CASE STUDY

Conversing with High-Risk Patients to Determine Serious Illness Goals and Values in the Time of Covid-19

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During the Covid-19 pandemic's first surge in Boston, Brigham Health sought to ensure that patients' health care proxies and serious illness wishes were known to care teams. The authors engaged a diverse set of team members in outreach regarding serious illness conversations. Patients enrolled in the Integrated Care Management Program (iCMP) were contacted by their own nurse care coordinator for a serious illness conversation, discussing patients' goals and values in the context of underlying illness and the threat of Covid-19. Simultaneously, nurses, medical students, and social care team members reached out to non-iCMP primary care patients identified as being at high risk of morbidity or mortality from Covid-19 and engaged these patients in conversations regarding health care proxy documentation and social determinants of health needs. The authors' experience demonstrates that such a population health approach can facilitate timely and well-accepted outreach regarding serious illness to patients with varied needs and profiles.

KEY TAKEAWAYS

- » The Covid-19 pandemic has amplified the importance of care team awareness of patients' serious illness wishes and health care proxies.

- » By leveraging a diverse team consisting of nurse care coordinators, nurses, medical students, and social care team members, we provided proactive, segmented outreach to patients deemed at high risk of morbidity and mortality from Covid-19. This allowed us to provide support during a challenging time and, depending on the patient group, to either clarify goals

and values in the setting of underlying illness or discuss health care proxy documentation and social determinants of health needs.

» Our experience taught us that it is possible to quickly mobilize a diverse group of colleagues in this work during a time of crisis and to target the efforts of this group on the basis of the team member skill set and the complexity of patient needs.

The Challenge

As morbidity and mortality from the Covid-19 pandemic rose in Boston during spring 2020, ensuring that patients' health care proxies (HCPs) and serious illness wishes were known to care teams emerged as a population health priority at Brigham Health. Additionally, in light of accumulating evidence that the pandemic was having an outsized impact on older and sicker patients, as well as those residing in specific socioeconomically vulnerable communities in Boston,[1] we felt there was an imperative to share information regarding Covid-19 and available resources with the most at-risk populations. This goal was in line with broader population health priorities centered on serious illness outreach set by Brigham Health's parent organization, Mass General Brigham.

Leveraging a robust care coordination team that had extensive experience with implementation of care management and the Serious Illness Care Program in the primary care setting,[2] we sought to develop and deploy a population health approach to patient outreach regarding serious illness preferences during the Covid-19 pandemic.

The Goal

Our goal was to develop a stratified approach that engaged multiple members of the care team in outreach to diverse patients at risk of Covid-19 infection or complications in order to understand their preferences related to potential serious illness.

Proactive conversations about patients' goals and values in the context of advancing serious illness can improve health care outcomes, such as anxiety, depression, and bereavement, and may help align the course of medical care with evolving patient preferences.[2-5] Evidence also suggests that appropriately timed serious illness conversations (SICs) with the correct intention (elucidating patient goals and values in the context of shared awareness about an uncertain future with serious illness) could lower costs.[6-8] Earlier high-quality communication about what matters most to patients holds the potential to add value to the care we deliver, primarily by improving patient and family outcomes and possibly also by eliminating some avoidable costs. Our overarching goal was to discern and elucidate patients' goals and values so this information could be leveraged in the appropriate context as needed.

The Team

We engaged a diverse set of Brigham Health team members in part-time outreach (alongside their typical duties) regarding serious illness preferences. The team included 21 Integrated Care Management Program (iCMP) nurse care coordinators, 17 non-iCMP nurses, members of Brigham Health's social care team (six community resource specialists, seven population health coordinators, two patient engagement coordinators, and four community health workers), and 14 medical students. The broader intervention was designed by the Brigham Health care management team leadership, including a care management medical director and administrative director, a social care team medical director, an iCMP nursing director, and several care management project managers.

The Execution

The primary care and care management teams at Brigham Health spearheaded this intervention. Brigham Health is a Boston-based academic medical center affiliated with Harvard Medical School that cares for 160,000 primary care patients. Its 18 clinics range from practices located on the main Brigham Health campus to community health centers and community primary care practices in and around Boston. Brigham Health, as part of the broader Mass General Brigham enterprise, participates in accountable care arrangements, including the Medicare Shared Savings Program and the MassHealth ACO.

