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Technical Expert Panel Summary Report: Quality Measures Development for Hospice Quality Reporting Program Final

Deliverables 6, 10, 11, and 14

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SECTION 1
INTRODUCTION AND OVERVIEW

1.1 Introduction

On May 18, 2017, and May 26, 2017, RTI International convened a Hospice Technical Expert Panel (TEP) meeting to seek expert input on two quality measure concepts for potential development under the Centers for Medicare & Medicaid Services (CMS) Hospice Quality Reporting Program (HQRP). The May 18 meeting was held in person, with some participants accessing the meeting via webinar; the May 26 meeting was held via webinar.

This report summarizes the TEP proceedings, detailing the key issues for the specification of each measure and the TEP discussion around those issues. In this section, we summarize the background and future direction of the HQRP and the process for the TEP meeting. The organization of the report is discussed at the end of this section.

1.2 Background

CMS has contracted with RTI to maintain and further develop the HQRP, including development of new quality measures in the HQRP to address current gaps in hospice quality measurement and reporting. The contract name is Hospice Quality Reporting Program Measure Development, Maintenance, and Support. As part of the measure development process, CMS asks measure developers to convene groups of stakeholders and experts who contribute thoughtful input and recommendations to the measure developer during the measure development and maintenance process.

This project supplements the current HQRP measure set, which includes nine quality measures captured by the Hospice Item Set: seven individual and one composite quality measures endorsed by the National Quality Forum, and one process measure pair that was finalized in the Fiscal Year 2017 Hospice Rule and implemented effective April 1, 2017. The HQRP also includes eight measures assessing patient and family experience with hospice care captured by the Hospice Consumer Assessment of Healthcare Providers and Systems (CAHPS®).

RTI conducted an environmental scan to identify measure concepts that may supplement the current HQRP measure set. Using findings from the environmental scan and input from nationally renowned experts in hospice measure development who serve on RTI's subcontractor and consultant team, CMS and RTI identified two claims-based measure concepts to begin new measures development. These measure areas focus on potentially avoidable care transitions for hospice patients and access to levels of hospice care. The two measure concepts were discussed by the TEP in December 2016, and the TEP encouraged the continued development of these two measures.

The objective of this TEP was to seek expert input on the specifications for these two measure concepts, including the numerator, denominator, exclusion criteria, risk adjustment, and definitions of key concepts. Comments and recommendations gathered from the TEP inform the

next steps in measure development, including analyses to determine the specifications of each measure.

1.3 Process of TEP Meeting

On October 10, 2016, RTI posted a Call for TEP and a TEP Nomination Form on the CMS website to initiate the recruitment of TEP members. The Call for TEP was disseminated through national hospice provider associations, measure development experts, previous TEP participants, and several other stakeholder organizations. At the close of the nomination period, CMS and RTI finalized the TEP composition by selecting 13 nominees who offered a diverse range of expertise, including hospice clinical and subject matter knowledge and measure development methodology (***Appendix A***). The TEP members received materials to review before the TEP meeting.

The TEP meeting was organized around discussion of the two claims-based measure concepts. Discussion was facilitated by the project director, Franziska Rokoske; the associate project director, Nan Tracy Zheng; and the quality measure development leads, Qinghua Li and Jennifer Frank.

1.4 Organization of Report

The following sections will introduce the measure concepts and summarize the TEP members' feedback on the discussion during the TEP meeting. We also discuss main takeaways and next steps in measure development. Section 2 focuses on the new measure concept of potentially avoidable care transitions for hospice patients. Section 3 focuses on the new measure concept of access to levels of hospice care.

SECTION 2
NEW MEASURE CONCEPT: POTENTIALLY AVOIDABLE CARE TRANSISTIONS FOR HOSPICE PATIENTS

2.1 Measure Description

Potentially Avoidable Care Transitions (PACT) for Hospice Patients[1] will assess the risk-standardized rate of potentially avoidable care transitions around live discharges from hospice care for Medicare patients. The rationale of the operational definition of PACT is to capture live discharges that are potentially inappropriate or followed by adverse or undesirable outcomes. This measure looks at the pattern of care at the end hospice care, including live discharges and acute care utilization within a short period after discharge, and patient's outcome after live discharges.

An environmental scan indicated that care transitions at the end of life, particularly live discharges from hospice and acute care utilization, are associated with undesirable outcomes and that there are performance gaps in this area. The TEP met to discuss this measure concept in December 2016, and confirmed that it is a high priority area and that measure development should continue. One of the main takeaways from the 2016 December TEP meeting was to focus this measure on care transitions that are in conjunction with or after discharge from hospice, rather than scenarios in which acute care utilization happens while the patient receives hospice care.

Since the last TEP, RTI has conducted an updated environmental scan, performed empirical data analysis and interviewed hospice caregivers. Interviews with the Caregiver Workgroup indicate that caregivers consider this to be a high priority area for patients and caregivers, and that patients and caregivers agreed such information would have been helpful when selecting a hospice.

This measure is for Medicare beneficiaries and uses the data in the Medicare eligibility database (EDB), hospice claims, inpatient claims, and outpatient claims data. The EDB file provides information on dates of birth and death, patient demographics, periods of hospice enrollment, and periods in the fee-for-service (FFS) program. The data elements from the Medicare hospice claims are those basic to the operation of the Medicare hospice payment systems and include date of admission, date of discharge, diagnoses, levels of hospice care, and patient's status at discharge. The inpatient and outpatient claims data files are the source for beneficiary-level hospital and emergency room (ER) use information.

