

IN DEPTH

Systemwide Advance Care Planning During the Covid-19 Pandemic: The Impact on Patient Outcomes and Cost



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WellSpan Health, an integrated system of eight hospitals and more than 170 outpatient locations, adopted a systemwide approach to implement team-based advance care planning (ACP) processes and during the pandemic created a remote response team to help high-risk patients with Covid-19 with ACP. The authors analyzed ICU use and costs for 356 patients who died of Covid-19 after being admitted to WellSpan hospitals. They compared patients who had completed ACP prior to hospitalization (53%) with those who had not (47%). While the patients who completed the ACP process were older than those who did not (79 vs. 73 years) and had greater acuity (LACE + score 71 vs. 65; LACE is a mnemonic representing a composite score, where L stands for length of stay, A for acuity, C for comorbidities and E for emergency department visits within last 6 months), they were less likely to use the ICU (62% vs. 78%) and accrued 25% lower costs whether they received ICU care or not. Systematic ACP, leading to proactive decision-making for treatment preferences by patients and their family members, can reduce unwanted medical interventions and the cost of care.

Advance care planning (ACP) defines patients' end-of-life treatment preferences and should be introduced well before a potential end-of-life crisis occurs. Well-informed ACP involving both patients and family members can lead to care concordant with patients' wishes¹ and reduce the

moral distress of family members who must make decisions for their loved ones without knowing those wishes.² However, ACP often occurs too late to accomplish its objective of elucidating the patient's wishes and ensuring that they are carried out: after a patient has been hospitalized, after medical decompensation, and, in many cases, after the patient has already undergone resuscitation or connection to life support. Frequently, the decisions fall entirely upon their medical proxies who are often completely unprepared.

Systematically promoting and facilitating ACP is challenging for health systems, because of limited clinician time, lack of proper communication training, and apprehension in broaching a difficult subject.^{3,4} The Covid-19 pandemic increased the urgency of having ACP in place, because patients with severe Covid-19 frequently need life support and their prospects for a full recovery afterwards are often quite bleak. Patients with chronic conditions or frail overall health were particularly likely to have severe disease. Limited in-person interactions made it almost impossible to pursue ACP during routine care, necessitating the development of remote outreach and Web-based interactive tools⁵ to engage patients in ACP conversations.

WellSpan Health is an integrated system with more than 20,000 employees that serves about 700,000 unique patients across five counties in south central Pennsylvania. We describe our ongoing efforts to improve our approach to ACP and how we adapted our processes during the pandemic. Additionally, we studied the impact of patients' ACP status on clinical and financial outcomes.

Rethinking ACP

In 2014, WellSpan evaluated national and local research highlighting gaps in ACP processes that led to poor outcomes, and we began pursuing a systemwide effort to enable proactive ACP discussions with patients. The catalyst for change was our realization that the existing approach to ACP was broken and was not resulting in the desired outcomes because staff focused on documentation and other priorities at the expense of ACP conversations. Family members and health system staff were in conflict over decisions that needed to be made. Limited clinician and team training were also significant barriers.

The systemwide intervention was developed by a task force supported by WellSpan's board of directors and executive leadership. By 2016, WellSpan had implemented a pilot with 10 primary care practices to test the model illustrated in Figure 1. It begins with the medical assistant (MA) identifying suitable patients for ACP conversations each morning and introducing ACP to them during intake.

