Standing Technical Expert Panel (TEP) for the Falls with Major Injury (FMI) Quality Measure

Summary Report

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Executive Summary

On May 12 and 14, 2025, RTI International, in partnership with Abt Global and Outcome and Assessment Information Set (OASIS) Answers International, convened a 2-day technical expert panel (TEP) to finalize an approach for respecifying the Centers for Medicare & Medicaid Services (CMS) Falls with Major Injury (FMI) (Consensus-Based Entity ID 0674) quality measure. This May 2025 TEP followed a prior TEP held on July 18, 2024, where panelists discussed initial concepts for respecification of the FMI measure.[1]

The cross-setting FMI quality measure is used in Long-Term Care Hospitals (LTCHs), Inpatient Rehabilitation Facilities (IRFs), Skilled Nursing Facilities (SNFs), Home Health Agencies, and Nursing Homes (NHs) to measure the percentage of stays or episodes that had an FMI event. Recent studies, including a report from the Office of Inspector General and an independent peer-reviewed journal publication, suggest that the current assessment-based FMI measure underreports FMI events and recommend incorporating claims data to improve measure accuracy (Sanghavi et al., 2020; Maxwell, 2023). Accordingly, this TEP considered approaches for incorporating claims data into the current assessment-based FMI measure.

All 15 of the TEP participants from 2024 were invited to participate in the May 2025 TEP, and 12 accepted the invitation. Of those 12, 10 participated live via Zoom and 2 provided asynchronous feedback in response to shared TEP materials (agenda, presentation slides, key discussion questions).

Two broad approaches for respecifying the FMI quality measure by adding claims data were discussed, both building upon the current assessment-based measure and adding claims data to find additional FMI events. The first added claims data to identify additional major injuries for falls documented in assessment data, and the second further used claims data to identify both falls and major injuries. The 12 TEP members were evenly split on which respecification approach they preferred. In addition, the TEP discussed refinements to International Classification of Diseases, Version 10 (ICD-10) code lists used in the claims-based approaches (major injury diagnoses and external cause codes to identify falls) and other detailed technical specifications for the incorporation of claims data to the measure. **Table ES-1** summarizes key TEP feedback in more detail.

[1] See the Cross-Setting Falls with Major Injury (FMI) Measure respecification briefing for technical expert panel (TEP) report (Acumen and Abt, 2024) for additional details about decisions made at the 2024 TEP: https://mmshub.cms.gov/sites/default/files/PAC-Home-Health-QRP-Cross-setting-TEP-Summary-Report-July-2024.pdf

Table ES-1. Summary of FMI TEP Feedback by Topic

Topic	Subtopic	Feedback
Refining the ICD-10 Diagnosis Code List Used to Identify Major Injury in Claims	Adding FMI Codes to Standardize Application Across Body Systems	Most TEP participants supported the idea of adding major injury diagnoses codes to standardize across body systems.
	Excluding Pathologic Fracture Codes	Pathologic diagnosis codes are used when an underlying condition or disease is the primary cause of an injury. All TEP participants supported excluding pathologic fracture codes for bone fractures in identifying major injuries that could be related to a fall.
	Excluding "Injury (except major)" Codes in Instrument Guidance Manuals	Most TEP participants supported the proposed exclusion of diagnosis codes explicitly corresponding to examples of "Injury (except major)" cases to align with guidance for providers in the clinical manuals.
	Refined Major Injury ICD-10 Diagnosis Code Set	Most TEP participants supported the refined definition of "Major Injury."
Refining the ICD-10 External Cause Codes Used to Identify Falls in Claims	ICD-10 External Cause Codes to Identify Falls	Most TEP panelists supported the external cause code set presented to identify falls in claims data.
Detailed Technical Specifications Regarding the Addition of Claims	Numerator Exclusions	Many TEP participants supported the proposed numerator exclusions: ▪ Diagnosis codes (for fall or major injury) with a "sequela" or "subsequent encounter" suffix (limiting to initial encounters) ▪ Claims for falls/major injuries where the diagnosis was not present on admission (i.e., hospital-acquired) ▪ Claims for falls/major injuries where the claim fell on the first day of the post-acute care (PAC) stay (as the fall could have occurred before the PAC stay) ▪ Claims for falls/major injuries that occurred on the day of discharge from the PAC stay where the discharge was to home (as the fall may have happened at home)
	Measure Window	TEP participants supported looking for additional FMI claims only within the PAC stay measure window (rather than looking for FMI claims 1 or 7 days after the end of care).
	Use of External Cause of Injury Codes to identify Falls	TEP participants were divided on whether they supported the use of external cause of injury codes to identify falls in claims, given that the codes are not used for payment.
	Continuous Enrollment	TEP participants were divided on whether excluding PAC stays without continuous enrollment for their respective payer from the denominator of the FMI measure is the best approach, given complexities introduced for settings including all payers.
Measure Results: Reliability	Measure Reliability	TEP participants were comfortable with the reliability estimates presented.

Note: The original list to which codes are being added, excluded, and so on is the list of ICD-10 codes provided to TEP members for feedback after a July 2024 TEP.

Introduction

The Centers for Medicare & Medicaid Services (CMS) develops and maintains quality measures to improve care quality and enable Medicare beneficiaries and their caregivers to make informed choices when selecting health care providers. CMS routinely evaluates and refines measures included in program measure sets to ensure cross-setting alignment, facilitate and implement improvements, and maintain measure effectiveness.

The CMS Division of Chronic & Post-Acute Care in the Quality Measurement and Value Incentives Group contracted with RTI International and Abt Global to support quality measurement as part of the *Development, Maintenance, and Support for Quality Reporting and Value-Based Purchasing Programs and Nursing Home Care Compare* and the *Home Health Quality Measurement, Value-Based Purchasing Model and Hospice Assessment Instruments Development and Maintenance* projects (RTI Contract No. 0216593.001.000.200; Abt Contract No. 75FCMC18D0014). RTI International, Abt Global, and Outcome and Assessment Information Set (OASIS) Answers International, together referred to as the Post-Acute Care (PAC) and Home Health (HH) Quality Reporting Program (QRP) Team (henceforth referred to as "the team"), support CMS in these efforts.

