Improving Nursing Facility Care through an Innovative Payment Demonstration Project:

OPTIMISTIC Phase Two

Short Running title: Implementation of nursing facility payment model

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Impact Statement:
We certify that this work is novel clinical research. The potential impact of this research on clinical care or health policy includes contributing to the understanding of implementing a novel Centers for Medicare and Medicaid Services demonstration project designed to reduce hospital transfers of nursing home residents through aligning payment mechanisms in the nursing facility setting. These nursing facility to hospital transfers are tied to quality metric and reimbursement mechanisms.

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Abstract

Optimizing Patient Transfers, Impacting Medical Quality, and Improving Symptoms: Transforming Institutional Care (OPTIMISTIC) is a two phase Centers for Medicare and Medicaid Innovations demonstration project now testing a novel Medicare Part B payment model for nursing facilities and practitioners in 40 Indiana nursing facilities. The new payment codes are intended to promote high quality care in place for acutely ill long stay residents. The focus of the initiative is to reduce hospitalizations through the diagnosis and on site management of six common acute clinical conditions (linked to a majority of potentially avoidable hospitalizations of nursing facility residents[1]): pneumonia, urinary tract infection, skin infection, heart failure, chronic obstructive pulmonary disease or asthma, and dehydration. This paper describes the OPTIMISTIC Phase Two model design, the nursing facility and practitioner recruitment and training, and early experiences implementing new Medicare payment codes for nursing facilities and practitioners. Lessons learned from the OPTIMISTIC experience may be useful to others engaged in multi-component quality improvement initiatives.

Key words: nursing facility, implementation science, quality improvement, hospitalization

Introduction

Unnecessary hospitalizations are burdensome for nursing facility residents, as well as expensive to the health care system. The Centers for Medicare and Medicaid Services (CMS) reported that approximately 45% of hospital admissions of long-stay nursing facility residents covered by Medicare and Medicaid were potentially avoidable, costing Medicare $2.6 billion in 2005[2]; another study using 2006-2008 data found that 3/5 of hospitalizations of long stay nursing home residents were potentially avoidable.[3] Proactive detection of symptoms and changes in the resident, as well as interventions and enhanced resources may prevent many unnecessary or inappropriate hospitalizations.[4,5]

The CMS Center for Innovations and CMS Medicare-Medicaid Coordination Office funded multi-site demonstration projects designed to improve care for long stay nursing facility residents and reduce potentially avoidable hospitalizations by increasing resources and education activities in participating facilities. Each site developed its own intervention based on broad parameters set by CMS. Indiana University's Optimizing Patient Transfers, Impacting Medical Quality and Improving Symptoms: Transforming Institutional Care (OPTIMISTIC) Project was one of seven sites participating in the Initiative to Reduce Avoidable Hospitalizations Among Nursing Facility Residents Phase One (October 2012 – September 2016)[6]. The OPTIMISTIC clinical model developed in Phase One, and continued in Phase Two, embeds a specially trained registered nurse (RN) in participating nursing facilities with support from nurse practitioners (NPs). The components of the OPTIMISTIC clinical model incorporate

elements of existing programs, such as INTERACT[4], Respecting Choices Last Steps[7], as well as newly developed tools and strategies[8,9] with the goal of safely reducing potentially avoidable hospitalizations of long-stay nursing facility residents. In the final evaluation of Phase One, OPTIMISTIC facilities experienced a 19% reduction in all-cause hospitalizations and a 33% reduction in potentially avoidable hospitalizations in comparison to control facilities. [5,6]

