Professional Identity Formation in Medical Education for Humanistic, Resilient Physicians: Pedagogic Strategies for Bridging Theory to Practice

Hedy S. Wald, PhD, David Anthony, MD, MSc, Tom A. Hutchinson, MB, Stephen Liben, MD, Mark Smilovitch, MD, and Anthony A. Donato, MD, MHPE

Abstract

Recent calls for an expanded perspective on medical education and training include focusing on complexities of professional identity formation (PIF). Medical educators are challenged to facilitate the active constructive, integrative developmental process of PIF within standardized and personalized and/or formal and informal curricular approaches. How can we best support the complex iterative PIF process for a humanistic, resilient health care professional? How can we effectively scaffold the necessary critical reflective learning and practice skill set for our learners to support the shaping of a professional identity?

The authors present three pedagogic innovations contributing to the PIF process within undergraduate and graduate medical education (GME) at their institutions. These are (1) interactive reflective writing fostering reflective capacity, emotional awareness, and resiliency (as complexities within physician–patient interactions are explored) for personal and professional development; (2) synergistic teaching modules about mindful clinical practice and resilient responses to difficult interactions, to foster clinician resilience and enhanced well-being for effective professional functioning; and (3) strategies for effective use of a professional development e-portfolio and faculty development of reflective coaching skills in GME.

These strategies as "bridges from theory to practice" embody and integrate key elements of promoting and enriching PIF, including guided reflection, the significant role of relationships (faculty and peers), mindfulness, adequate feedback, and creating collaborative learning environments. Ideally, such pedagogic innovations can make a significant contribution toward enhancing quality of care and caring with resilience for the being, relating, and doing of a humanistic health care professional.

> To be a physician requires a transformation of the individual—one does not simply learn to be a physician, one becomes a physician.
>
> — Abraham Fuks and colleagues, "The Foundation of Physicianship"[1]

Within this article, we present three pedagogic innovations aimed at fostering the complex, iterative process of professional identity formation (PIF) in undergraduate medical education and graduate medical education (GME) at our institutions in the United States and Canada. A shared feature of these pedagogies is the development of reflective skills, core to professional competency.[2,3] Guided reflection is a critical component of the active construction process of PIF.[4] We hope innovations supporting PIF, such as those we describe below, can make a significant contribution toward enhancing the quality of care and caring with the development of resiliency for the being, relating, and doing[5] of a humanistic physician.

Please see the end of this article for information about the authors.

Correspondence should be addressed to Hedy S. Wald, Warren Alpert Medical School of Brown University, Department of Family Medicine, 222 Richmond St., Providence, RI 02912; telephone: (781) 424-2711; fax: (866) 372-7918; e-mail: hedy_wald@brown.edu.

Acad Med. 2015;90:753–760.
First published online April 16, 2015
doi: 10.1097/ACM.0000000000000725

Supplemental digital content for this article is available at http://links.lww.com/ACADMED/A275.

Importance of the PIF Process

Medical education has the dual responsibility of teaching skills and knowledge and of supporting the development of a professional identity.[6,7] Medical educators seek best practices to cultivate a well-rounded physician, placing dual emphasis on the development of the scientist and the maturation of the humanist.[8] Development of humanistic skills, behaviors, and attitudes is an active learning process, ideally leading to the "accordance of deep respect to humans … and concern for their general welfare and flourishing."[9] Cultivating the character (including virtues and attributes) as well as lifelong pursuits and behaviors of humanistic physicians requires a collective self-awareness of faculty, house staff, and students[4] and is of keen interest within medical education. Medical student "wholeness" and engagement (avoiding excessive detachment from patients and from self) are essential for the training of caring, humanistic, and ethical physicians,[10] in line with "bringing our whole person to whole person care."[11] This recent formulation—related to reflective writing (RW)-enhanced reflection—emphasizes cultivation of students' intellectual, emotional, and spiritual dimensions within PIF, including and valuing preexisting positive attributes brought to the medical education experience.

Ultimately, a medical professional's identity is "a representation of self, achieved in stages over time during which the characteristics, values, and norms of the medical profession are internalized, resulting in an individual thinking, acting, and feeling like a physician."[4] In general, PIF may be conceptualized as

well-integrated personal and professional development or "the moral and professional development of students, the integration of their individual maturation with growth in clinical competency, and their ability to stay true to values which are both personal and core values of the profession."[7] As such, medical education has integrated core components of formation that originated in clergy training (i.e., engagement in service, growth in self-knowledge, and intense mentoring[12]), thus broadening the domains of professionalism and professional development.

Medical educators are challenged to help facilitate the active constructive process of PIF within both formal and informal curricula. Suggested strategies for professional physician persona transformation include interaction with appropriate role models, providing opportunities to experiment and receive feedback on emerging identities, and creating pedagogic space[13] for clinical teachers to inspire students to meaningfully[14] reflect on, understand, and synergize developing identities.[15] How can we, as responsible educators, bridge theory to practice in PIF curricula and effectively cultivate mindful reflective practice,[16,17] enabling incorporation of the ideals, values, and ethical scaffolding of the medical profession? Three pedagogic innovations designed to address this key question are described below.