For this effort, RTI provides implementation support for the Inpatient Rehabilitation Facility (IRF), Long-Term Care Hospital (LTCH), and Skilled Nursing Facility (SNF) QRPs, as well as the SNF Value-Based Purchasing (VBP) Program and the Nursing Home Quality Initiative (NHQI). Abt Global supports the HH QRP. OASIS Answers provides additional clinical expertise and measure development support.

Meeting Structure

This follow-up technical expert panel (TEP) meeting took place virtually in two sessions over May 12 and 14, 2025, from 11:00 a.m. to 3:00 p.m. EST on both days. The primary goals of this meeting were to:

- Update the TEP panelists on measure respecification progress since the July 2024 TEP.
- Obtain feedback to assist in the finalization of technical specifications for the measure.
- Update TEP panelists on the analytical results for the measure.

Specifically, the team sought the TEP's guidance on (1) which of two proposed approaches for incorporating claims data was preferable, (2) technical details (numerator exclusions, etc.) related to adding claims data, and (3) refinements to the International Classification of Diseases, Version 10 (ICD-10) code set used to identify major injury and falls in claims data. This work will result in finalized technical specifications for the measure. Please see the appendices for supplemental materials.

TEP Participants

The 15 TEP participants in the 2024 Falls with Major Injury (FMI) discussion were invited to reconvene for the May 2025 TEP. Participants were given the option to participate synchronously or asynchronously for one or both sessions, as their schedules allowed. Each participant received an initial email outreach request on April 8, 2025.

Ten of the TEP panelists participated in the meetings synchronously, and two additional members participated asynchronously. **Table 1** provides an overview of the 15 prospective participants who were invited to participate.

Table 1. FMI TEP Participants (May 2025)

Name	Title	Setting(s) of Expertise	Organization
Rebecca Cartright, FACHE	Chief Executive Officer	IRF, acute care hospital, HH, hospice, rural practice	Ernest Health Midlands Regional Rehabilitation Hospital
Michele Cournan, DNP, RN, CRRN, ANP-BC, FNP, FARN	Director of Quality Improvement (retired)	IRF	Sunnyview Rehabilitation Hospital/St. Peter's Health Partners
Joseph E. Daly, PT, MBA, MHA, FACHE	Physical Therapist	LTCH, IRF, SNF/nursing home (NH), acute care hospital, HH	Practicing physical therapist in various post-acute settings in the Pittsburgh area
April Diaz, RN, BS	Vice President of Clinical Services	SNF/NH	Marquis Companies
Rebecca Montross, MS, GCAS	Assistant Vice President for Analytics and Data Governance	IRF, HH, hospice, quality measurement	Allied Services Integrated Health System
Eugene A. Gonsiorek, PhD, PT, NHA	Vice President of Clinical Regulatory Standards	SNF/NH, quality measurement, measurement developer, clinical researcher	PointClickCare
Barbara "Barb" Hansen, MA, RN	Chief Executive Officer and Executive Director	SNF/NH, HH, hospice, rural practice	Oregon Hospice & Palliative Care Associates Washington State Hospice & Palliative Care Organization
Jennifer L. Kennedy, EdD, MA, BSN, RN, CHC	Vice President, Quality, Standards, and Compliance	HH, hospice, quality measurement	Community Health Accreditation Partner (CHAP)
Sireesha Koppula, MD, MPH, MBA, CPE, CMQ	Associate Professor of Nephrology and Director of Quality Improvement	LTCH, IRF, SNF/NH, acute care hospital, HH, hospice, quality	University of New Mexico
Edward W. Martin, MD, MPH, FACP, FAAHPM	Chief Medical Officer	LTCH, SNF/NH, HH, hospice	HopeHealth, representing American Academy of Hospice and Palliative Care

(continued)

Table 1. FMI TEP Participants (May 2025) (continued)

Name	Title	Setting(s) of Expertise	Organization
Janet P. McMillan, DSN, APRN, PMHNP-BC*	Psychiatric Nurse Practitioner/QAPI Coordinator	Acute care hospital, HH, hospice, rural practice, quality measurement, measurement developer, clinical researcher	Forrest General Home Care and Hospice
Bruce Pomeranz, MD, MMM	Chief Quality Officer	IRF, quality measurement, clinical researcher	Select Medical (Employer) AMRPA (American Medical Rehabilitation Providers Association) (Organizational Representative)
Robert J. Rosati, PhD	Vice President of Research and Quality	HH, hospice, quality measurement, clinical researcher	Visiting Nurse Association Health Group
Chloe Slocum, MD, MPH*	Medical Director for Quality and Safety and Attending Physician, and Assistant Professor and Director of Health Policy	LTCH, IRF, SNF/NH, quality measurement	Spaulding Rehabilitation-Mass General Brigham, Harvard Medical School
Amy J. Stewart, MSN, RN, RAC-MT, RAC-MTA, QCP-MT, DNS-MT	Chief Nursing Officer	SNF/NH, quality measurement	AAPACN (The American Association of Post-Acute Care Nursing)

Note: Asynchronous participants noted with an asterisk (*); nonparticipants are italicized.

Measure Overview and History

The FMI (Consensus-Based Entity ID 0674) measure was adopted by the NHQI for long-stay (LS) nursing home (NH) residents in 2011 (Partnership for Quality Measurement, 2021). Following the Improving Medicare Post-Acute Care Transformation (IMPACT) Act of 2014, which required PAC providers to report data on the incidence of major falls, an application of the LS NH measure was adopted by the IRF, LTCH, SNF, and HH QRPs. The LS NH measure was also recently adopted by the SNF VBP Program, and it will affect payment for the program starting in fiscal year 2027.

The FMI measure as it is currently specified is calculated using assessment data for the respective setting (i.e., assessment data element J1900C). An FMI is identified when both a fall and major injury are indicated on a patient assessment during the measure window (i.e., the numerator is triggered by item J1900C equaling 1 or 2, indicating one or more FMI events). However, recent analyses have raised concerns that the measure's assessment-only design may result in underreporting of FMI events.[2]

[2] Recent studies found substantial underreporting of FMIs in assessment data, specifically citing that approximately 50% of FMIs are not reported across settings. Sanghavi et al. (2020) found that only 57.5% of claims-identified FMI events were reported in MDS assessments, and a report reviewing the HH setting released by the Office of Inspector General (Maxwell, 2023) found that only 45% of claims-identified FMI events were reported in OASIS assessments. In addition, research conducted by Mintz et al. (2022) supports the use of claims data to improve the identification of more nonfracture fall-related injuries.

