2014

Meaningful Use: Electronic Clinical Quality Measure Reporting

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Acknowledgements

I would like to take this opportunity to express my gratitude to Dr. Sajeesh Kumar for his patience and guidance in completing my thesis and also to my coworkers at CHE Trinity Health in Livonia, Michigan, for the support and encouragement as well as the ability to flex my schedule when needed.

Most importantly, I wish to thank my husband and parents for the support given to me throughout the years which enabled me to accomplish this very lengthy goal. My children for sharing the dining room table throughout the years, so I too could do my homework. For my niece and nephew who thought it was weird I was still in school; realize that no matter how old, you can achieve what you set your mind to.

Lastly, I dedicate this thesis to my maternal grandfather who influenced many decisions in our lives, but most importantly drove home the need for education and I quote… "it is the one thing in life that can never be taken away."

To all, thank you.

Abstract

The adoption of health information technology and the meaningful use of electronic health records is a byproduct of the 2009 American Recovery and Reinvestment Act (ARRA). One measure of ARRA is the Health Information and Technology for Economic and Clinical Health (HITECH) Act which authorizes the Centers for Medicare and Medicaid Services (CMS) to provide monetary incentives to hospitals and providers who demonstrate meaningful use of certified electronic health records (EHRs).

The electronic reporting of clinical quality measures is but one requirement for demonstrating meaningful use. Reporting of clinical quality measures has been around for 25 plus years as a manual process of chart abstraction. With today's requirements, clinicians must adopt and support alternate means to discretely document patient care. Vendors are scrambling to provide the electronic tools necessary to enhance workflow, calculate results and electronically report outcomes; all as a by-product of patient care.

The journey has only begun and will most likely become more complex and stringent in the future as new requirements are enacted. Hospitals will rely on the electronic tools provided by vendors and the support of the clinicians to adopt workflow changes needed for the successful attestation of meaningful use.

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Definition of Key Terms

- AHA – American Hospital Association
- AHIMA – American Health Information Management Association
- AHRQ – Agency for Healthcare Research and Quality
- AMI – Acute Myocardial Infarction
- ARRA – American Recovery and Reinvestment Act
- CAC – Children's Asthma Care
- CMA – Core Measure Automation
- CMS – Centers for Medicare and Medicaid Services
- CQM – Clinical Quality Measures
- EHR – Electronic Health Record
- eCQM – Electronic Clinical Quality Measures
- ED – Emergency Department
- HITECH – Health Information and Technology for Economic and Clinical Health
- HTN – Healthy Term Newborn
- JC – Joint Commission
- MU – Meaningful Use
- NIHSS – National Institutes of Health Stroke Scale
- NQF – National Quality Forum
- NQS – National Quality Strategy
- PC – Perinatal Care
- PN – Pneumonia

- RHMs – Regional Health Ministries
- SCIP- Surgical Care Improvement Project
- STK – Stroke
- VTE – Venous Thromboembolism

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Chapter 1

Introduction

In 2009, President Barack Obama signed into law the American Recovery and Reinvestment Act (ARRA). Through ARRA, the Health Information and Technology for Economic and Clinical Health (HITECH) Act was instituted promoting the adoption of health information technology and the meaningful use of electronic health records (EHRs).

The HITECH Act authorizes the Centers for Medicare and Medicaid Services (CMS) to provide monetary incentives to hospitals and providers who demonstrate meaningful use of certified EHRs for the electronic exchange of health information. EHRs can provide many benefits for providers and their patients, but the benefits depend on how they are used. The EHR Incentive Program encourages providers to utilize their EHRs to achieve benchmarks that can lead to improved patient care, access to complete and accurate information as well as patient empowerment.

Background

The final rule defining meaningful use of electronic health records (EHRs) was published on July 28, 2010, and consisted of three requirements:

1. Use of certified EHR technology.
2. Demonstration of meaningful use of the EHR.
3. Clinical quality measure reporting using the EHR.

Clinical quality measures (CQMs) are tools that health care providers can use to measure and track the quality of health care services being provided across many aspects of patient care. With the continual tracking and reporting of CQMs, health care providers can deliver effective, safe, efficient, patient-centered care resulting in improved patient outcomes, public health and lower costs associated with the delivery of care (Ramirez 2012).

CQMs prior to the enactment of Meaningful Use have traditionally been manually abstracted from the medical record or claims-based reported. The CQMs identified for demonstration of Meaningful Use have been retooled to allow for collection and abstraction directly from the electronic health record. Additional work remains to "harmonize" the quality measures required for CMS Inpatient Quality Reporting and Meaningful Use (Table 1).

Stage 1 Meaningful Use for eligible hospitals for years 2011 – 2013, required reporting on 15 out 15 clinical quality measures:

- Stroke (STK) - 7 measures
- Venous Thromboembolism (VTE) - 6 measures
- Emergency Department (ED) Throughput – 2 measures

In 2014, Stage 2 Meaningful Use for eligible hospitals mandated electronic reporting of 16 out 29 clinical quality measures covering at least 3 of 6 National Quality Forum (NQF) domains:

- Acute Myocardial Infarction (AMI) – 4 measures
- Pneumonia (PN) – 1 measure
- Surgical Care Improvement Project (SCIP) – 3 measures

- Children's Asthma (CAC) – 1 measure
- Stoke (STK) – 7 measures
- Venous Thromboembolism (VTE) – 6 measures
- Emergency Department (ED) Throughput – 2 measures
- Hospital Outpatient – 1 measure
- Perinatal Care (PC) – 2 measures
- Healthy Term Newborn (HTN) – 1 measure
- Hearing Screening – 1 measure

The NQF domains are part of the National Quality Strategy (NQS) priorities set forth by the Department of Health and Human Services for health care quality improvement. The six domains are:

- Patient and Family Engagement
- Patient Safety
- Care Coordination
- Population/Public Health
- Efficient Use of Healthcare Resources
- Clinical Process/Effectiveness

Purpose of Study

The purpose of this study is to identify the electronic tools compatible with the Cerner Millennium electronic health record and the associated clinician workflow modifications required for electronic reporting of clinical quality measures (CQMs).

Significance of Study

The significance of this study will be the achievement of a standardized clinician workflow at CHE Trinity Health through the utilization of available electronic tools compatible with the Cerner Millennium electronic health record.

CHE Trinity Health is one of the largest multi-institutional Catholic health care delivery systems in the nation. It serves people and communities in 20 states from coast to coast with 86 hospitals, 109 continuing care facilities as well as home health and hospice programs that provide nearly 2.8 million visits annually (CHE Trinity Health Annual Report 2013).

Research Questions

This study seeks to identify the required changes in clinician workflow that will enhance data capture of the electronic reporting of clinical quality measures.

The two specific research questions are:

- With the implementation of certified electronic health records and the mandate for Meaningful Use, what workflow changes must be incorporated to successfully achieve attestation of electronic clinical quality measure reporting?
- What Cerner Millennium compatible electronic tools are available to capture clinical quality measure data as a byproduct of patient care?

