Methodology Report For Public Comment: Patient Understanding of Key Information Related to Recovery From an Outpatient Surgery or Procedure

Submitted by:

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Prepared for:

Centers for Medicare & Medicaid Services (CMS)

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EXECUTIVE SUMMARY

BACKGROUND

The purpose of this request for public comment is for CORE to gain feedback from a broad range of stakeholders (including technical experts, providers, patients, purchasers, and the public at large) on the development of a novel Patient-Reported Outcome-based Performance Measure (PRO-PM), titled "Patient Understanding of Key Information Related to Recovery from an Outpatient Surgery or Procedure." This document describes the preliminary measure specifications, reports on the findings of a pilot study, and seeks comment on the measure specifications, including the survey instrument.

This document is organized to facilitate your review and input. It also highlights specific aspects of the measure that would most benefit from public input and links to more in-depth discussion of these specific issues. Following the Executive Summary, the document provides more detailed background on the measure, describes the development and testing of the survey, reports on results of the first pilot, and touches on survey implementation.

THE MEASURE

The aim of this measure is to assess patients' perceived understanding of key information related to their recovery process after undergoing an outpatient procedure or surgery. Patients are sent a survey via text/email shortly after their discharge from and HOPD. The survey asks patients to rate the clarity of information related to medications, warning signs or symptoms, changes to daily activities, and the applicability of the information. Ensuring that patients understand this information can facilitate improved care and lead to better immediate outcomes (such as fewer medication errors and duplicate tests and imaging), resulting in improved overall health, better patient experience, and potentially lower costs. Upon completion, the measure is intended to assess facility-level performance in the outpatient setting, for example, for HOPDs or ambulatory surgical centers (ASCs). The logic model illustrating this relationship is located in Appendix A.

DEVELOPMENT PROCESS

CORE is developing this measure under contract to CMS, consistent with CMS' measure development guidance. CORE's project team, a multidisciplinary team of clinicians, health services researchers, and statisticians, has defined a patient-reported outcome; developed a survey tool to collect information from patients; and completed an initial pilot wherein we administered the survey tool to patients undergoing outpatient operations at HOPDs. This initial pilot allowed us to test the tool's feasibility and performance. Throughout development, we have obtained input from stakeholders including a Technical Expert Panel and Patient Workgroup.

REQUEST FOR PUBLIC COMMENT

In this public comment request, CORE seeks feedback on five topics related to development of the PRO-PM and its potential use. These comments will inform: 1) potential refinements to the survey instrument; 2) the measure's risk-adjustment model; 3) the measure cohort; 4) survey implementation; and 5) possible measure use for ASCs (in addition to HOPDs as intended).

Below is a summary of the five topics that CORE is seeking feedback on and specific questions regarding the measure, "Patient Understanding of Key Information Related to Recovery from an Outpatient Surgery or Procedure."

1. **Survey Instrument:** In preparation for the second pilot test, we are requesting comment on survey design. Based on feedback from the first pilot test as well as stakeholders, prior Technical Expert Panel (TEP) meetings, and patient work groups, the potential survey changes we are considering are: streamlining and

clarifying the introduction; removing or adding any questions; and modifying the order of questions to potentially increase the response rate. We welcome comments on these topics as well as general survey feedback, see Appendix C for the full survey.

2. **Risk Adjustment**: Risk adjustment is designed to account for patient-level factors that are clinically relevant, have strong relationships with the outcome, and are outside the control of the reporting entity without obscuring important quality differences. Risk adjustment puts measured entities on a level playing field when comparing performance across facilities. This PRO-PM may need to be adjusted for patient characteristics such as health literacy, language, age, sex, or other factors. Many of these factors have already been included in the survey instrument (*see results).* Incorporating results from the first pilot, we are examining associations between these patient characteristics and responses to determine which of these should be included in the final risk-adjustment model. CORE welcomes suggestions for additional risk variables that we should consider for inclusion in the risk-adjustment model.

3. **Measure Cohort:** The target population is all patients 18 years and older who have undergone an outpatient surgery or procedure at a participating HOPD, regardless of payer type, excluding procedures that occur in the emergency department (ED). This approach allows CMS to include Medicaid patients or Medicare Advantage patients, in addition to Medicare Fee-for-Service (FFS) patients and to align with other CMS patient-reported information, such as patient experience collected through the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey. In the first pilot, we did not limit the cohort to any subset of procedures or surgeries. CORE is considering whether to refine the measure cohort by limiting the cohort to only include patients undergoing a procedure or surgery classified as major or minor by CMS's definitions and patients undergoing non-surgical invasive procedures (e.g., colonoscopy, endoscopy, cystoscopy, etc.).

4. **Survey Implementation**: Data collection for PRO-PMs such as this one impacts both providers and patients. CORE aims for the final measure to be implemented in a way that maximizes response rates without adding undue burden to providers or clinicians. For the first pilot, the survey was administered directly by a third-party vendor via text/email to patients. The HOPDs participating in the pilot praised this approach for placing little to no burden on their doctors and nurses. However, CORE is also soliciting feedback on other suggestions for survey implementation. This includes the possibility of specifying the measure in Fast Healthcare Interoperability Resources (FHIR) and using Application Programming Interfaces (APIs) to gather data needed to define the measure cohort and other measure-related data. We are also open to other suggestions and general comments about how best to implement the measure in a way that places minimal burden on HOPDs and ASCs.

5. **Future Considerations:** This measure is intended for use in both HOPDs and ASCs. The current measure is being developed in HOPDs, but CORE is seeking comment on issues to consider when expanding the measure to the ASC setting. CORE welcomes considerations that may be useful for the implementation of this PRO-PM in ASCs. We do not expand on this item elsewhere in the document as we are seeking general comments at this time.

   To be considered, comments must be received by 11:59 PM EST on April 11, 2022 at cmsoutpatientpropm@yale.edu.

BACKGROUND

IMPORTANCE

The demand for outpatient surgical procedures has been steadily growing amongst Medicare beneficiaries. Between 2005 and 2011, the number of outpatient surgical procedures increased by 14%.[1,2] Medicare payments for outpatient operations rose by $8.5 billion between 2008 and 2014.[2] Moreover, these operations are increasing in complexity, as CMS continues to relax the list of procedures it will reimburse only if they occur in the inpatient setting. For example, in Florida 15% of total knee arthroplasties (TKAs) shifted from the inpatient setting to HOPDs or ASCs between 2012 to 2018.[3]

Unlike inpatient procedures and surgeries, patients undergoing operations in the outpatient setting are sent home the same day. After discharge, patients may experience lingering side effects of anesthesia. Furthermore, HOPDs and ASCs fail to provide patients with critical information about recovery at a much higher rate than inpatient hospitals. Inpatient hospitals have standardized discharge summaries that deliver several pieces of vital information more regularly than outpatient providers such as: continuing medication names and instructions (96% vs. 40%); new medication names and instructions (99% vs. 29%); and pending diagnostic test names and instructions (90% vs. 61%).[4] Given the increasing frequency and complexity of outpatient operations, it is imperative for patients to have a clear understanding of their recovery plan.

Ensuring that patients have access to easy-to-understand information is a vital part of a smooth recovery. The lack of consistently written documentation in the outpatient setting is associated with worse patient understanding[5] and lower patient involvement in their recovery.[6] Whereas information that is simpler to read and more complete has been associated with fewer follow-up calls to providers as well as less frequent hospital readmissions.[7-9] The timing of the development of this PRO-PM is appropriate given the trend towards shifting more surgeries and procedures to the outpatient setting, along with the evidence that patients do better when they understand the information related to their recovery.

MEASURE CONCEPT

The concept for this PRO-PM originated from stakeholder engagement. In 2018-2019, CMS directed CORE to conduct to generate new measure concepts for the Hospital Outpatient Quality Reporting (HOQR) and Ambulatory Surgery Center Quality Reporting (ASCQR) Programs. CORE convened five stakeholder groups (patient and patient advocates; clinicians; ASC and HOPD leadership; measure developers and electronic health record [EHR] vendors; and federal agency representatives) to elicit input on measure concepts through a series of focus groups.

Participants noted that patients are routinely discharged from HOPDs and ASCs without detailed, personalized clinical information. Patients do not leave with information such as the name of the procedure, the intraoperative findings, any complications they experienced, and clear instructions on self-care, such as when to start and stop medications, adjust their physical activity, or care for their wounds. Based on this stakeholder feedback and subsequent direction from CMS, CORE began the development of a patient-reported outcome performance measure (PRO-PM) to measure patient's level of understanding related to this information.

MEASURE DESCRIPTION

The measure's goal is to capture patients' perceived understanding of the information provided to them about managing their recovery from the day they elected to undergo the surgery or procedure through the day they respond to the survey.