Underreporting in assessment data may stem from confusion about how "major injury" is defined (i.e., providers may take the existing list of examples in the assessment as a restrictive list) or could be a result of providers being unaware of downstream diagnoses following the fall (i.e., the full extent of fall-related injury is unknown until the patient receives hospital or emergency department care). Providers also may not report FMI events to avoid the associated poor quality measure scores.

The goal of this TEP meeting was to obtain feedback on proposed approaches to respecification of the FMI measure by adding claims data to the current measure to address underreporting.[3] This meeting was a follow-up to the previous TEP held on July 18, 2024, when respecification of the measure was initially discussed.

TEP Discussion

The TEP discussion included several overarching topics, with the team presenting talking points, key findings from relevant analyses, and targeted questions for TEP participant discussion. These topics included discussion of two possible specification approaches, detailed technical specifications for claims data used in the FMI measure, and refinement of ICD-10 code sets for major injury diagnoses and external cause of injury.

FMI Respecification Approaches

During the 2024 TEP, the team proposed two possible approaches (Approaches 2 and 3) for respecifying the FMI measure by adding claims data, in addition to the current specification (hereafter referred to as Approach 1).

- ***Approach 1*****:** *Currently adopted assessment-based version of the FMI measure.*
- ***Approach 2*****:** *Approach 1 + identification of FMI events using a combination of assessment data (to identify whether a fall occurred) and claims data (to identify whether a major injury occurred).*
- ***Approach 3:*** *(No longer under consideration): Approach 2 (Including Approach 1) + identification of FMI events using only claims data (to identify FMIs using a set of major injury diagnoses which we would assume are always the result of a fall)*

Feedback from the 2024 TEP determined that Approach 3 (which assumes that a fall occurred based only on the major injury diagnosis code in claims) was not suitable for further consideration given a high probability of false positives from this approach. However, Approach 2 (inclusive of Approach 1) does not fully address the issue of FMI underreporting; although it uses both assessment and claims data to identify major injuries, it relies solely on assessment data to identify whether a fall occurred.

To more fully address the problem of assessment underreporting, while also inviting fewer false positives, CMS proposed a new *Approach 4* in the 2025 TEP (see **Table 2** below). Similar to Approach 3, the newly proposed Approach 4 is inclusive of Approaches 1 and 2 and additionally

identifies FMIs using claims data alone, Rather than assume a fall occurred based on the presence of a major injury diagnosis code alone (which could lead to false positives) as Approach 3 did, Approach 4 identifies FMI events in claims data where both an external cause of injury code indicates a fall and a diagnosis code indicates a major injury.

Table 2. FMI Respecification Approaches

Approach	Description of FMI Event Identification Method	Assessment Data		Claims Data		Concerns
		Fall	Major Injury	Fall	Major Injury	
Approach 1: Current Specification	Assessment-reported fall (J1800 = [1]) + assessment-reported major injury (J1900C = [1, 2])	●	●			Relies solely on assessment data to identify a fall and major injury, which may increase the risk of underreporting.
Approach 2 (Inclusive of Approach 1)	**Already Included in Approach 1:** Assessment-reported fall (J1800 = [1]) + assessment-reported major injury (J1900C = [1, 2]) *OR* **Added in Approach 2:** Assessment-reported fall (J1800 = [1]) + claims-confirmed major injury diagnosis code	●	●		●	Relies solely on assessment data to identify a fall, which may increase the risk of underreporting; claims included only for identifying major injury.
Approach 4 (inclusive of Approach 2, which is inclusive of Approach 1)	**Already Included in Approach 1:** Assessment-reported fall (J1800 = [1]) + assessment-reported major injury (J1900C = [1, 2]) *OR* **Already Included in Approach 2:** Assessment-reported fall (J1800 = [1]) + claims-confirmed major injury diagnosis code *OR* **Added in Approach 4:** Fall identified on claims by external cause code + claims-confirmed major injury diagnosis code	●	●	●	●	May systematically exclude falls in facilities not using external cause of Injury codes, as these codes are optional.
Approach 3: No longer being considered following TEP discussion	Assessment-reported fall (J1800 = [1]) + assessment-reported major injury (J1900C = [1,2]) OR Assessment-reported fall (J1800 = [1]) + claims-confirmed major injury diagnosis code OR Fall assumed based on presence of a major injury diagnosis that is ”always” the result of a fall + claims-confirmed major injury diagnosis code	●	●		●	Not requiring claim or assessment documentation of a fall could lead to false positives.

Conversation during the 2025 TEP centered on the nuances of potential new FMI measure specifications (Approaches 2 and 4). The team presented data from the HH setting to illustrate the potential impacts of adding claims data (via Approaches 2 and 4) to the current assessment-based specification (Approach 1). Results showed that adding claims data (Medicare Fee-For-Service, Medicare Advantage, and Medicaid) to assessment data as a means of identifying FMI events allowed us to identify more FMI events that we could otherwise. Specifically, the mean provider-level FMI rate increased from 1.02% of episodes resulting in an FMI when the measure was calculated using the current assessment-only specification (Approach 1), to 1.29% when we included claims to identify major injuries for falls documented in assessment data (Approach 2), and to 1.61% when we further used claims with external cause of injury codes indicating a fall and major injury diagnoses to indicate an FMI event (Approach 4). Together, these results suggest that adding claims to the FMI measure calculation capture FMI events over and above the current specification and may mitigate underreporting of FMI events. Furthermore, these results showed that of all the potential specifications for the FMI measure under consideration (Approaches 1, 2 and 4), Approach 4 was able to capture the most FMI events.