The patients we sought to contact regarding serious illness preferences were either enrolled in Brigham Health's iCMP (n = 2,833) or were Brigham Health primary care patients identified as at high risk of morbidity and mortality from Covid-19 (n = 5,500). The iCMP program is a primary care–based care management program with the goal to enhance care for complex patients identified by a proprietary Mass General Brigham claims- and EHR-based algorithm (Algorithm 1) as being at risk of poor outcomes and high costs. Patients identified by Algorithm 1 are then reviewed by their primary care physicians (PCPs) for enrollment in the iCMP program, and appropriate patients are provided intensive case management by nurse care coordinators based in the primary care practices.[9,10]

> " *Identifying the denominator of patients who are seriously ill — those with conditions that confer mortality risk and either burden their ability to live their life or notably impact their caregivers — to prioritize for palliative care and serious illness communication interventions remains a key challenge for implementers.* "
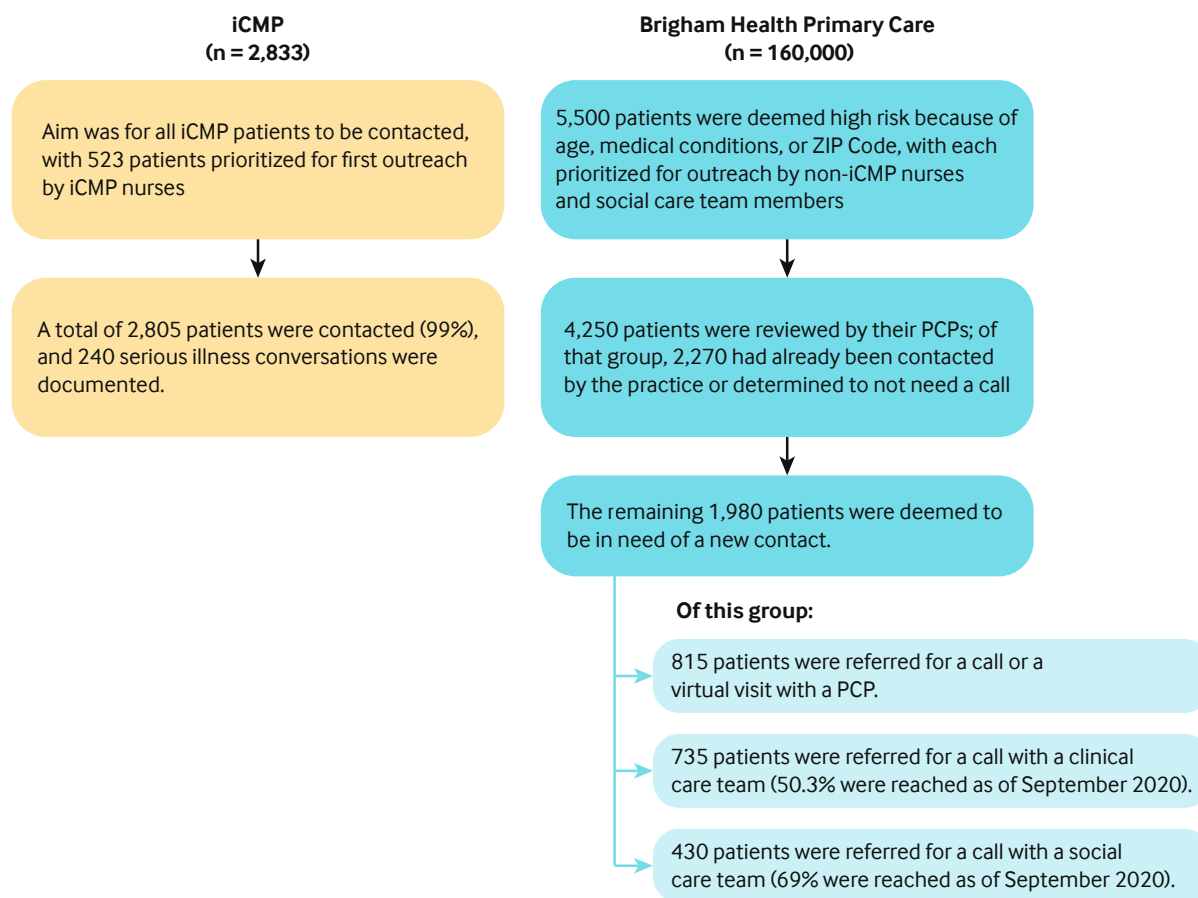
The efforts of nurse care coordinators are supplemented by additional team members such as pharmacists, community health workers, and specialized heart failure and end-stage renal disease nurses, as needed. In our non-iCMP intervention, Brigham Health primary care patients not enrolled in iCMP were identified as high risk if they were older than 80 years of age with any frailty

