Beyond the Lamppost: A Proposal for a Fourth Wave of Education for Collaboration

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Abstract

Interprofessional education (IPE) is an increasingly popular educational model that aims to educate health care students to be better collaborators by enabling them to learn with, from, and about each other. IPE's rising popularity is evident in the increase in scholarship on this topic over the last few decades. In this Perspective, the authors briefly describe three historical "waves" of IPE: managing the health workforce through shared curriculum, maximizing population health through health workforce planning, and fixing individuals to fix health care. Using insights from the social sciences and past practice, they then discuss six reasons why the current third wave of IPE is likely to fall short of meeting its goals, including that (1) IPE is logistically complex and costly, (2) IPE is developmentally inappropriate, (3) the link between IPE and key outcomes is still missing, (4) IPE insufficiently engages with theory, (5) IPE rarely addresses power and conflict, and (6) health care is an inertial system that IPE is unlikely to change. The authors conclude by sharing their vision for a fourth wave of education for collaboration, addressing workplace systems and structures, which would combine undergraduate, uniprofessional education for collaboration with practice-based interventions.

Interprofessional education (IPE) is an increasingly popular educational model that aims to educate health care students to be better collaborators by enabling them to "learn with, from and about each other."[1] Critical perspectives on IPE have emerged over the past decade,[2–8] so it is now imperative that we integrate the evolution of knowledge about IPE into its current state. In this article, we critically review the literature to provide a historically and socially grounded overview of IPE as an educational intervention. We sought to answer the following questions: How has IPE evolved over time discursively? What can we learn from the past and present forms of IPE that we can apply when designing future forms of education for collaboration? We identify three historical waves of IPE and argue that it is time for a fourth wave of education for collaboration that builds on insights from past practice and the social sciences. Our work is anchored in the Canadian experience of IPE over time, as we both have conducted IPE research in this context. Although the specifics of the waves we describe—their start and end dates, their specific actors, etc.—might not fully map to those in other countries, there are many similarities. We believe, therefore, that our key messages will resonate with our international colleagues. We hope that, by the end of this article, readers will be able to identify the limitations of the current third wave of IPE and be inspired to transform the way they think about and enact education for collaboration.

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Defining IPE and Education for Collaboration

First, it is important to define what we mean by IPE. We have chosen to use one of the most popular definitions, that IPE "occurs when two or more professions learn with, from and about each other to improve collaboration and the quality of care."[1] Most of the education labeled as IPE currently occurs at the undergraduate (or prelicensure) level,[9] and we will be referring to this type of education when we use the term *IPE*. In contrast, we will use the phrase *education for collaboration* when we are referring more broadly to the various forms that education to improve collaboration might take, whether they are uniprofessional (i.e., where only one profession participates in an educational intervention) or interprofessional, held at the undergraduate level or in practice settings. A key goal of education for collaboration is to improve interprofessional practice; such interventions traditionally have taken one of three key forms: improving knowledge or skills, establishing structured meetings or task distribution, or fostering team identities.[10]

The Three Waves of IPE

Although the language of IPE (and the associated concepts of multiprofessional, interdisciplinary, multidisciplinary, or transdisciplinary education) has been used since the mid-1950s, it is only in the past 20 years that it has become a recognizable field of inquiry in health professions education. Our research into the discursive evolution of IPE suggests that its history can be divided into three main overlapping phases, which we call waves (see Table 1). We do not intend to argue that the waves we have identified are generalizable outside of Canada; instead, we hope to show that, since the discourse of IPE has evolved historically, our current forms of IPE and the functions we ascribe

to them are not implicit and inevitable, and therefore they can be changed.

