Summary of New Hospital Harm Technical Expert Panel (TEP) Evaluation of Measures

Patient Safety Measure Development and Maintenance

March 2022

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Contents

Submitted To

Centers for Medicare & Medicaid Services (CMS)
Center for Clinical Standards and Quality (CCSQ)

Attention

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Project

Patient Safety Measure Development and Maintenance
Contract Number: 75FCMC18D0027

Task & Deliverable

Chapter 4: Quality Measure Development and Reevaluation
Deliverable 4.3 Summary of TEP Evaluation of Measures
Sepsis

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Background

The Centers for Medicare & Medicaid Services (CMS) has contracted with American Institutes for Research (AIR) to develop and maintain patient safety measures of hospital harm for implementation in CMS programs. The contract name is Measure & Instrument Development and Support (MIDS) Patient Safety Measure Development and Maintenance. The contract number is 75FCMC18D0027. As part of its measure development process, AIR convenes groups of stakeholders and experts who contribute direction and thoughtful input to the measure developer during measure development and maintenance.

AIR is obtaining expert and stakeholder input to inform the development of three new hospital harm measures. This report summarizes the feedback and recommendations made by the Technical Expert Panel (TEP) during the meetings to discuss the new hospital harm measures. The report will be updated to include feedback and recommendations from future meetings as they occur.

Measure Development Project Team

The Patient Safety Measure Development and Maintenance project team is comprised of staff from AIR, UC Davis, Clinician-Driven Quality Solutions, and Kennell & Associates. Presenters and moderators for this TEP meeting were Mia Nievera (AIR), Dr. Garth Utter (UC Davis), Irina Tokareva (UC Davis), and Dr. Patrick Romano (UC Davis).

Mia Nievera, MSN, RN, is the Project Director for this work and leads the electronic clinical quality measure (eCQM) development. Dr. Garth Utter, MD, MSc, is a practicing physician at UC Davis Health and a clinical subject matter expert (SME) for the project team. Irina Tokareva, RN, BSN, MAS, CPHQ is a clinical SME for the project team. Dr. Patrick Romano, MD, MPH, leads the measure development task for the project.

A full list of the staff supporting this work is listed in Appendix B**.**

Overview of the Technical Expert Panel

In alignment with the CMS Measures Management System Blueprint, the project team convened a Technical Expert Panel (TEP) to provide guidance on the development of three new hospital harm measures. The role of the TEP is to provide guidance on key methodological and clinical decisions. The TEP is comprised of 16 individuals representing a variety of viewpoints and backgrounds, including experience in critical care, acute care, and emergency care as well as expertise in patient safety and hospital harms, electronic health record (EHR) systems, quality improvement, and risk adjustment. Two TEP members represent patient/caregiver perspectives. The full TEP membership is listed in Appendix A. In addition to the TEP, the project team convened an additional group of experts for a Technical Advisory Group (TAG) to further inform the TEP and the measure developer on specific relevant topics for the measure development process.

TEP Purpose & Objectives

The TEP is comprised of individuals with knowledge of the new hospital harm measure topics under consideration (falls, peri-operative venous thromboembolism, and postoperative respiratory failure). The overarching goals of the TEP are to provide information, support, feedback, and perspective to the AIR team on the development, specification, testing, maintenance, re-evaluation, and implementation of three new hospital harm measures for possible future use in CMS programs. The TEP's role is to provide input and advice to the measure developer on the information gathering, measure development, testing, maintenance, and re-evaluation of three new hospital harm measures.

The TEP will:

- Review pre-meeting materials and provide written feedback
- Discuss feedback and revisions during virtual meetings along with other relevant topics
- Review and comment on meeting minutes and associated post-meeting documents along with any follow-up action items

TAG Purpose & Objectives

The TAG is comprised of individuals with working knowledge of the new hospital harm measure topics under consideration, including falls, peri-operative venous thromboembolism, and postoperative respiratory failure, as well as issues specific to measure development, including risk adjustment methodologies, and clinical workflows. The TAG's role is to provide input to the

measure developer and the TEP for consideration in the discussions throughout the measure development process.

