
# Updated

# State Medicaid Health Information Technology Plan (SMHP)

## April 15, 2013

**State of Mississippi**

**Division of Medicaid**

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# 1 Executive Summary

The State of Mississippi Division of Medicaid (DOM) is participating in the Centers for Medicare and Medicaid Services (CMS) Electronic Health Record (EHR) system incentive payment program for its Medicaid eligible professionals (EPs) and eligible hospitals (EHs), collectively providers. The Mississippi Provider Incentive Program (MPIP) provides incentive payments to Mississippi Medicaid providers that adopt, implement, or upgrade to (A/I/U) or meet the Meaningful Use (MU) criteria of Certified Electronic Health Record Technology (CEHRT). The incentive payments are part of the American Recovery and Reinvestment Act (ARRA) health care initiative to promote the use of Health Information Technology (HIT) to improve the health care outcomes and provide cost saving efficiencies in the health care system. Mississippi Medicaid providers are benefitting from this program and had access to the incentives as soon as CMS was ready to make the payments. This State Medicaid HIT Plan (SMHP) provides a description of the strategic planning process that DOM has undertaken, and continues to undertake to participate in the provider incentive program; the business and operational plan for payment of the incentives; and an HIT Roadmap presenting the direction that DOM plans to take to achieve the HIT vision described in this document.

As part of its strategic planning effort, in the fall of 2010 DOM carefully considered the current EHR usage and capacity and completed an Environmental Scan of the State of Mississippi to ascertain the level of readiness of its providers. DOM also considered its current data sharing partners and evaluated the level of readiness to expand its current data sharing capacity. DOM coordinated this strategic Medicaid planning effort with the strategic planning effort for the statewide Health Information Exchange (HIE). This effort resulted in comprehensive knowledge of the HIT landscape at that time within the State of Mississippi. The HIT landscape, begun in 2010 and updated in 2012, is discussed in this document in Section 3 – Current HIT Landscape Assessment – The "As-Is" Environment.

Once DOM obtained a good understanding of the current EHR landscape, its planning effort for this update focused on the vision of DOM's HIT for the next five years, with an emphasis on the next three years (2013 – 2015). DOM has specific goals to achieve a new Medicaid Management Information System (MMIS) within the next four years as a part of a new Medicaid Enterprise System (MES). With that effort, DOM will: 1) achieve greater interoperability with its providers; 2) continue to provide an EHR system with enhanced health record sharing functionality; and 3) promote adoption of CEHRT for its providers with the goal of promoting coordinated health care for its beneficiaries and better health care outcomes. The effort to promote electronic exchange of health care data, or Health Information Exchange (HIE) for the benefit of the patient will be enhanced by the improvement of access to broadband technology for the citizens of Mississippi. Discussion of DOM's future vision of HIT and HIE can be found in this document at Section 4 – To-Be Landscape.

Using DOM's strategy as defined by the To-Be Landscape, DOM defined the Mississippi HIT Roadmap for achievement of its future vision. The HIT Roadmap articulates the major milestones and activities that DOM will achieve as it moves from its current environment (As-Is) to its future vision (To-Be). One of

DOM's first milestones was achieved in the submission of this SMHP and the Implementation Advanced Planning Document (IAPD) to CMS for funding. Additional important milestones achieved include accepting provider registrations for the incentive program payments and making incentive payments to providers. DOM continues to work toward the milestones of sharing data with the statewide HIE and enhancing the capabilities of the Medicaid EHR System (MEHRS) and e-Prescribing (known as eScript). Discussion of DOM's HIT Roadmap is found in this document in Section 6 – HIT Roadmap.

As one of the key elements to this SMHP, DOM underwent a comprehensive technical, business and operational planning endeavor to be ready to pay Mississippi Medicaid providers incentive payments under the MPIP as quickly as possible. DOM made the commitment to its providers to be ready to pay as soon as the funding was able to be released from CMS. This commitment resulted in Mississippi being one of the first states in the nation to make incentive payments to its providers. DOM carefully considered and incorporated all program integrity elements for the MPIP. DOM has implemented rigorous administration and oversight of the MPIP, including beginning A/I/U post payment audits, and continues to promote the adoption of CEHRT for its providers. As part of its promotion efforts, DOM has implemented a communication plan to inform providers of the availability of the incentives and will continue to conduct provider outreach and education. The discussion of the MPIP and its processes is found in this document in Section 5 – Provider Incentive Program Blueprint.

In addition to the submission of an updated SMHP, DOM submitted an updated IAPD o to CMS in December 2012, requesting implementation funding for only federal fiscal year (FFY) 2013. The updated SMHP and IAPD were approved in January 2013.

DOM is pleased to submit this updated SMHP dated April 15, 2013, as documentation of its continued activities to comprehensively plan and implement the future vision of DOM as a partner to its providers and stakeholders in the adoption of CEHRT and the promotion of HIE. An updated IAPD is being submitted in conjunction with this SMHP update, to adjust the FFY 2013 funding and request implementation funding through FFY 2015.

# 2 Introduction and Overview

DOM submits an updated SMHP annually to provide CMS with a summary of the activities that DOM has completed and expects to undertake in the future to successfully implement its HIT promotion program. For ease of use, an acronym table is attached hereto as Appendix A and a glossary of terms is attached hereto as Appendix B.

In order to submit this FFY 2013 SMHP update, DOM has completed a rigorous planning process designed to consider and incorporate all of the requirements for implementation of its HIT promotion program. These requirements include payment of the incentives for A/I/U and MU of CEHRT for Mississippi Medicaid providers.

DOM carefully analyzed the current technology, business, and operational environment and, subsequently, methodically planned the changes required to effectively administer the MPIP. DOM's strategic planning process entailed coordination with the statewide HIE planning efforts and a series of informational meetings of the essential DOM organizational participants and DOM stakeholders.

The results of DOM's meticulous planning process are incorporated into this SMHP update, including all of the elements required by the CMS. This document includes a description of the following elements required by CMS:

- The current and future vision for the MMIS;
- A re-assessment of the current HIT environment in the State of Mississippi through an environmental scan;
- The State of Mississippi's HIT To-Be landscape, taking into account the activities that have been completed since the original SMHP submission;
- The State of Mississippi's HIT Roadmap and plan, including a complete Interoperability Strategy found in Appendix L;
- A description of how the SMHP was designed and developed;
- The MPIP payment system and how the MMIS has been considered in developing the HIT Roadmap;
- Infrastructure enhancements that will support the overall goals of DOM;
- Data sharing components of the HIT Roadmap;
- Promotion of secure data exchange in accordance with the Health Insurance Portability and Accountability Act (HIPAA);
- A description of how DOM will promote the adoption and use of data technical standards;
- The process for improvements in health outcomes, clinical quality, or efficiency resulting from the adoption of CEHRT by DOM Medicaid providers, including the methods by which DOM will measure success;

- The method by which DOM will support the integration of clinical and administrative data;
- The method by which DOM will adopt national data standards for health and data exchange and open standards for technical solutions as they become available;
- A list of specific actions completed to implement the MPIP; and
- A Blueprint of the MPIP.

Section 5 – Provider Incentive Program Blueprint, of this SMHP update details the following processes used by DOM for oversight and administration of the MPIP, as required by CMS:

- The oversight of the MPIP that is conducted to ensure that providers meet all program requirements are met, including:
    - Compliance based upon their participation year;
    - Enrollment eligibility criteria;
    - Patient volume requirements;
    - EH incentive payment calculations remain consistent with CMS rules;
    - A/I/U and MU requirements are met prior to payment;
    - Monitoring and validation information; and
    - A process for combating fraud and abuse;
- Assurance that no amounts higher than 100 percent of Federal Financial Participation (FFP) will be claimed by DOM for reimbursement of expenditures for payments to providers;
- Assurance that no amounts higher than 90 percent FFP will be claimed by DOM for administrative expenses in administering the MPIP;
- Assurance that payments made to the approved providers are paid directly (or to an employer of facility to which the provider has assigned payments) without any reduction or rebate, and that incentive payment reassignments to an entity promoting the adoption of CEHRT as validated by DOM are voluntary for the provider involved;
- Assurance that providers receive only one incentive payment per program year;
- The Mississippi State Level Registry (MS SLR) attestation process, including specific identifiers used by DOM to coordinate with CMS on incentive payments;
- Assurance that only appropriate funding sources are used to make MPIP payments, including the methodology for verification;
- Assurance that MPIP payments are made for no more than a total of six years;
- Assurance that no provider begins receiving payments after 2016 and incentive payments cease after 2021;

- Assurance that an EH does not receive payments after fiscal year 2016 unless the hospital has received an incentive payment in the prior fiscal year;
- Executing timely and accurate payment of incentives;
- Recoupment/adjustment of incentive payments incorrectly disbursed; and
- The MPIP appeals process.

As DOM continues to refine this plan and provide updates to CMS, DOM will conduct operational and business planning to provide the following information:

- A description of the process to capture clinical quality data from each provider and a description of the methodology in place to verify this information; and
- The method by which DOM intends to address the needs of underserved and vulnerable populations, including information related to children, individuals with chronic conditions, Title IV-E foster care children, individuals in long term care settings, and the aged, blind, and disabled.

In addition to developing elements for the SMHP update, DOM has also been working with the statewide HIE and the Regional Extension Center (REC), eQHealth, to promote the use of CEHRT to providers throughout the State of Mississippi as well as educate providers on the MPIP.

DOM plans to keep CMS informed of anticipated changes to activities, scope, or objectives. DOM will provide annual updates and as-needed updates to CMS as its plan evolves over the next five years.

# 3 Current HIT Landscape Assessment – The "As-Is" Environment

This section describes the original environmental assessment of the State of Mississippi's Medicaid providers and the readiness for EHR adoption and Medicaid incentive payments. Updates to the SMHP will be completed in the To-Be, MPIP, and Roadmap sections of this document. This section provides the assessment documents, the tools used, the analysis applied, and the outcomes. This landscape assessment provides an understanding of the HIT/HIE issues and serves as source data for the development of the To-Be Landscape and completion of the HIT Roadmap and the IAPD.

## 3.1 Overview of Provider Environmental Scan

DOM has conducted several ongoing, comprehensive assessments of the current and planned levels of HIT adoption by Medicaid providers. These assessments began in June 2010, and include assessments up to September, 2012. For the purposes of this document, HIT refers to information technology (IT) that a provider might use, including practice management, health management records, EHRs, and electronic billing. The mechanisms utilized to collect this data included interviews, surveys, and focus groups. The entities interviewed or surveyed included all types and sizes of providers in a cross section of urban and rural settings, as well as providers in Federally Qualified Health Centers (FQHCs), Rural Health Clinics (RHCs), and Tribal settings. This report includes information gathered specifically for the SMHP, as well as information gathered for the Statewide HIE Strategic and Operational Plan (SOP), and other HIT related initiatives. The HIE SOP Environmental Scan relies on surveys and interviews that may not be precisely representative of the HIT landscape for Medicaid providers. As reflected in the information contained in Appendix H, DOM concludes that the incentive program is a strong motivational factor for the adoption of CEHRT.

### 3.1.1 Eligible Hospital Environmental Scan

The HIE Readiness Assessment was conducted in June 2010 for the Mississippi Department of Information Technology Services (ITS) for its SOP effort. The assessment included interviews with representatives of 27 facilities across the State of Mississippi that were conducted with a cross section of urban and rural facilities, including both clinics and hospitals. This assessment was aimed primarily at gathering information from hospitals, but included certain other entities such as hospital clinics, FQHCs, and the Indian Tribe. In addition, the Environmental Scan includes the results of a survey conducted in December 2009 by the Mississippi Hospital Association (MHA). The MHA survey, which is attached hereto as Appendix D, gathered data from Critical Access Hospital (CAH) and Acute Care Hospitals.

#### 3.1.1.1 Eligible Hospital Surveys

All organizations participating in the surveys described above report using an electronic system for their billing and administrative functions. Data gathered from both surveys indicates a current low level of data exchange by the survey participants. Other similarities included that Certification Commission for Health Information Technology (CCHIT) is the most sought after certification for HIT technology, and that there is a strong interest by providers to implement an Electronic Medical Record (EMR) system if and when it is financially feasible. The providers with the highest adoption rates are FQHCs, hospitals, and the Indian Tribe. Dentists have the lowest adoption rate of 44.4 percent, with the overall adoption rate of 72.3 percent across provider types. On average, pharmacies currently benefit the most from data exchanges, with 75.9 percent of respondents currently exchanging data with them. In contrast, only 48.2 percent of providers share data with government agencies. These surveys have been included as Appendices C and D to this document.

#### 3.1.1.2 Eligible Hospital Focus Groups

During the ITS HIE Readiness Assessment performed for the SOP, the interview team learned that many facilities without EMR or EHR system capability often have a billing management system in place. The primary reasons cited by the facilities for not implementing an EMR/EHR are:

1. The upfront cost involved; and
2. The uncertainty over whether or not the chosen vendor will meet the certification requirements necessary for ARRA funding.

This interview data identifies capital and ongoing costs as major barriers to implementation or expansion of an EMR or EHR.

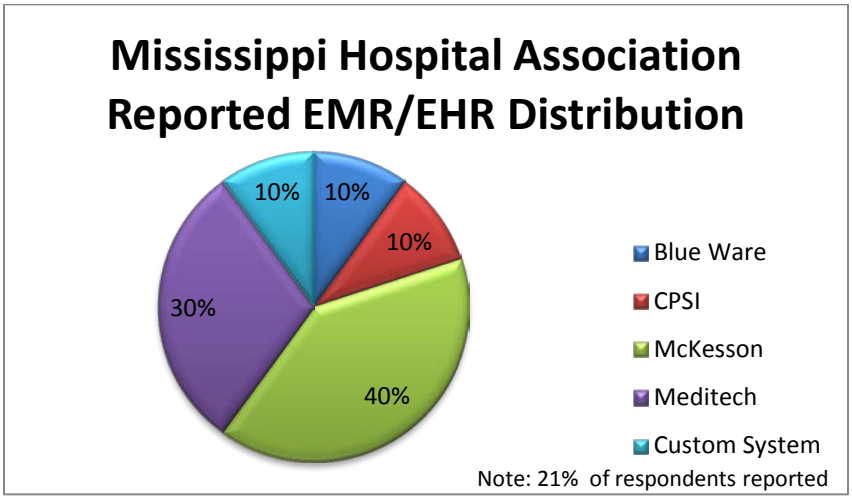



**Figure 1: Mississippi Hospital Association Survey – Reported EMR/EHR Distribution**

The data shown above indicates that a variety of vendors have been chosen for the EMR/EHR implementations. With the exception of one respondent that developed a custom system for a hospital, all vendor systems identified in the interviews and surveys are either CCHIT compliant based on prior year requirements or the vendor expressed intent to achieve CCHIT compliance.

The organizations expressing readiness or plans to exchange data within the next year have identified not only the technology but also the vehicles through which they would conduct the exchange. These vehicles fall into three general categories:

- A private network of homogeneous or heterogeneous provider facilities utilizing the same vendor/platform (e.g. McKesson's RelayHealth);
- An organization interested in connecting their standards-based system with an existing Regional Health Information Organization (RHIO) or HIE (see Section 4.3.1); or
- A future statewide HIE (see Section 4.7).

All organizations that plan to or are currently sharing data intend to continue their efforts to implement and use EHR technology.

#### 3.1.1.3 Eligible Hospital Environmental Scan Conclusions

The two main sources of data for this report – in-person interviews and electronic surveys – provide a snapshot of the current state of HIT adoption among Mississippi EHs. The data supports that EHs intend to move forward with implementing EHR technology and the exchange of information.

Based on these results, DOM's conclusions are that:

- Hospitals are becoming increasingly aware of the benefits of EHR technology and its positive impact on the quality of care for their patients;
- The exchange of electronic data between hospitals and their providers is necessary for improvement of patient care and controlling costs;
- All hospitals recognize the inevitability of moving to an EMR/EHR system with the capability of exchanging clinical health care data beyond the integrated service delivery network;
- The success of participation in exchanges relies on vendor ability to achieve certification;
- The Nationwide Health Information Network (NwHIN) and the State HIE will provide the mechanisms to facilitate the secure exchange of patient data regardless of the location of the patient and his/her health records; and
- HIEs (e.g., the Mississippi Coastal Health Information Exchange (MSCHIE)), RHIOs, and system-wide record sharing will continue to increase in parallel with a statewide HIE effort. The establishment of standards is critical to interoperability and alignment with the existing exchanges.

#### 3.1.1.4 Eligible Professional Environmental Scan

The assessment of the current state of HIT among Medicaid EPs included a provider survey that was conducted between July and early September 2010. In addition, a series of focus groups with providers from various locations in Mississippi was conducted in August 2010. These activities provided data and information specific to the current level of HIT adoption across the EP environment in the State of Mississippi.

#### 3.1.1.5 Eligible Professional Survey

The Medicaid EP survey was launched in July of 2010 and consisted of a multi-part questionnaire that was made available online through the DOM Website and the MMIS Website through September 2010. (The survey results are included in Appendix E.) The questionnaire consisted of 22 questions, both in multiple choice and text entry format, concerning the present and planned use of HIT among EPs in the State of Mississippi.

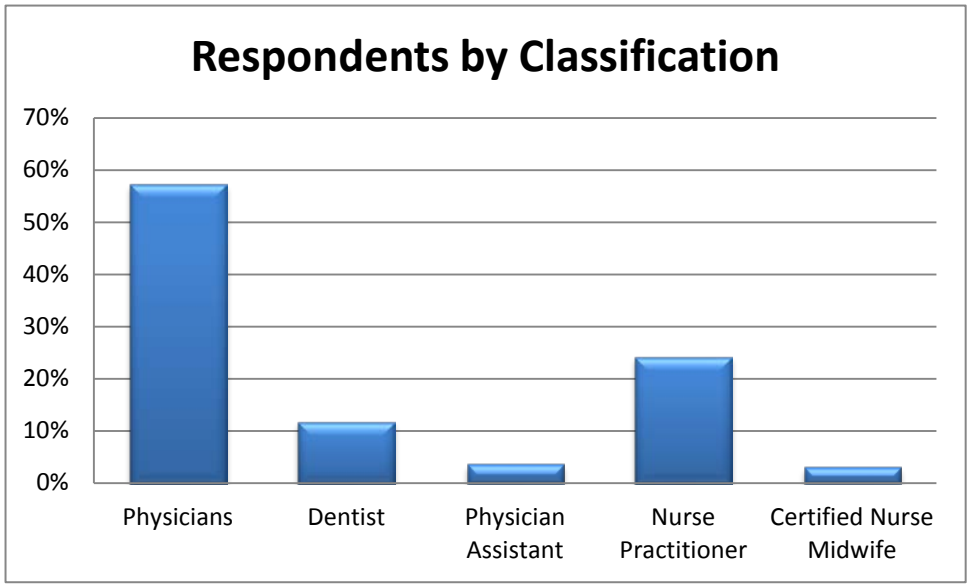



**Figure 2: Eligible Professional Survey – Respondents by Classification**

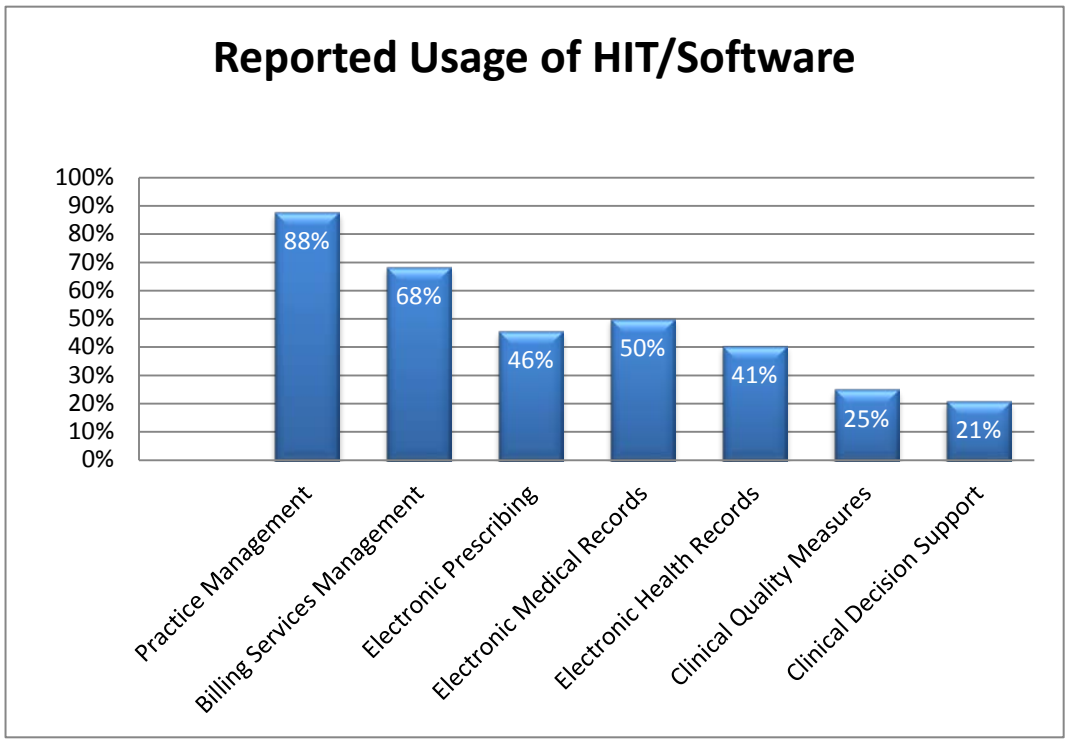



**Figure 3: Eligible Professional Survey – Current HIT Usage**

While 88 percent of respondents report currently using practice management software and 43 percent report currently using an EMR software product, 72 percent report planning to add or upgrade EHR software in the future. Additionally, a full 83 percent reported that they intend to apply for incentive payments under the Medicaid program.

In terms of their current and planned level of health data exchange with various entities, 27 percent of practices indicated that they currently exchange data with hospitals, and 33 percent indicated that they plan to exchange data with hospitals in the future. These percentages are based on the number of practices responding regardless of the size of the practice. Of the responding practices, 16 percent reported that they currently exchange data with other physicians and government agencies, 46 percent expect to exchange data with other physicians in the future, and 35 percent expect to exchange data with government agencies. Based on the survey results, practices are focused on exchanging data: 1) first with hospitals and pharmacies; 2) second with other physicians, labs, and radiology; and 3) last with governmental agencies.

Computerized Physician Order Entry (CPOE) features such as patient problem lists, allergies, drug interaction, and electronic prescribing are among the most popular features reported by users of this generation of EHR software products. All of these features show immediate, readily-visible benefits of improving the quality of care given by the provider. Although the providers initially do not anticipate any cost savings as a result of the implementation of HIT, they understand the future potential in improved health care provided and the possibility of future cost savings to the health care industry.

An important data point is that 56 percent of all respondents reported that they expect to exchange data with labs or diagnostic imaging centers in the near future. While providers are implementing EHR systems that have those capabilities, they are first focusing on implementing features that will immediately improve the quality of care in their practice and allow the exchange of data with other practices or hospitals.

#### 3.1.1.6 Eligible Professional Focus Groups

Two provider focus group meetings were conducted in Mississippi in August of 2010. A total of 42 participants representing various provider organizations participated. Each group was asked the same basic set of questions. Based upon the responses to the initial questions, follow-up questions were asked for clarification and additional information. The results from the focus group sessions were very similar to one another and have been reported as a collective response. See Appendix C.

Thirty-three participants of the August 2010 group meetings reported using an EMR/EHR application. Although one practice reported having used their application for two years, most were relatively new users of their electronic systems. Most participants described their experience as ultimately positive; however, the responses varied significantly by age of the

participant, with younger participants generally reporting higher levels of satisfaction. Participants reported that the desire to improve the quality of care was a motivating factor in adopting EMR/EHR technology. Some participants registered concerns that the adoption of the technology could result in "check box medicine."

Participants that had not yet adopted EMR/EHR technology reported that they would consider utilizing an EMR/EHR because of the incentive payments; and some reported they are looking for a solution or guidance from the REC. In terms of the types of features these participants were seeking in a product, they reported ease of use and suitability to their specialty as being the primary characteristics.

Participants reported a fairly limited understanding of the requirements of MU and a low awareness of the specifics of the overall Medicare/Medicaid incentive programs.

#### 3.1.1.7 Eligible Professional Environmental Scan Conclusions

To arrive at hypotheses or conclusions from the results of the survey, it is important to bear in mind that the survey was targeted to Medicaid providers. The survey was voluntary and made available through the DOM Website, the MMIS Website, and targeted e-mails to Medicaid providers. Practices responding included 18 counties with designated urban areas and 20 counties with populations less than 50,000. The respondents self-selected, indicating that the results of the survey may not constitute a statistically representative sample of the total population. Based on the survey and related sessions, DOM's conclusions are that:

- Providers have a strong interest in improving their patients' quality of care;
- Providers are focused on first exchanging data with hospitals and pharmacies;
- Practices with fewer than ten practitioners are more likely to meet the 30 percent Medicaid requirement;
- Providers show a significant interest in the Health Information Technology for Economic and Clinical Health (HITECH) incentive program;
- The large majority of respondents indicated they intend to apply for the stimulus payments in 2011. Most respondents intend to upgrade or replace their systems;
- Providers need community outreach programs to understand the incentive program details regarding eligibility;
- Providers need community outreach programs to understand the requirements of MU and Clinical Quality Measures (CQM) for the Medicaid EHR incentive program;

Based on these findings, it is clear that providers have a high level of interest in adopting EHR technology, but the high cost of the systems and the lack of a statewide HIE hinder their efforts.

Cost of implementation of the EHR systems will be partially overcome by the Medicaid EHR incentive program. However, the lack of understanding of the Medicaid EHR incentive program creates another barrier to adoption; therefore, a provider outreach and education program is needed to inform providers about the program and its requirements. The development of the education and training program in collaboration with the REC is a necessity to achieving the adoption and use of EHR technology.

The major conclusions drawn from the focus group participants include:

- Enthusiasm for moving to technology and obtaining the associated benefits among the participants, but a need for assistance along the way;
- Significant disparity among those participants who were familiar with MU and the incentive program and those who were not. The range of knowledge was very wide;
- A need for significant outreach and education specific to the incentive programs across the State of Mississippi;
- Mississippi's extensive rural demographics will pose unique challenges for EHR adoption;
- Many of the providers across the State will need significant educational assistance from DOM and significant educational/technical assistance from the REC in selecting and adopting an appropriate EHR system;

#### 3.1.1.8 Provider Survey of Paper Medicaid Claims Submitters

In the summer of 2012, DOM conducted an electronic survey of CEHRT adoption (including MEHRS/eScript adoption). The providers selected to receive this electronic survey (via email) were those providers who were still submitting paper Medicaid claims to DOM, as of summer, 2012.

The selected group of paper submitting providers was refined to 643 providers after eliminating any MEHRS/eScript users, Optometrists, and Dentists. 643 electronic surveys were then emailed, with a focus on certified EHR technology adoption and utilization, Meaningful Use knowledge and intention to attest for MU, and other related questions.

There were 64 provider respondents (roughly 10%) to the survey, with a majority of the respondents completing the entire electronic survey.

Key data points on the Medicaid Survey responses:

- Meaningful Use Incentives and EHR implementation and usage:

- 14 providers responded that they did not know if they qualified for Meaningful Use incentives; these providers were flagged as needing EHR and MU outreach and assistance from DOM and/or the REC;
- 15 Providers responded that they did not qualify for incentives, however, 7 of these 15 responded that they planned on implementing an EHR regardless of not qualifying for incentives;
- 37 providers responded that they qualified for incentives; 8 of the 37 had not implemented an EHR yet.
- All 8 respondents who had not implemented an EHR yet stated that they needed help either selecting an EHR or that they needed help with training issues on technology/the EHR (or both);
- There was no prominent EHR in use, however Greenway and NextGen were in higher usage;

- ePrescribing implementations and usage:
  - A majority of the providers, 44 out of 64 provider respondents, had implemented an ePrescribing solution;
  - The 20 respondents who had not implemented an ePrescribing system stated that training issues or the difficulty of the integration of an ePrescribing system into their current workflow was the issue (or both); and
- Smart Card Pilot program and use-cases:
  - Nearly all the providers responded that they would want a Smart Card with Medication History, eligibility data, immunization data, and Medicaid service levels available.

#### 3.1.1.9 Providers Environmental Scan Conclusions

There is a high level of interest in EMR/EHR among the State of Mississippi's health care providers. Providers realize the benefits that EHR systems offer in improving the quality of care for their patients and the potential of cost savings to the health care industry. Providers have worked together to achieve limited success with their local exchanges. However, providers recognize the challenges in achieving the vision of a nationwide EHR network. Key challenges to implementing the EHR software and developing a nationwide EHR network are as follows:

- The EHR technology is new and still evolving. Availability and high cost of the software has deterred implementation. Interoperability of software and the need for further development of standards will continue to challenge the exchange of data;
- The high bandwidths required to support the transportation of data in a timely manner;

- The lack of a State and national infrastructure to support the secure exchange of data between authorized users;
- The lack of understanding surrounding the CMS funding opportunities and the associated requirements has impacted both the commitment to spend funds on implementing an EHR system; and
- The lack of standardized protocol or definition of what constitutes EHR/Continuity of Care Documents (CCD).

No single entity can achieve the implementation of the CEHRT and the build out of the State and national infrastructure needed to support the secure exchange of patient data. Each of the challenges listed above are being addressed and roadmaps are being developed to overcome the challenges. Initially, DOM's role is to: 1) facilitate the payment of incentives for adoption of CEHRT; 2) work with the State and national health networks in developing the exchange of data; and 3) encourage its providers in the adoption of CEHRT. Medicaid's role will continue to evolve over time and change in accordance with the needs of its providers and State and national networks.

## 3.2 MMIS Capabilities Assessment

Mississippi's current MMIS is a three-tiered application architecture composed of:

1. A client work station (user interface tier);
2. An application server (business logic tier); and
3. A mainframe backend (data tier).

The business logic and data tier are housed in a secure data center facility in Pennsylvania with MMIS' vendor Xerox. The user interface tier workstations are located in DOM facilities in the State of Mississippi. The workstations run a PowerBuilder runtime client and the presentation layer of the Envision system on the Windows Vista Professional operating system. The workstation application handles primary edit logic prior to sending the data on to the business logic tier for further processing.

The business logic tier provides: 1) middleware connectivity to the mainframe environment; 2) clustering, load-balancing, failover, and two-phase commit control over the database transactions; and 3) additional business logic processing via PowerBuilder and Java objects. The mainframe-based data tier uses IBM Customer Information Control System for transaction processing and DB2 for relational database management.

The major components of the MMIS include:

- Data Entry
- Claims

- Financial
- Reference
- Management and Administrative Reporting
- Third Party Liability
- Provider
- Surveillance and Utilization Review
- Beneficiary
- Medicare Buy-In
- Automated Voice Response System
- Provider Lookup
- Bulletin Board System
- WINASAP – Provider claims submission software
- Web Portal
- Electronic Data Interchange (EDI) Processing
- Computer Systems Request

The Decision Support System (DSS) and Data Warehouse (DW) components include:

- Data Warehousing
- Management and Administrative Reporting
- Surveillance and Utilization Review (J-SURS)
- Data Management Tools

Lastly, pharmacy claims processing include:

- Point of sale terminals
- Pharmacy Benefit Management (PBM)

The State of Mississippi is currently working to procure: 1) a state-of-the-art MMIS; 2) a PBM System; 3) DSS / DW solution, as supporting ancillary applications; and 4) Fiscal Agent services. The procurement effort will emphasize vendor achievement and alignment of Medicaid Information Technology Architecture (MITA) principles and goals as key outcomes of the process.

Based on the MITA State Self-Assessment (SS-A) and Gap Analysis, there are several opportunities for MITA level advancement in the Provider Management, Operations Management, Business Relationship Management, and Program Integrity Management business process areas. DOM will consider the appropriate solution during the re-procurement effort.

## 3.3 Feasibility of Incentive Payment Methodology

The State of Mississippi studied two possible solutions for administering the MPIP – one involving in-house development of a provider incentive payment system; and a second option involving a standalone Web-based hosted solution developed by Xerox. DOM elected to use the Xerox solution, which involved minimal changes to the current MMIS.

The Xerox solution was designed and implemented in conjunction with Xerox's work on the California replacement MMIS. Since 2011 it has been implemented in multiple states as a Software as a Service (SaaS) solution. Xerox's solution offers DOM a Web-based State registration, attestation, and tracking system to support provider incentive payments for the A/I/U and/or MU of CEHRT. This Web-based system was designed to provide a State Level Registry (SLR) to document, track, and attest to the provider's use of EHRs in support of A/I/U and MU requirements. This SLR works in conjunction with and communicates with the CMS Registration & Attestation System in accordance with the published CMS interface specifications.

The Xerox solution provides two separate Web portals: one for the provider access and one for State staff to access.

The provider portal is a single location where providers can securely log in to complete their A/I/U and MU attestation information, including uploading any additional required documentation for acceptance and review by the State. The provider portal allows each eligible provider to complete registration and to review and edit their demographic information. However, data received from the CMS Registration & Attestation System must be edited through the Medicare/Medicaid EHR Incentive Program Registration Website.

As a part of the MS SLR attestation process, providers enter the following information into the provider portal:

- Medicaid patient volume percentage numerator and denominator to achieve eligibility. This will also be analyzed for non-hospital based eligibility;
- Required A/I/U data (or MU data and percentage information, including CQMs)); and
- Supporting documentation.

The MS SLR automatically verifies provider data, such as license validation and exclusion checks, and indicates a preliminary approval or denial in accordance with current CMS and DOM requirements. Providers are able to track the status of their application and payments online, and view any messages from DOM.

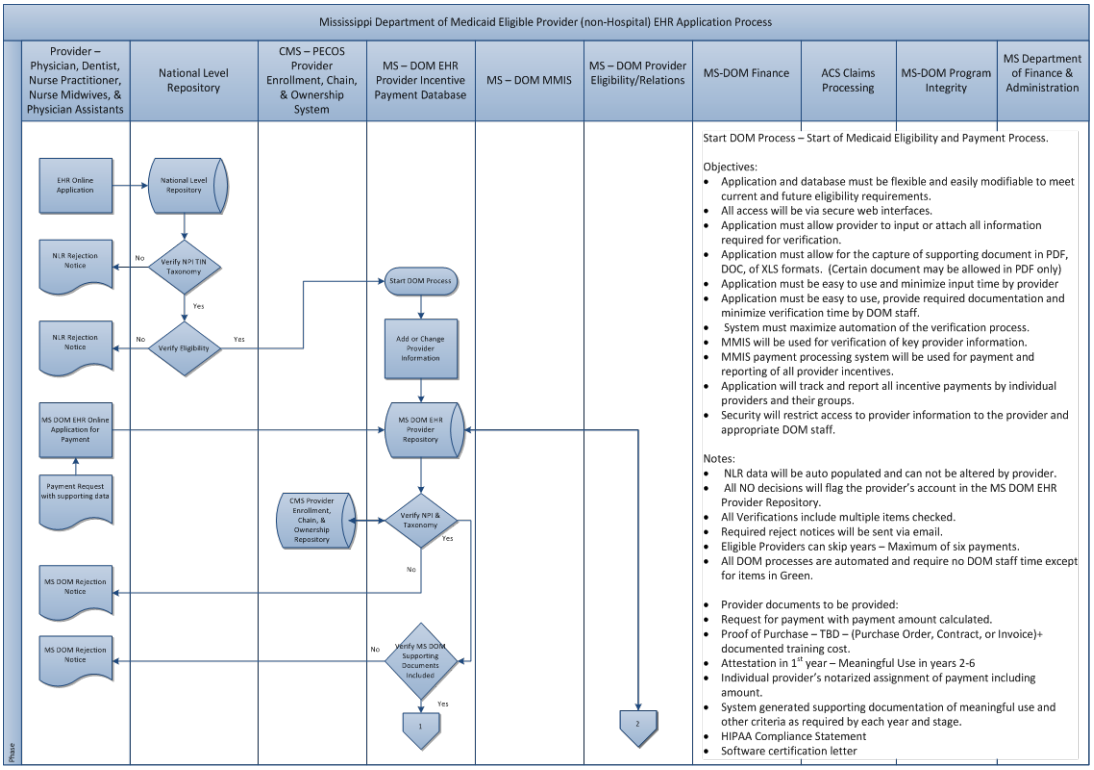
The State access portal provides a location where DOM-approved users can securely log in to access provider attestation information and work queues. The work queues for DOM users are role-based so that the provider registration and attestation information can be routed to the correct user and/or department for approval, action, or denial. The State access portal provides a mechanism by which the State can track incentive payments and communicate with providers through a messaging system. In this way, the State can communicate "directly" with the providers on matters of approval or denial, or to request additional information.

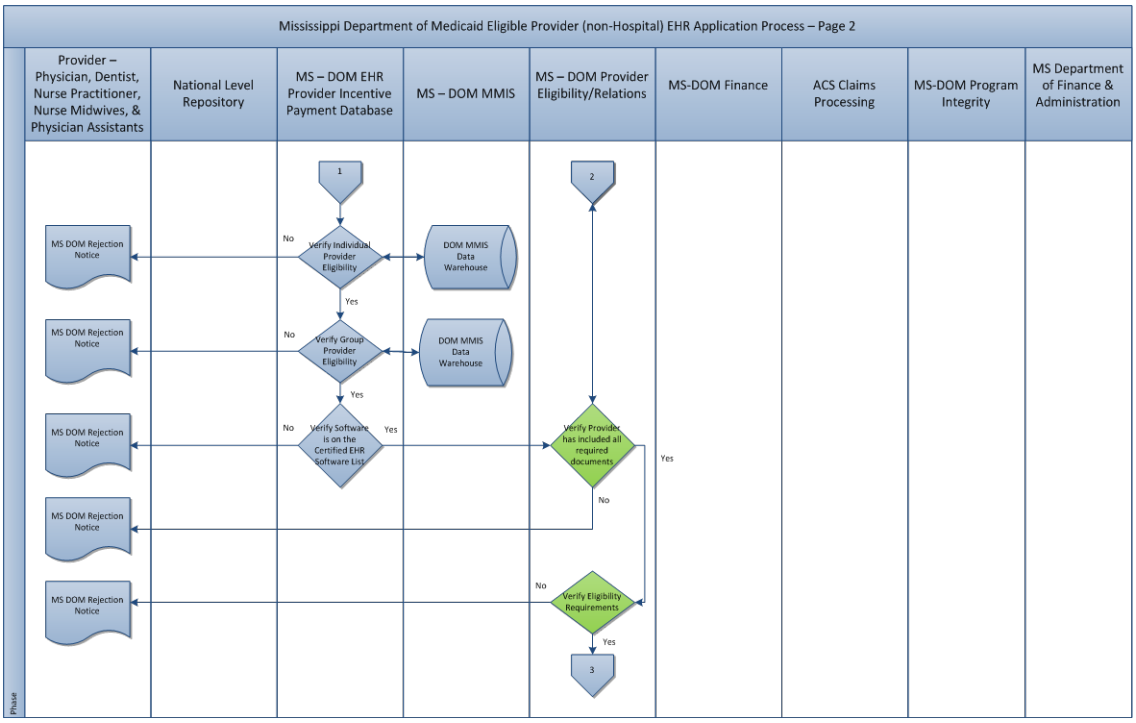
Approved State users utilize the State access portal to:

- Review and approve provider attestation information and supporting materials;
- Calculate and initiate a provider payment cycle using an automated interface to the MMIS;
- Manage the audit, recoupment and adjustment, and appeals processes; and
- Review provider quality metrics.

The following is an alternatives analysis that DOM used to compare the Xerox proposed stand-alone solution with an effort to develop an in-house system to provide functionality needed for issuing provider incentive payments.

The in-house system was investigated and process flows were developed to show the required changes in workflow to accommodate provider payments. The outcome of that process is represented in the figures shown below. The first set of figures represents the proposed new process flow for EPs and the second set of figures represents the proposed new process flow for EHs.


Mississippi Department of Medicaid Eligible Provider (non-Hospital) EHR Application Process
Provider – Physician, Dentist, Nurse Practitioner, Nurse Midwives, & Physician Assistants
National Level Repository
CMS – PECOS Provider Enrollment, Chain, & Ownership System
MS – DOM EHR Provider Incentive Payment Database
MS – DOM MMIS
MS – DOM Provider Eligibility/Relations
MS-DOM Finance
ACS Claims Processing
MS-DOM Program Integrity
MS Department of Finance & Administration
EHR Online Application
National Level Repository
NLR Rejection Notice
Verify NPI TIN Taxonomy
No
Yes
NLR Rejection Notice
Verify Eligibility
No
Yes
Start DOM Process
Add or Change Provider Information
MS DOM EHR Online Application for Payment
MS DOM EHR Provider Repository
Payment Request with supporting data
CMS Provider Enrollment, Chain, & Ownership Repository
Verify NPI & Taxonomy
Yes
No
MS DOM Rejection Notice
MS DOM Rejection Notice
Verify MS DOM Supporting Documents Included
No
Yes
1
2
Start DOM Process – Start of Medicaid Eligibility and Payment Process.
Objectives:
Application and database must be flexible and easily modifiable to meet current and future eligibility requirements.
All access will be via secure web interfaces.
Application must allow provider to input or attach all information required for verification.
Application must allow for the capture of supporting document in PDF, DOC, or XLS formats. (Certain document may be allowed in PDF only)
Application must be easy to use and minimize input time by provider
Application must be easy to use, provide required documentation and minimize verification time by DOM staff.
System must maximize automation of the verification process.
MMIS will be used for verification of key provider information.
MMIS payment processing system will be used for payment and reporting of all provider incentives.
Application will track and report all incentive payments by individual providers and their groups.
Security will restrict access to provider information to the provider and appropriate DOM staff.
Notes:
NLR data will be auto populated and can not be altered by provider.
All NO decisions will flag the provider's account in the MS DOM EHR Provider Repository.
All Verifications include multiple items checked.
Required reject notices will be sent via email.
Eligible Providers can skip years – Maximum of six payments.
All DOM processes are automated and require no DOM staff time except for items in Green.
Provider documents to be provided:
Request for payment with payment amount calculated.
Proof of Purchase – TBD – (Purchase Order, Contract, or Invoice)+ documented training cost.
Attestation in 1st year – Meaningful Use in years 2-6
Individual provider's notarized assignment of payment including amount.
System generated supporting documentation of meaningful use and other criteria as required by each year and stage.
HIPAA Compliance Statement
Software certification letter
Phase


Mississippi Department of Medicaid Eligible Provider (non-Hospital) EHR Application Process – Page 2
Provider – Physician, Dentist, Nurse Practitioner, Nurse Midwives, & Physician Assistants
National Level Repository
MS – DOM EHR Provider Incentive Payment Database
MS – DOM MMIS
MS – DOM Provider Eligibility/Relations
MS-DOM Finance
ACS Claims Processing
MS-DOM Program Integrity
MS Department of Finance & Administration
1
2
MS DOM Rejection Notice
Verify Individual Provider Eligibility
No
Yes
DOM MMIS Data Warehouse
MS DOM Rejection Notice
Verify Group Provider Eligibility
No
Yes
DOM MMIS Data Warehouse
MS DOM Rejection Notice
Verify Software Is on the Certified EHR Software List
No
Yes
Verify Provider has included all required documents
Yes
No
MS DOM Rejection Notice
MS DOM Rejection Notice
Verify Eligibility Requirements
No
Yes
3
Phase

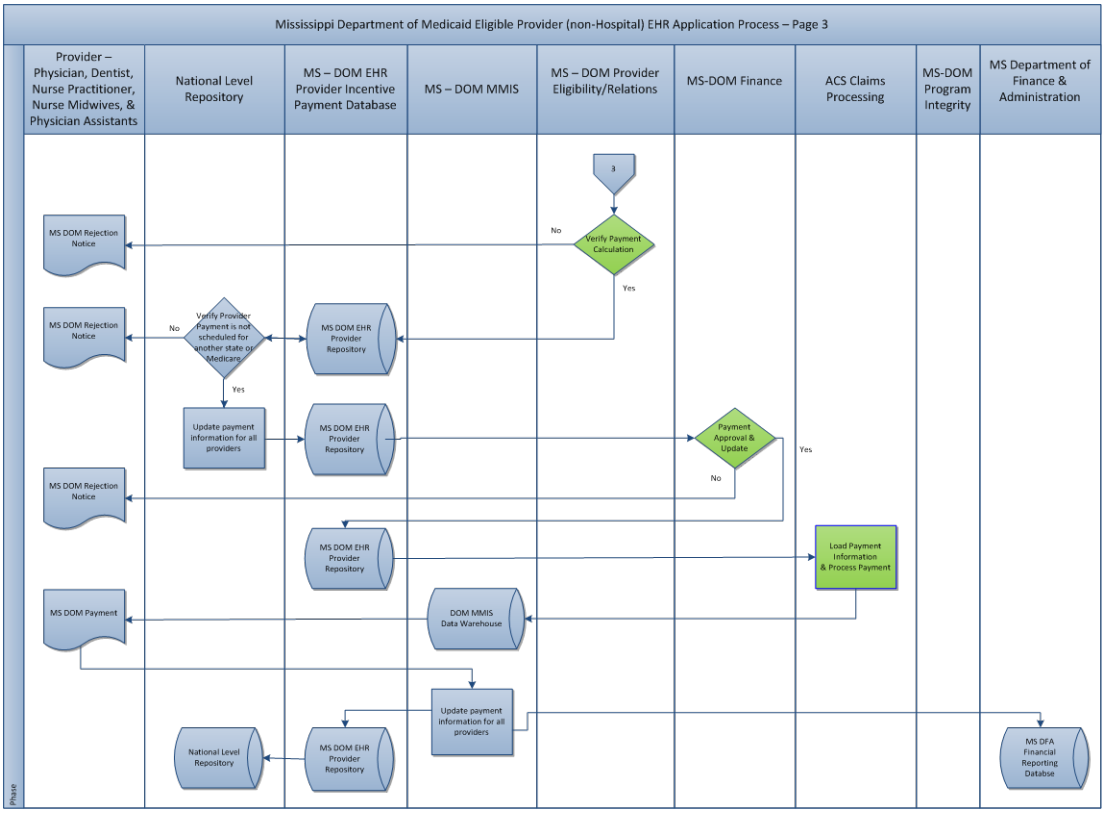
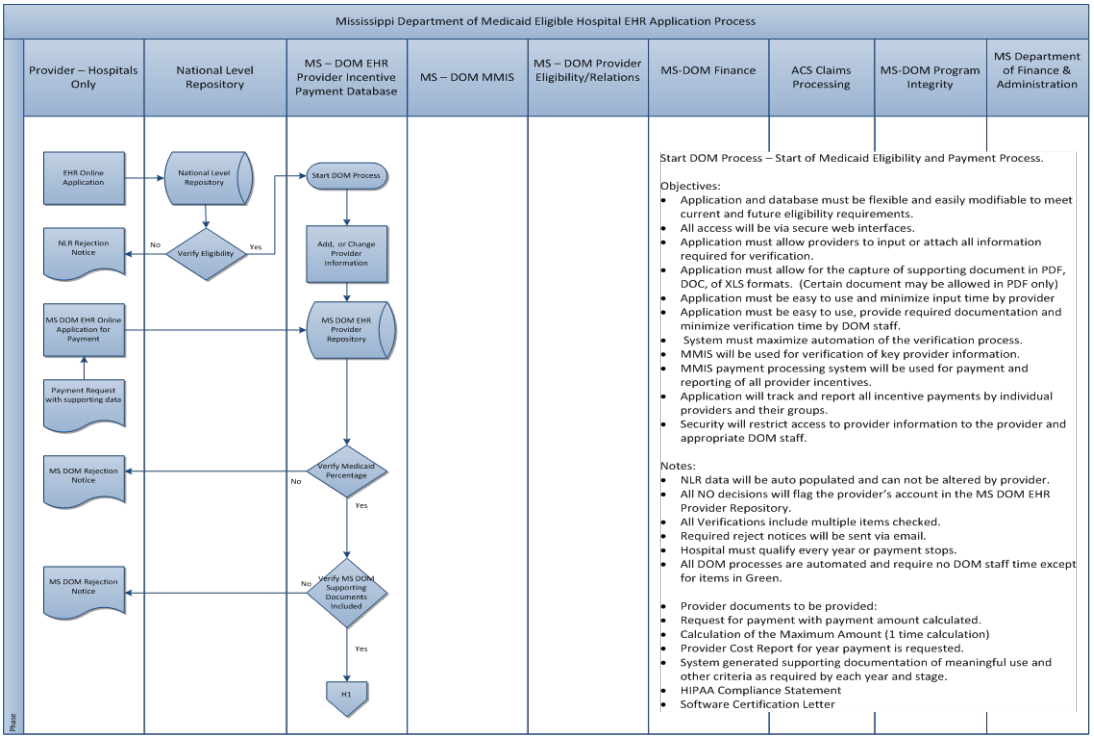



**Figure 4: Internal Process Flow - Professional Eligibility**



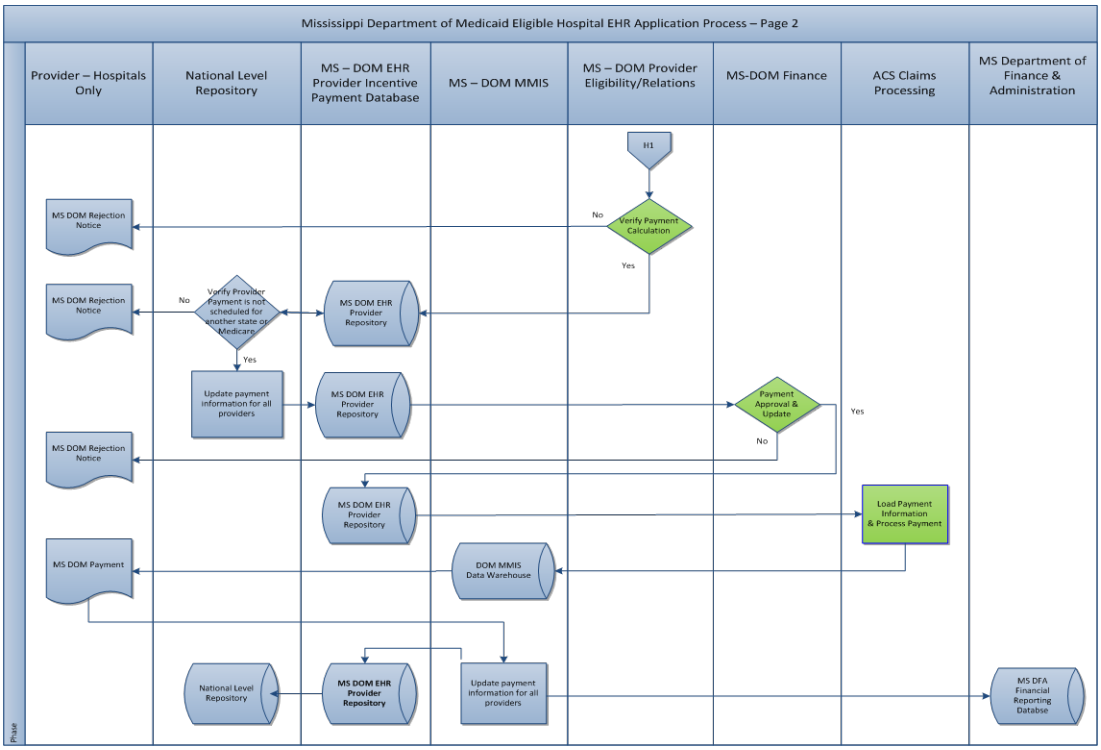




**Figure 5: Internal Process Flow - Hospital Eligibility**

The following table shows the comparison that DOM made between the internal solution and the Xerox solution. As noted above, the Xerox option was used as an adjunct to the current MMIS, requiring only minimal changes to the current MMIS. This option had several advantages that are discussed below. Critical factors in DOM's decision-making process were critical timeline, availability of qualified staff, and investment in infrastructure.

**Table 3-1: Internal Solution v. Xerox Solution**

| Considerations | Internal Solution/SaaS Solution |
|---|---|
| The State has indicated a desire to participate in Group 1 testing for the provider incentive payments with CMS. | Internal Solution: The changes necessary for participating in Group 1 testing will not be available in time. |
| | SaaS Solution: Vendor commits to meeting the required timelines. |
| The State desires a solution that poses the least risk of schedule delay. | Internal Solution: The State does not have the required resources necessary to successfully develop and implement the solution. |
| | SaaS Solution: The vendor is devoting significant resources to creating a solution for multiple states. |
| The State desires a solution that requires the least amount of limited State resources. | Internal Solution: The required State resources will be significant under this scenario (support, maintenance, development, program, help desk, project management, and vendor oversight). The State would struggle to recruit sufficient qualified resources in a timely manner. |
| | SaaS Solution: The State's required commitment of resources is significantly decreased by focusing its limited resources on the oversight of the proposed solution. |
| The State desires a solution that meets all Mississippi-specific requirements. | Internal Solution: An internal solution will be able to meet any Mississippi-specific requirements. |
| | SaaS Solution: The Xerox solution may not meet all Mississippi-specific requirements. Small changes, such as additional fields are included in the cost, but substantial modifications may be expensive or time consuming. |
| The State desires a solution that conforms to all CMS requirements. | Internal Solution: An internal solution would require additional manual processes for attestation and verification, but will be able to meet all CMS requirements fully. |

| Considerations | Internal Solution/SaaS Solution |
|---|---|
| | SaaS Solution: The Xerox proposal includes a Web-based system to support the MU requirements, incentive payments, and other ARRA HITECH Act requirements. This solution provides a more automated solution for the attestation and verification processes, therefore requiring fewer DOM resources for the oversight of the attestation and verification processes. |
| The State desires a solution that is flexible, easily modifiable, and maintainable. | Internal Solution: Building applications that are flexible, easy to modify, and maintain is a challenge. The State may struggle to create an internal solution to meet these objectives while altering a legacy MMIS at the same time. |
| | SaaS Solution: The vendor states that the application will be configurable for state specific requirements, but not enough information is known to verify flexibility. |
| The State desires a solution that provides as much automation as possible for audit functions. | Internal Solution: An internal solution may be able to automate audit functions fully; but design, development, and implementation would take a significant amount of time beyond the timeline for Group 1 or Group 2. |
| | SaaS Solution: The Xerox proposed solution provides automation of audit functions. The full extent of those automation capabilities is unknown at this point. |

Based on a review of the alternatives, the State chose to pursue the Xerox SaaS solution. The State believed that the SaaS offered the lowest risk and a lower cost alternative, long-term, than developing a new internal solution. The State worked closely with Xerox to finalize the requirements for the State of Mississippi in the commercial off the shelf (COTS) offering using configuration sessions and user group calls. Since implementation, the Xerox application has successfully accepted provider attestations for A/I/U and MU and DOM continues to work on shaping functionality within the Xerox solution to meet the needs of the MPIP and future stages of the MU program.

## 3.4 Current MEHRS Status

With the use of funds from a Transformation grant, a provider Stabilization grant, and the MMIS enhanced funding match, the State of Mississippi has implemented a system known as Medicaid

Electronic Health Record System and e-Prescribing (MEHRS/eScript). The MEHRS/eScript system was launched in June 2010 and is available to all Mississippi Medicaid providers at no charge.

DOM requested and received funding for MEHRS design, development, and implementation, as well as ongoing support, via an IAPD that was approved by CMS in January 2009. CMS approved a four-year contract term with two two-year renewals with the understanding that the renewals would require further approval. The current contract includes development costs and support for potential future requirements. The definition of these requirements is flexible in nature, and could be used for changes in the definition of MU.

This system offers providers capabilities for:

- An EHR based on data from Medicaid claims, showing a rolling 36-month history of procedures, diagnoses, and medications for each Medicaid beneficiary;
- E-prescribing, based on Medicaid formularies, with drug utilization review alerts;
- Opportunities for care improvement when comparing a patient's information against evidence-based quality measures; and
- Entry of patient-reported allergies, immunizations, self-reported medications, and vitals.

The goals for the MEHRS/eScript project include:

- Online provider access to Medicaid beneficiaries' claims-based medical and medication history;
- Identification and treatment of health problems at the point of care with the potential for reduction of duplicated procedure expenses;
- Access to beneficiary history in situations where the beneficiary is unable to communicate;
- Access to beneficiary history in times of disaster; and
- Reduction in prescription errors due to elimination of hand-written scripts.

DOM understands the needs of its providers and continually strives to supply them with the tools needed to support their efforts. In recognition of those needs and the cost associated with the implementation of EHR technology, DOM has implemented and will continue to provide its MEHRS/eScript product to its providers at no cost for the product. Through Medicaid and State partners, the MEHRS/eScript product is being deployed and providers trained on its use.

DOM contracted with the vendor Shared Health to provide a MEHRS/eScript for Mississippi Medicaid providers in 2009. Shared Health subsequently rolled out MEHRS/eScript with over 3,200 Medicaid providers and practice staff users registering for the system, enabling electronic health records with clinical data for over 600,000 Medicaid beneficiaries in MEHRS/eScript.

Shared Health was scheduled to upgrade the currently deployed version of MEHRS/eScript (Version 7) to an Office of the National Coordinator for Healthcare Information Technology (ONC)-certified version, named MEHRS/eScript Version 8. MEHRS/eScript Version 8 was due for delivery to DOM in late 2011, as mutually and contractually agreed by both DOM and Shared Health; however it has not been delivered to date.

In early 2012, DOM was informed that Shared Health would not be delivering Version 8 of MEHRS/eScript, would not be delivering any ONC-certified version of MEHRS/eScript, and that Shared Health was stopping all development work on the MEHRS/eScript product and platform.

As DOM has providers who are relying on the MEHRS/eScript system for meeting the criteria of Stage 1 Meaningful Use, DOM and Shared Health have, as of this date, entered into an agreement to migrate/upgrade the MEHRS/eScript system to a commercially available solution, through several new (subcontracted) vendors. This upgraded MEHRS/eScript solution will meet all ONC certifications for an EHR and ePrescribing system, and also allow DOM to continue to utilize the backend data and systems currently in place, including the clinical data and longitudinal health record on over 600,000 Medicaid beneficiaries in the State of Mississippi. Terms and negotiations with Shared Health (and subcontractors) is ongoing, however, the goal is to have a certified EHR rolled out to providers by June 2013 to allow for providers on the MEHRS/eScript system to attest to Stage 1 MU.

## 3.5 Current MITA Status

MITA is a CMS initiative designed to assimilate business and IT transformation across the Medicaid enterprise to improve the administration of the Medicaid program. MITA is a business-centric architectural framework that provides planning guidelines for states to define strategic business goals and objectives, define business processes, and assess current capabilities as a baseline to measure progress towards these goals.

A key activity within the MITA initiative is performing a MITA SS-A. Requests for FFP for MMIS enhancements must include a formal SS-A which describes the extent to which current MMIS systems reflect MITA and how requested changes will advance their transformation into the new architecture.

HIT, like MITA aims to improve quality of care through an open architecture that supports the integration of clinical and administrative data, promotes interoperability, and coordination with partners to improve health outcomes.

Mississippi completed a MITA SS-A in 2008 and a subsequent Gap Analysis was completed in June, 2010. The purpose of a completed SS-A is to identify the “As Is” state and “To Be” (target) state of a state’s Medicaid business enterprise. The Mississippi Medicaid enterprise has many business processes that are currently in the Level 1 maturity with some business processes in Level 2.

Since 2010, DOM formalized the business process narratives and mapping as a part of the Mississippi MITA goals. DOM plans to convert these business processes into MITA 3.0 standards

in the coming year as a part of the ongoing update process that aligns current MITA status with MITA goals.

DOM has advanced in its use of technology to supply information to providers in the following ways:

- Implementation of the MEHRS/eScript system to deliver an EHR built from administrative claim data. This EHR assists providers in appropriate treatment of beneficiaries and reduces unnecessary testing.
- Receipt of a large percentage of claims through EDI.
- Electronic funds transfer (EFT) is used to payment nearly all providers.
- Widespread usage of the Envision Web portal.

Although DOM has advanced its use of technology towards the MITA standard, challenges remain. For example, some business processes must still be performed and/or validated manually. DOM has not developed all of the business processes necessary to utilize the DSS to its full capacity. Care planning and care management are fields open to the State for increased gains in population health and cost savings.

The MITA SS-A results are a valuable resource in planning for the MMIS replacement. DOM is aware of the transition that must occur between the current MMIS RFP and the requirements for MITA 3.0 in the MMIS reprocurement. Future plans will be coordinated to ensure the new MMIS will support the Medicaid EHR Incentive Program.

## 3.6 Current Broadband Initiatives

The State of Mississippi has had a public mandate to improve access to broadband technology since 2003 when the Mississippi Broadband Technology Development Act was passed (Miss. Code Ann. § 57-87-1 et. seq.). The Mississippi Broadband Task Force was founded in 2004 to promote citizen use of the Internet with a plan and broadband strategy. Since that time, the State has been moving forward with planning and implementation of improved access to broadband services. Over $77 million in grant funding was awarded to the Office of the Governor through federal broadband stimulus programs. The funding is to be used to expand broadband access and adoption in communities across the State of Mississippi. Specifically, the State is participating in the national broadband mapping and planning initiative through the Broadband Technology Opportunities Program (BTOP) administered by the Department of Commerce (DOC).

In April 2009, Governor Haley Barbour charged the Mississippi Broadband Task Force with the development of strategies to enhance the broadband infrastructure in Mississippi. The National Telecommunications and Information Administration (NTIA) awarded the State of Mississippi a grant as part of the BTOP, under the ARRA. With this funding, Mississippi is eager to deploy the Long Term Evolution (LTE) broadband network to better serve the citizens of the State. LTE is a

next generation mobile broadband technology designed to support data applications that are currently too bandwidth-intensive for the existing technology. Additionally, on August 18, 2010, the State received a $7.1 million grant through the Broadband Initiatives Program (BIP) to design, engineer, and construct a broadband network in rural northeastern Mississippi.

In September 2010, the Office of the Governor received an additional award from NTIA of nearly $5 million for broadband planning and mapping activities under the State Broadband Data and Development Program, a matching grant program that implements the joint purposes of the ARRA and the Broadband Data Improvement Act. This is a supplement to the original $2 million award the State received in January 2010, allowing the extension of its current two-year broadband data collection program for an additional three years and allowing the State to identify and implement best practices in broadband mapping. The State of Mississippi will utilize a portion of the funding to support the creation of the Mississippi Broadband Connect Coalition, a non-profit, public-private partnership focused on producing a comprehensive statewide strategic plan for improving digital literacy, increasing access to broadband and enabling greater adoption of broadband in the State.

The Mississippi Broadband Connect Coalition (MBCC) began partnering with the Mississippi State University Extension Service in 2011 to develop the statewide strategic plan. This 125-member public-private partnership met for almost 9 months to create the statewide strategic plan titled, "Mapping Mississippi's Digital Future," a long-term plan that addresses recommendations on how to improve broadband usage across several policy areas. The policy areas included education, healthcare, workforce development, government performance and public safety. The long-term plan identifies barriers to further broadband deployment in Mississippi as well as why broadband is not more widely adopted. Finally, the plan looks at ways to improve broadband access specifically with the Delta and Tribal communities in Mississippi.[1]

## 3.7 Coordination with Medicare and Federally Funded, State Based Programs

DOM is participating with CMS to pay providers and is using the CMS Registration & Attestation System and MS SLR to coordinate Provider incentive payments with Medicare.

## 3.8 Coordination with the Statewide Health Information Exchange

DOM participated in the Mississippi Statewide Health Information Network (MS-HIN) SOP effort as a member of the Technical Infrastructure and Finance Domain Groups. The Statewide HIE SOP was submitted to the ONC in September 2010. DOM provided and will continue to provide

[1] Adopted from links on the Mississippi Broadband Connect Coalition's website http://msbb.broadmap.com/

information to stakeholders regarding the MEHRS/eScript solution and status, as well as the impact of the MEHRS/eScript solution on the MS-HIN and MU.

The structure for Mississippi MS-HIN is set forth in Mississippi Statute. See Appendix F, House Bill 941. The governing body is the MS-HIN Board of Directors. The Board of Directors was appointed at the end of September and the first meeting was held on October 20, 2010. The overall structure for MS-HIN is shown in Figure 6: MS-HIN Organization Structure in Section 4.7 below.

The MS-HIN Board of Directors maintains oversight responsibility for all HIE activities in the State of Mississippi. MS-HIN has a broad representation of stakeholders. DOM is a member of the MS-HIN Board of Directors and works in partnership with the MS-HIN, providing leadership to assure that Medicaid beneficiaries are best represented and served by the MS-HIN. DOM is providing leadership to assure funding for MS-HIN in accordance with the fair share principles and cost allocation defined in guidance from CMS provided as part of the State Medicaid Director Letter dated May 18, 2011.

DOM continues to coordinate efforts with MS-HIN to support interoperability and a non-duplication of efforts, including ADT feeds to support the Medicaid providers using MEHRS/eScript, the exchange of Immunization data and Immunization reporting to MSDH, interoperability to support laboratory results, radiology results, the MSDH Patient Centered Medical Home (PCMH), and clinical data exchange.

## 3.9 Current Public Health Initiatives

The Mississippi State Department of Health (MSDH) has implemented a Health Data System (HDS) designed to improve data quality and efficiency of collection, as well as improve the ease of submission. The system is comprised of Rhapsody Connect, an integration broker that includes a rules engine, database, and secure messaging product. The primary goal of the HDS is to establish and maintain a centralized reporting system by collecting hospital discharge data from each licensed health care facility in Mississippi. In addition to the hospital discharge data collection and evaluation, the MSDH's Office of Epidemiology interfaces to the HDS. The HDS will also be used to support disease registry information relating to heart disease, stroke, and asthma. With the future expansion of HDS, the MSDH is planning to interface the system with the State's Trauma Registry, as well as conduct syndrome surveillance and participate in electronic laboratory reporting. As of July 2010, the system will perform automatic reporting of reportable diseases and conditions to the Centers for Disease Control and Prevention (CDC).

At this time, the MSDH communicates with CDC through the PHIN MS Rhapsody. MS-HIN is in the process of evaluating connectivity options to MSDH to support Public Health reporting and Stage 1 MU criteria. MS-HIN is considering the best alternative (price, scalability, etc.) for connecting all MS-HIN stakeholders to MSDH to support these Public Health initiatives. MSDH

has expressed the interest and forthcoming ability to exchange data with DOM (via the DOM-MS-HIN connection).

DOM, MSDH and MS-HIN are continuing to coordinate on plans for additional future connections with other federal public health and welfare programs (Health Resources and Services Administration, Substance Abuse and Mental Health Services Administration or Indian Health Services), and will continue to collaborate and coordinate, so as not to create a duplication in efforts (connectivity, interoperability, etc.)

## 3.10 Federally Qualified Health Centers /Rural Health Clinics

Mississippi's FQHCs and RHCs are already working together and exchanging health care information. A project connecting 14 of the 21 FQHCs is already in place. The Coastal Family Health Center (CFHC) in Biloxi, Mississippi already hosts 11 of the FQHCs and another three are planned for the last quarter of 2010. Additionally, CFHC is connected to MSCHIE, the fully-operational HIE serving the Gulf Coast region of the State of Mississippi, and a core component of the MS-HIN infrastructure.

Some of the FQHC's in Mississippi have adopted the MEHRS/eScript system. As the outreach team has worked with the FQHC's they have encountered primarily e-Clinical Works installations and Health Port installations.

## 3.11 Department of Defense and Veteran's Administration

There are three major military installations in the State of Mississippi: two are Air Force bases near Columbus and Biloxi and the third is a Navy facility near Meridian. While the military has expressed an interest in receiving information about off-base treatment of military personnel, they have been unable to connect to the State to retrieve the information due to severely restrictive security constraints. Plans to exchange military health care information will be accomplished through coordination of Department of Defense (DoD) assets and facilities, in coordination with NwHIN through the MS-HIN NwHIN connection, including connecting with the DoD and DoD systems using secure protocols and standards, including Virtual Lifetime Electronic Record (VLER) and DoD NwHIN Exchange Gateway, via the DOM - MS-HIN connection, and subsequent MS-HIN NwHIN Exchange Gateway.

In addition to the two large Veterans hospital facilities in Mississippi – one in Biloxi and one in Jackson, the Board of Veterans Affairs is located in Jackson, Mississippi. The DoD and the Veterans Administration (VA) are currently developing the VLER. VLER will support future connections to MS-HIN (and thus DOM) via NwHIN Gateways.

## 3.12 Indian Health Services

Choctaw Indians are the most prevalent minority of the American Indian population in the State of Mississippi. Members of the Mississippi Indian Tribe receive basic health care through a community health service. Representatives of the Tribe indicate they are participating with Indian Health Services and anticipate connecting to DOM through MS-HIN and using NwHIN in the future. Therefore, health care information exchange can be accomplished by connecting with the Indian Health Service through the MS-HIN NwHIN Gateway using secure protocols and standards.

Presently, the Mississippi Choctaw Reservation has eight communities: Bogue Chitto, Bogue Homa, Conehatta, Crystal Ridge, Pearl River, Red Water, Tucker, and Standing Pine. Members representing the Choctaw Indian Tribe attended the focus group workshop conducted August 18, 2010 in Jackson. The representatives attending the workshop expressed strong interest in EHRs and HIE.

# 4 To-Be HIT Landscape

This section aligns the current As-Is HIT Landscape with the vision of the DOM for adoption, promotion, and enhancement of EHR technology for Medicaid providers and for promotion of electronic exchange of health information for the Medicaid agency. This section also describes the goals and objectives and additional functionality that is planned to promote interoperability, providing the greatest benefit from the MMIS data and participation in the exchange of data with the MS-HIN and the DOM Interoperability Platform.

DOM is planning to implement a DOM Interoperability Platform as a single connectivity methodology, utilizing an integrated Enterprise Service Bus and NwHIN Exchange (CONNECT). The DOM Interoperability Platform will provide connectivity and interoperability between the internal DOM systems and services, and provide a standards-based NwHIN to NwHIN Exchange connection to MS-HIN. This single connection to MS-HIN, using NwHIN to NwHIN Exchange (CONNECT) will facilitate DOM's connectivity needs to outside agencies, stakeholders, other States, other HIEs, and Federal Agencies.

## 4.1 Future Vision for Providers

A key component of the Mississippi HIT strategy is adoption and MU of EHR's by providers. To that end, DOM is offering a Web-based system for provider incentive payment attestations. The MS SLR is a public-facing application available over the Internet where providers supply registration and attestation data related to the incentive program. The Website can be reached directly or from a link on the current Mississippi MMIS Envision Web portal and the DOM Website. The MS SLR, described in further detail in Section 4.1.1.1, below, provides an easily accessible, easy to use system for the providers participating in the MPIP.

DOM and the REC will be providing outreach to the provider community to enhance CEHRT adoption rates and understanding of MU. Further information on these efforts can be found in Section 6 – HIT Roadmap, of this document.

Table 4-1 shows DOM's goals for provider adoption and MU of CEHRT in Mississippi:

**Table 4-1: Total Payment Counts (Actual and Projected)**

| | Payment Counts – Actual (FFY 2011 and 2012) and Projected (FFY 2013 – 2015) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | FFY 2011 | | FFY 2012 | | FFY 2013 | | FFY 2014 | | FFY 2015 | | 5-Year Adopted Total Payments | 5-Year MU Total Payments |
| | *Adopt Certified EHR* | *MU of EHR* | *Adopt Certified EHR* | *MU of EHR* | *Adopt Certified EHR* | *MU of EHR* | *Adopt Certified EHR* | *MU of EHR* | *Adopt Certified EHR* | *MU of EHR* | | |
| ***Hospitals*** | 1 | 0 | 52 | 9 | 32 | 63 | 0 | 94 | 0 | 34 | 85 | 200 |
| ***Physicians*** | 93 | 0 | 757 | 65 | 334 | 850 | 386 | 850 | 414 | 850 | 1,984 | 2,615 |
| ***Dentists*** | 1 | 0 | 58 | 0 | 25 | 59 | 29 | 59 | 31 | 59 | 144 | 177 |
| ***Nurse Practitioners*** | 53 | 0 | 336 | 23 | 149 | 389 | 172 | 389 | 185 | 389 | 895 | 1.190 |
| ***Certified Nurse Midwives*** | 0 | 0 | 8 | 0 | 2 | 8 | 2 | 8 | 3 | 8 | 15 | 24 |
| ***Pediatricians (Reduced Payment)*** | 0 | 0 | 6 | 0 | 2 | 6 | 3 | 6 | 3 | 6 | 14 | 18 |
| ***FQHC / RHC PA*** | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 2 |
| ***Optometrists*** | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 2 | 0 | 8 | 0 |
| **TOTAL** | **148** | **0** | **1,218** | **97** | 547 | 1,376 | 595 | 1,407 | 638 | 1,346 | 3,146 | 4,226 |

The following table shows the Performance Measures that DOM will use to gauge progress against the goals listed above:

**Table 4-2: Performance Measures for EH/EP and EHR Goals**

| Performance Measure | Method and Data Sources | Target |
|---|---|---|
| Number of EPs who received an EHR Incentive Payment for MU by the end of FFY 2015 | Obtain a report from the MS SLR with the number of unique EP's by individual NPI, not Group, that received at least one EHR Incentive Payment for MU | 1,300 |
| Number of EHs who received an EHR Incentive Payment for MU by the end of FFY 2015. | Obtain a report from the MS SLR with the number of unique EH's that received at least one EHR Incentive Payment for MU. | 94 |
| Number of providers registered and trained on the upgraded MEHRS/eScript v7.3 by June 2012. | Utilize monthly registration and training report from MEHRS system. | 80 |

#### 4.1.1.1 Mississippi State Level Registry Application

The core functions of the MS SLR Web application that are currently active in the MS SLR are categorized into the following five groups:

- MS SLR registration and view of CMS Registration & Attestation System data;
- Verification of Medicaid eligibility;
- Attestation to A/I/U or MU criteria;
- Review and approval; and
- Submission of payments.

The Current MS SLR functionalities are further detailed in Section 5 – Provider Incentive Program Blueprint.

Xerox continues to enhance functionalities within the MS SLR, including three major areas of development:

- Appeals – detailed appeals tracking and status reporting;
- Audits – initiation, tracking and reporting of provider audits; and
- Recoupments/adjustments – creation of the payment file (positive or negative) for total recoupments or payment adjustments.

These functional areas are tentatively scheduled to be released in 2013. DOM staff is currently working with Xerox on the all-State user group calls to develop specific capabilities in each area. DOM currently tracks appeals, audits and recoupments/adjustments outside of the MS SLR due to the limited capability within the Xerox application. Once these areas are fully developed and implemented, DOM will begin to utilize the MS SLR to track, process and report audits and recoupments/adjustments. Appeals are processed through an external system, in accordance with state law.

Further changes to the MS SLR include changes pertaining to Stage 1 MU (implemented in early 2013) and new rules for Stage 2 MU (to be implemented in 2014). The Stage 1 MU changes affect both EPs and EHs beginning in 2013. Several of the changes to Stage 1 MU impact the provider attestation process in the MS SLR and must be revised to include items such as definition changes, new eligibility parameters, and removed/combined objectives. Xerox has completed the necessary revisions required for Stage 1 and released the changes into the production environment of the MS SLR.

Stage 2 changes will be incorporated into the MS SLR during 2013 for hospital attestation beginning October 2013 and eligible professional attestation beginning January 2014. These changes include allowing providers to use a 90-day reporting period, regardless of the stage of MU, for 2014 only. In addition, Stage 2 changes will include modifications to the Core and Menu Objectives and the Clinical Quality Measures as required in the Final Rule.

## 4.2 Future MES Capabilities

The State of Mississippi is currently in the process of procuring a new solution referred to as the Mississippi Medicaid Enterprise System (MES) which will include: 1) a state-of-the-art MMIS; 2) a PBM System; 3) DSS / DW solution, as supporting ancillary applications; and 4) Fiscal Agent services to meet the business needs of DOM. 2017 is the targeted go live for the newly acquired MES.

It is the goal of DOM MES procurement to:

- Improve communication and administration of the Medicaid Program;
- Provide timely and accurate adjudication of Medicaid claims;
- Increase data storage and improve data retrieval and reporting capabilities for Medicaid and the CHIP;
- Replace proprietary systems (e.g., clearinghouse and DSS/DW) with more technologically advanced and less costly products, which will result in more efficient operation of the Medicaid Program;
- Meet the requirements of MITA Maturity Level 3 standards, such as Service Oriented Architecture (SOA) using Enterprise Service Bus (ESB) infrastructure; and
- Allow for interface with the future DOM Interoperability Platform.

The State has developed a request for proposals (RFP) designed to move DOM forward in its vision of a Medicaid Enterprise that:

- Meets CMS certification requirements;
- Is aligned with the current MITA framework and future MITA frameworks[2];
- Is aligned with CMS Enhanced Funding Requirements: Seven Conditions and Standards[3] (see DOM Connectivity & Interoperability Strategy Document attached hereto as Appendix L for details);
- Implements all MITA business processes with the maximum business capability level possible – identifying any business processes that are at Level 1 or Level 2 and moving progressively to Level 3 or higher;

[2] MITA Framework 3.0 was released in 2012 and includes final policies on everything but eligibility and enrollment. Enhanced funding requirements – Seven Conditions and Standards will be incorporated into MITA 3.0.

[3] CMS has issued new standards and conditions that must be met by the states in order for Medicaid technology investments (including traditional claims processing systems, as well as eligibility systems) to be eligible for the enhanced match funding, details can be found on the document Medicaid IT Supplement (MITS-11-01-v1.0), https://www.cms.gov/Medicaid-Information-Technology-MIT/downloads/Enhanced-Funding-Requirement-Seven-Conditions-and-Standards.pdf

- Provides support for an open, flexible, and cost effective Medicaid Enterprise architecture;
- Utilizes an ESB for interfaces, including to the DOM Interoperability Platform, the MEDS/X and/or new eligibility system, MS SLR, and other associated systems and environments, SOA, and Web services technology to allow for disparate system communication;
- Implements the latest technology standards - International Classification of Diseases (ICD-10), NCCI edits, Health Level Seven (HL7 – including offering increased support for the HL7 CCD), HIPAA version 5010 transactions, including the HIPAA 278 transaction, and the National Council for Prescription Drug Programs (NCPDP) Version 3.0 pharmacy claims;
- Uses a rules-based engine for ease of definition and update of eligibility and operational rules processing;
- Presents a browser-based Medicaid Enterprise system for minimal desktop footprint, ease of application update, and ubiquitous access for all users;
- Provides interface to the SLR, including support for the current and future SLR implementations;
- Provides an interface to support the MEHRS/eScript system;
- Provides an interface to the remediated MEDS/X eligibility system. The new MMIS could require a future interface to a new eligibility system if the remediated MEDS/X is phased out over time; and
- Provides architecture for future interface to the DOM Interoperability Platform with the support of both clinical and administrative transactions with DOM trading partners, including MS-HIN.

## 4.3 Future Vision for MEHRS/eScript

As noted in the As-Is section, DOM has launched and is actively using the MEHRS/eScript system. The MEHRS/eScript system, powered by Shared Health, offered providers an EHR that could aid providers in meeting the MU criteria. The smart analytics and predictive modeling enabled improvement of care for Medicaid beneficiaries, while concurrently managing and reducing the cost of care.

MEHRS/eScript launched in June 2010 supporting over 775,000 beneficiaries and attained community registration exceeding 2,000 providers and 2,200 clinical and staff users. The adoption of this product for practices with and without an existing EMR exceeded DOM's goals and expectations. The future versions of the MEHRS/eScript could have incorporated additional standards-based transactions, transactions for clinical data, EHR certification for the product, and integration opportunities for work flow and data integration with provider's practice management and other vendor EMR/EHR systems.

In early 2012, DOM was informed that Shared Health would not be delivering Version 8 of MEHRS/eScript, would not be delivering any ONC Certified Version of MEHRS/eScript, and that Shared Health was stopping all development work on the MEHRS/eScript product and platform.

As DOM has providers who are relying on the MEHRS/eScript system for meeting the criteria of Stage 1 Meaningful Use, DOM and Shared Health have, as of this date, entered into an agreement to migrate the MEHRS/eScript system to a commercially available solution, through a prime and subcontractor. This upgraded MEHRS/eScript solution will meet all ONC certifications for an EHR and ePrescribing system, and also allow DOM to continue to utilize the backend data and systems currently in place, including the clinical data and longitudinal health record on over 600,000 Medicaid beneficiaries in the State of Mississippi. The goal is to have a certified EHR rolled out to providers by June, 2013 to allow for providers on the MEHRS/eScript system to attest to Stage 1 MU.

The upgrade to MEHRS/eScript will support and provide:

- A complete, ONC Certified EHR/EMR that allows providers to attest for Stage 1 (and beyond) MU;
- A SureScripts certified ePrescribing system, integrated into the ONC certified EMR;
- DIRECT Messaging, enabling MEHRS/eScript users to exchange, in an interoperable fashion, CCDs and other clinical documents with users of MS-HIN and other certified EHRs that support DIRECT;
- Migration from the existing MEHRS/eScript (Shared Health) Clinical Data Repository (CDR) into an upgraded, standards-based CDR (CCD) repository capable of data transformation, generating up to date CCDs on demand, and consuming inbound CCDs (when DOM is prepared to accept inbound CCDs and has acceptable data integrity and data sorting/matching policies and procedures);
- An integrated analytics engine to allow DOM to query and perform deep analytics on clinical data and user metrics;
- Seamless exchange and interoperability with the DOM Interoperability Platform, thereby allowing system to system CCD and clinical data exchange between DOM and MS-HIN, as well as other Agencies, HIEs and trading partners behind MS-HIN (utilizing the DOM – MS-HIN single connectivity method);
- Support for future technologies, including Smart Cards, to allow for seamless exchange of clinical information (CCDs) in a secure, but highly efficient manner to improve care;

The upgraded MEHRS/eScript System will require interoperability with existing and future DOM internal infrastructure, as well as external trading partners. The DOM Interoperability Platform will provide the ability for a standardized exchange of data both to internal DOM systems and external trading partners, including:

- The upgraded MEHRS/eScript System and the new MES will require interfaces to exchange data. Such interfaces should be provided by the appropriate vendor or customized for this specific DOM workflow.
- The upgraded MEHRS/eScript System will require support of interoperability to MSDH, including support of the bi-directional exchange of immunization registry data with the MSDH Mississippi Immunization Information Exchange System (MIIX) system, and interoperability with the MSDH Patient Centered Medical Home.
- The upgraded MEHRS/eScript System will support the receipt of laboratory data via: 1) the DOM Interoperability Platform; and 2) the Direct Project integrated secure messaging. See the DOM Connectivity and Interoperability Strategy attached hereto as Appendix L.
- The upgraded MEHRS/eScript System will require connectivity to the trading partners discussed in this section and to potentially other external trading partners, thus the upgraded MEHRS/eScript System will require a connection/interface to the DOM Interoperability Platform for bi-directional clinical data exchange.

### 4.3.1 Upgrade to an ONC Certified MEHRS/eScript System

The migration from the current MEHRS/eScript System to an ONC Certified EHR / EMR, allowing providers to attest for Stage 1 Meaningful Use, will begin in March, 2013. The rollout of the upgraded MEHRS/eScript System will be accompanied with training, outreach, and support staff, to ensure that those providers who are currently using MEHRS/eScript have an opportunity to upgrade and attest for Stage 1 Meaningful Use before July, 2013.

In conjunction with the deployment of the certified EHR / EMR, the backend MEHRS/eScript upgrade will begin, including the upgrade of the Clinical Data Repository (CDR), allowing for the existing clinical data, data load processes from DOM claims, and longitudinal health record to be upgraded to a modern CDR with data transformation capabilities, analytics, and supporting CCD exchange. This upgraded and modernized CDR will then be interfaced with the DOM interoperability platform, allowing for clinical data exchange with internal DOM systems and external trading partners, in a standards-based, single connectivity methodology.

As the CDR upgrade of the MEHRS/eScript System is underway, a complete analytics engine and system will be deployed and integrated to allow for deep data analytics on the clinical data in the modernized CDR. This analytics engine and process will allow DOM the ability to run

sophisticated analytics at both a high level and at a very detailed level. This ability to run sophisticated analytics will allow DOM to have access not only to the data but utilize the data for decision making, including the ability to target at-risk populations, evaluate care, look for trends, and move to more of a Medicaid Accountable Care Organization (ACO) model.

The proposed value of an upgraded, certified MEHRS/eScript system is asserted by Shared Health, as shown below:

Value to Providers:

- ONC-certified EHR/EMR with ePrescribing is available at no cost for Medicaid providers; the upgrade from the current Version 7 being utilized by the CY2010 and CY2011-adopters of MEHRS/eScript to the upgraded version will be free-of-charge to the users;
- Access to a complete longitudinal patient-centric health record on eligible beneficiaries;
- Electronic prescribing – DUR and Medicaid drug formularies have been features of electronic prescribing since system inception and the addition of drug formulary access for non-MEHRS/eScript users through the National Pharmacy Hub is an objective of a future phase;
- Disease management.; and
- Interoperability via the integrated Direct Project secure messaging system in the upgraded MEHRS/eScript System and clinical data CCD exchange via the modernized CDR and DOM Interoperability Platform, allowing for the exchange and coordination of clinical data.

Value to Patients:

- Comprehensive health record data at point of care;
- Increased communication for wellness and disease management; and
- Informed providers, leading to a higher quality of care for patients.

Value to DOM:

- Patient safety;
- Reduced cost;
- Population management for current and future clinical improvement programs; and
- Deep analytics on DOM clinical data for decision-making, predictive modeling, etc.

### 4.3.2 Involvement in State Health IT Environment

The upgraded MEHRS/eScript System will be an important part of the State of Mississippi's future HIT environment. MEHRS/eScript has a unique role in the Mississippi HIT environment due to the promotion of the solution by DOM. This unique role means that the upgraded MEHRS/ eScript solution will be promoted throughout the State of Mississippi in coordination with the EHRs promoted through the local REC. Since the MEHRS/eScript system is available to all Medicaid provider locations, all Medicaid patients at those locations will benefit from the use of the MEHRS/eScript system. The availability of the upgraded MEHRS/eScript System to Medicaid providers is significant because 30 percent of Mississippi's population is currently eligible for Medicaid and this percentage is expected to increase steadily over the next few years as a result of the Healthcare reform initiatives.

The main role of the MEHRS/eScript system in the Mississippi HIT environment is to offer Medicaid providers a certified EHR at no cost. The upgraded MEHRS/eScript System will aid providers in meeting the requirements for a certified EHR/EMR under the MPIP.

One major goal in implementing the upgraded MEHRS/eScript System is improvement in the care of Medicaid beneficiaries while reducing the cost of care via smart analytics and predictive modeling.

### 4.3.3 Impact of Update to Exchange Standards:

The upgraded, certified MEHRS/eScript System will support the capability to exchange (import/export) information using the CCD format, via the CDR. While this CCD exchange capability will give the solution the ability to function as an HIE, DOM views the MEHRS/eScript System as a CDR with certified EHR/EMR user interface, and as a component of the Mississippi HIT landscape, not as an HIE solution. Once the CCD capability is available via the upgrade process of MEHRS/eScript to a certified EHR/EMR, the MEHRS/eScript System will have the ability to exchange information with a wide variety of organizations and disparate locations, either via integrated Direct Messaging or the DOM Interoperability Platform.

The CCD is included as a standard for patient summary records in many important initiatives such as NwHIN Exchange, the Direct Project[4], and Integrating the Healthcare Enterprise (IHE). Furthermore, the CCD standard is being promoted by the Federal Government (CMS, ONC, and other federal agencies) as well as vendors, standards groups, and the health care community at large. Providers with the upgraded MEHRS/eScript ONC-certified solution will be able to utilize the CCD to exchange clinical data with other EHRs and provider information systems, in an interoperable format.

[4] Note: Details in Section 6.6.2.

DOM is considering piloting Smart Cards, in coordination with the upgrade to a certified MEHRS/eScript System, to allow for basic clinical data on Medicaid beneficiaries to be deployed to improve the healthcare and care coordination for all Medicaid Beneficiaries. By coordinating with the upgraded MEHRS/eScript system, it is DOM's vision that beneficiary CCD clinical data could be quickly and securely downloaded or accessed by providers, including those providers with limited access to technology and/or broadband communication.

### 4.3.4 Impact of MU

The deployment of an ONC certified MEHRS/eScript System beginning in March 2013, will allow for those providers using the system to attest for Stage 1 Meaningful Use. Deploying an ONC-ATCB certified MEHRS/eScript System will allow providers and users of the MEHRS/eScript solution to potentially qualify for EHR incentive payments.

## 4.4 Future Alignment with MITA

As noted in Section 4.2 above, the State of Mississippi is currently in the process of procuring an MES which combines the following: 1) a state-of-the-art MMIS; 2) PBM System; 3) DSS / DW solution, as supporting ancillary applications; and 4) Fiscal Agent services that meet the business needs of the DOM. A key component of this procurement is to acquire a Medicaid Enterprise Solution for the State of Mississippi that aligns to and advances increasingly in MITA maturity for business, architecture, and data and that includes MITA Maturity Level 3 standards, such as SOA using ESB infrastructure.

The MITA-enabling guidelines, processes, and tools provide a framework for the continuous improvement of service delivery and business processes based on efficient technology utilization. The MITA framework depicts this evolution as a progression of maturity levels that reflect DOM's ability to execute business functions in the rapidly changing health care environment. DOM will use the MITA framework as a tool to assist in the strategic application of technology and enhancements that provide value and contribute to a continuous improvement in the Medicaid program's maturity.

The selected vendor must employ a SOA to take advantage of system components reuse across business functions as services. SOA is an approach to loosely coupled, protocol independent, standards-based distributed computing where software resources expose their functionality as services and are available on the network. SOA requires the use of business services in addition to technical services. The business services support business functions within the MS Medicaid Enterprise and map all applicable MITA business processes within the MITA Business Process Model, unless they are Mississippi-specific business processes. Each business service must meet the MITA definition of a business service. The SOA architecture must also enable the agency

business units to build business applications quickly and efficiently in the future by reusing resident SOA infrastructure and application service components.

CMS requires a MITA roadmap that delineates how the proposed system enhancements for eligibility and enrollment functions will fit into the states' greater MITA framework. Such a requirement will align CMS' expectations to see states continuing to make measurable progress in implementing their MITA roadmaps.

DOM is in the early stages of executing a remediation of the current MEDS/MEDSX eligibility system under amendment to the existing contract with the current fiscal agent. DOM is collaborating with Mississippi Insurance Department (MID) and Comprehensive Health Insurance Risk Pool Association to determine future integration touch points with the Health Insurance Exchange for eligibility determination.

DOM's roadmap will be aligned with MITA maturity target levels as follows:

- As-Is:
  - State Medicaid Agency complies with State regulations to maintain an adequate Provider network and pay claims promptly to encourage Provider participation and ensure access to care;
  - Many steps require manual intervention;
  - Data Content is nonstandard; and
  - Appropriateness of care is assessed retrospectively.
- Target MITA Maturity Levels 3 & 4 (5 years):
  - State Medicaid Agency coordinates with other payers to offer one-stop shop entry points to applicants for service and provider enrollment, provider reimbursement, and coordination of benefits;
  - Patients make personal healthcare decisions;
  - State Medicaid Agency accommodates cultural, linguistic, and health needs;
  - State Medicaid Agency uses national standards for data content and exchange; and
  - Coordination and collaboration across healthcare programs intrastate contributes to improved outcomes.

The SOA will feature:

- Technology Independence: The service components will be invoked from multiple platforms and utilize standard protocols.

- Standards-Based Interoperability: The system will support multiple industry standards, including, at a minimum: HL7; XML; Extensible Stylesheet Language Transformation (XSLT); Web Services Interoperability (WS-I); WSDL; SOAP1.1 or 2.0; Universal Description, Discovery, and Integration (UDDI); Web Services (WS)-BPEL; Representational State Transfer (REST) (in place of SOAP); and WS-Message Transmission Optimization Mechanism (MTOM) Policy.
- Life Cycle Independence: Each service component will operate in a separate life cycle.
- Loose Coupling: Service components will be defined independently, with the interface components bridging the gap between components. For example, the Service Consumer Component specification must be defined independent of the Service Provider Component. The alignment of the two specifications is defined in the interface component.
- Invocable Interfaces: The Service interfaces will be invoked locally or remotely.
- Communication Protocol: A Service will be invoked by multiple protocols. The choice of protocol must not restrict the behavior of the service. Binding to a specific protocol will take place at run-time/deployment-time, and not at the design or development time.
- Flexibility: The selected vendor will focus on the business processes that comprise the systems, with the following in mind:
    - Ability to adapt applications to changing technologies;
    - Easily integrate applications with other systems;
    - Leverage existing investments in desired legacy applications; and
    - Quickly and easily create a business process from existing services.
- Metadata Management: SOA commonly provides application and data integration via an abstraction layer. Given the requirements of interoperability and independence, the proper use and management of metadata is extremely important to the effective operation of the SOA. It will also allow for:
    - Separation of the data and structures and convert them to a data layer within the SOA architecture;
    - Development of a Common Data Model and Metadata using the MITA HL7 methodology; and
    - Achievement of the SOA loosely coupled “separation of concern” approach, by separating the data layer from the application layer to more effectively and easily manage the data without changing the application code. This will create the desired more loosely coupled SOA environment and enable the business to accelerate any system changes required in the future.

- ESB: The MMIS Enterprise solution will include an ESB for data transport, messaging, queuing, and transformation. The ESB is a service layer that provides the capability for services to interoperate and to be invoked as a chain of simple services that perform a more complex end-to-end process. The service layer is designed to handle both normal conditions and respond to failures and adapt to changes.
- MITA Alignment: The MMIS Enterprise will be aligned with MITA. This includes, but is not limited to:
    - Map of business processes to MITA business processes;
    - Alignment of proposed business processes to the MITA maturity level and capabilities;
    - Use of MITA standard interface definitions (expressed in WSDL) and messages (expressed as an XML/schema) for all services;
    - Use of the MITA/HL7 methodology for defining the information model and messages; and
    - Adherence to the MITA governance process for newly developed interfaces and messages.

In future phases of the MEDS/MEDSX project, DOM intends to collaborate with other State agencies (e.g., Food Stamps (SNAP) and TANF regarding the possibility of shared services and interfaces).

## 4.5 Future Broadband Initiatives

As described in Section 3.6 – Current Broadband Initiatives, Mississippi has received funding to expand statewide broadband services. Utilizing these funding sources, MBCC continues to move towards implementing broadband expansion using the strategies outlined in their long-term strategic plan, "Mapping Mississippi's Digital Future." As a part of this effort, MBCC has launched the Extension Broadband Education and Adoption Team (e-BEAT), which deployed Regional Coordinators throughout Mississippi to work with elected officials, businesses, educators and community leaders on developing tools to increase digital literacy and increase broadband adoption. For example, e-BEAT is currently working on developing a map of broadband availability for inclusion in a comprehensive plan aimed at moving Mississippi towards greater access.

In addition to the ARRA broadband funding for expansion of broadband services, the State of Mississippi continues to participate in broadband connectivity expansion specifically for telehealth initiatives through the Federal Communications Commission (FCC) funding of the University of Mississippi Medical Center (UMMC). UMMC also received a United States Department of Health and Human Services (HHS) Health Resources and Services Administration

(HRSA), Office for the Advancement of Telehealth (OAT) grant for a telemedicine project in the Delta.

The State of Mississippi Health IT Committee Recommendations for Broadband include:

1. Partnership of the Mississippi Broadband Connection Coalition with the MS-HIN Board to coordinate growth and identify regulatory barriers to health IT adoption. An outcome of this partnership may be to form a sustainable public-private partnership with MS-HIN to support policy development in the field. This partnership could document Mississippi's efforts in EHRs, Health Exchanges, Telemedicine, and Medical Record Imaging. An additional function could be to identify regulatory obstacles that may be inhibiting expansion of Health IT.

2. Attention to privacy and security concerns, including establishing a NPI system for all participants. The Health Information Technology Policy Committee (HITPC) report can serve as a guide for establishing Health IT growth policy at the state level.

3. Identification of a dedicated spectrum for medical imaging. High costs are associated to medical imaging from the limited supply of spectrum, however, the medical cost savings that could be realized through utilization of this technology in clinical and preventative practices makes the effort to find spectrum important. Once spectrum is found and financed, it could be dedicated to use by hospitals or rural physicians, and managed centrally.

4. Map availability of broadband to hospitals and rural physician groups. Hospitals should be at the top of the list for access to high speed Internet. To accomplish this, existing advocacy groups should unite to prioritize needs for a State Level Rural Health Care application. The first step should be to map the availability of broadband to the State's hospitals.

5. Provision of Health IT-related digital literary courses at rural hospitals by Mississippi State University Extension Service eBEAT Team. National and state research suggests that geographic location is closely correlated with adoption rates. The challenge is how to introduce citizens who may already be marginalized from broadband usage to the concept of receiving healthcare from the Internet.

## 4.6 Future Vision for Medicare and Federally-Funded, State-Based Programs

### 4.6.1 Medicare

As Medicare and CMS are migrating towards NwHIN, it is essential for Mississippi to have direct, NwHIN Exchange-based connectivity with Medicare and CMS. Therefore, the State of Mississippi DOM will deploy a DOM Interoperability Platform that supports a variety of communication and interoperability standards and protocols, including NwHIN Exchange (based upon the CONNECT protocols) to enable connectivity with CMS/Medicare/CMS Agencies over NwHIN for both clinical and administrative transactions. This DOM NwHIN Platform will facilitate connectivity through MS-HIN as the preferred connectivity methodology, and then by the MS-HIN NwHIN Gateway to CMS. Coordination and planning with MS-HIN is ongoing to ensure a non-duplication of efforts.

### 4.6.2 CDC Coordination

A national initiative of CDC is to facilitate real time, interoperable data exchange between organizations for the promotion of collaboration and rapid dissemination of critical information in the organizations associated with public health. The integration and alignment of DOM with the State of Mississippi, including Public Health, for Public Health related reporting and surveillance to the CDC over NwHIN is important to improving health care outcomes for all Mississippians. DOM will consider implementing the GIPSE profile and other CDC-based reporting formats for interoperable data exchange with CDC over NwHIN Exchange, including clinical and required (immunizations, syndromic surveillance, etc.) reporting. DOM is collaborating with MS-HIN, and utilizing the DOM NwHIN to MS-HIN NwHIN Exchange connectivity, to allow for immunization data exchange between the upgraded MEHRS/eScript System and the Mississippi State Department of Health (MSDH). DOM is working with MSDH and MS-HIN to collaborate on standards-based connectivity and interoperability to facilitate reporting to MSDH and to further assist MSDH in reporting to the CDC, including using such standards as GIPSE and NwHIN Exchange.

### 4.6.3 CMS/ASPE Coordination

Integration with CMS will enable electronic quality reporting over NwHIN Exchange, as ordered by the ARRA. Based on the recommendation of ONC, DOM is migrating toward utilizing NwHIN and Federal Health Architecture (FHA) standards via the DOM Interoperability Platform to coordinate with Medicare and federally funded, inter/intra-state based programs as they become compliant with NwHIN and FHA standards. By implementing and integrating standards, profiles, and interoperable infrastructure/technologies (including IHE, Healthcare Information Technology Standards Panel (HITSP), and NwHIN standards, profiles, and technologies) through

the DOM Interoperability Platform, DOM will drive towards and migrate upwards to the higher levels of MITA and MITA compliance, as well as administrative simplification. DOM intends to report any required quality data to CMS such as QRDA (via coordination and connectivity with the statewide HIE, MS-HIN) via NwHIN Exchange. Accordingly, DOM plans to incorporate standards, profiles, and interoperable infrastructure such as IHE, HITSP and NwHIN.

### 4.6.4 HRSA Coordination

HRSA is the primary federal agency for improving access to health care services for low income and uninsured individuals. The CFHC in Biloxi received a HRSA grant to connect 21 FQHC's in Mississippi together for the exchange of health care data. Lessons learned in the CFHC study can be used to encourage EHR adoption in other Mississippi FQHCs.

## 4.7 Future Vision for the Statewide Health Information Exchange

DOM is planning to implement a DOM Interoperability Platform as a single connectivity methodology, utilizing an integrated ESB and NwHIN Exchange (CONNECT). The DOM Interoperability Platform will provide connectivity and interoperability between the internal DOM systems and services, and provide a standards-based NwHIN to NwHIN Exchange connection to MS-HIN. This single connection to MS-HIN, using NwHIN to NwHIN Exchange (CONNECT) will facilitate DOM's connectivity needs to outside agencies, stakeholders, other States, other HIEs, and Federal Agencies.

DOM has identified several use cases that the NwHIN to NwHIN (DOM to MS-HIN) connectivity model can support, including:

- Direct messaging interoperability between the upgraded MEHRS/eScript System and MS-HIN (HISP to HISP interoperability) to facilitate Direct messaging between MEHRS users, Medicaid providers, and MS-HIN users;
- Interoperability with the MSDH MIIX System, including feeding MIIX data into the upgraded MEHRS/eScript System;
- ADT Feed interoperability with MS-HIN to support MEHRS/eScript users and Medicaid providers;
- Laboratory Result interoperability with MS-HIN and MS-HIN connected laboratories, to support Medicaid providers and MEHRS users;
- Radiology Reports interoperability with MS-HIN and MS-HIN connected laboratories, to support Medicaid providers and MEHRS users;
- Interoperability to support the MSDH Patient Centered Medical Home (PCMH); and

- Clinical data exchange with MS-HIN and MS-HIN users.

### 4.7.1 DOM Enterprise Master Patient Index (eMPI)

DOM is also planning on deploying an Agency-wide (Source of Truth) Enterprise Master Patient Index (eMPI) to provide patient matching and coordination of patient records and clinical data throughout DOM and across the DOM infrastructure, including for connectivity and interoperability with MS-HIN. The upgraded MEHRS/eScript solution will deploy two MPI's, and the future MES will need an MPI. Given these future components within the DOM infrastructure, it is critical to have a single, master 'source of truth' patient identifier for DOM beneficiaries via an Enterprise Master Patient Index.

The DOM eMPI will allow for a limitation of duplicate beneficiary records, duplicate beneficiary clinical data and administrative data, and allow for more structure in the organization and storage of beneficiary data across the DOM infrastructure (including multiple clinical and administrative systems). Systems that would interface and utilize the DOM eMPI include the new MES, the upgraded MEHRS/eScript EHR, the Clinical Data Repository and Advanced Analytics Engine, the DOM Interoperability Platform (and data exchange with MS-HIN, who also has an eMPI), and other various services and systems. Coordination and alignment of the DOM eMPI with the MS-HIN eMPI is critical, and will allow for streamlined and correctly matched beneficiary clinical data exchange between DOM and MS-HIN.

### 4.7.2 MS-HIN Governance

The structure for MS-HIN is set forth in Mississippi Statute. See Appendix F, HB 941. The governing body is the MS-HIN Board of Directors. The Board of Directors was appointed at the end of September 2010 and the first meeting was held on October 20, 2010. The figure below shows the overall structure for MS-HIN.

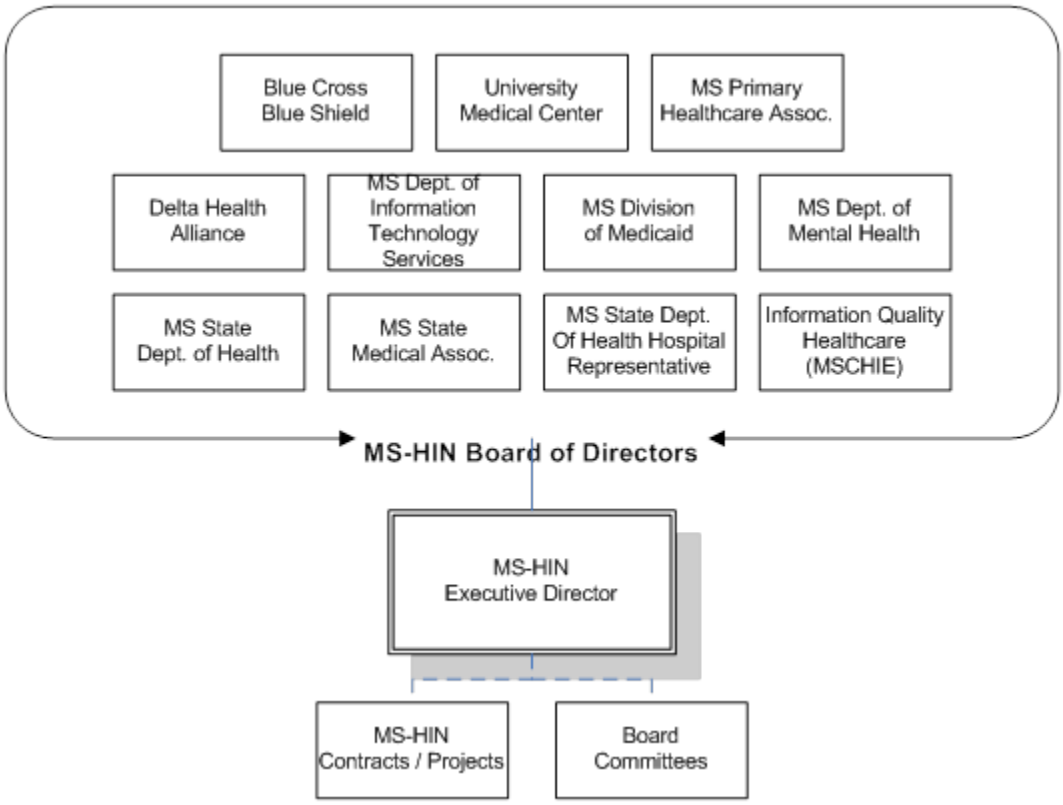



**Figure 6: MS-HIN Organization Structure**

The MS-HIN Board of Directors adopted the following statement to describe its vision for the HIE in Mississippi.

> ***"The trusted source for secure, quality healthcare information – anywhere, anytime – for a healthier Mississippi."***

In addition, the Board adopted the following mission statement for HIE in Mississippi.

> ***"To provide sustainable, trusted exchange of health information to improve the quality, safety, and efficiency of healthcare for all Mississippians."***

The MS-HIN Board of Directors maintains oversight responsibility for all HIE activities in the State of Mississippi. MS-HIN has a broad representation of stakeholders. DOM is a member of the MS-HIN Board of Directors and will work in partnership with the MS-HIN, providing leadership, as appropriate, to assure that Medicaid beneficiaries are best represented and served by the MS-HIN. In addition, Mississippi ITS staff members work directly with the MS-HIN and are specifically chartered to ensure that MS-HIN is compliant with the State of Mississippi's laws and policies.

DOM will work closely with both MS-HIN and the upgraded MEHRS/eScript System to ensure that each system supports broad, standards-based, interoperable environments to maximize DOM's investments in these efforts. Having this standards-based foundation allows DOM the greatest flexibility moving forward.

Policy development, including providing advice and counsel, is a function of the MS-HIN Board of Directors. The MS-HIN requires a majority of the total membership to approve all policy decisions. MS-HIN may form special advisory groups on an as-needed basis to address specific issues of importance.

The State HIT Coordinator is not a member of the MS-HIN Board, but coordinates the MS-HIN Board meetings and acts as a liaison between ONC and the MS-HIN Board. The State HIT Coordinator also works closely with the senior staff at DOM to coordinate activities across a wide range of issues.

## 4.8 Future Vision for the Public Health Initiatives

DOM will utilize the DOM Interoperability Platform to connect to the MSDH, via a connection to MS-HIN using NwHIN Exchange, for such use cases as:

- Bi-directional immunization data exchange between the MSDH MIIX and the upgraded MEHRS/eScript System;
- Admissions, discharge, transfer (ADT) Feeds from MSDH into the upgraded MEHRS/eScript System;
- Interoperability with the MSDH Patient Centered Medical Home.

## 4.9 Future Vision for Federally Qualified Health Centers/Rural Health Clinics

FQHCs and RHCs are already working together and exchanging health care information. A project connecting 14 of 21 FQHCs is already in place. The CFHC in Biloxi, Mississippi already hosts 11 of the FQHCs and plans to have all locations connected. Additionally, CFHC is connected to MSCHIE, the fully operational HIE serving the Gulf Coast region of the State.

The Delta Health Alliance in Greenville, Mississippi is a Beacon Community Grant recipient with plans to connect all of the RHCs in the 18-county Delta region of the State. Based upon the MEHRS/eScript system capabilities, DOM can provide targeted analytics, clinical data summaries in CCD format, medication history, and disease management decision support to the FQHCs and RHCs supporting the underserved citizens of the State of Mississippi.

## 4.10 Future Vision for DoD and VA

There are three major military installations in the State of Mississippi: two are Air Force bases near Columbus and Biloxi and a Navy facility near Meridian. The military has expressed an interest in receiving information about off-base treatment of military personnel, but are unable to connect to the State of Mississippi directly due to severe security constraints. Therefore, the exchange of health care information will be accomplished through coordination of DoD assets and facilities, in coordination with MS-HIN and NwHIN Exchange, including connecting with and to the DoD and DoD systems using secure protocols and standards, including VLER and NwHIN Exchange.

There are two large Veterans hospital facilities in Mississippi: one in Biloxi and one in Jackson. The DoD and the VA are currently developing the VLER. VLER supports future connections to MS-HIN, and subsequently DOM, via NwHIN Exchange (CONNECT). By connecting to the VA and DoD, DOM can exchange clinical data and documents with the VA and DoD and coordinate care for the active duty military personnel or veterans, if need be. DOM will continue to examine DoD and VA use-cases and coordination of clinical data and care coordination.

## 4.11 Future Vision for Indian Health Services

Choctaw Indians are the most prevalent minority of the American Indian population in the State of Mississippi. Members of the Mississippi Indian Tribe receive basic health care through a community health service. Representatives of the Tribe indicate they are participating with Indian Health Services and can connect to DOM through MS-HIN, via the DOM to MS-HIN NwHIN Exchange connectivity. Therefore, the exchange of health care information can be accomplished through MS-HIN utilizing NwHIN and connecting with the Indian Health Service using secure protocols and standards.

DOM plans to support the Choctaw Indian Tribe by providing the upgraded MEHRS/eScript System to the Tribe at no cost; thereby, giving them access to Medicaid beneficiary information and medication history.

# 5 Provider Incentive Program Blueprint

## 5.1 Introduction

### 5.1.1 Overview

The Medicaid EHR Incentive Program, defined by the ARRA of 2009, was established to provide incentive payments to eligible providers for their efforts to meaningfully use certified EHR technology, including adoption, implementation, or upgrade (A/I/U). Through December 2012, DOM has paid over $97,765,913.64 in incentive payments to 1,452 eligible professionals (EPs) and 65 eligible hospitals (EHs) for attesting to A/I/U or Meaningful Use (MU).

This Provider Incentive Program Blueprint (Blueprint) describes the high-level requirements, process flows, and technical requirements of the Mississippi Provider Incentive Program (MPIP) to interface with the CMS Registration & Attestation System to enable providers to register for Medicaid incentives, attest to their eligibility requirements in each year of the program, and allow DOM to pay incentive payments in 2013 and subsequent years. The software application supporting the MPIP is the Xerox solution, currently being offered to multiple states as a software as a service (SaaS) solution. DOM's decision to implement a SaaS solution has helped the MPIP leverage resources across the participating states.

DOM has branded the Xerox solution as the Mississippi State Level Registry (MS SLR) to be specific to the MPIP and DOM policies.

This Blueprint has liberally borrowed from efforts in other states and documentation from CMS.

### 5.1.2 Purpose

The purpose of this program is to capture and track provider attestations, evaluate eligibility, and collect information in order to make timely incentive payments to qualifying providers for A/I/U and MU of certified EHR technology. The goal of the program is to ensure the right payment was made to the right provider at the right time.

The MS SLR has interfaced with the CMS Registration & Attestation System and is configured to capture and document information regarding the following:

- Eligibility history;
- Payment history;
- Audit (to be implemented in 2013);
- Appeals (to be implemented in 2013); and

- Recoupment and/or Adjustment (to be implemented in 2013).

DOM utilizes the MS SLR for storing, tracking and reporting on attestation data including all the information listed above.

Figure 7 depicts the high level overview of the necessary components of the MPIP:

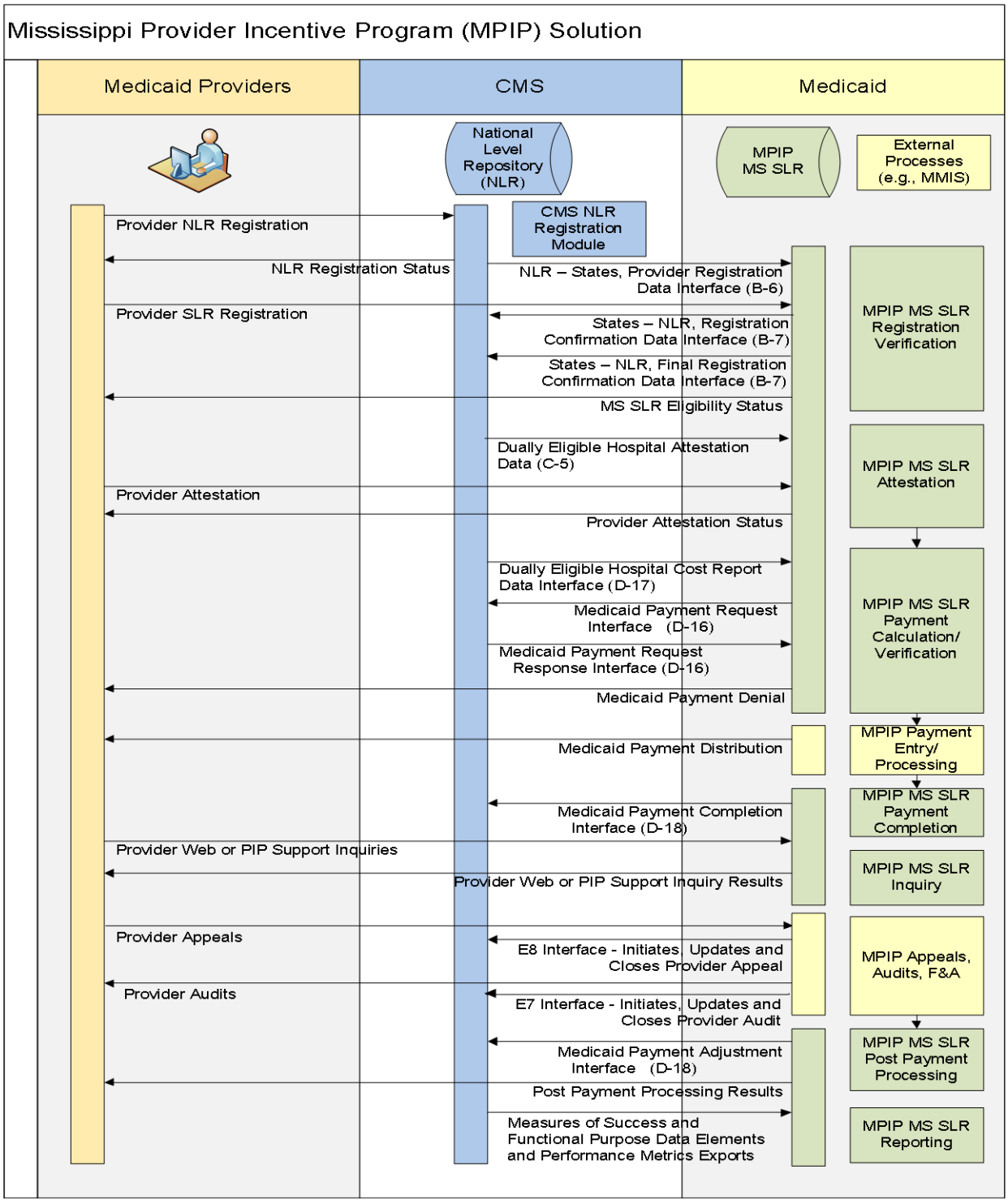



**Figure 7: Mississippi Provider Incentive Program Solution**

## 5.2 Eligibility: Provider Type, Eligibility Period, and Patient Volume

Providers must meet the eligibility requirements for provider type (EP or EH) and patient volume to receive EHR Incentive Payments.

