

January 4, 2019

Transfer of Health Information and Care Preferences Quality Measures Pilot Test for Skilled Nursing Facilities (SNFs), Inpatient Rehabilitation Facilities (IRFs), Long-Term Care Hospitals (LTCHs), and Home Health Agencies (HHAs)

Deliverable 14

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RTI Project No. 0214077.001

CMS Contract No. HHSM-500-2013-13015I, HHSM-500-2013-13001I



TRANSFER OF HEALTH INFORMATION AND CARE PREFERENCES QUALITY
MEASURES PILOT TEST FOR SKILLED NURSING FACILITIES (SNFS), INPATIENT
REHABILITATION FACILITIES (IRFS), LONG-TERM CARE HOSPITALS (LTCHS), AND
HOME HEALTH AGENCIES (HHAS)

DELIVERABLE 14

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RTI International

CMS Contract No. HHSM-500- 2013-13015I

Task Order HHSM-500-T0001

Abt Associates

CMS Contract No. HHSM-500-2013-13001I

Task Order HHSM-500-T0002I

This project was funded by the Centers for Medicare & Medicaid Services under contract no. HHSM-500-2013-13015I and HHSM-500-2013-13001I. The statements contained in this report are solely those of the authors and do not necessarily reflect the views or policies of the Centers for Medicare & Medicaid Services. RTI assumes responsibility for the accuracy and completeness of the information contained in this report.

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LIST OF ACRONYMS AND SHORT FORMS

CMS	Centers for Medicare & Medicaid Services
EMR	Electronic Medical Record
HHA	Home Health Agency
HIE	Health Information Exchange
IMPACT Act	Improving Medicare Post-Acute Care Transformation Act of 2014
IRB	Institutional Review Board
IRF	Inpatient Rehabilitation Facility
IRF-PAI	Inpatient Rehabilitation Facility-Patient Assessment Instrument
LCDS	LTCH Care Data Set
LTCH	Long-Term Care Hospital
MDS	Minimum Data Set
OASIS	Outcome and Assessment Information Set
PAC	Post-Acute Care
PCP	Primary Care Physician
QM	Quality Measure
SNF	Skilled Nursing Facility
RTI	Research Triangle Institute
TEP	Technical Expert Panel
TOH	Transfer of Health Information and Care Preferences

SECTION 1. PILOT OVERVIEW

1.1 Pilot Test Overview

This report summarizes pilot testing conducted during the summer of 2018 of two quality measures related to the transfer of health information. **Information in this report is current as of August 15, 2018.**

1.1.1 Purpose & Legislative Authority

The Centers for Medicare & Medicaid Services (CMS) has contracted with RTI International (CMS Contract# HHSM-500- 2013-13015I) and Abt Associates (CMS Contract# HHSM-500-2013-13001I) to develop cross-setting transfer of health information and care preferences measures in order to meet the mandate of the Improving Post-Acute Care Transformation Act of 2014 (IMPACT Act) domain titled “Accurately communicating the existence of and providing for the transfer of health information and care preferences of an individual to the individual, family caregiver of the individual, and providers of services furnishing items and services to the individual when the individual transitions from a PAC provider to another applicable setting, including a different PAC provider, a hospital, a critical access hospital, or the home of the individual.” RTI International and Abt Associates are developing and testing two Transfer of Health Information and Care Preferences quality measures for Skilled Nursing Facilities (SNFs), Inpatient Rehabilitation Facilities (IRFs), Long-Term Care Hospitals (LTCHs), and Home Health Agencies (HHAs). Two measures were developed and tested: 1) a transfer of medication profile to the subsequent provider quality measure and 2) a transfer of medication profile to the patient/family/caregiver quality measure. These measures assess, respectively, the percent of patient or resident discharges or transfers with an assessment indicating a medication profile was provided to the subsequent provider at patient discharge or transfer to another provider and the percent of patient or resident discharges with an assessment indicating a medication profile was provided to the patient, family and/or caregiver at patient discharge to a home or community setting. The purpose of the pilot test was to test these two quality measures (QMs), including reliability and feasibility, across post-acute care settings. Results from this pilot test will inform refinements to the measures under development.

1.2 Pilot Test Objectives

The primary objective of the pilot test was to collect patient/resident quantitative data using the data elements, also sometimes referred to in this report as assessment items, needed to calculate the quality measures as well as qualitative data related to feasibility and face validity. The main goals of the pilot test were to examine inter-rater reliability, face validity, completion time estimates, feasibility, and the overall experience of collecting and submitting data for these quality measures and the related standardized patient assessment data elements described below.

1.3 Measures Overview

The Transfer of Health Information includes two process quality measures:

1. Transfer of Medication Profile to the Subsequent Provider
2. Transfer of Medication Profile to the Patient/Family/Caregiver

1.3.1 Provider Measure

The transfer of medication profile to provider quality measure, henceforth referred to as QM1, estimates the percent of patient or resident discharge/transfer assessments indicating that the patient's medication profile was sent to the subsequent provider. As shown in Appendix A, QM1 data element Q1A asks "At the time of discharge/transfer to another provider, did your facility/agency provide the patient's/resident's current medication profile to the subsequent provider?" The denominator for QM1 is the total number patient/resident stays ending in discharge/transfer to a short-term general hospital, a SNF, intermediate care, home under care of an organized home health service organization or hospice, hospice in an institutional facility, a swing bed, an IRF, a LTCH, a Medicaid nursing facility, an inpatient psychiatric facility, or a critical access hospital. The numerator is the number of stays for which the assessment indicated that the facility/agency provided a current reconciled medication list to the subsequent provider.

1.3.2 Patient Measure

The transfer of medication profile to patient quality measure, henceforth referred to as QM2, estimates the percent of patient or resident discharge assessments indicating that the patient's medication profile was provided to the patient, family and/or caregiver at discharge to a home or community setting. As shown in Appendix A, QM2 data element Q2A asks "At the time of discharge/transfer, did your facility/agency provide the patient's/resident's current medication profile to the patient, family and/or caregiver?" The denominator for QM2 is the total number patient/resident stays ending in discharge to a private home/ apartment (apt.), board/care, assisted living, group home, transitional living or home under the care of an organized home health service organization or hospice. The numerator is the number of stays for which the assessment indicated that the facility/agency provided a current reconciled medication list to the patient, family and/or caregiver at discharge.

1.3.3 Route of Transmission Data Elements

We also tested data collection on two related standardized patient assessment data elements (SPADEs). These standardized data elements are not used in the measure calculation – they collect structural information pertaining to the routes of information transfer being used by PAC providers. Q1B asks the route(s) of transmission by which the information was provided to the subsequent provider, including electronic health record (EHR), health information organization (HIO), verbal or paper-based. The second standardized data element, Q2B collects information on the route(s) of transmission to the patient/family/caregiver. Q2B asks the routes of transmission by which the information was provided, including electronic health record (EHR), health information organization (HIO), verbal or paper-based.

SECTION 2. PILOT TEST METHODS

2.1 Site Recruitment and Selection Process

Pilot test site recruitment began April 2018. Emails were sent to those sites that participated in our previous pilot test in the summer of 2017 requesting their participation in this pilot test. Many of the emails were followed up with additional emails and with telephone calls or messages. Sites that participated in the summer 2017 pilot test were selected purposively so that they varied on several key characteristics across the four settings: geographic location (10 CMS regions), size (small, medium and large), ownership type (for-profit and not-for-profit), and whether they use an electronic medical record (EMR). Within each setting, we sought to include sites that represented multiple geographic locations, at least one small, medium and large facility/agency, some that were for profit and some not-for-profit and some that currently used EMRs. Of the 32 sites that participated in the 2017 pilot test, 15 agreed to participate in the 2018 pilot test. Emails were also sent to 23 additional sites that were identified based on their previous interest in pilot testing (but not selected for the 2017 pilot testing) or from referrals from provider organizations.