Building on the findings of OPTIMISTIC and the other sites engaged in Phase One projects, CMS funded a second round of demonstration projects (April 2016 – September 2020). OPTIMISTIC is one of the six original sites participating in Phase Two[1]. Phase Two included the recruitment of additional nursing facilities at each demonstration project site to test a payment model centered on new Medicare Part B billing codes for nursing facilities and practitioners, which may be used only by participants in the demonstration projects. The codes provide reimbursement for the treatment of residents who experience acute changes in condition related to six common medical conditions[1]. Nursing facilities use these new codes to bill Medicare for the elevated level of care provided during an episode of acute illness, in addition to their usual payments (from Medicaid or other sources) for care, room and board. There are also codes for practitioners (physicians, nurse practitioners, or physician assistants) to bill for a care coordination visit or bill at a higher rate for an initial assessment visit for the resident who has experienced a change in condition. The original nursing facilities who participated in OPTIMISTIC Phase One continued their participation in Phase Two of the demonstration project. These facilities maintain the clinical care model delivered by OPTIMISTIC RNs and NPs developed in Phase One, in addition to accessing the novel facility and

provider billing codes. A second group of Indiana facilities was recruited for participation in the Phase Two payment only model arm of the demonstration.

These CMS demonstration projects represent a large federal investment in exploring both clinical enhancement and payment approaches to improve care of nursing facility residents and reduce avoidable hospital transfers. The purpose of this paper is to describe the OPTIMISTIC approach to implementing this novel payment model in 40 nursing facilities, the process of nursing facility and practitioner recruitment and training, and early experiences in the use of novel CMS payment codes for nursing facilities and practitioners.

Structure of the Phase 2 Nursing Facility Initiative Demonstration Project

Facilities in the demonstration project are able to bill for elevated care provided to residents that have been in the facility for greater than 100 days, have Medicare that is not a Medicare managed care plan, and are not on hospice. All eligible residents in participating nursing facilities are notified of the project and have the option to opt-out. In the first nine months of the Phase two initiative, 25 residents had opted out, representing only 1% of the total eligible population. If a resident is currently receiving the Medicare post-acute care benefit for skilled nursing facility care, then the acute care episode codes cannot be billed for the same days.

CMS chose six clinical conditions associated with potentially avoidable hospitalizations as the focus for Phase Two,[1] based on research suggesting these six conditions are linked to approximately 80% of potentially avoidable hospitalizations among long stay nursing facility residents[10]. The six conditions include: pneumonia, dehydration, congestive heart failure (CHF),

urinary tract infection (UTI), skin infection, and chronic obstructive pulmonary disease (COPD)/asthma.

In order for a facility to bill for an episode of care associated with one of these conditions, the facility must 1) identify and document that the resident had a change in status; 2) have a medical practitioner perform and document an in-person or telemedicine assessment within two days of the resident's change in status, and; 3) document the elevated level of care provided to the resident during the billing period. In order for a resident to be certified as having one of the six conditions, specific clinical criteria must be met and documented by the practitioner who assesses the patient (see Figure 1).

Facilities can bill for episodes up to seven days for residents with pneumonia, CHF, UTI, skin infection, or COPD/asthma. Facilities can bill for up to five days of enhanced care for residents with dehydration. If a resident dies or transfers to the hospital during an acute care episode, the facility may still bill for care provided for the days leading up to the death or transfer. If a resident remains ill after the initial billing period for facility care, a practitioner may perform another in-person assessment and re-certify for another episode, which may be continuous with the first. During the acute care episode, nursing facilities receive a daily Medicare payment, on top of the payments they are receiving from Medicaid or other payors for daily care, room and board ($218, with some regional variation in rates). These payments can be used to cover the expense of enhanced care provided during these episodes (i.e., - additional staff time) as well as support the purchase of additional in-house resources such as bladder scanners or additional blood pressure cuffs.

Physicians, nurse practitioners, and physician assistants in participating facilities have the opportunity to bill the new Medicare Part B codes for the care that they provide to residents. When one of the six conditions is suspected, the practitioner can bill a code for the initial visit that is reimbursed at an enhanced rate ($205, with some regional variation), similar to the initial visit rate for a hospitalized patient (as compared to the lower-reimbursed subsequent visit codes which are used in usual practice). A new code for Care Coordination and Caregiver Engagement was created which practitioners may bill annually or if a Minimum Data Set (MDS) Significant Change in Condition is completed by nursing facility staff. This code (approximately $76) requires 25 minutes of face to face time, no physical exam can be performed, and a member of the interdisciplinary care team must also be present. All of these codes may only be billed for eligible residents in facilities participating in the demonstration project.