This measure is claim-based. Therefore, there will be no additional data collection or submission burden for hospice providers.

[1]The measure name has been updated based on TEP discussion and subsequent discussions with CMS. The new measure title is *Transitions from Hospice Care, Followed by Death Within 30 Days or Acute Care*. While this measure name has been updated since the TEP, in this report we use the title that was discussed by the TEP

After the TEP meeting, CMS and RTI continued the measure development activities to address the comments and suggestions that were provided at the TEP meeting. With further development, the measure title and description have been updated. The updated measure title is *Transitions from Hospice Care, Followed by Death Within 30 Days or Acute Care.* In this report, we will refer to the measure as PACT, to reflect the TEP discussion.

Based on TEP discussion and subsequent discussion with CMS, the description of this outcome measure reflects the rates of live discharges from hospices that are followed by death within 30 days or hospitalization or ER visits within 7 days after hospice discharge, except when the patients move out of the service area and reenroll in hospice in a different service area within 14 days after discharge. At the end of this section, we will discuss next steps, including continued discussion with CMS and federal hospice experts to refine the operationalization of this description.

2.2 Summary of TEP Discussion

The TEP discussion centered on weighing several proposed options for the operational definition of PACT. The rationale was to capture live discharges that are potentially inappropriate, such as transferring a patient to acute care when they need higher intensity hospice care. We also acknowledge that some live discharges from hospice are appropriate and to be expected. For example, when a patient's status stabilizes and no longer meets the hospice eligibility criteria, discharging the patient is appropriate.

The proposed options for the operational definition of PACT included all live discharges with various combinations of the exceptions. The TEP discussion focused on a few exceptions that may indicate appropriate live discharges, which will not be counted toward this measure. The exceptions considered various cases in which a live discharge from a hospice is a reasonable outcome even if the hospice has provided good quality of care, based on the patient's reason for discharge, post-discharge care pattern, and outcome. To facilitate discussion, RTI provided rationale and findings from empirical data analyses to inform each exception.

- **Proposed Exception 1**: Patient survived at least X (30, 60, 90, 180) days without any 30-day hospitalization/ ER use.

- **Proposed Exception 2**: Patient transferred to a different hospice to receive GIP care.

- **Proposed Exception 3**: Patient was discharged from hospice because they moved out of the service area.

TEP discussion also included revisiting the measure concept, risk adjustment, usability, and unintended consequences of the measure.

2.2.1 Measure Concept

Overall, TEP members supported the importance of the measure concept and the underlying rationale for the operational definition of PACT. However, the TEP raised some

concerns about the measure concept, focusing on provider accountability and distinguishing between program integrity and quality of care measures.

Accountability—Some TEP members questioned whether hospices should be responsible for post-discharge outcomes and cautioned against holding providers accountable for events outside their control. They reasoned that, although hospice patients may stabilize and be appropriately discharged for no longer being terminally ill—which is in accordance with Medicare hospice eligibility rules—their fragile condition persists in the months following discharge. TEP members stated that negative health outcomes after hospice live discharge are not necessarily related to poor care quality on the part of the discharging hospice. We acknowledged the TEP's concern and reemphasized that the intent of the measure is to capture relatively higher rates of live discharges that are followed by adverse outcomes (i.e., PACT). Hospices with substantially higher rates of PACT than their peers may be cause for concern.

Program integrity versus quality of care—TEP members discussed and distinguished between the various goals surrounding this measure concept, depending on whether its purpose is to evaluate hospice quality of care or to evaluate program integrity. A measure that captures hospice live discharges to minimize inappropriate hospice admissions (i.e., admitting patients who do not meet the eligibility criteria) would be considered a program integrity measure. One TEP member voiced that this measure as currently specified would not address high live discharge rates, because it fails to capture many of the discharges resulting from enrolling ineligible patients, as many of those patients may fall under Exception 1. We clarified that although monitoring fraudulent admission practices is important, the PACT measure's purpose is to measure quality of care for hospice patients once they enroll in hospice care, regardless of issues surrounding enrollment.

2.2.2 Exception 1—Patient survived at least X (30, 60, 90, 180) days without any 30-day hospitalization/ ER use

The first exception we discussed was for cases where live discharges were followed by certain lengths of survival without any 30-day, post-discharge hospitalizations or ER visits, including all-cause hospitalizations, ER visits and observation stays. TEP members agreed that hospitalization or ER use and death shortly after hospice discharge could be indicators of low-quality care of the discharging hospice. One TEP member cited the practices of her own hospice to support the rationale of this exception. That hospice works to ensure that live discharges are appropriate before they are initiated and that patients receive a post-discharge care plan, which should help reduce the likelihood of using acute care shortly after hospice discharge. Another TEP member noted that they would want patients to live as long as possible after being discharged alive and suggested a measure to simply capture survival after live discharge.

The TEP then discussed two key parameters in this exception: the time window between live discharge and hospital or ER admission, and the length of survival. Many TEP members agreed that the proposed 30-day window between hospice discharge and hospitalization or ER use is too long for attributing post-discharge acute care use to the discharging hospice. With this concern over accountability, some TEP members recommended using a 7-day window.

The TEP provided input from both policy and clinical perspectives regarding the length of survival after live discharge, which can suggest whether a hospice live discharge was appropriate. From a policy standpoint, 180 days was fitting, because of hospice eligibility requirements that state patients must have a life expectancy of 6 months or less. From a clinical perspective, however, a shorter length of 30 days was preferred, because of the challenges surrounding prognostication. For the purposes of a quality measure, TEP members recommended determining the cutoff point for survival based on clinical practice. Therefore, 30 days was recommended and commonly agreed on.