Table 1

Measure Comparison

CMS Inpatient Quality Reporting Program vs Meaningful Use

Acute Myocardial Infarction (AMI)

Measure	CMS IQR Program	Meaningful Use
AMI-1	*Voluntary*	N/A
AMI-2	Removed	e-measure
AMI-3	*Voluntary*	N/A
AMI-5	*Voluntary*	N/A
AMI-7	*Voluntary*	N/A
AMI-7a	REQUIRED	e-measure
AMI-8	*Voluntary*	N/A
AMI-8a	*Voluntary*	e-measure
AMI-10	Removed	e-measure

Heart Failure (HF)

Measure	CMS IQR Program	Meaningful Use
HF-2	*Voluntary*	N/A
HF-3	Removed	N/A

Pneumonia (PN)

Measure	CMS IQR Program	Meaningful Use
PN-3a	Removed	N/A
PN-6	*Voluntary*	e-measure
PN-6a	N/A	N/A
PN-6b	N/A	N/A

Surgical Care Improvement Project (SCIP)

Measure	CMS IQR Program	Meaningful Use
SCIP-Inf-1	*Voluntary*	e-measure
SCIP-Inf-2	*Voluntary*	e-measure
SCIP-Inf-3	*Voluntary*	N/A
SCIP-Inf-4	REQUIRED	N/A
SCIP-Inf-6	*Voluntary*	N/A
SCIP-Inf-9	*Voluntary*	e-measure
SCIP-Card-2	*Voluntary*	N/A

SCIP-VTE-2	*Voluntary*	N/A

Stroke (STK)

Measure	CMS IQR Program	Meaningful Use
STK-1	REQUIRED	N/A
STK-2	*Voluntary*	e-measure
STK-3	*Voluntary*	e-measure
STK-4	REQUIRED	e-measure
STK-5	*Voluntary*	e-measure
STK-6	REQUIRED	e-measure
STK-8	REQUIRED	e-measure
STK-10	*Voluntary*	e-measure

Venous Thromboembolism (VTE)

Measure	CMS IQR Program	Meaningful Use
VTE-1	REQUIRED	e-measure
VTE-2	REQUIRED	e-measure
VTE-3	REQUIRED	e-measure
VTE-4	*Voluntary*	e-measure
VTE-5	REQUIRED	e-measure
VTE-6	REQUIRED	e-measure

IMM (Immunizations)

Measure	CMS IQR Program	Meaningful Use
IMM-1	*Voluntary*	N/A
IMM-2	REQUIRED	N/A

Chapter 2

Review of Literature

An extensive search of relevant literature was performed using PubMed and CINAHL databases, Google Scholar search engine and the American Health Information Management Association's (AHIMA) Body of Knowledge (Table 2).

Search guidelines were followed for each database using keywords of meaningful use, quality measures, clinical quality measures, electronic CQMs, eCQMs, reporting electronic quality measures and reporting eCQMs. This literature review included articles that were published in the years 2012 to 2014, written in English and addressed electronic clinical quality measure reporting for Meaningful Use. Articles addressing eligible physicians, physician practices or outpatient clinical quality measures were excluded as well as letters and website blogs.

Many articles found in the literature search addressed attestation to the Meaningful Use of electronic health records in general and were thus eliminated. Focus of these articles discussed interoperability, certification of electronic health records and required vocabulary standards.

Findings

The Joint Commission (JC) has been involved in performance measurement for 25 years; viewed as a critical way to extend the reach and sophistication of the accreditation process. Quality measures set national standards of care in clinical categories and hospitals are then measured on how often they provide recommended treatments known to get the best results for patients with certain medical conditions or surgical procedures. The measures are based on

scientific evidence and health care experts and researchers are constantly evaluating the evidence to make sure that the measures and guidelines are kept up-to-date.

Today, quality measures are tied to the Centers for Medicare & Medicaid (CMS) value-based purchasing program, to emerging pay-for-performance initiatives, to the National Quality Forum and are made available online to help patients choose where they go for care. Increasingly, the pressure to comply with quality measures is weighing heavily on health care organizations, clinical staff, reimbursement and reputations as a whole.

CMS has recognized that considerable work is needed to be done by measure owners and developers on the clinical quality measures it has put forth in its ruling including completing electronic specifications for measures, incorporating those specifications into EHR technology to capture and calculate the results and implementing the necessary systems.

Collection of quality measures today. According to Fu et al., (2012) current quality measurement processes are labor intensive, involving manual chart reviews and use of paper-based quality measures that vary in format and definitions from measure to measure. Automated quality reporting is considered to many to be an important tool that will help close the gaps in the quality of health care in the United States.

The practice of collecting and publishing information on the quality of health care services began as early as the late 19th Century when Florence Nightingale reported on London Hospital mortality rates. Today, there is almost 2000 quality measures listed in the Agency for Healthcare Research and Quality (AHRQ) National Quality Measure Clearinghouse.

Challenges associated with the reporting of eCQMs. A study sanctioned by the American Hospital Association (AHA) was conducted regarding hospitals electronically reporting quality measures. Four hospitals of various sizes participated in the study. Results

showed extensive clinician workflow redesign was required in order to capture discrete data. Interoperability of multiple systems within the facility caused duplicative work as information available in one system had to be manually entered into the electronic health record. In addition, a staff intensive concurrent review process was implemented to review documentation and identify missing data thus ensuring the accuracy and completeness of the data used for quality measure reporting.

Another study conducted by Kern et al., (2013) discussed the impact that electronic health records will have on the reporting of quality measures. However, before getting to this realization, work must be done to retool the current paper-based manually abstracted measures. Measure developers should include clinicians and EHR vendors to address workflow ensuring that the capture of structured data flows with the care of the patient. In addition, further studies are indicated to ensure reliability of the data captured prior to public reporting and pay for performance; if a quality measure cannot be reliably collected, it cannot be validated.

Change in workflow. As quality measures change from manually abstracted to electronically reported, there are inherent differences in the data definitions, calculations, inclusions and exclusions. The manually abstracted results for the same measure previously reported will change and remediation to reconcile and manage the differences will become necessary. Quality teams will have growing responsibility to proactively work with clinicians to ensure that their patient populations qualify for eMeasure reporting (Doyle 2014).

Findings of a study by Kern et al., (2013) suggests that automatic reporting of electronic clinical quality measures underestimates rates due to non-discrete capture of clinical data in the form of free-text or scanned documents. For automated reporting to be valid, clinicians have to document care in an electronic format amendable to reporting. Workflow and documentation

habits have a profound impact on the success of e-measure reporting. Documentation requirements need to be reinforced periodically to ensure data is being discretely captured. Continued studies are needed to assess which measures are best calculated electronically or retrieved from claims/administrative data (Parsons et al, 2012).

Quality measures future. The American Hospital Association (AHA) recommends slowing down the pace of electronic quality reporting citing the need for policy changes. In a recent study, challenges were identified in the program design and technology. AHA states "This study demonstrates that successful implementation of current policy requirements for eCQMs must be redirected so that EHRs are working for the clinicians rather than the clinicians spending extensive amounts of time working for the EHRs". Five policy recommendations have been put forth which would allow the creation of a reliable policy, give time for vendors to develop the appropriate tools to support workflow and enable hospitals to improve quality while maintaining patient safety (Monegain 2013)

The five AHA policy recommendations are:

1. Slow the pace of the transition to electronic quality reporting with fewer but better tested measures, starting with Stage II.
2. Make EHRs and eCQM reporting tools more flexible so that data capture can be aligned with workflow and interoperable so that data can be shared across hospital department systems.
3. Improve health IT standards for EHRs and eCQM reporting tools to address usability and data management to achieve Meaningful Use expectations.
4. Carefully test eCQMs for reliability and validity before adopting then in national programs.

