

# Integrating Compassionate, Collaborative Care (the “Triple C”) Into Health Professional Education to Advance the Triple Aim of Health Care

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## Abstract

Empathy and compassion provide an important foundation for effective collaboration in health care. Compassion (the recognition of and response to the distress and suffering of others) should be consistently offered by health care professionals to patients, families, staff, and one another. However, compassion without collaboration may result in uncoordinated care, while collaboration without compassion may result in technically correct but depersonalized care that fails to meet the unique emotional and psychosocial needs of all involved. Providing compassionate, collaborative care (CCC) is critical to

achieving the “triple aim” of improving patients’ health and experiences of care while reducing costs. Yet, values and skills related to CCC (or the “Triple C”) are not routinely taught, modeled, and assessed across the continuum of learning and practice. To change this paradigm, an interprofessional group of experts recently recommended approaches and a framework for integrating CCC into health professional education and postgraduate training as well as clinical care.

In this Perspective, the authors describe how the Triple C framework

can be integrated and enhance existing competency standards to advance CCC across the learning and practice continuum. They also discuss strategies for partnering with patients and families to improve health professional education and health care design and delivery through quality improvement projects. They emphasize that compassion and collaboration are important sources of professional, patient, and family satisfaction as well as critical aspects of professionalism and person-centered, relationship-based high-quality care.

**T**he emergency department (ED) team was ready to receive the nine-year-old girl who had collapsed on a nearby school athletic field, but was unable to resuscitate her. The ED physician, who had just returned to work from maternity leave, gazed at the child’s lifeless body with disbelief. When the child’s mother arrived, her piercing wails gripped the attention of everyone who could hear her. The charge nurse supported the mother as she led her into a conference room, where they were met by a social worker and a chaplain. Patients in the ED waiting room, responding to the receptionist’s apologies for the delay, said, “Take care of that family first. We can wait.” In the trauma room, a nurse who had been a member of the code team held the ED physician as she wept. The

rest of the team gathered around them. Students, house staff, nurses, physicians, and anesthesiologists stood in that makeshift sanctuary—some silently, others speaking words of support, as all honored the life and spirit of the young girl. After a few moments, they thanked each other and went back to their work.

In the ED described above, everyone—including the individuals in the waiting room—became members of a compassionate, collaborative care (CCC) community. Compassion, a universal response to distress and suffering, is recognizing and understanding another’s concerns, distress, pain, or suffering, coupled with acknowledging those conditions and taking action to ameliorate them. Extensive social psychology research demonstrates that other-oriented emotions such as compassion, which are elicited by and congruent with the perceived welfare of someone in need, produce altruistic motivation to help.<sup>1</sup>

Empathy and compassion among all members of the health care team are essential foundations of collaborative

care.<sup>2,3</sup> CCC, which we have called the “Triple C,”<sup>4</sup> involves health care professionals, patients, and families working interdependently to cocreate and provide care based on collectively agreed-on goals. Compassion without collaboration may result in uncoordinated care, while collaboration without compassion may result in technically correct but depersonalized care that fails to meet the unique emotional and psychosocial needs of all involved. The Triple C model includes sharing concerns and supporting one another to maximize health, well-being, and resilience in order to achieve the “triple aim”<sup>5</sup> of improving patients’ health and experiences of care while reducing costs. Indeed, some authors have suggested that we should strive not just for the triple aim but for a “quadruple aim” of also supporting providers’ well-being.<sup>6</sup>

CCC requires a shift from a traditional hierarchical model based on physician power and control toward a more equal partnership- and relationship-based model. Such care prioritizes respectful, caring relationships and empowerment

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shared among members of a team, which can include patients, family members (or surrogate decision makers), providers, staff, institutional leaders, managers, and administrators alike. Although some patients and families may prefer not to be actively involved, team members must nonetheless share information and strive to facilitate patients' participation as their comfort allows.

Recently, an interprofessional group of clinicians, educators, organizational leaders, and measurement experts—with input from patients, families, and advocates—defined the underlying foundations and principles of CCC (see Box 1) and articulated recommendations for its advancement.<sup>4</sup> In this Perspective, we discuss why CCC is important and two of the ways in which this interprofessional group suggested advancing it: (1) integrating a framework for CCC into existing competencies for health professional education and postgraduate training, and (2) involving patients and their families in this education as well as in codesigning health care processes to provide CCC.

