

## QUALITY MEASURE WORKGROUP RECOMMENDATIONS

The HIT Policy Committee formed the Quality Measures Workgroup to recommend new clinical quality measures to leverage the evolving health IT infrastructure. The Workgroup is tasked with providing initial recommendations on the quality measure prioritization and convergence process for Stage 2 and Stage 3 Meaningful Use. In October 2010, The Workgroup was divided into five Tiger Teams to focus on the following measure domain areas: Patient and Family Engagement, Clinical Appropriateness/Efficiency, Care Coordination, Patient Safety, and Population and Public Health.

These domains are broadly aligned with the National Priorities Partnership Framework for health quality, and the five pillars of Meaningful Use – improving safety, quality, efficiency, and health disparities; engaging patients and families; improving care coordination; improving population health; and ensuring adequate privacy and security protections.

The Workgroup tasked the Tiger Teams with proposing important measure concepts for each of their domain areas. In identifying these concepts, the Tiger Teams used the following criteria: the state of measure development; the endorsement status; the potential impact to improve population health and reduce burden of illness; the ability to enable longitudinal assessment of condition-specific, patient-focused, episodes of care; and the ability to address previously unmet needs of population/public health.

After reviewing the Tiger Teams' recommendations, the Workgroup revised and consolidated the measure concepts, and then issued a request for comment to the public for specific examples of measures that aligned with these concepts. 112 organizations and 22 individuals responded to the request for comment, identifying about 490 unique measures applicable to the Workgroup measure concept areas.

A subset of these measures was then identified and reviewed by the Quality Measure Workgroup and HIT Policy Committee. The Tiger Teams then reconvened to review these measures and identify 8 – 12 priority measures for Stage 2 and Stage 3 Meaningful Use.

The Tiger Team recommendations are provided in subsequent sections. These recommendations will be used to directly inform ONC's activities in developing electronic quality measures for Stage 2 and 3 of Meaningful Use. Given the nature of the development process, these recommendations will not necessarily result in developed measures.

**CLINICAL APPROPRIATENESS/EFFICIENCY  
STAGE 2 & 3 MEANINGFUL USE QUALITY MEASURES**

The Clinical Appropriateness/Efficiency Tiger Team followed three guiding principles in identifying and prioritizing measure concepts:

- 1) Be parsimonious. Identify measures where performance is likely to have large beneficial corollary effects on how patients receive care and attain optimal outcomes. These measures should apply to a diverse and broad set of providers.
- 2) Maximize impact. Prioritize based on the opportunity to significantly improve outcomes and reduce errors and/or impact and benefit a large number of patients. Be purposeful about recommending measures that relate to largest areas of clinical activity.
- 3) Be practical. Whenever possible, highlight current metrics in widespread use that will improve efficiency, while highlighting promising areas and priorities for future measures.

The recommended measures/concepts cross multiple specialties and care delivery settings, align with Meaningful Use domains and will enable creation of measures that will leverage the richness of the EHR data. The selection process takes into account HIT sensitivity, preventable burden, longitudinal measurement goals and ability to perform health risk assessment criteria. The measures/concepts are in varying degrees of readiness and will rely on further development/testing and validation work to produce implementable measures.

**Efficient Use of Facilities- Measures that evaluate facility utilization and frequency of patient visits and admissions.** This group of measures focuses on the cause of frequent visits and impacts on facility utilization.

1. All Cause Readmission or related readmission measure that will incorporate EHR data from various sites. This measure would be aimed for future stages pending the infrastructure and availability of multiple data sources. The ability to query and gather admissions data from subsequent hospitalizations is a current methodological issue which will need to be addressed.
2. Preventable ED visits- This measure concept addresses the actions that could prevent emergency department visits, especially for 72 hour return visits to the ED. It focuses attention on the conditions that most affect the emergency room visits especially factors such as care coordination and discharge planning. AHRQ has funded Kathy McDonald at Stanford to conduct a review of the literature on preventable ED visit measures and this measure may build upon that body of literature. (Stage 3)