In April and May 2018, telephone discussions were conducted with ten potential new sites, again selected purposely as described above, to explain the pilot test procedures and expectations and ascertain sites' level of interest and ability to participate. All ten sites agreed to participate. Pilot sites were not provided with any incentives to participate. The characteristics of pilot sites, which included seven HHAs, five IRFs, six LTCHs, and six SNFs, are detailed in Section 3.1.

2.2 Site Training

Pilot site training was conducted by teleconference by RTI and Abt in June 2018 and included five training dates. Each training session lasted 75 to 90 minutes. Before the training, participating sites were provided with a training manual and guidance document explaining how to complete each assessment item. During the training, participants [primarily registered nurses (RNs)] from each site were walked through the pilot test procedures step-by-step. Training participants were instructed in how to complete each assessment item, record the time to complete items, and track the assessments that were completed and submitted via the pilot testing secure website. The pilot test manual included screen shots of the data collection website data collection forms. Participants were provided with instructions for accessing the website and entering data. Questions received during and shortly after the pilot test training were compiled and responses were distributed to all pilot test sites just before data collection began.

2.2.1 Check-In Calls

Within two weeks of beginning data collection, most sites participated in a check-in call. The purpose of these calls was to answer any questions that sites had once data collection activities began. RTI pilot test staff also reviewed pilot data entered by the site for one to three patients/residents before the call to identify any data that seemed incorrect or anomalous. The purpose of these calls was to ensure that sites were correctly following pilot test procedures and

understood and were completing assessment items in accordance with the guidance provided. The questions and answers were recirculated to all pilot participants along with assessment coding reminders to address common coding issues identified. Sites were instructed to contact the pilot test team by email or telephone if they had additional questions.

2.3 Data Collection

2.3.1 Data Collection Methods

Participating sites were given the goal of collecting data for 15-20 patients/residents at discharge or transfer using the assessment forms shown in Appendix B, including the QM data elements and SPADEs. Data collectors were also asked to report the amount of time taken to collect data for each assessment item. Sites were asked to select two data collectors who would complete the assessments independently; some sites used more than two (and no more than four) data collectors. Most of the data collectors were RNs with positions in quality improvement or medical records, but a few were therapists or facility/agency administrators. Each patient/resident assessment was completed by two independent data collectors. The paired data allowed for analysis of inter-rater reliability. Each site was also asked to assign a data collection coordinator. This person, who in some cases was also a data collector, kept a log of the participating patients/residents and the completed assessments. This log was for internal use by the sites and was not shared with RTI or Abt. Data collection began the third week in June 2018 and ended the first week of August 2018, lasting for approximately 50 days. The RTI IRB confirmed that this research is exempt.

2.3.2 Data Collection Website

RTI created a secure data collection website for the submission of pilot test data. Each participating site was provided with a unique username and password for data entry. Use of a data collection website helped ensure submission of high-quality data because the website data entry system included checks to ensure that data were not entered more than once for each patient by each data collector. The website also included automated skip patterns. The data collectors did not need to determine intended skip patterns and, in some cases, the automated skip patterns prevented errors in entry of data. The data collection website was available to the participating sites during the entire data collection period and is now closed.

2.3.3 Debriefing Interviews

After the conclusion of the data collection period in August 2018, participating sites took part in a debriefing telephone interview. The purpose of the interview was to gather in-depth qualitative information about the participant sites' experience collecting data, the processes they used, and their impressions of the data elements and related QMs (see Appendix D for topics covered). Individual sites participated in interviews and included the data collection coordinator and, often, the data collectors. The discussion was facilitated by RTI pilot test staff using a semi-structured interview protocol. Abt staff also participated in the interviews with HHAs. An additional RTI staff member was on each call to take notes and the calls were recorded as back-up and supplement for detailed note-taking.

2.3.4 Data Security

As a Business Associate to CMS on this contract, RTI followed Health Insurance Portability and Accountability Act (HIPAA) requirements for protecting the privacy of patients and their protected health information (PHI). No PHI were provided to RTI or Abt for this pilot study as all data were de-identified, in compliance with the regulations. Facilities submitted the de-identified data on a secure website, and RTI maintained the data on RTI's Enhanced Security Network. This network meets the Federal Information Processing Standards (FIPS) Moderate level for data security and confidentiality.

2.4 Data Analysis

2.4.1 Quantitative Analyses

We conducted analyses of inter-rater reliability as well as descriptive statistics for each data element and the completion time estimates. The tests of inter-rater reliability allowed us to determine the level of agreement between the two independent data collectors across assessments, sites and settings.

2.4.2 Qualitative Analyses

Debriefing interview notes were entered into a form created for note-taking and data analysis and located on the data collection website. This allowed the data to be extracted into an Excel spreadsheet where closed ended questions were coded as 1=Yes, 2=No, 3=Don't Know, and 0 = missing or no response. Open ended question responses were also extracted into the Excel database and analyzed for consistencies and commonalities in responses. The unit of analysis used was the site, but there were a few instances where there were different responses between the participants at the site and those were coded separately.

As part of our measure development work, qualitative interviews with recent PAC patients and caregivers of recent PAC patients were also conducted. Details about the methods and results of these interviews can be found in Appendix E.

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**SECTION 3.
PILOT TEST FINDINGS**

3.1 Pilot Site Characteristics

Of the 25 sites that originally agreed to participate in the pilot test, 24 submitted data and provided their current facility characteristic data. The 24 sites consisted of seven HHAs, five IRFs, six LTCHs, and six SNFs. Characteristics of the participating sites are shown in Table 1 below. As discussed in Section 2.1, 14 sites participated in the 2017 pilot test and ten new pilot sites were recruited based on previous interest in pilot testing or from referrals from provider organizations.

**Table 1.
Characteristics of Participating Sites**

Variables	Across All Sites	By Setting			
		HHA (n=7)	IRF (n=5)	LTCH (n=6)	SNF (n=6)
<i>Setting Type</i>	Percent (%)				
Hospital or Facility Based	41.7	42.9	40.0	33.3	50.0
Freestanding	58.3	57.1	60.0	66.7	50.0
<i>Chain/Independent Status</i>	Percent (%)				
Independently Owned	45.8	57.1	20.0	50.0	50.0
Part of a chain or has multi CCNs	54.2	42.9	80.0	50.0	50.0
<i>CMS Region *</i>	Percent (%)				
Region 1	16.7	14.3	20.0	16.7	16.7
Region 2	16.7	28.6	20.0	0.0	16.7
Region 3	12.5	50.0	20.0	0.0	16.7
Region 4	29.2	28.6	0.0	66.7	16.7
Region 5	4.2	0.0	0.0	0.0	16.7
Region 6	8.3	14.3	0.0	16.7	0.0
Region 7	8.3	0.0	20.0	0.0	16.7
Region 8	0.0	0.0	0.0	0.0	0.0
Region 9	4.2	0.0	20.0	0.0	0.0
Region 10	0.0	0.0	0.0	0.0	0.0

(continued)

**Table 1. (continued)
Characteristics of Participating Sites**

Variables	Across All Sites	By Setting			
		HHA (n=7)	IRF (n=5)	LTCH (n=6)	SNF (n=6)
<i>Facility Statistics</i>	Average				
Daily Census	—	581.4	39.0	49.4	24.0
Average Number of Beds **	59.3	N/A	54.8	78.7	43.7
Average Length of Stay	—	46.0	13.0	28.6	19.9
<i>Profit/Not For Profit Status</i>	Percent (%)				
For Profit, Publicly Traded	8.3	0.0	0.0	16.7	16.7
For Profit, Not Publicly Traded	20.8	14.3	40.0	16.7	16.7
Government Entity	4.2	0.0	0.0	0.0	16.7
Not for Profit	66.7	85.7	60.0	66.7	50.0
<i>Use EHR</i>					
Yes	79.2	100.0	60.0	83.3	66.7
Partially	12.5	0.0	20.0	0.0	33.3
No	8.3	0.0	20.0	16.7	0.0
<i>Assessments Submitted</i>	801	245	166	205	185