The target population is all patients 18 and older, who undergo any outpatient surgery or a procedure in an ASC or an HOPD, excluding procedures that occur in the emergency department (ED). This approach allows CMS to include Medicaid patients and Medicare Advantage patients, in addition to Medicare Fee-for-Service (FFS) patients and is aligned with other CMS patient-reported

information, such as patient experience collected through the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey.

The measure under development shifts away from the original measure concept suggested by stakeholders (i.e., to focus only on information in discharge instructions to assess the efficacy of information providers deliver to patients throughout the full episode of care). The original measure concept was solely dedicated to the information provided to patients in their discharge instructions. The original concept was centered around CMS requirements for ASCs and HOPDs to provide discharge instructions to all patients undergoing a procedure or surgery in their facility. However, through discussions with the TEP and Patient Workgroup during measure development, CORE learned that patients rely on much more than discharge instructions to inform their recovery. Information like pre-operative instructions, frequently asked questions posted on ASC and HOPD websites, conversations with ASC and HOPD affiliated providers, and other forms of communications all helped patients with their understanding of the recovery process. Discharge instructions are still a key document that will likely play a vital role in patients' perceived understanding of their recovery. However, a measure solely targeting discharge instructions would have ignored these other sources of information, or potentially introduce bias into the measure as patients think of these other items when responding to the survey. Thus, the measure under development accounts for other information sources for patients undergoing outpatient procedures.

This measure is being developed as a PRO-PM, rather than a facility-level process measure, as it is important to directly assess patients' perceived understanding of these domains. CORE has concluded that there are no suitable validated existing PROMs, and that to develop the PRO-PM, CORE must first develop and validate a PROM survey instrument. PRO-PMs have unique measure implementation considerations that differ from claims-based quality measures. These challenges include potential costs associated with utilizing PROMs, collecting PROM responses from patients, and submitting PROM data to CMS. To minimize burden to facilities/patients and to maximize data collection, CORE is considering and seeks input on how the survey may be implemented.

ACKNOWLEDGEMENTS

This work is a collaborative effort. The CORE Project Team gratefully acknowledges and thanks the project's consultants as well as participants of the project's national technical expert panel (TEP) and Patient Workgroup for their support and input through measure development. In addition, the authors would like to acknowledge and thank staff of the Centers for Medicare & Medicaid Services (CMS) and others for their contribution to this work. The individuals that are part of CORE's team are listed in Appendix E.

DEVELOPMENT AND TESTING OF THE SURVEY INSTRUMENT (PATIENT-REPORTED OUTCOME MEASURE)

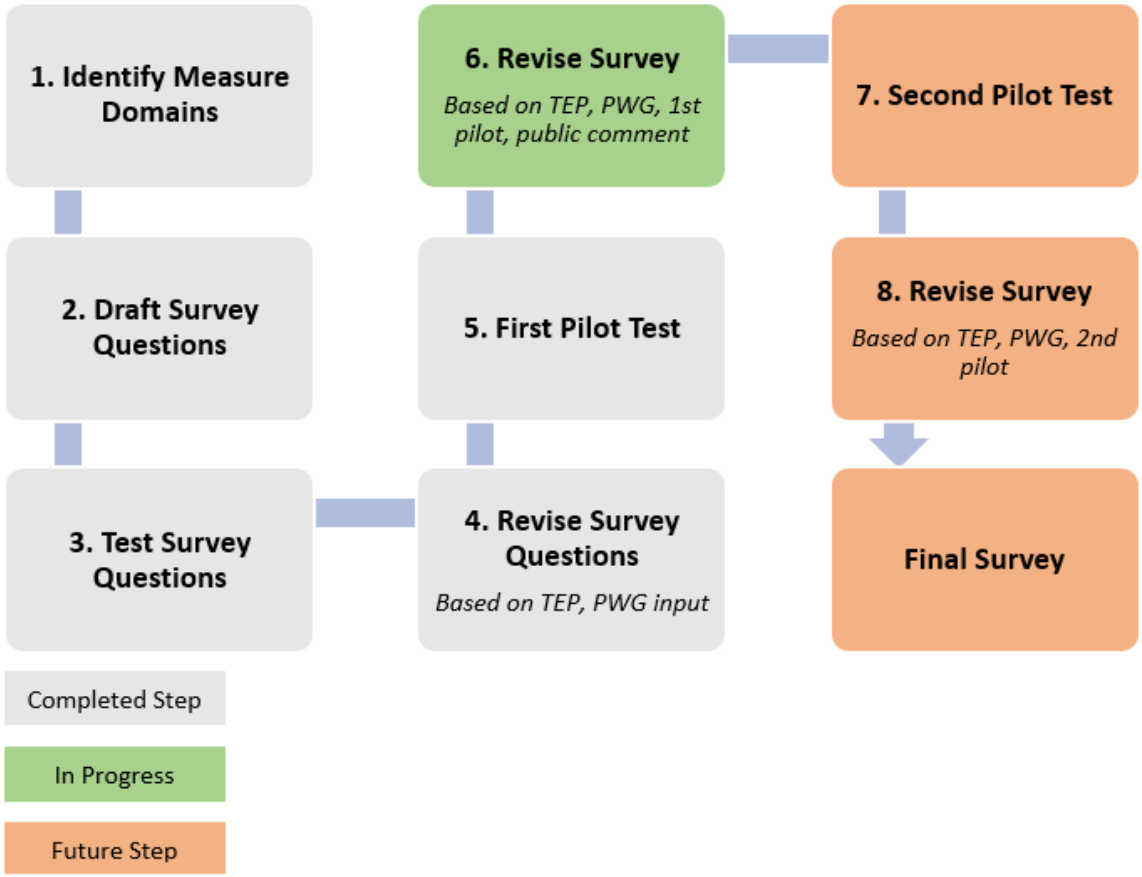
DEVELOPMENT AND TESTING

Prior to developing a PRO-PM, CORE had to develop and validate a survey instrument (PROM) that could be used to capture the patient-reported outcome. This entailed a thorough review of the published and grey literature to examine already existing surveys or survey questions that could be used for this measure. Through this work, CORE identified several potential survey instruments that could potentially be adapted for use in this measure. These included:

- Several Consumer Assessment of Healthcare Providers & Systems (CAHPS) surveys
- The Health Information National Trends Survey
- The Emergency Department Patient Experiences with Care Survey
- Multiple surveys in published research articles

After careful examination of these surveys, CORE determined that the measure concept could only be fully addressed by developing a novel survey instrument focused entirely on the measure concept. The survey development process consists of eight steps. The initial survey development steps were completed using an iterative learning process in which certain steps were repeated and then retested (steps 1-4) as shown in Figure 1 below. As we continue to refine the survey, we will complete the remaining survey development steps (5-8).

Figure 1: Survey Development Steps



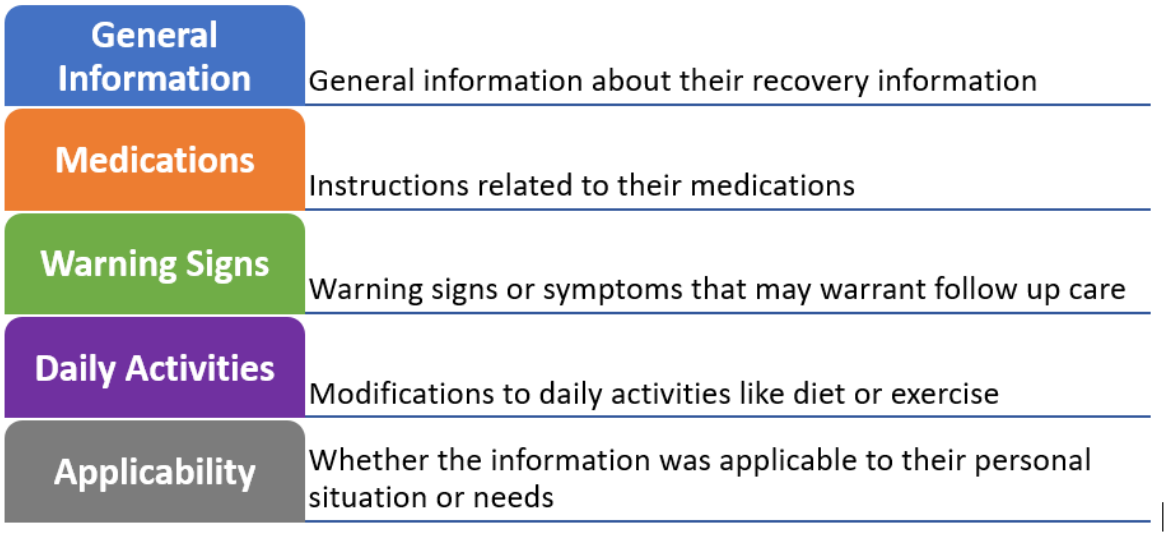
THE SURVEY

The survey is a multi-item instrument addressing five domains that evaluate patients' perceived understanding of information they received regarding the recovery process. Each domain has 2-4 items (questions) that measure how well the patient understood information in the domain on a scale of 1 to 3, where 1 is not clear, 2 is somewhat clear, and 3 is very clear. Each of the five domains is focused on different aspects of the recovery process.