### 5.2.1 EH Eligibility Criteria

EHs must meet the following criteria for the EHR Incentive Payment program. Please note that criteria have been updated to reflect changes to eligibility as stated in the CMS Stage 2 Final Rule (2012).

#### 5.2.1.1 EH Provider Type

To be eligible for the MPIP, EHs must fall into one of the following hospital types:

- Acute Care Hospital:
  - The CCN has the last four digits in the series 0001 – 0879; and
  - The average length of patient stay is 25 days or fewer; or
- Critical Access Hospital (CAH):
  - The CCN has the last four digits in the series 1300 – 1399; and
  - The average length of patient stay is 25 days or fewer; or
- Children's Hospital: (None in Mississippi)
  - The hospital is separately certified as a children's hospital - either freestanding or a hospital within hospital and the CCN has the last four digits in the series 3300-3399; or
  - The hospital is separately certified, either freestanding or hospital within a hospital, which predominately treats individuals 21 years of age or younger and does not have a CCN because they do not serve any Medicare beneficiaries but has been provided an alternative number by CMS for purposes of enrollment in the Medicaid EHR Incentive Program.

#### 5.2.1.2 EH Eligibility Period

For the purposes of calculating hospital patient volume the eligibility period is defined as:

- A representative, continuous 90-day, 3-month, 6-month or full year period from the preceding fiscal year; or

- A representative, continuous 90-day period in the 12-month period directly preceding the attestation date.

DOM requires that the eligibility period start on the first day of the month to ensure that patient volume data self-reported in the eligibility period selected by the provider aligns with the reporting periods of the data available in the MMIS. Once an eligibility period is used for the purposes of calculating Medicaid patient volume, the same eligibility period may not be used in subsequent attestation years for the purposes of proving Medicaid patient volume.

#### 5.2.1.3 EH Patient Volume

Acute Care and CAHs must have at least a 10 percent Medicaid patient volume based on both the inpatient and emergency room discharges. Children's hospitals are not required to meet a minimum Medicaid patient volume. To calculate Medicaid patient volume, an EH must divide total Medicaid encounters (numerator) by total patient encounters (denominator) using the same eligibility period for both numerator and denominator.

For purposes of calculating hospital patient volume, a Medicaid encounter means services rendered to an individual per inpatient discharge and/or in an emergency department on any one day where:

- Medicaid (or a Medicaid demonstration project approved under section 1115 of the Act) paid for part or all of the service; or
- Medicaid (or a Medicaid demonstration project approved under section 1115 of the Act) paid for all or part of the individual's premiums, co-payments, and/or cost sharing; or
- The individual was enrolled in a Medicaid (or a Medicaid demonstration project approved under section 1115 of the Act), *regardless* of payment liability, in accordance with CFR §495.306.

As noted above, the optional EHR Hospital Patient Volume Calculator can be found at http://www.medicaid.ms.gov. Also, see Appendix G attached hereto. Hospitals may use the EHR Hospital Patient Volume Calculator as a worksheet; however it will no longer be required for submission with the attestation.

Hospitals are allowed to count a maximum of one encounter per patient per day. Hospitals will be required to use their discharges from both the inpatient facility (POS 21) and the emergency room (POS 23) to determine their patient volumes.

The authorized data source documents (detailed below) are required documentation to be submitted with EH attestations. Only MS DOM authorized data sources as described below will be used to calculate the Medicaid share percentage.

- The authorized data source for the total Inpatient Discharges (POS 21) will be the annual cost report for the hospital's fiscal year ending in the prior federal fiscal year.

- The authorized data source for the total Medicaid Primary Inpatient Discharges (POS 21) will be the annual cost report for the hospital's fiscal year ending in the prior federal fiscal year.

- The authorized data source for the total Medicaid Secondary Payer Inpatient Discharges will be the hospital's inpatient accounting/billing system. Only Medicare and Third party claims with Medicaid as the secondary payer showing that the individual was enrolled in Medicaid (or a Medicaid demonstration project approved under section 1115 of the Act) will be used to determine the Medicaid Secondary Payer Inpatient Discharges, regardless of payment liability by Medicaid. Summary data supporting each discharge amount will be attached to the hospital's application. Upon request, the hospital may be required to provide detailed reports including the payer (primary and secondary), patient ID, claim number, date, revenue and procedure codes, and paid amounts.

- The authorized data source for the total Medicaid Primary Payer Emergency Room Discharges will be the hospital's inpatient accounting/billing system. Summary data supporting each discharge amount will be attached to the hospital's application. Each emergency room visit will be considered a single discharge. Emergency room visits that result in transfer to the inpatient unit for other than observation will not be included in the emergency room discharges. Upon request, the hospital may be required to provide detailed reports including the payer (primary and secondary), patient ID, claim number, date, revenue and procedure codes, and paid amounts.

- The authorized data source for the total Medicaid Secondary Payer Emergency Room Discharges will be the hospital's emergency room accounting/billing system. Only Medicare and Third party claims with Medicaid as the secondary payer showing that the individual was enrolled in Medicaid (or a Medicaid demonstration project approved under section 1115 of the Act) will be used to determine the Medicaid Secondary Payer Emergency Room Discharges, regardless of payment liability by Medicaid. Medicare and Third party claims will be reported separately. Summary data supporting each discharge amount will be attached to the hospital's application. Upon request, the hospital may be required to provide detailed reports including the payer (primary and secondary), patient ID, claim number, date revenue and procedure codes, and paid amounts. Each emergency room visit will be considered a single discharge. Emergency room visits that result in transfer to the inpatient unit for other than observation will not be included in the emergency room discharges.

As noted above, hospitals have the option to complete the EHR Hospital Patient Volume Calculator. The EHR Hospital Patient Volume Calculator will no longer be required for a hospital's attestation but may be uploaded with the hospital's attestation as needed. However,

all other authorized data sources must be attached to the hospital's attestation as supporting documentation.

### 5.2.2 EP Eligibility Criteria

Medicaid EPs must meet the following criteria to be eligible for the MPIP. Please note that criteria have been updated to reflect changes to eligibility as stated in the CMS Stage 2 Final Rule (2012).

#### 5.2.2.1 EP Provider Type

To be eligible for attestation to the MPIP, EPs must be licensed as one of the following:

- Doctor of Medicine;
- Doctor of Osteopathy;
- Doctor of Dental Medicine or Surgery;
- Optometrist;
- Nurse Practitioner; or
- Physician assistant (PA) when working at a Federally Qualified Health Clinic (FQHC) or Rural Health Clinic that is so led by a PA.

EPs working in a FQHC or RHC will be determined based on prior year claims history for "predominately" status. EPs with at least 50 percent of their encounters (claims) provided through or in a FQHC or RHC environment will qualify as working "predominately" in a FQHC or RHC. Professionals must also be currently performing services in a FQHC or RHC.

##### *5.2.2.1.1 Physician Assistant Criteria*

PAs are considered to be EPs if the PA is practicing predominately in an FQHC or RHC that is "so led" by a PA. An FQHC or RHC is considered to be "so led" under the following circumstances:

- A PA is the primary provider in a clinic (for example, when there is a part-time physician and full-time PA, the PA is the primary provider);
- A PA is a clinical or medical director at a clinical site of practice; or
- A PA is an owner of an RHC.

A PA practicing predominately in a FQHC or RHC is eligible to use Needy Individual patient volume. A PA is considered to be practicing predominantly if over 50 percent of his or her total patient encounters over a period of six months in the most recent calendar year occur at a FQHC or RHC.

#### *5.2.2.1.2 Pediatricians*

Pediatricians must be board certified or board eligible and must have the appropriate taxonomy code in the MS SLR Provider Master File (PMF). Pediatricians may qualify for a reduced payment if they have greater than 20 percent Medicaid patient volume, but less than 30 percent Medicaid patient volume. Pediatricians may receive the full incentive payment amount if they can demonstrate 30 percent Medicaid patient volume in a given program year. Pediatricians working in an FQHC or RHC that choose to use Needy Individual patient volume must have at least 30 percent Needy Individual patient volume.

#### *5.2.2.1.3 Hospital Based EPs*

Hospital based EPs are determined on the EP's services provided in service code areas 21 and 23. In accordance with the CMS Stage 2 Final Rule (2012), hospital based EPs are now eligible to attest for individual incentive payments if they can demonstrate that they have funded, acquired, implemented and maintained certified EHR technology, including supporting hardware and any interface necessary to meet MU, without reimbursement from an EH or CAH.

EPs will be deemed to be hospital based if 90 percent or more of total Medicaid encounters are provided in service code areas 21 and 23. Total Medicaid encounters include both Medicaid and Medicaid Managed Care encounters. The formula for the computation will be (Total Medicaid encounters provided in service code areas 21 and 23) / (Total Medicaid encounters for all areas).

The MS SLR assists DOM in identifying non-hospital based EPs by requiring that EPs attest to the fact that they do not perform greater than 90 percent of their services in an inpatient or emergency room setting.

### 5.2.2.2 EP Eligibility Period

For all program years, EPs may use an eligibility period that falls under the following criteria:

- A 90-day period, 3-month period, 6-month period or a full year period from the preceding calendar year; or
- A 90-day period from the 12-month period directly preceding the EP's attestation date.

The length of the period will be identified during attestation in the MS SLR. The numerator and denominator of the Medicaid patient volume equation must use the same eligibility period. Once an eligibility period is used for the purposes of calculating Medicaid patient volume, the same eligibility period may not be used in subsequent attestation years for the purposes of proving Medicaid patient volume. .

DOM requires that the eligibility period start on the first day of the month to ensure that self-reported patient volume data in the eligibility period selected by the provider aligns with the reporting periods of the data available in the MMIS.

#### 5.2.2.3 EP Patient Volume

DOM opted to offer the Medicaid fee for service (standard) calculation for EP Medicaid patient volume. Patient volume can be aggregated from multiple locations or states.

EPs must demonstrate at least 30 percent Medicaid patient volume based on Medicaid encounters and total encounters during a chosen eligibility period. To calculate Medicaid patient volume, an EP must divide total Medicaid encounters (numerator) by total patient encounters (denominator) using the same eligibility period for both the numerator and denominator. An encounter includes concurrent care or transfer of care visits, consultant visits, or prolonged physician service without direct (face to face) patient contact (telehealth), regardless of financial liability. Providers are allowed to count a maximum of one encounter per recipient per day. No financial obligation is necessary for encounters to be included in Medicaid patient volume calculations.

For purposes of calculating patient volume a Medicaid encounter is defined as services rendered to an individual on any one day where:

- Medicaid (or a Medicaid demonstration project approved under section 1115 of the Act) paid for part or all of the service; or
- Medicaid (or a Medicaid demonstration project approved under section 1115 of the Act) paid for all or part of the individual's premiums, co-payments, and/or cost sharing; or
- The individual was enrolled in Medicaid (or a Medicaid demonstration project approved under section 1115 of the Act), *regardless* of payment liability, in accordance with CFR §495.306.

The EHR Professional Patient Volume Calculator can be found at http://www.medicaid.ms.gov. There are two versions of the EHR Professional Patient Volume Calculator, one for EPs using Medicaid patient volume only and the other for EPs practicing in FQHCs, RHCs, and IHS. Also, see Appendix G attached hereto. A copy of the EHR Professional Patient Volume Calculator may be attached with the MS SLR application as optional supporting documentation.

All providers are required to attach summary reports from their practice management or billing systems supporting their encounter calculations for their online application. Summary reports must separate the eligible encounters by the primary and secondary payer. Managed Care patient encounters must be identifiable in the Medicaid and all payer encounter counts. DOM

will verify that all providers have attached this required documentation with applications submitted.

All Medicaid encounter counts are compared to the provider's practice management or billing reports (regardless of financial obligation) for verification of encounters claimed on their application. Both the total and Medicaid primary and secondary encounters are verified. Medicaid claim counts are available in the MS MMIS as a secondary source of verification or Medicaid encounters.

The MS SLR provides for statistical data to be entered by State and can accept multiple states. Mississippi Medicaid encounters will be compared to the EP's and/or Group's claims data for the appropriate period of time. Out of state claims data will be subject to written verification from the other state at the option of the DOM audit staff. All applications are subject to both prepayment and post-payment audits.

#### *5.2.2.3.1 Needy Individual Patient Volume*

EPs practicing predominately in a FQHC or RHC may choose to use Needy Individual Patient volume in lieu of Medicaid patient volume for the purposes of meeting the 30 percent threshold. Needy Individual patient volume is calculated using the following formula:

((Needy Individual Patient Encounters + Medicaid Encounters)/Total Patient Encounters) x 100 = n%

To be considered a Needy Individual patient, a patient must meet one of the following criteria:

- Receives medical assistance from Medicaid;
- Receives medical assistance from the Children's Health Insurance Program;
- Receives uncompensated care by the Provider; or
- Receives services at either no cost or reduced cost based on a sliding scale determined by the individual's ability to pay.

#### *5.2.2.3.2 MississippiCan*

Because MississippiCan was initiated in 2011, applications can include encounters for Managed Care patients in the eligible professional encounters. Managed Care Encounters must be included in the numerator and denominator during attestation in the MS SLR. Additionally, encounters for Managed Care patients should be shown on a separate line in the EHR Professional Patient Volume Calculator (if included in the attestation documentation).

#### *5.2.2.3.3 Group Medicaid Patient Volume*

EPs may opt to use Group patient volume as proxy for their individual patient volume. An EP may use Group patient volume as a proxy for their own under the following conditions:

- The clinic or group practice's patient volume is appropriate as a patient volume methodology calculation for the EP (for example, if an EP only sees Medicare, commercial, or self-pay patients, this is not an appropriate calculation);
- There is an auditable data source to support the clinic or group practice's patient volume determination; and
- The clinic or group practice and EPs decide to use one methodology in each year (in other words, clinics could not have some of the EPs using their individual patient volume for patients seen at the clinic, while others use the clinic-level data).

The clinic or group practice must use the entire clinic or group practice's patient volume and not limit it in any way. EPs may attest to patient volume under the individual calculation or the clinic or group practice proxy in any participation year.

If the EP works in the clinic as well as outside the clinic (or with and outside a group practice), then the clinic or group practice level determination includes only those encounters associated with the clinic or group practice.

In order to meet the requirements to use Group patient volume, including the requirement of an auditable data source, Mississippi will require the clinic or group practice to include all servicing providers' claims regardless of the payer or whether or not they are eligible for the incentive payment.

For purposes of calculating Group patient volume for EPs, the clinic or group should divide:

- The total eligible Medicaid encounters for all EPs in the clinic or group practice in the continuous 90-day period, 3 month period, 6 month period, or full year period, in the preceding fiscal year; *or*
- The total eligible Medicaid encounters in the clinic or group practice in the continuous 90-day period in the 12-month period directly preceding the attestation date; *by*
- The total encounters for the clinic or group practice for all servicing providers not limited in any way for the same eligibility period.

For Mississippi, a Group will be defined as having the same NPI and TIN. All individual EPs and clinics or group practices must be registered with the DOM with a current license, must be in good standing with CMS, the DOM, and the State of Mississippi and must have an NPI and Mississippi Medicaid provider number. Both the individual EP and Group must have an active status in the DOM PMF, including active licenses, and all individual EP's seeking an EHR incentive payment which is assigned to the Group must be linked to the Group in the MMIS.

## 5.3 Provider Registration and Verification

### 5.3.1 CMS Registration & Attestation System Registration

CMS has ownership of all processes concerning registration at the national level. A brief description is provided here. More detailed information can be found in the document entitled "HITECH Interface Control Document." The most important aspect of the registration process for the MPIP concerns the interface transaction sent from the CMS Registration & Attestation System to the MS SLR once a provider has registered with CMS. More detail on this interface is contained in this Blueprint in Section 5.2.2.1 – CMS Registration & Attestation System – States, Provider Registration Data Interface (B-6) Process.

Regardless of the provider's intent to attest with the Medicare or Medicaid EHR Incentive Program, all providers applying for incentives must first register with CMS Registration and Attestation System. The CMS Registration and Attestation System will capture basic information such as provider type (EP or EH) and whether the provider is applying for Medicare, Medicaid, or both (allowed for certain EHs). To eliminate duplication, CMS has restricted EPs to a single Web account that requires EPs to use their Social Security Number (SSN)/Tax Identification Number (TIN) to establish their registration and has restricted the issuance of the Web accounts to one per SSN/TIN.

If a provider chooses Medicaid, or both Medicaid and Medicare (EHs only), the provider must identify the state selected for attestation. The CMS Registration and Attestation System will check for a valid National Provider Identifier (NPI), TIN (if on record), and for any federal level sanctions. For EHs only, the CMS Registration and Attestation System will also check for a valid CMS Certification Number (CCN)[5]. Providers opting for Medicaid who are not included in the Social Security Administration (SSA) Death Master File will be passed through to the Medicaid state selected by the provider. If registration checks complete successfully, the new provider information will be written to the CMS Registration & Attestation System and sent to the State for validation in a data transaction defined by CMS named the "CMS Registration & Attestation System – States Provider Registration Data Interface (B-6)."

Hospitals registering for both the Medicaid and Medicare EHR Incentive Program at the same time that are approved by CMS as a meaningful user will also be deemed a meaningful user by Medicaid The CMS Registration & Attestation System will send a C-5 record to confirm that CMS has determined the hospital to be a meaningful user of EHR technology. The hospital must still submit their attestation to Medicaid in order to receive their Medicaid MU incentive payment. This is the recommended pathway for dually eligible hospitals that apply for an MU incentive payment.

[5] Please note that the CCN was previously known as the Medicare Provider number.

The CMS Registration & Attestation System communicates the registration status back to the provider.

### 5.3.2 CMS Registration & Attestation System/MS SLR Data Validation Process

This process will accept and parse the B-6 Interface. The purpose of the B-6 Interface is to inform the states of new, updated, and inactivated Medicaid registrations. The CMS Registration & Attestation System will send batch feeds to the states of new EPs and EHs that registered for the EHR Incentive Program and selected or switched to Medicaid. The data also includes any updates/changes to the EP or EH entries and any registration inactivation events. A detailed description of this interface can be found in the document entitled "HITECH Interface Control Document."

This process will perform the following actions:

- Accept new transactions;
- Handle duplicate transaction exception; and
- Send back the Provider Registration Confirmation Interface (B-7 Interface) immediately after the first time a B-6 Interface is received, parsed, and stored for a given provider. The B-7 Interface will contain an Eligibility Status of "Pending" and allow CMS to record the fact the B-6 Interface was received by DOM before DOM determines the provider's registration status with the State.

Processes to manage transactions that do not pass Exception Handling are not described because the HITECH Interface Control Document states that CMS does not expect any exceptions from the B-6 Interface.

If the transaction passes Exception Handling and Duplicate Check processing, the process named "CMS Registration & Attestation System/MS SLR Data Validation" (described in this section) is executed.

The CMS Registration & Attestation System/MS SLR data validation process supports the requirements that provider data in the B-6 Interface be verified by the provider. Process execution logic depends on several different scenarios:

- NPI from a B-6 Interface transaction being processed does not match a MS SLR Provider Registration transaction: The B-6 transaction is stored in the MS SLR awaiting MS SLR Provider Registration using the same NPI.
- NPI from a B-6 Interface transaction being processed does match a MS SLR Provider Account transaction: The data from the B-6 transaction is matched against the data input by the provider during MS SLR provider account creation.

- NPI from a MS SLR Registration transaction being processed does not match a B-6 Interface transaction: The MS SLR provider can create an account and can complete the "About You" step. The provider will receive a hard stop after the "About You" step and will be notified that he/she must complete his/her CMS Registration and Attestation System application before proceeding in the MS SLR. The receipt of the matching B-6 transaction will allow the provider to proceed in the MS SLR.

- NPI from a MS SLR Registration transaction being processed does match a B-6 Interface transaction: The data from the MS SLR Provider Registration is matched against the B-6 transaction. If all data matches, the provider can proceed with the completion of their attestation.

In the event that the information entered by the provider and transmitted through the B-6 Interface cannot be validated, the provider may be asked to correct information entered at the CMS Registration & Attestation System. The MS SLR will not allow any changes to the NPI, SSN, CCN or TIN entered at CMS Registration & Attestation System. If an EP or EH needs to change any of this information to proceed, the Help Desk staff will refer them to CMS Registration & Attestation System where the EP or EH will be responsible for correcting the information. Upon completion and update at the CMS Registration & Attestation System, the information will be sent to and incorporated in the MS SLR electronically as an update.

State Reason Codes received on the B-6 transaction will also be interrogated to determine if the provider eligibility should be rejected based on code values sent to the MS SLR from the CMS Registration & Attestation System. The following table lists the codes. The codes designated by a "Hard Stop" will cause the provider's eligibility to be rejected. If the B-6 transaction includes one of the "Soft Stop" codes, it means the provider's eligibility was rejected by another state. This will not exclude the provider from being eligible in Mississippi. Normal eligibility determination processes will still be performed.

**Table 5-1: State Reason Codes**

| State Reason Code Description | Reason Code |
|---|---|
| Eligible Hospitals | |
| Excluded / Federal | EH01 |
| Excluded / State | EH02 |
| Not Licensed / Credentialed | EH03 |
| Failed Patient Volume | EH04 |
| No Certified EHR | EH05 |
| Failed A/I/U | EH06 |
| Failed MU | EH07 |
| Excluded / Federal / 2nd Check | EH08 |
| Excluded / State / 2nd Check | EH09 |
| Eligible Professionals | |
| Excluded / Federal | EP01 |
| Excluded / State | EP02 |
| Dead | EP03 |
| Not Licensed / Credentialed | EP04 |
| Hospital Based | EP05 |
| Failed Patient Volume | EP06 |
| Failed Practices predominantly at a FQHC / RHC with 30% needy individual patient volume | EP07 |
| No Certified EHR | EP08 |
| Failed A/I/U | EP09 |
| Failed MU | EP10 |
| Excluded / Federal / 2nd Check | EP11 |
| Excluded / State / 2nd Check | EP12 |
| Dead / 2nd Check | EP13 |

| Key | |
|---|---|
| | Hard Stop |
| | Soft Stop |

The B-7 Interface will be sent back to the CMS Registration & Attestation System the second time as the Provider Final Registration Status Interface (B-7). At this time, the B-7 transaction will contain an Eligibility Status of "Accepted" or "Rejected" notifying the CMS Registration & Attestation System of the provider's registration status with the MPIP. The rejection reason will be communicated back to the CMS Registration & Attestation System using one of several codes. Please refer to Table 5: State Reason Codes in Section 5.3.2. The Hard Stop/Soft Stop designation has no meaning in this context; they all signify that provider eligibility was rejected. Mississippi may use any of the State-specific codes to specify the reason the provider was rejected.

### 5.3.3 MPIP MS SLR Registration

The MS SLR registration process will only accept registration requests from Mississippi Medicaid Providers. A provider is considered a Mississippi Medicaid Provider if the provider has an active

Mississippi Medicaid Provider number. Providers who work in an FQHC or a Coordinated Care Organization must also have a Mississippi Medicaid Provider number. Any provider who attempts to register in the MS SLR without a Medicaid Provider number will be prohibited by the application from proceeding with registration. DOM has emphasized the fact that the Medicaid Provider number is a requirement for eligibility in the MPIP training for providers.

This process supports provider registration with the MS SLR. The provider verifies information obtained via the CMS Registration & Attestation System interface and supplies additional information the State may require for determining eligibility before the attestation process. Areas of focus within the MS SLR for Mississippi registration and eligibility verification include:

- Mississippi Medicaid Provider number;
- Professional license number – for providers with licenses in multiple states, the MS MMIS will search for a Mississippi license, regardless of the number of other state licenses associated with a given provider;
- Provider type and any hospital, FQHC, or RHC affiliation; and
- Provider sanctions/exclusions; those checked at the State level by the MS SLR include terminated licenses, expired licenses, State terminations, deceased providers, legal actions, and voluntary terminations by the provider. Based on the CPI Informational Bulletin, CPI-B11-05, issued on 05/31/2011, Mississippi will not permit individuals or entities that are currently terminated or sanctioned under Medicare or any other State Medicaid program to apply for or receive payment.

A Provider Master File (PMF) is generated from the MMIS and holds information on all EPs and EHs that are potentially eligible for the MPIP. The MS SLR Registration Validation from the MMIS and PMF includes the following checklist:

- Provider and Payee NPI are valid;
- Provider is not deceased;
- Medicaid Provider number is valid, including clinic or group practice Medicaid Provider numbers;
- Providers have current licenses issued by the State of Mississippi;
- Provider is not sanctioned by Mississippi DOM; and
- Provider type is included in the attestation and is a valid code.

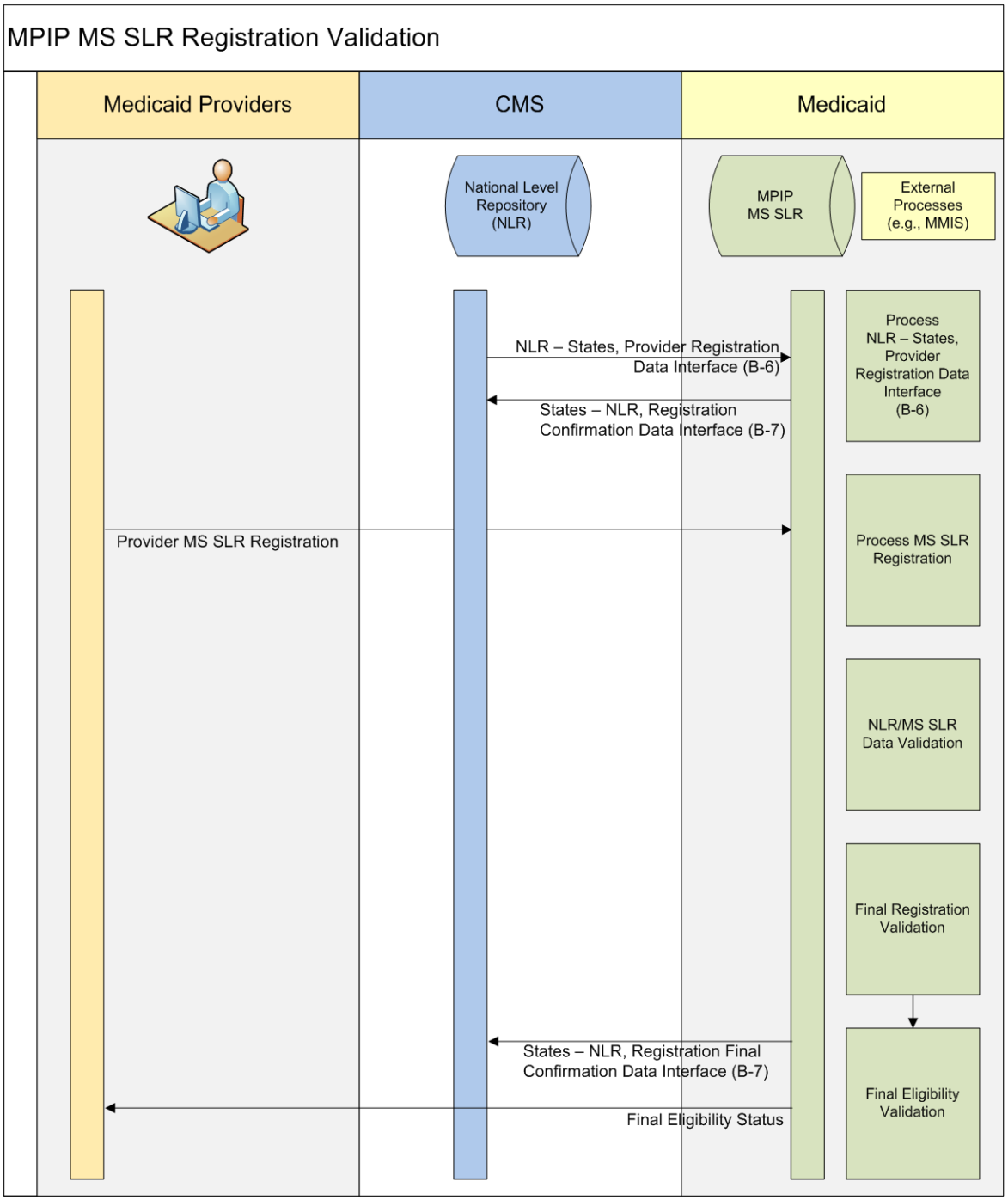



**Figure 8: MPIP MS SLR Registration Validation**

## 5.4 MPIP MS SLR Attestation

Once registration is complete, the provider's next step in applying for the MPIP is to access the MS SLR and answer a variety of questions attesting to the A/I/U or MU of certified EHR

technology. EP and EH attestations are subject to eligibility verification processes as described in Section 5.2 above. As stated, DOM will verify this information using practice management reports for EPs as a part of required documentation to be attached to an attestation. EHs will be verified by a review of cost reports and data sources prior to payment.

### 5.4.1 Adoption, Implementation, or Upgrade

Along with the attestation information described above for provider type, eligibility period, and patient volume, providers also may attest to the A/I/U of certified EHR technology in the first year. Providers must enter the CMS EHR Certification code from its EHR vendor to identify their EHR software. The MS SLR will validate the CMS EHR Certification code against the current ONC database of valid CMS EHR Certification codes. Please note that there is no EHR reporting period required for A/I/U attestations.

The definition of Adopt/Implement/Upgrade (A/I/U) in 42 CFR 495.302 allows a provider to demonstrate A/I/U through any of the following: (a) acquiring, purchasing or securing access to certified EHR technology; (b) installing or commencing utilization of certified EHR technology capable of meeting meaningful use requirements; or (c) expanding the available functionality of certified EHR technology capable of meeting meaningful use requirements at the practice site, including staffing, maintenance, and training, or upgrade from existing EHR technology to certified EHR technology per the EHR certification criteria published by ONC.

During the attestation process in the MS SLR, the provider is required to supply the following attestation information to qualify for an A/I/U incentive payment:

- Select Adoption, Implementation, or Upgrade;
- Provide a brief textual description of how the provider meets the criteria for Adoption, Implementation, or Upgrade of certified EHR technology;
- Attach external documents supporting Adoption, Implementation, or Upgrade of certified EHR technology. DOM prefers that a signed contract is uploaded demonstrating proof of a fiscal relationship between the vendor and the EP/EH. In instances in which a signed contract is not applicable DOM will accept other documentation, including but not limited to, a vendor invoice, an End-User License Agreement (EULA), or other evidence that sufficiently demonstrates A/I/U.
- Certified EHR Technology: Enter ONC certification code. CMS publishes a list of codes identifying all ONC certified EHR technology products. During attestation the provider must enter the code from its EHR vendor to identify the EHR.
- Attestation Agreement: Sign and attach an Attestation Agreement indicating A/I/U. Attestation Agreement must be executed by the Eligible Provider or the

designated representative of an Eligible Hospital. The EHR Incentive Payment will be made to the designated payee as referenced on the Attestation Agreement. It is the responsibility of the provider to verify accuracy of information contained on the Attestation Agreement, including the designated Payee.

### 5.4.2 Meaningful Use

Providers are eligible to receive EHR Incentive Payments for demonstrating they are meeting Meaningful Use criteria. Meaningful Users must meet the same certified EHR technology and patient volume criteria as described for A/I/U. In addition, Meaningful Users must meet required Core and Menu objectives and Clinical Quality Measures (CQM).

Meaningful User is defined in 42 CFR 495.4 as a provider that meets the EHR Incentive Payment program eligibility criteria that, for an EHR reporting period for a payment year or payment adjustment year, demonstrates meaningful use of certified EHR technology and meets the objectives and associated measures specified in the regulation and reports CQMs selected by CMS.

By definition, certified EHR technology must include the capability to electronically record the numerator and denominator and generate a report including the numerator, denominator, and the resulting percentage for all percentage-based MU measures (specified in the certification criterion adopted at 45 CFR 170.302(n)).

Please note that providers cannot use a non-certified system to calculate the numerators, denominators, and exclusion information for CQMs. The numerator, denominator, and exclusion information for CQMs must be reported directly from certified EHR technology.

As defined by 45 CFR 170.302(n), MU and CQM measures are a product of a provider's certified EHR technology software. The MS SLR will allow providers to directly enter MU reporting and CQM attestation data or upload CQM measures from their .xml files created in their certified EHR technology. (The upload function is currently available but not required until 2014. MS SLR will validate that the requirements for MU have been met.)

#### 5.4.2.1 MU Reporting Period

The MU EHR reporting period is a continuous period where the provider successfully demonstrates all the MU objectives of certified EHR technology according to CMS requirements.

In the first year of MU attestation (generally the second year of MPIP participation) providers must meet MU requirements during a single 90-day reporting period within the current calendar (EPs) or federal fiscal year (EHs) in order to receive the second payment. In subsequent years of participation, the MU EHR reporting period is a full year, with attestation and payment occurring

directly after the close of the calendar (EPs) or federal fiscal year (EHs). In some cases, EPs and EHs may have attested to MU with the Medicare EHR Incentive Program prior to their attestation with the MPIP; EPs and EHs falling under this category would be required to follow the CMS timeline for the MU EHR reporting period. EHs filing for both Medicare and Medicaid in the same payment year must follow the Medicare guidelines for determining MU.

#### 5.4.2.2 Meaningful Use - EHs

As described above, after attesting to A/I/U in the first program year of the MPIP, EHs will be required to attest to MU to receive incentive payments. For EHs and CAHs, "year" means the federal fiscal year.

For Stage 1, EHs are required to meet a total of 17 MU objectives from a list of 22: 12 are required core objectives; and the remaining five objectives may be chosen from the list of ten menu set objectives. The final rule of the EHR Incentive Program gives states the opportunity to choose any of the four menu set public health measures as a core requirement for Medicaid. DOM will not require any additional MU criteria for EHs. Additionally, as a part of MU, EHs are required to submit data on 15 CQMs. Appendix I contains the listing of Stage 1 MU core and menu set objectives.

For Stage 2, EHs are required to meet a total of 19 MU objectives, 16 of which are required core objectives; and the remaining three objectives may be chosen from the list of six menu set objectives. In addition, EH's must report on 16 of 29 Clinical Quality Measures and must electronically report those CQM's.

During the attestation process in the MS SLR for Stage 1 MU, the provider is required to supply the following attestation information to qualify for Meaningful Use incentive payment:

- Select MU (first MU submission only);
- Attach external documents supporting Meaningful Use of certified EHR technology. DOM prefers that a signed contract is uploaded demonstrating proof of a fiscal relationship between the vendor and the EH. In instances in which a signed contract is not applicable DOM will accept other documentation, including but not limited to, a vendor invoice, an End-User License Agreement (EULA), or other evidence that sufficiently demonstrates MU.
- Certified EHR Technology: Enter ONC certification code. CMS publishes a list of codes identifying all ONC certified EHR technology products. During attestation the provider must enter the code from its EHR vendor to identify the EHR.
- Using certified EHR technology, respond to the Meaningful Use Core, Menu, and Clinical Quality Measures (CQM) objectives.

- Attach the following supporting documentation (required by the MS Division of Medicaid):
    - CPOE Report
    - Problems List Report
    - Security Risk Questionnaire (optional)
- Attestation Agreement: Sign and attach an Attestation Agreement indicating Meaningful Use. Attestation Agreement must be executed by the designated representative of an Eligible Hospital. The EHR Incentive Payment will be made to the designated payee as referenced on the Attestation Agreement. It is the responsibility of the provider to verify accuracy of information contained on the Attestation Agreement, including the designated Payee.

#### *5.4.2.2.1 Dually Eligible Hospitals*

Note that the CMS Registration & Attestation System is sending Medicare hospital attestation data to the State for dually eligible EHs via the Dually Eligible Hospital Attestation Data (C-5). MPIP will evaluate the C-5 Interface Transaction attestation data to determine if the hospital has been approved for Medicare payment. If the hospital is eligible for Medicare payment, then the hospital will be deemed eligible to meet Medicaid MU requirements and will not have to complete the MU validation questionnaire. As a result, the attestation agreement will show that the hospital has been deemed a meaningful user by CMS. CMS still requires the State to send the Medicaid Payment Request Response Interface (D-16) transaction prior to issuing payment. EHs that are dually eligible will still have to meet the Medicaid patient volume requirements.

### 5.4.2.3 Meaningful Use - EPs

After attesting to A/I/U with the MPIP, EPs will be required to attest to MU in subsequent program years to receive incentive payments. For EPs, "year" means calendar year.

For Stage 1, EPs are required to meet a total of 18 MU objectives from a list of 23 MU objectives: 13 are required core objectives; and the remaining five objectives may be chosen from the list of ten menu set objectives. The final rule of the EHR Incentive Program gives states the opportunity to choose any of the four menu set public health measures as a core requirement for Medicaid. DOM will not require any additional MU criteria. Additionally, as a part of MU, EPs must submit CQMs with their MU attestation. Appendix I contains the listing of MU core and menu set objectives.

Some MU objectives are not applicable to every provider's clinical practice, eliminating any eligible patients or actions for the measure denominator. In these cases, the EP would be

excluded from having to meet that measure. Examples of exclusions include dentists that do not perform immunizations and chiropractors that do not e-prescribe.

For Stage 2, EP's are required to meet a total of 20 MU objectives: 17 of the objectives are required core objectives; and the remaining three objectives may be chosen from the list of six menu set objectives (see Appendix I). EP's must also report on 9 of 64 approved CQMs and must electronically report their CQM data.

During the attestation process in the MS SLR for Stage 1 MU, the provider is required to supply the following attestation information to qualify for Meaningful Use incentive payment:

- Select MU (first MU submission only);
- Attach external documents supporting Meaningful Use of certified EHR technology. DOM prefers that a signed contract is uploaded demonstrating proof of a fiscal relationship between the vendor and the EH. In instances in which a signed contract is not applicable DOM will accept other documentation, including but not limited to, a vendor invoice, EULA, or other evidence that sufficiently demonstrates MU.
- Certified EHR Technology: Enter ONC certification code. CMS publishes a list of codes identifying all ONC certified EHR technology products. During attestation the provider must enter the code from its EHR vendor to identify the EHR.
- Using certified EHR technology, respond to the Meaningful Use Core and Menu, objectives, including CQMs.
- Attach the following supporting documentation (required by the MS Division of Medicaid):
    - CPOE Report
    - Problems List Report
    - Security Risk Questionnaire (optional)
- Attestation Agreement: Sign and attach an Attestation Agreement indicating Meaningful Use. Attestation Agreement must be executed by the Eligible Professional. The EHR Incentive Payment will be made to the designated payee as referenced on the Attestation Agreement. It is the responsibility of the provider to verify accuracy of information contained on the Attestation Agreement, including the designated Payee.

### 5.4.3 Changes to Exclusions

Beginning in 2014, EPs and EHs will no longer be permitted to count exclusions toward the minimum of 5 menu objectives on which they must report if there are other menu objectives that they can achieve.

EPs and EHs will not be penalized for selecting a menu objective and claiming the exclusion if they are able to qualify for an exclusion on all remaining objectives. For example, EPs who select the menu objective to submit data to an immunization registry and claim the exclusion on it would also be able to claim the exclusion for the remaining public health objectives.

## 5.5 MPIP MS SLR Payment Calculation/Verification

At the successful completion of the registration and attestation verification of eligibility process, DOM will begin to disburse incentive payments. The payment process involves a number of important activities:

- Calculating the payment;
- Verifying with CMS, via the CMS Registration & Attestation System, that the provider should not be denied payment; and
- Tracking the payment and verifying that the right payment was made to the right provider at the right time.

### 5.5.1 Payment Calculation

Payments are calculated differently for EPs and EHs.

#### 5.5.1.1 EP Payment Calculation

In the MS SLR, EPs will attest that the data they enter is correct and the MS SLR will automatically determine eligibility for the incentive payment. The EP Medicaid EHR incentive payment (a fixed amount), based on the EP's year of participation, is specified in the table below. The table includes payment for A/I/U. The preliminary payment amount is subject to DOM verification. In the event of an audit, the EP must have auditable supporting documentation, such as reports from their practice management system, for each included line item. Providers will be given the option of uploading or faxing the supporting information with their attestation.

EPs may not receive EHR incentive payments from both the Medicare and Medicaid programs in the same year. In the event an EP qualifies for EHR incentive payments from both the Medicare and Medicaid programs, the EP must elect to receive payments from only one program. After

an EP qualifies for an EHR incentive payment under one program before 2015, an EP may switch between the Medicare and Medicaid programs one time. Upon switching programs, the EP will be placed in the payment year the EP would have been in had the EP not switched programs. For example, if an EP decides to switch after attesting to MU of certified EHR technology for a Medicare incentive payment for the second payment year, then the EP would be in the third payment year for purposes of the Medicaid incentive payments.

**Table 5-2: Medicaid EP Payment Table**

**Medicaid EHR Incentive Payment Schedule for Eligible Professionals**

| | Medicaid EP Qualifies to Receive First Payment in 2011 | Medicaid EP Qualifies to Receive First Payment in 2012 | Medicaid EP Qualifies to Receive First Payment in 2013 | Medicaid EP Qualifies to Receive First Payment in 2014 | Medicaid EP Qualifies to Receive First Payment in 2015 | Medicaid EP Qualifies to Receive First Payment in 2016 |
|---|---|---|---|---|---|---|
| **Payment Amount in 2011** | $21,250.00 | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 |
| **Payment Amount in 2012** | $8,500.00 | $21,250.00 | $0.00 | $0.00 | $0.00 | $0.00 |
| **Payment Amount in 2013** | $8,500.00 | $8,500.00 | $21,250.00 | $0.00 | $0.00 | $0.00 |
| **Payment Amount in 2014** | $8,500.00 | $8,500.00 | $8,500.00 | $21,250.00 | $0.00 | $0.00 |
| **Payment Amount in 2015** | $8,500.00 | $8,500.00 | $8,500.00 | $8,500.00 | $21,250.00 | $0.00 |
| **Payment Amount in 2016** | $8,500.00 | $8,500.00 | $8,500.00 | $8,500.00 | $8,500.00 | $21,250.00 |
| **Payment Amount in 2017** | $0.00 | $8,500.00 | $8,500.00 | $8,500.00 | $8,500.00 | $8,500.00 |
| **Payment Amount in 2018** | $0.00 | $0.00 | $8,500.00 | $8,500.00 | $8,500.00 | $8,500.00 |
| **Payment Amount in 2019** | $0.00 | $0.00 | $0.00 | $8,500.00 | $8,500.00 | $8,500.00 |
| **Payment Amount in 2020** | $0.00 | $0.00 | $0.00 | $0.00 | $8,500.00 | $8,500.00 |
| **Payment Amount in 2021** | $0.00 | $0.00 | $0.00 | $0.00 | $0.00 | $8,500.00 |
| **TOTAL Incentive Payments** | **$63,750.00** | **$63,750.00** | **$63,750.00** | **$63,750.00** | **$63,750.00** | **$63,750.00** |

*Note: The total for pediatricians who meet the 20 percent patient volume but fall short of the 30 percent patient volume is $14,167 in the first year and $5,667 in subsequent years. This adds up to a maximum Medicaid EHR incentive payment of $42,500 over a six-year period.*

#### *5.5.1.1.1 Medicaid EHR Incentive Payment Assignment*

The following process applies only when an EP is assigning their EHR incentive payment. Such assignment of payments must be entirely voluntary for the EP. When registering for the MPIP, EPs may assign their incentive payments to their Medicaid Group account provided the EP is affiliated with the Group in the MMIS. To verify this, the payee must be a hospital or designated as a Group in the MMIS and the payee's NPI, SSN, TIN, or Medicaid Provider Number must match with the CMS Registration & Attestation System and the PMF file. The payee must register with the CMS Registration & Attestation System using a NPI, SSN, TIN, or Medicaid Provider Number that matches the PMF file. This data cannot be changed at the State level.

As part of the annual attestation process, DOM requires that all EPs who are assigning their payment attest that the assignment is voluntary and is being made to an established Medicaid provider.

Once a payment has been disbursed by DOM to the designated payee, as assigned by the EP, the payee cannot be changed, removed or revoked. DOM expects that once a payment is assigned and an EP submits an attestation for approval, the EP authorizes payment to be made to the payee as indicated.

#### 5.5.1.2 EH Payment Calculation

Hospitals need to supply several factors that go into the EH Medicaid EHR incentive payment calculation. All factors for calculating the payment amount are derived directly from the current and prior cost reports. Only CMS pre-approved data sources will be used in calculating the payment amount. These factors are based on the hospital fiscal year that ends during the federal fiscal year prior to the hospital fiscal year that serves as the first payment year, and are listed below:

- Total Medicaid Discharges (most recent four years);
- Medicaid Discharges for the Current Year;
- Medicaid Acute Inpatient Bed Days;
- Medicaid Managed Care Acute Inpatient Bed Days;
- Total Acute Inpatient Bed Days;
- Total Hospital Charges; and
- Total Hospital Uncompensated Care Charges.

DOM will verify the EH's calculation of their overall EHR amount. The overall amount is the sum over four years of (a) the base amount of $2,000,000 plus (b) the discharge related amount defined as $200 for the 1,150 through the 23,000 discharge for the first payment year then a pro-rated amount of 75 percent in year 2, 50 percent in year 3, and 25 percent in year 4. For years 2-4 the rate of growth is assumed to be the previous 3 years' average. Note that if a hospital's average annual rate of growth is negative over the three year period, it will be applied as such. Transition factors are applied to years one through four in the following amounts: Year One – 100 percent; Year Two - 75 percent; Year Three - 50 percent, and Year Four - 25 percent.

Auditable data sources will be used to calculate the Medicaid aggregate EHR hospital incentive amounts, as well as determining Medicaid incentive payments to these EHs. Auditable data

sources for the calculation of the Medicaid EHR incentive amounts are the EH's Medicare/Medicaid cost reports.

For the purpose of calculating the Medicaid discharges for determining the annual Medicaid patient volume percentage, DOM will allow EHs to count discharges when Medicaid is the primary or secondary payer, regardless of payment liability on the discharge. This method is in accordance with the instructions from CMS's Facts, Answers, and Questions section published on the CMS Website.

The "Medicaid Share," which is applied against the aggregate EHR incentive amount, is essentially the percentage of an EH's Medicaid inpatient days divided by the total inpatient non-charity care days. This method is in accordance with the instructions from CMS's Facts, Answers, and Questions section published on the CMS Website.

The estimated total charges and charity care charges used in the formula must represent inpatient hospital services only and exclude any professional charges associated with the inpatient stay.

In any given payment year, no annual Medicaid EHR incentive payment to an EH may exceed 50 percent of the EH's aggregate EHR incentive amount. Likewise, over a two-year period, no Medicaid EHR incentive payment to an EH may exceed 90 percent of the aggregate EHR incentive amount. A hospital cannot receive payments after 2016 unless the hospital received a payment for the previous year. Prior to 2016, Medicaid EHR incentive payments to EHs can be made on a non-consecutive annual basis.

Due to the high cost of hospital software and to encourage the early adoption of the EHR technology in hospitals, DOM is choosing to pay the Overall EHR Amount over the minimum three-year period at the maximum allowable percentages in each year that the EH qualifies for payment (Year 1 - 50 percent, Year 2 – 40 percent, Year 3 – 10 percent). The entire EH payment calculation is defined in the worksheet included in Appendix G.

Calculation of the Overall EHR Amount is a one-time calculation based on the following steps:

- Calculate the average annual growth rate over three years using the Medicare/Medicaid Cost Reports prior to the most current Cost Report.
- Calculate the total Medicaid discharges using the Medicaid discharges in the Medicare/Medicaid Cost Reports plus the discharges where Medicaid is the secondary payer. Only discharges between 1149 and 23,000 per CCN will be allowable discharges.
- Calculate each of the next four year's total discharges by multiplying the previous year's discharges times the average computed growth rate.

- Calculate the Medicaid Aggregate EHR Incentive Amount for each year by adding (total discharges times $200) to the $2,000,000 base.
- Apply the appropriate transition factor to each year's Aggregate EHR Incentive Amount. (Year One – 100 percent, Year Two – 75 percent, Year Three – 50 percent, Year Four – 25 percent).
- Calculate the total Overall EHR Incentive Amount by adding the total of each year with the transition factor applied.
- Apply the Medicaid Share percentage to the Overall EHR Incentive Amount. (See Medicaid Share calculation below). This is the hospital's Medicaid Aggregate EHR Incentive amount.

Calculation of the Medicaid Share percentage:

- Total Medicaid days includes both the total Medicaid Days and total Medicaid HMO days from the Medicare/Medicaid Cost Report.
- Calculate the non-charity percentage. Divide the (total hospital charges less uncompensated care) by the total hospital charges.
- Calculate the non-charity days by multiplying the non-charity percentage times the total hospital days.

Calculate the Medicaid Share percentage by dividing the Medicaid days by the non-charity days. DOM has created a calculation worksheet for EHs that mirrors the calculation in the MS SLR application. The calculation worksheet is included as Appendix G: EHR Hospital PIP Calculator and will be available on DOM's Websites and made available through its outreach program.

Hospitals must use their filed and accepted cost report data only in the onetime calculation of the EH's incentive payment amount. EHs are required to use the last four (4) consecutive years' cost reports in the calculation of the onetime payment. Any deviation will result in the rejection of the EH's application. All cost reports are subject to audit by Medicare and Medicaid. Any audit adjustments to the cost report used to calculate the onetime payment may result in a payment adjustment or denial of Medicaid payment at the discretion of the DOM. Data sources below are in accordance with CMS FAQ 10771.

For hospitals filing the 2552-96 cost report, the authorized data sources are:

- Total Discharges - Worksheet S-3 Part 1, Column 15, Line 12
- Medicaid Days - Worksheet S-3, Part I, Column 5, Line 1 + Lines 6-10
- Medicaid HMO Days - Worksheet S-3, Part I, Column 5, Line 2
- Total Inpatient Days - Worksheet S-3 Part 1, Column 6, Line 1, 2 + Lines 6 -10

- Total Hospital Charges - Worksheet C Part 1, Column 8, Line 101
- Charity Care Charges - Worksheet S-10, Column 1, Line 30
    - DOM does not expect that any 2552-96 cost reports will be submitted due to the change to 2552-10. However, DOM will accept the PDF version of the 2552-96 cost reports for EHR Incentive Payments or the hospital can use zero for the Charity Care Charges.

For hospitals filing the 2552-10 cost report, the authorized data sources are:

- Total Discharges - Worksheet S-3 Part 1, Column 15, Line 14
- Medicaid Days - Worksheet S-3, Part I, Column 7, Line 1 + Lines 8-12
- Total Inpatient Days - Worksheet S-3 Part 1, Column 8, Line 1, 2 + Lines 8 - 12
- Total Charges - Worksheet C Part 1, Column 8, Line 200
- Charity Care Charges - Worksheet S-10, Column 3, Line 20

For new hospitals or hospitals that have a change of ownership with a new CCN, CMS is allowing states to decide when a new hospital can apply for the EHR incentive program. MS DOM has determined that a hospital must have four years of history (four cost reports) before they can apply. Cost report years containing more or less than 12 months must be excluded from the growth calculation. Only years with 12 months can be used in the calculation. The hospital must use the previous year's cost report. For example, if cost report year 2008 contained 13 months, the hospital would have to use the cost reports for 2010, 2009, 2007, and 2006.

DOM will utilize the applicable statistics and financial data from the hospitals' Medicare/Medicaid Cost Reports for the last four years to validate the initial calculation of the incentive payment amount and to validate that the average length of stay does not exceed the 25-day maximum. This means that the hospital must submit four cost reports on their initial application for the first payment. For subsequent years, the hospital's cost report ending during the previous federal fiscal year will be used, and only the most recent cost report will be required.

#### *5.5.1.2.1 Managed Care Payment Calculation*

DOM's Coordinated Care program, MississippiCAN, began in January, 2011, and does not include any inpatient services.

### 5.5.2 CMS Verification

Before payment can be distributed, a final CMS check must be performed to validate that the provider can receive payment. The validation is done via the Medicaid Payment Request

Response Interface (D-16) to the CMS Registration & Attestation System. The CMS Registration & Attestation System will return a batch interface transaction via the Medicaid Payment Request Response Interface (D-16) authorizing the payment or denying it with a Denial Reason, such as a duplicate payment or federally excluded reason.

## 5.6 MPIP Payment Entry/Processing

DOM will use the existing MMIS system to make provider payments. The automated payment interface from the MS SLR to the MMIS system is now operational and facilitates a streamlined payment process for the MPIP. EHR incentive payments will follow the established rules for all provider payments and will use the existing payment rules built into the current and future MMIS systems. The MMIS will notify the MS SLR that a payment was made; allowing the MS SLR to create the batch interface transaction notifying the CMS Registration & Attestation System that payment is complete.

DOM is making EHR incentive payments from the MMIS on a weekly basis. DOM makes the incentive payments to the provider, the employer, or a facility assigned the payments without any reduction or rebate. DOM does not make incentive payments to any entities promoting the adoption of certified EHR technology since none exist in Mississippi.

DOM will use existing MMIS capability to take advantage of existing reconciliation, accounting, tracking, and reporting capability supporting provider reimbursement. Reporting capabilities of the existing MMIS and Decision Support System/Data Warehouse (DSS) will be utilized to facilitate the CMS-37 and CMS-64 report information. Utilization of the MMIS and the DSS will allow the EHR incentive payment information to be available to the current and future audit and analysis tools built into the MMIS and DSS. DOM anticipates that the current MMIS system will be replaced during the life of the EHR incentive program.

## 5.7 MPIP MS SLR Payment Complete

As stated above, the MS SLR must send a Medicaid Payment Completion Interface transaction (D-18) to the CMS Registration & Attestation System when the payment is distributed to the Provider. The D-18 will be sent five business days after the payment is issued.

## 5.8 MPIP MS SLR Inquiry

The MS SLR allows inquiry processes for providers to track the progress of their incentive payments, including if their attestation has been received, sent to CMS, or approved for payment. Inquiry processes may also be used by Xerox Help Desk Support Representatives to answer providers' questions or provide guidance to providers to correct information. In addition

to contacting the Xerox Help Desk, providers have the option to call DOM staff to inquire about specific information contained outside of the MS SLR.

## 5.9 MPIP MS SLR Update and Risks

DOM is participating in a multi-state SaaS solution to allow providers to attest online for their EHR incentive payment. Version 1 of the MS SLR was implemented to allow providers to apply for and submit the required documentation needed for A/I/U approval. Version 1 of MS SLR also enabled verification of most of the pre-payment audit requirements for approval of payment and captures the required documentation for additional manual review and/or audit of the attestation.

Version 2 of the MS SLR was implemented in the 1st quarter of 2012. Version 2 allows providers to attest to MU online with an immediate response that indicates whether they meet the MU requirements. Supporting documentation may include the patient volume calculators found at www.medicaid.ms.gov, contractual documents, reports from the EHR system and other documents. See the CMS-approved screenshots pertaining to MU in Version 2 attached hereto as Appendix K.

The MS SLR also includes a Dashboard component that is an internal tool used by DOM for verification, review, internal audits, submission of audits to CMS, and processing payments. The Dashboard will allow the DOM payment approver to see the attestation and all supporting documentation. The Dashboard includes expanded tools and reporting to support the additional pre- and post-payment audits, payment tracking and analysis of provider attestation statuses. Xerox is phasing in online post-payment audit tools and tracking of audit, appeals, and recoupment/adjustment. The first phase is complete and subsequent functionality is expected to be completed in 2013. DOM expects that they will fully implement the audit, appeals, and recoupment/adjustment functionality available in the MS SLR once all phases are made available by Xerox.

DOM is making a best effort to apply MITA principles to all future development and deployments of the MS SLR. One challenge for DOM is using a SaaS model with multiple states, with each state having different workflows and needs. This multi-stakeholder approach has created many challenges, including configuration and customization of the application for Mississippi DOM-specific needs. For example, DOM has chosen to forgo implementing the post-payment auditing function within the MS SLR until it is more robust. Although many states are satisfied with the current functionalities available within the Xerox solution, DOM continues to perform audit, recoupment and adjustment, and appeals processes manually outside of the MS SLR due to the limited functionality.

Xerox has updated the system to incorporate Stage 1 2013 changes related to the Final Rule. Xerox also plans to develop and implement changes required by the Stage 2 Final Rule in 2013.

One potential risk relating to the MS SLR will be releasing updates within the deadlines set forth by CMS for 2013, while maintaining the integrity of the software and current functionalities.

Another risk specific to the MS SLR relates to CMS's changes to the definition of a Medicaid encounter. DOM foresees many challenges in verifying encounters that do not have an associated claim searchable within the MMIS. DOM is concerned that this change will require more robust post-payment audit requirements, increasing the need for resources and potentially creating a larger burden upon providers to demonstrate proof through auditable data sources.

## 5.10 Program Oversight

### 5.10.1 MPIP MS SLR Prepayment Verification

DOM is conducting a robust and comprehensive prepayment oversight program. The prepayment oversight activities are led by the Office of Information Technology Management (iTECH). The levels of prepayment oversight and monitoring include the review, tracking and verification of provider attestations, including all of the information and documents necessary for a Medicaid provider to receive an incentive payment for each program year. This process ensures each provider meets provider registration, attestation, and eligibility criteria prior to receiving their incentive payment. Prepayment verifications are primarily performed by the MS SLR through configurable items within the application; however, iTECH staff members also perform some manual verifications prior to releasing providers for payment.

#### 5.10.1.1 Automated Prepayment Verification Process

As a part of the prepayment verification process, the automated MS SLR functions and the CMS Registration and Attestation System are leveraged to assure that no duplicate Medicaid EHR incentive payments are paid by more than one state or between the Medicaid and Medicare programs. The MS SLR automated processes and manual stops will also ensure that the incentive payments are made accurately, without reduction or rebate and will be made directly to a provider or to an eligible third - party entity to which the provider has assigned payments.

DOM has created a PMF that consists of all EPs and EHs to compare to B-6 Interface information during MS SLR Registration. The PMF excludes all providers whose licenses have expired, as well as all OIG excluded providers and State of Mississippi exclusions. The PMF also includes those EPs who qualify as "non-hospital" based and excludes all EPs listed on the State death registry. The PMF is automatically generated weekly from the MMIS provider master and claims data files. The PMF file will be the control file used by the MS SLR for approval of all EP and EH attestations. The CMS and OIG sanctions are updated monthly; the State of Mississippi sanctions are updated daily.

In addition to verification against the PMF, the MS SLR has been configured to automate several prepayment verifications on information entered by the provider during attestation. The MS SLR incorporates hard stops to verify that all information entered by providers aligns with program rules and that required documents are attached.

The MS SLR will automatically verify the following items during the attestation process:

- Eligibility reporting period using dates entered by the provider;
- (EHs only) – Average Length of Stay is less than 25 days;
- Medicaid patient volume (or Needy Individual Patient Volume) using numerator and denominator;
- ONC EHR certification number by matching the provider certification number with the ONC Certified HIT Product List;
- A/I/U criteria or MU criteria, depending upon the attestation type; and
- Provider NPI and SSN/TIN and payee NPI and SSN/TIN with the PMF.

Providers will be required to upload documentation in support of many of these items prior to proceeding in the MS SLR as well. If any one item cannot be verified, then the attestation will stop and the provider will not be able to proceed until corrected.

In the final step of attestation in the MS SLR, providers are required to submit an attestation agreement document. DOM currently uses a comprehensive attestation document that ensures DOM and CMS that the provider meets the requirements for eligibility and incentive payment. The attestation agreement will be automatically generated from the information entered into the MS SLR by the provider and will vary based on provider type. The attestation agreement includes the following statements that the provider:

- Is voluntarily participating in the Mississippi Medicaid EHR Incentive Payment Program;
- Has met all of the eligibility requirements for the program for the payment year;
- Has created a binding legal or financial obligation to acquire, implement or upgrade to the CMS Certified EHR software identified by the CMS EHR Certification identification;
- Agrees that any assignment of the EHR Incentive Payment is made voluntarily;
- Understands that their application is subject to review and/or audit by the State of Mississippi and that all supporting data must be maintained for a minimum of seven years;

- Understands that any falsification or concealment of material information may result in the provider being declared ineligible to participate in this program or any other Mississippi Medicaid program;
- Understands that any incentive payments found to have been made based on fraudulent information or attestation may be recouped by DOM, including all collection costs and penalties that may be assessed by the State of Mississippi;
- Understands that the EHR incentive payments are treated like all other income and are subject to federal and state laws regarding income tax, wage garnishments, and debt recoupment;
- Certifies that information contained in the MS SLR and attestation agreement is true, accurate, and complete; and
- Understands that Medicaid EHR incentive payments submitted under this provider number will be from federal funds and that any falsification or concealment of a material fact may be prosecuted under federal and state laws.

Moreover, given that this is a legally binding document, DOM requires the following:

- The above statement will appear directly above the provider's signature or, if they are printed on the reverse of the form, a reference to the statements must appear immediately preceding the provider's signature;
- The provider's signature;
- The provider and provider's name, NPI, SSN, and TIN appears on the attestation agreement;
- The provider is responsible for verifying both the provider and provider's payee information is correct on the attestation agreement; and
- The provider attestation must be resubmitted upon any change in the provider's attestation and/or representative.

As a final step in the prepayment verification process, the MS SLR will work to prevent multiple payments to providers by:

- Indexing files using the CCN, NPI, and TIN as the key for EHs;
- Indexing files using NPI and SSN for all other providers; and
- Requiring an NPPES Web account through the CMS Registration and Attestation System before an attestation can be complete.
    - EPs – the Web account is only issued using the Provider's SSN. The individual Provider is only issued one account per SSN.

- EHs – the Web account is only issued using the hospital's CCN. The hospital is only issued one account per CCN.

#### 5.10.1.2 iTECH Staff Prepayment Verifications

iTECH staff includes a combination of trained internal staff and new contracted staff to administer the MPIP program. iTECH staff members are responsible for conducting manual prepayment verifications and provider outreach. To ensure that staff levels are appropriate for the MPIP program, quarterly reports are reviewed to assess attestation-to-payment time and provider outreach efficiency. Over time, staff levels have been increased to support paying incentives in a timely manner.

##### *5.10.1.2.1 Manual Prepayment Verification Process*

iTECH staff review every attestation prior to releasing for payment. Given that the MS SLR cannot automatically verify all information, the iTECH manual verification process for all providers includes:

- Ensuring that all documentation attached is correct and accurate as described by the MS SLR;
- Verifying that the certified EHR technology contract is valid within the last 12 months;
- Ensuring that the attestation agreement is signed and valid according to DOM regulations; and
- (For MU only) verifying required documents are attached and appropriate for chosen MU measures.

All attestations found without proper documentation attached will be pended and a notice identifying the missing or incorrect information will be sent to the provider's e-mail address with instructions on how to correct.

In addition to verifying documentation, iTECH performs several other manual verifications on EPs prior to payment. These verifications include:

- Verifying that the EP is affiliated with the assigned payee in the MMIS and that the EP payee has a group indicator, if applicable; and
- Verifying that the SLR payment report matches the SLR request for approval to pay file.

Any exceptions are noted and researched for the reason for non-approval. The following is a "checklist" of items that will be used by iTECH staff to verify attestations prior to payment.

**Table 5-3: Checklist of Items for Pre-Payment Verification**

| Requirement | Automated State Level Registry System / Manual Process |
|---|---|
| Collect and verify basic information to assure Provider enrollment eligibility upon enrollment or re-enrollment to the Medicaid EHR payment incentive program. | Automated – MS SLR |
| Collect and verify basic information to assure patient volume in the numerator. Both the Medicaid and total patient volumes will be verified. | Automated - MS SLR<br><br>Manual – Provider management reports and Review of Provider supporting documentation |
| Collect and verify basic information to assure that PA EPs are practicing predominantly in a FQHC or RHC and are so led by the PA. | Automated – MS SLR |
| Assure that Medicaid providers who wish to participate in the EHR incentive payment program have or will have a NPI and will choose only one program from which to receive the incentive payment using the NPI, a TIN, and CMS' national provider election database. | Automated – CMS Registration & Attestation System and MS SLR<br><br>Manual – Review NPI, TIN and active license for validity |
| Based on provider type, assure that the provider meets all requirements to be eligible to participate in the EHR Payment Incentive Program as a Medicaid Provider. "All requirements" means all requirements that can be verified using external data sources available to DOM. | Automated – MS SLR<br><br>Manual - Review of provider supporting documentation |

| Requirement | Automated State Level Registry System / Manual Process |
|---|---|
| To eliminate long-term care hospitals, ensure that a hospital eligible for incentive payments has demonstrated an average length of stay of 25 days or less. | Automated – MS SLR will calculate the average length of stay for all hospitals. The calculation will be the total number of inpatient days divided by the total number of discharges. The application has a hard stop and will not allow the application to proceed if the average length of stay is greater than 25 days. |
| Ensure all eligibility information is verified at least on an annual basis.<br><br>Provider eligibility information is only going to be verified when the Provider requests a payment via the MS SLR. | Automated – MS SLR<br><br>Manual - Review of Provider supporting documentation |
| Verify the Provider has met the certified EHR requirements, through use of the ONC - certified EHR code and attached vendor contracts, purchase order, EULA or license agreement. | Automated - MS SLR<br><br>Manual verification is required to ensure the document attached is the type to which attestation is made. |
| Based on Provider type, assure the MU Core requirements have been attested to and are accurate. | Automated - MS SLR<br><br>Manual – review specific objectives, including CPOE, problem list and DOM security risk analysis questionnaire<br><br>*The DOM security risk analysis questionnaire can be found at www.medicaid.ms.gov |
| Based on Provider type, assure the proper number of MU Menu Item requirements have been attested to and are accurate. | Automated - MS SLR |

| Requirement | Automated State Level Registry System / Manual Process |
|---|---|
| Capture and verify clinical quality measures from each Provider. | Automated –MS SLR |
| Based on Provider type, assure the first year payment is accurately calculated. | Automated - MS SLR |
| Based on Provider type, assure the payment for years two through six are accurately calculated. | Automated - MS SLR |
| Assure a Provider does not receive incentive payments for more than six years. | Automated – CMS Registration & Attestation System and MS SLR |
| Assure a Provider does not receive duplicate payments for any given year. | Automated – CMS Registration & Attestation System and MS SLR |
| Ensure that each Provider that collects an EHR incentive payment has collected an incentive payment from only one state, even if the Provider is licensed to practice in multiple states. | Automated – CMS Registration & Attestation System and MS SLR |
| Assure payments are not made for any year starting after the year of 2015 unless the Provider has been provided payment for a previous year within the active program period. | Automated – MS SLR |

| Requirement | Automated State Level Registry System / Manual Process |
|---|---|
| Assure that Medicaid EHR incentive payments are made without reduction or rebate have been paid directly to a Provider or to an employer, a facility, or an eligible third-party entity to which the Medicaid Provider has assigned payments. | Automated – MS SLR |
| Ensure that any existing fiscal relationships with providers to disburse the incentive payments through Medicaid managed care plans does not result in payments that exceed 105 percent of the capitation rate, in order to comply with the Medicaid managed care incentive payment rules at §438.6(v)(5)(iii). | Does not apply to MS providers. Incentive payments are made directly to the provider. |
| Ensure that only appropriate funding sources are used to make Medicaid EHR incentives.<br><br>DOM apportions money from the proper account, via existing DOM accounting processes, before the money is disbursed. | Manual - MMIS and State accounting processes. |

#### 5.10.1.3 MMIS Automated Audits

The MMIS conducts automated audits before payment is generated in the MMIS. MMIS audits include:

- Verifying that the provider is affiliated with the payee in the MMIS Provider File to make a payment to the payee listed in the MS SLR. If this affiliation is not present, the provider will be notified of the error and will be given instructions on how to correct the problem;

- Verifying that the provider's Mississippi Medicaid ID is active; and
- (For EPs only) – Verifying that the EP's license is active and valid.

### 5.10.2 Financial Reporting

MPIP Financial Reporting is conducted through iTECH and the Bureau of Finance and Accounting by leveraging functions available in the MS SLR. The MS SLR incorporates reporting capabilities for the incentive payment program, including pre-payment verification activities, post-payment auditing activities, and incentive payment amounts by provider type. iTECH and the Bureau of Finance and Accounting utilize these reporting capabilities, in addition to guidance from the Final Rule, to report to CMS on oversight activities and financial activities.

DOM claims federal reimbursement in accordance with all applicable federal laws, regulations, and policy guidance. More specifically, the Bureau of Finance and Accounting has a process in place to ensure that its expenditures for administration of the MPIP will not be claimed at amounts higher than 90 percent of the cost of such administration. A separate reporting category, 039 SLR Incentive Payments, has been established to identify all direct costs related to the Medicaid EHR incentive payment program. This category of service is tracked throughout the following reports produced from the MMIS:

- RX045 – Final Payment Summary
- RX047 – Financial Transaction Summary
- RX048 – Medicaid Register by Provider Type
- RX051 – Preliminary Payment Summary
- RX053 – Remittance Activity Control Totals
- RX054 – Remittance Advice (RA)
- RX100 – Final Payment Estimation by Billing Provider
- RX124 – Weekly Category of Service Summary
- RX134 – New Financial Transactions Report
- RX141 – Financials by Category of Service
- RX241 – Monthly Financials by Category of Service
- RX245 – Monthly Final Payment Summary
- RX341 – Quarterly Financials by Category of Service

- RX345 – Quarterly Final Payment Summary

Administrative costs are determined based on our agency accounting records. Expenses related to HIT are designated with distinct reporting codes within the accounting system. Monthly and quarterly account reconciliations and preparation of the quarterly CMS-64 reports identify all administrative expenditures related to the Medicaid EHR incentive payment program, including any expenditure erroneously claimed at an amount higher than 90 percent. The Bureau of Finance and Accounting would take corrective action immediately if erroneous expenditures are identified.

The Bureau of Finance and Accounting also has a process in place to ensure that it does not claim amounts higher than 100 percent of the cost of such payments to providers. This control process will be supported by reports based on data extracted from MMIS and the MPIP MS SLR solution, which will be compared to estimated expenditures from the CMS-37.

Additional financial oversight reports include:

**Table 5-4: Additional Financial Oversight Reports**

| Report | Frequency |
|---|---|
| Reports showing payments pending by Provider. | Weekly and Monthly |
| Reports showing payments made by Provider. | Weekly and Monthly |
| Payment reconciliation reports to track payment by NPI/Provider ID from MS SLR to MMIS to MS SLR to the CMS Registration & Attestation System. | Weekly and Monthly.<br>Dollars in the payment calculation of MS SLR by Provider.<br>Dollars input in to the MMIS system by Provider.<br>Payments made by MMIS to Provider.<br>Payments reported to the MS SLR by Provider.<br>Payments reported to the CMS Registration & Attestation System by Provider. |
| Reports tracking the status of all applications in the redetermination or appeals processes. | Weekly and Monthly |
| CMS Report with number of providers by type and location using A/I/U. | Year One Report - Quarterly and Annually |
| Aggregated Tables for A/I/U. | Year One Report - Quarterly and Annually |
| CMS Report with number of providers by type and location using MU. | Year Two & beyond - Quarterly and Annually |

| Report | Frequency |
|---|---|
| Aggregated Tables for MU. | Year Two & beyond - Quarterly and Annually |
| Quantitative data on how the incentive payment program addressed individuals with unique needs, such as children. | Quarterly and Annually |

DOM will create additional reports as necessary to administer, manage, and monitor MPIP.

## 5.11 Audit Strategy

DOM began making payments to providers in May 2011. Since that time, DOM has conducted an ongoing evaluation of its verifications and Audit Strategy. As a result of this ongoing evaluation, DOM has determined that it will conduct pre-payment verifications of 100 percent of all provider attestations and will follow a rigorous pre-payment verification process. As noted above, certain pre-payment verifications are automated through the MS SLR, while other pre-payment verifications are manually completed by iTECH staff. The verification workflow begins after the provider completes registration and attestation. DOM has up to 60 days to verify the provider's eligibility and an additional 45 days to distribute payment. This 45-day period starts after payment authorization is confirmed through the Medicaid Payment Request Response Interface (D-16).

DOM Bureau of Compliance and Financial Audit (BCFA) staff members are responsible for conducting post-payment audits on behalf of DOM. BCFA staff members will leverage all existing data sources for post-payment verifications, including MMIS claims data for comparison to a provider's self-reported data.

Post-payment audits of providers that have attested to and been paid for A/I/U have already commenced. BCFA will begin conducting post-payment audits of providers that have attested to and been paid for MU in 2013. The post-payment MU audit strategy is included in Appendix J. Appendix J is marked as confidential and will not be released as part of the public document.

### 5.11.1 Pre-Payment Audits

DOM conducts pre-payment audits for A/I/U and MU on 100 percent of provider attestations using the process previously explained in Section 5.10.1.

### 5.11.2 Post- Payment Audits

DOM conducts post-payment audits for A/I/U and MU as outlined in Appendix J. Appendix J is a confidential document and will not be posted on public Websites.

DOM acknowledges that the Audit Strategy, including pre and post-payment verifications, for A/I/U and MU as outlined above and in Appendix J will need to be evaluated on a regular basis. In subsequent SMHP updates, DOM will include necessary revisions to the Audit Strategy, as a part of the Appendices, to reflect the level of risk encountered in attestation reviews and based on lessons learned as the MPIP proceeds.

### 5.11.3 Fraud and Abuse

Abuse is defined as provider practices that are inconsistent with sound fiscal, business or medical practices and result in unnecessary costs to DOM. Fraud is when the provider has the intent to deceive or misrepresent with knowledge that this deception could result in an unauthorized benefit. Fraud detection focuses on providers with intent to commit either a civil or criminal action for personal gain. Fraud and abuse prevention includes the previously described pre and post-payment verification and audit activities with additional investigation that starts at the conclusion of the initial pre and post-payment audit processes. When DOM determines that there is an issue related to payment that is more than a provider's mistake or error or negligence then the provider is referred to the Attorney General's Medicaid Fraud Control Unit (MFCU) for investigation. The MFCU has specific authority to investigate and prosecute Medicaid fraud and abuse using search warrants and administrative document request. The MFCU may determine settlements, obtain judgments and convictions and recover criminal and civil restitution, fines, penalties and costs.

#### 5.11.3.1 Recoupment

Xerox is in the process of developing and implementing the recoupment and adjustment functionalities within the MS SLR. DOM anticipates that by 2013 the MS SLR will have the ability to capture recoupment and adjustment information, including tracking recoupments/adjustments and flagging providers that have been paid improperly in previous program years.

Recoupments and adjustments of Medicaid EHR incentive payments will be handled in the same fashion as all other Medicaid claims. DOM will use its current recovery process (MS Code 43-13-121) to take corrective action regarding any improper payments to providers through the MPIP. DOM recognizes the need to repay CMS all FFP received by providers in the event of an improper payment, regardless of whether or not DOM has actually received the recoupment.

DOM plans to use the current MMIS functionality to track overpayments and will utilize MMIS negative payment files to facilitate the recoupment or adjustment of incentive payments. To date, DOM has not completed a recoupment or adjustment for any incentive payments that have been distributed.

## 5.12 Administrative Redetermination and Appeal Plan

This section of the SMHP describes the DOM appeals process regarding the MPIP appeal rights, the valid reasons for an appeal, and types of provider eligible for an appeal. The redetermination and appeal processes will proceed in accordance with the Mississippi state law and the Division of Medicaid State of Mississippi's Administrative Code Title 23, Part 300 – Appeals.

Specifically, Medicaid Providers can appeal if they believe that they have been incorrectly denied an incentive payment, or have received an incorrect payment amount because of an incorrect determination of eligibility, including but not limited to the following DOM decisions:

- Measuring patient volume;
- Demonstrating MU; and
- Efforts to adopt, implement, or upgrade to certified EHR technology.

The first step in the appeals process is for the provider to request an informal reconsideration prior to invoking a formal appeal. This can be achieved by contacting iTECH staff. iTECH staff may grant the provider the opportunity to make changes to their MS SLR information after the informal reconsideration process and discussion. If the reconsideration process results in a denial decision, MS DOM will provide a written notification of the denial action to the provider. The provider may then proceed in the appeals process by submitting a formal appeal to DOM at that time.

The provider may formally appeal the decision by filing a written notice for appeal with the Bureau of Administrative Appeals within 30 days of the written receipt of the adverse decision. State of Mississippi law requires that providers file a formal appeal in writing, detailing the reason for the appeal. DOM uses an internal system to track all appeals and all supporting documentation is stored on a secure server within DOM. The notice of appeal is considered filed when it is date stamped by the Bureau of Administrative Appeals. The notice must identify the issues being appealed, explain the reasons why the provider disagrees with the adverse decision, and include all supporting documentation.

DOM will manually update the status of all formal appeals in the MS SLR. This process allows DOM to maximize the benefits of using the existing system for all appeals and minimizes administrative costs of the program. Redeterminations will be an informal process and will be documented within the MS SLR or an internal system depending on when the redetermination request is made. Inquiry and reporting capability will be supported on all data collected within the MS SLR. All transactions within the MS SLR will be logged for monitoring, tracking, and audit purposes.

Appeals, audits, fraud and abuse administration and work will be supported by processes external to MS SLR and may take place at any point described above (Registration, Attestation, etc.). "Historical log" information will be stored in the MS SLR that documents the initiation, progress, and results of each appeal, audit, and recoupment or adjustment case. Mississippi has a substantial investment in staff training and systems designed to facilitate and track appeals, audits, fraud and abuse. Mississippi will leverage this investment to reduce the administrative cost of the EHR incentive payment program. Documentation generated during the process will be secure and readily available to DOM staff to assist in answering provider questions.

DOM has an existing relationship with the Mississippi Attorney General's Office Medicaid Fraud Control Unit and has incorporated this process as part of the MPIP oversight responsibilities.

The provider will receive a fair hearing in accordance with the Division of Medicaid State of Mississippi's Administrative Code Title 23, Part 300 – Appeals. DOM has not updated its appeals process since program inception, but may reserve the right to do so in subsequent SMHP updates based upon lessons learned and the number and type of appeals being filed and processed on an annual basis.

### 5.12.1 Miscellaneous Provider Issues and Complaints

DOM has established an e-mail address for provider issues and complaints. The e-mail account is monitored daily and distributed to the appropriate person to resolve the issue. Mississippi DOM assists providers in addressing all issues as quickly as possible. DOM will track the issue to its final resolution and will maintain a log of ongoing and resolved issues. DOM will summarize and categorize all provider issues received.

## 5.13 MPIP MS SLR Post Payment Processing

Whenever a provider's incentive payment is adjusted due to an audit finding, the state will notify CMS via a CMS Registration & Attestation System Medicaid Payment Adjustment Interface (D18 – payment adjustment/recoupment) transaction.

## 5.14 Quarterly Reporting to CMS

CMS implemented a standard report format for quarterly reporting on EHR Incentive Payment program measures of progress. DOM submits these quarterly reports directly to CMS on or before the required deadlines on the required CMS template. The template includes the following items:

- State System - Dates
    - Registration Implementation
    - AIU Attestation Implementation

  - Payments Implementation
  - Audits Implementation
  - MU Attestation
  - IAPD Expiration
- Provider Outreach – Number and Dates
  - Outreach Events
  - Phone Calls
  - Emails
- Auditing – Planned and Actual Dates
  - EP AIU Audits
  - EP MU Audits
  - EH Audits
- State-Specific SMHP Tasks – Planned and Actual Dates
  - Conduct Year One post payment audits and analysis
  - Finalize audit plan for Year Two MU and other program requirements
  - Receive CMS APD approval for eligibility determination remediation
  - Develop requirements/release RFP for interface to the State HIE and NwHIN
  - Create RFPs for NwHIN platform consulting, IV&V, and implementation vendors
  - Release MMIS system replacement RFP
  - Develop audit plan for year 2013 MU and other program requirements
  - Start development of required changes to the MS SLR
  - Share limited Medicaid data with local HIEs as agreed and requested (e.g., MSCHIE)
  - Finalize audit plan for year 2013 MU and other program requirements
  - Deploy ONC/ATCB-certified ASP version of MEHRS/eScript for all users
- Staffing Levels and Changes – Planned and Actual
  - Operational Staff
  - IT Staff
  - Auditing Staff
  - New Staff This Quarter
- EP/EH Counts and Amounts Paid (Total since start of program)
  - EP AIU Count
  - EP AIU Paid Amount
  - EP MU Count
  - EP MU Paid Amount
  - EH AIU Count
  - EH AIU Paid Amount
  - EH MU Count
  - EH MU Paid Amount
- Other Information
  - Additional tasks

# 6 HIT Roadmap

## 6.1 Major Activities and Milestones Moving from "As-Is" to "To-Be"

The following table shows the major activities and milestones to move DOM from the "As-Is" to the "To-Be" status. There are several recurring activities shown within the table that should be pointed out. These activities show only one quarter, but continue throughout the Milestone Schedule on a quarterly basis. The recurring activities include:

- *Implementation of MU for EH and EP* – Starting in the third quarter of FFY 2012, the MS SLR began accepting MU attestations. Although this is shown as a milestone that ended in Q3 of FFY2012, the MU functionality remains active in the MS SLR;
- *Post Payment Audit Implementation* – In the fourth quarter of FFY2012, the post payment audit program was initiated. As noted in Section 5 – Provider Incentive Program Blueprint, post payment audits have commenced for A/I/U attestations. Post payment audits will continue on a regular basis throughout the program; and
- *SMHP and IAPD Annual Updates* – Beginning in the second quarter of FFY2012, DOM has submitted annual updates of the SMHP and IAPD to CMS for approval. Annual SMHP updates include changes to the "As-Is" and "To-Be" landscape, policy changes to the MPIP, and a new HIT Roadmap. Annual IAPD updates outline the requested funds for implementing HIT initiatives outlined in the SMHP.

**Table 6-1: Master Milestones/Schedule**

| MILESTONE | START DATE | END DATE | STATUS |
|---|---|---|---|
| **System Procurement or Implementation** | | | |
| ***State Level Registry (SLR) Upgrades*** | ***Q2 FFY12*** | ***Q2 FFY14*** | |
| Meaningful Use UAT | Q2 FFY12 | Q2 FFY12 | Completed |
| Implementation of Meaningful Use for EH and EP | Q3 FFY12 | Q3 FFY12 | Completed |
| First EP Payments for Meaningful Use | Q3 FFY12 | Q3 FFY12 | Completed |
| Provider Training on Meaningful Use | Q4 FFY12 | Q4 FFY12 | Completed |
| Post Payment Audit Implementation | Q4 FFY12 | Q4 FFY12 | Completed |
| MMIS / SLR Payment Electronic Interface Implementation | Q4 FFY12 | Q4 FFY12 | Completed |
| SMHP Update for Stage 2 Final Rule Changes | Q1 FFY13 | Q1 FFY13 | Completed |
| Organization of EHR Unite (MEHRS and SLR) in iTECH | Q1 FFY13 | Q1 FFY13 | In Progress |
| SLR Release 2.4 - Stage 1 Changes for 2013 Implementation | Q1 FFY13 | Q1 FFY13 | Completed |
| SLR Release 2.5 | Q2 FFY13 | Q2 FFY13 | |

| MILESTONE | START DATE | END DATE | STATUS |
|---|---|---|---|
| SLR Release 2.6 | Q3 FFY13 | Q3 FFY13 | |
| SLR Functionality for Audit, Recoupment & Adjustment, and Appeals | Q3 FFY13 | Q3 FFY13 | |
| SLR Release 2.7 | Q4 FFY13 | Q4 FFY13 | |
| SLR Release 3.0 - Stage 2 Meaningful Use Implementation for EH | Q1 FFY14 | Q1 FFY14 | |
| SLR Release 3.1 - Stage 2 Meaningful Use Implementation for EP | Q2 FFY14 | Q2 FFY14 | |
| ***SMHP and IAPD Annual Updates*** | ***Q2 FFY12*** | ***Q1 FFY17*** | |
| ***Meaningful Use of MEHRS - Medicaid EHR Replacement*** | ***Q1 FFY13*** | ***Q1 FFY17*** | |
| Implementation and upgrade of MEHRS to ONC Certified EHR | Q2 FFY13 | Q2 FFY14 | |
| Interface MEHRS with MS-HIN to support DIRECT Project Interoperability | Q2 FFY13 | Q3 FFY13 | |
| Interface MEHRS with DOM Interoperability Platform for bi-directional data exchange | Q4 FFY13 | Q1 FFY14 | |
| Interface MEHRS to support ADT feeds from MS-HIN | Q1 FFY14 | Q1 FFY14 | |
| Interface MEHRS to support MIIX Immunization Data (Rhapsody Interface) | Q2 FFY14 | Q3 FFY14 | |
| Interface MEHRS to support laboratory results and radiology files from MS-HIN | Q3 FFY14 | Q4 FFY14 | |
| Interface MEHRS to support outbound CCD exchange to MS-HIN | Q4 FFY14 | Q1 FFY15 | |
| Interface with Louisiana HIE to support the use-cases for CCD exchange | Q2 FFY16 | Q2 FFY16 | |
| Interface with Tennessee HIE to support the use-cases for CCD exchange | Q2 FFY16 | Q2 FFY16 | |
| Interface with the DoD to support the exchange of CCDs | Q3 FFY16 | Q3 FFY16 | |
| Interface with VA to support the exchange of CCDs | Q3 FFY16 | Q3 FFY16 | |
| Interface with Alabama HIE to support the use-cases for CCD exchange | Q4 FFY16 | Q4 FFY16 | |
| Interface with Arkansas HIE to support the use-cases for CCD exchange | Q4 FFY16 | Q4 FFY16 | |
| Implement with I.H.S. to support use-cases for CCD | Q1 FFY17 | Q1 FFY17 | |
| **DOM Interoperability Platform Acquisition and Implementation** | | | |
| Procure Interoperability Staff | Q1FFY13 | Q3FFY13 | |
| Vendor analysis and review of offerings, including presentations, HIMSS meetings | Q2FFY13 | Q2FFY13 | |
| Write RFP for Interoperability Platform | Q3FFY13 | Q3FFY13 | |
| Open bids for vendors | Q3FFY13 | Q3FFY13 | |
| Evaluate bids for vendors | Q3FFY13 | Q3FFY13 | |
| Negotiate contract with vendor | Q3FFY13 | Q3FFY13 | |
| Implement Interoperability Platform | Q4FFY13 | Q1FFY14 | |
| Interface MEHRS with the Interoperability Platform to support bi-directional data exchange | Q4FFY13 | Q1FFY14 | |
| Interface to support ADT feeds from MS-HIN (Interoperability) | Q1FFY14 | Q1FFY14 | |
| Interface for the exchange of laboratory results and radiology (via CCD, MS-HIN, Interoperability) | Q3FFY14 | Q4FFY14 | |
| Interface to MEHRS to support outbound CCD exchange with MS-HIN | Q4FFY14 | Q1FFY15 | |
| Statistical reporting with the MSDH Patient Centered Medical Home | Q2FFY15 | Q3FFY15 | |

| MILESTONE | START DATE | END DATE | STATUS |
|---|---|---|---|
| Upgrade Interface to MS-HIN NwHIN from Rhapsody for MIIX immunization data | Q1FF16 | Q1FF16 | |
| Interface with Louisiana HIE to support the use-cases for CCD exchange | Q2FFY16 | Q2FFY16 | |
| Interface with Tennessee HIE to support the use-cases for CCD exchange | Q2FFY16 | Q2FFY16 | |
| Interface with the DoD to support the exchange of CCDs (MEHRS) | Q3FFY16 | Q3FFY16 | |
| Interface with VA to support the exchange of CCDs (MEHRS) | Q3FFY16 | Q3FFY16 | |
| Interface with Alabama HIE to support the use-cases for CCD exchange | Q4FFY16 | Q4FFY16 | |
| Interface with Arkansas HIE to support the use-cases for CCD exchange | Q4FFY16 | Q4FFY16 | |
| Implement with I.H.S. to support use-cases for CCD | Q1FFY17 | Q1FFY17 | |
| Interface to the new MES to support MEHRS clinical data exchange | Q2FFY17 | Q3FFY17 | |

## 6.2 Legislation

Based on work done for Mississippi's HIE SOP, the following State statutes may require review, analysis, and opinion from the State Attorney General or an appropriate designee:

- Mississippi Statute 41-21-97, Confidentiality of Hospital Records and Information; Exceptions

  This statute makes the "hospital records of and information pertaining to patients at treatment facilities or patients treated by physicians, psychologists…, licensed master social workers or licensed professional counselors" confidential. In relevant part, these records may only be released by the written authorization of the patient or "when necessary for the continued treatment of a patient."

  "Treatment facility" is defined under Mississippi Statue 41-21-61 as "a hospital, community mental health center, or other institution qualified to provide care and treatment for mentally ill, mentally retarded, or chemically dependent persons."

- Mississippi Department of Health, Part III Office of Health Protection, Subpart 01—Health Facilities Licensure and Certification, Chapter 40, Minimum Standards of Operation for Psychiatric Hospitals, Section 122 Patient Records (Psychiatric Hospital Standards)

  Section 122 of these regulations protects patient records created and maintained in psychiatric hospitals in the State of Mississippi. Provisions from this section that may impact the MS-HIN (and by extension, the State Medicaid HIT Plan) include the following:

  1. Section 122.02. Patient "records shall be kept confidential and only authorized personnel shall have access to the record."

2. Section 122.03. "The facility shall have written policies and procedures that protect the confidentiality of patient records and govern the disclosure of the information in the records. The policies and procedures shall specify the conditions under which information on applicants or patients may be disclosed and the procedures for releasing such information."

3. Section 122.04. This section states a patient or his or her authorized representative may consent to the release of information provided that written consent is given on a form containing the following information:

    - Name of the person;
    - Name of the program;
    - The name of the person, agency, or organization to which the information is to be disclosed;
    - The specific information to be disclosed;
    - The purpose for the disclosure;
    - The date the consent was signed and the signature of the individual witnessing the consent;
    - The signature of the patient, parent, guardian, or authorized representative; and
    - A notice that the consent is valid only for a specified period of time.

4. Section 122.06 requires every consent for release of information shall include the following in the patient's record:

    - The actual date the information was released;
    - The specific information released; and
    - The signature of the staff member who released the information.

## 6.3 Assumptions and Dependencies

The following assumptions and dependencies may affect the SMHP as described in this document:

- Assumptions - this plan assumes that:

    1. The DOM Interoperability Platform Acquisition and Implementation will be available for integration and testing per the schedule listed in the table "Master Milestones/Schedule" above;

2. Certification and implementation of EHR systems will be timely in keeping with the MPIP schedule; and

3. Medicaid EHR Replacement will occur according to the schedule listed in the table "Master Milestones/Schedule" above.

- Dependencies – this plan depends upon:

1. The SLR Upgrades activities listed in the table "Master Milestones/Schedule" above are dependent on Xerox's ability to meet the timeline dictated by the proposed release schedule.

## 6.4 Participation in the State Health Information Exchange (e.g., MS-HIN)

The structure for MS-HIN is set forth in Mississippi Statute. See Appendix F, HB 941. The governing body of MS-HIN is the Mississippi Health Information Network Board of Directors. DOM is a member of the MS-HIN Board of Directors and will work in partnership with MS-HIN, providing both leadership and funding support, as appropriate, to assure that Medicaid beneficiaries are best represented and served by MS-HIN.

DOM will work closely with both MS-HIN and the upgraded MEHRS/eScript System to ensure that each system supports broad, standards-based, interoperable environments to maximize DOM's investments in these efforts. Having this standards-based foundation allows DOM the greatest flexibility moving forward.

DOM expects the MPIP will encourage and advance the use and number of certified EHR systems available and functioning throughout the State. DOM will participate in MS-HIN and will closely coordinate with MS-HIN to align and leverage resources. Some of the anticipated activities include:

- Coordinating with the MS-HIN to use existing HIT infrastructure and services, such as offering the upgraded MEHRS/eScript System with integrated analytics, etc., when possible;
- Coordinating with MS-HIN to assist providers in achieving MU; and
- Coordinating with the State HIT Director, the REC (eQHealth Solutions), the Hinds Community College (Workforce Development), and Medicaid providers to disseminate information about MS-HIN, Provider adoption and incentive payments to providers.

## 6.5 Participation in the Nationwide Health Information Network

### 6.5.1 Alignment with MITA Mission, Goals, and Objectives

CMS expects that the SMHP will be fully aligned with MITA's mission, goals, and objectives that support the Medicaid mission and goals. MITA and Medicaid's mission and goals include:

- Adopt industry standards for data exchange;
- Develop seamless, integrated systems;
- Promote flexible, reusable, and adaptable environment;
- Support interoperability, integration, and an open architecture;
- Provide data that is timely, accurate, useable, and easily accessible;
- Support integration of clinical and administrative data;
- Provide performance measurement;
- Promote an enterprise view and efficient/effective data sharing;
- Coordinate with Public Health and other trading partners; and
- Promote secure data exchange.

MITA and Medicaid's mission and goals are also aligned with federal standards including the FHA and the NwHIN initiative. Furthermore, CMS expects that states will bring their business/technical capabilities in line with MITA Maturity Levels 3, 4, and 5, at which time states will agree on common data standards, jointly developed business services, and adopt NwHIN standards for interoperability and data.

- MITA Maturity Level 3[Clinical Data]: Data standards are adopted nationally. Shared repositories of data improve efficiency of access and accuracy of data used, resulting in better business process results.
- MITA Maturity Level 4[Clinical Data]: Access to standardized clinical data through regional data exchange enhances the decision-making process. With clinical evidence, decisions can be immediate, consistent, and decisive.
- MITA Maturity Level 5[National Interoperability/NwHIN]: Data exchange on a national scale optimizes the decision-making capabilities of the state agency.

DOM has targeted achievement of MITA Maturity Levels 3, 4, and 5 by adopting and aligning with federal standards, including NwHIN.

### 6.5.2 Nationwide Health Information Network

The NwHIN comprises the conventions, standards, and shared infrastructure necessary to facilitate the secure and interoperable exchange of electronic health information between organizations over the Internet. Much has already been accomplished to enable the exchange of clinical data, such as summaries between providers. Considerable infrastructure has already been defined at the national level to provide robust security, patient discovery, authentication and authorization, and auditing support. The NwHIN is a critical part of the national health IT agenda to improve population health by making it possible for health information to follow the consumer, be available for clinical decision making, and support appropriate use of health care information beyond direct patient care.

Technical and policy activities over the course of the next several years will expand the value of NwHIN standards, services, and trust fabric and extend the ability to securely exchange health information to a larger audience. This expansion will support providers wishing to achieve MU of CEHRT and qualify for incentives under the HITECH Act.

The ONC, along with federal agencies, state agencies, and HIEs, is facilitating the growth and connectivity to NwHIN. As such, compliance with NwHIN/FHA is an important element of the HIT Roadmap for the State of Mississippi.

NwHIN can facilitate the exchange of both clinical and administrative data between providers, payers, patients, and other health care professionals. Agencies involved in NwHIN include CMS, CDC, SSA, DoD, and VA. NwHIN supports a wide range of use cases for a wide range of users. A list of common NwHIN use-cases is provided below:

- Provider to Provider: Providing the ability to locate providers, send referrals, exchange patient medical history, and send messages for the administrative coordination of care.
- Provider to Patient: Providing the ability to send patient reminders, send patient medical history to a Personal Health Record (PHR), and to provide patient medical summaries to patients.
- Laboratory to Provider: Providing the ability to send lab results to providers and submit reportable lab results to public health.
- Provider to Federal Agencies: Providing the ability to send quality reports, surveillance reports, and more to federal agencies.
- Provider to Pharmacy: Providing the ability to send electronic prescriptions for medications and implement drug-drug, drug-allergy, and drug-formulary checks.
- Provider to Payer: Providing the ability to check eligibility, submit claims, receive prior authorization, and submit patient information.

The NwHIN initiatives include NwHIN Exchange, the Direct Project, and CONNECT. NwHIN Exchange and the Direct Project are separate sets of standards and protocols used for information exchange, while CONNECT is a set of software designed to facilitate information exchange with the NwHIN Exchange and the Direct Project specifications. NwHIN Exchange is meant to facilitate inter-HIE data exchange, while the Direct Project is meant to facilitate Intra-HIE data exchange. NwHIN Exchange is used for states or large Provider organizations to connect with the federal government and to communicate among HIEs.

The Direct Project is used for Provider-to-Provider messaging and communication among smaller health care organizations. CONNECT is a federally funded, Open Source software solution for NwHIN that allows for the secure and private exchange of health information. The CONNECT software, referred to as a CONNECT NwHIN Gateway, is the "on ramp" to the NwHIN network. However, the CONNECT software is not the only viable pathway to the NwHIN network.

DOM is coordinating with MS-HIN on Direct Project use-cases, including interoperability between the upgraded MEHRS/eScript system and MS-HIN to allow for physicians in either MS-HIN or the MEHRS/eScript solution to natively use their Direct Project messaging, in their existing system or workflow, to message one another (interoperability between MEHRS/eScript and MS-HIN providers using the Direct Project). DOM is also examining Direct Project messaging for MS-HIN providers to securely message DOM in regards to provider enrollment and other administrative transaction related questions for DOM.

### 6.5.3 NwHIN Gateways

In order to connect to the NwHIN, organizations can utilize an "NwHIN Gateway." An NwHIN Gateway is a set of interfaces, adapters, and subsystems that facilitates connection to, and exchange with, the NwHIN network. Existing NwHIN Gateways can be grouped into two basic categories:

1. CONNECT-compliant gateways; and
2. Proprietary NwHIN gateways.

DOM has a goal of integrating an Interoperability Platform, supporting NwHIN Exchange (CONNECT) into the DOM ecosystem. This Interoperability Platform, with full support of standards such as NwHIN Exchange, as well as support for other standards and protocols, will ensure coordination with the federal NwHIN initiative and connectivity among the providers, stakeholders, HIEs (both in the State of Mississippi and in other states), other State Medicaid agencies, and other entities associated with DOM and the State of Mississippi. DOM is coordinating with MS-HIN to allow for DOM to MS-HIN connectivity, using NwHIN standards

such as CONNECT, to allow for other Mississippi agencies to connect to MS-HIN or DOM and have access to both MS-HIN and DOM.

### 6.5.4 Coordination with NwHIN

The vision for DOM is a DOM Interoperability Platform, with integrated NwHIN Module, in full alignment with the goals and directions outlined in the SMHP and IAPD. The expectation of DOM is to fully align with federal HIT-enabled health reform(s), including CMS MITA missions, goals and objectives, while supporting the interoperable exchange of clinical and administrative data with DOM internal and external state trading partners, and the full support of MU in coordination with NwHIN.

DOM strategies have been developed in coordination with key stakeholders, including the emerging MS-HIN, MSDH, the Mississippi Insurance Department, and other State and federal trading partners.

The DOM Interoperability Platform should include:

- A comprehensive interoperability platform in compliance with CMS, CCIIO, and ONC and used for internal/external connectivity, including NwHIN Exchange;
- Support connectivity for bi-directional data exchange with MS-HIN;
- An ESB for connecting disparate DOM systems;
- Support (as needed) for the State of Mississippi connectivity to the Federal Data Services Hub;
- Support for the existing and future DOM MMIS/MES and eligibility system(s);
- Support for the upgraded MEHRS/eScript System; and
- Support for other State of MS agencies and stakeholders.

The foundation of the DOM Interoperability Platform should include:

- NwHIN Exchange;
- HL7 version 2.x and version 3 messaging;
- IHE profiles;
- Web services (SOAP or RESTful); and
- Others (HTTP/S, (M)LLP, FTP, DB, etc.).

The future vision for coordination with the NwHIN includes the acquisition of a DOM Interoperability Platform, with support for standards and protocols such as NwHIN Exchange, in a non-propriety deployment and architecture. The DOM Interoperability Platform may be used for connection to: federal agencies, including CMS; the statewide HIE (e.g., MS-HIN) and other

HIE initiatives, including other state's HIE initiatives; and other networks, including neighboring state Medicaid agencies and state agencies (State Departments of Health, etc.).

The DOM Interoperability Platform will also be utilized to connect to MS-HIN using standards and protocols such as NwHIN Exchange. Acquisition of a DOM Interoperability Platform will ensure DOM's ability to accomplish Medicaid-specific use cases (utilizing NwHIN and FHA standards). In addition, DOM will develop and continue the coordination of efforts with federal agencies, such as the SSA, CMS, CDC, VA, and DoD.

Based on the recommendation of ONC, DOM is migrating toward utilizing NwHIN and FHA standards to coordinate with Medicare and federally-funded, State-based programs as they become compliant with NwHIN and FHA standards.

### 6.5.5 Connectivity

DOM plans to include requirements for CONNECT NwHIN Exchange Gateway(s) Modules in the DOM Interoperability Platform in the future Medicaid Health IT architecture, in order to encourage connectivity between DOM, the statewide HIE (e.g., MS-HIN), neighboring HIEs and state agencies/departments, and federal agencies. DOM may use the integrated NwHIN Exchange Gateway(s) for the exchange of information with the following organizations, in alignment with ONC/FHA and NwHIN use case of "Provider to Payer" connectivity:

<u>The Mississippi Statewide HIE (MS-HIN):</u>

The DOM Interoperability Platform, and integrated NwHIN Module, can support connectivity and interoperability with MS-HIN and the Provider organizations within the HIE, including the Provider locations receiving EHR Incentive Payments from DOM. DOM has identified several use cases that the NwHIN to NwHIN (DOM to MS-HIN) connectivity model can support, including:

- Direct messaging interoperability between the upgraded MEHRS/eScript System and MS-HIN (HISP to HISP interoperability) to facilitate Direct messaging between MEHRS users, Medicaid providers, and MS-HIN users;
- Interoperability with the MSDH MIIX System, including feeding MIIX data into the upgraded MEHRS/eScript System;
- ADT Feed interoperability with MS-HIN to support MEHRS/eScript users and Medicaid providers;
- Laboratory Result interoperability with MS-HIN and MS-HIN connected laboratories, to support Medicaid providers and MEHRS users;
- Radiology Reports interoperability with MS-HIN and MS-HIN connected laboratories, to support Medicaid providers and MEHRS users;

- Interoperability to support the MSDH Patient Centered Medical Home (PCMH);
- Clinical data exchange with MS-HIN and MS-HIN users.

This DOM – MS-HIN connectivity can also be utilized to support:

- Other Mississippi State agencies and stakeholder connectivity and interoperability needs, such as MSDH, the Mississippi Department of Human Services (MDHS), the Mississippi Department of Mental Health (DMH), the Mississippi Department of Rehabilitative Services (MDRS), the Mississippi Department of Corrections (MDOC), the Mississippi Department of Revenue, and the Mississippi Department of Employment Security (MDES);
- Neighboring HIEs such as the Louisiana Statewide HIE, the Arkansas Statewide HIE, the Tennessee Statewide HIE, the Alabama Statewide HIE;
- Neighboring state agencies such as state Medicaid agencies, State Departments of Health; and
- Federal agencies such as the CMS, the Social Security Administration, the DoD, the VA, the CDC.

The benefits of employing an Interoperability Platform with an integrated NwHIN Gateway(s) Module for DOM are:

- The ability to interact with the aforementioned trading partners (MS-HIN, states, federal agencies, HIEs);
- The ability to leverage a standards-based platform (NwHIN Exchange with an NwHIN CONNECT compliant Gateway) for communication and interoperability;
- The ability to utilize NwHIN for both clinical and future administrative transactions with multiple trading partners; and
- A decrease in dependence on other entities to provide connectivity and interoperability with health care partners.

DOM is also planning on deploying an Agency-wide (Source of Truth) Enterprise Master Patient Index (eMPI) to provide patient matching and coordination of patient records and clinical data throughout DOM and across the DOM infrastructure, including for connectivity and interoperability with MS-HIN. As DOM is planning on deploying or has deployed several, disparate clinical and administrative technical infrastructure components, it is critical to have a single, master 'source of truth' patient identifier on DOM beneficiaries.

The DOM eMPI will allow for a limitation of duplicate beneficiary records, duplicate beneficiary clinical data and administrative data, and allow for more structure in the organization and storage of beneficiary data across the DOM infrastructure (including multiple clinical and administrative systems). Systems that would interface and utilize the DOM eMPI include the new MES, the upgraded MEHRS/eScript EHR, the Clinical Data Repository and Advanced

Analytics Engine, the DOM Interoperability Platform (and data exchange with MS-HIN, who also has an eMPI), and other various services and systems. Coordination and alignment of the DOM eMPI with the MS-HIN eMPI is critical, and will allow for streamlined and correctly matched beneficiary clinical data exchange between DOM and MS-HIN.

### 6.5.6 Integrating the Healthcare Enterprise Statement and Standards Integration to Drive MITA Compliancy

IHE was formed by the Healthcare Information and Management Systems Society (HIMSS) and the Radiological Society of North America (RSNA). IHE is an initiative by health care professionals to improve the way health care information is shared between systems and organizations around the world for the purpose of improving the overall quality of health care to patients. The mission of IHE is to achieve interoperability of systems through the precise definition of health care tasks, the specification of standards-based communication between systems required to support those tasks, and the testing of systems to determine that they conform to the specifications. IHE promotes the coordinated use of established standards such as DICOM and HL7 to address specific clinical need in support of optimal patient care.

IHE has developed a set of profiles (Integration Profiles) specifying a clear implementation path, including, but not limited to: IT infrastructure, Cardiology, Anatomic Pathology, Eye Care, Laboratory, Patient Care Coordination, Radiology, and Patient Care Devices. Integration Profiles describe how a workflow crossing multiple systems can be achieved using established standards. NwHIN core services are developed based on IHE profiles, especially IT Infrastructure.

IHE, in general, is a standard way to share EHRs between providers and major HIT or EHR systems that already are IHE compliant. IHE provides a proven solution to resolve health IT interoperability challenges. The following are some core IHE Integration Profiles enabling data sharing among disparate health information systems:

- PIX/PDQ (Patient Identifier Cross-Referencing and Patient Demographic Query): Allows systems to query a central master patient index for patient demographics and visit information;
- XDS (Cross-Enterprise Document Sharing): Queries/retrieves a list of clinical documents located within a health care community such as RHIO;
- XDR (Cross-Enterprise Document Reliable Interchange): Provides document interchange using a reliable messaging system. This permits document interchange between EHRs, PHRs, and other healthcare IT systems in the absence of a document sharing infrastructure such as XDS Registry and Repositories;
- XCPD (Cross-Community Patient Discovery): Locates communities for patients and correlates patient identifiers (PID);

- XCA (Cross-Community Access): Queries and retrieves data from partner communities;
- XUA (Cross-Enterprise User Authentication): Provides a means to communicate claims about the identity of an authenticated principal (user, application, and system) in transactions that cross enterprise boundaries;
- ATNA (Audit Trail and Node Authentication): Secures access control via secure nodes and request and retrieve audit logs from external communities;
- CT (Consistent Time): Ensures that system clocks and time stamps of computers in a network are well synchronized; and
- BPPC (Basic Patient Privacy Content): Supports a mechanism to record the patient privacy consent.

EHR systems supporting IHE profiles generally work together better, are easier to implement, and help providers utilize information more efficiently. According to IHE.net, an IHE profile is a technical definition or standard that provides "a common language for purchasers and vendors to discuss the integration needs of healthcare sites and the integration capabilities of healthcare IT products." To ensure that EHR systems comply with IHE profiles, the IHE hosts "connectathons" to permit vendors to showcase their systems and technology as an IHE compliant vendor.

Many EHR vendors and HIE vendors and suppliers worldwide, including foreign nations, are participating in the IHE workgroups and adopting IHE standards. As participation and adoption of IHE standards and profiles grow, so does the ability for disparate systems and infrastructures to interface, integrate, and communicate data freely.

The State of Mississippi has providers with multiple, diverse EHR systems; therefore, it is critical for DOM to adopt standards, profiles, and an overall interoperable infrastructure to support clinical and administrative data exchange between DOM and the State of Mississippi HIE (MS-HIN) stakeholders and other trading partners. By implementing and integrating standards, profiles, and interoperable infrastructure/technologies (includingHL7/IHE/HITSP/NwHIN standards, profiles, and technologies), DOM will drive towards and migrate upwards to the higher levels of MITA and MITA compliance. Accordingly, DOM plans to incorporate standards, profiles, and interoperable infrastructure such as HL7, IHE, HITSP and NwHIN.

## 6.6 Meaningful Use Provisions with Exchange Components

The table below enumerates each of the MU provisions described in the Final Rule. The table is developed based on "CMS 45 CFR Part 170 (Health Information Technology: Initial Set of Standards, Implementation Specifications, and Certification Criteria for Electronic Health Record Technology; Final Rule)." Column 2 indicates whether the MU criteria can be supported by NwHIN Exchange or by local health information systems (e.g., EMR or EHR). Column 3 identifies

relevant standards to the MU criteria. Most are based on the recommended standards mentioned in the final rule. Some advanced (well-developed) standards are recognized as relevant standards, which can be supported by NwHIN Exchange.

