

Check a Box. Save a Life: How Student Leadership Is Shaking Up Health Care and Driving a Revolution in Patient Safety

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Objectives: The objective was to engage health professions students as leaders in spreading the World Health Organization Surgical Checklist. The published impact of the checklist in reducing surgical complications and deaths, combined with its ease of use, offers an ideal target for students to save lives and prevent suffering. As members of the “Check a Box. Save a Life.” campaign, students can speed the pace of patient safety improvement.

Methods: The campaign was developed around an online Webcast event, designated its launch. Outreach was conducted mainly through social media, especially the popular networking Web site, Facebook. The Institute for Healthcare Improvement’s Open School for Health Professions and the American Medical Student Association provided a source of potential campaign members.

Results: One hundred eighty-two registrants, representing 122 distinct hosting institutions, signed up for the launch event. Based on hosts’ projected event sizes, assessed in a registration questionnaire, approximately 1400 students are believed to have participated in the event. After the launch, these students joined the campaign and were invited to carry out projects in their home institutions. Six weeks after the launch, the campaign reconvened at the Institute for Healthcare Improvement’s 21st Annual National Forum, and attendees presented case reports of 15 projects they had undertaken since the launch.

Conclusions: As an independent, self-organized, decentralized effort and an application of student social organizing to the cause of patient safety, “Check a Box.” is a landmark achievement. Leveraging social media and disrupting the traditional model of safety leadership, the campaign offers hope for the future of patient safety.

Key Words: patient safety, medical student education, surgical safety, WHO Surgical Safety Checklist, social media, student organizing, health profession education

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Last October, students around the globe decided to miss class. How did their deans respond to this truancy? With praise. “This is a wonderful opportunity; how can I help?,” asked the

dean of a California medical school. “Enjoy the teach-in” (oral communication, October 21, 2009).

In 14 countries, nearly 1400 students in health professions training—nursing, medicine, pharmacy, public health, and health administration programs—came together for a virtual teach-in on patient safety. In doing so, they joined a movement that has surprised even the visionary Don Berwick in its spread. Their cause: safer surgery. Under the banner of “Check a Box. Save a Life.” A rallying around the World Health Organization (WHO) Surgical Safety Checklist, these students represent a previously untapped cohort of activists with the potential to drive reforms in patient safety. This article tells the story of how this new social movement took shape and forecasts its potential to triumph over the famously resistant culture of medicine.

Ten years after the Institute of Medicine released its landmark report, *To Err Is Human*, improving health care has become a focus of providers, administrators, hospitals, and payer organizations. Despite these developments, health care has responded slowly, if at all. The Agency for Healthcare Research and Quality’s most recent *National Healthcare Quality Report* actually shows a 1% decline in patient safety measures.¹

Against this gloomy picture, a new glimmer of optimism shines through, in the form of a grassroots student movement organizing for patient safety. Using the impact of the WHO Surgical Safety Checklist as their call to action, thousands of students from around the world are championing safety.^{2,3} These future health professionals are self-organized, largely unfunded, and decentralized. Furthermore, they are leveraging social networks and new media in ways that are unprecedented in the field of health care improvement. Borrowing techniques from established social organizers such as Marshall Ganz and the 2008 Obama campaign, this new movement has the potential to save hundreds of thousands of lives and profoundly shake up the current model of health care leadership. Indeed, as the next generation of health care leaders, their energy foretells a revolution in the sluggish culture of medicine.

SOWING THE SEEDS OF CHANGE: DON BERWICK’S CONVERSATION WITH THE FUTURE

The movement was conceived in December of 2008, at the 20th Annual National Forum of the Institute for Healthcare Improvement (IHI).⁴ There, IHI President and CEO Don Berwick and Atul Gawande presented new findings about a checklist to reduce surgical complications and deaths. The crowd was tantalized by the sneak preview of Gawande’s results, 1 month before his article in the *New England Journal of Medicine* would demonstrate the checklist’s potential to save lives, prevent suffering, and cut costs.⁵ In his keynote address, Dr Berwick offered a challenge to his audience: “Let’s put our network to work. I propose a sprint” (oral communication, December 10, 2008). Berwick urged his audience of thousands to use the checklist in 1 operating room at their institutions within 90 days. Dr Gawande was excited about

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Berwick's plan: "The sprint is a remarkable social experiment" (oral communication, December 10, 2008).