RTI presented analysis showing that among live discharges followed by hospitalization or ER use, about 60% of hospital admissions and more than 25% of ER visits occurred on the same day as hospice discharge. Some members recommended looking separately at transitions that occur on the day of hospice discharge. Several members explained that hospitals are very reluctant to contract with hospices, so these transitions may reflect lack of access to general inpatient care (GIP) care, as opposed to inappropriate live discharges and subsequent concerning care transitions. However, per the hospice conditions of participation (CoP), being able to provide GIP care is required. This scenario may indicate a quality concern, because hospices are discharging patients in need of inpatient care, and such care transitions disrupt continuity of care.

2.2.3 Exception 2—Patient transferred to a different hospice to receive GIP care

The next exception we discussed was about patients being discharged alive and transferred to a different hospice to receive GIP care. The TEP opposed including this exception in the measure, because hospices are required to provide access to GIP services, and failing to do so would violate the CoP, which reflects the minimum quality standard. In addition, this transition pattern occurs in less than 0.25% of hospice stays, making this exception rare and less worthwhile to pursue.

Some TEP members noted that some patients may prefer to receive GIP care in another facility (e.g., there is another facility closer to the patient's home and family) and the discharging hospice may not have a contract with the preferred facility. In such scenarios, TEP members explained, hospices would need to discharge the patient to meet the needs of patient and family, and this should not be counted as a care transition that indicates quality concern. A few members stated that when hospices without inpatient units or contracts with other facilities discharge their patients for coordinating GIP care, this coordination could be considered good quality care. However, in general, most TEP members agreed that a hospice not able to provide GIP care is more of a violation of CoP and an indicator of potential quality issues.

2.2.4 Exception 3—Patient was discharged from hospice because they moved out of the service area

The third exception we discussed was about patients being discharged because they moved out of the hospice service area. We proposed this as a possible exception, because it may be more reflective of patient-initiated discharges that are out of hospices' control.

Two other reported reasons for discharge also were considered as potentially beyond hospices' control: when the patient is no longer terminally ill or when the patient and family

revoke the hospice benefit. We did not include the no longer terminally ill reason for discharge because patient survival (Exception 1) is a more objective indicator for these cases. Hospice benefit revocation was not proposed as part of Exception 3, because it may reflect patient and family dissatisfaction with the quality of hospice care provided. Additionally, there are concerns that the reported benefit revocation may not reflect a true patient-initiated revocation.

Moving out of the hospice service area may be a matter of patient preference, but from a quality perspective, the hospice can act to ensure continuity of care and a safe transition. Therefore, the TEP recommended we modify this exception to include only patients that re-enrolled in a hospice within 2 weeks after discharge. TEP members stated that when a patient moves, the discharging hospice should provide a plan of care that includes helping the patient re-enroll in another hospice.

TEP members also suggested that we conduct analysis to validate cases where the reason for discharge is because the patient moved out of the service area, although this cannot be done for all cases because of data limitations.

2.2.5 Risk Adjustment

Some TEP members suggested adjusting this measure for patients' hospice length of stay and including local fixed effects in the risk adjustment model. Another member recommended adjusting for hospice diagnosis by performing analysis for each diagnosis, to better compare performance across providers. The TEP generally warned against too much risk adjustment, which would make the measure less discriminating among providers and, therefore, less useful for measuring quality.

2.2.6 Usability and Unintended Consequences

A few TEP members stressed the importance of usability for this measure, particularly for small hospices with limited resources to track quality measure performance. The TEP generally agreed that this measure should not be constructed with a cutoff point or target rate. We underscored that the goal of this measure is not to capture a "never-event" outcome, as some level of live discharges and post-discharge transitions are expected and can result from patient preferences beyond hospices' control.

TEP members also cautioned against unintended consequences of this measure. One stated that it may disincentivize hospices from admitting patients who are relatively early in their disease trajectory, because they might have higher chances of being discharged alive. We discussed that risk adjustment may help mitigate this unintended consequence, and applying Exception 1 would also help address this concern.

2.3 Main Takeaways

Measure concept and purpose—The TEP continued to support the importance of this measure, as it intends to capture the hospices with a substantially higher rate of live discharges that may reflect suboptimal quality of care.

Operational definition of PACT—Regarding the proposed options for defining PACT, the TEP recommended the following:

- ***Exception 1***: Modify this exception to include patients who survived at least 30 days without any hospitalization or ER use in the 7 days after discharge. When attributing post-discharge acute care to the hospice's quality of care, a shorter time window is appropriate, and 30-day survival is a clinically appropriate expectation because of the challenges around prognostication.

- ***Exception 2***: This exception should not be used because inability to provide access to GIP level of care is a violation of the CoP.

- ***Exception 3***: Modify this exception to only include patients that were discharged because they moved out of the hospice service area and re-enrolled in a hospice in a different service area within 2 weeks after discharge. Hospices should provide a discharge care plan and help patients and families find another hospice to ensure continuity of care when a patient moves out of the service area.

To summarize the TEP recommendations and update the PACT operational definition: PACT will include live discharges from hospices that are followed by death within 30 days or any hospitalization or ER use within 7 days after hospice discharge, except when the patients were discharged because they moved out of the service area and re-enrolled in hospice in a different service area within 14 days after discharge.

