Stimulating Reflective Practice Among Your Learners

“There are three methods to gaining wisdom. The first is reflection, which is the highest. The second is imitation, which is the easiest. The third is experience, which is the bitterest.”

Confucius

Educational organizations, including the Council on Medical Student Education in Pediatrics, recognize that the development of the reflective practitioner is a fundamental element of professional training. The Royal College of Physicians and Surgeons of Canada articulate in their CanMEDS competency framework that physicians must “demonstrate a lifelong commitment to reflective learning” and “recognize and reflect learning issues in practice.” Similarly, the Accreditation Council for Graduate Medical Education requires graduating residents to continuously improve patient care based on constant self-evaluation and lifelong learning. As part of the ongoing Council on Medical Student Education in Pediatrics series on skills and strategies used by great clinical teachers, this article focuses on reflection, a skill that should be modeled and taught to medical students so that they may practice and refine a reflective approach throughout their careers.

WHAT IS REFLECTION?

Reflection means to “turn back” or think back on experiences. The definition takes on an added meaning when applied to clinical experiences and refers to the process of “slowing down” (not physically, but at an emotional or cognitive level) to analyze, in a deliberate manner, surprising or disconcerting events to make sense of them and understand why they occurred. Critical reflection occurs when one not only explores one’s own beliefs, biases, and approaches but also those of others who may have contributed to the way events unfolded. This may lead to a different understanding of what occurred. Critical reflection has the potential to promote transformative learning: learning that can be applied similar, but not necessarily identical, situations that arise in the future. The key elements of critical reflection are that it arises out of experience and results in change.

HERE’S ONE WAY TO THINK ABOUT IT

Within medical education, reflection can be categorized into 3 domains: “doctor as expert” (clinical reasoning), “doctor as scholar” (scientific reflection), and “doctor as person” (personal reflection). Within each of these domains, reflection can occur “in action” (like a surgeon analyzing an unexpected problem during surgery by asking, “What am I doing wrong?”) or “Why are things not going the way I expected them to?” (such as a surgical team debriefing after surgery by asking, “What did we do well, what did we do wrong, and why?”). Ideally, educational strategies should focus on both “in action” and “on action” aspects of reflective practice because they involve different skill sets.

HERE’S HOW TO TEACH REFLECTIVE PRACTICE

While in clinic, a student erroneously diagnoses a febrile 18-month-old child with rhinorrhea, cough, and diffuse symmetric expiratory wheezing as having bacterial pneumonia instead of bronchiolitis. He recommends levofloxacin, based on published adult pneumonia treatment guidelines, and shares that the family was “difficult.” His preceptor in this busy clinical environment might be inclined to “help” the student by asking him to read about pneumonia and bronchiolitis, advising him to rely on pediatric literature, and explaining that having a sick child is a very stressful event for a family. Alternatively, this encounter could provide an opportunity to employ a variety of different teaching techniques to promote deeper learning by stimulating reflection, as outlined in the following paragraphs.
Doctor as Expert

“Doctor as an expert” reflection refers to clinical reasoning. For our student, a strategy to promote “reflection in action” could be to ask him to think of an additional diagnosis for this patient besides pneumonia and reprioritize the differential based on the defining and discriminating features of the case (pointing out that the symmetric and diffuse wheezing is atypical for a child with bacterial pneumonia, who is more likely to have focal rhonchi). A “reflection on action” intervention could involve the student using a tool (such as SNAPP$^9$ or IDEA$^{10}$) aimed at promoting a structured and systematic clinical reasoning process that encourages the student to defend diagnoses based on key features in the patient’s history and physical examination.

Doctor as Scholar

“Doctor as a scholar” reflection involves analyzing and applying evidence-based medicine in patient care encounters. Great teachers encourage learners to pause and reflect on what needs to be considered when applying published literature to their patients. A strategy to promote “reflection in action” could be to lead our student through the exercise of asking PICO (Population, Intervention, Comparison, Outcome)$^{11}$ questions as they pertain to this patient because the population addressed in the article he quoted was distinctly different from the patient he saw. The student would then recognize that the findings of the article he chose do not apply to this patient (even if his diagnosis of pneumonia had been correct), stimulating him to learn about differences in etiology and management of pneumonia in different age groups.