* Region 1: CT, ME, MA, NH, RI, VT; Region 2: PR, VI, NY, NJ; Region 3: MD, DC, DE, WV, VA, PA; Region 4: NC, SC, TN, FL, GA, AL, KY, MS; Region 5: MI, MN, OH, IL, IN, WI; Region 6: TX, LA, AR, OK, NM; Region 7: MO, KS, IA, NE; Region 8: ND, UT, SD, WY, CO, MT; Region 9: NV, AZ, CA, HI, AS, Pacific Territories; Region 10: WA, AK, ID, OR

** SNF Based on number of dedicated short term beds, not total certified NF beds

3.2 Assessments Submitted

We received 801 assessments from the 24 participating sites, with a mean of 16 patients per site. See Table 1 for the number of assessments submitted in each setting. For patients who were discharged from their PAC setting to home with home health or hospice, data collectors completed both QM1 and QM2 as well as the related route of transmission SPADEs. Because some assessments included data for both the provider and patient measures, this resulted in 241 pairs of assessments (i.e., completed by each of the two data collectors) for QM1, including the route SPADE, and 266 pairs of assessments for QM2, including the route SPADE. The few assessments that were not paired were dropped from the inter-rater reliability analyses but included in descriptive statistics.

3.3 QM Inter-rater Reliability

The paired data were used to determine inter-rater reliability, or the proportion of the time that the two independent data collectors agreed in their responses to the data elements. As shown in **Table 2**, inter-rater reliability was generally high across both the provider and patient QMs. Inter-rater reliability was 86.7% for QM1 and 93.2% for QM2.

Table 2.
Inter-rater Agreement on QM Data Elements

Assessment Item	Inter-rater Agreement (%)
QM1	86.7
QM2	93.2

Qualitative data from the debriefing interviews reinforced the findings related to the high inter-rater reliability. Participating sites reported that the training and the guidance for completing the items was clear. When asked if their data collectors used the same process to collect the assessment data, most sites across all settings (N=20) said both data collectors used the same process.

3.4 Quality Measure (QM) Scores

The pilot test data collection coding guidance for the provider and patient quality measures under development (current as of August 15, 2018) required that all elements listed in Appendix C be provided to the provider or patient in order to code “yes” that a medication profile had been provided. The average score for QM1 across all sites was 73% and the average score for QM2 across all sites was 80.8%. However, as shown in Figures 1 and 2, there were differences across settings in average QM scores for both measures. IRFs had the lowest average scores on both measures, while SNFs had the highest average scores on both measures.

Figure 1. Average QM1 (Transfer to Provider) Score by Setting

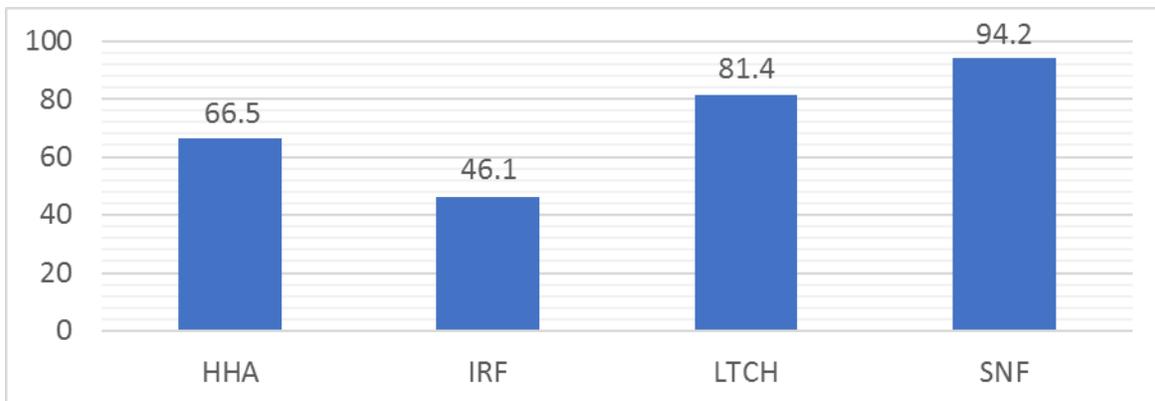
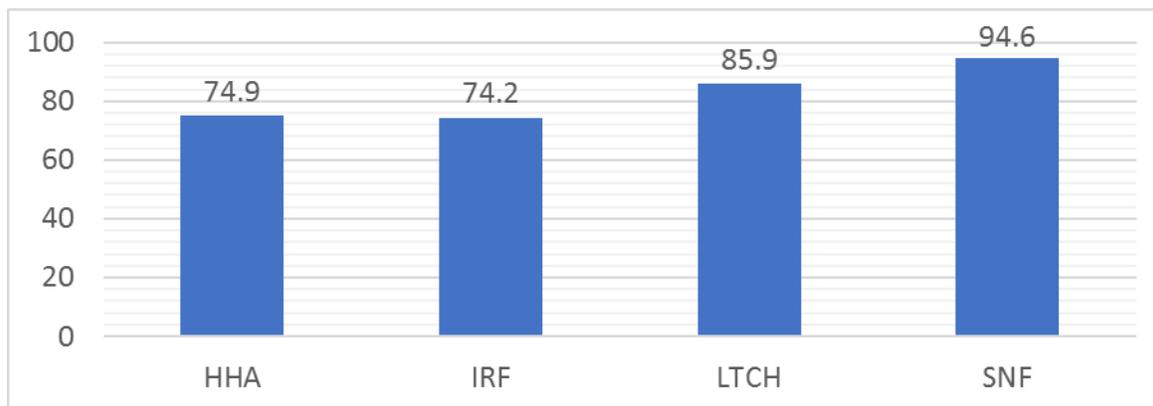


Figure 2.
Average QM2 (Transfer to Patient) Score by Setting



At the time of pilot testing, data collection coding guidance for the quality measures under development (current as of August 15, 2018) required that all elements listed in Appendix C be provided to the provider or patient in order to code “yes” that a medication profile had been provided. During the debriefing interviews, several sites reported that their EHR systems do not include the medication indication or purpose on the medication list. Almost all IRFs reported that lack of documentation for the medication purpose or indication in the medical chart was a reason when coding “no” for the QMs. One IRF commented that a challenge with obtaining the medication indication is that it is usually captured in the physician notes and these are not transferred to the part of the chart other staff can access, making confirmation of the information difficult. A few sites commented that the medication indication would only be documented if it was a new medication prescribed during the PAC stay/episode. One IRF said that the medication indications would only be documented for a PRN (pro re nata or taken as needed) medication, a newly prescribed antibiotic, or a medication being used for an alternate (i.e., off-label) purpose. Missing purpose or indications did not only affect IRFs – nine of the sites across settings reported that their systems do not typically document medication indication or purpose in the medication information transferred.

In addition, a few IRFs and other sites also reported that they coded “no” that the medication profile was not transferred when their systems could not confirm whether the medication profile was successfully transferred to the next provider. This occurred, for example, when data collectors found an error message related to fax transmission and were unsure if the person who had originally attempted the fax had tried again. It was not necessary, for the pilot testing, to confirm that the information had been received by the subsequent provider. Reasons were similar for coding “no” for QM2.

3.4.1 Pilot Site Opinions of QM1 Transfer to Provider

When asked about the utility of QM1, more than half (n=15) of the sites felt that QM1 could distinguish facilities or agencies with higher quality medication information transfer from those with lower-quality medication information transfer at discharge or transfer. Several of these sites responded to this question from the perspective that failure to send a medication

profile reflected poor information transfer. Fewer (n=6) sites thought that the measure reflected overall quality. The most common reason given for why sites (n=4) thought the measure would distinguish high versus low quality facilities or agencies was that it would be an indication of improved care coordination. A few sites (n=6) disagreed with QM1 as a good reflection of overall quality; four additional sites were undecided about the QM's relation to overall quality. Of the six sites that disagreed, the most common opinion was that the measure was not a reflection of their site's quality because although they provide high quality and comprehensive medication information, they did not provide all items required to meet QM1 as indicated in the coding guidance for the pilot test. For the purposes of this pilot test, failure to transfer just one type of information (e.g., medication indication) would not meet the measure numerator criteria. Another reason was that several of the data elements in the medication profile guidance, at the time of the pilot testing, were discretionary and relied on clinical judgement to determine if applicable.

