Development of Resident-Sensitive Quality Measures for Inpatient General Internal Medicine

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BACKGROUND: Graduate medical education (GME) training has long-lasting effects on patient care quality. Despite this, few GME programs use clinical care measures as part of resident assessment. Furthermore, there is no gold standard to identify clinical care measures that are reflective of resident care. Resident-sensitive quality measures (RSQMs), defined as “measures that are meaningful in patient care and are most likely attributable to resident care,” have been developed using consensus methodology and piloted in pediatric emergency medicine. However, this approach has not been tested in internal medicine (IM).

OBJECTIVE: To develop RSQMs for a general internal medicine (GIM) inpatient residency rotation using previously described consensus methods.

DESIGN: The authors used two consensus methods, nominal group technique (NGT) and a subsequent Delphi method, to generate RSQMs for a GIM inpatient rotation. RSQMs were generated for specific clinical conditions found on a GIM inpatient rotation, as well as for general care on a GIM ward.

PARTICIPANTS: NGT participants included nine IM and medicine-pediatrics (MP) residents and six IM and MP faculty members. The Delphi group included seven IM and MP residents and seven IM and MP faculty members.

MAIN MEASURES: The number and description of RSQMs generated during this process.

KEY RESULTS: Consensus methods resulted in 89 RSQMs with the following breakdown by condition: GIM general care—21, diabetes mellitus—16, hyperkalemia—14, COPD—13, hypertension—11, pneumonia—10, and hypokalemia—4. All RSQMs were process measures, with 48% relating to documentation and 51% relating to orders. Fifty-eight percent of RSQMs were related to the primary admitting diagnosis, while 42% could also be related to chronic comorbidities that require management during an admission.

CONCLUSIONS: Consensus methods resulted in 89 RSQMs for a GIM inpatient service. While all RSQMs were process measures, they may still hold value in learner assessment, formative feedback, and program evaluation.

KEY WORDS: assessment; graduate medical education; competency-based medical education; quality.

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INTRODUCTION

Graduate medical education (GME) training has long-lasting effects on the quality of care that graduates deliver.^{1–5} However, these “imprinting” studies focus mainly on clinical performance measures (CPMs) of *former* residents⁶ and not on measures *during* residency. This gap has led some to advocate for CPMs in trainee assessment that could determine readiness for graduation or predict performance after training.⁷ Without this, program directors do not truly know if their educational outcomes connect with quality care at the heart of GME’s mission.

Ideally, GME programs could easily measure CPMs that are attributable to resident care. This could enhance feedback to learners, provide accountability to the public, improve program evaluation, and justify funding of education research.⁸ While some programs have started bridging the gap between CPMs and resident assessment,^{9–13} most face barriers, including lack of defined and agreed upon CPMs, difficulty with attribution of care to individuals, variable case-mix indices, small sample sizes, and data transparency and confidentiality issues.^{8,14,15}

The growing calls for connecting education to CPMs^{16–22} have led to promising ideas. Haan et al. used a tiered framework to identify care measures that could be used to measure education quality.¹¹ Kalet et al. and Yin et al. used theoretical models to identify “educationally sensitive patient outcomes,” defined as meaningful patient outcomes that are sensitive to provider education.^{22,23} Building on these studies, Schumacher et al. used consensus-building methods to identify “resident-sensitive quality measures” (RSQMs), defined as measures that are meaningful in patient care and mostly attributable to resident care.^{24,25} RSQMs were initially developed and implemented in pediatric emergency medicine (PEM), showing discrimination between learners across patient encounters.^{26–28} While the initial study used National Quality Measures Clearinghouse measures as a starting point

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for measure development, the authors found that relatively few measures met criteria to be RSQMs.²⁴

Most workplace-based assessment (WBA) approaches suffer from unwanted rater effects such as variable frames of reference, high levels of inference, differing methods for synthesizing judgments into numerical ratings, and construct-irrelevant variance.²⁹ The discriminatory potential of RSQMs suggests promise for an assessment method that does not rely on raters. However, RSQMs must be developed and empirically tested in other clinical care environments. The aims of this study were to (1) determine the extent to which previously described consensus methods used in PEM can be used to develop RSQMs for inpatient general internal medicine (GIM) and (2) describe the characteristics of RSQMs developed for inpatient GIM, including how they differ compared with the PEM context.