### Why Is CCC Important?

Extensive evidence links the quality of communication between clinicians and patients and among colleagues with

health outcomes, patient satisfaction, quality of life, adherence to treatment, hospital readmissions, costs of care, medical errors, and malpractice claims.<sup>7–17</sup> While communication is the medium by which compassion and collaboration are expressed, studies linking perceived provider empathy and compassion with patient outcomes are just emerging. For example, researchers have shown correlations between higher levels of empathy and compassion as self-reported by physicians and both better control of diabetes and cholesterol<sup>18</sup> and fewer hospital admissions for serious complications of diabetes.<sup>19</sup> Other researchers have shown improved long-term psychological adjustment after a cancer diagnosis, less intensive care utilization at the end of life, increased markers of immune responsiveness, and even shortened duration of the common cold among patients of providers who are perceived by patients as more empathic and with whom patients feel more connected.<sup>20–22</sup>

Compassion may also contribute to positive outcomes for clinicians and organizations. At the individual level, recent social neuroscience research suggests that training aimed at cultivating compassion activates neural reward systems and increases positive emotions.<sup>23</sup> At the organizational level, patients have been found to rate their care experiences

more highly at and to be more likely to recommend hospitals that recognize and reward compassionate professionals and staff and that provide support and opportunities to mitigate staff distress compared with hospitals that do not.<sup>24</sup> Thus, compassion has positive effects not only on individual patient and provider well-being but also on organizational reputation and patient loyalty.

Numerous reports have highlighted the importance of collaborative care for improving health care quality in addition to health outcomes.<sup>25–28</sup> Interprofessional education (IPE)—in which members of multiple health care or social care professions learn from, with, and about each other for the purpose of improving collaboration and the health and well-being of patients—provides a foundation for collaborative care to flourish.<sup>29</sup> Together, mutual understanding among team members and effective communication skills help foster CCC. For example, several studies have found that effective communication among different health professionals reduces medical errors.<sup>30–34</sup> Additionally, intervention studies designed to improve communication and collaboration among health professionals have resulted in maintenance of functional ability and reduced mortality among geriatric patients.<sup>35–37</sup> Further, a systematic review of the impact of IPE demonstrated positive outcomes in diabetes care and management of victims of domestic violence as well as positive effects on ED culture, error rates, patient satisfaction, and collaborative team behavior in multiple settings.<sup>38</sup>

### Implementing a Framework for CCC in Health Professional Education and Training

CCC requires values and skills that can be taught, modeled, learned, and assessed. Some of these are already being taught and assessed in health professional education and postgraduate training under the rubrics of interpersonal and communication skills, teamwork, and professionalism. We recently participated in the development of a framework of attributes and observable behaviors that demonstrate CCC.<sup>39</sup> Our hope is that this Triple C framework, which includes detailed behavioral descriptors for each attribute, will provide depth and coherence to training in values

## Box 1

### Foundations of Compassionate, Collaborative Care<sup>a</sup>

The compassionate, collaborative care (Triple C) model rests upon values that prioritize respectful, caring relationships, emotional support, good communication, and shared empowerment to accomplish mutually determined goals. Including patients and families as equal members of the health care team is a key catalyst for compassionate, collaborative care. Everyone is or could be a member of the health care team—patients, family members (or surrogate decision makers), providers, staff, institutional leaders, managers, and administrators alike.

#### Principles of compassionate, collaborative care

1. Patients and family members should be involved in health professional education and practice design in order to truly transform health care.
2. While honoring the preferences of patients and families who choose not to be so involved, health care professionals must share information and strive to facilitate patient and family participation as their comfort allows.
3. Compassion and collaboration involve attributes, values, and skills that can be taught, modeled, learned, and assessed and that must be integrated into health professional education and practice at all levels and continuously reinforced.
4. The well-being of professional and family caregivers is critical to their ability to function effectively. Promotion of caregivers' resilience, and thus their ability to care for and heal others, must be proactively supported.
5. Leaders of health care and educational organizations and systems must create cultures and provide resources that support compassionate, collaborative care.

