

Abstract

Context:

Demand for palliative care (PC) continues to increase with an insufficient number of specialists to meet the need. This requires implementation of training curricula to expand the workforce of interdisciplinary clinicians who care for persons with serious illness.

Objectives:

To evaluate the impact of utilizing individual practice improvement projects (PIP) as part of a longitudinal PC curriculum, the Coleman Palliative Medicine Training Program (CPMTP-2).

Methods:

Participants developed their PIPs based on their institutional needs and through a mentor, and participated in monthly meetings and bi-annual conferences, thereby allowing for continued process improvement and feedback.

Results:

Thirty-seven interdisciplinary participants implemented 30 PIPs encompassing seven themes: (1) staff education; (2) care quality and processes; (3) access to care; (4) documentation of care delivered; (5) new program development; (6) assessing gaps in care/patient needs; and (7) patient/family education. The majority of projects did achieve completion, with 16 of 30 projects reportedly being sustained several months after conclusion of the required training period. Qualitative feedback regarding mentors' expertise and availability was uniformly positive.

Conclusion:

The CPMTP-2 demonstrates the positive impact of PIPs in the development of skills for interdisciplinary learners as part of a longitudinal training program in primary PC. Participation in a PIP with administrative support may lead to operational improvement within PC teams.

1 Introduction

2 As demand for palliative care (PC) services continues to increase there remains
3 insufficient numbers of board-certified PC specialists to serve the needs of patients with serious
4 illness^{1,2}. In response, there has been an emphasis on implementing curricula for generalist PC
5 training to ensure that all providers who care for persons with serious illness are equipped with
6 fundamental PC skills³⁻⁵. Interdisciplinary and discipline-specific training exist in a variety of
7 forums including face-to-face conferences, on-line curricula and masters level degree programs⁶⁻
8 ¹². One effort undertaken to expand the primary palliative medicine workforce is the Coleman
9 Palliative Medicine Training Program (CPMTP). Since 2012 this longitudinal program has
10 offered PC training to practicing clinicians by utilizing multi-modal educational strategies^{13,14}.
11 One feature of the two-year curriculum included application of institutional practice change in
12 which learners received mentorship in the design, implementation, and evaluation of practice
13 improvement projects (PIPs). We hypothesize that participation in PIPs would strengthen the
14 engagement of participants and mentors in the program. This paper discusses the process of
15 embedding PIPs into the CPMTP-2 curriculum (2015-2017), the incorporation of mentors, and
16 the impact these projects had on the learners.

17 Methods

18 *Participants and PIP Development*

19 Program applications required a short essay describing perceived gaps in PC within their
20 healthcare system that could serve as the focus for a two-year PIP. This amount of time allowed
21 for more feasibility for project completion considering full-time work commitments. In order to
22 promote individual growth and interest, we allowed participants to choose their own topics based

23 on gaps in PC at their home institutions. In addition to new applicants, participants who had
24 completed the CPMTP training in a previous cycle could apply to pursue a new, or build upon an
25 existing, PIP. Once accepted into the program learners attended an open plenary on day one of
26 the training describing the process for developing a successful PIP. They received instruction in
27 how to conduct an institutional needs assessment and when to use common sources of
28 administrative data to evaluate PC performance. The learners documented their project goals,
29 implementation strategies, evaluation plans, and timeline on an intent-to change contract (ICC)
30 that aligned with institutional priorities and adhered to the SMART (specific, measurable,
31 achievable, realistic, timely) method¹⁵ (ICC available upon request). They were allowed to
32 design a project solo or work in pairs, if they were from the same institution.

33 Each learner was assigned a project mentor, who was a local expert in PC, and was
34 responsible for facilitating continuous process improvement and feedback on the PIPs. Mentors
35 introduced their learners to resources on national quality standards prescribed by organizations
36 such as the American Academy of Hospice and Palliative Medicine and Center to Advance
37 Palliative Care, as well as screening tools, dashboard metrics, and evaluation methods. They
38 provided advice on how to work with key stakeholders and collaborate on existing institutional
39 initiatives to streamline resources. Before PIP implementation mentors reviewed and approved
40 the learners' ICCs. Over the duration of the program they met monthly with their learner by
41 telephone to trouble-shoot barriers and provide feedback on PIP progress. Returning learners
42 who had graduated from the prior training cycle received quarterly mentorship on PIPs from the
43 principal investigators.

44 The mentors also received support from the principal investigators and other
45 multidisciplinary program leaders through quarterly telephone meetings. During these calls the

46 mentors reviewed their learners' progress on the PIP and received advice on how to address
47 challenges with project implementation and the mentorship process.

48 Project support was also provided continuously throughout the two-year period using
49 smaller breakout sessions during the bi-annual conferences. This allowed robust peer-peer group
50 and group mentor consultation in order to refine the projects using the SWOT method¹⁶. The
51 learners were also required to meet bi-annually with their local administrators to discuss their
52 PIPs progress, identify unintended challenges, and assess alignment with institutional priorities.
53 Finally, the learners received guidance at multiple points during the training on writing their
54 project results into scientific abstracts and posters. The two-year training program culminated in
55 a poster session and graduation ceremony at the concluding conference which featured oral
56 presentations by selected top abstracts.