**Table 6-2: MU Provisions**

| Criteria | NwHIN or Local | Relevant Standards | Comments |
|---|---|---|---|
| Core Provision | | | |
| CPOE | Local | TBD | Lower priority than other exchanges; phase 1 requirement is only for entering order into system, not to transmit them. |
| Adverse event clinical decision support (drug-drug/drug-allergy check). | Local | TBD | |
| E-prescribing | NwHIN | NCPDP; HL7 | |
| Record demographics. | Local | | |
| Current diagnoses. | NwHIN | HITSP C32 | Access to clinical summaries is part of NwHIN. |
| Maintain active medications/allergies. | Local | | |
| Record and chart changes. | Local | | |
| Record smoking status. | Local | | |
| Implement one CDS rule. | Local | | |
| Submit quality reports. | NwHIN | PQRI 2009 Registry XML Specification, QRDA (recognized as relevant standard) | Base on PQRI work done to date; assume push of data for time being, no query/retrieve support required. |
| Provide patients a copy of their electronic health information. | NwHIN or Local | Structured: HITSP C32 et al. Unstructured: HITSP C62 | Use NwHIN if patient uses PHR service Provider to maintain data; messaging-based standards may apply for some exchanges. |
| Summary of care for each transition of care and referral (discharge summaries). | NwHIN | HL7 CCD (Standard) HITSP C32 (Implementation Specification) et. al. | Already supported by NwHIN. |
| Capability to exchange key clinical information (coordination). | NwHIN | Structured: HITSP C32 et. al. Unstructured: HITSP C62 | Already supported by NwHIN; messaging-based standards may apply for some exchanges. |
| Appropriate security and privacy. | NwHIN | | Not technically an exchange, but the NwHIN must provide the appropriate trust fabric to support the MU provisions. Currently NwHIN Exchange |

| | | | |
|---|---|---|---|
| | | | uses a system-level trust model, and should be reviewed to ensure that MU requirements are accommodated. |
| Menu Provision | | | |
| Drug-formulary checks. | Local | | |
| Record advance directives. | Local | | |
| Retrieve lab results. | NwHIN | HITSP C36 (HL7 v2.5.1 message-based); HITSP C37 (clinical document architecture exchange). | Need to determine how HL7 v2 messaging can be transported over NwHIN Web services. |
| Generate lists of conditions. | Local | | NwHIN support for analytic queries down the road may be helpful. |
| Patient reminders. | Local | | |
| Timely electronic access/ clinical summaries for each visit. | NwHIN or Local | Structured: HITSP C32 et al. Unstructured: HITSP C62 | Use NwHIN if patient uses PHR service Provider to maintain data; messaging-based standards may apply for some exchanges. |
| Patient education. | Local | | |
| Medication reconciliation. | Local | | Complete set of data for reconciliation may require exchange to receive medical history from other providers. |
| Summary of care for each transition of care and referral (discharge summaries). | NwHIN | HL7 CCD (Standard) HITSP C32 (Implementation Specification) et. al. | Already supported by NwHIN. |
| Submit data to immunization registries. | NwHIN | HITSP C72 (HL7 bv.2.3.1)/C78 | Upgrade available based on HL7 v2.5.1. |
| Submit reportable lab results to public health agencies. | NwHIN | CDC Implementation Guide (based on HL7 v.2.5.1) | |
| Provide electronic syndromic surveillance. | NwHIN | HL7 v2.3 and v2.5.1, GIPSE (recognized as next generation standard) | Already implemented in CDC pilot. |

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## Appendix A: Acronyms

| Acronym | Stands For: |
|---|---|
| A/I/U | Adopt, Implement or Upgrade |
| ACO | Accountable Care Organization |
| ADT | Admission, Discharge, Transfer |
| ARRA | American Recovery and Reinvestment Act |
| ATNA | Audit Trail and Node Authentication |
| BPPC | Basic Patient Privacy Content |
| BFCA | Bureau of Compliance and Financial Audit |
| BIP | Broadband Initiatives Program |
| BTOP | Broadband Technology Opportunities Program |
| CAH | Critical Access Hospital |
| CCD | Continuity of Care Document |
| CCHIT | Certification Commission for Health Information Technology |
| CDC | Centers for Disease Control and Prevention |
| CEHRT | Certified Electronic Health Record Technology |
| CFHC | Coastal Family Health Center |
| CMS | Centers for Medicare and Medicaid Services |
| COTS | Commercial Off the Shelf |
| CPOE | Computerized Physician Order Entry |
| CQM | Clinical Quality Measures |
| CT | Consistent Time |
| DMH | Mississippi Department of Mental Health |
| DOC | Department of Commerce |

| Acronym | Stands For: |
|---|---|
| DoD | Department of Defense |
| DOM | State of Mississippi Division of Medicaid |
| e-BEAT | Extension Broadband Education and Adoption Team |
| EFT | Electronic Funds Transfer |
| EH | Eligible Hospital |
| EHR | Electronic Health Record |
| eMPI | Enterprise Master Patient Index |
| EMR | Electronic Medical Record |
| EP | Eligible Professional |
| ESB | Enterprise Service Bus |
| EULA | End User License Agreement |
| FCC | Federal Communications Commission |
| FFP | Federal Financial Participation |
| FFY | Federal Fiscal Year |
| FHA | Federal Health Architecture |
| FQHC | Federal Qualified Health Center |
| HDS | Health Data System |
| HHS | Department of Health and Human Services |
| HIE | Health Information Exchange |
| HIPAA | Health Insurance Portability and Accountability Act |
| HIT | Health Information Technology |
| HITECH | Health Information Technology for Economic and Clinical Health |
| HIX | Health Insurance Exchange |

| Acronym | Stands For: |
|---|---|
| HL7 | Health Level Seven |
| IAPD | Implementation Advanced Planning Document |
| ICD-10 | International Classification of Diseases |
| IHE | Integrating the Healthcare Enterprise |
| IT | information technology |
| iTECH | Office of Information Technology Management |
| ITS | Information Technology Services |
| LTE | Long Term Evolution |
| MBCC | Mississippi Broadband Connect Coalition |
| MDES | Mississippi Department of Employment Security |
| MDHS | Mississippi Department of Human Services |
| MDOC | Mississippi Department of Corrections |
| MDRS | Mississippi Department of Rehabilitative Services |
| MEHRS | Medicaid Electronic Health Record System |
| MES | Mississippi Enterprise System |
| MHA | Mississippi Hospital Association |
| MID | Mississippi Insurance Department |
| MIIX | Mississippi Immunization Information Exchange System |
| MITA | Medicaid Information Technology Architecture |
| MMIS | Medicaid Management Information System |
| MPIP | Mississippi Provider Incentive Program |
| MS SLR | Mississippi State Level Registry |
| MSCHIE | Mississippi Coastal Health Information Exchange |

| Acronym | Stands For: |
|---|---|
| MSDH | Mississippi Department of Health |
| MS-HIN | Mississippi Statewide Health Information Network |
| MTOM | WS Message Transmission Optimization Mechanism |
| MU | Meaningful Use |
| NCPDP | National Council for Prescription Drug Programs |
| NwHIN | Nationwide Health Information Network |
| NPI | National Provider Identifier |
| NTIA | National Telecommunications and Information Administration |
| OAT | Office for Advancement of Telehealth |
| ONC | Office of the National Coordinator for Healthcare Information Technology |
| PHR | Personal Health Record |
| PIX | Patient Identifier Cross-Referencing |
| PDQ | Patient Demographic Query |
| REST | Representational State Transfer |
| RFP | Request for Proposals |
| RHC | Rural Health Clinic |
| RHIO | Regional Health Information Organization |
| SaaS | Software as a Service |
| SLR | State Level Registry |
| SMHP | State Medicaid Health Information Technology Plan |
| SOP | Strategic and Operational Plan |
| UDDI | Universal Description, Discovery and Integration |
| UMMC | University of Mississippi Medical Center |

| Acronym | Stands For: |
|---|---|
| VA | Veterans Administration |
| VLER | Virtual Lifetime Electronic Record |
| WS-I | Web Services Interoperability |
| XCA | Cross-Community Access |
| XCPD | Cross-Community Patient Discovery |
| XDR | Cross-Enterprise Document Reliable Interchange |
| XDS | Cross-Enterprise Document Sharing |
| XSLT | Extensible Stylesheet Language Transformation |
| XUA | Cross-Enterprise User Authentication |

## Appendix B: Glossary

| Term | Definition |
|---|---|
| 4010 Format | The current version of the HIPAA electronic transaction standards. |
| 5010 Format | The new version of the 4010 Format, and required to be in use by January 1, 2012. http://www.ama-assn.org/ama/pub/physician-resources/solutions-managing-your-practice/coding-billing-insurance/hipaahealth-insurance-portability-accountability-act/transaction-code-set-standards/version-5010-electronic.page? |
| 501(c)(3) | Tax-exempt charitable organizations and non-profits - http://www.irs.gov/charities/charitable/article/0,,id=96099,00.html. |
| Adopt, Implement, or Upgrade (A/I/U) | Defined in CMS regulations at 42 CFR 495.302 as (1) Acquire, purchase, or secure access to certified EHR technology; (2) Install or commence utilization of certified EHR technology capable of meeting meaningful use requirements; or (3) Expand the available functionality of certified EHR technology capable of meeting meaningful use requirements at the practice site, including staffing, maintenance, and training, or upgrade from existing EHR technology to certified EHR technology per the ONC EHR certification criteria. |
| Allscripts | Vendor providing ePrescribing via the eScript solution with support for drug interactions and contraindications |
| American Recovery and Reinvestment Act (ARRA) | An economic stimulus package enacted by the 111th Congress in February 2009, commonly referred to as the Stimulus or The Recovery Act. |
| Authentication | Authentication is a method or methods employed to prove that the person or entity accessing information has the proper authorization. Generally used to protect confidential information and network or application access. |
| Authorization | Authorization is a system established to grant access to information. Authorization also establishes the level of access an individual or entity has to a data set and includes a management component—an individual or individuals must be designated to authorize access and manage access once access is approved. |
| Broadband | A medium that can carry multiple signals, or channels of information, at the same time without interference. Broadband Internet connections enable high-resolution videoconferencing and other applications that require rapid, synchronous exchange of data. |
| Centers for Disease Control and Prevention (CDC) | Centers for Disease Control and Prevention - http://www.cdc.gov/ |
| Centers for Medicare and Medicaid Services (CMS) | Centers for Medicare and Medicaid Services - http://www.cms.gov/ |
| Certification Commission for Health Information Technology (CCHIT) | A private not-for-profit organization functioning as an ONC-Authorized Testing and Certification Body of electronic health records. |
| Children's Health Insurance Program (CHIP) | http://www.cms.gov/home/chip.asp |

| Term | Definition |
|---|---|
| Comprehensive Health Insurance Risk Pool Association | Comprehensive Health Insurance Risk Pool Association - http://www.mississippihealthpool.org/ |
| Computerized Physician Order Entry (CPOE) | Computer-based systems that automate and standardize the clinical ordering process in order to eliminate illegible, incomplete, and confusing orders. CPOE systems typically require physicians to enter information into predefined fields by typing or making selections from on-screen menus. CPOE systems often incorporate, or integrate with, decision support systems. |
| Continuity of Care Document (CCD) | An electronic document exchange standard for sharing patient summary information, including the most commonly needed pertinent information about current and past health status in a form that can be shared by all computer applications, such as Web browsers and EMR/EHR software systems. |
| CONNECT NwHIN Gateway | Open Source Implementation of NwHIN Exchange - http://www.connectopensource.org/ |
| CORE Phase II Certified | Certification for HIPAA EDI Transaction Types - http://www.caqh.org/CORE_phase2.php. |
| Critical Access Hospital (CAH) | A hospital that is certified to receive cost-based reimbursement from Medicare. The reimbursement that CAHs receive is intended to improve their financial performance and thereby reduce hospital closures. |
| Data Warehouse (DW) | A large database that stores information like a data repository but goes a step further, allowing users to access data to perform research-oriented analysis. |
| Decision Support System (DSS) | A computer-based information system that supports business or organizational decision-making activities intended to help decision makers compile useful information from a combination of raw data, documents, personal knowledge, or business models to identify and solve problems and make decisions. |
| De-identified health information | De-identified health information consists of individual health records with data redacted or edited to prevent it from being associated with a specific individual. See the HIPAA Privacy Rule for de-identification guidelines. The term is defined at 45 C.F.R. § 160.103. |
| Department of Defense (DoD) | Department of Defense - http://www.defense.gov/ |
| Department of Health and Human Services (HHS) | United States Department of Health and Human Services - http://www.hhs.gov/ |
| EA Server | Server enabling existing applications to leverage SOA architectures, J2EE, and CORBA. |
| EDIFECS Certified | EDIFECS Certified - http://www.edifecs.com/ |
| Electronic Data Interchange (EDI) | Electronic Data Interchange – The electronic transmission of structured data between organizations. |
| EHNAC Accredited | Electronic Healthcare Network Accreditation Commission - http://www.ehnac.org/ |

| Term | Definition |
|---|---|
| Enterprise Master Patient Index (eMPI) | Master Patient Indices link smaller organizational level MPIs together to identify, match, merge, de-duplicate, and clean patient records to create a clear view of a patient's medical record. |
| Electronic Health Record (EHR) | An electronic record of health-related information on an individual that conforms to nationally recognized interoperability standards that can be created, managed, and consulted by authorized clinicians and staff across more than one health care organization. |
| Electronic Medical Record (EMR) | An electronic record of health-related information for an individual that can be created, gathered, managed, and consulted by authorized clinicians and staff within one health care organization. |
| Envision | Mississippi's HIPAA compliant Medicaid Management Information System (MMIS) developed by Affiliated Computer Systems (ACS). |
| e-prescribing | Practice in which drug prescriptions are entered into an automated data entry system (handheld, PC, or other), rather than handwriting them on paper. The prescriptions can then be printed for the patient or sent to a pharmacy via the Internet or other electronic means. https://www.cms.gov/eprescribing/ |
| Federal Health Architecture (FHA) | A collaborative body composed of several federal departments and agencies, including the Department of Health and Human Services (HHS), the Department of Homeland Security (DHS), the Department of Veterans Affairs (VA), the Environmental Protection Agency (EPA), the United States Department of Agriculture (USDA), the Department of Defense (DOD), and the Department of Energy (DOE). FHA provides a framework for linking health business processes to technology solutions and standards, and for demonstrating how these solutions achieve improved health performance outcomes. |
| Federally Qualified Health Center (FQHC) | A health center that receives cost-based reimbursement for Medicare and Medicaid patients as a mechanism to increase primary care services to high risk populations in underserved areas. |
| Formulary | A list of medications (both generic and brand names) that are covered by a specific health insurance plan or pharmacy benefit manager (PBM), used to encourage utilization of more cost-effective drugs. Hospitals sometimes use formularies of their own, for the same reason. |
| Geocoded Interoperable Population Summary Exchange (GIPSE) | GIPSE is a data format created by the U.S. Centers for Disease Control and Prevention (CDC) to allow the electronic exchange of health condition/syndrome summary data that has been stratified by a number of variables, including geography. GIPSE data will be utilized by public health agencies in the U.S. to conduct situational awareness, including early event detection and monitoring, for potential public health events. |
| GrabIt | A tool provided by ACS that is able to search, read and download binary files |
| Health Information Technology (HIT) | The application of information processing involving both computer hardware and software that deals with the storage, retrieval, sharing, and use of health care information, data, and knowledge for communication and decision-making. |

| Term | Definition |
|---|---|
| Health Information Technology for Economic and Clinical Health Act (HITECH) | Legislation enacted under Title XIII of the American Recovery and Reinvestment Act (ARRA) of 2009. The purpose of HITECH was to promote spending to expand adoption rates of HIT. |
| Health Information Exchange (HIE) | The electronic movement of health-related information among organizations according to nationally recognized standards. Health Information Exchange is a term commonly used to describe a Regional Health Information Organization (RHIO). The notion of HIE is the precursor to RHIO and is used interchangeably when discussing RHIO. |
| Health Insurance Exchange (HIX) | As part of the Affordable Care Act (ACA), states are to establish, implement and operate a Health Insurance Exchange by January 1, 2014 that acts as a marketplace for individuals seeking affordable insurance options. http://www.healthcare.gov/news/blog/health_insurance_exchanges.html |
| Health Insurance Portability and Accountability Act of 1996 (HIPAA) | A federal law intended to improve the portability of health insurance and simplify health care administration. HIPAA sets standards for electronic transmission of claims-related information and for ensuring the security and privacy of all individually identifiable health information. http://www.hhs.gov/ocr/privacy/ |
| Health Level 7 (HL7) | HL7 is one of several American National Standards Institute (ANSI)-accredited standards-developing organizations operating in the health care arena. Health Level 7's domain is clinical and administrative data. |
| Healthcare Information Technology Standards Panel (HITSP) | Sponsored by ANSI under a contract from ONC, HITSP is a public/private partnership dedicated to facilitating the harmonization of consensus-based standards necessary to enable the widespread interoperability of health care information in the United States. |
| Indian Health Service (HIS) | Indian Health Service - http://www.ihs.gov/ |
| Integrating the Healthcare Enterprise (IHE) | An initiative by healthcare professionals and industry to improve the way computer systems in healthcare share information. IHE promotes the coordinated use of established standards such as DICOIM and HL7 to address specific clinical needs in support of optimal patient care. |
| Interoperability | HIMSS' definition of interoperability is "ability of health information systems to work together within and across organizational boundaries in order to advance the effective delivery of healthcare for individuals and communities." For further information, visit HIMSS Interoperability Definition and Background (PDF). |
| Java Surveillance Utilization Review System (J-SURS) | A suite of claims-based, data mining software applications designed to identify potentially fraudulent or abusive practices by both those who provide and receive healthcare service. |
| Meaningful Use (MU) | Meaningful Use - https://www.cms.gov/EHRIncentivePrograms/30_Meaningful_Use.asp |

| Term | Definition |
|---|---|
| Medicaid Information Technology Architecture (MITA) | A federal, business-driven initiative that affects the Medicaid enterprise in all states by improving Medicaid program administration, via the establishment of national guidelines for processes and technologies. MITA is a common business and technology vision for state Medicaid organizations that supports the unique needs of each state. https://www.cms.gov/MedicaidInfoTechArch/ |
| Mississippi Coastal Health Information Exchange (MSCHIE) | The predecessor HIE to MS-HIN. |
| Mississippi Coordinated Access Network (MississippiCAN) | A Coordinated Care Program for Mississippi Medicaid beneficiaries to improve access to needed medical services, improve quality care, and improve efficiencies and cost effectiveness. |
| Mississippi Department of Employment Security (MDES) | Mississippi Department of Employment Security - http://www.mdes.ms.gov/ |
| Mississippi Department of Human Services (MDHS) | Mississippi Department of Human Service - http://www.MDHS.state.ms.us/ |
| Mississippi Department of Mental Health (DMH) | Mississippi Department of Mental Health - http://www.dmh.state.ms.us/ |
| Mississippi Department of Rehabilitation Services (MDRS) | Mississippi Department of Rehabilitation Services - http://www.mdrs.state.ms.us/ |
| Mississippi Division of Medicaid | Mississippi Division of Medicaid - http://www.medicaid.ms.gov/ |
| Mississippi Health Information Network (MS-HIN) | The Mississippi Health Information Exchange. |
| Mississippi Information Technology Services (ITS) | Mississippi Information Technology Services - http://www.its.ms.gov/ |
| Mississippi Insurance Department (MID) | Mississippi Insurance Department - http://www.mid.state.ms.us/ |
| Mississippi State Department of Health (MSDH) | Mississippi State Department of Health - http://www.msdh.state.ms.us/ |
| Nationwide Health Information Network (NwHIN) | The federal government's program to implement a national interoperable system for sharing electronic medical records or EMRs (a.k.a. electronic health records or EHR). NwHIN describes the technologies, standards, laws, policies, programs and practices that enable health information to be shared among health decision makers, including consumers and patients, to promote improvements in health and healthcare. The development of a vision for the NwHIN began more than a decade ago with publication of an Institute of Medicine report, "The Computer-Based Patient Record". http://healthit.hhs.gov/portal/server.pt/community/healthit_hhs_gov__nationwide_health_information_network/1142 |

| Term | Definition |
|---|---|
| National Coordinator for Health Information Technology (ONC) | Previously referred to as ONCHIT, ONC provides leadership for the development and nationwide implementation of an interoperable health information technology infrastructure to improve the quality and efficiency of health care and the ability of consumers to manage their care and safety. http://healthit.hhs.gov/portal/server.pt/community/healthit_hhs_gov__home/1204 |
| NwHIN Direct (Direct Project) | Provides point-to-point messaging over NwHIN between providers and other healthcare related organizations – http://directproject.org |
| NwHIN Exchange | Provides system level (entity to entity) connectivity over NwHIN – NwHIN Exchange Specification (http://exchange-specifications.wikispaces.com/) |
| NwHIN Exchange Gateway | An implementation of NwHIN Exchange Specifications and Profiles. |
| Personal Health Record (PHR) | An electronic record of health-related information on an individual that conforms to nationally recognized interoperability standards and that can be drawn from multiple sources while being managed, shared, and controlled by the individual. |
| Pharmacy Benefit Management (PBM) | A third party administrator of prescription drug programs primarily responsible for processing and paying prescription drug claims. They also are responsible for developing and maintaining the formulary, contracting with pharmacies, and negotiating discounts and rebates with drug manufacturers. |
| Physician Quality Reporting Initiative (PQRI) | A voluntary program that provides a financial incentive to physicians and other eligible professionals whoprofessionals who successfully report quality data related to services provided under the Medicare Physician Fee Schedule (MPFS). |
| Portal | A Web site that offers a range of resources, such as e-mail, chat boards, search engines, and content. |
| Prospective Payment System | A payment mechanism for reimbursing hospitals for inpatient health care services in which a predetermined rate is set for treatment of specific illnesses. The system was originally developed by the U.S. federal government for use in treatment of Medicare recipients. |
| Provider | A provider is an individual or group of individuals who directly (primary care physicians, psychiatrists, nurses, surgeons, etc) or indirectly (laboratories, radiology clinics, etc) provide health care to patients.<br>In the case of this SMHP and the MPIP, provider refers to both Eligible Professionals (EPs) and Eligible Hospitals (EHs). |
| Public Health | Public health is the art and science of safeguarding and improving community health through organized community effort involving prevention of disease, control of communicable disease, application of sanitary measures, health education, and monitoring of environmental hazards. |
| Quality Reporting Document Architecture (QRDA) | The emerging quality reporting architecture, based upon the HL7 CDA document. |
| Real-Time Innovations (RTI) | A company that develops a middleware solution. |

| Term | Definition |
|---|---|
| Regional Extension Center (REC) | An organization that has received funding under the Health Information Technology for Economic and Clinical Health Act to assist health care providers with the selection and implementation of electronic health record technology. |
| Regional Health Information Organization (RHIO) | A health information organization that brings together health care stakeholders within a defined geographic area and governs health information exchange among them for the purpose of improving health and care in that community. |
| Rural Health Clinic (RHC) | A clinic certified to receive special Medicare and Medicaid reimbursement, intended to increase primary care services for Medicaid and Medicare patients in rural communities. |
| Secure Sockets Layer (SSL) | A cryptographic protocol that enables secure communication over the internet. |
| Shared Health | A vendor providing DOM with MEHRS/eScript products. |
| Software as a Service (SaaS) | A business model for software delivery in which software is hosted in the cloud and accessed by users through a client. |
| Stakeholder | A stakeholder is any organization or individual that has a stake in the exchange of health information, including health care providers, health plans, health care clearinghouses, regulatory agencies, associations, consumers, and technology vendors. |
| Telehealth | The use of telecommunications and information technology to deliver health services and transmit health information over distance. Sometimes called telemedicine. |
| Telemedicine | The use of telecommunications and information technology to deliver health services and transmit health information over distance. Sometimes called telehealth. |
| Transaction Types (EDI) | 270/271 – EDI Healthcare Eligibility/Benefit Inquiry (270) and EDI Healthcare Eligibility/Benefits Response (271)<br>276/277/277U – EDI Healthcare Claim Status Request (276) and EDI Healthcare Claim Status Notification (277)<br>278 – EDI Healthcare Service Review Information (278)<br>820 – EDI Payroll Deducted and other group Premium Payment for Insurance Products (820)<br>834 – EDI Benefit Enrollment and Maintenance Set (834)<br>835 – EDI Healthcare Claim Payment/Advice Transaction Set<br>837P/D/I – EDI Healthcare Claim Transaction Set (837), Professional (P), Dental (D), and Institutional (I) |
| Transmission Control Protocol and Internet Protocol (TCP/IP) | Commonly known together as the Internet Protocol Suite. |

| Term | Definition |
|---|---|
| Vendors | Vendors are organizations that provide services and supplies to other organizations. In the context of health information exchange, the term usually refers to technology vendors who provide hardware or software, such as electronic health records, e-prescribing technology, or security software. |
| Veteran's Affairs | Veteran's Affairs - http://www.va.gov/ |
| Virtual Private Network | Provides secure and remote access to a private Local Area Network via the Internet or other networks. |
| Xerox | Vendor providing the Medicaid Management Information System (MMIS) to provide core administrative capabilities for DOM. Xerox also provides the MS SLR for tracking provider attestations to the MPIP. |

# Appendix C: HIE Readiness Assessment Focus Group Results

## HIE Readiness Assessment Focus Group Results

The HIE Readiness Assessment was conducted in June 2010 for the Mississippi Department of Information Technology Services (ITS) for its Strategic and Operational Planning (SOP) effort. The assessment included interviews with representatives of 27 facilities across Mississippi that were conducted with a cross section of urban and rural facilities, including both clinics and hospitals. This assessment was aimed primarily at gathering information from hospitals but included certain other entities, such as hospital clinics, FQHCs, and the Indian Tribe.

Two provider focus group meetings were conducted in Mississippi on August 18th and 19th, 2010. The 18th meeting was held in Jackson and had 20 participants representing 12 different providers. The 19th meeting was conducted in Hattiesburg and had 21 participants representing 9 different providers.

Each group was asked the same basic question set. Based on the responses to the basic questions, additional follow up questions were asked for clarification and additional information. The results of each focus group were similar. Therefore, these results are combined and shown as a collective response.

*Question 1 – How many participants are using an Electronic Health Record application?*

- 11 out of 20 in Jackson.
- 12 out of 21 in Hattiesburg.

*Question 2 – What EHR application are you using?*

- Allscripts
- Relay Health
- Greenway
- Epic associated with tertiary hospital
- Practice Works

*Question 3 – How long have you been using the EHR application?*

Most were relatively recent acquisitions with two (2) years being the longest for three (3) providers.

*Question 4 – Describe your experience with EHR technology to date.*

- On All Scripts (3 different responders).
  - Older physicians not as happy as younger physicians as their work flow is altered
  - Of 25 total physicians, 9 are fully using it while the rest are adjusting to the new system
  - One group was dissatisfied and looking to convert to tertiary hospital system
- Greenway user is having a positive experience and sees definite cost savings. No lost charts.
- Billing has become easier.
- Recent move to EPIC, 240+ physicians in locations over southern part of state are using the EHR and the organization could not function without it.
  - Does not know how they would ever go back to paper record, but does not know how to show meaningful use
- Some are using Voice recognition for clinical notes.
- Some physicians are using a point and click system with customized templates
- Customization of templates by each physicians is important

*Question 5 – Why did you or why are you considering making the change to an electronic health records system?*

- Driven by the fear of lost reimbursement not the incentive dollars
- Doctors concerned about loss of volume which is pay criteria when convert to EMR
- Change for the doctor must be coordinated with hospital EMR so change is not done twice.
- Incentive is nice, not primary driver
- Most would do EMR adoption without incentive because:
    - Improved quality of care
    - Difficult to manage volume of data with paper, they are running out of storage space
    - Federal requirement
    - Access information anywhere
    - Patient safety, easier to read notes and comments, prescription built in, automatic data feeds to different applications
    - Ease of use
    - Needed to recruit new doctors

*Question 6 – For those participants without an EHR application, what are your plans?*

- Have been looking for a year and hope to make a decision later this year
- Tried one system but it did not integrate with existing practice management system so they are continuing to look
- Five participants indicated they were unfamiliar with EHR applications in general and were looking for assistance (They were introduced to the Regional Extension Center staff at the end of the focus group meeting)

*Question 7 – What features are you seeking in an electronic health record application?*

- Ease of use
- Product suited to specialty
- Customization to fit the needs of individual doctor or specialty
- Integration with key services like labs
- Legibility leading for improved patient safety
- Customized templates to allow for additional detail information
- Assistance meeting quality metrics
- Improved access to data
- Improved coding features for better billing and collection

*Question 8 – What are the primary resistance points for adoption of an EHR application?*

- Takes time to learn a new process
- Physicians don't like information they are getting. It seems template driven with a lot of irrelevant data to wade through to get to the data physicians really need
- Don't like the templates, no time to customize
- Don't like the workflow structure
- Medicine by check box, don't like the built in intelligence
- Change
- Spending too much time looking at a computer and not enough face to face time with the patient

*Question 9 – Are you aware of the Medicaid provider incentive program?*

Most participants had heard of the incentive program but less than half had any real knowledge of how it worked and what they needed to do to apply. Of those familiar with the program (about 30 percent), they indicated they would apply for Medicaid because it paid more than the Medicare program.

*Question 10 – Does the incentive influence affect your decision making about acquiring an EHR application?*

Most of the respondents were moving forward without the incentives and a majority was skeptical the incentive program would actually pay them as promised.

*Question 11 – When do you think you will apply for stimulus funds?*

About half indicated they would apply in 2011. The remainder wereremainder were unsure when they might apply because they did not know when they would convert to an EHR.

*Question 12 – If you apply for Medicaid stimulus finds, Medicaid will be required to verify your eligibility. What would make verification easiest on your practice?*

- Know the requirements and expectations from the beginning
- Keep it simple with minimal impact on administrative staff which adds expense
- Educate people on the process and how to meet meaningful use
    - PQRI example of what not to do, took too much time to get results and understand if submission was successful
    - Target audience to include public health
- Use random sampling for checking compliance and audits
- Do not want to do have to complete special data extractions. Follow the normal work flow practices that can be done as part of everyday business
- It should be as electronic as possible

*Question 13 – Are you aware of Meaningful Use and what it may require?*

- Most participants reported a limited understanding of Meaningful Use
- Most participants reported they were aware Meaningful Use was coming
- Most participants were aware there were quality measures in their future but lacked specifics on them

*Question 14 – What is the value of an improved electronic claims submission process?*

- Ability to bill every day with shorter turnaround times on reimbursement
- Will improve the throughput success
- Get money faster from Medicaid
- Medicare not impacted due to having set schedule and cutoffs
- Easier to address billing audits
- Billing success based on type of service performed, primary OK, specialty may cause issues
- Coding level is enhanced and good EHR's can suggest code based on various components
- Documentation is there to help patients
- Helps with correct diagnosis coding

- From HIPPA standpoint, it helps track who is looking at records so there is better privacy and security

*Question 15 – What is your experience with Medicaid in Mississippi?*

- Do not like time it takes to approve claims. Denial two months after the treatment causes financial problems for clinics
- Process OK, reimbursement rate is too low
- Provider enrollment takes too long, some clinics not aware they can back bill new enrollments
- Deal with CHIPS and Medicaid, you do not ever know what to expect out of them. They are unpredictable
- Call center at Medicaid does not have the intelligence to deal with issues on phone. Frustrates the clinic
- Must ask for extended visits for kids and prior authorizations. Creates a lot of extra work for physicians

*Question 16 – How many have heard about the Share Point EHR being offered by the Division of Medicaid in Mississippi*

- 2 of 21 in Hattiesburg
- 5 of 20 in Jackson

*Participant questions for the Moderator*

Participants were provided an opportunity to ask questions of the moderator. The questions included:

- What is the Medicaid six year span for incentive payments and what is the relationship to relation to Meaningful Use?
- How do submit claims in the future without being ICD10 compliant? Does it require providers to have a certified EMR?
- Can you explain the Medicaid and Medicare incentive and disincentive programs?
- Are private payers incenting EMR adoption as well as Medicaid?
- Incentives not helpful if providers do not have the money to invest in EHR up front. How can Medicaid help financially strapped doctors get the money to get the technology
- Need to provide doctors a system to help doctors understand process and options
- States could tack on additional requirements for meaningful use. Is Mississippi planning on doing that?
- How would I find out what program I should choose and how do I apply for the incentives?

## Appendix D: Mississippi Hospital Association – IT Survey

| Hospital Name: | Health Information System (HIS) | Electronic Health Record | Computerized Physician Order Entry | Lab Information System | Radiology Information System | Picture Archiving and Comm. System | Emergency Department | Pharmacy | Document Imaging |
|---|---|---|---|---|---|---|---|---|---|
| Baptist Memorial Hospital - Booneville | | | | | | | | | |
| Baptist Memorial Hospital Golden Triangle | | | | | | | | | |
| Baptist Memorial Hospital Union County | yes | yes | | yes | yes | yes | | | yes |
| Calhoun Health Services | | | | | | | | | |
| Central Mississippi Medical Center | | | | | | | | | |
| Delta Regional Medical Center | yes | | | yes | yes | yes | yes | yes | |
| Field Memorial Community Hospital | yes | yes | | yes | yes | yes | yes | yes | yes |
| Franklin County Memorial Hospital | yes | | | | | | | | |
| George Regional Hospital | yes | yes | yes | yes | yes | yes | yes | yes | yes |
| Greenwood Leflore Hospital | yes | | | yes | yes | yes | | yes | |
| Hancock Medical Center | yes | | | yes | yes | yes | | yes | |
| Hardy Wilson Memorial Hospital | | | | | yes | yes | | | |
| Highland Community Hospital | | | | | | | | | |
| Jasper General | | | | | | | | | |
| Jefferson Davis Community Hospital | yes | | | | yes | yes | | yes | |
| King's Daughters Hospital Yazoo City | yes | yes | | | yes | yes | | yes | |
| King's Daughters Medical Center | yes | yes | | yes | yes | yes | yes | yes | yes |

| Hospital Name: | Health Information System (HIS) | Electronic Health Record | Computerized Physician Order Entry | Lab Information System | Radiology Information System | Picture Archiving and Comm. System | Emergency Department | Pharmacy | Document Imaging |
|---|---|---|---|---|---|---|---|---|---|
| Leake Memorial Hospital | | | | | yes | yes | | | yes |
| LTAC of Greenwood | yes | | | | | | | | |
| Magee General Hospital | yes | | | yes | | yes | | | |
| Magnolia Regional Health Center | yes | yes | yes | yes | yes | yes | yes | yes | yes |
| Methodist Rehabilitation Center | yes | | | | | yes | | yes | |
| Mississippi Baptist Medical Center | yes | yes | yes | yes | yes | yes | | yes | yes |
| Natchez Regional Medical Center | yes | | | yes | yes | yes | | yes | yes |
| Neshoba Hospital | | | | | | | | | |
| Neshoba County General Hospital - Nursing Home | yes | | | yes | | yes | yes | yes | |
| North Mississippi Medical Center-Iuka | | | | | | | | | |
| North Mississippi State Hospital | yes | | | | | | | yes | |
| North Oak Regional Medical Center | yes | | | | yes | yes | | yes | |
| Noxubee General CAH | yes | | yes | yes | yes | | | yes | |
| Patients' Choice - Humphreys County | | | | | | | | | |
| Patients Choice Medical Center of Claiborne County | | | | | | yes | | | |
| Perry County General Hospital | yes | | | yes | yes | yes | | yes | yes |
| Quitman County Hospital, LLC | | | | yes | | | | yes | yes |
| Select Specialty | | | | | | | | | |

| Hospital Name: | Health Information System (HIS) | Electronic Health Record | Computerized Physician Order Entry | Lab Information System | Radiology Information System | Picture Archiving and Comm. System | Emergency Department | Pharmacy | Document Imaging |
|---|---|---|---|---|---|---|---|---|---|
| Hospital - Gulf Coast, Inc. | | | | | | | | | |
| Singing River Health System | yes | yes | yes | yes | yes | yes | | yes | |
| South Central Regional Medical Center | | | | | | | | | |
| South Pike Hospital Association | yes | yes | yes | yes | yes | yes | | yes | yes |
| St. Dominic - Jackson Memorial Hospital | yes | yes | yes | yes | yes | yes | yes | yes | yes |
| Tallahatchie General Hospital | | | | | | | | | |
| TYLER HOLMES MEMORIAL HOSPITAL | | | | | | | | | |
| UMMC | | | | | | | | | |
| University Hospitals and Health System | | | | | | | | | |
| University of Mississippi Health Center | yes | | | yes | yes | yes | | | yes |
| Walthall County General Hospital | yes | | | yes | | yes | | yes | |
| Wesley Medical Center | yes | yes | | yes | yes | yes | yes | yes | yes |
| Winston Medical Center | | | | | | | | | |
| Yalobusha General Hospital | yes | | | | | yes | | | |
| Total Responding Yes | 28 | 11 | 7 | 21 | 22 | 27 | 8 | 23 | 14 |

**Appendix E: DOM Medicaid Provider Survey Results**

# Appendix E

## Mississippi Division of Medicaid

## Provider Survey Results

The Medicaid Eligible Provider survey was launched in July of 2010 and consisted of a multi-part questionnaire that was made available online through the Division of Medicaid website and the MMIS website through September 2010. The questionnaire consisted of 22 questions, both in multiple choice and text entry format, concerning the present and planned use of health information technology among Eligible Professionals in the State. Following are the results of the survey:

**1. In which county is your primary practice located? (Select County from drop-down list)**

| Adams | Alcorn | Amite | Attala | Benton | Bolivar | Calhoun | Carroll | Chickasaw |
|---|---|---|---|---|---|---|---|---|
| 5 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 1 |
| Choctaw | Claiborne | Clarke | Clay | Coahoma | Copiah | Covington | Desoto | Forrest |
| 0 | 0 | 1 | 1 | 0 | 0 | 0 | 4 | 2 |
| Franklin | George | Greene | Grenada | Hancock | Harrison | Hinds | Holmes | Humphreys |
| 0 | 0 | 0 | 1 | 0 | 5 | 11 | 0 | 0 |
| Issaquena | Itawamba | Jackson | Jasper | Jefferson | Jefferson Davis | Jones | Kemper | Lafayette |
| 0 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 7 |
| Lamar | Lauderdale | Lawrence | Leake | Lee | Leflore | Lincoln | Lowndes | Madison |
| 0 | 9 | 0 | 1 | 2 | 0 | 2 | 3 | 3 |
| Marion | Marshall | Monroe | Montgomery | Neshoba | Newton | Noxubee | Oktibbeha | Panola |
| 0 | 1 | 3 | 0 | 1 | 1 | 0 | 1 | 0 |
| Pearl River | Perry | Pike | Pontotoc | Prentiss | Quitman | Rankin | Scott | Sharkey |
| 3 | 0 | 1 | 1 | 0 | 0 | 4 | 0 | 1 |
| Simpson | Smith | Stone | Sunflower | Tallahatchie | Tate | Tippah | Tishomingo | Tunica |
| 0 | 1 | 0 | 1 | 0 | 2 | 0 | 1 | 1 |
| Union | Walthall | Warren | Washington | Wayne | Webster | Wilkinson | Winston | Yalobusha |
| 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Yazoo | Out of State | Response Count | | | | | | |
| 0 | 1 | 94 | | | | | | |

**2. Please enter your contact information or that of your designee.**

| Answer Options | Response Percent | Response Count |
|---|---|---|
| Name: | 100.0% | 94 |
| Company: | 100.0% | 94 |
| Address: | 100.0% | 94 |
| Address 2: | 33.0% | 31 |

| | | |
|---|---|---|
| City/Town: | 100.0% | 94 |
| State: | 100.0% | 94 |
| ZIP: | 100.0% | 94 |
| Country: | 96.8% | 91 |
| Email Address: | 100.0% | 94 |
| Phone Number: | 100.0% | 94 |
| | *answered question* | 94 |
| | *skipped question* | 8 |

**3. What is your total number of locations and overall staffing level for each of the positions listed below? (Estimates are acceptable) (Select number from drop-down list)**

| Answer Options | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | over 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Locations | 0 | 63 | 13 | 3 | 2 | 4 | 1 | 1 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 |
| Physicians | 15 | 29 | 16 | 10 | 5 | 2 | 2 | 2 | 2 | 0 | 0 | 2 | 2 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 4 |
| Dentists | 69 | 14 | 6 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Physician Assistants | 84 | 4 | 1 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Nurse Practitioner | 45 | 21 | 12 | 6 | 3 | 2 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Nurse Midwives | 84 | 5 | 4 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Staff | 0 | 6 | 5 | 8 | 6 | 9 | 2 | 3 | 6 | 6 | 5 | 2 | 3 | 2 | 0 | 2 | 1 | 2 | 0 | 0 | 1 | 25 |

**4. Which of the following software products or services are you currently using?**

| Answer Options | Yes | No | Response Count |
|---|---|---|---|
| Practice Management | 79 | 11 | 90 |
| Billing Services Management | 58 | 27 | 85 |
| Electronic Prescribing | 37 | 44 | 81 |
| Electronic Medical Records | 41 | 41 | 82 |
| Electronic Health Records | 32 | 47 | 79 |
| Clinical Quality Measures | 18 | 54 | 72 |
| Clinical Decision Support | 15 | 57 | 72 |
| | *answered question* | | 94 |
| | *skipped question* | | 8 |

**5. Which of your current software products or services are certified?**

| Answer Options | CCHIT Certification | Other Certification | No Certification | Not Used | Not Sure | Response Count |
|---|---|---|---|---|---|---|
| Practice Management | 26 | 0 | 8 | 10 | 47 | 91 |
| Billing Services Management | 18 | 3 | 6 | 17 | 37 | 81 |
| Electronic Prescribing | 21 | 2 | 7 | 30 | 23 | 83 |
| Electronic Medical Records | 23 | 2 | 5 | 29 | 23 | 82 |

| | |
|---|---|
| *skipped question* | 18 |

**9. What is the cost range for your planned software upgrades? (Select amounts from drop-down list)**

**Minimum**

| Answer Options | $0 | $10,000 | $20,000 | $30,000 | $40,000 | $50,000 | $60,000 | Over $60,000 | Response Count |
|---|---|---|---|---|---|---|---|---|---|
| Estimated Range | 26 | 23 | 10 | 5 | 2 | 3 | 2 | 10 | 81 |

**Maximum**

| Answer Options | $0 | $10,000 | $20,000 | $30,000 | $40,000 | $50,000 | $60,000 | Over $60,000 | Response Count |
|---|---|---|---|---|---|---|---|---|---|
| Estimated Range | 6 | 17 | 12 | 4 | 7 | 10 | 5 | 14 | 75 |

| | Question Totals |
|---|---|
| *answered question* | 81 |
| *skipped question* | 21 |

**10. Does your practice exchange or plan to exchange health information with the following?**

| Answer Options | Yes-Currently | Yes-Planned | Not Planned | Response Count |
|---|---|---|---|---|
| Hospitals | 25 | 30 | 36 | 91 |
| Pharmacies | 32 | 36 | 25 | 93 |
| Lab/X-ray | 27 | 28 | 36 | 91 |
| Other Physicians | 15 | 42 | 34 | 91 |
| Governing Agencies | 14 | 30 | 41 | 85 |
| Other | 1 | 4 | 46 | 51 |
| Other (please specify) | | | | 4 |

| | |
|---|---|
| *answered question* | 94 |
| *skipped question* | 8 |

**11. Does your practice use or plan to use Telemedicine?**

| Answer Options | Yes | No | Response Count |
|---|---|---|---|
| Providing Care | 17 | 69 | 86 |
| Consultation with other physicians or hospitals | 25 | 60 | 85 |

| | | | |
|---|---|---|---|
| View patient information at home | 23 | 59 | 82 |
| Other | 3 | 48 | 51 |
| Other (please specify) | | | 2 |
| | | *answered question* | 87 |
| | | *skipped question* | 15 |

**12. Does your practice use computers in the exam room?**

| Answer Options | Response Percent | Response Count |
|---|---|---|
| Yes | 50.0% | 47 |
| No | 50.0% | 47 |
| If yes, what are the uses? | | 43 |
| | *answered question* | 94 |
| | *skipped question* | 8 |

**13. What are your practice specialties?**

| Answer Options | Response Count |
|---|---|
| | 90 |
| *answered question* | 90 |
| *skipped question* | 12 |

| 14. Please estimate the percentage of services by payer type: (Total should equal 100%) (Select percentage from drop-down list) | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Answer Options** | **1%** | **2%** | **3%** | **4%** | **5%** | **6%** | **7%** | **8%** | **9%** | **10%** | **11%** | **12%** | **13%** | **14%** | **15%** |
| Commercial Carriers | 3 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 7 | 1 | 0 | 0 | 0 | 4 |
| Medicare | 3 | 0 | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 6 | 0 | 1 | 3 | 1 | 3 |
| Medicaid | 2 | 1 | 1 | 1 | 9 | 0 | 1 | 2 | 0 | 7 | 1 | 1 | 0 | 0 | 3 |
| Private/Uninsured | 3 | 3 | 4 | 3 | 15 | 2 | 0 | 1 | 0 | 17 | 0 | 0 | 1 | 0 | 7 |
| **Answer Options** | **16%** | **17%** | **18%** | **19%** | **20%** | **21%** | **22%** | **23%** | **24%** | **25%** | **26%** | **27%** | **28%** | **29%** | **30%** |
| Commercial Carriers | 0 | 0 | 0 | 0 | 11 | 2 | 1 | 1 | 1 | 7 | 0 | 0 | 0 | 1 | 10 |
| Medicare | 0 | 1 | 1 | 1 | 3 | 0 | 0 | 0 | 0 | 8 | 1 | 1 | 0 | 1 | 9 |
| Medicaid | 0 | 2 | 1 | 2 | 8 | 0 | 1 | 1 | 0 | 12 | 0 | 1 | 1 | 0 | 5 |
| Private/Uninsured | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 4 | 3 | 0 | 1 | 0 | 4 |
| **Answer Options** | **31%** | **32%** | **33%** | **34%** | **35%** | **36%** | **37%** | **38%** | **39%** | **40%** | **41%** | **42%** | **43%** | **44%** | **45%** |
| Commercial Carriers | 1 | 0 | 0 | 1 | 3 | 2 | 0 | 0 | 0 | 6 | 1 | 2 | 0 | 0 | 3 |
| Medicare | 0 | 0 | 1 | 0 | 4 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 1 | 2 |
| Medicaid | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 2 |
| Private/Uninsured | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 2 | 0 | 1 |
| **Answer Options** | **46%** | **47%** | **48%** | **49%** | **50%** | **51%** | **52%** | **53%** | **54%** | **55%** | **56%** | **57%** | **58%** | **59%** | **60%** |
| Commercial Carriers | 0 | 1 | 0 | 0 | 8 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 3 |
| Medicare | 0 | 1 | 2 | 1 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 5 |
| Medicaid | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 1 |
| Private/Uninsured | 1 | 0 | 0 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| **Answer Options** | **61%** | **62%** | **63%** | **64%** | **65%** | **66%** | **67%** | **68%** | **69%** | **70%** | **71%** | **72%** | **73%** | **74%** | **75%** |
| Commercial Carriers | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Medicare | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |
| Medicaid | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 |
| Private/Uninsured | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| **Answer Options** | **76%** | **77%** | **78%** | **79%** | **80%** | **81%** | **82%** | **83%** | **84%** | **85%** | **86%** | **87%** | **88%** | **89%** | **90%** |
| Commercial Carriers | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Medicare | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Medicaid | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Private/Uninsured | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Answer Options** | **91%** | **92%** | **93%** | **94%** | **95%** | **96%** | **97%** | **98%** | **99%** | **100%** | | | | | |
| Commercial Carriers | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | |
| Medicare | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | |
| Medicaid | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 3 | | | | | |
| Private/Uninsured | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | |

| | |
|---|---|
| *answered question* | 93 |
| *skipped question* | 9 |

**15. What is your level of interest in the following:**

| Answer Options | High | Medium | Low | Response Count |
|---|---|---|---|---|
| Receiving updates on EHR information | 53 | 20 | 17 | 90 |
| Training on EHR Implementation | 45 | 21 | 25 | 91 |
| Available incentive payments | 78 | 7 | 8 | 93 |
| Open Forum Discussions | 37 | 29 | 25 | 91 |
| | | | *answered question* | 94 |
| | | | *skipped question* | 8 |

**16. Do you plan to apply for the Medicaid Provider Incentive Payments for implementing EHR technology?**

| Answer Options | Response Percent | Response Count |
|---|---|---|
| Yes | 83.0% | 78 |
| No | 17.0% | 16 |
| If yes, in what year do you plan to apply (2011 - 2016) | | 78 |
| | *answered question* | 94 |
| | *skipped question* | 8 |

**17. If you plan to apply for the Medicaid Provider Incentive Payments, in which state do you plan to apply? (Select state from drop-down list)**

| State | | | | | | | |
|---|---|---|---|---|---|---|---|
| Answer Options | MS | AL | AR | LA | TN | Other | Response Count |
| Apply in | 82 | 0 | 0 | 0 | 0 | 1 | 83 |
| | | | | | | | Question Totals |
| | | | | | | *answered question* | 83 |
| | | | | | | *skipped question* | 19 |

**18. Do you plan to apply for the Medicare Provider Incentive Payments for implementing EHR technology?**

| Answer Options | Response Percent | Response Count |
|---|---|---|
| Yes | 73.4% | 69 |
| No | 26.6% | 25 |
| If yes, in what year do you plan to apply (2011 - 2014) | | 68 |
| *answered question* | | 94 |
| *skipped question* | | 8 |

**19. If this practice is part of a group practice, how are your locations interconnected? (Bandwidths are ranges with the maximum bandwidth shown) (Check all that apply - multiple choices per row are allowed)**

| Answer Options | None | 56 KB | 768 KB | 1.5 MB | 6.0 MB | 25 MB | 50 MB | Over 50 MB | Not Sure | Response Count |
|---|---|---|---|---|---|---|---|---|---|---|
| Cable | 9 | 2 | 1 | 1 | 3 | 0 | 0 | 1 | 12 | 29 |
| Dedicated | 13 | 1 | 0 | 1 | 1 | 0 | 0 | 2 | 11 | 29 |
| DSL | 10 | 4 | 1 | 5 | 1 | 0 | 0 | 3 | 13 | 36 |
| Ethernet | 9 | 0 | 0 | 4 | 0 | 1 | 0 | 5 | 8 | 27 |
| Satellite | 14 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 7 | 21 |
| Dial up | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 24 |
| Other | 13 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 9 | 23 |
| Other (please specify) | | | | | | | | | | 7 |
| *answered question* | | | | | | | | | | 50 |
| *skipped question* | | | | | | | | | | 52 |

**20. If your practice electronically exchanges information with a hospital, what type of connection does your practice use? (Bandwidths are ranges with the maximum bandwidth shown) (Check all that apply - multiple choices per row are allowed)**

| Answer Options | None | 56 KB | 768 KB | 1.5 MB | 6.0 MB | 25 MB | 50 MB | Over 50 MB | Not Sure | Response Count |
|---|---|---|---|---|---|---|---|---|---|---|
| Cable | 15 | 1 | 0 | 0 | 1 | 2 | 0 | 1 | 7 | 27 |
| Dedicated | 15 | 1 | 0 | 1 | 4 | 1 | 0 | 1 | 8 | 31 |
| DSL | 16 | 2 | 0 | 1 | 1 | 0 | 0 | 2 | 12 | 34 |
| Ethernet | 10 | 0 | 0 | 3 | 0 | 0 | 1 | 6 | 9 | 29 |
| Satellite | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 25 |
| Dial up | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 24 |
| Other | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 22 |
| Please identify the hospital(s) | | | | | | | | | | 13 |
| *answered question* | | | | | | | | | | 46 |
| *skipped question* | | | | | | | | | | 56 |

**21. What types of Internet services and bandwidths does your practice currently use? (Bandwidths are ranges with the maximum bandwidth shown) (Check all that apply - multiple choices per row are allowed)**

| Answer Options | None | 56 KB | 768 KB | 1.5 MB | 6.0 MB | 25 MB | 50 MB | Over 50 MB | Not Sure | Response Count |
|---|---|---|---|---|---|---|---|---|---|---|
| Cable | 9 | 0 | 1 | 2 | 4 | 1 | 0 | 1 | 22 | 40 |
| Dedicated | 12 | 1 | 0 | 2 | 1 | 2 | 1 | 2 | 16 | 37 |
| DSL | 10 | 7 | 0 | 12 | 9 | 0 | 0 | 4 | 31 | 73 |
| Ethernet | 8 | 1 | 0 | 5 | 1 | 0 | 0 | 7 | 20 | 42 |
| Satellite | 18 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 12 | 30 |
| Dial up | 18 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 34 |
| Other | 11 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 13 | 26 |
| Other (please specify) | | | | | | | | | | 4 |
| | | | | | | | | *answered question* | | 94 |
| | | | | | | | | *skipped question* | | 8 |

**22. What types of Internet services and maximum bandwidths are available to your practice location? (One choice per row for all rows)**

| Answer Options | None | 56 KB | 768 KB | 1.5 MB | 6.0 MB | 25 MB | 50 MB | Over 50 MB | Not Sure | Response Count |
|---|---|---|---|---|---|---|---|---|---|---|
| Cable | 5 | 2 | 2 | 2 | 5 | 0 | 2 | 1 | 37 | 56 |
| Dedicated | 7 | 2 | 0 | 4 | 4 | 1 | 2 | 2 | 34 | 56 |
| DSL | 7 | 6 | 1 | 5 | 10 | 0 | 1 | 3 | 43 | 76 |
| Ethernet | 4 | 1 | 0 | 7 | 1 | 0 | 1 | 6 | 31 | 51 |
| Satellite | 8 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 31 | 42 |
| Dial up | 8 | 8 | 0 | 0 | 1 | 0 | 0 | 0 | 33 | 50 |
| Other | 10 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 26 | 37 |
| Other (please specify) | | | | | | | | | | 4 |
| | | | | | | | | *answered question* | | 94 |
| | | | | | | | | *skipped question* | | 8 |

## Appendix F: House Bill 941

# House Bill 941

AN ACT TO CREATE THE MISSISSIPPI HEALTH INFORMATION NETWORK ACT TO PROMOTE THE USE OF HEALTH INFORMATION TECHNOLOGY AND EXCHANGE OF THAT INFORMATION TO IMPROVE HEALTH CARE QUALITY AND EFFICIENCY; TO ESTABLISH THE MISSISSIPPI HEALTH INFORMATION NETWORK AND PROVIDE THAT IT WILL BE GOVERNED BY A BOARD OF DIRECTORS; TO PROVIDE FOR THE MEMBERSHIP OF THE MS-HIN BOARD; TO PROVIDE FOR THE POWERS AND DUTIES OF THE MS-HIN BOARD; TO PROVIDE CERTAIN IMMUNITY FOR MEMBERS OF THE MS-HIN BOARD; TO PROVIDE FOR PRIVACY OF HEALTH INFORMATION IN THE NETWORK; TO REQUIRE ALL AGENCIES OF THE STATE ENGAGED IN THE DELIVERY OR PROVISION OF HEALTH INFORMATION TECHNOLOGY SERVICES TO COORDINATE BETWEEN THE SEVERAL STATE AGENCIES, WITH PRIVATE NONPROFIT CORPORATIONS, AND WITH FEDERALLY FUNDED AGENCIES TO PREVENT UNNECESSARY DUPLICATION, WASTEFUL EXPENDITURES OF STATE FUNDS; TO ENCOURAGE THE DEVELOPMENT OF AN INTEROPERATIVE STATEWIDE SYSTEM OF HEALTH INFORMATION TECHNOLOGY; TO REQUIRE STATE AGENCIES, BEFORE ACQUIRING ANY HEALTH INFORMATION TECHNOLOGY SYSTEM, TO CONDUCT A SURVEY OF ALL HEALTH INFORMATION TECHNOLOGY SYSTEMS WITHIN THE GEOGRAPHIC AREA FOR WHICH THE SERVICE IS INTENDED, AND ANALYZE THE BENEFITS OF USING EXISTING PROVIDERS; TO REQUIRE THE MISSISSIPPI HEALTH INFORMATION NETWORK TO REVIEW PROPOSALS AND PROVIDE GUIDANCE FOR HEALTH INFORMATION TECHNOLOGY ACQUISITION; TO DIRECT THE PEER COMMITTEE TO MAKE CERTAIN REPORTS REGARDING THE DEVELOPMENT OF ELECTRONIC HEALTH INFORMATION IN MISSISSIPPI; AND FOR RELATED PURPOSES.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF MISSISSIPPI:

SECTION 1. This act shall be known and may be cited as the "Health Information Technology Act."

SECTION 2. The Mississippi Health Information Network is a public–private partnership for the benefit of all of the citizens of this state.

SECTION 3. (1) The Mississippi Health Information Network is established, and is referred to in this act as the "MS-HIN."

(2) The MS-HIN shall be governed by a board of directors (MS-HIN board) consisting of eleven (11) members. The membership of the MS-HIN board shall reasonably reflect the public-private and diverse nature of the MS-HIN.

(3) The membership of the MS-HIN board of directors shall consist of the following:

(a) The Governor shall appoint one (1) member of the MS-HIN board of directors, who shall be a representative of a health insurance carrier in Mississippi with knowledge of information technology, to serve an initial term of three (3) years;

(b) The State Board of Health shall appoint one (1) member of the MS-HIN board of directors, who shall be a representative of a Mississippi hospital with knowledge of information technology, to serve an initial term of three (3) years;

(c) The Mississippi State Medical Association shall appoint a member of the MS-HIN board of directors, who shall be a licensed physician, to serve an initial term of three (3) years; (d) The Primary Health Care Association shall appoint a member of the MS-HIN board of directors to serve an initial term of one (1) year;

(e) The Delta Health Alliance shall appoint a member of the MS-HIN board of directors to serve an initial term of four (4) years;

(f) The Information and Quality Health Care-Mississippi Coastal Health Information Exchange (MCHIE) shall appoint a member of the MS-HIN board of directors to serve an initial term of one (1) year;

(g) The State Board of Health shall appoint a member of the MS-HIN board of directors who shall be an employee of the State Department of Health to serve an initial term of one (1) year;

(h) The Mississippi Board of Information Technology Services shall appoint a member of the MS-HIN board of directors to serve an initial term of two (2) years;

(i) The Mississippi Board of Mental Health shall appoint a member of the MS-HIN board of directors who shall be an employee of the Department of Mental Health to serve an initial term of four (4) years;

(j) The University of Mississippi Medical Center shall appoint a member of the MS-HIN board of directors to serve an initial term of two (2) years; and

(k) The Division of Medicaid shall appoint a member of the MS-HIN board of directors who shall be an employee of the Division of Medicaid to serve an initial term of two (2) years.

Initial terms shall expire on June 30 of the appropriate year, and subsequent appointments shall be made by the appointing entity for terms of four (4) years. Members may be reappointed.

(4) No state officer or employee appointed to the MS-HIN board or serving in any other capacity for the MS-HIN board will be construed to have resigned from public office or employment by reason of that appointment or service.

(5) The chairperson of the MS-HIN board shall be elected by a majority of the members appointed to the MS-HIN board.

(6) The MS-HIN board is authorized to conduct its business by a majority of a quorum. A quorum is six (6) members of the MS-HIN board.

(7) The MS-HIN board may adopt bylaws for its operations, including, but not limited to, the election of other officers, the terms of officers, and the creation of standing and ad hoc committees.

SECTION 4. (1) In furtherance of the purposes of this act, the MS-HIN shall have the following duties:

(a) Initiate a statewide health information network to:

(i) Facilitate communication of patient clinical and financial information;

(ii) Promote more efficient and effective communication among multiple health care providers and payers, including, but not limited to, hospitals, physicians, non-physician providers, third-party payers, self-insured employers, pharmacies, laboratories and other health care entities;

(iii) Create efficiencies by eliminating redundancy in data capture and storage and reducing administrative, billing and data collection costs;

(iv) Create the ability to monitor community health status;

(v) Provide reliable information to health care consumers and purchasers regarding the quality and cost-effectiveness of health care, health plans and health care providers; and

(vi) Promote the use of certified electronic health records technology in a manner that improves quality, safety, and efficiency of health care delivery, reduces health care disparities, engages patients and families, improves health care coordination, improves population and public health, and ensures adequate privacy and security protections for personal health information.

(b) Develop or design other initiatives in furtherance of its purpose; and

(c) Perform any and all other activities in furtherance of its purpose.

(2) The MS-HIN board is granted all incidental powers to carry out its purposes and duties, including the following:

(a) To appoint an executive director, who will serve at the will and pleasure of the MS-HIN board. The qualifications and employment terms for the executive director shall be determined by the MS-HIN board.

(b) To adopt, modify, repeal, promulgate, and enforce rules and regulations to carry out the purposes of the MS-HIN;

(c) To establish a process for hearing and determining case decisions to resolve disputes under this act or the rules and regulations promulgated under this act among participants, subscribers or the public;

(d) To enter into, and to authorize the executive director to execute contracts or other agreements with any federal or state agency, any public or private institution, or any individual in carrying out the provisions of this act; and

(e) To discharge other duties, responsibilities, and powers as are necessary to implement the provisions of this act.

(3) The executive director shall have the following powers and duties:

(a) To employ qualified professional personnel as required for the operation of the MS-HIN and as authorized by the MS-HIN board;

(b) To administer the policies of the MS-HIN board; and

(c) To supervise and direct all administrative and technical activities of the MS-HIN.

(4) The MS-HIN shall have the power and authority to accept appropriations, grants and donations from public or private entities and to charge reasonable fees for its services. The revenue derived from grants, donations, fees and other sources of income shall be deposited into a special fund that is created in the State Treasury and earmarked for use by the MS-HIN in carrying out its duties under this act.

SECTION 5. (1) All members of the MS-HIN board shall not be subject to and are immune from claim, suit, liability, damages or any other recourse, civil or criminal, arising from any act or proceeding, decision or determination undertaken, performed or reached in good faith and without malice by any such member or members acting individually or jointly in carrying out the responsibilities, authority, duties, powers and privileges of the offices conferred by law upon them under this act, or any other state law, or duly adopted rules and regulations of the aforementioned committees, good faith being presumed until proven otherwise, with malice required to be shown by a complainant. All employees and staff of the MS-HIN, whether temporary or permanent, shall enjoy the same rights and privileges concerning immunity from suit otherwise enjoyed by state employees under the Mississippi Constitution of 1890 and Section 11-46-1 et seq.

(2) The MS-HIN is not a health care provider and is not subject to claims under Sections 11-1-58 through 11-1-62. No person who participates in or subscribes to the services or information provided by the MS-HIN shall be liable in any action for damages or costs of any nature, in law or equity, that result solely from that person's use or failure to use MS-HIN information or data that were imputed or retrieved in accordance with the rules or regulations of the MS-HIN. In addition, no person will be subject to antitrust or unfair competition liability based on membership or participation in the MS-HIN, which provides an essential governmental function for the public health and safety.

SECTION 6. (1) All persons providing information and data to the MS-HIN shall retain a property right in that information or data, but grant to the other participants or subscribers a nonexclusive license to retrieve and use that information or data in accordance with the rules or regulations promulgated by the MS-HIN board and in compliance with the provisions of the Health Insurance Portability and Accountability Act of 1996, Public Law 104-191.

(2) Patients desiring to obtain a copy of their personal medical record or information are to request the copy from the health care provider who is the primary source of the information, and the MS-HIN shall not be required to provide this information directly to the patient.

(3) All processes or software developed, designed or purchased by the MS-HIN shall remain its property subject to use by participants or subscribers in accordance with the rules and regulations promulgated by the MS-HIN board.

SECTION 7. (1) The MS-HIN board shall by rule or regulation ensure that patient specific health information be disclosed only in accordance with the provisions of the Health Insurance Portability and Accountability Act of 1996, Public Law 104-191, which governs the electronic transmission of that information.

(2) Patient specific health information and data of the MS-HIN shall not be subject to the Federal Freedom of Information Act, Mississippi Open Records Act (Section 25-61-1 et seq.) nor to subpoena by any court. That information may only be disclosed by consent of the patient or in accordance with the MS-HIN board's rules, regulations or orders.

(3) Notwithstanding any conflicting statute, court rule or other law, the data in the network shall be confidential and shall not be subject to discovery or introduction into evidence in any civil action. However, information and data otherwise discoverable or admissible from original sources are not to be construed as immune from discovery or use in any civil action merely because they were provided to the MS-HIN.

(4) Submission of information to and use of information by the State Department of Health shall be considered a permitted disclosure for uses and disclosures required by law and for public health activities under the Health Insurance Portability and Accountability Act and the privacy rules promulgated under that act.

(5) Any violation of the rules or regulations regarding access or misuse of the MS-HIN health information or data shall be reported to the Office of the Attorney General, and shall be subject to prosecution and penalties under state or federal law.

SECTION 8. For the purposes of this act, the following terms shall be defined as provided in this section:

(a) "Electronic health records" or "EHR" means electronically maintained clinical and demographic information, used by a meaningful EHR user.

(b) "Health information technology" or "HIT" means the equipment, software and networks to be used by a meaningful EHR user.

(c) "Acquisition" of HIT systems or other computer or telecommunications equipment or services means the purchase, lease, rental or acquisition in any other manner of HIT systems or any other computer or telecommunications equipment or services used exclusively for HIT.

(d) "Meaningful EHR user" means an eligible professional or eligible hospital that, during the specified reporting period, demonstrates meaningful use of certified EHR technology in a form and manner consistent with certain objectives and measures presented in applicable federal regulations as amended or adopted. These objectives and measures shall include the use of certified EHR.

(e) "Entity" means and includes all the various state agencies, officers, departments, boards, commissions, offices and institutions of the state, but does not include any agency financed entirely by federal funds.

SECTION 9. (1) Before the acquisition of any HIT system, an entity shall provide MS-HIN, at a minimum, description, purpose and intent of the proposed service or system, including a description and specifications of the ability to connect to MS-HIN.

(2) Where existing entities can be used to provide the proposed HIT system, in whole or in part, the submission shall include letters of commitment, memoranda of agreements, or other supporting documentation.

(3) The MS-HIN shall review proposals for acquisition of HIT systems for the purposes contained in Section 4 of this act, and provide guidance to entities including collaborative opportunities with MS-HIN members.

(4) Any acquisition of an HIT system that was approved by the Mississippi Department of Technology Services before the effective date of House Bill No. 941, 2010 Regular Session, is exempt from the requirements of Sections 8 and 9 of this act.

SECTION 10. The Legislative Audit Committee (PEER) shall develop and make a report to the Chairmen of the Senate and House Public Health and Welfare/Medicaid Committees regarding the following electronic health records (EHR) system items:

(a) Evaluate the Request for Proposals (RFP) for the implementation and operations services for the Division of Medicaid and the University Medical Center electronic health records system and e-prescribing system for providers;

(b) Evaluate the proposed expenditures of the Mississippi Division of Medicaid (DOM) and the University Medical Center (UMC) regarding electronic health information; and

(c) Evaluate the use of American Recovery and Reinvestment Act (ARRA) funds for electronic health records system implementation in the State of Mississippi.

The PEER Committee shall make its report on or before December 1, 2010, including any recommendations for legislation.

SECTION 11. This act shall stand repealed on July 1, 2014.

SECTION 12. This act shall take effect and be in force from and after its passage.

**Appendix G: Calculators**

**G1. Hospital EHR Patient Volume Calculator (Revised 2013) – Form 2552-96**

# Mississippi Division of Medicaid
## Mississippi Provider Incentive Payment Program

***White Areas are for data input***

| ***Hospital:*** | | ***NPI:*** | |
|---|---|---|---|

***Grey Areas are calculated results***

## Average Length of Stay - 2552-96 Cost Report

| Measure | Cost Report Data Source | Total |
|---|---|---|
| Total Hospital Days | w/s S-3 part I, col. 6, lines 1,2,6,7,8,9,10 | 0 |
| Total Hospital Discharges | w/s S-3 part I, col. 15, lines 1,2,6,7,8,9,10 | 0 |
| **Average Length of Stay - 2552-96 Cost Report** | | **0.0** |

## Patient Volume Calculation

### Inpatients - POS Code 21 - Discharges

| **Medicaid Primary Payer** | | | |
|---|---|---|---|
| | **Data Source - 2552-96 Cost Report** | Medicaid | Total |
| Discharges | w/s S-3 part I, col. 15, lines 1,2,6,7,8,9,10 | | 0 |
| Medicaid Primary Payer | w/s S-3 part I, col. 14, lines 1,2,6,7,8,9,10 | 0 | |
| **Medicaid Secondary Payer** | | | |

| Primary Payer - Discharges | Data Source | Medicaid | Total |
|---|---|---|---|
| Medicare | | 0 | 0 |
| Third Party | | 0 | 0 |
| **Total POS 21 Discharges** | | **0** | **0** |

## Emergency Room - POS Code 23 - Discharges

| Medicaid Primary Payer | | | |
|---|---|---|---|
| **All Patients** | **Data Source** | Medicaid | Total |
| All Payers | | | 0 |
| Medicaid Primary Payer | | 0 | |

| Medicaid Secondary Payer | | | |
|---|---|---|---|
| **Primary Payer** | **Data Source** | Medicaid | Total |
| Medicare | | 0 | 0 |
| Third Party | | 0 | 0 |
| **Total POS 23 Discharges** | | **0** | **0** |
| **Total Discharges and Encounters for SLR Application** | | **0** | **0** |
| **Medicaid Percentage** | | **0.0%** | |

**Notes:**

**Hospital Patient Encounters are based on discharge data from both the Inpatient (POS Code 21) and Emergency Room (POS Code 23).**

**Hospital must have a minimum of 10 percent Medicaid Patient Volume to qualify for the Medicaid Incentive Payment.**

**Hospital Patient Volumes are from the prior federal fiscal year.**

1 Medicaid Primary Payer Encounters for both the inpatient and emergency room are required. Medicaid primary payers include Medicaid and Mississippi CAN.

Medicaid Secondary Payer Encounters are optional (if Medicaid Secondary Payer encounters are included, then both inpatient and emergency room discharges must be used). Medicaid Secondary Payer Encounters include Medicare and third party payers when Medicaid is responsible for the copayment.

2 Supporting Documentation: (Must be attached to the application)
- a. Inpatient (POS 21) Discharges - Cost Reports from identified data locations.
- b. Emergency Room (POS 23) Discharges - Billing management reports

3 Inclusions in Medicaid Encounter (Discharges) Counts:
- a. Encounters include a Medicaid Eligible patient (regardless of payment Liability) **New in 2013**
- b. Encounters paid through the Mississippi CAN program

4 Exclusions from Medicaid Encounter (Discharges) Counts:
- a. Encounters not resulting in a payment by Medicaid
- b. All CHIP Encounters
- c. Emergency Room encounters that result in admission to the hospital

5 Each Emergency room visit will count as one encounter. (See 4.c. - Patients discharges into the hospital can't be included in the patient discharges.)

**G2. Hospital EHR Patient Volume Calculator (Revised 2013) – Form 2552-10**

| **Mississippi Division of Medicaid**<br>**Mississippi Provider Incentive Payment Program** | | | |
|---|---|---|---|
| ***White Areas are for data input*** | | | |
| ***Hospital:*** | | ***NPI:*** | |
| ***Grey Areas are calculated results*** | | | |
| | | | |
| **Average Length of Stay Calculation - 2552-10 Cost Report** | | | |

| Measure | Cost Report Data Source | Total |
|---|---|---|
| Total Hospital Days | w/s S-3 part I, col. 8, lines 1,2,8,9,10,11,12 | 0 |
| Total Hospital Discharges | w/s S-3 part I, col. 15, lines 1,2,8,9,10,11,12 | 0 |
| **Average Length of Stay - 2010 Cost Report Year** | | **0.0** |

# Patient Volume Calculation

## Inpatients - POS Code 21 - Discharges

| **Medicaid Primary Payer (Required)(1)** | | Medicaid | Total |
|---|---|---|---|
| | **Data Source - 2552-10 Cost Report** | Column 8 | Column 15 |
| Discharges | w/s S-3 part I, col. 15, lines 1,2,8,9,10,11,12 | | 0 |
| Medicaid Primary Payer | w/s S-3 part I, col. 14, lines 1,2,8,9,10,11,12 | 0 | |
| **Medicaid Secondary Payer - (Optional)(1)** | | | |
| **Primary Payer - Discharges** | **Data Source** | Medicaid | **Total** |
| Medicare | | 0 | 0 |
| Third Party | | 0 | 0 |
| **Total POS 21 Discharges** | | **0** | **0** |

## Emergency Room - POS Code 23 - Discharges

| **Medicaid Primary Payer - (Required)(1)** | | | |
|---|---|---|---|
| **All Patients** | **Data Source** | Medicaid | **Total** |
| Discharges | | | 0 |
| Medicaid Primary Payer | | 0 | |

| Medicaid Secondary Payer - (Optional)(1) | | | |
|---|---|---|---|
| **Primary Payer** | **Data Source** | Medicaid | **Total** |
| Medicare | | 0 | 0 |
| Third Party | | 0 | 0 |
| **Total POS 23 Discharges** | | **0** | **0** |
| **Total Encounters - SLR Application** | | **0** | **0** |
| **Medicaid Percentage** | | **0.0%** | |

**Notes:**

**Hospital Patient Encounters are based on discharge data from both the Inpatient (POS Code 21) and Emergency Room (POS Code 23).**

**Hospital must have a minimum of 10 percent Medicaid Patient Volume to qualify for the Medicaid Incentive Payment.**

**Hospital Patient Volumes are from the prior federal fiscal year.**

1 Medicaid Primary Payer Encounters for both the inpatient and emergency room are required. Medicaid primary payers include Medicaid and Mississippi CAN.

Medicaid Secondary Payer Encounters are optional (if Medicaid Secondary Payer encounters are included, then both inpatient and emergency room discharges must be used) Medicaid Secondary Payer Encounters include Medicare and third party payers when Medicaid is responsible for the copayment.

2 Supporting Documentation: (Must be attached to the application)

a. Inpatient (POS 21) Discharges - Cost Reports from identified data locations

b. Emergency Room (POS 23) Discharges - Billing management reports

3 Inclusions in Medicaid Encounter (Discharges) Counts:

a. Encounters include a Medicaid Eligible patient (regardless of payment Liability) **New in 2013**

b. Encounters paid through the Mississippi CAN program

4 Exclusions from Medicaid Encounter (Discharges) Counts:

a. Encounters not resulting in a payment by Medicaid

b. All CHIP Encounters

c. Emergency Room encounters that result in admission to the hospital

5 Each Emergency room visit will count as one encounter. (See 4.c. - Patients discharges into the hospital can't be included in the patient discharges.)

**G3. Professional EHR Patient Volume Calculator (Revised 2013) – Form 2552-96**

| Eligible Professional - Medicaid Percentage Calculation | | | | |
|---|---|---|---|---|
| ***White Areas require provider input*** | | | | |
| ***Provider Name:*** | | ***NPI:*** | | |
| **Medicaid Qualifying Period** | | | | |
| Patient Volume - Individual or Group Statistics used: (9) | | | Individual | |
| Period Start Date (3) | 00/00/00 | Duration - Months | | |
| Period End Date (3) | 00/00/00 | | | |
| **Encounters - Medicaid Primary Payer (Required)** | | | | |
| All Patients | Encounter Data Source | | Medicaid | Total |
| All Payer Encounters | | | 0 | |
| Medicaid FFS Encounters | | | | 0 |
| Medicaid MS CAN Encounters | | | | 0 |
| **Encounters - Medicaid Secondary Payer (Optional)** | | | | |
| Primary Payer | Encounter Data Source | | Medicaid | Total |
| Medicare Encounters | | | | 0 |
| Third Party Encounters | | | | 0 |
| ***Total Encounters used in Application*** | | | ***0*** | ***0*** |
| ***Medicaid Percentage*** | | | ***0.0%*** | |

| Patient Volume Requirements | |
|---|---|
| 1 | Eligible Professional must have a minimum of 30% Medicaid Encounters in the prior calendar year to qualify for the Incentive Payment. |
| 2 | Eligible Pediatricians may qualify for a reduced incentive payment if they have at least 20% but less than 30% Medicaid Encounters in the prior calendar year. |
| 3 | Medicaid Patient Volume calculation period must be in the year prior to the current program or payment year. Professional must select one of the following periods:<br>a. Ninety day period starting on the first day of the month.<br>b. Greater than ninety day period starting on the first day of the month. Patient Volume period cannot exceed the full calendar year.<br>c. Full calendar year<br>d. Any ninety day period within 12 months of Attestation - **New in 2013** |
| 4 | A patient encounter includes service rendered on any one day to a Medicaid-enrolled individual, regardless of payment liability. This includes zero-pay claims and encounters with patients in Title XXI- funded Medicaid expansions, but not separate CHIP programs. Provider patient volume includes CHIP encounters if part of Title XIX expansion or part of Title XXI expansion (still cannot include CHIP stand-alone Title XXI encounters) - **New in 2013** |
| 5 | Patient Volume supporting documentation must be attached to the application. All data sources must be identifiable and auditable (i.e. billing systems or practice management software). Supporting Documentation must identify the encounter data by primary and secondary payer and must eliminate ineligible encounters. |
| 6 | EPs may use a clinic or group practice's patient volume as a proxy for their own under three conditions:<br>(1) The clinic or group practice's patient volume is appropriate as a patient volume methodology calculation for the EP (for example, if an EP only sees Medicare, commercial, or self-pay patients, this is not an appropriate calculation); |

(2) There is an auditable data source to support the clinic's patient volume determination; and

(3) So long as the practice and EPs decide to use one methodology in each year (in other words, clinics could not have some of the EPs using their individual patient volume for patients seen at the clinic, while others use the clinic-level data). The clinic or practice must use the entire practice's patient volume and not limit it in any way. EPs may attest to patient volume under the individual calculation or the group/clinic proxy in any participation year. Furthermore, if the EP works in both the clinic and outside the clinic (or with and outside a group practice), then the clinic/practice level determination includes only those encounters associated with the clinic/practice.

| | |
|---|---|
| 7 | To be a meaningful EHR user, an EP must have 50 percent or more of their patient encounters during the EHR reporting period at a practice/location or practices/locations equipped with certified EHR technology. For the purpose of calculating this 50 percent threshold, any encounter where a medical treatment is provided and/or evaluation and management services are provided should be considered a "patient encounter." |

**G4. EHR Hospital PIP Calculator (Revised Jan 2013) – Form 2552-96**

| Hospital One Time Payment Calculation |
|---|
| **Calculation of Medicaid Electronic Health Records (EHR) Incentive Payment using 2552-96 Cost Report** |
| **This Payment Calculation was approved by CMS on 06/13/2011** |
| ***White Areas are for data input from your Cost Reports*** |
| ***Hospital:*** ***NPI:*** |
| ***Grey Areas are calculated by the MS SLR application - Do not change*** |
| The overall "EHR" amount is the sum over 4 years of (a) the base amount of $2,000,000 plus (b) the discharge related amount defined as $200 for the 1,150 through the 23,000 discharge for the first payment year then a pro-rated amount of 75% in yr 2, 50% in yr 3, and 25% in yr 4<br><br>For years 2-4 the rate of growth is assumed to be the previous 3 years' average. |
| |

***Step 1:*** ***Compute the average annual growth rate over 3 years using previous Medicare cost reports.***

Per the Medicare cost report, worksheet S-3, part I, line 12, column 15 - Total discharges

| Cost Report years used for one time calculations | PY | CY | Increase | Growth |
|---|---|---|---|---|
| Fiscal Year | | | | |
| Fiscal Year | 0 | | 0 | 0.00% |
| Fiscal Year | 0 | | 0 | 0.00% |
| Fiscal Year | 0 | | 0 | 0.00% |

Enter most current Cost Report year used for Steps 2 - 6.

Total Percent - Increase/(Decrease) 0.0%

Divided by 3 years 3

| | |
|---|---|
| **The average annual growth rate over 3 years** | **0.00%** |

***Step 2:*** ***Compute total discharge related amount using proper transition factors***

> discharges are capped at 23,000 each year

| | | | | |
|---|---|---|---|---|
| INPUT FY total Discharges from worksheet S-3, part I, line 12, column 15 | | | 0 | 0 |
| | | Discharges | | |
| | | Total | Allowable | Amount |
| Year 1 | (allowed dischg - 1,149) x $200 | 0 | 0 | $0 |
| Year 2 | ((allowed dischg - 1,149) x $200) | 0 | 0 | $0 |
| Year 3 | ((allowed dischg - 1,149) x $200) | 0 | 0 | $0 |
| Year 4 | ((allowed dischg - 1,149) x $200) | 0 | 0 | $0 |
| **Total 4 year discharge related amount** | | | | **$0** |

| ***Step 3:*** ***Compute the initial amount for 4 years*** | Year 1 | Year 2 | Year 3 | Year 4 |
|---|---|---|---|---|
| Years 1 - 4 base amount of $2,000,000 per year | $2,000,000 | $2,000,000 | $2,000,000 | $2,000,000 |
| Years 1-4 discharge related amount (step 2) | $0 | $0 | $0 | $0 |
| **Aggregate EHR amount for 4 years** | **$2,000,000** | **$2,000,000** | **$2,000,000** | **$2,000,000** |
| ***Step 4:*** **Apply Transition Factor** | **$2,000,000** | **$1,500,000** | **$1,000,000** | **$500,000** |
| ***Step 5:*** ***Compute the overall EHR amount for 4 years*** | | | | **$5,000,000** |

***Step 6:*** ***Computation of Medicaid Share from the Medicare cost report (2552-96 Cost Report)***

(estimated Medicaid inpatient-bed-days + estimated Medicaid HMO inpatient-bed-days) /
(est. Medicaid IP-bed-days x ((est. total charges - est. charity care charges) / est. total charges))

| | | | |
|---|---|---|---|
| w/s S-3 part I, col. 5, lines 1,6,7,8,9,10 | Total Medicaid Days | 0 | |
| w/s S-3 part I, col. 5, line 2 | Total Medicaid HMO days | 0 | |
| | Total Medicaid and HMO Medicaid days | | 0 |
| w/s C part I, col. 8, line 101 | Total Hospital Charges | $0 | |
| w/s S-10, line 30 | Uncompensated care charges (negative amount) | $0 | |
| | Total Hospital Charges - charity chgs | $0 | |
| | divided by Total Hospital Charges | $0 | |
| | Non-charity percentage | 0.00% | |
| w/s S-3 part I, col. 6, line 1,2,6,7,8,9,10 | Total Hospital Days | 0 | |
| | Non-charity total Hospital Days | | 0 |

| | |
|---|---|
| **(Total Medicaid and HMO Medicaid days) divide non-charity hospital days** | **0.00%** |

***Step 7:*** ***Computation of Medicaid aggregate EHR incentive amount***

| | |
|---|---|
| Aggregate EHR amount for 4 years | $5,000,000 |
| (Total Medicaid and HMO Medicaid days) divide non-charity hospital days | 0.00% |
| **Medicaid Aggregate EHR Incentive Amount** | **$0.00** |

***Step 8:*** ***Computation of Medicaid annual EHR incentive payout***

| | Annual Percentage | Annual Payment |
|---|---|---|
| **Year 1 payment** | **50.0%** | **$0** |
| **Year 2 payment** | **40.0%** | **$0** |
| **Year 3 payment** | **10.0%** | **$0** |

## CMS Reference - Authorized Data Sources for One Time Payment Calculation

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If the State chooses to use the cost report in the Medicaid EHR incentive hospital payment calculation, what data elements should be used in the Medicare cost report, Form CMS 2552-96 and the Form CMS 2552-10?

Based on the Medicare cost report guidance, Form CMS 2552-96 will be used until the implementation of the new Medicare cost report, Form CMS 2552-10. Although the State may choose to use the following data elements, it is the States' and hospitals' responsibility to ensure the integrity and regulatory compliance of the data.

| The CMS 2552-96 data elements are as follows: |
|---|
| |
| -Total Discharges - Worksheet S-3 Part 1, Column 15, Line 12 |
| -Medicaid Days - Worksheet S-3, Part I, Column 5, Line 1 + Lines 6-10 |
| -Medicaid HMO Days - Worksheet S-3, Part I, Column 5, Line 2 |
| -Total Inpatient Days - Worksheet S-3 Part 1, Column 6, Line 1, 2 + Lines 6 -10 |
| -Total Hospital Charges - Worksheet C Part 1, Column 8, Line 101 |
| -Charity Care Charges - Worksheet S-10, Column 1, Line 30 |
| |
| The CMS 2552-10 data elements are as follows: |
| |
| -Total Discharges - Worksheet S-3 Part 1, Column 15, Line 14 |
| -Medicaid Days - Worksheet S-3, Part I, Column 7, Line 1 + Lines 8-12 |
| -Medicaid HMO Days - Worksheet S-3, Part I, Column 7, Line 2 |
| -Total Inpatient Days - Worksheet S-3 Part 1, Column 8, Line 1, 2 + Lines 8 - 12 |
| -Total Hospital Charges - Worksheet C Part 1, Column 8, Line 200 |
| -Charity Care Charges - Worksheet S-10, Column 3, Line 20 |
| |
| For information about the cost report data elements that are used in the Medicare hospital incentive calculation, please see FAQ #10717. |

**G5. EHR Hospital PIP Calculator (Revised Jan 2013) – Form 2552-10**

| Hospital One Time Payment Calculation | | | |
|---|---|---|---|
| **Calculation of Medicaid Electronic Health Records (EHR) Incentive Payment using 2552-10 Cost Report** | | | |
| **This Payment Calculation was approved by CMS on 06/13/2011** | | | |
| ***White Areas require provider input*** | | | |
| ***Hospital:*** | | ***NPI:*** | |
| ***Grey Areas are calculated by the MS SLR application - Do not change*** | | | |
| The overall "EHR" amount is the sum over 4 years of (a) the base amount of $2,000,000 plus (b) the discharge related amount defined as $200 for the 1,150 through the 23,000 discharge for the first payment year then a pro-rated amount of 75% in yr 2, 50% in yr 3, and 25% in yr 4<br><br>For years 2-4 the rate of growth is assumed to be the previous 3 years' average. | | | |

***Step 1:*** ***Compute the average annual growth rate over 3 years using previous Medicare cost reports.***

Per the Medicare cost report 2552-10, worksheet S-3, part I, line 14, column 15 - Total discharges

| | | | PY | CY | Increase | Growth |
|---|---|---|---|---|---|---|
| Fiscal Yr | 2009 | 2552-96 | 0 | | | |
| Fiscal Yr | 2010 | 2552-96 | 0 | 0 | 0 | 0.00% |
| Fiscal Yr | 2011 | 2552-10 | 0 | 0 | 0 | 0.00% |
| Fiscal Yr | 2012 | 2552-10 | 0 | 0 | 0 | 0.00% |
| | | | Total Percent - Increase/(Decrease) | | | 0.0% |
| | | | Divided by 3 years | | | 3 |
| **The average annual growth rate over 3 years** | | | | | | **0.00%** |

***Step 2:*** ***Compute total discharge related amount using proper transition factors***

> discharges are capped at 23,000 each year

| INPUT FY 2010 total Discharges from worksheet S-3, part I, line 14, column 15 | | | 0 |
|---|---|---|---|

| | | Discharges | | |
|---|---|---|---|---|
| | | Total | Allowable | Amount |
| Year 1 | (allowed dischg - 1,149) x $200 | 0 | 0 | $0 |
| Year 2 | ((allowed dischg - 1,149) x $200) | 0 | 0 | $0 |
| Year 3 | ((allowed dischg - 1,149) x $200) | 0 | 0 | $0 |
| Year 4 | ((allowed dischg - 1,149) x $200) | 0 | 0 | $0 |
| **Total 4 year discharge related amount** | | | | **$0** |

| ***Step 3:*** ***Compute the initial amount for 4 years*** | Year 1 | Year 2 | Year 3 | Year 4 |
|---|---|---|---|---|
| Years 1 - 4 base amount of $2,000,000 per year | $2,000,000 | $2,000,000 | $2,000,000 | $2,000,000 |
| Years 1-4 discharge related amount (step 2) | $0 | $0 | $0 | $0 |
| **Aggregate EHR amount for 4 years** | **$2,000,000** | **$2,000,000** | **$2,000,000** | **$2,000,000** |
| ***Step 4:*** **Apply Transition Factor** | **$2,000,000** | **$1,500,000** | **$1,000,000** | **$500,000** |
| ***Step 5:*** ***Compute the overall EHR amount for 4 years*** | | | | **$5,000,000** |

***Step 6:*** ***Computation of Medicaid Share from the Medicare cost report (Revised 2552-10 Cost Report)***

(estimated Medicaid inpatient-bed-days + estimated Medicaid HMO inpatient-bed-days) /
(est. Medicaid IP-bed-days x ((est. total charges - est. charity care charges) / est. total charges))

| | | | |
|---|---|---|---|
| w/s S-3 part I, col. 7, lines 1,8,9,10,11,12 | Total Medicaid Days | 0 | |
| w/s S-3 part I, col. 7, line 2 | Total Medicaid HMO days | 0 | |
| | Total Medicaid and HMO Medicaid days | | 0 |
| w/s C part I, col. 8, line 200 | Total Hospital Charges | $0 | |
| w/s S-10, line 20 | Uncompensated care charges (negative amount) | $0 | |
| | Total Hospital Charges - charity chgs | $0 | |
| | divided by Total Hospital Charges | $0 | |
| | Non-charity percentage | 0.00% | |
| w/s S-3 part I, col. 8, lines 1,2,8,9,10,11,12 | Total Hospital Days | 0 | |
| | Non-charity total Hospital Days | | 0 |

| | |
|---|---|
| **(Total Medicaid and HMO Medicaid days) divide non-charity hospital days** | **0.00%** |

***Step 7:*** ***Computation of Medicaid aggregate EHR incentive amount***

| | |
|---|---|
| Aggregate EHR amount for 4 years | $5,000,000 |
| (Total Medicaid and HMO Medicaid days) divide non-charity hospital days | 0.00% |
| **Medicaid Aggregate EHR Incentive Amount** | **$0.00** |

***Step 8:*** ***Computation of Medicaid annual EHR incentive payout***

| | Annual | |
|---|---|---|
| | **Percentage** | **Payment** |
| **Year 1 payment** | **50.0%** | **$0** |
| **Year 2 payment** | **40.0%** | **$0** |
| **Year 3 payment** | **10.0%** | **$0** |

## CMS Reference - Authorized Data Sources for One Time Payment Calculation

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If the State chooses to use the cost report in the Medicaid EHR incentive hospital payment calculation, what data elements should be used in the Medicare cost report, Form CMS 2552-96 and the Form CMS 2552-10?

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| The CMS 2552-96 data elements are as follows: |
|---|
| |
| -Total Discharges - Worksheet S-3 Part 1, Column 15, Line 12 |
| -Medicaid Days - Worksheet S-3, Part I, Column 5, Line 1 + Lines 6-10 |
| -Medicaid HMO Days - Worksheet S-3, Part I, Column 5, Line 2 |
| -Total Inpatient Days - Worksheet S-3 Part 1, Column 6, Line 1, 2 + Lines 6 -10 |
| -Total Hospital Charges - Worksheet C Part 1, Column 8, Line 101 |
| -Charity Care Charges - Worksheet S-10, Column 1, Line 30 |
| |
| The CMS 2552-10 data elements are as follows: |
| |
| -Total Discharges - Worksheet S-3 Part 1, Column 15, Line 14 |
| -Medicaid Days - Worksheet S-3, Part I, Column 7, Line 1 + Lines 8-12 |
| -Medicaid HMO Days - Worksheet S-3, Part I, Column 7, Line 2 |
| -Total Inpatient Days - Worksheet S-3 Part 1, Column 8, Line 1, 2 + Lines 8 - 12 |
| -Total Hospital Charges - Worksheet C Part 1, Column 8, Line 200 |
| -Charity Care Charges - Worksheet S-10, Column 3, Line 20 |
| |
| For information about the cost report data elements that are used in the Medicare hospital incentive calculation, please see FAQ #10717. |

## Appendix H: Impact of Incentive Payments

| Importance of Incentive Payment by Provider planning to upgrade | | | | |
|---|---|---|---|---|
| | Importance of Cost by Provider Type | | | |
| Provider Type | High | Medium | Low | Total |
| Dentist | 4 | | | 4 |
| FQHC | 1 | | | 1 |
| Hospital | 1 | | 1 | 2 |
| Optometry | 8 | 1 | | 9 |
| Pediatrics | 4 | | | 4 |
| Physician | 24 | 1 | 1 | 26 |
| Grand Total | 42 | 2 | 2 | 46 |
| Percentages | | | | |
| Overall Percentage | 91% | 4% | 4% | 100% |
| Non Physician Percentage | 90% | 5% | 5% | 100% |
| Physician Percentage | 92.3% | 3.8% | 3.8% | 100% |

| Importance of Incentive Payment by Location planning to upgrade | | | | |
|---|---|---|---|---|
| | Importance of Cost by Location | | | |
| Location | High | Medium | Low | Total |
| Coast Metro | 5 | | | 5 |
| Columbus Metro | 2 | | | 2 |
| JXN Metro | 10 | | 2 | 12 |
| McComb | 1 | | | 1 |
| Memphis Metro | 5 | | | 5 |
| Meridian Metro | 5 | | | 5 |
| Picayune | 1 | | | 1 |
| Tupelo Metro | 2 | 1 | | 3 |
| Under 50,000 | 11 | 1 | | 12 |
| Grand Total | 42 | 2 | 2 | 46 |
| Percentages | | | | |
| Overall Percentage | 91% | 4% | 4% | 100% |
| Metro Area Percentage | 91% | 3% | 6% | 100% |
| Rural Area Percentage | 91.7% | 8.3% | 0.0% | 100% |

Based on the results of the survey, at least 90% of the Providers who planned to attest to A/I/U indicated that incentive payments were a major factor in their decision. These results were consistent regardless of location or Provider type.

## Appendix I: MU Requirements (Updated 2013)

**Requirements for Stage 1 of MU**

For eligible professionals, there are a total of 23 MU objectives. Beginning in 2013, to qualify for an incentive payment, 18 of these 23 objectives must be met, including at a minimum:

- 13 required base and core objectives (unless an exclusion applies);
- 5 objectives chosen from a list of 10 menu set objectives, including at least 1 public health objective; and
- 6 CQMs (3 core or alternate core plus 3 menu).

For eligible hospitals and CAHs, there are a total of 22 MU objectives. Beginning in 2013, to qualify for an incentive payment, 17 of these 22 objectives must be met, including at a minimum:

- 12 required base and core objectives; and
- 5 objectives chosen from a list of 10 menu set objectives, including at least 1 public health objective; and
- 15 core CQMs.

**Requirements for Stage 2 of MU**

In order to meet Stage 2 requirements, you must have met the Stage 1 requirements of the EHR Incentive Programs for a 90-day period in your first year of participation and a full year in your second year of participation.

The earliest that the Stage 2 criteria must be met is in calendar year 2014 for EPs and federal fiscal year 2014 for EHs and CAHs. Due to changes in CEHRT standards, in 2014 EPs, EHs and CAHs will be allowed a 90-day EHR reporting period, regardless of EP's, EH's or CAH's year of program participation.

To demonstrate MU under Stage 2 criteria EPs must meet a total of 20 objectives and report CQMs, including:

- 17 base and core objectives;
- 3 menu objectives that they select from a total list of 6; and
- 9 CQMs from a total list of 64.

To demonstrate MU under Stage 2 criteria EHs and CAHs must meet a total of 19 objectives:

- 16 base and core objectives;
- 3 menu objectives that they select from a total list of 6; and
- 16 CQMs from a total list of 29.

**Explanation of base, core and menu Objectives**

The difference between a base, core and menu objective relates to the ONC technical standards for CEHRT. Base and core objectives are required to meet MU (unless an exclusion applies) and menu objectives allow providers a choice of objectives to fulfill remaining MU requirements.

Table I below outlines a crosswalk of MU base, core and menu objective requirements for EPs, EHs and CAHs between Stage 1 and Stage 2, including those that qualify for exclusions.

**Table I: Crosswalk of Objective Requirements for Stage 1 and Stage 2 Meaningful Use (Revised 2013)**

| Base Objectives | Stage 1 Minimum Requirement | Stage 2 Minimum Requirement | Exclusion (EPs only) |
|---|---|---|---|
| Record Demographics:<br>• Preferred language<br>• Gender<br>• Race<br>• Ethnicity<br>• Date of Birth<br>• EH/CAH - Date & Preliminary Cause of Death in even of mortality | More than 50% of all unique patients seen by EP or admitted to EH's or CAH's inpatient or emergency department have demographics recorded as structured data | More than **80%** of all unique patients seen by EP or admitted to EH's or CAH's inpatient or emergency department have demographics recorded as structured data | None. |
| Record and chart changes in vital signs | For more than 50% of all unique patients age 2 and over seen by the EP or admitted to the EH's or CAH's inpatient or emergency department have height, weight, and blood pressure recorded as structured data | For more than 80% of all unique patients seen by the EP or admitted to the EH's or CAH's inpatient or emergency department have:<br>• Blood pressure (ages 3 and over)<br>• Height/length and weight (all ages)<br><br>recorded as structured data | Any EP who:<br>1. Sees no patients 3 years or older is excluded from recording blood pressure;<br>2. Believes that all three vital signs of height, weight, and blood pressure have no relevance to their scope of practice is excluded from recording them;<br>3. Believes that height and weight are relevant to their scope of practice, but blood pressure is not, is excluded from recording blood pressure; or<br>4. Believes that blood pressure is relevant to their scope of practice, but height and weight are not, is excluded from recording height and weight. |

| Base Objectives | Stage 1 Minimum Requirement | Stage 2 Minimum Requirement | Exclusion (EPs only) |
|---|---|---|---|
| Clinical Decision Support | Implement one clinical decision support rule | EPs, EHs, and CAHs must satisfy both measures in order to meet the objective:<br>• Implement 5 clinical decision support interventions related to 5 Clinical Quality Measures at a relevant point in patient care for the entire EHR reporting period<br>• Enabled and implemented the functionality for drug-drug and drug-allergy interaction checks for the entire EHR reporting period | None. |
| Implement drug-drug and drug-allergy interaction checks<br><br>(Consolidated into Clinical Decision Support for Stage 2) | EP/EH/CAH has enabled the functionality for the entire EHR reporting period | | None. |
| Computerized Provider Order Entry | More than 30% of unique patients with at least one medication in their medication list seen by the EP or admitted to the EH's or CAH's inpatient or emergency department have at least one medication entered using CPOE<br><br>*Alternate measure*: More than 30% of medication orders created by the EP or authorized providers of the EH's or CAH's inpatient or emergency department during the EHR reporting period are recorded using CPOE. This alternative measure is optional in 2013, but required in 2014. | More than 60% of medication, laboratory, radiology orders created by the EP or admitted to the EH's or CAH's inpatient or emergency department during the EHR reporting period are recorded using CPOE | Any EP who writes fewer than 100 prescriptions during the EHR reporting period. |
| Implement drug-formulary checks<br><br>(Consolidated into CPOE for Stage 2) | The EP/EH/CAH has enabled this functionality and has access to at least one internal or external drug formulary for the entire EHR reporting period | | |

| Base Objectives | Stage 1 Minimum Requirement | Stage 2 Minimum Requirement | Exclusion (EPs only) |
|---|---|---|---|
| Summary of Care | The EP, EH, or CAH who transitions or refers their patient to another setting of care or provider of care providers a summary of care record for more than 50% of transitions of care and referrals | EPs, EHs, and CAHs must satisfy both measures in order to meet the objective:<br>• The EP, EH, or CAH that transitions or refers their patient to another setting of care or provider of care provides a summary of care record for more than 65% of transitions of care and referrals<br>• The EP,EH, or CAH that transitions or refers their patient to another setting of care or provider of care electronically transmits a summary of care record using Certified EHR Technology to a recipient with no organizational affiliation and using a different Certified EHR Technology vendor than the sender for more than 10% of transitions of care and referrals | Any EP who does not transfer a patient to another setting or refer a patient to another provider during the EHR reporting period would be excluded from this requirement. |
| Problem List<br>(Consolidated into Summary of Care for Stage 2) | More than 80% of all unique patients seen by the EP or admitted to the EH's or CAH's inpatient or emergency department have at least one entry (or an indication that no problems are known for the patient) recorded as structured data | | |
| Medication List<br>(Consolidated into Summary of Care for Stage 2) | More than 80% of all unique patients seen by the EP or admitted to the EH's or CAH's inpatient or emergency department have at least one entry (or an indication that the patient is not currently prescribed any medication) recorded as structured data | | |
| Medication Allergy List<br>(Consolidated into Summary of Care for Stage 2) | More than 80% of all unique patients seen by the EP or admitted to the EH's or CAH's inpatient or emergency department have at least one entry (or an indication that the patient has no known medication allergies) recorded as structured data | | |

| Base Objectives | Stage 1 Minimum Requirement | Stage 2 Minimum Requirement | Exclusion (EPs only) |
|---|---|---|---|
| Timely Electronic Access to Health Information **[EP Only]**<br><br>(View, Download and Transmit to 3rd Party for Stage 2) | More than 10% of all unique patients seen by the EP are provided timely (available to the patient within four business days of being updated in the certified EHR technology) electronic access to their health information subject to the EP's discretion to withhold certain information | There are 2 measures for this objective, both of which must be satisfied in order to meet the objective:<br>• More than 50% of all unique patients seen by the EP during the EHR reporting period are provided timely (within 4 business days after the information is available to the EP) online access to their health information subject to EP's discretion to withhold certain information<br>• More than 10% of all unique patients seen by the EP during the EHR reporting period (or their authorized representatives) view, download or transmit to the third party their health information | Any EP that neither orders nor creates lab tests or information that would be contained in the problem list, medication list, medication allergy list (or other information as listed at 45 CFR 170.304(g)) during the EHR reporting period. |
| Electronic Copy of Health Information<br><br>(View, Download and Transmit to 3rd Party for Stage 2) | More than 50% of all patients of the EP or the inpatient or emergency departments of the EHs/CAHs who request an electronic copy of their health information are provided it within 3 days | There are 2 measures for this objective, both of which must be satisfied in order to meet the objective:<br>• More than 50% of all patients who are discharged from the inpatient or | Any EP who has no requests from patients or their agents for an electronic copy of patient health information during the EHR reporting period would be |

| Base Objectives | Stage 1 Minimum Requirement | Stage 2 Minimum Requirement | Exclusion (EPs only) |
|---|---|---|---|
| Electronic Copy of Discharge Instructions **[EH only]**<br><br>(View, Download and Transmit to 3rd Party for Stage 2) | More than 50% of all patients who are discharged from an EH or CAH's inpatient or emergency department and who request an electronic copy of their discharge instructions are provided it | emergency department of an EH or CAH have their information available online within 36 hours of discharge<br>• More than 10% of all patients who are discharged from the inpatient or emergency department of an EH or CAH view, download or transmit to a third party their information during the EHR reporting period | excluded from this requirement. |
| Privacy/Security | Conduct or review a security risk analysis per 45 CFR 164.308 (a)(1) and implement security updates as necessary and correct identified security deficiencies as part of its risk management process | Conduct or review a security risk analysis per 45 CFR 164.308 (a)(1), including addressing the encryption/security of data at rest in accordance with the requirements under 45 CFR 164.312 (a)(2)(iv) and 45 CFR 164.306 (d)(3), and implement security updates as necessary and correct identified security deficiencies as part of its risk management process | None. |
| Clinical Quality Measures<br><br>(This requirement has been removed as an objective and has been incorporated directly into the definition of MU) | Submit clinical quality measures through attestation, either electronically or as discussed in section II(A)(3) of the final rule | Clinical Quality Measures eliminated from the core objective. However, EPs, EHs and CAHs are still required to report CQMs to CMS or the States in order to demonstrate Meaningful Use of Certified EHR Technology | None. |

| Core Objective | Stage 1 Minimum Requirement | Stage 2 Minimum Requirement | Exclusion (EPs only) |
|---|---|---|---|
| ePrescribing **[EP Only]** | More than 40% of all permissible prescriptions written by the EP are transmitted electronically using certified EHR technology | More than 65% of all permissible prescriptions written by the EP are compared to at least one drug formulary and transmitted electronically using Certified EHR Technology | 1. Any EP who writes fewer than 100 prescriptions during the EHR reporting period would be excluded from this requirement.<br>2. Any EP who does not have a pharmacy within their organization and there are no pharmacies that accept electronic prescriptions within 10 miles of the EP's practice location at the start of his/her EHR reporting period would be excluded from this requirement. |
| Smoking Status | More than 50% of all unique patients 13 years old or older seen by the EP or admitted to the EH's or CAH's inpatient or emergency department have smoking status recorded | More than 80% percent of all unique patients 13 years or older seen by the EP or admitted to the EH's or CAH's inpatient emergency department during the EHR reporting period have smoking status recorded as structured data | Any EP who did not see patients 13 years or older during the EHR reporting period would be excluded from this requirement.<br><br>Any EH or CAH that did not admit any patients 13 years or older to the inpatient or emergency department during the EHR reporting period. |
| Clinical Summaries for Each Office Visit **[EP Only]** | Clinical summaries provided to patients for more than 50% of all office visits within 3 business days | Clinical summaries provided to patients within 24 hours for more than 50% of office visits | Any EP who has no office visits during the EHR reporting period would be excluded from this requirement. |

| Core Objective | Stage 1 Minimum Requirement | Stage 2 Minimum Requirement | Exclusion (EPs only) |
|---|---|---|---|
| Lab Results into EHR | More than 40% of all clinical lab test results ordered by the EP or by an authorized provider of the EH or CAH for patients admitted to its inpatient or emergency department during the EHR reporting period whose results are either in a positive/negative or numerical format are incorporated in certified EHR technology as structured data | More than 55% of all clinical lab test results ordered by the EP or by an authorized provider of the EH or CAH for patients admitted to its inpatient or emergency department during the EHR reporting period whose results are either in a positive/negative or numerical format are incorporated in certified EHR technology as structured data | Any EP who orders no lab tests who results are either in a positive/negative or numeric format during the EHR reporting period would be excluded from this requirement. |
| Patient Reminders **[EP only]** | More than 20% of all unique patients 65 and older or 5 years and younger were sent an appropriate reminder during the EHR reporting period | More than 10% of all unique patients who have had an office visit with the EP within the 24 months prior to the beginning of the EHR reporting period were sent a reminder, per patient preference | Any EP who has no patients 65 years or older or 5 years old or younger with records maintained using CEHRT is excluded from this requirement. |
| Patient Specific Education | More than 10% of all unique patients seen by the EP or admitted to the EH's or CAH's inpatient or emergency department are provided patient-specific education resources | [EP] Patient-specific education resources identified by Certified EHR Technology are provided to patients for more than 10% of all office visits by the EP[EH/CAH] More than 10% of all unique patients admitted to the EH's or CAH's inpatient or emergency departments are provided patient-specific education resources identified by Certified EHR Technology | None. |
| Medication Reconciliation | The EP,EH or CAH performs medication reconciliation for more than 50% of transitions of care in which the patient is transitioned into the care of the EP or admitted to the EH's or CAH's inpatient or emergency department | The EP, EH or CAH performs medication reconciliation for more than 65% of transitions of care in which the patient is transitioned into the care of the EP or admitted to the EH's or CAH's inpatient or emergency department | Any EP who was not the recipient of any transitions of care during the EHR reporting period would be excluded from this requirement. |

| Core Objective | Stage 1 Minimum Requirement | Stage 2 Minimum Requirement | Exclusion (EPs only) |
|---|---|---|---|
| Patient List | Generate at least one report listing patients of the EP, EH or CAH with a specific condition | Generate at least one report listing patients of the EP, EH, or CAH with a specific condition | None. |
| Immunization Registries | Performed at least one test of certified EHR technology's capacity to submit electronic data to immunization registries and follow up submission if the test is successful (unless none of the immunization registries in which the EP, EH or CAH submits such information have the capacity to receive the information electronically) | Successful ongoing submission of electronic immunization data from Certified EHR Technology to an immunization registry or immunization information system for the entire EHR reporting period | 1. An EP that does not perform immunizations during the EHR reporting period would be excluded from this requirement.<br>2. Any EP who operates in a jurisdiction for which no public health agency is capable of receiving electronic immunization information in the specific standards required by CEHRT at the start of their EHR reporting period. |
| Lab Results to Public Health Agencies **[EH only]** | Performed at least one test of certified EHR technology's capacity to provide electronic submission of reportable lab results to public health agencies and follow up submission if the test is successful (unless none of the public health agencies in which the EP, EH or CAH submits such information have the capacity to receive the information electronically) | Successful ongoing submission of electronic reportable laboratory results from Certified EHR Technology to a public health agency for the entire EHR reporting period | None. |

| Core Objective | Stage 1 Minimum Requirement | Stage 2 Minimum Requirement | Exclusion (EPs only) |
|---|---|---|---|
| Secure Messaging | N/A | A secure message was sent using the electronic messaging function of Certified EHR Technology by more than 10% of unique patients seen by the EP during the EHR reporting period | 1. Any EP who has no office visits during the EHR reporting period is excluded from this requirement.<br>2. Any EP who conducts 50% or more of his/her encounters in a country that does not have 50% or more of its housing units with 3Mpbs broadband accessibility according to the latest information available from the FCC on the first day of their EHR reporting period. |
| **Menu Objective** | **Stage 1 Minimum Requirement** | **Stage 2 Minimum Requirement** | **Exclusion (EPs only)** |
| Imaging Results | N/A | More than 40% of all scans and tests whose result is one or more images ordered by the EP or by and authorized provider of the EH or CAH for patients admitted to its inpatient or emergency department during the EHR reporting period are accessible through Certified EHR Technology | 1. Any EP who orders less than 100 tests that result in an image during the EHR reporting period.<br>2. Any EP who has no access to electronic imaging results at the start of the EHR reporting period. |
| Advance Directives **[EH only]** | More than 50% of unique patients 65 years old or older admitted to the EH's or CAH's inpatient department have an indication of an advance directive status recorded | More than 50% of unique patients 65 years old or older admitted to the EH's or CAH's inpatient department during the EHR reporting period have an indication of an advance directive status recorded | |

| Menu Objective | Stage 1 Minimum Requirement | Stage 2 Minimum Requirement | Exclusion (EPs only) |
|---|---|---|---|
| ePrescribing **[EH only]**<br><br>(Stage 2 - combined with Drug Formulary checking from Stage 1 Menu Set) | N/A | More than 10% of hospital discharge medication orders for permissible prescriptions (for new or changed prescriptions) are compared to at least one drug formulary and transmitted electronically using Certified EHR Technology | |
| Electronic Medication Administration Record (eMAR) **[EH only]** | N/A | More than 10% of medication orders created by authorized providers of the EH's or CAH's inpatient or emergency department during the EHR reporting period are tracked using eMAR | |
| Family Health History | N/A | More than 20% of all unique patients seen by the EP or admitted to the EH's or CAH's inpatient or emergency department during the EHR reporting period have a structured data entry for one or more first-degree relatives | Any EP who has no office visits during the EHR reporting period. |

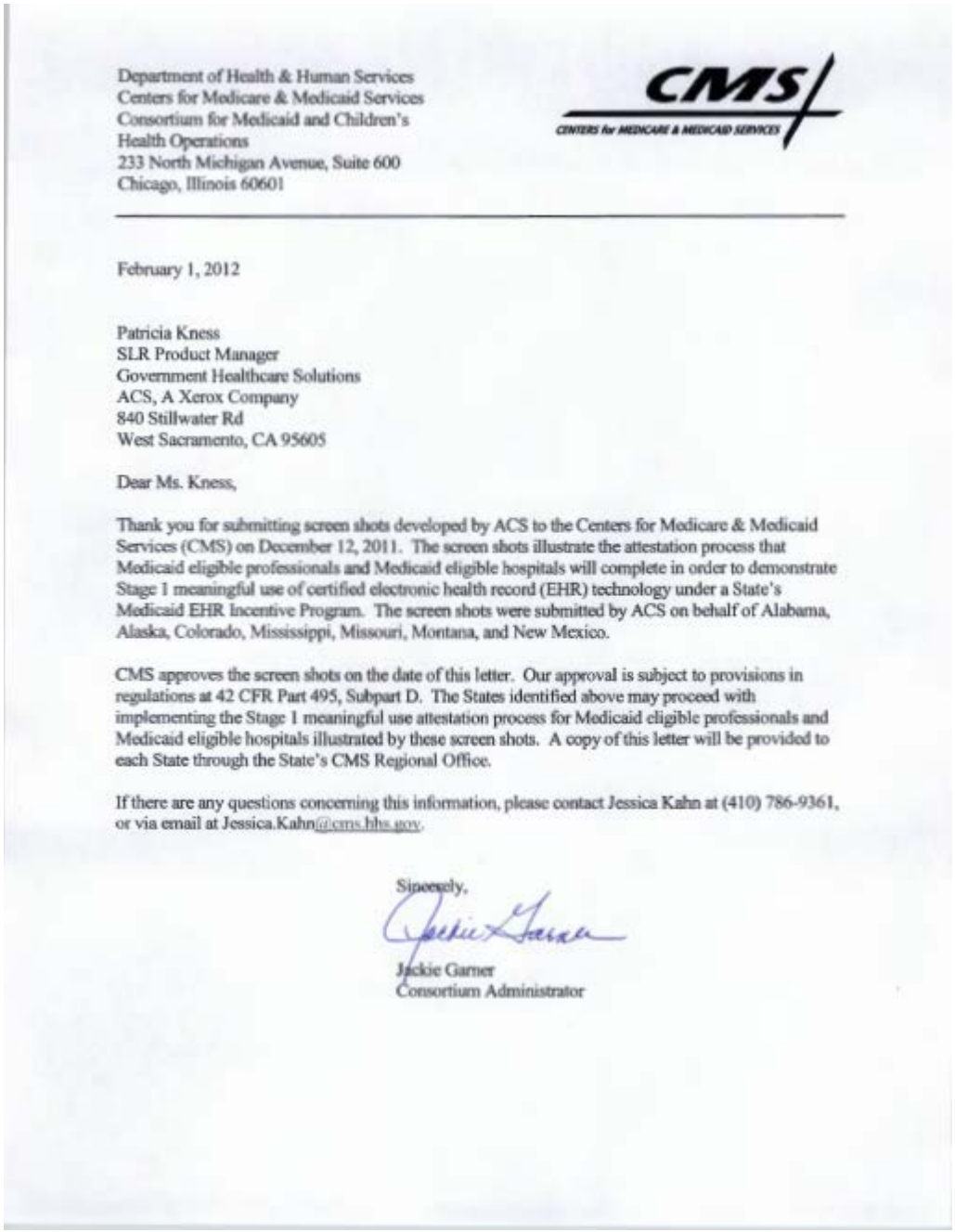
| Menu Objective | Stage 1 Minimum Requirement | Stage 2 Minimum Requirement | Exclusion (EPs only) |
|---|---|---|---|
| Syndromic Surveillance | Performed at least one test of certified EHR technology's capacity to provide electronic submission of syndromic surveillance to public health agencies and follow up submission if the test is successful (unless none of the public health agencies in which the EP, EH or CAH submits such information have the capacity to receive the information electronically) | Successful ongoing submission of electronic syndromic surveillance from Certified EHR Technology to a public health agency for the entire EHR reporting period | 1. If an EP does not collect any reportable syndromic information on their patients during the EHR reporting period, then the EP is excluded from this requirement.<br>2. Any EP who operates in a jurisdiction for which no public health agency is capable of receiving electronic cancer case information in the specific standards required by CEHRT at the start of their EHR reporting period. |
| Specialized Registry<br>**[EP only]** | N/A | Successful ongoing submission of specific case information from Certified EHR Technology to a specialized registry for the entire EHR reporting period | 1. Any EP who does not diagnose or directly treat cancer.<br>2. Any EP who operates in a jurisdiction for which no public health agency that is capable of receiving electronic cancer case information in the specific standards required by CEHRT at the start of their EHR reporting period. |

| Menu Objective | Stage 1 Minimum Requirement | Stage 2 Minimum Requirement | Exclusion (EPs only) |
|---|---|---|---|
| Cancer Registry **[EP only]** | N/A | Successful ongoing submission of cancer case information from Certified EHR Technology to a specialized registry for the entire EHR reporting period | 1. Any EP who does not diagnose or directly treat any disease associated with a specialized registry sponsored by a national specialty society for which the EP is eligible, or the public health agencies in their jurisdiction.<br>2. Any EP who operates in a jurisdiction for which no public health agency or national specialty society for which the EP is eligible that is capable of receiving electronic specific case information in the specific standards required by CEHRT at the start of their EHR reporting period. |

## Appendix I: Post-Payment Audit Strategy for Meaningful Use

Appendix J will be submitted to CMS separate from this SMHP update to maintain confidentiality.

## Appendix K: Meaningful Use Screenshots



Department of Health & Human Services
Centers for Medicare & Medicaid Services
Consortium for Medicaid and Children's
Health Operations
233 North Michigan Avenue, Suite 600
Chicago, Illinois 60601

CMS
CENTERS for MEDICARE & MEDICAID SERVICES

February 1, 2012

Patricia Kness
SLR Product Manager
Government Healthcare Solutions
ACS, A Xerox Company
840 Stillwater Rd
West Sacramento, CA 95605

Dear Ms. Kness,

Thank you for submitting screen shots developed by ACS to the Centers for Medicare & Medicaid Services (CMS) on December 12, 2011. The screen shots illustrate the attestation process that Medicaid eligible professionals and Medicaid eligible hospitals will complete in order to demonstrate Stage 1 meaningful use of certified electronic health record (EHR) technology under a State's Medicaid EHR Incentive Program. The screen shots were submitted by ACS on behalf of Alabama, Alaska, Colorado, Mississippi, Missouri, Montana, and New Mexico.

CMS approves the screen shots on the date of this letter. Our approval is subject to provisions in regulations at 42 CFR Part 495, Subpart D. The States identified above may proceed with implementing the Stage 1 meaningful use attestation process for Medicaid eligible professionals and Medicaid eligible hospitals illustrated by these screen shots. A copy of this letter will be provided to each State through the State's CMS Regional Office.

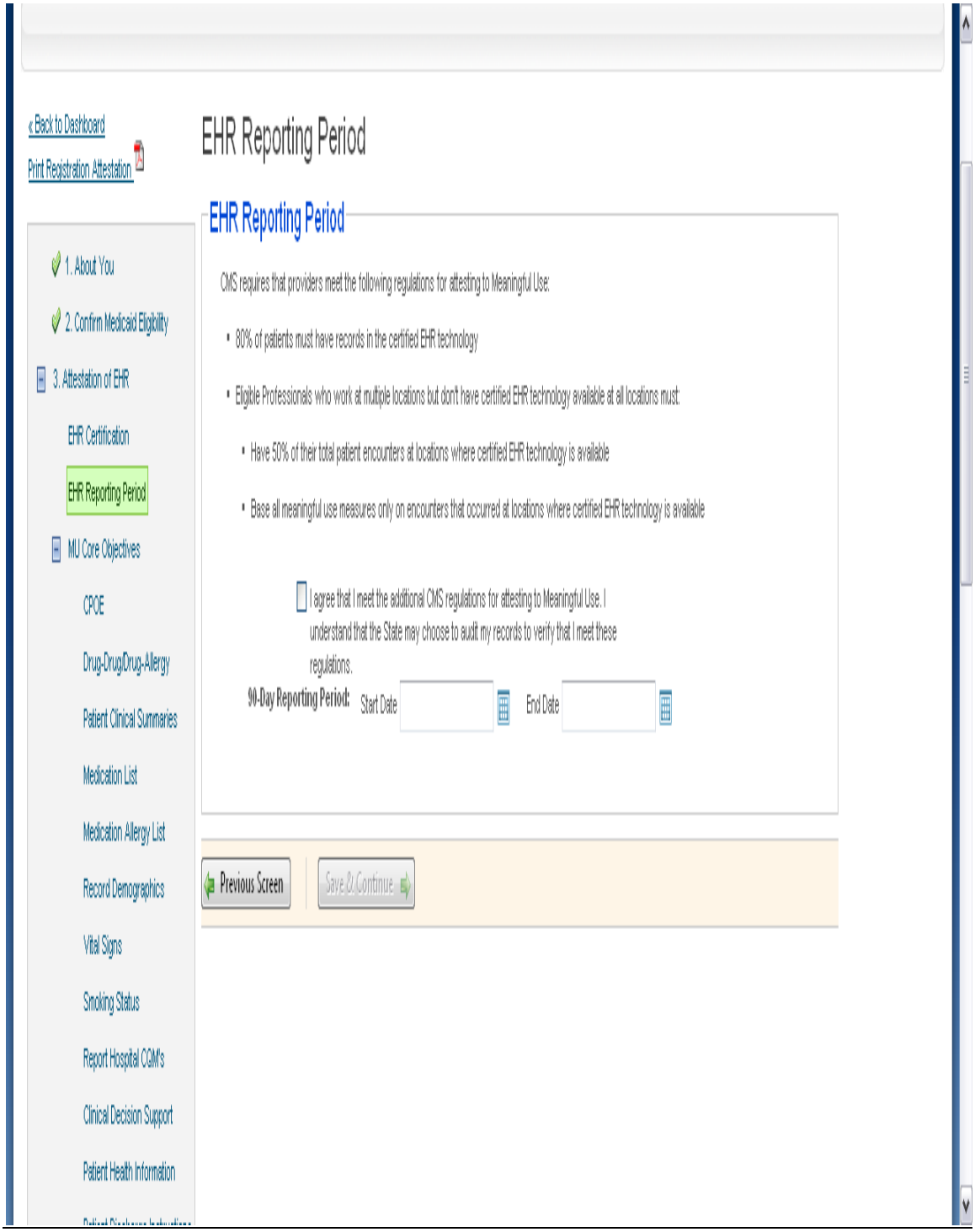
If there are any questions concerning this information, please contact Jessica Kahn at (410) 786-9361, or via email at Jessica.Kahn@cms.hhs.gov.