These domains were informed by our literature review, Patient Workgroup, and TEP. Appendix B and the attached TEP Summary Report describe the Patient Workgroup and TEP feedback in more detail.

Figure 2 depicts the survey domains. Each domain evaluates patient ratings of the clarity of information they received during the recovery process.

Figure 2: Survey Domains



The survey asks patients to identify and rate the clarity of all sources of information they received during the episode of care by answering the items in each domain. CORE has defined the episode of care as beginning from the moment they elected to undergo an outpatient surgery or procedure to the day they received the survey (within 7 days of the operation). Some of the pieces of information that patients may be referencing when they respond to the survey include but are not limited to pre-operative clinical encounters, pre-operative packets, post-operative calls made by providers, conversations with nurses and doctors after the procedure or surgery, discharge summaries, and other resources like YouTube videos made by the facility for specific topics/procedures and facility website pages. This approach focuses on the end-result (patient understanding of how to manage their recovery), rather than any one specific document, encounter, or patient education strategy.

FIRST PILOT

OVERVIEW

The first pilot test of the survey instrument was conducted in two HOPDs located in two different states. One of the HOPDs operates in a rural area while the other is in a metropolitan area. Patients who had either a surgery or procedure between August and October 2021 were sent the survey. The survey was available electronically via email and text. In total, 350 patients responded to the survey; most responded to the survey via the text message prompt.

DESIGN

CORE contracted with a survey vendor to pilot the surveys in the HOPDs. Patients consented to receiving the survey as part of their intake forms. Each hospital provided the survey vendor with a datafile on a weekly basis for all the patients who underwent a surgery or procedure in their HOPD. This file included information on patient clinical and demographic characteristics as well as the contact information of patients who consented to receiving the survey. The survey vendor then pushed the survey electronically to patient's phones and emails. Up to four reminders were sent to patients if they did not respond initially. The survey vendor subsequently uploaded results of the survey to an online portal which CORE had access to view in real time and could also download the raw data. The survey vendor also collected information about respondents and nonrespondents to provide at the conclusion of the pilot test.

As part of the pilot, the survey vendor also identified patients and providers who were willing to be interviewed. CORE interviewed 10 patients who completed the survey and asked them to share their experiences regarding the information they were provided related to their recovery, as well as the survey itself. The provider interviews were held with quality improvement officers and clinicians at both HOPDs and were focused on their experiences piloting the survey and how they envisioned using the information as part of quality improvement efforts.

RESULTS

The response rates varied slightly by age, with older patients somewhat more likely to respond than younger patients as shown in Table 1.

Table 1. Pilot Survey Response Rate by Age

Age	Response Rate
18-24	19%
25-34	15%
35-44	16%
45-54	20%
55-64	23%
65-74	23%
75+	23%
Overall	22%

RESPONDENT CHARACTERISTICS

Patient characteristics of survey respondents and non-respondents are shown in Table 2 below. CMS convention uses global billing period to define procedures as major, having a follow up period of 90 days, and minor having a follow up period of zero to 10 days. The following analysis used this convention to classify procedures as major and

minor. We also separated endoscopes, defined as any procedure involving a flexible or rigid instrument used to visualize internal organ or organ space, out from other procedures that were classified as neither major nor minor surgeries.

Patients were significantly more likely to respond if they were female (p = 0.036) and spoke English as their primary language (p=0.029). There were no significant differences in response rate based on type of insurance or type of surgery.

Table 2. Patient Characteristics (respondents vs. non-respondents)

Variable	Respondents (n=348)	Non-respondents (n=1,330)	P-value
Sex	.	.	**0.036***
Male	153 (44%)	671 (51%)	.
Primary Language	.	.	**0.029***
English	325 (93%)	1175 (88%)	.
Spanish	20 (6%)	145 (11%)	.
Insurance Type	.	.	**0.356**
Medicare	132 (38%)	387 (29%)	.
Medicaid	75 (22%)	288 (22%)	.
Private	117 (34%)	529 (40%)	.
Other	24 (6%)	126 (9%)	.
Surgery Type	.	.	**0.332**
Major/Minor Surgery	552 (42%)	159 (46%)	.
Scope	384 (29%)	97 (28%)	.
Neither	394 (30%)	92 (26%)	.

MISSINGNESS

As shown in Table 3, most patients (83%) who responded completed the full survey. Those who did not finish dropped off in stages corresponding to each set of questions

Table 3. Percent responses missing by question/domain

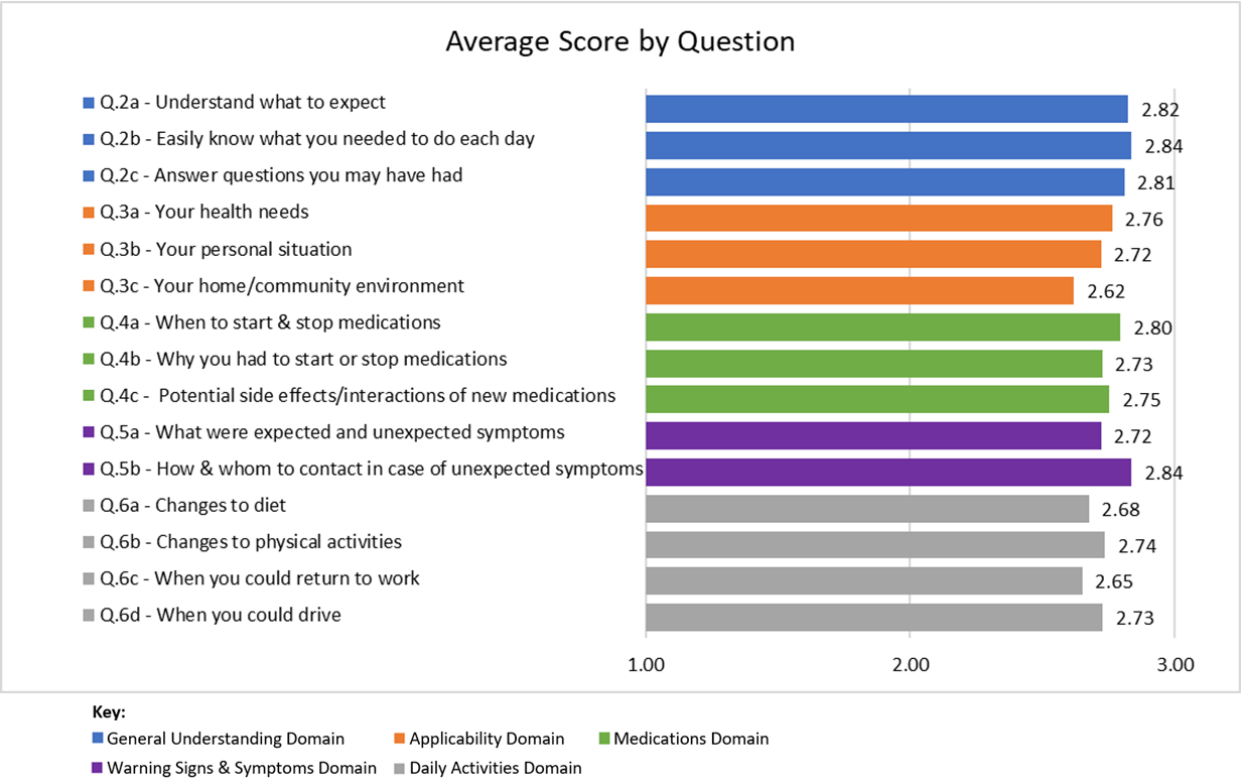
Question	HOPD #1	HOPD #2	Total
Q.1 – Sources of information	0.0%	4.3%	3.4%
Q.2 – General understanding	4.4%	9.8%	8.7%
Q.3 - Applicability	11.8%	11.6%	11.6%
Q.4 – Medications	14.7%	12.0%	12.5%
Q.5 – Warning Signs & Symptoms	16.2%	13.0%	13.7%
Q.6 – Daily Activities	19.1%	14.5%	15.4%
Q.7 – Patient Characteristics	20.6%	15.9%	16.9%

AVERAGE SCORES BY QUESTION

As shown in Figure 3, patients generally provided the highest responses in the General Understanding, Medications, and Warning Signs & Symptoms domains, with average scores on questions in those domains ranging between 2.72 and 2.84 (out of a possible range from 1 to 3, 1 indicating information was the least clear and 3 the

clearest). Patients responded somewhat less favorably in the Applicability and Daily Activities domains (ranging from 2.62 to 2.76).