Wave 1: Managing the health workforce through shared curriculum, 1954–1979

An article we recently published with colleagues documented a case that exemplifies the first wave of IPE: that of the Division of Interprofessional Education at the University of British Columbia (UBC), in Vancouver, Canada.[11] The UBC experiment was one of only a few IPE initiatives at the time, along with experiments at the University of Florida and the University of Kentucky in the United States, neither of which has been studied retrospectively.[12]

Dr. John McCreary was the inaugural director of the UBC Division of Interprofessional Education and a powerful and well-connected leader. He saw IPE as an answer to both provincial and national challenges. First, UBC had a clear need for a new health sciences center.[12] At the time, the university was establishing the first medical school in Western Canada and needed laboratory and classroom space to train physicians. The creation of a health sciences center where all of UBC's health professions education programs could be located was seen as a natural means to maximize resources and bring students together. Second, a national challenge arose out of the development of Canada's new public health system, which was initiated by the Medical Care Act in 1966. Given the expected rise in demand for services, McCreary and other national leaders foresaw an increased need for primary care and the associated need to redefine medical education. They believed that training health care professionals using a shared curriculum would help manage their education and work more effectively.

Yet as McCreary sought to enlist colleagues from across the university for his interprofessional project, tension arose because of disagreements about the purpose of IPE.[11] Some colleagues wanted to validate the vision that all the health professions are unique and complementary contributors and experts in their own particular domain; others, however, saw the purpose of IPE as the training of more affordable substitutes or aides to physicians, given the anticipated care needs of the population and the associated health care costs.

In the end, the UBC IPE experiment failed because McCreary could not convince the other health professions that it was in their best interest to adopt his IPE vision and because initially high levels of enthusiasm for the project among local and provincial financial backers waned. The Division of Interprofessional Education was closed in 1975, one year after McCreary retired.

Wave 2: Maximizing population health through health workforce planning, 1978–2008

IPE advocates during the second wave appear to have been driven by two factors: (1) improving access to primary care for populations globally, and (2) preparing the health workforce to provide such care. The 1978 Alma Ata Declaration established access to primary care for all as a key health outcome to be achieved by 2000, and the 1988 World Health Organization (WHO) report *Learning Together to Work Together for Health*[13] further focused on teaching primary and community-oriented care in health professions education. This WHO report identified the training of generalist practitioners through IPE, using the "team approach," and intersectoral collaboration (defined as collaboration with sectors such as agriculture, industry, and public works) as means for achieving health care access for all.[13–15]

Table 1
Features of the Four Waves of Education for Collaboration

Characteristic	Wave 1: 1954–1979	Wave 2: 1978–2008	Wave 3: 1999–present	Wave 4: 2018 forward
Vision	Managing the health workforce through shared curriculum	Maximizing population health through health workforce planning	Fixing individuals to fix health care	Addressing workplace systems and structures
Led by	Academic physicians	Governments	Educators and administrators	Educators and researchers
Goal	Maximize workforce efficiency	Maximize population health	Act as a panacea (see Box 1)	Teach students an understanding of health care systems, power, and the health professions, as well as the attitudes and skills to work collaboratively
Reach	Local; health systems focused; Canada and the United States	Commonwealth; primary care and population health focused; Canada, the United Kingdom, the United States	Global; predominantly tertiary care focused; at least 50 countries, 6 continents	Global movement with local focus
Type of intervention	Creation of shared space and curriculum to solve workforce issues	Intersectoral, top-down regulation, and human resources strategies	Focus on undergraduate students who learn with, from, and about each other; change targeted at individual practitioners to improve patient care; ignores systems-level issues	Uniprofessional education for collaboration that provides "explicit team learning"[26] combined with team training in the workplace
Illustrative texts, author (year)	Whyte et al (2017)[11] McCreary (1962)[12] Detwiller (1963)[52]	World Health Organization (1988)[13] Romanow (2002)[20]	World Health Organization (2010)[9] Canadian Interprofessional Health Collaborative (2007)[53]	Baker et al (2011)[2] Paradis and Whitehead (2015)[7] World Health Organization (2013)[23] Salas and Frush (2012)[54]

In Canada in 1994, this population health approach was officially endorsed by the federal, provincial, and territorial Ministers of Health, and several reports documented the importance of intersectoral collaboration in response to this priority.[16,17] Then, in the late 1990s, federally commissioned investigators made recommendations for the reform of health care services to support this renewed focus on primary health care.[18–20] Their reports connected the lack of timely and quality access to care to shortages in human resources in health care. In his 2002 report, Roy Romanow[20] suggested that the Canadian human resources in health care crisis could be solved in part by IPE.