Fostering Reflection to Support PIF in Health Professions Education and Practice

The power of RW

Reflective capacity (RC), an essential competency for clinical reasoning, patient–physician communication, and professionalism,[3] encompasses skills of metacognition and emotional awareness as students explore the complexities of physician–patient interactions[18] and develop a reflective professional self. Given that reflection is not necessarily intuitive, the use of RW to enhance reflective skills and support personal and professional development in health care professions education is well documented.[19–23] More recently, authors have emphasized the power of RW for examining and illuminating critical experiences within PIF, thus helping provide insights into the longitudinal development of professional identity (as distinct from professional development).[24–26] Training to foster PIF is both experiential and contemplative.[7]

A RW curriculum in a family medicine clerkship

At Alpert Medical School of Brown University (AMS), students' structured RW, which was combined with guided individualized written feedback from interdisciplinary faculty ("interactive RW"), was first implemented in a doctoring course[20] in 2005 and further developed within a family medicine clerkship beginning in 2009.[27] AMS students participate in two cycles of interactive RW during a six-week required family medicine clerkship. The curricular objectives align with processes fundamental to and essential for students' active construction of PIF—namely, (1) improving students' RC; (2) sharing personal narratives within an authentic, safe community of learners[7]; and (3) providing positive role modeling and adequate mentoring.[28]

The RW curriculum, which is a component of an existing small-group curriculum during weekly didactics, bridges classroom learning and clinical experiential learning. In each of two RW cycles, students respond in writing to a prompt and electronically submit their RW to an interprofessional small-group faculty team—a physician and a clinical psychologist–medical educator (H.S.W.). During the small-group session in the following week, an hour is devoted to collaborative reflection on and processing of the narratives (reflective triggers). Faculty facilitators emphasize the small groups as safe spaces for discussing challenges, triumphs, uncertainties, lessons learned, and inherent stresses of developing into a physician. Students are invited, though not required, to share their narratives, and the group is invited to respond.

Following this session, each student is provided written structured, individualized feedback to his or her narrative via e-mail from faculty. Written feedback is strictly formative, not included in the student's final summary evaluation, and uses systematic frameworks for enhancing the educational impact of RW (described below). In crafting feedback, faculty often attach supplemental literature (resonating with students' RW themes), including published reflective narratives, poetry, and/or peer-reviewed research. The curriculum structure includes four reflection tiers: (1) community mentor experience (role modeling), (2) RW (the writing process itself), (3) small-group collaborative reflection and feedback, and (4) individualized written formative feedback promoting a more in-depth reflective process. Experience followed by reflection within a community of peers is a key PIF component.[29]

This curriculum has evolved over its first five years through an iterative process. Two thematically structured prompts—one on a "challenging patient encounter" and a second on the role of a primary care physician—were initially provided for two writing exercises. After receiving students' feedback indicating a desire for greater latitude in reflection topics, a second broader writing prompt option was added (in the second RW cycle), inviting students to write about any patient interaction that "struck" them.

Guided reflection is an integral component of PIF[4]; thus, we provide a faculty development (FD) session[30] to enhance the educational impact of RW pedagogy as well as the availability of ongoing faculty advising and consultation. The formalized FD session promotes skilled readers/responders (and small-group facilitators) with instruction in (1) systemized frameworks to guide the crafting of quality written feedback to students' RW while attending to the intellectual and emotional processes of becoming a physician,[31] and (2) effective small-group facilitation. The frameworks are (1) the Brown Educational Guide to the Analysis of Narrative (BEGAN)[24,32] and (2) the Reflection Evaluation For Learners' Enhanced Competencies Tool (REFLECT) rubric.[33] The REFLECT rubric is used for formative assessment of reflective level within students' RW and guides BEGAN application. Given that PIF is a lifelong process, the potential for faculty members' own PIF through the teaching (collaborative reflection) and participation in FD sessions is recognized.[34,35] Facilitation of small-group discussions may be a source of fulfillment and renewal for faculty.[36] Indeed, as one of our small-group faculty recently remarked, "This reminds me why I went into this business."

Guided reflection within individualized RW feedback and/or a collaborative group process (using RW) on key wellness themes—such as managing uncertainty[23]; identifying gaps in self-care; and fostering self-compassion[37] and attitudes promoting constructive, healthy engagement with challenges at work—may foster resiliency and enhance well-being to promote healthy, integrated PIF.[10] As such, interactive RW has recently been described as a metaphorical "resiliency workout" with intellectual stretching, building emotional muscle, and fostering ethical fitness[38] for the "marathon" of clinical practice.[5] In line with our objectives, guided critical reflective skills development has been shown to reduce stress and foster wellness in medical students,[39–41] and RW has been shown to positively influence students' capacity for empathy.[42] There is a richness of insight in students' RW and small-group reflection, and we observe students gaining a deeper understanding of themselves and their roles as physicians.

Our students begin their clerkships with considerable interactive RW experience, given its inclusion in our preclinical doctoring course. We feel that the level of critical reflection displayed by our clerkship students demonstrates the effect of longitudinal exposure to interactive RW in medical training; we hope to further explore this. Thus far, students have responded well to the RW curriculum, with many students reaching out to indicate their appreciation. Student evaluations obtained during 2009–2011 prior to the implementation of a writing prompt option ranged from 3.7 to 4.1 (out of 5, with 5 indicating strongly positive feelings about the enhancement of RC, satisfaction with group discussions, and quality of written feedback). In the 2013–2014 year, the average responses to two RW curriculum queries (end-of-clerkship evaluation) were 4.4 and 4.3 out of 5 (regarding small-group process and individualized feedback, respectively). Several students have published reflective narratives,[43–45] and a group recently presented on interactive RW at an international conference.[11] Illustrative quotes from both students' RW and feedback on the curriculum are provided in List 1. We are currently analyzing emerging PIF themes within clerkship students' RW to better evaluate outcomes and validate our observations.