3.4.2 Pilot Site Opinions of QM2 Transfer to Patient

The sites were also asked for their opinions about QM2. More than half of the sites, (n=15), felt that QM2 would distinguish facilities or agencies with higher quality medication information transfer to the patient, family or caregiver from those with lower-quality medication information transfer at discharge. Most sites had opinions similar to those they had about QM1. Seven of the sites stated this measure would not be a good indicator of quality while three sites stated they were undecided about this. Of the seven sites that said no, the reasoning was similar to the opinions stated for QM1 - that while they provide comprehensive medication information at discharge and feel that they provide excellent quality of care, they do not usually provide all of the information listed in the guidance used for pilot testing.

3.4.3 Pilot Site Opinions of Importance of Medication Profile Information to Transfer

The sites were asked which of the data elements in the medication profile guidance they considered most important to transfer. Similar responses were received for the information to transfer to the provider and to the patient. Four sites stated that all of the information was important. Information stated as important by at least half of the sites were patient name, date of birth, patient active diagnosis, known medication or other allergies, known drug sensitivities and reactions, medication name and strength, dose, route of medication administration, frequency or timing, any special instructions, and any held medications. Data elements in the medication profile guidance reported as important by a third or more of sites were primary practitioner and purpose or indication. The data elements in the medication profile guidance identified least frequently as important, or called out as least important, were patient's ability to self-administer medication, and the discretionary items of height, weight, preferred language, last dose administered, final dose, and relevant lab results.

3.5 Route of Transmission SPADEs

As discussed above (and shown in Appendix A), data elements Q1B and Q2B are SPADEs pertaining to how sites provided the medication profile to providers and to patients. For each transfer of a medication profile to the provider, sites were asked to report how information was provided to the subsequent provider. For each transfer of a medication profile to the patient,

sites were asked to report how information was shared with the patient, family or caregiver. Sites could report more than one route of transmission for each assessment and routes included EHR, HIO, verbal, or paper-based.

3.5.1 SPADE Inter-Rater Reliability

Paired data were used to determine inter-rater reliability for the route of transmission SPADEs. For the route of transmission items, the percent agreement indicates the proportion of the time the two coders agreed about whether or not that route was used. It does not indicate whether they selected the exact same combination of routes used when multiple routes were selected. As shown in *Table X*, inter-rater reliability for the route data elements was generally high ranging from 87.8% to 98.2%.

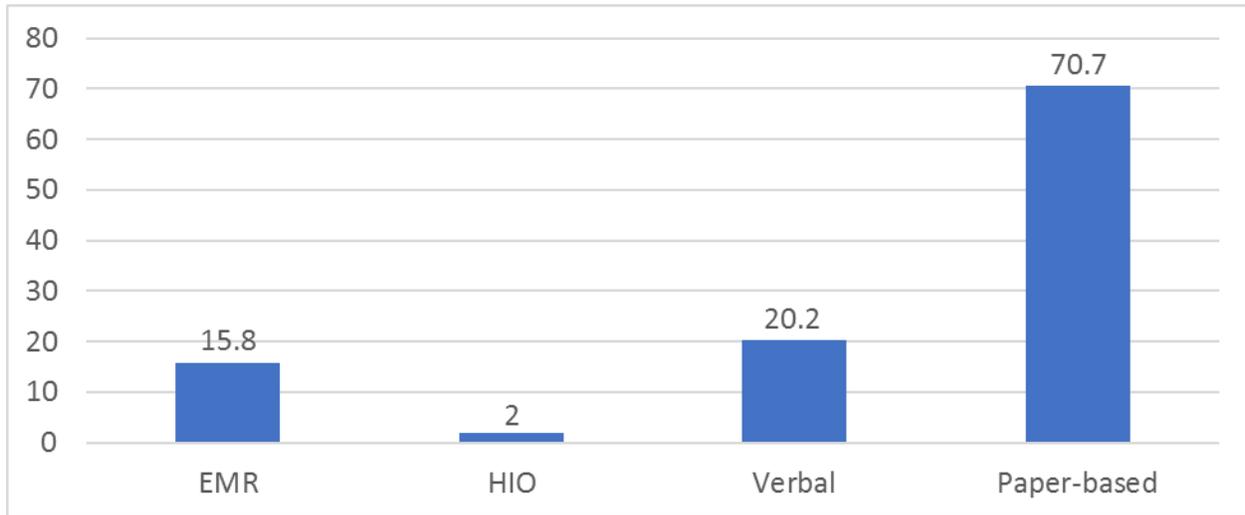
Table 3.
Inter-rater Agreement on Route of Transmission SPADEs

Assessment Item	Inter-rater Agreement (%)
Q1B Routes:	
Electronic Health Record	92.4
Health Information Organization	97.5
Verbal	88.8
Paper-base	87.8
Q2B Routes:	
Electronic Health Record	95.9
Health Information Organization	98.2
Verbal	90.1
Paper-based	90.9

3.5.2 Route of Transmission to Provider

As shown in *Figure 3*, the most common route of transmission to the provider was paper-based, with over 70% of assessments reporting this route when QM1 was coded “yes,” that a medication profile was provided to the next provider. Verbal transmission was also reported on over 20% of assessments. The use of EHR was reported on about 15% of assessments when QM1 was coded “yes.” Sites often provided information by more than one route; assessments indicated that more than one route was used to send the medication profile to the subsequent provider 35% of the time.

Figure 3.
Proportion of Discharge/Transfer Assessments by Route of Transmission to Provider



Identifying the route of transmission was not a problem for most sites (n=18). Although data collectors at six sites indicated they had initial difficulty determining the route of transfer to the subsequent provider, most were able to learn from other knowledgeable staff about how they should code this item. For example, data collectors from four IRFs determined that medication profile information would only be sent by EHR if the subsequent provider was in their health system, otherwise it was sent by fax. One data collector stated there was initial confusion if their LTCH used an HIO to send discharge information; they were able to determine that the HIO was only used for provider referrals.

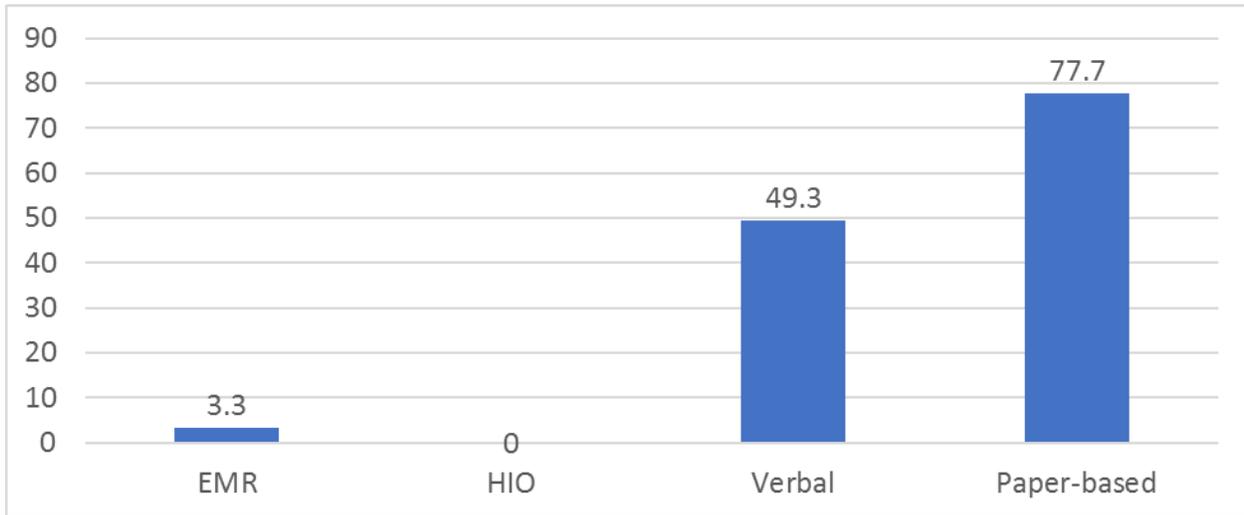
During the check-in calls and debriefing interviews, it was determined that almost all of the small number of assessments with HIO coded as the route were incorrectly coded as such, due to lack of clarity as to what this route was. This was usually early in the data collection.