**Assessment of appropriate medication and treatment. This group of measures evaluates outcomes based on care reflecting the use of evidenced-based guidelines or the overuse/underuse of medications for specific priority conditions.**

3. A. *Asthma medication Ratio*: The percentage of members 5-64 years of age who were identified as having persistent asthma and had a ratio of controller medications to total asthma medications of .50 or greater during the measurement year (NCQA) Stage 2

*B. Medication Management for People with Asthma-* The percentage of members 5-64 years of age during the measurement year who were identified as having persistent asthma and who were dispensed appropriate medications and remained on their medications during the treatment period. Two rates are reported. The percentage of members who remained on an asthma controller medication for at least 50% of the treatment period, and the percentage of members who remained on an asthma controller medication for at least 75% of the treatment period. (NCQA) This measure may have methodological issues related to pharmacy benefits data. Stage 3.

4. *Lipid control using Framingham risk score-* This measure evaluates lipid control stratified to a risk assessment scale using the Framingham risk score. The measure would require a computational algorithm using structured elements (age, smoking history, systolic blood pressure, total cholesterol, HDL cholesterol and BMI). Stage 2.
5. *Global Cardiovascular Risk Outcomes Measure-*  
The measure would report an index of the risk reduction under current treatment relative to the treatment received to achieve a score of 100% on the relevant HEDIS measures. The measure would use Archimedes as a risk calculator. Archimedes is a large-scale physiology-based model developed by Eddy and colleagues which includes pathways relating to diabetes, congestive heart failure, coronary artery disease, stroke, hypertension, obesity, and metabolic syndrome in a single integrated model. It can use data from an Electronic Health Record to predict cardiovascular outcomes under different treatment scenarios for actual, individual patients. It would allow a performance target for each population. This measure may depend on the proprietary nature of the modeling tool. Stage 3.

**Efficient Use of Diagnostic Tests- Measures that evaluate usage and appropriateness of diagnostic testing procedures, with measures for redundancy, cumulative exposure and appropriate use.** This group of measures evaluates the cause and impacts of unnecessary diagnostic procedures which can ultimately lead to unnecessary downstream effects from further invasive or non-invasive testing (eg. Increased radiation exposure).

6. The following measures are expected to gain endorsement in January 2011, under the NQF Imaging Efficiency II project:
  - *IEP-005-10: Pulmonary CT Imaging for Pulmonary Embolism-* Percent of patients undergoing CT pulmonary angiogram for the evaluation of possible PE who have a documented indication consistent with guidelines prior to CT imaging
  - *IEP-007-10: Appropriate Head CT Imaging in Adults with Mild Traumatic Brain Injury-*Percent of adult patients who presented within 24 hours of a non-penetrating head injury with a Glasgow coma score (GSC)> 13 and underwent head CT for trauma in the ED who have a documented indication consistent with guidelines prior to imaging.

- *IEP-014-10 Cardiac stress imaging not meeting appropriate use criteria* - Preoperative evaluation in low risk surgery patients. This measure calculates the percentage of stress SPECT MPI, stress echo, CCTA, or CMR performed in low risk surgery patients for pre-operative evaluation.
- *IEP-015-10 Cardiac stress imaging not meeting appropriate use criteria* - Routine testing after PCI (percutaneous coronary intervention ). Percentage of all stress SPECT MPI, stress echo, performed routinely after PCI, with reference to timing of test after PCI and symptomatic status.
- *IEP-016-10 Cardiac stress imaging not meeting appropriate use criteria* - Testing in asymptomatic, low risk patients. Percentage of all stress SPECT MPI, stress echo, CCTA and CMR performed in asymptomatic, low CHD risk patients for initial detection and risk assessment.
- NQF # 0312 Title: LBP: Repeat Imaging Studies
- NQF # 0514 Title: MRI lumbar spine for low back pain
- NQF #: ACP-021-10 Title: Head CT Scan Results for Acute Ischemic Stroke or Hemorrhagic stroke who Received Head CT Scan Interpretation Within 45 minutes of Arrival.