TEP participants asked a variety of questions about each approach, but there was no clear agreement or disagreement on which approach was preferable. TEP members noted the potential positives of Approach 4, including the capture of the most previously missed FMI incidents by including an option where falls can be identified in claims data. Some TEP members concurred that Approach 4 would likely capture the highest rate of true falls and would be more comprehensive by incorporating both claims and assessment data to identify falls.

Other participants felt Approach 2 would result in a more straightforward method with a lower chance of false positives being attributed to the provider or facility. In particular, several TEP members expressed concern that because coding external cause of injury codes is optional when submitting claims, there could be differences in coding practices across hospital providers. For example, clinicians may be less able to complete the assessments necessary for documenting external cause of injury codes during busier times, and some sites may tend to be busier than others. Additionally, TEP members also noted concerns about the inconsistent use of external cause codes across states, limiting the effectiveness of Approach 4 in linking major injuries to falls. See the section titled "Use of External Cause of Injury Codes" below for additional context on points of concern related to the use of external cause codes in Approach 4.

Consensus:	The TEP participants were evenly split, with half preferring Approach 2 and half preferring Approach 4.

Major Injury ICD-10 Diagnosis Code Set

TEP participants were asked to provide input on several proposed changes to the major injury ICD-10 diagnosis code set to identify major injury in claims data for Approaches 2 and 4. Participants in the July 2024 TEP participated in streamlining an initial ICD-10 list for major injury diagnosis. This section outlines proposed changes (additions, exclusions, etc.) to that code set in response to TEP feedback and additional clinical discussion.

Adding Major Injury ICD-10 Diagnosis Codes to Standardize Across Body Systems

The team proposed standardizing codes across body systems to ensure that major injury types were not arbitrarily excluded from the code set for one associated body part or region, while being included for others to maintain logical consistency. For example, the team added dislocation injuries of the skull to the Joint Dislocation/Subluxation (Traumatic) category, as injuries to the skull and face are included in other categories (e.g., Fracture [Traumatic]) and were previously missing from the Dislocation/Subluxation (Traumatic) category.

From a baseline straw poll before discussion, TEP members largely agreed with standardizing codes across body systems (N = 9 of 12 supporting). Among the TEP members who were uncertain or opposed, questions included the appropriateness of focusing on all body systems (e.g., skin), but the team clarified that skin is not represented in the body systems as defined by the ICD-10 coding guidelines, even though skin is clinically an organ. Following this discussion and additional clarification, one of the initial opposers indicated a change in perspective, resulting in a total of 10 TEP participants supporting standardization.

Consensus: Most TEP participants supported adding major injury codes to standardize application across body systems.

Excluding Pathologic Fracture Codes

The ICD-10 Official Guidelines for Coding and Reporting indicate that code assignment is based on documentation from a patient's provider (the physician or practitioner legally responsible for their care). This requires that the associated diagnosis must be established before the ICD-10 code is used in the patient record. This structure provides a clear distinction between pathologic diagnosis codes, which are used when an underlying condition or disease is the primary cause of an injury, and traumatic codes, which are used when an incident is the cause of the injury. For example, if a bone fracture is a result of pathologic condition, then an M84.4 code (indicating "Pathological fracture, not elsewhere classified") would be used. The team proposed to include only traumatic fractures as major injuries that are captured in claims and assessment data, excluding pathologic fractures and pathologic joint dislocations and subluxations from the FMI measure. This exclusion would not affect traumatic fractures or traumatic joint dislocations and subluxations.

In a baseline straw poll before discussion, all but one TEP participant agreed with the exclusion of pathologic fracture codes (N = 10 of 11 supporting).[4] One participant pointed out that an emergency department or hospital clinician may be less familiar with patient history or nuance when they are coding a pathologic versus traumatic facture and therefore may code incorrectly at times, especially relative to assessment data, which are completed by clinicians who have spent more time with the patient. The one participant who initially opposed exclusion of

[4] Total TEP participants included in votes varied, as participants occasionally stepped away during the discussion (e.g., to take a phone call).

pathologic fracture codes changed their opinion, resulting in full TEP participant agreement to exclude these codes.

Consensus: All TEP participants were supportive of the proposed exclusion for pathologic fracture and dislocation/subluxation codes.

Excluding Codes for "Injury (Except Major)" in Instrument Guidance Manuals

Guidance manuals for providers define two levels of fall-related injuries: "Injury (except major)" and "Major Injury." We proposed to exclude those diagnoses aligned with the "Injury (except major)" examples in the ICD-10 diagnosis code set for major injury.

Examples of "Injury (except major)" include skin tears, abrasions, lacerations, superficial bruises, hematomas, sprains, and any fall-related injury that causes the patient to complain of pain. These example injuries are the same across settings' provider guidance manuals. The team proposed excluding diagnoses codes aligned with the definition of "Injury (except major)" from the ICD-10 diagnosis code set for major injury. In contrast, the team proposed to maintain diagnosis codes for injuries aligned with the examples of "Major Injury" in guidance manuals including bone fractures, joint dislocations, closed head injuries with altered consciousness, and subdural hematoma in the ICD-10 diagnosis code set for major injury.

In a baseline straw poll before discussion, all but one TEP participant (N = 10 of 11 supporting) supported the exclusion of diagnoses for injuries listed in the guidance manuals as examples of "Injury (except major)." The one participant who opposed these exclusions asserted that patterns of minor injuries are markers of escalating fall risk and suboptimal care in some high-risk individuals. This individual also expressed concern about significant skin tears and hematomas that would be excluded if these codes were excluded.

Consensus: Most TEP participants were supportive of the proposed exclusion of "Injury (except major)" codes.

Refined Major Injury ICD-10 Diagnosis Code Set

After the exclusions, the following code categories from the original major injury ICD-10 diagnosis code set shared at the July 2024 TEP will be maintained as a part of the "Major Injury" definition:

- Fracture (Traumatic)
- Joint Dislocation/Subluxation (Traumatic)
- Injury to the Head (with and without Loss of Consciousness)
- Other Non-Fracture Bony Injury
- Organ Trauma
- Crush Injury
- Spine (Cord/Disc)

The intention is to include major injury diagnoses either explicitly referenced as "Major Injury" in Instrument Guidance Manual examples or which should be reasonably considered major

injuries. The team asked the TEP for input on this refined major injury ICD-10 diagnosis code set.

