Program Evaluation in Health Professions Education: An Innovative Approach Guided by Principles

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Abstract

Problem
Program evaluation approaches that center the achievement of specific, measurable, achievable, realistic, and time-bound goals are common in health professions education (HPE) but can be challenging to articulate when evaluating emergent programs. Principles-focused evaluation is an alternative approach to program evaluation that centers on adherence to guiding principles, not achievement of goals. The authors describe their innovative application of principles-focused evaluation to an emergent HPE program.

Approach
The authors applied principles-focused evaluation to the Children's Hospital of Philadelphia Medical Education Collaboratory, a works-in-progress program for HPE scholarship. In September 2019, the authors drafted 3 guiding principles. In May 2021, they used feedback from Collaboratory attendees to revise the guiding principles: *Advance Excellence*, *Build Bridges*, and *Cultivate Learning*.

Outcomes
In July 2021, the authors queried participants about the extent to which their experience with the Collaboratory adhered to the revised guiding principles. Twenty of the 38 Collaboratory participants (53%) responded to the survey. Regarding the guiding principle *Advance Excellence*, 9 respondents (45%) reported that the Collaboratory facilitated engagement in scholarly conversation only by a small extent, and 8 (40%) reported it facilitated professional growth only by a small extent. Although some respondents expressed positive regard for the high degree of rigor promoted by the Collaboratory, others felt discouraged because this degree of rigor seemed unachievable. Regarding the guiding principle *Build Bridges*, 19 (95%) reported the Collaboratory welcomed perspectives within the group. Regarding the guiding principle *Cultivate Learning*, 19 (95%) indicated the Collaboratory welcomed perspectives within the group and across disciplines, and garnered collaboration.

Next Steps
Next steps include improving adherence to the principle of *Advancing Excellence*, fostering a shared mental model of the Collaboratory's guiding principles, and applying a principles-focused approach to the evaluation of multi-site HPE programs.

Problem

Achievement of specific, measurable, achievable, realistic, and time-bound (SMART) goals is commonly used as a criterion for judging the value or effectiveness of programs in health professions education (HPE).[1–3] Although SMART goals are useful in program evaluation, articulating SMART goals can be challenging when evaluating emergent or novel programs. In these situations, program leaders may have a general sense of *what* matters and what they want to accomplish, but exactly *how* they will accomplish that is unclear and may shift as the program evolves.

Patton's[4] principles-focused evaluation is an alternative to goal-oriented program evaluation. It uses adherence to guiding principles, not achievement of goals, as the criterion for judging the value or effectiveness of a program. Guiding principles may be defined as "statements that provide guidance about how to think or behave toward some desired result, based on personal values, beliefs, and experience."[4(p9)] In the context of program evaluation, Patton recommends that the guiding principles be (1) guiding (provide guidance and direction), (2) useful (inform decisions), (3) inspiring (articulate what could be), (4) developmental (adapt over time and contexts), and (5) evaluable (can be documented and judged).[4,5] Thus, notable differences exist between the use of guiding principles versus SMART goals as criteria for making judgments about a program. Guiding principles offer a values-informed sense of direction toward outcomes that are difficult to quantify and frame by time (Table 1). In addition, guiding principles are aspirational, whereas SMART goals explicate what is feasible to achieve.

We argue that adhering to guiding principles, while being flexible and open to how to realize those principles, may foster creativity in HPE programs. The use of guiding principles may also prevent premature closure when making judgments about the value or effectiveness of a program. As with false-negative results, program leaders could conclude that their program *was not* effective if SMART goals were not achieved (e.g.,

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Table 1
Contrasting SMART Goals and Principles-Focused Evaluation[a]

Characteristics	SMART goals	Guiding principles
Scope	Specific	General
Intention	Achievement	Aspiration
Orientation	Outcomes	Value
Frame	Time-bound	Evolving

[a]SMART goals center the achievement of specific, measurable, achievable, realistic, and time-bound goals,[1] whereas principles-focused evaluation centers on adherence to guiding principles, not achievement of specific goals.[4]

if only 10% of participants had at least 1 peer-reviewed publication within 12 months of completing the faculty development program and not the specific goal of > 20% of participants). However, with principles-focused evaluation, program leaders could conclude that the same program *was* effective because guiding principles were honored (e.g., participants routinely referred to the faculty development program as "my people" or "home base," which indicates that the program adhered to the guiding principle of creating community).