**POPULATION & PUBLIC HEALTH**  
**STAGE 2 & 3 MEANINGFUL USE QUALITY MEASURES**

In developing its initial measure concept recommendations, the Population and Public Health Tiger Team focused on measures that would have the greatest impact within health outcomes. In prioritizing the measures for Stage 2 & 3 MU, the team again focused on health outcomes, but also sought to focus on gap areas not addressed by the Stage 1 MU quality measure requirements.

**Stage 2 Recommended Measures:**

**Healthy Lifestyle Behaviors**

*Measure of alcohol screening using a validated instrument, including documentation of a brief intervention*

This measure seeks to ensure that all patients are examined for alcohol dependence. If the screen is positive, then there would be documentation of brief interventions. This may need to be two measures, since it is a screen and then another action.

*Measure tracking longitudinal change of individual patient BMI*

This measure seeks to ensure that changes in patient BMI are tracked using EHR technology. The measure is focused on individual patient BMI change with the hope that the measure developer would be able to incorporate the ability to aggregate on a population level. In order for this measure to be successful, the EHR would have to be able to store multiple weight and height entries across multiple patient visits.

**Effective Preventative Services**

*Measure of depression screening using a validated instrument, including documentation of a follow-up plan*

This measure seeks to ensure that all patients are screened for depression. If the screen is positive, then there would be documentation of a follow-up plan. Documentation of a follow-up plan may be difficult to embed into EHR systems.

*Measure assessing patients with undiagnosed hypertension using a calculated algorithm*

This measure seeks to ensure that patients with undiagnosed hypertension are recognized. The algorithm would allow physicians to identify people who meet the criteria for hypertension diagnosis, and diagnose them. The measure would hopefully capture both the identification of the undiagnosed patient and the diagnosis.

*Measure of longitudinal assessment of blood glucose control*

This measure seeks to ensure that changes in blood glucose levels are tracked using EHR technology. Like the BMI measure, the measure is focused on individual patient blood glucose with the hope that the measure developer would be able to incorporate the ability to aggregate on a population level. The EHR would have to be able to store multiple blood glucose entries across multiple patient visits for this measure to be successful.

## Health Equity

Given some of the methodological issues that a measure developer would face in creating a measure for health equity, the Population & Public Health Tiger Team deferred their recommended health equity measure to Stage 3.

### **Stage3 Recommended Measures:**

#### **Healthy Lifestyle Behaviors**

*Measure assessing appropriate diagnosis and documentation of referral for alcohol dependence*

This measure builds on the recommended Stage 2 alcohol screening measure and now seeks to assess appropriate referral of a positive screen (beyond the brief intervention).

*Measure tracking longitudinal change of tobacco use*

This measure builds on the Stage 1 tobacco screening measure and now seeks to assess change in tobacco use. Given that this is a delta measure, in order for the measure to be successful, the EHR would have to be able to capture tobacco use status across multiple patient visits.

#### **Effective Preventative Services**

*Measure tracking longitudinal assessment of blood pressure*

This measure builds on the Stage 1 blood pressure screening measure and now seeks to assess longitudinal change of blood pressure for individual patients. As with the other measures that incorporate longitudinal assessment, the hope is that the measure developer would be able to incorporate the ability to aggregate the changes on a population level.

*Measure tracking longitudinal change of depression*

This measure builds on the recommended Stage 2 depression screening measure and now seeks to assess change in depression status.

*Measure of HIV screening based on current recommended guidelines*

The team felt that HIV screening is a gap area not addressed by any of the other Tiger teams. This measure seeks to ensure that all patients are screened for HIV.

## Health Equity

*Measure assessing clinical quality measures (to be determined) stratified by pertinent patient demographic fields applicable to addressing health disparities*

This measure would assess one, or many, clinical quality measures stratified by demographic fields pertinent to gauging the impact on health equity.

### **Methodological Issues**

A general methodological issue associated with most of the recommended measures is the ability to capture the relevant information about health outcomes across time – the ‘delta’ focus. Consequently, standard data entry conventions may need to be identified for the measures to be effective and broadly applicable.