2.4 Next Steps

RTI will continue to solicit feedback on this measure through post-TEP debriefs with subcontractors and consultants. Based on the TEP meeting and the input we received, our next steps include the following:

- Completing further analyses to discuss with CMS and federal hospice experts to finalize the operational definition of PACT, measure specifications, and risk adjustment. Specifically, to further finalize the operational definition of this measure, we will conduct data analysis to validate the reason of discharge as patient moving out of service area and, and examine the measure distribution at the patient-stay and hospice levels with the suggested modifications of the measure definition from the TEP discussion. These next steps of analyses and discussion will confirm the operationalization of these specifications.

- Soliciting input from other stakeholders through a public comment period.

- Presenting the measure's proposed specifications to the Measure Applications Partnership—a multi-stakeholder partnership that guides the U.S. Department of Health and Human Services on the selection of performance measures for federal health programs—for their review of the appropriateness of adopting this measure in the HQRP.

SECTION 3
QUALITY MEASURE 2: ACCESS TO LEVELS OF HOSPICE CARE

3.1 Measure Description

Access to Levels of Hospice Care will assess access to higher-intensity levels of hospice care by calculating the risk-standardized rate of GIP or continuous home care (CHC) use for Medicare hospice patients during their hospice stay. An environmental scan indicated that appropriate use of higher-intensity levels of hospice care is associated with positive outcomes and that there are performance gaps in provision of these levels of care among hospices. The TEP met to discuss this measure concept in December 2016, and confirmed that is a high priority area and that measure development should continue. Interviews with the Caregiver Workgroup indicate that caregivers consider this to be a high priority area for patients and caregivers, and that patients and caregivers may need additional information to interpret a measure of access to levels of hospice care.

The data source for this measure will be Medicare claims.

This measure is intended to encourage hospices to be responsive to changes in patients' and families' care needs and provide higher-intensity levels of hospice care when appropriate. The measure is also intended to help patients and caregivers make informed decisions when choosing a hospice, by offering information about potential access to the levels of care provided at hospices they may be considering.

3.2 Summary of TEP Discussion

The TEP discussion on this measure focused on five major topics: (1) the measure specification approach, (2) the measure numerator, (3) the number of measures for this concept, (4) denominator exclusions, and (5) risk adjustment. In the following subsections, we summarize the options and recommendations derived from the TEP discussion.

3.2.1 Measure Specification Approach

During the December 2016 TEP meeting, TEP members discussed two possible specification approaches for this measure concept: a "yes or no"[1] specification approach and a rate-based specification approach. During this TEP meeting, we presented analyses of these two measure approaches.

"Yes or No" measure

The discussion regarding the yes/no approach revealed that such a measure could be interpreted as a compliance measure, rather than a quality measure, because the Hospice CoP

[1] A "yes or no" measure is defined as a measure that would state whether the hospice provided higher-intensity levels of care *at all* in a given reporting period.

require that hospices have the capacity to provide access to each of the four levels of care.[1] However, some of the group said that a yes/no measure would not be a compliance measure, as it goes beyond the CoP's requirements by examining whether the hospice actually provided these services, instead of whether the hospice simply had the capacity to provide these services.

TEP members cautioned that a limitation of a yes/no measure would be its inability to distinguish between hospices that provided varying degrees of access to higher-intensity levels of hospice care. TEP members stated that there could be a difference in quality between hospices providing a very low amount of higher-intensity levels of hospice care and hospices providing an average or higher amount. For example, a patient of a hospice that provides GIP or CHC to 0.2% of its patients may experience poorer-quality care than a patient in a hospice that provides these services to 5% of their patients. However, with a yes/no measure, these two hospices would both score "yes" and may be considered to have similar quality even though there was a difference.

If a yes/no approach were adopted, some TEP members suggested examining a short period, such as 6 months, to determine whether a hospice provided any GIP and CHC. TEP members felt that all hospices should be providing some of these services within this shorter period. However, this approach could impact measure stability, and hence relatability, because of the small number of stays in that time for smaller hospices. Our analyses show that access to these services fluctuates depending on the period; hospices with small denominators may provide these services in a given year, but not the next. Because of this fluctuation, a longer period may be needed to determine that a smaller hospice does not provide access to certain levels of care.

Rate-based measure

Most TEP members agreed that the measure should be rate based. TEP members reported that a rate-based approach would be more precise and more useful than a yes/no measure. This approach also would provide more information about the hospices by using a rate of provision of these levels of hospice care, rather than grouping all hospices that provide some GIP or CHC into one category. This approach also would offer more flexibility. The measure would offer the same information as a yes/no measure if the benchmark were set at zero, but the benchmark could be changed later to provide more information about hospices' provision of GIP or CHC.

Although most TEP members agreed with the rate-based measure approach, they voiced some concerns, including the following: (1) The measure could incentivize overuse of GIP and CHC. (2) Consumers could find a rate-based measure confusing. and (3) Setting a benchmark for this measure beyond zero would be more meaningful, but difficult.

During the December 2016 TEP, members agreed that the intent of this measure was not to capture overuse of higher-intensity levels of hospice care, as this would be more related to program integrity and it may be difficult to link overuse of these levels to quality of care. When discussing the rate-based measure approach at this May 2017 TEP, the group mentioned that

[1] The four levels of care are routine home care, CHC, GIP, and inpatient respite care. For more information about these levels, see https://www.cms.gov/Regulations-and-Guidance/Legislation/CFCsAndCoPs/Hospice.html

such a rate-based measure could incentivize hospices to provide more high-intensity levels of care, which could result in overuse. In response, a TEP member mentioned that, under the current Medicare hospice payment, providing more GIP and CHC does not result in a high profit margin; therefore, the low profit margin of providing these higher-intensity levels of hospice care could act as a counterbalance to perceived incentives to provide more of these levels of care. Furthermore, the GIP measures on the Program for Evaluating Payment Patterns Electronic Report (PEPPER) and the regulatory scrutiny faced by hospices for overuse of these services, including the overall Hospice cap and GIP cap, would help disincentivize overuse of GIP or CHC and counterbalance the unintended consequence of this quality measure.