To our knowledge, guiding principles have not been used for evaluating HPE programs, although they have been used for designing and implementing HPE programs.[6,7] To address this gap, we describe an innovative approach to program evaluation—principles-focused evaluation—and our application of this innovative approach to an emergent program in HPE.

Approach

Developing the program and crafting guiding principles

In 2019, we developed the Children's Hospital of Philadelphia (CHOP) Medical Education Collaboratory (Collaboratory), a works-in-progress program for HPE scholarship. The Collaboratory was designed to be a forum for faculty, staff, and trainees to present scholarly projects and receive constructive feedback and a gathering place for them to learn from the scholarly projects of their peers.

To craft guiding principles, we reviewed existing documents from a 2017 visioning meeting attended by committed health professions educators at CHOP. Documents included statements about what educators valued, believed in, and knew from their own experience at CHOP. We met 3 times from September to November 2019 to review documents and inductively derive guiding principles. Our initial guiding principles were to *Advance Excellence*, *Build Capacity*, and *Encourage Collaboration* (Figure 1). We edited these initial principles based on Patton's guidelines so that they fit the purpose of program evaluation when program value or effectiveness is judged based on adherence to principles.[4] In operationalizing the program, we routinely shared our guiding principles via email announcements about the Collaboratory and verbally at Collaboratory sessions at the start of each semester. We sought approval from CHOP's Committee for the Protection of Human Subjects, which deemed our project exempt from review.

Implementing and improving the program

We remained cognizant of our guiding principles as we implemented the Collaboratory in January 2020 and made program improvements over time. For example, we iteratively adapted the schedule of Collaboratory sessions to best fit the needs of our attendees and presenters from across CHOP by shifting from 2 presenters to 1 presenter per 60-minute Collaboratory and adding an early evening timeslot. We also revised presenter guidelines to maximize time for discussion (see Supplemental Digital Appendix 1 at http://links.lww.com/ACADMED/B345). When pandemic restrictions prohibited face-to-face meetings, we shifted to video conferencing and took advantage of virtual meeting features (e.g., using the chat feature to share relevant articles).

This study was approved as exempt by the CHOP Committee for the Protection of Human Subjects.

Outcomes

We report outcomes of our innovation—application of principles-focused evaluation to program evaluation—in 2 respects. First, we consider our revision of guiding principles as outcomes. Second, we provide evidence of our adherence to those guiding principles.

Revised guiding principles

In May 2021, after 3 semesters of implementation and iterative improvements, we launched our principles-focused evaluation of the Collaboratory. Specifically, we asked, "Are we adhering to our guiding principles?" We started to address that question by sharing descriptive information (e.g., number of sessions, number attendees) and initial guiding principles with attendees of an end-of-semester Collaboratory and eliciting their ideas for program improvement. On the basis of their feedback and aware of a new venue to build community among physician educators, we scaled back on our intention to build capacity and instead focused on building collaboration. We were struck by perceptions that the forum had become a safe space for learning and wanted to incorporate that in our guiding principles. Thus, we revised our guiding principles to *Advance Excellence*, *Build Bridges*, and *Cultivate Learning* (Figure 1).

Then, we constructed a survey to query Collaboratory attendees and presenters about the extent to which the Collaboratory adhered to the revised guiding principles. The survey was composed of 7 items rated on a 4-point scale, with 1 indicating not at all and 4 indicating a great extent, and corresponding text boxes for optional open-ended comments (see Supplemental Digital Appendix 2 at http://links.lww.com/ACADMED/B345). Survey items were crafted from language of the guiding principles, which were informed by feedback from attendees of the end-of-semester Collaboratory, but the survey itself was not pilot tested.