indicator (e.g., weight loss, vision impairment, malnutrition, urinary incontinence, difficulty walking, etc.); were older than 70 years of age with respiratory disease, cardiovascular disease, or diabetes; had any evidence of serious illness (such as end-stage renal disease, cirrhosis, or dementia); or resided in high-risk ZIP Codes, on the basis of Massachusetts Department of Public Health Covid-19 data (Figure 1).

FIGURE 1

Segmenting Patient Population for Serious Illness Outreach

This figure shows the segmentation of population for outreach between Integrated Care Management Program (iCMP) and non-iCMP patients. For the iCMP group, we successfully contacted 99% of the patients and documented serious illness conversations for nearly 9% of those patients. For the non-iCMP patients who had been reviewed by their primary care physicians (PCPs), 47% were deemed to be in need of a new call.

iCMP
(n = 2,833)

Aim was for all iCMP patients to be contacted, with 523 patients prioritized for first outreach by iCMP nurses

A total of 2,805 patients were contacted (99%), and 240 serious illness conversations were documented.

Brigham Health Primary Care
(n = 160,000)

5,500 patients were deemed high risk because of age, medical conditions, or ZIP Code, with each prioritized for outreach by non-iCMP nurses and social care team members

4,250 patients were reviewed by their PCPs; of that group, 2,270 had already been contacted by the practice or determined to not need a call

The remaining 1,980 patients were deemed to be in need of a new contact.

Of this group:

815 patients were referred for a call or a virtual visit with a PCP.

735 patients were referred for a call with a clinical care team (50.3% were reached as of September 2020).

430 patients were referred for a call with a social care team (69% were reached as of September 2020).

Source: The authors.

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These groups were identified and were segmented for differential outreach because, while they each were at high risk of Covid-19–related illness, they differed in several ways:

• Their overall risk profiles and needs (with patients in the iCMP group thought to be of higher risk overall by virtue of being identified by Algorithm 1, and the non-iCMP group thought to have a higher likelihood of resource needs given that a proportion was identified on the basis of ZIP Code),

• Their previous engagement with an extended care team (with iCMP patients having previous close relationships with nurse care coordinators), and

• The extent to which the concept of serious illness preferences had been introduced previously (SICs had been introduced previously with many iCMP patients).

iCMP Outreach

In late March 2020, iCMP nurse care coordinators were provided lists of their patients to contact. While we intended to contact all 2,833 iCMP patients, we began with those 523 patients who had either not been contacted recently or who we thought were most important to prioritize for early outreach. Identifying the denominator of patients who are seriously ill — those with conditions that confer mortality risk and either burden their ability to live their life or notably impact their caregivers — to prioritize for palliative care and serious illness communication interventions remains a key challenge for implementers.[11,12]

During the time pressure of our Covid-19 work, we chose to employ a proxy indicator for those most in need of SICs by prioritizing those 523 patients estimated to be at highest risk of mortality at 1 year, on the basis of proprietary predictive analytics work (which we hereafter refer to as Algorithm 2) by a Brigham Health informatics team. The team uses machine learning and natural language processing to identify risk of death, and they have previously demonstrated the ability to accurately predict mortality in patients with dementia.[13] While tools that use mortality prediction as a proxy indicator for serious illness are common, the approach remains imperfect, because the tools do not assess other critical human elements of serious illness — such as illness' impact on personal and family life[14] — that can predict the need for patient–clinician conversations about goals and values.