Technical Expert Panel Meeting #5

March 4, 2022 1:00 PM ET

Summary of Presentation

The AIR team convened the fifth TEP meeting with members from both the TEP and TAG to provide updates on the development of the Postoperative Respiratory Failure (PRF), Falls with Major Injury, and Postoperative Venous Thromboembolism (VTE) eCQMs. Prior to the meeting, the AIR team provided the TEP and TAG members with the presentation slide deck in preparation for discussion. During the meeting, the TEP and TAG members introduced themselves and announced any personal disclosures. The meeting began with a presentation of the updates to the Falls with Major Injury eCQM since the last TEP meeting, led by Mia Nievera. Irina Tokareva then shared the results of the public comment period for Falls with Major Injury and provided an overview of the upcoming activities for this measure. Then Dr. Patrick Romano shared updates to the Postoperative Venous Thromboembolism eCQM since the last TEP meeting and the results of the public comment period for this measure and wrapped up with a discussion of upcoming steps for the measure. Next, Dr. Garth Utter introduced the preliminary measure specifications for the Postoperative Respiratory Failure eCQM for discussion and shared the planned next steps. Finally, Mia Nievera provided a preview of the next TEP meeting, which will include the TEP members from the legacy Maintenance of Hospital Harms TEP to review the suite of 9 Hospital Harm measures managed by this project.

Attendance:

TEP Members: Cynthia Barnard, David Classen, Helen Haskell, Kevin Kavanagh, Anna Legreid-Dopp, Lisa Riggs, Bruce Spurlock, Ashley Tait-Dinger

Not Present: Brian Callister, Lillee Gelinas, Hazel Crews, Shabina Khan, Joseph Kunisch, Grant Lynde, Hardeep Singh, Amy Wilson

TAG Members: JohnMarc Alban, Brigitte Chiu-Ngu, Stephen Davidow, Sharon Hibay, Timothy Lowe, Amita Rastogi, Sheila Roman, Patricia Zrelak

Not Present: David Levine, Timothy Lowe, Barbara Pelletreau

CMS: Yuling Li

AIR: Mia Nievera, Hannah Klein, Leah Dillard, Bo Feng, Michelle Lefebvre, Tracy Haidar

Kennell: Christina Superina, Courtney Colahan

UC Davis: Patrick Romano, Garth Utter, Rich White, Irina Tokareva

Summary of TEP Discussion

1. **Falls with Major Injury- Overview Since Meeting #4:** Mia Nievera provided a brief overview of the activities for the Falls with Major Injury measure since the last TEP meeting. The AIR Team held a public comment period from June 18, 2021, to August 2, 2021, and then reviewed the feedback and refined the value sets for the risk adjustment variables of interest. The team is working with two test sites for this measure, the first of which is preparing for reliability and validity testing and the second is preparing for the data collection step of the testing process. The team is aiming to complete testing this Spring.

2. **Falls with Major Injury- Review of Public Comment Feedback:** Irina Tokareva provided an overview of the feedback received from the public comments. The comments addressed questions of the measure's feasibility and implementation, evidence and importance, potential unintended consequences, numerator and denominator, and risk adjustment. Generally, the respondents noted there is variability and delay in falls documentation capture, but it is possible to link major injury diagnosis to an in-hospital fall if the documentation were more standardized in structured fields. Respondents felt in-hospital falls are important and prevalent and there is a lack of evidence-based interventions that are widely adopted and/ or shown to reduce falls with major injury. While commenters expressed concern about the potential unintended consequence of reducing patient mobility, they agreed with the numerator and denominator inclusions and exclusions; and felt risk adjustment is appropriate for this measure and aligning better with NDNQI definition of fall with major injury.