While the first wave of IPE played out in academic settings, the second wave was driven primarily by governments' broad interest in workforce management. In Canada, many laws, reports, and initiatives resulted, including Ontario's 1991 Regulated Health Professions Act, the 2003 federal Pan-Canadian Health Human Resources Strategy, funding in 2003 for Interprofessional Education for Collaborative Patient-Centred Practice projects, and the creation of Health Force Ontario, which was charged with managing Ontario's health care workforce. All of these efforts served to legitimize the idea of workforce management for collaborative care delivery. IPE nevertheless remained a minor aspect of these broader reform efforts.

Wave 3: Fixing individuals to fix health care, 1999–present

Our research suggests that the third wave of IPE was set into motion by the publication of the momentous Institute of Medicine report *To Err Is Human: Building a Safer Health System* in 1999.[21] The report's authors estimated that between 44,000 and 98,000 deaths occurred annually in the United States' health care system as a result of preventable human errors. The report was immensely influential (cited 19,340 times as of March 2018 according to Google Scholar), and it has had international repercussions. Indeed, soon after it was published, governments in the United Kingdom, Australia, and Canada started promoting patient safety.[22]

IPE advocates in this third wave aligned their rhetoric with that of the patient safety movement and framed IPE as a panacea—when implemented, IPE would reduce medical errors, improve patient outcomes and satisfaction, and prepare clinicians for the complex needs of both our health care system and our aging patients. During this wave, advocates suggested IPE as the solution to nearly every health care problem that arose (see Box 1), despite the limited support for these claims in the literature.

Advocates in this wave also helped establish IPE as a legitimate practice and field of inquiry, and their patient safety rhetoric overshadowed that of the second wave and its concerns with workforce management and population health. By focusing on how IPE could teach individuals to be better team players and arguing that improved teamwork would help solve several health care problems, third wave advocates suggested that the enduring problems of the health care system could be fixed by fixing the practice of individual health professionals by improving their knowledge, changing their attitudes, and increasing their skills.

In the following section, we discuss six ways in which the current, third wave of IPE is falling short of meeting its goals. Understanding these shortcomings is fundamental to being able to suggest more productive ways forward.

How and Why the Third Wave of IPE Is Falling Short of Meeting Its Goals

IPE is logistically complex and costly

The WHO noted that IPE requires a "significant layer of coordination" to be developed and implemented successfully.[23] Anyone who has been involved in large-scale IPE programs knows the wizardry that is required to coordinate IPE activities. At the University of Toronto, the Centre for IPE (www.ipe.utoronto.ca) welcomes 1,600 new students from 11 different health sciences programs annually.[24] The Centre supports many full- and part-time staff members, who oversee four core learning activities (including clinical placements) and about 120 different electives.[24] It has taken years and a lot of "complicated diplomatic negotiation"[24] to find space for IPE in the curriculum and to obtain the funding necessary to support this infrastructure.

Current versions of IPE aim to provide high-quality educational offerings to large numbers of students in small groups, despite evidence that the modality of teaching might not matter as much as we think[25] and that facilitators might in fact hinder the learning of team skills.[26] Such forms of IPE require (1) a large number of facilitators who agree to work for free and to be trained using special sessions and training materials; (2) the simultaneous booking of a large number of rooms; (3) the preparation of documents and their printing, distribution, and disposal; and (4) the preparation of surveys and their distribution, collection, data input and verification, data analysis, write-up, and dissemination. In our experience, these logistical demands mean that the staff who coordinate and manage IPE are often hired on the basis of their event management skills rather than their expertise with scholarly activities or rigorous research, limiting the scientific anchoring and credibility of IPE.