A “reflection on action” intervention could involve helping him reflect on an evidence-based practice prescription.$^{12}$ After guiding him in framing an appropriate clinical question (such as, “Compared with adults, what is the most appropriate antibiotic for children with community-acquired pneumonia$^9$?”), the student could review the medical literature, choose the most appropriate studies, justify his choices based on an appraisal of the articles, and articulate the application of his findings to improve his patient’s care.

Doctor as Person

Reflection on the role of “doctor as a person” attempts to enhance learner empathy by focusing attention on unexplored perspectives of various stakeholders to facilitate emotional engagement. Reflective conversations with medical students can promote professional formation of learners by helping them recommit to humanistic values in the face of common contextual challenges.

For our student, a “reflection in action” strategy could be to have him reflect on, and then verbally present, an account of the events that transpired during his interaction with the family, narrating the events from the perspective of the family, and having him explore how his own beliefs might have

### TABLE 1 Strategies to Promote Learning in Each Domain of Reflective Practice

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<tr>
<th>Doctor as a person</th>
<th>Sample Strategies for Reflection in Action</th>
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</thead>
<tbody>
<tr>
<td>Debriefing on errors/near-errors based on inappropriate application of literature in clinical decision-making. PICO$^{11}$:</td>
<td>Acquire, Appraise, Apply, Analyze</td>
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<tr>
<td>Diagnostic “pauses,” with focus on justifying the differential diagnosis based on discriminating features of illnesses. One-Minute-Preceptor$^{21}$</td>
<td>Acquire, Appraise, Apply, Analyze</td>
</tr>
<tr>
<td>Doctor as an expert</td>
<td>Sample Strategies for Reflection on Action</td>
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<tr>
<td>Preceptor role modeling of self-awareness and vulnerability. Priming learners to focus on emotions and nonverbal cues in patient interactions. Skill-building exercises focused on improving “mindfulness,” cultivating “engaged curiosity,” and improving observation of events such as perspective-taking and role-playing workshops.</td>
<td>Appreciative inquiry$^{13}$, Narrative writing$^{14}$, Reflection on critical incident reports, formative events, and multisource feedback.$^{19}$</td>
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<td>Doctor as scholar</td>
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<tr>
<td></td>
<td>- Interpretive summary</td>
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<td>- Alternative diagnoses with explanation of reasoning</td>
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<td>SNAPP$^9$:</td>
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<td></td>
<td>- Summarize history and findings; narrow the differential</td>
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<td>- Analyze the differential</td>
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<td>Evidence-based practice prescriptions$^{12}$:</td>
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<td>- 5 As of evidence-based practice$^{22}$:</td>
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$^8$ Alternative diagnoses with explanation of reasoning

$^{13}$ Interpretive summary

$^{14}$ Differential diagnosis with commitment to the most likely diagnosis

$^{15}$ Explanation of reasoning in choosing the most likely diagnosis

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$^{18}$ Analyze the differential

$^{19}$ Probe preceptor

$^{20}$ Plan management

$^{21}$ Select issue for self-directed learning

$^{22}$ Evidence-based practice prescriptions

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impacted the interaction. One could then have the learner re-engage the family to address their concerns and beliefs pertaining to their child’s respiratory illness. Even such brief oral reflective exercises have a profound impact, because they occur in close relation to the event and may positively influence the outcome. A “reflection on action” strategy could involve the learner writing a reflective paragraph describing multiple perspectives such as his own, the family’s, the preceptor’s, and even that of the education literature (as it pertains to difficult patient interactions). Alternatively, the student could interview a mentor of his choice to learn how the mentor has successfully addressed similar difficult encounters with patients and reflect on the experience (appreciative inquiry).13

**CHALLENGES TO PROMOTING REFLECTION**

Challenges exist for both the learner and the preceptor. Learner reflective capacity can be quite variable, and students may be apprehensive to critically reflect, as sensitive issues may be discussed. Preceptors may feel pressed for time or not aware of how to promote reflection. Table 1 lists techniques that can be used to promote learning in each of the domains of reflection.

**CONCLUSIONS**

Medicine is full of conundrums and challenges, both cognitive and emotional. Reflective habits assist practitioners in addressing and managing unexpected situations and challenges for which there is no one right answer and enable them to learn and grow from these experiences. Although there is admittedly limited evidence specifically supporting a link between reflective teaching interventions and patient care outcomes, a growing body of medical education literature is accumulating, demonstrating that reflective learning promotes professional formation, empathy, and clinical reasoning skills.

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