METHODS

Selection of Clinical Conditions

We selected a single rotation, GIM inpatient wards, on which all internal medicine (IM) and medicine-pediatrics (MP) residents rotate. Focusing on a single rotation allowed us to control the scope of the study, and to test the feasibility of generating RSQMs for specific clinical environments. We identified clinical conditions commonly managed on an inpatient GIM rotation for which RSQMs could be developed. Similar to Schumacher et al., we decided that a manageable number (10–15) of RSQMs for each condition would allow for the development of resident performance profiles.²⁴ When choosing conditions, we were guided by our previous curricular reform work, during which faculty content experts selected skills that were common and observable on their rotation.³⁰ This work resulted in a list of 16 skills for inpatient GIM rotations such as “Initiate antibiotic(s) for pneumonia” and “Manage derangements of potassium.”³¹ We reviewed several years of WBA data and chose six commonly assessed conditions. These included diabetes mellitus, hypertension, chronic obstructive pulmonary disease (COPD), hyperkalemia, hypokalemia, and pneumonia. We created a separate category—“Inpatient GIM”—to capture measures that were not specific to the aforementioned conditions, or for measures that were replicated across multiple conditions, indicating they were important across GIM inpatient care rather than specific to one condition.

Generation and Prioritization of Measures

We followed methods previously described in PEM to generate and prioritize RSQMs.^{24,25} We used the nominal group technique (NGT) to generate candidate measures, followed by a modified Delphi process to prioritize those measures (Fig. 1).^{32,33} Residents and faculty members both completed the NGT and Delphi processes as previous RSQM work

showed that each stakeholder group provided unique insights.²⁵ We sent recruitment emails to all University of Cincinnati (UC) IM and MP residents and Department of Medicine faculty members, and selected respondents who represented multiple different years in residency training, different faculty clinical roles, and different levels of faculty experience (Table 1). All members had spent multiple weeks on inpatient GIM wards and were considered content experts in the workflow of the rotation.

Nominal Group Technique. We held two NGT meetings, one with nine residents and one with six faculty members (Table 1). The meetings were held separately to avoid power dynamics and fears of sharing “incorrect” responses. Following Schumacher et al.’s methods,²⁴ the meeting facilitator (B.K.) asked participants to generate potential quality measures for the six clinical conditions using the following criteria: (1) *important to quality care on an inpatient GIM rotation for a patient with the condition of interest* and (2) *achievement of the measure would likely primarily represent a resident’s care for the patient (not another provider)*. We informed participants that while many quality measures would be extracted from the electronic health record (EHR), they should exclude extraction feasibility from their thought process.

Participants wrote down potential measures without input from others. We then used a round-robin discussion strategy allowing each participant to share ideas with the group. Study team members recorded candidate measures, and participants asked clarifying questions to ensure understanding. We then removed duplicate measures.

Delphi. Similar to the NGT meetings, we used email to recruit UC IM and MP residents and faculty for a single Delphi group. The final group consisted of seven residents and seven faculty members (Table 1).

We completed three Delphi rounds via email using an Excel spreadsheet (version 14.7.7, Microsoft, Inc., Redmond, WA) for rating measures each round. Response rate for each round was 100%. In each round, Delphi participants rated measures generated during the preceding NGT meetings on a 6-point scale (1 = lowest, 6 = highest) for the same two criteria used in the NGT groups: (1) *important to quality care on an inpatient GIM rotation* and (2) *primarily represents a resident’s care for the patient*. We defined a priori that consensus for inclusion would be met if at least 11/14 participants rated a measure as a 5 or 6 in both criteria. For automatic exclusion, 11/14 participants would need to rate a measure as a 1 or 2 in both criteria. Measures meeting inclusion or exclusion criteria in one round were not rated again in subsequent rounds. In each round, participants made comments that were anonymized and shared with raters in later rounds. Delphi participants did not know the inclusion or exclusion criteria to avoid biased responses.

In rounds 2 and 3, each participant received an individual Excel sheet including measures that had not yet reached inclusion or exclusion criteria, their own previous rating, the

Figure 1 Overview of the consensus process used to generate inpatient general internal medicine resident-sensitive quality measures.

distribution of the group's previous ratings, and anonymized comments. Participants rated remaining measures considering this collective information as a guide. Consistent with our a priori intent, we ended successive rounds after reaching approximately 10–15 measures for most conditions.