Scholars have identified these pragmatic constraints and their negative impact on IPE,[3,23,24,27,28] but IPE advocates have not reconsidered the interventions themselves, instead hoping that one day the right mixture of "ingredients"[6] will solve IPE's problems. This is likely a case of the sunk cost fallacy—that is, evaluating the future by looking at how much was invested in the past.[29]

Box 1

Interprofessional Education (IPE) as a Panacea for All of Health Care's Problems: Wave 3 of IPE[a]

According to key Canadian reports (1999–2015), IPE can increase collaboration, address workforce shortages, promote patient-centered/holistic care, improve workplace relations, improve patient safety, improve patient outcomes, improve the accessibility of services, enhance practice/service delivery, save money/reduce costs, improve conditions for health care professionals, increase interactive learning, increase knowledge/training/skills, create a more flexible workforce, avoid hierarchy/sharing power, reduce wait times, address current systems failures, drive health care policy goals, increase culturally sensitive health services, and develop a common language.

[a]Problems listed in order of frequency in key Canadian reports.[16–20,22,24,44] For a complete list of these reports, contact the authors.

Future education for collaboration models should instead aim for logistical simplicity and resource minimization if they want to be sustainable and effective.

IPE is developmentally inappropriate

More than six decades after IPE took its first academic steps, we still do not know whether it should be implemented at the undergraduate, postgraduate (i.e., postlicensure), and/or practice level(s).[8,27] On the one hand, some argue that students should develop a collaborative, "health care team" identity early in their educational journey.[4] If educators legitimize teamwork early, they might be able to overcome siloed professional identities, countering the negative effects of in-group association. On the other hand, scholars and students alike are aware that it is difficult for preclinical students to discuss their roles and to negotiate tasks before they have assumed their future clinical role. Students in their first or second year of study rarely understand their own scope of practice fully, and therefore it is difficult for them to explicate it to others or to assimilate to what others' scopes might be.[8]

Furthermore, the professional and collaborative roles of health professions education graduates will vary as students learn about their professions, as they navigate different work contexts, and as their professions evolve over time. Some students will work in hospital settings, others in primary care settings; still others will engage in policy work and activism. The scopes of the different health professions and the regulations that guide them will also change. For instance, pharmacists in Ontario now are legally allowed to administer travel vaccines,[30] while nurse practitioners have gained the right to prescribe controlled drugs and substances.[31]

The expectation that early involvement in IPE activities will prepare students for the complex and changing world of collaboration is incongruent with practice realities. Future models of education for collaboration should provide developmentally appropriate, uniprofessional opportunities, supplemented by workplace-based team training to maximize students' learning potential and alignment with the workplace characteristics and demands of their professional role.

The link between IPE and key outcomes is still missing

IPE aims to improve patient care outcomes by educating collaboration-ready professionals who can transform health care delivery. Several reviews have attempted to assess the impact of IPE on a variety of outcomes, including student reactions, attitudinal change, knowledge and skills, behavioral change, organizational change, and impact on patient care.

After decades of research, evaluations have shown that students react positively to IPE activities, but support for IPE's impact on the other outcomes listed above remains limited.[28,32–34] For instance, a 2013 Cochrane systematic review[35] covering 30 years of IPE research concluded that "it is not possible to draw generalizable inferences about the key elements of IPE and its effectiveness" on professional practice and health care outcomes. Similarly, a 2016 critical review[33] confirmed that the impact of IPE on health care was still awaiting scientific support. Moreover, a 2013 WHO report[23] found "no practice-level impact" on patient care and consequently recommended implementing IPE "only in the context of rigorous research." This recommendation reversed the WHO's earlier position on IPE.[9,13] We recommend that IPE scholars accept this reversal and refrain from citing the older reports to support their practice.