TEP members also voiced concerns about patients' and families' understanding of a rate-based measure. To avoid potential consumer confusion and aid patients and families in interpreting the results, TEP members recommended publicly reporting the measure with more information than a simple rate. For example, one member recommended that hospices be grouped such that those providing less than a given amount of GIP or CHC would be reported to provide "less than the typical amount" of these two levels, while those that provide none would be reported as providing "none of these services." Another TEP member recommend reporting the measure on a per capita basis, such as "Y proportion of 100 stays in this hospice get GIP or CHC" or "for every X patients in this hospice, Y get GIP or CHC."

TEP members agreed that however the measure is reported, there should be some form of benchmark or threshold to define an expected level of use of higher-intensity levels of hospice care, which would indicate reasonable access to these levels of hospice care. Such a threshold also could prevent incentivizing overuse of these levels of care, because a higher-than-typical rate would not necessarily be perceived as "better quality." TEP members discussed the difficulties in setting a benchmark for this measure. Most agreed that the use of GIP or CHC for individual patients depends on patient needs or preferences and clinical judgement. The TEP also agreed that an appropriate level for GIP or CHC on the hospice level is based on that hospice's patient mix. TEP members could not easily identify a benchmark based on the analyses presented. They believed, however, that the distribution of the use of GIP and CHC seemed to be low and presented room for improvement. They recommended further analyses to find a clinically meaningful benchmark, including both quantitative analysis of claims data and qualitative interviews with hospice clinicians.

Because of the lack of a clear benchmark and the need for further analyses, some TEP members recommended initially setting a threshold of zero. As measure performance data are collected and analyzed and hospices become comfortable with the measure, the measure benchmark could then be shifted higher, if a meaningful nonzero benchmark could be identified.

3.2.2 Measure Numerator Considerations

TEP members discussed whether the time window for this measure should include the entire stay or be limited to the last 7 days of life. The rationale for the latter would be that there may be a greater need for higher-intensity levels of hospice care in the last 7 days, when symptom burden is increased for many patients. However, focusing this measure on the last days of life could incentivize hospices to keep patients in higher-intensity levels of hospice care until death, regardless of need or preferences. Also, if the measure were restricted in such a way,

the measure would not be able to assess the responsiveness of hospices to changing needs over the entire patient stay. Finally, a recently implemented Hospice Item Set–based measure pair, Visits When Death Is Imminent, is focused on service utilization in the final 7 days of life. For these reasons, the TEP determined that it would be preferable to look at the entire stay for this measure, but they recommended that we should conduct further analyses to understand the use of GIP and CHC throughout the hospice stay.

3.2.3 Number of Measures for This Concept

Of the four levels of care described by the hospice CoP, GIP and CHC are the two higher-intensity levels of hospice care. Hospices are expected to be able to provide each of the four levels of care to comply with the CoP. The TEP discussed whether access to GIP and CHC could be combined into one measure or presented separately. TEP members agreed that the two levels of care should be presented together, as GIP and CHC both address the need for higher-intensity care, and patient and family preference generally drive which service is used during periods of crisis. Access to either service would show consumers that a hospice can provide higher-intensity levels of hospice care and that the hospice is responsive to patient needs. TEP members also reported that, in situations when the patient and family do not specifically prefer one or the other, market factors, hospice infrastructure, and patient and family preferences play a large role in determining whether a hospice provides more GIP or CHC when patients need such level of care. In certain markets where inpatient bed availability is high, GIP could be provided more regularly than CHC, for example. Therefore, the hospice should not be penalized for not providing a higher rate of CHC, if the hospice provides GIP care to meet patients and families' needs. Combining the two higher-intensity levels of hospice care into one measure could help account for such issues.

From a data perspective, separating the two levels of hospice care would pose challenges for creating reliable measures. Our analyses show that the mean and median proportion of stays including CHC is 3.7% and 0.1%, respectively, and the mean and median proportion of stays including GIP is 10.1% and 3.0%, respectively. Because rates of GIP and CHC are low, setting a meaningful benchmark would be difficult, and collecting enough stays to accurately determine whether a hospice provides access to GIP and CHC may take a long time.

As the TEP further reported, in addition to a combined measure, consumers might also prefer to see the two levels of care separately. For example, consumers might have a particular interest in receiving all care in the home and, therefore, would want to see the rate of CHC alone, instead of with GIP. Because of this, some of the group recommended publicly reporting additional information under this concept: the rate-based measure where GIP and CHC are combined, and additional information about whether the hospice had provided any GIP or CHC (separately) to their patients.

3.2.4 Measure Denominator Considerations and Exclusion Criteria

Based on analyses of claims data, we presented a possible exclusion for this measure, where those patient stays that did not begin in routine home care would be excluded from the measure denominator. By examining just those patients that entered hospice on routine home care to see the rate at which they received GIP and CHC later during their stay, the measure

would assess hospices' responsiveness to changes in patient needs. Making an inference about hospices' responsiveness for those patients that began care in GIP or CHC is difficult. The TEP also discussed that referral patterns impact use of GIP at the beginning of a stay. Certain hospices receive many patients directly from the hospital, who then enter hospice and immediately receive GIP. Thus, differences between hospices in use of GIP (when not excluding stays that began in GIP or CHC) partially reflect these different referral patterns. For these reasons, TEP members were supportive of this exclusion criterion.