Despite a growing literature on RW and PIF, there are important gaps in our knowledge. Reliable measures of RC validated across clinical settings and institutions are needed so that investigators may begin to determine best practices for fostering RC. We hope to engage both faculty and learners in future studies to further elucidate how the process of interactive RW plays a central role in scaffolding critical reflective skills necessary for the PIF of a humanistic, resilient health care practitioner.

Promoting Resilience as Part of PIF in Medical Students

Earlier, we described the increasing interest in fostering resilience within early stages of medical education. Medical education and practice can result in PIF but also in damage to a healthy professional identity, as evidenced by the high levels of cynicism and burnout both in practicing physicians as well as in undergraduate medical students.[10,46,47] Developing the necessary resilience to function effectively in the professional arena is a vital component of medical PIF,[48] with a working definition of *resilience* being "the ability to maintain personal and professional wellbeing in the face of ongoing work stress and adversity."[48] Adverse medical situations challenge medical students to respond as professional individuals rather than as they would have in their preexisting personal identities.[49] Mentoring students in preparing for such scenarios fosters the development of functional self-concepts and behaviors (the being and the doing of the "good physician").[4]

Given this needs assessment, three of us (T.A.H., S.L., M.S.) created two complementary teaching modules fostering the necessary knowledge, skills, and attitudes in our medical students.

Module One: Resilient responses to difficult clinical interactions

For a teaching module used at McGill University Faculty of Medicine since 2007, we developed brief, emotionally confronting, and ethically challenging clinical scenarios based on real events reported to faculty. Examples included being verbally abused by a physician in authority, being put under pressure to perform an ethically questionable procedure on a patient, being manipulated by a resident to not answer questions posed by attending staff, and having a conversation with an angry family about a seriously ill family member. A more in-depth description of a scenario is provided in Supplemental Digital Appendix 1, which may be found at http://links.lww.com/ACADMED/A275. Medical students engage in these scenarios with standardized patients at the McGill Simulation Centre in six afternoon sessions throughout the year. Each student plays a role in one scenario and observes two other scenarios. These teaching sessions consist of five separate sections: (1) prebriefing for faculty (the prebriefing documents for faculty are available from us), (2) prebriefing for faculty and students, (3) scenarios followed by small-group debriefing, (4) large-group debriefing, and (5) debriefing for faculty.

We base our faculty briefing for these sessions and our teaching in the large-group debriefing on Satir and colleagues'[50] work on congruent relating and Kabat-Zinn's[51] work on coping with stress mindfully. From Satir's work in particular, we stress the importance of remaining present to self, other, and context in stressful situations[50] and the self-awareness necessary to catch oneself in an unhelpful survival stance[52] of placating, blaming, being super-reasonable, or distracting. On the basis of Kabat-Zinn's work, we emphasize the difference between reacting and responding to stress.[51] We refrain from lecturing on these topics; rather, we use what emerges in the sessions to highlight relevant points. Instead of highlighting right or wrong responses to a scenario (even with an ethical dilemma), we focus primarily on a student's ability to remain congruent[50] and mindful in his or her response to a stressful scenario.

We have taught these sessions to approximately 1,600 medical students over the past nine years with excellent responses and evaluations from students and faculty. We rarely encounter a student who concerns us because of a strong emotional response to a scenario. On each occasion we have followed up without serious adverse consequences.

List 1

Illustrative Quotations From Students' Reflective Narratives and RW Curriculum Evaluations Highlighting the Curriculum's Impact on Their PIF[a]

Quotations from reflective narratives

"As a 'doctor hopeful,' I recognize that there are the clinical knowledge and skills I must master, but that there is also this persona of the doctor that I must master as well. This persona includes having a certain comfort with challenges of a broader context, whether being the drug-seeking patient, an ethical dilemma, or a complex social situation; all these situations require a certain tenacity to maintaining such a high standard in the profession that is quite difficult to attain."

"I'm still working on not letting my emotions get the better of me and making me say or promise a patient something I cannot or do not have the rights to achieve, since maintaining professional boundaries is important to the doctor–patient relationship. I hope that with more practice and experience, I can find that good mix of compassion and calm, and develop my own unique style of carrying it out."

Quotations from student feedback about the RW curriculum

"Reflective writing nurtures my whole person, and personal and group feedback builds community and mentorship."

"Through RW, I realized I was beginning to draw satisfaction from patient interactions instead of purely from successful medical treatment/patient outcomes."

"I wanted to thank you for your review of my reflection and your time today. The discussion today made me think about when I've been the happiest seeing patients, and I came to the conclusion that I am happiest when I use a balanced approach involving learning about the human(istic) side of my patients. The patients [who] have touched my heart with their stories are the ones I most carry forward in my career and life. And I don't really enjoy encounters when I end up feeling like a "robot" doctor. I think just being conscious of this will help me redirect my experiences in the future."

"Thanks so much for your comments. Much food for thought. I like your term, 'emotional anesthesia.' It really paints the picture that it is almost a prescription against pain we might feel, should we open ourselves completely to the emotional winds head-on. But it is a powerful 'drug,' and must be constantly titrated to ensure against erosion of the emotional depth we arrive with."