Of course, we understand that the absence of evidence for IPE's effectiveness is not proof of its ineffectiveness. However, what if we stopped assuming that undergraduate IPE is the key to education for collaboration and started looking elsewhere for more appropriate and effective answers? Selecting evidence-based interventions that focus on the explicit teaching of team skills might prove to be more effective.[26]

IPE insufficiently engages with theory

Recently, scholars have criticized IPE for being atheoretical and ahistorical,[6,7] despite the fact that several authors have proven the fruitfulness of engaging with theory in the context of IPE.[3,4,7,8,36–38] Most IPE remains implicitly or explicitly based on contact theory,[39,40] which suggests that bringing members of different groups together should reduce prejudice and improve intergroup relationships. Contact theory was developed by Gordon Allport[41] in 1954, in the context of adversarial race relations in the United States, and suggests that greater exposure to racially diverse others should improve the quality of interracial relations. A more recent review of the literature on contact theory provided support for its potentially positive impact but suggested two key caveats: first, individuals who are coerced into intergroup interactions often respond negatively to the contact, which confirms and strengthens stereotypes, and second, positive intergroup contact depends on the equal status of the participants in the interaction.[42]

These findings regarding contact theory are distressing news for IPE interventions, which often both coerce students into intergroup interactions and are not designed to equalize the status of participants. Several recent articles have shown that IPE might reinforce professional stereotypes among students and that some students react strongly against IPE's silence on professional hierarchies.[2,3,5,8,43] Enabling contact among health care professionals during an educational intervention may not be enough to make differences and hierarchies disappear, no more than coexistence has enabled the disappearance of racial conflict. Educational interventions based on contact theory should be voluntary and involve contextual, local readjustment of the implicit interprofessional hierarchies that define between-group contact. Designing activities that equalize status and capitalize on volunteer participation also would help.

Anchoring education for collaboration in more robust theories of how the professions actually come together will most certainly improve the empirical success of such programs.

IPE rarely addresses power and conflict

When presenting our views on IPE, we often ask audience members to identify what they see as the key problem that IPE is trying to solve. Their answers are generally variations of the following: interprofessional power, hierarchies, conflict, and their consequences. In a recent article,[7] we investigated to what extent these issues were described and addressed in the literature. We reviewed 2,191 IPE-related articles and found that only 6 (or 0.3%) discussed sociological rather than statistical power.

If issues of power are known and recognized in clinical practice and in the literature, why then does IPE fail to address

them? Although our research could not answer this question directly, the failure of the third wave to address power dynamics has positioned IPE as a solution to an amorphous and unarticulated problem. When they ignore power and conflict and their structural and cultural manifestations, IPE scholars obscure the problem they are trying to solve, thus avoiding the core issues that plague collaborative care delivery. Future education for collaboration will need to address these issues and offer ways to recognize and address power differentials in the workplace.

Health care is an inertial system that IPE is unlikely to change

An enthusiastic belief in the ability of educational interventions to change our health care system sets up IPE students for disappointment, if not failure. Young graduates who participate in prelicensure IPE often come to expect collaborative practice, but the workplace can be radically different. Without structures to support collaborative care delivery, students cannot become the collaborative clinicians they hoped to be. There is often too much work, too many tasks, too many patients, too many noncollaborative senior clinicians, too little preparation, too little time, too little space, too little influence, and too few allies for truly collaborative care to happen. These everyday constraints are exacerbated by differences in pay and status between the professions, as well as by divergent and contradictory funding and reimbursement models.[44] Contemporary health care systems do not value or reward collaborative care.