57 **Analysis**

58 Project abstracts and posters were reviewed independently by members of the study team
59 to categorize the practice change methods and interventions. They compared category
60 definitions through an iterative process until consensus was obtained. At 6 months post-training,
61 learners completed a survey soliciting qualitative data regarding the quality of mentorship,
62 challenges encountered, lessons learned and sustainability of projects. Study data were collected
63 and managed using REDCap electronic data capture tools^{17,18}. REDCap (Research Electronic
64 Data Capture) is a secure, web-based software platform designed to support data capture for
65 research studies, providing 1) an intuitive interface for validated data capture; 2) audit trails for
66 tracking data manipulation and export procedures; 3) automated export procedures for seamless
67 data downloads to common statistical packages; and 4) procedures for data integration and

68 interoperability with external sources. This project was considered exempt through the
69 Institutional Review Board.

70 **Results**

71 Learners and PIP Themes

72 Thirty-seven interdisciplinary learners participated in the program, including advanced
73 practice nurses (n=15), chaplains (n=7), social workers (n=5), physicians (n=5), nurses (n=4),
74 and a physician assistant. Of these, eleven were returning learners. In total, 30 unique PIPs were
75 implemented at diverse sites including: thirteen teaching hospitals, eleven community hospitals,
76 three safety net hospitals, two outpatient clinics and one home-based palliative care program.
77 Twenty-six projects were completed individually and four by a pair. One learner was unable to
78 complete their project due to lack of administrative approval. Another completed a project, but
79 not an abstract due to a leave of absence from work. Some PIPs were implemented across more
80 than one practice setting, such as the inpatient location and an outpatient clinic or a nursing
81 home, or across multiple hospitals within one health care system. Of those that were completed,
82 seventeen projects encompassed practice change in inpatient areas, fourteen in outpatient
83 settings, two in nursing homes, one in home based PC, and one in a community-based hospice.

84 Analysis of practice change methods resulted in categorization into seven themes, with
85 several projects representing more than one theme: (1) staff education; (2) care quality and
86 processes; (3) access to care; (4) documentation of care delivered; (5) new program
87 development; (6) assessing gaps in care/patient needs; and, (7) patient/family education (Table
88 1). The majority of practice change methods selected by learners focused on staff education,
89 with communication and PC skills being a major driver of the intervention. In addition to staff

90 education, several projects emphasized improvements in care quality through implementation of
91 pathways for documenting advance directives and prompting assessment of symptoms. A
92 number of learners also chose to implement projects that addressed increasing access to PC
93 through enhancing referral processes and implementing consult triggers. In contrast, few projects
94 centered on addressing patient needs through direct patient and family education (Table
95 1). Project titles and learners' professions are represented in Table 2.

96 Qualitative Feedback on Project Implementation, Sustainment and Mentorship

97 Twenty-five of the incoming learners (96%) responded to an anonymous post-training
98 survey with open-ended questions about their experience with project implementation,
99 challenges encountered, and sustainability of the interventions. Learners were also asked to
100 provide comments regarding the value of their mentor throughout the process. The eleven
101 returning learners with prior PIP experience and mentoring did not complete this survey.

102 Comments on lessons learned by the learners were both project-specific (e.g. plan,
103 staffing and metrics) as well as centered on messaging and communication with colleagues,
104 administration, and other stakeholders. Keys to success included narrowing the project focus,
105 partnering with others, and becoming more familiar with metrics and other outcome measures.
106 Learners acknowledged the necessity for leadership engagement and ideal language that should
107 be used to advocate effectively for PC within their healthcare systems (Table 3).

108 Several challenges were elicited requiring adjustments in project goals and timelines.
109 Some learners faced organizational issues arising from departures of key leaders, loss of
110 resources, and hospital mergers. Others identified gaps in education such as colleagues'
111 misperceptions about PC, resistance to integrating PC into clinical areas, and effort needed to

112 improve communication with staff in other facilities. Some learners found it necessary to scale
113 back project goals, or discovered that projects involved more time than expected. They
114 identified changes in electronic medical record platforms or increased time required to extract
115 data from chart review as unforeseen barriers to timely project completion.

116 Despite these challenges, the majority of projects did achieve completion, and 16 of 30
117 projects were reportedly being sustained several months after conclusion of the required training
118 period. Of the few PIPs that did not achieve full completion, one project conducted by a chaplain
119 met its goal of assessing unmet spiritual care needs, but could not achieve its desired outcome of
120 increasing spiritual care staffing in PC. Two PIPs were not sustained due to a change in
121 institutional leadership. Another PIP was terminated when financial support ended for a social
122 worker who was employed at a safety net hospital.