**PATIENT & FAMILY ENGAGEMENT  
STAGE 2 & 3 MEANINGFUL USE QUALITY MEASURES**

The Patient & Family Engagement Tiger Team reviewed the measures submitted through the public comment process, focusing on measures that could both assess patient health outcomes (e.g., improve individual patient care) as well as on measures that would assess patient experience with care (e.g., improve patient experience and practice patterns). Discussion first focused on measures that, with some additional investment by ONC over the next nine months, could be ready for Stage 2 of Meaningful Use. The Tiger Team then turned to identifying ways to build on Stage 2 measures to advance meaningful patient and family engagement in Stage 3, again with some additional investment by ONC and approximately 18 months for measure development. The separate components (e.g. functional status, patient care experiences) applied to 10 priority conditions can leverage new EHR functionalities that will incorporate patient self-reported data into an outcomes based performance metric.

**Stage 2 Recommended Measures:**

**Patient Health Outcomes**

*Measure assessing the percent of qualifying patients that complete a health risk or health status assessment for 10 priority conditions that are sensitive to functional or symptom improvement*

This measure seeks to ensure that patient health status is assessed for conditions that are sensitive to functional or symptom improvement, using a composite instrument, perhaps modeled off of the PROMIS tool. One issue with this measure is making it EHR-sensitive so that clinical patient data captured by the assessment is capable of flowing back to the EHR to inform the care process.

*Measure assessing functional status (for 10 priority conditions sensitive to functional or symptom improvement)*

This measure seeks to capture a summary score for patient mental health and physical health using a validated instrument like the VR 12/36 or the PROMIS-10 Global Health Scale.

**Self-Management/Activation**

*Measure assessing the experience of care provided by a practice using a composite survey tool*

This measure seeks to capture aggregate data to help assess the care experienced by patients within a practice and is potentially applicable to providers and hospitals. The patient experience data could be collected via a common data platform. It builds upon the important concept that shared decision making with patients and among providers is important for creating a person-orientated as opposed to ailment-oriented care paradigm. ONC should integrate new questions from the Medical Home and HIT CAHPS modules into the core CG-CAHPS for EPs, and build infrastructure/methodology to administer survey electronically for both EPs and EHs.

### **Stage 3 Recommended Measures:**

#### **Patient Health Outcomes, Experience and Self-Management/Activation**

##### *Improvement in Functional Status*

This measure would facilitate reporting of Summary Improvement Score for mental health and physical health, for appropriate chronic disease or surgical patients, using a validated instrument like the VR 12/36 or the PROMIS-10 Global Health Scale.

##### *Composite measure incorporating health risk, functional status assessments, & patient experience of care*

This measure seeks to capture the health risk, functional status, and patient experience of care information within one composite measure. Incorporating these three elements into one measure is likely to be difficult; hence its status as a proposed Stage 3 measure.

- *Measuring health risks*

The health risk component of the measure would assess health risk reduction measurements and behaviors – using a validated tool – and include some biometric data.

- *Measure assessing patient activation & self-management tied to specific conditions*

This measure seeks to assess the availability of patient self-management resources that is in accordance with patient preferences and to measure patient self-management of health risk behaviors and preventive care of acute and chronic conditions. It may be difficult to capture both patient activation and self-management within one measure. This could also be included in the composite survey outlined above.

- *Measure assessing patient experiences that is broadly applicable to hospitals & physicians*

This measure seeks to combine the care experience domain of surveys like CAHPS, with the individual patient health status and care domain of care/health assessment-type surveys, to create a flexible instrument for providers and a separate instrument for hospitals that effectively measures both domains. In other words, for hospitals, this would include the ability to capture patient-specific results on interventions like discharge planning and all the factors being recognized as contributors to readmission, and include family-supplied data that can be related to the patient. The hope would be to further, leverage HIT to make tools like CAHPS and HCAHPs more dynamic and contextualized to individual patient circumstance.