As newcomers in a complex and inertial system, new health care professionals are not in a position to confront harmful and unsafe professional hierarchies and provide exceptional, high-quality collaborative patient care.[45–47] Refusing to acknowledge that these problems cannot be solved through educational interventions alone is both naive and unfair. In overemphasizing education, we ignore the systemic issues that underpin problems of collaboration. Future education for collaboration should stress the limited impact of educational interventions when trying to solve major structural problems and ensure that organizational and legal factors are included as essential areas for improving collaborative care delivery.

Wave 4: Addressing Workplace Systems and Structures

In their recent *Academic Medicine* article, Lutfiyya and colleagues[33] quoted John Gilbert's response to the vexing question of whether IPE makes a difference to health care: "interprofessional education is a great truth awaiting scientific confirmation." We take a different stance, suggesting that this "great truth" rests on too many shaky assumptions and flawed premises to justify continued practice and inquiry. Third wave advocates have made a compelling case for why we should focus on patient care and transform individuals to improve health care, yet we believe that continuing to look under the same proverbial lamppost (i.e., IPE) will not help us find the lost key to useful and effective education for collaboration. To address the six limitations of the third wave that we articulated above and learn from both past practice and the social sciences, we suggest a fourth wave of education for collaboration, which addresses workplace systems and structures (see Table 1).

To garner the support and money needed, the fourth wave of education for collaboration will need to anchor itself in local and national priorities while being more logistically straightforward and less costly. We must build alliances within and across our organizations and with different levels of government to obtain and stabilize the funding necessary for our interventions to be sustainable. Relying on charismatic leaders will not suffice; our initiatives must stand on their own by being structurally embedded into both universities and hospitals, with organizational commitment for funding, staff, time, and space.

More important, we must reconsider whether undergraduate, large-scale models of IPE are serving our students' educational needs and improving health care delivery. The logistical hurdles faced by many IPE programs might be removed if, instead of providing costly IPE at this level, we combine undergraduate, uniprofessional education for collaboration with practice-based interventions. Every professional group already has the infrastructure in place to build and revise existing courses for its students (e.g., faculty members, teaching assistants, administrators, rooms), and studies on uniprofessional education interventions have demonstrated improved teamwork skills.[48]

Many key competency frameworks, including those from the Accreditation Council for Graduate Medical Education (Core Competencies) and the Royal College of Physicians and Surgeons of Canada (CanMEDS),[49,50] now include collaboration as a key aspect of training. Acknowledging this reality, Earnest and colleagues[26] recently argued in favor of "explicit team learning" activities, where students both learn interdependently and obtain explicit training in teamwork. We agree that these are key dimensions of successful education for collaboration but have two concerns.

First, we believe that the topics of "quality and safety; teamwork and collaboration; and values and ethics" described by Earnest and colleagues[26] will not suffice. Indeed, education for collaboration initiatives must also address how issues of power, structures, and systems limit and constrain health care professionals' ability to collaborate, and they must teach students how to navigate and transform these entities. Pretending that these issues do not exist is not going to help us change health care delivery. Second, we believe that teaching teamwork at the undergraduate level is important but that it must also happen in practice settings. In such settings, we could focus our attention and resources on individuals who are actually eager to learn about effective collaboration, with an anticipated greater impact. Such education would be more developmentally appropriate, as all participants would have a deep understanding of their roles, tasks, and collegial relationships already. Moreover, there is growing evidence that workplace-based team training (including simulations) works.[51]

Finally, and probably most important, we must accept that health care is an inertial system and that education for collaboration will not be enough to transform care delivery. To make collaborative care a reality, advocates must work with their colleagues to transform the multiple layers of interactional, organizational, cultural, and financial barriers that constrain individual behavior and hamper quality care. Education is a necessary but insufficient solution for systems change. We must look beyond the lamppost and embrace an education for collaboration model that is more rigorously supported by evidence and that addresses workplace systems and structures.