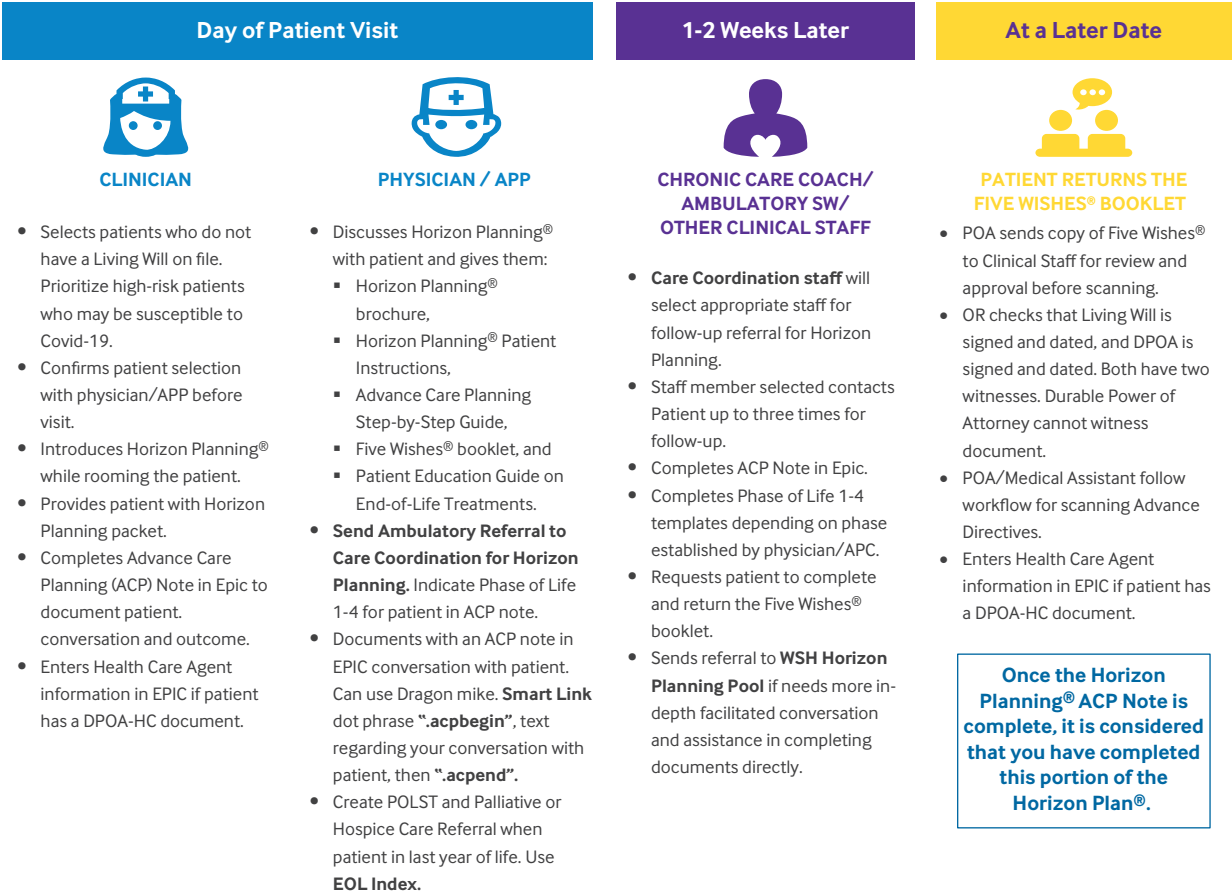
“ *ACP often occurs too late to accomplish its objective of elucidating the patient's wishes and ensuring that they are carried out.* ”

Although the pilot was successful, WellSpan did not have full-time team members who could drive the systemwide ACP initiative and sustain it at scale. Within a year, a full-time staff member was hired to pursue this ACP model across all settings. (We added an additional staff member in 2020 and plan to add two more by the end of 2021.)

FIGURE 1

Horizon Planning Workflow for Primary Care Practice

Horizon planning workflow for primary care practice at WellSpan Health (WSH). The systemwide advance care planning (ACP) intervention was developed by a task force supported by WellSpan’s board of directors and executive leadership. By 2016, WellSpan had implemented a pilot with 10 primary care practices to test the model illustrated. APP = advanced practice provider, DPOA-HC = durable power of attorney for health care, EOL = end of life, POA = power of attorney, POLST = physician's orders for life-sustaining treatment, SW = social worker.



Source: WellSpan
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All staff, regardless of relationship to direct patient care, are given an understanding of the importance of ACP and their role in supporting the patients’ wishes. Staff training is carried out via online curricula, in-person training, and follow-up support. Once trained, staff are part of a team approach to conversations with patients so that one discipline is not responsible for all ACP-related interactions with patients.

By 2020, using a change management model and unified electronic health record (EHR), ACP workflows had been integrated into 54 ambulatory practices, three hospitals, home health care, remote patient monitoring, and preferred partner skilled nursing facilities.