3.5.3 Route of Transmission to Patient

As shown in Figure 4, the most common route of transmission to the patient was paper-based. Over 75% of patient assessments reported this route when QM2 was coded “yes,” that a medication profile was provided to the patient. Verbal transmission was reported on almost 50% of assessments when QM2 was coded “yes” and EHR was reported on about 3% of these assessments. More than one route was used to provide the medication profile to the patient 58% of the time, most commonly when the medication profile was provided both verbally and paper-based (54% of assessments).

Debriefing interviews confirmed this; almost all providers reported that medication profile information was given in a paper-based discharge packet to the patient or caregiver. Of note, verbal route may not have been selected by providers as often as this was done in practice because verbal reports are typically not documented in the medical chart and therefore could not be confirmed for documentation purposes.

Figure 4.
Proportion of Discharge Assessments by Route of Transmission to Patient



3.5.4 Pilot Site Opinions on Publicly Reporting Route of Transmission

Sites were asked for their opinions about whether consumers would find useful, for selecting a PAC facility/agency, the route of transmission of information to providers and to patients if this information were publicly available (e.g., from a Compare website). Almost half of the sites (n = 11), did not feel that this information would be helpful for selecting a PAC facility/agency, while another 10 were unsure or did not know. Three sites felt the information would be useful. The most common reasons sites reported that this information would not be useful is that facility/agency reputation, nursing ratio, cleanliness, and location are the types of information consumers use for decision-making and that transferring information is considered a standard of practice, that providers are “on top of this,” and it is not reflective of the quality of care.

3.6 Time Estimates to Complete Data Elements

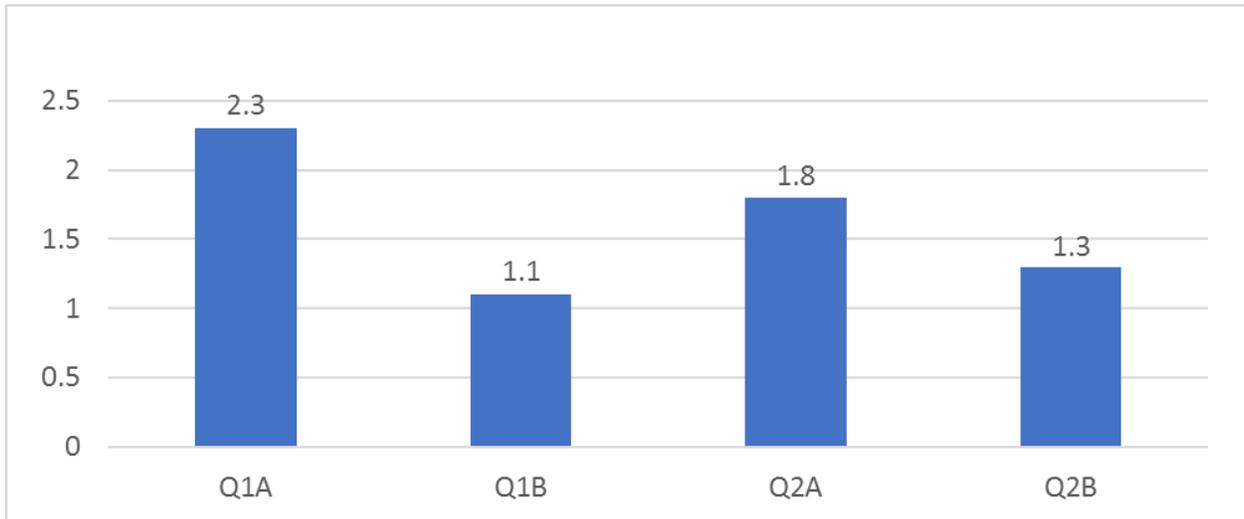
Data collectors were asked to report the amount of time taken to collect data for each data element. The questions regarding staff data collection time came immediately after each data element so that data collectors did not have to rely on recall. See Appendix A for the time estimate questions.

In addition to the time to complete the data elements, the pilot test sites estimated that the initial up-front time to prepare for data collection, including reviewing and ensuring understanding of the guidance by the data collectors, and developing any data collection tools ranged from a half hour to five hours, and averaged two and a half hours per site.

3.6.1 Time Estimates to Complete QMs and SPADEs

On average, QM1 took 2.3 minutes to complete and the provider route of transmission, data element Q1B, took 1.1 minute to complete. QM2 took, on average, 1.8 minutes to complete and the patient route of transmission question, Q2B, took 1.3 minutes to complete on average.

Figure 5.
Average Time to Complete the Data Elements in Minutes

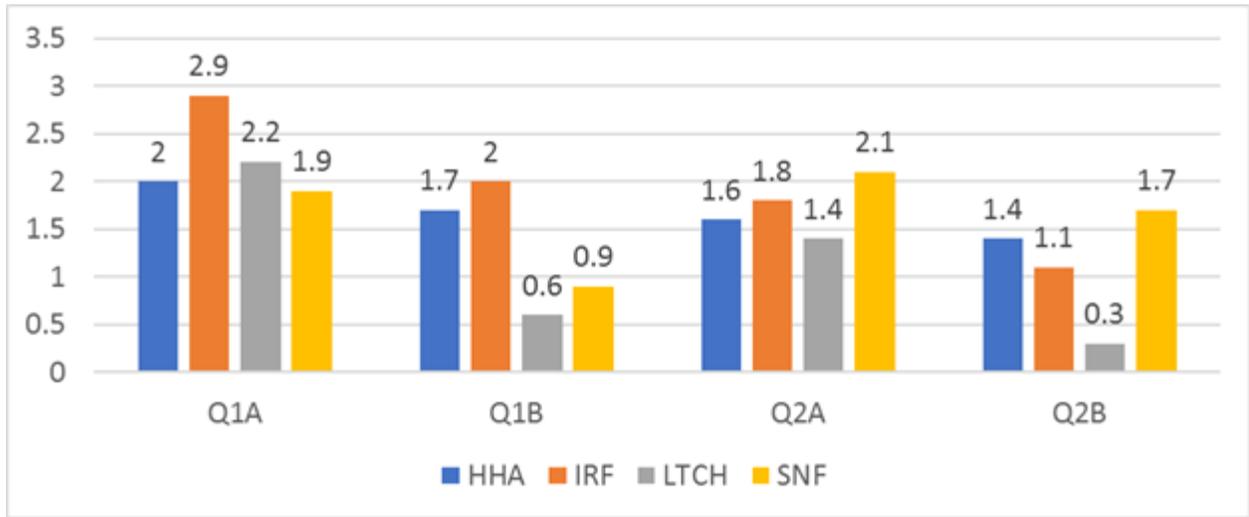


3.6.2 Differences Between Settings

We conducted additional analyses to examine differences between settings in the average time to complete the provider and patient data elements. As shown in Figure 6 below, there were not consistent differences in the time to complete the four data elements across settings, with IRFs reporting a longer average time to complete most, but not all, data elements.