The words of Drs Berwick and Gawande particularly captivated the health professions students in the audience, including Andrew Carson-Stevens, a medical student from Cardiff University. "Don challenged the room. He proposed a sprint, as this kind of change usually takes 17 years." Carson-Stevens reflected, "I wondered, 'Why can't we do it overnight?'" (oral communication, October 5, 2009).

From there, a new international team was formed, called the Safe Surgery Student Mentor Project (SSSMP), and the group set out to spread the surgical checklist to their peers and colleagues worldwide. According to Jordan Bohnen, a leader of the SSSMP, "We envisioned students across the world, and from all health professions, helping to disseminate the WHO Surgical Safety Checklist and partnering to improve health care quality" (oral communication, July 15, 2009).

The month after the Forum, Dr Gawande's article in the *New England Journal of Medicine* made headlines, showing how a 2-minute checklist had decreased operative complications by more than one-third and nearly halved surgical deaths.⁵ The SSSMP students felt ready for action. The group sought guidance from Dr Gawande's group, and from Dr Berwick, who connected them to a growing online community within the IHI, its then-new IHI Open School for Health Professions.

THE IHI OPEN SCHOOL: A NEW PARADIGM OF PROFESSIONAL EDUCATION

The IHI Open School for Health Professions, now only 18 months old, is itself a success story.⁶ The IHI Open School arose out of a desire to provide health professions students around the world the skills they need to become change agents for quality improvement and patient safety. Through online learning opportunities, particularly courses authored by IHI faculty, students of the IHI Open School—including nursing, medical, dental, pharmacy, administration, and other allied health students—can learn about patient safety, quality improvement, teamwork, and leadership. These disciplines, often left out of traditional curricula, help students become well-rounded providers better equipped to fulfill the role of a professional. As Berwick puts it, "Participation in the IHI Open School can make you more powerful in your role as a helper to relieve suffering; more comfortable that you can take on the tasks that really are part of health care but never became part of health care professional training."⁷

In just 18 months, the IHI Open School has grown exponentially, attracting a broad community of students from all the health professions. Through videos hosted on its YouTube channel, through Twitter, Facebook, and its blog,⁸ the IHI Open School has revolutionized the process of new member outreach. At the time of this writing, more than 16,000 individual students were registered in the school, with 169 Chapters convening on 181 campuses in 24 countries worldwide (oral communication, December 8, 2009).⁹ The explosive growth of the IHI Open School in just a year and a half is a testament to the pent-up energy within students wanting to take the lead in safety.

"We were amazed by the response," recalls Shannon Mills, the IHI Open School's Community Manager. "We didn't expect the Chapter Network would spread as fast as it has or that students would start this type of movement" (oral communication, December 8, 2009).

With its energetic community, its global connections, and its connection to the IHI faculty of health care experts, the IHI Open School seemed the ideal place for the Safe Surgery

Student Mentor Project to look for students to lead with the checklist. The groups began collaborating and, with Berwick's blessing, convened a small team at the IHI offices in Cambridge, Massachusetts. Representing locales as remote as Israel and Wales, the students hoped to turn their excitement into a movement with a reach around the world.

TURNING PASSION INTO ACTION: BUILDING THE CAMPAIGN

The SSSMP students were experienced with the checklist. One student had spread it to 2 hospitals in Pakistan.¹⁰ Another, from Wales, UK, had studied the checklist already in place and worked to improve compliance with proper use.¹¹ The support of the IHI Open School offered access to a wealth of knowledge and leadership in health care. A final key element came from a third partner organization: The American Medical Student Association (AMSA).¹² With nearly 60 years of experience mobilizing student advocates in health care causes, AMSA offered a toolkit of activist best practices and an independent network of more than 60,000 future physicians to engage as leaders.