> *Overall, Integrated Care Management Program (iCMP) nurses noted that while they at first might have felt awkward asking the serious illness conversation (SIC) questions over the phone, patients were very receptive to the conversations. Their health and mortality were more real and concrete in the setting of Covid-19, and, in some cases, they were eager to have these conversations.*"

The iCMP nurses were asked to have an SIC during telephonic outreach calls as appropriate and to ensure that their patients' wishes were documented in a designated portion of the electronic medical record. The iCMP nurses had previously received training in conducting comprehensive SICs for seriously ill patients[2] as part of a train-the-trainer model[15] that leverages the SIC Guide developed by Ariadne Labs. This previously conducted training was supplemented by two

additional sessions conducted by author J. Lakin. and a palliative care colleague between March and April 2020 that iCMP nurses could attend if they were interested and by a Covid-19–specific SIC Guide developed by Ariadne Labs (Appendix).

Conversations were conducted by phone, and iCMP nurses were encouraged to document the conversations in a dedicated Advance Care Planning section of the electronic medical record that prompts users to include items such as a patient's illness understanding, hopes, and worries. It also provides room to document what is important to patients and their families and to clarify appropriate next steps, such as completing legal documents, arranging follow-up conversations, etc. Finally, it provides a single storage site for legal forms such as HCP and Medical Orders for Life-Sustaining Treatment (MOLSTs).[16]

Non-iCMP Outreach

During the same period, a total of 5,500 primary care patients not in iCMP were identified as at a high risk on the basis of their age, medical conditions, and ZIP Code. They were designated for telephonic outreach by a non-iCMP nurse or our social care team, consisting of community resource specialists, population health coordinators, patient engagement coordinators, community health workers, and medical student volunteers. Brigham Health PCPs reviewed 4,250 patients in this group (80%) and designated them as needing a virtual visit with their PCP, as being appropriate for outreach by a nurse or a member of the social care team, or as not appropriate for outreach (e.g., if a patient was on hospice or actively hospitalized, and, thus, inpatient providers were having these conversations).

Given that team members reaching out to this group of patients did not have a preexisting relationship with them and that this group of patients had an overall lower risk of morbidity and mortality than did our iCMP cohort, we directed discussions to focus on asking patients whether they had identified an HCP. If patients already had an HCP on file in the Brigham Health system, our outreach served to verify that the HCP reflected their current wishes. Patients were given an opportunity to document an HCP if they did not yet have one. Patients were also provided Covid-19 education and were screened for Covid-19 symptoms and resource needs such as food and housing. (Full details of the script used for calls are available in the Appendix.)

All social care team members and medical students had been trained in how to facilitate an HCP conversation during a session led by the care management team's medical and administrative directors. This session also covered the logistics of outreach, documentation (including a smartphrase with prompts), and tracking of calls. Team members were informed about whom to contact in case a medical concern arose during conversations. Non-iCMP nurses received separate training provided by nursing leaders and had access to the same scripts and materials available to the social care team and medical students. Community resource specialists on the social care team led weekly office hours so that other personnel conducting outreach could properly triage and communicate resource needs and escalate any urgent questions or concerns to nursing and physician leadership.

The Metrics

We contacted a total of 2,805 iCMP patients (99% of all eligible patients) during the pandemic, with 523 prioritized for initial contact; iCMP nurses documented a total of 240 SICs between March and July 2020.

As an example of one of these conversations, iCMP nurse B.H. was able to help a patient, with multiple drug-resistant urinary tract infections resulting in sepsis and Covid-19, to clarify her wishes in the setting of decreased independence. In the 6 months prior to the pandemic, the patient had had four admissions and four skilled nursing home visits. She became wheelchair dependent and subsequently more debilitated after developing Covid-19. Through a skilled SIC, nurse B.H. was able to elucidate how important it was to the patient to be able to think, connect with others, and not receive intrusive care if she were in a state in which she was not able to communicate with others. These preferences were documented in the electronic medical record, and the patient's MOLST form, which had indicated previously that she wanted to receive all life-saving measures, was updated to reflect more nuanced wishes.

