From Outcomes to Insights: A Structured Reflection Tool for Resident Development in Practice Based-Learning and Improvement

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Setting and Problem

Reflective practice is a key component of the Accreditation Council for Graduate Medical Education practice-based learning and improvement (PBLI) competency. To develop skills in PBLI, residents require access to their own patient outcomes data. Prior research demonstrates that automated patient outcome feedback increases electronic health record re-access by residents.[1] However, outcomes data alone may be insufficient for promoting PBLI; residents may benefit from a format for structured reflection on those outcomes. We developed a tool grounded in narrative writing to bridge outcomes data with resident reflection. Here, we describe residents' experiences with this tool during pilot implementation.

Intervention

Emergency clinicians at our institution have access to a digital platform entitled Linking Outcomes Of Patients (LOOP). LOOP is an automated patient outcomes feedback software suite integrated within our electronic health record that generates personalized reports of clinicians' patient outcomes. LOOP allows clinicians to track unanticipated return visits ("bouncebacks"), inpatient level-of-care escalations, and deaths of their individual patients with site-specific comparators.[2] The cost of this platform includes institutional fees for cloud computing, software licensing fees, and labor provided by our research team.

To promote PBLI, we designed a structured narrative reflection form ("Growth Chart") for residents with prompts about self-perceived strengths, professional identity, and overall experiences after all clinical rotations. After emergency department rotations, residents receive a Growth Chart prompt to analyze LOOP data and generate narrative reflections about patient outcomes, potential contributing factors, and intended practice modifications.

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Six postgraduate year 1 to 4 emergency medicine residents participated in this pilot over a 12-month period. Semi-structured interviews were subsequently performed and qualitatively analyzed following an inductive approach and grounded theory. Two authors (K.L., K.R.) used constant comparative analysis to blindly code transcripts and generate themes using Dedoose, version 9.0.107 (Sociocultural Research Consultants LLC).

Outcomes to Date

Pilot participants' opinions of the Growth Charts utilizing LOOP data were positive and 6 key themes emerged (TABLE). All participants reported that LOOP provided information valuable to their growth. Several expressed that data enhanced the quality of their reflections: "It allowed me to be grounded in objective data … [which] actually foster[ed] the reflection, because … my reflections wouldn't have been as robust without the LOOP data" (Participant 3). Many participants stated that their structured reflections utilizing LOOP data resulted in practice changes, such as adjusting discharge instructions, modifying antibiotic prescribing, and increasing confidence when advocating for level-of-care decisions.

The impact on reflective practice was captured by Participant 5: "Narrative emotional things come out of this experience a little bit more … [and] not only help affect your efficiency of clinical practice, but also … how you practice humanistic medicine."

This pilot suggests that personalized outcomes data paired with structured narrative reflections allow trainees to set tailored goals and meaningfully execute PBLI. The model has relevance to educators not only in the field of emergency medicine, but also in any clinical specialty due to increasingly available electronic outcomes-based feedback platforms. Though reported outcomes may differ by specialty, pairing specialty-specific data with longitudinally spaced narrative prompts may serve as a powerful tool to spark reflection on care. This pilot also reveals opportunities

TABLE
Categorized Thematic Analysis From Participant Semi-Structured Interviews

Theme	Codes	Representative Quotes
Goal setting	Benefit of written record[a]	"Having all the rotations in the same document allowed me to look back [at] other things that I was working on earlier." (Participant 3)
	Benefit of goal setting[a]	"It was nice to think about where I'm going, where I've been, especially with all of the data that I have, and how I want to get to where I want to be." (Participant 3)
Benefit of reflective practice	Valuable adjunct to biannual reviews with program directors[a]	"And I think those [LOOP and Growth Charts] help[ed] me kind of anchor in individual practice goals and who I want to be as a physician. And kind of drive some of those conversations in a way that I don't know if I would have been as focused on, or as cognizant of, without the LOOP data and the narrative reflections." (Participant 6)
	Valuable practice for emotional processing[a]	"I think any time you're intentionally reflecting it's gonna change how you behave and [have] small micro interactions … in the daily workspace." (Participant 6)
Format and content of Growth Chart	Personal preference for reflective practice[a]	"I feel like when you write something down it solid[ifies] … and allows you to tackle some … of the reality [of] what you're putting in your head, [by] … putting it into speech." (Participant 3)
	Redundancy of phrasing of questions[a]	"I think some of the questions were a little redundant sometimes … I would just eventually be like, 'See that answer,' especially towards the end of the year." (Participant 3)
	Formatting of Google document[a]	"I think it was on a Google document. I'm wondering if just making it on OneDrive might be easier to access because I had to keep searching for the Google document link." (Participant 2)
Barriers to consistent use	Inaccessibility of LOOP[b]	"Usually to access LOOP, we'd have to be on the VPN. That was a bit of a challenge or a barrier." (Participant 2)
	Lack of motivation[a]	"It was really just the buy-in, and I feel like should the buy-in have been influenced by a requirement to do it or some kind of carrot to do it? But ultimately the buy-in ended up being influenced by the experience with it." (Participant 4)
	Less useful for off-service rotations[b]	"It would have been interesting to see my bounceback rate [on those off-service rotations]... In theory, it could have been useful." (Participant 1)
Benefit of objective data	Valuable patient care follow-up information[b]	"I think one of the best parts of LOOP was seeing the bouncebacks, and I think you didn't get a good handle on that end of the spectrum [prior to using LOOP], and one could argue, that's kind of the most relevant area for improvement." (Participant 1)
	Enhanced quality of reflections[b]	"It allowed to me to be grounded in objective data … I think it actually foster[ed] the reflection, because I feel like my reflections wouldn't have been as robust without the LOOP data." (Participant 3)
Clinical practice change	Confirmation of current practice[c]	"Data allowed you to feel strong in your decision-making of appropriate level of care decisions that was happening based off of good clinical practice." (Participant 1)
	Change in discharge planning[c]	"[The data led me to think] should I have changed my discharge instructions? Do I need to have a more in-depth conversation with this patient, and anticipate a return?" (Participant 2)
	LOOP data resulted in practice change[c]	"Prescribing habits were definitely influenced by the LOOP data … and the emphasis on care transitions was very much influenced by the LOOP data in terms of the bouncebacks." (Participant 4)

[a] Codes regarding the Growth Charts.
[b] Codes regarding LOOP.
[c] Codes regarding LOOP and Growth Chart together.
Abbreviation: LOOP, Linking Outcomes Of Patients.

for improvement for programs seeking to implement similar tools. Participants experienced logistical challenges accessing Growth Charts and LOOP reports; housing reflection tools and outcomes data on a shared platform may enhance accessibility. Given that Growth Chart engagement was voluntary, faculty needed to prompt some participants to complete the charts. One participant suggested that the Growth Charts held intrinsic value, so providing protected time to engage in reflection might overcome such barriers.

In conclusion, this pilot provides evidence that a structured reflection tool may be applied to bridge outcomes data with resident reflection and enhance PBLI by fostering reflection grounded in objective clinical data.

References

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