3. **Falls with Major Injury- Review of Updates in Response to Public Comment Feedback:** Irina Tokareva provided an overview of how the measure developer responded to the comments received. To respond to concerns about variability in the documentation of falls with major injury, the team refined the denominator to exclude patients with a fall diagnosis present on admission, focusing on major injury only to ensure measure sensitivity and using diagnosis and observation codes, and will be looking at the workflows during pilot testing. The team also refined the measure to limit the numerator where the fall and major injury diagnoses must not be present on admission. In addition to risk adjusting for age, bone disorders and coagulation issues, measure developer is considering other risk factors such as delirium and other psychosis as well as list of medications to avoid unintended consequences. The intent of the measure is not to dictate fall prevention protocols to providers, instead it is to assist in identifying

improvement opportunities related to patient falls and trigger additional research in this field.

4. **Falls with Major Injury- Expert Input:** The group discussed the inclusion of risk factors, such as delirium, and how the measure uses present on admission status. Patrick Romano encouraged the group to advocate for any particular risk factors they believe are important, based on experience or literature.

    - Bruce Spurlock asked for a list of all the risk factors under consideration for risk adjustment.

        - Irina Tokareva confirmed that the team is still working on refining the list and plans to share with the TEP at the next meeting.

    - Cynthia Barnard asked for clarification on how the measure defines fall diagnosis present on admission (POA).

        - Irina and Patrick clarified that by removing encounters with a fall diagnosis present on admission, the measure is only looking at falls that occurred in the hospital inpatient setting.

    - Several TEP members expressed support for the use of delirium as a risk factor if present on admission.

        - Helen Haskell asked if delirium and psychosis are risk factors, does that mean the measure does not include falls that occur with delirious people.

            1. Irina and Patrick clarified that these would not be exclusions but would be included in the risk adjustment for this measure. Specifically, the team is adjusting for patients who are delirious on admission, not delirium that results from medications that are given to the patient in the hospital.

            2. Helen Haskell followed up to clarify why, in the hospital setting, we wouldn't expect delirium present on admission to be managed such that the risk of a fall would be minimized.

            3. Irina and Patrick explained that patients with delirium are challenging because it may take a day or so until the medications are cleared from their system and the underlying medical cause of the delirium can be effectively treated.

    - David Classen echoed agreement with this risk factor approach as delirium caused by medications is an enormous problem in hospitals.

    - Bruce Spurlock added that delirium in the hospital can be caused by several factors but is something hospitals have some control over. Overall, he supported the use of it as a risk factor. He notes it may stimulate more diagnosis, but if it is not present on admission, providers should be able to manage it in a hospital setting such that the risk of falls is minimized.

- Sheila Roman asked whether the team would consider stratifying the measure by race to align with CMS' push for equity.

    - Irina Tokareva confirmed the team is considering options for the risk variables including patient information from insurance data and zip code/ other socioeconomic information from administrative data.

- Amita Rastogi asked how the team is defining fall and major injury, is this based on specific ICD-10 codes?

    - Irina Tokareva confirmed that the measure will use ICD-10-CM diagnosis codes to define major injuries and falls as a mechanism of injury.

- David Classen asked about how the measure will define delirium and noted it might be listed in the nursing notes. If the measure uses value sets to define it, would it only be captured if delirium is coded?

    - Irina Tokareva confirmed it would be defined by codes in the value set since this is an electronic measure, which relies on data from discrete fields in the EHR.

    - Patrick Romano added that the challenge in using information other than diagnosis codes is there is not a consistent record for delirium assessments with a numeric score in structured fields, though there are some efforts to do so [e.g., the "Confusion Assessment Method" (CAM)].

    - David Classen confirmed this is a challenge.

- Sharon Hibay suggested that the team should harmonize with other measures that use the concept of delirium and if there are no value sets for quantifying delirium, she suggests working with LOINC to develop the necessary codes. She

suggested looking at value sets for measures across settings including post-acute care and primary care, but to also consider the intent of the value sets.

    - Irina Tokareva confirmed the team is harmonizing with other existing data sets used by measures such as the PSIs.