WellSpan used the system-change model and implementation framework provided by Gundersen Health System and Respecting Choices that had been developed and researched for more than two decades.⁶ These tools were instrumental in creating an organizational culture and a systemic approach to significantly improving the engagement of patients in planning for end-of-life care.

WellSpan created its own patient packet, which included instructions for completing Five Wishes advance directive forms, the forms themselves (which, under Pennsylvania law, the patients can complete and sign in the presence of two witnesses), and patient education guides on life-support options. To promote standardization, similar messages and materials are provided at all care sites. In addition, patients can access materials free through the WellSpan website and the My WellSpan patient engagement mobile app.

Our ACP effort is led by an active ACP leadership team: an executive champion, a physician lead, a full-time ACP program manager, and a full-time ACP coordinator. This leadership team and its associated cost are covered by the Continuing Care Services departmental budget. The core team engages clinical and operational leaders from across the system to begin, sustain, and expand systematic ACP efforts.

At the care sites, all team members, including physicians, advanced practice providers, licensed practical nurses (LPNs), registered nurses (RNs), support staff, and care coordinators, play a role in the ACP process. The cost of this activity is a minor increment on people's time and has been demonstrated to pay for itself in savings. WellSpan views ACP as integral to the standard of care.

There are robust data and analytics support for ongoing data tracking and retrospective analysis through WellSpan's Analytics Center of Excellence.

Covid-19 Response

Given the Covid-19 pandemic's disproportionate impact on older patients with chronic conditions, the need for ACP was unusually urgent. We needed to find ways to have ACP discussions and complete ACP documentation for patients separated from family members, caregivers, and medical proxies. Because of the challenges of limited in-person contact, we had to develop a novel approach to ACP conversations based on the foundation we had already created.

Therefore, in April 2020, WellSpan staffed an Advance Care/Horizon Planning Response Team (HPRT) that engaged in ACP discussions with patients tested for severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) or those who would be at higher risk of severe disease if infected by SARS-CoV-2.

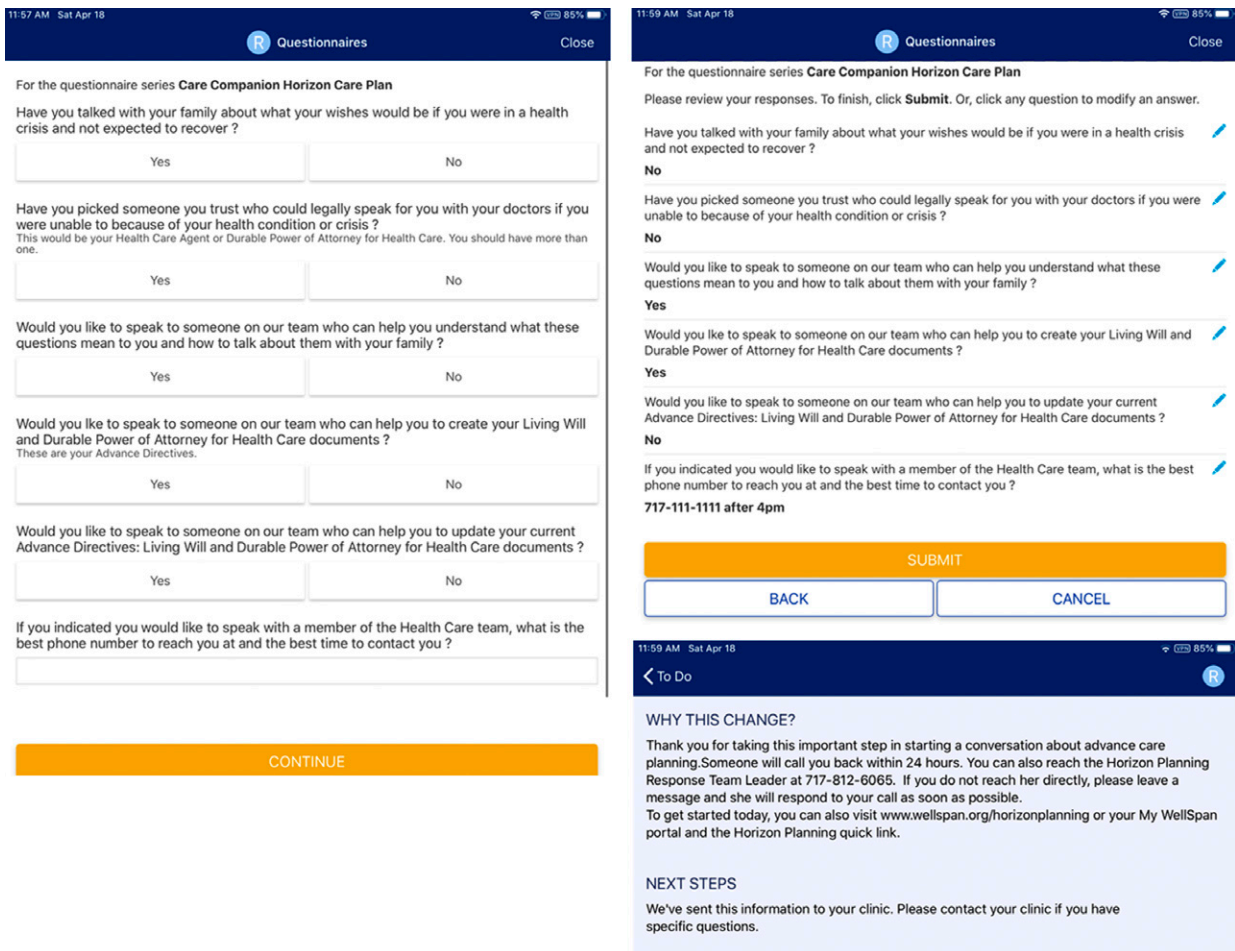
“ All staff, regardless of relationship to direct patient care, are given an understanding of the importance of ACP and their role in supporting the patients’ wishes.