Sincerely,

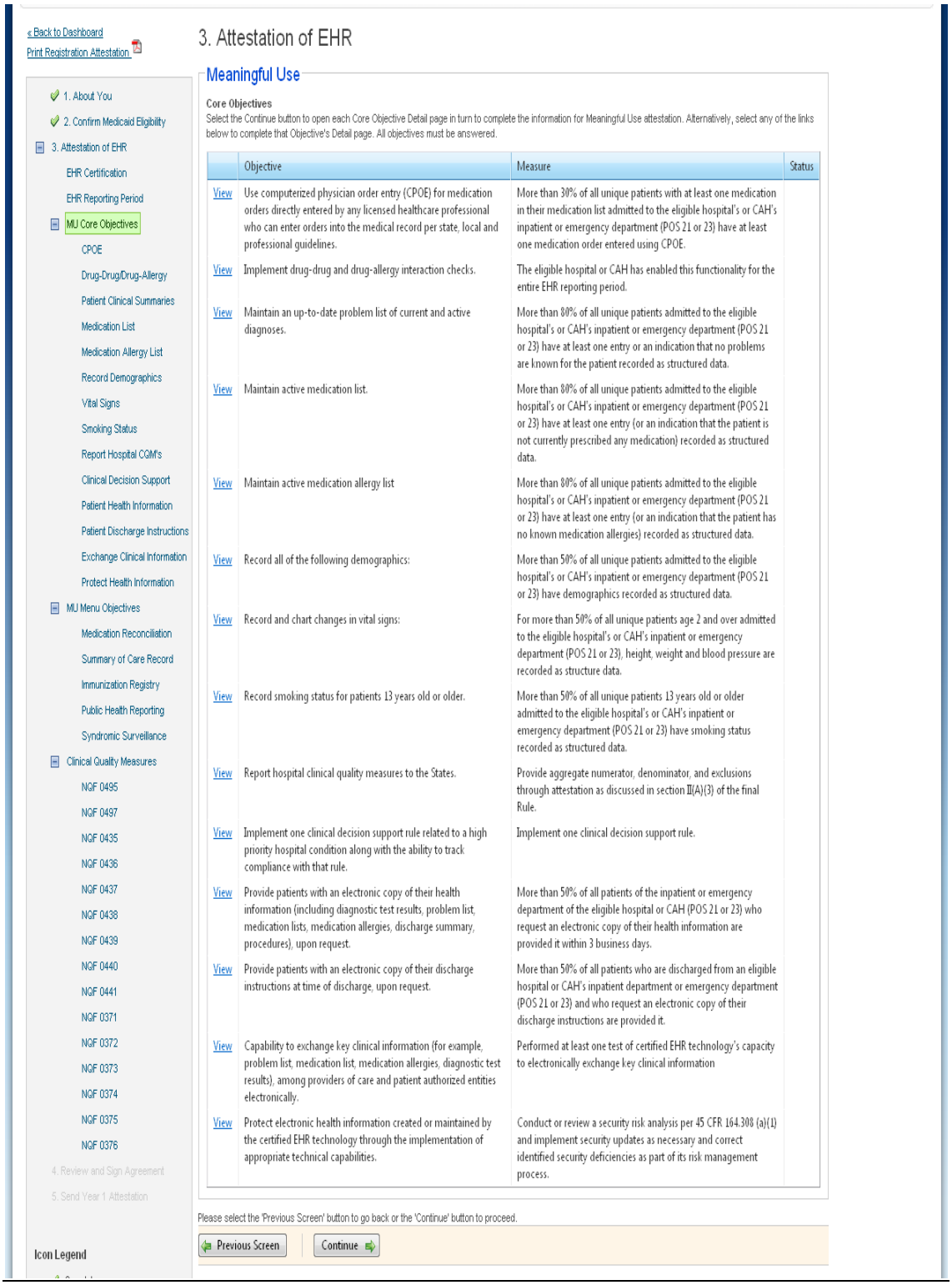
Jackie Garner
Consortium Administrator

ELIGIBLE HOSPITAL

EHR Reporting Period



## MU Core Objectives



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- 1. About You
- 2. Confirm Medicaid Eligibility
- 3. Attestation of EHR
  - EHR Certification
  - EHR Reporting Period
  - MU Core Objectives
    - CPOE
    - Drug-Drug/Drug-Allergy
    - Patient Clinical Summaries
    - Medication List
    - Medication Allergy List
    - Record Demographics
    - Vital Signs
    - Smoking Status
    - Report Hospital CQM's
    - Clinical Decision Support
    - Patient Health Information
    - Patient Discharge Instructions
    - Exchange Clinical Information
    - Protect Health Information
  - MU Menu Objectives
    - Medication Reconciliation
    - Summary of Care Record
    - Immunization Registry
    - Public Health Reporting
    - Syndromic Surveillance
  - Clinical Quality Measures
    - NQF 0495
    - NQF 0497
    - NQF 0435
    - NQF 0436
    - NQF 0437
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    - NQF 0439
    - NQF 0440
    - NQF 0441
    - NQF 0371
    - NQF 0372
    - NQF 0373
    - NQF 0374
    - NQF 0375
    - NQF 0376
- 4. Review and Sign Agreement
- 5. Send Year 1 Attestation

Icon Legend

3. Attestation of EHR

Meaningful Use

Core Objectives

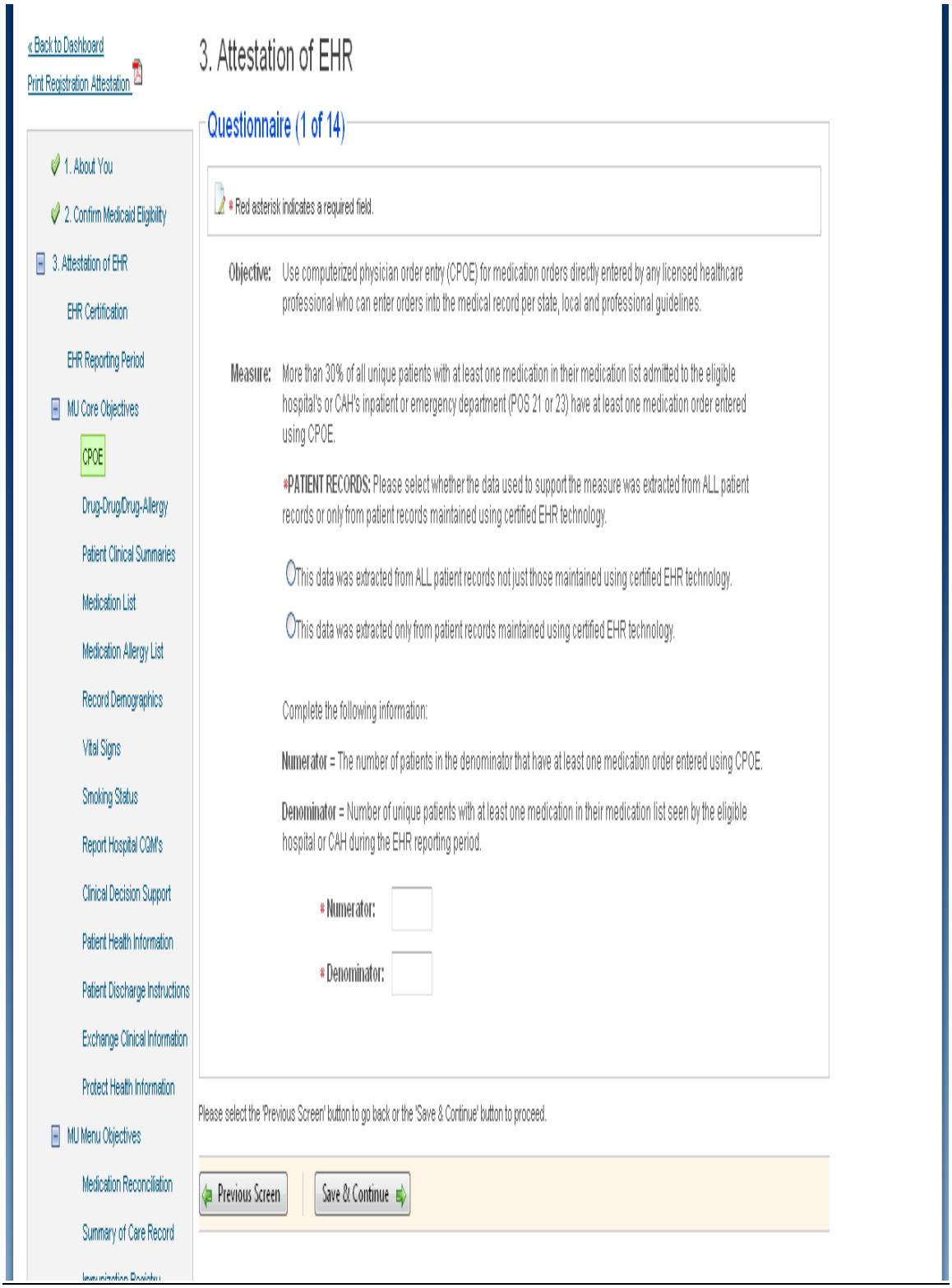
Select the Continue button to open each Core Objective Detail page in turn to complete the information for Meaningful Use attestation. Alternatively, select any of the links below to complete that Objective's Detail page. All objectives must be answered.

| | Objective | Measure | Status |
|---|---|---|---|
| View | Use computerized physician order entry (CPOE) for medication orders directly entered by any licensed healthcare professional who can enter orders into the medical record per state, local and professional guidelines. | More than 30% of all unique patients with at least one medication in their medication list admitted to the eligible hospital's or CAH's inpatient or emergency department (POS 21 or 23) have at least one medication order entered using CPOE. | |
| View | Implement drug-drug and drug-allergy interaction checks. | The eligible hospital or CAH has enabled this functionality for the entire EHR reporting period. | |
| View | Maintain an up-to-date problem list of current and active diagnoses. | More than 80% of all unique patients admitted to the eligible hospital's or CAH's inpatient or emergency department (POS 21 or 23) have at least one entry or an indication that no problems are known for the patient recorded as structured data. | |
| View | Maintain active medication list. | More than 80% of all unique patients admitted to the eligible hospital's or CAH's inpatient or emergency department (POS 21 or 23) have at least one entry (or an indication that the patient is not currently prescribed any medication) recorded as structured data. | |
| View | Maintain active medication allergy list | More than 80% of all unique patients admitted to the eligible hospital's or CAH's inpatient or emergency department (POS 21 or 23) have at least one entry (or an indication that the patient has no known medication allergies) recorded as structured data. | |
| View | Record all of the following demographics: | More than 50% of all unique patients admitted to the eligible hospital's or CAH's inpatient or emergency department (POS 21 or 23) have demographics recorded as structured data. | |
| View | Record and chart changes in vital signs: | For more than 50% of all unique patients age 2 and over admitted to the eligible hospital's or CAH's inpatient or emergency department (POS 21 or 23), height, weight and blood pressure are recorded as structure data. | |
| View | Record smoking status for patients 13 years old or older. | More than 50% of all unique patients 13 years old or older admitted to the eligible hospital's or CAH's inpatient or emergency department (POS 21 or 23) have smoking status recorded as structured data. | |
| View | Report hospital clinical quality measures to the States. | Provide aggregate numerator, denominator, and exclusions through attestation as discussed in section II(A)(3) of the final Rule. | |
| View | Implement one clinical decision support rule related to a high priority hospital condition along with the ability to track compliance with that rule. | Implement one clinical decision support rule. | |
| View | Provide patients with an electronic copy of their health information (including diagnostic test results, problem list, medication lists, medication allergies, discharge summary, procedures), upon request. | More than 50% of all patients of the inpatient or emergency department of the eligible hospital or CAH (POS 21 or 23) who request an electronic copy of their health information are provided it within 3 business days. | |
| View | Provide patients with an electronic copy of their discharge instructions at time of discharge, upon request. | More than 50% of all patients who are discharged from an eligible hospital or CAH's inpatient department or emergency department (POS 21 or 23) and who request an electronic copy of their discharge instructions are provided it. | |
| View | Capability to exchange key clinical information (for example, problem list, medication list, medication allergies, diagnostic test results), among providers of care and patient authorized entities electronically. | Performed at least one test of certified EHR technology's capacity to electronically exchange key clinical information | |
| View | Protect electronic health information created or maintained by the certified EHR technology through the implementation of appropriate technical capabilities. | Conduct or review a security risk analysis per 45 CFR 164.308 (a)(1) and implement security updates as necessary and correct identified security deficiencies as part of its risk management process. | |

Please select the 'Previous Screen' button to go back or the 'Continue' button to proceed.

Previous Screen | Continue

Core Objective #1



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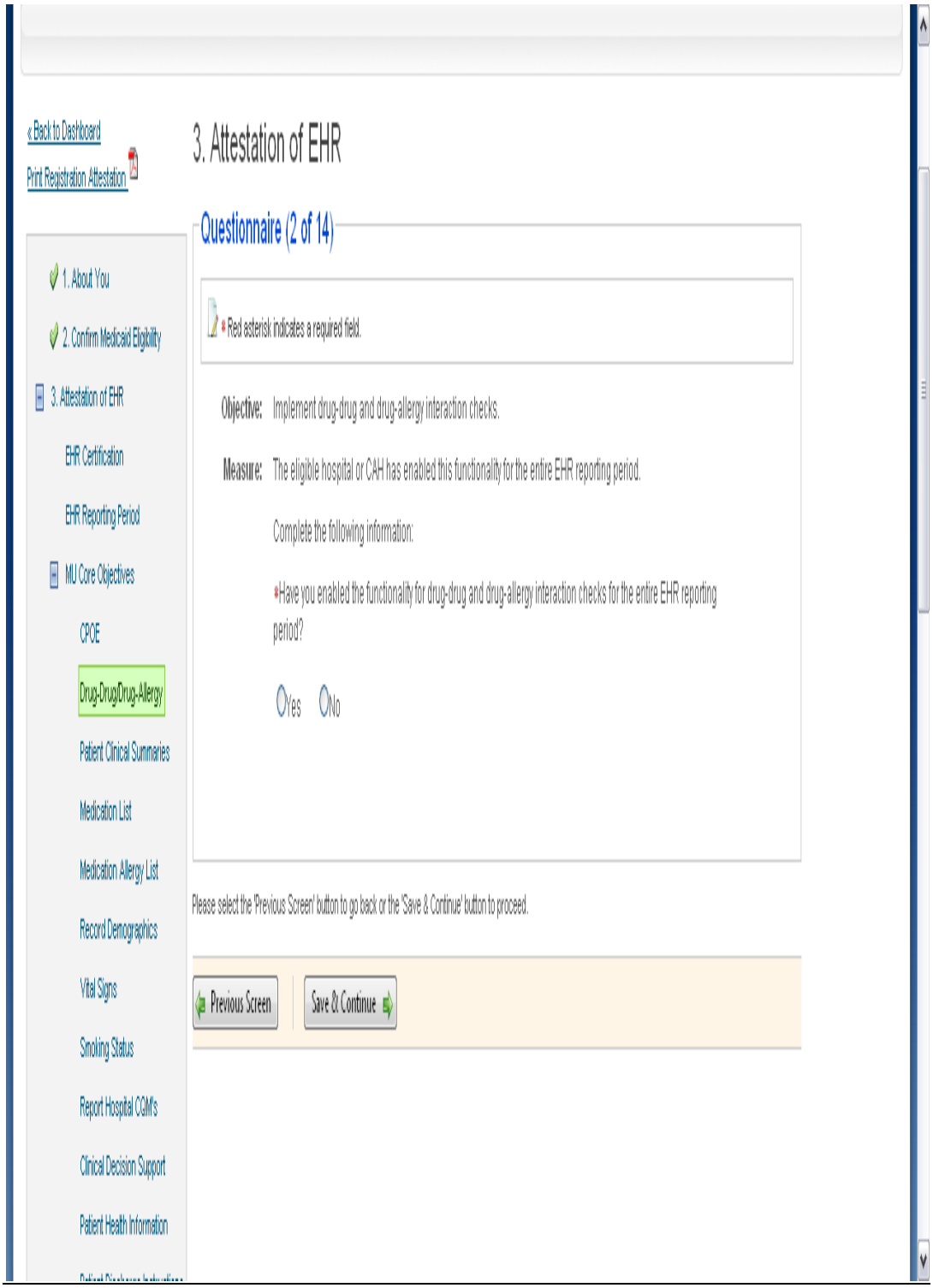
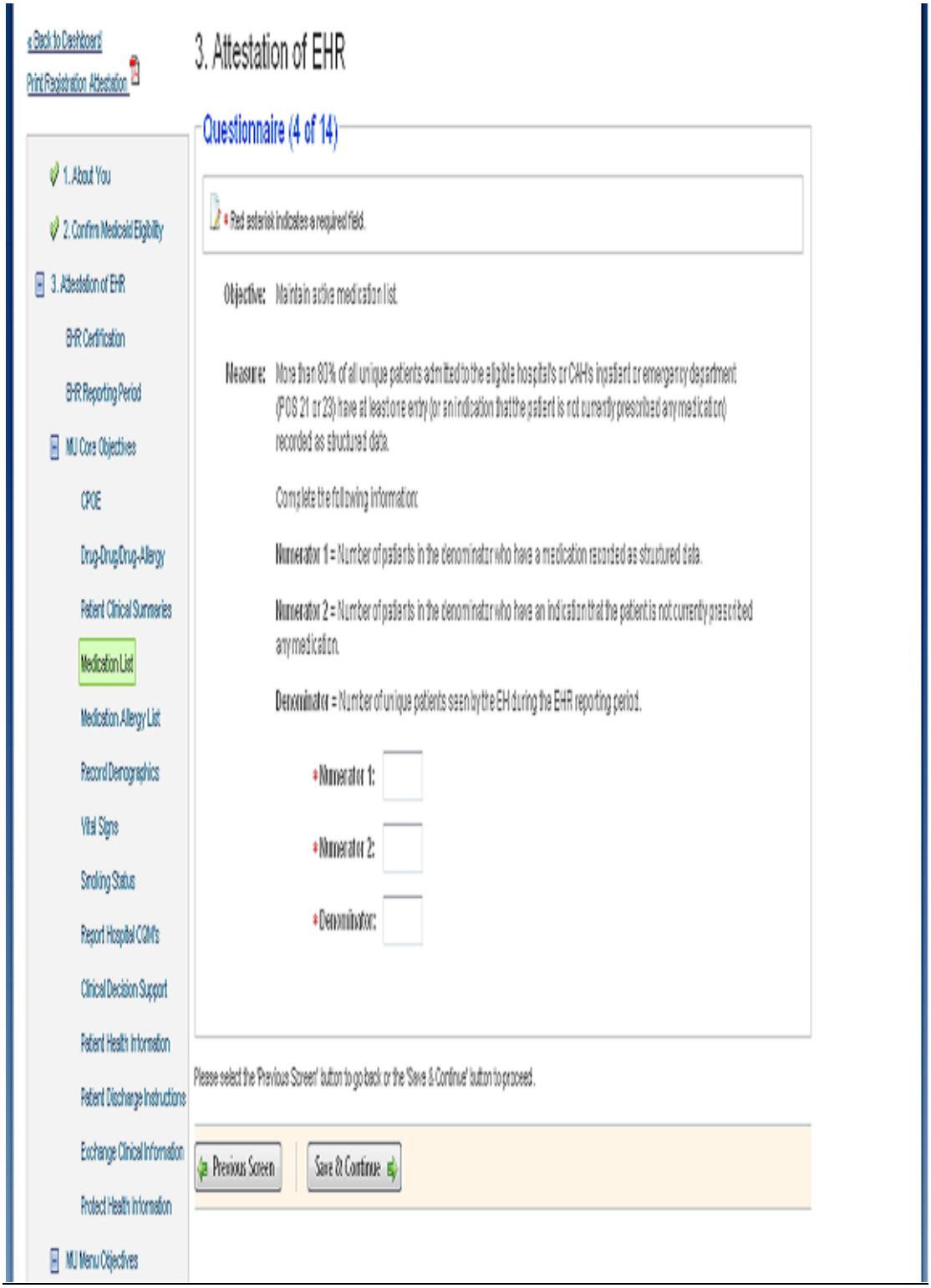


Core Objective #3

Core Objective #4



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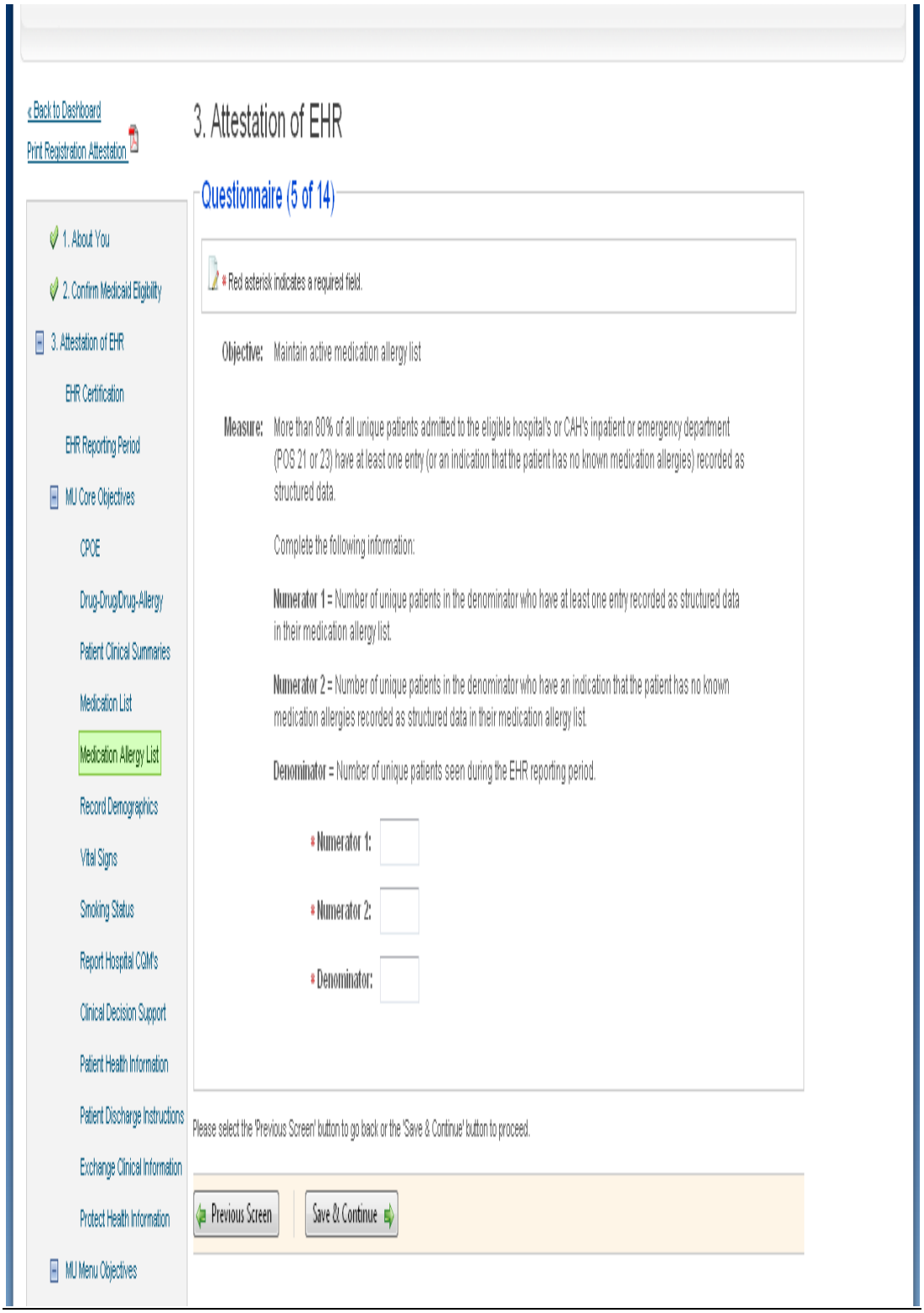

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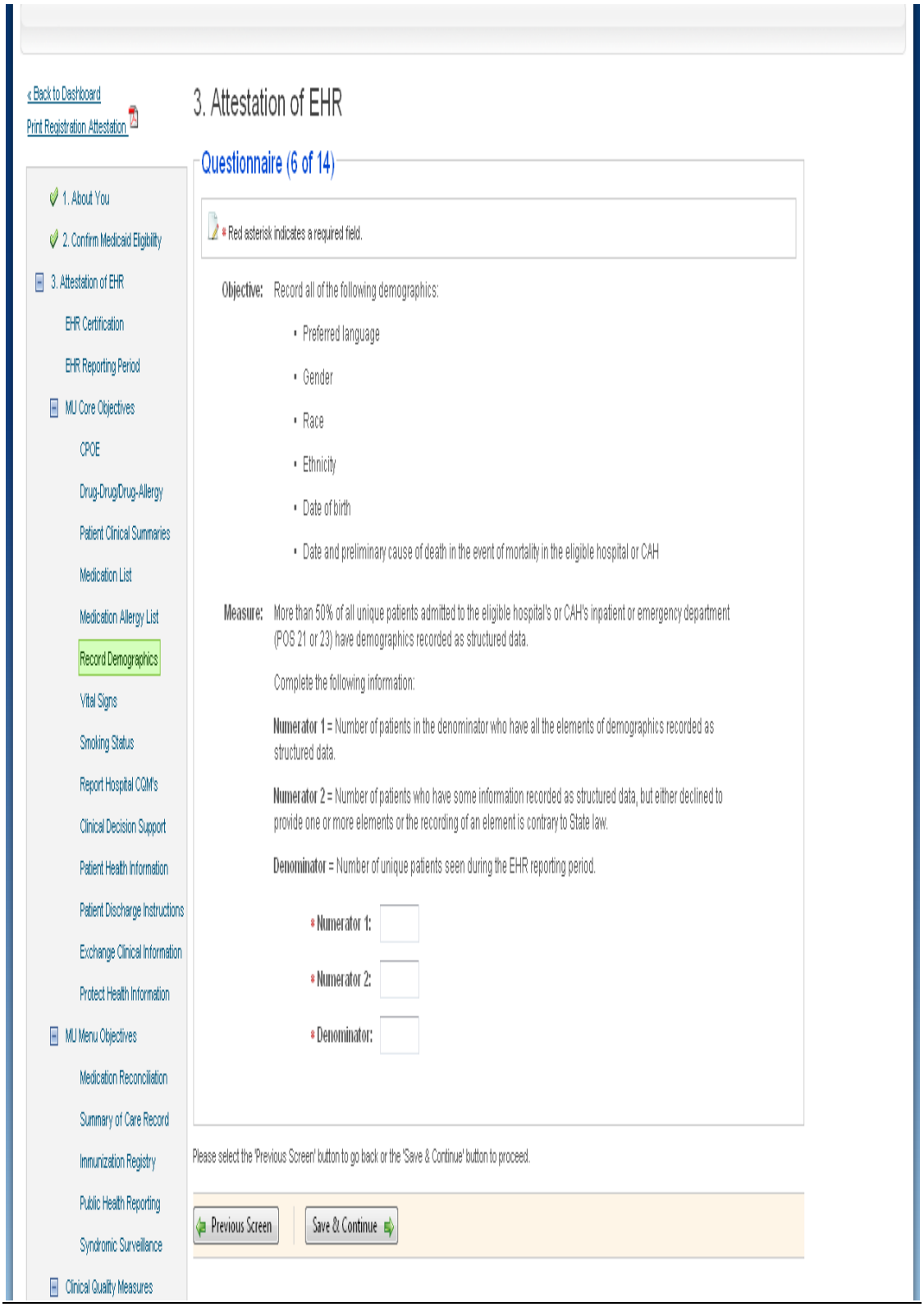

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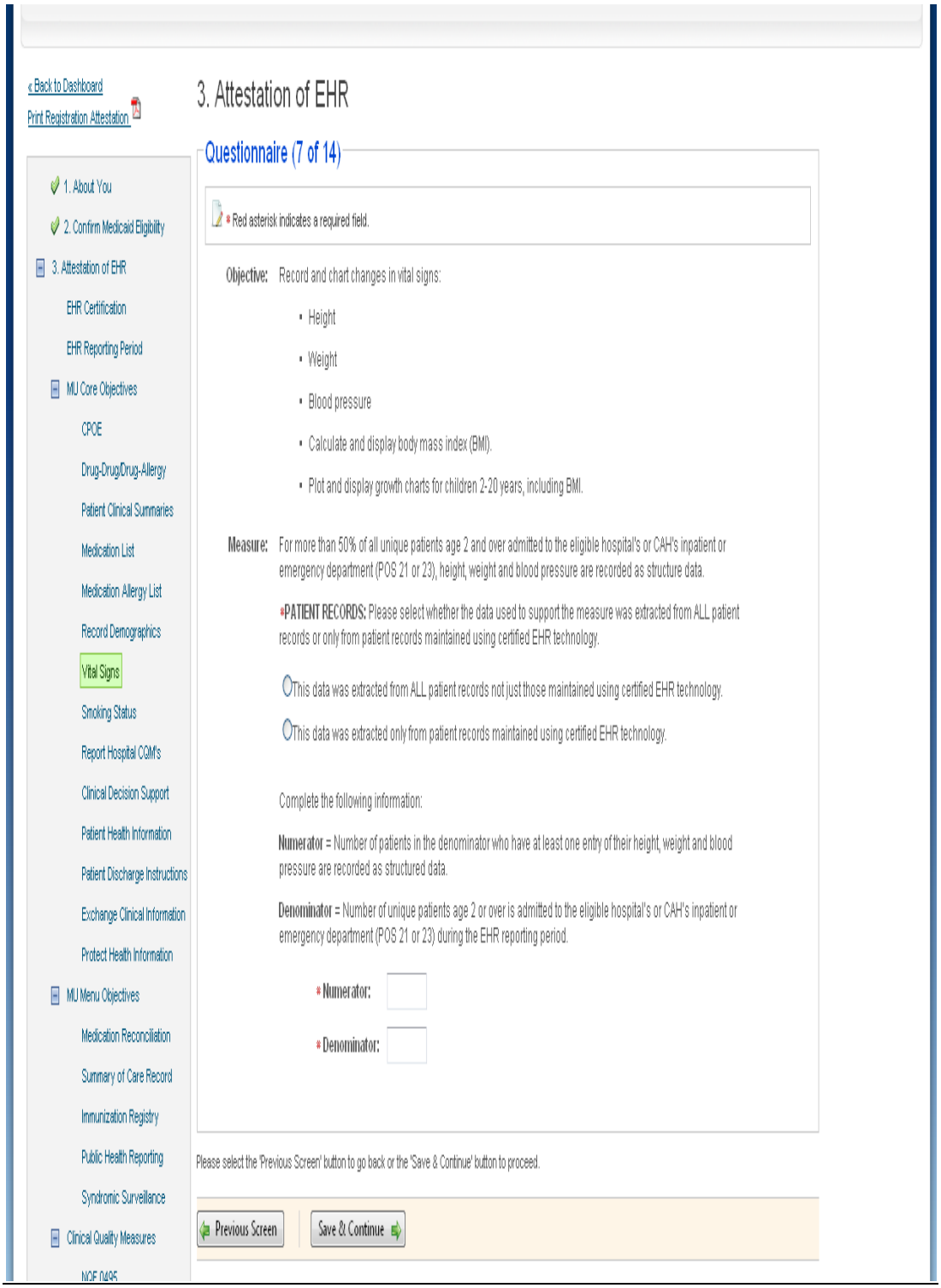

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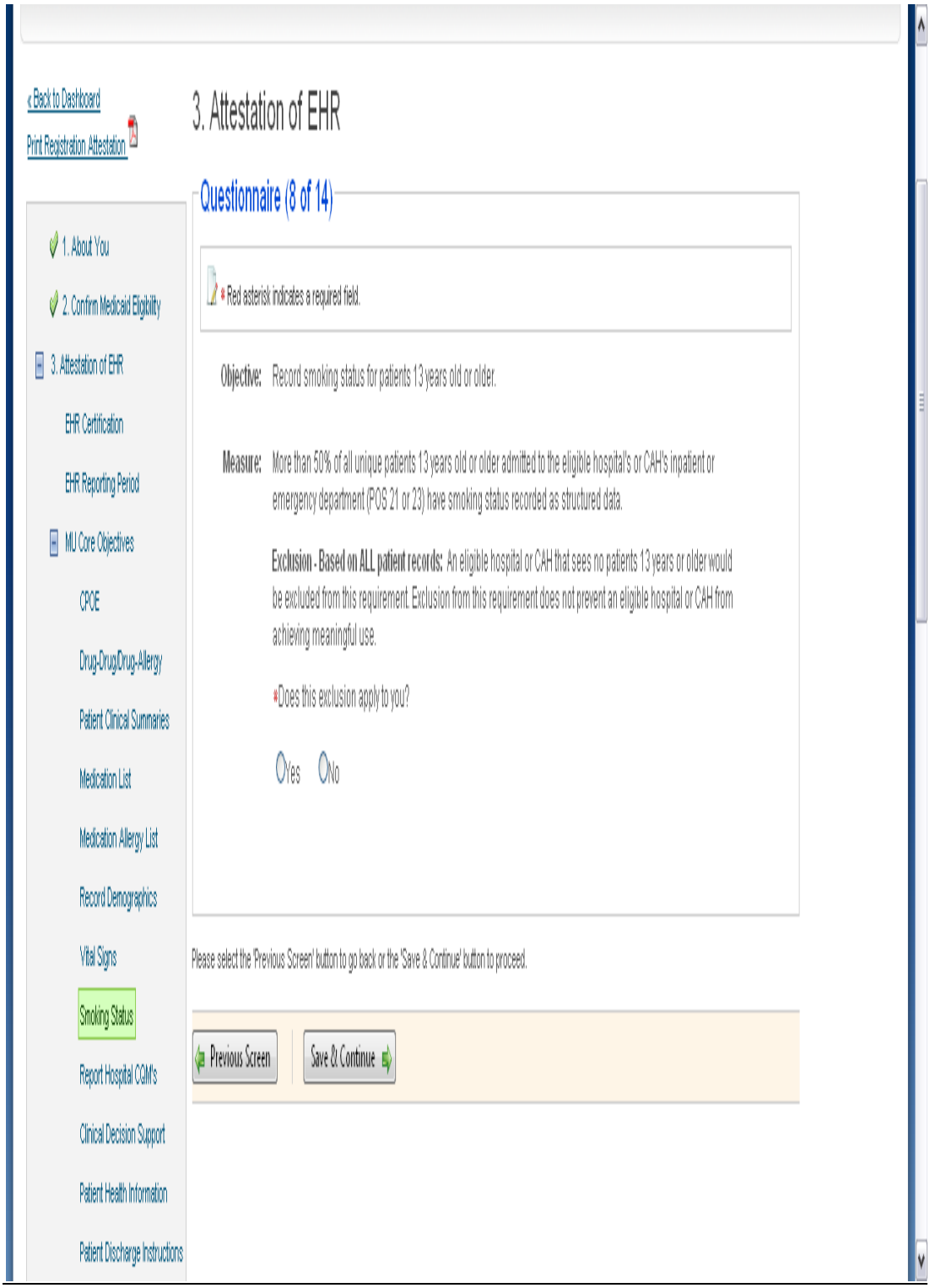

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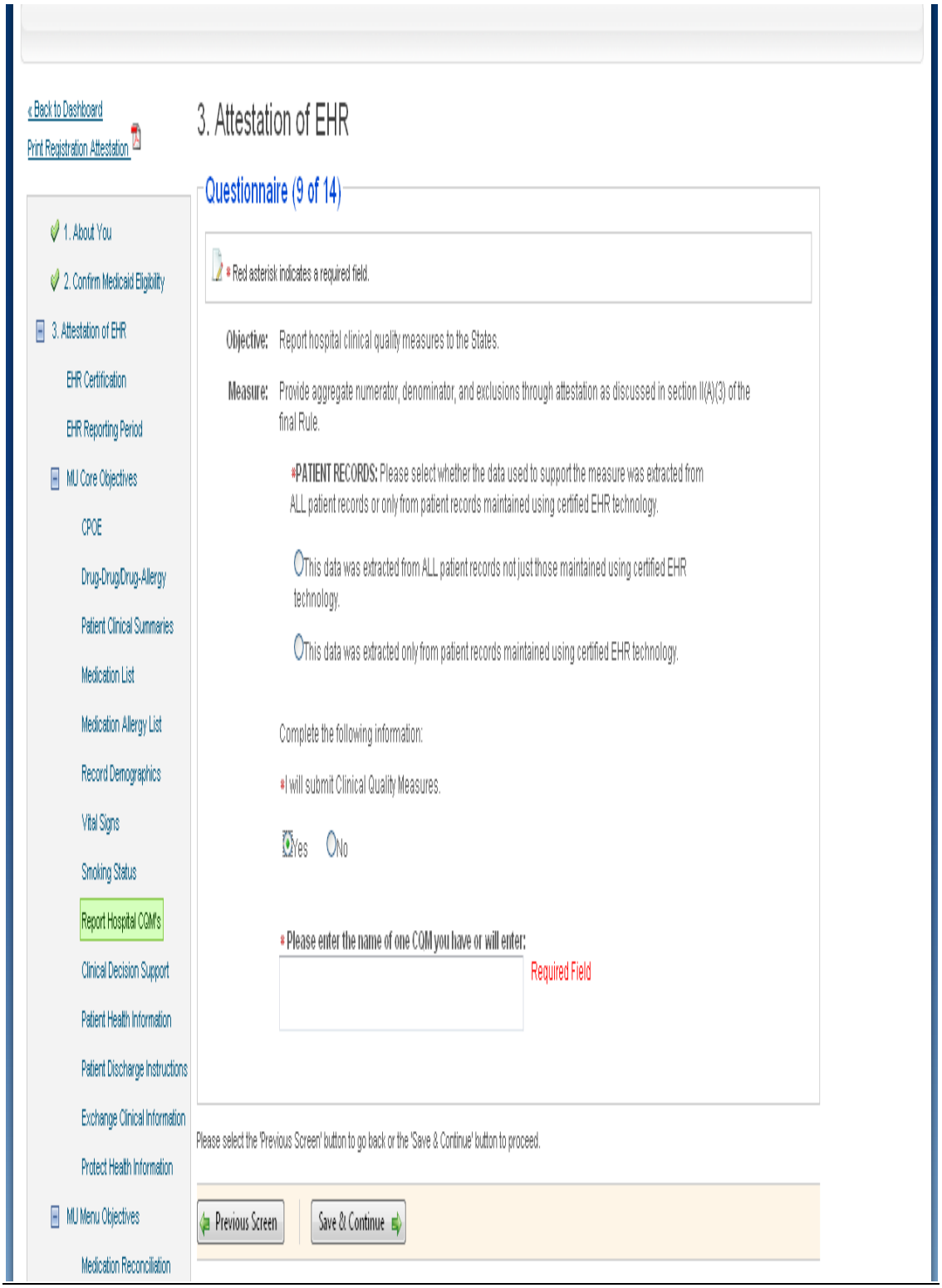

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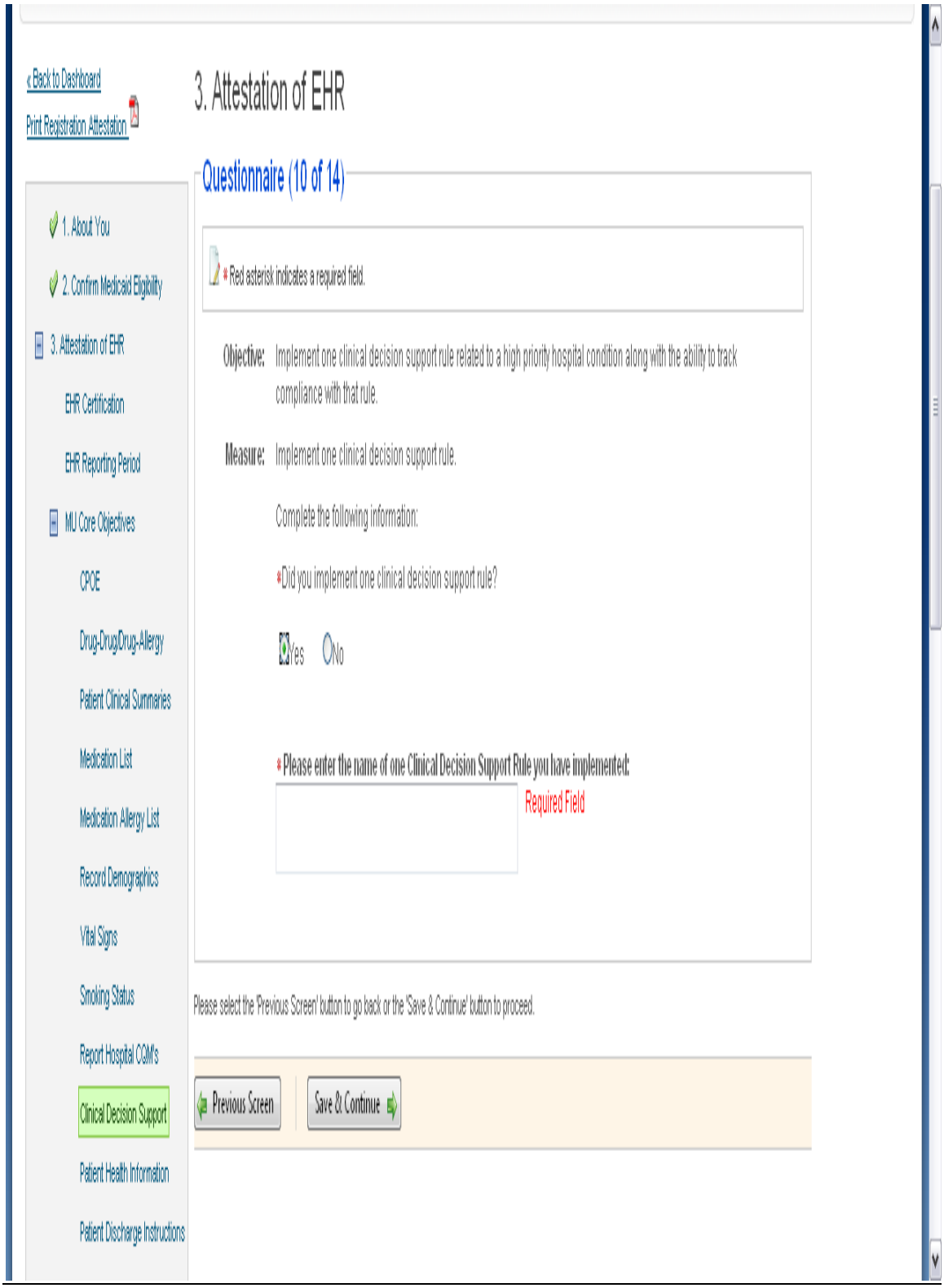

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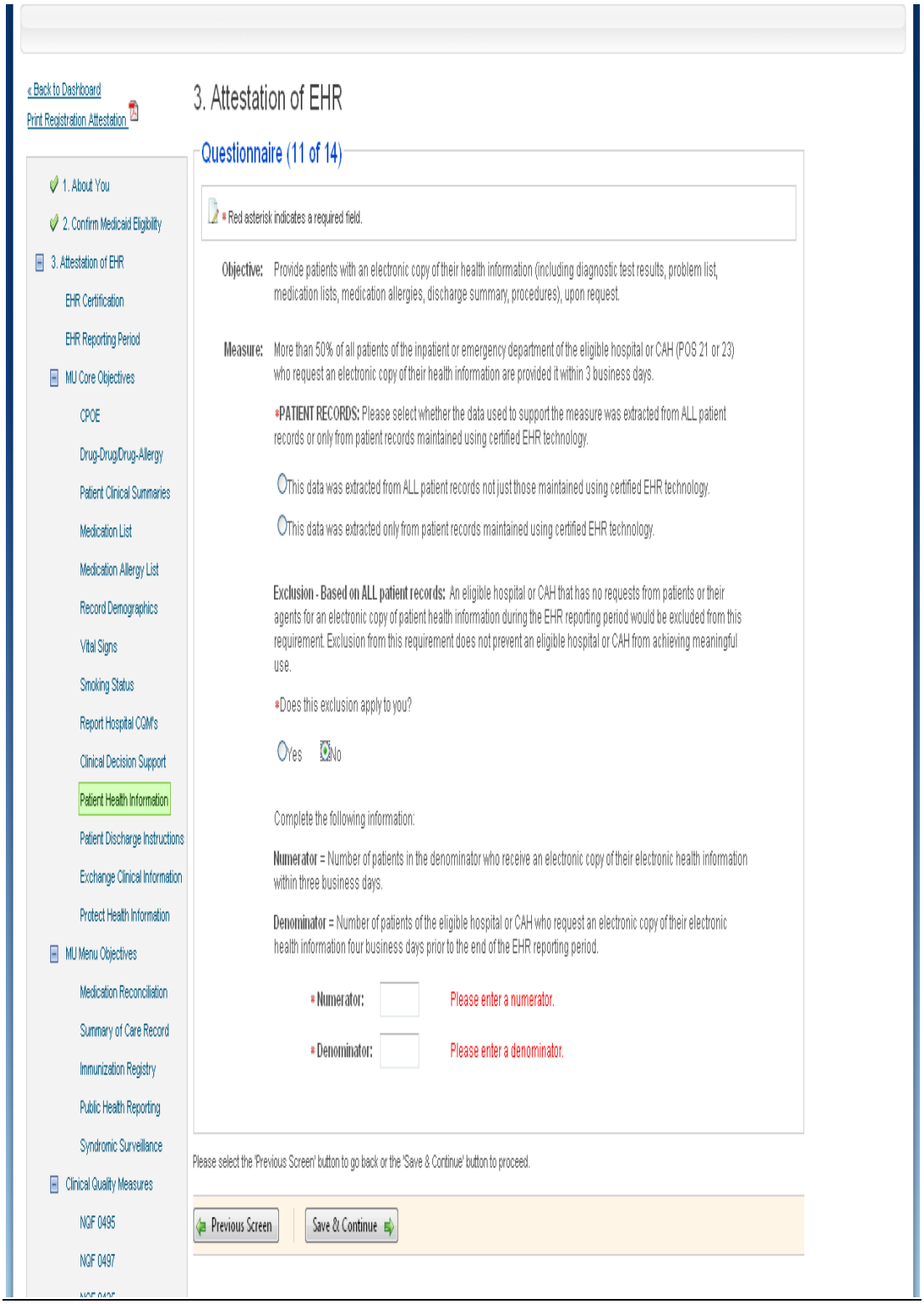

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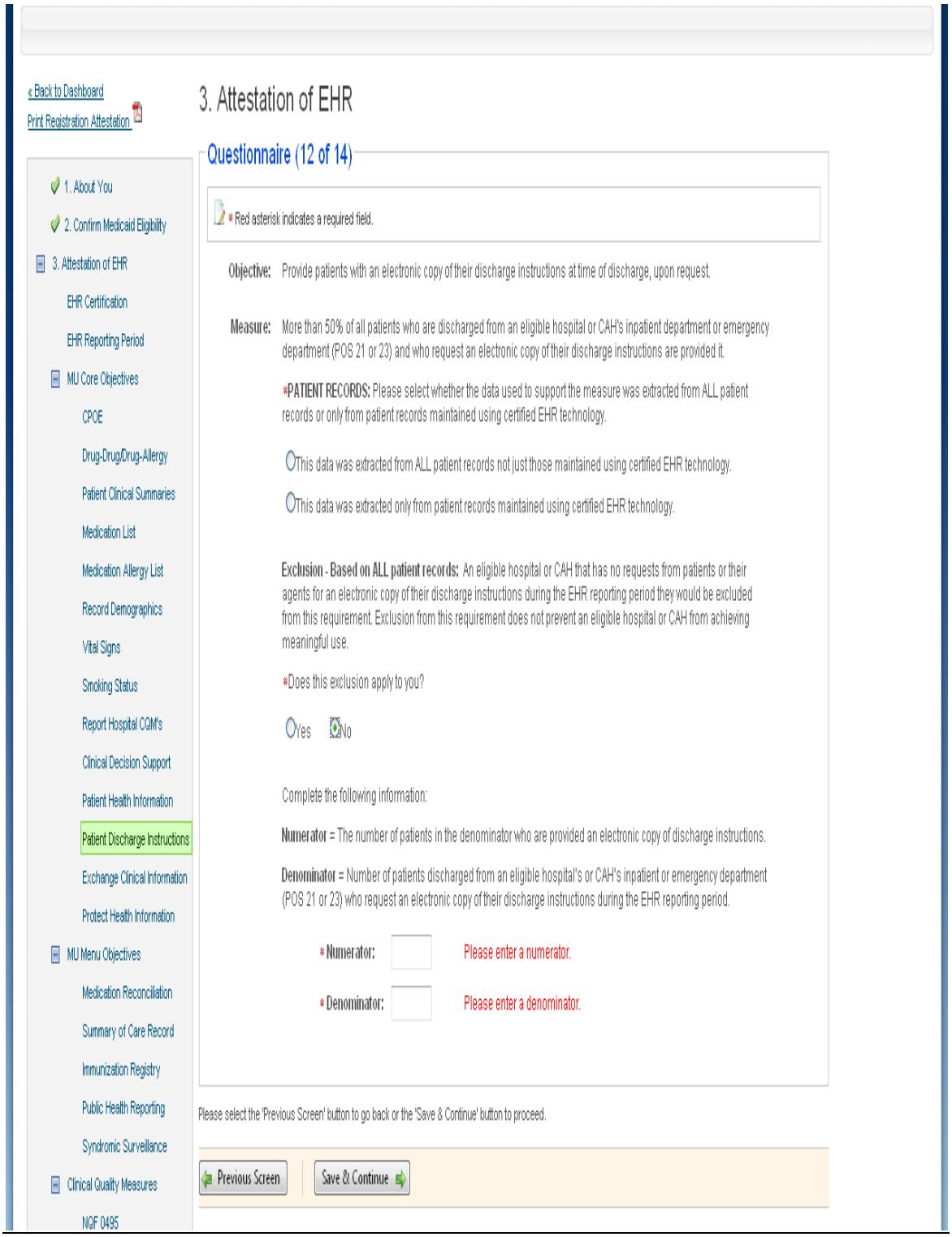

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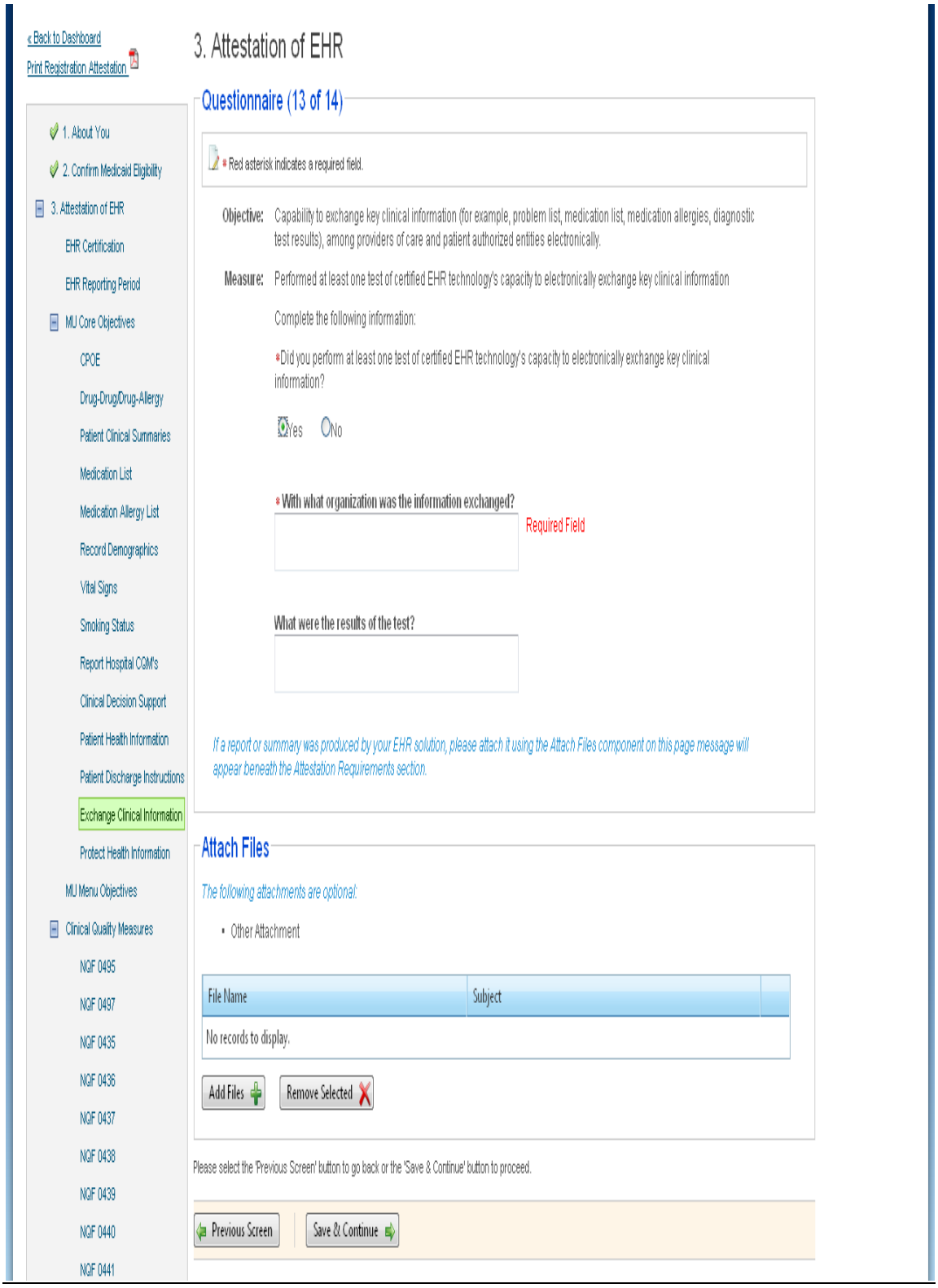

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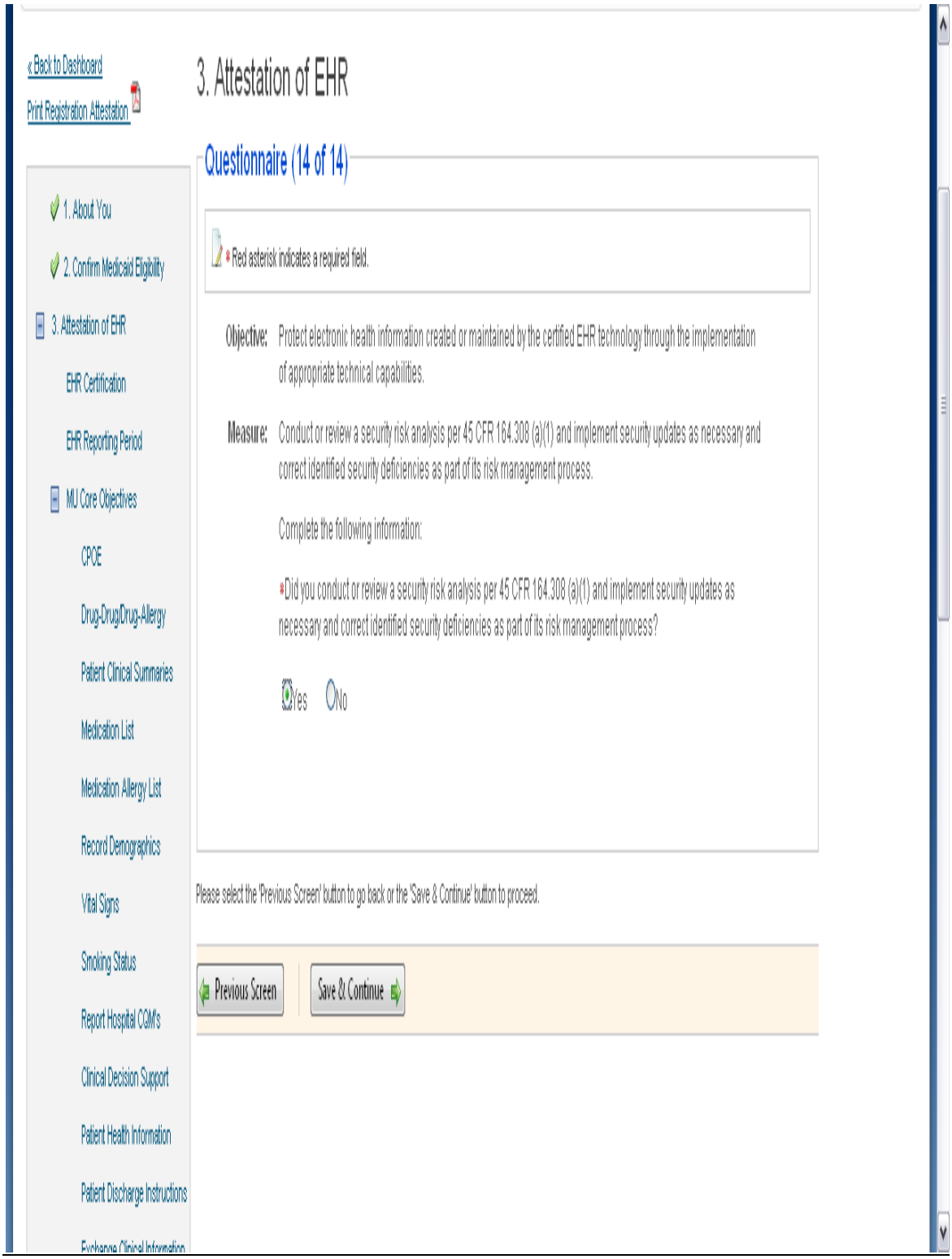

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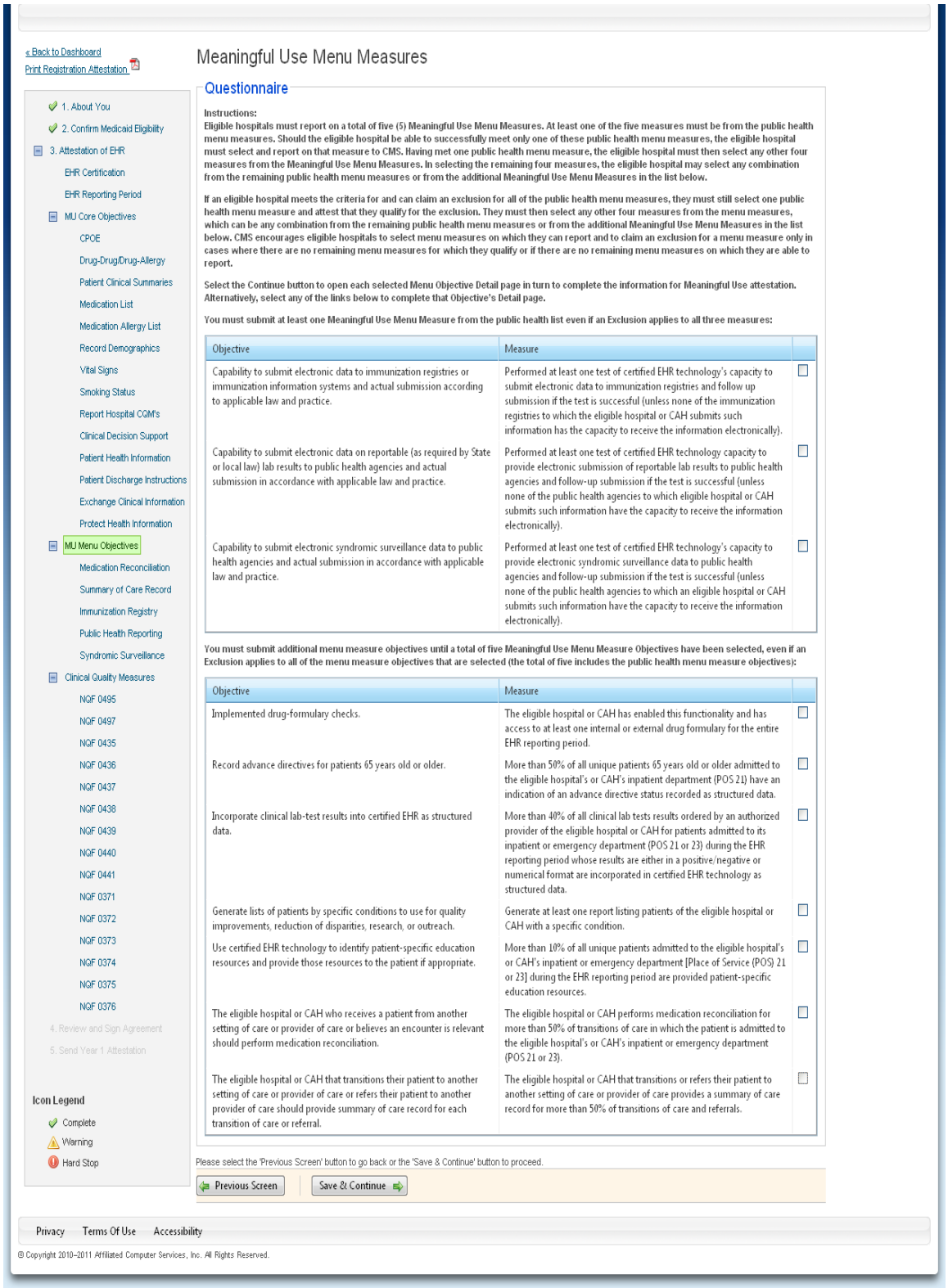

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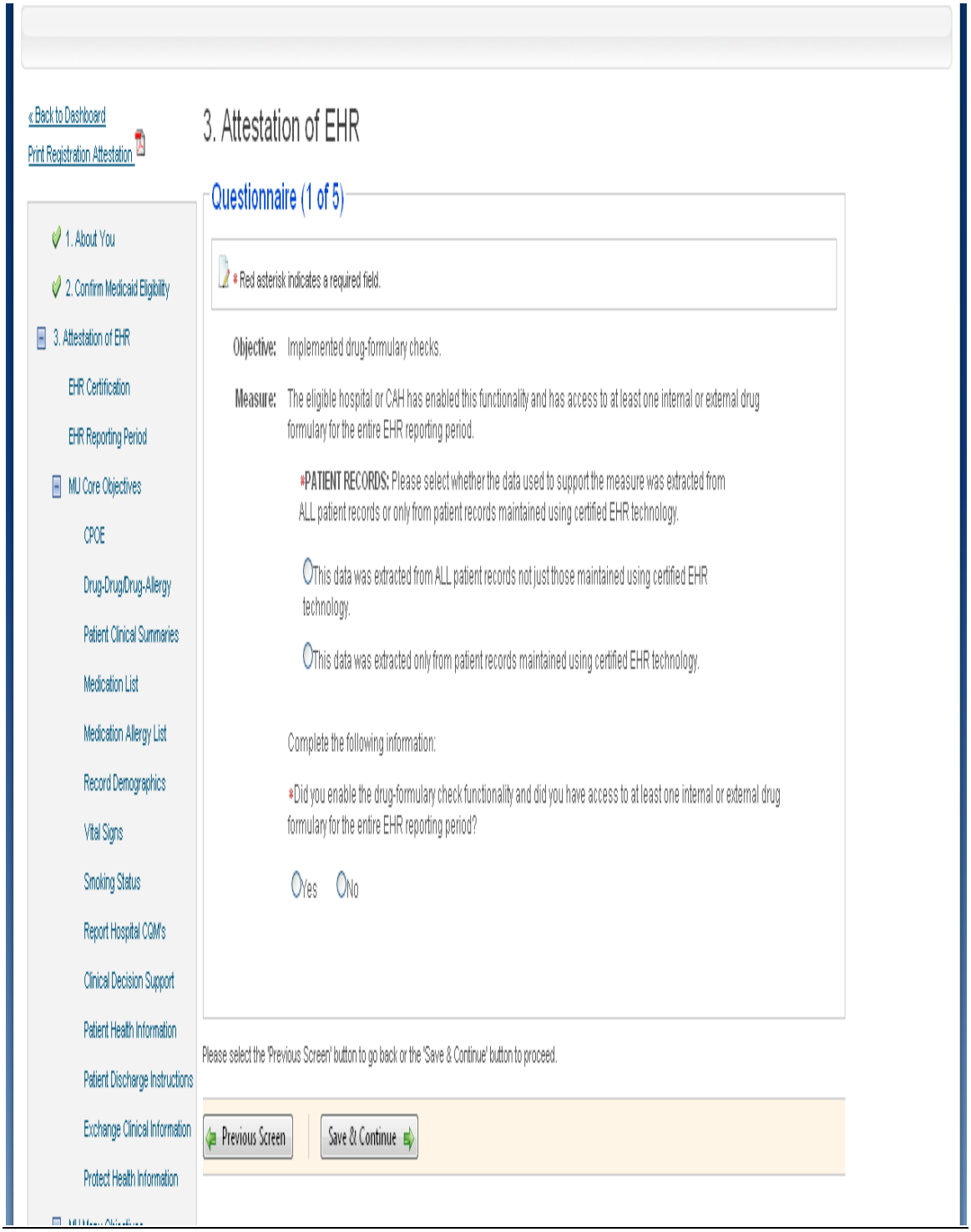

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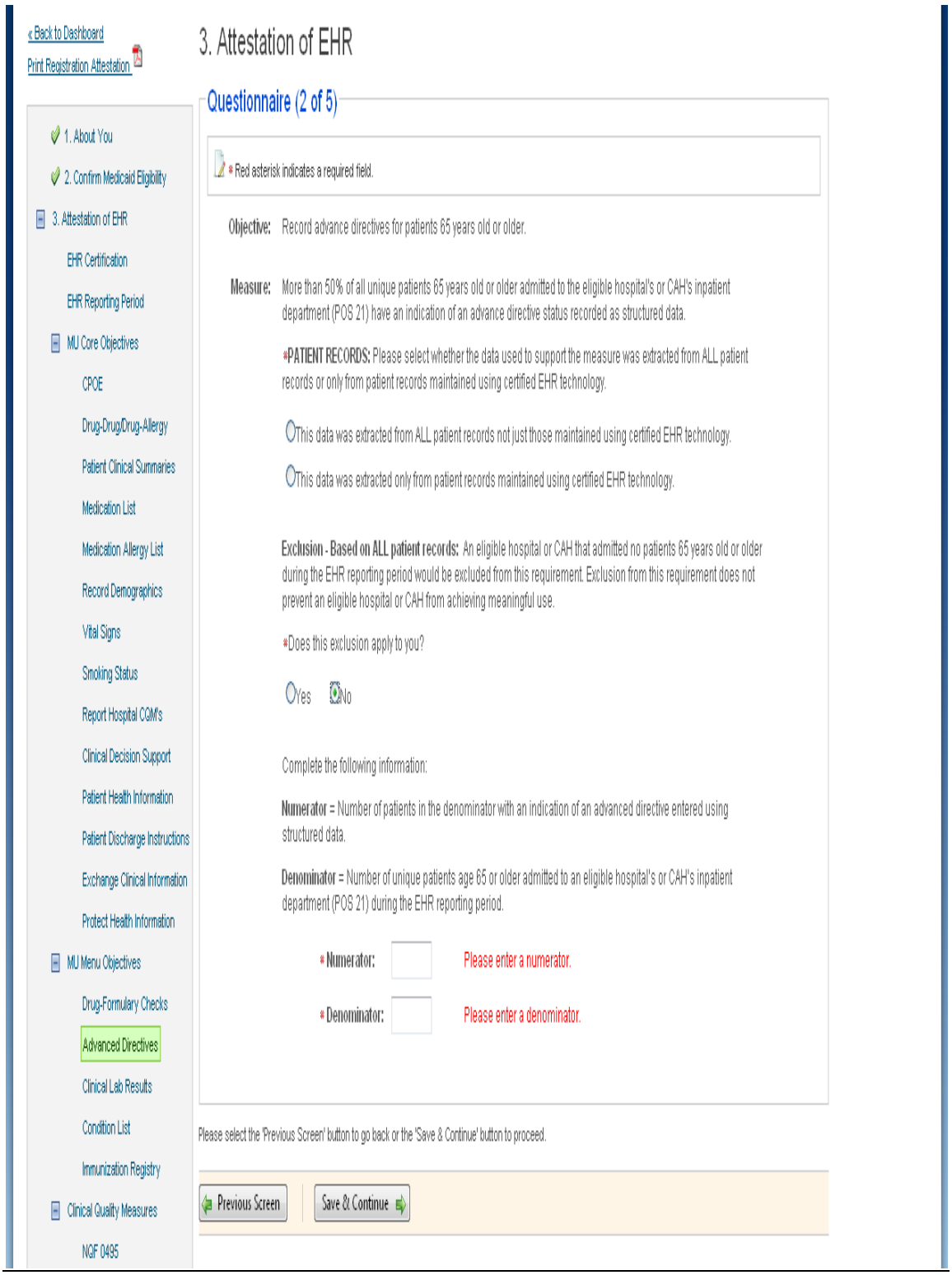

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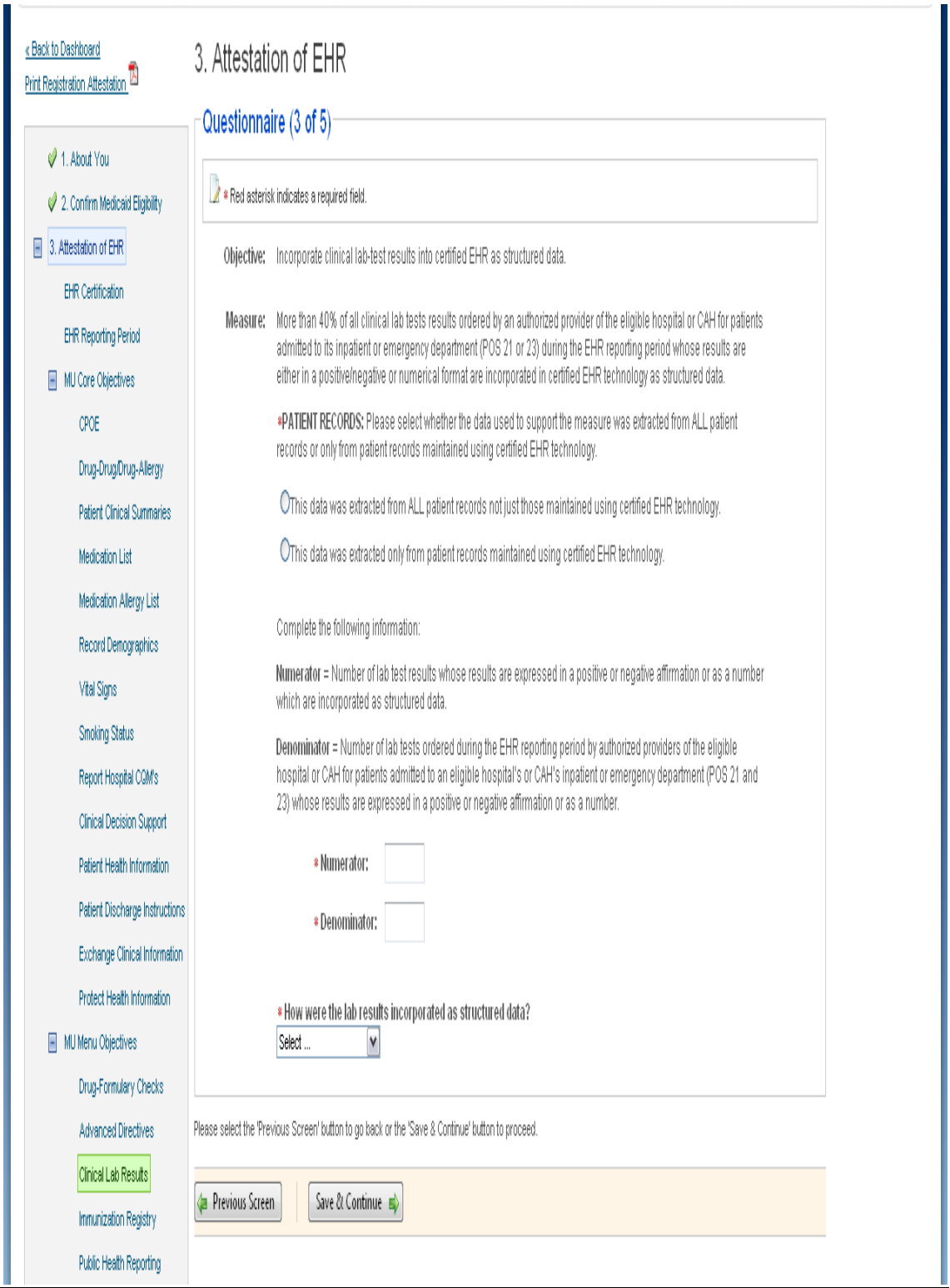

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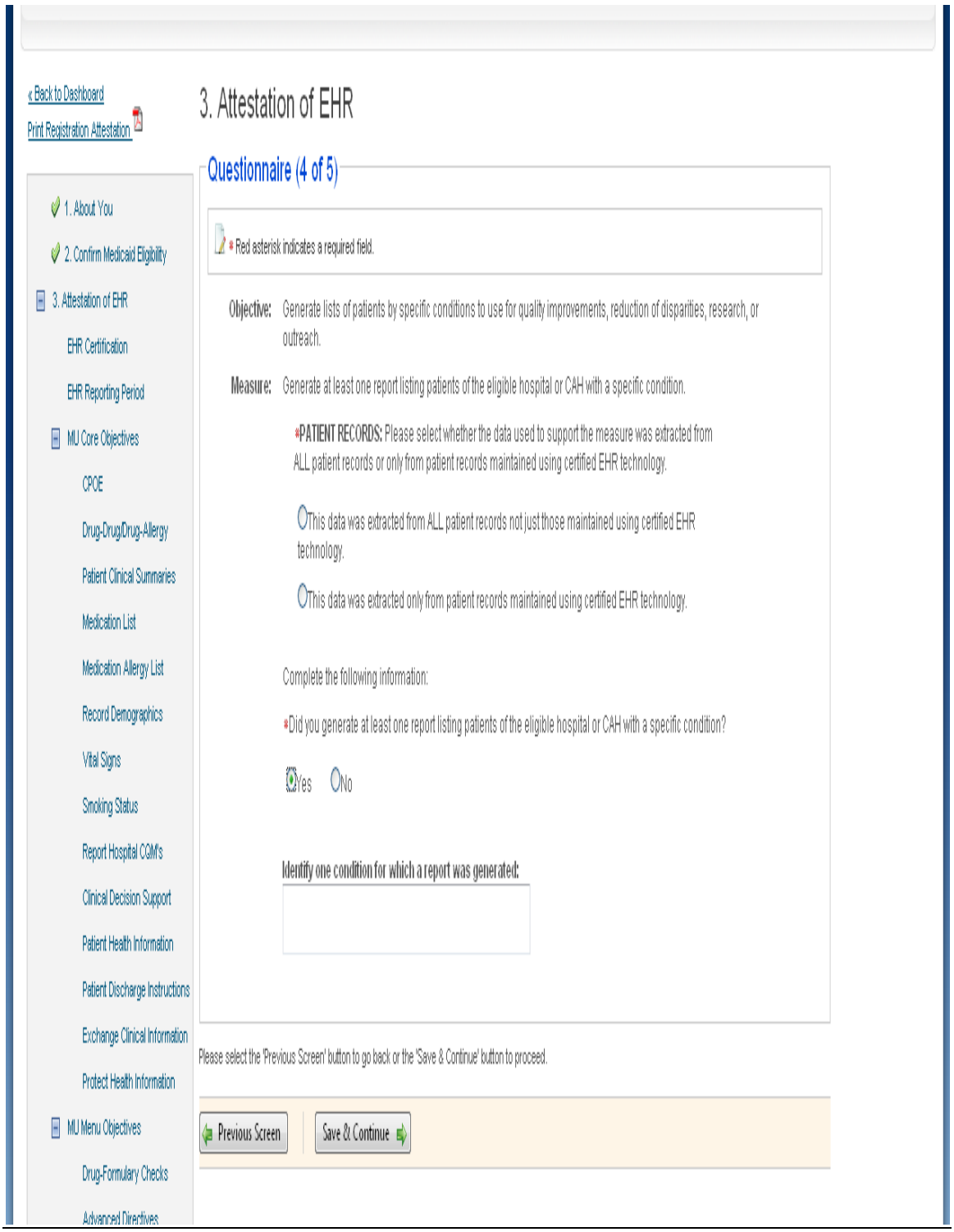

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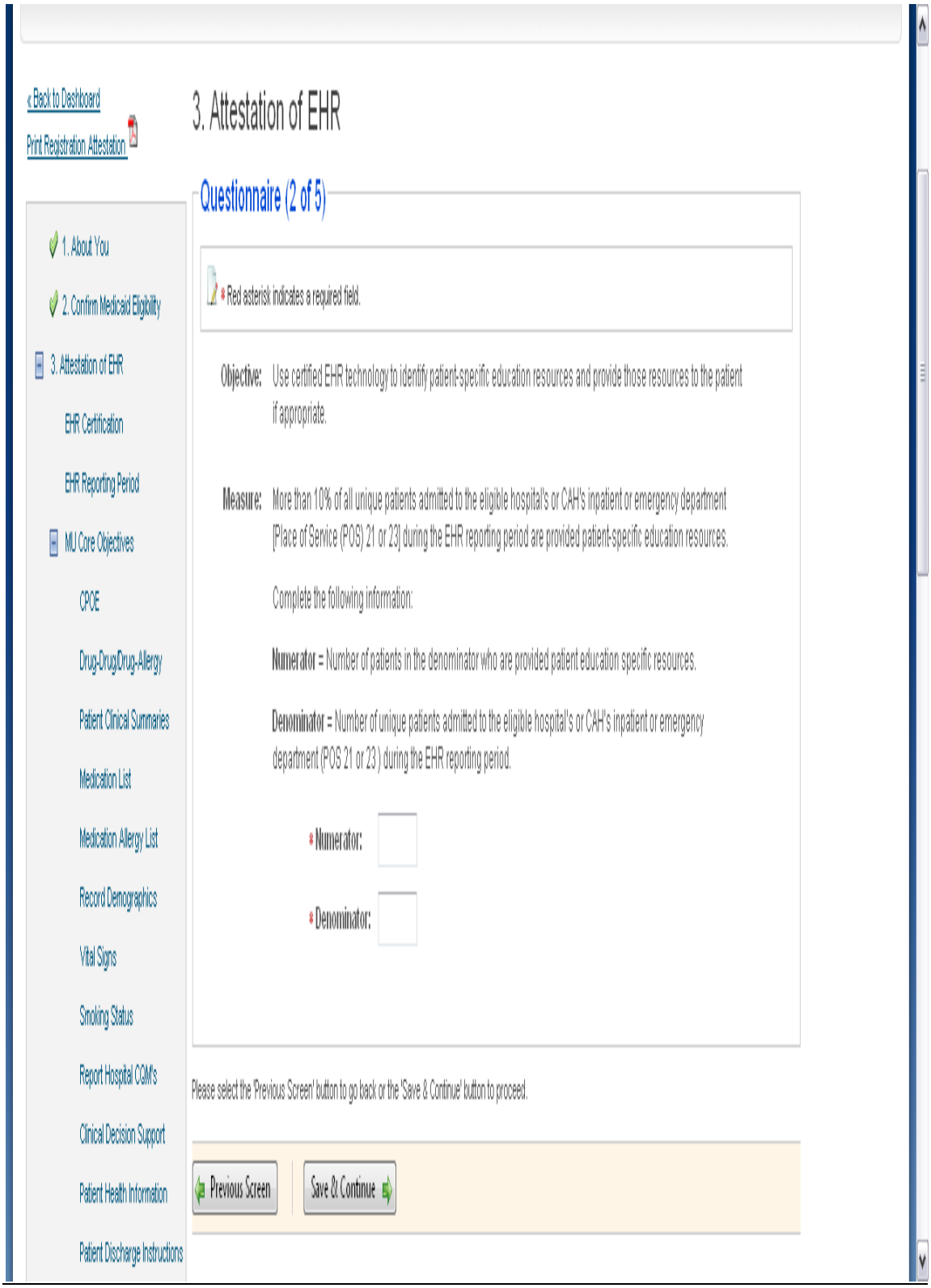

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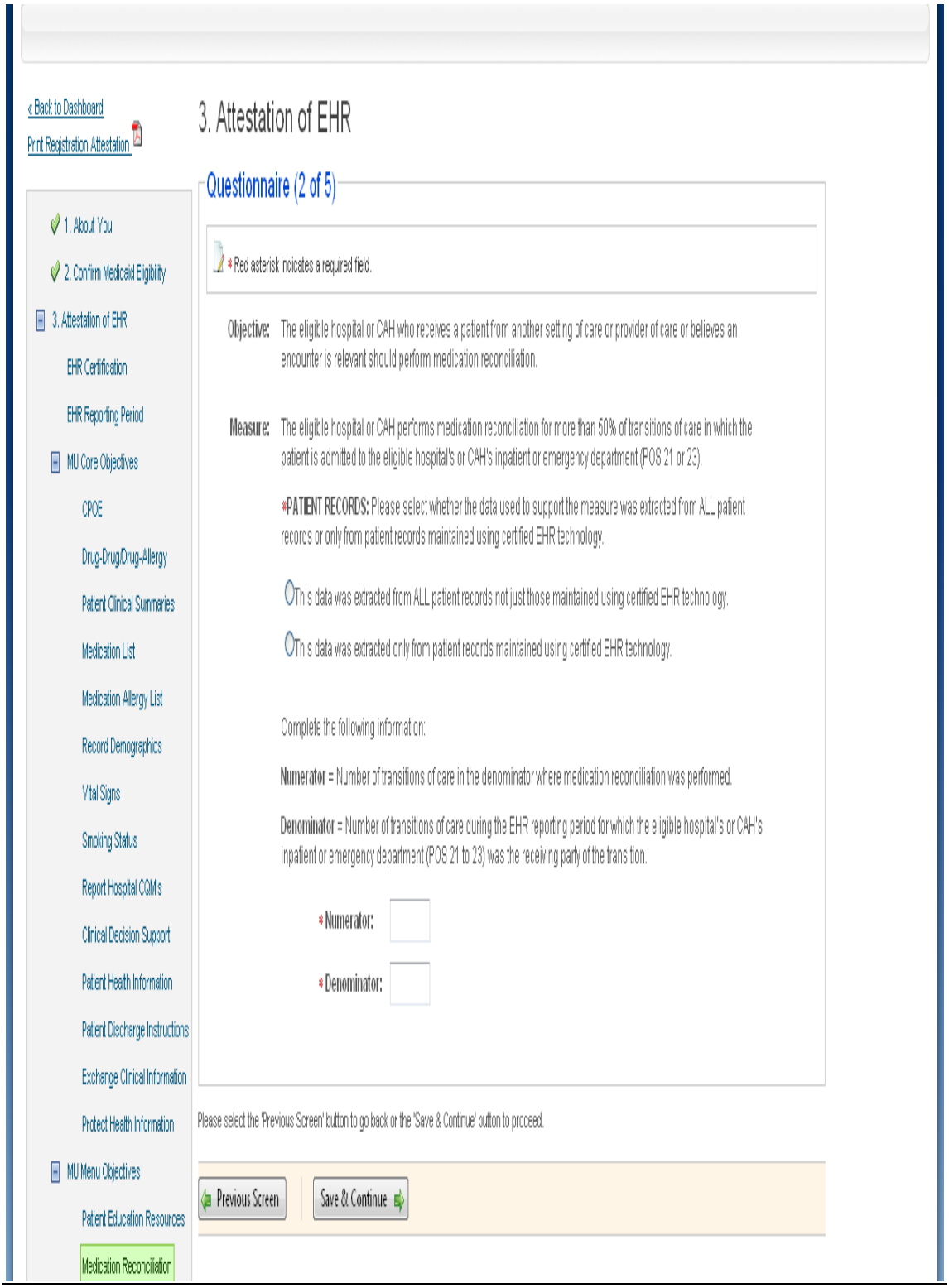

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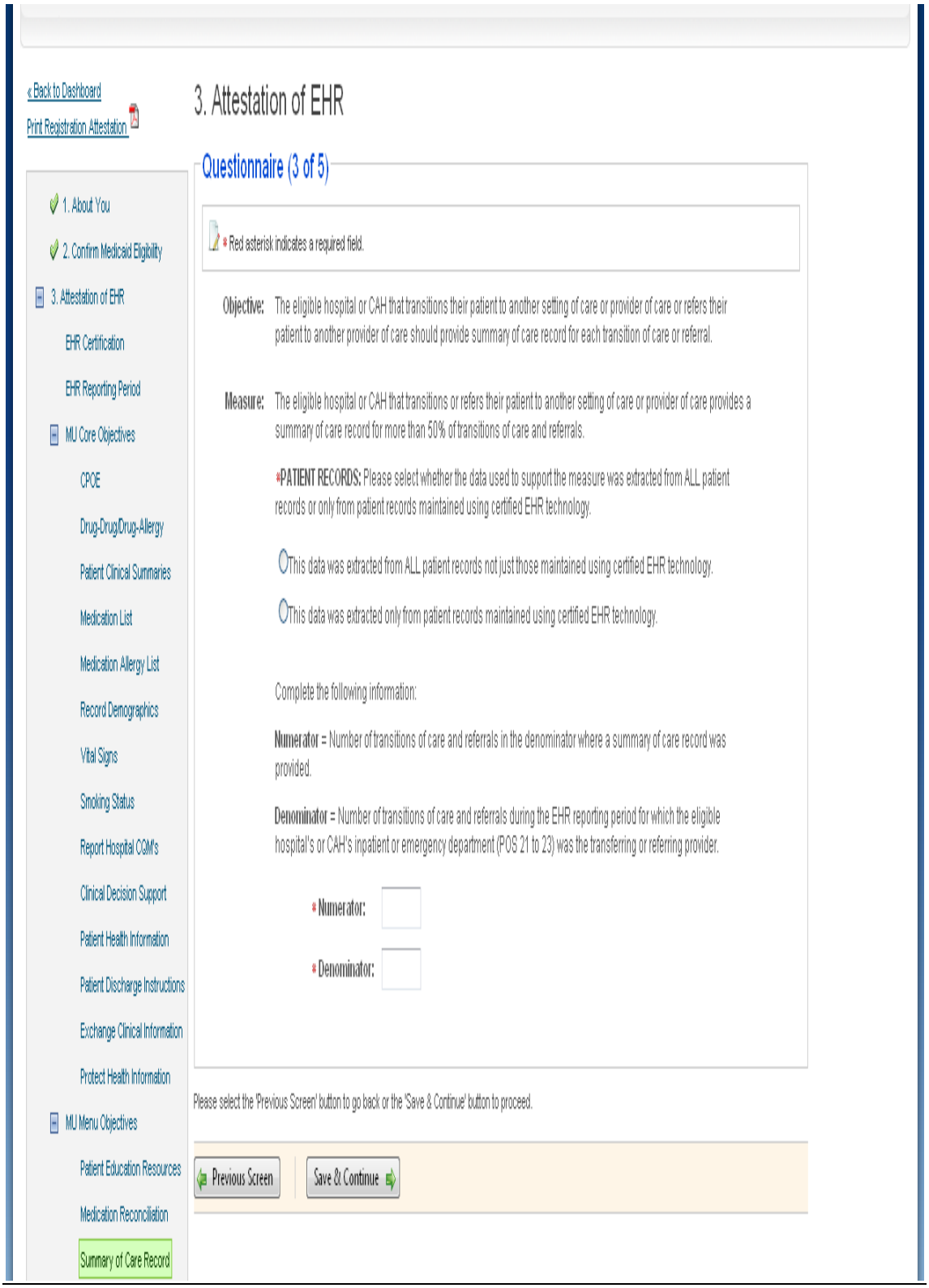

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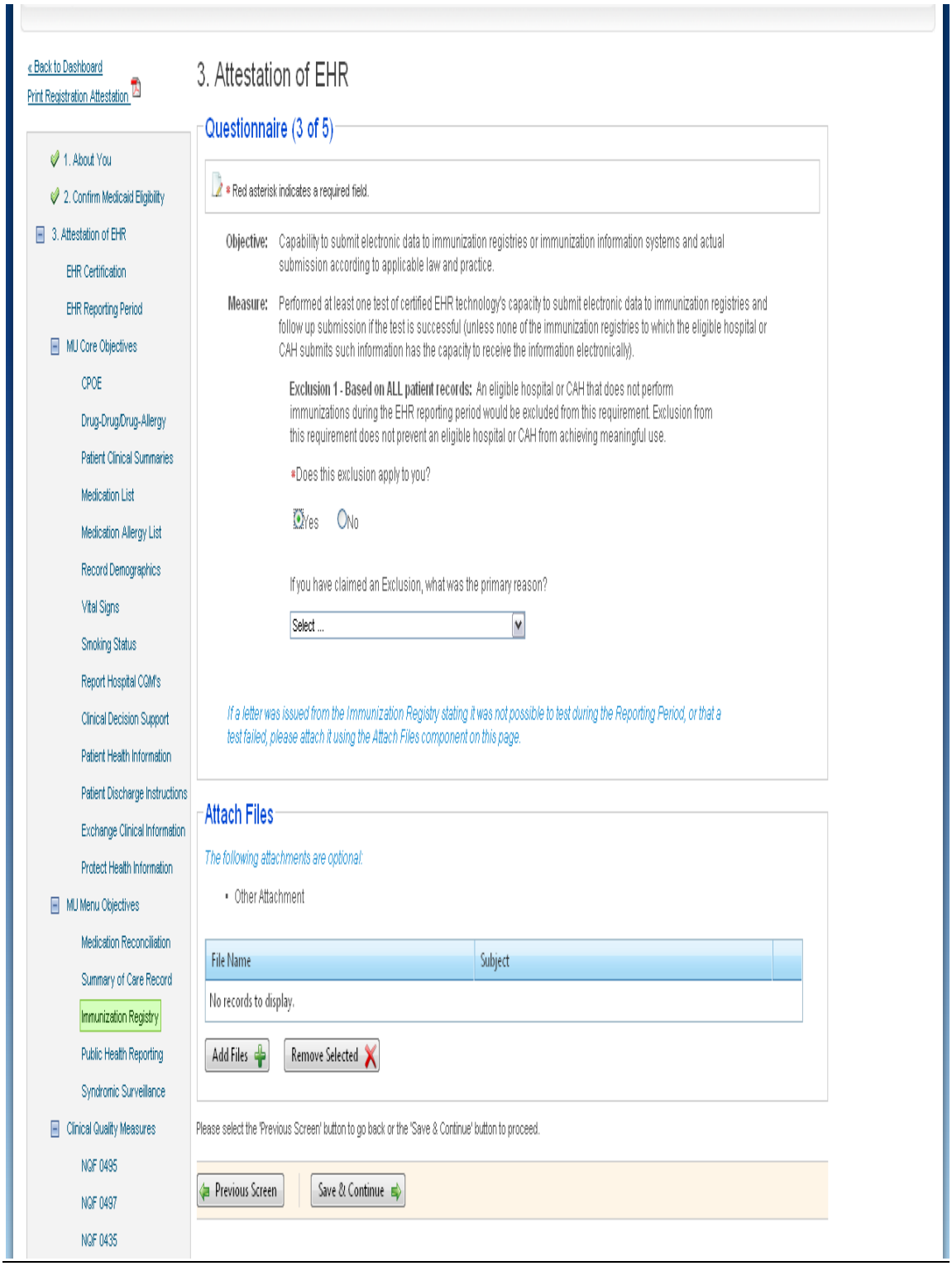

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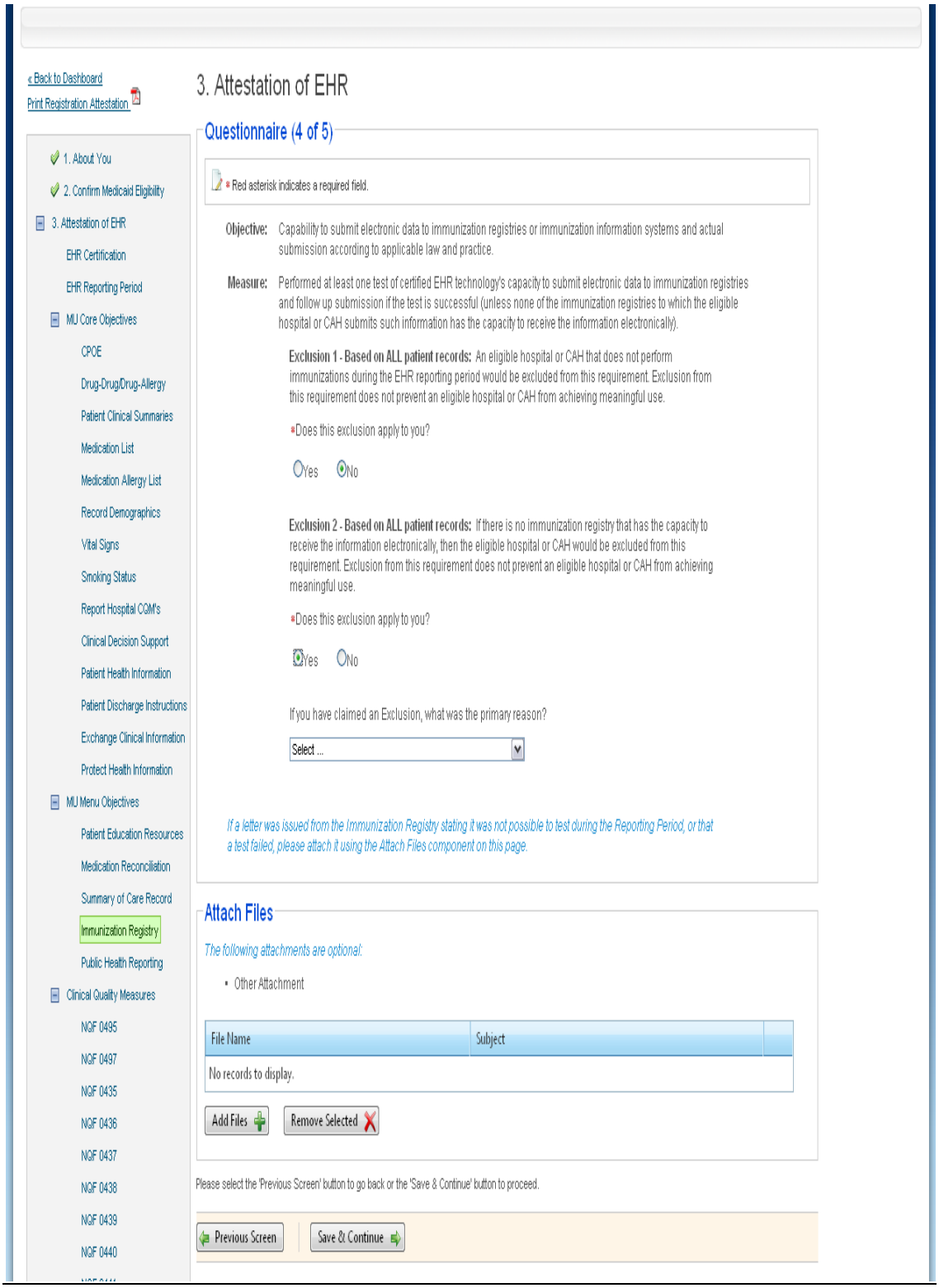

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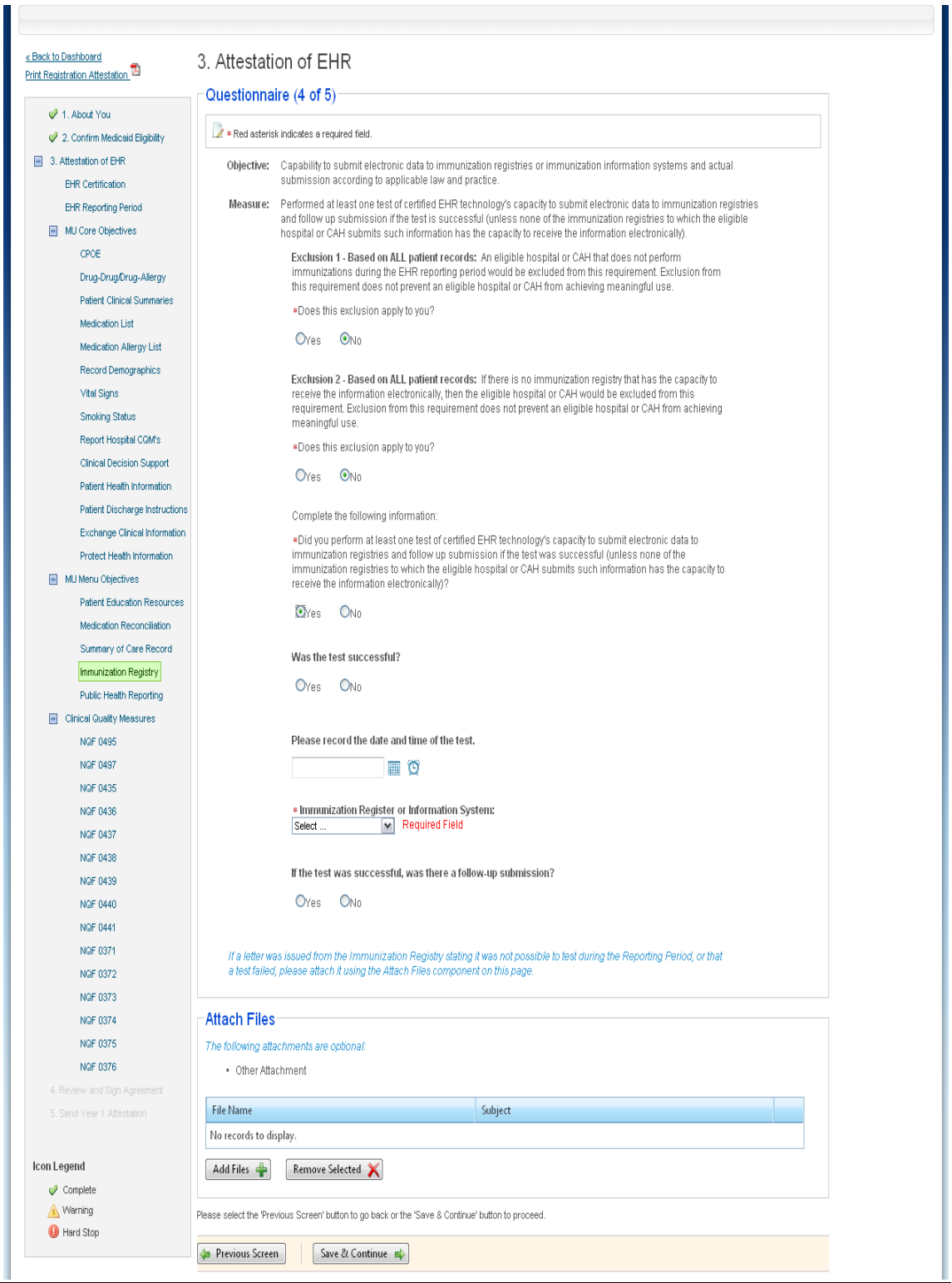

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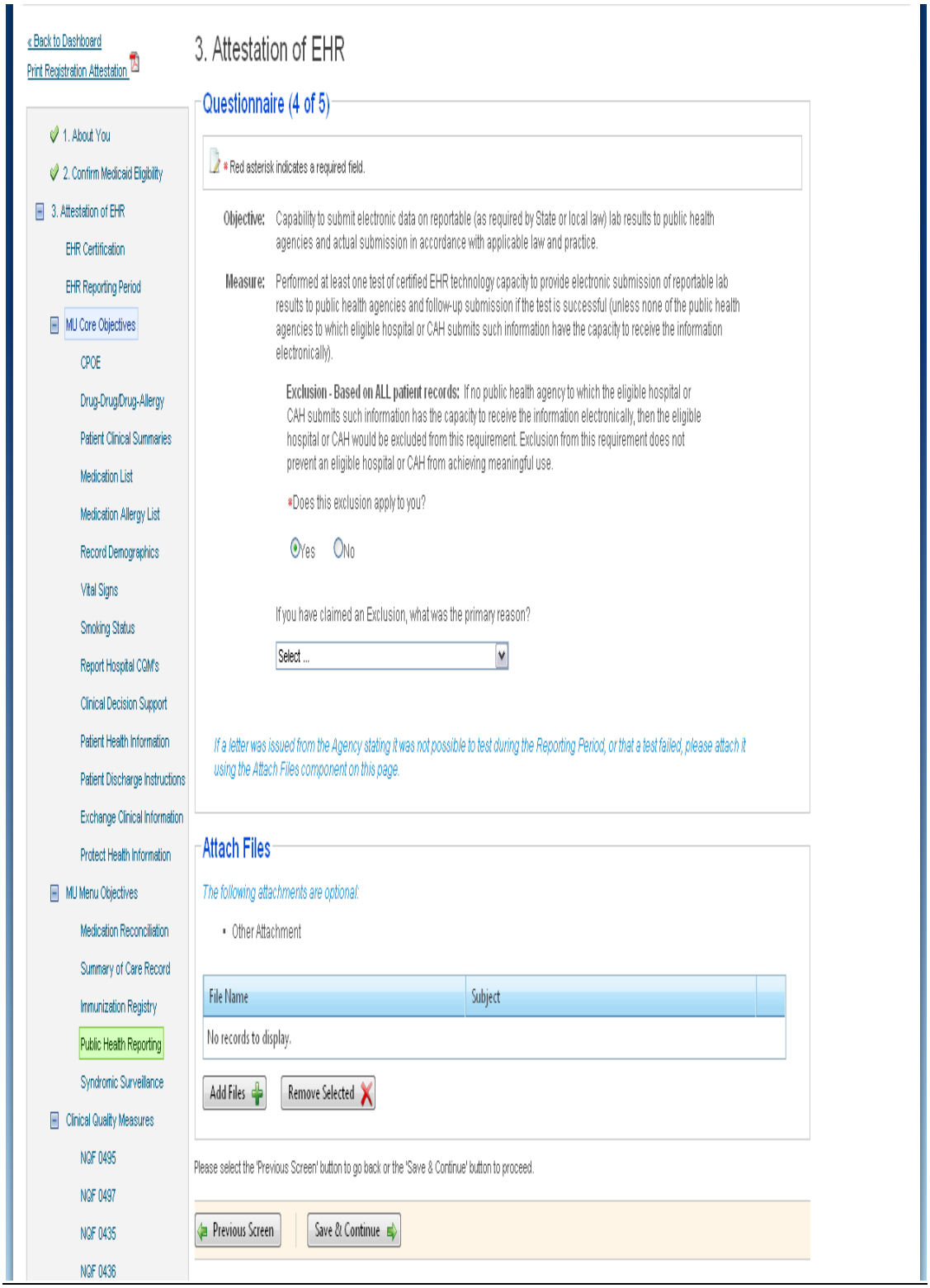

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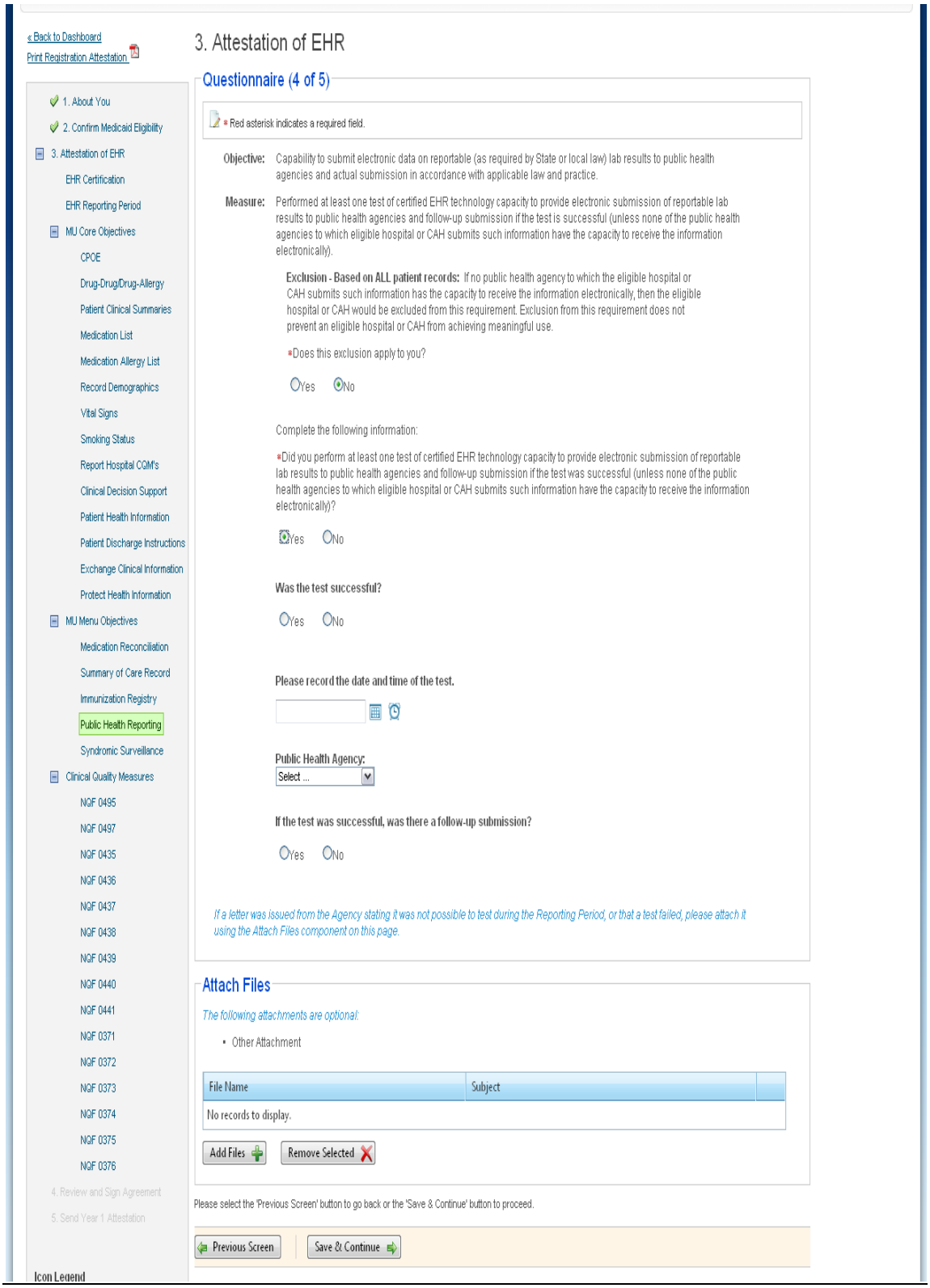

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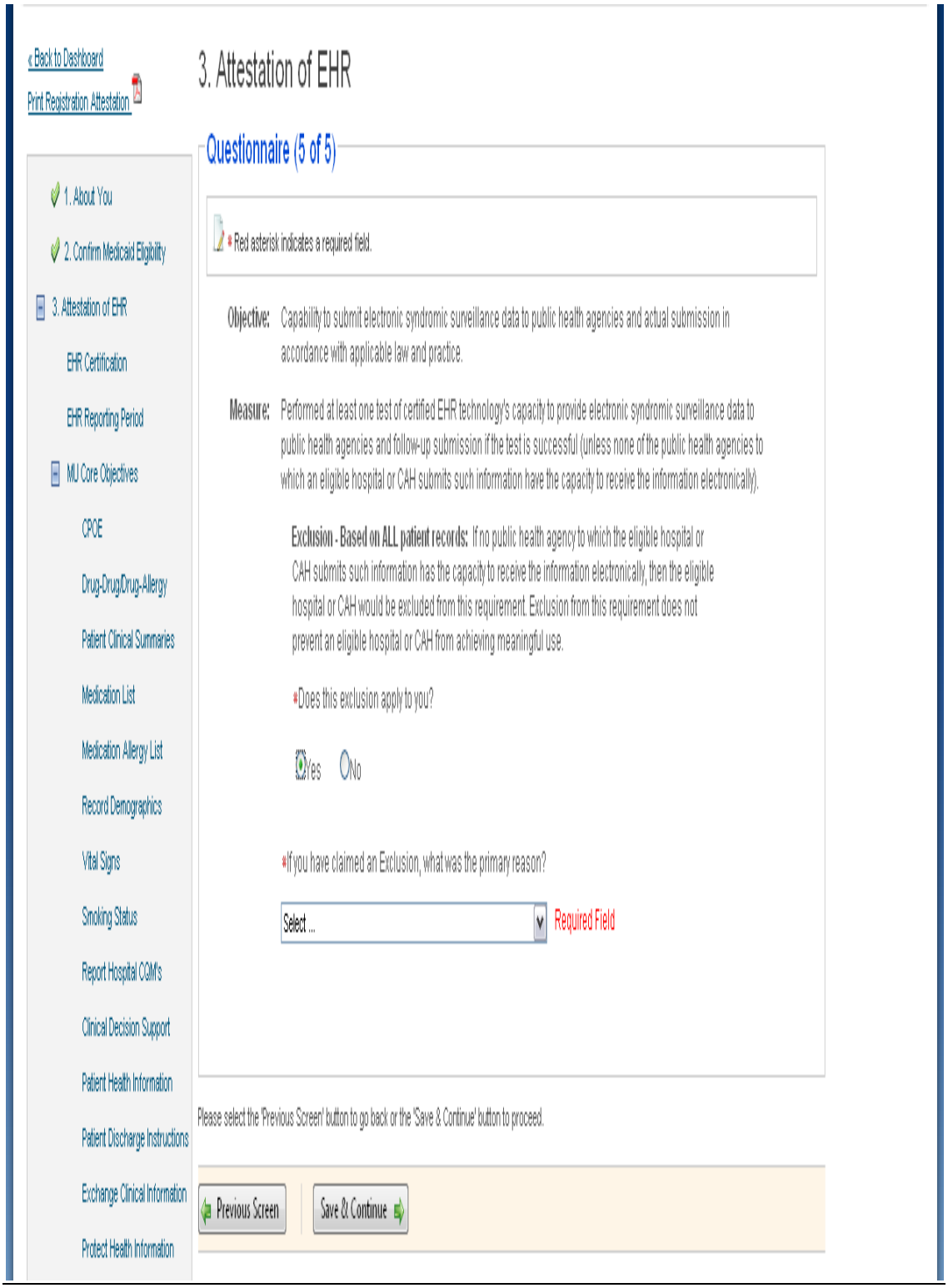
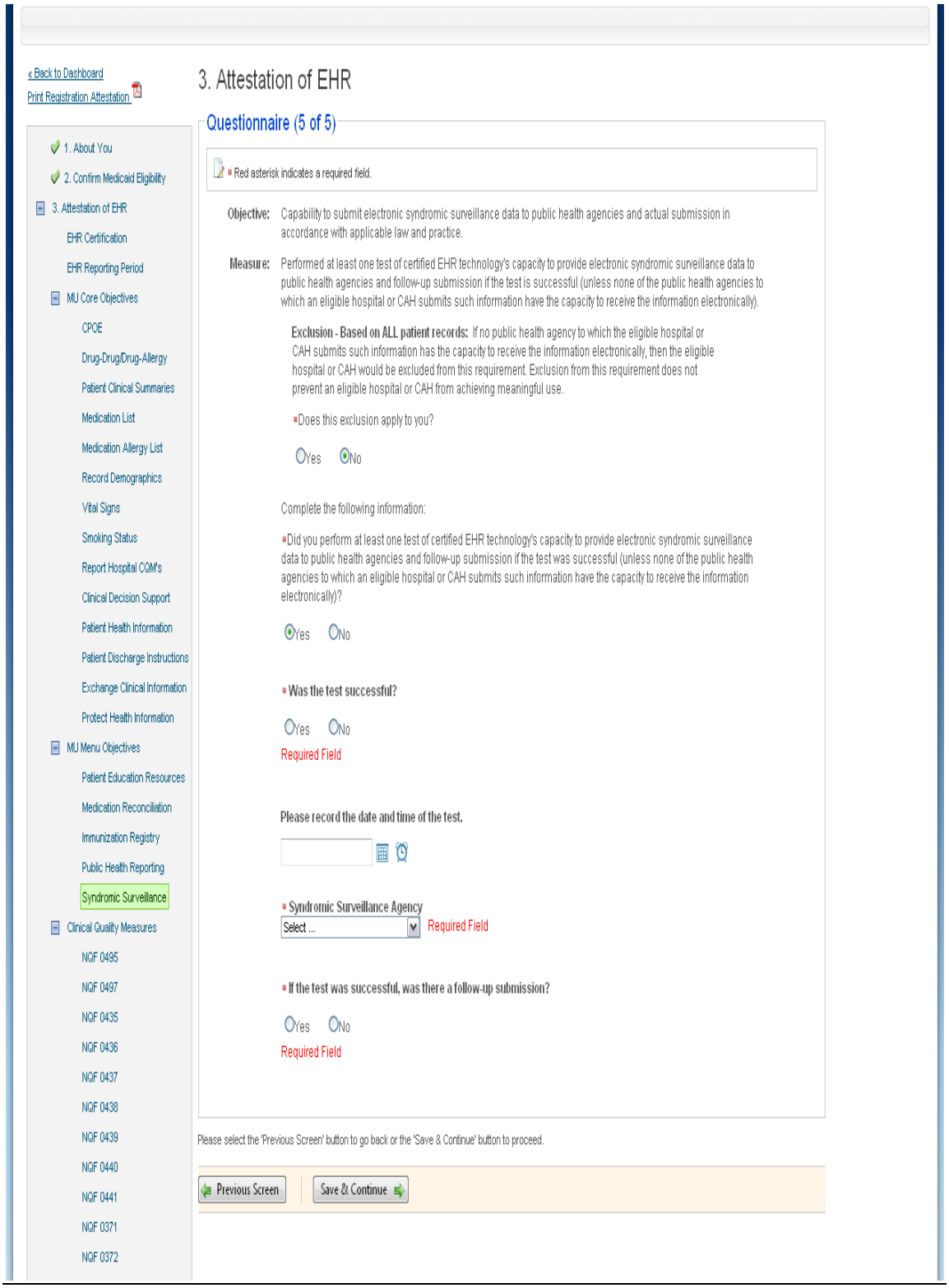
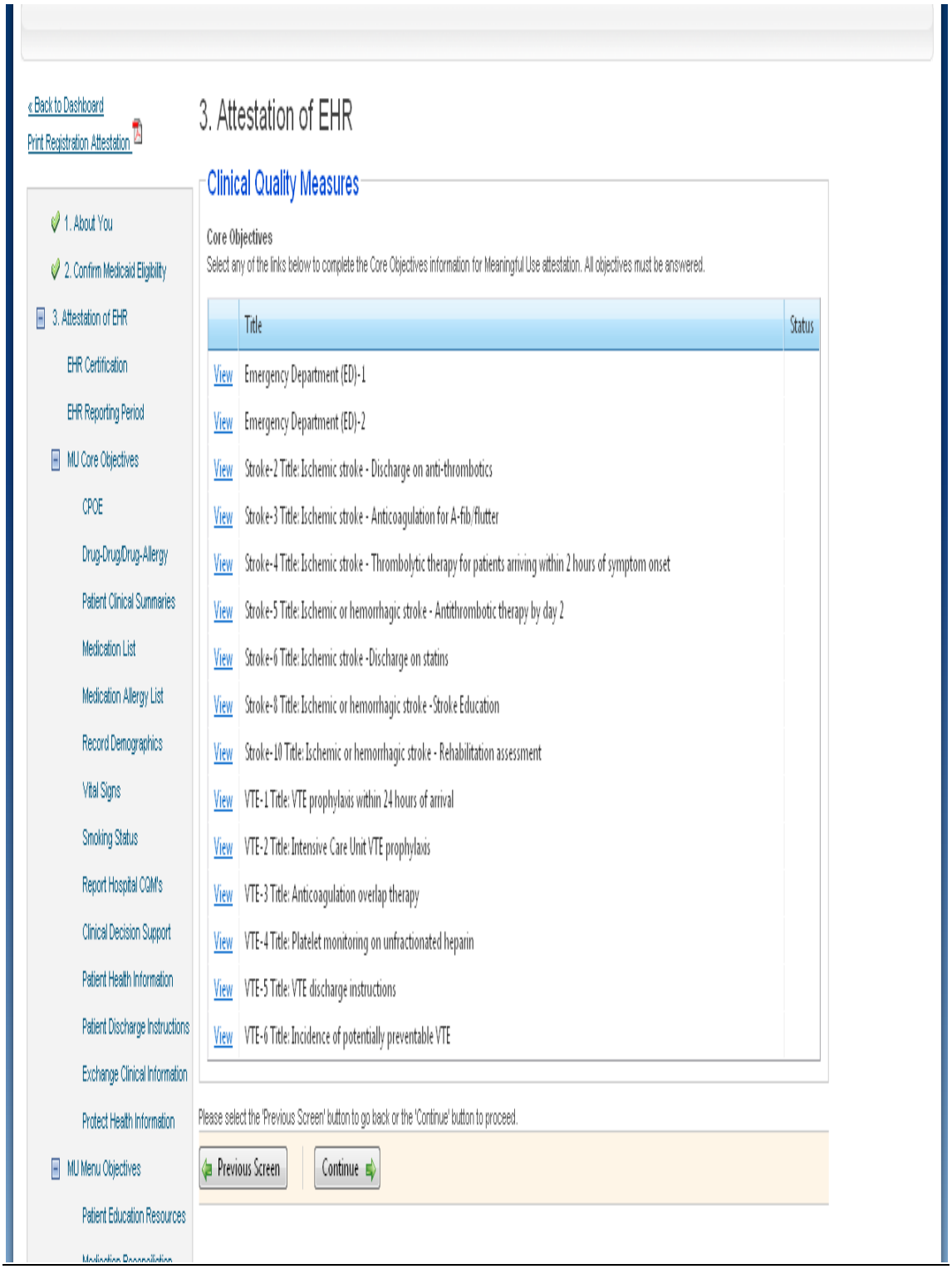