5. Provide clear guidance and tested tools to support successful hospital transition to increased electronic quality reporting requirements.

The review of the literature although somewhat limited provides for a common theme. The manual abstraction of clinical quality measures is labor intensive as the abstractor must thoroughly review the medical record whether it be in a paper, electronic or a hybrid (paper and electronic) format. There is a need for discrete data to be captured in order for electronic reporting of clinical quality measures to be successful. The capture of such data must be conducive to the clinician workflow and a by-product of patient care. Vendors must provide the electronic tools needed to capture the data relevant to the appropriate clinical quality measure based on patient condition with the ability to report accurate results.

Table 2

Literature Review

Title of Publication	Year of Publication	Author(s)	Main Findings
Hospitals face challenges using electronic health records to generate clinical quality measures	2013	American Hospital Association	Results of study showed extensive provider and nurse workflow redesign was required in order to capture discrete data.
The journey to electronic performance measurement	2013	Burstin, H.	Discussed the impact that electronic health records will have on the reporting of quality measures and the need to retool the current paper-based manually abstracted measures.
Transition to emeasures	2014	Doyle, B.	Although the new electronic measures are labeled the same, there are inherent differences in the data definitions, calculations, inclusions and exclusions.
The impact of emerging standards adoption on automated quality reporting	2012	Fu, P.C. Rosenthal, D. Pevnick, J.M. Eisenberg, F.	The automated reporting of clinical quality measures will provide an opportunity to ease the current manual burden of data collection resulting in the efficiency and effectiveness of the health care being delivered.
AHA urges quality reporting slowdown	2013	Monegain, B.	The AHA recommends slowing down the pace of electronic quality reporting citing the need for policy changes which would allow the creation of a reliable policy, time for vendors to develop the appropriate tools to support workflow and hospitals to improve quality with maintaining patient safety.
Validity of electron health record-derived quality measurement performance monitoring	2012	Parsons, A. McCullough, C. Wang, J. Shih, S.	Workflow and documentation habits have a profound impact on the electronic capture of clinical quality measures. Periodic reinforcement of documentation

			requirements will ensure data is being discretely captured.

Chapter 3

Methodology

CHE Trinity Health began its Stage I Meaningful Use journey in the fall of 2011 with the implementation of a Quality Measure Dashboard. This dashboard was not well-received by clinicians and quality leads in the regional health ministries (RHMs) which resulted in limited adoption of the tool.

By early 2013, with Stage II Meaningful Use electronic reporting just around the corner, a new more aggressive initiative was undertaken by senior leadership to implement the electronic tools necessary to facilitate and support improved usability, implementation of additional functionality and to address the people, process and culture issues related to capturing and reporting clinical quality measure data.

Objectives of the project included:

- The establishment and adoption of standardized, evidence-based clinical practices for each measure (Heart Failure, Immunizations, Acute Myocardial Infarction, Pneumonia, Surgical Care Improvement Project, Stroke and Venous Thromboembolism)
- To embed the most recent quality measures functionality into clinician and abstractor workflow to support evidence-based decision support and automation of quality measures
- Establish process to automate quality measure abstraction for core measures/Meaningful Use Stage II that can be leveraged for future regulatory requirements

- Allow for flexible tools, reports and dashboards to support managing compliance, creating accountability as well as research and predictive capabilities

A project team is formed. Armed with the vision of leveraging collaboration, innovation and process standardization to design the safest practices to achieve best-in-class results for quality measures – every patient, every time, a comprehensive hierarchical Core Measure Automation (CMA) project team was formed consisting of:

- CMA Steering Team – executive members from clinical informatics and regional health ministries (RHMs)
- CMA Executive Sponsor – included two members from the CMA Steering Team along with representatives from the RHMs, informatics, system integration and program leadership
- CMA Leadership - comprised of physician leadership, clinical informatics, quality leads and information services
- CMA Planning Team – included clinical informatics, information services, program leadership, vendor representative (Cerner) and change leadership
- Local RHM Project Team – project lead from all regional health ministries

The journey begins. The CMA planning team was tasked with conducting site visits to all RHMs to meet with key stakeholders comprised of physician and nursing leadership as well as lead quality reviewers and abstractors (Table 3). The main focus of these meetings were to identify the electronic tools available to automate current processes as going forward it would be impossible to maintain a manual method of capturing the ever increasing measures that will be required of hospitals. Through automation, CHE Trinity Health would be able to shift efforts

from data abstraction toward the use of information to improve care. It was strongly felt that quality measures were here for the longevity and are only going to expand and have more impact as meaningful use requirements increase.

Based on the previous limited adoption of a quality measure dashboard, it was imperative that each RHM had change leaders supporting the CMA project objectives and goals. As a change leader, responsibilities included the participation in project design decisions, implementation planning, development of training materials based on organizational process and workflow and generally becoming "super users" of the electronic tools to support end users not only at go-live, but on an ongoing basis.

Table 3

CMA Project Key Roles and Responsibilities

Role	Responsibilities
Physician	• Document contraindications utilizing the Quality Measure Contraindication PowerNote • Document working diagnosis • Maintain an up to date problem list • Enter admission orders via Order Set or PowerPlan • Review MPages for missing documentation and complete prior to patient discharge. • Complete discharge instructions
Nursing	• During report out or as needed, review the Quality Measure Component on the MPage • Check for incomplete measures and document elements that are within the scope and practice of nursing • Relay incomplete measures to on coming staff
Concurrent Reviewer	• Review summary reports to identify trends of missing information • Follow up with appropriate clinician • Provide teaching on how to use the tools if necessary • Manually initiate the Quality Measure Component as needed • Provide education regarding quality measures • Identify time sensitive measures and follow up with appropriate clinician for completion
Abstractor	• Identify patients in the appropriate quality measure population based on principal diagnosis • For each patient, review the entire chart and capture the data elements as required • Provide summary reports for physician peer review and administration

Chapter 4

Results

Two electronic tools were identified and implemented that incorporated the discrete capture of documentation and clinical quality measure monitoring into the clinician workflow:

The first tool was the addition of a quality measure component to the summary page (Table 4) also known as an MPage. According to Cerner's definition, an MPage is a knowledge solution that provides a consolidated view of information contained throughout the electronic medical record providing the clinician with the information needed to understand the patient's story in a single view. The quality measure component provides a documentation "checklist" related to the specific quality measure for which the patient is being tracked. Data is automatically collected as part of the day-to-day workflow and provides real-time feedback to clinicians.