To further address our evaluation question, we administered the survey via email to past presenters (n = 13) and attendees (n = 25) at the Collaboratory in July 2021. We received 20 unique responses, 9 from presenters and 11 from attendees for a response rate of 53% (n = 20/38). We analyzed quantitative data descriptively, calculating percentage of responses for

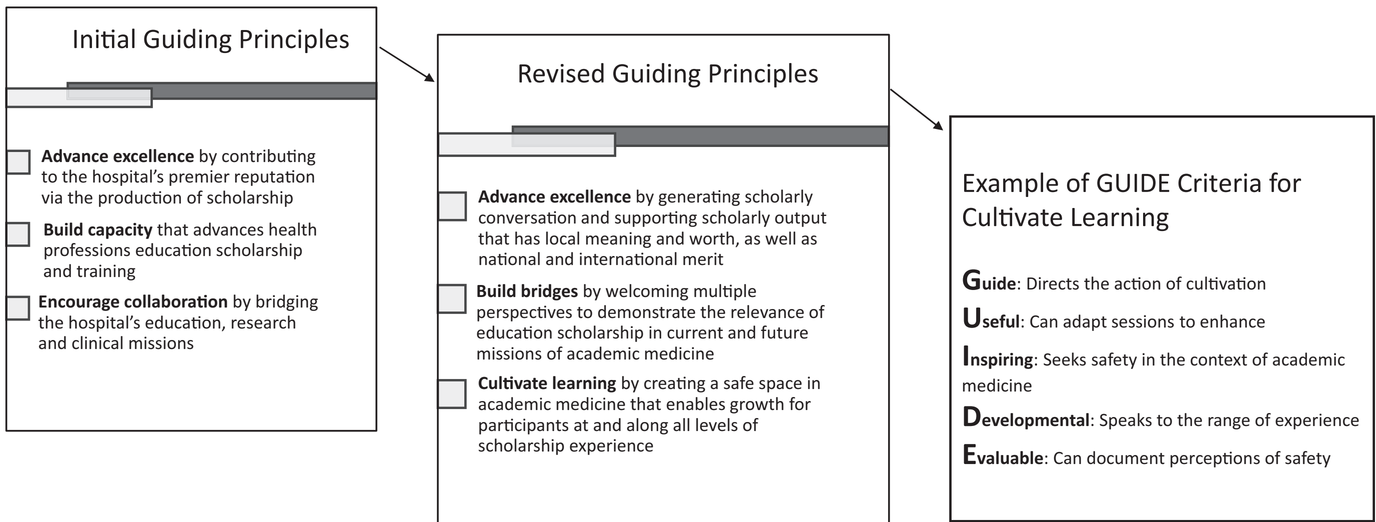

Figure 1 Initial and revised guiding principles of Children's Hospital of Philadelphia Medical Education Collaboratory (Collaboratory), with an example of GUIDE (guiding, useful, inspiring, developmental, evaluable) criteria[4] for one guiding principle.

each item. We categorized qualitative data from open-ended comments by guiding principle and reviewed these data for evidence of alignment with principles. Results for each item can be found in Figure 2.

We summarize the survey findings, below, by guiding principle and highlight what we learned from open-ended comments. Given our small sample size and similar responses for attendees and presenters on quantitative survey items, we pooled the quantitative responses and report percentages for all survey respondents. We distinguish between attendee and presenter responses for more nuanced open-ended survey items.

Guiding principles

Advance excellence. Nine of the 20 survey respondents (45%) reported that the Collaboratory facilitated their engagement in scholarly conversation by only a small extent, and 8 (40%) reported that the Collaboratory facilitated their professional growth by only a small extent. The Collaboratory's intention to advance excellence seemed to be a 2-edged sword. In open-ended comments, some attendees expressed positive regard for a high degree of rigor, but other attendees described feeling discouraged because the level of scholarship that was demonstrated seemed unachievable. For example, some described the Collaboratory as useful for "taking a project idea and putting it into scholarly practice" and "pointing me in the right direction" (in terms of scholarship). In contrast, others described the Collaboratory as a forum where the "high standards could feel discouraging to those just testing the waters of education scholarship." To better achieve the principle of advancing excellence, both attendees and presenters suggested the Collaboratory could make scholarship more approachable by offering workshops, not just a forum for discussion.