3.2.5 Risk Adjustment

RTI presented preliminary analyses of patient and hospice characteristics associated with the use of GIP and CHC. The TEP was supportive of risk-adjusting this measure. To do so, they recommended adjusting our current regression model and further testing potential risk adjusters. TEP members recommended removing the live discharge variable from current regression analyses, because factors that indicate quality, such as live discharge rates, should not be considered in the risk adjustment model. The analyses presented to the TEP focused on patient-level outcomes and the factors that might affect whether a given patient receives a higher-intensity level of hospice care. In addition to these analyses, the TEP recommended further analysis looking at hospice-level performance as the dependent variable.

Of the potential risk adjusters presented, TEP members were most supportive of further analyzing risk adjustment for length of stay, diagnosis, and setting of care.

3.3 Main Takeaways

Measure specifications—TEP members agreed that CMS and RTI should start the development of a rate-based measure, which offers more flexibility than a yes/no measure. That is, setting a threshold at zero, the measure will allow the identification of hospices that do not provide any GIP or CHC. This measure also offers "room for growth," because the threshold can be recalibrated when all or most hospices provide these levels of care. However, TEP members described challenges in setting a benchmark for an appropriate amount of higher-intensity levels of hospice care beyond zero. Therefore, they recommended analysis of the distribution and trend of this rate-based measure, combined with qualitative analyses to determine a clinically meaningful benchmark.

Number of measures for this concept—Most TEP members agreed that GIP and CHC should be assessed in one measure. TEP members agreed that providing either showed that a hospice was responsive to patient needs for higher-intensity levels of hospice care. We will consider the possibility of reporting additional information about whether the hospice had provided any GIP or CHC (separately) to their patients.

Exclusion criteria—TEP members agreed that patient stays that did not begin in routine home care should be excluded from this measure.

Risk adjustment—TEP members were supportive of risk-adjusting this measure. They recommended completing further analyses and supported testing risk adjustment for length of stay, diagnosis, and setting of care.

3.4 Next Steps

RTI will continue to solicit feedback on this measure through post-TEP debriefing meetings and other communication methods (e.g., group e-mail discussion) with subcontractors and consultants. Our next steps include the following:

- Complete further analyses to discuss with CMS and federal hospice experts to finalize measure specifications and risk adjustment.
  - Based on the TEP discussion, RTI drafted early measure specifications. These next steps of analyses and discussion will confirm the operationalization of these specifications.
  - Additional analyses will address the distribution of the unadjusted measure, and the specification of risk adjustment covariates.
- Complete further analyses to support measure validity, including this measure's relationship with other outcomes, by examining this measure's relationship to:
  - family satisfaction measures from the CAHPS survey, to determine whether hospices that provide low levels of GIP or CHC also have lower scores on family satisfaction measures; and
  - the PACT measure (described in ***Section 2***), to determine whether hospices that provide low levels of GIP or CHC also have high levels of potentially inappropriate live discharges.
- Solicit input from other stakeholders and the public through a public comment period.
- Present the measure with the proposed specifications to the Measure Applications Partnership—a multi-stakeholder partnership that guides the U.S. Department of Health and Human Services on the selection of performance measures for federal health programs—for their review of the appropriateness of adopting the measures in the HQRP.

APPENDIX A:
TECHNICAL EXPERT PANEL (TEP) MEMBERS

❖ Thomas Caprio, MD, MPH, MSHPE, CMD, HMDC, FACP

Medical Director
Visiting Nurse Service and Visiting Nurse Hospice and Palliative Care

Medical Director
University of Rochester Geriatric Assessment Clinic

Program Director, Geriatric Medicine Fellowship Program
University of Rochester
Rochester, NY

Thomas Caprio is an associate professor of medicine/geriatrics, dentistry, clinical nursing, and public health sciences at the University of Rochester Medical Center in Rochester, New York. He is the chief medical officer of the University of Rochester Medicine Home Care & Hospice and the medical director for the Visiting Nurse Hospice and Palliative Care. He serves as director of the geriatric medicine fellowship program, director of the University of Rochester geriatric assessment clinic, and director of the Finger Lakes Geriatric Education Center. He oversees the federally funded Geriatric Workforce Enhancement Program, which provides education and training related to geriatrics and palliative care for health care professionals, rural primary care providers, academic faculty, and family caregivers.

Dr. Caprio received his undergraduate degree from Nazareth College of Rochester, his MD from State University of New York at Buffalo, his MPH from the University of Rochester School of Medicine and Dentistry, and his master of science in health professions education (MSHPE) from the University of Rochester Warner Graduate School of Education.

❖ Corinne Casey, RN, BS

Vice President of Clinical Operations
Compassus Hospice & Palliative Care
Brentwood, TN

Corrinne Casey is the vice president of clinical operations for Compassus Hospice & Palliative Care. Ms. Casey has also served as director of operations and regional clinical director at Compassus Hospice. She has extensive clinical and operational experience in the health care field across diverse health care settings, including hospice.

Ms. Casey received her AS in nursing from the University of Nevada, Las Vegas, and her undergraduate degree from St. Joseph's College in Maine. She is expected to complete an MBA in 2018 from St. Joseph's College as well.

