**Appendix. Supplemental Methods and Results**

SUPPLEMENTAL METHODS

Context and Participants

Massachusetts law allows several mechanisms for voiding health care proxy forms: patients can void them verbally or in writing; they are automatically voided if someone had named their spouse as their agent but then they became separated or divorced; and they can be voided by a court of law (for instance if a health care team becomes concerned that an agent is not acting in a patient’s best interest). The law allows the design of HCP forms to vary, only requiring that certain key elements be present in order for a form to be valid.1 As a result, HCA uses a HCP form that was developed and refined at BIDMC using user-centered design principles to ensure maximal readability.2

In any given week, HCA suites each average 240 to 450 non-urgent patient encounters. The clinic is staffed by ~165 physicians (~100 of whom are residents) and several NPs, who in total account for ~38 FTEs. Numerous people support the physicians and NPs, including 20 MAs and 12 CAAs.

The advance care planning (ACP) page in WebOMR has the ability to store Yes/No information about whether or not a patient has chosen a proxy, and if not, it has the ability to store Yes/No information about whether the patient was provided information. If the patient has chosen a health care proxy, then the proxy’s name and phone number are required fields. The ACP page also allows for the storage of scanned documents in Portable Document Format (PDF).

Intervention

In the context of the Massachusetts health care proxy form requirements, although initiatives that mail a blank proxy form to patients prior to their clinic visit, or that use a web-based interface3–6 have some appealing characteristics, they require the patient to locate witnesses and remember to bring the form in to their next visit, making it much less likely a properly completed proxy form will end up in the electronic medical record. In addition, research has shown that didactic and information based methods to improve rates of advance directive completion are not as effective as interactive methods over a number of visits where participants have the opportunity to ask questions or receive assistance completing forms.7–9 Initiatives that remind physicians of the importance of completing advance directives have resulted in some improvements, but it is unclear that these are sustainable.10–13 Given multiple competing demands for primary care physician time, the task of helping a patient designate a HCP may be best shifted to other professionals.9,14,15

As a result, rather than a pre-clinic mailing, electronic solution, or physician-based process, we purposefully designed a clinic-based process using a paper form that relied on non-physician professionals. We anticipated that such a process would create an opportunity for patients to ask questions and allow them to get assistance completing forms, verify they had done so properly prior to leaving the clinic, and ensure that a copy was saved in the medical record. We also hypothesized that non-physician professionals might value expanding their scope of practice.

Although many advance care planning improvement initiatives focus on seriously ill patients,16 HCA decided to encourage all patients 18 years or older to complete a HCP, regardless of their state of health. Conceptualizing HCP completion as part of routine health care maintenance normalized the task and eliminated the need to identify or target a subset of “seriously ill” patients.

To develop and refine the process, the North suite’s physician leader (JB) convened an interdisciplinary team meeting in the summer of 2014 to discuss the project, craft a collaborative workflow, and identify team member roles. Using plan-do-study-adjust (PDSA) cycles, the process was iteratively refined with a few MAs and CAAs in the North suite over a six-week pilot period. During this time, the MAs and CAAs were coached about HCPs and the process in a variety of ways. They watched a video about why it is important to select a HCP, reviewed and practiced completing a HCP form with a team member, discussed ways of raising the topic of a HCP with a patient, practiced responding to patients’ questions about HCPs, and learned where to enter data into the medical record and how to scan HCPs.

Direct observations

Direct observations were performed by a research assistant (GA). Patients who checked in by themselves for their visit and spoke English were presumed to have capacity to consent, and if the MAs indicated no contraindication to approaching a patient, the research assistant then offered the patient verbal and written descriptions of the study. If they were so inclined, patients then verbally consented to participate, and were told that they could request observation stop at any time. If patients declined to participate, their reason for doing so was recorded.

Observations began when an MA called a consented patient back to the pre-exam area. A timing device was used to measure the duration of various portions of the visit and notations were made about the phrases used by the MAs and CAAs, their workflow, the discussion with patients about HCPs, the patients’ reactions, whether patients completed the proxy form, and any other key aspects of the process. When the clinician (MD or NP) entered the examination room, the research assistant left the room and paused observation, and once the patient left the room to check out with the CAAs, observation resumed. Observations stopped once the patient had completed the check-out process.

If a patient had not previously completed a proxy, and did not complete one during their visit, the reason(s) why were noted. At the completion of observation, the patient was given information about the purpose of the study, and again encouraged to complete a proxy form if they had not yet done so.

Time series

To calculate our measures, we used data from the medical record that was entered by the CAAs in the course of their work. Each patient’s WebOMR record includes a field entitled “Health care proxy chosen?” which allows one of three values: blank (i.e. it had never been addressed, which was treated as “No” for purposes of our analyses); “No”; or “Yes.” We then defined the following:

**Process measure**

* **Opportunity capture rate** = (**# of patients who completed a HCP during their clinic visit**, during a specified time period) ÷ (**# of patients needing to complete a HCP during their clinic visit**, during the same time period)
* **Patients needing to complete a HCP during their clinic visit** were those whose HCP chosen status the day prior to the visit was “No”
* **Patients who completed a HCP during their clinic visit** were those whose HCP chosen status had been “No” the day prior to the visit, but then changed to “Yes” by the end of the day after their clinic visit. The day after the clinic visit was chosen to allow the CAAs a window for post-visit data entry.

**Outcome measure**

* **Percent with proxy chosen** = (**# of patients who had chosen a proxy by the end of the day after their clinic visit,** during a specified time period) ÷ (**# of patients seen in clinic,** during the same time period)
* **Patients seen in clinic** were those who kept a scheduled non-urgent visit.
* **Patients who had chosen a proxy by the end of the day after their clinic visit** were those who kept a scheduled non-urgent visit, and whose HCP chosen status was “Yes” by the end of the day after their clinic visit. This included both those who had already completed a proxy prior to their clinic visit, and those who had not but then did so during their visit.

Focus group

After participants reviewed the direct observation and time series data, the following lead questions were used to prompt reflection and dialogue:

* *“What do you think about this data?”*
* *“What has been good about this initiative to improve the percentage of patients who have a health care proxy?”*
* *“What has made it easier for this initiative to work well? I.e. what have been the facilitators?”*
* *“What hasn’t been good about it?”*
* *“What has made it more difficult for this initiative to work well? I.e. what been the barriers?”*
* *“What would you do differently if you were to do it again?”*
* *“What advice would you have for others considering taking on this work?”*
* *“Any other closing thoughts?”*

SUPPLEMENTAL RESULTS

Direct observations

Fifty-eight patients were approached by the research assistant, six declined to be observed, all citing that they were “not interested.” Fifty-two patients provided verbal consent. One of these patient’s visit unexpectedly overlapped with the visit of another patient who was being observed, so observation was not completed, and one patient requested observations stop after they had begun and stated “I just want a normal visit.”

For those patients who did not have a HCP on file at the beginning of their visit, the MAs almost always addressed the topic of completing a proxy form during the visit (22 out of 25 visits). After responding to patient’s questions, the MAs would leave patients to complete the proxy form while they waited for the physician or nurse practitioner to enter the exam room. Some patients did not complete the form despite the explanation and encouragement from the MA, but this was uncommon, occurring only 6 out of 22 times. After their visit with the MD/NP, patients took the form to the CAA, who would encourage completion, help them if necessary, witness it and find a second witness, and then enter the information into the medical record. Sometimes the CAAs would need to prioritize other tasks so would defer and batch the work of data entry.

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