Identifying Entrustable Professional Activities for Internal Medicine Residents in Ambulatory Continuity Practice

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INTRODUCTION

Medical care is increasingly provided in the ambulatory setting. Internal medicine (IM) residency training programs must assess residents' trajectory to independently provide quality care in ambulatory continuity practice.

Entrustable professional activities (EPAs) are measurable, discrete tasks used for competency-based assessment. This study aimed to identify EPAs for IM residents applicable to the ambulatory continuity setting overcoming others' failure to achieve consensus.^{1–3}

METHODS

Three authors (C.S., K.J., R.L.) compiled a list of 177 potential EPAs from a literature review.^{1, 3–5} The study team eliminated EPAs irrelevant to ambulatory IM, reducing the list to 50 EPAs. A group of medical educators combined redundant EPAs and identified gaps finalizing 20 candidate EPAs. Two study authors (C.S., R.L.) graded each EPA using the EQual rubric, an instrument with 14 categories scored on a scale of 1–5 to evaluate EPA consistency.⁶ The team re-evaluated EPAs scoring less than 4 in any category. Through the revision process, the team eliminated four EPAs and revised five, resulting in sixteen EPAs.

Participants in the study were IM physician educators from one of three settings: a university-based clinic, a VA clinic, or a safety net clinic. Using a Delphi technique, participants could

complete two rounds of surveys via email. In the first round, participants rated level of importance of each EPA on a 5-point Likert scale (1 = not at all important, 5 = very important) and in which year of training a resident is expected to be independent (PGY1–PGY3). Respondents could submit additional EPAs. In round 2, respondents received their response from

Table 1 Delphi Participant Characteristics

	N (%)
Title	
Professor	8 (50)
Associate professor	4 (25)
Assistant professor	3 (19)
Other	1 (6)
Practice site	
VA clinic	5 (31)
University clinic	8 (50)
County clinic	3 (19)
Years precepting	
2–5	2 (13)
6–10	5 (31)
11–15	2 (13)
16–20	3 (19)
21–25	2 (13)
> 25	2 (13)
Half days of precepting per week on average throughout career	
1	8 (50)
2	6 (38)
3	1 (6)
4	1 (6)
Years outpatient attending	
2–5	2 (13)
6–10	4 (25)
11–15	3 (19)
16–20	3 (19)
21–25	2 (13)
> 25	2 (13)
Scholarly publications	
Yes	15 (94)
No	1 (6)
Scholarly work on medical education	
Yes	6 (38)
No	10 (63)
Teaching Scholars Program graduate	
Yes	5 (31)
No	11 (69)
Academy of Medical Educators member	
Yes	5 (31)
No	11 (69)