Figure 3. Average Survey Score by Survey Question



AVERAGE SCORES BY CATEGORY

In each comparison discussed below, we evaluate the relationship between the mean overall survey score and patient characteristics. We arrive at mean overall survey scores by first assigning a numeric value to each survey response (1=unclear, 2=somewhat clear, 3=clear). We then sum the scores for each question for each patient so that every patient has a total survey score. To arrive at group-level mean survey scores, we sum the scores for all the patients in that group and divide this total by the number of patients in the group. The goal of these analyses is to identify potential variables that should be included in the final risk-adjustment model. Due to the limited sample size of the pilot, we recognize some of the results may not be statistically significant even when there appears to be a difference between groups. We will reevaluate all of these associations in the second, larger pilot.

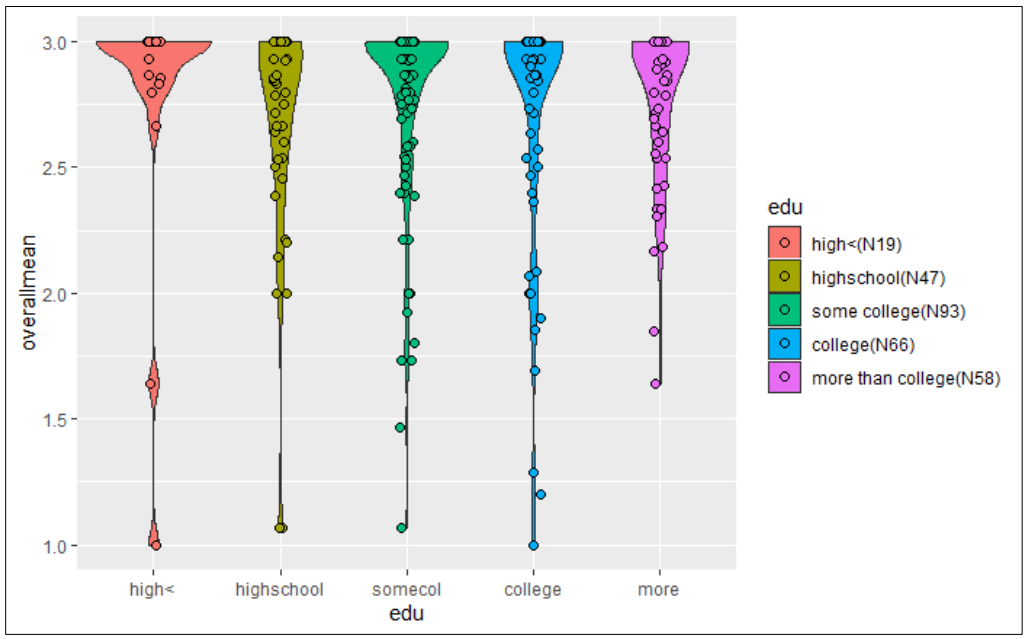
The violin plots below illustrate the distribution of overall score within each group. The plots are wider in places where many patients provided similar scores (that is, where patient scores are clustered more densely), and narrower in score ranges with fewer patients. Individual dots are also included for each response.

We tested the association between each categorical variable and mean survey score using one-way Analysis of Variance (ANOVA). In this test, an F-statistic with significant p-value indicates that the mean score in at least one group differs statistically from that of another group. We have considered $p < 0.05$ to indicate statistical significance.

We summarize our interpretation of each plot in the grey box to the right of the figure.

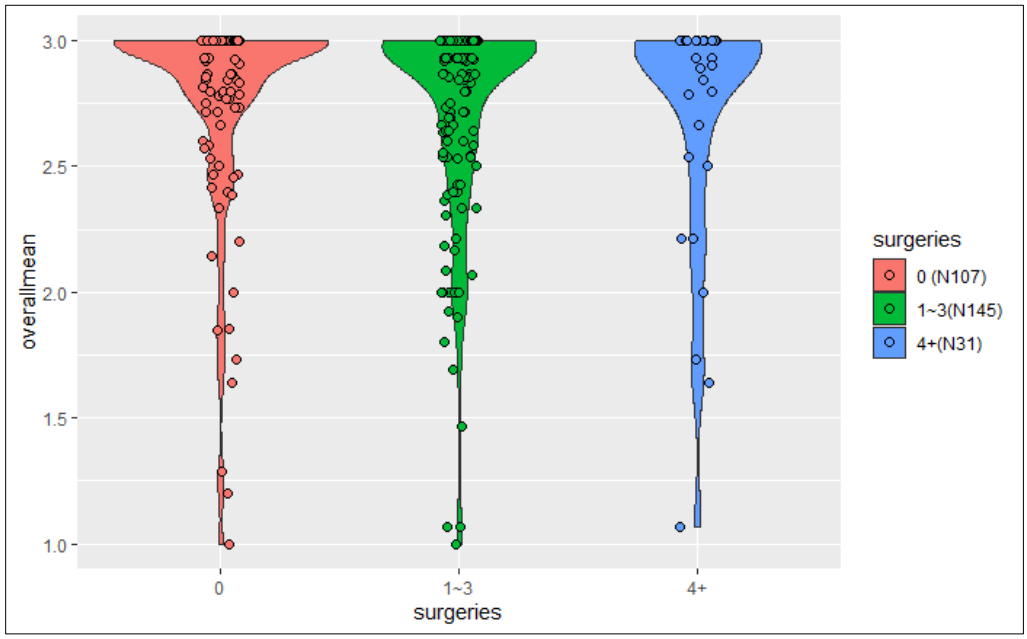
Full data tables including average responses by question may be found in Appendix D.

Figure 4. Average Survey Score by Self-Reported Education Level



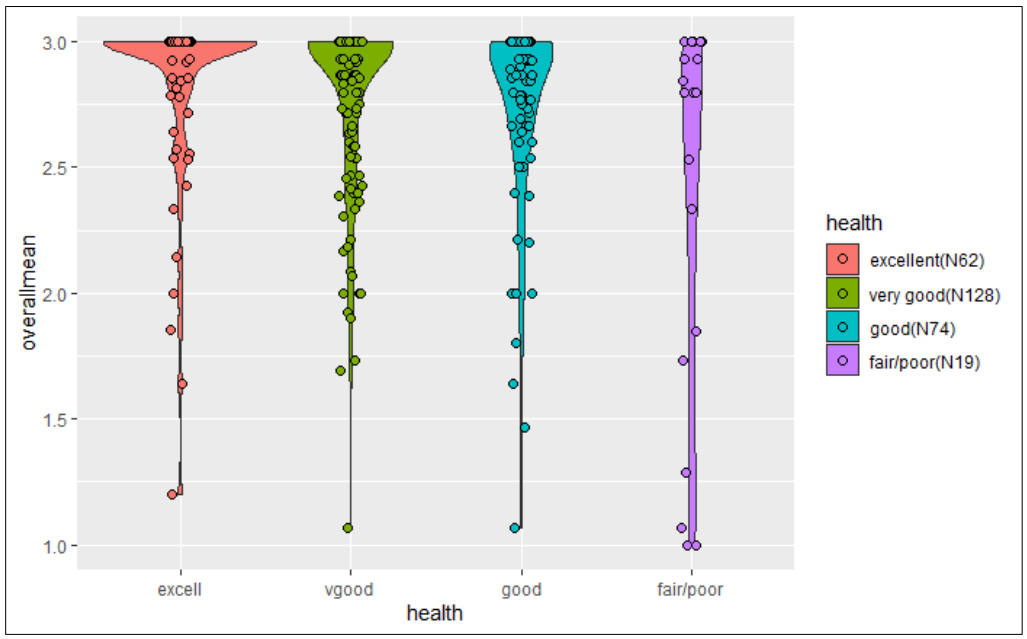
We did not observe a significant association between mean score and educational attainment (F = 0.45, p = 0.77) (Figure 4).