Final Measure Categorization

To compare with RSQMs previously developed for PEM, we categorized the final GIM RSQMs as process measures, defined as evidence-based elements of patient care that do not directly assess the patient's clinical condition,^{34,35} or outcome measures. We also detailed the type of work they represented (e.g., documentation vs order vs other), and categorized whether measures would most likely relate to the primary admitting diagnosis, a comorbidity distinct from this diagnosis but requiring management during hospitalization, or both. For

example, "Order COPD bundle for acute COPD exacerbation" is most likely related to a primary admitting diagnosis, while "Order basal/bolus insulin for patients with insulin-dependent diabetes mellitus" could relate to an admitting diagnosis (e.g., diabetic ketoacidosis) or could be a continuation of therapy for diabetes unrelated to the admission reason. The primary author (B.K.) completed initial categorizations, and then, other authors discussed to achieve consensus.

Analysis of Measure Categorization

We performed a post hoc analysis to investigate why all RSQMs were process measures. We compared mean Delphi group scores between process and outcome measures using the Student *t* test. We conducted all analyses using SAS (Cary, NC, v. 9.4).

The UC institutional review board deemed this study exempt. NGT and Delphi contributors all signed a document of informed consent and received \$100 for participating.

Table 1 Individual Characteristics of Nominal Group Technique (NGT) and Delphi Group Members

Characteristic	NGT resident group (n = 9)	NGT faculty group (n = 6)	Delphi group (n = 7 residents and 7 faculty members)
Gender	Female—7 Male—2	Female—3 Male—3	Female—7 Male—7
Specialty	IM—5 MP—4	IM—3 MP—3	IM—8 MP—6
Faculty clinical role	N/A	Ambulatory practitioners—3 Hospitalists—3	Ambulatory practitioners—3 Hospitalists—4
Experience	PGY1—3 PGY2—2 PGY3—1 PGY4—2 PGY5—1	Mean years in practice—6.5 (range 2–18)	Mean years in practice—9.4 (range 3–24) PGY1—3 PGY2—2 PGY3—2

PGY, post-graduate year
PGY5 = chief resident

RESULTS

The resident NGT group generated 250 candidate measures, and the faculty NGT group 211. With duplicate measures removed, the final number of candidate measures used for the first Delphi round totaled 379, broken down by condition: diabetes mellitus—73, hypertension—70, COPD—63, hyperkalemia—24, hypokalemia—21, pneumonia—53, and inpatient GIM—75. Eighty-nine measures reached inclusion consensus (Table 2) at the end of three Delphi rounds, with the following breakdown by condition: inpatient GIM—21, diabetes mellitus—16, hyperkalemia—14, COPD—13, hypertension—11, pneumonia—10, and hypokalemia—4.

Table 2 The 89 RSQMs for General Internal Medicine Resulting from Consensus-Building Methods