In a baseline straw poll before discussion, the TEP participants generally agreed with this list (N = 9 of 11 supporting), though two TEP participants indicated concern about injury to major organ systems. One panelist indicated that a major organ injury could be coded in association with a fall, when it was caused by something else. Another participant expressed concern that an updated major injury definition could result in misalignment with guidance manuals. The participant also noted that before this TEP, it was not clear to them that the categories of major injury listed in the guidance manual and item 1900C (bone fractures, joint dislocations, close head injuries with altered consciousness, and subdural hematoma) are not intended to be exhaustive. This participant felt it would be important to update provider guidance to educate coders. The team noted that the intention is to edit guidance in the manuals to clarify and correct any misalignment with the specification.

Consensus: Most TEP participants supported the refined definition of "Major Injury."

Falls ICD-10 External Cause of Injury Code Set

Falls ICD-10 External Cause of Injury Code Set

ICD-10 external cause of injury codes include a subset of codes beginning with V, W, X, and Y. They are used to classify environmental events and circumstances as the cause of injury and other adverse effects. These codes should be used only when there is an injury diagnosis code on the claim, and they are used secondarily to the code that represents the injury or adverse effect. External cause of injury codes V00 and W00 through W19 represent slipping, tripping, stumbling, and falls. The team shared a proposed list of external cause of injury codes to identify falls in claims data with the TEP.

Before discussion, 10 of 12 TEP participants supported the proposed falls ICD-10 external cause of injury code set. TEP members asked about the implications of using external cause codes in all-payer settings. The team said that for settings with all-payer patient populations, there would be a review of claims with external cause codes for all payers available, including Medicare FFS and MA. We note that there is not an external cause field in Medicaid claims, and we do not have access to commercial claims.

Ultimately, one of the opposing panelists became supportive of the proposal after establishing that they were thinking of their own setting-specific concerns. They acknowledged that some codes may be more appropriate for some settings than others. The team reiterated that the intent is to make the FMI specifications as universal as possible, but some may be more relevant or applicable to certain settings. With this TEP participant's shift in opinion, the total number of supporting TEP members was 11 of 12.

Consensus: Most TEP panelists supported the proposed external cause codes to identify falls.

FMI Analytic Respecification Proposals

The team proposed detailed technical specifications around the inclusion of claims data in the FMI measure for TEP feedback, including numerator exclusions, measure windows, the use of external cause of injury codes, and continuous enrollment. Finally, the team presented measure reliability estimates for Approaches 1, 2, and 4 for the TEP's discussion.

Numerator Exclusions

The team determined that some claims in the measure window may not be appropriate to include when identifying FMI events. For example, FMI events documented right at the beginning or end of the stay or episode may not be reasonable to attribute to the PAC provider. To address this concern, the team proposed four numerator exclusion criteria to be applied when identifying FMI events using claims data:

1. Exclude claims with diagnosis codes (major injury) with a "sequela" or "subsequent encounter" suffix (indicating residual conditions resulting from a previous illness or injury, after the acute phase has resolved).
2. Exclude claims identifying a fall or major injury if the claim began on the date of PAC admission, as an FMI identified by this claim could have occurred before PAC stay.
3. Exclude claims indicating an FMI event if the fall or major injury is explicitly not present on admission to hospital.
4. Exclude claims that occur on the day of discharge if the person was discharged home, as the FMI event could have happened at home (not applicable to HH).

TEP participants asked questions about within-stay and continuing care timing with regard to how falls would be attributed (e.g., falls occurring in the post-discharge window after a PAC stay are not attributed to the PAC facility; falls occurring before facility stay with associated injuries caught by the facility would not be included in the measure and not attributed to the facility because no associated assessment data or external cause of injury codes would exist within-stay).

Panelists were not polled on their support for numerator exclusions, but based on questions they asked, comments they made, and their body language (e.g., affirmative nods), TEP members indicated broad agreement regarding the numerator exclusions.

Consensus: TEP participants supported the presented numerator exclusions.

Measure Window

The measure window specifies the period when an FMI event can occur and be counted in the measure. For inpatient PAC settings, a within-stay measure window definition will be used to identify claims for FMI events, calculated as the day after the start of care through discharge from care. For HH, the team additionally considered extending the measure window to 1 or 7 days after the end of care, given that it may take longer to identify the need to seek care for a major injury in the HH setting. The team provided correlations of the measure calculated for

Approaches 1, 2, and 4 using claims date from within the episode, 1 day after the episode, and 7 days after the episode. Scores calculated for both proposed extensions result in very high correlations with the within-episode calculation at the provider level.

TEP participants acknowledged that the extension options do not seem to have a significant impact on overall numbers, adding that 7 days after the episode seems too long. However, many expressed that even 1 day seems unnecessary, explaining that the previous provider should not be responsible for patient well-being days after discharge. Panelists were not polled regarding their support for extending the measure window to look 1 or 7 days past discharge to identify FMI in claims, but based on questions they asked, comments they made, and their body language (e.g., affirmative nods), most TEP members seemed to support within-episode measure windows (no extension) for HH and other settings.

Consensus: Most TEP participants supported the measure window being within-episode/stay.

Use of External Cause of Injury Codes

Approach 4 uses external cause of injury codes to identify falls in claims data. External cause of injury codes are not used for payment; they are primarily intended for research and evaluation of injury prevention strategies. Additionally, inconsistent use of external cause of injury codes could result in variation in rates of FMI events across facilities and states as an artifact of coding practices of proximal hospitals. To assess the potential for this concern, the team examined geographic variation in Medicare FFS and MA external cause of injury code use with an underlying goal of determining whether substantial variation exists in the use of external cause of injury codes across states.

Several TEP participants had questions on the use of external cause of injury codes. Some raised concerns about them, noting that they may not be reliable and accurate coding markers because they are not used to determine payment and are intended for research and evaluation of injury prevention strategies. Other TEP members asked questions related to the reliability of data, given variation and outliers across states. Additional questions were raised, with panelists adding that if external cause of injury codes are used inconsistently and data are variable, they likely do not resolve the underlying FMI specification concern around underreporting.