As the 3 groups joined at the IHI offices in October 2009, a new narrative of what could be accomplished emerged. The remarkable effect of the checklist as published by Atul Gawande's Safe Surgery Saves Lives Study Group was to decrease surgical complications from 11.0% before implementation to 7.0%, and to reduce deaths from 1.5% to 0.8%.⁵ One team member pointed out that the number needed to treat (NNT) to prevent a complication was only 25 uses, and to save a life, just 143.

The implications of these dry statistics were astonishing: students themselves could save a life by using the checklist. Given a typical medical student rotation through surgery of 6 weeks, averaging 4 cases per day, a medical, physician assistant, or nursing student would see enough cases—144—to save a life, statistically speaking. This "one student, one life" concept could extend to other professionals as well—in fact, to anyone who set foot in an operating room holding the checklist. Pre-health students observing only 25 cases—less than 1 each week during the academic year—could protect 1 patient from a serious complication.

"We had to get the word out about this—fast," remembered Dan Henderson. "Even with half the published impact, this would make a huge difference" (oral communication, December 8, 2009). Thus, a campaign to "Check a Box. Save a Life." was born.

LAUNCHING THE MOVEMENT: THE TEACH-IN

Recast as an empowering, action-oriented cause, with the subtitle, "The First Global Student Sprint to Improve Healthcare," the campaign quickly attracted leaders. As Lily Gutnik recalled, "As a student on the team, you don't get a lot of chances to save lives. Often, you're observing or looking up information for the team. This checklist, this chance to actually make a difference for my patients, it's really exciting!" (oral communication, October 6, 2009).

A launch was scheduled for October 22, initially dubbed "Global Safe Surgery Day." Drs Berwick and Gawande agreed to lend their celebrity status to a Webcast event, with students tuning in live at lunchtime, watching an interactive rebroadcast 3 hours later, or viewing the program on the SSSMP³ or IHI Open School web sites.¹³ Outreach for the launch was

conducted primarily via so-called new media. A virtual event on the social networking web site, Facebook,¹⁴ attracted 111 students to host the event at their institutions, representing the bulk of recruitment. Campaign leaders also posted announcements on IHI's Web site, the IHI Open School blog, and Safesurg.org Web site. Leaders sent e-mails to lists of interested students and conducted in-person outreach at the American College of Surgeons Clinical Congress and AMSA regional meetings. Surprisingly, such traditional methods of recruitment were significantly less fruitful. Further, outreach at meetings represented the only expense in the process.

In total, 182 hosting sites registered for the event from 121 distinct institutions, yielding an estimated 1400 viewers for the launch event. Registered hosts were primarily from the United States, as well as Canada and the UK. Participants also tuned in from such remote locales as Egypt, New Zealand, Pakistan, and Kenya; in all, 6 continents were represented.

The live webcast, which began at noon eastern daylight time, captured an audience from 51 individual sites, primarily the eastern US, where it was lunchtime. The interactive rebroadcast, at noon Pacific daylight time, had 15 sites tuning in. We believe, based on registrants, viewings of posted videos, and anecdotal data, that the majority of those who could not view the live Webcast subsequently hosted events at their institutions.

AFTER THE LAUNCH: TAKING SAFE PRACTICE BACK HOME

At present, the campaign exists in an ongoing execution phase. Student leaders, who tuned in and became enlisted in the cause of health care improvement, are working to change their organizations from within. Focusing on 3 initial aims—raising awareness, implementing the checklist, and collecting data on its use—the campaign offers something for students who find themselves at any stage of leading change.