Abbreviations: RW indicates reflective writing; PIF, professional identity formation.

[a]At the Alpert Medical School of Brown University, students' structured RW is combined with guided individualized written feedback from interdisciplinary faculty ("interactive RW"). Students participate in two cycles of interactive RW during a six-week required family medicine clerkship.

We ask students to report on their perceived confidence before and after the session with regard to particular types of knowledge, skills, and attitudes. In the six 2013 sessions, 162 of the 184 students (88%) completed questionnaires before and after the sessions. Their responses indicated that

- before the session, 36 students (22%) reported a high level of confidence in having knowledge of the steps to take after a difficult situation has occurred; after the session, 117 (72%) reported such confidence ($P < .001$);
- before the session, 45 students (28%) reported a high level of confidence in having skills to deal with difficult situations when they were occurring; after the session, 133 (82%) reported such confidence ($P < .001$); and
- before the session, 75 students (46%) reported comfort in discussing difficult situations with others; after the session, 133 (82%) reported such comfort ($P < .001$).

Our confidence matches that of students regarding their ability to gain important knowledge, skills, and attitudes helpful to their future professional careers. However, further qualitative research is needed to determine to what degree the congruence and mindfulness that we teach are actually incorporated into students' professional identities.

Module Two: Mindful clinical practice

Decreased stress and increased appreciation for life are demonstrated outcomes of mindfulness-based stress reduction courses first offered by the University of Massachusetts Medical School to patients with chronic pain.[53] To address the problems of stress and burnout in medical students, "mindfulness-based medical" courses have recently been introduced into the curricula of several medical schools.[54,55] New mindfulness-based medical undergraduate courses continue to emerge with outcome goals such as reducing student stress and cultivation of resilience, well-being, and personal growth.[54,55] More broadly, mindful practice[56] is highlighted as integral to the professional competency of physicians, requiring mentoring and guidance.

Building on the work of Epstein[56] (at the University of Rochester School of Medicine and Dentistry) and Hassed et al[54] (at Monash University), some of us (S.L., T.A.H.) created in 2014 a seven-week mindful medical practice course for preclerkship, second-year medical students at McGill University Faculty of Medicine. This core (nonelective) course will be integrated into the core medical undergraduate curriculum. Each of the seven consecutive 90-minute small-group classes will consist of a triad of didactic learning, contemplative practice (e.g., meditation), and narrative medicine.[57] Within this three-part framework, topics of relevance to undergraduate medical learners include:

- Developing situational awareness by developing capacities in noticing and discernment
- Strengthening self-monitoring and metacognition
- Learning how to recognize common cognitive traps and biases that lead to medical errors
- Working mindfully in teams
- Understanding time "management" and differing ways perception is altered by unexamined assumptions
- Addressing cognitive and emotional challenges of working with uncertainty of clinical decision making
- Understanding the connection between cultivating compassion for self and for others
- Being aware of challenges to professionalism including understanding complexities of boundaries and limit setting
- Responding to loss and grief

Synergy between the two modules

Our intention is synergy between these two teaching modules (*mindful clinical practice* before clerkships and *resilient responses to difficult interactions* during clerkships) to provide students with necessary knowledge, skills, and attitudes

of mind fostering clinician resilience and enhanced well-being. We will need both quantitative and qualitative research on the effects of our proposed mindful medical practice course and on the synergy between the two teaching modules in promoting long-term resiliency as a core component of PIF in our students.

Fostering Reflective Skills to Cultivate the PIF Process Within GME

The importance of cultivating PIF within GME

We now turn to highlighting the importance of implementing effective pedagogy for cultivating the complex, ongoing, dynamic, and iterative PIF process within GME, given that junior members of the profession must reconcile dissonance between the stated values of the medical profession and the realities of medicine as practiced in the real world.[58] This process requires reflection, feedback, and intercalation of patient care experiences as the learner assimilates tacit and explicit expectations of the profession.[59] Residency represents the first professional work experience for physicians and is thus a critical time for facilitated reflective discussions with seniors in the profession. Supporting the gradual progression from *acting* as a member of a profession to assuming its values, integrating feedback, and *becoming* a physician[60] requires skilled longitudinal mentoring and advising within a collaborative learning environment.[58] Such ongoing interaction is key, given that PIF is not linear but rather is pushed forward by crises fostered by clinical experiences and by the hidden curricula exposing and challenging a learner's values.[49] Role models and mentors who can facilitate and guide learners' reflections are thus critical to this process.[4] Threats to fostering these critical mentoring relationships include faculty members' diminished interest in teaching,[61] shortened training times, and increasing clinical demands on faculty.[62]

PIF curricular interventions have been primarily focused on teaching and assessing professionalism[25] and may include lectures on ethics and expectations of the profession,[4] RW seminars,[3,8,9] and exposure to simulated and real experiences with facilitated debriefing.[63] The recent focus on fostering PIF in GME as distinct from "professionalism" emphasizes longitudinal engagement with mentors and role models throughout the continuum of training and into practice, during which trainees learn to reflect while reexamining their values and ideals and finding meaning in their work.[64] We believe that reflective exercises in an e-portfolio, facilitated by trained mentors, help bring PIF out of the "shadows" of training and into the light of guided reflective discussion. As such, these exercises serve as a vehicle for pursuing PIF goals—namely, helping learners discover "who they are, who they are becoming, and who they wish to become."[4]