Overall, IRFs (n=5) and HHAs (n=6) had the most comments about variations in time to complete the items. The most common responses when asked during the debriefing interviews about what contributed to longer time estimates were twofold. First, sites indicated that they may spend longer times reviewing some charts because of longer patient medical histories and to verify medication profile information using the chart. Two sites commented that time estimates typically shortened after the initial assessments they completed because they learned where the information was located in the chart and this made the completion of future assessments quicker. A second contributing factor for longer data collection times was the amount of time reportedly spent locating information in EHR-based medical charts. Sites reported a common problem was not being able to easily locate the scanned discharge documentation in the EHR. Data collectors reported that these documents are often mislabeled, inconsistently saved in different parts of the electronic record, or simply not scanned back and saved to the EHR. A data collector from one site also commented that medication changes close to discharge can be more difficult to confirm because the discharge paperwork has already been prepared.

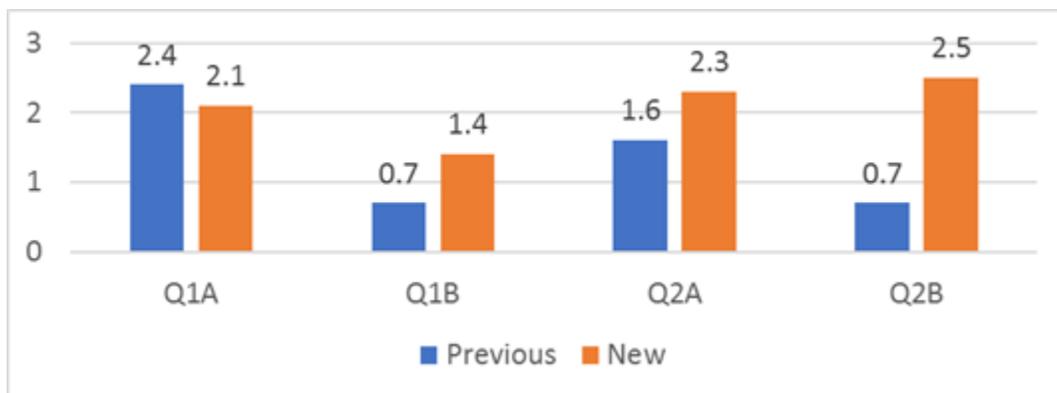
Figure 6.
Average Time by Setting to Complete Data Elements by Setting in Minutes



3.6.3 Differences in Time Estimates Between Previous and New Pilot Sites

We also explored differences in time estimates between pilot sites that had participated in our previous pilot test and newly recruited sites. For three out of the four data elements, the newly recruited sites reported longer average times to complete. This is likely because the previously participating sites had become adept at locating this type of information in their records during our previous pilot test, which included locating similar information in patient charts and reporting the route by which it had been transferred. They also may have improved documentation of information transferred at discharge and transfer during or after participation in our previous pilot test.

Figure 7.
Average Time to Complete Data Elements by Previous and New Sites in Minutes



SECTION 4. CONCLUSIONS

Pilot testing of the provider and patient QMs was conducted in June through August 2018. Twenty-four sites participated in this pilot study representing four post-acute care setting types – seven HHAs, five IRFs, six LTCHs and six SNFs. These pilot test sites submitted 801 assessments. Paired data collectors submitted data for 241 pairs of QM1 assessments and 266 pairs of assessments for QM2. Inter-rater reliability across the pairs of data collectors was high for all data elements, including the route SPADEs, ranging from 86.7% to 98.2% agreement across data elements.

Average QM scores for QM1 and QM2 were also generally high across settings. However, IRFs scored lower on average than other settings on QM1, with an average score of 46.1%. IRFs reported that reasons for coding that the medication profile was not transferred was primarily because their EHRs did not include a purpose or indication for all or many medications, or that they were unable to locate this information in their systems. In other words, although a medication profile had usually been transferred, not all elements of the medication profile required to meet the measure criteria for this pilot test were transferred. A few IRFs also reported that their systems could not confirm whether the medication profile was successfully transferred to the next provider, although their facility did send, usually electronically, the medication profile information. Missing purpose or indications affected not only IRFs – nine sites across all settings reported that they do not typically include indication or purpose in the medication information transferred, and several more reported that this information is not universally provided for all types of medications.

Common feedback from the pilot test sites was that while all or most of the patient and medication information in the coding guidance was important, they did not agree with the specifications tested during the pilot test requiring that all of the data elements in the medication profile be transferred in order to code “yes” that a medication profile was transferred. Further, feedback noted that not all of the information may be pertinent or a high priority to transfer – it may depend on the patient and/or the medication. Some sites felt that the discretionary medication profile data elements in the guidance were unclear as to when they applied and left much up to clinical judgement.

In terms of the routes used to send medication profiles to the next provider or share them with the patient, paper-based (e.g., fax) was most commonly reported. Over 70% of provider assessments and nearly 80% of patient assessments reported paper-based as the route used. However, in many cases more than one route was used. Assessments indicated that both paper-based and verbal routes were used 54% of the time to share the medication profile with patients. Further, based on what sites reported during their debriefing interviews, “verbal” was likely selected on assessments less frequently than used in actual practice. This was because sites did not select “verbal” as the route when they could not support that route through documentation. Sites reported a desire to improve documentation of verbal information sharing if these QMs are implemented.

Finally, the data elements appear to be feasible to collect, based on the time estimates to complete the items and feedback from the sites during debriefing interviews. The time estimates for completing the four data elements were relatively low, ranging from 1.1 to 2.3 minutes. Debriefing interviews indicated that longer times were often attributable to coders reviewing longer patient charts and difficulty locating the necessary information in EHR systems. As indicated by the debriefing interviews and the differences in time estimates between the previous and new pilot sites, time to complete the data elements appears to decrease as more assessments are completed.

CMS will use the results of this pilot test to continue development of these QMs and the related route or transmission SPADEs. Information in this report was current as of August 15, 2018.

**APPENDIX A:
PROVIDER AND PATIENT DATA ELEMENTS TESTED**

Current as of August 15, 2018

Q1A At the time of discharge/transfer to another provider, did your facility/agency provide the patient's/resident's current medication profile to the subsequent provider?	
Enter Code <input type="checkbox"/>	<p>1. Yes – Current medication profile provided to the subsequent provider → Go to Q1B.</p> <p>2. No – Current medication profile not provided to the subsequent provider?</p> <p>3. NA (Home Health transfer only) – The agency was not made aware of this transfer timely</p>
<p>Q1B Indicate the route(s) of transmission of the current medication profile to the provider. (Check all that apply)</p> <p><input type="checkbox"/> 1. Electronic Health Record</p> <p><input type="checkbox"/> 2. Health Information Organization</p> <p><input type="checkbox"/> 3. Verbal (e.g., in-person, telephone, video conferencing)</p> <p><input type="checkbox"/> 4. Paper-based (e.g., fax, copies/printouts)</p>	

Q2A At the time of discharge/transfer, did your facility/agency provide the patient's/resident's current medication profile to the patient, family and/or caregiver?	
Enter Code <input type="checkbox"/>	<p>1. Yes – Current medication profile provided to the patient, family and/or caregiver → Go to Q2B.</p> <p>2. No – Current medication profile not provided to the patient, family and/or caregiver.</p>
<p>Q2B Indicate the route(s) of transmission of the current medication profile to the patient/family/caregiver. (Check all that apply)</p> <p><input type="checkbox"/> 1. Electronic Health Record (e.g., electronic access to patient portal)</p> <p><input type="checkbox"/> 2. Health Information Organization</p> <p><input type="checkbox"/> 3. Verbal (e.g., in-person, telephone, video conferencing)</p> <p><input type="checkbox"/> 4. Paper-based (e.g., fax, copies/printouts)</p>	

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APPENDIX B: DATA ENTRY FORMS

Current as of August 15, 2018

TRANSFER OF THE MEDICATION PROFILE DATA COLLECTION PILOT TEST

PATIENT/RESIDENT ASSESSMENT FORM

To submit an assessment, please login with your site username and password.