- Pat Zrelak commented that many nursing flowsheets now have a screen for delirium, but she assumes this measure will rely on a medical diagnosis and not just any mention within the medical record. A lot of hospitals are doing work around delirium and the detection of delirium, but it is unclear where it ends up in the medical record. It would be helpful to incorporate the protocols and screenings for those hospitals that do have them in place for delirium.

    - Irina Tokareva summarized that the TEP members believe including delirium as a risk factor may improve the consistency in documentation and diagnosis.

    - Patrick Romano added that at this point we don't know that the screening is applied consistently across hospitals, but that can be monitored.

- Cynthia Barnard added that it is very difficult to deal with the problem that "lack of documentation does not equal lack of harm" because inconsistent documentation is going to be a challenge for many ICD-dependent eCQMs.

    - Patrick Romano acknowledged that the team is sensitive to this issue and is open to recommendations about how to minimize its impact.

- Cynthia Barnard followed up to ask whether the coding issue for rib fractures during CPR has been addressed.

    - Patrick Romano confirmed that the CDC has accepted our recommendation to create new ICD-10-CM codes to separate those events through exclusions.

    - David Classen asked how common rib fracture from CPR is in hospitals.

- Patrick Romano noted it is unclear how common it is since there is not currently a code for it (though one systematic review[1] suggested that CPR results in fractured ribs in approximately 30% of instances).

- Cynthia Barnard added that anecdotally it is far from uncommon. Whether that is because it is an emotionally upsetting event so people remember it out of proportion to the actual frequency or not, she is unaware of any formal surveillance.

- Cynthia Barnard suggests that the measure developer ensure the specifications are very clear to ensure fair and consistent reporting. She cautions that if not specific and clear, the measure could disadvantage certain types of organizations and could create additional burden for the safety net facilities. It is difficult to strike the right balance of specificity and clarity, but ICD codes are inherently quite challenging.

5. **Postoperative VTE- Overview Since Meeting #4:** Dr. Patrick Romano provided a brief summary of the updates to the Postoperative Venous Thromboembolism (VTE) eCQM since the last TEP meeting. The team held a public comment period from September 30, 2021, to November 4, 2021. Following the public comment period, the team refined the measure and aligned the development and testing of it to another eCQM in development, Anticoagulant- Related Major Bleeding (ARMB), to be companion measures. The team plans to begin pilot testing this spring and encourages TEP members to reach out if their center may be interested in serving as a pilot test site.
6. **Postoperative VTE- Review of Public Comment Feedback:** Patrick Romano provided a brief overview of the detailed feedback received during the public comment period, including feedback from key anticoagulant groups such as the Anticoagulation Forum. Commenters felt the data fields for this measure vary in availability, but generally anesthesia start and stop times are available and the measure would be feasible to implement. Commenters also agreed that postop VTEs are important and prevalent but shared concerns about a potential increased risk for bleeding as a result of this measure. Additionally, commenters felt the numerator and denominator specifications needed additional clarifications and there was some hesitancy around the use of imaging and initial anticoagulation as the basis of a diagnosis of VTE (i.e., numerator event).

[1] Miller AC, et al. A systematic review and pooled analysis of CPR-associated cardiovascular and thoracic injuries. *Resuscitation*. 2014;85:724-731.