Menu Objective #10 – with no exclusion selected



CQM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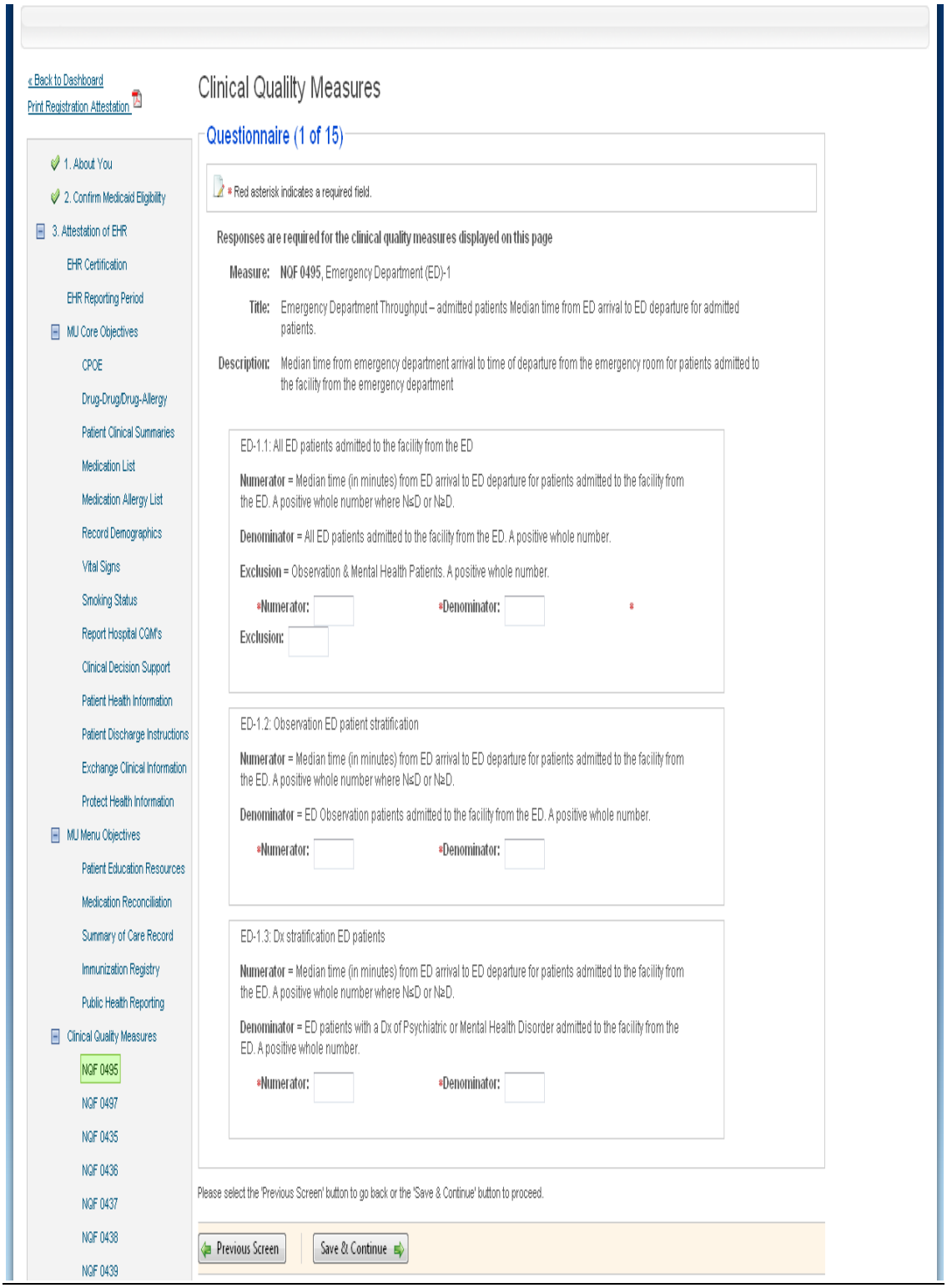
Smoking Status
Report Hospital CQM's
Clinical Decision Support
Patient Health Information
Patient Discharge Instructions
Exchange Clinical Information
Protect Health Information
MU Menu Objectives
Patient Education Resources
Clinical Quality Measures
Core Objectives
Select any of the links below to complete the Core Objectives information for Meaningful Use attestation. All objectives must be answered.
Title
Status
View Emergency Department (ED)-1
View Emergency Department (ED)-2
View Stroke-2 Title: Ischemic stroke - Discharge on anti-thrombotics
View Stroke-3 Title: Ischemic stroke - Anticoagulation for A-fib/flutter
View Stroke-4 Title: Ischemic stroke - Thrombolytic therapy for patients arriving within 2 hours of symptom onset
View Stroke-5 Title: Ischemic or hemorrhagic stroke - Antithrombotic therapy by day 2
View Stroke-6 Title: Ischemic stroke -Discharge on statins
View Stroke-8 Title: Ischemic or hemorrhagic stroke - Stroke Education
View Stroke-10 Title: Ischemic or hemorrhagic stroke - Rehabilitation assessment
View VTE-1 Title: VTE prophylaxis within 24 hours of arrival
View VTE-2 Title: Intensive Care Unit VTE prophylaxis
View VTE-3 Title: Anticoagulation overlap therapy
View VTE-4 Title: Platelet monitoring on unfractionated heparin
View VTE-5 Title: VTE discharge instructions
View VTE-6 Title: Incidence of potentially preventable VTE
Please select the 'Previous Screen' button to go back or the 'Continue' button to proceed.
Previous Screen
Continue

NQF 0495


« Back to Dashboard
Print Registration Attestation
Clinical Quality Measures
Questionnaire (1 of 15)
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* Red asterisk indicates a required field.
Responses are required for the clinical quality measures displayed on this page
Measure: NQF 0495, Emergency Department (ED)-1
Title: Emergency Department Throughput – admitted patients Median time from ED arrival to ED departure for admitted patients.
Description: Median time from emergency department arrival to time of departure from the emergency room for patients admitted to the facility from the emergency department
ED-1.1: All ED patients admitted to the facility from the ED
Numerator = Median time (in minutes) from ED arrival to ED departure for patients admitted to the facility from the ED. A positive whole number where N≤D or N≥D.
Denominator = All ED patients admitted to the facility from the ED. A positive whole number.
Exclusion = Observation & Mental Health Patients. A positive whole number.
*Numerator:
*Denominator:
Exclusion:
ED-1.2: Observation ED patient stratification
Numerator = Median time (in minutes) from ED arrival to ED departure for patients admitted to the facility from the ED. A positive whole number where N≤D or N≥D.
Denominator = ED Observation patients admitted to the facility from the ED. A positive whole number.
*Numerator:
*Denominator:
ED-1.3: Dx stratification ED patients
Numerator = Median time (in minutes) from ED arrival to ED departure for patients admitted to the facility from the ED. A positive whole number where N≤D or N≥D.
Denominator = ED patients with a Dx of Psychiatric or Mental Health Disorder admitted to the facility from the ED. A positive whole number.
*Numerator:
*Denominator:
Please select the 'Previous Screen' button to go back or the 'Save & Continue' button to proceed.
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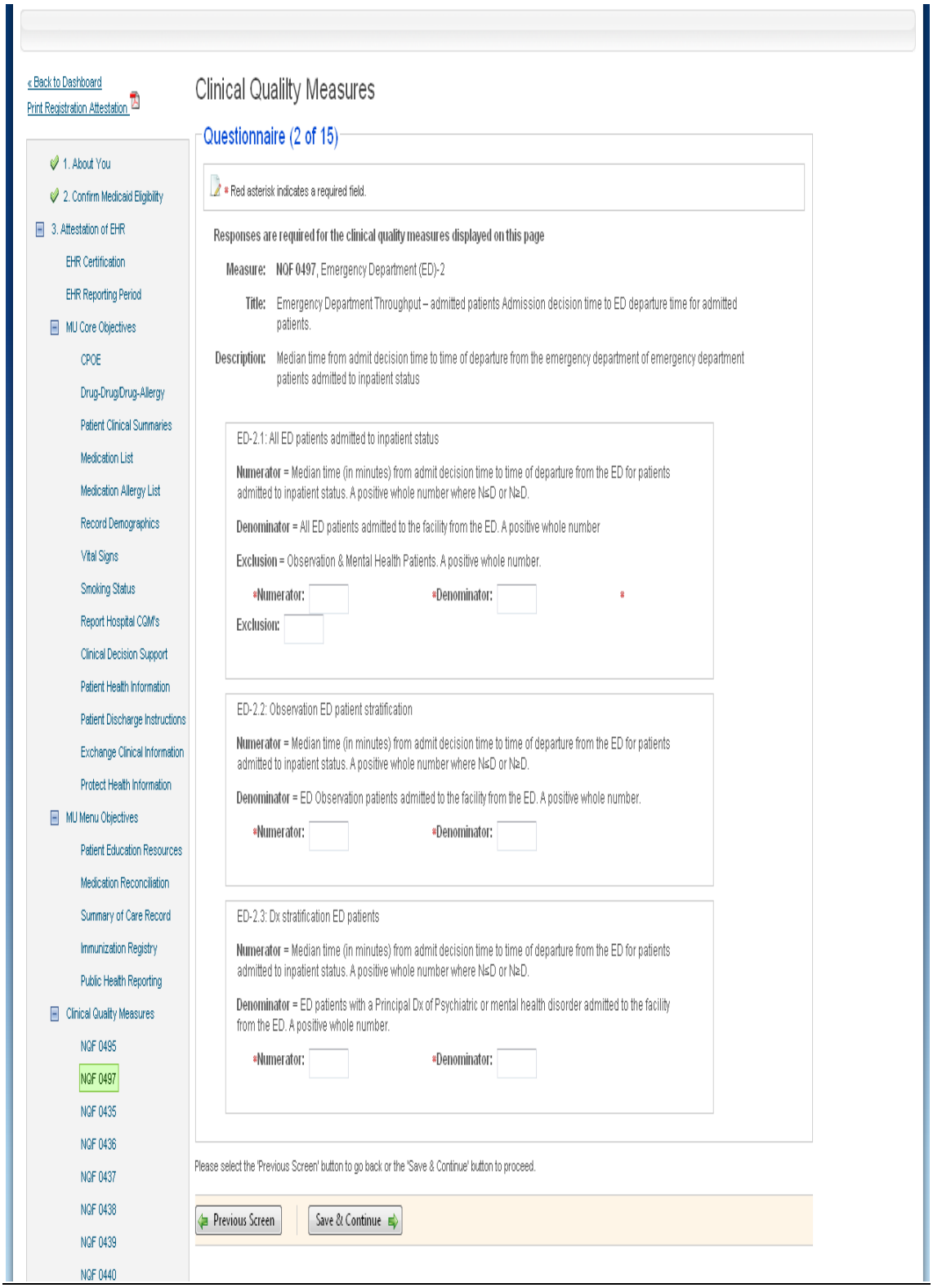
NQF 0497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NQF 0438
NQF 0439
NQF 0440
* Red asterisk indicates a required field.
Responses are required for the clinical quality measures displayed on this page
Measure: NQF 0497, Emergency Department (ED)-2
Title: Emergency Department Throughput – admitted patients Admission decision time to ED departure time for admitted patients.
Description: Median time from admit decision time to time of departure from the emergency department of emergency department patients admitted to inpatient status
ED-2.1: All ED patients admitted to inpatient status
Numerator = Median time (in minutes) from admit decision time to time of departure from the ED for patients admitted to inpatient status. A positive whole number where N≤D or N≥D.
Denominator = All ED patients admitted to the facility from the ED. A positive whole number
Exclusion = Observation & Mental Health Patients. A positive whole number.
*Numerator:
*Denominator:
Exclusion:
ED-2.2: Observation ED patient stratification
Numerator = Median time (in minutes) from admit decision time to time of departure from the ED for patients admitted to inpatient status. A positive whole number where N≤D or N≥D.
Denominator = ED Observation patients admitted to the facility from the ED. A positive whole number.
*Numerator:
*Denominator:
ED-2.3: Dx stratification ED patients
Numerator = Median time (in minutes) from admit decision time to time of departure from the ED for patients admitted to inpatient status. A positive whole number where N≤D or N≥D.
Denominator = ED patients with a Principal Dx of Psychiatric or mental health disorder admitted to the facility from the ED. A positive whole number.
*Numerator:
*Denominator:
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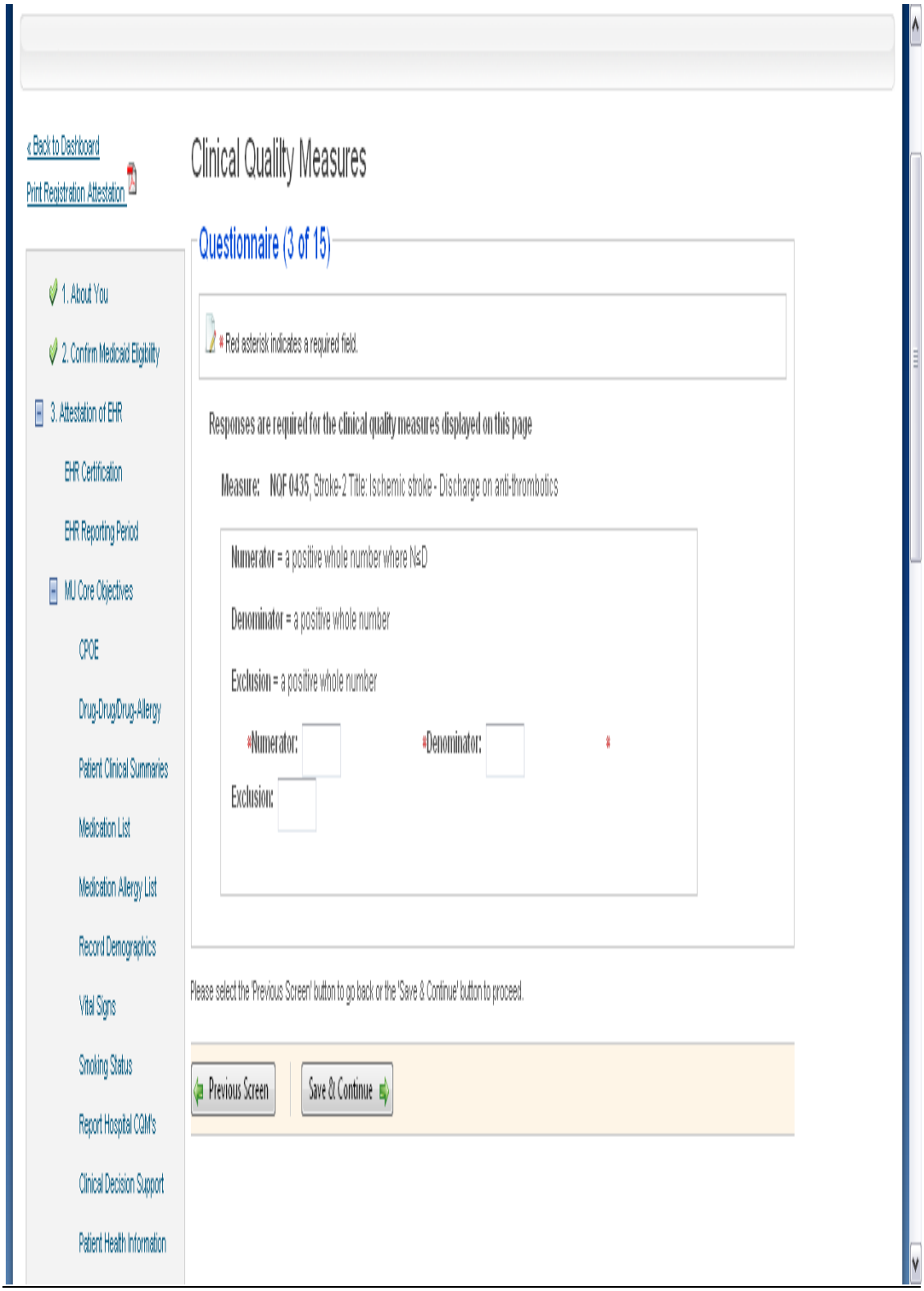
NQF 0435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* Red asterisk indicates a required field.
Responses are required for the clinical quality measures displayed on this page
Measure: NQF 0435, Stroke-2 Title: Ischemic stroke - Discharge on anti-thrombotics
Numerator = a positive whole number where N≤D
Denominator = a positive whole number
Exclusion = a positive whole number
*Numerator:
*Denominator:
Exclusion:
Please select the 'Previous Screen' button to go back or the 'Save & Continue' button to proceed.
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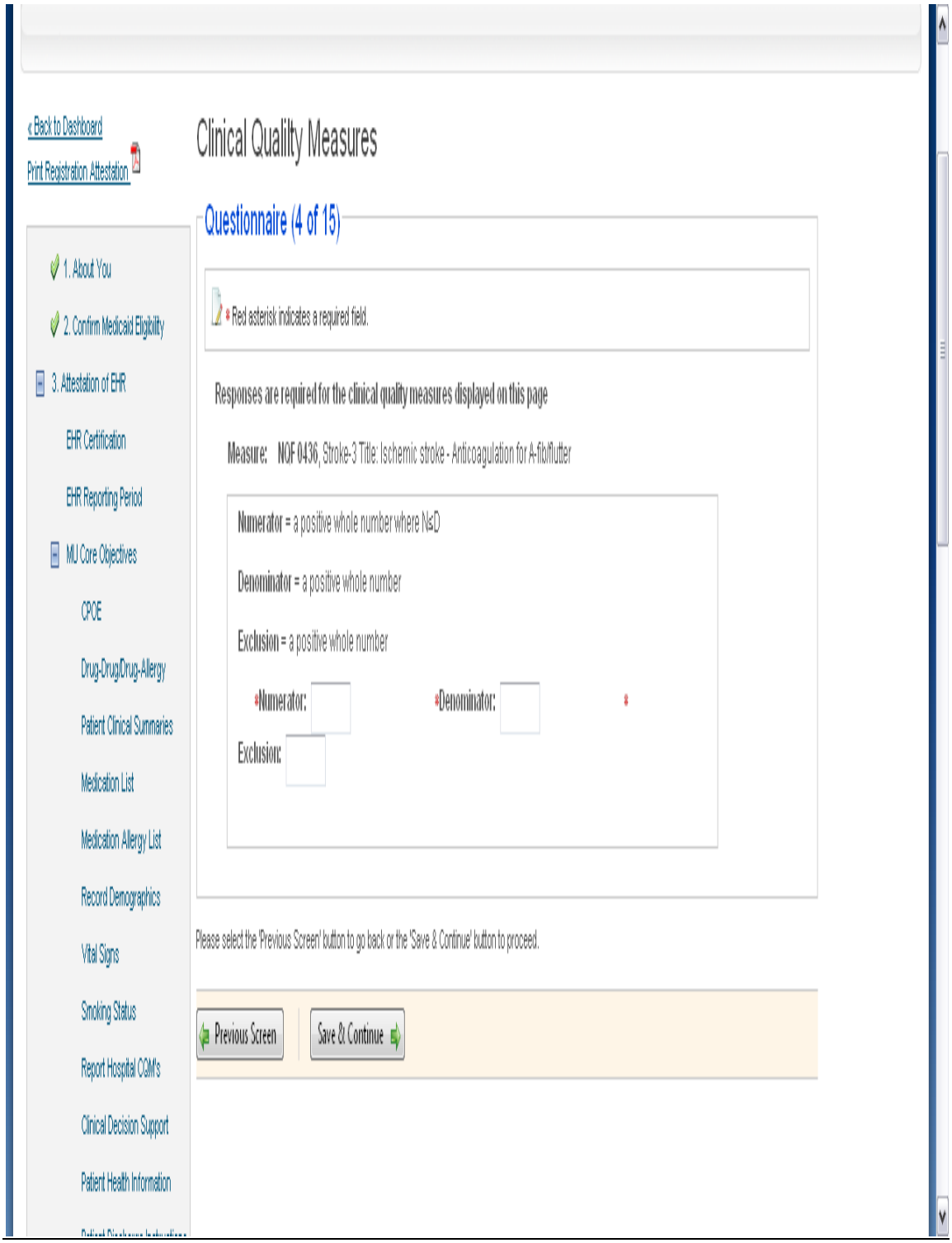
NQF 0436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* Red asterisk indicates a required field.
Responses are required for the clinical quality measures displayed on this page
Measure: NQF 0436, Stroke-3 Title: Ischemic stroke - Anticoagulation for A-fib/flutter
Numerator = a positive whole number where N≤D
Denominator = a positive whole number
Exclusion = a positive whole number
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Exclusion:
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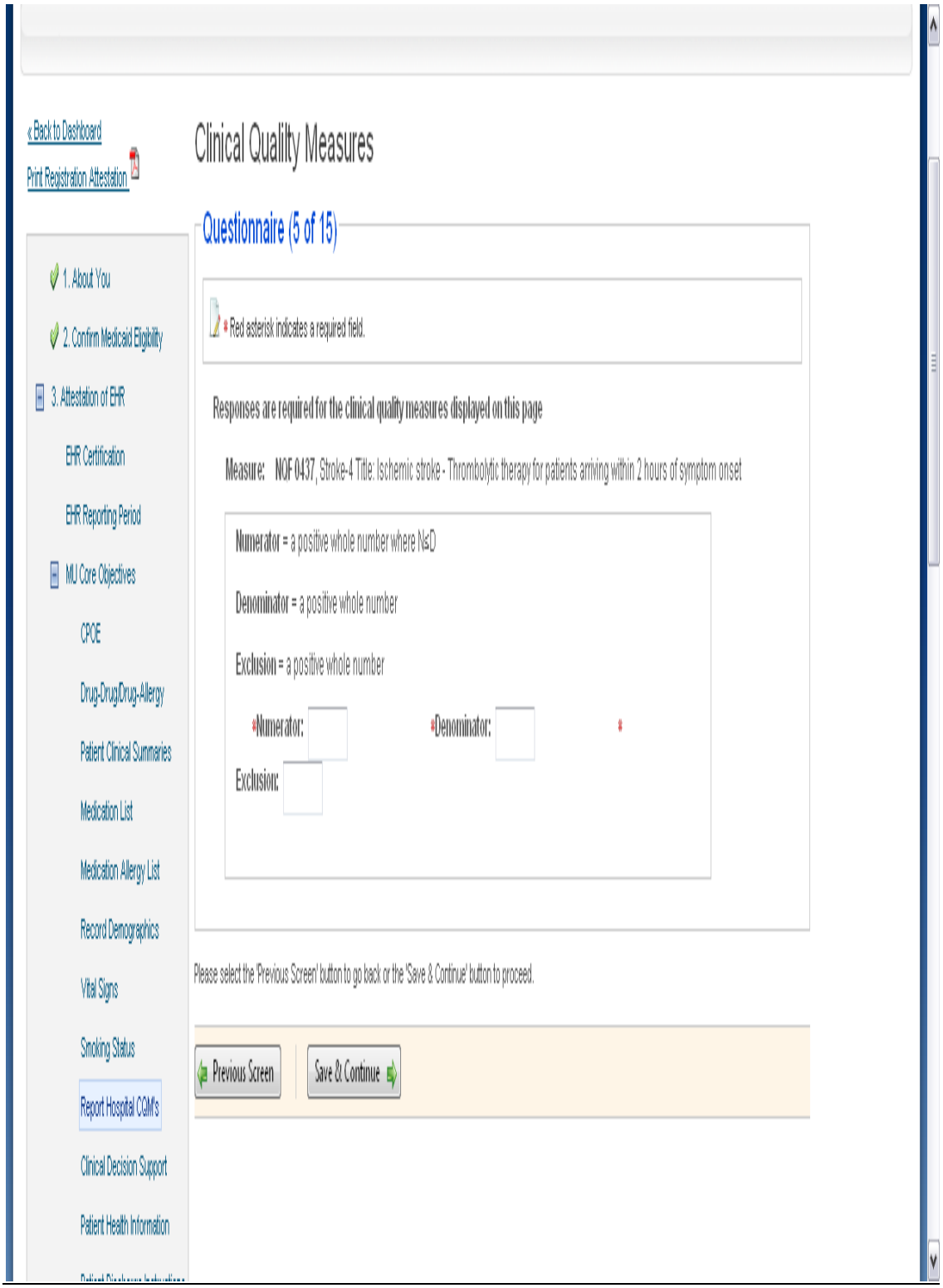
NQF 0437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* Red asterisk indicates a required field.
Responses are required for the clinical quality measures displayed on this page
Measure: NQF 0437, Stroke-4 Title: Ischemic stroke - Thrombolytic therapy for patients arriving within 2 hours of symptom onset
Numerator = a positive whole number where N≤D
Denominator = a positive whole number
Exclusion = a positive whole number
*Numerator:
*Denominator:
Exclusion:
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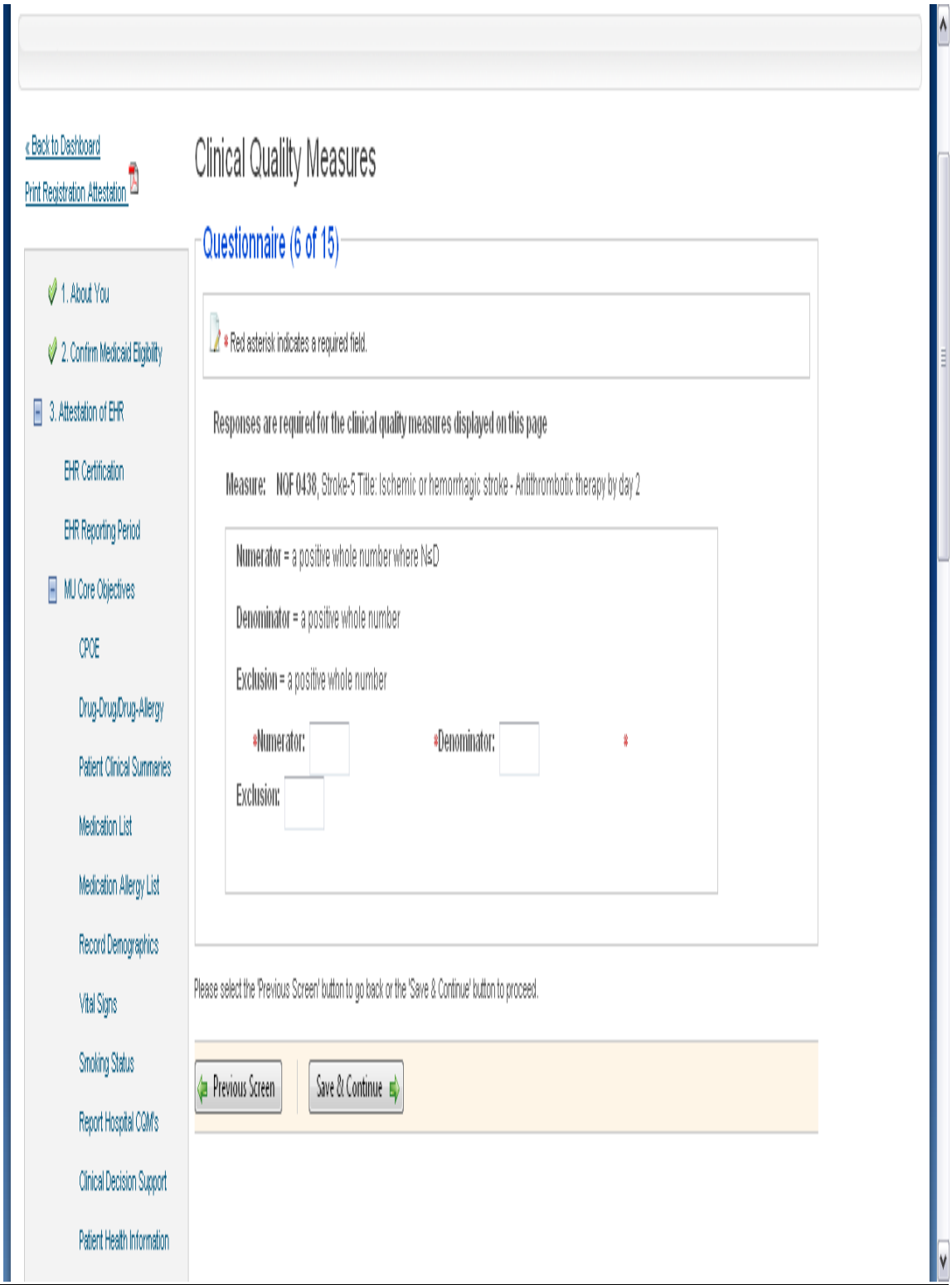
NQF 0438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* Red asterisk indicates a required field.
Responses are required for the clinical quality measures displayed on this page
Measure: NQF 0438, Stroke-5 Title: Ischemic or hemorrhagic stroke - Antithrombotic therapy by day 2
Numerator = a positive whole number where N≤D
Denominator = a positive whole number
Exclusion = a positive whole number
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*Denominator:
Exclusion:
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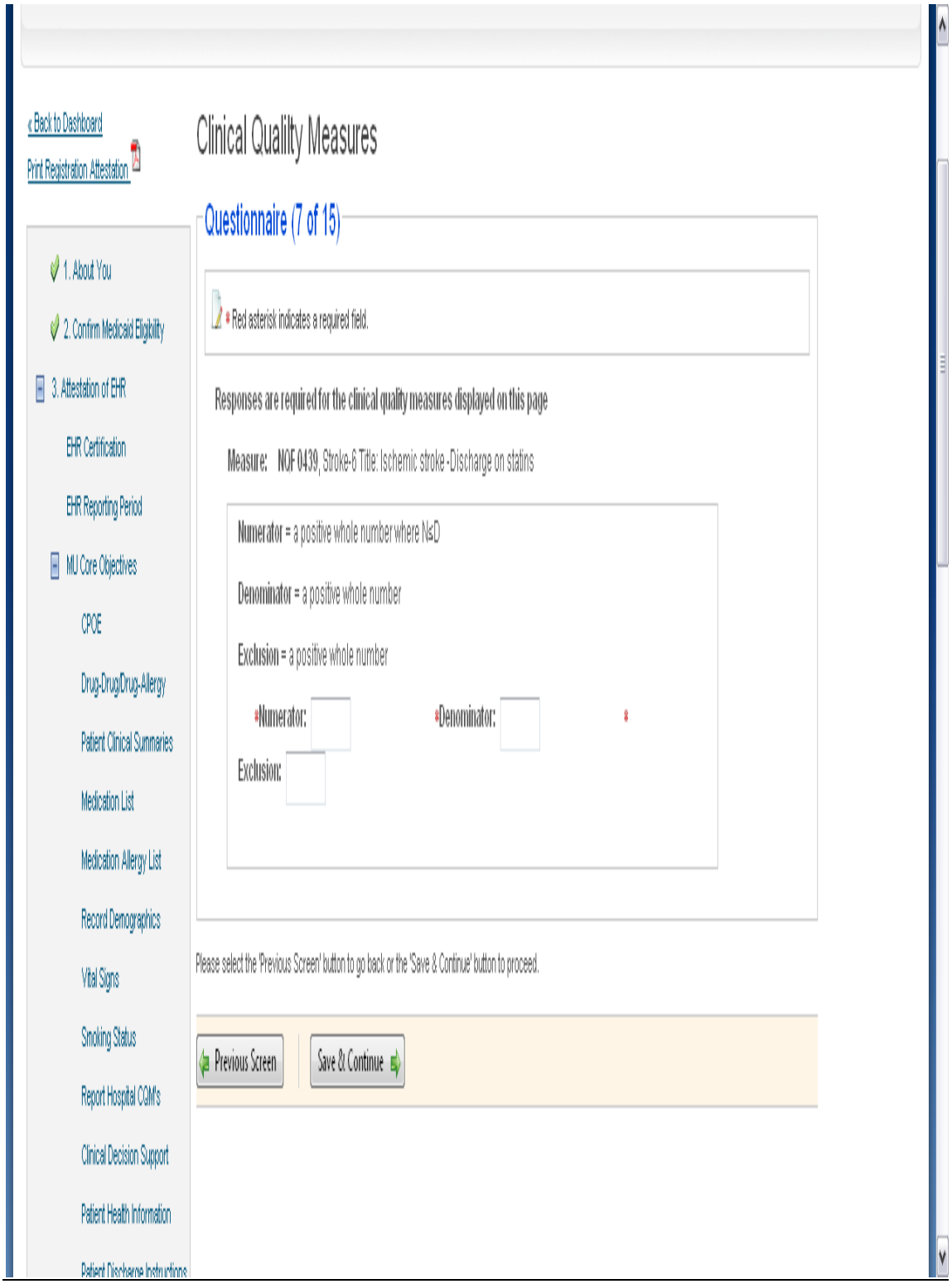
NQF 0439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Red asterisk indicates a required field.
Responses are required for the clinical quality measures displayed on this page
Measure: NQF 0439, Stroke-6 Title: Ischemic stroke -Discharge on statins
Numerator = a positive whole number where N≤D
Denominator = a positive whole number
Exclusion = a positive whole number
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*Denominator:
Exclusion:
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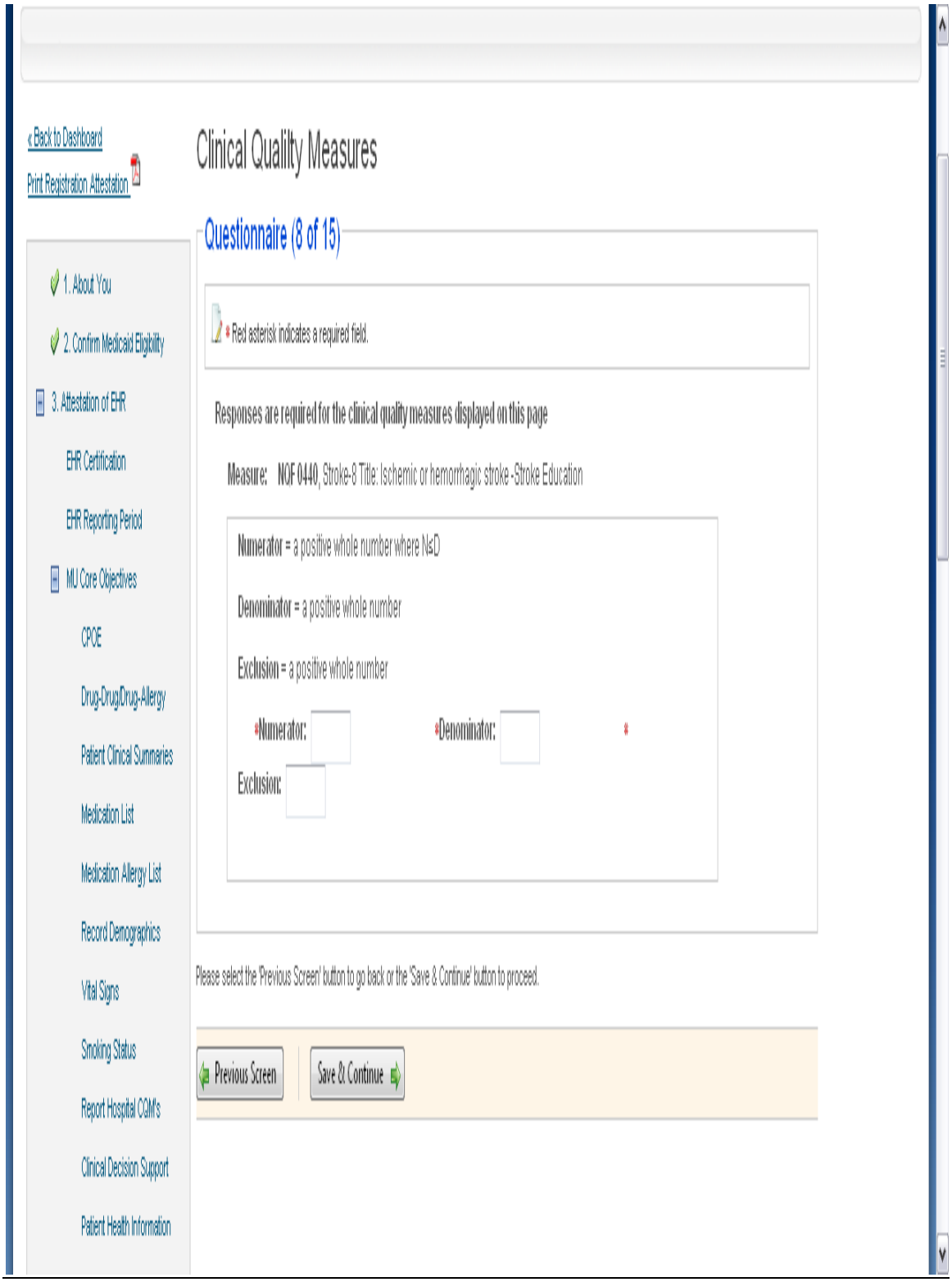
NQF 0440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* Red asterisk indicates a required field.
Responses are required for the clinical quality measures displayed on this page
Measure: NQF 0440, Stroke-8 Title: Ischemic or hemorrhagic stroke -Stroke Education
Numerator = a positive whole number where N≤D
Denominator = a positive whole number
Exclusion = a positive whole number
*Numerator:
*Denominator:
Exclusion:
Please select the 'Previous Screen' button to go back or the 'Save & Continue' button to proceed.
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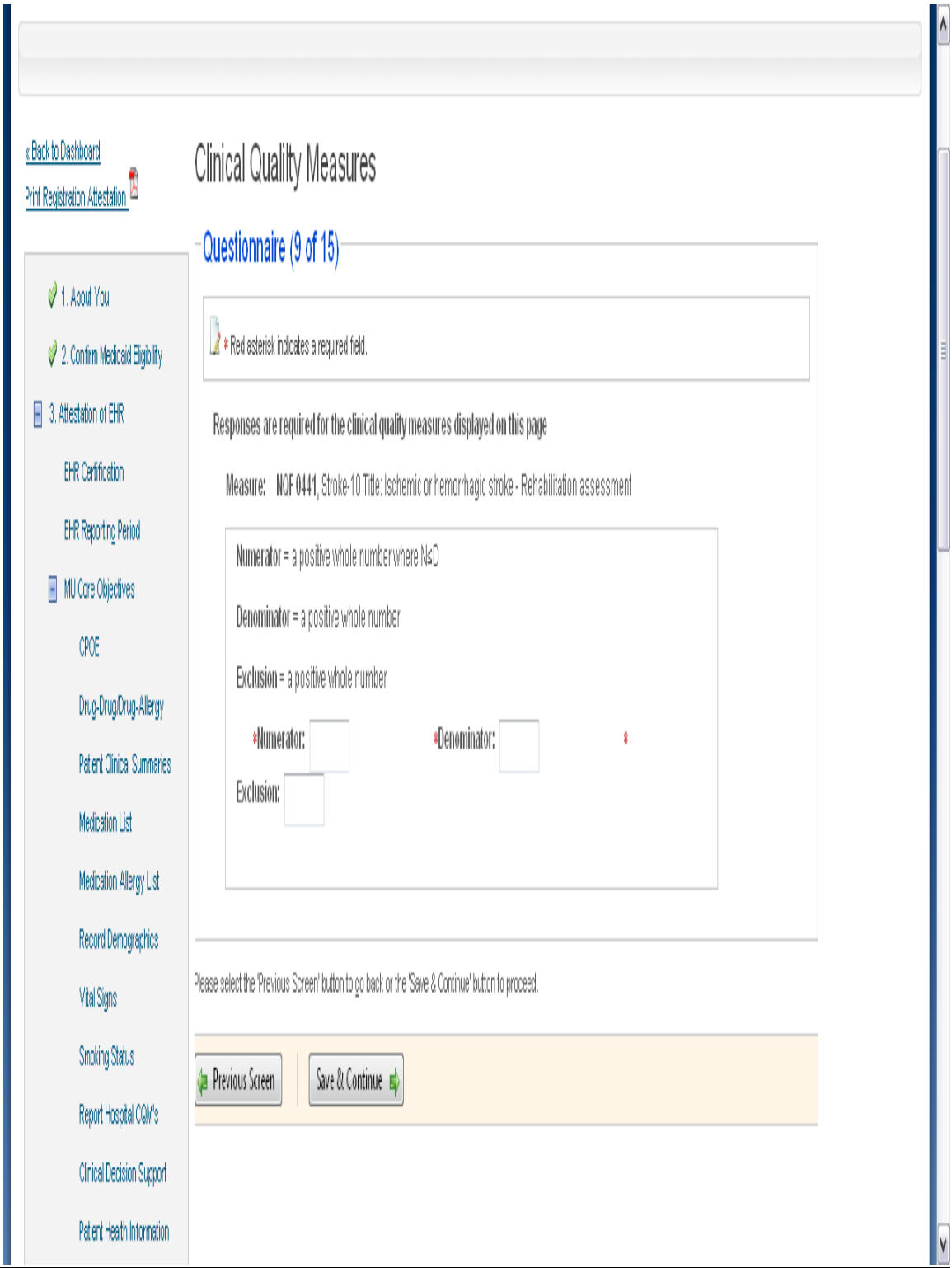
NQF 0441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* Red asterisk indicates a required field.
Responses are required for the clinical quality measures displayed on this page
Measure: NQF 0441, Stroke-10 Title: Ischemic or hemorrhagic stroke - Rehabilitation assessment
Numerator = a positive whole number where N≤D
Denominator = a positive whole number
Exclusion = a positive whole number
*Numerator:
*Denominator:
Exclusion:
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NQF 0371


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* Red asterisk indicates a required field.
Responses are required for the clinical quality measures displayed on this page
Measure: NQF 0371, VTE-1 Title: VTE prophylaxis within 24 hours of arrival
Numerator = a positive whole number where N≤D
Denominator = a positive whole number
Exclusion = a positive whole number
*Numerator:
*Denominator:
Exclusion:
Please select the 'Previous Screen' button to go back or the 'Save & Continue' button to proceed.
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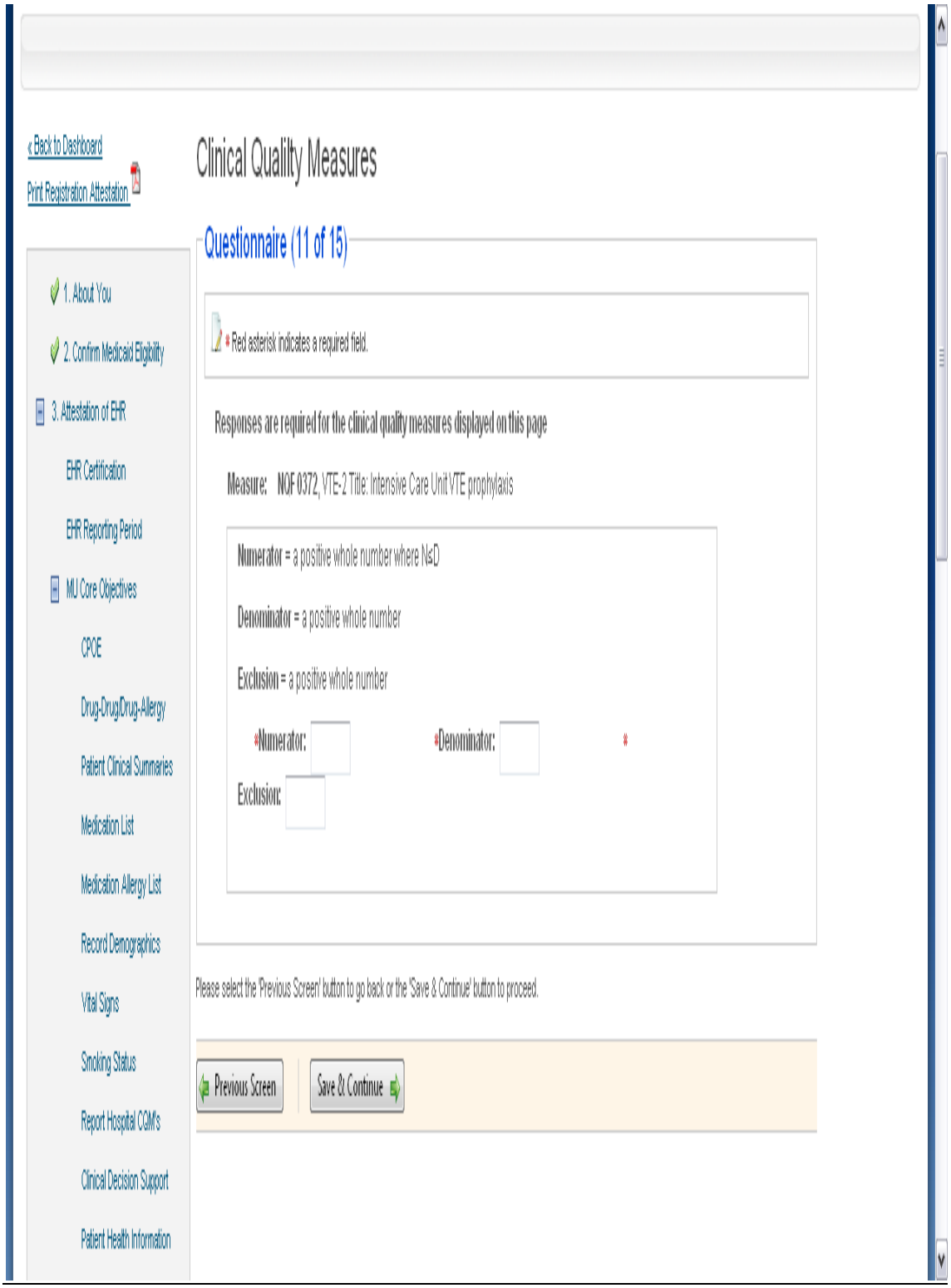
NQF 0372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* Red asterisk indicates a required field.
Responses are required for the clinical quality measures displayed on this page
Measure: NQF 0372, VTE-2 Title: Intensive Care Unit VTE prophylaxis
Numerator = a positive whole number where N≤D
Denominator = a positive whole number
Exclusion = a positive whole number
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*Denominator:
Exclusion:
Please select the 'Previous Screen' button to go back or the 'Save & Continue' button to proceed.
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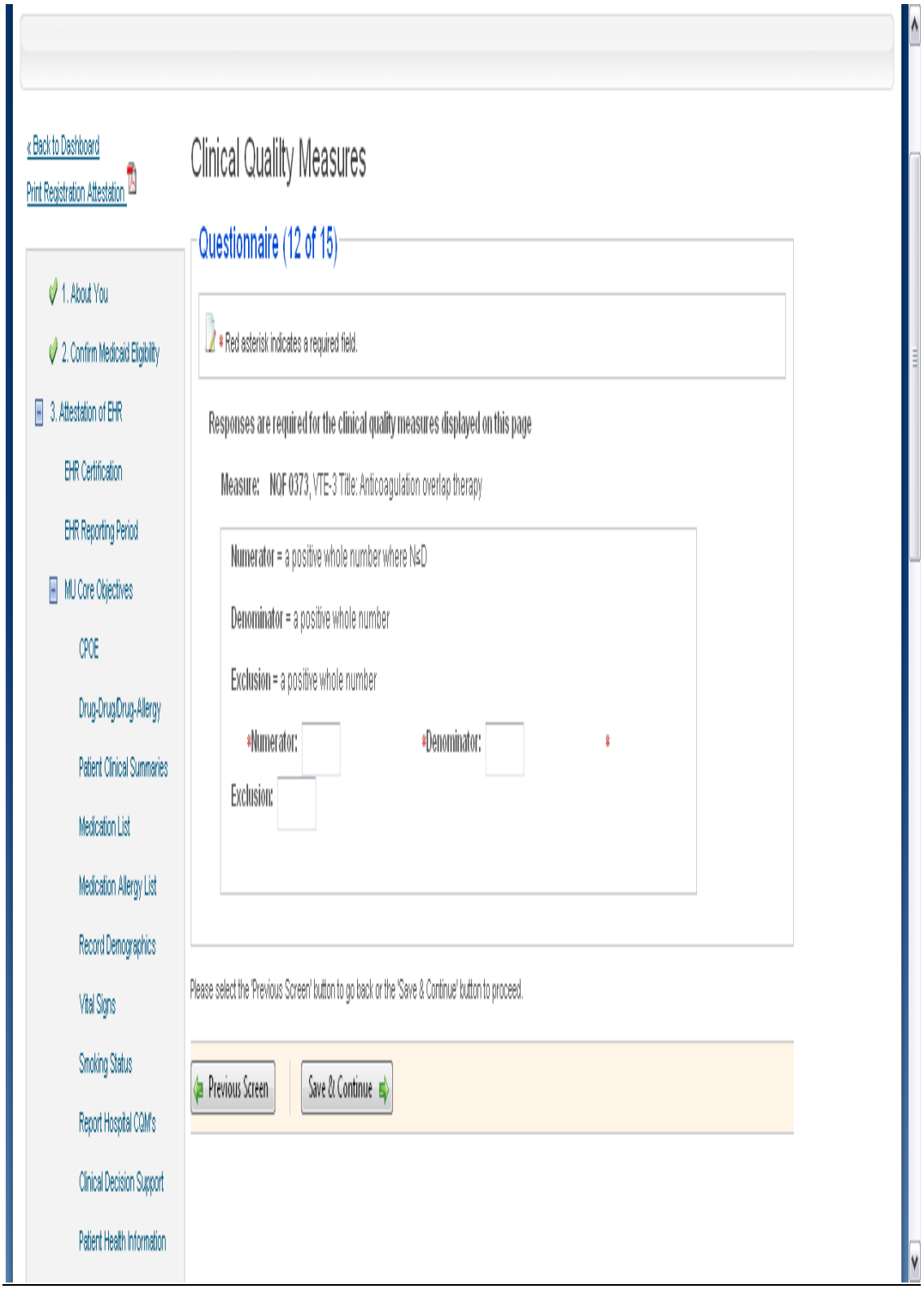
NQF 0373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* Red asterisk indicates a required field.
Responses are required for the clinical quality measures displayed on this page
Measure: NQF 0373, VTE-3 Title: Anticoagulation overlap therapy
Numerator = a positive whole number where N≤D
Denominator = a positive whole number
Exclusion = a positive whole number
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*Denominator:
Exclusion:
Please select the 'Previous Screen' button to go back or the 'Save & Continue' button to proceed.
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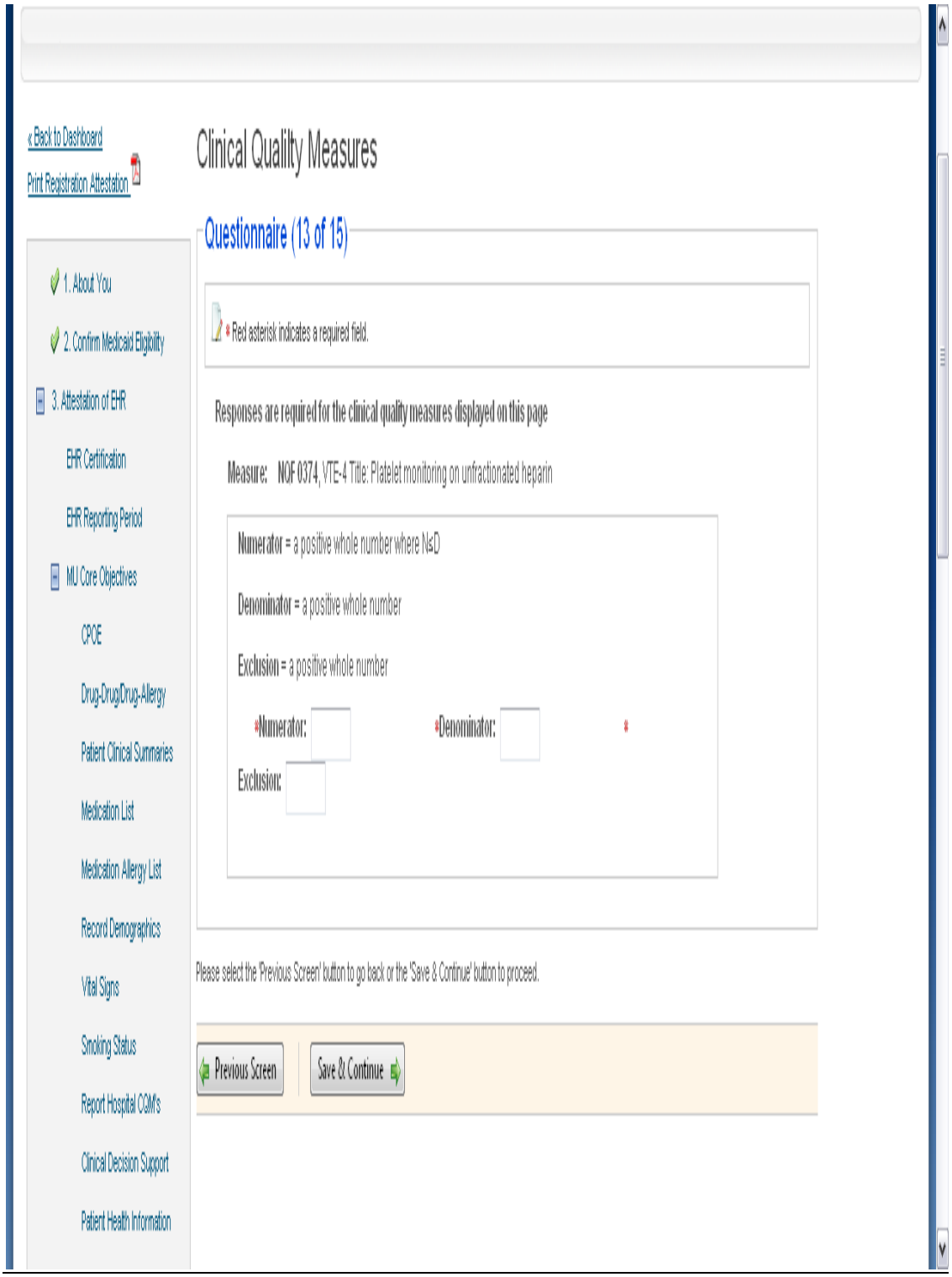
NQF 0374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* Red asterisk indicates a required field.
Responses are required for the clinical quality measures displayed on this page
Measure: NQF 0374, VTE-4 Title: Platelet monitoring on unfractionated heparin
Numerator = a positive whole number where N≤D
Denominator = a positive whole number
Exclusion = a positive whole number
*Numerator:
*Denominator:
Exclusion:
Please select the 'Previous Screen' button to go back or the 'Save & Continue' button to proceed.
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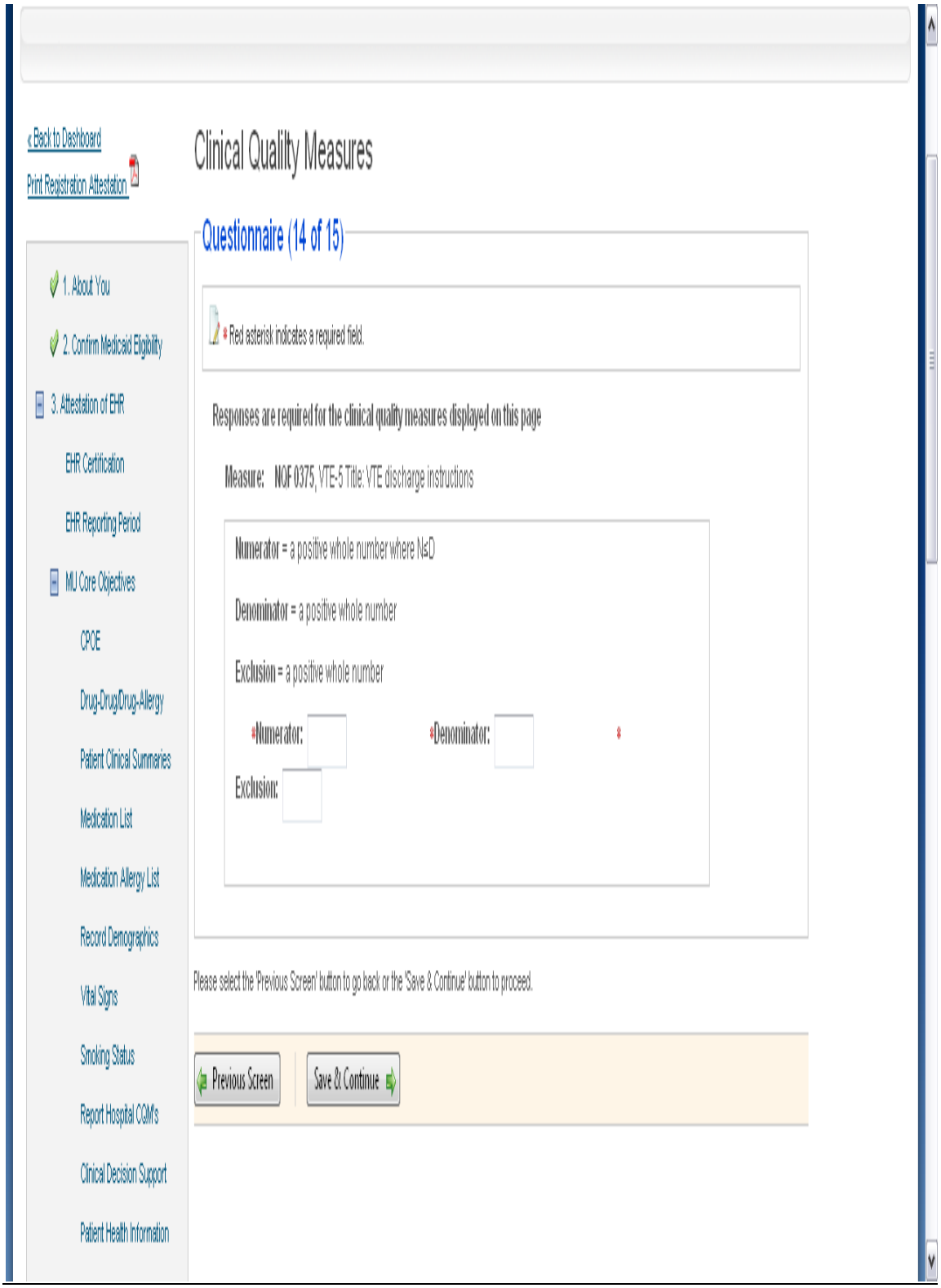
NQF 0375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* Red asterisk indicates a required field.
Responses are required for the clinical quality measures displayed on this page
Measure: NQF 0375, VTE-5 Title: VTE discharge instructions
Numerator = a positive whole number where N≤D
Denominator = a positive whole number
Exclusion = a positive whole number
*Numerator:
*Denominator:
Exclusion:
Please select the 'Previous Screen' button to go back or the 'Save & Continue' button to proceed.
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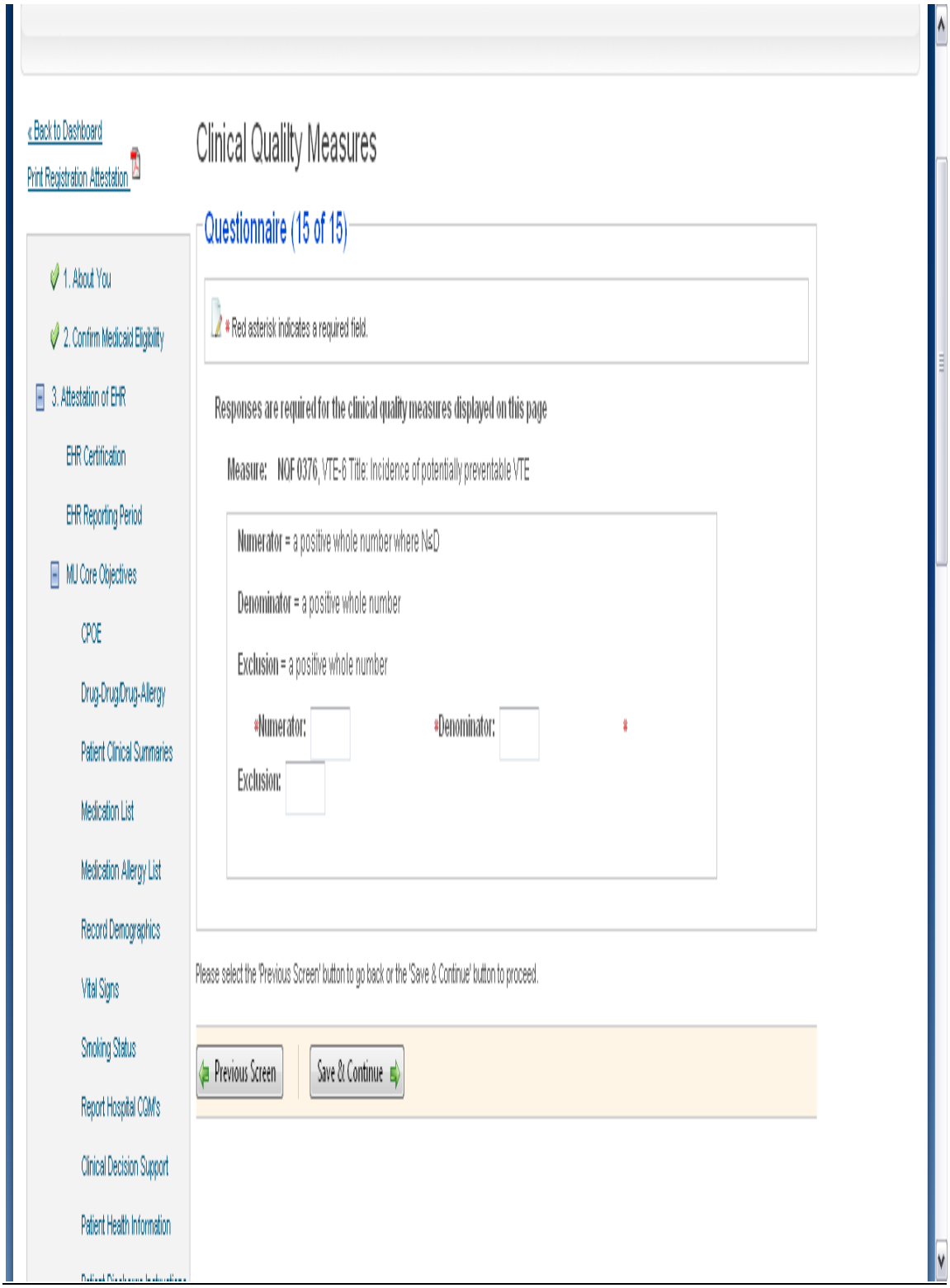
NQF 0376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* Red asterisk indicates a required field.
Responses are required for the clinical quality measures displayed on this page
Measure: NQF 0376, VTE-6 Title: Incidence of potentially preventable VTE
Numerator = a positive whole number where N≤D
Denominator = a positive whole number
Exclusion = a positive whole number
*Numerator:
*Denominator:
Exclusion:
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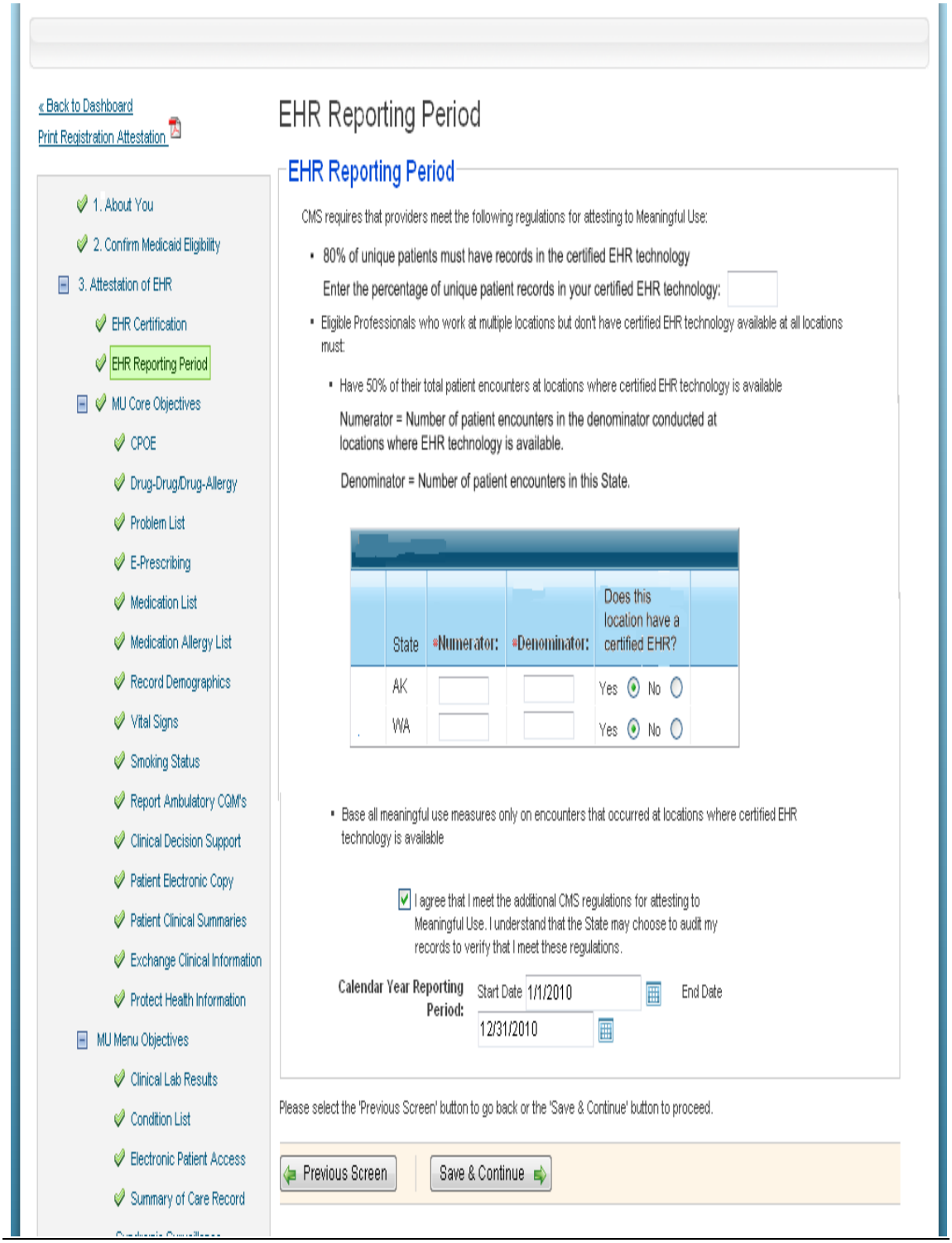
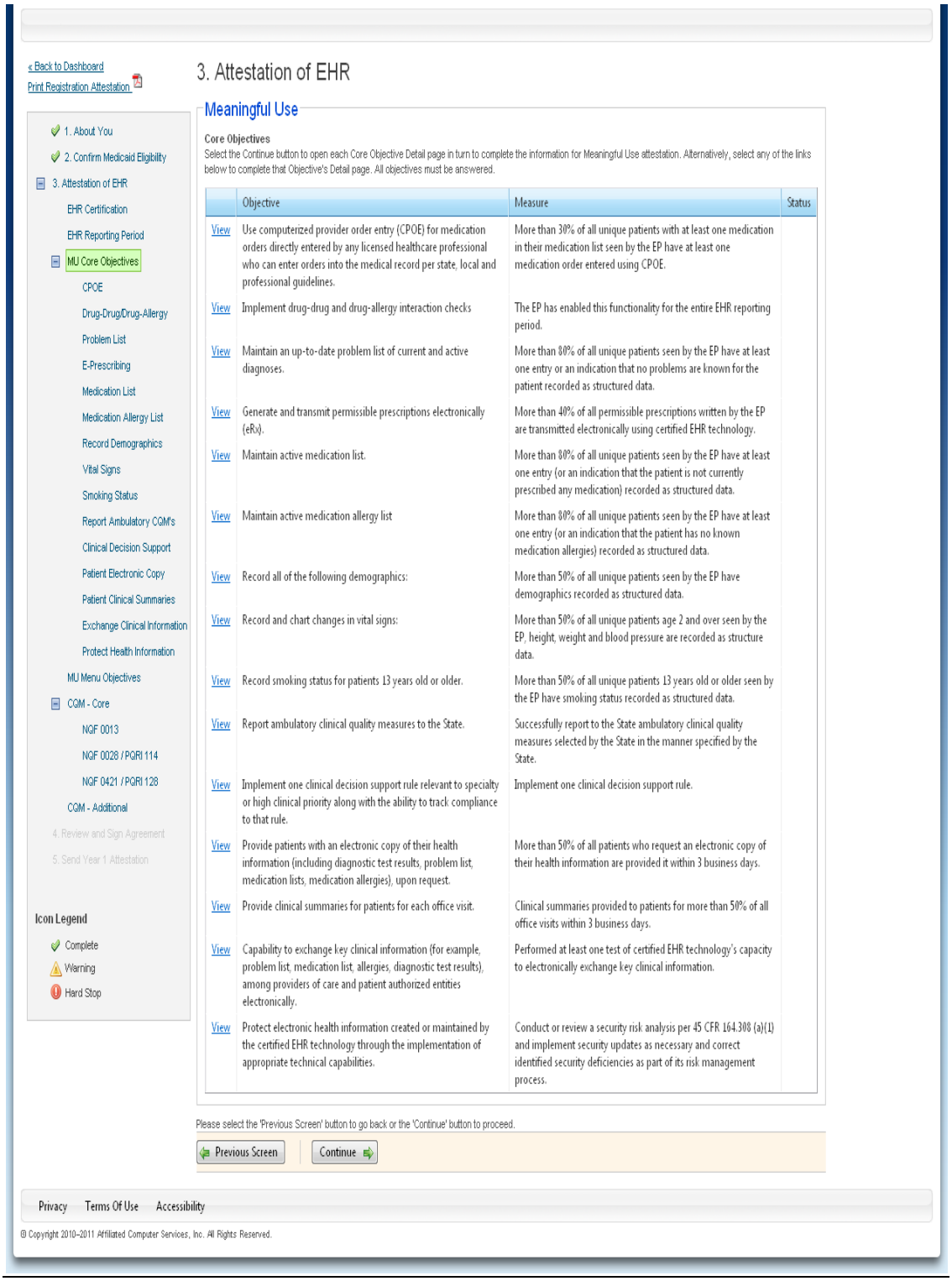
ELIGIBLE PROFESSIONAL

EHR Reporting Period



## Core Objectives Summary



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NQF 0028 / PQRI 114
NQF 0421 / PQRI 128
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5. Send Year 1 Attestation

Icon Legend
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Hard Stop

3. Attestation of EHR

Meaningful Use

Core Objectives

Select the Continue button to open each Core Objective Detail page in turn to complete the information for Meaningful Use attestation. Alternatively, select any of the links below to complete that Objective's Detail page. All objectives must be answered.

| | Objective | Measure | Status |
|---|---|---|---|
| View | Use computerized provider order entry (CPOE) for medication orders directly entered by any licensed healthcare professional who can enter orders into the medical record per state, local and professional guidelines. | More than 30% of all unique patients with at least one medication in their medication list seen by the EP have at least one medication order entered using CPOE. | |
| View | Implement drug-drug and drug-allergy interaction checks | The EP has enabled this functionality for the entire EHR reporting period. | |
| View | Maintain an up-to-date problem list of current and active diagnoses. | More than 80% of all unique patients seen by the EP have at least one entry or an indication that no problems are known for the patient recorded as structured data. | |
| View | Generate and transmit permissible prescriptions electronically (eRx). | More than 40% of all permissible prescriptions written by the EP are transmitted electronically using certified EHR technology. | |
| View | Maintain active medication list. | More than 80% of all unique patients seen by the EP have at least one entry (or an indication that the patient is not currently prescribed any medication) recorded as structured data. | |
| View | Maintain active medication allergy list | More than 80% of all unique patients seen by the EP have at least one entry (or an indication that the patient has no known medication allergies) recorded as structured data. | |
| View | Record all of the following demographics: | More than 50% of all unique patients seen by the EP have demographics recorded as structured data. | |
| View | Record and chart changes in vital signs: | More than 50% of all unique patients age 2 and over seen by the EP, height, weight and blood pressure are recorded as structure data. | |
| View | Record smoking status for patients 13 years old or older. | More than 50% of all unique patients 13 years old or older seen by the EP have smoking status recorded as structured data. | |
| View | Report ambulatory clinical quality measures to the State. | Successfully report to the State ambulatory clinical quality measures selected by the State in the manner specified by the State. | |
| View | Implement one clinical decision support rule relevant to specialty or high clinical priority along with the ability to track compliance to that rule. | Implement one clinical decision support rule. | |
| View | Provide patients with an electronic copy of their health information (including diagnostic test results, problem list, medication lists, medication allergies), upon request. | More than 50% of all patients who request an electronic copy of their health information are provided it within 3 business days. | |
| View | Provide clinical summaries for patients for each office visit. | Clinical summaries provided to patients for more than 50% of all office visits within 3 business days. | |
| View | Capability to exchange key clinical information (for example, problem list, medication list, allergies, diagnostic test results), among providers of care and patient authorized entities electronically. | Performed at least one test of certified EHR technology's capacity to electronically exchange key clinical information. | |
| View | Protect electronic health information created or maintained by the certified EHR technology through the implementation of appropriate technical capabilities. | Conduct or review a security risk analysis per 45 CFR 164.308 (a)(1) and implement security updates as necessary and correct identified security deficiencies as part of its risk management process. | |

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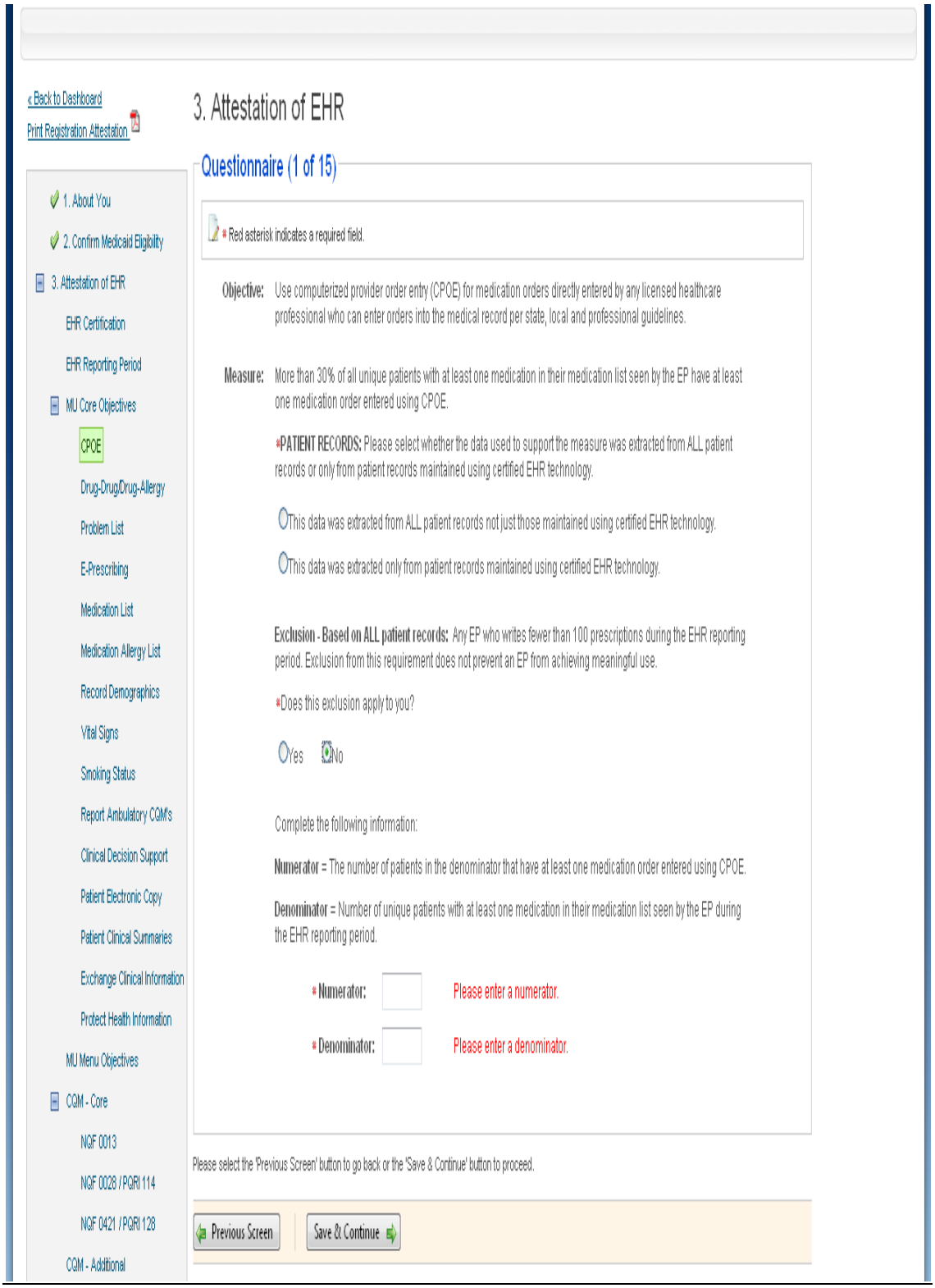
Core Objective #1



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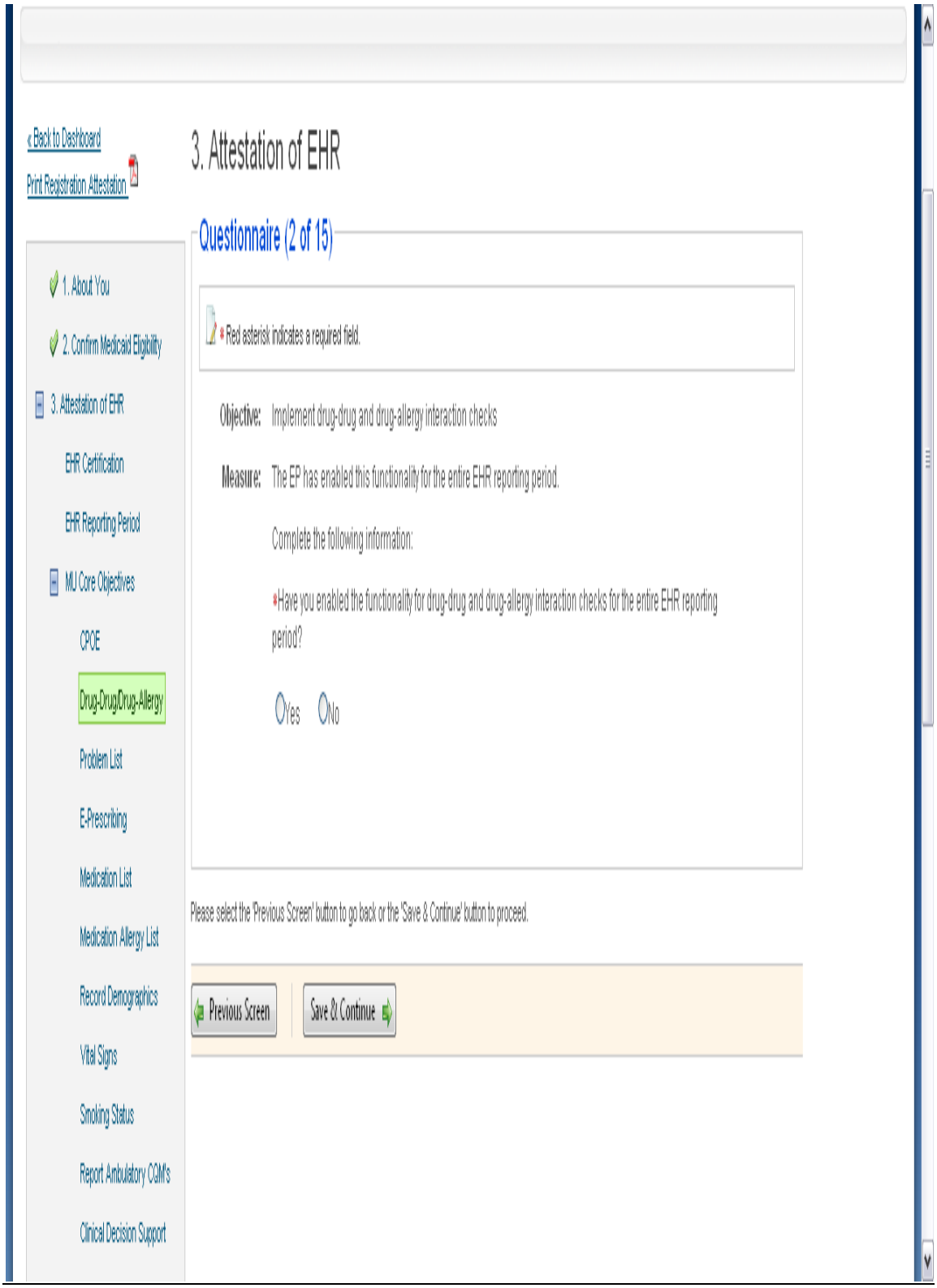

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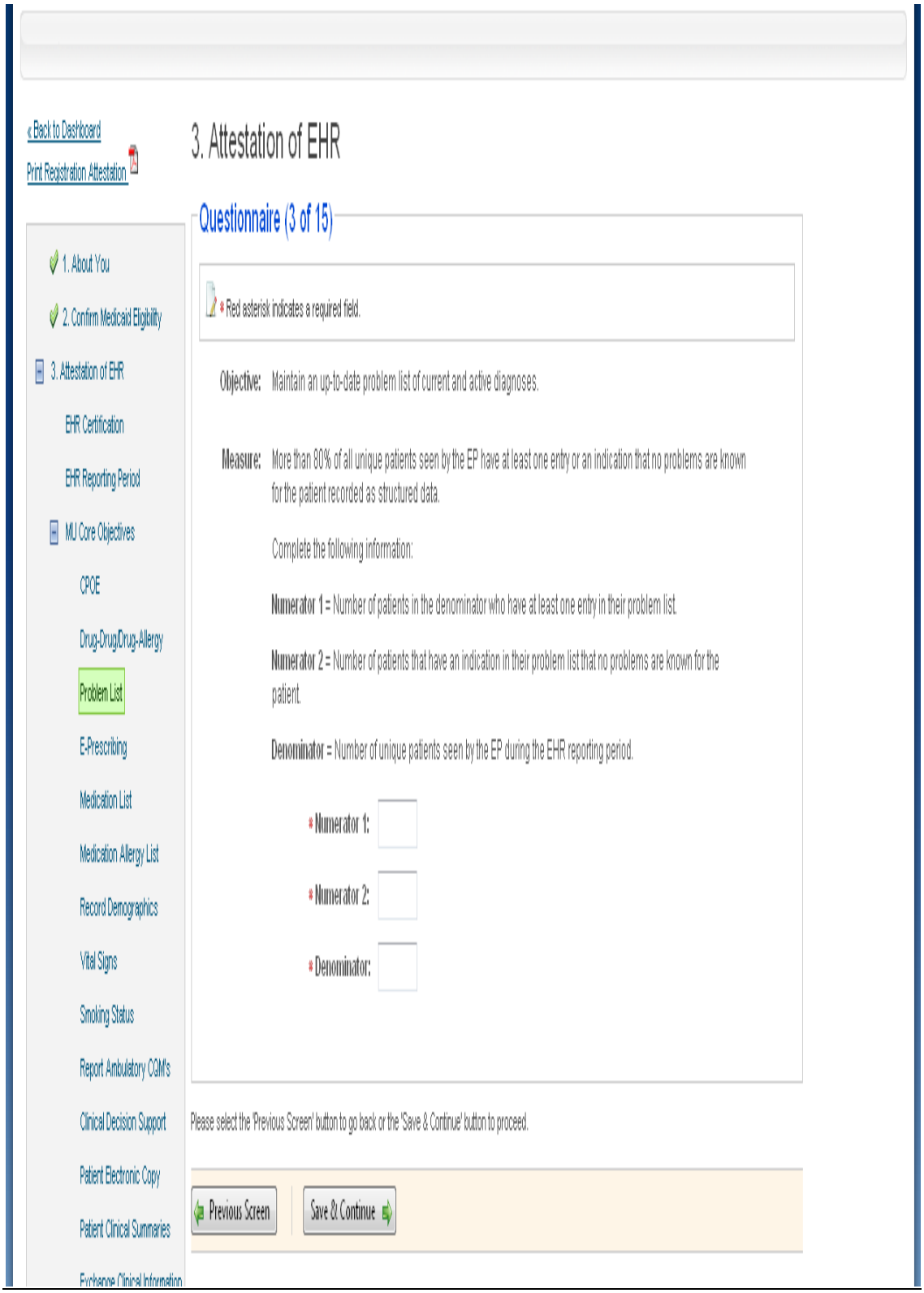

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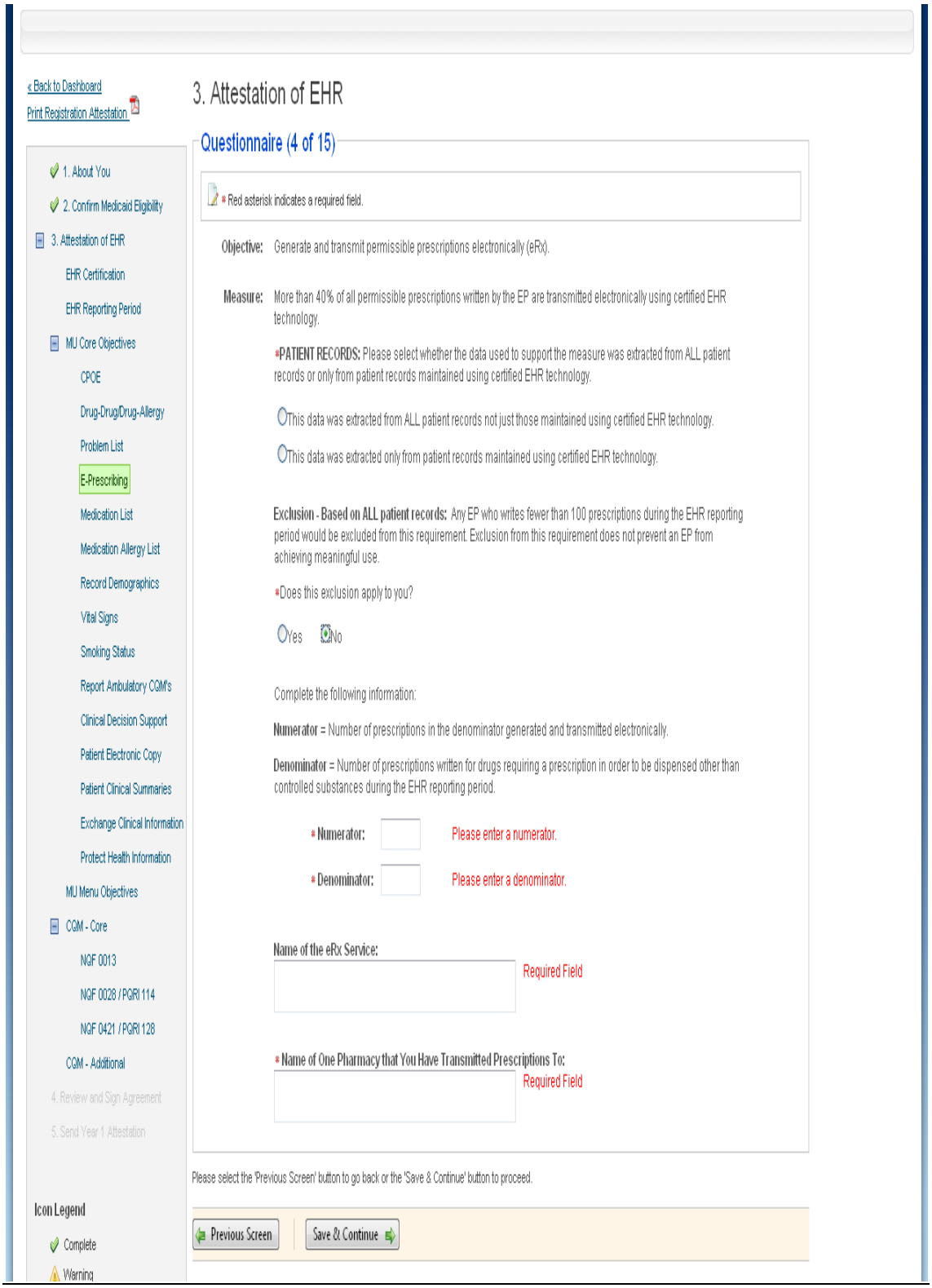
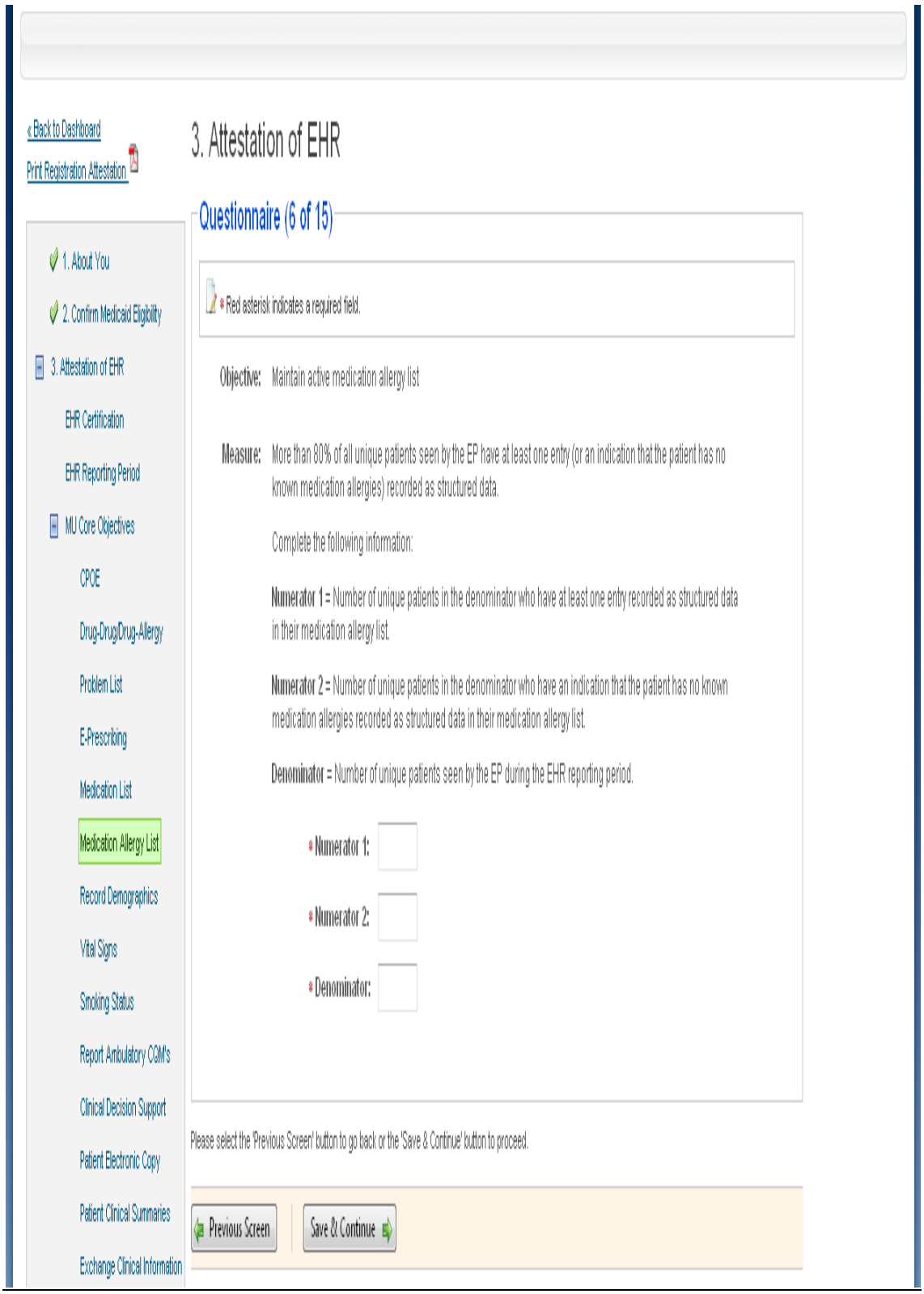


Core Objective #5

Core Objective #6



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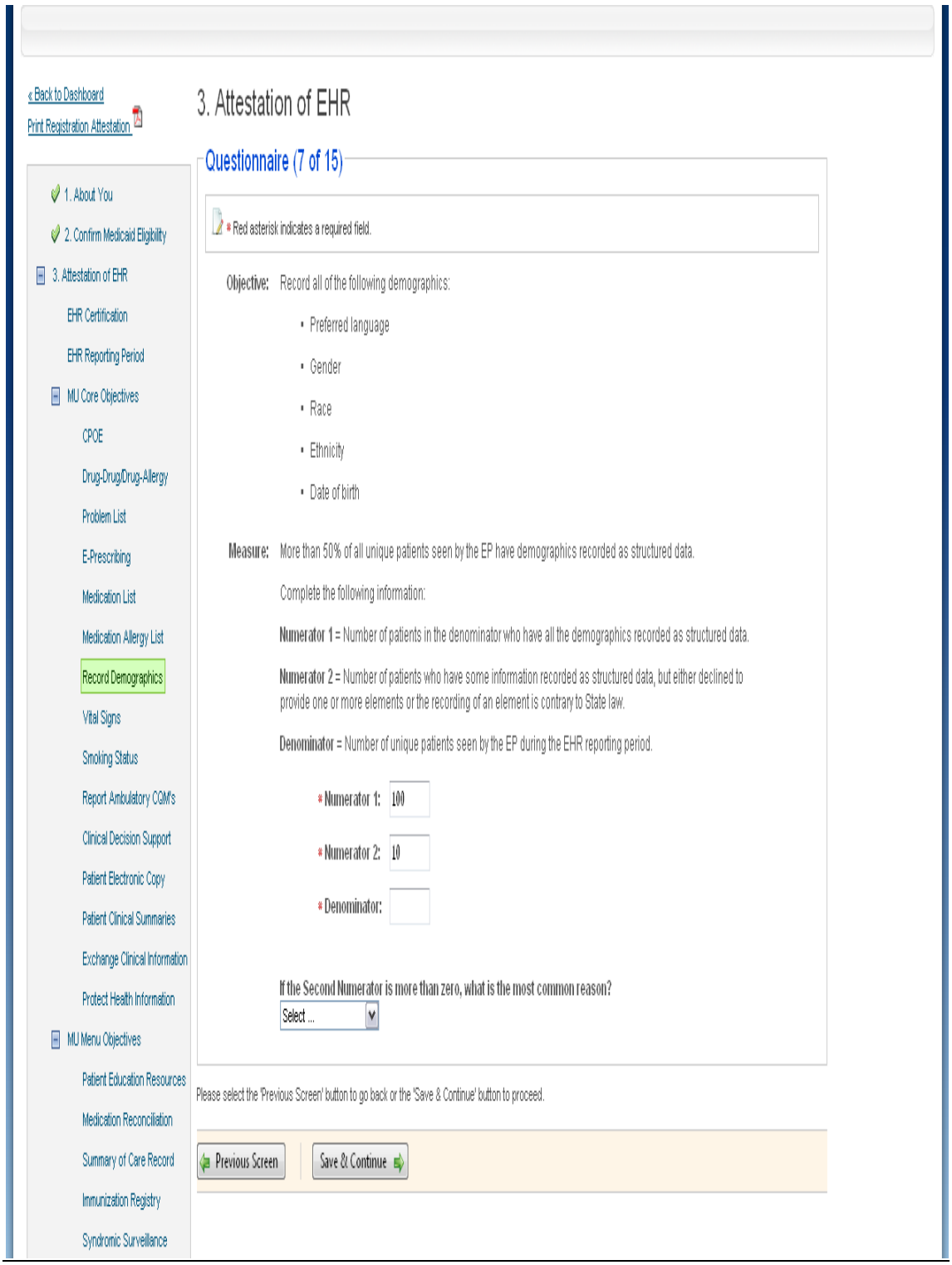
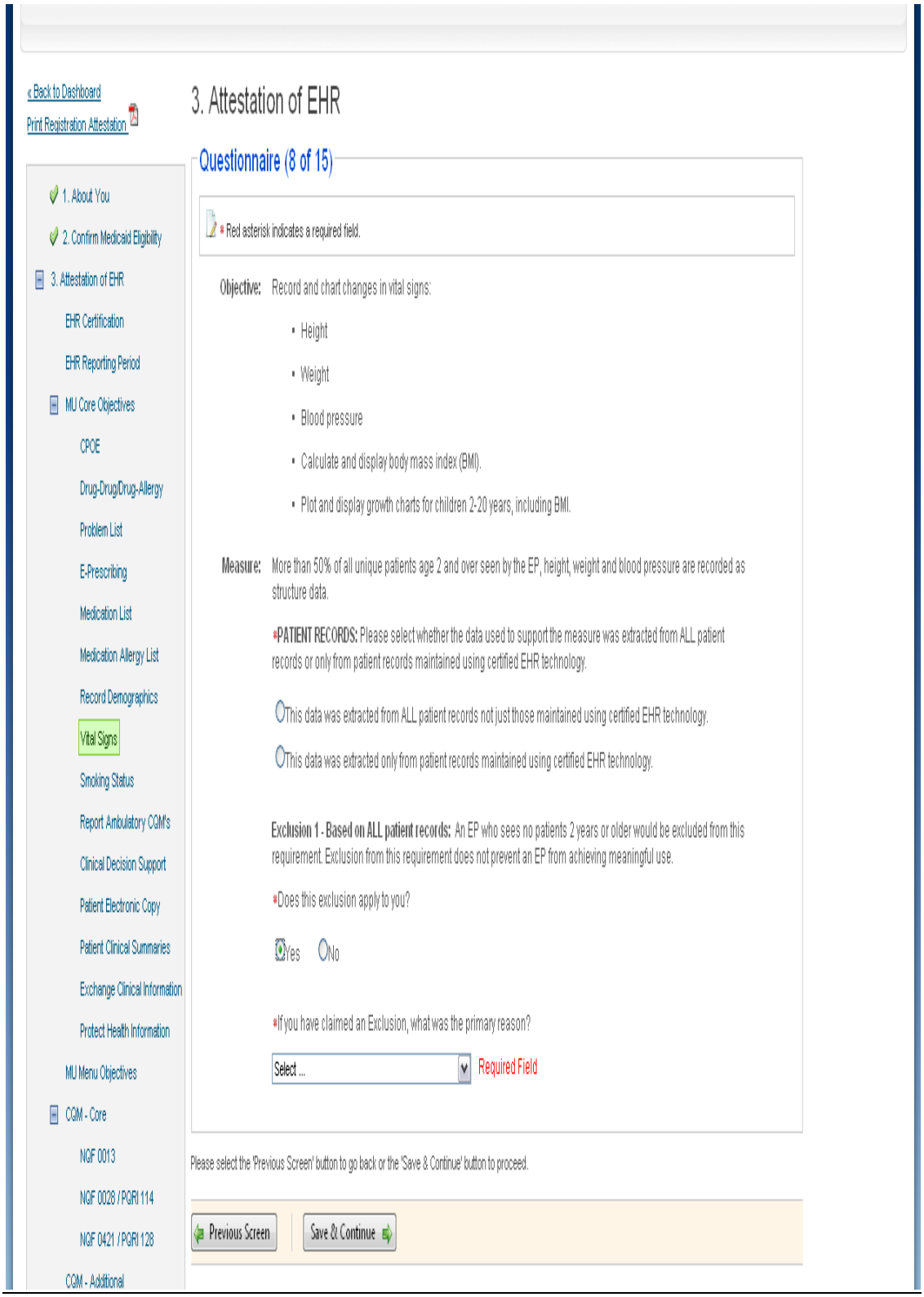
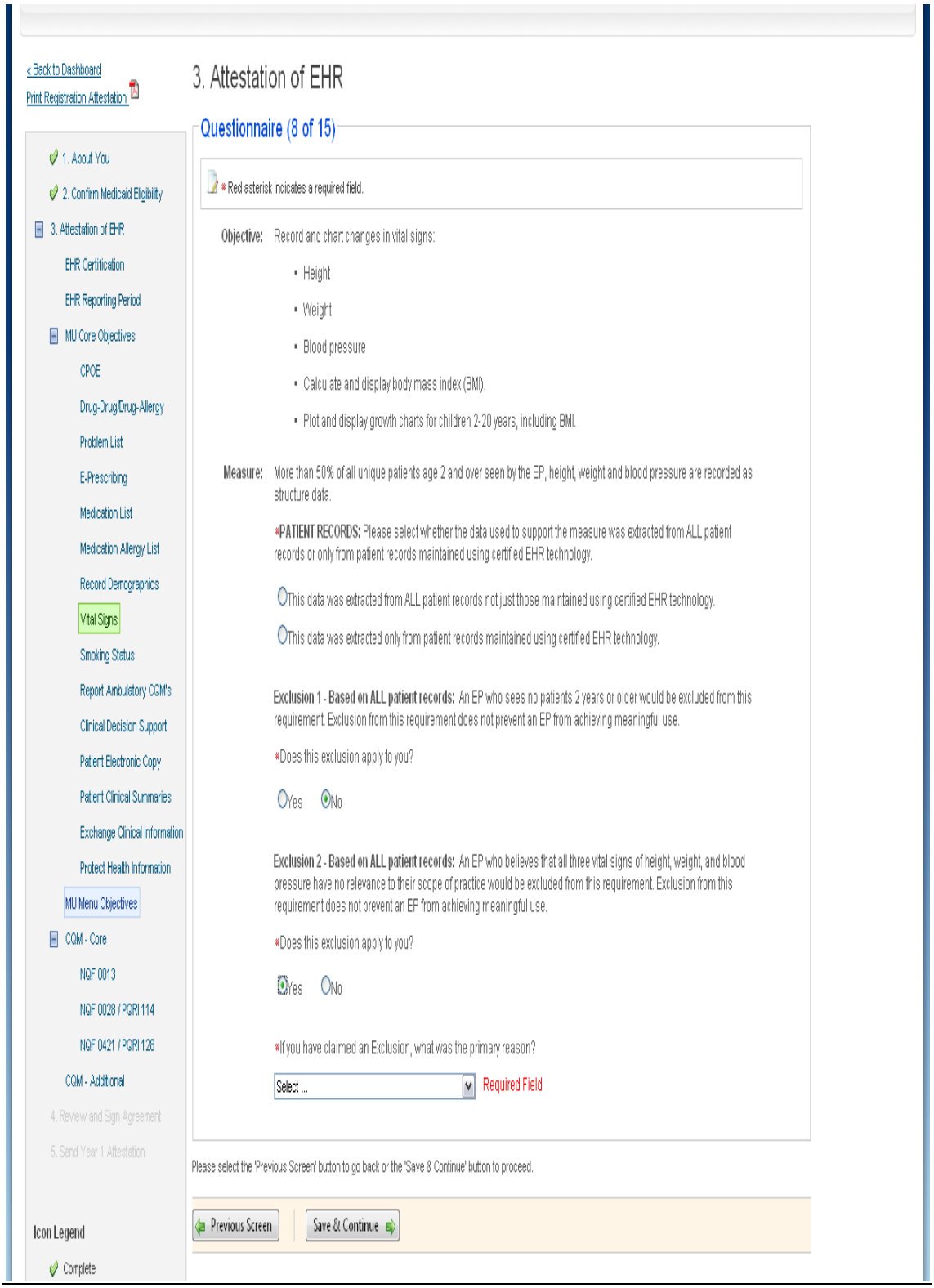


Core Objective #8 with first exclusion selected



Core Objective #8 with second exclusion selected



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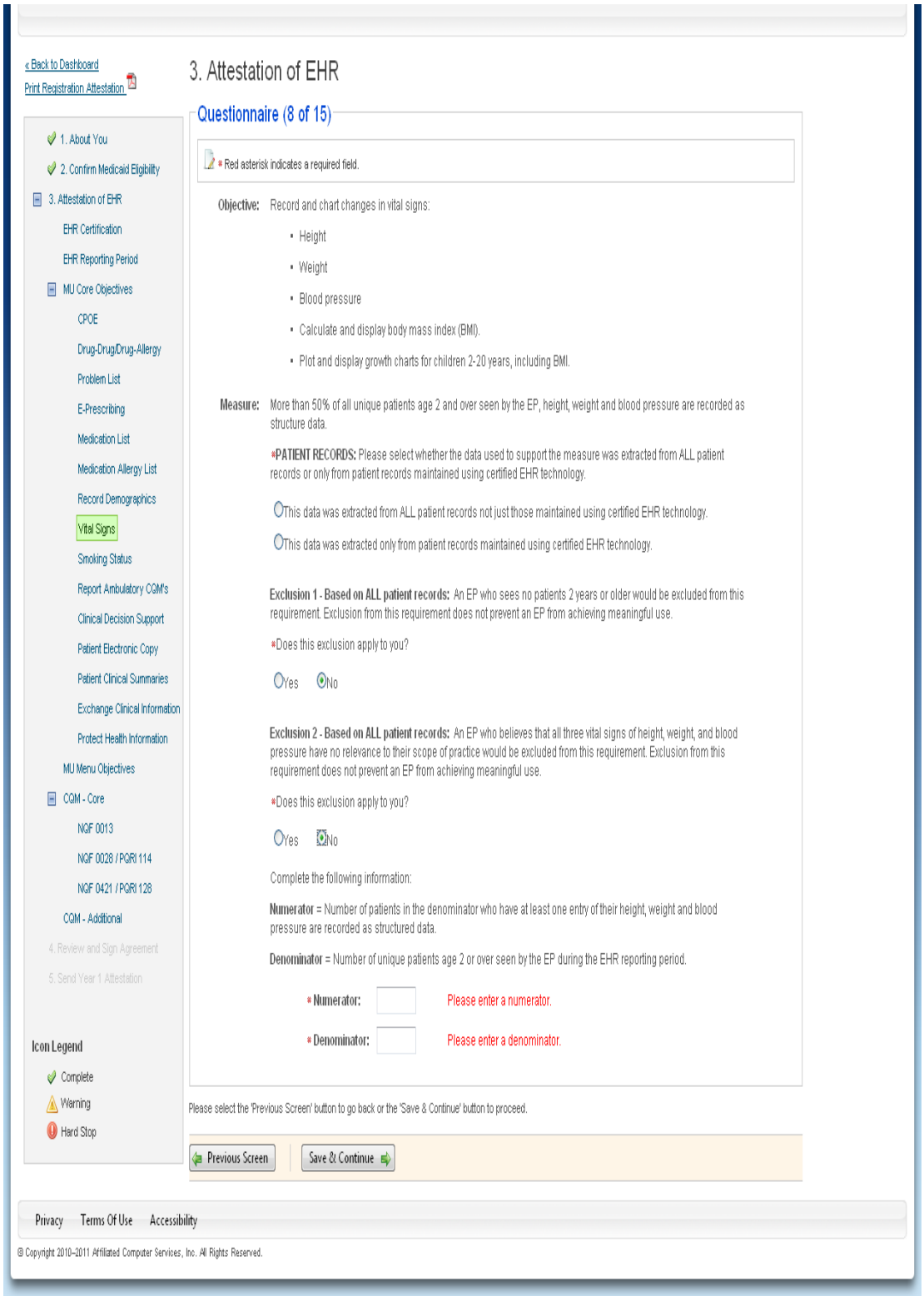

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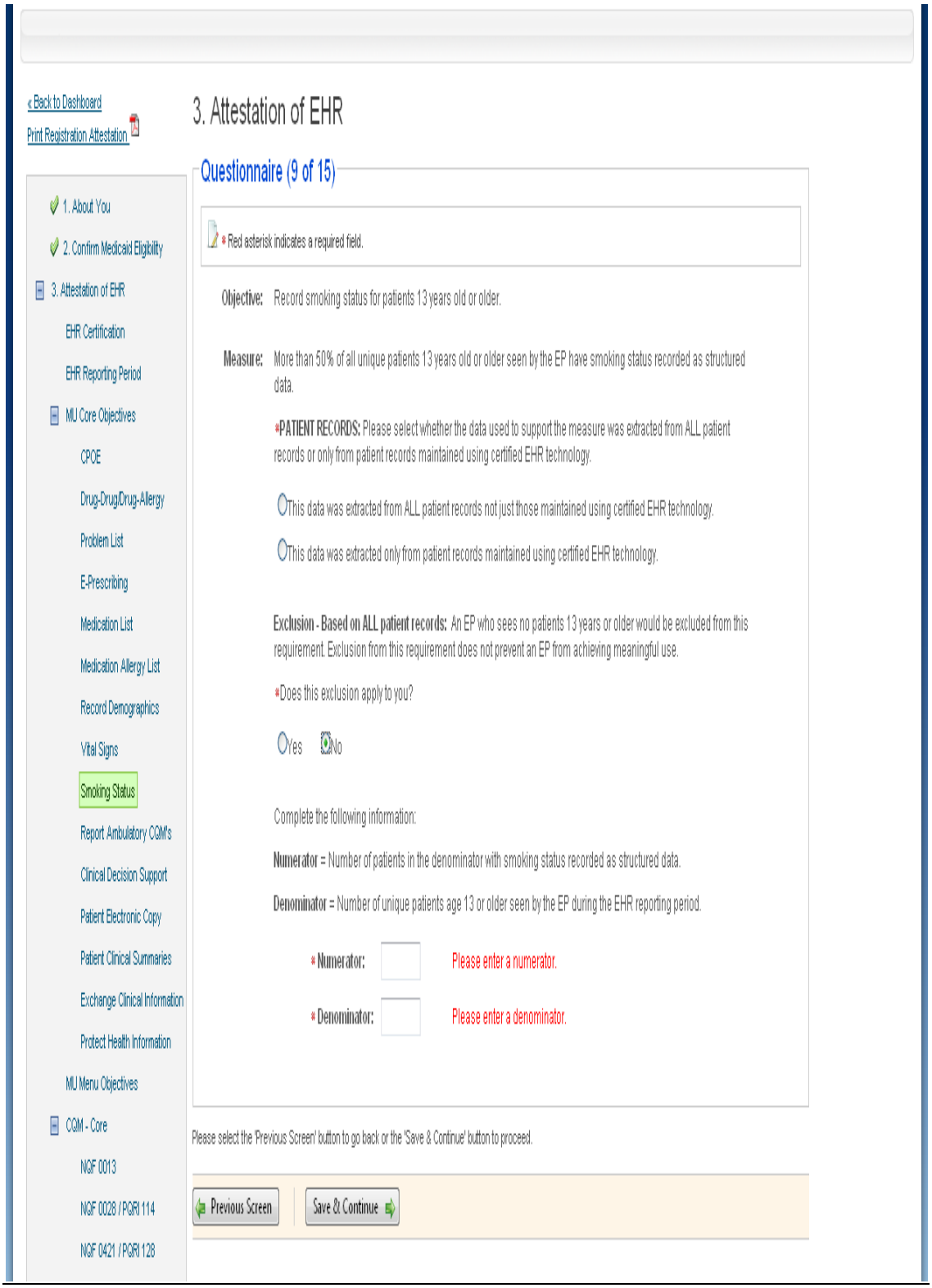

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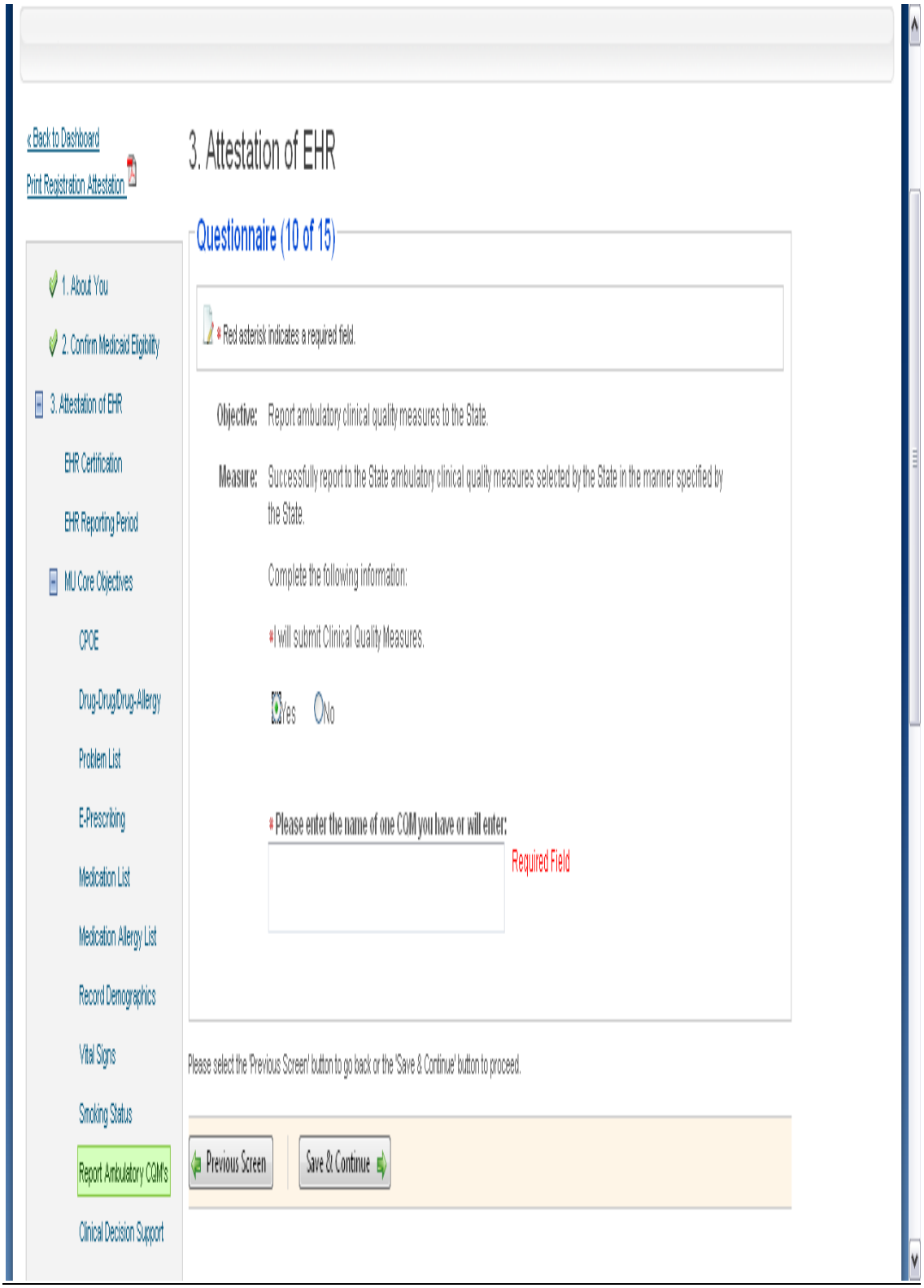
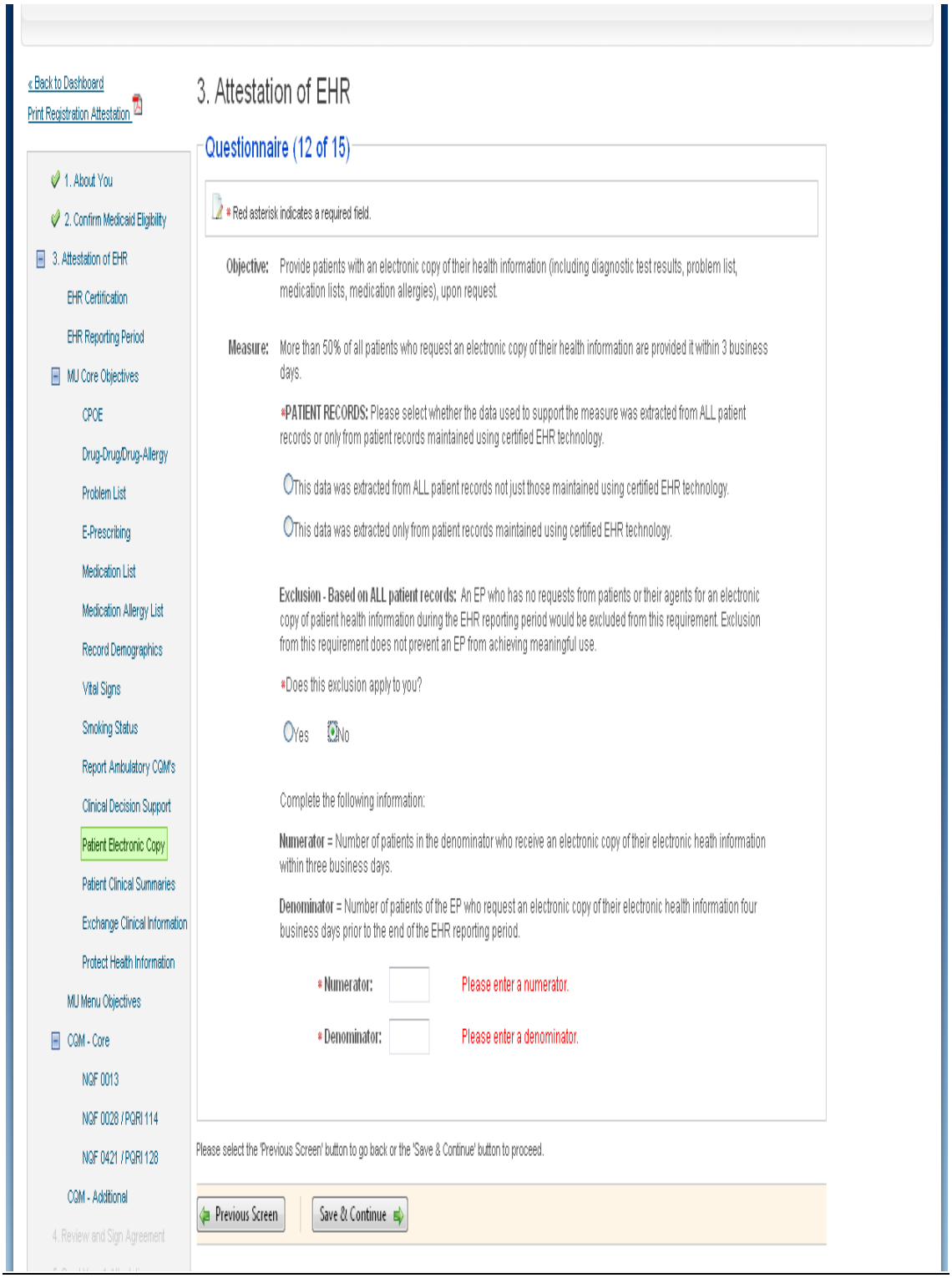


Core Objective #11

Core Objective #12



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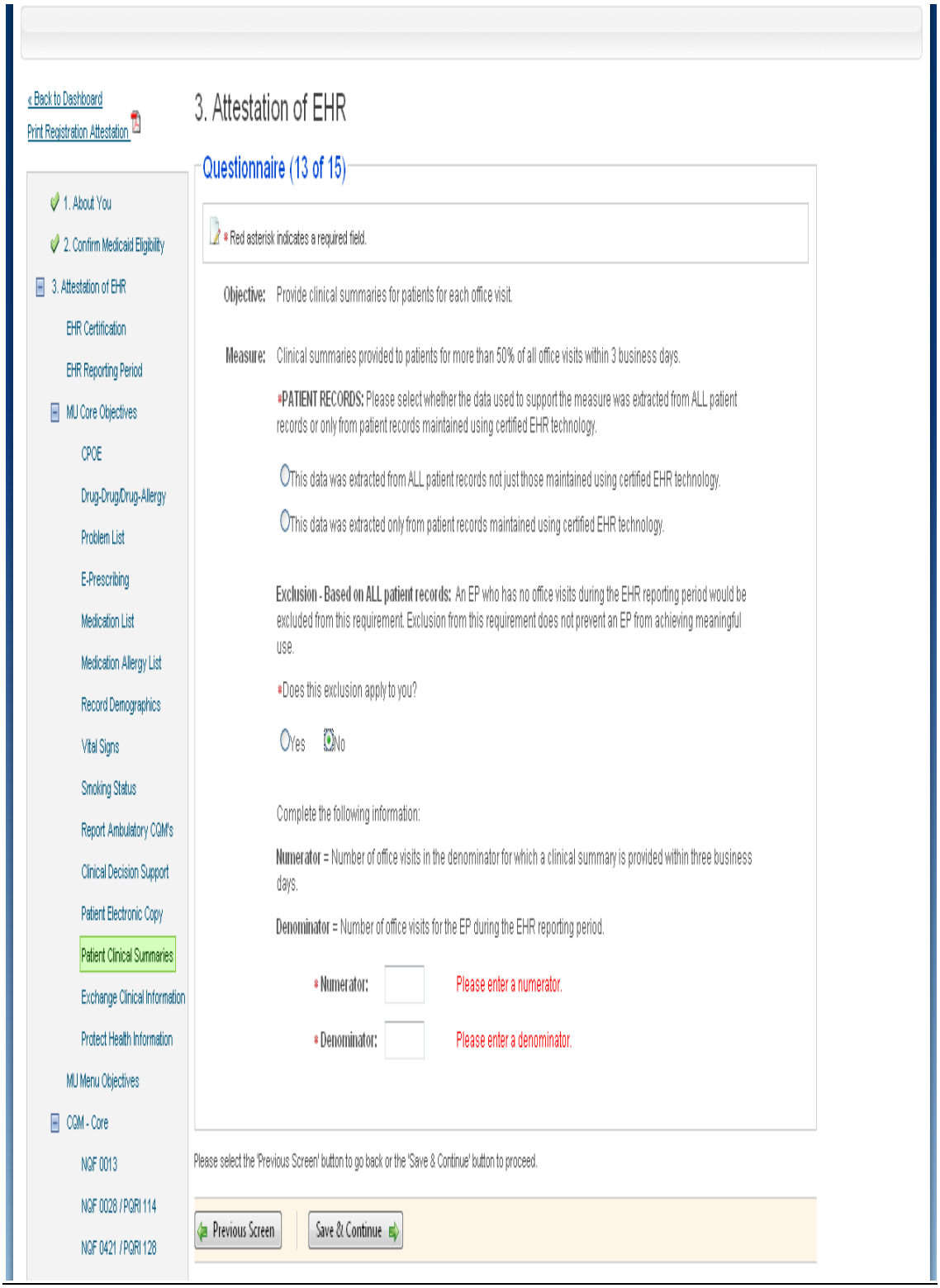
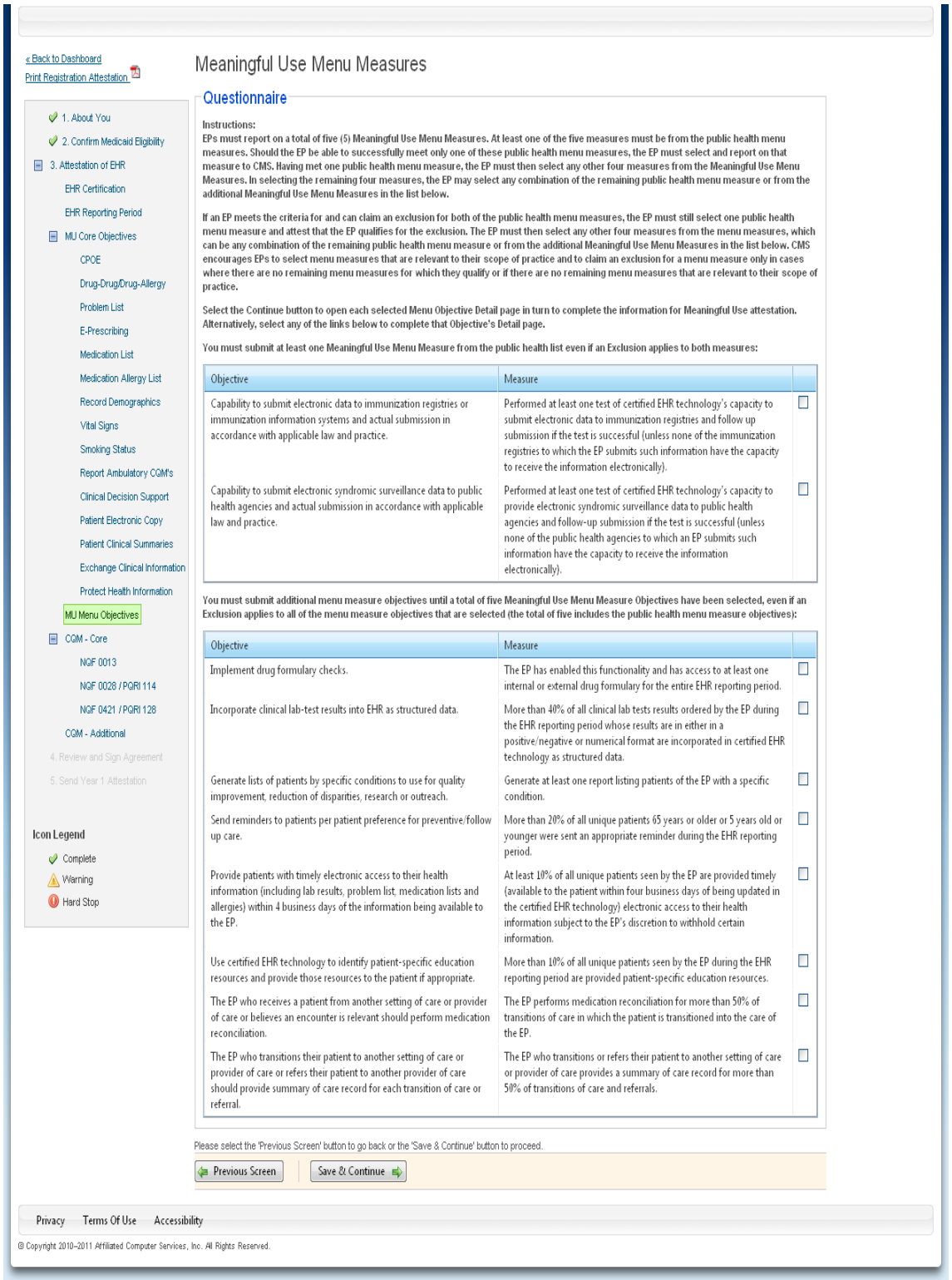


Core Objective #14

Core Objective #15

Menu Objective Summary



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Medication List
Medication Allergy List
Record Demographics
Vital Signs
Smoking Status
Report Ambulatory CQM's
Clinical Decision Support
Patient Electronic Copy
Patient Clinical Summaries
Exchange Clinical Information
Protect Health Information
MU Menu Objectives
CQM - Core
NQF 0013
NQF 0028 / PQRI 114
NQF 0421 / PQRI 128
CQM - Additional
4. Review and Sign Agreement
5. Send Year 1 Attestation

Icon Legend
Complete
Warning
Hard Stop

Meaningful Use Menu Measures

Questionnaire

Instructions:
EPs must report on a total of five (5) Meaningful Use Menu Measures. At least one of the five measures must be from the public health menu measures. Should the EP be able to successfully meet only one of these public health menu measures, the EP must select and report on that measure to CMS. Having met one public health menu measure, the EP must then select any other four measures from the Meaningful Use Menu Measures. In selecting the remaining four measures, the EP may select any combination of the remaining public health menu measure or from the additional Meaningful Use Menu Measures in the list below.