In contrast, some TEP panelists acknowledged that the inclusion of external cause of injury codes, although imperfect, allows for the capture of additional FMIs that have been underreported using the current approach. The team also clarified that external cause of injury codes are only used in Approach 4.

Panelists were polled on their opinions of Approach 4 (the only proposed Approach that uses external cause codes) based on the presented external cause of injury code data and associated discussion. Four of the eight TEP panelists supported Approach 4's inclusion of external cause of injury codes, and the remaining four felt less confident in Approach 4.

Consensus: TEP participants were divided on whether the presented external cause of injury codes data made them feel more or less confident in Approach 4.

Continuous Enrollment

Claims-based measures typically exclude stays where the patient lacked continuous enrollment in the payer program (e.g., Medicare FFS, MA, Medicaid) for which claims are abstracted to calculate that measure. For claims-based measures, continuous enrollment provides assurance that a patient's complete course of care is accurately captured in claims. Assessment-based measures typically do not use a continuous enrollment exclusion because all relevant information can be obtained using assessment data. As a measure proposed to incorporate both claims and assessment data, excluding stays or episodes lacking continuous enrollment for FMI may improve face validity of the measure; however, excluding stays without continuous enrollment can also reduce reportability by excluding stays with valid assessment data. Last, using continuous enrollment is slightly complicated by the move of many programs to all-payer, which includes private pay, for which we cannot observe claims or enrollment.

TEP panelists asked clarifying questions, but the primary aim of the discussion focused on the need for consistency. Panelists brought up specific scenarios, such as special needs plan enrollment and how moving from one type of special needs plan to another might affect continuous enrollment. Multiple panelists highlighted the seasonality of these changes, considering that patients often switch coverage at key points in the year during annual enrollment periods. The team continues to consider how to apply this exclusion for other all-payer settings.

Panelists were not polled regarding their support for continuous enrollment, but based on questions they asked, comments they made, and their body language (e.g., affirmative nods), feedback seemed to be mixed on whether to implement a continuous enrollment restriction.

Consensus: TEP participants were divided on whether to apply a continuous enrollment exclusion for the FMI denominator.

Measure Reliability

Incorporating claims data into FMI can affect measure reliability if claims data differ in quality, completeness, or consistency. The team tested measure reliability in the HH setting using the following two methods:

- **Split-Half Intraclass Correlation Coefficient:** How consistent is the measure when calculated on different subsets of the same HH agency's patients?
- **Signal-to-Noise Ratio:** How much true variation in performance exists between HH agencies compared with random variation within HH agencies?

Testing results indicated consistently moderate reliability for all approaches and measure window combinations. The team indicated that the finding of moderate reliability was not

surprising, given that FMI is a rare occurrence (i.e., occurring in roughly 1 in 50 patients or fewer, depending on the approach).

TEP participants had few questions beyond noting the small differences between measures across the approaches. The team indicated that the potential combination of assessment and claims data for FMI could have reduced measure reliability, but these analyses indicate that is not the case. Measure validity was the driver for considering introduction of claims data, but reliability also could have been influenced, and these findings indicate that is not a concern. Panelists were not polled on measure reliability, but based on questions they asked, comments they made, and their body language (e.g., affirmative nods), feedback was generally positive. However, reliability measures did not seem to influence preferences for Approach 2 versus Approach 4.

Consensus: TEP participants were comfortable with the reliability measures presented, but because there was no obvious frontrunner, reliability did not seem to influence participant preferences for either FMI approach.

Additional FMI Notes

TEP participants also noted comments and questions that expanded beyond the planned discussion topics:

- TEP participants noted continued concerns about **timing and setting-specific impacts** of the FMI respecification, especially for the FMI as calculated for LS NH residents. One panelist asked about the LS NH FMI measure specifically, noting that that this measure looks back up to 275 days within the episode to identify an FMI event. These concerns prompted the team to remind the TEP that the FMI measure captures falls across a long span of time (up to 275 days into the NH episode) for the LS NH measure because episodes of care are so long for this population. Accordingly, there will be cases where facilities have falls on their reports for extended periods of time. The intent is not to compare measure results for an LS NH population and a PAC population, where stays tend to be much shorter, but rather, to have a consistent underlying approach across settings.
- Another question arose regarding the potential to **risk-adjust** the FMI measure. The team responded that, although CMS considered using risk adjustment in calculating the FMI measure, CMS prefers not to use risk adjustment for FMI because FMI are “never events.”
- One TEP panelist noted that because FMI is a quality measure, any respecification effort will have **downstream effects on provider payments**.
- One TEP panelist noted a gap related to the **hospice setting**, where FMI assessment data are not collected. An addition would be needed to the Hospice Outcomes and Patient Evaluation (HOPE) tool to capture FMI in these settings in a manner comparable to other settings. One TEP participant indicated that hospice providers would appreciate the integration and tracking of falls in their programs. The team confirmed that FMI assessment data are not currently being collected for the hospice setting. Any additional considerations for hospice assessment would be the subject of future discussion.

Next Steps

After the TEP meeting, the team outlined the next steps for refinement for this FMI measure:

- Writing and distributing the TEP Summary Report, including background of the FMI measure, review of topics discussed, and viewpoints given during the May 2025 TEP.
- Performing analyses and updates based on TEP feedback, integrating needed revisions as appropriate. Additional analysis will contribute to the updated specifications and associated provider guidance manual updates.
- Producing and posting technical specifications reports, which document the new, finalized measure specifications along with appropriate testing in advance of public reporting.