Recruitment and on-boarding of nursing facilities and practitioners

The Indiana University OPTIMISTIC project team was awarded a contract in April 2016 with a target Phase Two launch date of October 2016. At the time of award, CMS provided a list of nursing facilities in Indiana potentially eligible for inclusion (i.e. – met baseline criteria set by CMS, including an overall star quality rating of 3 or more, average total census of 80 residents, more than 40% of residents are long stay and are not in Medicare managed care plans, and no recent deficiencies or evidence of Medicare fraud). The OPTIMISTIC project team advertised the opportunity to participate in Phase Two to facilities throughout the state and contacted Phase One nursing facility partners as well as the facilities identified by CMS. Phase

One facilities were concentrated in central Indiana; facilities added for Phase Two were recruited across the state.

An introductory email and project fact sheet invited facilities to participate in webinars designed to provide information about the opportunity and instructions about the application process. The application required a signed Memorandum of Understanding indicating willingness to meet program requirements, signed letters of intent from eligible facility practitioners, detailed facility and census information, and information about the facility's capacity to meet program clinical requirements (See Figure 2 for clinical capability requirements). At the conclusion of the enrollment period, Indiana University received complete applications from 55 new facilities, as well as all 19 facilities that had participated in the Phase One clinical demonstration. CMS made the final determination of the 44 nursing facilities selected for participation (about 9% of all Indiana nursing facilities).

To participate in Phase Two, facilities were required to demonstrate they had tools, processes and services (Figure 2) in place to provide the enhanced care required to treat acute illness in place, and commit to submit data to OPTIMISTIC to meet CMS data reporting requirements. The OPTIMISTIC project team worked closely with the 19 nursing partners from the Phase One program to ensure their ability to meet readiness, including in-person meetings. The CMS funded Operations and Support contractor conducted onsite reviews with about 20% of the selected facilities and all other facilities completed a telephone interview to assess readiness for participation.

Nursing facilities were also required to obtain a signed letter of intent from practitioners who were interested in billing the new codes and met the eligibility criteria to participate. Practitioners had to have a minimum of seven long stay residents in the facility and be Medicare certified providers in good standing. Practitioners were then approved by CMS. As of June 2017, a total of 148 practitioners had been vetted and approved.

OPTIMISTIC facilities who participated in Phase One were able to retain the full clinical model of Phase One, including embedded RNs and NPs in addition to billing for elevated care. In preparation for Phase Two, the OPTIMISTIC RNs and NPs underwent additional training on identification and treatment of the six clinical conditions specific to this phase of the demonstration.

In late September 2016, 44 facilities (19 from Phase One and 25 new for Phase Two) were invited to attend the OPTIMISTIC Stakeholder Summit, a day-long meeting which provided training and information about the launch of the Phase Two demonstration. All nursing facilities successfully completed the readiness review process prior to the "go live" date on October 1st, 2016. Within the first few months of the initiative, four facilities (2 payment only facilities and 2 clinical + payment facilities) dropped out of the Initiative without billing.

Data collection, evaluation and monitoring

The OPTIMISTIC team is required to submit quarterly data to CMS. For OPTIMISTIC, all participating facilities transmit data via a secure REDCap[11] database hosted at Indiana University on both administrative and clinical data specifications, including eligible residents,

hospital transfers, and acute care episodes billed. Facilities are subject to auditing of episodes billed by Medicare contractors.

Facility and practitioner engagement

Learning communities were established as a required element in Phase Two to both deliver training and information to the nursing facility and practitioner partners and encourage experience sharing across the project. OPTIMISTIC developed two learning communities: one for the nursing facility leadership (i.e.,-operations); and one for clinical care providers, including nursing facility directors of nursing and practitioners. Both clinical plus payment and payment only facilities and providers were invited to participate in learning community events. To reduce travel burden on facility staff, the learning communities were conducted by webinar once a month for the first nine months. In the first three months, the learning communities were set up as an "office hours" format with the project billing and data specialists available to disseminate new information and answer questions about the logistics of administering the project.