Quality measure components are initiated based on patient status (Inpatient, Observation, Inpatient Major Surgery and Labor &Delivery), individual care plan or by system rule. The component displays the quality measures being tracked in either a complete or incomplete status. As care is documented discretely within the electronic record, the quality measure component updates the required data elements in real-time. However, in addition, each specific data element within the measure contains a hyperlink that when clicked on takes the clinician to the proper area within the chart to discretely capture the care provided (prescribe, order, document, administer) (Tables 5-11).

The second tool implemented is used to capture quality measure contraindications. This tool is known as the Quality Measure Contraindication PowerNote (Table 12). From the Quality

Measure Component, the user clicks on the contraindication document hyperlink, the Quality Measure PowerNote opens, the user then selects the appropriate measure, a contraindication section displays. The user then selects the appropriate contraindication(s) and signs the note. The user is returned to the MPage. The document link is updated with the documented contraindication as well as the date and time that the PowerNote was signed.

Table 4

Quality Measure Component on MPage

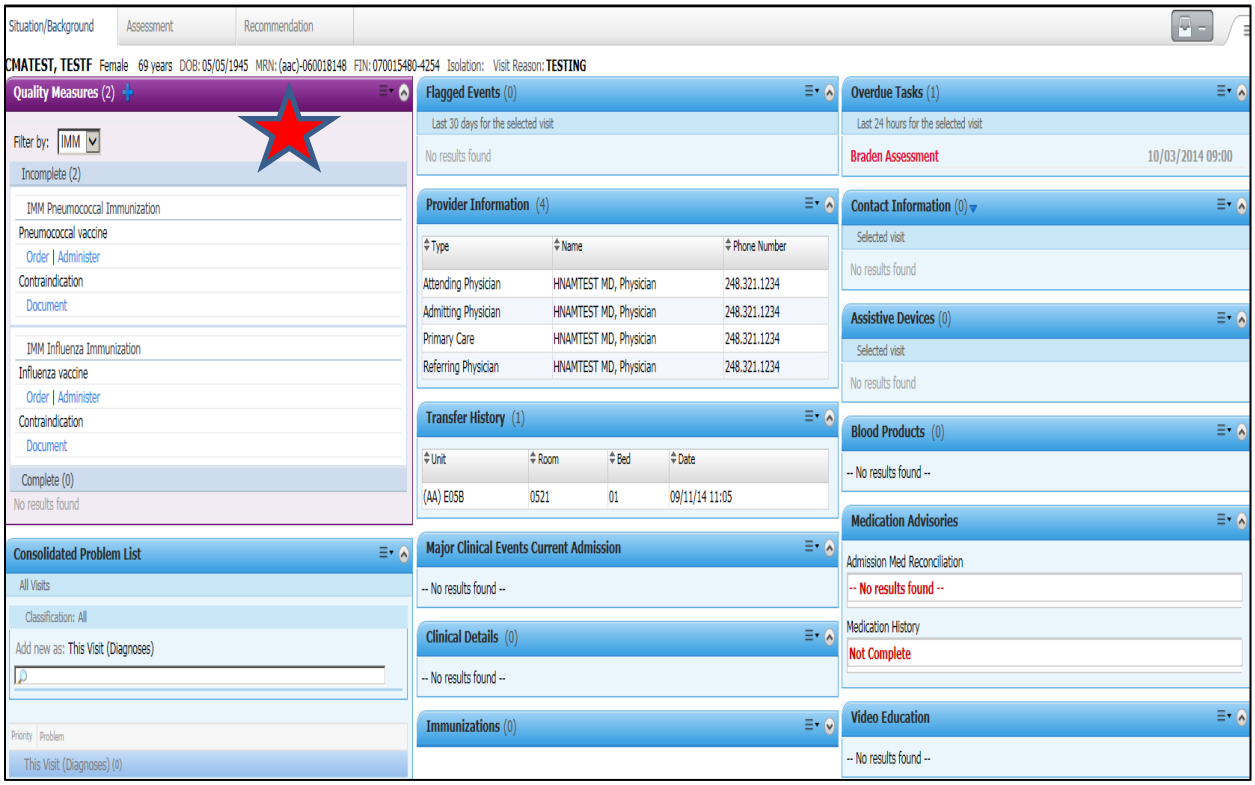


Table 5

Initiating Quality Measures

Quality Measure	How the Measure is Initiated
Venous Thromboembolism	Initiated by the system on patients 18 and over after the Adult Admission Profile, Adult Preprocedure Comprehensive Form or OB Comprehensive Form is signed.
Stroke	NIHSS>0, Swallow Screen administered, Stroke problem or diagnosis documented or Altepase 0.9/kg ordered in the ED. Initiated by the Stroke Quality Measure order within the Stroke PowerPlan
Pneumonia	Pneumonia diagnosis documented Initiated by the Pneumonia Quality Measure order within the Pneumonia PowerPlan
Acute Myocardial Infarction	STEMI problem or diagnosis documented Initiated by the AMI Quality measure order within the AMI and Chest Pain PowerPlan
Heart Failure	Heart failure problem or diagnosis documented or heart failure early alert ID is on the patient's chart. Initiated by the Heart Failure Quality order within the Heart Failure PowerPlan
SCIP	Initiated by the manual placement of the SCIP Quality Measure order.