HPRT comprised 35 team members who were furloughed because of practice shutdowns. They included MAs, social workers, LPNs, RNs, and certified registered nurse practitioners from WellSpan primary care practices, care management, and other areas. Most had prior training in

FIGURE 2

Questions Regarding Advance Care Planning

Questions regarding advance care planning imbedded in the WellSpan Health patient engagement mobile app, My WellSpan



Source: WellSpan

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having ACP conversations through the systemwide initiative. However, all received additional focused training through virtual sessions on ACP best practices specific to Covid-19 based on emerging national guidelines.

The Care Companion tool in WellSpan's Epic EHR was leveraged for patients tested for SARS-CoV-2. Six questions regarding ACP were imbedded in My WellSpan (Figure 2). Patients who expressed an interest in ACP received follow-up from HPRT. In addition, high-risk patients identified through EHR-generated ACP reports were proactively contacted by HPRT. Through a chart review prior to the outreach, HPRT determined previous ACP activity depicted by documented ACP notes or scanned advance directives and followed up with appropriate interventions.

HPRT telephoned patients to introduce ACP (Figure 3). If they requested written materials, a patient packet was mailed to them and followed up with another call to answer any questions and concerns related to completion of the documents. The team provided direct assistance by phone or video visits to help complete Five Wishes advance directives and guidance on obtaining two witness

FIGURE 3

HPRT Workflow

Horizon Planning Response Team (HPRT) workflow and scripts to discuss advance care planning (ACP) with patients who tested positive for Covid-19 and indicated interest in ACP or who were deemed high risk on the basis of electronic health record review. DPOA-HC = durable power of attorney for health care, LW = living will, PCP = primary care provider.

Horizon Planning Response Team Workflow and Scripts

HPRT Step by Step Process:

- Calls patient to introduce advance care planning, identify materials and assistance available from team, and confirms level of support needed/wanted by patient. Three calls to reach patient is standard protocol. Followed script provided to staff during training.
- Mails packet of materials if requested. Includes cover letter outlining next steps for patient. Either directly or through Central Distribution Center.
- Sets a date for two-hour follow-up discussion with patients requesting assistance in completing the documents.
- Follow-up discussion call (Respecting Choices model and other COVID-19 conversation models: Detailed script provided to staff during training) – Discusses with patient the following:
 - What gives life meaning? What if only short time to live – how does this change?
 - What experience has person had with death and dying that would influence decisions?
 - What cultural, spiritual, or religious beliefs might influence decision making and is there a faith leader the person wishes to consult with before making decisions?
 - What is patient's understanding of advance care planning and what advance directives are?
 - Discuss all segments of Five Wishes booklet, particularly DPOA-HC and LW segments.
 - Discussion of signature page and need for witnesses.
 - Discussion of need for additional follow-up for completion of document.
 - Discussion of how to ensure document gets to medical records through PCP, hospital, or My WellSpan portal.
- Completion of effort.