Similarly, the OPTIMISTIC medical director and project director facilitated practitioner-targeted clinical learning communities to answer clinical specific questions including meeting criteria for certification. Following the early months of implementation, the learning communities focused each month on one of the six clinical conditions and on antibiotic stewardship.[12] The learning community webinars were rated as useful by participants but were overall inconsistently attended (an average of ten participants on practitioner webinars and an average sixteen participants on the operational focused webinars). Nursing facility leaders and

practitioners have multiple competing priorities and, despite soliciting input, the project team found it difficult to identify days and times that were convenient for a majority to participate. All facility leadership, clinical leads, and practitioners were invited to the annual Stakeholder Seminar at the conclusion of the first year.

In addition to offering webinars, OPTIMISTIC project team staff maintains regular contact with facilities. The payment only facilities receive a monthly survey and call; clinical + payment facilities participate in quarterly in-person meetings. Some findings to date related to implementation challenges include identification of acute changes in status, lack of practitioner availability to conduct certification visits, need for more proactive communication between clinical care staff and practitioner of the initial notice of a change in condition, difficulty in incorporating the new code into their billing system, changing the nursing facility culture and practitioners' willingness to treat in place, providing family education on the benefits of treating acute illness in the nursing facility, and preparing required data submissions. Members of the project team are available to provide support on any aspect of the project, including in-person meetings at facilities to review of available data on billing practices for acute care episodes.

Quarterly newsletters are distributed via email to all stakeholders involved in the project. A project website is maintained which includes information and tools related to the initiative (optimistic-care.org). Quarterly Advisory Board meetings continue from Phase One, which include key stakeholders in long-term care from industry, advocacy, and government.

Early implementation of the payment model

For the 40 facilities who participated in the project in the first nine months of implementation (October 2016-June 2017), facilities in the clinical + payment group were an average size of 142 beds and there were 136 average beds per facility in the payment only group (Table 1). At the launch of Phase Two, the average facility star rating was 3.76 in the clinical + payment facilities and 4.17 in the payment only facilities, out of five respectively[13]. According to data reported by the facilities, in the first nine months of implementation of the payment model UTIs were the most commonly billed condition in both groups with 445 submitted bills for UTI episodes (see Table 2). In contrast, acute changes in condition from COPD was the least commonly billed condition in both groups with 48 submitted bills for COPD episodes. As of August 2017, 11 facilities did not report billing any episodes – the highest utilizer of the codes had billed for 108 episodes.

Continued refinement of the OPTIMISTIC clinical model

The evaluation of the Phase One CMS project demonstrated the success of the OPTIMISTIC clinical model in reducing all-cause and potentially avoidable hospitalizations of long stay nursing facility residents. Ongoing OPTIMISTIC clinical staff training and new tool development reflects CMS's focus on the six clinical conditions commonly associated with avoidable transfers. Standardized protocols have been developed to support care of acutely ill residents. In addition, the OPTIMISTIC clinical staff continue to champion use of INTERACT tools, advance care planning, and transition support that are central to the OPTIMISTIC clinical model.

Discussion

CMS is making a significant investment in exploring strategies to improve care for nursing facility residents through clinical and payment demonstration projects. In Phase One, OPTIMISTIC built and maintained partnerships with 19 nursing facilities in central Indiana, successfully collaborating with industry to impact meaningful patient outcomes. Phase Two builds on the success of Phase One, now aligning payment incentives by providing resources directly to nursing facilities and practitioners to care for sick residents in place. New challenges include recruiting and sustaining partnerships with 40 facilities spread across the state, training facility staff, leadership, and practitioners how to utilize novel Medicare billing codes, and continuing to refine the OPTIMISTIC clinical model.