7. **Postoperative VTE- Review of Updates in Response to Public Comment Feedback:** Patrick Romano summarized the key changes to the measure following the public comment period. The team refined the value set to clarify that deep vein thrombosis (DVT) for this measure refers to the proximal veins of the lower extremities, not upper extremity thromboses or distal thromboses. The team added a minimum length of stay for the denominator to remove patients who are discharged in 2 days or less as there is no time to diagnose and treat a postoperative VTE in that timeframe. The team also added denominator exclusions for obstetric patients, patients with ECMO during the encounter, and patients who had a thrombectomy procedure before or on the same day as the first operating room procedure. These exclusions are designed to remove patients who have a high risk of thromboembolism despite prophylactic methods, so the measure does not penalize facilities for lifesaving ECMO treatment. The addition of a denominator exclusion for patients with acute brain or spinal injury or hemorrhage, discharged less than 5 days after surgery and a numerator exclusion for patients with acute brain or spinal injury who have a diagnostic study for VTE within 5 days after surgery are intended to exclude patients who aren't stable enough for prophylaxis.
8. **Postoperative VTE- Expert Input:** The TEP members weighed in on the changes to the Postop VTE measure, expressing interest in accurately accounting for patients with a history of DVT or PE. Many felt that the measure won't capture a large portion of postoperative VTEs as oftentimes patients are discharged so quickly that the diagnosis of a VTE doesn't occur during the initial hospital stay.
    - David Classen asked how the measure handles patients with a history of deep vein thrombosis (DVT) or pulmonary embolism (PE).
        - Patrick Romano confirmed it's not currently an exclusion but could be considered as a risk factor.
        - Richard White agreed these cases are of interest since patients with a history of DVT have an eight-fold higher incidence of subsequent VTE. Such a major risk should lead to more aggressive prophylaxis, but we will need to look at the data on this issue. We will also need to consider how accurate the diagnosis is for these cases (i.e., does the numerator event truly represent a new incident DVT or PE, or might it instead represent the sequela of a prior DVT or PE?).
        - Amita Rastogi suggested using prescribed anticoagulants at the time of admission to indicate those at risk of DVT. If they've had a previous DVT sometimes they are put on long-term anticoagulants, which would be present on admission.
        - Richard White stated that it is common for patients to be on long-term anticoagulants for various reasons, so this approach may lead to many

false positives. Additionally, patients are usually taken off anticoagulants prior to elective surgery. So, the team will need to investigate how to capture a personal history of DVT or PE in the coding.
    - Patrick Romano added that since this is an eCQM we are limited to using structured fields, so we are unable to use the free text from the clinician documentation of why the patient was on an anticoagulant. The team will investigate using the available flag for the intent of the medication.
- Brigitte Chiu asked whether a patient who develops VTE despite prophylactic anticoagulation would be counted for this measure. Her concern is that this push to avoid VTE may promote aggressive anticoagulation and that may cause more major bleeding during the early postop days.
    - Patrick Romano confirms that the measure would count events where the patient receives prophylactic anticoagulation as this is intended to be a risk adjusted outcome measure. Cases where the anticoagulation isn't started as soon as it should be after surgery or where there's a failure to use mechanical thromboprophylaxis (e.g., sequential compression devices) are of interest. The concern for unintended increases in bleeding events is the reason this measure is paired with a parallel measure to track anticoagulant-related major bleeding.
- David Classen raised the concern that hospitals work hard to get surgical patients discharged as quickly as possible so oftentimes DVTs and PEs occur (or at least are detected) only after the patient has left the hospital. Therefore, an encounter-based measure such as this one would miss a lot of the postop VTEs unless there is some way to look at a longer window such as 30-days.
    - Mia Nievera confirmed the measure is encounter-based so it is limited to the duration of the encounter, with the constraints listed in the numerator and denominator exclusions. The denominator is limited to patients with a length of stay greater than 2 days after the surgery and for patients with acute brain or spinal injuries or hemorrhage, the length of stay must be greater than 5 days.
    - Richard White noted that the analyses using the California dataset where they can link several hospitals shows that these postop VTE patients usually just get treated in the outpatient (Emergency Department) setting so capturing this accurately and electronically would require the ability to link records across settings (or at least across encounters within the same setting).
    - David Classen, Amita Rastogi, Kevin Kavanagh, Sharon Hibay, and Stephen Davidow shared support for a 30-day approach.