Figure 5. Average Survey Score by Self-Reported Number of Previous Surgeries in the Past Five Years



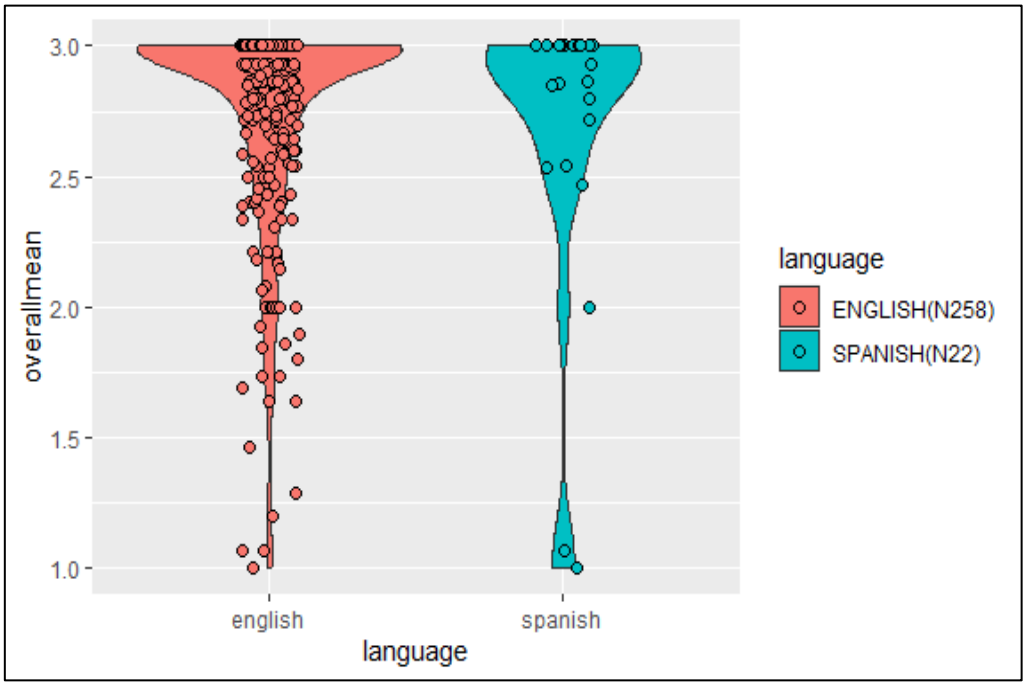
There is no significant difference in reported understanding based on the number of recent prior surgeries (F = 0.401, p = 0.67) (Figure 5).

Figure 6. Average Survey Score by Self-Reported Health Status



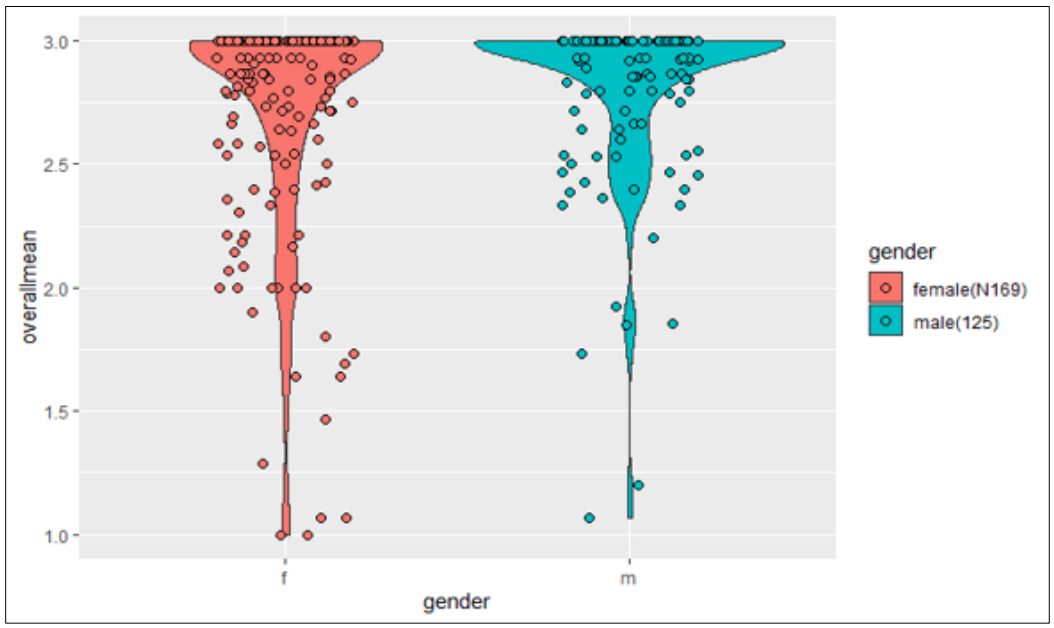
In general, patients with better self-reported health had better understanding of their instructions; this association was statistically significant ($F = 6.55$, $p < 0.001$) (Figure 6).

Figure 7. Average Survey Score by Self-Reported Preferred Language



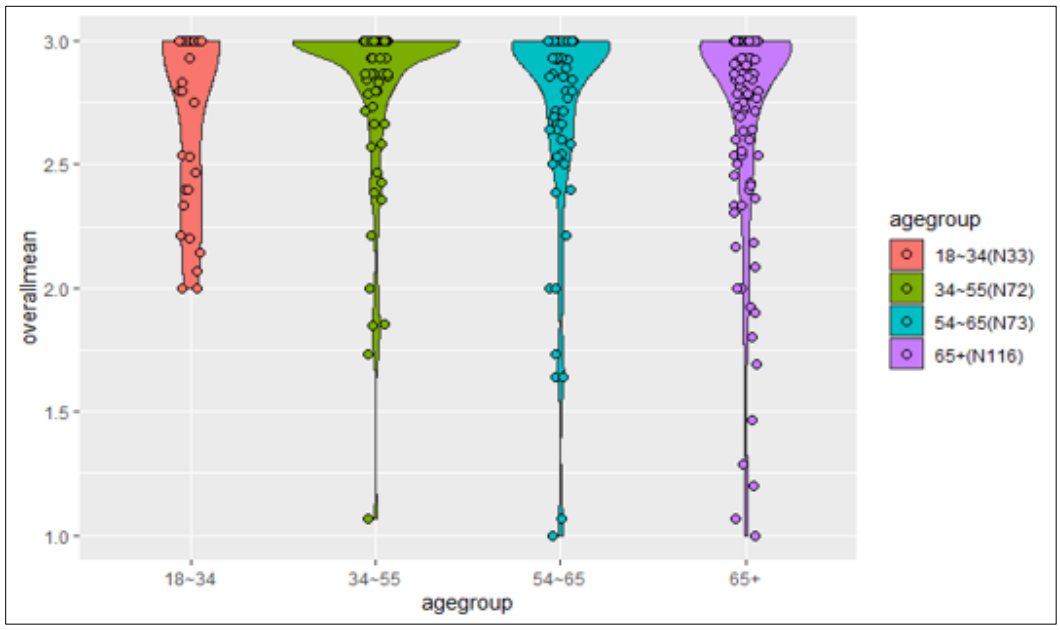
There is no significant difference in understanding based on preferred language ($F = 0.754$, $p = 0.39$) (Figure 7).

Figure 8. Average Survey Score by Self-Reported Gender



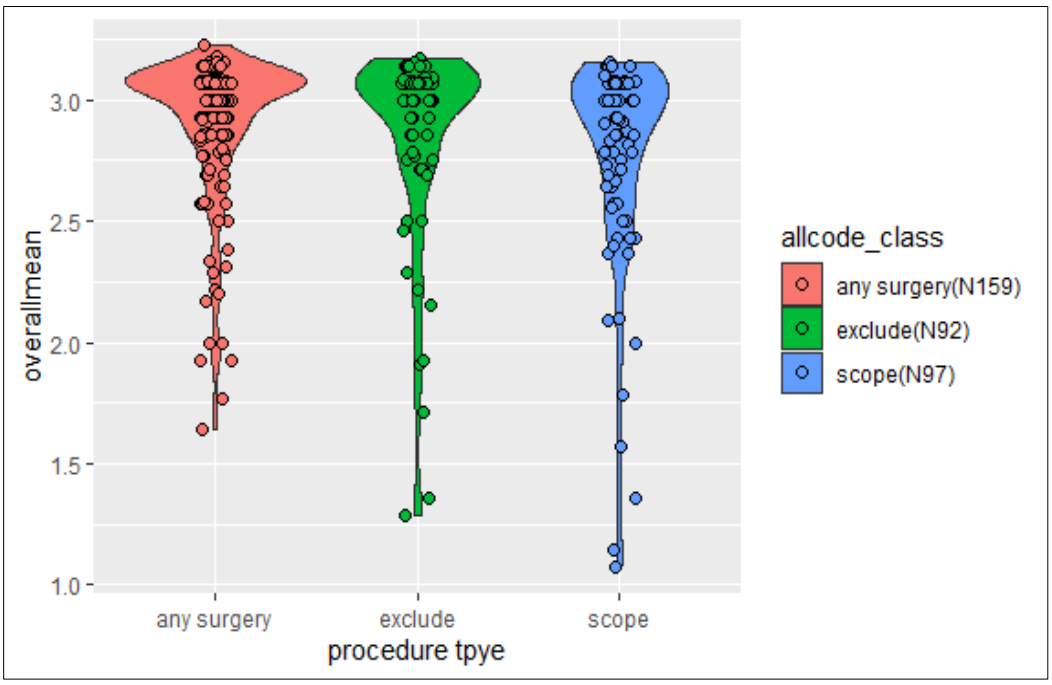
Male patients reported significantly higher mean overall survey scores than female patients (F = 4.07, p = 0.045) (Figure 8).