If an EP meets the criteria for and can claim an exclusion for both of the public health menu measures, the EP must still select one public health menu measure and attest that the EP qualifies for the exclusion. The EP must then select any other four measures from the menu measures, which can be any combination of the remaining public health menu measure or from the additional Meaningful Use Menu Measures in the list below. CMS encourages EPs to select menu measures that are relevant to their scope of practice and to claim an exclusion for a menu measure only in cases where there are no remaining menu measures for which they qualify or if there are no remaining menu measures that are relevant to their scope of practice.

Select the Continue button to open each selected Menu Objective Detail page in turn to complete the information for Meaningful Use attestation. Alternatively, select any of the links below to complete that Objective's Detail page.

You must submit at least one Meaningful Use Menu Measure from the public health list even if an Exclusion applies to both measures:

| Objective | Measure | |
|---|---|---|
| Capability to submit electronic data to immunization registries or immunization information systems and actual submission in accordance with applicable law and practice. | Performed at least one test of certified EHR technology's capacity to submit electronic data to immunization registries and follow up submission if the test is successful (unless none of the immunization registries to which the EP submits such information have the capacity to receive the information electronically). | ☐ |
| Capability to submit electronic syndromic surveillance data to public health agencies and actual submission in accordance with applicable law and practice. | Performed at least one test of certified EHR technology's capacity to provide electronic syndromic surveillance data to public health agencies and follow-up submission if the test is successful (unless none of the public health agencies to which an EP submits such information have the capacity to receive the information electronically). | ☐ |

You must submit additional menu measure objectives until a total of five Meaningful Use Menu Measure Objectives have been selected, even if an Exclusion applies to all of the menu measure objectives that are selected (the total of five includes the public health menu measure objectives):

| Objective | Measure | |
|---|---|---|
| Implement drug formulary checks. | The EP has enabled this functionality and has access to at least one internal or external drug formulary for the entire EHR reporting period. | ☐ |
| Incorporate clinical lab-test results into EHR as structured data. | More than 40% of all clinical lab tests results ordered by the EP during the EHR reporting period whose results are in either in a positive/negative or numerical format are incorporated in certified EHR technology as structured data. | ☐ |
| Generate lists of patients by specific conditions to use for quality improvement, reduction of disparities, research or outreach. | Generate at least one report listing patients of the EP with a specific condition. | ☐ |
| Send reminders to patients per patient preference for preventive/follow up care. | More than 20% of all unique patients 65 years or older or 5 years old or younger were sent an appropriate reminder during the EHR reporting period. | ☐ |
| Provide patients with timely electronic access to their health information (including lab results, problem list, medication lists and allergies) within 4 business days of the information being available to the EP. | At least 10% of all unique patients seen by the EP are provided timely (available to the patient within four business days of being updated in the certified EHR technology) electronic access to their health information subject to the EP's discretion to withhold certain information. | ☐ |
| Use certified EHR technology to identify patient-specific education resources and provide those resources to the patient if appropriate. | More than 10% of all unique patients seen by the EP during the EHR reporting period are provided patient-specific education resources. | ☐ |
| The EP who receives a patient from another setting of care or provider of care or believes an encounter is relevant should perform medication reconciliation. | The EP performs medication reconciliation for more than 50% of transitions of care in which the patient is transitioned into the care of the EP. | ☐ |
| The EP who transitions their patient to another setting of care or provider of care or refers their patient to another provider of care should provide summary of care record for each transition of care or referral. | The EP who transitions or refers their patient to another setting of care or provider of care provides a summary of care record for more than 50% of transitions of care and referrals. | ☐ |

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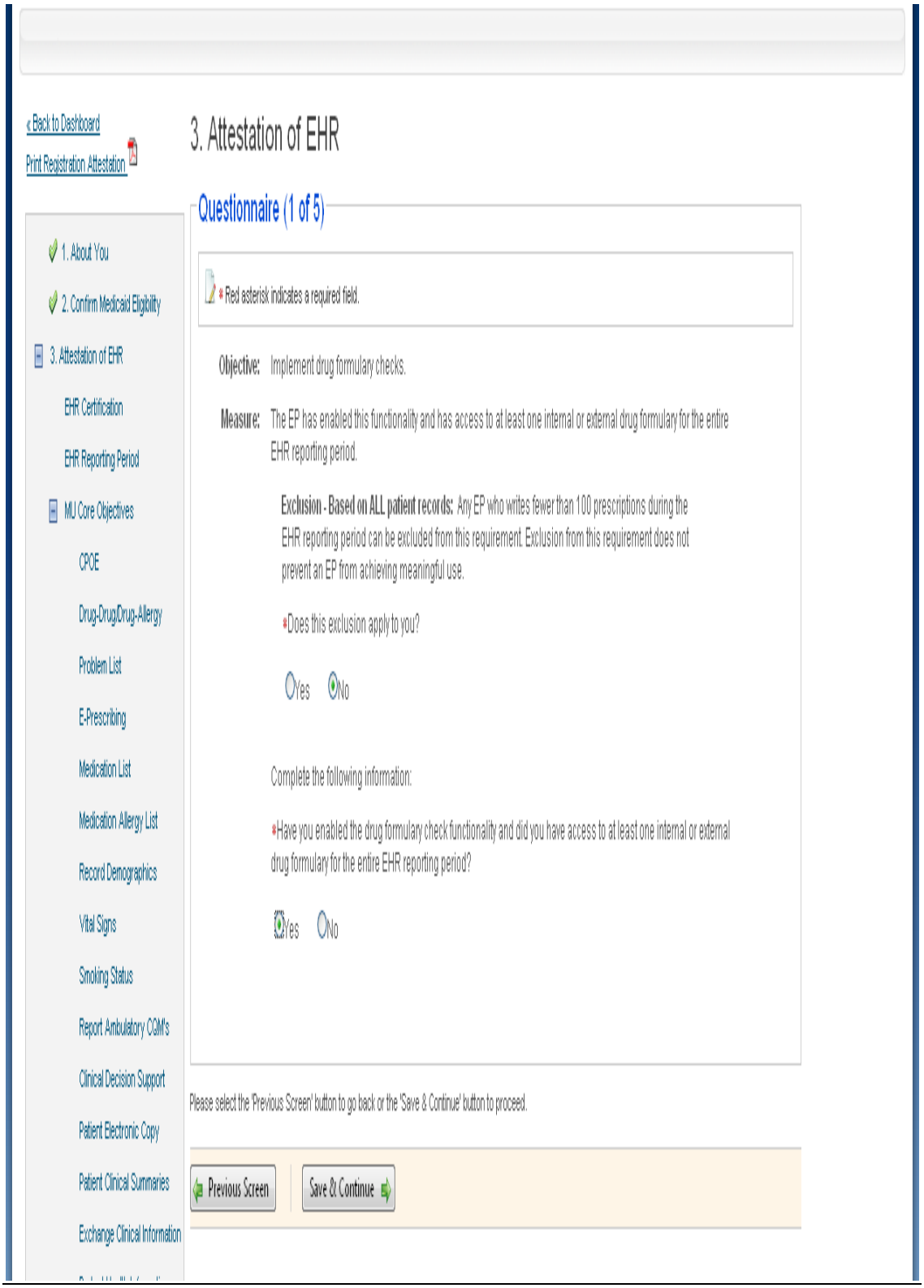
Menu Objective #1



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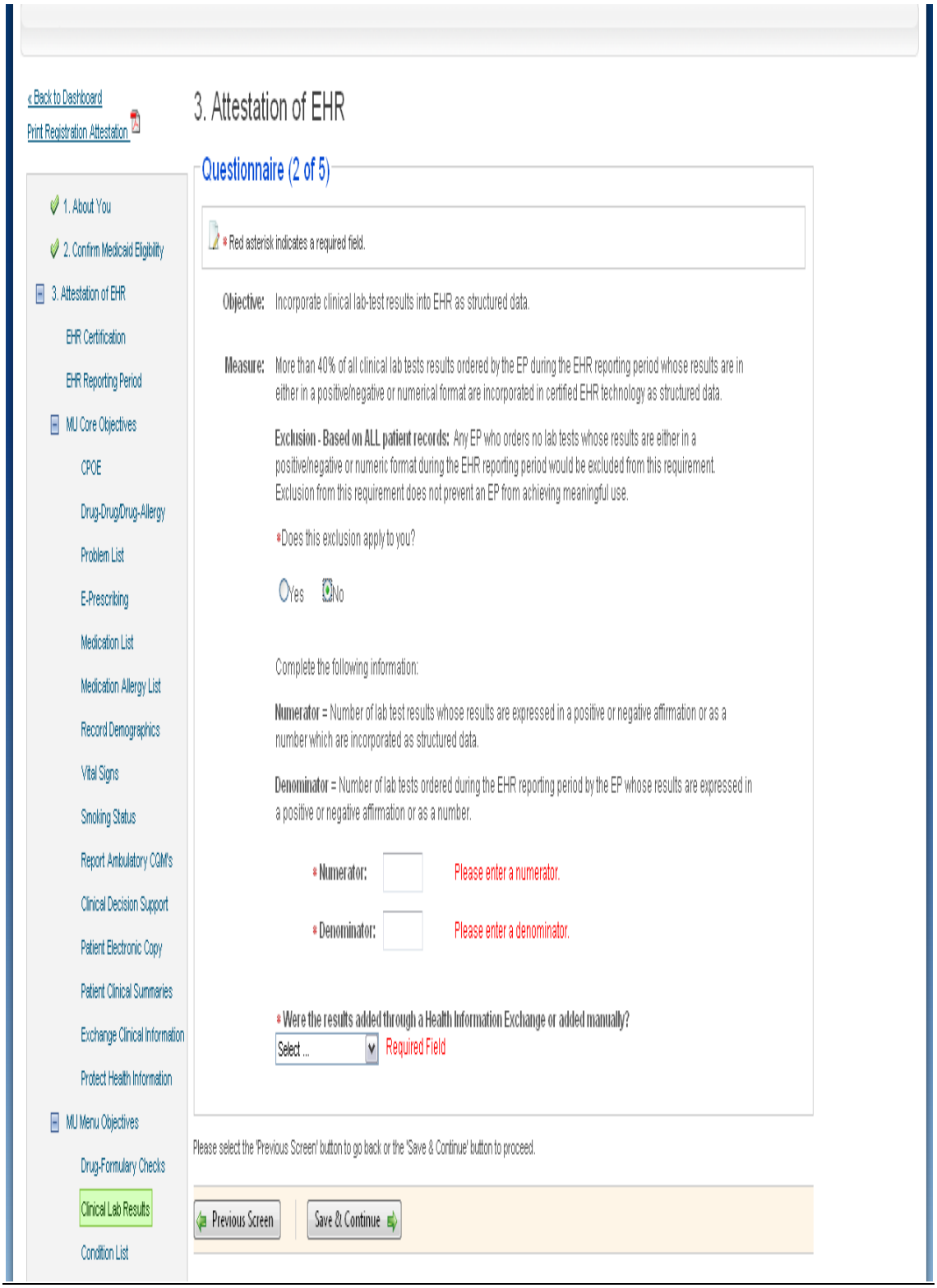

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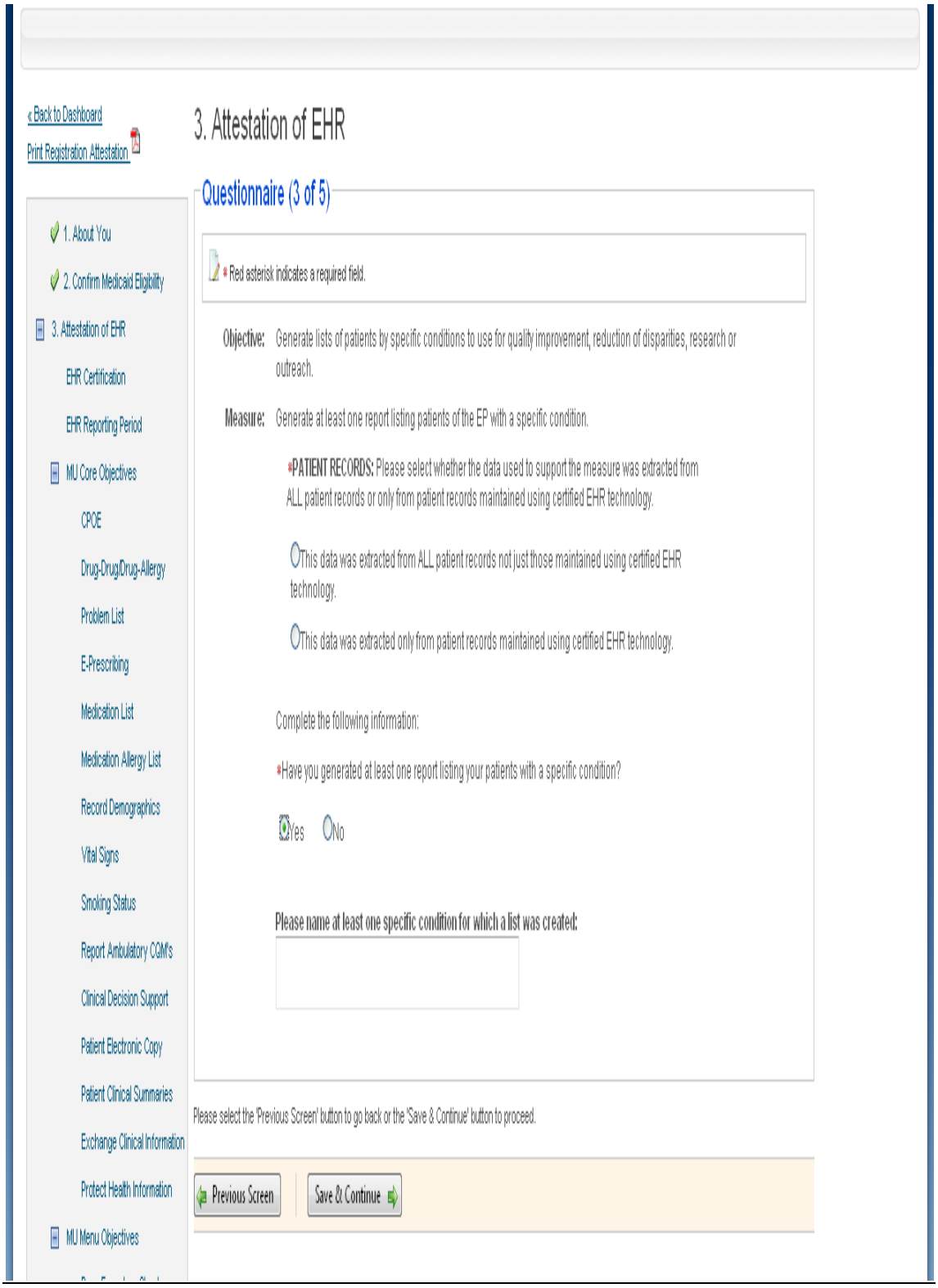
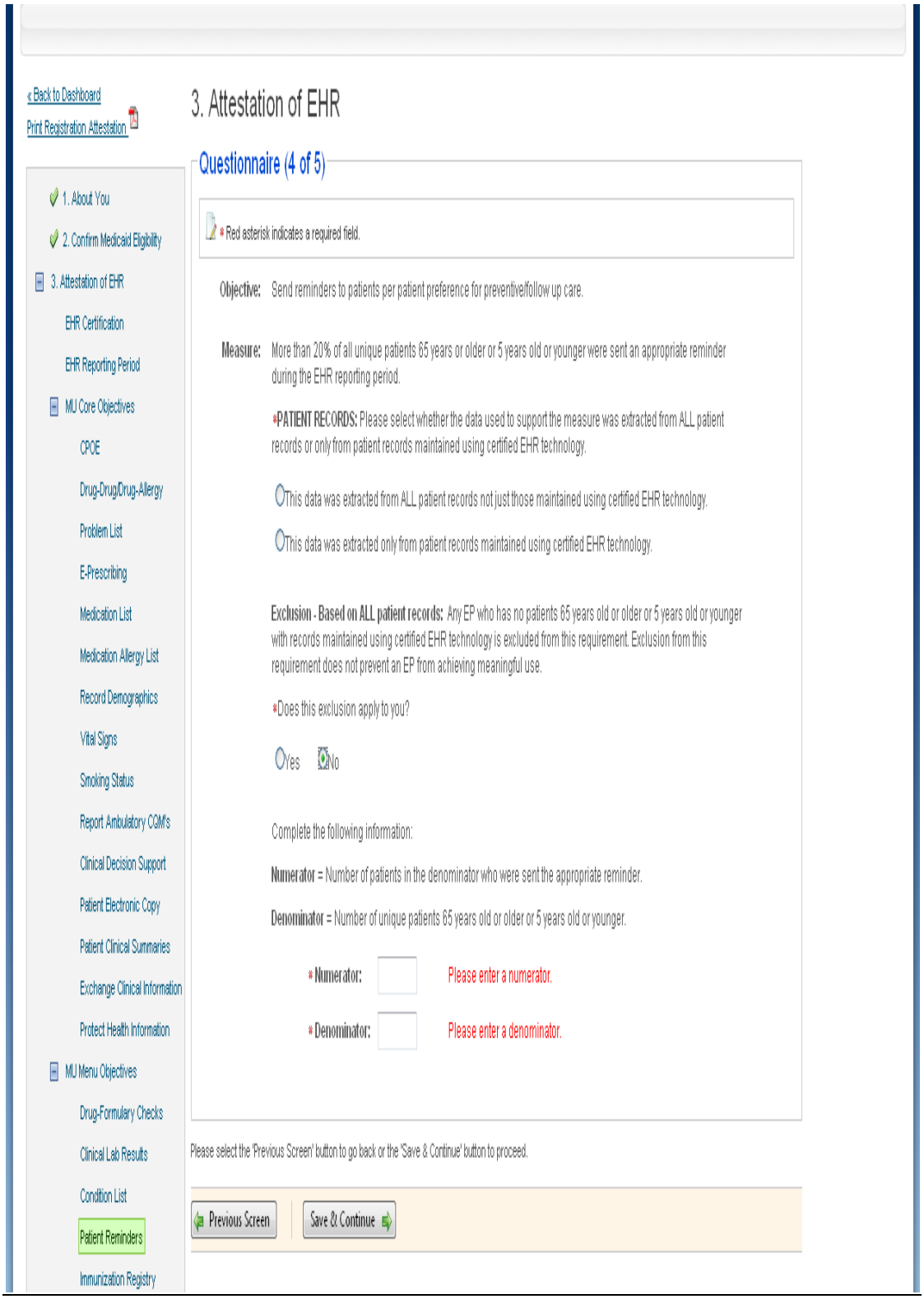
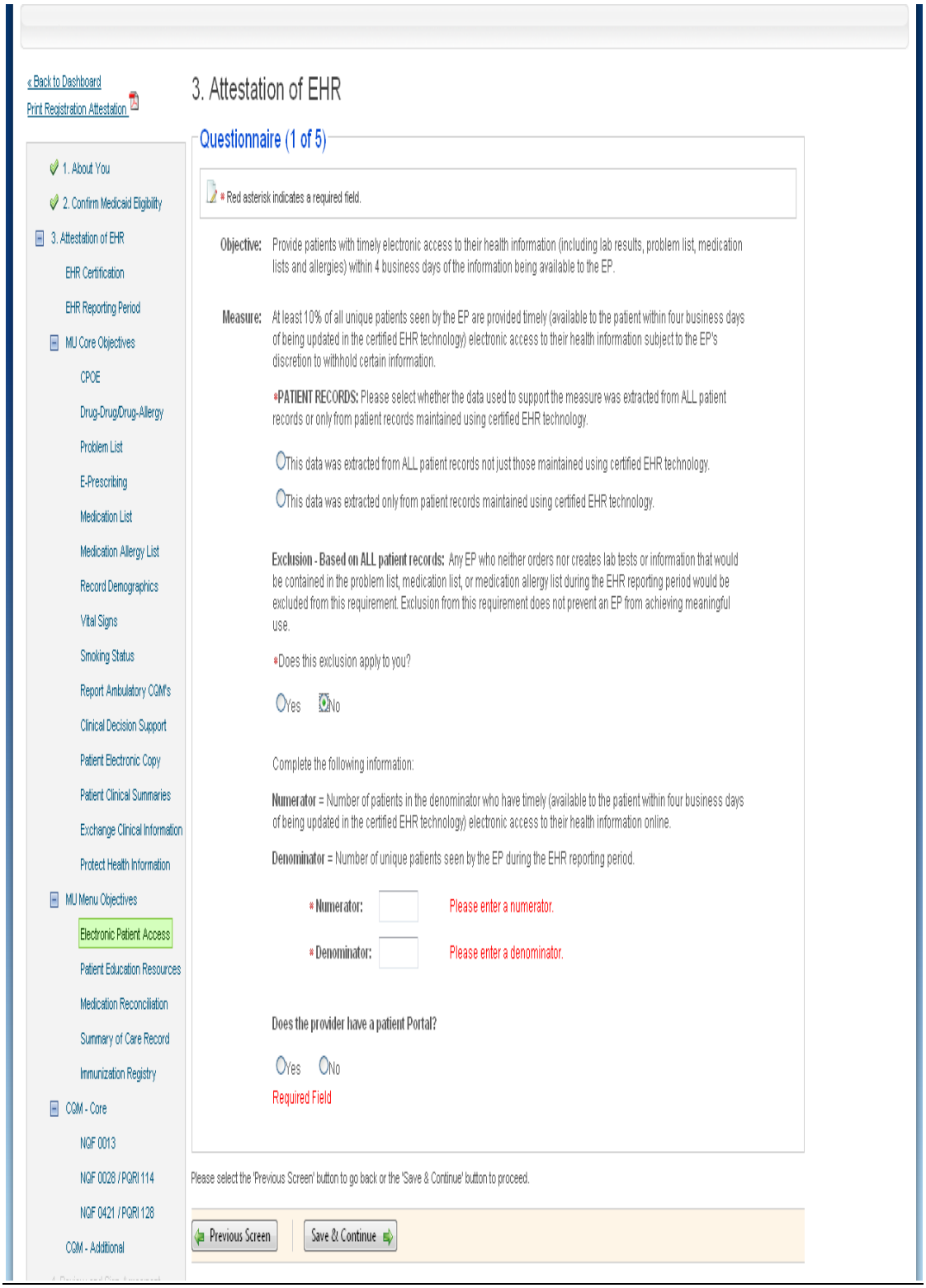


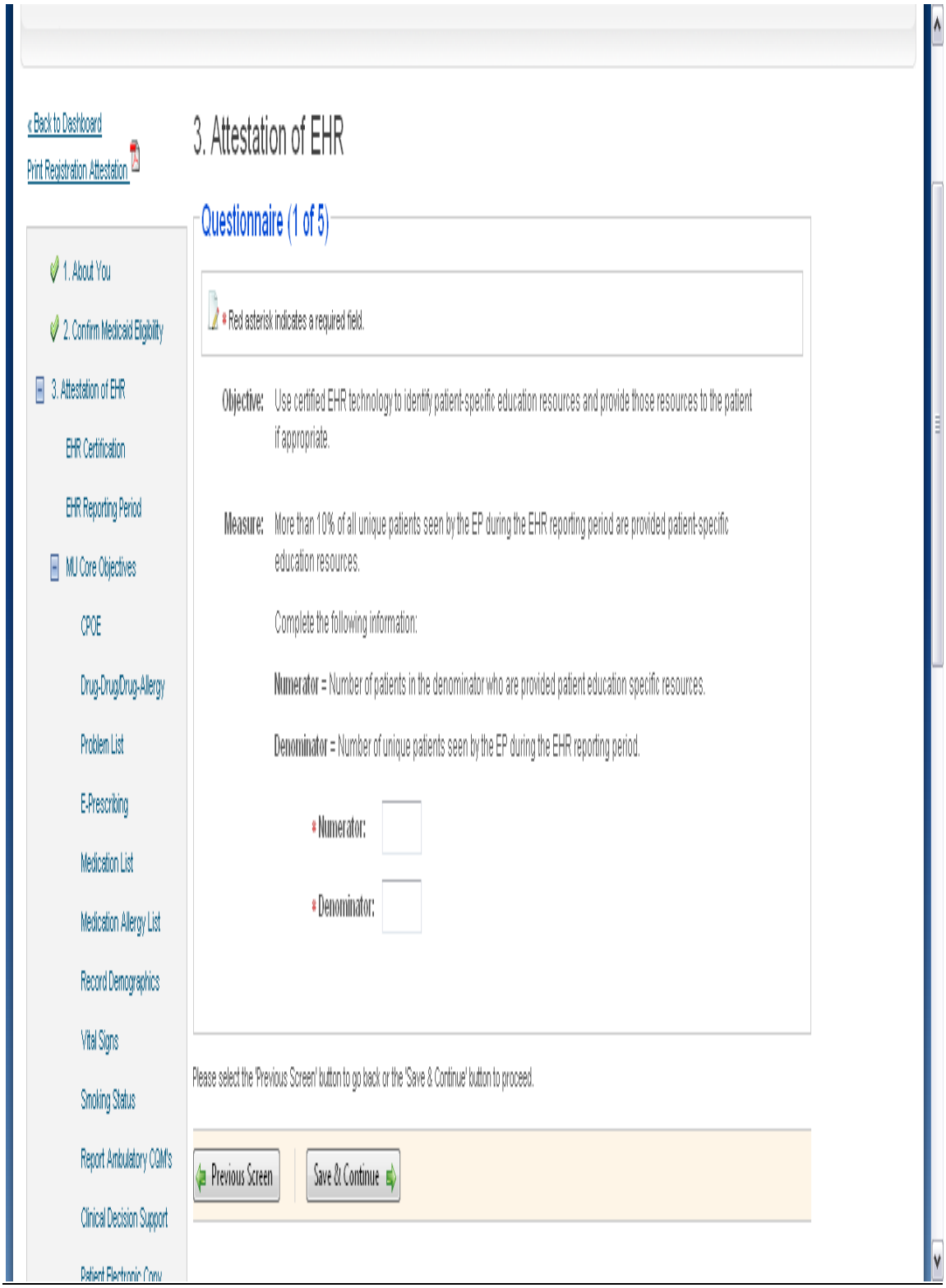
Menu Objective #4



Menu Objective #5



Menu Objective #6



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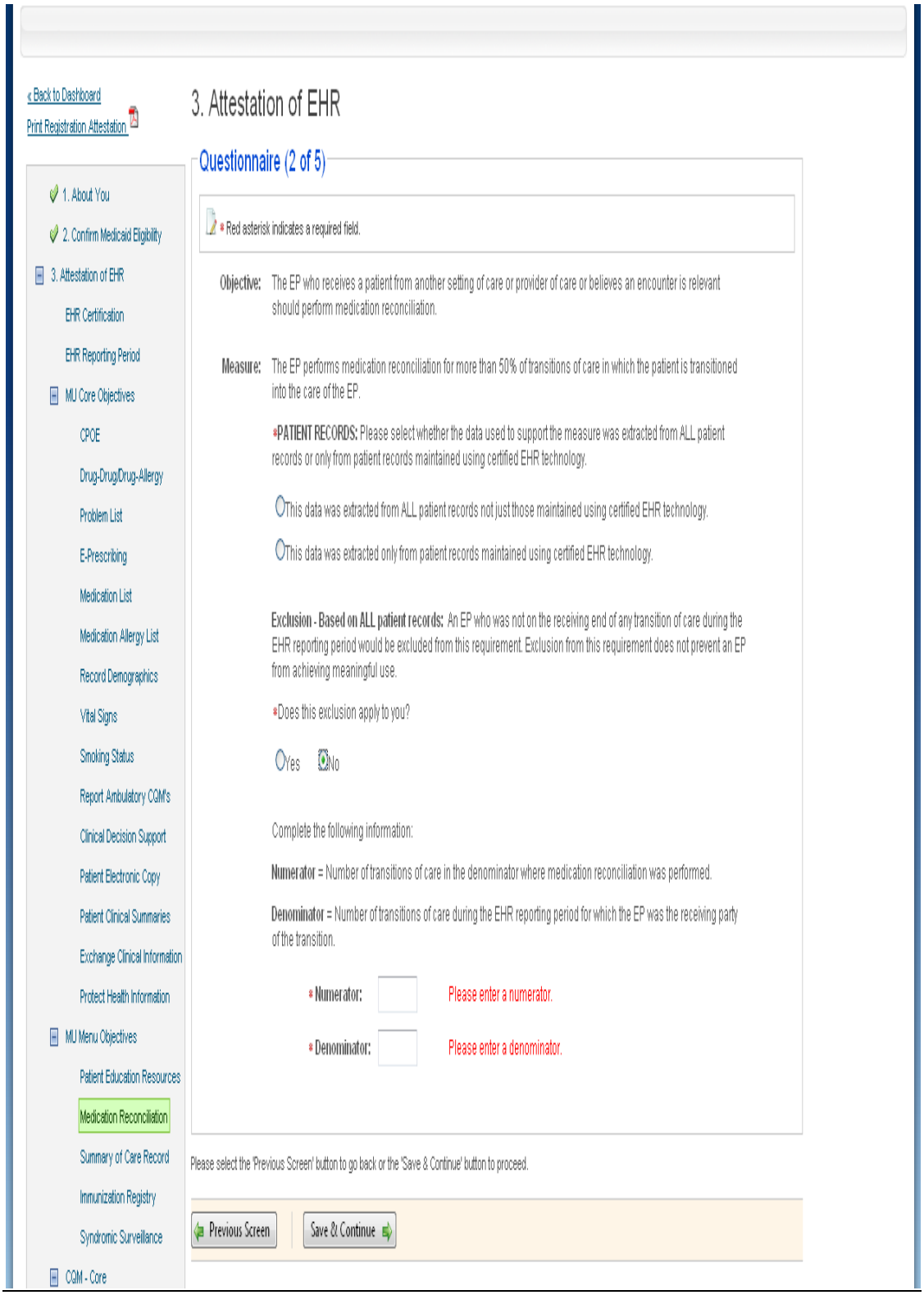
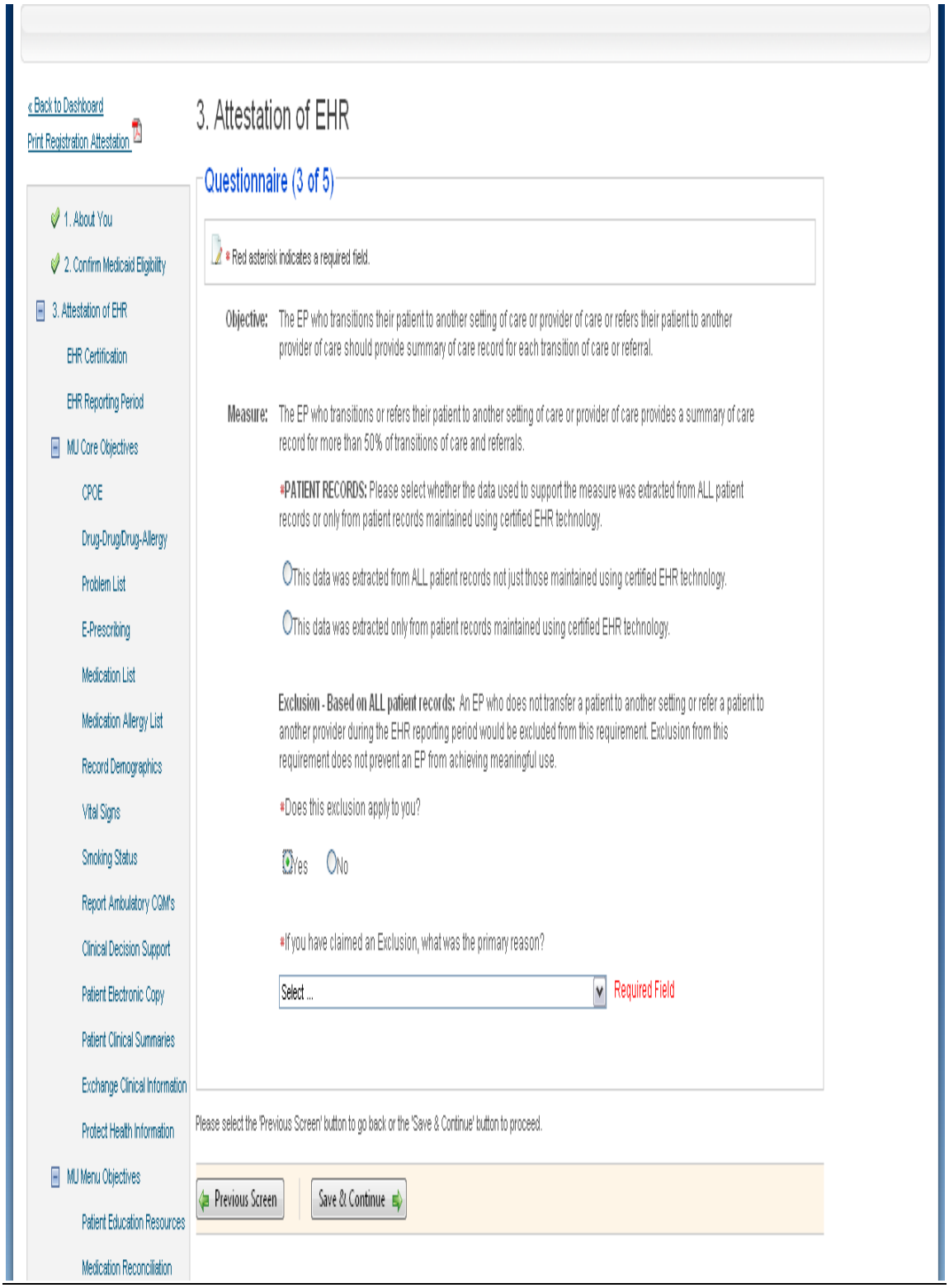


Menu Objective #8 with exclusion selected



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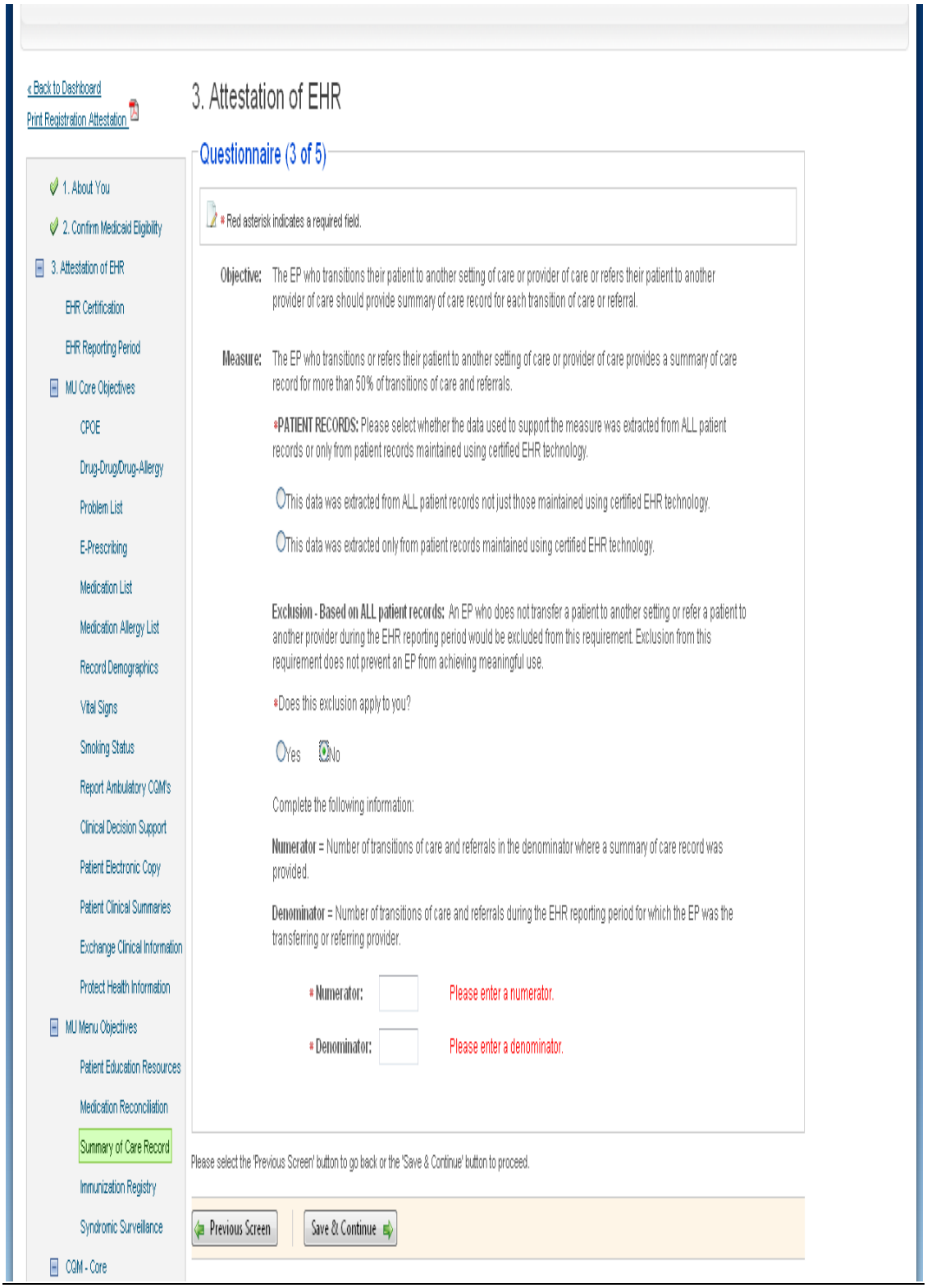

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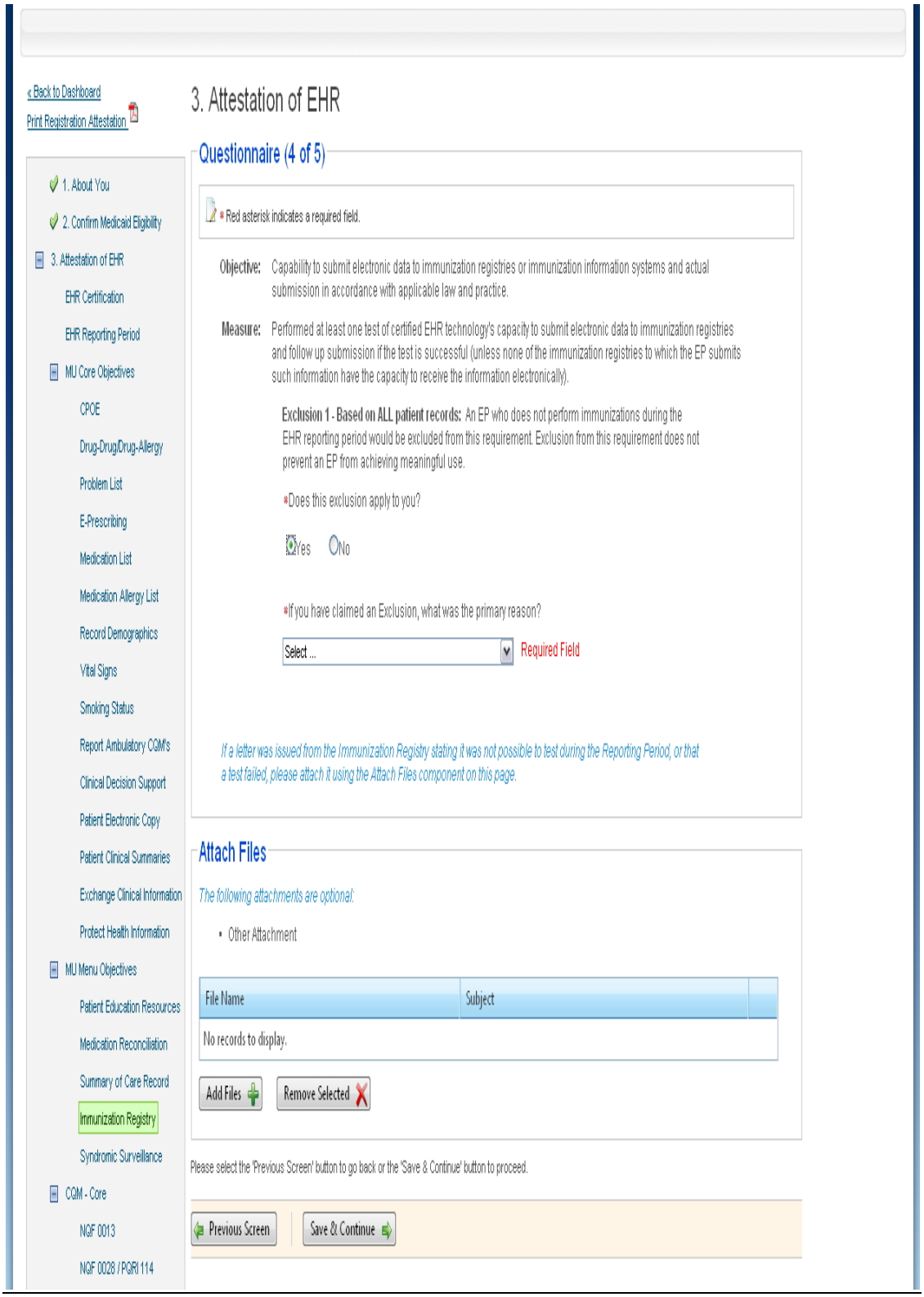
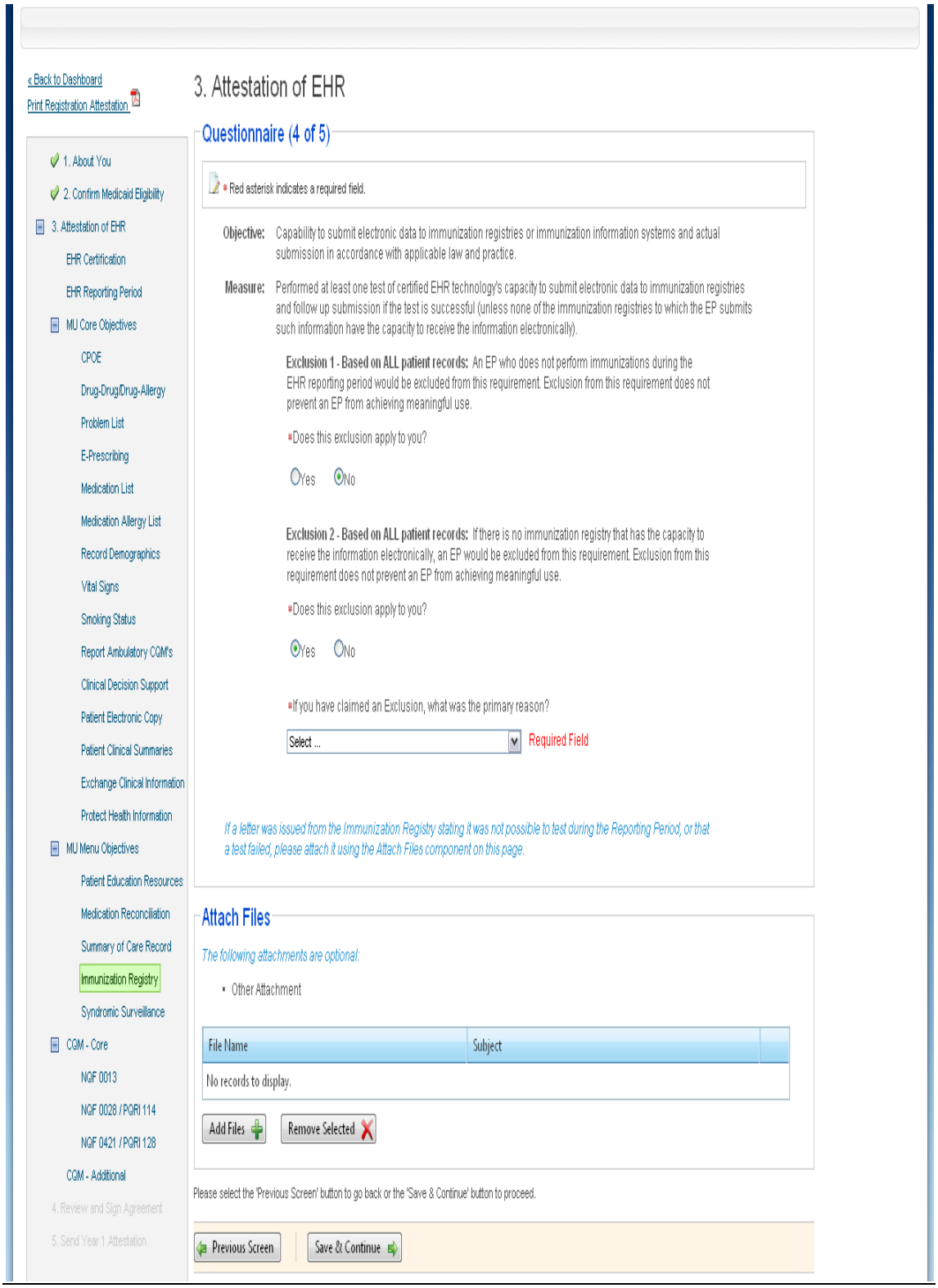


Menu Objective #9 with second exclusion selected



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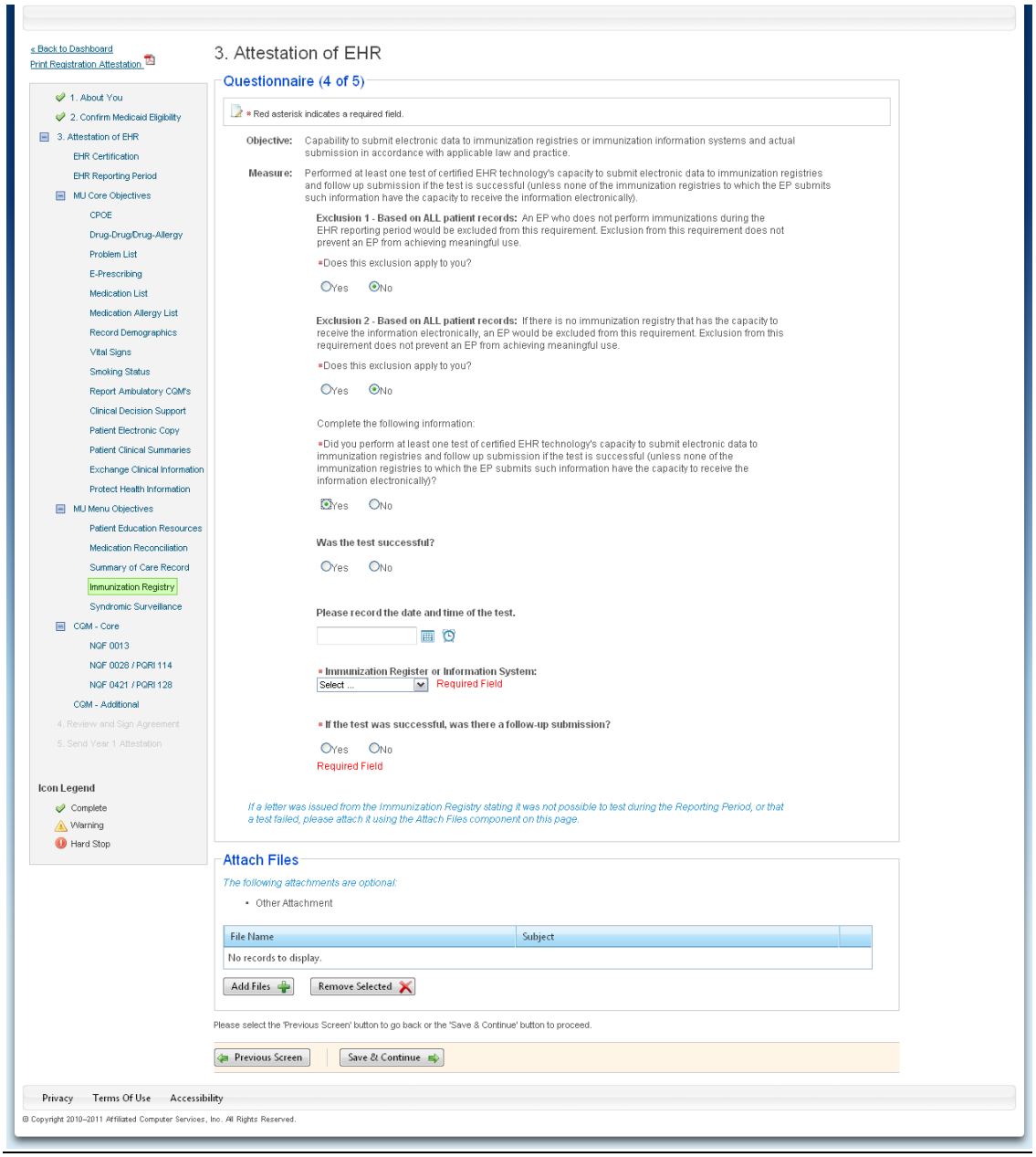

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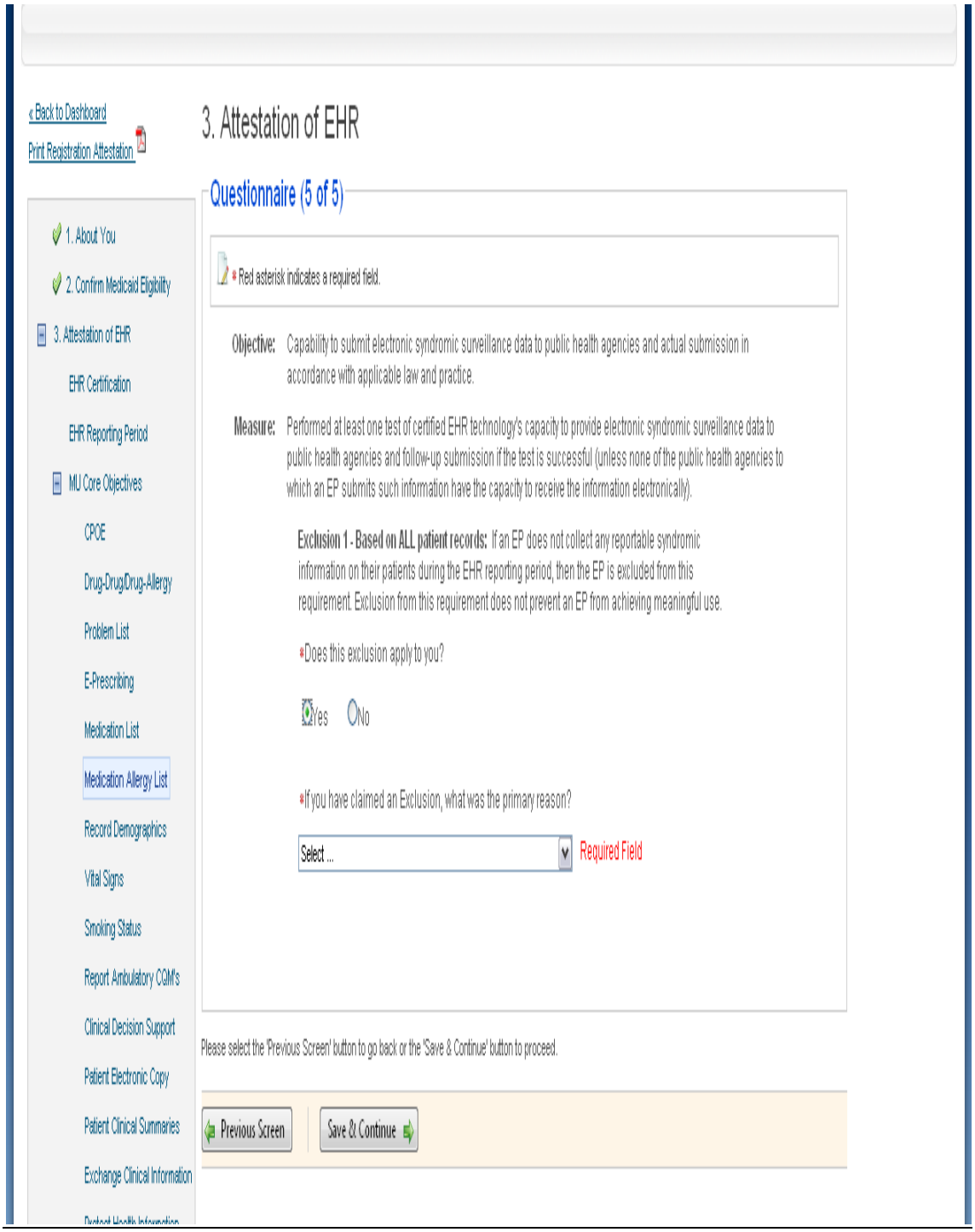

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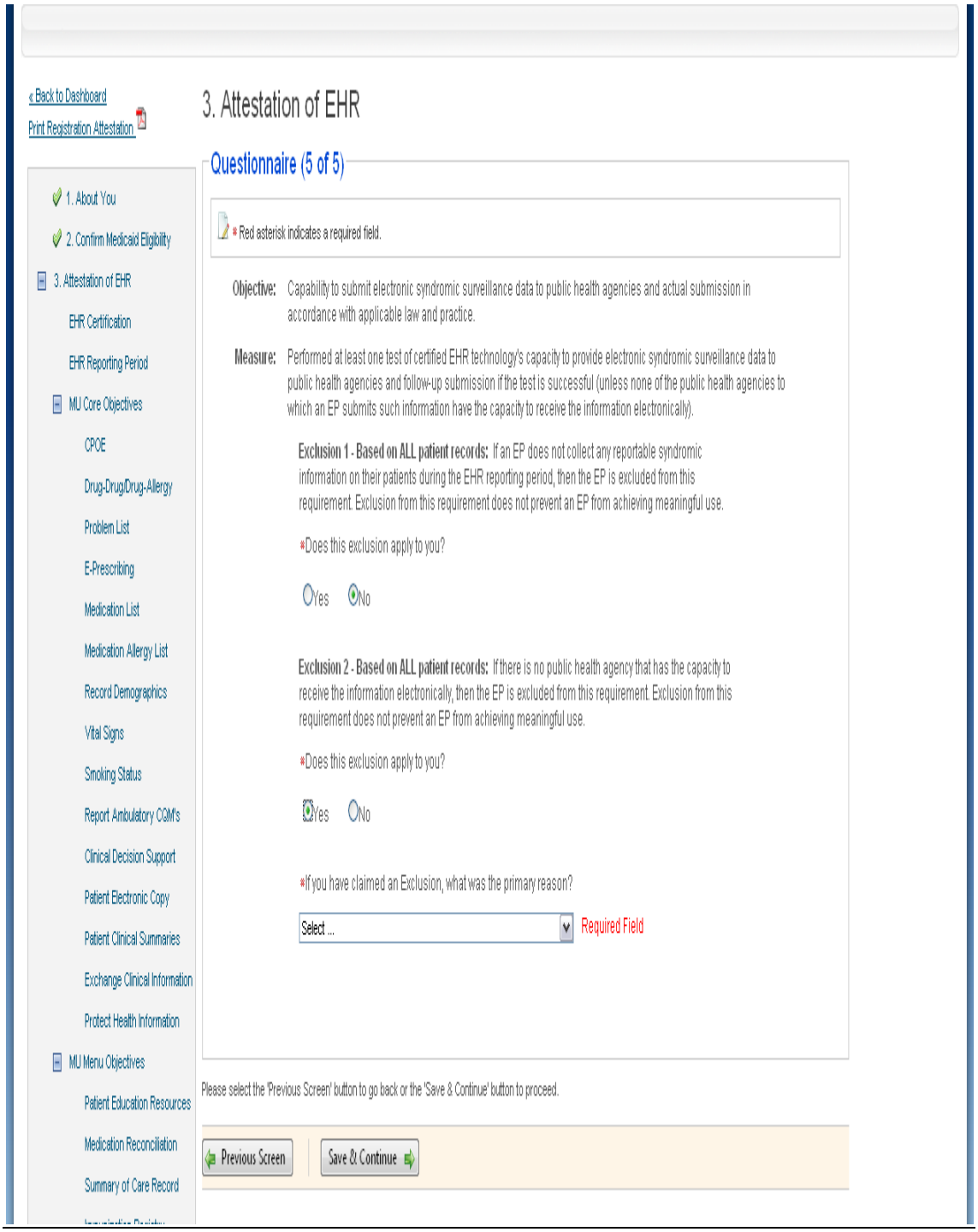

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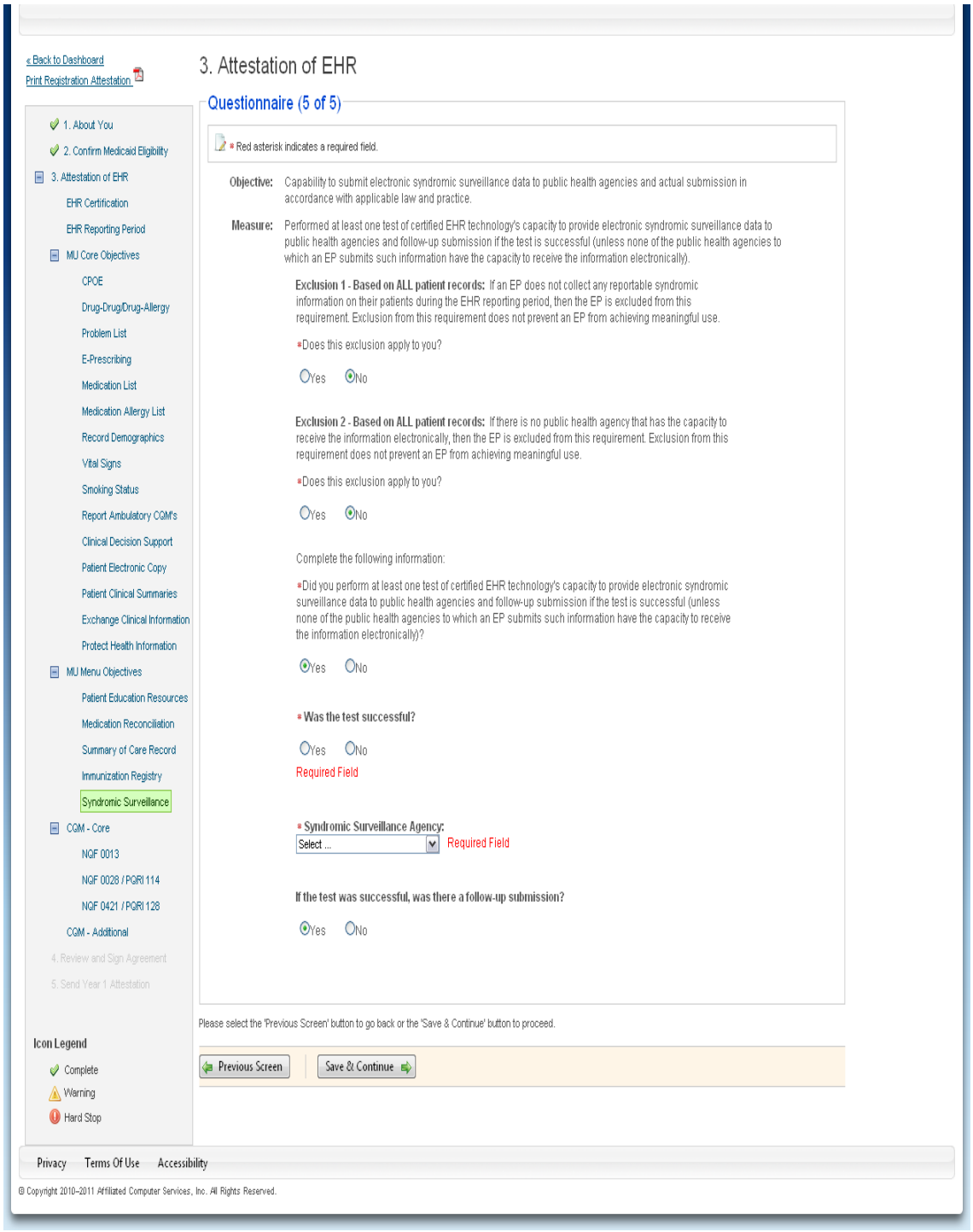
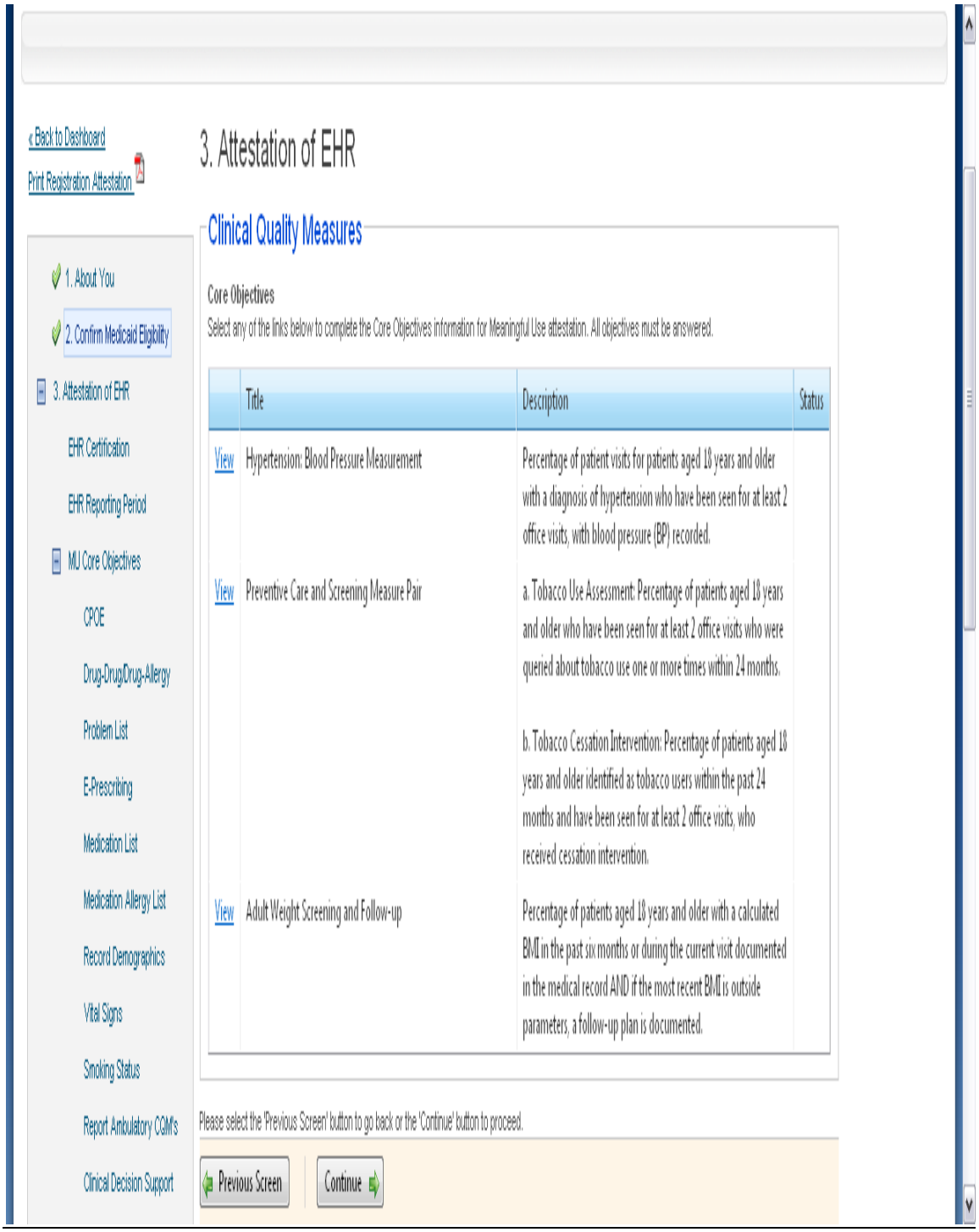
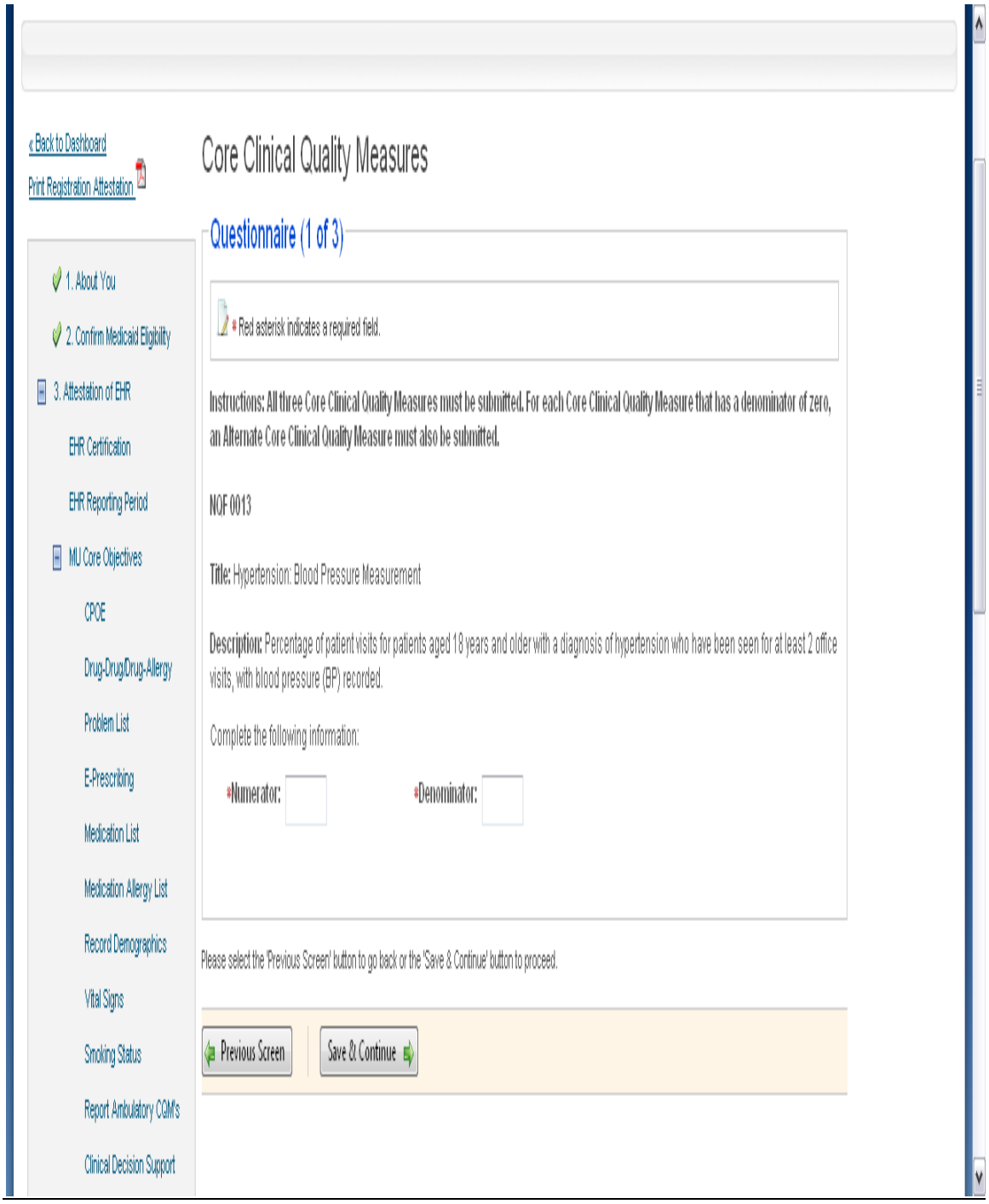


CQM Core Summary



NQF 0013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Drug-Drug/Drug-Allergy
Problem List
E-Prescribing
Medication List
Medication Allergy List
Record Demographics
Vital Signs
Smoking Status
Report Ambulatory CQM's
Clinical Decision Support
Questionnaire (1 of 3)
* Red asterisk indicates a required field.
Instructions: All three Core Clinical Quality Measures must be submitted. For each Core Clinical Quality Measure that has a denominator of zero, an Alternate Core Clinical Quality Measure must also be submitted.
NQF 0013
Title: Hypertension: Blood Pressure Measurement
Description: Percentage of patient visits for patients aged 18 years and older with a diagnosis of hypertension who have been seen for at least 2 office visits, with blood pressure (BP) recorded.
Complete the following information:
*Numerator:
*Denominator:
Please select the 'Previous Screen' button to go back or the 'Save & Continue' button to proceed.
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NQF 0028


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Problem List
E-Prescribing
Medication List
Medication Allergy List
Record Demographics
Vital Signs
Smoking Status
Report Ambulatory CQM's
Clinical Decision Support
Patient Electronic Copy
Patient Clinical Summaries
Exchange Clinical Information
Protect Health Information
Questionnaire (2 of 3)
* Red asterisk indicates a required field.
Instructions: All three Core Clinical Quality Measures must be submitted. For each Core Clinical Quality Measure that has a denominator of zero, an Alternate Core Clinical Quality Measure must also be submitted.
NQF 0028 / PQRI 114
Title: Preventive Care and Screening Measure Pair
a. Tobacco Use Assessment
Description: Percentage of patients aged 18 years and older who have been seen for at least 2 office visits who were queried about tobacco use one or more times within 24 months.
Complete the following information:
*Numerator:
*Denominator:
b. Tobacco Cessation Intervention
Description: Percentage of patients aged 18 years and older identified as tobacco users within the past 24 months and have been seen for at least 2 office visits, who received cessation intervention.
Complete the following information:
*Numerator:
*Denominator:
Please select the 'Previous Screen' button to go back or the 'Save & Continue' button to proceed.
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NQF 0421


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Questionnaire (3 of 3)
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Drug-Drug/Drug-Allergy
Problem List
E-Prescribing
Medication List
Medication Allergy List
Record Demographics
Vital Signs
Smoking Status
Report Ambulatory CQMs
Clinical Decision Support
* Red asterisk indicates a required field.
NQF 0421 / PQRI 128
Title: Adult Weight Screening and Follow-up
Description: Percentage of patients aged 18 years and older with a calculated BMI in the past six months or during the current visit documented in the medical record AND if the most recent BMI is outside parameters, a follow-up plan is documented.
Complete the following information:
* Numerator:
* Denominator:
* Exclusion:
Population Criteria 1:
* Numerator:
* Denominator:
* Exclusion:
Population Criteria 2:
Please select the 'Previous Screen' button to go back or the 'Save & Continue' button to proceed.
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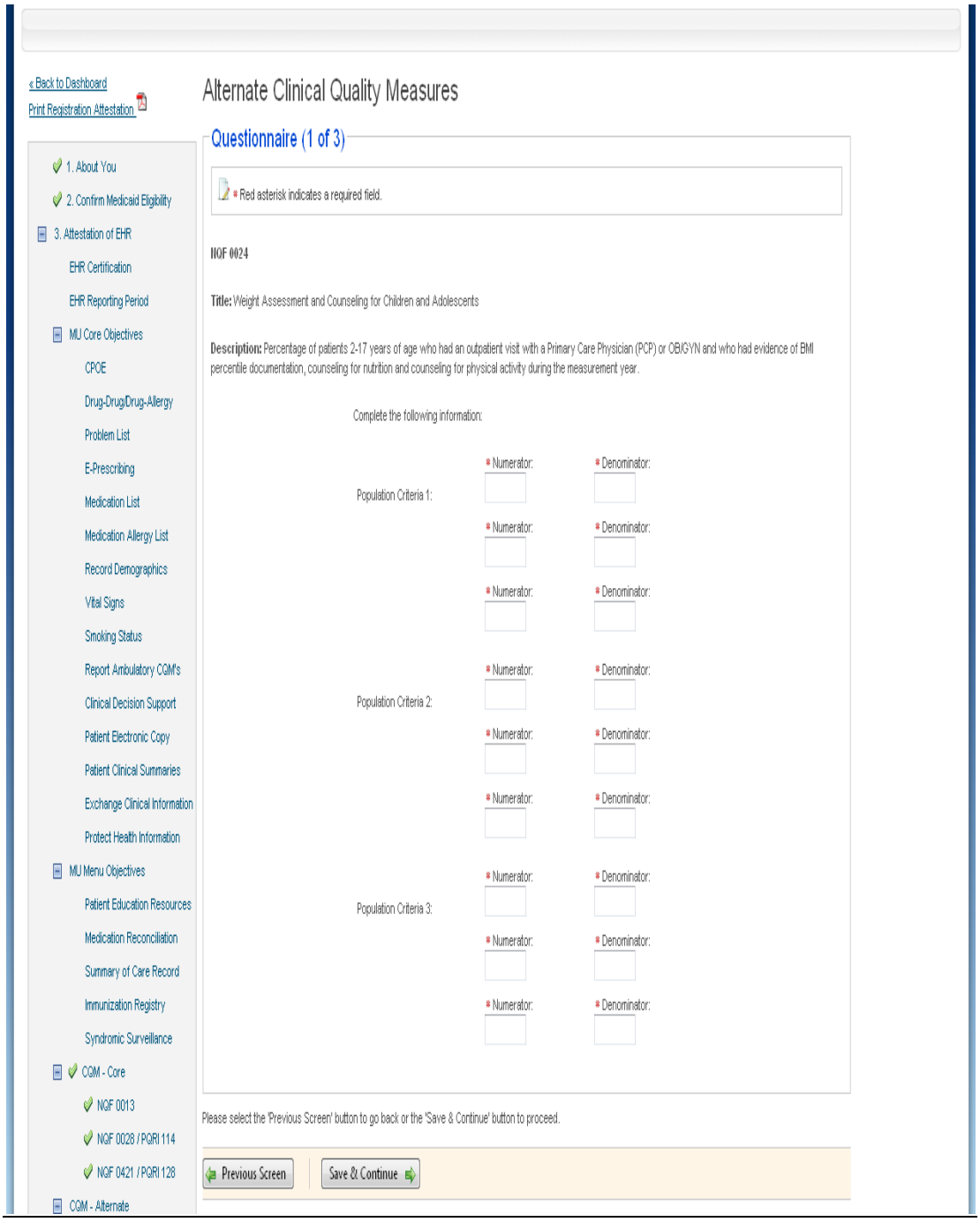
Alternate CQM Summary

NQF 0024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CQM - Core
NQF 0013
NQF 0028 / PQRI 114
NQF 0421 / PQRI 128
CQM - Alternate
* Red asterisk indicates a required field.
NQF 0024
Title: Weight Assessment and Counseling for Children and Adolescents
Description: Percentage of patients 2-17 years of age who had an outpatient visit with a Primary Care Physician (PCP) or OB/GYN and who had evidence of BMI percentile documentation, counseling for nutrition and counseling for physical activity during the measurement year.
Complete the following information:
Population Criteria 1:
Population Criteria 2:
Population Criteria 3:
* Numerator:
* Denominator:
Please select the 'Previous Screen' button to go back or the 'Save & Continue' button to proceed.
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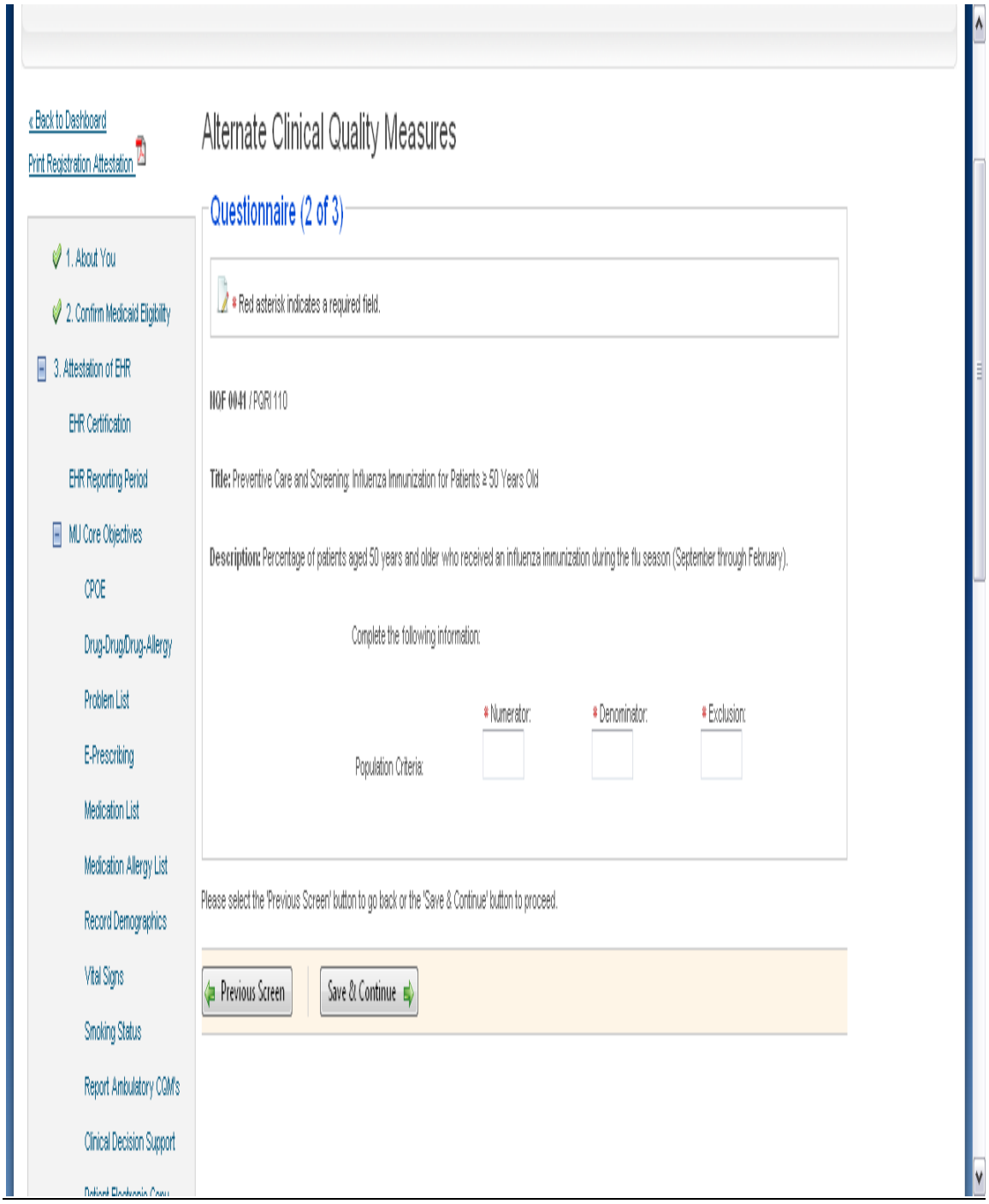
NQF 0041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* Red asterisk indicates a required field.
NQF 0041 / PQRI 110
Title: Preventive Care and Screening: Influenza Immunization for Patients ≥ 50 Years Old
Description: Percentage of patients aged 50 years and older who received an influenza immunization during the flu season (September through February).
Complete the following information:
* Numerator:
* Denominator:
* Exclusion:
Population Criteria:
Please select the 'Previous Screen' button to go back or the 'Save & Continue' button to proceed.
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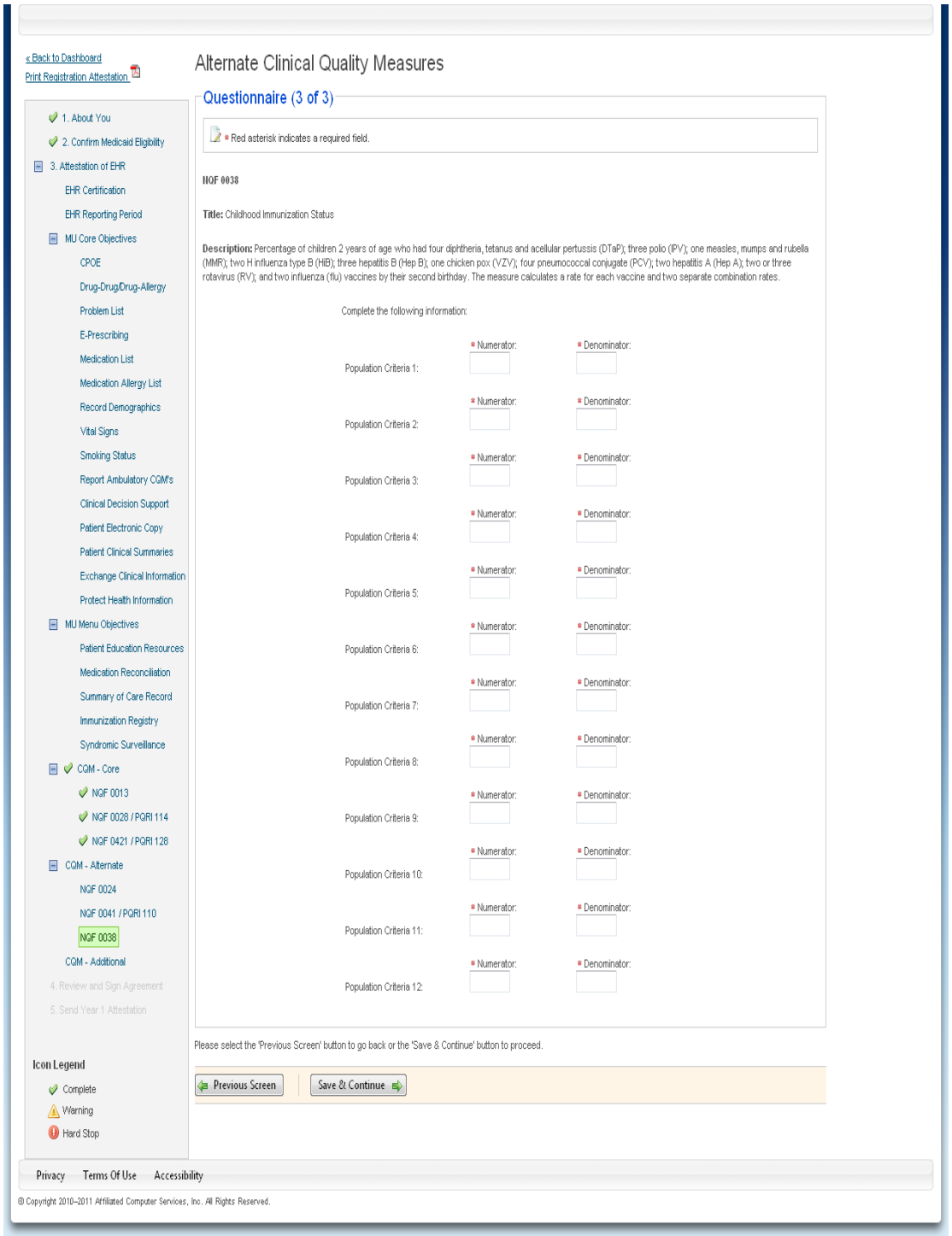
NQF 0038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NQF 0028 / PQRI 114
NQF 0421 / PQRI 128
CQM - Alternate
NQF 0024
NQF 0041 / PQRI 110
NQF 0038
CQM - Additional
4. Review and Sign Agreement
5. Send Year 1 Attestation
Icon Legend
Complete
Warning
Hard Stop
NQF 0038
Title: Childhood Immunization Status
Description: Percentage of children 2 years of age who had four diphtheria, tetanus and acellular pertussis (DTaP); three polio (IPV); one measles, mumps and rubella (MMR); two H influenza type B (HiB); three hepatitis B (Hep B); one chicken pox (VZV); four pneumococcal conjugate (PCV); two hepatitis A (Hep A); two or three rotavirus (RV); and two influenza (flu) vaccines by their second birthday. The measure calculates a rate for each vaccine and two separate combination rates.
Complete the following information:
* Numerator:
* Denominator:
Population Criteria 1:
Population Criteria 2:
Population Criteria 3:
Population Criteria 4:
Population Criteria 5:
Population Criteria 6:
Population Criteria 7:
Population Criteria 8:
Population Criteria 9:
Population Criteria 10:
Population Criteria 11:
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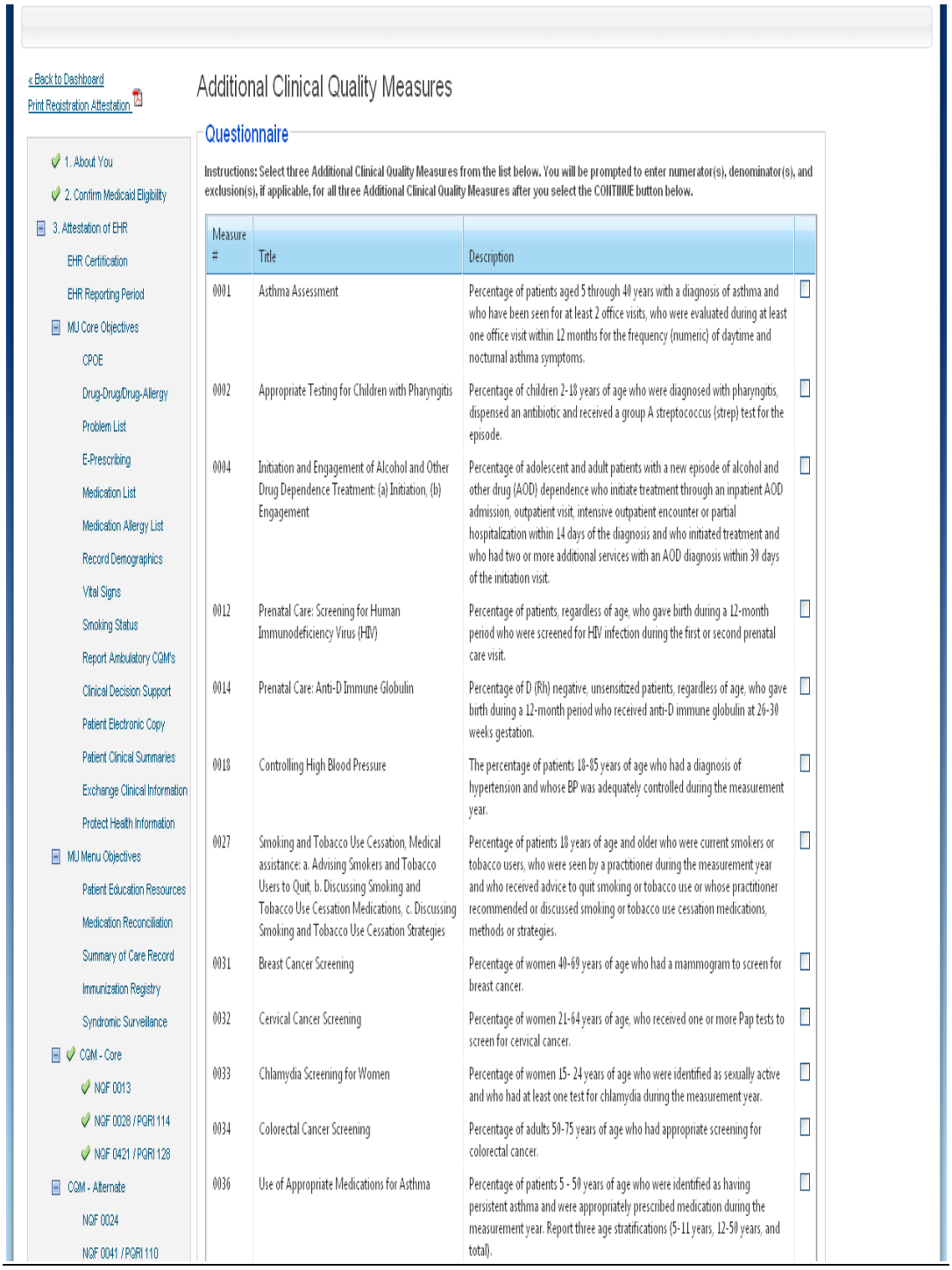

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    - NQF 0013
    - NQF 0028 / PQRI 114
    - NQF 0421 / PQRI 128
  - CQM - Alternate
    - NQF 0024
    - NQF 0041 / PQRI 110

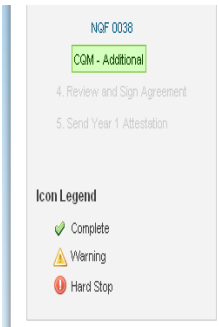
## Additional Clinical Quality Measures

### Questionnaire

**Instructions:** Select three Additional Clinical Quality Measures from the list below. You will be prompted to enter numerator(s), denominator(s), and exclusion(s), if applicable, for all three Additional Clinical Quality Measures after you select the CONTINUE button below.