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Appendix A: Cross-Setting Measure Team Members

Note: Names are listed in alphabetical order by last name

**TEP Presenter*

Name	Role	Organization
Lawren Bercaw	TEP Coordination Lead	RTI International
Anne Deutch	Co-Project Director	RTI International
Lauren Church	Team Analyst	RTI International
Alexandra Hamann	Team Economist	RTI International
Kelly Hughes	Team Analyst	RTI International
Beldina Orinda	TEP Coordination Associate Lead	RTI International
Laura Smith	Clinical Lead	RTI International
Ali Vadnais*	Falls with Major Injury Lead	RTI International
Tanvi Yende	Falls with Major Injury Lead	RTI International
Alrick Edwards	Home Health Project Manager	Abt Global
Derek Hoodin*	Home Health Data Analytic Associate	Abt Global
Sean McClellan*	Home Health Quality Measure Development and Analytic Lead	Abt Global
Teresa Mota	Clinical Lead	Abt Global
Marisa Roczen	Home Health Data Analytic Associate	Abt Global
Michelle Roozeboom-Baker	Home Health Data Analytic Associate	Abt Global
Nekabari Siaglo	Home Health Data Analytic Associate	Abt Global
Kerry Termine*	Clinical Lead	OASIS Answers

Appendix B: Revised Falls with Major Injury TEP Charter

Project Title	Falls with Major Injury Quality Measure
TEP Expected Time Commitment and Dates	As the TEP has convened previously in summer 2024, the anticipated commitment will be similar. The TEP members are expected to participate in two virtual half-day meetings occurring in early summer 2025. Subsequent follow-up meetings reconvening with the same panel of participants are possible through 2026. Additional time commitments will include reviewing materials in preparation for and following TEP meetings.
Project Overview	The Centers for Medicare & Medicaid Services (CMS)' *Development, Maintenance, and Support for Quality Reporting and Value-Based Purchasing Programs and Nursing Home Care Compare* contractors are reconvening a standing Technical Expert Panel (TEP) to provide input for updating the Falls with Major Injury Quality Measure. Under CMS Contract #75FCMC18D0012CMS, Task Order (TO) 75FCMC24F0121, RTI International (RTI), Abt Global (Abt), and their partners are continuing development of a Falls with Major Injury (FMI) quality measure. Convening a group of stakeholders (i.e., a TEP) who contribute direction and thoughtful input during measure development and maintenance is a key part of ensuring that the measure is appropriate. TEPs review quality measure concepts under consideration, draft quality measure specifications, and provide guidance regarding key measure constructs and findings (e.g., numerator, denominator, exclusions, risk adjustment approach, and scientific acceptability of measure testing results). As part of that effort, we are seeking expert input from TEP participants on the following topics: ▪ Measure analytic updates ▪ ICD-10 code value set ▪ Other topics, as appropriate
Project Objective	This effort supports continued development of the FMI quality measure to help patients and caregivers determine information about provider quality and to incentivize the IRF/LTCH/SNF/HH/NHQI settings to improve quality. Ratings will be publicly reported on CMS's Care Compare tool on Medicare.gov, and data will also be available for download through the CMS Provider Data Catalog.
TEP Objectives	The TEP members will provide expert input and guidance on the continued development of the FMI measure. TEP participants have a variety of backgrounds and perspectives, including clinical care providers, care quality leaders, and health policy experts. Specifically, we will seek guidance on the following: ▪ Measure analytic updates ▪ ICD-10 code value set ▪ Other topics, as appropriate Participants may represent more than one perspective simultaneously.

Project Title	Falls with Major Injury Quality Measure
TEP Requirements	A TEP of up to 15 participants will provide guidance and expert input that contributes to measure design. TEP members may include experts who are relevant health care providers, clinicians with setting-specific experience, researchers with topical or setting expertise, patient advocates and consumer organization representatives, provider association representatives, quality improvement experts, measure development experts, as well as people who have been patients, family members, or caregivers with personal experience. All efforts are made to ensure participation and perspectives are varied across types of expertise and experience. Participants must be able to commit to TEP engagement across the life of the measure refinement period, including both TEP meetings and review of relevant TEP materials. Participants also must be able to engage via virtual meeting platform. Additional considerations include avoiding any participant who may have a known conflict of interest.
Scope of Responsibilities	TEP participants provide guidance on potential measures, measure weights, relevant methods, and measure design. Responsibilities include reviewing relevant materials (e.g., discussion of analytic results, concerns about proposed measure design or revisions) and providing input during TEP meetings on the overall measure specifications, as follows: ▪ Complete TEP nomination materials ▪ Review provided pre-meeting TEP materials ▪ Engage in TEP meetings with full participation and input on key measure decisions ▪ Review provided post-meeting TEP materials (e.g., meeting summaries) ▪ Respond to asynchronous TEP measure feedback requests ▪ Maintain confidentiality of all TEP content until it is made public All TEP meetings are scheduled with at least 30 days' notice, and to the extent possible, TEP participants are asked about their availability prior to selecting TEP meeting dates. Participants are expected to attend all meetings or provide prior notification if they are unable to attend. For nonattendance, participants are expected to provide written feedback that can be shared with other TEP members for feedback and discussion. TEP members may designate a proxy participant from their organization with RTI/partner approval. In the event of a request to discontinue TEP participation, RTI/partner will identify a replacement from among the responses to the most recent call for nominations. Alternatively, affiliates of the TEP member (e.g., colleagues from the same organization or professional society) also may serve as replacements, pending RTI/partner approval. Upon identification of an appropriate alternate member, any TEP obligations will transfer to the replacement TEP member. The new member also will be briefed on prior TEP proceedings to ensure shared understanding. Notably, all TEP feedback is intended to guide measure design and development, not advise CMS in decision-making.