Using an e-portfolio and trained mentors to pursue PIF goals

At Reading Health System in Pennsylvania, an electronic professional development portfolio has served since 2008 as a documentation tool supporting residents' reflections on performance and their self-monitoring, comparisons of self-assessments with external feedback, and generation of learning plans.[65,66] Mentors are selected from a pool of full-time faculty educators and matched with individual residents at the start of residency, with each mentor assigned four to six mentees. The e-portfolio was overlaid on this existing mentoring process, with goals of promoting reflective skills, supporting self-directed learning, and enhancing career development.[65] The portfolio backbone is the mentee's curriculum vitae (CV). All scholarly activity and research efforts are uploaded, with automatic reminders (generated by any uploads) triggering future CV updates. The portfolio is designed to assist the resident (1) to reflect in action,[2] with reflection-inviting questions for each document type; and (2) to reflect on action, including the ability to open and view their descriptions of all sequential reflections in order to review longitudinal progress toward self-declared goals. Mentors coach mentees at triannual meetings to facilitate reflections on clinical evaluations, test scores, critical incident RW assignments, feedback from their teaching, and their presentations for meaning making and transformative learning. Self-directed learning is supported through mentor-coached reviews of uploaded chart audits and evidence-based medicine searches.

The last portfolio section contains uploads of trainees' short- and long-term professional development plans, initially created jointly by the mentor and the mentee, but solely by the mentee later in the program as the scaffolding process is gradually reduced and independence is achieved.[67]

Each resident completes e-portfolio writing and reflective assignments prior to mentoring meetings triannually and during night float rotations. Specific exercises for each session are outlined in advance for the resident, who completes a series of year- and session-specific assignments throughout the three years of residency.[65] Mentors provide only formative feedback to mentees, to maintain both authenticity and confidentiality for the mentees. Mentors also help mentees prepare for annual summative portfolio reviews with the program director (not a mentor) and serve as their advocates to the Clinical Competence Committee.[68] Mentoring meetings have a series of assignments with agendas determined by mentees. The portfolio serves as the conversational "departure point" for PIF discussions about such topics as achieving work–life balance, fostering resiliency[69] to prevent burnout,[70] and future endeavors.

Mentor training is critical to successful PIF interventions.[4,71] Our mentors participate in a process most have never experienced in their own training, which makes FD a critical portion of the program's success. One portfolio champion (A.A.D.) serves the role of "reflective coach" to assist in facilitating the portfolio mentoring process and craft ongoing FD. Mentors' needs assessments led to designing biannual FD sessions,[72] including the topics "orienting the new mentee to goals of the portfolio," "a toolbox of educational interventions," "role of the mentor and the assessment system,"‘ and "an introduction to qualitative methods to assess portfolios." Within all of this, "mentoring the mentors" includes cultivating "reflection mentors" who can foster the kind of mentor–mentee relationships that create a supportive reflective learning environment. Mentors orient themselves to the process experientially by maintaining their own personal portfolio on the Web site, which can help inform their own modeling of the self-reflective process with mentees.

Surveys of graduates from 2010 to 2013 found generally positive reviews of the e-portfolio curricular interventions. Specific written comments included

> I found it to be an important tool for self-evaluation, self-reflection, and for weighing how much I was growing … and it helped me prepare myself for a higher level.

One mentor described the portfolio as a

> safe haven for discussion of variations on their personal style, whether it be in their teaching techniques or their patient care … and for reevaluation of their identity as they move from intern to resident to staff.

Such feedback emphasizes the perceived value of mentoring the process of students' constructing a professional "identity that intersects with and builds on who they are."[73]

Importance of e-portfolios to both residents and their mentors

Given the skills and habits cultivated by this process, long-term studies of effectiveness of such PIF interventions in GME are needed. Future directions include qualitative assessments of residents exposed to mentoring through portfolios (including those who are less engaged) to determine the long-term impact of portfolio use on measures of staff physician resiliency/levels of burnout, self-directed learning, and perceived and reported impact on relationship-centered patient care, with or without their continued engagement with their portfolios. Evaluating the impact on GME mentors of cultivating PIF with e-portfolios is also of interest.

Jonas Salk said that "our greatest responsibility is to be good ancestors."[74] Carrying out this responsibility may be enhanced by effective platforms to foster and coach reflective skills, at the same time promoting career development and work–life balance while imparting the values of the profession. We believe a professional development e-portfolio can serve as an attractive "canvas" to paint the picture of a resident's dreams, while offering coaching and guidance for introducing the newest members of medicine to the profession (and potentially help realize their dreams), and in the process, reenergize the mentors themselves.

Summing Up

In summary, the pedagogic strategies we have described above represent bridges from theory to practice, embodying and integrating key elements of promoting and enriching PIF.[75] Such elements include guided reflection, the integral role of relationships, formative feedback, and the creation of collaborative learning environments[76] or "communities of practice"[77] for promoting the socialization process. A unifying theme among these medical school and GME curricular innovations is cultivating mindful reflective practice to promote resilience—conceptualized as part of PIF—and to enhance learners' well-being. We hope these curricula descriptions can serve as a valuable "reflective trigger" for medical educators—and potentially, within a broader interprofessional perspective, for health care professions educators—to consider the process and content of existing and potential PIF pedagogy within their own institutions.

Research is needed on both the process and outcomes of the described curricular innovations (and associated FD), addressing such issues as best practices in cultivating a robust reflective practice skills set, reducing stress, identifying and enhancing resiliency factors, and positively influencing the learner's well-being and patient care.