Build bridges. Of the 20 survey respondents, 19 (95%) indicated that the Collaboratory welcomed personal perspectives within the group and across other disciplines that inform HPE. Almost half of the presenters reported gaining at least 1 new collaborator after presenting at the Collaboratory. According to both attendees and presenters, the Collaboratory was useful "in creating an education community and connecting CHOP with the education community from other institutions" and supporting an "interdisciplinary approach to scholarship."

Cultivate learning. Of the 20 survey respondents, 19 (95%) perceived the Collaboratory as welcoming different perspectives on scholarship. Open-ended comments revealed that features of the Collaboratory contributed to the perception of the Collaboratory as a safe space for learning; it was "inclusive," "honest," and "friendly." According to attendees, features of virtual meetings (e.g., closed captioning, meeting transcripts, chat box) and the small-group setting made it easy to engage and contribute to discussions. For presenters, the Collaboratory had "great accessibility and feedback … [and a] wonderful environment."

Next Steps

As the field of HPE continues to expand, so too will the number of emergent or novel programs. We applied an innovative approach to program evaluation—principles-focused evaluation—to an emergent HPE program at CHOP.[4] Distinct contributions of principles-focused evaluation were its flexibility in allowing us to start with a set of guiding principles informed by existing documents, to tailor guiding principles based on emergent stakeholder feedback, and to hold ourselves accountable to revised guiding principles, not predetermined SMART goals. Our evaluation revealed that we were adhering to 2 guiding principles (*Build Bridges* and *Cultivate Learning*) but had room to improve adherence to a third principle (*Advance Excellence*).

We considered our work in light of standards for judging the soundness of program evaluation: feasibility, utility, integrity and accuracy.[8,9] Our principles-focused evaluation was feasible, helping us stay open to different ways to adhere to principles as the program matured and the COVID-19 pandemic unfolded. Our evaluation was useful for informing program improvement. For example, we implemented a series of skill-building sessions to cultivate learning through small-group, hands-on instruction for frequent areas of concerns in response to evaluation findings. Our principles-focused evaluation had integrity because

