## MedCentral Health System – Automated Abstraction for CMS Quality Measures

**SIEMENS**

### SUCCESS SNAPSHOT
MedCentral Health System
Mansfield, Ohio

**CHALLENGE:**
- Streamline its chart abstraction process
- Integration with submission vendor in order to submit to programs such as the Joint Commission and CMS
- Improving time and accuracy of abstraction data

**SOLUTION:**
Siemens Soarian® Quality Measures is the application selected by MedCental Health System. It is a data analysis tool designed specifically to extract quality of care data from the electronic patient record. It replaces time consuming manual chart reviews with automated chart abstraction of quality measures as defined by CMS and the Joint Commission. Soarian Quality Measures is enabled by the patented REMIND™ (Reliable Extraction and Meaningful Inference from Non-Structured Data).

**STANDARDS-BASED PROFILES IMPLEMENTED:**
IHE Profiles & HITSP Constructs

## BACKGROUND:
**Automatic Abstraction of Quality Measures**

### MedCentral Health System

MedCentral Health System, a non-profit organization with approximately 2,600 employees, is the largest medical provider between Cleveland and Columbus, serving primarily Richland, Crawford, Ashland, Morrow, Huron, and Knox counties.

As one of the leading health systems in Ohio, MedCentral needed to streamline its chart abstraction functions to enable it to efficiently meet increasing federal and state core measures reporting requirements. They desired a tool that would integrate seamlessly within its current clinical and financial departments and ancillary information systems.

MedCentral did not have any data mining applications. What is more, the only visibility it had to clinical processes and the capture of data was through manual chart abstractions, which were completed to accommodate core measurements reporting requirements issued by the Centers for Medicare and Medicaid Services (CMS) and The Joint Commission (JC).

Siemens demonstrated the use of IHE (Integrating the Healthcare Enterprise) and HITSP standards in how its quality product—Soarian® Quality Measures—obtains patient clinical information, and then evaluates and reports on quality measures based on that information. Soarian Quality Measures currently assists with chart abstraction of CMS Quality measures at MedCentral by identifying structured and unstructured evidence in electronic documents. The application then evaluates the evidence found within the medical record to determine the answer to the particular question for a given measure through inference logic (e.g., Was aspirin prescribed at discharge…? Yes.).

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**HiMSS**

# IHE SUCCESS STORY

## CHALLENGE:
**Abstraction Process within Soarian Quality Measures**

As part of utilizing the IHE standards, Soarian Quality Measures needed to obtain patient summary information and encounter discharge information from a patient medical repository using the IHE IT Infrastructure framework. This framework provided the secure retrieval of information from a repository of documents that describe the patient medical record.

Manually abstracting this wave of information threatens to swamp healthcare organizations. With patient data buried in many different systems from many departments, especially records in free text, hospitals are challenged to calculate and report core measures in a timely manner. Turning unstructured data into structured actionable data is a key objective. And when patient quality issues are identified, finding out what the contributing factors are can be a very difficult process. It may take months which dramatically slows downs and impedes the ability of a hospital to correct quality problems, and effectively impact quality improvement.
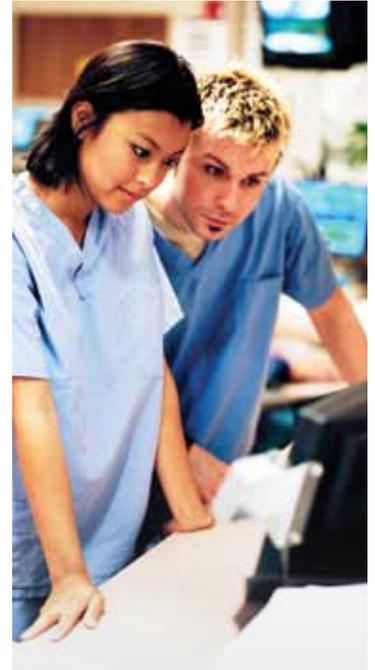
## SOLUTION:
**Implementing HITSP Standards and Initiating Use of EHR Technologies**

The retrieved documents were represented using CDA (Clinical Document Architecture), which models patient clinical information using coded values and relationship to describe observations, substance administration, problems, encounters, vital signs, patient demographic information, and other information about the patient.

Quality measures are described in a machine readable form using the HITSP C106 standard. Measures described by the C106 documents are evaluated against the CDA documents to create an HITSP C105 document. The HITSP C105 document describes the patient record information that is required to evaluate the electronic measure.

Today, the quality abstraction process can be resource intensive for facilities to maintain for CMS, The Joint Commission, and other quality initiative reporting processes. By adopting the HITSP standards and initiating use of EHR technologies under the HITECH Act, MedCentral's role of quality reporting became less burdensome to facilities and enhanced the reporting processes. By implementing the prescribed standards, MedCentral's EHR systems were able to facilitate the quality reporting processes and allow for improved timely reporting.