<sup>a</sup>Adapted with permission from Lown BA, McIntosh S. Recommendations from a conference on advancing compassionate, person- and family-centered care through interprofessional education for collaborative practice.<sup>4</sup>

and skills that may otherwise be taught and assessed in a fragmented fashion. The behaviors in the framework can be included in learning objectives and assessment instruments and can also be used to set patient and family expectations and professional standards. The contents of the Triple C framework were informed by entrustable professional activities (EPAs) and several competency frameworks, including that outlined by the Interprofessional Education Collaborative.<sup>40</sup> As Table 1 demonstrates, the Triple C framework can be mapped onto and enhance the teaching and assessment of EPAs and competencies articulated by associations of health professions colleges, accreditation organizations, and medical licensure requirements.<sup>41–44</sup> Our framework is also consonant with the CanMEDS Physician Competency Framework, which was originally created with input from patient focus groups.<sup>45</sup>

The attributes and behaviors in the Triple C framework are often extolled; they are indeed the basis of person-centered, relationship-based high-quality care. However, these behaviors are infrequently taught, modeled, reinforced, and assessed over the continuum of learning and practice. Our review of existing competency expectations across multiple disciplines and professions revealed little emphasis on nonverbal communication and accurate interpretation of emotional cues, behaviors which are critical in diagnosing distress and suffering and has been found to be correlated with patient satisfaction and reduced malpractice claims.<sup>46,47</sup> Other framework behaviors that are underemphasized in existing documents include acknowledging and responding to emotions, managing one's own emotions and interpersonal conflict, listening actively, and sustaining well-being and fostering health professionals' resilience.

Achieving the transformative change needed to foster these values and behaviors will require an array of approaches. These include partnering with patients and families to codesign and coproduce health professional education and health care delivery.

### **Partnering With Patients and Families to Advance CCC**

Although patients and clinicians view effective communication, strong

relationships, and emotional support as fundamental to excellent patient care, many find these characteristics lacking in practice.<sup>48</sup> Partnerships to advance CCC can occur on multiple levels and in various locations across the continuum of learning and practice. Individuals and teams involved in quality improvement and patient safety initiatives could partner with patients and families in designing, evaluating, and improving care in hospitals and in practice models such as patient-centered medical homes (PCMHs). However, fewer than one-third of PCMHs responding to a recent survey reported involvement of patients and families in improvement and redesign of processes.<sup>49</sup> Further, in Massachusetts, where hospital patient and family advisory councils (PFACs) were initiated in the 1990s and are now mandatory, more than half of PFACs recently reported that they were not involved in initiating change in hospitals.<sup>50</sup>

Patients and families are experts in determining whether the care they experience is truly compassionate and collaborative. Advancing CCC will require their involvement in cocreating materials, processes, and policies—beyond commenting on those created by professional or administrative staff. Robust examples of patient involvement in improving the quality of care are emerging worldwide. The Aligning Forces for Quality initiative, funded by the Robert Wood Johnson Foundation, engaged 16 diverse communities in multistakeholder alliances that included patients and families. Alliance patient partners and advisors helped identify patients' needs and collaborated to create, implement, and evaluate practice changes ranging from helping patients improve their own communication and self-management skills to developing improved diabetes education materials.<sup>51</sup> Experience-based codesign, a structured process first piloted in England, begins by gathering staff, patient, and family experiences through video-recorded interviews. This approach has been used internationally to identify shared priorities and to initiate improvements in a range of services and settings, including cancer care, intensive care units, and mental health services.<sup>52</sup> Patient advocacy organizations can also play a role. The Cystic Fibrosis Foundation implemented a Learning and Leadership Collaborative to accelerate the rate of

improvement in cystic fibrosis care. Using the Dartmouth Clinical Microsystem curriculum, professionals, patients, and families worked together to enhance the improvement capabilities at 90% of participating U.S. cystic fibrosis centers.<sup>53</sup>

Students, postgraduate trainees, and faculty should work with patients and families in such initiatives. One focus of the Accreditation Council for Graduate Medical Education's new Clinical Learning Environment Review (CLER) is the ability of training programs to involve trainees in quality improvement and patient safety projects and to create safe learning and practice environments.<sup>54</sup> Early involvement of patients and families alongside students and trainees in quality and safety initiatives would contribute to the development of mutual understanding and respect, shared purpose, collaboration, and compassion among professionals and service users. Such patient and family involvement could potentially foster a process of cultural transformation that would promote high-quality, safe care. The National Center for Interprofessional Practice and Education is collecting data and promoting programs in which interprofessional groups of learners and faculty partner with underserved communities and populations in particular, to improve the quality of care through collaborative practice.<sup>55</sup> The data the National Center collects will be useful for analyzing the impact of these programs.