#### **Honoring Patient Preferences & Shared Decision Making**

##### *Measure assessing the percent of surgery patients 18+ for any of a selected set of conditions who were provided or offered a Patient Decision Aid prior to their surgical decision*

This measure seeks to capture provider-patient shared decision making. Selected conditions determined by the Secretary's national health priority conditions for shared decision making might include: early stage prostate cancer, early stage breast cancer, arthritis of the knee, arthritis of the hip, low back pain, and chronic angina. In future stages, the measure could be expanded beyond providing access to an aid to the documentation of the patient's observations from the Shared Decision Process. This could include three

data elements, completion date, patient knowledge results, and their treatment preferences. For example: Percentage of Patients 18 years or older who received a Patient Decision Aid prior to a surgical decision for key conditions, whose responses and observations are reported to the provider and included in the patient record

*Measure assessing the use of shared decision making materials for patients with specific conditions*

Similar to the previous measure, this measure seeks to capture provider-patient shared decision making. The goal is for shared decision making materials to be electronically ordered for all unique patients identified by the provider to have specific conditions for which share decision making materials are needed. The measure would hopefully allow providers to track compliance and patient understanding and use of shared decision making materials.

*Measure assessing provider decision quality*

This measure seeks to assess the quality of the decisions made by care providers. For example, FIMDM is creating measures of decision quality that integrate measures of patient knowledge with consideration of patient values and preferences for 19 preference-sensitive conditions.

## **Methodological Issues**

In order to prepare patient-reported measures for Stage 2 MU implementation, methodological work should focus on a few key issues:

1. What issues exist in integration of multiple validated survey instruments (or parts of validated instruments) and how has that been implemented in different settings?
2. How have proposed survey instruments been used in practice for patient care purposes and for clinical quality measurement purposes? Collect experience from diverse set of practice delivery settings and understand how patient-reported data is fed back into an EHR.
3. How should data collected for improving care (where patient-level data are essential) be separated from data collected for assessing patient experience (where the practice should only get aggregate data)? How can this be effectively communicated to the patient/family? To what extent does this affect the denominator (census versus sample)?

## CARE COORDINATION

### STAGE 2 & 3 MEANINGFUL USE QUALITY MEASURES

In developing its initial recommendations measure concept recommendations, the Care Coordination Tiger Team focused on health IT sensitive measures that would have the greatest impact on health outcomes. In prioritizing the measures for Stage 2 & 3 MU, the team specifically focused on gap areas not addressed by already existing quality measures in the realm of care coordination. In general, measures recommended for Stage 2 are process indicators while Stage 3 measures are more outcomes oriented.

#### **Stage 2 Recommended Measures:**

##### **Effective Care Planning**

###### *Measure of self-management plan for patients with leading conditions*

This process measure would assess the presence of a self-management plan for patients with the following leading conditions: asthma, congestive heart failure, hyperlipidemia, hypertension, and diabetes. A measure of a self-management plan would focus on the documentation and provision of the management plan, and would include the following elements: assessment of the disease process, measurement of patient activation (readiness and skills), agreement on goals/lifestyle modifications, method to track outcome over time, and a plan to follow up with the patient to re-assess progression toward achieving goals of care. Documentation updating the self-management plan should be performed within the measurement year. There are numerous examples of validated self-management plans for chronic conditions such as asthma and congestive heart failure. However, this measure would standardize common elements for chronic disease self-management plans.

###### *Measure of a documented advance care plan*

This process measure would document the presence of an advance care plan in the electronic medical record, or document an advance care plan discussion with the provider and the date on which it was discussed. The documentation of discussion must be noted in the measurement year, or provide notation that the member has previously executed an advance care plan. Measures of advance care planning exist, but few are HIT sensitive. This measure would align with current Meaningful Use Workgroup objectives to address this gap area.

##### **Care Transitions**

###### *Measure of medication reconciliation after any care transition*

This measure would document medication reconciliation for all ages post hospitalization or facility discharge. Medication reconciliation would account for prescriptions, over-the-counter medications and supplements. This measure would also assess administration, dose, frequency, and route for each medication. Finally, this measure would document patient adherence.

###### *Measure of patient and family experience across a care transition*

This process measure would assess the patient and family preferences in deciding what the patient's health care needs are upon transition from one care setting to another. The measure example that best fits this description is NQF #228: Care Transitions Measure (CTM) 3- item survey. This measure would also assess patient comprehension of his health and medications along with a plan for self-management. For Stage 2,

this measure would focus on transition from inpatient hospitalization or Emergency Department to home, skilled nursing facility, and/or long term care facility. The privacy and security of patient-reported data would also be addressed.