In the first several months of implementation, three facilities from the same company withdrew from the project after a prolonged ownership transition. One additional facility was terminated due to non-participation in submitting data; this independent facility cited lack of resources to meet the requirements of the project including instituting processes to submit new billing codes, provide enhanced clinical care and documentation, and data submission. None of these facilities billed any of the payment codes.

Data on overall patterns of billing for the six conditions has been shared at the OPTIMISTIC Advisory Board meetings and directly with facility leaders. This data has been well-received and is key for facilities to understand how their billing practices are similar or different to others in the initiative. It also indicates there is wide variability in how quickly a facility is able to adopt new billing codes, even with support. Clearly, those that have not billed at all are unsuccessful at appropriately identifying eligible changes in condition and billing for them. However, those that are billing less than others may also be missing opportunities to receive

additional resources for care provided in the facility and may have higher rates of potentially avoidable hospital transfers as a result.

The OPTIMISTIC team continues to be impressed with the reality that there is no substitute for intensive, one-on-one support for successful implementation. There is a four person implementation team who serves as the primary liaisons to the facilities and practitioners in the project.

Through participation in this initiative, facilities have access to new revenue intended to support identification and treatment of acute illness in place. Prevention of hospital transfers is incentivized; prevention of acute illness is not directly incentivized through this payment model. Prior to the start of the initiative, all facilities underwent review by CMS contractors to ensure best practice clinical protocols were in place for prevention of infection, dehydration, and exacerbations of chronic disease. As reported, the most commonly billed codes are for episodes of UTI and pneumonia. The impact of access to these billing codes on overall infection rates will be an important component of the evaluation of the project. The evaluation will also report on the net effect on Medicare costs in order to assess whether increased payments to nursing facilities and practitioners are off-set by reductions in hospitalization and related costs.

Conclusion

Potentially avoidable hospitalizations of nursing facility residents have been recognized as an example of waste in the health care system and a disservice to this frail population and their families. In response to this recognition, increased expectations around reducing readmissions from health system partners, and initiatives such as these demonstration projects

have resulted in dramatic progress[14]. Phase Two of the Nursing Facility Initiative provides an important opportunity to test whether increased resources to facilities and practitioners can further reduce avoidable hospitalizations. Running a complex demonstration project requires sophisticated staff and strong stakeholder partnerships, as well as the ability to adapt strategies based on data. OPTIMISTIC Phase One demonstrated that an enhanced clinical care model in nursing facilities improved key outcomes; Phase Two builds on this platform to further refine the clinical model and support implementation of novel billing codes to support in-house care of nursing facility residents. The lessons learned from the OPTIMISTIC experience may be useful to others engaged in multi-component quality improvement initiatives including successes and limitations of communications within a large network, the importance of using data to target activities, and understanding the level of support needed to support implementation.

Table 1: Facility Characteristics at Baseline in Clinical + Payment and Payment Model Only Groups

Facility Characteristic	Clinical + Payment (n=17)	Payment Only (n=23)
Number of Medicare and Medicaid certified beds average (range) ¥	141.82 (89-188)	136.39 (68-162)
Ownership ¥		
For profit n,(%)	4, (17.39%)	2, (11.76%)
Public n, (%)	13, (56.52%)	14, (82.35%)
Non-profit n, (%)	6, (26.09%)	1, (5.88%)
Facilities in 'mostly rural' zip codes (n, %)*	0, 0%	4, 17.39%
Overall star rating, average ¥	3.76	4.17
Providers in facility eligible to bill novel Medicare codes on 10/1/16 (average, range)	2.82 (1-6)	2.96 (1-6)
All-cause transfer rate of OPTIMISTIC eligible residents per 1000 resident days, average**	1.23	1.50
Cognitive Function Scale (average, range)+	2.15 (1.66-2.72)	2.13 (1.72-2.66)
% non-white residents (average, range)+	29.05 (4.27-79.17)	6.31 (0-37.50)

¥ NHC Provider Information archive for September 2016

*2010 census data

** obtained from the Q1 Metrics report from CMS published in 2017 Q3, average for 10/01/16 to 12/31/2016.

+calculated from Minimum Data Set as a mean of facility means, using closest comprehensive assessment to 10/1/2016