Table 6

VTE Quality Measure

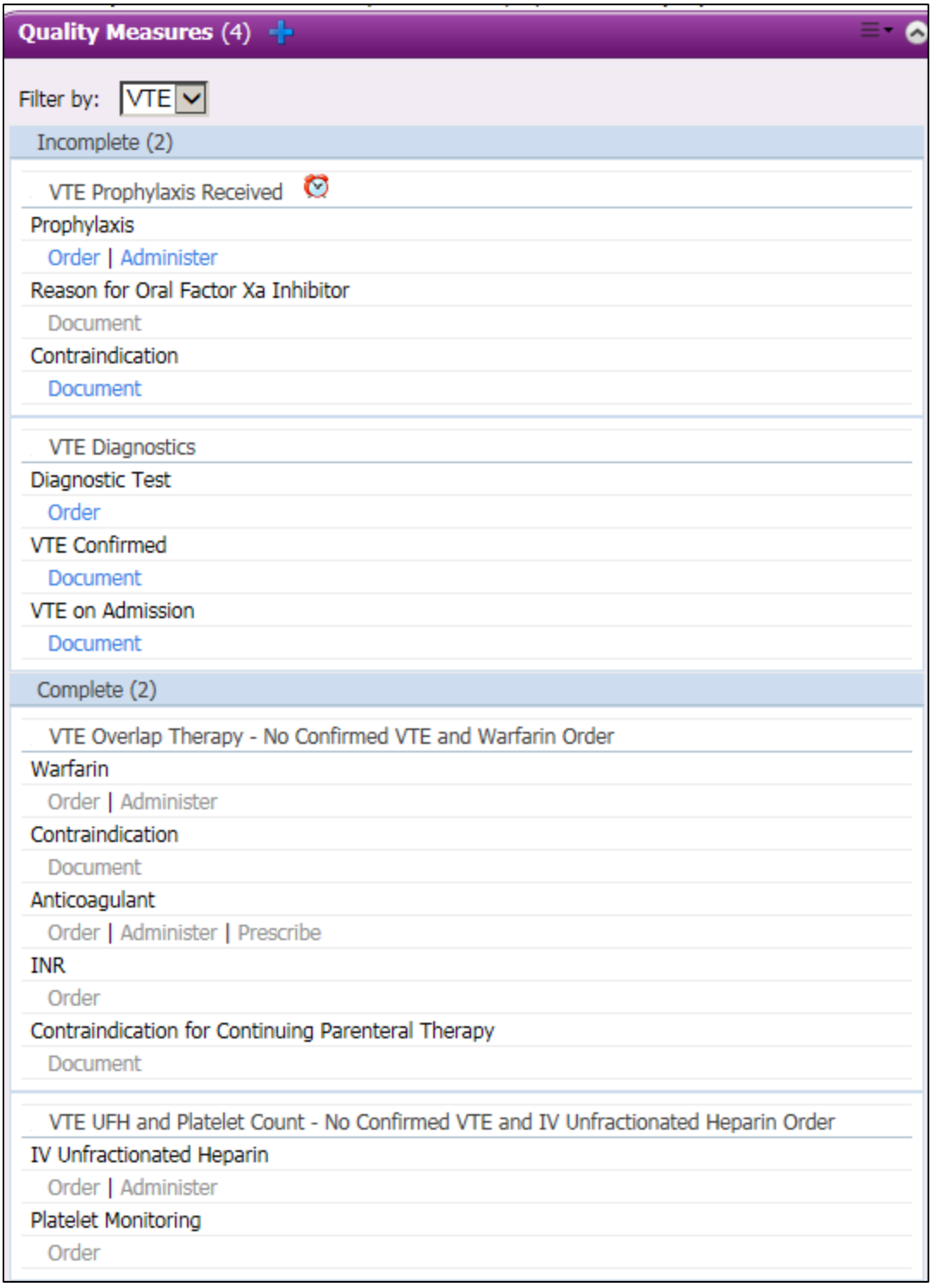
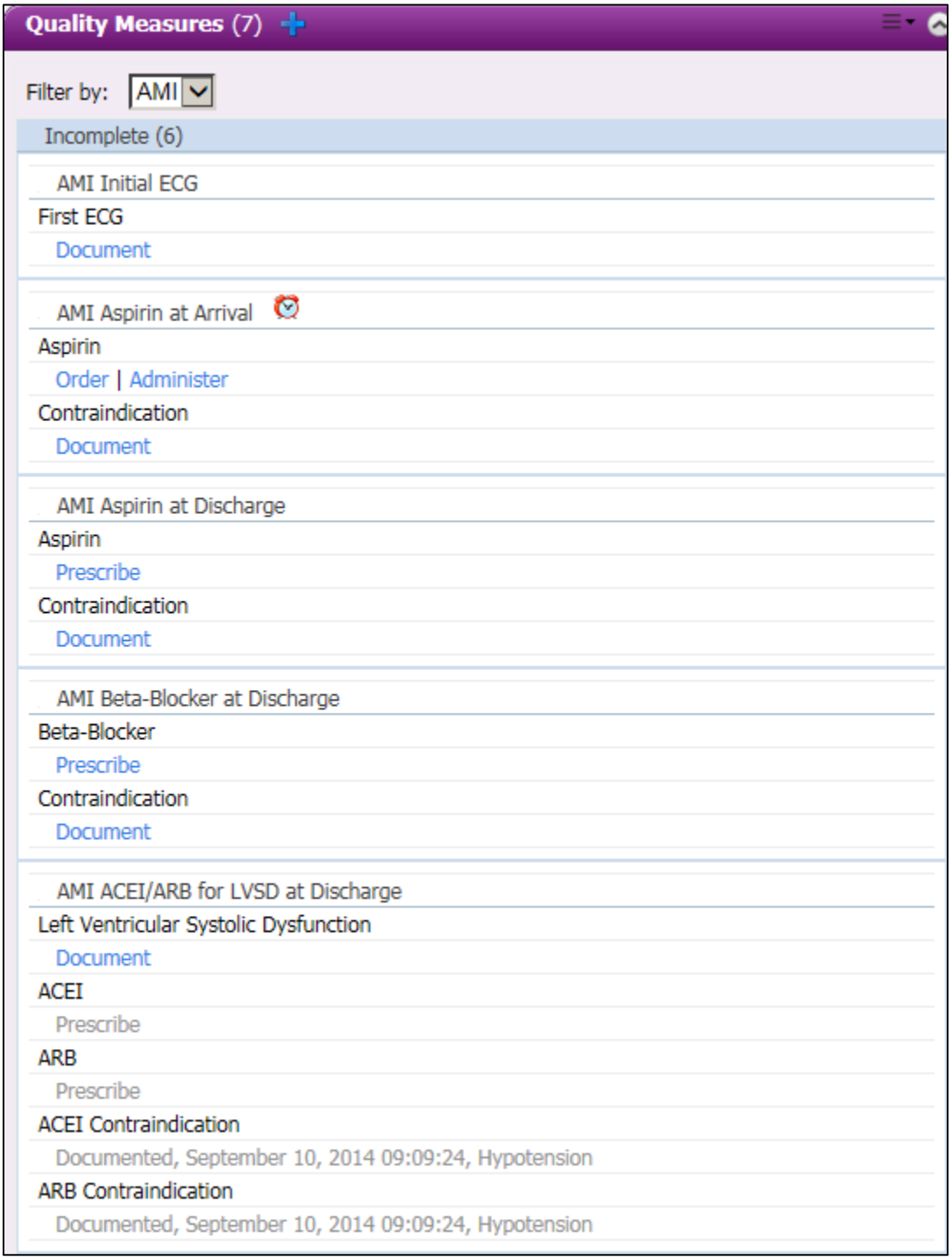