> " *We instead need tools that can help us target those who are most in need of a patient–clinician conversation about goals and values in advancing serious illness; while this may include those with conditions that carry a high risk of mortality, it will also identify those who may have impairments in quality of life, functional status, or caregiver support.*"

Because these conversations were conducted over the phone rather than in person (as would have occurred during non–Covid-19 times), family members were more likely to be present for the conversations and involved. In one situation, a patient had filled out her HCP information in the December prior to Covid-19. When this patient's iCMP nurse reached out to her to verify the information, they realized that the son whose home the patient had moved into during Covid-19 was not her proxy and was not aware of her wishes. This realization triggered a family-wide discussion about the patient's wishes, and the patient made it clear to all family members that she would only want intravenous fluids and no other intervention in the event of acute illness.

Overall, iCMP nurses noted that while they at first might have felt awkward asking the SIC questions over the phone, patients were very receptive to the conversations. Their health and mortality were more real and concrete in the setting of Covid-19, and, in some cases, they were eager to have these conversations.

Of the 5,500 Brigham Health primary care patients identified as high risk but not in iCMP, the records of 4,250 were reviewed by their PCPs (in some cases, PCPs had been redeployed to other work or could not be reached). Of that group, 2,270 had already been contacted by their practice to check in on their well-being or to make an appointment or were designated as not needing a call (if,

for example, they were on hospice, had just had a phone call with a PCP, were deceased, or were no longer receiving care in our system). The remaining 1,980 patients were targeted for outreach: 815 were referred for a virtual visit with their PCP; 735 were referred for a call from their usual primary care clinical team (i.e., a nurse in primary care), with 370 (50.3%) reached; and 430 patients were referred for non-iCMP nurse or social care team outreach, with 297 (69%) reached successfully.

Of the 297 patients reached via non-iCMP nurse or social care team outreach, 103 had their emergency contact updated in the electronic medical record, and 58 HCP forms were mailed to patients. In addition, 133 of patients reached (44.8%) requested a second call as a later check-in. Food insecurity and medication access issues were the most common needs among patients referred for a social care team call who reported determinants of health concerns (Figure 1).

Hurdles

We faced several hurdles during this outreach. First, while our nurse care coordinator team was able to document SICs in a specific portion of the electronic medical record, and our expanded social care team had a defined place to document HCP preferences, it was a challenge to coordinate the logistics of completing legal documents (such as a MOLST form) in the setting of a pandemic and the predominantly virtual interactions. In the future, the availability of eMOLST (an electronic platform for completing and digitally signing MOLST forms) may mitigate these challenges.

Second, the segmentation of our patient population and subsequent outreach to a portion of the population by team members, who did not have a preexisting relationship with the patients and had various degrees of medical knowledge (or knowledge of patients' specific conditions), resulted in limiting the depth of conversations available to non-iCMP patients. While iCMP nurse care coordinators knew their patient panels well and could engage in an in-depth conversation regarding goals and preferences, this was less feasible for other members of the care team making calls to primary care patients with whom they were speaking for the first time. This affected the depth of conversations with non-iCMP patients and likely patient comfort with the conversations, but was a necessary choice to facilitate outreach to a broad swath of patients who did not have a designated care coordinator.

Rapid adaptation of algorithms to facilitate patient identification emerged as a third challenge. While Algorithm 2 had previously been developed and used to identify the highest-risk iCMP patients, the analytics used to identify high-risk non-iCMP patients had not existed previously, but rather had to be rapidly deployed during the pandemic to meet evolving needs. Furthermore, while we used Algorithm 2 to prioritize patients by their probability of death, this is not the ideal way to identify and prioritize patients for the type of intervention we have described.[14] We instead need tools that can help us target those who are most in need of a patient–clinician conversation about goals and values in advancing serious illness; while this may include those with conditions that carry a high risk of mortality, it will also identify those who may have impairments in quality of life, functional status, or caregiver support. We continue to work with our informatics team to broaden the scope of the predictive analytics tools and are also testing the algorithms to see if they are acceptable to clinicians and able to change behavior rather than simply measuring the accuracy of mortality prediction.