Login	
Site ID	<input style="width: 80%;" type="text"/>
Site Password	<input style="width: 80%;" type="password"/>
<input type="button" value="Log In"/>	

For assistance, please contact [Samantha Clark](#) or [Jon Dibello](#)

TRANSFER OF THE MEDICATION PROFILE DATA COLLECTION PILOT TEST

PATIENT/RESIDENT ASSESSMENT FORM

To begin the assessment, enter the patient's/resident's 2-digit ID and assessor code assigned by your facility/agency.

Site Information	
Site	RTI
Patient and Assessor Information	
Patient Number	<input style="width: 80%;" type="text"/>
Assessor (Data Collector) ID	<input style="width: 80%;" type="text"/>
Discharge Date	
Date of Patient/Resident Discharge	
Discharge Date	<input style="width: 80%;" type="text"/> MM/DD/YYYY
Patient's/Resident's Discharge Disposition	
Patient/Resident Discharged or Transferred To: (Check all that apply)	
<input type="checkbox"/> Another Provider (short-term general hospital, SNF, intermediate care, home under care of an organized home health service organization or hospice, hospice in an institutional facility, swing bed, IRF, LTCH, Medicaid nursing facility, inpatient psychiatric facility, or critical access hospital)	
<input type="checkbox"/> Home (private home/apartment, board/care, assisted living, group home, transitional living or home under care of organized home health service organization or hospice)	
<input type="button" value="Continue"/>	

For assistance, please contact [Samantha Clark](#) or [Jon Dibello](#)

TRANSFER OF THE MEDICATION PROFILE DATA COLLECTION PILOT TEST

PATIENT/RESIDENT ASSESSMENT FORM

Medication Profile Transferred to Subsequent Provider	
Q1A. At the time of discharge/transfer to another provider, did your facility/agency provide the patient's/resident's current medication profile to the subsequent provider?	
Enter Code <input style="width: 100%; height: 20px;" type="text"/>	1. Yes – Current medication profile was provided to the subsequent provider. 2. No – Current medication profile was not provided to the subsequent provider. 3. NA (Home Health transfer only) – The agency was not made aware of this transfer timely. ➔ <i>Skip to Signature</i>
Time Estimate, in minutes, of the time it took to complete item Q1A	
<input style="width: 100%; height: 20px;" type="text"/>	
Q1B. Route of Transmission of Medication Profile to Subsequent Provider	
Indicate the route(s) of transmission of the current medication profile from your facility/agency to the subsequent provider.	
↓	Check all that apply
<input type="checkbox"/>	A. Electronic Health Record
<input type="checkbox"/>	B. Health Information Organization
<input type="checkbox"/>	C. Verbal (e.g., in-person, telephone, video conferencing)
<input type="checkbox"/>	D. Paper-based (e.g., fax, copies/printouts)
Time Estimate, in minutes, of the time it took to complete item Q1B	
<input style="width: 100%; height: 20px;" type="text"/>	
Please describe the reason(s) for coding No, that your facility/agency did not provide the patient's/resident's current medication profile to the subsequent provider. Please do not provide any protected health information or other patient/resident information such as the patient, family, or caregiver names, dates (other than year) directly related to the patient, or names of their healthcare providers.	
<input style="width: 100%; height: 40px;" type="text"/>	
<input style="width: 100%; height: 20px;" type="button" value="Continue"/>	

For assistance, please contact [Samantha Clark](#) or [Jon Dibello](#)

TRANSFER OF THE MEDICATION PROFILE DATA COLLECTION PILOT TEST

PATIENT/RESIDENT ASSESSMENT FORM

Medication Profile Transferred to Patient/Caregiver	
Q2A. At the time of discharge/transfer, did your facility/agency provide the patient's/resident's current medication profile to the patient, family and/or caregiver?	
Enter Code <input style="width: 40px; height: 15px;" type="text"/>	1. Yes – Current medication profile was provided to the patient, family and/or caregiver. 2. No – Current medication profile was not provided to the patient, family and/or caregiver.
Time Estimate, in minutes, of the time it took to complete item Q2A	
<input style="width: 40px; height: 15px;" type="text"/>	
Q2B. Route of Transmission of Medication Profile to Patient/Family/Caregiver	
Indicate the route(s) of transmission of the current medication profile from your facility/agency to the patient/family/caregiver.	
↓	Check all that apply
<input type="checkbox"/>	A. Electronic Health Record (e.g., electronic access to patient portal)
<input type="checkbox"/>	B. Health Information Organization
<input type="checkbox"/>	C. Verbal (e.g., in-person, telephone, video conferencing)
<input type="checkbox"/>	D. Paper-based (e.g., fax, copies/printouts)
Time Estimate, in minutes, of the time it took to complete item Q2B	
<input style="width: 40px; height: 15px;" type="text"/>	
Please describe the reason(s) for coding No. that your facility/agency did not provide the patient's/resident's current medication profile to the patient, family and/or caregiver.	
Please do not provide any protected health information or other patient/resident information such as the patient, family, or caregiver names, dates (other than year) directly related to the patient, or names of their healthcare providers.	
<div style="border: 1px solid black; height: 40px; width: 100%;"></div>	
<input type="button" value="Continue"/>	

For assistance, please contact [Samantha Clark](#) or [Jon Dibello](#)

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**APPENDIX C:
LIST OF MEDICATION PROFILE INFORMATION TO BE PROVIDED TO NEXT
PROVIDER AND/OR PATIENT**

Current as of August 15, 2018

Medication Profile Information	Description
<i>To be Completed for Each Patient/Resident:</i>	
1. Patient name	The patient's First and Last Name at a minimum and, if available, Middle Initial
2. Patient date of birth	The patient's date of birth
3. Patient's primary practitioner name and contact information	The name and contact information (e.g., phone numbers, email address) for the practitioner responsible for care of the patient
4. Patient active diagnoses	All of the patient's active diagnoses
5. Known medication and other allergies	All known medication and other allergies are listed. If there are no known allergies, this is indicated with, "no known allergies."
6. Known drug sensitivities and reactions	All known drug sensitivities and reactions
<i>Discretionary Medication Profile Information, When Applicable:</i>	
Description	
7. Weight and date taken	The patient's weight and the date it was taken when documented for medication dosage/calculation.
8. Height and date taken	The patient's height and the date that it was taken when documented for medication dosage/calculation.
9. Patient's preferred language	Patient's preferred language for health-related encounters and information, if not English. Include preferences for both written and verbal communication. Example: American Sign Language interpreter services and written materials provided in braille.
10. Patient's ability to self-administer medication	Patient's ability to self-administer medication, such as opening and closing medication containers, pouring correct dosage of medication, or putting medication in his/her mouth.

Medication Profile Information	Description	Tips for Information for Patient/Family/Caregiver
<i>To be Completed for Each Medication*:</i>		
11. Name and strength	The full generic name and medication strength	
12. Dose	Dosage strength and strength unit	
13. Route of medication administration	The route by which the medication is to be administered (e.g., oral, topical, inhalant, injection, sublingual, parenteral, and by infusion)	

Medication Profile Information	Description	Tips for Information for Patient/Family/Caregiver
14. Frequency or timing	How often a medication is to be administered per unit of time	
15. Any special instruction (e.g., crush medications)	Any additional special instructions that patients may require in order to properly take the medication as prescribed, such as “crush medication prior to taking.”	
16. (For held medications) Reason for holding medication and when medication should resume	Description of the reason for holding medication (e.g., lab results), along with information as to when taking the medication should be resumed if the medication has a temporary stop order/ a “hold” order.	
17. Purpose/Indications	Indication is documented clinical rationale for administering a medication that is based upon an assessment of the patient’s/resident’s condition and therapeutic goals and is consistent with manufacturer’s recommendations and/or clinical practice guidelines, clinical standards of practice, medication references, clinical studies or evidence-based review articles that are published in medical and/or pharmacy journals.	Description of the reasons for taking the medication in plain language.
<i>Discretionary Information, When Applicable</i>	Description	Additional Information for Patient/Family/Caregiver
18. When the last dose of the medication was administered if medication was administered by discharging/transferring provider	If the medication was administered by the discharging/transferring provider, the date and time of the last dose.	
19. When final dose should be administered (e.g., end of treatment)	The date and/or time the final dose of the medication should be administered	
20. Relevant lab test results if important to guide medication management (e.g., blood cultures after completion of antibiotic therapy)	All relevant lab test results, such as blood cultures after completion of antibiotic therapy, if relevant to management of the medication.	