Table 7

AMI Quality Measure



AMI Quality Measure Continued

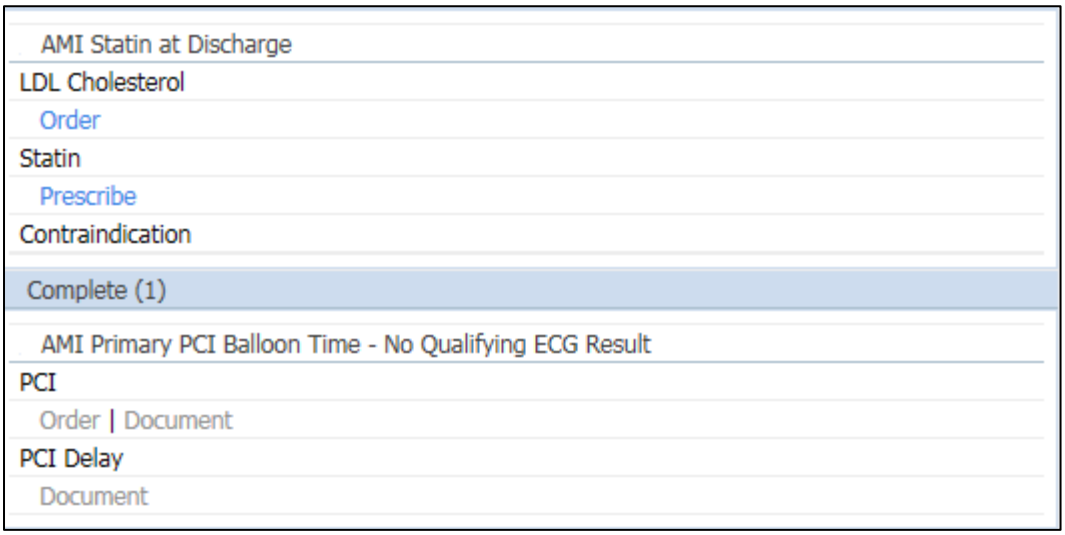


Table 8

HF Quality Measure

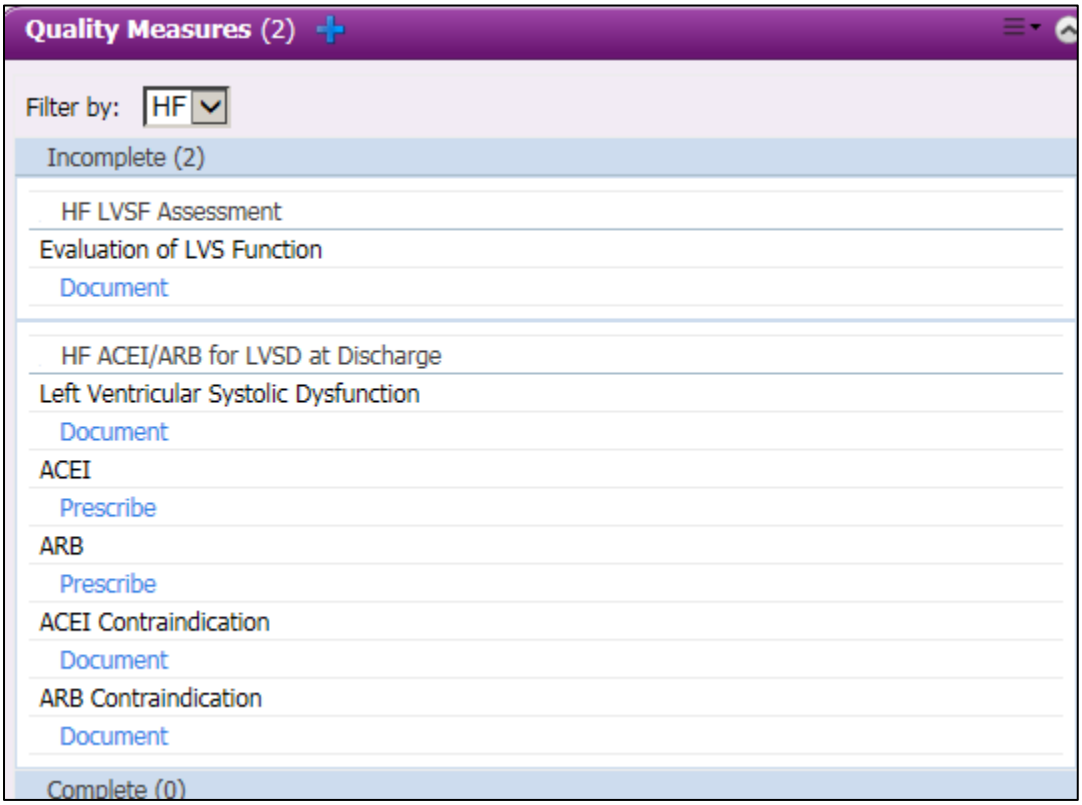


Table 9

PN Quality Measure

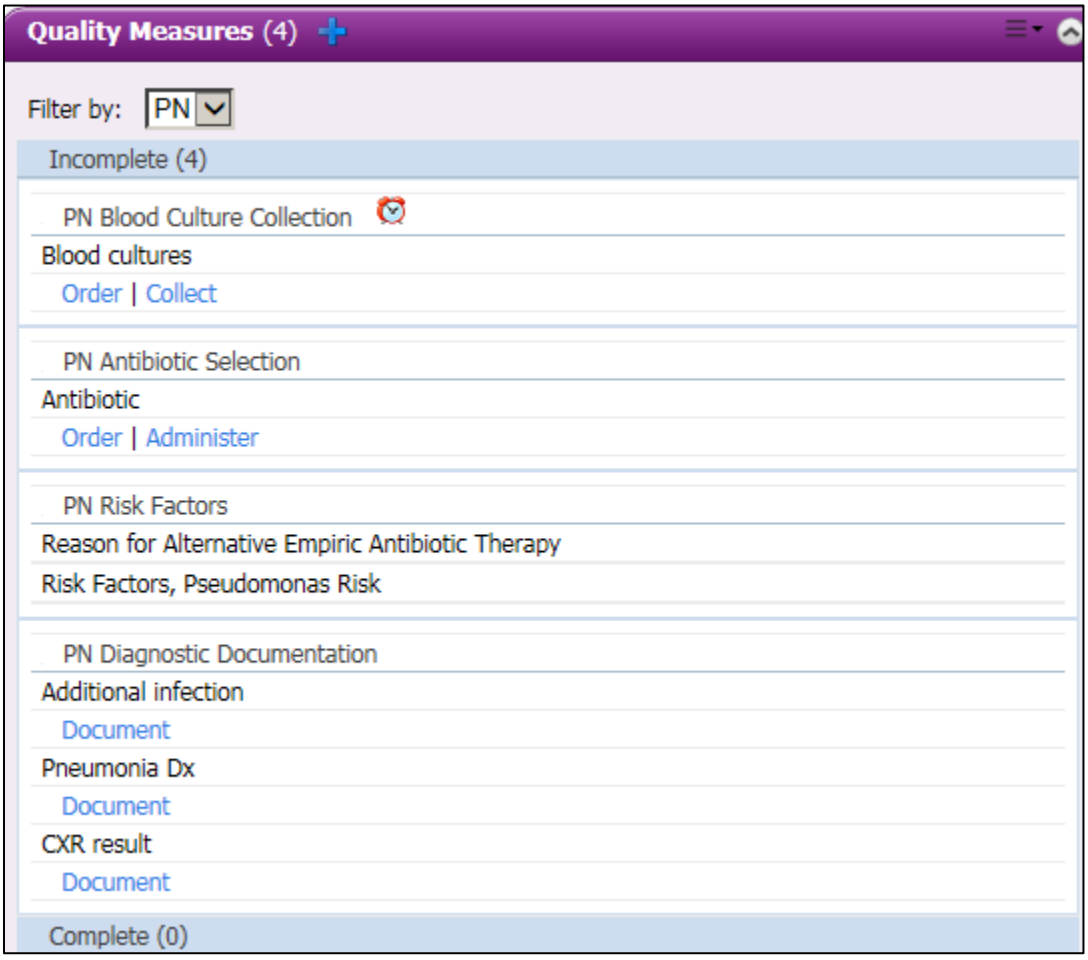
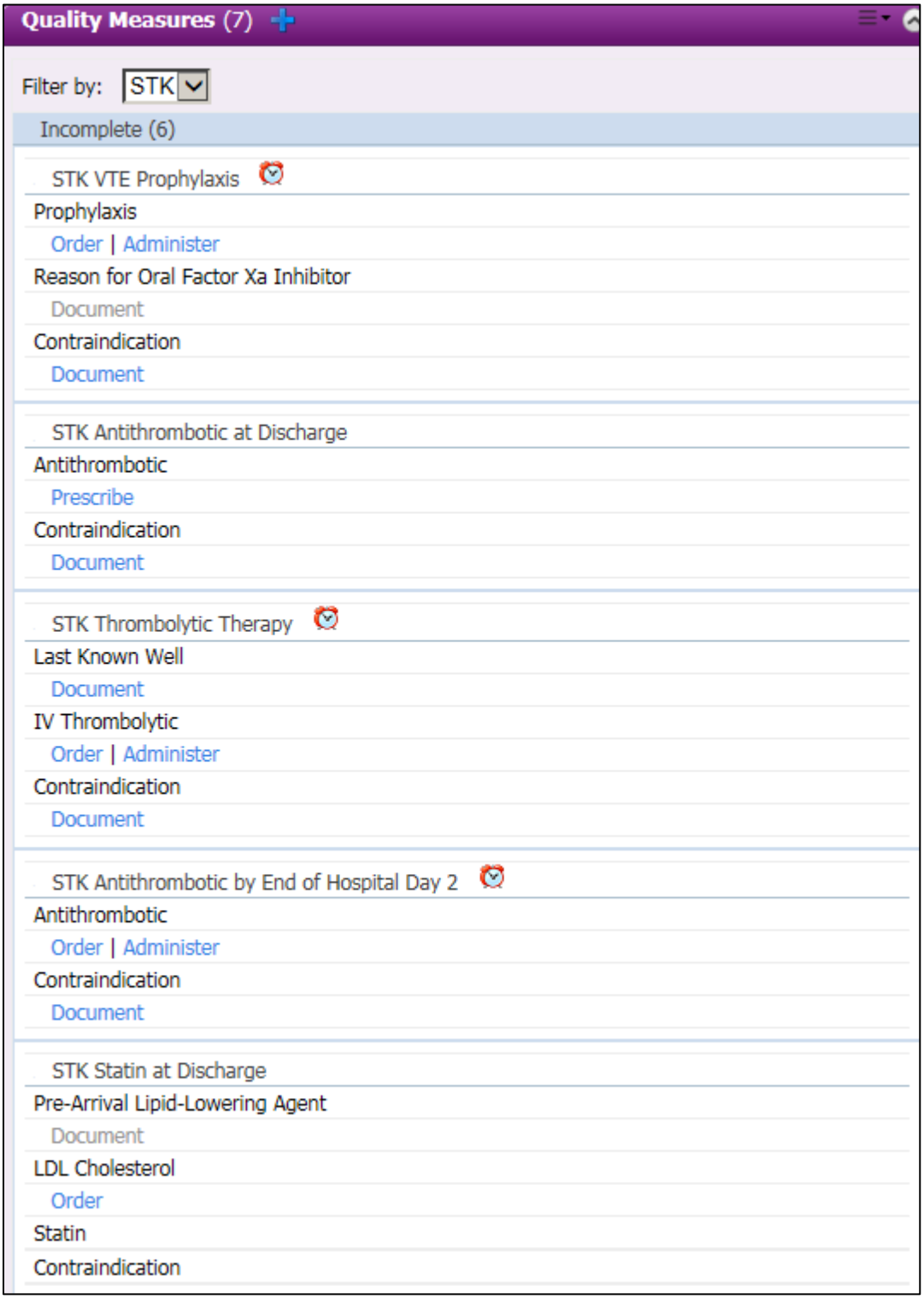