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Table 2 EPA Scores

	Mean EQual score*	Content validity index†	Mean score‡ (confidence interval§)	Mode training year	Inclusion in final EPA list
Perform initial H&P, develop problem list, and plan for new ambulatory patient in continuity practice	4.89	100	5 (4.77–5)	1	Yes
Provide continuity care, conducting interval visits, for primary care patients with multiple chronic conditions	4.11	100	5 (4.77–5)	2	Yes
Evaluate and manage a new problem in a continuity ambulatory patient requiring coordination of care between providers and across settings	4.32	93.75	4.94 (4.67–4.99)	2	Yes
Diagnose conditions for and co-manage patients with complex problems needing subspecialty care in the outpatient setting	4.07	93.75	4.88 (4.57–4.97)	3	Yes
Care for acute illness, chronic disease, and health care maintenance needs using evidence-based guidelines and other forms of decision support	4.18	93.75	4.94 (4.67–4.99)	3	Yes
Use motivational interviewing to help a patient change her health-related behaviors	4.11	93.75	4.94 (4.67–4.99)	2	Yes
Discuss serious news with a patient and/or family (bad news, end-of-life care planning)	4.61	93.75	4.88 (4.5–4.97)	2	Yes
Identify and accommodate a language, cognitive, functional, or cultural barrier in a continuity clinic patient visit	4.39	87.5	4.88 (4.57–4.97)	2	Yes
Document patient medical information and care plan via an electronic health record effectively and in a time-efficient manner	4.85	87.5	4.88 (4.57–4.97)	1	Yes
Identify a continuity patient's goals of care and customize a care plan to meet this goal of care during a clinic visit	4.25	87.5	4.88 (4.5–4.97)	2	Yes
Works collaboratively with inter-professional health care team members (e.g., pre-clinic huddle, continuity clinic visit, or inter-visit documentation)	4	87.5	4.88 (4.5–4.97)	2	Yes
Track and coordinate care during inter-visit periods, ensuring follow-up on messages, tests, consults, and care at other facilities	4.57	81.25	4.75 (4.4–4.9)	2	Yes
In a clinic visit, identifies and addresses health issues in a patient within a vulnerable population (e.g., functional impairment, cognitive impairment, homelessness, substance use, or multiple chronic diseases)	4.29	81.25	4.81 (4.48–4.94)	3	Yes
Provide age-appropriate screening and preventative care	4.25	81.25	4.81 (4.84–4.94)	1	Yes
Perform comprehensive medication review and reconciliation utilizing an EHR that allows electronic prescribing	4.64	68.75	4.63 (4.24–4.83)	1	No
Develop and implement an action plan based on review of performance data for one's ambulatory patient panel	4.46	62.5	4.63 (4.24–4.83)	2	No

*EQual rubric score on scales 1–5

†Content validity index is the proportion of respondents agreeing the EPA is very important = 5

‡Scales 1–5, 1 = not at all important and 5 = very important

§One-sided confidence interval of important rating

round 1 and the distribution of responses from all participants and asked if they would like to change any of their initial ratings.

A mean score and a content validity index (CVI) for each EPA were calculated from responses to the second-round survey. The CVI was the proportion of respondents scoring the EPA “very important” (score 5). EPAs with a content validity index > 80% were included in the final core list of EPAs. Asymmetric 95% confidence intervals were calculated to address skewness in the responses and to ensure that the confidence interval included nothing lower than 4 which was the lower bound established. The institutional review board gave this study exempt status.

RESULTS

The characteristics of Delphi participants are presented in Table 1. Of the 76 faculty educators invited to participate, 20 participants completed round 1 and sixteen participated in both rounds. Half of participants were full professors and all three clinic sites were represented. Experience precepting residents in continuity clinic ranged from 5 to 30 years.

Table 2 shows the EQual rubric scores, CVI, mean importance score, 95% asymmetric confidence interval, and mode of training year for assessment. The EQual rubric scores ranged from 4 to 4.89. Two EPAs had 100% agreement as “very important,” five EPAs had > 90% agreement, and fourteen out of sixteen exceeded the 80% agreement threshold. All EPAs had a mean importance rating greater than 4 and no confidence interval crossed 4. The mode year of assessment for four of the EPAs was PGY-1, nine in PGY-2, and three in PGY-3.

DISCUSSION

Our study found 14 EPAs important for IM ambulatory continuity medicine. This final list represents a foundation of EPAs that can be applied in ambulatory IM training. Educators had a strong agreement on the importance of each included EPA supporting the process of defining EPAs through literature review, EQual rubric scoring, and revision. The two eliminated EPAs had wide confidence intervals reflecting

variation in responses among the participants. The experience of the participants in this study suggests their insights are likely to capture appropriate tasks for ambulatory practice. The EQual rubric provided a helpful tool for refinement of EPAs to meet a standard definition early in the process. This study shows a process for defining EPAs for the ambulatory continuity component of IM training that could be reproduced for other specialties or practice settings.

Limitations of our study include data from a single institution. Additionally, the foundation of our EPA list was based on literature review in a nascent field. While we allowed participants to comment on gaps in our list, there may be other relevant EPAs not included.

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Compliance with Ethical Standards:

Conflict of Interest: The authors declare that they do not have a conflict of interest.

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