❖ Hazel Crews, PT, MHS, MHA, CPHQ

Executive Program Director
Indiana University Health
Indianapolis, IN

Hazel Crews is the executive program director within System Patient Safety & Quality at Indiana University Health. In this role, she works collaboratively with clinical leadership to promote organization-wide quality improvement using a data-driven approach, and provides consultation to other facilities about quality, patient safety, and compliance issues. Additionally, she oversees data collection and reporting of quality measures to external payers and databases.

Ms. Crews received her undergraduate degree from the University of Bombay, India; her master's degree in orthopedic physical therapy (PT) from the University of Indianapolis; and her master's degree in health care administration (MHA) from Indiana University-Purdue University.

❖ Bhargavi Degapudi, MD

Medical Director
Care Transitions at AtlantiCare
Egg Harbor Township, NJ

Bhargavi Degapudi is the medical director of Care Transitions at AtlantiCare. In this role, Dr. Degapudi provides medical leadership to the care management and develops Transitions work flow. She is responsible for the transformation of the acute care discharge process, focused on the priorities of reductions in readmissions, post-acute cost of care and total hospital days, enhancements in patient experience of care, and improvements in quality outcomes. She also serves as the Systems Best Quality Committee chair at Atlantic Care, initiating the process of defining and selecting quality metrics and the reporting of these metrics in value-based payment models. Dr. Degapudi has practiced as a hospice physician, nephrologist, and hospitalist.

Dr. Degapudi received her MD from Gandhi Medical College, India, completed her internal medicine residency at Abington Memorial Hospital, Pennsylvania, and completed a nephrology fellowship at Hahnemann University Hospital in Philadelphia.

❖ J. Cameron Muir, MD, FAAHPM, HMDC

Executive Vice President of Quality and Access
Chief Medical Officer
Capital Caring
Falls Church, VA

J. Cameron Muir is the executive vice president of quality and access and chief medical officer at the advanced illness company, Capital Caring, serving Virginia; Maryland; West Virginia; and Washington, DC. At Capital Caring, Dr. Muir pioneers innovative quality improvement measurement and data collection methods to ensure that the highest-quality care is the delivered

outcome in advanced illness care. He currently has faculty appointments at Johns Hopkins Medicine and George Washington University Medical School. Previously, Dr. Muir served as the medical director of the Palliative Care and Home Hospice Program at Northwestern Memorial Hospital, and as the director of the Palliative Care Program at the Northwestern University Medical School. Additionally, he is a past president of the American Academy of Hospice and Palliative Medicine.

Dr. Muir received his MD from the University of Virginia School of Medicine, completed his residency in internal medicine at Dartmouth-Hitchcock Medical Center, and earned fellowships in bioethics at the University of Chicago Medical Center. He also earned fellowships in medical oncology and in hospice and palliative medicine at Northwestern University's Feinberg School of Medicine.

❖ Dana Mukamel, PhD

Professor, Division of General Internal Medicine and Primary Care
University of California, Irvine, Department of Medicine
Irvine, CA

Dana Mukamel is a professor in the Division of General Internal Medicine and Primary Care at the University of California, Irvine, Department of Medicine, and director of the Program of Research in Translational Technology Enabling High Quality Care (iTEQC). She also holds appointments in the Departments of Public Health and Nursing. Her research focuses on issues related to quality of care in long-term care, both methodological issues related to measurement of quality and empirical studies designed to offer insights into policy, market, and provider characteristics that contribute to the provision of high-quality care. Dr. Mukamel wrote the first paper to develop risk-adjusted outcome measures for nursing homes (Medical Care 1997) and has continued work in this area. Previously, she was the co-principal investigator for a study funded by the National Institute of Nursing Research on the quality of end-of-life care in nursing homes. Currently, she is a co-investigator for a study funded by the Patient-Centered Outcomes Research Institute to improve end-of-life and palliative care in nursing homes. Her work has expanded to the development of decision applications for patients, providers, and policy makers, that use interactive information technology (IT). She is a member of the Agency for Healthcare Research and Quality MONAHRQ strategic team of advisors and has served on several TEPs, including the Centers for Medicare & Medicaid Services TEP for development of quality measures for nursing homes and home care and the 5-Star TEP. Dr. Mukamel received a Lifetime Achievement Award from the American Public Health Association in recognition for her work in quality for long-term care.

Dr. Mukamel received her BS from Tel Aviv University in Israel, her MS in technology and policy from the Massachusetts Institute of Technology, and her PhD in economics from the University of Rochester, New York.

❖ Terrence O'Malley, MD

Physician
Massachusetts General Hospital
Partners HealthCare Systems, Inc.
Boston, MA

Terrence O'Malley has extensive clinical experience in hospice and nursing facility settings. Dr. O'Malley currently practices exclusively in a nursing facility setting. In addition, he serves on the National Quality Forum Care Plan Standing Committee for Measures and Measure Maintenance and on the newly formed National Quality Forum Interoperability Project, which seeks to establish a measurement framework for interoperability and how care teams communicate. Dr. O'Malley is also a community lead on the Office of the National Coordinator of Health Information Technology Standards & Interoperability Framework Electronic Long-Term Services and Supports project, which is developing a shared vocabulary and process for creating a home- and community-based service plan. He is a member of the Health IT Policy Committee Advanced Care Models and Meaningful Use workgroup and a member of the Health IT Standards Committee.

Dr. O'Malley received his undergraduate degree from Amherst College, Massachusetts, and his MD from the Cornell University Medical College. He completed his residency in internal medicine at Massachusetts General Hospital and earned a clinical fellowship from Harvard Medical School.