# INTEROPERABILITY IN ACTION:
**Standards and Profiles**

The following diagram shows how the Siemens Soarian Quality Measures product collects clinical documents from an XDS-b registry/repository, evaluates the medical record against the electronic quality measures described by a C106 document and produces a QRDA C105 document that describes how patients qualify for the numerator/denominator of the quality measure.
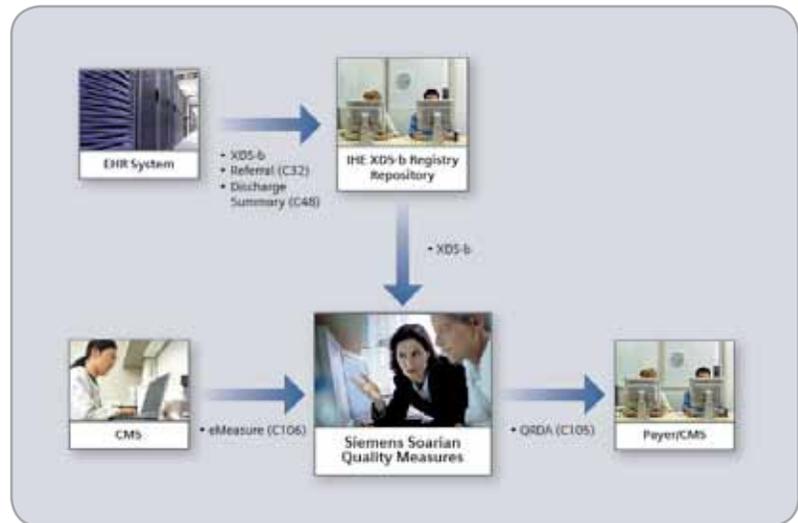


# RESULTS & BENEFITS:
**Benefits of Standards Adoption**

MedCentral received value from its Soarian Quality Measures solution almost immediately. Within the first few months, the team responsible for CMS and JC reporting posted significant results. MedCentral realized a reduction in chart abstraction times in every category.

- Automatic chart abstraction yielded significant time reduction: 66% (HF), 63% (AMI), 42% (SCIP), and 53% (PN)
- Average of 51% in time reduction for abstraction
- Improved abstraction accuracy by 13% for 10 patients (1 for HF, 3 for AMI, and 6 for PN)

Another advantage realized from Soarian Quality Measures is the improved accuracy of chart abstractions. Soarian Quality Measures pulls information from Soarian and populates areas of the electronic chart for quality reporting — automating a process that was once done by MedCentral personnel. More importantly, Soarian Quality Measures consistently includes data that would have been missed in a manual abstraction.

Siemens believes the IHE standards improved the ability for vendors and providers to share the patient care information among various settings in a systematic approach. Obviously, this will require changes to be adopted in the vendor community as well as the provider community to conform to the standards in a uniform reporting mechanism. This will take time and effort on many levels. However, with the HITECH incentives being supported by the Federal Government, these initiatives are closer to reality than ever before, as demonstrated by MedCentral Health System.

# IHE SUCCESS STORY

## TESTIMONIAL:
**Fred Crowgey, Projects Director for IT at MedCentral**

*"We built a huge data repository and were constantly adding to it. Soarian Quality Measures can mine discrete data as well as text data. And, it can do this in Siemens and non-Siemens applications. That's hugely appealing and is helping to convert data into knowledge here at MedCentral."*

## HOW CAN INTEGRATING THE HEALTHCARE ENTERPRISE (IHE) HELP YOU?
**Find out more at www.ihe.net**

Use of IHE-based systems is a wise choice because IHE provides a proven foundation to support a connected healthcare environment by solving the interoperability challenges faced by today's healthcare providers. Most clinical settings use a wide variety of systems and modalities from different manufacturers and as a result, exchange of patient data is a significant challenge.

IHE provides a solution via a common framework, referred to as IHE "Profiles" that enable the coordinated use of established standards such as HL7, DICOM, OASIS, and many others. IHE profiles address critical interoperability issues related to information access for care providers and patients, clinical workflow, security, administration and information infrastructure. IHE also defines a process by which these profiles are subjected to rigorous validation and conformance testing.

Together this framework and process result in health IT systems that are able to communicate with one another better, are easier to implement, and allow care providers to more effectively use information.

### Why IHE?
Use of IHE helps clinical end-users resolve interoperability challenges. The ability to efficiently and securely access and exchange patient health data has long been a difficult challenge to resolve. Now with the addition of new incentives such as demonstrating "Meaningful Use' in the United States and similar mandates elsewhere in the world, IHE provides a proven solution to resolve health IT interoperability challenges. Use of IHE enables a collaborative environment between healthcare providers and industry leaders to improve the effective and secure exchange of patient health information.

**Benefits of using IHE-based Systems for Hospitals and other Enterprise Clinical Settings:**

- *Fewer interfaces:* It's not unusual for a 100-bed hospital to have dozens of interfaces - with IHE-based systems the need to create and maintain costly interfaces is greatly reduced.

- *Meeting reporting requirements:* Products developed using IHE can help end users more easily meet reporting requirements such as Meaningful Use in the United States and similar requirements worldwide.

**Benefits of Using IHE Frameworks for Health IT Product Developers:**

- *Reduce and improve product development cycles:* By implementing IHE, vendors can streamline their product development cycles by leveraging this integration capability across multiple customers, thus allowing staff to focus more attention on creating new product features and functions.

Founded in 1997 by HIMSS and RSNA, IHE is a global non-profit organization with stakeholder engagement of hundreds of volunteers representing the healthcare community worldwide.

*Learn more about how IHE can help you, visit **www.ihe.net** or email **secretary@ihe.net**.*