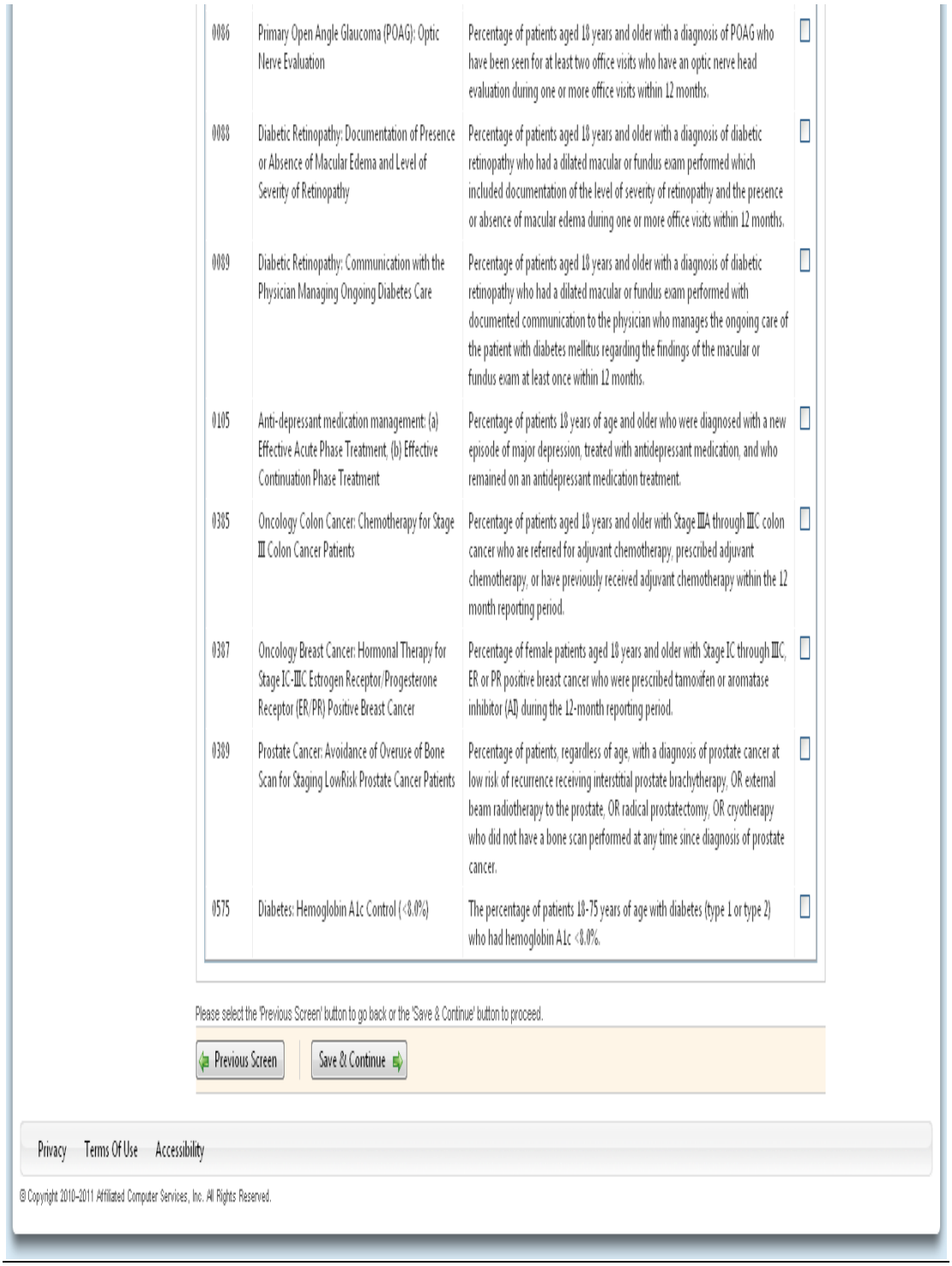
| Measure # | Title | Description | |
|---|---|---|---|
| 0001 | Asthma Assessment | Percentage of patients aged 5 through 40 years with a diagnosis of asthma and who have been seen for at least 2 office visits, who were evaluated during at least one office visit within 12 months for the frequency (numeric) of daytime and nocturnal asthma symptoms. | ☐ |
| 0002 | Appropriate Testing for Children with Pharyngitis | Percentage of children 2-18 years of age who were diagnosed with pharyngitis, dispensed an antibiotic and received a group A streptococcus (strep) test for the episode. | ☐ |
| 0004 | Initiation and Engagement of Alcohol and Other Drug Dependence Treatment: (a) Initiation. (b) Engagement | Percentage of adolescent and adult patients with a new episode of alcohol and other drug (AOD) dependence who initiate treatment through an inpatient AOD admission, outpatient visit, intensive outpatient encounter or partial hospitalization within 14 days of the diagnosis and who initiated treatment and who had two or more additional services with an AOD diagnosis within 30 days of the initiation visit. | ☐ |
| 0012 | Prenatal Care: Screening for Human Immunodeficiency Virus (HIV) | Percentage of patients, regardless of age, who gave birth during a 12-month period who were screened for HIV infection during the first or second prenatal care visit. | ☐ |
| 0014 | Prenatal Care: Anti-D Immune Globulin | Percentage of D (Rh) negative, unsensitized patients, regardless of age, who gave birth during a 12-month period who received anti-D immune globulin at 26-30 weeks gestation. | ☐ |
| 0018 | Controlling High Blood Pressure | The percentage of patients 18-85 years of age who had a diagnosis of hypertension and whose BP was adequately controlled during the measurement year. | ☐ |
| 0027 | Smoking and Tobacco Use Cessation, Medical assistance: a. Advising Smokers and Tobacco Users to Quit; b. Discussing Smoking and Tobacco Use Cessation Medications; c. Discussing Smoking and Tobacco Use Cessation Strategies | Percentage of patients 18 years of age and older who were current smokers or tobacco users, who were seen by a practitioner during the measurement year and who received advice to quit smoking or tobacco use or whose practitioner recommended or discussed smoking or tobacco use cessation medications, methods or strategies. | ☐ |
| 0031 | Breast Cancer Screening | Percentage of women 40-69 years of age who had a mammogram to screen for breast cancer. | ☐ |
| 0032 | Cervical Cancer Screening | Percentage of women 21-64 years of age, who received one or more Pap tests to screen for cervical cancer. | ☐ |
| 0033 | Chlamydia Screening for Women | Percentage of women 15- 24 years of age who were identified as sexually active and who had at least one test for chlamydia during the measurement year. | ☐ |
| 0034 | Colorectal Cancer Screening | Percentage of adults 50-75 years of age who had appropriate screening for colorectal cancer. | ☐ |
| 0036 | Use of Appropriate Medications for Asthma | Percentage of patients 5 - 50 years of age who were identified as having persistent asthma and were appropriately prescribed medication during the measurement year. Report three age stratifications (5-11 years, 12-50 years, and total). | ☐ |

## CQM Additional Summary (2 of 3)




| | | | |
|---|---|---|---|
| 0043 | Pneumonia Vaccination Status for Older Adults | Percentage of patients 65 years of age and older who have ever received a pneumococcal vaccine. | ☐ |
| 0047 | Asthma Pharmacologic Therapy | Percentage of patients aged 5 through 40 years with a diagnosis of mild, moderate, or severe persistent asthma who were prescribed either the preferred long-term control medication (inhaled corticosteroid) or an acceptable alternative treatment. | ☐ |
| 0052 | Low Back Pain: Use of Imaging Studies | Percentage of patients with a primary diagnosis of low back pain who did not have an imaging study (plain x-ray, MRI, CT scan) within 28 days of diagnosis. | ☐ |
| 0055 | Diabetes: Eye Exam | Percentage of patients 18 -75 years of age with diabetes (type 1 or type 2) who had a retinal or dilated eye exam or a negative retinal exam (no evidence of retinopathy) by an eye care professional. | ☐ |
| 0056 | Diabetes: Foot Exam | The percentage of patients aged 18 - 75 years with diabetes (type 1 or type 2) who had a foot exam (visual inspection, sensory exam with monofilament, or pulse exam). | ☐ |
| 0059 | Diabetes: Hemoglobin A1c Poor Control | Percentage of patients 18 - 75 years of age with diabetes (type 1 or type 2) who had hemoglobin A1c > 9.0%. | ☐ |
| 0061 | Diabetes: Blood Pressure Management | Percentage of patients 18 - 75 years of age with diabetes (type 1 or type 2) who had blood pressure <140/90 mmHg. | ☐ |
| 0062 | Diabetes: Urine Screening | Percentage of patients 18 - 75 years of age with diabetes (type 1 or type 2) who had a nephropathy screening test or evidence of nephropathy. | ☐ |
| 0064 | Diabetes Low Density Lipoprotein (LDL) Management and Control | Percentage of patients 18-75 years of age with diabetes (type 1 or type 2) who had LDL-C < 100 mg/dL). | ☐ |
| 0067 | Coronary Artery Disease (CAD): Oral Antiplatelet Therapy Prescribed for Patients with CAD | Percentage of patients aged 18 years and older with a diagnosis of CAD who were prescribed oral antiplatelet therapy. | ☐ |
| 0068 | Ischemic Vascular Disease (IVD): Use of Aspirin or Another Antithrombotic | Percentage of patients 18 years of age and older who were discharged alive for acute myocardial infarction (AMI), coronary artery bypass graft (CABG) or percutaneous transluminal coronary angioplasty (PTCA) from January 1- November 1 of the year prior to the measurement year, or who had a diagnosis of ischemic vascular disease (IVD) during the measurement year and the year prior to the measurement year and who had documentation of use of aspirin or another antithrombotic during the measurement year. | ☐ |
| 0070 | Coronary Artery Disease (CAD): Beta-Blocker Therapy for CAD Patients with Prior Myocardial Infarction (MI) | Percentage of patients aged 18 years and older with a diagnosis of CAD and prior MI who were prescribed beta-blocker therapy. | ☐ |
| 0073 | Ischemic Vascular Disease (IVD): Blood Pressure Management | Percentage of patients 18 years of age and older who were discharged alive for acute myocardial infarction (AMI), coronary artery bypass graft (CABG) or percutaneous transluminal coronary angioplasty (PTCA) from January 1- November 1 of the year prior to the measurement year, or who had a diagnosis of ischemic vascular disease (IVD) during the measurement year and the year prior to the measurement year and whose recent blood pressure is in control (<140/90 mmHg). | ☐ |
| 0074 | Coronary Artery Disease (CAD): Drug Therapy for Lowering LDL-Cholesterol | Percentage of patients aged 18 years and older with a diagnosis of CAD who were prescribed a lipid-lowering therapy (based on current ACC/AHA guidelines). | ☐ |
| 0075 | Ischemic Vascular Disease (IVD): Complete Lipid Panel and LDL Control | Percentage of patients 18 years of age and older who were discharged alive for acute myocardial infarction (AMI), coronary artery bypass graft (CABG) or percutaneous transluminal angioplasty (PTCA) from January 1-November1 of the year prior to the measurement year, or who had a diagnosis of ischemic vascular disease (IVD) during the measurement year and the year prior to the measurement year and who had a complete lipid profile performed during the measurement year and whose LDL-C<100 mg/dL. | ☐ |
| 0081 | Heart Failure (HF): Angiotensin- Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy for Left Ventricular Systolic Dysfunction (LVSD) | Percentage of patients aged 18 years and older with a diagnosis of heart failure and LVSD (LVEF < 40%) who were prescribed ACE inhibitor or ARB therapy. | ☐ |
| 0083 | Heart Failure (HF): Beta-Blocker Therapy for Left Ventricular Systolic Dysfunction (LVSD) | Percentage of patients aged 18 years and older with a diagnosis of heart failure who also have LVSD (LVEF < 40%) and who were prescribed beta-blocker therapy. | ☐ |
| 0084 | Heart Failure (HF): Warfarin Therapy Patients with Atrial Fibrillation | Percentage of all patients aged 18 years and older with a diagnosis of heart failure and paroxysmal or chronic atrial fibrillation who were prescribed warfarin therapy. | ☐ |

CQM Additional Summary (3 of 3)



| | | | |
|---|---|---|---|
| 0086 | Primary Open Angle Glaucoma (POAG): Optic Nerve Evaluation | Percentage of patients aged 18 years and older with a diagnosis of POAG who have been seen for at least two office visits who have an optic nerve head evaluation during one or more office visits within 12 months. | ☐ |
| 0088 | Diabetic Retinopathy: Documentation of Presence or Absence of Macular Edema and Level of Severity of Retinopathy | Percentage of patients aged 18 years and older with a diagnosis of diabetic retinopathy who had a dilated macular or fundus exam performed which included documentation of the level of severity of retinopathy and the presence or absence of macular edema during one or more office visits within 12 months. | ☐ |
| 0089 | Diabetic Retinopathy: Communication with the Physician Managing Ongoing Diabetes Care | Percentage of patients aged 18 years and older with a diagnosis of diabetic retinopathy who had a dilated macular or fundus exam performed with documented communication to the physician who manages the ongoing care of the patient with diabetes mellitus regarding the findings of the macular or fundus exam at least once within 12 months. | ☐ |
| 0105 | Anti-depressant medication management: (a) Effective Acute Phase Treatment, (b) Effective Continuation Phase Treatment | Percentage of patients 18 years of age and older who were diagnosed with a new episode of major depression, treated with antidepressant medication, and who remained on an antidepressant medication treatment. | ☐ |
| 0385 | Oncology Colon Cancer: Chemotherapy for Stage III Colon Cancer Patients | Percentage of patients aged 18 years and older with Stage IIIA through IIIC colon cancer who are referred for adjuvant chemotherapy, prescribed adjuvant chemotherapy, or have previously received adjuvant chemotherapy within the 12 month reporting period. | ☐ |
| 0387 | Oncology Breast Cancer: Hormonal Therapy for Stage IC-IIIC Estrogen Receptor/Progesterone Receptor (ER/PR) Positive Breast Cancer | Percentage of female patients aged 18 years and older with Stage IC through IIIC, ER or PR positive breast cancer who were prescribed tamoxifen or aromatase inhibitor (AI) during the 12-month reporting period. | ☐ |
| 0389 | Prostate Cancer: Avoidance of Overuse of Bone Scan for Staging LowRisk Prostate Cancer Patients | Percentage of patients, regardless of age, with a diagnosis of prostate cancer at low risk of recurrence receiving interstitial prostate brachytherapy, OR external beam radiotherapy to the prostate, OR radical prostatectomy, OR cryotherapy who did not have a bone scan performed at any time since diagnosis of prostate cancer. | ☐ |
| 0575 | Diabetes: Hemoglobin A1c Control (<8.0%) | The percentage of patients 18-75 years of age with diabetes (type 1 or type 2) who had hemoglobin A1c <8.0%. | ☐ |

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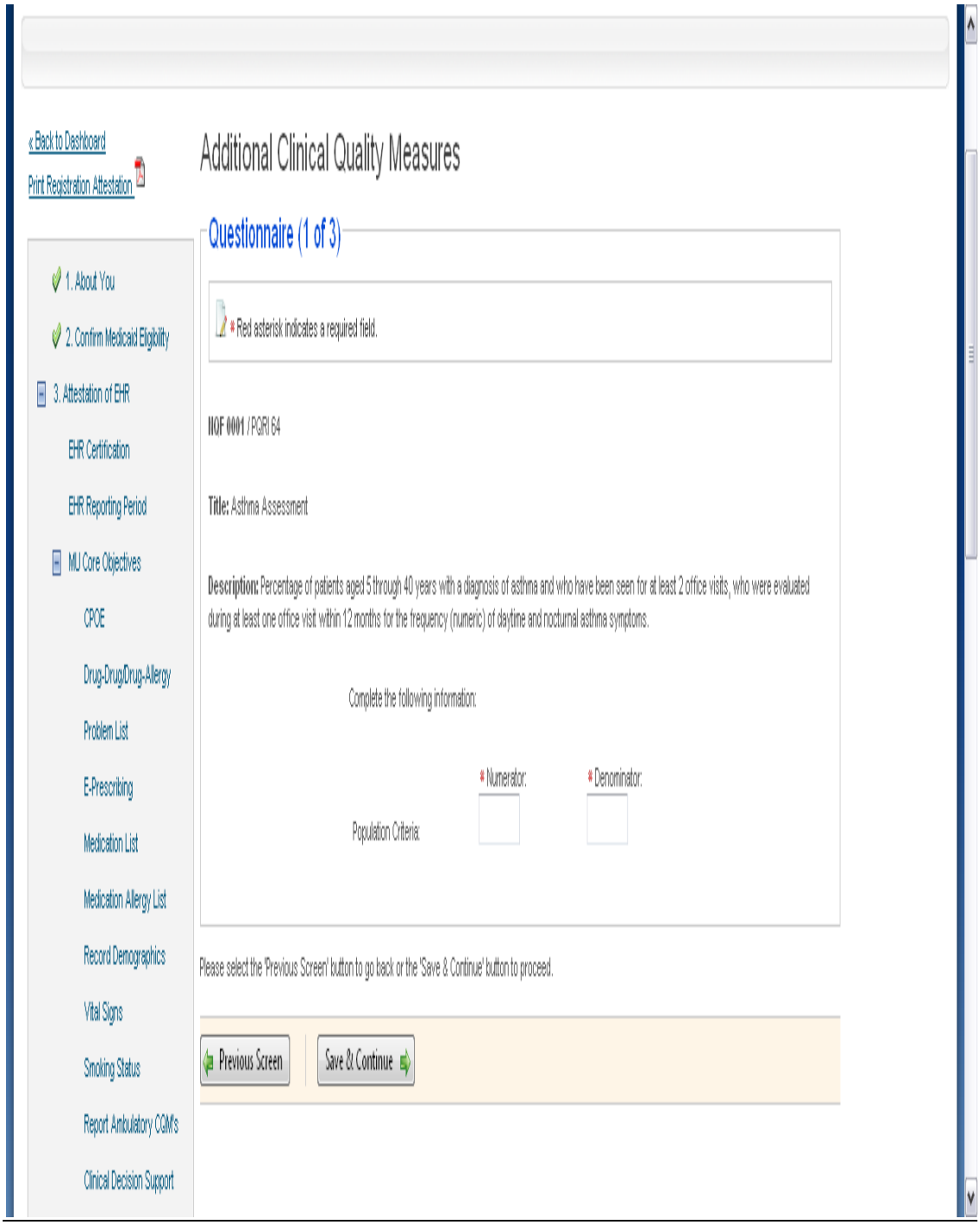
NQF 0001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* Red asterisk indicates a required field.
NQF 0001 / PQRI 64
Title: Asthma Assessment
Description: Percentage of patients aged 5 through 40 years with a diagnosis of asthma and who have been seen for at least 2 office visits, who were evaluated during at least one office visit within 12 months for the frequency (numeric) of daytime and nocturnal asthma symptoms.
Complete the following information:
* Numerator:
* Denominator:
Population Criteria:
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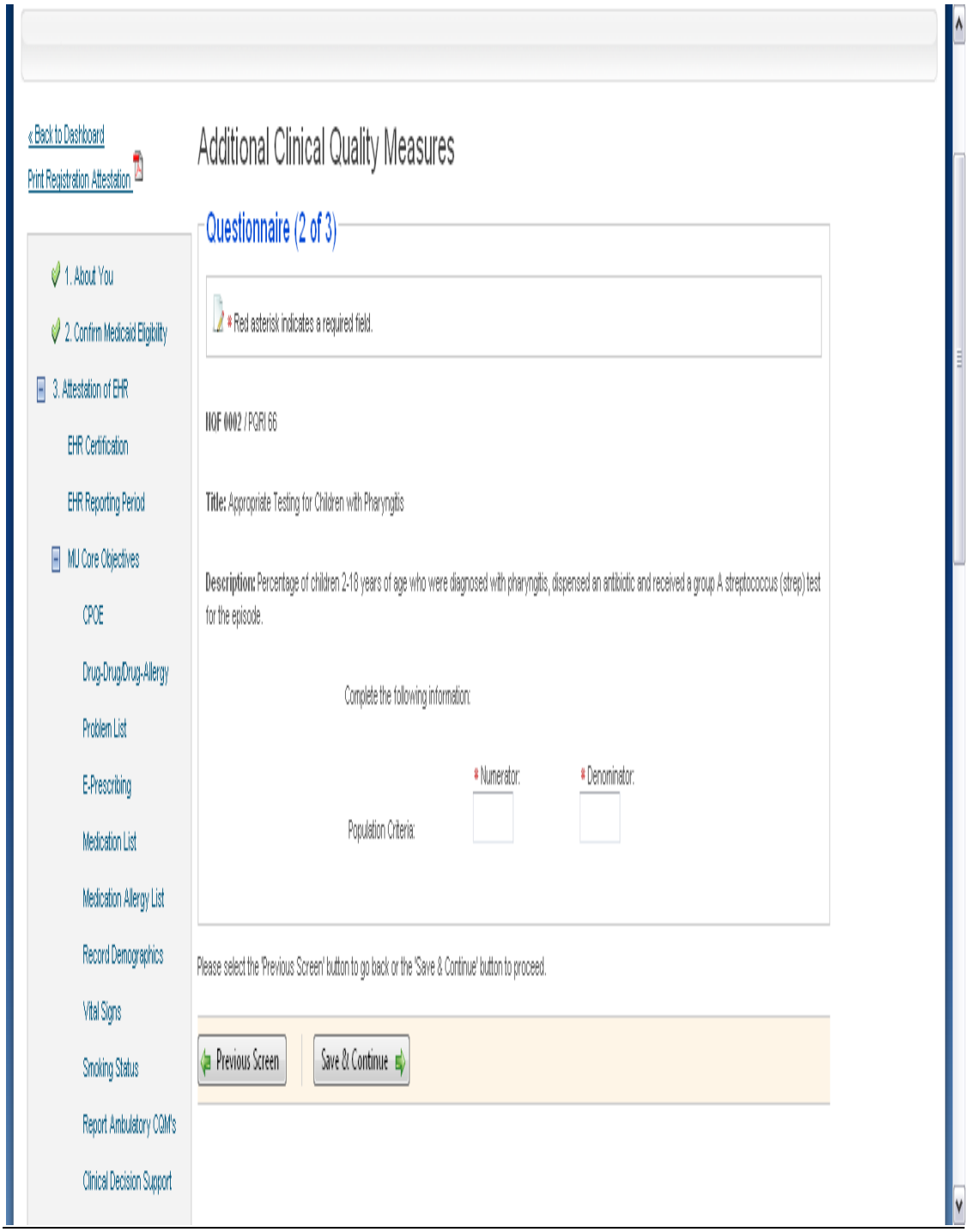
NQF 0002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* Red asterisk indicates a required field.
NQF 0002 / PQRI 66
Title: Appropriate Testing for Children with Pharyngitis
Description: Percentage of children 2-18 years of age who were diagnosed with pharyngitis, dispensed an antibiotic and received a group A streptococcus (strep) test for the episode.
Complete the following information:
* Numerator:
* Denominator:
Population Criteria:
Please select the 'Previous Screen' button to go back or the 'Save & Continue' button to proceed.
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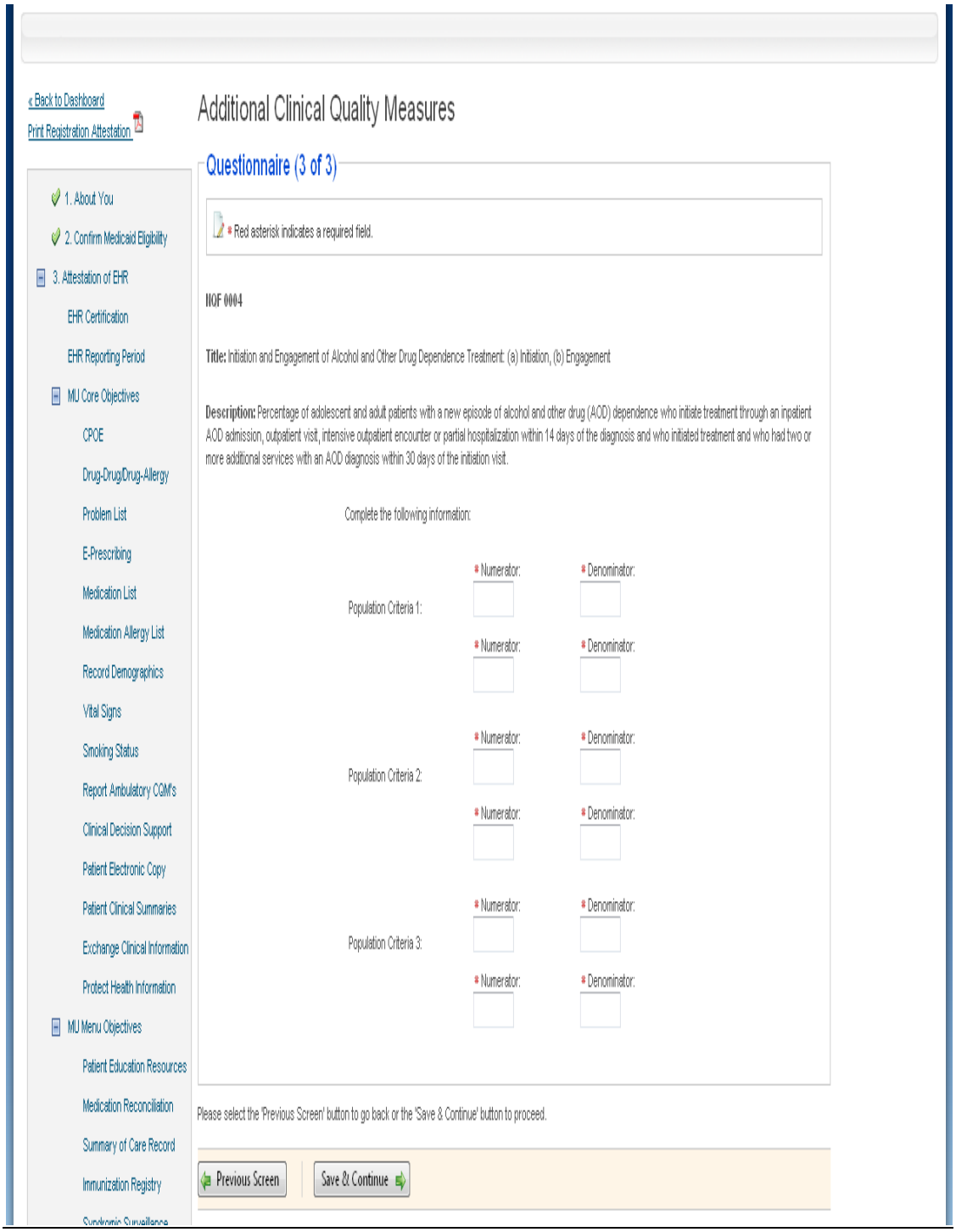
NQF 0003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* Red asterisk indicates a required field.
NQF 0004
Title: Initiation and Engagement of Alcohol and Other Drug Dependence Treatment: (a) Initiation, (b) Engagement
Description: Percentage of adolescent and adult patients with a new episode of alcohol and other drug (AOD) dependence who initiate treatment through an inpatient AOD admission, outpatient visit, intensive outpatient encounter or partial hospitalization within 14 days of the diagnosis and who initiated treatment and who had two or more additional services with an AOD diagnosis within 30 days of the initiation visit.
Complete the following information:
* Numerator:
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Population Criteria 1:
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NQF 0012


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* Red asterisk indicates a required field.
NQF 0012
Title: Prenatal Care: Screening for Human Immunodeficiency Virus (HIV)
Description: Percentage of patients, regardless of age, who gave birth during a 12-month period who were screened for HIV infection during the first or second prenatal care visit.
Complete the following information:
* Numerator:
* Denominator:
* Exclusion:
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NQF 0014


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* Red asterisk indicates a required field.
NQF 0014
Title: Prenatal Care: Anti-D Immune Globulin
Description: Percentage of D (Rh) negative, unsensitized patients, regardless of age, who gave birth during a 12-month period who received anti-D immune globulin at 26-30 weeks gestation.
Complete the following information:
* Numerator:
* Denominator:
* Exclusion:
Population Criteria:
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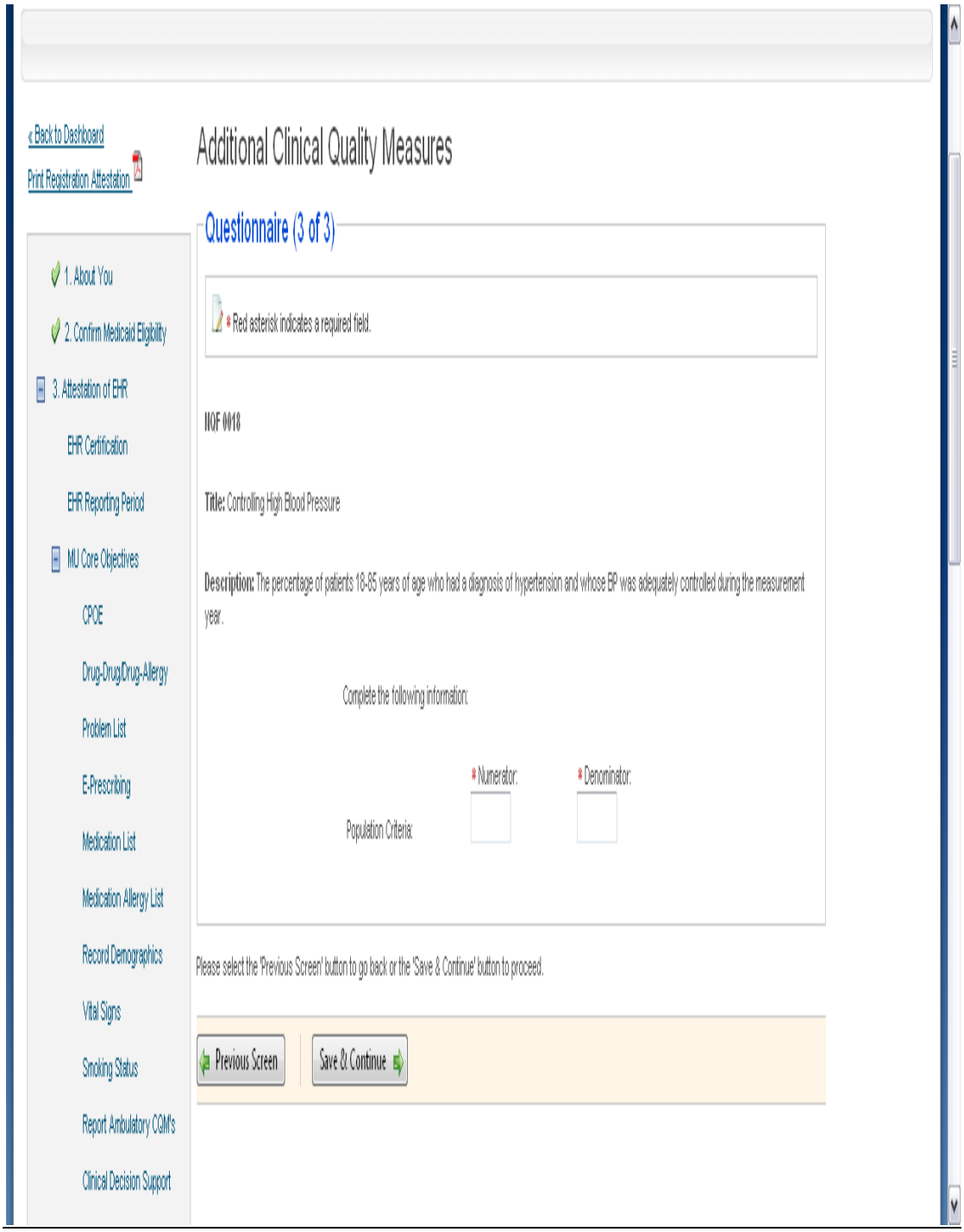
NQF 0018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* Red asterisk indicates a required field.
NQF 0018
Title: Controlling High Blood Pressure
Description: The percentage of patients 18-85 years of age who had a diagnosis of hypertension and whose BP was adequately controlled during the measurement year.
Complete the following information:
* Numerator:
* Denominator:
Population Criteria:
Please select the 'Previous Screen' button to go back or the 'Save & Continue' button to proceed.
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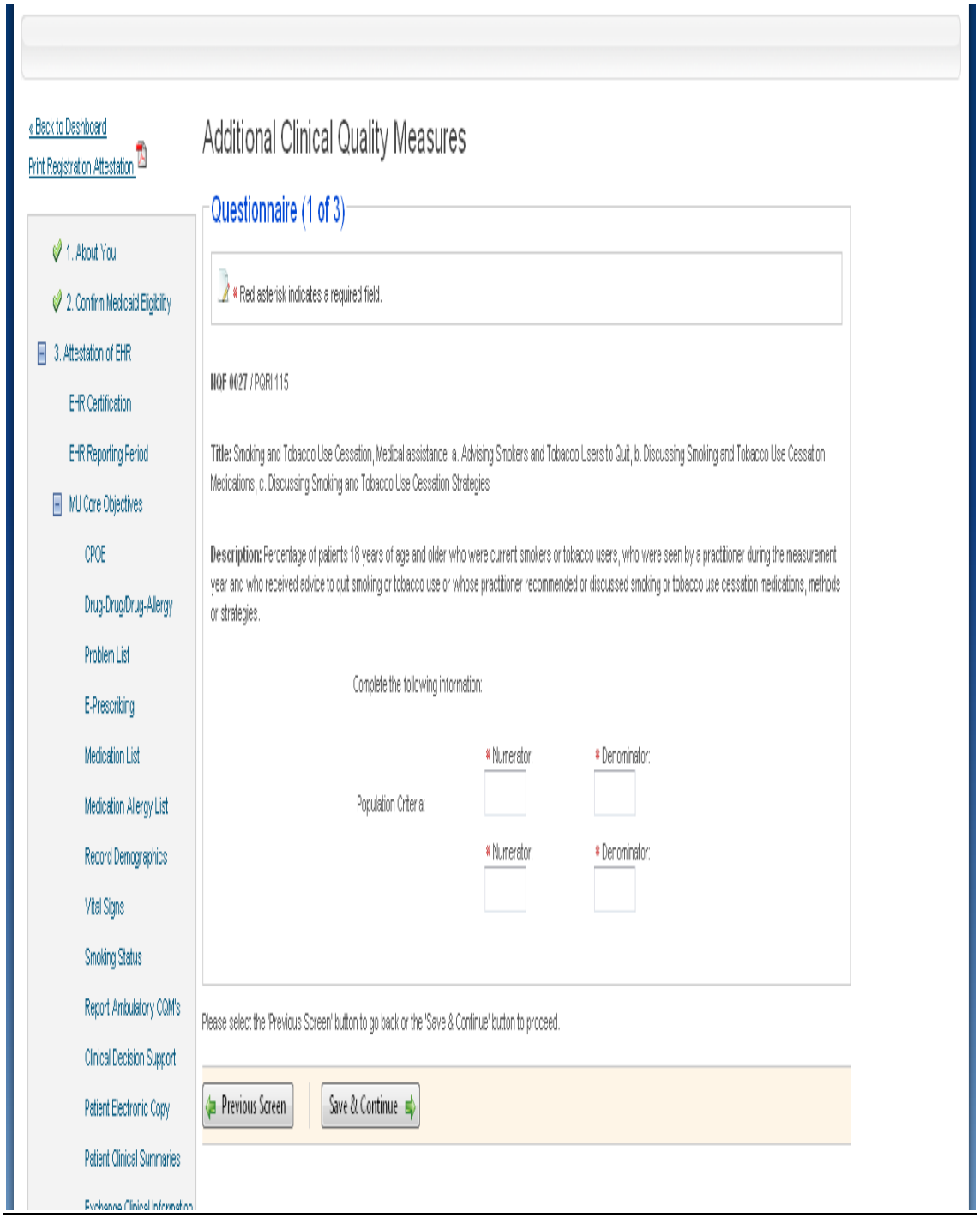
NQF 0027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* Red asterisk indicates a required field.
NQF 0027 / PQRI 115
Title: Smoking and Tobacco Use Cessation, Medical assistance: a. Advising Smokers and Tobacco Users to Quit, b. Discussing Smoking and Tobacco Use Cessation Medications, c. Discussing Smoking and Tobacco Use Cessation Strategies
Description: Percentage of patients 18 years of age and older who were current smokers or tobacco users, who were seen by a practitioner during the measurement year and who received advice to quit smoking or tobacco use or whose practitioner recommended or discussed smoking or tobacco use cessation medications, methods or strategies.
Complete the following information:
Population Criteria:
* Numerator:
* Denominator:
* Numerator:
* Denominator:
Please select the 'Previous Screen' button to go back or the 'Save & Continue' button to proceed.
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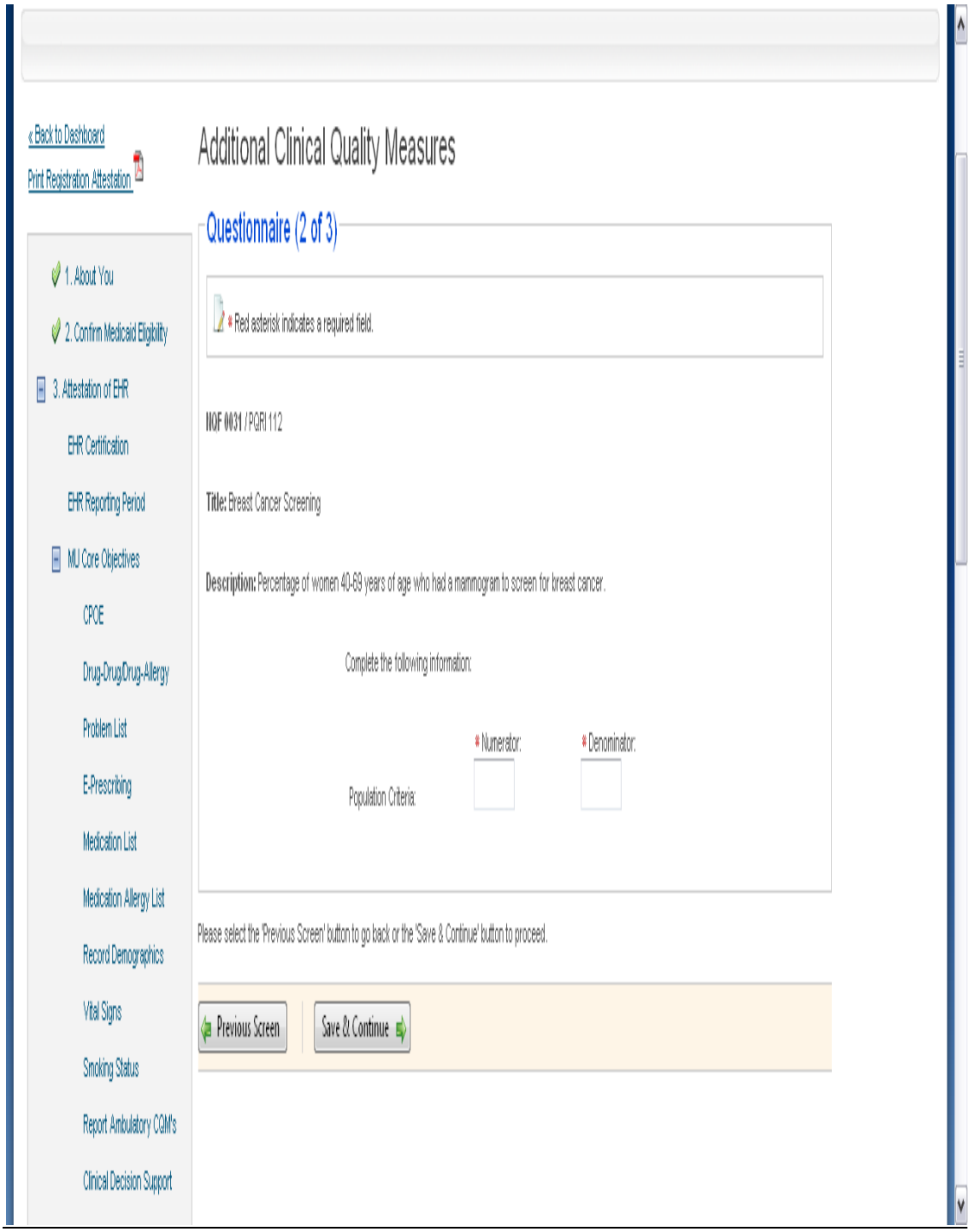
NQF 0031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* Red asterisk indicates a required field.
NQF 0031 / PQRI 112
Title: Breast Cancer Screening
Description: Percentage of women 40-69 years of age who had a mammogram to screen for breast cancer.
Complete the following information:
* Numerator:
* Denominator:
Population Criteria:
Please select the 'Previous Screen' button to go back or the 'Save & Continue' button to proceed.
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NQF 0032


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* Red asterisk indicates a required field.
NQF 0032
Title: Cervical Cancer Screening
Description: Percentage of women 21-64 years of age, who received one or more Pap tests to screen for cervical cancer.
Complete the following information:
* Numerator:
* Denominator:
Population Criteria:
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NQF 0033


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Exchange Clinical Information
Protect Health Information
* Red asterisk indicates a required field.
NQF 0033
Title: Chlamydia Screening for Women
Description: Percentage of women 15- 24 years of age who were identified as sexually active and who had at least one test for chlamydia during the measurement year.
Complete the following information:
* Numerator:
* Denominator:
* Exclusion:
Population Criteria 1:
Population Criteria 2:
Population Criteria 3:
Please select the 'Previous Screen' button to go back or the 'Save & Continue' button to proceed.
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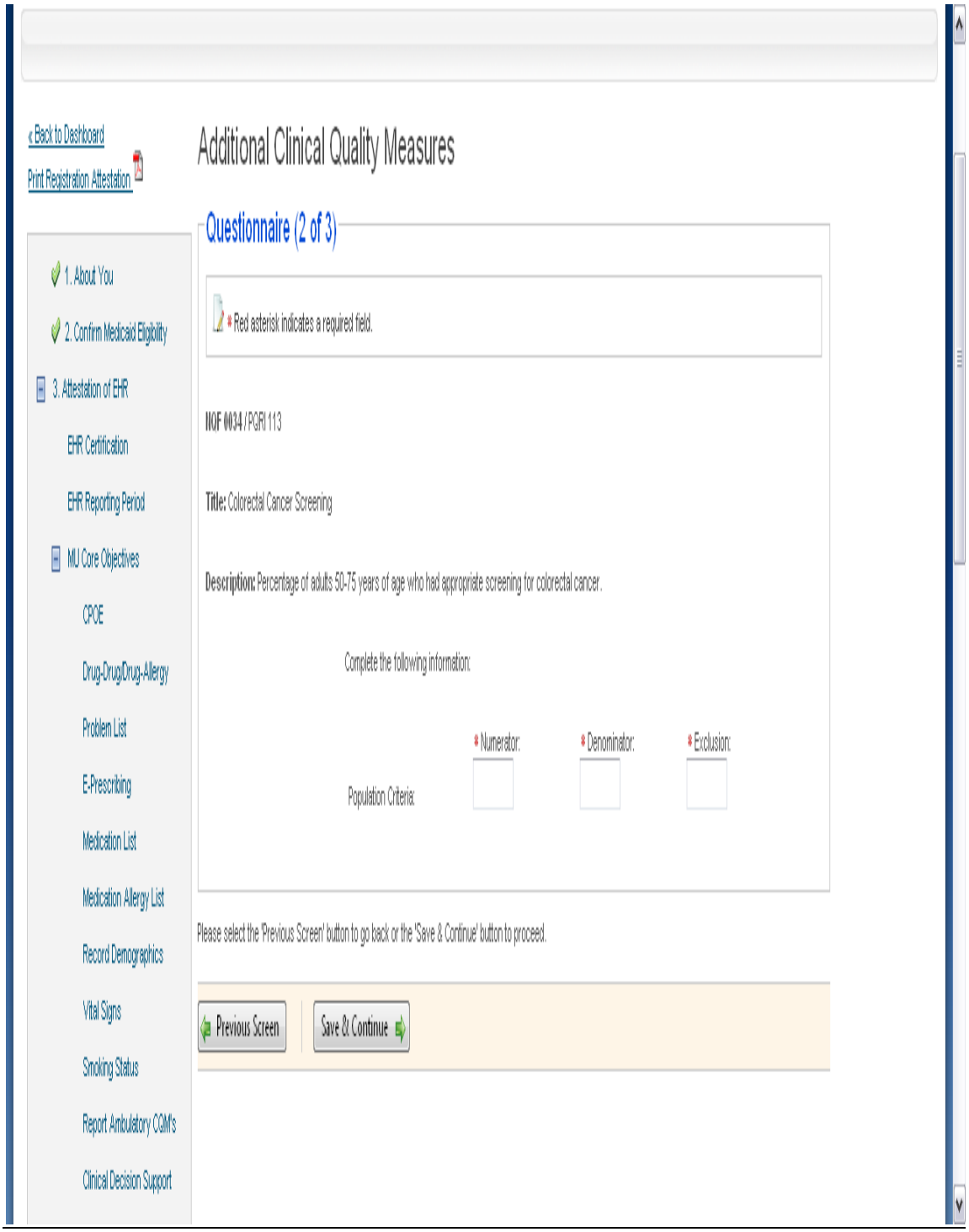
NQF 0034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* Red asterisk indicates a required field.
NQF 0034 / PQRI 113
Title: Colorectal Cancer Screening
Description: Percentage of adults 50-75 years of age who had appropriate screening for colorectal cancer.
Complete the following information:
Population Criteria:
* Numerator:
* Denominator:
* Exclusion:
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NQF 0036


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Protect Health Information
* Red asterisk indicates a required field.
NQF 0036
Title: Use of Appropriate Medications for Asthma
Description: Percentage of patients 5 - 50 years of age who were identified as having persistent asthma and were appropriately prescribed medication during the measurement year. Report three age stratifications (5-11 years, 12-50 years, and total).
Complete the following information:
* Numerator:
* Denominator:
* Exclusion:
Population Criteria 1:
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Population Criteria 3:
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NQF 0043


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* Red asterisk indicates a required field.
NQF 0043 / PQRI 111
Title: Pneumonia Vaccination Status for Older Adults
Description: Percentage of patients 65 years of age and older who have ever received a pneumococcal vaccine.
Complete the following information:
* Numerator:
* Denominator:
Population Criteria:
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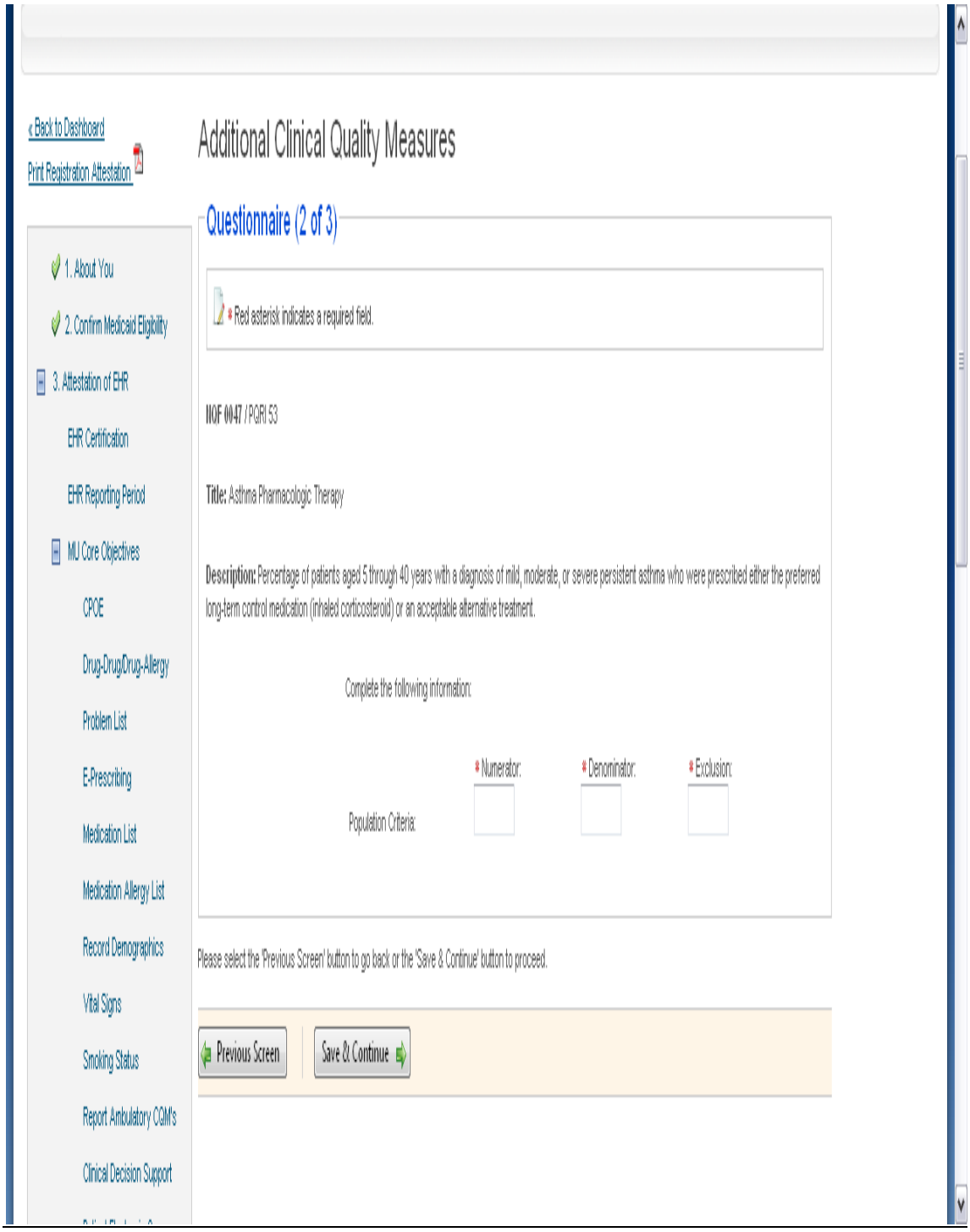
NQF 0047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* Red asterisk indicates a required field.
NQF 0047 / PQRI 53
Title: Asthma Pharmacologic Therapy
Description: Percentage of patients aged 5 through 40 years with a diagnosis of mild, moderate, or severe persistent asthma who were prescribed either the preferred long-term control medication (inhaled corticosteroid) or an acceptable alternative treatment.
Complete the following information:
* Numerator:
* Denominator:
* Exclusion:
Population Criteria:
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NQF 0052


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* Red asterisk indicates a required field.
NQF 0052
Title: Low Back Pain: Use of Imaging Studies
Description: Percentage of patients with a primary diagnosis of low back pain who did not have an imaging study (plain x-ray, MRI, CT scan) within 28 days of diagnosis.
Complete the following information:
* Numerator:
* Denominator:
Population Criteria:
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NQF 0055


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* Red asterisk indicates a required field.
NQF 0055 / PQRI 117
Title: Diabetes: Eye Exam
Description: Percentage of patients 18 -75 years of age with diabetes (type 1 or type 2) who had a retinal or dilated eye exam or a negative retinal exam (no evidence of retinopathy) by an eye care professional.
Complete the following information:
* Numerator:
* Denominator:
* Exclusion:
Population Criteria:
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NQF 0055


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* Red asterisk indicates a required field.
NQF 0056 / PQRI 163
Title: Diabetes: Foot Exam
Description: The percentage of patients aged 18 - 75 years with diabetes (type 1 or type 2) who had a foot exam (visual inspection, sensory exam with monofilament, or pulse exam).
Complete the following information:
* Numerator:
* Denominator:
* Exclusion:
Population Criteria:
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NQF 0059


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* Red asterisk indicates a required field.
NQF 0059 / PQRI 1
Title: Diabetes: Hemoglobin A1c Poor Control
Description: Percentage of patients 18 - 75 years of age with diabetes (type 1 or type 2) who had hemoglobin A1c > 9.0%.
Complete the following information:
* Numerator:
* Denominator:
* Exclusion:
Population Criteria:
Please select the 'Previous Screen' button to go back or the 'Save & Continue' button to proceed.
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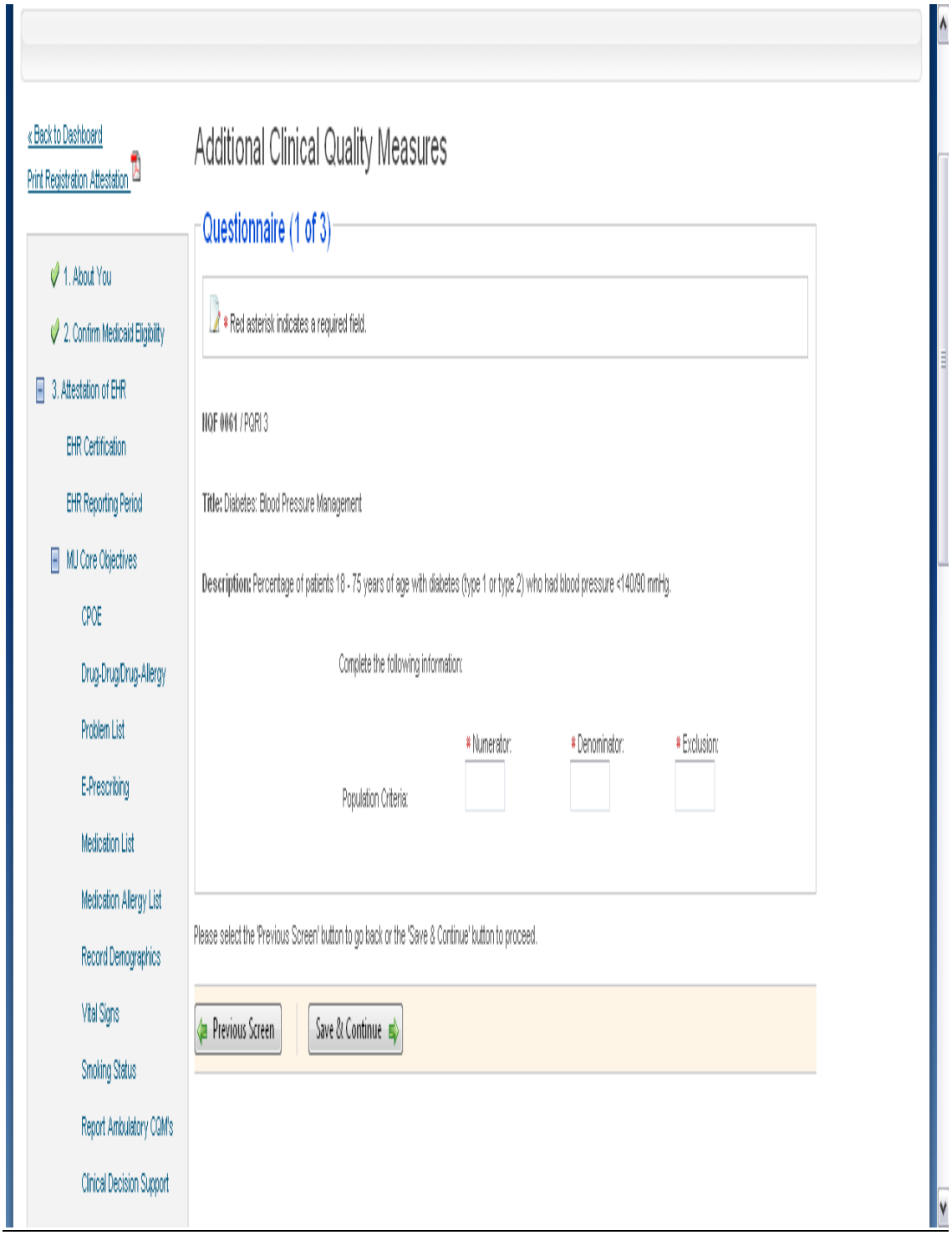
NQF 0061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* Red asterisk indicates a required field.
NQF 0061 / PQRI 3
Title: Diabetes: Blood Pressure Management
Description: Percentage of patients 18 - 75 years of age with diabetes (type 1 or type 2) who had blood pressure <140/90 mmHg.
Complete the following information:
* Numerator:
* Denominator:
* Exclusion:
Population Criteria:
Please select the 'Previous Screen' button to go back or the 'Save & Continue' button to proceed.
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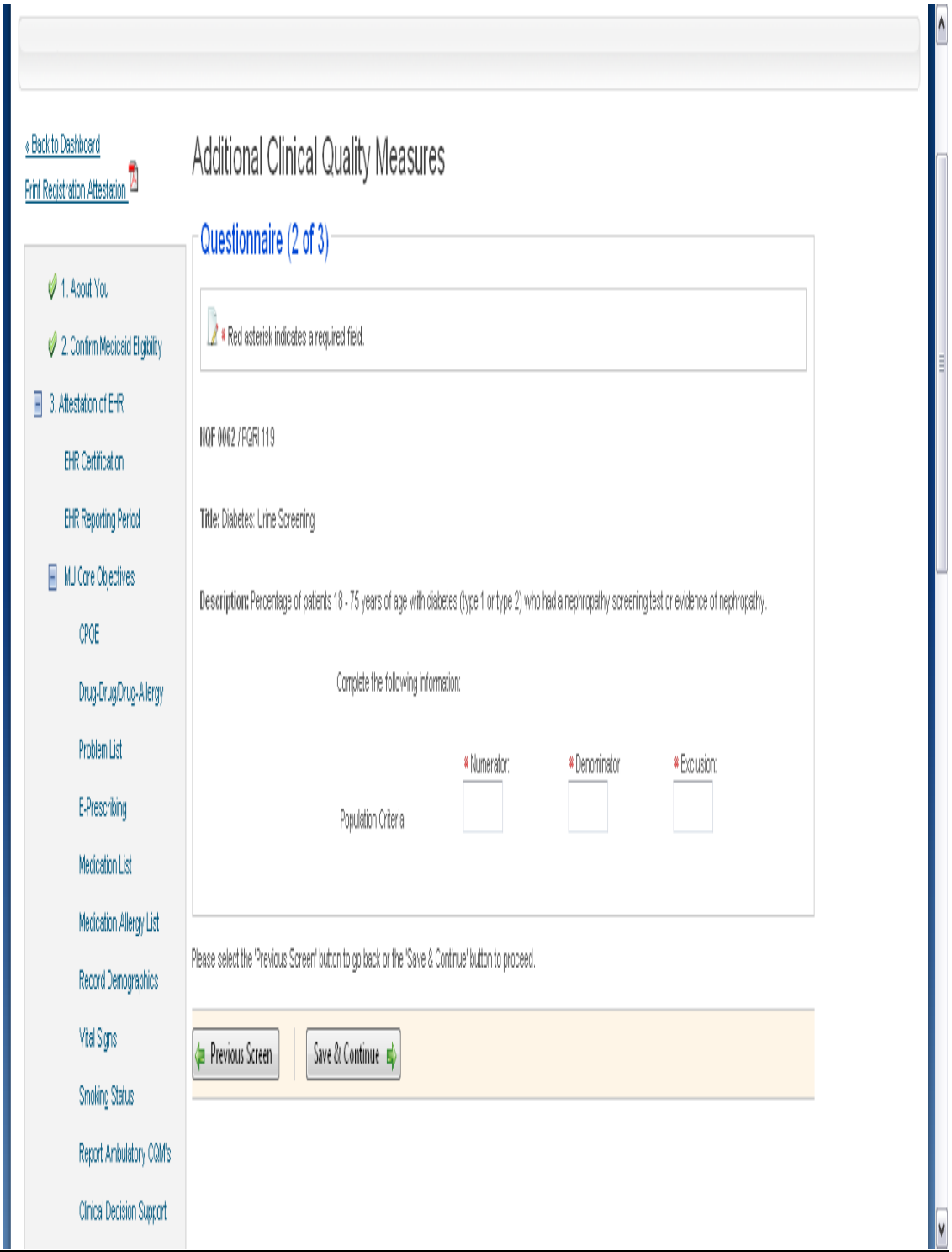
NQF 0062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* Red asterisk indicates a required field.
NQF 0062 / PQRI 119
Title: Diabetes: Urine Screening
Description: Percentage of patients 18 - 75 years of age with diabetes (type 1 or type 2) who had a nephropathy screening test or evidence of nephropathy.
Complete the following information:
* Numerator:
* Denominator:
* Exclusion:
Population Criteria:
Please select the 'Previous Screen' button to go back or the 'Save & Continue' button to proceed.
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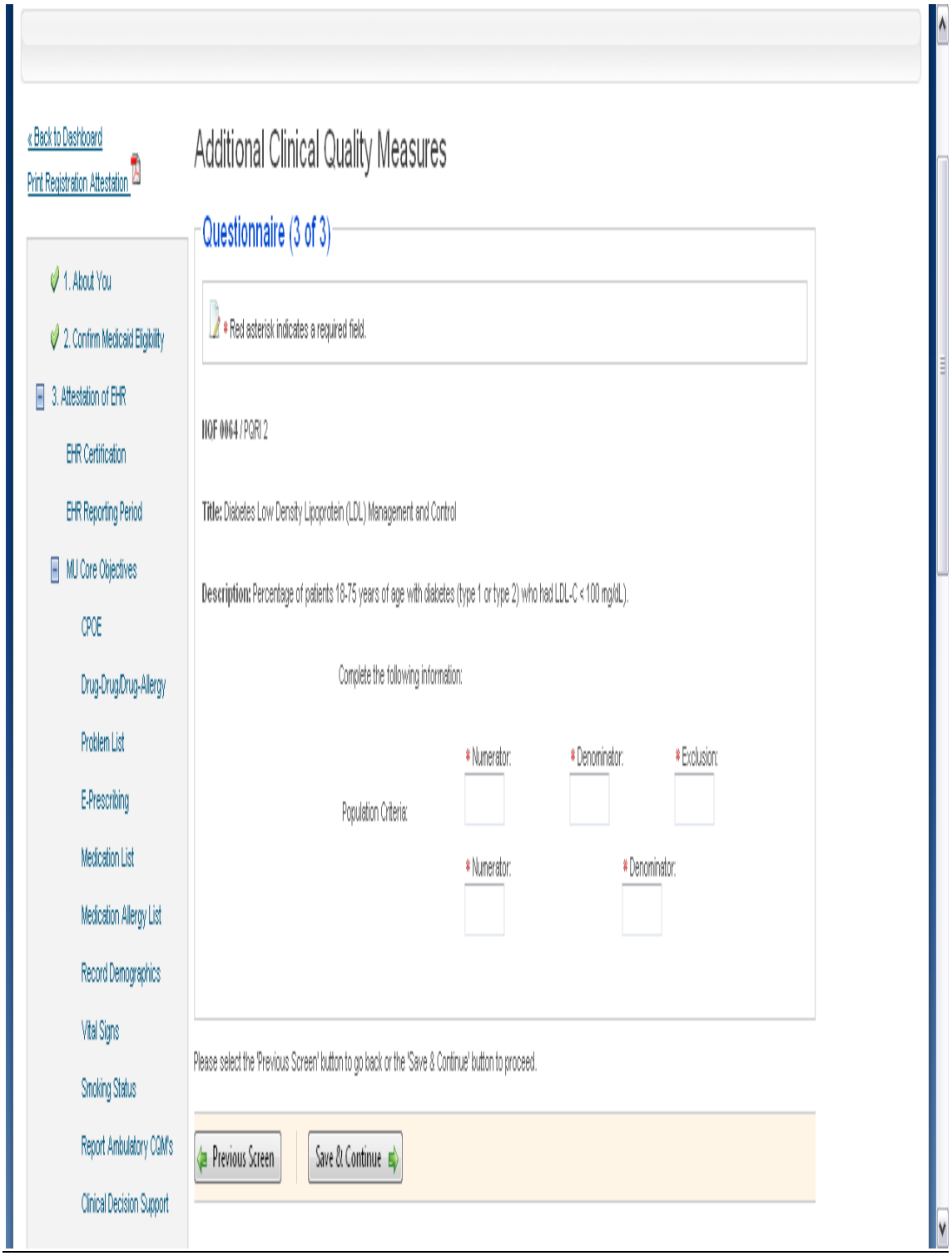
NQF 0064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* Red asterisk indicates a required field.
NQF 0064 / PQRI 2
Title: Diabetes Low Density Lipoprotein (LDL) Management and Control
Description: Percentage of patients 18-75 years of age with diabetes (type 1 or type 2) who had LDL-C < 100 mg/dL).
Complete the following information:
Population Criteria:
* Numerator:
* Denominator:
* Exclusion:
* Numerator:
* Denominator:
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NQF 0067


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* Red asterisk indicates a required field.
NQF 0067 / PQRI 6
Title: Coronary Artery Disease (CAD): Oral Antiplatelet Therapy Prescribed for Patients with CAD
Description: Percentage of patients aged 18 years and older with a diagnosis of CAD who were prescribed oral antiplatelet therapy.
Complete the following information:
* Numerator:
* Denominator:
* Exclusion:
Population Criteria:
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NQF 0070


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* Red asterisk indicates a required field.
NQF 0070 / PQRI 7
Title: Coronary Artery Disease (CAD): Beta-Blocker Therapy for CAD Patients with Prior Myocardial Infarction (MI)
Description: Percentage of patients aged 18 years and older with a diagnosis of CAD and prior MI who were prescribed beta-blocker therapy.
Complete the following information:
* Numerator:
* Denominator:
* Exclusion:
Population Criteria:
Please select the 'Previous Screen' button to go back or the 'Save & Continue' button to proceed.
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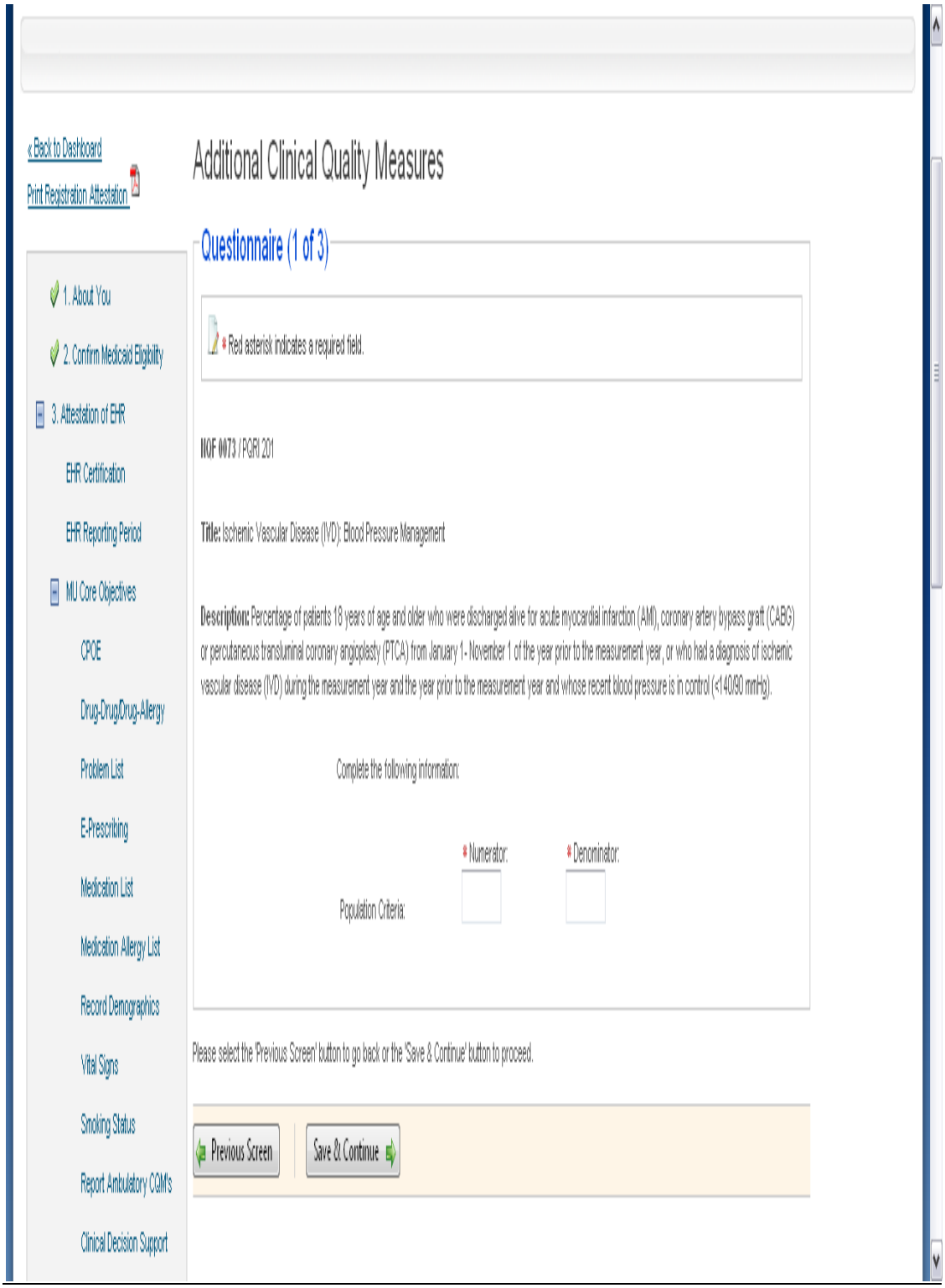
NQF 0073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* Red asterisk indicates a required field.
NQF 0073 / PQRI 201
Title: Ischemic Vascular Disease (IVD): Blood Pressure Management
Description: Percentage of patients 18 years of age and older who were discharged alive for acute myocardial infarction (AMI), coronary artery bypass graft (CABG) or percutaneous transluminal coronary angioplasty (PTCA) from January 1- November 1 of the year prior to the measurement year, or who had a diagnosis of ischemic vascular disease (IVD) during the measurement year and the year prior to the measurement year and whose recent blood pressure is in control (<140/90 mmHg).
Complete the following information:
* Numerator:
* Denominator:
Population Criteria:
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NQF 0074


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* Red asterisk indicates a required field.
NQF 0074 / PQRI 197
Title: Coronary Artery Disease (CAD): Drug Therapy for Lowering LDL-Cholesterol
Description: Percentage of patients aged 18 years and older with a diagnosis of CAD who were prescribed a lipid-lowering therapy (based on current ACC/AHA guidelines).
Complete the following information:
* Numerator:
* Denominator:
* Exclusion:
Population Criteria:
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NQF 0075


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* Red asterisk indicates a required field.
NQF 0075
Title: Ischemic Vascular Disease (IVD): Complete Lipid Panel and LDL Control
Description: Percentage of patients 18 years of age and older who were discharged alive for acute myocardial infarction (AMI), coronary artery bypass graft (CABG) or percutaneous transluminal angioplasty (PTCA) from January 1-November1 of the year prior to the measurement year, or who had a diagnosis of ischemic vascular disease (IVD) during the measurement year and the year prior to the measurement year and who had a complete lipid profile performed during the measurement year and whose LDL-C<100 mg/dL.
Complete the following information:
* Numerator:
* Denominator:
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* Numerator:
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NQF 0081


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* Red asterisk indicates a required field.
NQF 0081 / PQRI 5
Title: Heart Failure (HF): Angiotensin- Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy for Left Ventricular Systolic Dysfunction (LVSD)
Description: Percentage of patients aged 18 years and older with a diagnosis of heart failure and LVSD (LVEF < 40%) who were prescribed ACE inhibitor or ARB therapy.
Complete the following information:
* Numerator:
* Denominator:
* Exclusion:
Population Criteria:
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NQF 0083


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* Red asterisk indicates a required field.
NQF 0083 / PQRI 8
Title: Heart Failure (HF): Beta-Blocker Therapy for Left Ventricular Systolic Dysfunction (LVSD)
Description: Percentage of patients aged 18 years and older with a diagnosis of heart failure who also have LVSD (LVEF < 40%) and who were prescribed beta-blocker therapy.
Complete the following information:
* Numerator:
* Denominator:
* Exclusion:
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NQF 0084


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* Red asterisk indicates a required field.
NQF 0084 / PQRI 200
Title: Heart Failure (HF): Warfarin Therapy Patients with Atrial Fibrillation
Description: Percentage of all patients aged 18 years and older with a diagnosis of heart failure and paroxysmal or chronic atrial fibrillation who were prescribed warfarin therapy.
Complete the following information:
* Numerator:
* Denominator:
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NQF 0086


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* Red asterisk indicates a required field.
NQF 0086 / PQRI 12
Title: Primary Open Angle Glaucoma (POAG): Optic Nerve Evaluation
Description: Percentage of patients aged 18 years and older with a diagnosis of POAG who have been seen for at least two office visits who have an optic nerve head evaluation during one or more office visits within 12 months.
Complete the following information:
* Numerator:
* Denominator:
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NQF 0088


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Medication Allergy List
Record Demographics
Vital Signs
Smoking Status
Report Ambulatory CQM's
Clinical Decision Support
* Red asterisk indicates a required field.
NQF 0088 / PQRI 18
Title: Diabetic Retinopathy: Documentation of Presence or Absence of Macular Edema and Level of Severity of Retinopathy
Description: Percentage of patients aged 18 years and older with a diagnosis of diabetic retinopathy who had a dilated macular or fundus exam performed which included documentation of the level of severity of retinopathy and the presence or absence of macular edema during one or more office visits within 12 months.
Complete the following information:
* Numerator:
* Denominator:
* Exclusion:
Population Criteria:
Please select the 'Previous Screen' button to go back or the 'Save & Continue' button to proceed.
Previous Screen
Save & Continue

NQF 0089


« Back to Dashboard
Print Registration Attestation
Additional Clinical Quality Measures
Questionnaire (1 of 3)
1. About You
2. Confirm Medicaid Eligibility
3. Attestation of EHR
EHR Certification
EHR Reporting Period
MU Core Objectives
CPOE
Drug-Drug/Drug-Allergy
Problem List
E-Prescribing
Medication List
Medication Allergy List
Record Demographics
Vital Signs
Smoking Status
Report Ambulatory CQM's
Clinical Decision Support
* Red asterisk indicates a required field.
NQF 0089 / PQRI 19
Title: Diabetic Retinopathy: Communication with the Physician Managing Ongoing Diabetes Care
Description: Percentage of patients aged 18 years and older with a diagnosis of diabetic retinopathy who had a dilated macular or fundus exam performed with documented communication to the physician who manages the ongoing care of the patient with diabetes mellitus regarding the findings of the macular or fundus exam at least once within 12 months.
Complete the following information:
* Numerator:
* Denominator:
* Exclusion:
Population Criteria:
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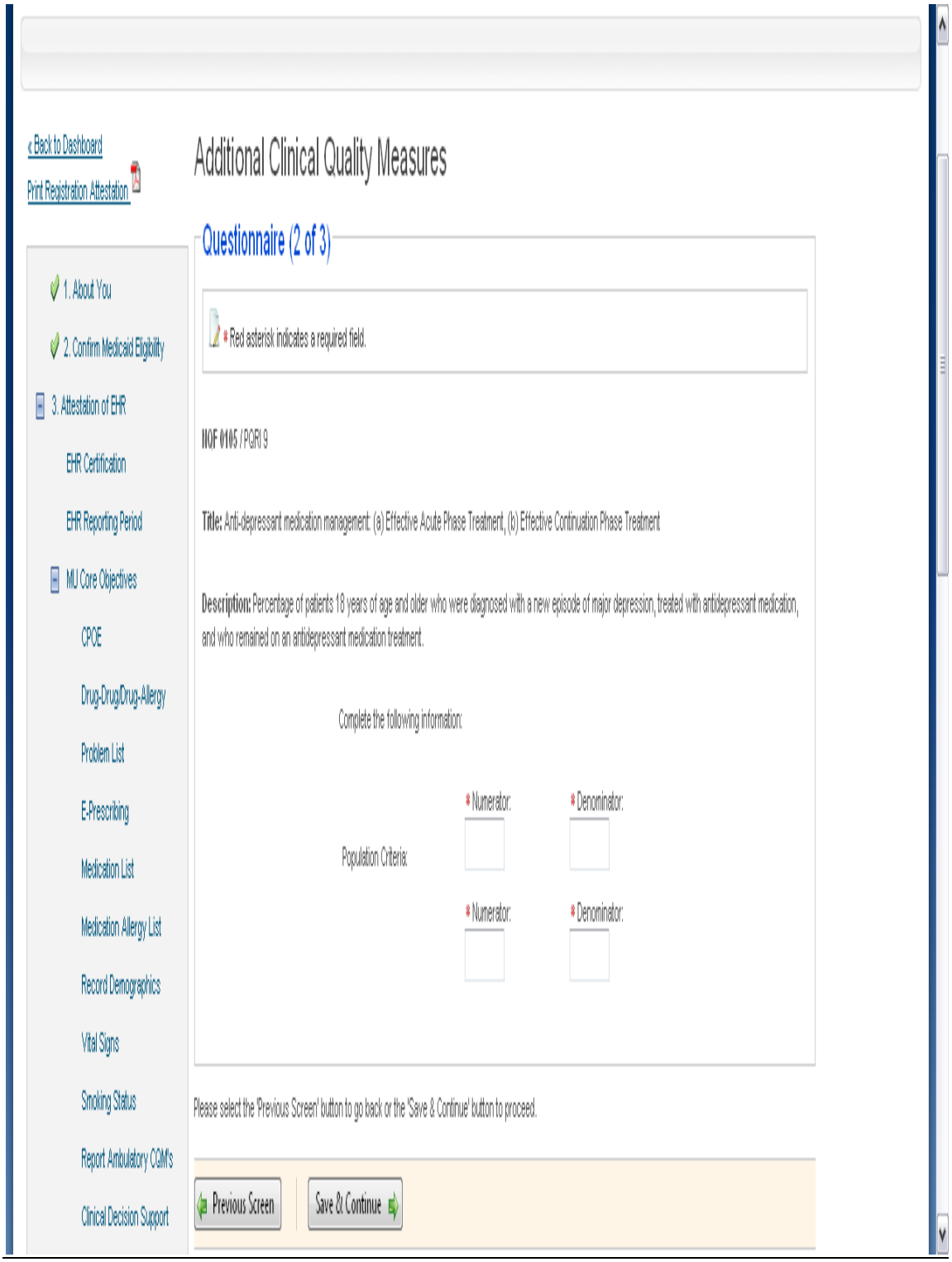
NQF 0105


« Back to Dashboard
Print Registration Attestation
Additional Clinical Quality Measures
Questionnaire (2 of 3)
1. About You
2. Confirm Medicaid Eligibility
3. Attestation of EHR
EHR Certification
EHR Reporting Period
MU Core Objectives
CPOE
Drug-Drug/Drug-Allergy
Problem List
E-Prescribing
Medication List
Medication Allergy List
Record Demographics
Vital Signs
Smoking Status
Report Ambulatory CQM's
Clinical Decision Support
* Red asterisk indicates a required field.
NQF 0105 / PQRI 9
Title: Anti-depressant medication management: (a) Effective Acute Phase Treatment, (b) Effective Continuation Phase Treatment
Description: Percentage of patients 18 years of age and older who were diagnosed with a new episode of major depression, treated with antidepressant medication, and who remained on an antidepressant medication treatment.
Complete the following information:
Population Criteria:
* Numerator:
* Denominator:
* Numerator:
* Denominator:
Please select the 'Previous Screen' button to go back or the 'Save & Continue' button to proceed.
Previous Screen
Save & Continue

NQF 0385


« Back to Dashboard
Print Registration Attestation
Additional Clinical Quality Measures
Questionnaire (3 of 3)
1. About You
2. Confirm Medicaid Eligibility
3. Attestation of EHR
EHR Certification
EHR Reporting Period
MU Core Objectives
CPOE
Drug-Drug/Drug-Allergy
Problem List
E-Prescribing
Medication List
Medication Allergy List
Record Demographics
Vital Signs
Smoking Status
Report Ambulatory CQM's
Clinical Decision Support
* Red asterisk indicates a required field.
NQF 0385 / PQRI 72
Title: Oncology Colon Cancer: Chemotherapy for Stage III Colon Cancer Patients
Description: Percentage of patients aged 18 years and older with Stage IIIA through IIIC colon cancer who are referred for adjuvant chemotherapy, prescribed adjuvant chemotherapy, or have previously received adjuvant chemotherapy within the 12 month reporting period.
Complete the following information:
* Numerator:
* Denominator:
* Exclusion:
Population Criteria:
Please select the 'Previous Screen' button to go back or the 'Save & Continue' button to proceed.
Previous Screen
Save & Continue

NQF 0387


« Back to Dashboard
Print Registration Attestation
Additional Clinical Quality Measures
Questionnaire (1 of 3)
1. About You
2. Confirm Medicaid Eligibility
3. Attestation of EHR
EHR Certification
EHR Reporting Period
MU Core Objectives
CPOE
Drug-Drug/Drug-Allergy
Problem List
E-Prescribing
Medication List
Medication Allergy List
Record Demographics
Vital Signs
Smoking Status
Report Ambulatory CQM's
Clinical Decision Support
* Red asterisk indicates a required field.
NQF 0387 / PQRI 71
Title: Oncology Breast Cancer: Hormonal Therapy for Stage IC-IIIC Estrogen Receptor/Progesterone Receptor (ER/PR) Positive Breast Cancer
Description: Percentage of female patients aged 18 years and older with Stage IC through IIIC, ER or PR positive breast cancer who were prescribed tamoxifen or aromatase inhibitor (AI) during the 12-month reporting period.
Complete the following information:
* Numerator:
* Denominator:
* Exclusion:
Population Criteria:
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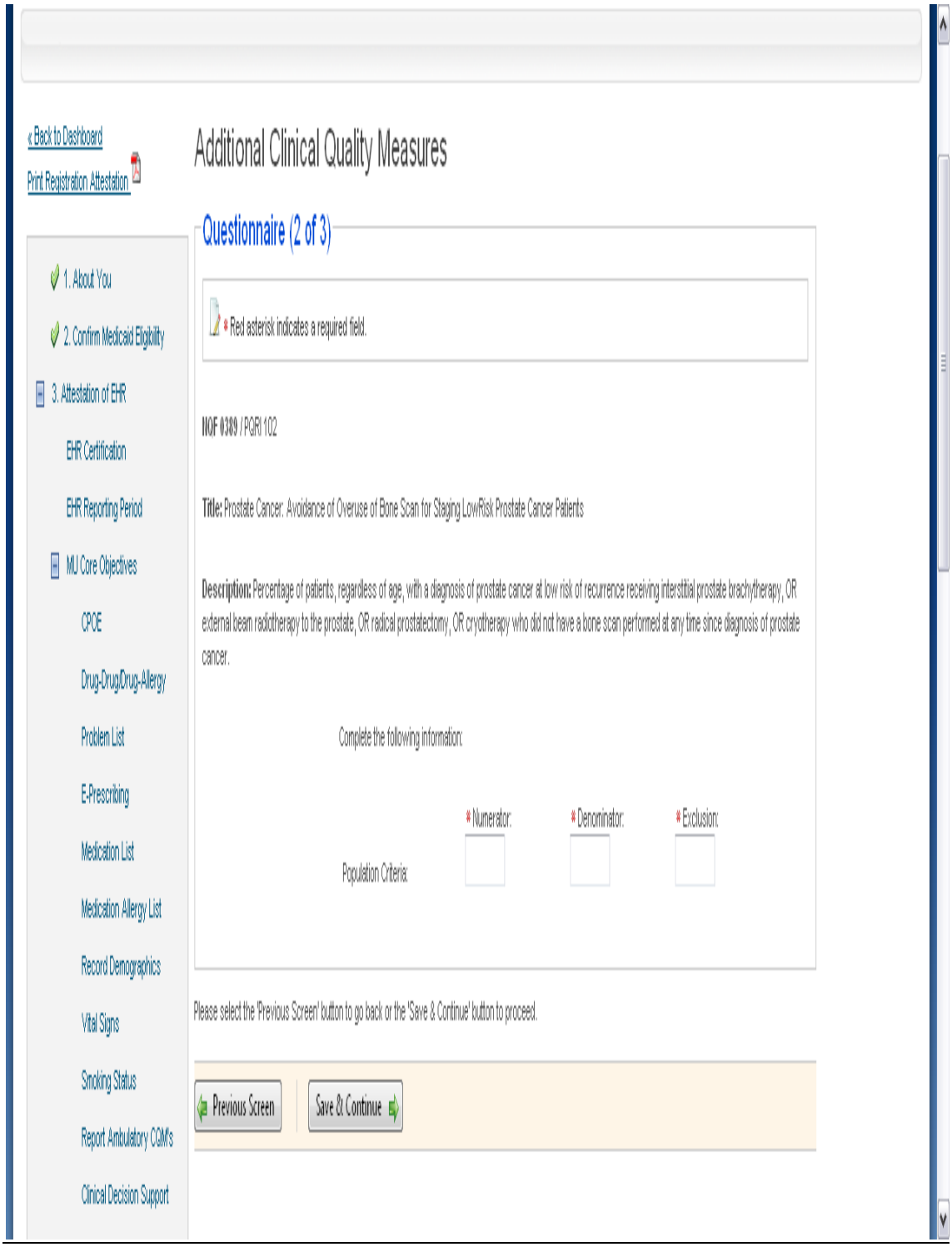
NQF 0389


« Back to Dashboard
Print Registration Attestation
Additional Clinical Quality Measures
Questionnaire (2 of 3)
1. About You
2. Confirm Medicaid Eligibility
3. Attestation of EHR
EHR Certification
EHR Reporting Period
MU Core Objectives
CPOE
Drug-Drug/Drug-Allergy
Problem List
E-Prescribing
Medication List
Medication Allergy List
Record Demographics
Vital Signs
Smoking Status
Report Ambulatory CQMs
Clinical Decision Support
* Red asterisk indicates a required field.
NQF 0389 / PQRI 102
Title: Prostate Cancer: Avoidance of Overuse of Bone Scan for Staging Low Risk Prostate Cancer Patients
Description: Percentage of patients, regardless of age, with a diagnosis of prostate cancer at low risk of recurrence receiving interstitial prostate brachytherapy, OR external beam radiotherapy to the prostate, OR radical prostatectomy, OR cryotherapy who did not have a bone scan performed at any time since diagnosis of prostate cancer.
Complete the following information:
* Numerator:
* Denominator:
* Exclusion:
Population Criteria:
Please select the 'Previous Screen' button to go back or the 'Save & Continue' button to proceed.
Previous Screen
Save & Continue

NQF 0575


« Back to Dashboard
Print Registration Attestation
Additional Clinical Quality Measures
Questionnaire (3 of 3)
1. About You
2. Confirm Medicaid Eligibility
3. Attestation of EHR
EHR Certification
EHR Reporting Period
MU Core Objectives
CPOE
Drug-Drug/Drug-Allergy
Problem List
E-Prescribing
Medication List
Medication Allergy List
Record Demographics
Vital Signs
Smoking Status
Report Ambulatory CQM's
Clinical Decision Support
* Red asterisk indicates a required field.
NQF 0575 / PQRI 66
Title: Diabetes: Hemoglobin A1c Control (<8.0%)
Description: The percentage of patients 18-75 years of age with diabetes (type 1 or type 2) who had hemoglobin A1c <8.0%.
Complete the following information:
* Numerator:
* Denominator:
* Exclusion:
Population Criteria:
Please select the 'Previous Screen' button to go back or the 'Save & Continue' button to proceed.
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# DOM Connectivity & Interoperability Strategy

## As-Is, To-Be and Roadmap Report

March 26, 2013

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# 1 Introduction and Overview

The State of Mississippi Division of Medicaid (DOM) is currently planning its interoperability strategy. The emerging Nationwide Health Information Network (NwHIN) has been identified as a key component of this strategy. As with any interoperability effort, coordination with internal and external stakeholders is key to success. This document details the ongoing discussion and planning with stakeholders and technology experts. This effort exists within the context of the recently approved State of Mississippi State Medicaid HIT Plan (SMHP), and the results of this effort will be integrated with the updated SMHP and Implementation Advance Planning Document (IAPD) documents, as required by the Centers for Medicare and Medicaid Services (CMS).

The strategies outlined in this document have been developed in coordination with key stakeholders, including the emerging State of Mississippi Health Information Network (MS-HIN), the Mississippi State Department of Health (MSDH) and the Mississippi Insurance Department (MID). Coordination was accomplished through status calls and in-person meetings during the development of this document as well as communications sharing key diagrams, timelines and strategy points.

The DOM vision is an ecosystem (healthcare community, Figure 1 below) of connected, interoperable Medicaid Providers, Medicaid trading partners and Medicaid stakeholders in the State of Mississippi. The expectation of DOM is to fully align with the SMHP and IAPD, as well as federal HIT-enabled health reform(s), including CMS Medicaid Information Technology Architecture (MITA) missions, goals and objectives. DOM intends to support the interoperable exchange of clinical data with DOM Medicaid providers, Medicaid trading partners, and Medicaid stakeholders, while improving care for Medicaid beneficiaries.

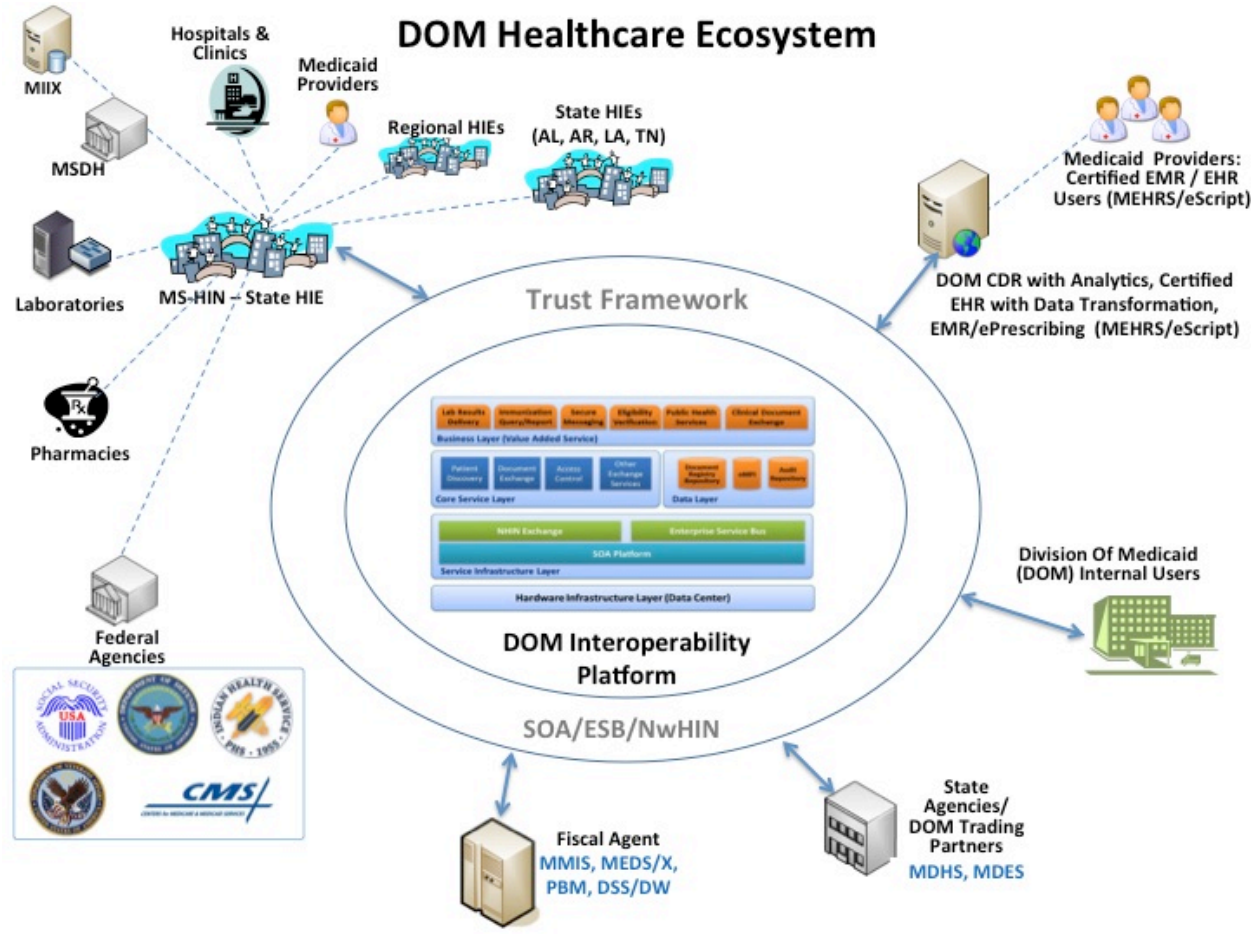



**Figure 9: The DOM Healthcare Ecosystem**

The DOM ecosystem is defined as a connected healthcare community of DOM and various DOM trading partners and stakeholders. The DOM ecosystem is the ultimate outcome of DOM's transition from the As-Is environment to the To-Be environment.

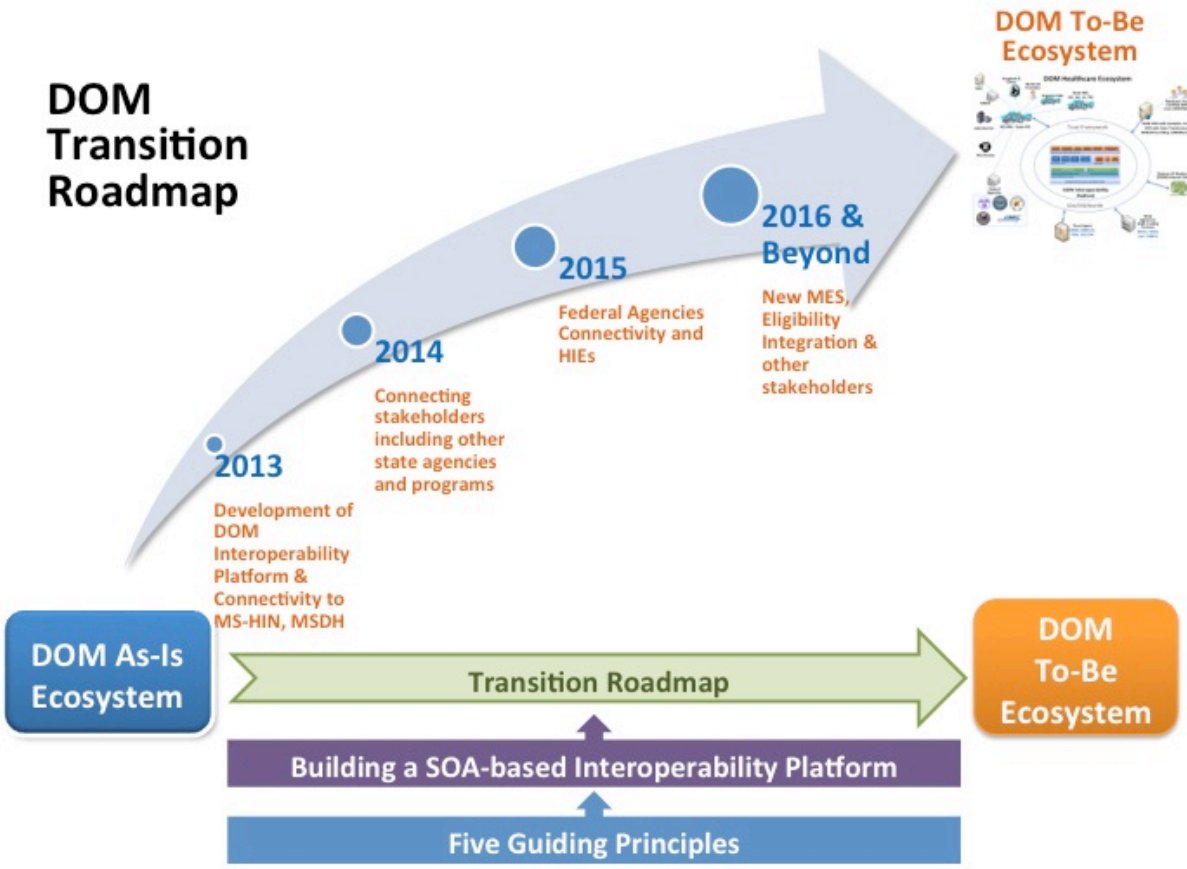



**Figure 10: The DOM Transition Roadmap from As-Is to To-Be**

The overall DOM goal is to implement a Service Oriented Architecture (SOA) based Interoperability Platform to enable clinical data exchange (HIT) to support Medicaid providers, Medicaid trading partners, and Medicaid stakeholders, while improving care for Medicaid beneficiaries in the State of Mississippi.

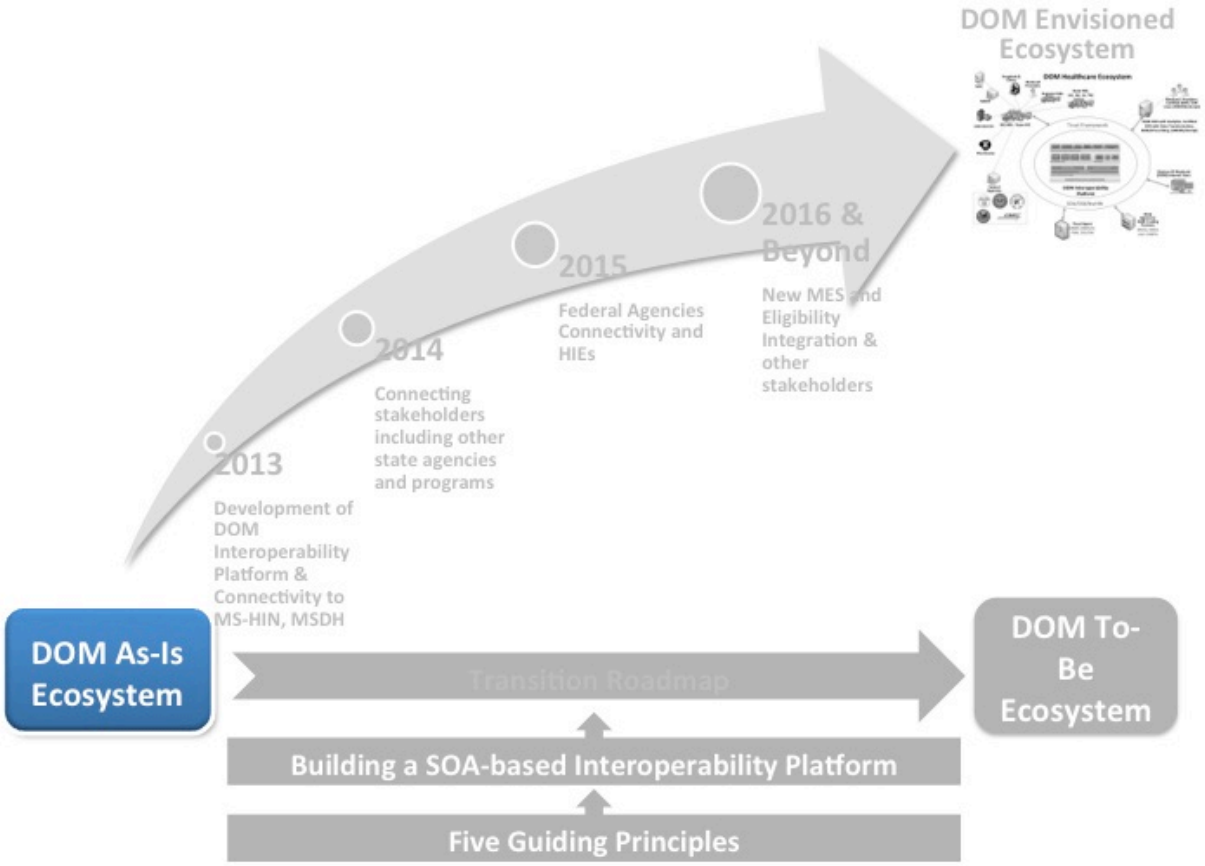
There are both new and existing systems and stakeholders that will play a role in the data exchange with DOM. For example, DOM staff, DOM systems, future DOM systems and services, approximately 625,000 Medicaid beneficiaries in the State of Mississippi and approximately 17,000 Mississippi-based Medicaid providers will require access to DOM's clinical data in the DOM Clinical Data Repository (CDR). From a trading partner perspective, the new Federally Facilitated Marketplace (FFM) and MS-HIN represent new trading partners that will require connectivity to the DOM and DOM systems for clinical and administrative data exchange in a bi-directional manner.

With the transition to MITA Maturity Level 3, as well as the implementation by DOM of a new Medicaid Management Information System (MMIS) and eligibility systems DOM will have a standards-based connectivity methodology is of critical importance. The Nationwide Health Information Network, or NwHIN, represents a standards-based connectivity methodology, already implemented by federal

agencies and supported by the Office of the National Coordinator for Health Information Technology as well as state and local Health Information Exchanges (HIEs).

The exploration of these subjects has been divided into three core sections - the As-Is, the To-Be, and the Roadmap. The As-Is Environmental assessment section describes the current status of DOM systems and overall technical environment as of mid-2011, and the To-Be and Roadmap sections provide the basis for the DOM technical roadmap, integration of trading partners, and a DOM Interoperability Platform.

# 2 DOM Connectivity and Interoperability Strategy – Assessment of As-Is Environment




This section describes the environmental HIT landscape assessment of the State of Mississippi Division of Medicaid as well as the DOM's trading partners' and stakeholders' current HIT environment. This HIT landscape assessment provides a basis for understanding of the gaps between the current DOM HIT landscape and DOM's To-Be Ecosystem. It also serves as a data source for the development of the To-Be landscape and of the Roadmap.

## 2.1 As-Is DOM Infrastructure

#### 2.1.1.1 Background

DOM is located in Jackson, Mississippi, and currently has limited infrastructure physically on-site. DOM is responsible for the overall administration of the Medicaid Program, and has contracted with a Fiscal Agent for operation of the MMIS, Pharmacy Benefits Management (PBM), Decision Support System

(DSS) and Data Warehouse (DW), and Medicaid Eligibility Determination System with Expansion (MEDS/X). The Fiscal Agent maintains Medicaid provider and Medicaid beneficiary eligibility records, processes claims, maintains reporting systems that enable DOM to monitor the program and enforce its policies and procedures, as well as aids in agency decision-making. Following a competitive procurement in 2005 for a takeover of the current operations with enhancements, Xerox Corporation (note: Xerox acquired the current vendor Affiliated Computer Services, or ACS) was selected to provide the MMIS and Fiscal Agent services for DOM.

The current MMIS system is hosted by Xerox in a data center in Pittsburgh, PA, while the MEDS/X system is hosted in Hillsboro, OR, and the DSS is hosted in Jackson, MS. The Medicaid Electronic Health Record System and e-Prescribing System (MEHRS/eScript) is hosted by Shared Health in a data center in Chattanooga, TN while the State Level Registry (SLR) is hosted by Xerox in Tarrytown, NY. More information about the MMIS system, MEDS/X system, and the MEHRS/eScript system can be found in the following sections.

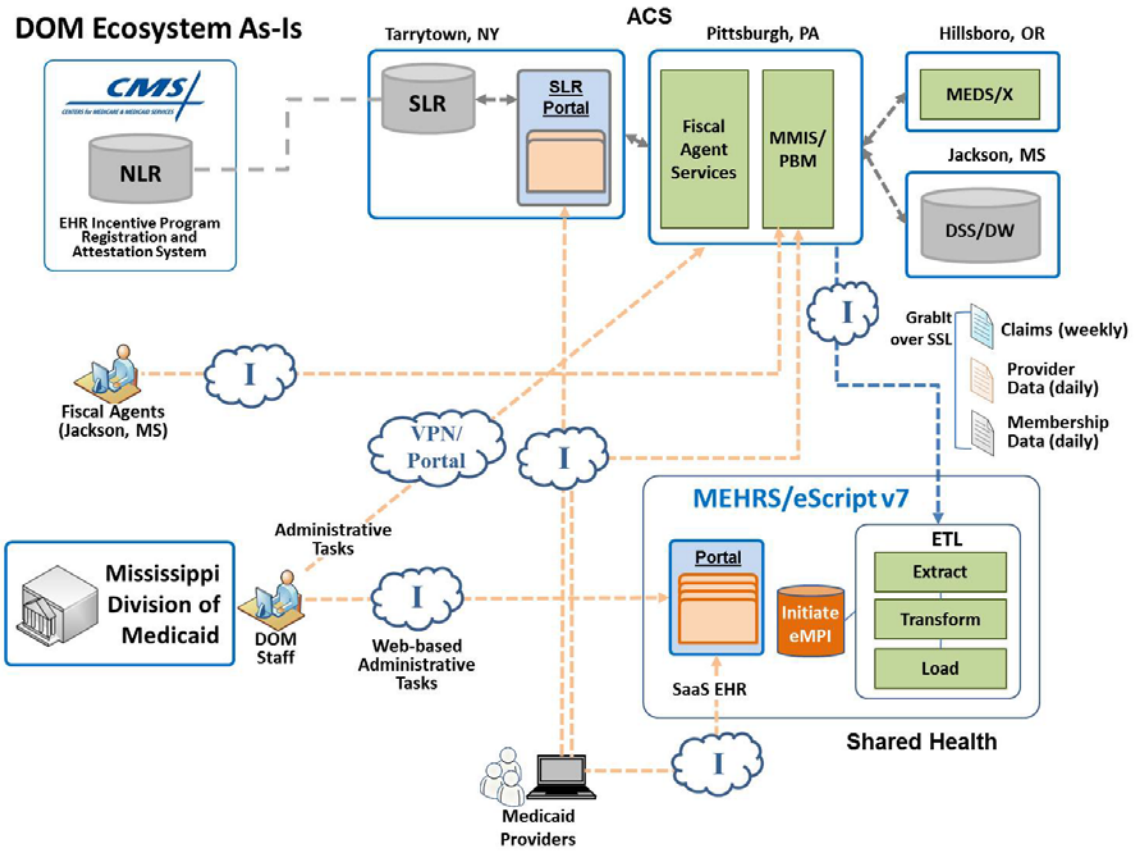



**Figure 11: DOM Ecosystem As-Is**

### 2.1.1.2 Connectivity

Connectivity to the MMIS and MEDS/X systems by DOM are provided by a secured Virtual Private Network by the State of Mississippi Information Technology Services (ITS). Connectivity to the

MEHRS/eScript system is via a secured (Secure Sockets Layer or SSL) Internet connection, and all interactions with MEHRS/eScript are browser-based.

ITS acts as an Internet Service Provider (ISP) (private network) which can be used by all State Agencies, including DOM and DOM's trading partners, including the MSDH, the Mississippi Department of Human Services (MDHS), and other State Agencies such as the Mississippi Department of Rehabilitation Services (MDRS), Mississippi Department of Corrections (MDOC), the Mississippi Department of Mental Health (DMH) and the Mississippi Department of Employment Security (MDES).

Currently there is limited data exchange between DOM and DOM trading partners using the ITS network, however, there is a desire by DOM for additional data exchange with the other State Agencies, MS-HIN, other HIEs, and federal agencies.

## 2.2 As-Is MMIS, MEDS/X Eligibility Systems, and SLR

#### 2.2.1.1 Background

The current MMIS is a solution called Envision, a 3-tier architecture currently provided by Xerox hosted in the Xerox data center in Pittsburg, Pennsylvania. Xerox is the current fiscal agent for DOM.

Envision components include the current MMIS and interfaces with the PBM/Prescription Drug Card System (PDCS). The MMIS also interfaces to a DSS/DW. The system is a federally-certified MMIS, eligible for enhanced Federal Financial Participation (FFP) matching rate of 75 percent for operations costs retroactive to October 6, 2003.

The MMIS system provides core administrative capabilities for DOM and Medicaid providers, including Medicaid claims processing, Medicaid claims status, and other administrative transactions. Electronic Data Interchange (EDI) transactions that can be supported by the current Xerox MMIS are 270/271, 276/277/277U, 278, 820, 834, 835, 837P/D/I. All production administration transactions are in 5010 format as of January 1, 2012. The current Xerox MMIS is EDIFECS Certified, EHNAC Accredited, CORE Phase II Certified, and MHCC Certified.

The Envision MMIS system utilizes the Xerox State Healthcare EDI Clearinghouse to provide Health Insurance Portability and Accountability Act (HIPAA) compliant transaction handling. Each MMIS core module receives, processes, and returns those HIPAA-mandated attributes that are utilized in the MMIS implementation of the DOM policy and edits. The EDI Clearinghouse maintains a complete record of all HIPAA transaction attributes received, along with necessary identifiers to correctly associate incoming transaction attributes to MMIS-generated transactions to construct outgoing transactions. Xerox, and subsequently DOM, is now HIPAA 5010 compliant.

#### 2.2.1.2 Connectivity

Envision utilizes a three-tier application deployment architecture. The three tiers are:

1. Client work stations.
2. Sybase Enterprise Application Server middle tier.
3. Mainframe back-end.

The hardware comprising the Envision system middle tier and back-end is located in a secure Xerox data center located in Pittsburgh, Pennsylvania. This data center is connected to the Xerox Mississippi FA offices and to the DOM network by the Xerox internal Wide Area Network (WAN) comprised of leased frame relay lines.

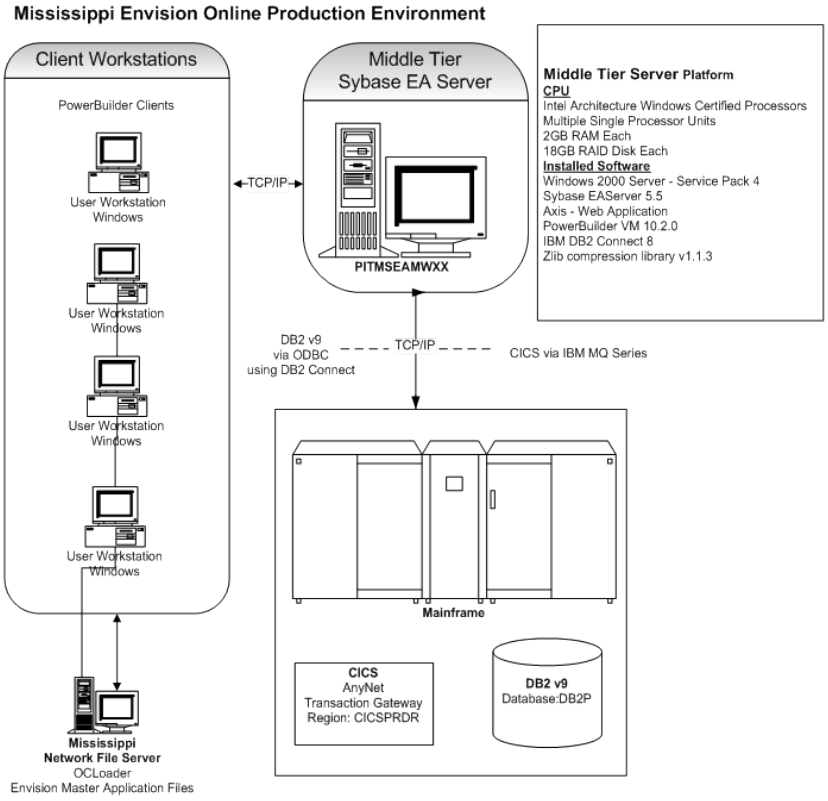



**Figure 12: Mississippi Envision Online Production Environment**

The current Xerox MMIS does not support clinical data or clinical data exchange, however, the MMIS is interfaced with the MEHRS/eScript system (see Section 2.3 for more details) and data from the MMIS claim files, member files, and provider files are used to populate the MEHRS/eScript system. Current interoperability between the MMIS and MEHRS/eScript is provided via an SSL secured Internet connection, using the GrabIt tool. GrabIt pulls the above mentioned MMIS data for MEHRS/eScript from an intermediate staging environment.

The current Xerox MMIS is planned to be replaced and upgraded over the next several years via a State procurement process. In the future, important clinical standards such as the Continuity of Care

Document (CCD) should be supported by the roadmap architecture. One goal of DOM's procurement of a new MMIS is compliance with MITA Level 3 and beyond, as set forth by CMS guidelines and specifications, including supporting a SOA architecture and using an ESB infrastructure. It is likely the Request for Proposals (RFP) for this new MMIS procurement will be delivered to the public by the 2nd quarter CY2013, with responses and vendor selection likely taking place by end-of-year 2013. After vendor selection, implementation of the new MMIS will take place over roughly the next three years, including running the new MMIS simultaneously with the current MMIS, for testing, prior to go-live. 2017 is the targeted goal for go-live of the newly acquired MMIS. After go-live and acceptance of the new MMIS, the current Xerox MMIS will be retired.

Questions remain on how and what transactions will be supported by the current MMIS and newly acquired MMIS with MS-HIN. While it is expected that there will be bi-directional clinical (CCD format) and administrative transaction exchange and support, the roadmap for interoperability between DOM and MS-HIN is still developing, and as such, the finalization of a roadmap for DOM and MS-HIN interoperability will be forthcoming.

#### 2.2.1.3 MEDS/X Eligibility System

The MEDS/X system is a Xerox provided eligibility system running in conjunction with the Xerox MMIS to provide core eligibility determination for Medicaid and the Children's Health Insurance Program (CHIP) beneficiaries. The MEDS/X system is hosted in Hillsboro, Oregon and uses a web services call to a RTI middleware solution, running on EA Server systems. The web services call uses CORBA to communicate with the EA Server to access the MMIS data. The MEDS/X system is being remediated to align with the CMS Enhanced Funding Requirements: Seven Conditions and Standards.

#### 2.2.1.4 Mississippi Provider Incentive Program and State Level Registry

The current Xerox MMIS system interfaces with the SLR, also Xerox provided and hosted product, for the determination of eligible providers under the Mississippi Provider Incentive Program (MPIP) and the processing of MPIP payments under this plan. Mississippi's SLR is live and paying provider incentive Medicaid payments.

Providers access a web portal to input data in the SLR, which in turn verifies eligibility for Mississippi Provider Incentive Payments, Electronic Health Record (EHR) Incentive Program Registration and Attestation System, also known as the National Level Repository (NLR) and initiates payment from the MMIS.

## 2.3 As-Is MEHRS/eScript – Medicaid Electronic Health Records System and e-Prescribing System

#### 2.3.1.1 Background

DOM acquired the MEHRS/eScript product from the vendor Shared Health, providing electronic health record and e-Prescribing services for the Medicaid providers in the State of Mississippi. The MEHRS/eScript solution is currently running version 7, offered in a hosted, Software as a Service (SaaS) model from the Shared Health data center. The MEHRS/eScript solution resides in the Shared Health data center in Chattanooga, Tennessee. Medicaid providers securely access the MEHRS/eScript system via an Internet connection and a web browser, and can access the features and functionality of an EHR and e-Prescribing service.

Current features of the MEHRS/eScript solution include:

- A claims-based clinical record, including procedures, diagnosis, medications, and immunizations (performed by Medicaid providers);
- Self-reported immunizations via an integrated portal;
- Self-reported medications via an integrated portal;
- Portal-entered vital statistics, including blood pressure, BMI, weight, blood type, etc.;
- Portal-entered allergies;
- Secure provider messaging from MEHRS/eScript provider to MEHRS/eScript provider;
- Clinical analytics, including identifying health conditions and care opportunities for each Medicaid beneficiary; and
- e-Prescribing via the eScript (Allscripts) solution with support for drug interactions and contraindications.

As of July 2011, MEHRS/eScript has a significant adoption rate among Medicaid providers after less than one year of being in production (MEHRS/eScript went into production in summer, 2010); out of approximately17,000 Mississippi-based Medicaid providers, 2,006 providers and approximately 2,200 of their clinical staff are registered for the MEHRS/eScript solution.

Adoption has progressed smoothly and very few Medicaid beneficiaries have opted out of the MEHRS/eScript system. A broad array of Medicaid beneficiaries are represented in MEHRS/eScript, however, due to the current MDHS privacy policy, the records of foster children are not visible to users of the system.

#### 2.3.1.2 Connectivity

MEHRS/eScript is integrated with the Xerox MMIS via a feed from the MMIS claims data (weekly), and member and provider files (daily), via a secure (SSL) Internet-based connection using the GrabIt tool. MMIS data and file extracts are moved via GrabIt into MEHRS/eScript, where data transformation takes place, including integration of the data with the internal MEHRS/eScript enterprise master patient index (eMPI), provided by Initiate. The MEHRS/eScript database houses up to 36 months of beneficiary data. There is no financial data or eligibility data in the MEHRS/eScript system.

In addition to access by providers, the DOM staff accesses the MEHRS/eScript system via a secured (SSL) Internet connection, and all interaction with the MEHRS/eScript systems by DOM staff is via a browser-based workflow.

The MEHRS/eScript is in the process of being upgraded to an ONC certified EHR with support for the Continuity of Care Document (CCD), in alignment with the Office of the National Coordinator of Health Information Technology (ONC) Certification for Meaningful Use.

## 2.4 As-Is Mississippi State Health Information Network MS-HIN Interoperability

#### 2.4.1.1 Background

The Mississippi State Health Information Network, MS-HIN, is in the stage of provider and stakeholder adoption, and has awarded the technical infrastructure contract to the vendor Medicity. Plans include rolling out a Direct Project messaging platform to support Meaningful Use along with key other HIE components (Record Locator Service, or RLS, clinical data exchange in CCD format, etc.). Plans for MS-HIN also include an NwHIN Exchange Gateway, which could be utilized as the connectivity methodology between MS-HIN and DOM, as NwHIN Exchange supports both clinical and administrative transactions. There have been preliminary discussions on the use of NwHIN as a connectivity methodology between MS-HIN and DOM; MS-HIN and DOM also need to complete data sharing agreements inclusive of MS-HIN providers.

#### 2.4.1.2 Connectivity

There is currently limited connectivity to MS-HIN (provided from DOM to the vendor Medicity and not directly to MS-HIN). DOM has been transmitting batch Medicaid medication history from the Shared Health MEHRS/eScript system to the Mississippi Coastal Health Information Exchange (MSCHIE) for use by providers. MSCHIE is the predecessor HIE of MS-HIN.

DOM has identified several use cases that the NwHIN to NwHIN (DOM to MS-HIN) connectivity model can support, including:

- Direct messaging interoperability between the upgraded MEHRS/eScript System and MS-HIN (HISP to HISP interoperability) to facilitate Direct messaging between MEHRS users, Medicaid Providers, and MS-HIN users;
- Interoperability with the MSDH MIIX System, including feeding MIIX data into the upgraded MEHRS/eScript System;
- ADT Feed interoperability with MS-HIN to support MEHRS/eScript users and Medicaid providers;
- Laboratory Result interoperability with MS-HIN and MS-HIN connected laboratories, to support Medicaid providers and MEHRS users;
- Radiology Reports interoperability with MS-HIN and MS-HIN connected laboratories, to support Medicaid providers and MEHRS users;
- Interoperability to support the MSDH Patient Centered Medical Home (PCMH);
- Clinical data exchange with MS-HIN and MS-HIN users.

## 2.5 As-Is Mississippi State Department of Health Interoperability

#### 2.5.1.1 Background

The new DOM MES and the upgraded MEHRS/eScript deployments will support additional clinical data sources, and as such, the upgraded MEHRS/eScript System requires the ability to connect with the MSDH systems/infrastructure to support the following use-cases:

- Bi-directional immunization data exchange between the MSDH Mississippi Immunization Information Exchange system (MIIX) and the upgraded MEHRS/eScript System;
- ADT Feeds to support MEHRS/eScript users;
- Interoperability with the MSDH Patient Centered Medical Home.

#### 2.5.1.2 Connectivity

DOM (the new MMIS and MEHRS/eScript) is planning for connectivity to MDHS through a connection to MS-HIN, via the DOM Interoperability Platform.

## 2.6 As-Is Other State Agency Interoperability

#### 2.6.1.1 Background

DOM has several use-cases for connecting to Mississippi State Agencies internally, including the following connections:

- The Mississippi Department of Human Services (MDHS);

- The Mississippi Department of Mental Health (DMH);
- The Mississippi Department of Rehabilitation Services (MDRS);
- The Mississippi Department of Corrections (MDOC); and
- The Mississippi Department of Employment Security (MDES).

#### 2.6.1.2 Connectivity

It should be noted that DOM can and has established some limited connectivity to these agencies via the MS ITS network and connections. DOM is still evaluating the current connectivity to these agencies against future needs, and options, such as utilizing the connection to MS-HIN (via the DOM Interoperability Platform).

## 2.7 As-Is Federal Agency and Surrounding State HIE Interoperability

#### 2.7.1.1 Background

DOM has several unique workflows and use-cases for federal agency interoperability, as well as surrounding State HIE interoperability and connectivity.

Specific DOM use-cases include the following. However, most of these use-cases are not currently supported due to a lack of a common connectivity methodology:

- Connectivity and interoperability with CMS for Recovery Audit Contractor (RAC) documentation exchange as well as emerging CMS transactions (x12 EDI, etc.);
- Connectivity and interoperability for the DOM Interoperability Platform with SSA to support the use-case of Social Security Administration Encounters (SSI monthly enrollees) and other data exchanges, including CCD exchange if necessary;
- Connectivity and interoperability with the United States Department of Defense (DoD) for the query and bi-directional exchange of CCDs for benefit verification as well as for coordination of care;
- Connectivity and interoperability with the United States Veteran's Administration (VA) for the query and bi-directional exchange of CCDs for benefit verification as well as for coordination of care;
- Connectivity and interoperability with the United States Indian Health Services (IHS) for the query and bi-directional exchange of CCDs for benefit verification as well as for coordination of care;
- Connectivity and interoperability with the State of Louisiana HIE for the query and bi-directional exchange of CCDs for coordination of care as well as provider administrative transaction support in the Mississippi Medicaid program (claims, eligibility, etc.);
- Connectivity and interoperability with the State of Arkansas HIE for the query and bi-directional exchange of CCDs for coordination of care as well as provider

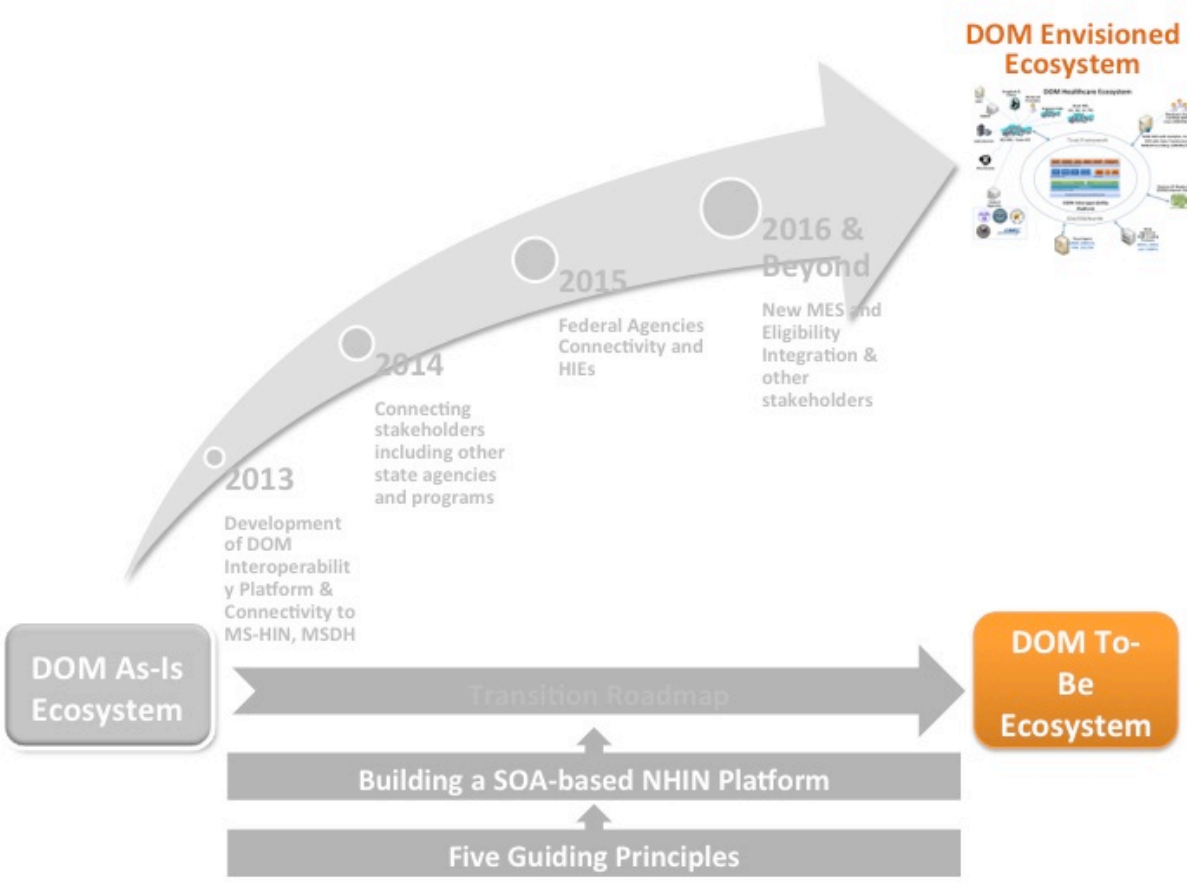
administrative transaction support in the Mississippi Medicaid program (claims, eligibility, etc.);

- Connectivity and interoperability with the State of Alabama HIE for the query and bi-directional exchange of CCDs for coordination of care as well as provider administrative transaction support in the Mississippi Medicaid program (claims, eligibility, etc.); and
- Connectivity and interoperability with the State of Tennessee HIE for the query and bi-directional exchange of CCDs for coordination of care as well as provider administrative transaction support in the Mississippi Medicaid program (claims, eligibility, etc.).

#### 2.7.1.2 Connectivity

Currently, DOM has limited connectivity to federal agencies and no connectivity to surrounding state Health Information Exchanges. Connectivity exists to CMS; however, this connectivity is via a dedicated connection to the CMS network backbone.

# *3* DOM Connectivity and Interoperability Strategy – DOM To-Be Ecosystem




This section describes the vision of DOM for adoption, promotion, and enhancement of DOM systems and for promotion of interoperable exchange of health information between DOM and DOM's trading partners and stakeholders. This section also describes the goals and objectives and additional functionality that is planned to promote interoperability and alignment with federal initiatives.

## 3.1 The State of Mississippi DOM Ecosystem To-Be

The DOM vision is to implement a modern and flexible connectivity methodology and framework to enable bi-directional exchange of clinical and administrative transactions with trading partners and stakeholders. A SOA-based Interoperability Platform will be utilized by DOM to create a DOM Healthcare Ecosystem that will support interoperable exchange of health information with DOM trading partners such as: MS-HIN, State Agencies, federal agencies, and border state HIEs (Louisiana, Arkansas, Tennessee, and Alabama).

The DOM ecosystem is defined as a connected healthcare community of the DOM and various DOM trading partners and stakeholders. The DOM ecosystem is the ultimate outcome of DOM's transition from the As-Is environment to the To-Be environment.

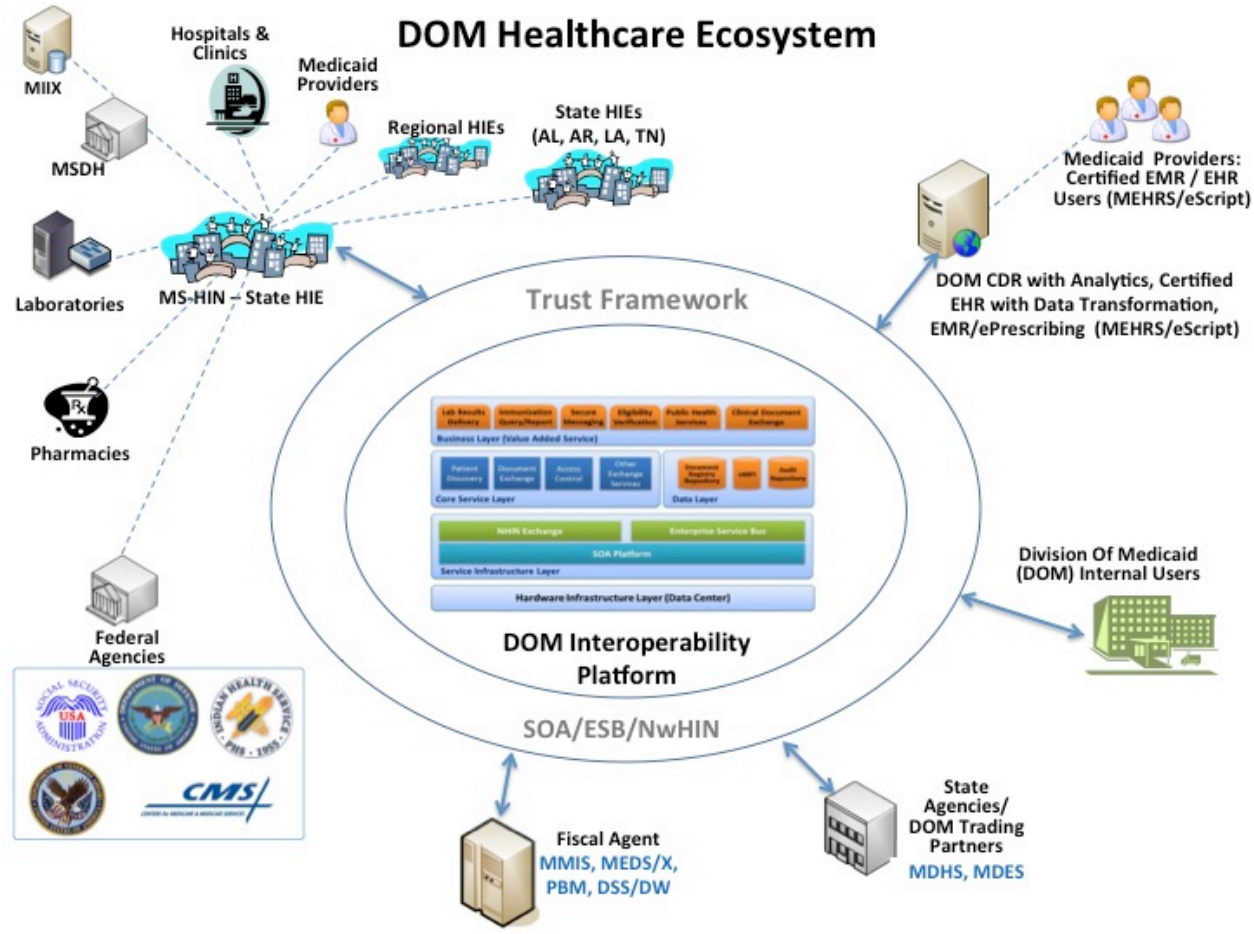



**Figure 13: DOM Healthcare Ecosystem**[6]

The strategic goals of the State of Mississippi DOM Ecosystem include, but are not limited to:

- Increased Interoperability: Ensuring syntactic and semantic interoperability for exchange of health information
- Increased Business and Technology Alignment: Ensuring alignment with various federal and State business/technical requirements and guidance for information technology systems; and
- Shared resources: Eliminating redundant efforts in Exchanges, Medicaid and other programs.

[6] See Figure 10 for expanded view of DOM Interoperability Platform.

**Table 3: DOM Ecosystem: Components, Trading Partners and Stakeholders**

| Players | Description | Notes |
|---|---|---|
| DOM | Mississippi Division of Medicaid, governance body for building and operating DOM ecosystem. | |
| Medicaid Providers | | Via MEHRS/eScript or MS-HIN |
| DOM Interoperability Platform | SOA-based Interoperability Platform with ESB and supporting the Nationwide Health Information Network. | Details in section 3.2.3 |
| MS-HIN | Mississippi Statewide HIE. | |
| State Agencies | Mississippi State Agencies including but not limited to MDHS, MDRS, MDOC, DMH, and MDES. | |
| Fiscal Agent | MMIS/PBM, DSS/DW, Eligibility System, SLR. | |
| MEHRS/eScript | Medicaid EHR System and e-Prescribing | |
| SLR | State Level Registry | |
| HIX | Health Care Marketplace | |
| Non-Medicaid Providers | | Via MS-HIN |
| Federal Agencies | Federal trading partners including but not limited to the Social Security Administration (SSA), VA, CMS, DoD, IHS, and Centers for Disease Control and Prevention (CDC. | Via MS-HIN |
| Border State HIEs | The States of Louisiana, Arkansas, Alabama, and Tennessee. | Via MS-HIN |
| Regional HIEs | Regional health information organizations such as Mississippi Health Partners and Delta Health Alliance. | Via MS-HIN |
| MSDH | Mississippi State Department of Health, which includes MIIX, Hospital Discharge Summary, Syndromic Surveillance, Birth and Death Statistics, Patient Centered Medical Home. | Via MS-HIN |
| Pharmacies | | Via MS-HIN |
| Laboratories | | Via MS-HIN |
| Hospitals and Clinics | | Via MS-HIN |
| Trust Framework | Policies and infrastructure supporting Legal, Security and | |

| | | |
|---|---|---|
| | Privacy | |

### 3.1.1 High-Level Architecture for DOM Ecosystem

The following diagram shows the high-level system architecture for the DOM ecosystem. It includes four core component architectures: 1) Business and Application Architecture; 2) Data Architecture; 3) Technical Architecture; and 4) Privacy and Security Architecture along with desired features. These four core component architectures are loosely coupled and interact with each other to realize a healthcare ecosystem. Desired system features (such as interoperability, scalability, efficiency and cost effectiveness, and quality of service) are realized with coordination of four architecture components.