Table 10

STK Quality Measure



STK Quality Measure Continued

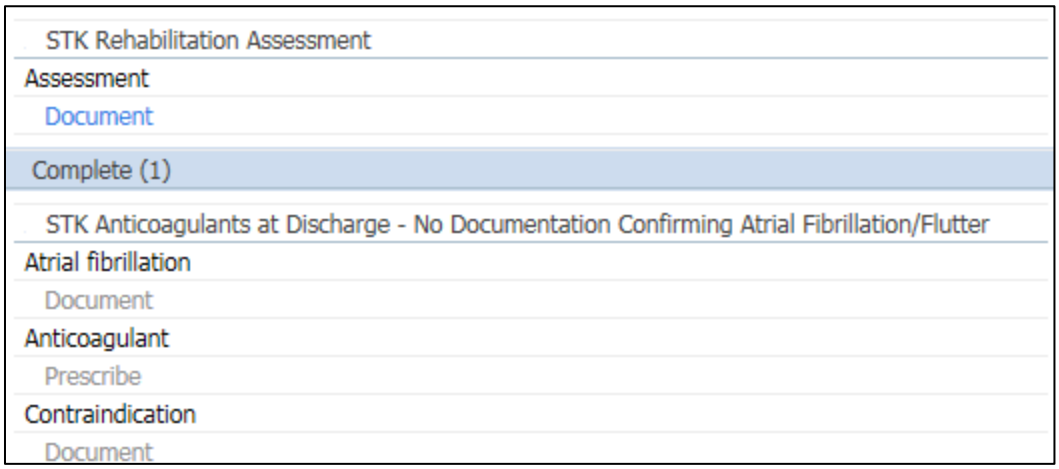
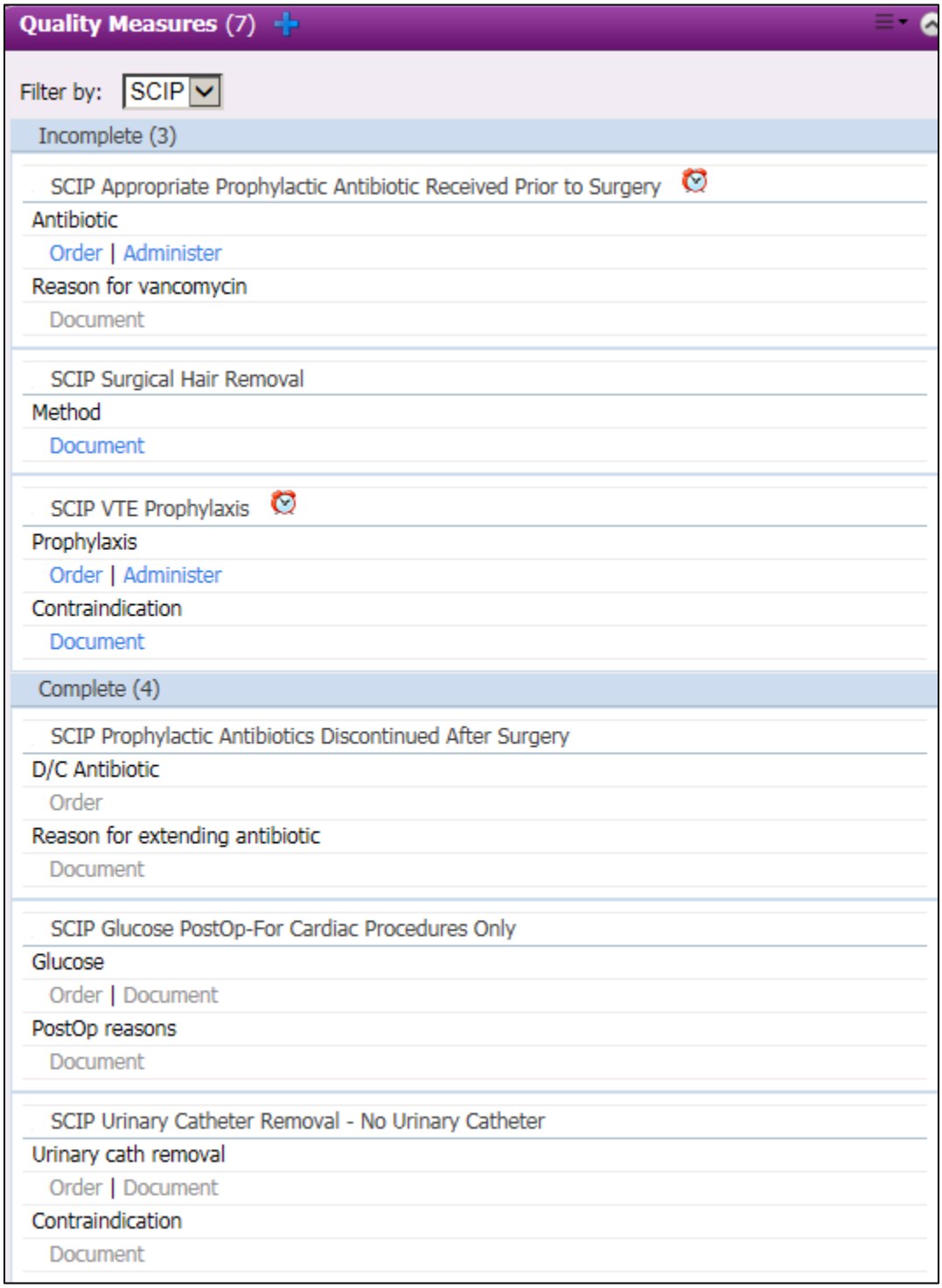