One year after Dr Berwick's challenge and the campaign's conception, its leaders reconvened at IHI's 21st Annual National Forum.¹⁴ There, they shared experiences of their early efforts. Many had battled apathy, indifference, and delays, but even after just a few months, 15 students presented case reports. Among them was a Chicago medical student who had succeeded in securing use of the checklist in all 6 of his institution's hospitals (B. Goold, personal communication, December 8, 2009). At each surgical case, the rotating medical student in the operating room administered the checklist.

The students also enjoyed the rare opportunity to meet with Marshall Ganz, an acclaimed social organizer and educator at the Harvard Kennedy School of Government, to discuss how to take engagement in the campaign to the next level. Professor Ganz highlighted the importance of a narrative and of building a story he describes as "self, us, now." Ganz explained, "Leadership means taking responsibility for empowering others to achieve common purpose in the face of uncertainty," showing how narratives unite groups by highlighting their shared values and purpose (oral communication, December 9, 2009).

After Dr Berwick's example, the campaign was intended to be a "sprint," with the Forum as its halfway mark. In the next 2 months, engagement and commitment to checklist projects were to continue, with a shift to reporting of projects and continual improvement at the conclusion of the sprint phase. Conceived as the inaugural sprint, "Check a Box. Save a Life." was only the first run of an ongoing student-led movement. Building on a vibrant community of leaders in the new campaign, strong relationships with the expanding IHI Open School, and the established AMSA network, the campaign has shown

tremendous promise. Further, the early successes of the collaboration between the SSSMP, the IHI Open School, and AMSA have led to consideration of continued partnership to produce student-oriented "quick start" packages, disseminated through the IHI Open School and AMSA networks, to help leaders implement safety improvements, supported by the Texas Medical Institute of Technology, a nonprofit medical research organization.

In the future, the campaign will focus on other areas of improvement, particularly those that are appropriate for students at varying levels of training—namely, teamwork, leadership, and communication. On these key targets for improvement, the consensus guidelines in the National Quality Forum's *Safe Practices for Better Healthcare*¹⁵ offer an ideal framework for student leadership. Indeed, the *Safe Practices Update* for 2010 recognizes student-led grassroots efforts as a potentially important driver for implementation of the *Safe Practices* (C.R. Denham, MD personal communication, December 14, 2009). Through such iterative efforts, the campaign will seek to establish a yearly rhythm of improvement that will continue to engage and train new leaders and protect the patients they hope to serve.

CONCLUSIONS AND LESSONS FOR THE NEXT 10 YEARS

"Check a Box. Save a Life. The First Global Student Sprint to Improve Healthcare" represents a unique achievement and perhaps a turning point in the field of patient safety. Although not unprecedented in size, scope, or content, this event nonetheless represents a watershed moment for safety leadership. The dramatic growth of the campaign's launching point and the rapid spread of the IHI Open School should send a powerful message to the leaders of health professions education: students want training in patient safety, quality improvement, and leadership—enough to pursue them in their precious spare time. What "Check a Box." adds to this picture is proof that students can and will independently organize themselves as leaders in safety as a full-fledged activist cause. Moreover, this can be achieved with neither significant support nor geographic proximity. As Ganz told the group, "When you don't have resources, you have to be resourceful" (oral communication, December 8, 2009).

Indeed, leveraging online resources available on IHI's Web site, as well as social media, particularly Facebook, for outreach proved more successful than conventional meetings requiring travel, food, and space. Further, this was accomplished without long-established relationships or individual contacts, instead relying on what social network theorist Mark Granovetter called "the strength of weak ties."¹⁶ In fact, the initial team members barely knew each other and made the first contacts from Wales, Israel, Boston, Los Angeles, and Washington, DC, primarily through the strength of their networks. What united them in the long run were their experiences with unsafe health care, their shared values as future providers seeking better, safer medical practice, and their desire to produce change, not wait for it. Those who came to the group through the launch event echo these themes. In such cases, the power of a *self-us-now* narrative becomes apparent, as shown to the SSSMP by Professor Ganz, and described elsewhere, including efforts to eliminate health care-associated infections.¹⁷

In addition, an arsenal of free or inexpensive Web-based tools, such as free site, survey, and map hosting (Google, Mountain View, CA) as well as an inexpensive online meeting platform (WebEx; Cisco Systems, San Jose, CA) permitted successful execution of a high-quality launch that was global in its reach, at a very low cost. All these suggest that leaders

seeking to mobilize groups for change should prioritize an effective narrative behind their cause, rather than the resources and structures needed to achieve it.