Figure 9. Average Survey Score by Age



There was no significant difference in mean survey scores by age (F = 0.803, p = 0.49) (Figure 9).

Figure 10. Average Survey Score by Procedure Type



There was no significant different in mean survey scores by procedure type (F = 0.75, p = 0.39) (Figure 10).

INTERITEM CORRELATIONS

To evaluate the internal consistency of the survey, we calculated the Inter-item correlations (IICs) for all questions, see Table D6. While there is some debate in the literature regarding the preferred values for IICs within each domain, generally accepted values fall between 0.3 to 0.7. IICs below 0.3 indicate questions that are poorly correlated and fail to measure the same construct and IICs above 0.7 signal questions that are repetitive. The IICs for the first pilot test ranged from 0.29 (between questions in the Daily Activities domain) to 0.73 (between questions within the General Understanding domain). The highest inter-item correlations are generally between questions within the General Understanding domain (0.64 to 0.73) and between questions within the Medications domain (0.59 to 0.71). The weakest inter-item correlations are those in the Daily Activities domain (0.29 to 0.44).

SURVEY IMPLEMENTATION

OVERVIEW

As described earlier, CORE conducted an initial pilot test of the survey. The first pilot was intended to be smaller and serve as an initial testing phase of the survey and the implementation approach. CORE is planning to conduct a second pilot test in the spring and summer of 2022 in at least 15 HOPDs. The public comment period will help inform any modifications CORE may make to the survey or implementation prior to the second pilot. We anticipate the survey will continue to be sent to patients electronically via email and text.

DESIGN

CORE is contracting with a survey vendor to pilot the surveys in the HOPDs. The format of the second pilot will be similar to the first pilot. However, expanding the pilot to a much larger number of HOPDs may necessitate the need to make changes to the preexisting process depending on the contracting requirements of each hospital.

RATIONALE

This second pilot will be conducted to allow for further item testing, exploration of the tool as a performance measure, risk adjustment finalization, validation, and measure specification exploration. This pilot is being conducted with a larger sample to accommodate the needed analyses to explore these aspects.

INPUT ON IMPLEMENTATION METHODS TO INFORM SECOND PILOT AND/OR FUTURE SURVEY IMPLEMENTATION

As noted in the Background section, CMS seeks to format this PRO-PM to minimize as much as possible the burden on providers and patients of implementing the measure. CMS is therefore exploring how to build on the growing use of FHIR standards, and the pending expansion of FHIR-formatted interoperable data that can be queried and transmitted through provider application program interfaces (APIs). CMS may be able to lower provider implementation burden through specifying the data elements for the measure in the FHIR standard, by developing open-source tooling that can query FHIR APIs to obtain the patient clinical, demographic, and contact information needed to identify patients eligible for the measure survey, and/or by structuring the measure specifications and software to best facilitate the transmission of the survey to patients.

We welcome comments on technical approaches that best minimize the burden on providers while supporting the collection of all the patient data necessary to calculate the measure.

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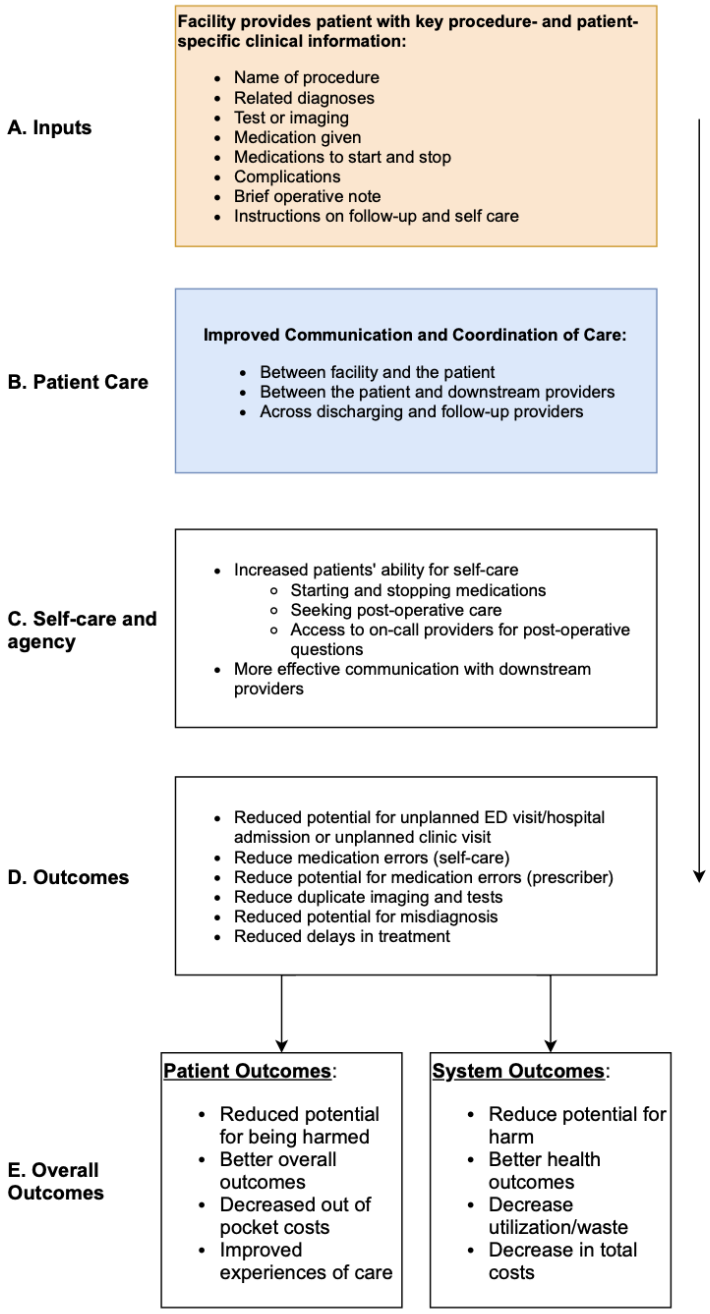
APPENDICES