Just as patients and families could be integrated into quality and safety improvement initiatives, they could also be involved in processes related to the oversight and improvement of health professional education at all levels.<sup>56</sup> This might range from helping teach and evaluate learners and clinicians to participating in curriculum development and in admission and institutional policy development processes. To date, patients' involvement in health professional education has largely been limited to sharing their experiences within faculty-directed curricula and to volunteering as patient-teachers or as simulated patients who provide feedback on clinical skills.<sup>57</sup> Involving patients and families in a more robust fashion, including in curriculum development and decision-making processes, would require institutional and faculty support as well as education and

**Table 1**  
**Compassionate, Collaborative Care (Triple C) Framework Mapped to Existing Standards<sup>a</sup>**

Attributes or behaviors	AAMC: Core EPAs for entering residency and competencies by domain <sup>41,62</sup>	USMLE Step 2 Clinical Skills: Communication and interpersonal skills behavior list <sup>44</sup>	ACGME and ABIM: Internal medicine milestones <sup>42,b</sup>	AACN: Nursing essentials <sup>43,c</sup>
Directs and focuses one's attention	<ul style="list-style-type: none"> <li>• EPAs: 1, 8, 9, 10</li> <li>• Competencies: PC 2</li> </ul>			Essential IX, outcome 4
Recognizes nonverbal cues	<ul style="list-style-type: none"> <li>• EPAs: 1, 9</li> <li>• Competencies: PC 2; ICS 7</li> </ul>			Essential IX, outcome 4
Actively listens	<ul style="list-style-type: none"> <li>• EPAs: 1, 9</li> <li>• Competencies: PC 2; KP 5; PBLI 9; ICS 1, 2, 3, 6; P 1, 5; IPC 1, 3, 4</li> </ul>	Function 1: Fostering the relationship		Essential IX, outcome 4
Elicits information—shows interest in the whole person	<ul style="list-style-type: none"> <li>• EPA 1</li> <li>• Competencies: PC 2, 5; KP 5; ICS 1, 6, 7; P 1, 5</li> </ul>	Function 2: Gathering information	PC1; PROF3	Essential VII, outcome 3; Essential IX, outcome 1
Nonjudgmentally values each person	<ul style="list-style-type: none"> <li>• EPAs: 1, 9</li> <li>• Competencies: P 1, 5; ICS 1, 2, 3; IPC 1, 3</li> </ul>	Function 1: Fostering the relationship	PROF1, PROF4	Essential VII, outcome 12
Asks about emotions, concerns, distress	<ul style="list-style-type: none"> <li>• EPA 1</li> <li>• Competencies: PC 2; KP 5; ICS 1, 2, 6, 7; P 1, 2, 5; IPC 1; PPD 1</li> </ul>	Function 5: Supporting emotions	PROF1	Essential IX, outcome 5
Responds to emotions, concerns, distress	<ul style="list-style-type: none"> <li>• EPA 1</li> <li>• Competencies: PC 2; KP 5; ICS 1, 2, 6, 7; P 1, 2, 5; IPC 1; PPD 1</li> </ul>	Function 5: Supporting emotions	PROF1	Essential IX, outcome 5
Shares information and decision making	<ul style="list-style-type: none"> <li>• EPAs: 3, 4, 6, 9, 10, 11</li> <li>• Competencies: PC 5, 7; KP 5; ICS 1, 2, 3; SBP 3; IPC 1, 2, 3</li> </ul>	Function 3: Providing information; Function 4: Making decisions	PC2; SBP1; PROF1; ICS 1, ICS2	Essential IX, outcome 4
Demonstrates trustworthiness	<ul style="list-style-type: none"> <li>• EPAs: 8, 9, 13</li> <li>• Competencies: P 4, 5, 6; SBP 4, 5; IPC 1; PPD 5</li> </ul>		SBP1; PROF2	Essential VIII, outcomes 1, 2, 10
Communicates with colleagues and adjusts actions	<ul style="list-style-type: none"> <li>• EPAs: 8, 9, 10</li> <li>• Competencies: PC 8; SBP 1, 2; ICS 2, 3; IPC 1, 2, 3, 4</li> </ul>		SBP2, SBP4	Essential VI, outcomes 2, 5
Practices self-reflection	<ul style="list-style-type: none"> <li>• EPAs: 7, 9</li> <li>• Competencies: PBLI 1–10; PPD 8</li> </ul>		SBP1; PBLI1, PBLI12, PBLI13	Essential VIII, outcome 6
Attends to relationships	<ul style="list-style-type: none"> <li>• EPAs: 1, 9</li> <li>• Competencies: PC 2; ICS 1, 2, 3, 6, 7; P 1, 2, 3, 5; SBP 1, 2, 4; IPC 1, 3, 4</li> </ul>	Function 1: Fostering the relationship	PROF1	Essential VI, outcomes 3, 5
Attends to one's own well-being and resilience	<ul style="list-style-type: none"> <li>• EPAs: None noted</li> <li>• Competencies: PPD 1, 2, 3, 4</li> </ul>			Essential IX, outcome 14