Condition	Resident-sensitive quality measure
COPD	<ol style="list-style-type: none"> 1. Document baseline (pre-admission) supplemental oxygen requirements 2. Document changes made to COPD medications during admission in the discharge summary 3. Document daily supplemental oxygen requirement 4. Document daily lung exam for acute COPD exacerbations 5. Document mental status exam for acute COPD exacerbations 6. Document admission respiratory exam for acute COPD exacerbation 7. Document supplemental oxygen requirement present on admission 8. Order albuterol for acute COPD exacerbations 9. Order COPD care bundle for acute COPD exacerbations 10. Order corticosteroids for acute COPD exacerbations 11. Order corticosteroids for 5-day course for acute COPD exacerbation 12. Order no duplicate COPD medications on discharge 13. Order oxygenation walk test if new inpatient oxygen requirement is persistent at time of discharge
Diabetes mellitus	<ol style="list-style-type: none"> 1. Document possible triggers for diabetic ketoacidosis episode 2. Document diabetes classification 3. Document home diabetes medication regimen 4. Order finger stick glucose checks 5. Order finger stick glucose checks every 6 h for patients with insulin-dependent diabetes mellitus and a diet order that is "nothing by mouth" 6. Order finger stick glucose checks every 6 h if a patient with insulin-dependent diabetes mellitus is receiving continuous enteral feeds 7. Order finger stick glucose checks with meals if a patient with insulin-dependent diabetes mellitus has an oral diet order 8. Re-order oral diabetes mellitus medications on discharge 9. Adjust insulin dose at least every 24 h with consistent hyperglycemia 10. Document daily insulin plan in progress note 11. Order "nothing by mouth" initially for patients with diabetic ketoacidosis on an insulin drip 12. Document changes to home insulin regimen in the discharge summary 13. Order basal/bolus insulin for patients with insulin-requiring diabetes mellitus 14. Order correct insulin dose for patients with insulin-requiring diabetes mellitus 15. Order insulin for all patients with type 1 diabetes mellitus 16. Order consult from diabetes educator for all patients with poorly controlled home glucoses or new diagnoses of diabetes mellitus
Hyperkalemia	<ol style="list-style-type: none"> 1. Document a differential diagnosis for etiologies of hyperkalemia 2. Document date of last hemodialysis prior to admission if the patient is dialysis-dependent 3. Document hyperkalemia as a problem in the admission note 4. Document interpretation of any electrocardiogram obtained for hyperkalemia 5. Hold ACE inhibitor medications on admission with hyperkalemia 6. Hold angiotensin receptor blocker medications on admission with hyperkalemia 7. Hold potassium supplements on admission with hyperkalemia 8. Hold potassium-sparing diuretics on admission with hyperkalemia 9. Order a repeat serum potassium lab after any intervention made to lower the potassium. 10. Order an electrocardiogram with severe hyperkalemia 11. Order intravenous calcium if electrocardiogram changes related to hyperkalemia are noted 12. Order potassium binding medication 13. Order repeat serum potassium if the lab sample is noted to be hemolyzed 14. Order telemetry with severe hyperkalemia
Hypokalemia	<ol style="list-style-type: none"> 1. If patients receive potassium supplementation during hospitalization, document if continued potassium supplementation is needed at discharge in the discharge summary 2. Order serum magnesium with severe hypokalemia 3. Order serum potassium lab daily if receiving intravenous diuretics 4. Order telemetry with severe hypokalemia
Hypertension	<ol style="list-style-type: none"> 1. Document blood pressure goals with hypertensive urgency/emergency 2. Document cardiovascular exam for hypertensive urgency/emergency 3. Document changes made to antihypertensive medications during admission in the discharge summary 4. Document evaluation for end organ damage when evaluating hypertensive urgency/emergency 5. Document presence or absence of symptoms related to hypertension (e.g., headache, chest pain, dyspnea, visual changes) in patients admitted with hypertensive urgency/emergency 6. Document reasoning in the discharge summary when home antihypertensive medications are discontinued 7. Document substance abuse history for hypertensive urgency/emergency 8. Hold ACE inhibitors with acute kidney injury 9. Hold angiotensin receptor blocker medications with acute kidney injury 10. Hold diuretic medications with non-cardiorenal acute kidney injury 11. Order change to antihypertensive medications if a patient is hypotensive
Pneumonia	<ol style="list-style-type: none"> 1. Document antibiotic(s) used in discharge summary 2. Document baseline (pre-admission) supplemental oxygen requirements 3. Document comorbidities that increase the risk of pneumonia (e.g., immunocompromised state, aspiration) 4. Document daily supplemental oxygen requirement 5. Document risk factors for multi-drug-resistant organisms (e.g., hospitalization of two or more days in the previous 90 days, from nursing home, antibiotic use in the last 90 days) 6. Document supplemental oxygen requirement present on admission 7. Document supplemental oxygen requirement prior to discharge 8. Document total antibiotic duration in discharge summary 9. Order speech therapy evaluation for aspiration pneumonia

(continued on next page)

Table 2. (continued)