123 Qualitative feedback on mentorship pointed to the value of the mentors' expertise and
124 availability. Mentors were viewed as assets who helped to fine-tune the scope of the projects
125 and offered important feedback on strategies to advocate within learners' healthcare institutions.
126 Additional comments praised the value in receiving input from others on goal-setting, educational
127 interventions, and outcome measures. The learners appreciated having time during the bi-annual
128 conferences to review metrics, receive guidance on data analysis, and write an abstract. (Table
129 4).

130 **Discussion**

131 To our knowledge this is the first longitudinal curriculum in PC that incorporates practice
132 change projects into multimodal educational strategies for training interdisciplinary providers
133 from diverse practice settings. The PIPs were generated based on identified gaps at trainees'

134 institutions and grew through mentoring relationships between trainees and mentors from
135 differing institutions, with most being from community-based settings. In a field as small as PC,
136 this demonstrates the breadth of mentorship support that may be available beyond the fulcrum of
137 traditional academic medical centers.

138 The learners developed unique projects based on gaps and institutional priorities,
139 professional interest and feasibility of implementation and evaluation. The most common
140 practice change themes involved staff education and improvement of care quality, a testament to
141 the need to continue to fill workforce gaps and improve patient care through education.
142 Aside from a few exceptions, the majority of respondents stated they were able to successfully
143 complete their projects by the end of the two-year program.

144 One example of a successful PIP involved a study conducted by a nurse and chaplain to
145 identify barriers to advance directive completion amongst inpatient nursing staff. The pair held
146 educational in-services for nurses with surveys on knowledge and attitudes about advance
147 directives. Learners reported findings to a committee tracking this information, thereby engaging
148 leadership on the important work they were doing. Another PIP led by an advanced practice
149 nurse aimed to increase referrals to PC by regularly presenting and educating interdisciplinary
150 teams at the medical cancer committee and tumor boards on PC services and participating in
151 daily interdisciplinary rounds. These efforts effectively increased PC service utilization. Another
152 project, led by a chaplain, sought to address the feasibility of utilizing a chaplain to lead advance
153 care planning conversations in an ambulatory family medicine practice. Eighty-percent of
154 patients who were approached (48/60) completed advance directives after engaging with the
155 chaplain¹⁹. And finally, a social worker developed a screening tool to identify barriers to PC
156 referrals for the undominciled population admitted to an urban hospital. Of the 494 homeless

157 patients screened, 52% met one or more of inclusion criteria for PC services, with 15%
158 completing health care power of attorney forms.

159 The qualitative comments on mentorship are promising and show how critical a well
160 trained mentor is in the development and execution of a PIP. Several benefits of mentorship
161 have been described elsewhere in the literature including enhanced productivity, feeling of
162 empowerment for mentees, and development of leadership skills^{20,21}. The mentors in our
163 program were purposely selected to be non-affiliated with their mentee's workplace, which
164 offered the extra benefit of an outsider's unbiased assessment along with knowledge of another
165 system of care delivery. Without an experienced mentor and continued check-ins (monthly and
166 at bi-annual meetings), it may have been challenging for learners to complete their PIPs. Despite
167 some setbacks, the majority of learners were able to successfully complete and maintain their
168 projects months after project completion. Strong administrative support and PIPs that closely
169 aligned with institutional priorities were found to be the strongest predictors of project success.

170 Healthcare systems are increasingly focused on quality and value which leads to the need
171 for more formal training in quality improvement for professionals in PC²². Our practice change
172 projects had some, but not all, of the features of a traditional quality improvement project²³.
173 Instead of using the PDSA cycle for rapid cycle QI²⁴ the learners utilized a structured ICC which
174 incorporated goal setting, action steps, anticipated resources, reflection on potential barriers, and
175 an evaluation plan. Similar to the intent of PDSA this document was continuously used to
176 reflect on and revise the PIPs over the duration of the project plan. The curriculum also included
177 instruction on evaluation methods germane to QI such as using process, outcome, and balancing
178 measures. Future work will explore adding QI content to the curricula.

179 There were several important limitations worth noting. This project was funded through
180 generous grant support which included stipends to trainees and mentors for participation, which
181 may not be feasible in setting without financial incentives. It was also conducted in a large urban
182 and suburban area with access to a large cohort of PC experts. This may impact replication in
183 other areas with less availability of seasoned clinicians to serve as project mentors. However,
184 the evolution of digital access may reduce that barrier. Finally, our evaluation timeline ended six
185 months after project completion; therefore it is unknown how, or if, projects were sustained long-
186 term.

187 **Conclusion**

188 The CPMTP-2 demonstrates the positive impact of PIPs in the development of skills for
189 interdisciplinary learners as part of a longitudinal training program in primary PC. Participation
190 in a PIP with administrative support may lay the groundwork for creating a culture of continuous
191 operational improvement within PC teams. This will help PC teams weather turnover of key
192 stakeholders, reduce dependence on single individuals for PC initiatives, and fortify alignment of
193 PC services with institutional goals. Future study may explore the institutional, team and
194 professional characteristics that encourage and support PC improvements independent of a
195 dedicated training program.

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