Source: WellSpan

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signatures safely. Once the documentation was complete, patients could upload the documents to their health records through MyWellSpan, mail them, or ask for them to be picked up. HPRT would then upload them to the patient's record.

HPRT members have since returned to their parent practices, and the enhanced skills they gained during the Covid-19 response are benefitting our systemwide efforts. All pre-Covid-19 ACP efforts at various care sites have been sustained during the pandemic.

Data Collection and Analytic Plan

To study the impact of ACP and related documents, we performed a retrospective analysis of all patients who died as a result of Covid-19 in four WellSpan hospitals between March 2020 and February 2021, with a goal of assessing differences in outcomes on the basis of patients' ACP status prior to hospitalization. WellSpan's institutional review board determined this as a quality improvement project.

Covid-19 status was determined by a positive laboratory test result within 14 days before admission. A total of 356 patients were included in this analysis. The patients were divided into those with or without ACP documents in place.

ACP status was determined by the presence of any of the following documents in their patient medical record: Scanned Pennsylvania Orders for Life-Sustaining Treatment, Scanned Living Will, or Scanned Power of Attorney or documented ACP note.

“ *Given the Covid-19 pandemic's disproportionate impact on older patients with chronic conditions, the need for ACP was unusually urgent.* ”

Patient demographics, including age, sex, and race/ethnicity, were recorded. To assess acuity, we used the highest LACE + score (an algorithmic assessment that prognosticates patient's risk of readmission) during the encounter.⁷ We used the Elixhauser Comorbidity Index, which assesses the burden of comorbid conditions, to compare chronicity in study cohorts. Each patient group was further assessed as to whether they received palliative care and hospice consults during their inpatient stay. We also assessed ICU utilization and averaged the sum of all ICU days among patients who spent time in the ICU during their inpatient stay. Cost data for patient encounters were obtained from StrataJazz (Strata Decision Technology, LLC, Chicago, IL), which provides a comprehensive cost of care based on charges each patient incurs, including both variable/direct expenses and an allocation of fixed costs. Additionally, in the ACP group, an independent randomized chart audit was performed to assess how well the care received matched up with the patients' end-of-life care wishes.

Covariates were added to each regression model to adjust for factors that may have affected outcome variables. Logistic regression was used for comparison of palliative care consult rate,

hospice referral rate, and ICU usage using the ACP documents indicator and the weighted Elixhauser Comorbidity Index. Linear regression was used for comparison of ICU length of stay (LOS), with ACP documents indicator and weighted Elixhauser Comorbidity Index added as independent variables. A gamma distribution-based generalized linear model was used for comparison of cost using the covariates ACP documents indicator, weighted Elixhauser Comorbidity Index, and ICU usage indicator.

Key variables such as age, sex, and race/ethnicity are associated with disproportionate hospitalization rate, testing positivity rate, and ventilator usage rate among patients with Covid-19. Because none of these outcomes were being studied, the analysis did not control for these variables.

Results and Discussion

Our systemwide ACP implementation has resulted in ACP conversations with more than 20,000 unique patients since 2016. More than 92,000 ACP packets of materials have been distributed to patients and community members. The pandemic slowed the expansion of our efforts, but not our commitment and our anticipation of its impact (as previously demonstrated by studies⁶ at Gunderson Health System). During the initial peak of the pandemic, HPRT contacted 2,434 patients over a 2-month period.