Condition	Resident-sensitive quality measure
Inpatient general internal medicine	<ol style="list-style-type: none"> 10. Review chest x-ray images in picture archiving and communication system (PACS) 1. Complete admission medication reconciliation 2. Complete discharge medication reconciliation 3. Document code status on admission 4. Document discharge weight in discharge summary in patients with congestive heart failure 5. Document goals of care discussions that result in code status changes 6. Document reason for not ordering deep venous thrombosis prophylaxis on admission 7. Document source of positive blood culture specimens 8. Medications listed in the discharge instructions match the discharge medication reconciliation 9. Medications listed in the discharge instructions match the discharge summary 10. Medications listed in the discharge summary match the discharge medication reconciliation 11. Order alcohol withdrawal order set for acute alcohol withdrawal 12. Order code status on admission 13. Order daily weights in patients with congestive heart failure exacerbation 14. Order deep venous thrombosis prophylaxis on admission 15. Order home noninvasive positive pressure ventilation on admission 16. Order intravenous proton pump inhibitor for acute gastrointestinal bleed 17. Order repeat hemoglobin/hematocrit in patients with active gastrointestinal bleeding 18. Order seizure precautions in patients with seizure history or condition placing them at risk of seizure 19. Order suicide precautions for patients with self-harm or intentional ingestion 20. Order surgical team consult for acute abdomen 21. Update sign out document daily

All final RSQMs were process measures. Several measures generated by the NGT groups were outcome measures (e.g., “Time with blood pressure in goal range”), but these were not prioritized by the Delphi group. Forty-eight percent (43/89) of the final measures related to documentation (e.g., Document interpretation of EKG), 51% (45/89) related to orders (e.g., Order finger stick glucose checks), and one measure was categorized as “other” (Review chest x-ray in picture archiving and communication systems). Fifty-eight percent (52/89) of measures were categorized as most likely relating to a primary admitting diagnosis (e.g., Order repeat hemoglobin or hematocrit in patients with acute gastrointestinal bleed), while 42% (37/89) were categorized as potentially being related to either a primary admitting diagnosis or a comorbidity (e.g., Adjust insulin dose at least every 24 h with consistent hyperglycemia).

In the post hoc analysis, the average Delphi group scores for process and outcome measures were calculated by adding final round group scores (e.g., maximum score for any measure being $14 \times 6 = 84$) and dividing by the total number of process and outcome measures respectively. Process and outcome measures had similar average group scores for criterion 1, *importance to clinical care* (60.7 vs 60.2 respectively, $p = 0.85$), but significantly different scores for criterion 2, *represents a resident's care* (66.5 vs 49.4, $p < 0.001$).

DISCUSSION

This study used previously described consensus-building methods to generate RSQMs relating to multiple clinical conditions commonly encountered on an inpatient GIM rotation. Competency-based medical education (CBME) has brought increased focus on learner abilities, often measured with WBAs. While this method has the advantage of assessing real-world performance, there are several drawbacks including

assessors using variable frames of reference²⁹ leading to sub-optimal reliability for high-stakes decisions,^{36–38} as well as the challenge of ensuring direct learner observation.³⁹ By reducing reliance on raters, RSQMs greatly reduce challenges of rater bias and supplement direct observation to give insight into resident performance.

Once RSQMs are identified and given specific operational definitions, systems to extract and display data could be automated, minimizing resources needed to sustain RSQM use. Compliance targets should be set below 100% to account for instances when residents deviate from fulfilling these measures for valid reasons (e.g., unique patient situation or clinical context).

Measuring Discrete Tasks

Developing RSQMs that are discrete tasks rather than broad composite measures holds multiple benefits. Data on discrete tasks may provide specific, formative feedback to learners, while composite measures may lack specificity. Using task-specific measures also allows for combining measures into different types of composite measures, making possible the assessment of learners through different lenses. For example, condition-specific composite measures could provide information on performance with a given clinical condition, or could be combined to make composite measures for processes across conditions (e.g., admission, discharge, medication ordering).

RSQMs as Process Measures

All final RSQMs were categorized as process measures, with half representing documentation tasks and half representing orders. Multiple potential reasons exist for why outcome measures produced in the NGT were not prioritized in the Delphi. First, while Delphi group members were instructed to disregard feasibility when prioritizing candidate measures, they

may have been aware that final RSQMs would most likely be extracted from the EHR. This may have biased members toward more easily obtained process measures such as documentation and orders. Second, Delphi members may have thought that residents are most responsible for process measures, while outcome measures are the collective result of multiple team members (e.g., attendings, nurses), and system and patient factors. This hypothesis is supported by the post hoc analysis showing that outcome measures had lower Delphi group scores for criterion 2 (*represents a resident's care*) than process measures. However, there is some evidence that residents significantly contribute to outcomes. Denson et al. showed a statistically significant increase in adjusted hospital mortality for IM patients who were discharged within 7 days following a change in resident providers, which occurred independent of attending switches.⁴⁰ A similar study showed increased odds of 30-day and 90-day post-discharge mortality when patients were discharged within 7 days following an intern or resident team transition, which occurred at different times than attending switches.⁴¹ While these studies do not prove causality, they suggest that the impact of resident care goes beyond process measures and may contribute significantly toward outcomes.