The IHI Open School and the “Check a Box. Save a Life.” campaign exists because patient safety and quality improvement have been underrepresented in health professional curricula and in daily practice. Instead, these are the purview of a hospital department and its officer. The successes of the IHI Open School and of “Check a Box. Save a Life.” may change that.

Innovation expert Clayton M. Christensen coined the term “disruptive innovation” to describe entry into an industry of low-performing products at the bottom of the market that appeal to previously uninvolved segments of consumers but eventually threaten mainstream sellers as the technology improves.¹⁸ Disruption is what happens to established leaders when cheaper entrants threaten to unseat them, including those in health care markets.¹⁹ Applying this concept to social change, Christensen defines “catalytic innovations,” which “challenge organizational incumbents by offering simpler, good-enough solutions aimed at underserved groups.”²⁰

Both the IHI Open School and the “Check a Box.” campaign represent innovations of exactly this kind. By leveraging students’ shared experiences and pent-up desires to practice safer medicine and by providing an option that was previously unavailable to students, these programs have disrupted the safety leadership paradigm. They offer tremendous hope for a revolution in the culture of medicine. Against a resistant culture and the slow change of established structures, these upstarts hope to speed the pace of patient safety reforms.

With continued progress, health professional trainees can attain the knowledge and skills needed to practice safe health care. Starting at the undergraduate level, continued safe practice education could train students to enter their first clinical clerkships with the same safety skill set of seasoned residents. Such trainees will go on to safer practice than their predecessors, ultimately saving lives. Perhaps more importantly, as their numbers reach a critical mass within the practicing population, perhaps 15% to 30%, the attitudinal shift will permit a profound shift in the once-stubborn culture of medicine. Eschewing the unsafe practices of the past and embracing safety, they will lead a revolution in patient safety.

One student can save one life. If the successes of “Check a Box.” continue, a new group of leaders may emerge to champion the cause of patient safety. With 234 million surgeries performed worldwide annually, there exists tremendous untapped potential for impact. In Chicago, putting the checklist in medical students’ hands will save at least 180 lives this year. Yet amid this victory, tens of thousands of students will become physicians, nurses, and other health professionals, including more than 3000 surgical residents in the United States. Although they could all be saving lives—tens of thousands—many will have missed the chance to become stewards of safety.

For our classmates and colleagues, health professions students worldwide, now is the time to recognize safety leadership as a core competency and seek opportunities for safer practice. By joining us in this campaign, visiting the IHI Open School online, reading Dr Gawande’s article on the checklist, and working to put it into use, you can become the leaders your patients deserve, the kind of safe provider you would wish for a family member.

For faculty members, we urge you to help nurture us to become safe professionals. Odds are your hospital has students in the IHI Open School and medical students in AMSA. They will face challenges—resistance, fear of reproach, feeling that they are acting alone. By helping students’ efforts to learn and

lead, you can profoundly shape our careers and the future of health care.

For senior leaders, we urge you to cultivate a culture that nurtures improvement efforts, supports change, and celebrates the bravery of those who stand up to keep patients safe. As Marshall Ganz might phrase it, your charge is to enable us to achieve the kind of safe, effective care we want for our patients, amid disagreement, resistance, and complacency.

With action, we can all save hundreds of thousands, even millions, of lives. Such an effort would likely have been harder, perhaps impossible, a decade ago. Ten years after *To Err Is Human* urged us to build a safer health care system, the “Check a Box. Save a Life.” campaign offers new hope that we just might.

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