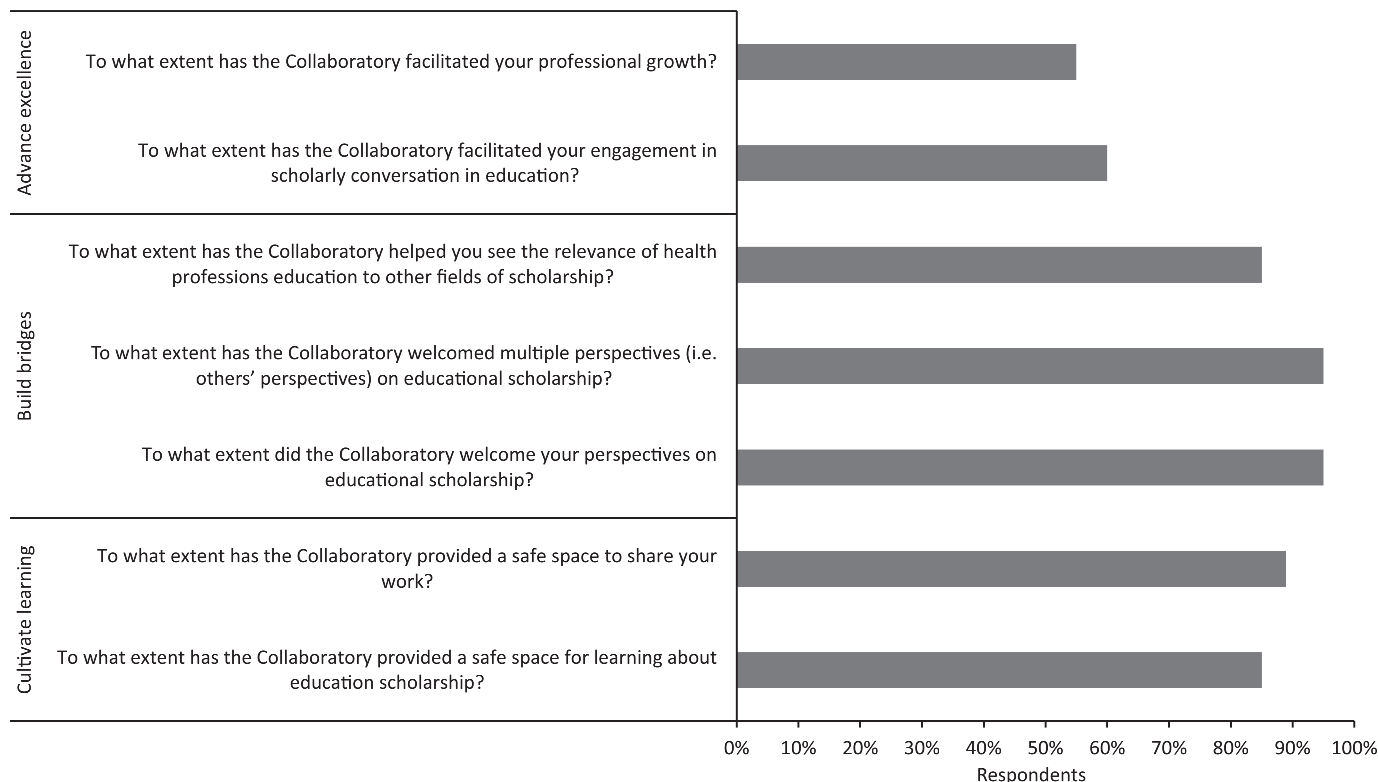

Figure 2 Participant responses to guiding principle–specific survey items on the principles-focused evaluation of the Medical Education Collaboratory of Children's Hospital of Philadelphia, 2021 (n = 20 respondents).

we grounded our work in data derived from health professions educators at CHOP. Collecting and analyzing both qualitative and quantitative data enhanced the accuracy of our evaluation findings.

As we reflect on our application of principles-focused evaluation, we note some limitations and words of caution. We focused on advancing excellence, building bridges, and cultivating a safe space for learning; in so doing, we did not consider other important principles, such as equity. We did not track attendance by individual; those who attended infrequently may have had a different perspective than those who attended more often. We acknowledge our role as both program leaders and program evaluators. Going forward, we will involve an external evaluator on our program leadership team. Although principles-focused evaluation can be a useful and feasible alternative to SMART goals in program evaluation, guiding principles are necessarily abstract and could appear contradictory, or at least not mutually supportive. We encountered this limitation when revising our guiding principles to focus on connection rather than capacity building. Therefore, program leaders and program evaluators need to establish and work to maintain a shared mental model of guiding principles for their program.

A goal-oriented approach to program evaluation is appropriate in many situations but could limit creativity in emergent or novel HPE programs. A next step may be the application of principles-focused evaluation to HPE programs that are implemented at multiple sites.[4] Similar to leaders of emergent or novel programs, leaders of multisite programs may have a shared sense of *what* matters and what they want to accomplish but realize that exactly *how* to accomplish what matters will be subject to site-specific, contextual influences.[10]

In closing, principles-focused evaluation is an innovative approach to program evaluation in HPE. Principles-focused evaluation helped us substantiate the effectiveness of our local, emergent program and highlighted areas for improvement. More broadly, others might use a principles-focused approach to evaluate emergent or novel programs, where doing the right thing (adhering to principles) is more imperative than doing things right (achieving specific goals).[4]