*Composite measures assessing closing the “referral loop”*

These composite measures would assess the success of critical information communicated in a bidirectional manner between specialists, primary care physicians, and patients. Specifically, measures would assess information transfer between requesting referral/consultation and provider completing referral/consultation. In addition, measures within this composite would assess communication of results by both specialist and primary care physician to patient and family members. The NCQA’s composite measures best fit this description.

**Stage3 Recommended Measures:**

**Effective Care Planning**

*Measure assessing the presence of a completed comprehensive care plan*

This longitudinal measure would assess the presence of a completed comprehensive care plan. This measure would build on existing Meaningful Use Workgroup objectives for a clinical summary. The measure would assess if the care plan was updated in the measurement year and would incorporate the following elements: results of specialty visits as well as care transitions, self-management plan, and medication reconciliation. The care plan would evaluate the adherence to the goals of care performed within the measurement period. This measure would provide a longitudinal examination of the adherence to clinical goals of care.

**Appropriate and Timely Follow Up**

*Measure assessing timeliness of and appropriate response by the health care team to clinical information*

This longitudinal outcome measure would assess the response of the health care team to functional and clinical data reviewed at the point of care and measure if the response was appropriate. The measure would focus on chronic diseases such as hypertension, diabetes, hyperlipidemia, and asthma. For example, the measure would assess if a patient with poorly controlled hypertension –documented as functional data in the EHR- was treated with timely and appropriate intervention. In this case, the measure would assess the timeliness and appropriateness of the health team’s response to poorly controlled hypertension, including an evaluation of improvement within the measurement timeframe. Another example would be the timely and appropriate response to abnormal laboratory values (i.e. hgb A1C and cholesterol values). The Department of Veterans Affairs is evaluating measures that best fit this description.

**Methodological Issues:**

For the first time, Health IT permits rapid measurement of successful care coordination. However, successful measures of care coordination would rely upon the national health information network and interoperable EHRs. The current state of health information exchanges and the level of interoperability between EHRs may detract from successful measurement of care coordination. This methodologic issue

may hinder appropriate utilization of quality data that would be communicated in a timely bidirectional manner for patients and physicians alike.

Attribution and risk adjustment remain methodologic challenges, particularly when measuring health teams successful care coordination and assessing patient outcomes after care transitions. For example, when a patient is transferred from one care setting to another, current measures are limited in attributing success to the sending and/or receiving health team.

Confirmation of successful care coordination remains a challenge. This may be due to a lack of standards and interoperability from one setting to another. Verifying that care coordination has successfully occurred within an integrated health system is challenging, much less authenticating successful care coordination across all care settings. The proposed measures would act as a yardstick to define the desired level of success.

Finding the balance between precisely defining a care plan and permitting the market to create the definition remains both a methodologic and a policy challenge. RFC comments ask for a standardized definition. Over time, a more extensive list of elements would be included in the care plan as technology – and interoperability- permits. In addition, increasing the number of structured data fields within the care plan will facilitate quality data aggregation and reporting. For stage 3, the care plan may include a self-management plan. There are two additional methodologic issues related to self-management plans: identifying a longitudinal measurement timeframe, and the creation of a standardized definition.

Finally, incorporating patient reported data into the measurement of successful care coordination will require a certain level of security and privacy. It will also require validated data collection, attribution, and risk adjustment. To achieve desired care coordination outcomes, the patient's perspective would need to be accurately measured.

## PATIENT SAFETY

### STAGE 2 & 3 MEANINGFUL USE QUALITY MEASURES

In developing its initial measure concept recommendations, the Patient Safety Tiger Team focused on health information technology (HIT) sensitive measures that would have the greatest impact on health outcomes. In prioritizing the measures for stage 2 & 3 MU, the team specifically focused on gap areas not addressed by already existing quality measures in the realm of patient safety. As a result, the group focused more on prevention and monitoring of adverse drug events than hospital acquired conditions for which several measures already are developed and have electronic specifications. In general, measures recommended for stage 2 tended more towards process indicators while stage 3 measures were more outcomes oriented.