Abbreviations: AAMC indicates Association of American Medical Colleges; USMLE, United States Medical Licensing Examination; ACGME, Accreditation Council for Graduate Medical Education; ABIM, American Board of Internal Medicine; AACN, American Association of Colleges of Nursing; EPA, entrustable professional activity; PC, patient care; KP, knowledge for practice; PBLI, practice-based learning and improvement; ICS, interpersonal and communication skills; P, professionalism; PROF, professionalism; SBP, systems-based practice; IPC, interprofessional collaboration; PPD, personal and professional development.

<sup>a</sup>This table shows where attributes and behaviors in the Triple C framework can be integrated into existing competency documents to expand or enhance existing expectations, and in some cases to introduce new attributes and behaviors. These attributes and behaviors apply to interactions between clinicians and staff, and with patients and families. This table was adapted with permission from Lown BA, McIntosh S, McGuinn K, et al.<sup>39</sup> A detailed version of this framework, which includes explicit behavioral descriptors for each attribute, may be found in that resource.

<sup>b</sup>The internal medicine milestones are presented as an example; however, milestones vary by specialty.

<sup>c</sup>As defined in the Essentials of Baccalaureate Education for Nursing Practice: Essential VI: Interprofessional communication and collaboration for improving health outcomes; Essential VII: Clinical prevention and population health; Essential VIII: Professionalism and professional values; Essential IX: Baccalaureate generalist nursing practice. The outcomes associated with each nursing essential in this table are explained in detail in the source document.<sup>43</sup>



other preparation both for faculty and for patients and their family members.

## Moving Forward: Challenges and Transformative Change

Barriers—including time, resources, professional silos, the need for faculty development and patient/family preparation, lack of supportive infrastructure, and resistance to change—present challenges to implementing CCC and the Triple C framework. In addition, many health care workers are suffering from administrative, measurement, and documentation burdens and from initiative fatigue. Perhaps more challenging, however, is the need to address the asymmetries in power and differences in the values, perspectives, and discourses that shape priorities, expectations, and cultural norms. Implicit in the discourse of medicine is the value of “objective” evidence, professionally defined knowledge, and quantitatively evaluated outcomes. The values and preferences of patients and families, and their “subjective” experiences, inform a different discourse and set of expectations.<sup>58,59</sup> Our collective challenge lies in interweaving evidence and experience, and professional expertise and personal wisdom, to improve the health of patients and families while supporting the health care workforce. We suggest that this sea change—the interweaving of the expertise of all members of the health care team, including patients and their families—may be catalyzed by involving patients and families in codesigning health care and health professional education. This will require compassion and collaboration.

To begin this transformation, health care professionals and educators need to advocate embedding expectations for CCC skills competence in health professional education, assessment practices, and standards and in efforts to improve the quality of health care. Practical suggestions and frameworks (including our Triple C framework) are emerging to guide the implementation of this work.<sup>39,60</sup> Transformative change will require working with local and national leaders responsible for developing educational requirements, criteria for learner advancement, accreditation of programs and facilities, licensure, and certification. Using these approaches will help ensure that compassion and

collaboration are integrated into health professional education and practice at all levels and continuously reinforced.

## Conclusions

Compassion and collaboration serve as the foundation for effective partnerships among health care workers, patients, families, and communities. They are also a source of patient and professional satisfaction, human connection, support, and resilience. The values and behaviors required to provide CCC must be integrated into health professional education and quality improvement processes, where they must be taught, modeled, assessed, and continuously improved. If, as Berwick<sup>61</sup> suggests, the experiences of patients and their families define the “true north” of high-quality care, we must learn from and with patients and their families how best to train health care professionals and configure health care processes to maximize CCC to achieve the triple aim. By doing so, we will make the compassionate, collaborative community of care, exemplified by the opening vignette, the rule rather than a rarity.