Table 11

SCIP Quality Measure



SCIP Quality Measure Continued

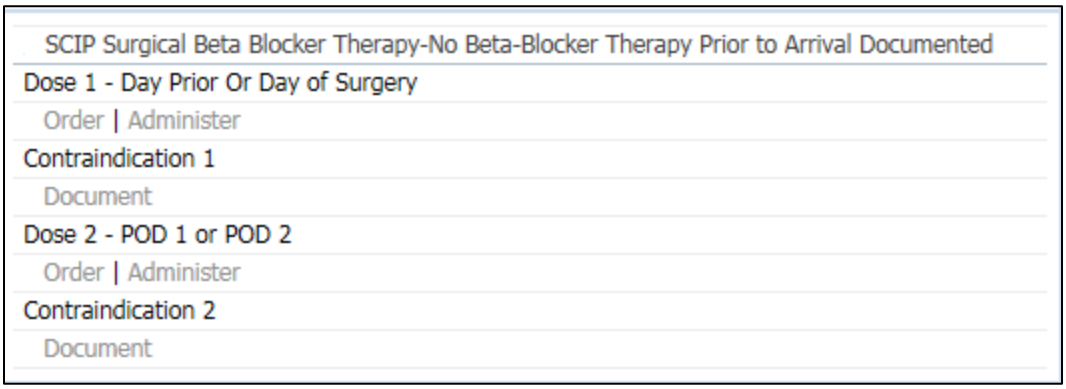
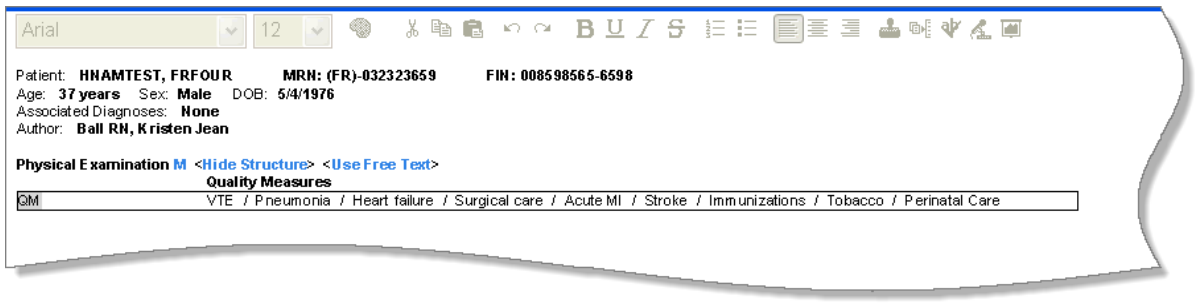


Table 12

Documenting Contraindications

1. From the appropriate MPage component of your patient's chart, select the **Quality Measure** component.
2. Select **Document** for the appropriate measure.
   - ➥ The Quality Measure PowerNote displays.



3. From the QM section, make the appropriate selection.
   - ➥ The Contraindication section displays.
4. Select the appropriate contraindication.

   Note: When you document the patient's contraindications, the use of Dragon is not recommended. Dragon does not give discrete data for capturing the contraindication.
5. Click .
   - ➥ The MPage displays.

*Excerpt from CHE Trinity Health job aid titled Documenting Contraindications.

Chapter 5

Conclusions

The implementation of The Quality Measure MPage component and the Contraindication PowerNote provides CHE Trinity Health with a means to capture, calculate and monitor selected quality measures as a by-product of patient care, the ability to monitor performance both real-time and retrospectively and the reporting capabilities to successfully attest to Stage II Meaningful Use requirements. However, these tools are only as good as the user.

To ensure continual success of the CMA journey, teams continue to meet to address issues and provide RHM change leaders with education regarding upgrades and new functionality. Recently, I was able to meet with Denise Scott, RN, a Concurrent Quality Abstractor at St. Joseph Mercy in Pontiac, Michigan. When asked how the electronic tools have assisted with the abstractor workflow she stated "The Quality Measure Contraindication PowerNote is like one stop shopping. It provides so much information and saves the abstractor from searching within the chart for the required information." Denise went on to share that the Quality Measure Component on the MPage has increased clinician awareness making the abstractor's job so much easier by eliminating the need to follow up with the clinician regarding gaps in care. In fact they have reported VTE compliance at 100 percent for the sixth straight month.

With the successful implementation and adoption of the CMA project, CHE Trinity Health has completed the attestation of Stage II Meaningful Use. However, the journey is far from ending as Meaningful Use requirements will become more complex and stringent in the

coming years. In closing, I would like to share a quote from Marian Anderson that was used as a reflection at the start of our CMA project team meetings: "If you have a purpose in which you can believe, there's no end to the amount of things you can accomplish". CHE Trinity Health has accomplished the first leg of the journey and will continue work efforts to ensure RHMs have the tools and training needed to meet the Meaningful use challenges ahead.

Recommendations for future studies. As Meaningful Use progresses into Stage III and health organizations continue to demonstrate to the meaningful use of electronic health records, additional studies are warranted regarding the association between electronic CQMs and patient outcomes, the validity of CQMs and the effect on reimbursement levels and patient utilization of reported electronic CQMs (Hospital Compare) to select care providers.

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