    - Patrick Romano noted the team will discuss this further with CMS.
    - Kevin Kavanagh added that when he underwent a major surgery, he was out of the hospital in less than 24 hours. For capturing VTEs, the team may need to consider a 30-day perspective or pulling data from multiple institutions.
    - Richard White noted that the data suggests patients who undergo surgery at a large referral center may be less likely to go back to that hospital for complications, because they go instead to a hospital closer to home. Record linkage is key for accurately capturing these incident cases of postoperative VTE.
- In discussing the ideal timeframe for capturing postoperative VTEs, the TEP shared factors for consideration.
    - Amita Rastogi noted her organization uses up to 90 days for some calculations.
    - Cynthia Barnard shared concern about picking 30 days as sometimes the further out from the hospital stay a complication occurs, the less preventable it is. She indicated it is important to consider whether something could have been done during the initial hospital stay to prevent the VTE30 days out before picking that timeframe. She noted the window would need to be attentive to medication and mobility adherence and suggested using data to determine whether the timeframe is appropriate.
        1. Richard White noted that the data suggests 30 days is a reasonable timeframe to capture DVTs related to the hospitalization and not some other event.
    - Sharon Hibay commented that finding the 'sweet spot' will be key to addressing the issue of unintended consequences of quick surgical turnarounds vs. practicing to the measure.
- Garth Utter suggested extremely long hospitalizations due to social factors as another issue for consideration and asked the group if the measure needs an upper limit on length of stay.
    - Patrick Romano echoed that patients with certain social factors such as homelessness, psychiatric conditions, or chronic wounds can spend up to a year in the hospital.
- Bruce Spurlock echoed the need for record linkage to improve the resiliency of our healthcare system. Currently NHSN reports come out on a delay, and we don't have the real-time data necessary to meet the needs of a resilient healthcare system. Without real-time data hospitals cannot respond quickly to

issues such as a rise in hospital acquired infections that occur with stresses such as pandemic surges. He emphasized the need for support from CMS for data linkage to accelerate the process.

- Kevin Kavanagh added that it is important that even for postoperative patients who may not be eligible for pharmaceutical prophylaxis, they can get mechanical prophylaxis, which should be considered.

9. **Postoperative Respiratory Failure- Overview Since Meeting #4:** Garth Utter provided a brief overview of the updates for Postoperative Respiratory Failure since the last TEP meeting. The team has been specifying the measure, with the goal to bring it to the public for comment this spring. Following the public comment period and receipt of TEP input, the team will refine the measure and prepare for pilot site testing this fall.

10. **Postoperative Respiratory Failure- Review of Draft Specifications:** Garth Utter provided an overview of the draft measure specifications. The goal of the measure is to detect incident cases of postoperative respiratory failure (PRF). The measure focuses on hospitalizations for elective operations in which PRF occurs. PRF is defined as an intubation occurring any time within 30 days after the conclusion of the first operation or cumulative time of mechanical ventilation more than 48 hours within 30 days after the conclusion of the first operation. The measure is intended to align with PSI 11. Additionally, the team has aligned the definition of PRF with the definitions used by the National Surgical Quality Improvement Program of the American College of Surgeons as well as the measures of PRF from the Society for Thoracic Surgery. The team considered a way to capture times of intubation and extubation for patients and account for (i.e., exclude) time spent on mechanical ventilation during operations (potentially serially for several operations). However, the fields that are available electronically probably will not be detailed enough to capture these timing details of mechanical ventilation both in and outside the operating room. The team would have to also add start and stop times for each operation to the logic, which would be very complex. The measure exclusions are still in development, but they fall into three main categories: (1) criteria indicating the existence of respiratory failure prior to the index operation; (2) criteria suggesting PRF would not have been preventable; or (3) criteria suggesting that the patient underwent intubation or mechanical ventilation primarily for airway protection rather than respiratory failure.

11. **Postoperative Respiratory Failure- Expert Input:**

    - David Classen asked if the 30-day window for this measure is limited to a single hospitalization or if it could run across hospitalizations.