> *It is notable that many of the members of this diverse team had already worked together to address patients' social determinants of health prior to the pandemic, which not only facilitated smooth collaboration, but also made it possible for us to screen patients for issues such as food insecurity and to provide basic Covid-19 education alongside conversations regarding serious illness preferences."*

Finally, while we were able to leverage the time and resources of a diverse set of people to engage in serious illness outreach during the height of the pandemic, it is less clear how this type of outreach can be sustained at this scale in the longer term, outside of a crisis setting. Future work will involve consideration of how to integrate ongoing engagement with SICs into daily workflows.

Our work builds upon prior efforts within our own institution to empower primary care clinicians to engage in SICs with their patients.[2] While similar work has previously engaged nurse care coordinators and social workers,[17] our intervention is unique in engaging community-based practitioners in the work of eliciting serious illness choices. It is also notable for integrating an assessment of needs related to social determinants of health, with the goal of taking a holistic approach to patient needs during a time of significant stress and growing food and housing insecurity.

Lessons Learned

Over a period of 5 months (with the majority of effort in March through May), our team of 71 clinicians and health care professionals rapidly adapted their workflows alongside existing responsibilities and successfully contacted more than 3,000 patients at risk of serious illness in order to document their goals and preferences. Behind the scenes in this effort was a care management team that prepared and disseminated lists of high-risk patients, facilitated review by PCPs, trained diverse team members, and coordinated work among the team's many players.

Our experience demonstrates that a population health approach can be used to facilitate stratified outreach regarding serious illness to patients with varied profiles and needs. We were able to effectively segment our institution's at-risk and primary care populations in order to prioritize outreach regarding serious illness for those with the highest risk of mortality among our patient base. Patients were receptive to outreach regarding serious illness and HCP decisions and were willing to engage in telephonic discussions around these topics, in some cases with team members they did not previously know.

Our experience shows that it is possible to engage a diverse team in this work, ranging from community health workers and medical students (who may be new to serious illness outreach) to nurse care coordinators who are skilled in these conversations. It is notable that many of the members of this diverse team had already worked together to address patients' social determinants

of health prior to the pandemic, which not only facilitated smooth collaboration, but also made it possible for us to screen patients for issues such as food insecurity and to provide basic Covid-19 education alongside conversations regarding serious illness preferences. Both the involvement of a diverse team and its ability to screen for social determinants of health are of importance given the racial and social lines along which the current pandemic has affected our patients.[18-20]

Where to Start

To initiate their own program of targeted outreach to clarify serious illness wishes, institutions should:

• Identify which patients are at high risk of serious illness. Organizations can use proprietary predictive analytics or take an approach based on patient age, comorbidities, and demographics. Subsequently, validate which patients are appropriate for outreach with PCPs or others who know patients well.

• Engage diverse care team members in the serious illness outreach effort. It is possible to engage both team members with whom patients have a preexisting relationship and a broader care team with varied training and skill sets.

• Develop or adapt a guide that helps team members performing outreach navigate the language used to assess serious illness goals and preferences. Train members in using this guide.

• Develop tracking tools and areas in which team members can document outcomes of conversations in the medical record.

• Assess the success of outreach via metrics such as the number of patients reached, the number of conversations documented, and the number of patients for whom other needs are identified and addressed.

Next Steps

Several priorities emerge for our program. First, we will aim to continue refining our stratification methodology to identify which types of serious illness engagement are best suited for which segments of patients; for example, should we focus on documentation of code status versus documentation of HCPs versus more complete SICs exploring complex goals of care preferences?

In addition, we will aim to develop a process for regular, sequential outreach to at-risk patients regarding serious illness care preferences. The importance of this goal has been highlighted by the ongoing pandemic, but it has not been easy to achieve given the resource reallocation needed for the effort we have described and the many competing priorities facing care teams. Finally, we will seek to establish ways in which nonclinical members of the care team are able to regularly contribute to SICs while balancing their other responsibilities to patients and leveraging their unique skill sets to enhance patient care.

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Appendix

A. Covid-19 Conversation Guide for Outpatient Care Script for Covid-19 Clinical Support. B. Outreach to Non–Integrated Care Management Program (iCMP) Patients.

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