APPENDIX A: LOGIC MODEL

Figure 11: Project Logic Model

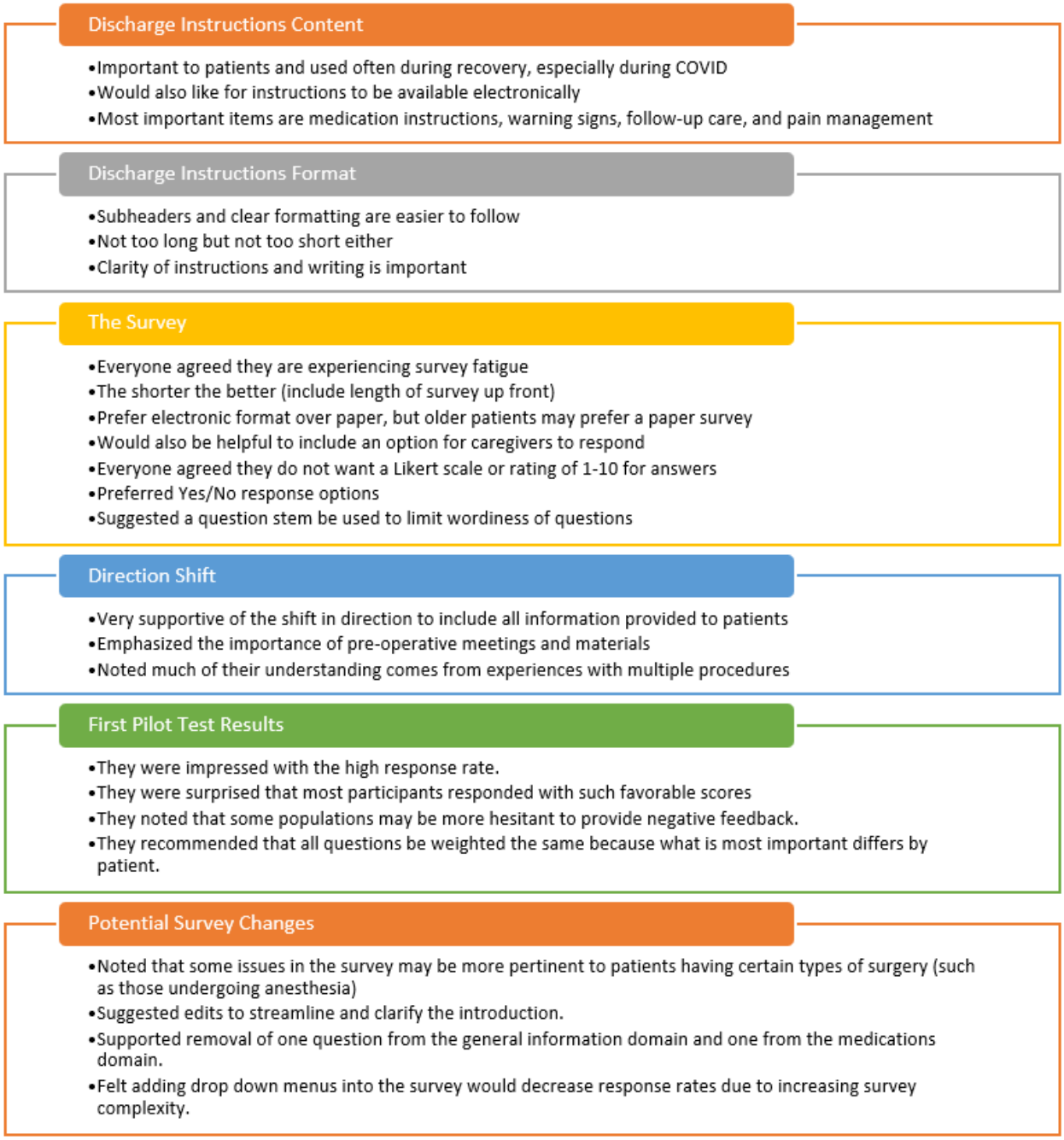


APPENDIX B: PATIENT WORKGROUP & TECHNICAL EXPERT PANEL INPUT

PATIENT WORKGROUP INPUT

CORE has held three Patient Workgroup (PWG) meetings thus far during measure development. Meetings focused on orienting patients to the concept and project updates as well as obtaining feedback on the topic, survey, pilot test results, and potential survey updates. Key takeaways from the PWG meetings can be found in Figure 12 below.

Figure 12: Summary of Patient Workgroup Feedback



TECHNICAL EXPERT PANEL INPUT

CORE has held three Technical Expert Panel (TEP) meetings during measure development. Meetings focused on orienting members to the concept and project updates as well as obtaining feedback on the topic, survey, pilot test results, and potential survey updates. Key takeaways from the TEP meetings can be found in Figure 13 below.

While this is a summary of some key points that emerged from the first three meetings, CORE summarized the TEP's input in a more detailed summary report; the TEP Summary Report is available for download at https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/MMS/TEP-Current-Panel as an accompaniment to this document.

Figure 13: Summary of Technical Expert Panel Feedback

Meeting 1

- TEP members generally agreed that the potential domains discussed were appropriate but felt the survey should mainly focus on patients' understanding of what to do during recovery from a surgery or procedure.
- TEP members generally felt it was important to reflect the quality of all information used by patients in the post-discharge period, not just the information included in "discharge instruction" documents.
- TEP members generally agreed the survey should be reasonably short and be sent to patients between 2-6 days after surgery.
- Some TEP members noted differences between hospital-based and ambulatory surgical centers and the overall variety of procedures within a facility or specialty as challenges for CORE to consider.

Meeting 2

- TEP members supported the shift to include all information provided, noting it presents a more holistic approach.
- TEP members recommended offering the survey in Spanish (in addition to English).
- Several TEP members noted that the questions seemed closely related and that responses might be very highly correlated.
- A few TEP members noted some questions may not be applicable to some patients and recommended allowing patients to skip the questions or respond, "not applicable."
- TEP members recommended interviewing patients to make sure their perception of each question matches CORE's intent.

Meeting 3

- TEP members appreciated the first pilot test results, commenting on patient characteristics including language, education, and by procedure type.
- TEP members generally expressed concern over patient feedback that they were sometimes not comfortable providing negative feedback on the survey
- Several TEP members agreed on the benefit of the survey results for providers and/or facilities to improve quality.
- Most TEP members appreciated the high level of correlation between survey questions within particular domains, and subsequently suggested only keeping questions in the survey that were clear and concise.
- Several TEP members suggested solutions to limit the cohort, including use of ICD-10 codes, clinical classification software, or use of anesthesia codes to best define major or minor surgeries, and scopes.

APPENDIX C: SURVEY INSTRUMENT (USED FOR FIRST PILOT IN TWO HOPDS)

INTRODUCTION

This is a short, multiple-choice question survey that should take you 5-7 minutes to finish.

You are getting this survey because you recently had a surgery/procedure. You should have been given information before and/or after your surgery/procedure about what to do during your recovery process. We would like to know if this information was clear and easy-to-follow. Your answers will help other patients like yourself be more informed about their recovery.

Neither your name nor any other identifying information will be shared with your provider if you decide to respond to this survey. This survey can be filled out by you or your caregiver.

MAIN SOURCE(S) OF INFORMATION

When answering the survey questions please think about **all the information** you were given about your surgery/procedure, from the day you decided to get your surgery/procedure until now.

Q.1 - Select **all** the sources of information you used/are using for your recovery:

- ☐ Instructions given **before** your surgery/procedure
- ☐ A conversation about your surgery/procedure **in the recovery room**
- ☐ Instructions given **when you were sent home** from your surgery/procedure
- ☐ A **follow-up** visit or phone call
- ☐ Other (family, friends, medical website, Google, message boards, etc.)
- ☐ None of the above

GENERAL INFORMATION

Q. 2 -The information you got about your recovery helped you:

- 2a. Understand what to expect
  - ☐ Yes
  - ☐ Somewhat
  - ☐ No
- 2b. Easily know what you needed to do each day
  - ☐ Yes
  - ☐ Somewhat
  - ☐ No
- 2c. Answer questions you may have had
  - ☐ Yes
  - ☐ Somewhat
  - ☐ No

INFORMATION WAS APPLICABLE TO ME

Q. 3 - The information you got about your recovery considered:

- 3a. Your health needs (any/all medical conditions, pain management, treatment preferences, etc.)
  - ☐ Yes
  - ☐ Somewhat
  - ☐ No
- 3b. Your personal situation (transportation needs, insurance coverage, financial status, etc.)
  - ☐ Yes
  - ☐ Somewhat
  - ☐ No

- 3c. Your home/community environment (presence of caregiver(s), obstacles like stairs or wheelchair accessibility, walkability of your neighborhood, etc.)
    - ☐ Yes
    - ☐ Somewhat
    - ☐ No

MEDICATIONS

Q.4 - How clear was the following information about your recovery:

- 4a. **When** to start and stop any medications
    - ☐ Very clear
    - ☐ Somewhat clear
    - ☐ Not clear
    - ☐ Does not apply
- 4b. **Why** you had to start or stop any medications
    - ☐ Very clear
    - ☐ Somewhat clear
    - ☐ Not clear
    - ☐ Does not apply
- 4c. Potential side effects/interactions of new medications
    - ☐ Very clear
    - ☐ Somewhat clear
    - ☐ Not clear
    - ☐ Does not apply

WARNING SIGNS OR SYMPTOMS

Q.5 - How clear was the following information about your recovery:

- 5a. What were expected and unexpected symptoms
    - ☐ Very clear
    - ☐ Somewhat clear
    - ☐ Not clear
    - ☐ Does not apply
- 5b. How and whom to contact in case of unexpected symptoms
    - ☐ Very clear
    - ☐ Somewhat clear
    - ☐ Not clear
    - ☐ Does not apply

DAILY ACTIVITIES

Q.6 – How clear was the following information about your recovery:

- 6a. Changes to your diet
    - ☐ Very clear
    - ☐ Somewhat clear
    - ☐ Not clear
    - ☐ Does not apply
- 6b. Changes to physical activities, including exercise

- ☐ Very clear
- ☐ Somewhat clear
- ☐ Not clear
- ☐ Does not apply

- 6c. When you could return to work
  - ☐ Very clear
  - ☐ Somewhat clear
  - ☐ Not clear
  - ☐ Does not apply
- 6d. When you could drive
  - ☐ Very clear
  - ☐ Somewhat clear
  - ☐ Not clear
  - ☐ Does not apply

ABOUT YOU

Q.7 - Are you the patient or a caregiver?

- ☐ Patient
- ☐ Caregiver

Q.8 - In the past 5 years how many surgeries/procedures have you had (not counting this one)?

- ☐ 0
- ☐ 1-3
- ☐ 4+

Q.9 - In general, how would you rate your overall health?

- ☐ Excellent
- ☐ Very good
- ☐ Good
- ☐ Fair
- ☐ Poor

Q.10 - What is the highest grade or level of school that you have completed?

- ☐ 8th grade or less
- ☐ Some high school, but did not graduate
- ☐ High school graduate or GED
- ☐ Some college or 2-year degree
- ☐ 4-year college graduate
- ☐ More than 4-year college degree

Q.11 - Which of the following do you identify as? **You can select more than one category**.

- ☐ American Indian or Alaska Native
- ☐ Asian
- ☐ Black or African American
- ☐ Hispanic or Latino
- ☐ Native Hawaiian or other Pacific Islander
- ☐ White or Caucasian
- ☐ Prefer not to answer

Q.12 - What language do you mainly speak at home?