    - Garth Utter confirmed this is an encounter-based measure. The rationale is that for most instances where the patient has recovered and left the hospital, respiratory failure after that point is not clearly attributed to the initial surgery but has unrelated causes.
- Bruce Spurlock noted there is a push to use non-invasive ventilation and move away from mechanical ventilation where possible. He questioned whether this should be included as there is still potential to harm the patient with the non-invasive approach. He added that we need to be able to adjust the measures as clinical information emerges. He agreed that harmonization of measures is important and that we will need to reevaluate this measure over time based on changing clinical practices related to mechanical ventilation. He argued that this could be a reason to capture non-invasive ventilation through a separate field.
    - Garth Utter responded that our current conceptualization of the PRF measure does not consider non-invasive ventilation, partly because we are not certain whether or how non-invasive ventilation could be reliably captured from electronic data. However, if we do not include it in the numerator, it is possible for hospitals to rely more on non-invasive ventilation to skirt around detection of PRF.
- Kevin Kavanagh asked to clarify the definition of elective procedures and suggests controlling for abdominal or thoracic procedures that violate muscular fascia as that can increase risk.
    - Garth Utter clarified that hospitals determine the elective status.
    - Mia Nievera added the value set relies on procedures using anesthesia to define the population. Elective status is not tied to individual procedures, but instead it is tied to the encounter at this time. This measure will be specified in FHIR so there may be some more robust indicators to classify a procedure but at this time the only way is through the encounter.
    - Garth Utter acknowledged that, although a large proportion of incident cases of PRF involve abdominal operations, there's no effort to exclude musculoskeletal procedures (aside from head and neck procedures). Therefore, most orthopedic and spine procedures would be captured so long as they occur during an elective hospitalization. The type of index operation, including the anatomic location and approach, can be accounted for through risk adjustment.
- Kevin Kavanagh suggested considering the types of surgeries the hospital is doing to reduce bias when comparing hospitals. A hospital that does primarily orthopedic extremity surgeries versus a hospital that does primarily abdominal surgery will need adjustments to accurately compare rates of PRF.

        - Garth Utter noted the team will consider this for risk adjustment.
    - David Classen noted the documentation of intubation and ventilation is very good in the electronic record, but unclear how non-invasive ventilation is documented.
    - Brigitte Chiu asked whether the measure captures cases in which the patient has the operation at one hospital and the PRF at a different one. In her area it is common for patients to be admitted to a different hospital for complications.
        - Garth Utter noted that without linkage across hospitals, this is unlikely to be captured by this measure.
        - Patrick Romano noted that—in contrast to postoperative VTE—most cases of PRF occur early after the index operation and, if a patient develops PRF after being discharged, it is often due to a separate process such as fluid overload, uncontrolled heart failure, etc., so in this case it is acceptable that these events are not captured by the measure.
    - Amita Rastogi emphasized the need to ensure the measure is patient-centered. If a patient is hospitalized at a different hospital for PRF within the 30-day window it should be counted as this is a patient centered problem.
        - Garth Utter responded that, in the team's analysis of PRF after elective procedures among different University of California medical centers, only 18%of cases occurred after postoperative day five, so while it is possible for respiratory failure to occur on a much-delayed basis, that is unusual.[2]

Conclusion and Next Steps

Following the conclusion of the TEP meeting, the MIDS Patient Safety team produced the meeting summary report. AIR plans to review the suggested refinements and considerations for measure testing and make changes accordingly. AIR plans to collect availability for the next meeting in the coming months, aiming for a meeting in Summer 2022.

[2] Stocking JC, Drake C, Aldrich JM, et al. Risk Factors Associated With Early Postoperative Respiratory Failure: A Matched Case-Control Study. J Surg Res. 2021 May;261:310-319. doi: 10.1016/j.jss.2020.12.043. Epub 2021 Jan 20.