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## References

- 1 Batson CD. Altruism in Humans. New York, NY: Oxford University Press; 2011.
- 2 Goetz JL, Keltner D, Simon-Thomas E. Compassion: An evolutionary analysis and empirical review. *Psychol Bull.* 2010;136:351–374.
- 3 Hojat M, Bianco JA, Mann D, Massello D, Calabrese LH. Overlap between empathy, teamwork and integrative approach to patient care [published online October 14, 2014]. *Med Teach.* doi: 10.3109/0142159X.2014.971722.
- 4 Lown BA, McIntosh S. Recommendations From a Conference on Advancing Compassionate, Person- and Family-Centered Care Through Interprofessional Education for Collaborative Practice; Atlanta, Georgia; October 30–November 1, 2014. <http://humanism-in-medicine.org/wp-content/uploads/2015/03/TripleCConferenceRecommendations.pdf>. Accessed November 3, 2015.
- 5 Berwick DM, Nolan TW, Whittington J. The triple aim: Care, health, and cost. *Health Aff (Millwood).* 2008;27:759–769.
- 6 Bodenheimer T, Sinsky C. From triple to quadruple aim: Care of the patient requires care of the provider. *Ann Fam Med.* 2014;12:573–576.
- 7 Ong LM, Visser MR, Lammes FB, de Haes JC. Doctor–patient communication and cancer patients’ quality of life and satisfaction. *Patient Educ Couns.* 2000;41:145–156.
- 8 Stewart M, Brown JB, Donner A, et al. The impact of patient-centered care on outcomes. *J Fam Pract.* 2000;49:796–804.
- 9 Stewart M, Meredith L, Brown JB, Galajda J. The influence of older patient–physician communication on health and health-related outcomes. *Clin Geriatr Med.* 2000;16:25–36, vii.
- 10 Levinson W, Roter DL, Mullooly JP, Dull VT, Frankel RM. Physician–patient communication. The relationship with malpractice claims among primary care physicians and surgeons. *JAMA.* 1997;277:553–559.
- 11 Zolnierok KB, Dimatteo MR. Physician communication and patient adherence to treatment: A meta-analysis. *Med Care.* 2009;47:826–834.
- 12 Epstein RM, Franks P, Shields CG, et al. Patient-centered communication and diagnostic testing. *Ann Fam Med.* 2005;3:415–421.
- 13 Boulding W, Glickman SW, Manary MP, Schulman KA, Staelin R. Relationship between patient satisfaction with inpatient care and hospital readmission within 30 days. *Am J Manag Care.* 2011;17:41–48.
- 14 Shouhed D, Gewertz B, Wiegmann D, Catchpole K. Integrating human factors research and surgery: A review. *Arch Surg.* 2012;147:1141–1146.