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References

1 Bjerke MB, Renger R. Being smart about writing SMART objectives. Eval Program Plan. 2017;61:125–127.
2 Haji F, Morin M, Parker K. Rethinking programme evaluation in health professions

education: Beyond “did it work?” Med Educ. 2013;47:342–351.
3 Allen LM, Hay M, Palermo C. Evaluation in health professions education: Is measuring outcomes enough? Med Educ. 2022;56:127–136.
4 Patton MQ. Principles-Focused Evaluation: The GUIDE. New York, NY: Guilford Press; 2018.
5 Duncan A, Dainty KN, Wodchis WP, Kirst M, Stergiopoulos V. A principles-focused evaluation of community mental health short-term case management. Eval Program Plan. 2021;89:102012.
6 Lomis K, Amiel JM, Ryan MS, et al. Implementing an entrustable professional activities framework in undergraduate medical education: Early lessons from the AAMC Core Entrustable Professional Activities for Entering Residency Pilot. Acad Med. 2017;92:765–770.
7 Muller D, Parkas V, Amiel J, et al. Guiding principles for undergraduate medical education in the time of the COVID-19 pandemic. Med Teach. 2021;43:137–141.
8 Balmer DF, Riddle JM, Simpson D. Program evaluation: Getting started and standards. J Grad Med Educ. 2020;12:345–346.
9 Stufflebeam DL, Shinkfield AJ. Evaluation Theory, Models and Applications. San Francisco CA: Jossey-Bass; 2007.
10 Cianciolo AT, Regehr G. Learning theory and educational interventions: Producing meaningful evidence of impact through layered analysis. Acad Med. 2019;94:789–794.

Teaching and Learning Moments

Medical Schools Must Improve Trauma-Informed Care Education

Last fall, I arrived at the hospital for a routine checkup. The provider I would be seeing was a new trainee, and they entered the room timidly as they verified my name and date of birth. We carried on a conversation about medical school, the rhythmic movements of their stethoscope during my exam proceeding without incident until they said, “Listening to the heart is easier for me with skin contact.” They quickly slipped their hand deeply down my shirt, their fingers and stethoscope suddenly touching my breast directly. Unprepared and clearly uncomfortable, I froze. Silently, I let them complete the exam.

Leaving the hospital, I wondered why this provider did not ask for permission or provide a word of warning before touching a woman’s chest. In questioning how their medical education had failed them in this, I realized a hard truth—I too was being failed by my curriculum regarding its lack of trauma-informed care education.

I was surprised I did not notice this gap in my medical training earlier. Before medical school, I worked at a shelter for survivors of domestic violence and sexual assault. Their experiences of trauma and lasting triggers were diverse, and certainly not isolated to gynecology, as some medical schools’ limited trauma-informed care curricula suggest. Particularly concerning to me was how past encounters with providers often colored patients’ perception and trust of medicine as a whole, discouraging them from accessing necessary treatment in the future.

I remembered a resident of the shelter whose experience of forced IV drug use led to severe psychological distress each time their arms were touched. While they knew they would benefit from seeing a physician who subspecialized in addiction medicine, they did not seek care due to fear of potential continued contact to their arms during an appointment. They saw this fear often realized by other residents of the shelter, whose physicians generally lacked understanding of the triggers inherent in basic care plans. This was the case in one shelter resident who came to the shelter directly from the hospital, the cause of their inpatient hospital stay being abdominal stab wounds sustained from retaliation by their former partner. Their surgeon gave me instructions on how and when to change their surgical dressings, but was unable to provide guidance on how to complete this task without the shelter resident experiencing crying that sometimes persisted for hours. In those moments, I breathed gentleness and warmth, yet internally struggled with strong tides of frustration over the medical team’s lack of thought regarding the emotional impact of their plans.

It is of the utmost importance to me that patients and their families do not remember me as the provider that made them feel discomfort or triggered their previous trauma. With continued reflection on my experience with the provider at my appointment, I am certain that medical schools must take action to bolster their trauma-informed care curricula. The onus cannot be on trainees like me to establish our own individual and substantive self-directed learning plans, yet we still must learn to show patients that we are worthy of their trust. Experiences of discomfort and unease, such as the one at my own appointment, are preventable with proactive trauma-informed medical education. I am grateful that my own institution has allowed me and other interested students and faculty to implement required training on this subject and that it was received by students with open arms. Other medical schools must rise to their responsibility to provide this content and cultivate learners with a strong ability to integrate knowledge of patients’ life experiences into care that feels safe and comfortable for all.

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