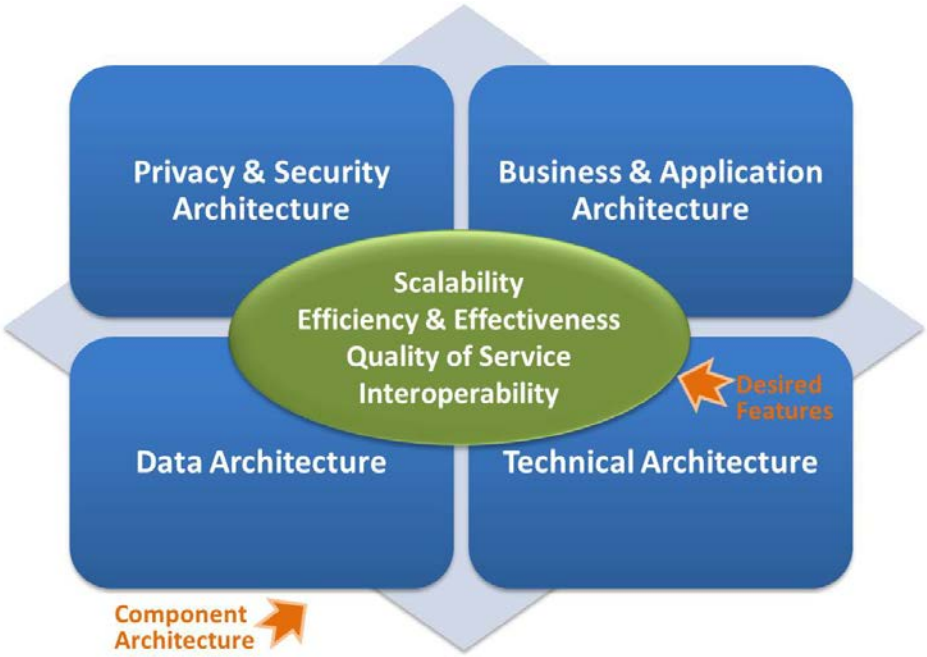



**Figure 14: High-Level Architecture for Healthcare Ecosystem**

#### 3.1.1.1 Business and Application Architecture

The Business and Application Architecture should include a Core Service stack, comprised of core components and subsystems, supporting three core functionalities for health information exchange: 1) Privacy and Security, 2) Patient Discovery, and 3) Administrative/Clinical Data Exchange. This core service stack should be integrated with various health information systems via standardized APIs and adapters. On top of the Core Service stack, services implementing business workflows (use-cases) and applications are deployed.

#### 3.1.1.2 Data Architecture

The Data Architecture should address syntactic and semantic interoperability (content exchange and vocabulary standards) for health information exchange including but not limited to: 1) vocabulary mapping engine; 2) data conversion/transformation, data consolidation; and 3) support of both structured and unstructured data.

- Structured Data: Data which is structured with an abstract data model (e.g., HL7 CDA/CCD, ASTM CCR etc.)
- Unstructured Data: Usually computerized information without a data model (or with a data model that is not easily usable by a computer program)

#### 3.1.1.3 Technical Architecture

The Technical Architecture provides core functionalities supporting business use-cases/workflows, and services. It includes components for establishing a common, predictable, secure communication between DOM and DOM trading partners. The DOM SOA-based Interoperability Platform, which leverages SOA, ESB and NwHIN, is the core of the technical architecture.

#### 3.1.1.4 Privacy and Security Architecture

The Privacy and Security Architecture provides infrastructure and functionalities ensuring secure exchange of health information and protection of privacy.

### 3.1.2 Desired Characteristics of the DOM Ecosystem

The table below shows a list of desired technical characteristics for the DOM Ecosystem.

**Table 4: Desired Characteristics of DOM Ecosystem**

| Criteria | Description |
|---|---|
| Flexibility | The architecture and system components should be easy to modify for integration with other applications, software components, and environments. For flexibility, followings should be taken into consideration:<br>▪ Flexible Programming: Language Independent + Platform Independent<br>▪ Architectural Styles: Support various architectural design: for example, peer-to-peer, distributed and centralized<br>▪ Reusable components with minimum modification |

| Criteria | Description |
|---|---|
| Interoperability & Interoperable Standards | The architecture and system components should be designed to assure syntactic and semantic interoperability for exchange of health information. The architecture should be designed by:<br>▪ Adopting existing and evolving standards addressing interoperability for health information exchange<br>▪ Adopting HIT and standards adopted and/or recommended by the Department of Health and Human Services (HHS), ONC, Federal Health Architecture (FHA), and CMS<br>o Vocabulary Standards<br>o Content Exchange Standards<br>o Transport Standards<br>o Privacy and Security Standards |
| Scalability | The architecture should be designed to scale up (rescaling in size and volume) as the DOM ecosystem grows with more stakeholders, additional connectivity, rapidly growing transaction/data volumes, newly added services supporting business use cases and workflows. |
| Privacy and Security | The architecture should ensure protection of patients' privacy and the security of the information exchanged between stakeholders. This requires the following:<br>▪ Coordination with applicable National Institute of Standards and Technology (NIST) and Federal Information Processing Standards (FIPS) standards<br>▪ Coordination with HIPAA<br>▪ Coordination with HITECH Act<br>▪ Coordination with Data Use and Reciprocal Support Agreement (HHS/ONC/NwHIN) |
| Cost Effective | The architecture must be designed for sustainability |
| Other Quality of Service (QoS) Metrics | The architecture should also be designed considering other QoS elements including but not limited to:<br>▪ Performance<br>▪ Availability<br>▪ Ease of Use: The architecture must be designed in a way that is easy to use, seamless, and have the same functionality and appearance to stakeholders. |

| Criteria | Description |
|---|---|
| Business Use-Case and Workflows | The architecture should ensure offerings of business use-cases, workflows along with services for the following stakeholders including but not limited to:<br>▪ HIE - DOM (MS-HIN and border state HIEs)<br>▪ DOM - State Agencies (MDHS, MDOC, MDRS MDES and DMH)<br>▪ DOM - MID<br>▪ DOM - MSDH<br>▪ Medicaid Provider - Non-Medicaid Provider<br>▪ DOM - Federal Agencies |

## 3.2 Business and Technical Considerations

This section details the business and technical requirements and recommendations that DOM must consider for Medicaid Information Technology (IT) systems.

### 3.2.1 Technical Requirements and Guidance

DOM must ensure alignment with, and incorporation of various technical requirements and/or recommendations for Medicaid Information Technology (IT) Systems.

#### 3.2.1.1 CMS Enhanced Funding Requirements for eligibility systems: Seven Conditions and Standards

CMS has developed requirements for states to receive enhanced (90/10) funding for eligibility systems using seven conditions and standards. The following table shows the seven conditions and standards with their descriptions.

**Table 5: Enhanced Funding Requirements for Eligibility Systems**

| Conditions and Standards | Description | Notes |
|---|---|---|
| Modularity Standard | Use of a modular, flexible approach to systems development, including the use of open interfaces and exposed application programming interfaces; the separation of business rules from core programming; and the availability of business rules in both human and machine readable formats.<br>▪ Use of Systems Development Lifecycle methodologies.<br>▪ Identification and description of open interface.<br>▪ Use of business rules engines.<br>▪ Submission of business rules to a HHS-designated repository. | |

| Conditions and Standards | Description | Notes |
|---|---|---|
| MITA Conditions | Align to and advance increasingly in MITA maturity for business, architecture, and data. States will be expected to continue to make measureable progress in implementing their MITA Roadmaps.<br>▪ MITA Self Assessments.<br>▪ MITA Roadmaps.<br>▪ Concepts of Operations and Business Process Models. | |
| Industry Standards Conditions | Ensure alignment with and incorporation of industry standards: 1) HIPAA security, privacy, and transaction standards; 2) accessibility standards; and 3) states would be required to update systems and practices to adhere to revolving industry standards.<br>▪ Identification of Industry Standards.<br>▪ Incorporation of industry standards in requirements, development, and testing phases. | |
| Leverage Conditions | Promote sharing, leverage, and reuse of Medicaid technologies and systems within and among states.<br>▪ Multi-state efforts.<br>▪ Availability for reuse.<br>▪ Identification of open source, cloud-based and commercial products.<br>▪ Customization.<br>▪ Transition and retirement plans. | |
| Business Results Conditions | Support accurate and timely processing of claims (including claims of eligibility), adjudications, and effective communications with providers, beneficiaries, and the public.<br>▪ Degree of automation.<br>▪ Customer Service.<br>▪ Performance standards and testing. | |
| Reporting Conditions | Produce transaction data, reports, and performance information that would contribute to program evaluation, continuous improvement in business operations, and transparency and accountability. | |

| Conditions and Standards | Description | Notes |
|---|---|---|
| Inter-operability Conditions | Ensure seamless coordination and integration with the Exchange (whether run by the State or federal government), and allow interoperability with health information exchanges, public health agencies, human services programs, and community organizations providing outreach and enrollment assistance services.<br>▪ Interactions with the Exchange.<br>▪ Interactions with other entities. | States to ensure interoperability between exchanges and public health agencies, human services programs and community organizations |

#### 3.2.1.2 CCIIO and CMS Guidance for Exchange and Medicaid Information Technology (IT) Systems

CMS published a guidance document to help states achieve interoperability between information technology (IT) components in the federal and State entities that work together to provide health insurance coverage through the Exchange, Medicaid or CHIP Programs. This is the combined work of the Center for Consumer Information and Insurance Oversight (CCIIO) and CMS. In summary, systems developed or enhanced to support functions of the Exchange should adhere to the following architectural principles when possible: Standards and Architecture Guidance.

**Table 6: Standards and Architecture Guidance**

| Standards | Description | Notes |
|---|---|---|
| HIPAA Transaction Standards | ▪ Administrative simplification provisions that required HHS to adopt national standards for electronic healthcare transactions and code sets, unique employee and provider identifiers, and protection of security and privacy.<br>▪ IT projects undertaken by states in support of the Affordable Care Act should comply with all relevant HIPAA standards, including protection of personal health information. | |
| Additional Transaction Standards in the Affordable Care Act | ▪ Section 1104 of the ACA requires HHS to adopt a single set of operating rules for each HIPAA transaction.<br>▪ Section 1561 includes development of interoperable and secure standards and protocols for enrollment.<br>▪ CMS will design and develop an information exchange model and tools that are fully compliant with National Information Exchange Model (NIEM) requirements as part of Exchange, Medicaid, and CHIP operations.<br>▪ States collaborate using the NIEM and unified form to facilitate the enrollment process and common data exchange. | |
| Standards for | ▪ Enrollment and eligibility systems should be designed to meet the diverse needs of users (e.g., consumers, state | |

| | | |
|---|---|---|
| Accessibility | personnel, other third-party assisters) without barriers or diminished function or quality.<br>▪ States to follow either the 508 guidelines or guidelines that provider greater accessibility to individuals with disabilities. | |
| Security and Privacy | ▪ In designing their information systems, agencies should also be aware of State laws that impose additional restrictions on the sharing of sensitive health information.<br>▪ HIPAA Privacy and Security Rules.<br>▪ Recommend to leverage NIST's security guidance (NIST's Special Publications and NIST guidance to implementing the HIPAA Security Rule). | |
| Other Standards | ▪ IT development projects should consider and apply NIST standards and guidelines developed by NIST for federal computer systems that extend beyond security and privacy as appropriate. | |
| **Architecture Guidance** | | |
| System Integration | ▪ Provide high-level integration of process flow and information flow with such business partners as navigator, health plans, small businesses, brokers, employers, and others.<br>▪ Apply a modular, flexible approach to systems development, including the use of open interfaces and exposed application programming interfaces, and the separation of business rules from core programming, available in both human and machine-readable formats.<br>▪ Ensure seamless coordination between Medicaid, CHIP and the Exchange, and allow interoperability with health information exchanges, public health agencies, human services programs, and community organizations providing outreach and enrollment assistance services. | |
| Service-Oriented Architecture | ▪ Employ Web Services Architecture/Service-Oriented Architecture methodologies for system design and development and to ensure standards-based interfaces to link partners and information at both federal and State levels.<br>▪ Employ common authoritative data sources and data exchange services, such as but not limited to, federal and State Agencies or other commercial entities.<br>▪ Employ open architecture standards (non-proprietary) for ease of information exchanges. | |
| Isolation of Business Rules | ▪ Use standards-based business rules and a technology-neutral business rule repository.<br>▪ Enable the business rules to be accessible and adaptable by other states. | |
| Security and Privacy | ▪ Support the application of appropriate controls to provide security and protection of enrollee and patient privacy. | |
| Efficient and Scalable | ▪ Leverage the concept of a shared pool of configurable, secure computing resources (e.g., Cloud Computing). | |

| | | |
|---|---|---|
| Infrastructure | | |
| Transparency, Accountability and Evaluation | ▪ Produce transaction data and reports in support of performance management, public transparency, policy analysis and program evaluation.<br>▪ Leverage Commercial Off-the-Shelf business intelligence functionality to support the development of new reports and respond to queries. | |
| System Performance | ▪ Ensure quality, integrity, accuracy, and usefulness of functionality and information.<br>▪ Provide timely information transaction processing, including maximizing real-time determinations and decisions.<br>▪ Ensure systems are highly available and respond in a timely manner to customer requests. | |

#### 3.2.1.3 Alignment with MITA Mission, Goals, and Objectives

CMS expects that the SMHP is fully aligned with MITA's mission, goals, and objectives that support the Medicaid mission and goals. MITA and Medicaid's mission and goals are also aligned with federal standards including the FHA and the NwHIN initiative. Furthermore, CMS expects that states will bring their business/technical capabilities in line with MITA Maturity Levels 3, 4, and 5, at which time states will agree on common data standards, jointly developed business services, and adopt NwHIN standards for interoperability and data.

- MITA Maturity Level 3 [Clinical Data]: Data standards are adopted nationally. Shared repositories of data improve efficiency of access and accuracy of data used, resulting in better business process results.
- MITA Maturity Level 4 [Clinical Data]: Access to standardized clinical data through regional data exchange enhances the decision-making process. With clinical evidence, decisions can be immediate, consistent, and decisive.
- MITA Maturity Level 5 [National Interoperability/NwHIN]: Data exchange on a national scale optimizes the decision-making capabilities of the state agency.

DOM has targeted achievement of MITA Maturity Levels 3, 4, and 5 by adopting and aligning with federal standards, including NwHIN.

#### 3.2.1.4 Federal HIT-Enabled Health Reform (Meaningful Use of EHR Technology)

The Department of Health and Human Services (HHS), ONC, and the Centers for Medicare and Medicaid Services (CMS) have released the final rule for Stage One Meaningful Use, specifying the related initial set of standards, implementation specifications, and certification criteria for Electronic Health Record (EHR) technology.

The following sections describe standards and implementation specifications adopted for Meaningful Use.

#### 3.2.1.5 Adopted Standards for Meaningful Use

**Table 7: Category for Standards to Support Meaningful Use**

| Category | Description |
|---|---|
| Vocabulary Standards | Standardized nomenclatures and code sets used to describe clinical information such as problems and procedures, medications, and allergies etc. |
| Content Exchange Standards | Standards used to share clinical contents between healthcare stakeholders: patient record summaries, prescriptions, structured clinical documents, and administrative transactions. |
| Transport Standards | Standards used to establish a common, predictable, secure communication channel for exchange of clinical contents between health information systems. |
| Privacy and Security Standards | Standards related security and privacy: Authentication, Authorization, Access Control, and Auditing. |

#### 3.2.1.6 Vocabulary Standards

The State of Mississippi should adhere to semantic interoperability and standards for coding systems.

**Table 8: Vocabulary Standards**

| Purpose | | Meaningful Use Stage 1 | Meaningful Use Stage 2 |
|---|---|---|---|
| Electronic Prescribing | | National Library of Medicine's RxNorm | RxNorm |
| Patient Summary Record | Medication Allergy List | No Standard | Unique Ingredient Identifier (UNII) |
| | Medication List | National Library of Medicine's RxNorm | RxNorm |
| | Problem List | ICD-9-CM or SNOMED-CT | ICD-10-CM or SNOMED- |

| | | | |
|---|---|---|---|
| | | | CT |
| | Procedures | 45 CFR 162.1002 (a)(2) and (a)(5) | |
| | Lab Order and Results | LOINC | LOINC |
| Lab Results reporting to Public Health | | LOINC | LOINIC, UCUM, SNOMED-CT |
| Surveillance Reporting to Public Health | | HL7 2.3.1 or HL7 2.5.1 | GIPSE |
| Submission to Immunization Registries | | CVX | CVX |

#### 3.2.1.7 Content Exchange Standards

**Table 9: Content Exchange Standards**

| Purpose | Meaningful Use Stage 1 | Meaningful Use Stage 2 |
|---|---|---|
| Electronic Prescribing | NCPDP SCRIPT 8.1 or SCRIPT 10.6 | NCPDP SCRIPT 10.6 |
| Drug Formulary Check | NCPDP Formulary and Benefits Standards 1.0 | NCPDP Formulary and Benefits Standards 1.0 |
| Patient Summary Record | HL7 CDA R2 CCD Level 2 (HITSP C32) or ASTM CCR | TBD |
| Administrative Transactions | HIPAA Transaction Standards ASC X12N or NCPDP | HIPAA Transaction Standards ASC X12N or NCPDP<br>▪ ASC X12N 270/271<br>▪ ASX X12N 837 (Dental, Professional, and Institutional)<br>▪ Other transactions |
| Quality Reporting | HL7 QRDA | TBD |
| Lab Results reporting to Public Health | HL7 2.5.1 | TBD |
| Surveillance Reporting to Public Health | HL7 2.3.1 or 2.5.1 | TBD |
| Submission to Immunization Registries | HL7 2.3.1 or 2.5.1 | TBD |

#### 3.2.1.8 Transport Standards

- Simple Object Access Protocol (SOAP)
- Representational State Transfer
- Hypertext Transfer Protocol (HTTP)
- eXtensible Markup Language (XML)

#### 3.2.1.9 Privacy and Security Standards

**Table 10: Privacy and Security Standards**

| Purpose | Adopted Standards |
|---|---|
| General Encryption and Description of Electronic Health Record | FIPS 197 AES. |
| Encryption/Decryption of Electronic Health Information for Exchange | Secure communication channel – Transport Layer Security (TLS), IPv6, IPv4 with IPsec. |
| Audit Logging | Minimum data elements: date, time, patient ID, user ID. |
| Data Integrity | SHA-1 or higher hashing algorithm FIPS PUB Secure Hash Standard (FIPS PUB 180-3). |
| Cross Enterprise Authentication | IHE Cross Enterprise User Assertion (XUA) with Security Assertion Markup Language (SAML). |
| Record Treatment, Payment, and Health care operations disclosures | Minimum data elements: date, time, patient ID, user ID, and a description of the disclosure. |

#### 3.2.1.10 Federal Requirements for Security

The HHS secretary has adopted the following standards for health information technology to protect electronic health information created, maintained, and exchanged:[7]

> *(a) Encryption and decryption of electronic health information—*
>
> *(1) General.* Any encryption algorithm identified by the National Institute of Standards and Technology (NIST) as an approved security function in Annex A of the Federal Information Processing Standards (FIPS) Publication 140–2 as shown in the table below.

[7] 45 CRF Part 170 – *Health Information Technology: Initial Set of Standards, Implementation Specifications, and Certification Criteria for Electronic Health Record Technology; Final Rule*

**Table 11: NIST Encryption Algorithm**

| Security Functions | Algorithms |
|---|---|
| Symmetric Key | Advanced Encryption Standard (AES), Triple-DES Encryption Algorithm and Escrowed Encryption Standard. |
| Asymmetric Key | Digital Signature Standard – DSA, RSA and ECDSA. |
| Secure Hash Standard | SHA-1, SHA-224, SHA-256, SHA-384 and SHA-512. |
| Random Number Generation | Deterministic Random Number Generators listed in NIST FIPS 140-2 Annex C. |
| Message Authentication | Triple-DES MAC, CMAC, CCM, GCM, GMAC and HMAC. |
| Key Management | NIST Recommendation for Key Derivation Using Pseudorandom Functions, SP 800-108. |

*(2) Exchange.* Any encrypted and integrity protected link[8].

*(b) Record actions related to electronic health information.*

The date, time, patient identification, and user identification must be recorded when electronic health information is created, modified, accessed, or deleted; and an indication of which action(s) occurred and by whom must also be recorded.

*(c) Verification that electronic health information has not been altered in transit.*

A hashing algorithm with security strength equal to or greater than SHA–1 (Secure Hash Algorithm (SHA–1) as specified by the National Institute of Standards and Technology (NIST) in FIPS PUB 180–3 (October, 2008)) must be used to verify that electronic health information has not been altered.

*(d) Record treatment, payment, and healthcare operations disclosures.*

The date, time, patient identification, user identification, and a description of the disclosure must be recorded for disclosures for treatment, payment, and healthcare operations, as these terms are defined at 45 Code of Federal Regulations (CFR) 164.501.

[8] Meaning: Transmit electronic health information over an encrypted and integrity protected link.

### 3.2.2 Adoption of Various Federal and Industry Standards and Technology

DOM must ensure adoption and alignment with various federal/State and industry standards and technology including, but not limited to:

- MITA Framework 3.0 (once approved);
- NwHIN: NwHIN Exchange and Direct Project;
- NIEM;
- SOA; and
- Cloud Computing .Computing.

The following technologies are recommended as a foundation for building the MS DOM Ecosystem.

- SOA
- Cloud Computing technology along with Virtualization technology
    - Infrastructure as a Service (IaaS)
    - Platform as a Service (PaaS)
    - SaaS
- Public Key Infrastructure (PKI)
- Adoption of Open Source solutions with on-going development and support
- Syntactic and Semantic Interoperability
- Adoption of Enterprise Service Bus (ESB) pattern for integration of heterogeneous health information systems
- SaaS based service offerings

**Table 12: Proposed MS DOM Ecosystem Technology**

| **Desired Characteristics** | **Proposed Technology** | | | | | | |
|---|---|---|---|---|---|---|---|
| | SOA | Federated Identity Management | Cloud Computing/ Virtualization | PKI | Adoption of Open Source Solutions | Adoption of Standards | ESB |
| Flexibility | √ | | √ | | √ | √ | √ |
| Scalability | √ | √ | √ | | | √ | √ |
| Interoperability | √ | √ | | √ | | √ | √ |
| Privacy and Security | √ | √ | | √ | | √ | |
| Cost Saving | | | √ | | √ | | √ |
| Performance | | | √ | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Availability | √ | | √ | | | | |
| Ease of Use | | | √ | | | | |

### 3.2.3 Adoption of Service Oriented Architecture and Cloud Computing

#### 3.2.3.1 Service Oriented Architecture

As described in the previous sections, SOA plays a key role (overlapping requirements and architecture guidance) in the development of new information technology systems. DOM must adopt SOA paradigm when developing a next generation Medicaid information technology system.

#### 3.2.3.2 SOA Principles

When designing the DOM Interoperability Platform, DOM must ensure compliancy with the following SOA guiding principles defining the rules for development, maintenance, and usage of SOA frameworks.

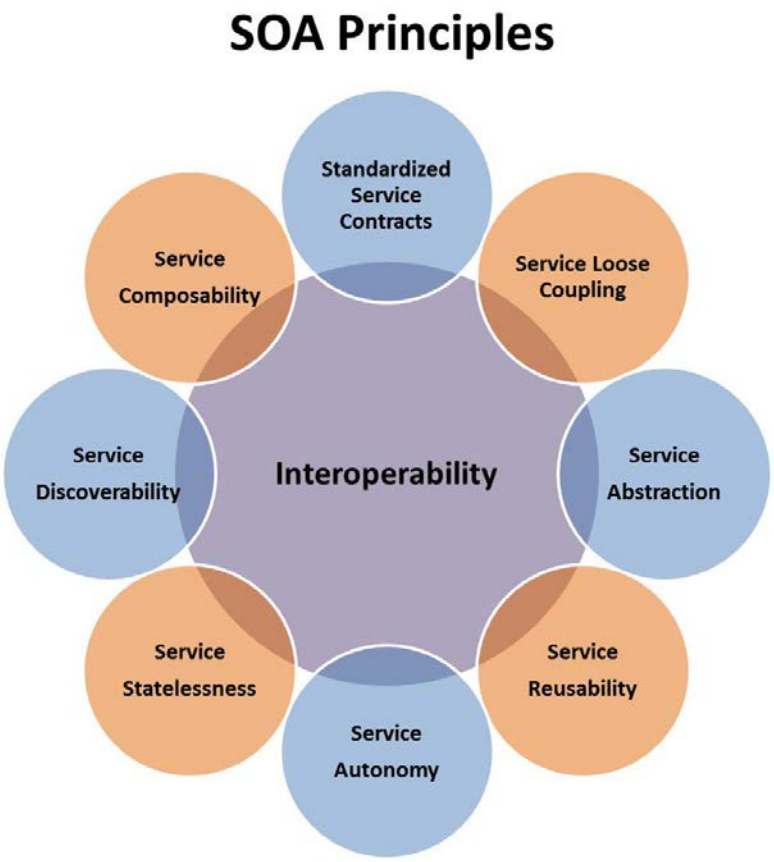



**Figure 15: SOA Principles**

**Table 13: SOA Principles and Frameworks**

| Principles | Description |
|---|---|
| Standardized Service Contracts | Services adhere to a communications agreement, as defined collectively by one or more service-description documents. |
| Service Loose Coupling | Services maintain a relationship that minimizes dependencies and only requires that they maintain an awareness of each other. |
| Service Abstraction | Beyond descriptions in the service contract, services hide logic from the outside world. |
| Service Reusability | Logic is divided into services with the intention of promoting reuse. |
| Service Autonomy | Services have control over the logic they encapsulate. |
| Service Statelessness | Services minimize resource consumption by deferring the management of State information when necessary. |
| Service Discoverability | A design consideration to provide optimal scope and the right granular level of the business functionality in a service operation. |
| Service Composability | Services are effective composition participants regardless of the size and complexity of the composition. |
| Service-Orientation and Interoperability | A fundamental goal of applying service-orientation is for interoperability to become a natural by-product, ideally to the extent that a level of intrinsic interoperability is established as a common and expected service design characteristic.<br><br>Interoperability is fundamental to every one of the principles. Each of the eight principles supports or contributes to interoperability in some manner. |

#### 3.2.3.3 Recommended Generic SOA Architecture

The following diagram presents a generic SOA architecture that is recommended as a model for DOM SOA-based Interoperability Platform. It consists of seven layers:

1. Policy and Governance Layer
2. Security Layer
3. Metadata and Data Abstraction Layer (a/k/a Information Layer)
4. Data Service and Integration Layer
5. Services Layer
6. Process and Orchestration Layer
7. Monitoring and Management Layer

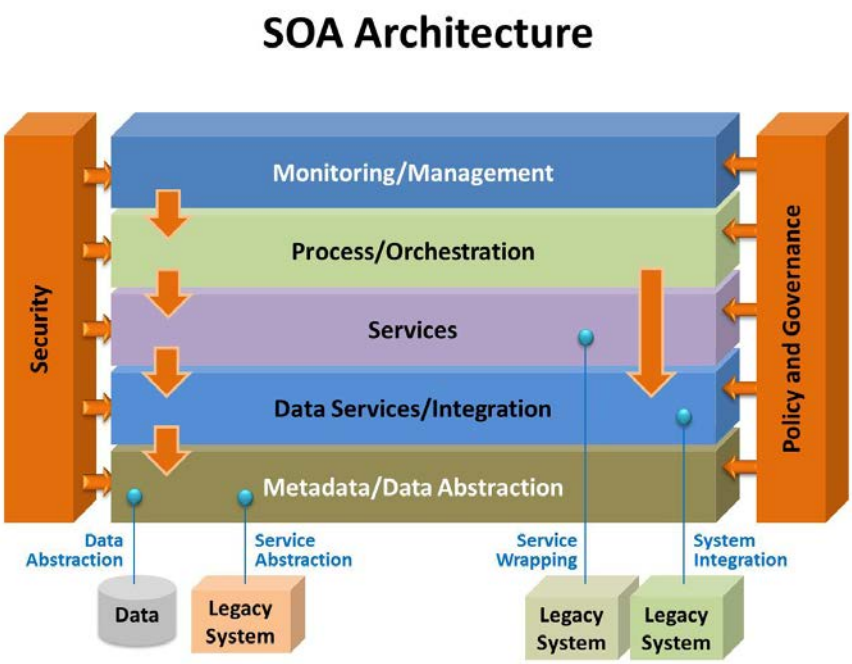



**Figure 16: SOA Architecture**

**Table 14: SOA Architecture**

| Layer | Description |
|---|---|
| Policy and Governance | Layer ensuring that the services and SOA solutions are adhering to the defined policies, guidelines and standards that are defined as a function of the objectives, strategies and regulations applied in the organization. |
| Security | Layer that ensures security at the multiple levels including but not limited to message-level security, application level security (such role based access control and authorization), audit, business level security. |
| Metadata / Data Abstraction | Abstraction of physical data layer: it provides a common logical data layer and schemas to other layers no matter how the physical data is structured. It will reduce costly changes to the physical database or core services. |
| Data Services and Integration | Layer that integrates backend systems, legacy systems, or other systems of business trading partners with the capability to mediate, transform, route and transport service requests from the service requester to the correct service provider. |
| Services | Layer that exposes legacy systems or other services as standardized services; service is defined and exposed as a reusable building block. |

| | |
|---|---|
| Process / Orchestration | Layer that defines and control how data flows and services interact to address business use-cases or workflows between systems, within and between organizations; Business Process Management. |
| Monitoring / Management | Layer that provides tools for monitoring and managing business processes, workflows, and services; Business Activity Monitoring. |

#### 3.2.3.4 Cloud Computing and Virtualization

Healthcare providers are under enormous pressure from healthcare reforms. The economic crisis has been forcing them to examine their IT spending and to consider new emerging technologies to reform their clinical operations. From the federal side, the recent American Recovery and Reinvestment Act (ARRA) calls for healthcare reform, full deployment and utilization of EHR by 2014. This challenge with investing time and resources into IT, to update its clinical processes and increase automation efficiencies, makes virtualization and Cloud Computing as a compelling model for improving quality patient care. The following section covers key benefits and features, and concerns and issues on adopting Cloud Computing in healthcare.

Cloud Computing along with virtualization has emerged as a next-generation computing technology stemming from various technologies and standards including cluster computing, grid computing, utility computing, Web Services, and others, mainly focusing on providing single, easy-to-use, virtualized view on a set of resources (data, computing power, network, and applications). "Cloud" can be defined in different ways. A cloud can be defined as a set of network-connected computers. In more detail, it can be defined as a set of platforms, infrastructure, and software applications working in tandem to provide various electronic services to the users over the Internet. In this world, everything (from low layer hardware such as CPU, memory, disk, network, etc. to high layer software applications) is a "service" which is accessible over the Internet. Services provided by clouds can be grouped into three categories: 1) SaaS – software applications provided as a service on demand; 2) PaaS – service platforms provided as a basis on which software applications are deployed; and 3) IaaS – storage and computing capabilities provided as a standardized service infrastructure mainly supporting SaaS and PaaS. Cloud Computing technology has many features such as elasticity, scalability, cost-efficiency ("pay as you use" model), high-throughput, and availability. More and more software applications along with business logics and data move from local computers or servers into Clouds at a different level – public cloud, private cloud, or hybrid.

> One widely recognized definition is NIST's definition on Cloud Computing:
>
> Cloud Computing is a model for enabling convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction. This

cloud model promotes availability and is composed of five essential **characteristics,** three **service models**, and four **deployment models.**[9]

**Table 15: Cloud Computing Characteristics, Service Models, and Deployment Models**

| | |
|---|---|
| **Essential Characteristics** | |
| On-demand Self-Service | Provisioning computing capabilities, such as server time and network storage, as needed automatically without requiring human interaction with each service's provider. |
| Broad Network Access | Capabilities are available over the network and accessed through standard mechanisms that promote use by heterogeneous thin or thick client platforms (e.g., mobile phones, laptops, and PDAs). |
| Resource Pooling | The provider's computing resources are pooled to serve multiple consumers using a multi-tenant model, with different physical and virtual resources dynamically assigned and reassigned according to consumer demand. There is a sense of location independence in that the customer generally has no control or knowledge over the exact location of the provided resources but may be able to specify location at a higher level of abstraction (e.g., country, state, or datacenter). Examples of resources include storage, processing, memory, network bandwidth, and virtual machines. |
| Rapid Elasticity | Capabilities can be rapidly and elastically provisioned, in some cases automatically, to quickly scale out and rapidly released to quickly scale in. To the consumer, the capabilities available for provisioning often appear to be unlimited and can be purchased in any quantity at any time. |
| Measured Service | Cloud systems automatically control and optimize resource use by leveraging a metering capability at some level of abstraction appropriate to the type of service (e.g., storage, processing, bandwidth, and active user accounts). Resource usage can be monitored, controlled, and reported providing transparency for both the provider and consumer of the utilized service. |
| **Service Models** | |
| Cloud Software as a Service (SaaS). | The capability provided to the consumer is to use the provider's applications running on a cloud infrastructure. The applications are accessible from various client devices through a thin client interface such as a web browser (e.g., web-based email). The consumer does not manage or control the underlying cloud infrastructure including network, servers, operating systems, storage, or even individual application capabilities, with the possible exception of limited user-specific application configuration settings. |
| Cloud Platform as a Service (PaaS). | The capability provided to the consumer is to deploy onto the cloud infrastructure consumer-created or acquired applications created using programming languages and tools supported by the provider. The consumer does not manage or control the underlying cloud infrastructure including network, servers, operating systems, or storage, but has control over the deployed applications and possibly application hosting environment configurations. |
| Cloud Infrastructure as a Service (IaaS). | The capability provided to the consumer is to provision processing, storage, networks, and other fundamental computing resources where the consumer is able to deploy and run arbitrary software, which can include operating systems and applications. The consumer does not manage or control the underlying cloud infrastructure but has control over operating systems, storage, deployed applications, and possibly limited control of select |

[9] P. Mell and T. Grance, "The NIST Definition of Cloud Computing," Version 15

| | |
|---|---|
| | networking components (e.g., host firewalls). |
| **Deployment Models** | |
| Private cloud | The cloud infrastructure is operated solely for an organization. It may be managed by the organization or a third party and may exist on premise or off premise. |
| Community Cloud | The cloud infrastructure is shared by several organizations and supports a specific community that has shared concerns (e.g., mission, security requirements, policy, and compliance considerations). It may be managed by the organizations or a third party and may exist on premise or off premise. |
| Public Cloud | The cloud infrastructure is made available to the general public or a large industry group and is owned by an organization selling cloud services. |
| Hybrid Cloud | The cloud infrastructure is a composition of two or more clouds (private, community, or public) that remain unique entities but are bound together by standardized or proprietary technology that enables data and application portability (e.g., cloud bursting for load-balancing between clouds). |

For healthcare providers of all sizes, Cloud Computing looks very promising mainly because it can bring a significant amount of cost reduction in running electronic medical record (EMR) applications, managing real-time high-throughput clinical workload, maintaining IT infrastructure, and introducing new clinical solutions and updates. A decision needs to be made between two extremes: building local computing infrastructure having data locally and keeping everything in a Cloud. For the big hospitals, they might want to adopt Cloud Computing to build a private Cloud. Medium size practices might want to invest in cloud-based infrastructure to take the burden of system administration off of internal IT. Solo or small size practices such as small clinics may want to keep all clinical applications in a Cloud including clinical data, by doing this, they may even be able to improve EHR data security because they do not need to worry about the risk of possible security breaches from server snatching or stolen laptops – mainly because no sensitive data is stored locally and all patient information is stored in the Cloud. Each healthcare provider needs to understand strengths, weaknesses, opportunities, and possible threats of utilizing Cloud Computing before they adopt Cloud Computing technology.

In spite of various promising features that make Cloud Computing in healthcare promising, there are concerns and issues. Security and patient privacy are the most obvious hurdles that are throwing doubts on adopting Cloud Computing broadly. Since individual's protected health information (PHI) can be transmitted from one organization to another organization over the Internet, Cloud Computing-based services are required to meet HIPAA requirements: especially The Privacy Rule and The Security Rule. They include 1)secure transmission of PHI over the Internet (encrypted data transmission), 2) fine grained control on access to PHI to preserve privacy, 3) storing PHI securely (encrypted data store), and 4) ensuring that PHI is accessible only by trusted entities to name a few (strong identity vetting, role-based access control, security auditing). Many Cloud Computing service vendors including Amazon.com are making great efforts to ensure their services (SaaS, PaaS, and IaaS) are HIPAA compliant.

#### 3.2.3.5 SOA and Cloud Computing Convergence

Both SOA and Cloud Computing have unique characteristics that can be leveraged to make any organizational IT infrastructure resilient to any changes in its IT environment. DOM's To-Be Ecosystem will adopt both SOA and Cloud Computing and maximize the benefits of technology by bringing and aligning Clouding Computing practices and SOA practices together. The outcome of the SOA and Cloud Computing Convergence would be the desired characteristics described in previous section. When SOA and Cloud Computing converge, Cloud Computing enriches SOA-based services with expandability and well-defined design (i.e., SaaS) so that SOA-based services will be equipped with additional value-added characteristics. On the other hand, SOA will bring valuable characteristics to Cloud Computing: 1) "service governance – architecture discipline with guiding principles" and 2) "driving from the architecture – proper manufacturing of information systems and resources." Figure 9 depicts how SOA and Clouding Computing meet in DOM's vision for transition.

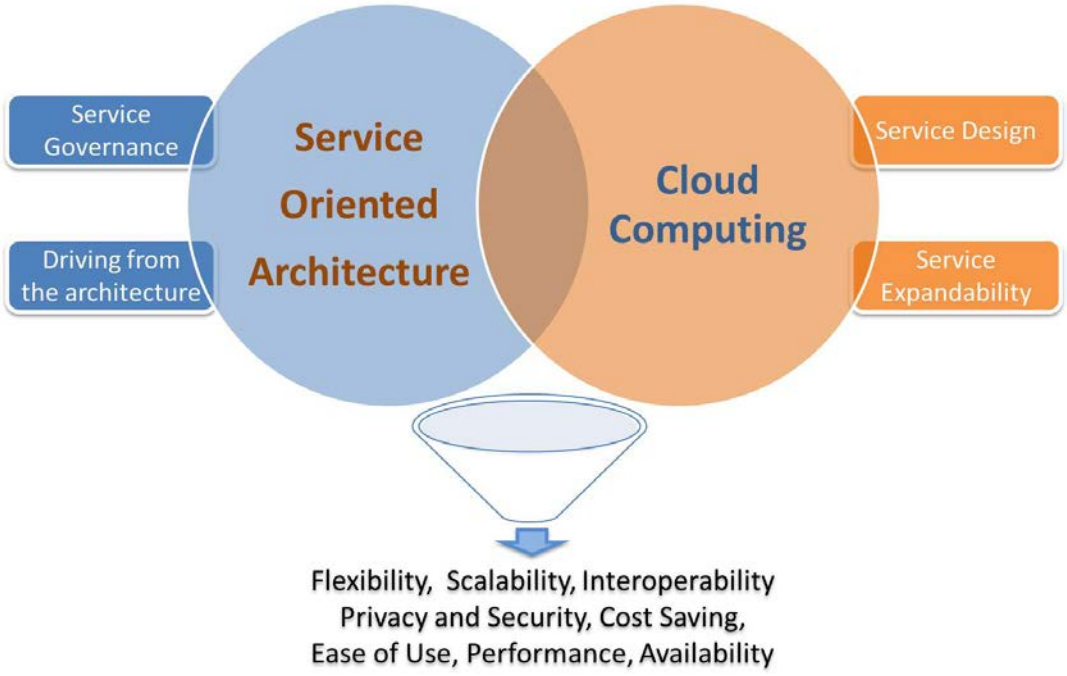



**Figure 17: SOA meets Cloud Computing**

#### 3.2.3.6 DOM Interoperability Platform Stack: Putting Everything Together

Figure 10 shows the DOM Interoperability Platform Stack that will be a foundation for the DOM To-Be Ecosystem. This Interoperability Platform stack is designed by 1) considering various federal technical requirements and guidance, 2) adopting various federal and industry standards and 3) putting SOA, Cloud Computing and ESB together as core infrastructure. The value-added services on the Business Layer will enable DOM's ultimate vision – improving Medicaid healthcare outcomes through adoption,

promotion, and enhancement of DOM systems and through promotion of interoperable exchange of health information between DOM and DOM's trading partners and stakeholders. Value added services include but are not limited to Lab Results Delivery, Immunization Exchange, Secure Messaging, Administrative Transactions, Public Health Services, and Clinical Document Exchange.

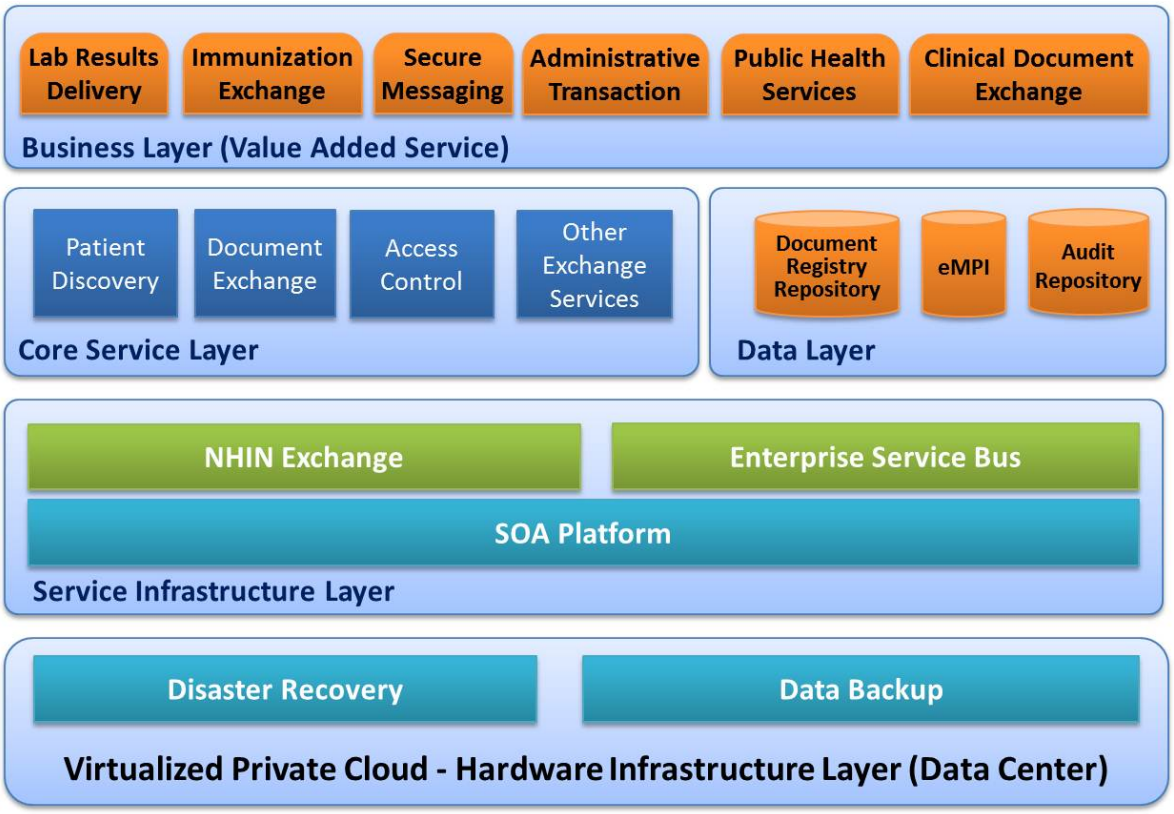



**Figure 18: Example DOM Interoperability Platform Stack**

### 3.2.4 Security Considerations and Adoption of Public Key Infrastructure

DOM will employ several levels of security to protect Medicaid beneficiary privacy and meet the guidelines established by HIPAA and state/federal security requirements. Data transactions on the network will be secured by encryption both while in transit and while at rest. Currently, DOM utilizes encryption for data at rest and will be integrating encryption for data in flight. The MEHRS/eScript system will support encryption for data at rest in the upgraded version. The DOM Interoperability Platform will fully comply with local, national and HHS Privacy and Security guidelines described in the previous section. The wide range of desired security functions to be supported includes but is not limited to user authorization, authentication, non-repudiation, digital encryption, audit logs, and administrative capabilities.

It is strongly recommended for DOM to adopt PKI to ensure a standards-based, secure, encrypted exchange of sensitive clinical information across healthcare networks. DOM is moving toward this goal.

#### 3.2.4.1 Public Key Infrastructure and Security

All aspects of the services, operations, and infrastructure related to certificates should be performed in accordance with the policies and procedures outlined in certificate practices statement document which is conforming to RFC 3647 "Internet X.509 Public Key Infrastructure Certificate Policy and Certification Practices Framework."

Data exchange over the Internet requires a certain level of security capabilities to protect against any threats to the communication or integrity of information. Patient privacy is one of the most critical issues in the healthcare vertical, and PHI needs to be protected effectively with the highest level of security capabilities. Many technologies have been developed and adopted to address security issues when using the Internet, including PKI, to ensure a standard-based, secure, encrypted exchange of sensitive clinical information across healthcare networks.

#### 3.2.4.2 Public Key Infrastructure and X.509 Certificate

PKI is a set of network services that support: 1) creation of a public and private cryptographic key pair via a trusted authority; 2) management (distribution and revocation) of an asymmetric cryptography key pair; 3) security of transmitted data and 4) validation of end-users and end-systems. X.509 is the standard deployment of Public Key Infrastructure (X.509 digital certificates). Vendors should utilize these PKI mechanisms to: 1) create secure networks over the unsecure public Internet; 2) to ensure the integrity and confidentiality of PHI exchanged across networks; and 3) to ensure authorized access to PHI by validating a user's identity.

- Authentication: Validating the identity of end systems and users ("verifying they are who they say they are").
- Integrity: Assuring the message integrity ("the transferred message has not been compromised in any way from the original message") through the digital signature mechanism.
- Confidentiality: Ensuring the confidentiality of the message ("only the intended recipient can read the message") through message encryption.
- Non-repudiation: Ensuring the uniqueness and originality of trading partners ("the transferred message has been sent and received by the parties claiming to have sent and received the message) through the digital signature mechanism.

#### 3.2.4.3 Authentication, Authorization, Access Control and Auditing (4A) using PKI

In order to provide secure health information exchange across organizations, several operational difficulties need to be addressed when implementing electronic access to patient clinical information.

- Authorization: Establishing and managing a list of authorized persons: strong identity proofing procedures during the process of credential issuance to users. Every user needs

to present identifying materials and information such a government issued photo ID and notarization.

- Authentication: Verifying the identity of the authorized users accessing clinical information: Identity Assurance Level 3 or Level 4 for authentication. Level-3 authentication is based on the proof of possession of a X.509 digital certificate. Level-4 authentication is similar to Level 3 except it requires hardware token such as smart cards, USB tokens, or key fobs.
- Access Control: Appropriately limiting authorized users' access to PHI based on their roles and privileges: role-based access control to provide healthcare organizations with a fine-grained access control to PHI under local control. (This is discussed in detail in the following section).
- Auditing: Logging audit trails on every access to PHI and reviewing/examining of audit trails to assess the adequacy of systems control on established security policies: vendors should implement a standards-based, IHE audit trail and node authentication profile compliant audit record repository to support auditing. Every transaction between trading partners and health information systems is logged on one or more audit repositories and is available to security officers for review/assessment.

#### 3.2.4.4 User Authorization and Authentication

For stronger user identity assurance, it is desired that user identity credentials support Assurance Levels 3 and 4 (shown in the diagram below).

*HSPD-12 and FIPS201 compliant:* Compliant with the requirements of Homeland Security Presidential Directive 12 (HSPD-12) for standardized identification credentials. All credentials (e.g., software certificates) need to comply with Federal Information Processing Standard #201 (FIPS201) including smart card technology, biometrics, and certificate validation.

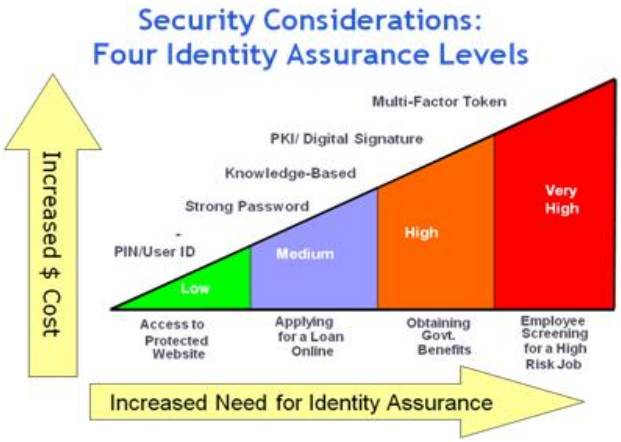



**Figure 19: Assurance Levels**

Furthermore, DOM should consider leveraging Federated Identity Management technology to ensure provider (user) authentications. In this model, there is no centralized shared provider directory. A SAML-based federated identity for a provider will be generated locally and exchanged/used globally between stakeholders and further role/privilege based access control decision will be made locally based on their own local security and privacy policies.

#### 3.2.4.5 Secure Data Transmission

For secure transactions, Web Services technology along with PKI technology is desired to be adopted. A secure channel is established over TLS and messages (containing PHI) which are encrypted and digitally signed when they are transmitted from one system to another health information system. Communication between systems and end secure nodes is a Web Services call built on top of a SOAP and SAML stack.

PKI cryptography technology is used for two-level security (for secure routing): transport-level security and message-level security. SSL/TLS protocol is used to provide encryption of the communication channel and secure authentication (mutual authentication) of the server. For message-level security, WS-Security is utilized to encrypt the content of the message (SOAP message). This is aligned with the approaches adopted by the ONC/NwHIN architecture.

The following is a list of recommended standards and profiles related to Web Services technology.

- Standards and Profiles Adopted for SOAP-based messaging
    - WS-I Basic Profile 2.0
        - SOAP version v1.2
        - HTTP version v1.1
        - WS-Address version v1.0
        - WS-BaseNotification v1.3
        - Message Transmission Optimization Mechanism binding for SOAP version v1.0
        - Web Service Description Language version v1.1
        - XML Schema version v1.0
        - Universal Discovery and Description Interface v3.0.2
    - WS-I Basic Security Profile 1.1
        - TLS version 1.0 (a/k/a SSL 3.0)
        - RFC 2459: Internet X.509 Public Key Certificate and CRL Profile
        - XML Signature version 1.0
        - AES 128-bit encryption
        - X.509 Token Profile version 1.0
        - SAML Token Profile version 1.1
        - Attachment Security 1.1
    - Other Profiles
        - WS-Reliable Messaging v1.2
        - WS-Policy 1.5

- WS-Policy Attachments 1.2
- WS-Policy Framework 1.2
- WS-Security Policy 1.2

#### 3.2.4.6 Other Security Considerations

The following security requirements/measures should be utilized to protect critical health information at each healthcare trading partner facility:

- Integrity of the data in the site: No unauthorized modification operation should be allowed on the database
- Confidentiality: Query results from a site are accessed only by authorized persons or organizations
- Preventing unauthorized disclosure of the data: During the transmission, all communication between trading partners should be encrypted

To ensure the security requirements described above, two level security controls are required: physical access control and technical security control.

#### 3.2.4.7 Physical Access Control

Physical access to computers and software systems should be restricted and audited.

- Computer screens (monitors) should have a pre-defined time-out feature, for example, screen-locked after no activity for 60 seconds
- Passwords (database and computers) should be properly and securely managed to prevent unauthorized access or manipulation of the system

#### 3.2.4.8 Technical Security Control

- Firewall setting for access control
- SQL Query restriction: No direct database access is not allowed from outside the network
- Node authentication verification: Client/server verification (authentication) is performed based on x.509-based PKI infrastructure
    - Only the systems that have certificates legitimately signed by trusted CA will be able to access the servers
    - Certificates are generated based on RSA public-key authentication algorithm. A 1024 (or 2048 bits for stronger encryption) bit RSA private key for each certificate is generated for message encryption for secure communication x.509 key/certificate pair should be kept securely in a local directory

## 3.3 To-Be DOM Infrastructure

Based on the various business and technical requirements, guidance, and considerations, DOM desires to build the To-Be environment to connect DOM's trading partners and stakeholders. The diagram below shows a high-level To-Be DOM environment desired by DOM.

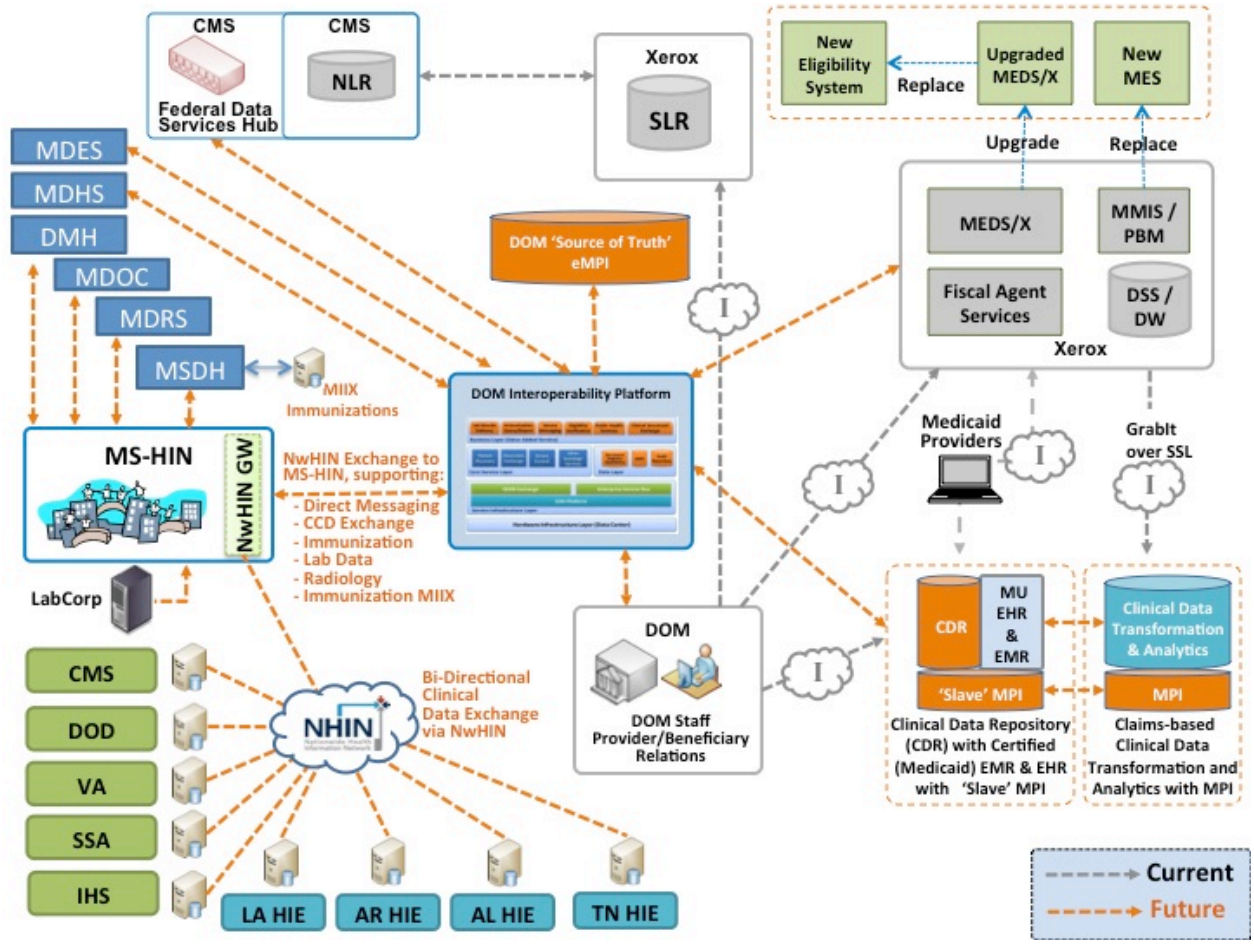



**Figure 20: DOM Ecosystem To-Be**

DOM's To-Be environment will allow DOM to access other stakeholders in the State of Mississippi via the ITS network or via MS-HIN, via the NwHIN connection to MS-HIN. Connectivity to State Agencies via the ITS network includes MDHS, and other State Agencies/stakeholders such as the MDES and MDHS. As there is little interoperable data flow or exchange using the ITS network today, there is a desire by DOM for additional data from the other State Agencies, MS-HIN, other HIEs, and federal agencies.

The following sections describe details on the To-Be vision of connectivity to DOM's trading partners and stakeholders.

## 3.4 To-Be MMIS (MES), MEDS/X Eligibility Systems, and SLR

### 3.4.1.1 To-Be MMIS (MES)

The current Xerox MMIS is likely to be replaced and upgraded over the next several years via a State procurement process for a new MES. The new MES architecture is expected to have increased support for clinical data. In the future, important standards such as the standard Continuity of Care Document, or CCD, format can be supported by this architecture. It is likely the Request for Proposal for this new MES procurement will be delivered to the public by the second quarter of 2013, with responses and vendor selection likely taking place by end-of year 2013. After vendor selection, implementation of the new MES will take place over roughly the next three years, including running the new MES simultaneously with the current Xerox MMIS, for testing, etc. The fourth quarter of 2017 is the targeted goal for go-live of the newly acquired MES. After go-live and acceptance of the new MES, the current Xerox MMIS will be retired.

The new MES will need to support current and future administrative transactions, including all current EDI transactions, as well as support for the HIPAA 278 transactions.

The new MES will require an interface to the existing State Level Registry (SLR), including supporting the current and future SLR implementations. The new MES will require an interface to the remediated MEDS/X eligibility system (see MEDS/X below). The new MES could require a future interface to a new eligibility system if the remediated MEDS/X is phased out over time.

The new MES architecture will need to support inbound and outbound flow of data to and from the MEHRS/eScript system. The new MES should include an ESB, to streamline connectivity to the deployed DOM Interoperability Platform (with integrated ESB), MEDS/X and/or new eligibility system, State Level Registry (SLR), and other associated systems and environments.

The new MES will fully comply with the MITA architecture framework – business, technical, and information. The MITA initiative began in 2005 with the concept of moving the design and development of Medicaid information systems away from the siloed, sub-system components that comprise a typical MES and moving to a SOA framework of designing Medicaid information systems along the core principle that business processes inform and drive the implementation of business services. The MITA initiative produced an architecture framework—business, technical, and information—along with a business maturity model for process improvement, that guides the planning of technology and infrastructure build-out to meet the changing business needs of Medicaid programs. MITA enables all State Medicaid enterprises to meet common objectives within the MITA framework while still supporting local needs unique to the particular state.

### 3.4.1.2 To-Be MEDS/X

The MEDS/X system is currently a Xerox provided eligibility system, running in correlation with the Xerox MMIS, to provide core eligibility determination and enrollment for Medicaid and CHIP related

beneficiaries. The MEDS/X system is being remediated to align with the CMS Enhanced Funding Requirements: Seven Standards and Conditions.

#### 3.4.1.3 To-Be SLR

As of 2011, the State Level Registry, or SLR, is a Xerox developed product that is interfaced into the existing Xerox MMIS. The SLR will need to be interfaced with the new MES and the DSS to support Eligible Provider Meaningful Use Attestation and payments.

## 3.5 To-Be MEHRS/eScript–Medicaid Electronic Health Records System and e-Prescribing System

DOM acquired the MEHRS/eScript product from the vendor Shared Health, providing electronic health record and e-Prescribing services for the Medicaid providers in the State of Mississippi. Medicaid providers access the MEHRS/eScript system via an Internet connection and a web browser, and can access the features and functionality of an EHR and e-Prescribing service.

In early 2012, DOM was informed that Shared Health would not be delivering Version 8 of MEHRS/eScript, would not be delivering any ONC Certified Version of MEHRS/eScript, and that Shared Health was stopping all development work on the MEHRS/eScript product and platform.

As DOM has providers who are relying on the MEHRS/eScript system for meeting the criteria of Stage 1 Meaningful Use, DOM and Shared Health have, as of this date, entered into an agreement to migrate/upgrade the MEHRS/eScript system to a commercially available solution, through several new (subcontracted) vendors. This upgraded MEHRS/eScript solution will meet all ONC certifications for an EHR / EMR and ePrescribing system, and also allow DOM to continue to utilize the Clinical Data Repository (CDR) and other systems currently in place, including the clinical data and longitudinal health record on over 625,000 Medicaid beneficiaries in the State of Mississippi. Terms and negotiations with Shared Health (and subcontractors) are complete. The goal is to have a certified EHR rolled out to providers in 2013 to allow for providers on the MEHRS/eScript system to attest to Stage 1 MU.

The upgraded MEHRS/eScript System and the new MES/DSS will require interfaces to exchange data. Such interfaces should be provided by the appropriate vendor or customized for this specific DOM workflow.

The upgraded MEHRS/eScript System will require support of interoperability to the Mississippi State Department of Health (MSDH), including support of the bi-directional exchange of immunization registry data with the MSDH MIIX system, hospital discharge summaries and data, syndromic surveillance and laboratory data, and interoperability with the MSDH Patient Centered Medical Home. DOM is currently working with MS-HIN on interoperability and connectivity options to MSDH via MS-HIN.

The upgraded MEHRS/eScript System will also require support of quality data metrics from providers in the standard format, Quality Reporting Document Architecture (QRDA) standard, and will need to support the exchange of this data via the DOM Interoperability Platform as well as from the

MEHRS/eScript system's clinical messaging or integrated Direct Project messaging (within the upgraded MEHRS/eScript System).

The upgraded MEHRS/eScript System will require support of laboratory data and radiology data, including laboratory results and radiology reports. This data can be fed via MS-HIN using the DOM Interoperability Platform, and may also be used to support laboratory orders, directly from the upgraded MEHRS/eScript System, in the future.

The upgraded MEHRS/eScript System will require connectivity to the trading partners discussed in this section and to potentially other external trading partners, thus MEHRS/eScript will need a connection/interface to the DOM Interoperability Platform for bi-directional clinical data (in CCD format) exchange.

## 3.6 To-Be Mississippi State Health Information Network MS-HIN Interoperability

The emerging Mississippi State Health Information Network, known as MS-HIN, is in the stage of provider and stakeholder adoption and has awarded the technical infrastructure contract to the vendor Medicity. Plans include roll out of a Direct Project (NwHIN Direct) messaging platform to support Meaningful Use along with key other HIE components (Record Locator Service, or RLS, clinical data exchange in CCD format, etc.). Plans for MS-HIN also include an NwHIN Exchange Gateway, which could be utilized as the preferred connectivity methodology between MS-HIN and DOM (via the DOM Interoperability Platform), as NwHIN supports both clinical and administrative transactions.

DOM is planning to implement a DOM Interoperability Platform as a single connectivity methodology, utilizing an integrated ESB and NwHIN Exchange (CONNECT). The DOM Interoperability Platform will provide connectivity and interoperability between the internal DOM systems and services, and provide a standards-based NwHIN to NwHIN Exchange connection to MS-HIN. This single connection to MS-HIN, using NwHIN to NwHIN Exchange (CONNECT) will facilitate DOM's connectivity needs to outside agencies, stakeholders, other States, other HIEs, and Federal Agencies.

DOM has identified several use cases that the NwHIN to NwHIN (DOM to MS-HIN) connectivity model can support, including:

- Direct messaging interoperability between the upgraded MEHRS/eScript System and MS-HIN (HISP to HISP interoperability) to facilitate Direct messaging between MEHRS users, Medicaid Providers, and MS-HIN users;
- Interoperability with the MSDH MIIX System, including feeding MIIX data into the upgraded MEHRS/eScript System;
- ADT Feed interoperability with MS-HIN to support MEHRS/eScript users and Medicaid providers;

- Laboratory Result interoperability with MS-HIN and MS-HIN connected laboratories, to support Medicaid providers and MEHRS users;
- Radiology Reports interoperability with MS-HIN and MS-HIN connected laboratories, to support Medicaid providers and MEHRS users;
- Interoperability to support the MSDH Patient Centered Medical Home (PCMH);
- Clinical data exchange with MS-HIN and MS-HIN users.

The timelines and project plan are under development by MS-HIN.

## 3.7 To-Be Mississippi State Department of Health Interoperability

The new DOM MES and the upgraded MEHRS/eScript System deployment will support additional clinical data sources, and as such, MEHRS/eScript will require the ability to connect with the MSDH systems/infrastructure to support the following use-cases:

- Bi-directional immunization data exchange between the MSDH MIIX and the upgraded MEHRS/eScript System;
- ADT feeds to support MEHRS/eScript users;
- Interoperability with the MSDH Patient Centered Medical Home.

DOM will negotiate a connection through MS-HIN (via the DOM Interoperability Platform and NwHIN as a connectivity methodology) to access and allow for the bi-directional exchange of information to support the DOM identified use-cases listed above.

DOM (and the upgraded MEHRS/eScript System) can connect to MSDH via the DOM Interoperability Platform, through a connection with MS-HIN (MES/MEHRS/eScript to MS-HIN to MSDH and vice-versa), to support the identified use-cases above. Optionally, MSDH could also utilize the DOM Interoperability Platform for connectivity to external and internal trading partners, including the CDC, CMS, and other necessary trading partners.

## 3.8 To-Be Other State Agency Interoperability

DOM has several use-cases for Mississippi State Agency connections, including the following agencies:

- The Mississippi Department of Human Services (MDHS)
- The Mississippi Department of Mental Health (DMH)
- The Mississippi Department of Rehabilitation Services (MDRS)
- The Mississippi Department of Corrections (MDOC)
- The Mississippi Department of Employment Security (MDES)

All of the above mentioned Mississippi State Agencies can be connected via the ITS connection or via the DOM Interoperability Platform. Specific workflows and use-cases need to be refined for further action and planning on these connections.

## 3.9 To-Be Federal Agency Interoperability and Surrounding State HIE Interoperability

DOM plans to utilize the DOM Interoperability Platform and integrated NwHIN Exchange connectivity to MS-HIN to facilitate connectivity to other trading partners, including internal State entities, federal agencies, and surrounding State HIEs. Specific federal agencies that DOM may seek to exchange information with, via the NwHIN connectivity with MS-HIN, include CMS, SSA, DoD, VA, IHS, etc.

The DOM Interoperability Platform and the integrated NwHIN Exchange component will facilitate a connection to MS-HIN, thereby supporting a DOM to MS-HIN (NwHIN-based) connectivity model to various federal agencies, including but not limited to the SSA, CMS, IHS, VA, and DoD. The following is a list of potential federal level projects currently identified for DOM:

- Exchange of eligibility data for Supplemental Security Income (SSI) Medicaid eligible beneficiaries
    - Agencies: SSA
    - Description: Exchange and delivery of a file of SSI Medicaid eligible beneficiaries, which will be sent through NwHIN, will significantly shorten the time it takes to make a beneficiary decision(s) and will improve the speed, accuracy, and efficiency of the disability program.
- Exchange of Summary Patient Records for the Virtual Lifetime Electronic Record (VLER)
    - Agencies: VA
    - Description: The goal of VLER is to unburden the Veteran by having data available when and wherever it is needed by providing seamless access to all of the electronic records for service members as they transition from military to Veteran status and throughout their lives.
- Exchange of Summary Patient Records for the VLER
    - Agency: DoD
    - Description: The goal of VLER is to unburden the Veteran by having data available when and wherever it is needed by providing seamless access to all of the electronic records for service members as they transition from military to Veteran status and throughout their lives.
- CMS Electronic Submission of Medical Documentation (esMD) project and Medicaid RAC Audits
    - Agencies: CMS

  - Description: The esMD project will add additional choice to the providers along with existing three choices when responding to these documentation requests: mail paper, mail a CD containing a Portable Document Format or Tag Image File Format file, or transmit a fax. The new options enable providers to respond to these requests for medical documentation: electronic transmission via NwHIN.

- IHS – Coordination of benefits/CCD
  - Agency: IHS
  - Description: Interoperable CCD exchange with IHS for coordination of care and eligibility determination.
- Border State HIEs
  - Agency: Various state HIEs.
  - Description: DOM has the desire to connect to surrounding State HIEs to support the use-cases of clinical and administrative transaction exchange in a bi-directional manner. Connectivity will need to be established to support exchange with the Louisiana HIE, the Alabama HIE, the Tennessee HIE and the Arkansas HIE. This will be accomplished through MS-HIN or through DOM's Interoperable NwHIN platform, depending on the timing.

## 3.10 To-Be for DOM Interoperability Platform with support for NwHIN Exchange (CONNECT-compliant) as a Connectivity Methodology

DOM as an agency has an overall need for a unified connectivity Platform, strategy and methodology, and NwHIN, the Nationwide Health Information Network, has been accepted and integrated into multiple federal and State agencies and use-cases, including CMS, SSA, DoD, VA, State HIEs, State Medicaid Agencies, and others.

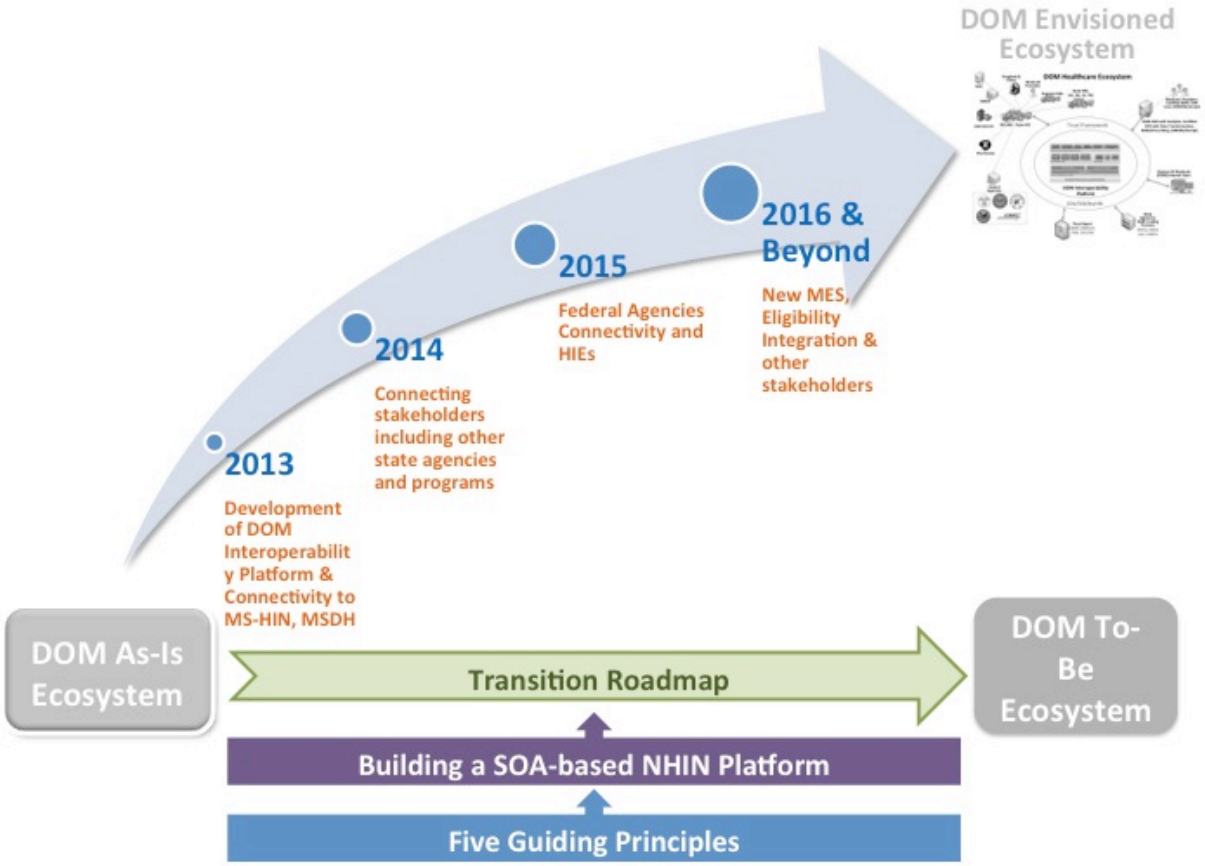
In order to implement a complete Interoperability Platform, DOM needs to acquire a flexible, SOA-based Interoperability Platform supporting NwHIN Exchange (CONNECT) with an integrated ESB for interoperability with existing and future DOM systems. The proposed DOM Interoperability Platform should be based on SOA, ESB, and NwHIN Exchange standards and support connectivity and interfaces to key, disparate trading partners such as the federal agencies and border state HIEs, via the connectivity to MS-HIN, as outlined in section 3.10.

DOM is also planning on deploying an Agency-wide (Source of Truth) Enterprise Master Patient Index (eMPI) to provide patient matching and coordination of patient records and clinical data throughout DOM and across the DOM infrastructure, including for connectivity and interoperability with MS-HIN. As DOM is planning on deploying or has deployed several, disparate clinical and administrative technical infrastructure components, it is critical to have a single, master 'source of truth' patient identifier on DOM beneficiaries.

The DOM eMPI will allow for a limitation of duplicate beneficiary records, duplicate beneficiary clinical data and administrative data, and allow for more structure in the organization and storage of beneficiary data across the DOM infrastructure (including multiple clinical and administrative systems).

Systems that would interface and utilize the DOM eMPI include the new MES, the upgraded MEHRS/eScript EHR, the Clinical Data Repository and Advanced Analytics Engine, the DOM Interoperability Platform (and data exchange with MS-HIN, who also has an eMPI), and other various services and systems. Coordination and alignment of the DOM eMPI with the MS-HIN eMPI is critical, and will allow for streamlined and correctly matched beneficiary clinical data exchange between DOM and MS-HIN.

# *4* DOM Connectivity and Interoperability Strategy – Roadmap from As-Is DOM Environment to To-Be DOM Environment




This section aligns the current As-Is DOM ecosystem Landscape with the To-Be vision of the DOM ecosystem. This section details guiding principles, milestones, timelines, risk assessment and mitigation plans. The key milestone of successful transition is "building a robust SOA-based Interoperability Platform" at the early stage of the project. The five guiding principles described in section 4.1 are a foundation for success.

## 4.1 Five Guiding Principles for Successful DOM To-Be Ecosystem Transition

Successful transition from the As-Is environment to the To-Be environment is about more than technology. Mississippi DOM will use following five guiding principles throughout the DOM's transition lifecycle: 1) put the business use-case before the technology; 2) engage all trading partners and

stakeholders; 3) ensure alignment with current/new federal requirements development; 4) assess for interoperability; and 5) operate and manage for accountability.

#### 4.1.1.1 Put the Business Use-Case Before the Technology

One of the biggest mistakes made by many IT projects is exploring technology options first before fully understanding business use-cases and processes and defining system requirements. Understanding the business use-cases and processes is the most important step for every successful IT project. DOM will:

- Develop a set of common processes to perform analysis on use-cases, scenarios, workflow and functionalities
- Develop template(s) for system requirements analysis and technology options
- Ensure consensus among trading partners and stakeholders about the common processes and requirements analysis
- Document each analysis process
- Develop detailed system/architecture design specifications and implementation guides based on the system requirements analysis

#### 4.1.1.2 Engage All Trading Partners and Stakeholders

The DOM To-Be Healthcare Ecosystem will enable interoperable exchange of health information between DOM and DOM's trading partners and stakeholders such as MS-HIN, MSDH, State agencies, federal agencies, and border HIEs (Louisiana, Arkansas, Tennessee, and Alabama). DOM will ensure these stakeholders are actively engaged throughout the DOM's transition lifecycle. A common understanding and sharing of goals, objectives and perspectives of all trading partners and stakeholders is the key for the success of DOM's transition.

DOM will:

- Share DOM's vision, goals and objectives with stakeholders
- Ensure timely and targeted communication
- Seek stakeholder's vision and perspectives
- Define roles and responsibilities clearly

#### 4.1.1.3 Ensure Alignment with Current/New Federal Requirements Development

HHS has been driving new initiatives, organizing new advisory committees (e.g. Health IT Policy Committee) and collaborating with other private/public sector organizations including standard development organization. Ensuring alignment of the DOM To-Be Ecosystem with current and new federal requirements will be one of key factors for success. DOM will:

- Stay attuned to new federal requirements development
- Share current/newly identified requirements with trading partners and stakeholders
- Develop a template to assess the impact of changes required as new requirements develop

#### 4.1.1.4 Assess for Interoperability

One key vision of the DOM To-Be Ecosystem is building an interoperable healthcare ecosystem ensuring seamless exchange of health information. DOM will:

- Assess the compatibility of DOM systems with current standards and interoperability requirements.
- Organize meetings for review of existing and new standards for interoperability
- Develop reports containing review results
- Participate in State/federal standard and harmonization efforts

#### 4.1.1.5 Operate and Manage for Accountability

Industry-wide best practices for project management emphasize the importance of accountability. DOM will ensure that 1) goals, objectives and milestones are accomplished 2) IT resources are maximized, 3) deliverables are delivered as planned and 4) projects and sub-tasks are completed within planned timeframe and budget.

DOM will:

- Create a detailed project work plan including scope of the work, key milestones, timelines and deliverables, risk assessment and mitigation plans;
- Schedule/conduct regular meetings to check progress and identify action items;
- Develop meeting/discussion notes and status reports; and
- Create a final report and include lessons learned.

## 4.2 Risk Assessment and Mitigation Strategy

The following table shows a list of potential risks on the transition from the As-Is DOM ecosystem to the To-Be DOM ecosystem and DOM's mitigation to the risks.

**Table 16: Risk Mitigation Strategy**

| | Risk | Risk Mitigation |
|---|---|---|
| 1 | MS-HIN Medicaid Providers have not completed a Business Associate Agreement (BAA) with DOM, creating risk to any type of | All DOM documentation for any provider who enrolls with DOM should complete the BAA. All providers who do not currently have a BAA should complete one immediately. |

| | | |
|---|---|---|
| | messaging with MS-HIN Medicaid Providers. | |
| 2 | Vendor recommends a proprietary Interoperability (and NwHIN Exchange, ESB) Platform for DOM. | DOM should procure an Interoperability Platform based upon published and known standards, such as the ONC, HHS, NwHIN Exchange CONNECT, and with the ability to connect to a dedicated ESB. |
| 3 | It is currently unknown how DOM's eligibility system and the DOM Interoperability Platform will interface with the Federal Data Services Hub, nor with the Federally Facilitated Marketplace | Follow federal standards with a flexible, SOA-based architecture, push for standards timelines from CMS. |
| 4 | The NwHIN platform of MS-HIN does not get implemented in a timely basis, or implemented with a non-standard NwHIN Exchange Gateway. | DOM proceeds with interoperability plans built upon federal standards, and integrates with MS-HIN as appropriate. MS-HIN disruptions should be evaluated if/as they occur, with contingencies in place to provide connectivity to agencies (State, federal) and other trading partners. One alternative to consider: MS-HIN could use DOM's non-proprietary Interoperability Platform (supporting NwHIN Exchange), along with MSDH and others. |
| 5 | System remediation (MEDS/X) and procurement of new MES and eligibility systems have different timelines. The complexity of integrating existing and new systems while also implementing a DOM Interoperability Platform may result in unavoidable delays. | DOM focuses and follows five guiding principles when implementing the DOM Interoperability Platform, especially by leveraging SOA and ESB as the foundational tools for integration and interoperability. DOM allocates qualified Project Managers and resources to ensure projects stay on schedule and converge at appropriate times. |

## 4.3 Roadmap for DOM Infrastructure

#### 4.3.1.1 Ecosystem

DOM's vision is to implement a non-proprietary NwHIN Exchange (CONNECT-compliant), SOA-based Interoperability Platform with the goal of supporting a complete, interoperable DOM infrastructure in alignment with the SMHP and IAPD. The expectation of DOM is to fully align with the federal HIT-enabled health reforms, including the CMS MITA missions, goals and objectives, while supporting the interoperable exchange of clinical and administrative data with internal and external DOM trading partners.

Attached to this document is the integrated DOM timeline and timeframes.

## 4.4 Roadmap for DOM MES, MEDS/X Eligibility Systems, and SLR

### Implementation Path for the New DOM MES

The current MMIS is likely to be replaced and upgraded over the next several years via a State procurement process. It is likely the Request for Proposal for this new MES procurement will be delivered to the public by early 2013, with responses and vendor selection likely taking place in mid 2013. After vendor selection, implementation of the new MES will take place over roughly the next three years, including running the new MES simultaneously with the current Xerox MMIS, for testing, etc. The 2nd quarter of 2016 is the targeted goal for go-live of the newly acquired MES. After go-live and acceptance of the new MES, the current Xerox MMIS will be retired.

Key identified needs for the new MES and the MES RFP:

- The new MES architecture should have increased support for clinical data. In the future, important standards, such as the standard CCD format could be supported by this architecture.
- Interface with the remediated MEDS/X system, and potential new eligibility system.
- Support for the HIPAA 5010 278 EDI transactions: As the HIPAA 278 can be viewed as an administrative transaction with clinical data; the new MES should support the 278 transaction for full prior-authorization workflow simplification.
- Interface with the existing State Level Registry (SLR): The new MES should support the existing (and any modifications to the) SLR, for continuity of MPIP payments to eligible providers.
- Interface to the DOM Interoperability Platform and other emerging technologies and systems via an integrated MES Enterprise Service Bus: the new MES should support an interface to the DOM Interoperability Platform, allowing for administrative and clinical transactions to flow in a bi-directional format to and from DOM trading partners and providers.

#### 4.4.1.1 Implementation Path for MEDS/X

The MEDS/X system is currently a Xerox provided eligibility system, running in correlation with the Xerox MES, to provide core eligibility determination for Medicaid and the CHIP related beneficiaries. The MEDS/X system is being remediated to align with the CMS Enhanced Funding Requirements: Seven Standards and Conditions. Both the remediated MEDS/X and the potential replacement system for eligibility are required to interface with the new (replacement) MES system.

#### 4.4.1.2 Implementation Path for SLR

The State of Mississippi's SLR is a Xerox developed product that is interfaced into the existing Xerox MMIS. The SLR will need to be interfaced with the new MES to support Eligible Provider Meaningful Use Attestation and payments.

## 4.5 Roadmap for MEHRS/eScript – Medicaid Electronic Health Records System and e-Prescribing System

#### 4.5.1.1 Implementation Path for MEHRS/eScript

As DOM has providers who are relying on the MEHRS/eScript system for meeting the criteria of Stage 1 Meaningful Use, DOM and Shared Health have, as of this date, entered into an agreement to migrate/upgrade the MEHRS/eScript system to a commercially available solution, through several new (subcontracted) vendors. This upgraded MEHRS/eScript solution will meet all ONC certifications for an EHR / EMR and ePrescribing system, and also allow DOM to continue to utilize the backend data and systems currently in place, including the clinical data and longitudinal health record on over 625,000 Medicaid beneficiaries in the State of Mississippi. Terms and negotiations with Shared Health (and subcontractors) are complete. The goal is to have a certified EHR / EMR with ePrescribing rolled out to providers in 2013 to allow for providers on the MEHRS/eScript system to attest to Stage 1 MU.

DOM continues to collaborate with MS-HIN, and focus on the utilization of MS-HIN data and feeds to support Medicaid providers, and MEHRS providers, in the State of Mississippi. Current MS-HIN – DOM use-cases under discussion include:

- HISP to HISP connectivity from the upgraded MEHRS system to MS-HIN to support Direct Messaging interoperability;
- An ADT data interface from MS-HIN into MEHRS to provide up to date ADT data for MEHRS providers;
- An interface to support MIIX and immunization data from MSDH, via MS-HIN, into MEHRS to support MEHRS providers with a future potential capability for MEHRS providers having the ability to send immunization data back into MIIX, via MS-HIN;
- Synchronization between the MEHRS eMPI and the MS-HIN eMPI to allow for more streamlined patient identities, queries, and data sharing;
- An interface to support Laboratory results from MS-HIN and MS-HIN providers and laboratories to support MEHRS providers;
- An interface to support Radiological data from MS-HIN and MS-HIN providers to support MEHRS providers;
- An interface to support CCD exchange between MEHRS and MS-HIN, with the first use-case a MEHRS to MS-HIN outbound only CCD exchange for clinical data exchange capabilities.

As DOM is actively in discussions with MS-HIN, these use-cases are subject modification and changes.

## 4.6 Roadmap for Mississippi State Health Information Network MS-HIN Interoperability

#### 4.6.1.1 Implementation Path

Coordination with MS-HIN needs to focus on the immediate rollout of core use-cases to support Meaningful Use, including the use-cases and timelines previously identified.

#### 4.6.1.2 DOM and NwHIN Direct/Direct Project Support outside of MEHRS/eScript

As MS-HIN is fully supporting the Direct Project, MS-HIN providers could use existing MS-HIN Direct Project installation and process for messaging to DOM to support Meaningful Use and administrative transaction use-cases. Therefore, DOM has completed a single address/drop box within DOM that fully supports the Direct Project but has limited impact to existing and current DOM workflows and processes.

These single addresses (one general address per use-case/drop box) are then routed to the appropriate system or resource(s) for processing, responding, etc. At this point, it seems impractical for DOM to implement a full Direct Project implementation for DOM users and staff; however, supporting several singular addresses, one per use-case, would fully support providers using the MS-HIN Direct Project implementation, as well as any MEHRS/eScript providers (note: the upgraded MEHRS/eScript System is integrated with the Direct Project).

#### 4.6.1.3 Implementation Path and Core Direct Project Use-Cases for DOM

- MS-HIN providers using their specific Direct Project address to send Attestation and supporting documentation to DOM in support of incentive payments; thus DOM should implement a single Direct Project address to support this type of documentation and bi-directional exchange, i.e. a single address such as *attestation@medicaid.ms.gov*
- Providers contacting the DOM provider support staff (PBR) for miscellaneous questions and inquiries; thus DOM should implement a Direct Project address to support this use-case for exchange via a single address, such as *pbr@medicaid.ms.gov*

Other addresses and use-cases can be supported, as well as a migration to a full Direct Project implementation, if necessary, when and if the time arises. Expansion of these use-cases can be accomplished with an automation of delivery of Direct Project messages, as well as an automated response from the appropriate DOM system, again using Direct Project protocols and services. DOM could acquire these Direct Project addresses and needed basic Direct Project infrastructure internally (via the ONC and supporting websites), via the MS-HIN Direct infrastructure, or via a 3rd party vendor.

## 4.7 Roadmap for Mississippi State Department of Health Interoperability

#### 4.7.1.1 Implementation Path

DOM is currently in the process of negotiating a connection through MS-HIN (via an NwHIN to NwHIN interface, as a connectivity methodology) to access and allow for the bi-directional exchange of information to support these multiple use-cases:

- Bi-directional immunization data exchange between the MSDH MIIX and the upgraded MEHRS/eScript system;
- ADT feeds of data for MEHRS users;
- Interoperability with the MSDH Patient Centered Medical Home.

DOM (and MEHRS/eScript) are planning to connect to MSDH via the DOM Interoperability Platform and using NwHIN, through a connection to MS-HIN. MSDH could also utilize the DOM Interoperability Platform for connectivity to external and internal trading partners, including the CDC, CMS, and other necessary trading partners, on an as-needed basis.

## 4.8 Roadmap Other State Agency Interoperability

#### 4.8.1.1 Implementation Path

DOM should work with other State agencies for interoperable data exchange between DOM and those State Agencies. Those State agencies are:

- The Mississippi Department of Human Services (MDHS)
- The Mississippi Department of Mental Health (DMH), via MS-HIN
- The Mississippi Department of Rehabilitation Services (MDRS), via MS-HIN
- The Mississippi Department of Corrections (MDOC), via MS-HIN
- The Mississippi Department of Employment Security (MDES)

All of the above mentioned Mississippi State Agencies can be connected via the ITS connection, via an emerging connection to MS-HIN, or via the DOM Interoperability Platform. Specific workflows and use-cases need to be refined for further action and planning on these connections.

## 4.9 Roadmap for Federal Agency and Surrounding State HIE Interoperability

#### 4.9.1.1 Implementation Path

The DOM Interoperability Platform, by utilizing standards such as NwHIN Exchange (CONNECT), can allow for the bi-directional exchange of both clinical and administrative data, and is being utilized by the

federal government, and federal agencies, for new and expanded use-cases and connectivity models. By deploying the DOM Interoperability Platform, DOM can support the following trading partners and use-cases, however, note that each federal agency will require a separate adapter or interface. More details on specific NwHIN Exchange adapters and interfaces can be found in section 4.11 below. The federal use cases are:

- Establish NwHIN-based connectivity to CMS using the DOM Interoperability Platform's connection to MS-HIN: Connectivity and interoperability with CMS for RAC documentation exchange as well as emerging CMS transactions (x12 EDI, etc.);
- Establish NwHIN-based connectivity to the SSA using the DOM Interoperability Platform's connection to MS-HIN: Connectivity and interoperability with the SSA to support the use-case of the exchange and delivery of a file of SSI Medicaid eligible beneficiaries and like files, including CCD exchange if necessary;
- Establish NwHIN-based connectivity to the DoD using the DOM Interoperability Platform's connection to MS-HIN: Connectivity and interoperability with DoD for the query and bi-directional exchange of CCDs for benefit verification as well as for coordination of care;
- Establish NwHIN connectivity to the VA using the DOM Interoperability Platform's connection to MS-HIN: Connectivity and interoperability with the VA for the query and bi-directional exchange of CCDs for benefit verification as well as for coordination of care;
- Establish NwHIN connectivity to IHS using the DOM Interoperability Platform's connection to MS-HIN: Connectivity and interoperability with IHS for the query and bi-directional exchange of CCDs for benefit verification as well as for coordination of care, and the additional use-case of any attestation and MU documentation from eligible providers;
- Establish NwHIN connectivity to the Louisiana HIE through the connectivity to MS-HIN: Connectivity and interoperability with the State of Louisiana HIE for the query and bi-directional exchange of CCDs for coordination of care;
- Establish NwHIN connectivity to the Arkansas HIE through the connectivity to MS-HIN:: Connectivity and interoperability with the State of Arkansas HIE for the query and bi-directional exchange of CCDs for coordination of care;
- Establish NwHIN connectivity to the Alabama HIE through the connectivity to MS-HIN:: Connectivity and interoperability with the State of Alabama HIE for the query and bi-directional exchange of CCDs for coordination of care;
- Establish NwHIN connectivity to the Tennessee HIE through the connectivity to MS-HIN: Connectivity and interoperability with the State of Tennessee HIE for the query and bi-directional exchange of CCDs for coordination of care.

## 4.10 Roadmap for DOM Interoperability Platform support NwHIN Exchange (CONNECT-compliant) as a Connectivity Methodology

DOM as an agency has an overall need for a unified connectivity strategy and methodology, and NwHIN, the Nationwide Health Information Network, has been accepted and integrated into multiple federal and State agencies and use-cases, including CMS, SSA, DoD, VA, IHS, State HIEs, State Medicaid agencies, and others.

In order to implement a complete Interoperability Platform with support for NwHIN Exchange, DOM needs to acquire a flexible, SOA-based Interoperability Platform with an NwHIN Exchange (CONNECT) module, and an integrated ESB for interoperability with existing and future DOM systems. The proposed DOM Interoperability Platform should support the key federal agencies outlined in section 3.10, as well as MS-HIN, surrounding State HIEs, and other trading partners as they become NwHIN compliant.

#### 4.10.1.1 Implementation Path

In 2013, DOM is planning to procure a SOA-based Interoperability Platform with appropriate federal agency adapters and interfaces and integrated ESB for interoperability, based upon the NwHIN Exchange Standards and that is open source CONNECT Gateway compliant.

If the DOM Interoperability Platform will be utilized, currently or in the future, by other stakeholders for additional use-cases, the following implementation path will require modification. It should be noted that Mississippi has approximately 17,000 Mississippi-based Medicaid providers, and connectivity with these providers is of the utmost importance to DOM.

Specific adapters could be required in the DOM Interoperability Platform procurement, and would include NwHIN Exchange-specific support, via the MS-HIN NwHIN connection, for:

- CMS;
- SSA;
- DoD;
- VA; and
- I.H.S

Additional adapters and customization could be required for interfacing, via the MS-HIN connection, with:

- The State of Tennessee HIE with 2,373 Mississippi Medicaid providers;
- The State of Louisiana HIE with 2,249 Mississippi Medicaid providers;
- The State of Alabama HIE with 1,737 Mississippi Medicaid providers; and
- The State of Arkansas HIE with 342 Mississippi Medicaid providers.

Internal DOM systems and connectivity must also be addressed, including the implementation and integration with the following systems and use-cases:

- Integration with the SLR to support the exchange of Attestation and supporting documentation from EPs to the SLR and DOM
- Integration with the MEHRS/eScript system to support clinical (CCD) data exchanges, as well as other clinical data feeds and systems (MIIX, ADT, Laboratory Results, Radiology Results, etc.)

#### 4.10.1.2 2013: Implementation of the DOM Interoperability Platform

- Procure and implement the DOM Interoperability Platform with NwHIN Module;
- Connect upgraded MEHRS HISP to MS-HIN HISP to support interoperable Direct Messaging exchanges;
- Interface the upgraded MEHRS with the Interoperability Platform;
- Implement the DOM 'Source of Truth' eMPI and begin to interface the eMPI with the Interoperability Platform and other systems;

#### 4.10.1.3 2014: Implementation of the DOM Interoperability Platform

- Interface the upgraded MEHRS System and the Interoperability Platform with MS-HIN to support ADT feeds from MS-HIN into the MEHRS system;
- Interface the upgraded MEHRS System and the Interoperability Platform with MS-HIN to support the exchange of laboratory results and radiological data from MS-HIN into the MEHRS System;
- Interface the upgraded MEHRS System and the Interoperability Platform with MS-HIN to support the MSDH Patient Centered Medical Home;
- Interface the upgraded MEHRS System and the Interoperability Platform with MS-HIN to support the exchange of CCD (clinical data) from MEHRS to MS-HIN, with the eventual support of inbound CCDs from MS-HIN into the DOM infrastructure;
- Interface the upgraded MEHRS System and the Interoperability Platform with MS-HIN to support MIIX and immunization data exchange – migrating the existing connection (HL7) from Rhapsody;

#### 4.10.1.4 2015: Implementation of the DOM Interoperability Platform

- Commence statistical reporting with MSDH Patient Centered Medical Home;

#### 4.10.1.5 2016: Implementation of the DOM Interoperability Platform

- Interface the Interoperability Platform with MS-HIN to support connectivity to the Louisiana HIE to support the use-case of CCD exchange;
- Interface the Interoperability Platform with MS-HIN to support connectivity to the Tennessee HIE to support the use-case of CCD exchange;
- Interface the Interoperability Platform with MS-HIN to support connectivity to the DoD to support the use-case of CCD exchange;
- Interface the Interoperability Platform with MS-HIN to support connectivity to the VA to support the use-case of CCD exchange;
- Interface the Interoperability Platform with MS-HIN to support connectivity to the Alabama HIE to support the use-case of CCD exchange;
- Interface the Interoperability Platform with MS-HIN to support connectivity to the Arkansas HIE to support the use-case of CCD exchange;
- Interface the Interoperability Platform with MS-HIN to support connectivity to Indian Health Services (I.H.S.) to support the use-case of CCD exchange;

#### 4.10.1.6 2017: Implementation of the DOM Interoperability Platform

- Interface the Interoperability Platform with the new MES to support clinical data exchange with the MES.

DOM recognizes the importance of the NwHIN Exchange connectivity to CMS and the emerging NwHIN/CMS roadmap and use-cases. Further refinement of CMS use cases using NwHIN will be integrated into this strategy over time.

## 4.11 Hosting Options for DOM Interoperability Platform

There are two hosting options for the DOM Interoperability Platform with integrated ESB and NwHIN Exchange (CONNECT) module:

1. Hosting with ITS in the State of Mississippi network and infrastructure. Hosting internally with the state could be accomplished, however, ITS would have to provide service, support, and overall management of the DOM Interoperability Platform, and would charge-back DOM. Prices TBD.

2. Hosting externally at a high-availability hosting partner (Rackspace, etc.). Hosting at an external hosting partner location would provide DOM with a complete, hosted solution and offering, however, the price could be higher than hosting internally with ITS. Price TBD.

**Attachment A: Acronyms**

| Acronym | Stands For: |
|---|---|
| ACS | Affiliated Computer Services, Inc. |
| AES | Advanced Encryption Standards |
| ARRA | American Recovery and Reinvestment Act |
| BAA | Business Associate Agreement |
| BAM | Business Activity Monitoring |
| CCD | Continuity of Care Document |
| CCIIO | Center for Consumer Information and Oversight |
| CDC | Centers for Disease Control and Prevention |
| CHIP | Children's Health Insurance Program |
| CMS | Centers for Medicare and Medicaid Services |
| DMH | Mississippi Department of Mental Health |
| DoD | Department of Defense |
| DOM | State of Mississippi Division of Medicaid |
| DSS | Decision Support System |
| DW | Data Warehouse |
| EDI | Electronic Data Interchange |
| EHR | Electronic Health Record |
| eMPI | Enterprise Master Patient Index |
| ESB | Enterprise Service Bus |
| esMD | Electronic Submission of Medical Documentation |
| FFP | Federal Financial Participation |
| FHA | Federal Health Architecture |
| FIPS | Federal Information Processing Standards |
| HHS | United States Department of Health and Human Services |
| HIE | Health Information Exchange |
| HIPAA | Health Insurance Portability and Accessibility Act |
| HIX | Health Insurance Exchange |

| Acronym | Stands For: |
|---|---|
| HTTP | Hypertext Transfer Protocol |
| IAPD | Implementation Advanced Planning Document |
| IHS | United State Indian Health Services |
| IaaS | Infrastructure as a Service |
| ISP | Internet Service Provider |
| ITS | Mississippi Department of Information Technology Services |
| MDES | Mississippi Department of Employment Security |
| MDHS | Mississippi Department of Human Services |
| MEDS/X | Medicaid Eligibility Determination System with Expansion |
| MDOC | Mississippi Department of Corrections |
| MEHRS/eScript | Medicaid Electronic Health Record System and e-Prescribing |
| MID | Mississippi Insurance Department |
| MIIX | Mississippi Immunization Information Exchange System |
| MITA | Medicaid Information Technology Architecture |
| MMIS | Medicaid Management Information System |
| MPIP | Mississippi Provider Incentive Program |
| MSCHIE | Mississippi Coastal Health Information Exchange |
| MSDH | Mississippi State Department of Health |
| MS-HIN | Mississippi Health Information Network |
| NwHIN | Nationwide Health Information Network |
| NIEM | National Information Exchange Model |
| NIST | National Institute of Standards and Technology |
| NLR | CMS National Level Repository |
| ONC | Office of the National Coordinator for Health Information Technology |
| PaaS | Platform as a Service |
| PBM | Pharmacy Benefit Management |
| PDCS | Prescription Drug Card System |
| PHI | Protected Health Information |

| Acronym | Stands For: |
|---|---|
| PPACA | Patient Protection and Affordable Care Act |
| PKI | Public Key Infrastructure |
| QoS | Quality of Service |
| QRDA | Quality Reporting Document Architecture |
| RAC | Recovery Audit Contractor |
| RFP | Request for Proposals |
| RHIO | Regional Health Information Organization |
| SaaS | Software as a Service |
| SAML | Security Assertion Markup Language |
| SMHP | State Medicaid Health Information Technology Plan |
| SLR | State Level Registry |
| SOA | Service Oriented Architecture |
| SOAP | Simple Object Access Protocol |
| SSA | Social Security Administration |
| SSI | Supplemental Security Income |
| SSL | Secure Sockets Layer |
| VA | Veterans Administration |
| VLER | Virtual Lifetime Electronic Record |
| WAN | Wide Area Network |
| XML | Extensible Markup Language |

**Attachment B: Glossary**

| Term | Definition |
|---|---|
| 4010 Format | The current version of the HIPAA electronic transaction standards. |
| 5010 Format | The new version of the 4010 Format, and required to be in use by January 1, 2012. http://www.ama-assn.org/ama/pub/physician-resources/solutions-managing-your-practice/coding-billing-insurance/hipaahealth-insurance-portability-accountability-act/transaction-code-set-standards/version-5010-electronic.page? |
| 501(c)(3) | Tax-exempt charitable organizations and non-profits - http://www.irs.gov/charities/charitable/article/0,,id=96099,00.html. |
| Adopt, Implement, or Upgrade (A/I/U) | Defined in CMS regulations at 42 CFR 495.302 as (1) Acquire, purchase, or secure access to certified EHR technology; (2) Install or commence utilization of certified EHR technology capable of meeting meaningful use requirements; or (3) Expand the available functionality of certified EHR technology capable of meeting meaningful use requirements at the practice site, including staffing, maintenance, and training, or upgrade from existing EHR technology to certified EHR technology per the ONC EHR certification criteria. |
| Affiliated Computer Systems (ACS) | Vendor providing the Medicaid Management Information System (MMIS) to provide core administrative capabilities for DOM |
| Allscripts | Vendor providing e-Prescribing via the eScript solution with support for drug interactions and contraindications |
| American Recovery and Reinvestment Act (ARRA) | An economic stimulus package enacted by the 111th Congress in February 2009, commonly referred to as the Stimulus or The Recovery Act. |
| Authentication | Authentication is a method or methods employed to prove that the person or entity accessing information has the proper authorization. Generally used to protect confidential information and network or application access. |
| Authorization | Authorization is a system established to grant access to information. Authorization also establishes the level of access an individual or entity has to a data set and includes a management component—an individual or individuals must be designated to authorize access and manage access once access is approved. |
| Broadband | A medium that can carry multiple signals, or channels of information, at the same time without interference. Broadband Internet connections enable high-resolution videoconferencing and other applications that require rapid, synchronous exchange of data. |
| Centers for Disease Control and Prevention (CDC) | Centers for Disease Control and Prevention - http://www.cdc.gov/ |
| Centers for Medicare and Medicaid Services (CMS) | Centers for Medicare and Medicaid Services - http://www.cms.gov/ |

| Term | Definition |
|---|---|
| Certification Commission for Health Information Technology (CCHIT) | A private not-for-profit organization functioning as an ONC-Authorized Testing and Certification Body of electronic health records. |
| Children's Health Insurance Program (CHIP) | http://www.cms.gov/home/chip.asp |
| Comprehensive Health Insurance Risk Pool Association | Comprehensive Health Insurance Risk Pool Association - http://www.mississippihealthpool.org/ |
| Computerized Physician Order Entry (CPOE) | Computer-based systems that automate and standardize the clinical ordering process in order to eliminate illegible, incomplete, and confusing orders. CPOE systems typically require physicians to enter information into predefined fields by typing or making selections from on-screen menus. CPOE systems often incorporate, or integrate with, decision support systems. |
| Continuity of Care Document (CCD) | An electronic document exchange standard for sharing patient summary information, including the most commonly needed pertinent information about current and past health status in a form that can be shared by all computer applications, such as Web browsers and EMR/EHR software systems. |
| CONNECT NwHIN Gateway | Open Source Implementation of NwHIN Exchange - http://www.connectopensource.org/ |
| CORE Phase II Certified | Certification for HIPAA EDI Transaction Types - http://www.caqh.org/CORE_phase2.php. |
| Critical Access Hospital (CAH) | A hospital that is certified to receive cost-based reimbursement from Medicare. The reimbursement that CAHs receive is intended to improve their financial performance and thereby reduce hospital closures. |
| Data Warehouse (DW) | A large database that stores information like a data repository but goes a step further, allowing users to access data to perform research-oriented analysis. |
| Decision Support System (DSS) | A computer-based information system that supports business or organizational decision-making activities intended to help decision makers compile useful information from a combination of raw data, documents, personal knowledge, or business models to identify and solve problems and make decisions. |
| De-identified health information | De-identified health information consists of individual health records with data redacted or edited to prevent it from being associated with a specific individual. See the HIPAA Privacy Rule for de-identification guidelines. The term is defined at 45 C.F.R. § 160.103. |
| Department of Defense (DoD) | Department of Defense - http://www.defense.gov/ |
| Department of Health and Human Services (HHS) | United States Department of Health and Human Services - http://www.hhs.gov/ |

| Term | Definition |
|---|---|
| EA Server | Server enabling existing applications to leverage SOA architectures, J2EE, and CORBA. |
| EDIFECS Certified | EDIFECS Certified - http://www.edifecs.com/ |
| Electronic Data Interchange (EDI) | Electronic Data Interchange – The electronic transmission of structured data between organizations. |
| EHNAC Accredited | Electronic Healthcare Network Accreditation Commission - http://www.ehnac.org/ |
| Enterprise Master Patient Index (eMPI) | Master Patient Indices link smaller organizational level MPIs together to identify, match, merge, de-duplicate, and clean patient records to create a clear view of a patient's medical record. |
| Electronic Health Record (EHR) | An electronic record of health-related information on an individual that conforms to nationally recognized interoperability standards that can be created, managed, and consulted by authorized clinicians and staff across more than one health care organization. |
| Electronic Medical Record (EMR) | An electronic record of health-related information for an individual that can be created, gathered, managed, and consulted by authorized clinicians and staff within one health care organization. |
| Envision | Mississippi's HIPAA compliant Medicaid Management Information System (MMIS) developed by Affiliated Computer Systems (ACS). |
| e-prescribing | Practice in which drug prescriptions are entered into an automated data entry system (handheld, PC, or other), rather than handwriting them on paper. The prescriptions can then be printed for the patient or sent to a pharmacy via the Internet or other electronic means. https://www.cms.gov/e-Prescribing/ |
| Federal Health Architecture (FHA) | A collaborative body composed of several federal departments and agencies, including the Department of Health and Human Services (HHS), the Department of Homeland Security (DHS), the Department of Veterans Affairs (VA), the Environmental Protection Agency (EPA), the United States Department of Agriculture (USDA), the Department of Defense (DOD), and the Department of Energy (DOE). FHA provides a framework for linking health business processes to technology solutions and standards, and for demonstrating how these solutions achieve improved health performance outcomes. |
| Federally Qualified Health Center (FQHC) | A health center that receives cost-based reimbursement for Medicare and Medicaid patients as a mechanism to increase primary care services to high risk populations in underserved areas. |
| Formulary | A list of medications (both generic and brand names) that are covered by a specific health insurance plan or pharmacy benefit manager (PBM), used to encourage utilization of more cost-effective drugs. Hospitals sometimes use formularies of their own, for the same reason. |

| Term | Definition |
|---|---|
| Geocoded Interoperable Population Summary Exchange (GIPSE) | GIPSE is a data format created by the U.S. Centers for Disease Control and Prevention (CDC) to allow the electronic exchange of health condition/syndrome summary data that has been stratified by a number of variables, including geography. GIPSE data will be utilized by public health agencies in the U.S. to conduct situational awareness, including early event detection and monitoring, for potential public health events. |
| GrabIt | A tool provided by ACS that is able to search, read and download binary files |
| Health Information Technology (HIT) | The application of information processing involving both computer hardware and software that deals with the storage, retrieval, sharing, and use of health care information, data, and knowledge for communication and decision-making. |
| Health Information Exchange (HIE) | The electronic movement of health-related information among organizations according to nationally recognized standards. Health Information Exchange is a term commonly used to describe a Regional Health Information Organization (RHIO). The notion of HIE is the precursor to RHIO and is used interchangeably when discussing RHIO. |
| Health Insurance Exchange or Health Care Marketplace (HIX) | As part of the Affordable Care Act (ACA), states are to establish, implement and operate a Health Insurance Exchange by January 1, 2014 that acts as a marketplace for individuals seeking affordable insurance options. http://www.healthcare.gov/news/blog/health_insurance_exchanges.html |
| Health Insurance Portability and Accountability Act of 1996 (HIPAA) | A federal law intended to improve the portability of health insurance and simplify health care administration. HIPAA sets standards for electronic transmission of claims-related information and for ensuring the security and privacy of all individually identifiable health information. http://www.hhs.gov/ocr/privacy/ |
| Health Level 7 (HL7) | HL7 is one of several American National Standards Institute (ANSI)-accredited standards-developing organizations operating in the health care arena. Health Level 7's domain is clinical and administrative data. |
| Healthcare Information Technology Standards Panel (HITSP) | Sponsored by ANSI under a contract from ONC, HITSP is a public/private partnership dedicated to facilitating the harmonization of consensus-based standards necessary to enable the widespread interoperability of health care information in the United States. |
| Indian Health Service (HIS) | Indian Health Service - http://www.ihs.gov/ |
| Integrating the Healthcare Enterprise (IHE) | An initiative by healthcare professionals and industry to improve the way computer systems in healthcare share information. IHE promotes the coordinated use of established standards such as DICOIM and HL7 to address specific clinical needs in support of optimal patient care. |

| Term | Definition |
|---|---|
| Interoperability | HIMSS' definition of interoperability is "ability of health information systems to work together within and across organizational boundaries in order to advance the effective delivery of healthcare for individuals and communities." For further information, visit HIMSS Interoperability Definition and Background. |
| Java Surveillance Utilization Review System (J-SURS) | A suite of claims-based, data mining software applications designed to identify potentially fraudulent or abusive practices by both those who provide and receive healthcare service. |
| Meaningful Use (MU) | Meaningful Use - https://www.cms.gov/EHRIncentivePrograms/30_Meaningful_Use.asp |
| Medicaid Information Technology Architecture (MITA) | A federal, business-driven initiative that affects the Medicaid enterprise in all states by improving Medicaid program administration, via the establishment of national guidelines for processes and technologies. MITA is a common business and technology vision for state Medicaid organizations that supports the unique needs of each state. https://www.cms.gov/MedicaidInfoTechArch/ |
| Mississippi Coastal Health Information Exchange (MSCHIE) | The predecessor HIE to MS-HIN. |
| Mississippi Coordinated Access Network (MississippiCAN) | A Coordinated Care Program for Mississippi Medicaid beneficiaries to improve access to needed medical services, improve quality care, and improve efficiencies and cost effectiveness. |
| Mississippi Department of Employment Security (MDES) | Mississippi Department of Employment Security - http://www.mdes.ms.gov/ |
| Mississippi Department of Human Services (MDHS) | Mississippi Department of Human Service - http://www.MDHS.state.ms.us/ |
| Mississippi Department of Mental Health (DMH) | Mississippi Department of Mental Health - http://www.dmh.state.ms.us/ |
| Mississippi Department of Rehabilitation Services (MDRS) | Mississippi Department of Rehabilitation Services - http://www.mdrs.state.ms.us/ |
| Mississippi Division of Medicaid | Mississippi Division of Medicaid - http://www.medicaid.ms.gov/ |
| Mississippi Health Information Network (MS-HIN) | The Mississippi Health Information Exchange. |
| Mississippi Information Technology Services (ITS) | Mississippi Information Technology Services - http://www.its.ms.gov/ |
| Mississippi Insurance Department (MID) | Mississippi Insurance Department - http://www.mid.state.ms.us/ |
| Mississippi State Department of Health (MSDH) | Mississippi State Department of Health - http://www.msdh.state.ms.us/ |

| Term | Definition |
|---|---|
| Nationwide Health Information Network (NwHIN) | The federal government's program to implement a national interoperable system for sharing electronic medical records or EMRs (a.k.a. electronic health records or EHR). NwHIN describes the technologies, standards, laws, policies, programs and practices that enable health information to be shared among health decision makers, including consumers and patients, to promote improvements in health and healthcare. The development of a vision for the NwHIN began more than a decade ago with publication of an Institute of Medicine report, "The Computer-Based Patient Record". http://healthit.hhs.gov/portal/server.pt/community/healthit_hhs_gov__nationwide_health_information_network/1142 |
| National Coordinator for Health Information Technology (ONC) | Previously referred to as ONCHIT, ONC provides leadership for the development and nationwide implementation of an interoperable health information technology infrastructure to improve the quality and efficiency of health care and the ability of consumers to manage their care and safety. http://healthit.hhs.gov/portal/server.pt/community/healthit_hhs_gov__home/1204 |
| Direct (Direct Project) | Provides point-to-point messaging over NwHIN between providers and other healthcare related organizations – http://directproject.org |
| NwHIN Exchange | Provides system level (entity to entity) connectivity over NwHIN – NwHIN Exchange Specification (http://exchange-specifications.wikispaces.com/) |
| NwHIN Exchange Gateway | An implementation of NwHIN Exchange Specifications and Profiles |
| Personal Health Record (PHR) | An electronic record of health-related information on an individual that conforms to nationally recognized interoperability standards and that can be drawn from multiple sources while being managed, shared, and controlled by the individual. |
| Pharmacy Benefit Management (PBM) | A third party administrator of prescription drug programs primarily responsible for processing and paying prescription drug claims. They also are responsible for developing and maintaining the formulary, contracting with pharmacies, and negotiating discounts and rebates with drug manufacturers. |
| Physician Quality Reporting Initiative (PQRI) | A voluntary program that provides a financial incentive to physicians and other eligible professionals that successfully report quality data related to services provided under the Medicare Physician Fee Schedule (MPFS). |
| Portal | A Web site that offers a range of resources, such as e-mail, chat boards, search engines, and content. |
| Prospective Payment System | A payment mechanism for reimbursing hospitals for inpatient health care services in which a predetermined rate is set for treatment of specific illnesses. The system was originally developed by the U.S. federal government for use in treatment of Medicare recipients |

| Term | Definition |
|---|---|
| Provider | A provider is an individual or group of individuals who directly (primary care physicians, psychiatrists, nurses, surgeons, etc) or indirectly (laboratories, radiology clinics, etc) provide health care to patients.<br><br>In the case of this SMHP and the Provider Incentive Payment program, Provider refers to both Eligible Professionals (EPs) and Eligible Hospitals (EHs). |
| Public Health | Public health is the art and science of safeguarding and improving community health through organized community effort involving prevention of disease, control of communicable disease, application of sanitary measures, health education, and monitoring of environmental hazards. |
| Quality Reporting Document Architecture (QRDA) | The emerging quality reporting architecture, based upon the HL7 CDA document. |
| Real-Time Innovations (RTI) | A company that develops a middleware solution. |
| Regional Extension Center (REC) | An organization that has received funding under the Health Information Technology for Economic and Clinical Health Act to assist health care providers with the selection and implementation of electronic health record technology. |
| Regional Health Information Organization (RHIO) | A health information organization that brings together health care stakeholders within a defined geographic area and governs health information exchange among them for the purpose of improving health and care in that community. |
| Rural Health Clinic (RHC) | A clinic certified to receive special Medicare and Medicaid reimbursement, intended to increase primary care services for Medicaid and Medicare patients in rural communities. |
| Secure Sockets Layer (SSL) | A cryptographic protocol that enables secure communication over the internet. |
| Shared Health | A vendor who previously provided DOM with MEHRS/eScript products. |
| Software as a Service (SaaS) | A business model for software delivery in which software is hosted in the cloud and accessed by users through a client. |
| Stakeholder | A stakeholder is any organization or individual that has a stake in the exchange of health information, including health care providers, health plans, health care clearinghouses, regulatory agencies, associations, consumers, and technology vendors. |
| Telehealth | The use of telecommunications and information technology to deliver health services and transmit health information over distance. Sometimes called telemedicine. |
| Telemedicine | The use of telecommunications and information technology to deliver health services and transmit health information over distance. Sometimes called telehealth. |

| Term | Definition |
|---|---|
| Transaction Types (EDI) | 270/271 – EDI Healthcare Eligibility/Benefit Inquiry (270) and EDI Healthcare Eligibility/Benefits Response (271)<br>276/277/277U – EDI Healthcare Claim Status Request (276) and EDI Healthcare Claim Status Notification (277)<br>278 – EDI Healthcare Service Review Information (278)<br>820 – EDI Payroll Deducted and other group Premium Payment for Insurance Products (820)<br>834 – EDI Benefit Enrollment and Maintenance Set (834)<br>835 – EDI Healthcare Claim Payment/Advice Transaction Set<br>837P/D/I – EDI Healthcare Claim Transaction Set (837), Professional (P), Dental (D), and Institutional (I) |
| Transmission Control Protocol and Internet Protocol (TCP/IP) | Commonly known together as the Internet Protocol Suite. |
| Vendors | Vendors are organizations that provide services and supplies to other organizations. In the context of health information exchange, the term usually refers to technology vendors who provide hardware or software, such as electronic health records, e-prescribing technology, or security software. |
| Veteran's Affairs | Veteran's Affairs - http://www.va.gov/ |
| Virtual Private Network | Provides secure and remote access to a private Local Area Network via the Internet or other networks. |