- 15 Rao JK, Anderson LA, Inui TS, Frankel RM. Communication interventions make a difference in conversations between physicians and patients: A systematic review of the evidence. *Med Care*. 2007;45:340–349.
- 16 Kelley JM, Kraft-Todd G, Schapira L, Kossowsky J, Riess H. The influence of the patient–clinician relationship on healthcare outcomes: A systematic review and meta-analysis of randomized controlled trials. *PLoS One*. 2014;9:e94207.
- 17 Kaplan SH, Greenfield S, Ware JE Jr. Assessing the effects of physician–patient interactions on the outcomes of chronic disease. *Med Care*. 1989;27(3 suppl): S110–S127.
- 18 Hojat M, Louis DZ, Markham FW, Wender R, Rabinowitz C, Gonnella JS. Physicians' empathy and clinical outcomes for diabetic patients. *Acad Med*. 2011;86:359–364.
- 19 Del Canale S, Louis DZ, Maio V, et al. The relationship between physician empathy and disease complications: An empirical study of primary care physicians and their diabetic patients in Parma, Italy. *Acad Med*. 2012;87:1243–1249.
- 20 Mager WM, Andrykowski MA. Communication in the cancer “bad news” consultation: Patient perceptions and psychological adjustment. *Psychooncology*. 2002;11:35–46.
- 21 Mack JW, Block SD, Nilsson M, et al. Measuring therapeutic alliance between oncologists and patients with advanced cancer. *Cancer*. 2009;115:3302–3311.
- 22 Rakel D, Barrett B, Zhang Z, et al. Perception of empathy in the therapeutic encounter: Effects on the common cold. *Patient Educ Couns*. 2011;85:390–397.
- 23 Klimecki OM, Leiberg S, Ricard M, Singer T. Differential pattern of functional brain plasticity after compassion and empathy training. *Soc Cogn Affect Neurosci*. 2014;9:873–879.
- 24 McClelland LE, Vogus TJ. Compassion practices and HCAHPS: Does rewarding and supporting workplace compassion influence patient perceptions? *Health Serv Res*. 2014;49:1670–1683.
- 25 World Health Organization. Learning together to work together for health. Report of a WHO study group on multiprofessional education of health personnel: The team approach. *World Health Organ Tech Rep Ser*. 1988;769:1–72.
- 26 Interprofessional Education Collaborative. Team-based competencies, building a shared foundation for education and clinical practice: Conference proceedings; February 16–17, 2011; Washington, DC. <http://www.aacn.nche.edu/leading-initiatives/IPECPProceedings.pdf>. Accessed November 3, 2015.
- 27 Institute of Medicine. *Crossing the Quality Chasm: A New Health System for the 21st Century*. Washington, DC: National Academy Press; 2001.
- 28 Institute of Medicine. *To Err Is Human: Building a Safer Health System*. Washington, DC: National Academy Press; 1999.
- 29 Reeves S, Zwarenstein M, Goldman J, et al. The effectiveness of interprofessional education: Key findings from a new systematic review. *J Interprof Care*. 2010;24:230–241.
- 30 Brock D, Abu-Rish E, Chiu C, et al. Interprofessional education in team communication: Working together to improve patient safety. *BMJ Qual Saf*. 2013;22:414–423.
- 31 Salas E, Frush K, eds. *Improving Patient Safety Through Teamwork and Team Training*. New York, NY: Oxford University Press; 2012.
- 32 Horak BJ, Pauig J, Keidan B, Kerns J. Patient safety: A case study in team building and interdisciplinary collaboration. *J Healthc Qual*. 2004;26:6–12.
- 33 Morey JC, Simon R, Jay GD, et al. Error reduction and performance improvement in the emergency department through formal teamwork training: Evaluation results of the MedTeams project. *Health Serv Res*. 2002;37:1553–1581.
- 34 Barrett J, Gifford C, Morey J, Risser D, Salisbury M. Enhancing patient safety through teamwork training. *J Healthc Risk Manag*. 2001;21:57–65.
- 35 Rice K, Zwarenstein M, Conn LG, Kenaszchuk C, Russell A, Reeves S. An intervention to improve interprofessional collaboration and communications: A comparative qualitative study. *J Interprof Care*. 2010;24:350–361.
- 36 Boulton C, Boulton LB, Morishita L, Dowd B, Kane RL, Urđangarin CF. A randomized clinical trial of outpatient geriatric evaluation and management. *J Am Geriatr Soc*. 2001;49:351–359.
- 37 Saltvedt I, Mo ES, Fayers P, Kaasa S, Sletvold O. Reduced mortality in treating acutely sick, frail older patients in a geriatric evaluation and management unit. A prospective randomized trial. *J Am Geriatr Soc*. 2002;50:792–798.
- 38 Reeves S, Perrier L, Goldman J, Freeth D, Zwarenstein M. Interprofessional education: Effects on professional practice and healthcare outcomes (update). *Cochrane Database Syst Rev*. 2013;3:CD002213.
- 39 Lown BA, McIntosh S, McGuinn K, et al. Compassionate, collaborative care model and framework. In: Lown B, McIntosh S, eds. *Conference on Advancing Compassionate, Person- and Family-Centered Care Through Interprofessional Education for Collaborative Practice*. October 30–November 1, 2014; Atlanta, Georgia. [http://www.theschwartzcenter.org/media/Triple-C-Conference-Framework-Tables\\_FINAL.pdf](http://www.theschwartzcenter.org/media/Triple-C-Conference-Framework-Tables_FINAL.pdf). Accessed November 3, 2015.