❖ Russell Portenoy, MD

Executive Director
MJHS Institute for Innovation in Palliative Care

Chief Medical Officer
MJHS Hospice and Palliative Care
New York, NY

Russell Portenoy is the executive director of the MJHS Institute for Innovation in Palliative Care and chief medical officer of MJHS Hospice and Palliative Care. He is also a professor of neurology and family and social medicine at the Albert Einstein College of Medicine in New York City. Dr. Portenoy's research has focused on clinical trials, surveys, and health services research related to pain and symptom management, opioid pharmacotherapy, cancer pain, and palliative care. Dr. Portenoy is editor-in-chief of the *Journal of Pain and Symptom Management*, co-editor of the *Oxford Textbook of Palliative Medicine*, and recipient of the Lifetime Achievement Award of the American Academy of Hospice and Palliative Medicine.

Dr. Portenoy received his undergraduate degree from Cornell University and his MD from the University of Maryland School of Medicine. He did a residency in neurology at the Albert Einstein College of Medicine and completed a fellowship at Memorial Sloan-Kettering Cancer Center.

❖ David Stevenson, PhD

Associate Professor, Department of Health Policy
Vanderbilt University
Nashville, TN

David Stevenson is an associate professor of health policy in the Department of Health Policy at Vanderbilt University School of Medicine. In addition, he serves as vice-chair for education in his department and as health policy track director in Vanderbilt's Masters of Public Health program. Dr. Stevenson's primary research interests are end-of-life care and long-term care. His research is currently focused on the implications of hospice sector and broader delivery system changes on a range of hospice and end-of-life care outcomes.

Dr. Stevenson received a BA in religion from Oberlin College, an MS in health policy and management from the Harvard School of Public Health, and a PhD in Health Policy from Harvard University.

❖ Helena Temkin-Greener, PhD, MPH

Professor, Department of Public Health Sciences
University of Rochester School of Medicine

Co-Director of Research, Palliative Care Program
University of Rochester Medical Center

Professor of Clinical Nursing
University of Rochester School of Nursing
Rochester, NY

Helena Temkin-Greener is the professor and co-director of research of the Palliative Care Program at the University of Rochester Medical Center. She has extensive experience in patient-centered outcomes research focusing on the elderly, long-term care, palliative care, and end-of-life care. Her research interests include developing new quality measures, analyzing variations across providers using quality measures, and identifying opportunities for quality improvement. She completed a National Institutes of Health (NIH)-funded study to develop end-of-life risk-adjusted outcomes for nursing home residents and is currently the principal investigator of a randomized controlled trial, funded by Patient-Centered Outcomes Research Institute, to implement and evaluate palliative care teams in 30 nursing homes. Additionally, she is conducting a pilot study to develop and validate a new tool that examines operational performance of palliative care consultation teams serving VA hospitals and nursing homes. Dr. Temkin-Greener has previously developed other tools for assessing care processes and teamwork in both community-based and institutional long-term care settings.

Dr. Temkin-Greener received her undergraduate degree from Smith College, Massachusetts; her MS and PhD in Anthropology from the University of Massachusetts, Amherst; and her MS in Community and Preventive Medicine from the University of Rochester School of Medicine, New York.

❖ Ruth Thomson, DO, FACOI, FAAHPM, HMDC

Chief Medical Officer
Hospice of Dayton, Inc.

President
Innovative Care Solutions, LLC
Dayton, OH

Ruth Thomson is the chief medical officer for Hospice of Dayton, Inc., and the president of Innovative Care Solutions, LLC. Dr. Thomson has extensive clinical experience in the field of hospice and palliative medicine.

Dr. Thomson received her AS from West Virginia University, Parkersburg; her BS from Marietta College, Ohio; and her Doctor of Osteopathic Medicine (DO) from the Ohio University College of Osteopathic Medicine. She completed a residency in internal medicine at Grandview Hospital and some additional fellowship training in hematology and medical oncology at the Cleveland Clinic Foundation.

❖ Tricia Thumann, RN, MSN, MHA

National Hospice Director
Ascension at Home

Hospice Director of Clinical Operations
Ministry Home Care
Marshfield, WI

Tricia Thumann is the national hospice director for Ascension at Home and the hospice director of clinical operations for Ministry Home Care in Wisconsin. Ms. Thumann has a broad background in the hospice field, including roles as director of clinical support services, clinical practice coordinator for home health and hospice, hospice house manager, hospice agency director, and hospice staff nurse.

Ms. Thumann received her undergraduate degree in nursing from Viterbo College, Wisconsin, and her MHA and master's of science in nursing (MSN) from the University of Phoenix.

❖ Susan Wallace, MSW, LSW

Coordinator, Strategic Communications & Projects
LeadingAge Ohio
Columbus, OH

Susan Wallace has worked with Ohio's state hospice organization for the past decade. There, she currently serves as the principal staff contact on quality measurement, performance improvement, and issues pertaining to social work and bereavement. Now a part of LeadingAge Ohio, she works with providers of pre- and post-acute care, including skilled nursing facilities, home- and community-based services, and affordable housing, to develop delivery system reforms at the state level, which includes addressing measurement gaps. Her previous work

included leading a multistate benchmarking and performance improvement project for hospices from 2009 to 2012. She has been a member of the National Hospice and Palliative Care Organization's Quality and Standards Committee for the past 8 years and co-chaired its Patient Outcomes Task Group for 5 years. She is trained in the Institute for Healthcare Improvement's Breakthrough Series Collaborative methods. Additionally, Ms. Wallace has served as adjunct faculty at the Ohio State University College of Social Work.

Ms. Wallace received her BA and MSW from Ohio State University. She is a licensed social worker (LSW)