- ☐ English
- ☐ Spanish
- ☐ Other

APPENDIX D: ADDITIONAL DATA TABLES

Table D1. Mean scores by facility

Question	HOPD #1	HOPD #2	Total
Q.2a	2.80	2.83	2.82
Q.2b	2.80	2.85	2.84
Q.2c	2.78	2.82	2.81
Q.3a	2.67	2.79	2.76
Q.3b	2.76	2.71	2.72
Q.3c	2.56	2.63	2.62
Q.4a	2.78	2.80	2.80
Q.4b	2.62	2.76	2.73
Q.4c	2.61	2.79	2.75
Q.5a	2.62	2.75	2.72
Q.5b	2.68	2.87	2.84
Q.6a	2.66	2.68	2.68
Q.6b	2.59	2.77	2.74
Q.6c	2.51	2.69	2.65
Q.6d	2.48	2.79	2.73
Overall	**2.66**	**2.77**	**2.75**

Table D2. Mean scores by overall self-reported health status

Question	Excellent (N=62)	Very Good (N=128)	Good (N=74)	Fair (N=17)	Poor (N=2)
Q.2a	2.84	2.86	2.84	2.53	2.00
Q.2b	2.89	2.89	2.80	2.53	2.00
Q.2c	2.90	2.86	2.74	2.47	2.00
Q.3a	2.87	2.77	2.76	2.47	2.00
Q.3b	2.84	2.69	2.76	2.47	2.00
Q.3c	2.74	2.53	2.76	2.29	2.00
Q.4a	2.89	2.86	2.73	2.29	3.00
Q.4b	2.76	2.77	2.71	2.41	3.00
Q.4c	2.81	2.81	2.70	2.35	3.00
Q.5a	2.78	2.75	2.71	2.41	2.00
Q.5b	2.84	2.92	2.80	2.41	2.00
Q.6a	2.81	2.66	2.66	2.47	2.00
Q.6b	2.84	2.80	2.60	2.44	3.00
Q.6c	2.76	2.76	2.46	2.31	3.00
Q.6d	2.77	2.82	2.63	2.38	3.00
Overall	**2.82**	**2.78**	**2.71**	**2.42**	**2.40**

Table D3. Mean scores by number of previous surgeries in past 5 years

Question	0(N=107)	1-3(N=145)	4+(N=31)
Q.2a	2.84	2.83	2.74
Q.2b	2.83	2.86	2.74
Q.2c	2.84	2.79	2.81
Q.3a	2.79	2.74	2.77
Q.3b	2.82	2.66	2.65
Q.3c	2.66	2.58	2.65
Q.4a	2.83	2.79	2.70
Q.4b	2.73	2.75	2.59
Q.4c	2.76	2.76	2.68
Q.5a	2.71	2.73	2.71
Q.5b	2.87	2.83	2.77
Q.6a	2.68	2.68	2.64
Q.6b	2.77	2.72	2.68
Q.6c	2.68	2.69	2.40
Q.6d	2.75	2.73	2.65
Overall	**2.77**	**2.74**	**2.68**

Table D4. Mean scores by highest grade education completed

Question	8th or less (N=5)	Some high school(N=14)	High school or GED (N=47)	Some college (N=93)	College (N=66)	More than college (N=58)
Q.2a	3.00	2.79	2.77	2.84	2.80	2.86
Q.2b	3.00	2.79	2.74	2.87	2.80	2.90
Q.2c	3.00	2.79	2.77	2.81	2.79	2.86
Q.3a	3.00	2.79	2.74	2.78	2.71	2.78
Q.3b	3.00	2.79	2.83	2.73	2.58	2.74
Q.3c	3.00	2.57	2.62	2.66	2.47	2.71
Q.4a	3.00	2.79	2.74	2.81	2.79	2.82
Q.4b	3.00	2.79	2.62	2.73	2.74	2.75
Q.4c	3.00	2.82	2.61	2.73	2.85	2.76
Q.5a	3.00	2.69	2.70	2.72	2.70	2.75
Q.5b	3.00	2.64	2.76	2.88	2.87	2.82
Q.6a	3.00	2.42	2.65	2.75	2.67	2.61
Q.6b	3.00	2.69	2.51	2.78	2.82	2.76
Q.6c	3.00	2.50	2.55	2.63	2.79	2.67
Q.6d	2.60	2.58	2.61	2.75	2.78	2.78
Overall	**2.97**	**2.69**	**2.68**	**2.76**	**2.74**	**2.77**

Table D5. Mean scores by preferred language

Question	English(N=198)	Spanish(N=22)	Other(N=3)
Q.2a	2.83	2.73	3.00
Q.2b	2.85	2.68	3.00
Q.2c	2.81	2.77	3.00
Q.3a	2.78	2.64	2.67
Q.3b	2.72	2.64	3.00
Q.3c	2.63	2.50	2.67
Q.4a	2.80	2.73	3.00
Q.4b	2.73	2.65	3.00
Q.4c	2.76	2.67	3.00
Q.5a	2.72	2.68	3.00
Q.5b	2.84	2.73	3.00
Q.6a	2.68	2.60	3.00
Q.6b	2.73	2.73	3.00
Q.6c	2.66	2.56	3.00
Q.6d	2.74	2.57	3.00
Overall	**2.75**	**2.66**	**2.96**

Table D6. Inter-item correlation coefficients

Variable	2a	2b	2c	3a	3b	3c	4a	4b	4c	5a	5b	6a	6b	6c	6d
Q.2a	.	0.73	0.68	0.63	0.43	0.45	0.46	0.34	0.33	0.55	0.35	0.2	0.5	0.26	0.36
Q.2b	0.73	.	0.64	0.55	0.37	0.43	0.41	0.38	0.31	0.46	0.43	0.14	0.43	0.23	0.33
Q.2c	0.68	0.64	.	0.6	0.47	0.48	0.48	0.37	0.33	0.47	0.43	0.13	0.55	0.22	0.37
Q.3a	0.63	0.55	0.6	.	0.54	0.58	0.58	0.47	0.43	0.63	0.48	0.19	0.54	0.31	0.42
Q.3b	0.43	0.37	0.47	0.54	.	0.63	0.38	0.41	0.25	0.57	0.35	0.22	0.4	0.24	0.37
Q.3c	0.45	0.43	0.48	0.58	0.63	.	0.36	0.46	0.33	0.48	0.37	0.2	0.47	0.3	0.35
Q.4a	0.46	0.41	0.48	0.58	0.38	0.36	.	0.59	0.61	0.5	0.45	0.27	0.48	0.28	0.3
Q.4b	0.34	0.38	0.37	0.47	0.41	0.46	0.59	.	0.71	0.48	0.44	0.37	0.47	0.35	0.29
Q.4c	0.33	0.31	0.33	0.43	0.25	0.33	0.61	0.71	.	0.42	0.45	0.35	0.47	0.36	0.31
Q.5a	0.55	0.46	0.47	0.63	0.57	0.48	0.5	0.48	0.42	.	0.54	0.26	0.48	0.22	0.35
Q.5b	0.35	0.43	0.43	0.48	0.35	0.37	0.45	0.44	0.45	0.54	.	0.27	0.39	0.23	0.3
Q.6a	0.2	0.14	0.13	0.19	0.22	0.2	0.27	0.37	0.35	0.26	0.27	.	0.29	0.42	0.36
Q.6b	0.5	0.43	0.55	0.54	0.4	0.47	0.48	0.47	0.47	0.48	0.39	0.29	.	0.44	0.43
Q.6c	0.26	0.23	0.22	0.31	0.24	0.3	0.28	0.35	0.36	0.22	0.23	0.42	0.44	.	0.42
Q.6d	0.36	0.33	0.37	0.42	0.37	0.35	0.3	0.29	0.31	0.35	0.3	0.36	0.43	0.42	.

APPENDIX E: CORE MEASURE DEVELOPMENT TEAM

Table E1. CORE Measure Development Team

Name	Team Role
Steven Spivack, PhD, MPH	Project Lead
Iman Simmonds, MD, MPH	Associate Research Scientist
Clarissa Myers, DPT, MPH	Project Coordinator
Kyle Bagshaw, MPH	Project Coordinator
Rachel Johnson-DeRycke, MPH	Patient & Family Engagement Expert
Leianna Dolce, BS	Research Associate
Rose Hu, MS	Analyst
Phylicia Porter, MPH, MSL	Contract Manager
Faseeha Altaf, MPH	Division Lead, Outpatient Research and Development
Elizabeth E. Drye, MD, MS	Senior Director
Zhenqiu Lin, PhD	Analytic Director
Ricardo Pietrobon, MD, PhD, MBA	Psychometric Consultant