#### **Stage 2 Recommended Measures:**

##### **Adverse Drug Event (ADE) Monitoring and Prevention**

###### *Measure of medication monitoring for patients on chronic medications*

This process measure would assess appropriate lab tests ordered and performed at reasonable intervals for patients on any of the following medications: Warfarin, ACE inhibitors, ARBs, diuretics, Metformin, and atypical neuroleptics. For patients prescribed Warfarin, in addition to measuring whether the INR is within therapeutic range, additional data points such as provider attribution, indication, and stop date should be considered.

###### *Measure of medication-disease or condition interactions in the elderly*

This process measure would assess medications ordered for patients over 65 years of age who are at high risk for an adverse event given the particular medication and disease state or condition. For example, patients over 65 years of age who are prescribed a medication on the Beers list and have a history of falls.

###### *Measure of adverse drug event reporting*

This measure would assess reporting practices of physicians with respect to ADEs. There would be no threshold for this measure, except that the numerator should not be zero for physicians who regularly prescribe medications. The readiness of this measure for stage 2 meaningful use depends on the widespread availability of the functionality. An ADE reporting system may alternatively be considered for a meaningful use objective under population and public health.

##### **Falls Prevention**

###### *Measure of falls screening*

This process measure would assess the number of patients who are over 65 years of age and screened for falls. This measure would aim to go beyond yes/no and capture more specific data to more adequately assess risk including options such as "no", "once with no injury," "once with significant injury," and "more than once."

### **Stage3 Recommended Measures:**

#### **Adverse Drug Event Monitoring and Prevention**

*Measure assessing high impact medication-disease, medication-lab and medication-medication interactions*

This measure would capture the prescribing of potentially harmful medications in certain patients for whom the medication would normally be contraindicated due to particular disease states, lab value thresholds or other medications. An example of this is the prescribing of Allopurinol in a patient with chronic kidney disease. The tiger team recommended that sufficient exclusion criteria be included so as not to discourage patient-centered care in instances when the benefits to the patient may outweigh the risks. The tiger team also recommended that a delta measure be used so that evaluation is focused on whether a provider is prescribing more or less potentially harmful medications.

#### **Hospital Associated Conditions**

*Measure of pressure ulcers*

This outcome measure would assess the occurrence and treatment of pressure ulcers in hospitalized patients. Data points to characterize the ulcers may include: presence on admission, stage, presence daily, Braden score, intervention & prevention treatment plan.

#### **EHR Safety**

*Measure of patient identification*

This measure would ensure that processes are in place to correctly identify patients in the EHR. The tiger team recommends that two modes of confirmation of patient identity be present, but were not prescriptive on specific functionalities.

*Measure of EHR-associated hazards*

This measure would aim to capture unintended consequences of HIT, including those contributing to care-process compromise and patient harm, so as to stimulate targeted and necessary improvements within the EHR. The measure development may be guided by the IOM report on patient safety and HIT to be made available later this year.

### **Methodological Issues:**

The advantages of electronic measures to capture patient safety data are numerous. A primary source of quality data would negate the need for labor-intensive validation and complex modeling required when using administrative claims data. Variation across and within health care organizations may also be mitigated through the calculation of patient safety measures from structured data housed in the EHR.

However, there are several methodological issues to consider in developing patient safety measures for stages 2 and 3 meaningful use. For measures that require reporting of events, the input of data may be variable. For many measures, the structured data elements must be available within the EHR. For example, the proposed falls screening and pressure ulcer measures include data that is likely not currently captured in most EHR systems. The proposed ADE reporting measure requires that the EHR functionality be included in certified technology for the value sets to be captured. For measures of medication monitoring, provider attribution must be determined. Risk adjustment may be necessary for certain measures. And finally, the

EHR safety measures are aspirational in that there are not to our knowledge any “automated” examples of EHRs capturing data with respect to EHR-associated hazards or patient identification.