Table 2: Billed change in condition episodes, by facility group, October 2016-June 2017

	Clinical + Payment (n=17)	Payment Only (n=23)	Overall (n=40)
Urinary Tract Infection (UTI)			
Billed episodes, n	207	238	445
Average billed per facility, SD (range)	12.2 ± 10.4 (0-42)	10.4 ± 13.4 (0-43)	11.1 ± 12.0 (0-43)
Average length of episode, SD	6.0 ± 2.3 SD	5.6 ± 1.8 SD	5.8 ± 2.0
% re-certified continuous (overall)	0%	1%	1%
Episode ended with transfer to the hospital (overall) n (%)	5 (2%)	3 (1%)	8 (2%)
Pneumonia			
Billed episodes, n	188	211	399
Average billed per facility, SD (range)	11.1 ± 6.7 (1-27)	9.2 ± 13.4 (0-50)	10.0 ± 10.6 (0-50)
Average length of episode, SD	5.7 ± 2.7 SD	5.5 ± 2.8 SD	5.6 ± 2.8
% re-certified continuous (overall)	0%	1%	1%
Episode ended with transfer to the hospital (overall) n (%)	4 (2%)	8 (4%)	12 (3%)
Skin Infection			
Billed episodes, n	126	101	227
Average billed per facility, SD (range)	7.4 ± 3.3 (0-17)	4.4 ± 6.6 (0-26)	5.7 ± 5.4 (0-26)
Average length of episode, SD	5.8 ± 2.3 SD	5.9 ± 1.4 SD	5.9 ± 2.0
% re-certified continuous (overall)	2%	5%	3%
Episode ended with transfer to the hospital (overall) n (%)	1 (1%)	0 (0%)	1 (0%)
Congestive Heart Failure (CHF)			
Billed episodes, n	47	58	105
Average billed per facility, SD (range)	2.8 ± 3.6 (0-12)	2.5 ± 6.9 (0-0-26)	2.6 ± 5.5 (0-26)
Average length of episode, SD	5.5 ± 2.16 SD	6.38 ± 2.85 SD	5.97 ± 2.59
% re-certified continuous (overall)	0%	0%	0%
Episode ended with transfer to the hospital (overall) n (%)	3 (6%)	0 (0%)	3 (3%)
Dehydration			
Billed episodes, n	32	30	62
Average billed per facility, SD (range)	1.88 ± 1.97 (0-7)	1.3 ± 3.06 (0-11)	1.55 ± 2.52 (0-11)
Average length of episode, SD	4.16 ± 1.22 SD	7.11 ± 17.51 SD	5.53 ± 12.07
% re-certified continuous (overall)	0%	0%	0%
Episode ended with transfer to the hospital (overall) n (%)	1 (3%)	0 (0%)	1 (2%)
Chronic Obstructive Pulmonary Disease (COPD)			
Billed episodes, n	30	18	48
Average billed per facility, SD (range)	1.76 ± 3.79 (0-14)	0.78 ± 2.58 (0-8)	1.2 ± 3.45 (0-14)
Average length of episode, SD	9.31 ± 17.81 SD	6.06 ± 1.11 SD	8.02 ± 13.96
% re-certified continuous (overall)	0%	0%	0%
Episode ended with transfer to the hospital (overall) n (%)	1 (3%)	0 (0%)	1 (2%)
Total for all conditions			
Billed episodes, n	630	656	1286
Average billed per facility, SD (range)	37.06 ± 23.42 (0-80)	32.80 ± 34.79 (0-138)	34.76 ± 30.18 (0-138)
Average length of episode, SD	5.86 ± 4.54	5.78 ± 4.35	5.82 ± 4.45
% re-certified continuous (overall)	0 %	2%	1 %
Episode ended with transfer to the hospital (overall) n (%)	15 (2%)	11 (2%)	26 (2%)

*this data is self-reported by facilities and may differ from Medicare claims data; billing rates are not adjusted for number of residents in the facility

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