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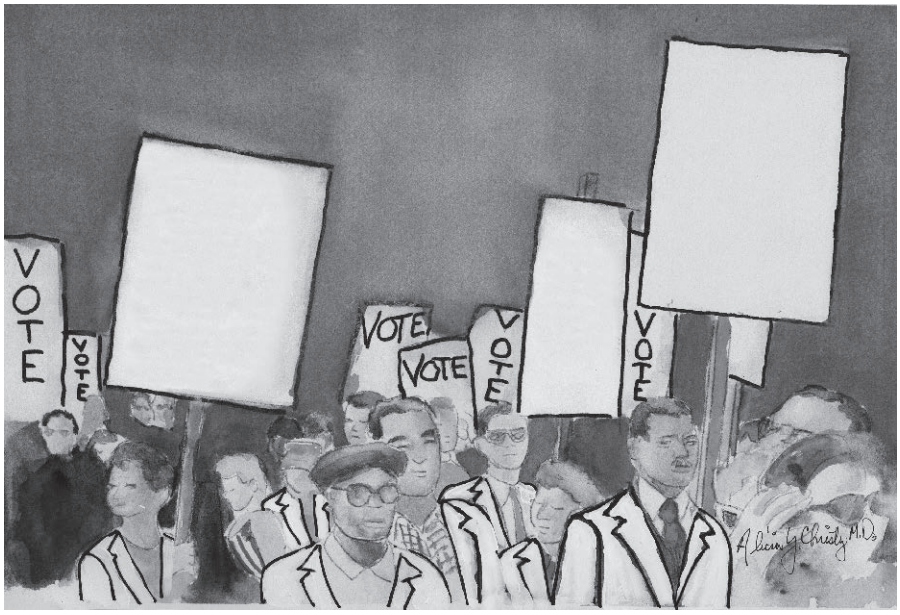
Cover Art

Artist's Statement: Physicians Must Speak for the Voiceless and the Vulnerable

As a 62-year-old African American woman, gynecologist, veteran, and artist, I have had unique life experiences that fuel my desire to be an effective advocate for all patients, especially for those who are vulnerable and do not have a voice. Women, for example, face some of the greatest potential losses of available health care. Many women depend upon health organizations, such as Planned Parenthood, for mammograms and pap smears. If such groups lose federal funding, thousands of low-income women would lose female-specific health services. Even now, insurers can consider a prior cesarean section as a preexisting condition, making obstetrical services unaffordable for economically disadvantaged women.



Physicians Must Speak for the Voiceless and the Vulnerable

To take action against barriers to care, I have joined multiple patient advocacy groups in women's health, such as the White Dress Project, a support group for women with fibroids. I have had the opportunity to serve on a committee for health care for the underserved, and I have developed training for physicians to care for homeless women. Not only am I a full-time gynecologist but a Red Cross volunteer physician as well. In these advocacy roles, I am able to increase access to health care on an individual level.

As a clinical educator and an adjunct faculty member at two medical schools, I look for opportunities to model advocacy to medical students, residents, fellows, and attending physicians through writing and political action. I've been invited to edit several special issues on health disparities, and I have used these opportunities to encourage physicians and physicians-in-training to author articles. I also include my mentees and colleagues in my work with elected officials. With the assistance of my senator's staff, I have provided information on veteran health resources to all the homeless shelters in Maryland. With the support of the staff, and the Maryland Commission for Suicide Prevention, we are developing a plan to provide suicide prevention training to all shelter staff in the state of Maryland.

My watercolor paintings have become an outlet for my angst and frustration as well as for my hope and my optimism. In *Physicians Must Speak for the Voiceless and the Vulnerable*, on the cover of this issue, I painted the protesting doctors in white coats to remind me of my responsibility as an effective and unwavering advocate for patients and to model that advocacy to trainees and colleagues. I also use the sale of my artwork to take tangible action—from selling paintings to raise funds for women's health care to donating my paintings to two women's clinics. I am greatly satisfied to know that while I am voicing the social change needed to improve access to quality health care, my art may be a source of comfort for patients.

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