Outcome studies of the effectiveness of PIF curricula are still at early stages and are needed to further consider potential synergistic effects among various approaches as well as how such core educational practices can serve as "architecture" for developing RC supporting PIF through "phases and longitudinal trajectories of the professional life cycle."[19] Further elaboration and agreement on essential outcomes in PIF can help guide such studies across training settings. In general, more specificity is needed in defining the steps (linear or not) required to progress towards the lofty goal of helping trainees adopt qualities of the "good physician."[4] The pedagogic approaches presented above, which include both standardized and personalized aspects of medical education, can ideally help educators shift away from "an exclusive focus on 'doing the work of a physician' toward a broader focus that also includes 'being a physician.'"[49] As such, we hope and plan to study how these pedagogic innovations can support formation of a reflective, resilient health care professional with habits of mind, heart, and practice[78] that promote informed flexibility, ongoing learning, and humility[3] for the professionally competent and compassionate being, relating, and doing of clinical practice.

Acknowledgments: H.S. Wald would like to acknowledge the Arnold P. Gold Humanism Foundation for a Harvard–Macy Scholar Award. T.A. Hutchinson, S. Liben, and M. Smilovitch would like to acknowledge the excellent work of the staff of the Arnold and Blema Steinberg Medical Simulation Centre in helping them prepare and implement the role-plays discussed in the section "Module One: Resilient responses to difficult clinical interactions."

Funding/Support: H.S. Wald is grateful for support in the preparation of this article from Brown University predoctoral training grant #D56HP2068.

Other disclosures: None reported.

Ethical approval: The authors received institutional review board permission for their work with reflective writing, including permission to share quotations. The survey quotations are from an anonymous, end-of-the-year evaluation.

H.S. Wald is clinical associate professor of family medicine, Warren Alpert Medical School of Brown University, Providence, Rhode Island.

D. Anthony is associate professor of family medicine, Warren Alpert Medical School of Brown University, Providence, Rhode Island.

T.A. Hutchinson is professor of medicine and director, McGill Programs in Whole Person Care, McGill University Faculty of Medicine, Montreal, Quebec, Canada.

S. Liben is associate professor of pediatrics, McGill University Faculty of Medicine, Montreal, Quebec, Canada.

M. Smilovitch is associate professor of medicine, McGill University Faculty of Medicine, Montreal, Quebec, Canada.

A.A. Donato is clinical associate professor of medicine, Jefferson Medical College, Philadelphia, Pennsylvania.

References

1 Fuks A, Brawer J, Boudreau JD. The foundation of physicianship. Perspect Biol Med. 2012;55:114–126.
2 Schön DA. Educating the Reflective Practitioner. San Francisco, Calif: Jossey-Bass; 1987.
3 Epstein RM. Reflection, perception and the acquisition of wisdom. Med Educ. 2008;42:1048–1050.
4 Cruess RL, Cruess SR, Boudreau JD, Snell L, Steinert Y. Reframing medical education to support the development of a professional identity. Acad Med. 2014;89:1446–1451.