Project Title	Falls with Major Injury Quality Measure
Guiding Principles	Participation as a TEP member is voluntary and the measure developer records the participant's input in the meeting minutes, which the measure developer will summarize in a report that they may disclose to the public. If a participant has chosen to disclose private, personal data, then related material and communications are not covered by patient-provider confidentiality. Patient/caregiver participants may elect to keep their names confidential in public documents. TEP organizers will answer any questions about confidentiality. All potential TEP members must disclose any significant financial interest or other relationships that may influence their perceptions or judgment. It is unethical to conceal (or fail to disclose) conflicts of interest. However, there is no intent for the disclosure requirement to prevent individuals with distinct perspectives or strong points of view from serving on the TEP. The intent of full disclosure is to inform the measure developer, other TEP members, and CMS about the source of TEP members' perspectives and how that might affect discussions or recommendations. All TEP decisions will be determined based on consensus, with votes on specific measure components, where appropriate. Although the TEP participants list will be made public, any patient or family caregiver participants will be given the option to redact their names from the publicly posted participant list. Similarly, any other public-facing TEP materials (e.g., meeting summaries) will generalize topics and findings by theme without attributing any comments or ideas to individual participants or their affiliated organizations. Note: If a participant discloses private, personal data by individual choice, then that information is not subject to confidentiality laws.
Estimated Number and Frequency of Meetings	TEP meetings will occur up to two times in 2025, with both meetings being held virtually and lasting fewer than four hours. Subsequent meetings may occur in 2026, with an anticipated eight hours' commitment.
Date Approved by TEP	Since this TEP has been convened previously, a prior version of this charter was approved July 2024.
TEP Membership	▪ Bruce A. Pomeranz, MD, MMM, Chief Quality Officer ▪ Joseph E. Daly, PT, MBA, MHA, FACHE, Practicing Physical Therapist ▪ Rebecca Montross, MS, GCAS, Assistant Vice President ▪ Janet P. McMillan, DSN, APRN, PMHNP-BC, Psychiatric Nurse Practitioner/QAPI Coordinator ▪ Barbara "Barb" Hansen, MA, RN, CEO and Executive Director ▪ Sireesha Koppula, MD, MPH, MBA, CPE, CMQ, Associate Professor of Nephrology ▪ Michele Cournan, DNP, RN, CRRN, ANP-BC, FNP, FARN, Director of Quality Improvement ▪ Edward W. Martin, MD, MPH, FACP, FAAHPM, Chief Medical Officer ▪ Jennifer L. Kennedy, EdD, MA, BSN, RN, CHC, Vice President, Quality and Standards ▪ Chloe Slocum, MD, MPH, Medical Director for Quality and Safety and Attending Physician, and Assistant Professor and Director of Health Policy ▪ Robert J. Rosati, PhD, Vice President of Research and Quality ▪ Eugene A. Gonsiorek, PT, NHA, PhD, Vice President of Clinical Regulatory Standards ▪ Amy J. Stewart, MSN, RN, RAC-MT, RAC-MTA, DNS-MT, QCP-MT, Chief Nursing Officer ▪ April Diaz, RN, BS, Vice President of Clinical Services ▪ Rebecca Cartright, FACHE, Chief Executive Officer

Appendix C: FMI TEP Agenda

FALLS WITH MAJOR INJURY TECHNICAL EXPERT PANEL

Organized and Facilitated by RTI International and Abt Global

May 12 and 14, 2025

11:00 AM – 3:00 PM

PRESENTERS:

Ali Vadnais (RTI)

Kerry Termine (OASIS)

Sean McClellan (Abt)

Derek Hoodin (Abt)

Facilitator: Lawren Bercaw (RTI)

Participating TEP Panelists:

Joseph E. Daly, PT, MBA, MHA, FACHE Executive Director

Rebecca Montross, MS, GCAS Assistant Vice President

Janet P. McMillan, DSN, APRN, PMHNP-BC Psychiatric Nurse Practitioner/QAPI Coordinator

Barbara "Barb" Hansen, MA, RN CEO and Executive Director

Sireesha Koppula, MD, MPH, MBA, CPE, CMQ Associate Professor of Nephrology

Michele Cournan, DNP, RN, CRRN, ANP-BC, FNP, FARN Director of Quality Improvement

Edward W. Martin, MD, MPH, FACP, FAAHPM Chief Medical Officer

Jennifer L. Kennedy, EdD, MA, BSN, RN, CHC Vice President, Quality and Standards

Chloe Slocum, MD, MPH Medical Director for Quality and Safety and Attending Physician, and Assistant Professor and Director of Health Policy

Robert J. Rosati, PhD Vice President of Research and Quality

Eugene A. Gonsiorek, PT, NHA, PhD Vice President of Clinical Regulatory Standards

Amy J. Stewart, MSN, RN, RAC-MT, RAC-MTA, DNS-MT, QCP-MT Chief Nursing Officer

April Diaz RN, BS Vice President of Clinical Services

Rebecca Cartright, FACHE Chief Executive Officer

TEP AGENDA

Session 1: MAY 12, 2025, 11:00 AM – 3:00 PM

1. **Introduction, Ground Rules & TEP Goals** *(Presenter: Lawren Bercaw, Facilitator, RTI)*
    a. Welcome
    b. Re-Introductions
    c. Ground rules for participation
    d. Review of TEP Goals
    e. Review of the Agenda
2. **Review of FMI Respecification Efforts to Date** *(Presenter: Ali Vadnais, RTI)*
    a. Revisiting the Falls with Major Injury Measure
    b. Summary of July TEP Discussion and Updates
        i. Approached to Identifying FMI Events
        ii. Defining Major Injury
3. **BREAK (~15 minutes)**
4. **Core Discussion Items – Coding for Major Injury and Falls in Claims Data** *(Presenter: Kerry Termine, OASIS Answers, Inc.)*
    a. Background on ICD-10 “Major Injury” Definition
    b. Examples of how “Major Injury” diagnosis codes will be used for FMI measure
    c. Proposed Set of ICD-10 Diagnosis Codes for Major Injury
        i. Overview of Changes
        ii. **Discussion Topic 1:** Adding codes
        iii. **Discussion Topic 2:** Excluding pathologic fracture codes
        iv. **Discussion Topic 3:** Excluding codes for injuries that are in “Injury (except major)”
        v. **Discussion Topic 4:** Codes to keep (maintain)
        vi. **Discussion Topic 5:** External Cause of Injury Codes
5. **Day 1 Review and Wrap-Up** *(Presenter: Lawren Bercaw, Facilitator, RTI)*

Session 2: MAY 14, 2025, 11:00 AM – 3:00 PM

1. **Welcome and Refresh on Ground Rules** *(Presenter: Lawren Bercaw, Facilitator, RTI)*
2. **Refresh on Background** *(Presenters: Derek Hoodin, Abt Global)*
3. **BREAK (~15 minutes)**
4. **Core Discussion Items – FMI Analytic Results** *(Presenters: Sean McClellan, Abt Global)*
    a. Numerator Exclusions
    b. Measure Window
    c. External Cause Codes
    d. Continuous Enrollment
    e. Measure Reliability
5. **Day 2 Review, Wrap-Up, and Next Steps** *(Presenter: Lawren Bercaw, Facilitator, RTI)*