- 40 Interprofessional Education Collaborative. Core competencies for interprofessional collaborative practice. May 2011. <http://www.aacn.nche.edu/education-resources/ipereport.pdf>. Accessed November 30, 2015.
- 41 Association of American Medical Colleges. Core entrustable activities for entering residency. Faculty and learners' guide. 2014. <http://members.aamc.org/eweb/upload/Core%20EPA%20Faculty%20and%20Learner%20Guide.pdf>. Accessed November 3, 2015.
- 42 Accreditation Council for Graduate Medical Education; American Board of Internal Medicine. The internal medicine milestone project. July 2015. <https://www.acgme.org/acgmweb/Portals/0/PDFs/Milestones/InternalMedicineMilestones.pdf>. Accessed November 3, 2015.
- 43 American Association of Colleges of Nursing. *Essentials series*. <http://www.aacn.nche.edu/education-resources/essential-series>. Accessed November 3, 2015.
- 44 United States Medical Licensing Examination. Step 2 Clinical Skills (CS). <http://www.usmle.org/bulletin/exam-content/#step2cs>. Accessed November 3, 2015.
- 45 Frank JR, ed; Royal College of Physicians and Surgeons of Canada. *The CanMEDS 2005 physician competency framework*. [http://www.royalcollege.ca/portal/page/portal/rc/common/documents/canmeds/resources/publications/framework\\_full\\_e.pdf](http://www.royalcollege.ca/portal/page/portal/rc/common/documents/canmeds/resources/publications/framework_full_e.pdf). Accessed November 3, 2015.
- 46 Mast MS. On the importance of nonverbal communication in the physician–patient interaction. *Patient Educ Couns*. 2007;67:315–318.
- 47 Riess H, Kraft-Todd G. E.M.P.A.T.H.Y.: A tool to enhance nonverbal communication between clinicians and their patients. *Acad Med*. 2014;89:1108–1112.
- 48 Lown BA, Rosen J, Marttila J. An agenda for improving compassionate care: A survey shows about half of patients say such care is missing. *Health Aff (Millwood)*. 2011;30:1772–1778.
- 49 Han E, Hudson Scholle S, Morton S, Bechtel C, Kessler R. Survey shows that fewer than a third of patient-centered medical home practices engage patients in quality improvement. *Health Aff (Millwood)*. 2013;32:368–375.
- 50 Health Care for All. PFAC 2014: A review of 2013 Patient and Family Advisory Council reports. <http://www.ipfcc.org/advance/topics/annual-reports.html>. Accessed December 15, 2015.
- 51 Roseman D, Osborne-Stafnsnes J, Amy CH, Boslaugh S, Slate-Miller K. Early lessons from four “aligning forces for quality” communities bolster the case for patient-centered care. *Health Aff (Millwood)*. 2013;32:232–241.
- 52 Robert G, Cornwell J, Locoek L, Purushotham A, Sturmeijer G, Gager M. Patients and staff as codesigners of healthcare services. *BMJ*. 2015;350:g7714.
- 53 Godfrey MM, Oliver BJ. Accelerating the rate of improvement in cystic fibrosis care: Contributions and insights of the learning and leadership collaborative. *BMJ Qual Saf*. 2014;23(suppl 1):i23–i32.
- 54 Myers JS, Nash DB. Graduate medical education's new focus on resident engagement in quality and safety: Will it transform the culture of teaching hospitals? *Acad Med*. 2014;89:1328–1330.
- 55 National Center for Interprofessional Practice and Education. *About the National Center*. <https://nexusipe.org/funding>. Accessed November 3, 2015.
- 56 Weinberger SE, Johnson BH, Ness DL. Patient- and family-centered medical education: The next revolution in medical education? *Ann Intern Med*. 2014;161:73–75.
- 57 Towle A, Bainbridge L, Godolphin W, et al. Active patient involvement in the education for health professionals. *Med Educ*. 2010;44:64–74.
- 58 Haddara W, Lingard L. Are we all on the same page? A discourse analysis of

- interprofessional collaboration. *Acad Med.* 2013;88:1509–1515.
- 59 Lord L, Gale N. Subjective experience or objective process: Understanding the gap between values and practice for involving patients in designing patient-centred care. *J Health Organ Manag.* 2014;28:714–730.
- 60 Tess A, Vidyarthi A, Yang J, Myers JS. Bridging the gap: A framework and strategies for integrating the quality and safety mission of teaching hospitals and graduate medical education. *Acad Med.* 2015;90:1251–1257.
- 61 Berwick DM. A user's manual for the IOM's "Quality Chasm" report. *Health Aff (Millwood).* 2002;21:80–90.
- Reference cited in Table 1 only**
- 62 Association of American Medical Colleges. Core entrustable professional activities for entering residency. Curriculum developers' guide. 2014. <https://members.aamc.org/eweb/upload/Core%20EPA%20Curriculum%20Dev%20Guide.pdf>. Accessed November 3, 2015.