5 Wald HS. Being, relating, doing: Fostering reflection in humanistic health care professions education and practice—Focus on interactive reflective writing. Grand rounds presentation at Georgetown University Medical Center; April 7, 2014; Washington, DC.
6 Monrouxe LV. Identity, identification and medical education: Why should we care? Med Educ. 2010;44:40–49.
7 Rabow MW, Remen RN, Parmelee DX, Inui TS. Professional formation: Extending medicine's lineage of service into the next century. Acad Med. 2010;85:310–317.
8 Branch WT, Kern D, Haidet P, et al. Teaching the human dimensions of care in clinical settings. JAMA. 2001;286:1067–1074.
9 Goldberg JL. Humanism or professionalism? The white coat ceremony and medical education. Acad Med. 2008;83:715–722.
10 Jennings ML. Medical student burnout: Interdisciplinary exploration and analysis. J Med Humanit. 2009;30:253–269.
11 Armstrong GA, Kofman A, Sharpless JJ, Anthony D, Wald HS. Bringing our whole person to whole person care: Fostering reflective capacity with interactive reflective writing in health professions education. Workshop presentation at: 1st International Congress on Whole Person Care; November 1, 2013; Montreal, Quebec, Canada.
12 Daaleman TP, Kinghorn WA, Newton WP, Meador KG. Rethinking professionalism in medical education through formation. Fam Med. 2011;43:325–329.
13 Clandinin DJ, Cave MT. Creating pedagogical spaces for developing doctor professional identity. Med Educ. 2008;42:765–770.
14 Birden HH, Usherwood T. "They liked it if you said you cried": How medical students perceive the teaching of professionalism. Med J Aust. 2013;199:406–409.
15 Goldie J. Identity formation in medical students: An elaboration of a previous conceptualization and review of the literature. MedEdWorld. October 17, 2013:1–23.
16 Pezzolesi C, Ghaleb M, Kostrzewski A, Dhillon S. Is mindful reflective practice the way forward to reduce medication errors? Int J Pharm Pract. 2013;21:413–416.
17 Nugent P, Moss D, Barnes R. Clear(ing) space: Mindfulness-based reflective practice. Reflective Pract. 2011;12:1–13.
18 Wald HS. Reflection, resilience, humanism: Interactive reflective writing and professional identity formation. Plenary presentation at: The Examined Life Conference—Writing, Humanities, and the Art of Medicine; April 11, 2014; Iowa City, Iowa.
19 Wald HS, Reis SP. Beyond the margins: Reflective writing and development of reflective capacity in medical education. J Gen Intern Med. 2010;25:746–749.
20 Wald HS, Davis SW, Reis SP, Monroe AD, Borkan JM. Reflecting on reflections: Enhancement of medical education curriculum with structured field notes and guided feedback. Acad Med. 2009;84:830–837.
21 Levine RB, Kern DE, Wright SM. The impact of prompted narrative writing during internship on reflective practice: A qualitative study. Adv Health Sci Educ Theory Pract. 2008;13:723–733.
22 Brady DW, Corbie-Smith G, Branch WT. "What's important to you?" The use of narratives to promote self-reflection and to understand the experiences of medical residents. Ann Intern Med. 2002;137:220–223.
23 Nevalainen MK, Mantyranta T, Pitkala KH. Facing uncertainty as a medical student—A qualitative study of their reflective learning diaries and writings on specific themes during the first clinical year. Patient Educ Couns. 2010;78:218–223.
24 Wald HS, Reis SP, Monroe AD, Borkan JM. "The loss of my elderly patient:" Interactive reflective writing to support medical students' rites of passage. Med Teach. 2010;32:e178–e184.
25 Holden M, Buck E, Clark M, Szauter K, Trumble J. Professional identity formation in medical education: The convergence of multiple domains. HEC Forum. 2012;24:245–255.
26 Wong A, Trollope-Kumar K. Reflections: An inquiry into medical students' professional identity formation. Med Educ. 2014;48:489–501.
27 Wald HS, Anthony D. Fostering reflective capacity with interactive reflective writing within the Alpert Medical School Family Medicine Clerkship. In: Faculty and Student Manual. Providence, RI: Warren Alpert Medical School of Brown University; 2009.
28 Branch WT Jr. Supporting the moral development of medical students. J Gen Intern Med. 2000;15:503–508.
29 Inui TS, Cottingham AH, Frankel RM, Litzelman DK, Suchman AL, Williamson PR. Supporting teaching and learning of professionalism—Changing the educational environment and students' "navigational skills." In: Creuss RL, Creuss SR, Steinert Y, eds. Teaching Medical Professionalism. Cambridge, UK: Cambridge University Press; 2009:108–123.
30 Wald HS, Borkan JM, Reis SP, Taylor JS. Faculty development for enhancing feedback to medical students' reflective narratives: Formal analytic frameworks for fostering and evaluating reflective capacity through "interactive" reflective writing. Paper presented at: AMEE International Faculty Development Conference; May 13, 2011; Toronto, Ontario, Canada.
31 Wald HS. Insights into professional identity formation in medicine: Memoirs and poetry. Eur Leg Towar New Paradig. 2011;16:377–384.
32 Reis SP, Wald HS, Monroe AD, Borkan JM. Begin the BEGAN (The Brown Educational Guide to the Analysis of Narrative)—A framework for enhancing educational impact of faculty feedback to students' reflective writing. Patient Educ Couns. 2010;80:253–259.
33 Wald HS, Borkan JM, Taylor JS, Anthony D, Reis SP. Fostering and evaluating reflective capacity in medical education: Developing the REFLECT rubric for assessing reflective writing. Acad Med. 2012;87:41–50.
34 Wald HS. I've got mail. Fam Med. 2008;40:393–394.
35 Wald HS. The "parallel 'parallel chart.'" http://medhum.med.nyu.edu/blog/?p=535. Accessed February 14, 2015.
36 Kumagai AK, White CB, Ross PT, Perlman RL, Fantone JC. The impact of facilitation of small-group discussions of psychosocial topics in medicine on faculty growth and development. Acad Med. 2008;83:976–981.
37 Neff KD, Kirkpatrick KL, Rude SS. Self-compassion and adaptive psychological functioning. J Res Personal. 2007;41:139–154.
38 Murphy LG. Authentic leadership: Becoming and remaining an authentic nurse leader. J Nurs Adm. 2012;42:507–512.
39 Lutz G, Scheffer C, Edelhaeuser F, Tauschel D, Neumann M. A reflective practice intervention for professional development, reduced stress and improved patient care—a qualitative developmental evaluation. Patient Educ Couns. 2013;92:337–345.
40 Miller E, Balmer D, Hermann N, Graham G, Charon R. Sounding narrative medicine: Studying students' professional identity development at Columbia University College of Physicians and Surgeons. Acad Med. 2014;89:335–342.
41 Peterkin A, Roberts M, Kavanagh L, Havey T. Narrative means to professional ends: New strategies for teaching CanMEDS roles in Canadian medical schools. Can Fam Physician. 2012;58:e563–e569.
42 Chen I, Forbes C. Reflective writing and its impact on empathy in medical education: Systematic review. J Educ Eval Health Prof. 2014;11:20.
43 Armstrong GW, Wald HS. Fostering reflective capacity with interactive reflective writing in medical education: Using formal analytic frameworks to guide formative feedback to students' reflective writing. Med Teach. 2013;35:258.
44 Sharpless J. Open wide. J Gen Intern Med. 2013;28:857–858.
45 van Wieren A. Shall we pray? JAMA. 2011;305:865–866.
46 Spickard A Jr, Gabbe SG, Christensen JF. Mid-career burnout in generalist and specialist physicians. JAMA. 2002;288:1447–1450.
47 Dyrbye LN, Massie FS Jr, Eacker A, et al. Relationship between burnout and professional conduct and attitudes among US medical students. JAMA. 2010;304:1173–1180.
48 McCann CM, Beddoe E, McCormick K, et al. Resilience in health professions: A review of recent literature. Int J Wellbeing. 2013;3:60–81.
49 Jarvis-Selinger S, Pratt DD, Regehr G. Competency is not enough: Integrating identity formation into the medical education discourse. Acad Med. 2012;87:1185–1190.
50 Satir V, Banmen J, Gerber J, Gomorri M. Chapter 4: Congruence. In: Satir V, ed. The Satir Model: Family Therapy and Beyond. Palo Alto, Calif: Science and Behavior Books; 1991:65–84.
51 Kabat-Zinn J. Full Catastrophe Living: Using the Wisdom of Your Body and Mind to Face Stress, Pain and Illness. New York, NY: Delta; 1990.
52 Satir V, Banmen J, Gerber J, Gomorri M. Chapter 3: The survival stances. In: Satir V, ed. The Satir Model: Family Therapy and Beyond. Palo Alto, Calif: Science and Behavior Books; 1991:31–64.
53 Kabat-Zinn J. Mindfulness-based interventions in context: Past, present, and future. Clin Psychol Sci Pract. 2003;10:144–156.
54 Hassed C, de Lisle S, Sullivan G, Pier C. Enhancing the health of medical students: Outcomes of an integrated mindfulness and lifestyle program. Adv Health Sci Educ Theory Pract. 2009;14:387–398.
55 Dobkin PL, Hutchinson TA. Teaching mindfulness in medical school: Where are we now and where are we going? Med Educ. 2013;47:768–779.