**APPENDIX D:
DEBRIEFING INTERVIEW TOPICS**

Current as of August 15, 2018

These interviews are being conducted with all sites that participated in the Transfer of Medication Profile (TOMP) pilot test to:

- better understand processes your facility/agency used to collect data, estimate time to complete the items, what impacted your time estimates, how you coded the items and any problems
- get your impressions of the draft assessment items and the two quality measures you are helping to test.

Transfer of Medication Profile to Provider and Transfer of Medication Profile to Patient

Q1A asks if your facility/agency provided a medication profile at the time of discharge/transfer to another provider. **Q2A** asks if your facility/agency provided a medication profile to the patient/family/caregiver at the time of discharge to home. **Q1B** and **Q2B** ask about 4 routes of information transmission that may have been used to transfer the medication profile.

We will ask you about:

- Timeframe for ‘at discharge/transfer’
- How your facility/agency documents and determined what types of medication profile information was transferred to the next provider and to the patient/family/caregiver
- Any problems in coding or need for better guidance
- Electronic routes of transmission – routes used and how coded
- Your views on reliability/consistency of coding the items across different data collectors

Draft items and quality measure - Items Q1A and Q2A may be used to create two discharge process quality measures (1- medication profile to provider; 2 – medication profile to patient). Under the draft specifications, a patient/resident discharge/transfer would be counted in the measure numerator if your facility/agency provided a medication profile that included all of the required and ‘if applicable’ data elements listed in the item coding guidance Table 1.

We will ask your views about:

- If the measures reflect provider quality and can distinguish providers with higher quality of care and information transfer processes from those with poorer quality of care and information transfer processes

- What medication information is most important to transfer at discharge/transfer

Review and Understanding the Data Collection Time Estimates

- Adequacy of training and TOMP Training Manual to complete the time estimates accurately
- Estimate of time it took to prepare/train the data collectors so that they understood and could code the items correctly. Please include up-front time involved in reviewing the guidance and training manuals, creating any tools to support data collection, and developing internal processes for data collection.
- Explanation of time that was included in your time estimate, and if it included the time it took to determine which medication profile information was provided at discharge/transfer
- What contributed to longer vs. shorter data collection times for specific items, for the different coders

Processes, Systems, Sources to Facilitate Data Collection

- Any changes to your processes and/or systems to support the data collection
- Staff and other sources used to complete items on medication profile information provided to next provider and to patient/family (e.g., case manager)
- Any differences in processes used by data collectors and impact on time estimates
- If these measures and items were implemented, likelihood your facility/agency would use the same processes used during the pilot data collection, anything you may do differently, and implications for time to complete the items

Your Experience with TOMP Item Data Collection

- Confidence in accuracy of information your facility/agency provided
- Anything that could have improved the data collectors' understanding of how to code the items
- Any insight into and possibly changes to your site's transfer of medication profile information as a result of participation in this pilot test
- Anything else you would like to share about your experience collecting and submitting data during the TOMP QM pilot test

**APPENDIX E:
CONSUMER INTERVIEWS FINDINGS MEMORANDUM**

To: Tara McMullen and Charlayne Van
Division of Chronic & Post-Acute Care, Centers for Medicare & Medicaid Services

From: Denise Tyler, Jennifer Howard, Colene Byrne

Date: 8/6/2018

Subject: Summary of Feedback from Consumer Interviews: Development of Medication Profile Transferred Measures for Skilled Nursing Facilities, Inpatient Rehabilitation Facilities, Long-Term Care Hospitals, and Home Health Agencies

This document summarizes the findings from interviews with twelve recent post-acute care (PAC) patients/residents or caregivers of patients with a recent PAC stay. The PAC settings include skilled nursing facilities, inpatient rehabilitation facilities, long-term care hospitals, and home health agencies. Interview participants were recruited with the assistance of a recruitment company, Fieldwork NRC, Inc. Participants were recruited through a combination of email and telephone outreach efforts. Participants' demographic information collected by Fieldwork NRC, Inc. recruiter during recruitment included first names (if unknown), age, race, and transfer setting (i.e. facility type). Recruiters scheduled interviews between 8 am and 5 pm EST at the participants' earliest convenience. This information was then shared with the RTI interview team (Colene Byrne, Denise Tyler, & Jennifer Howard) in a password protected excel document for interviewer scheduling. The interviews focused on the transfer of a medication profile between settings and to the patient and/or caregiver. Interviews with six patients/residents and six caregivers were conducted between July 9 and July 13, 2018. This memorandum summarizes the key findings from the twelve interviews conducted.

Receipt of Medication Information by the PAC Provider

- All interview participants, patients and caregivers, reported that their PAC provider had received information about their medications from the previous provider.
- More than half of the participants reported that the medication information received by the PAC was incomplete or inaccurate in some way.
- Those who reported incomplete or inaccurate information said that they supplemented or corrected the medication information.
- The most commonly reported error was that a particular medication was missing from the list of medications.
- In one case, the dose was incorrect.

Medication Information Provided by the PAC Provider

- All participants, except one patient who was no longer taking any medication at PAC discharge, reported that the PAC setting provided them with medication information at discharge.
- Most said that they had been provided their medication information verbally before discharge.
- Some participants also reported receiving printed information, most often in the form of a discharge summary.
- The most common types of information that participants said they received at PAC discharge were information about medication dosage, frequency and side effects.

Importance of Medication Information

- All participants said that it was very important for facility or agency staff to have accurate and up-to-date medication information.
- Participants stated that accurate medication information was “a matter of life and death” and that inaccurate information “could cause you harm” or “bring you back to the hospital.”
- When asked what medication information was most important for staff to have, most participants said dosage, frequency and side effects.
- A couple of participants also said it was important for staff to know about the patient’s allergies and any contraindications.

Selecting a PAC Provider

- None of the participants indicated they had knowledge of the Compare websites or the existence of data on those sites for use in selecting a PAC provider.
- Most of the participants said that they would use a website with data about providers to select a PAC provider.
- Two participants said they would not use such a website because the information is too impersonal. They would prefer a recommendation from their doctor or other personal contacts.
- A few participants reported that they had previously researched PAC providers for themselves or a family member. They said they used online reviews or the PAC providers’ websites to do so.

Importance of Medication Information Sharing in PAC Selection

- When asked if information about the percent of time that PACs provided medication information at discharge to the next provider or to the patient would be important to their PAC selection, most said it would be.
- When asked how important that information would be to their selection, most said it would be important. However, a couple of participants said that the information would only be somewhat important or “wouldn’t be a deciding factor.”
- When asked what this information would tell them about the quality of the PAC provider, participants said, “It would be a higher quality facility” and a “higher score is more proactive” and “that shows they are taking the best care of the patient.”
- One participant was concerned about what this measure would mean regarding access to his medical information and where it is shared.
- One participant stated that the measure would not say much about the PAC provider because “medication is strictly in the doctor’s hands.”

Preferences Regarding Route of Medication Information Transmission

- Most participants said that knowing the route of transmission used by PAC providers to send medication information would be important to their PAC selection. However, some said this would not be the sole factor.
- Most participants reported preferring that PAC providers use electronic means for sending information to other providers and patients. However, some thought that email and fax were electronic means.
- A couple of the participants preferred verbal or written sharing of information, one preferred use of a patient portal and one participant did not have a preference saying, “I just want the fastest method.”
- Participants were concerned about the privacy protections for information sent electronically. Some were also concerned about the accuracy of the information sent.