The consequences of using only process measures in resident assessment are unclear. Some studies suggest that better performance on process measures may translate to improved outcomes.^{35,42-44} For example, improved use of a standard COPD care bundle (process measure) has been shown to improve length of stay and readmission rates (outcome measures).^{45,46} However, the association between process and outcomes is not always well-defined³⁴ and is dependent on clinical care context, the evidence supporting the process measure, data sources, and other difficult to measure factors. Even so, process measures have value for multiple reasons. First, operationalizing process measures may be more straightforward than outcome measures.³⁵ Second, they may be more attributable to individual clinicians given the complex system that contributes to patient outcomes.³⁵ Finally, process measures are important for formative organizational and individual efforts,³⁴ and providing RSQM data to learners may drive personal and system-wide improvement. Process measures can be a starting point, leading to outcome measures as measurement and attribution techniques improve.

RSQMs and the Relationship to the Primary Admitting Diagnosis

Forty-two percent of RSQMs in our study related to either to the primary admitting diagnosis or to chronic comorbidities requiring management while patients are admitted for unrelated reasons. This differs from original RSQM work done in PEM, in which nearly all measures directly related to the primary diagnosis. This difference has multiple possible reasons. First, adult patients are more likely than children to have multiple chronic conditions such as hypertension, diabetes,

and chronic lung disease, which require active management. Second, GIM inpatients have longer lengths of stay than PEM patients. Our hospital's average length of stay for a GIM inpatient is roughly 4 days, while most PEM visits are a matter of hours. Longer stays mean chronic conditions have a higher chance of requiring active management. Finally, there may be differences in the types of patients who require admission and those seen in the emergency department, such as more comorbidities for those requiring admission. It is unclear if RSQMs are equally valid for assessing residents regardless of whether they are related to the primary admission diagnosis or a chronic comorbidity. It is also unclear if resident contribution to care is the same in these two situations. Perhaps for GIM inpatient teams, attendings focus more on primary diagnoses, leaving management of chronic conditions more to resident purview, and therefore, resident contribution is greater for RSQMs related to chronic conditions. Further studies to develop RSQMs in other specialties and settings are needed to understand what works for whom in which settings, and to understand why.

Our study has several limitations. It was performed at a single residency program, at one institution, in a single clinical setting. The resulting RSQMs are likely influenced by our institution's local workflow, EHR, and practice patterns, and therefore may not generalize to other institutions. Also, while we used our current WBA program to choose conditions for which to build measures, other programs may choose other conditions common to GIM. However, we believe that institutions can follow these methods to develop RSQMs that fit their local systems to measure resident performance for conditions important in local contexts. There is no gold standard to know if the RSQMs produced in this study can provide valid assessment of resident performance. Seeking such evidence comprises important next steps with the RSQMs developed in this study. During consensus building, group members were not specifically told to consider only primary admitting diagnoses, comorbidities, or both, and it is unclear if a shared mental model was truly formed amongst the group in this regard. Further studies are needed to understand if primacy of diagnosis influences resident contribution to outcomes. Finally, residents work in teams and in complex clinical environments. While our goal was to generate measures that are highly attributable to a single learner, there could be team effects that still influence performance on a given RSQM. The attribution/contribution challenge will always exist when measuring performance of an individual in a dynamic, team-based environment.¹⁴ However, since we graduate, certify, and credential individuals, we must continue to try and find ways to tease out and measure an individual's performance in this complex milieu.

CONCLUSIONS

We used consensus methods to generate and prioritize 89 RSQMs for a GIM ward rotation at a single institution. All

of the prioritized RSQMs were process measures, and while it is unclear if higher performance on these measures translates to improved patient outcomes, they likely hold value for purposes of learner assessment, program evaluation, providing formative feedback, and as an initial step toward using outcome measures. Next steps include creating specific operational definitions to determine which RSQMs can be accurately measured using EHR data, testing feasibility of operationalizing RSQMs, building validity evidence for their use in resident assessment, and striving to identify and validate outcome measures for the same purposes.

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Compliance with Ethical Standards:

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