56 Epstein RE. Mindful practice. JAMA. 1999;282:833–839.
57 Dobie S. Viewpoint: Reflections on a well-traveled path: Self-awareness, mindful practice, and relationship-centered care as foundations for medical education. Acad Med. 2007;82:422–427.
58 Cooke M, Irby DM, O'Brien BC. Educating Physicians: A Call for Reform of Medical School and Residency. New York, NY: Jossey-Bass; 2010.
59 Niemi PM, Vainiomäki PT, Murto-Kangas M. "My future as a physician"—Professional representations and their background among first-day medical students. Teach Learn Med. 2003;15:31–39.
60 Kegan R. In Over Our Heads: The Mental Demands of Modern Life. Cambridge, Mass: Harvard University Press; 1994.
61 Souba WW. Academic medicine and the search for meaning and purpose. Acad Med. 2002;77:139–144.
62 Chikwe J, de Souza AC, Pepper JR. No time to train the surgeons: More and more reforms result in less and less time for training. BMJ. 2004;328:418–419.
63 Ginsburg S, Lingard L. "Is that normal?" Preclerkship students' approaches to professional dilemmas. Med Educ. 2011;45:362–371.
64 Nothnagle M, Reis S, Goldman RE, Anandarajah G. Fostering professional formation in residency: Development and evaluation of the "forum" seminar series. Teach Learn Med. 2014;26:230–238.
65 Donato AA, George DL. A blueprint for implementation of a structured portfolio in an internal medicine residency. Acad Med. 2012;87:185–191.
66 Nothnagle M, Goldman R, Quirk M, Reis S. Promoting self-directed learning skills in residency: A case study in program development. Acad Med. 2010;85:1874–1879.
67 Stalmeijer RE, Dolmans DH, Wolfhagen IH, Scherpbier AJ. Cognitive apprenticeship in clinical practice: Can it stimulate learning in the opinion of students? Adv Health Sci Educ Theory Pract. 2009;14:535–546.
68 Friedman Ben David M, Davis MH, Harden RM, Howie PW, Ker J, Pippard MJ. AMEE medical education guide no. 24: Portfolios as a method of student assessment. Med Teach. 2001;23:535–551.
69 Epstein RM, Krasner MS. Physician resilience: What it means, why it matters, and how to promote it. Acad Med. 2013;88:301–303.
70 Dyrbye LN, West CP, Satele D, et al. Burnout among U.S. medical students, residents, and early career physicians relative to the general U.S. population. Acad Med. 2014;89:443–451.
71 Dougherty P, Ross PT, Lypson ML. Monitoring resident progress through mentored portfolios. J Grad Med Educ. 2013;5:701–702.
72 Driessen E, van Tartwijk J, van der Vleuten C, Wass V. Portfolios in medical education: Why do they meet with mixed success? A systematic review. Med Educ. 2007;41:1224–1233.
73 Frost HD, Regehr G. "I am a doctor": Negotiating the discourses of standardization and diversity in professional identity construction. Acad Med. 2013;88:1570–1577.
74 Healy GB. Role models in surgery. Surgeon. 2011;9(suppl 1):S48–S49.
75 Stern DT, Papadakis M. The developing physician—Becoming a professional. N Engl J Med. 2006;355:1794–1799.
76 Irby DM, Cooke M, O'Brien BC. Calls for reform of medical education by the Carnegie Foundation for the Advancement of Teaching: 1910 and 2010. Acad Med. 2010;85:220–227.
77 Wenger E. Communities of Practice: Learning, Meaning, and Identity. Cambridge, UK: Cambridge University Press; 1998.
78 Shulman L. Signature pedagogies in the professions. Daedalus. 2005;134:52–59.