Appendix A. TEP Composition List

Name, Credentials, and Professional Role	Organizational Affiliation, City, State	Conflict of Interest Disclosure
Cynthia Barnard, PhD, MBA, MSJS Vice President, Quality; Assistant Professor	Northwestern Memorial Healthcare, Northwestern University Chicago, IL	None
T. Brian Callister, MD, FACP, SFHM Physician; Governor of Nevada ACP; Professor of Medicine	American College of Physicians, University of Nevada, Reno School of Medicine Reno, NV	None
David Classen, MD, MS Professor of Medicine and Infectious Diseases	University of Utah School of Medicine, Pascal Metrics Salt Lake City, UT	AHRQ funding, VA funding, Pascal Metrics funding, NQF Chair
Hazel Crews, MHS, MHA, CPHQ, HACP Senior Director of Quality Improvement	Managed Health Services Indianapolis, IN	None
Lillee Gelinas, BSN, MSN, RN, CPPS, FAAN Patient Safety Section Director	Texas College of Osteopathic Medicine, University of North Texas Health Science Center Fort Worth, TX	None
Helen Haskell, MA Caregiver Representative	Mothers Against Medical Error Columbia, SC	None; Patient Advocate
Kevin Kavanagh, MD, MS Volunteer Board Chairman	Health Watch USA Lexington, KY	NQF CSAC Member
Shabina Khan Patient Representative	Chicago, IL	None
Joseph Kunisch, PhD, RN-BC Informatics, CPHQ Vice President	Harris County Health System Houston, TX	None
Anna Legreid Dopp, PharmD Director, Clinical Guidelines and Quality Improvement	American Society of Health-System Pharmacists, Pharmacy Quality Alliance Bethesda, MD	None
Grant Lynde, MD, MBA Staff Physician and Vice Chair of Quality	Emory University Hospital, American Society of Anesthesiologists Atlanta, GA	None
Lisa Riggs, MSN, RN, ACNS-BC, CCRN-K Volunteer Leader & Member	American Association of Critical Care Nurses Aliso Viejo, CA	None
Hardeep Singh, MD, MPH Chief of Health Policy, Quality and Informatics Program	Michael E. DeBakey Veterans Affairs Medical Center and Baylor College of Medicine Houston, TX	AHRQ grants, VA grants, Gordon and Betty Moore Foundation grants, Cancer Research UK grant
Bruce Spurlock, MD President & CEO	Cynosure Health, Cal Hospital Compare Roseville, CA	None

Name, Credentials, and Professional Role	Organizational Affiliation, City, State	Conflict of Interest Disclosure
Ashley Tait-Dinger, MBA Director of Analytics, Alternative Payment Models & Finance	Florida Alliance for Healthcare Value, The Leapfrog Group Winter Springs, FL	None
Amy Wilson, RN, MSN, CPHQ Senior Vice President, Clinical Operations	Ascension St. Louis, MO	None

Appendix B. Project Staff

AIR Team	
Name	**Role**
Mia Nievera, MSN, RN	Project Director, eCQM Lead
Anna Michie, MHS, PMP	Project Manager
Stacie Schilling, MPH	NQF SME
Bo Feng, PhD	eCQM Statistical Lead
Michelle Lefebvre, RN, BSN	eCQM Measure Lead
Katie Magoulick, MPH, MSW	eCQM Measure Lead
Sajad Vahedi, PhD	eCQM Statistical Support
Tracy Haidar, PharmD, MS	eCQM Statistical Support
Hannah Klein, PMP	TEP Lead
Leah Dillard	TEP Meeting Coordination & Support
Kennell Team	
Name	**Role**
Allison Russo, DrPH, MPH	Information Gathering Lead
Christina Superina, MPP	Project Manager
Courtney Colahan	Team Member
UC Davis Team	
Name	**Role**
Patrick Romano, MD, MPH	Clinical Director
Christian Sandrock, MD, MPH	Clinical SME
Richard White, MD	Clinical SME
Irina Tokareva, RN, BSN, MAS, CPHQ	Clinical SME
Garth Utter, MD, MSc	Clinical SME
Daniel Tancredi, PhD	Statistical SME
Guibo Xing, PhD	Claims Measure Testing Lead
Monika Ray, PhD	Computer Science SME
Meghan Weyrich, MPH	Project Manager
Clinician-Driven Quality Solutions Team	
Name	**Role**
Chana West, RN, MSN	eCQM Testing Support

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