We found that a higher percentage of deceased patients in the study population had ACP (53.3% vs. 46.6%) prior to hospitalization. Patients in the ACP group were more likely to be older (median age 79 vs. 73 years), female (44.2% vs. 37.3%), and white (90.5% vs. 78.9%) and less likely to be Black (2.6% vs. 7.2%) or Hispanic (3.2% vs. 9.6%) (Table 1). While both groups were evenly matched for comorbidities, the ACP group had a higher median LACE+ score (71 vs. 65), indicating greater overall acuity.

Patients with ACP prior to hospitalization had lower use of inpatient palliative care consultation (49.5% vs. 52.5%) and a higher referral rate to hospice services (29.7% vs. 22.5%) ($P > .05$ for both)

Table 1. Baseline Characteristics of Patients Who Died of Covid-19 with or Without ACP Documented Prior to Hospital Admission

	With ACP (n = 190)	Without ACP (n = 166)
Median age (years)	79	73
Male (%)	55.8	62.7
Female (%)	44.2	37.3
White (%)	90.5	78.9
Black (%)	2.6	7.2
Hispanic (%)	3.2	9.6
Median LACE+ score	71	65
Median weighted Elixhauser Comorbidity Index	11	11

ACP = advance care planning. Source: WellSpan.

Table 2. Differences in Services Received and Costs for Patients Who Died of Covid-19 with or Without ACP Documented Prior to Hospital Admission

	With ACP (n = 190)	Without ACP (n = 166)	P value
Palliative care inpatient consult	93 (48.9)	87 (52.4)	.5263
Inpatient hospice consult	57 (30.0)	40 (24.1)	.2385
Encounters with ICU utilization	120 (63.2)	127 (76.5)	<.01
Average ICU days, No.	7.6	12.8	<.05
Cost of care, \$			
With ICU stay	53,420.30	70,785.10	<.01
Without ICU stay	18,653.50	24,717.00	<.01

ACP = advance care planning. Data are No. (%) unless otherwise indicated. Source: WellSpan.

(Table 2). The ACP group had significantly lower ICU use (61.9% vs. 77.5%; $P < .01$), and, amongst those who used the ICU, the ACP group had lower ICU LOS (7.8 vs. 12.6 days; $P < .05$).

Patients with ACP accrued significantly lower costs compared with those without ACP (Table 2). Patients admitted to the ICU with ACP had inpatient costs 24.5% lower than those without ACP (\$53,420.3 vs. \$70,785.1; $P < .01$). Furthermore, even amongst patients not admitted to the ICU, those with ACP had inpatient costs 24.5% lower than those without ACP (\$18,653.5 vs. \$24,717.0; $P < .01$).

Our findings suggest that ACP prior to hospitalization can lead to proactive decision-making for end-of-life care preferences by patients and their family members. Even though patients with ACP were older and had greater acuity, they were less likely to receive unwanted ICU-level care. (We conducted an independent random chart audit to confirm that the care patients received was consistent with their stated wishes.) The reduction in unwanted aggressive care led to a 25% reduction in cost as well, regardless of whether a patient did or did not go to the ICU.

Furthermore, proactive ACP discussions can potentially reduce the burden on the inpatient palliative care teams through reducing the need for in-hospital consultations for ACP.

Of all the patients that we analyzed whose death was Covid-19 related, more than half had ACP documented prior to hospitalization, suggesting the overall success of the program in accessing patients proactively who would go on to have a poor outcome. Because our program involved having very difficult conversations via remote communication, this success supports the viability of such a strategy going forward.

On the basis of these findings, more study is warranted to examine the impact of ACP on all hospitalized deaths. The results validate the importance of a systemwide initiative and a continued commitment to sustain and expand ACP efforts.

One potential limitation of this analysis is that the possible effect of race/ethnicity, sex, and age on outcomes was not assessed. However, we clearly must explore ways to increase the success of ACP outreach among racial and ethnic minorities. Other lessons learned include:

- ACP must be a key strategic initiative for the entire health system, with commitment from top leadership and the board of directors, to adopt and implement a consistent approach systemwide.
- This initiative must be supported by a dedicated full-time team to spearhead activities and develop community awareness through partnerships and engagement activities.
- The ACP activity at all care delivery sites must be team based and not the responsibility of one individual or role type.
- Metrics and data dashboards at all levels are necessary to drive accountability, sustained performance, and ongoing improvement.

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