5 Million Lives Campaign

Miles to Go: An Introduction to the 5 Million Lives Campaign

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The article introduces the series on the 5 Million Lives Campaign, the Institute for Healthcare Improvement's national initiative that aims to protect patients from five million incidents of medical harm in United States hospitals between December 2006 and December 2008.

On December 12, 2006, the Institute for Healthcare Improvement (IHI) was joined by partner organizations from across the United States in announcing the 5 Million Lives Campaign, a new initiative to help increase patient safety and transform the quality of care in America's hospitals. The campaign targets a reduction of five million incidents of harm during a two-year period (December 2006 to December 2008), seeking to build on the momentum of IHI's previous national initiative, the 100,000 Lives Campaign (December 2004 to June 2006), and to cooperate as closely as possible with other, complementary national efforts. In addition to avoiding a massive amount of pain and suffering for American patients and families, a successful 5 Million Lives Campaign will generate a large, integrated national system for collaboration and learning that should stand as a shared asset for future improvement efforts.

In the last 10 years most stakeholders in the American health care system—patients, families, payers, purchasers, and providers—have reached consensus on the unacceptably low quality and reliability of the country's health care. A series of major studies and numerous well-documented stories of catastrophic harm and unnecessary death in hospitals have established that, while the United States continues to excel in the development of efficacious medical technologies, it has been unable to consistently introduce effective interventions to reliably protect patients from error and medical harm.[1,2]

In an attempt to remedy the problem, federal and state

Article-at-a-Glance

Background: The Institute for Healthcare Improvement (IHI)'s 5 Million Lives Campaign targets a reduction of five million instances of harm from December 2006 through December 2008. The campaign continues the six interventions of the 100,000 Lives Campaign and adds six more.

Definition of Medical Harm and Setting the Goal: The campaign's aim is to support the reduction of medical harm, so defined: "Unintended physical injury resulting from or contributed to by medical care (including the absence of indicated medical treatment), that requires additional monitoring, treatment, or hospitalization, or that results in death." The goal of a reduction of five million incidents of harm in two years is based on an estimate that 40 to 50 incidents occur per 100 admissions, for a total of 15 million incidents of medical harm each year in the United States.

The 5 Million Lives Campaign's "Platform": This campaign's six new interventions address the prevention of pressure ulcers, reduction of methicillin-resistant *Staphylococcus aureus* (MRSA) infection, prevention of harm from high-alert medications, reduction of surgical complications, delivery of reliable and evidence-based care for congestive heart failure, and getting hospitals' boards of directors on board.

Conclusion: Together with complementary partner initiatives, the 5 Million Lives Campaign is intended to act as a major driver of national improvement.

agencies, national associations, and a number of not-for-profit organizations have applied a variety of approaches, including incentives (for example, pay-for-performance schemes), legislation (for example, mandatory reporting of hospital infection data in some states), and accreditation. These efforts have yielded some exceptional results, but IHI's conclusion in summer 2004 was that these pockets of success were insufficient if safe delivery of care to all patients is to be achieved. Driven by a combination of frustration about current circumstances and optimism about what committed, well-supported hospitals can accomplish through collaboration, IHI attempted to identify a vehicle for spreading best practice more broadly, rapidly, and completely across the nation.

The 100,000 Lives Campaign, launched in December 2004, was the result of that exploration, inviting U.S. hospitals—where some of the most acute forms of harm occur—to join together to avoid 100,000 unnecessary deaths during an 18-month period through overall improvements across their facilities. The campaign recommended six well-known interventions to help hospitals begin this important work (Table 1, page 480), offered free tools and resources to all participants, and invested a great deal of effort in developing partnerships with national and regional organizations in pursuit of a similar aim.

Although IHI has thoroughly documented the 100,000 Lives Campaign's approach to spreading best practice and to calculating "lives saved,"[3–6] we have not yet produced a summative study providing a comprehensive, definitive understanding of the campaign's impact. Nevertheless, several encouraging observations emerge from our initial analysis:

- More than 3,100 hospitals enrolled in the 100,000 Lives Campaign (representing an estimated 75% of all hospital beds).
- A number of influential national partners stood by IHI with well-aligned programs, including The Joint Commission, the American Nurses Association, the American Medical Association, the Centers for Medicare & Medicaid Services, the Centers for Disease Control and Prevention, the National Patient Safety Foundation, and the Leapfrog Group.
- A national network of 55 voluntary field offices—referred to in the campaign as "nodes"—took shape, operating in states and large systems and acting as local conveners, teachers, and drivers of progress.
- More than 120 hospitals emerged as "mentors," coaches to peer facilities on specific campaign interventions.
- Other countries—including Australia, Canada, and Denmark—have, in partnership with IHI, initiated large-scale improvement projects structured similarly to the campaign.
- Each intervention was implemented by at least 60% of the participating hospitals, and more than 40% committed to implementing all six.
- More than 85% of the participating hospitals reported monthly mortality data to IHI by the campaign's end.
- Participating facilities avoided an estimated 122,000 deaths through overall improvements during the campaign period.

On this last point, IHI experts and independent researchers have recently engaged in a dialogue (some of it in the pages of this *Journal*), ostensibly discussing the campaign's methods of calculating national change in mortality but also addressing the matter of appropriate attribution of credit for national change.[7] Specifically, others have noted that media outlets have mistakenly attributed the change in national mortality to the effect of the campaign alone. As IHI has explained, the "lives saved" calculation—which lies at the center of this debate—measures the overall improvement of hospital care rather than the isolated effect of the campaign on that care, and that with this calculation as currently defined we cannot—and do not—attribute our estimate of "lives saved" to the campaign.

Planning the "New" Campaign

Despite ongoing evaluation and the uncertainty that accompanies any effort of this scale, we feel that interrupting this initiative to wait for definitive evidence of its effectiveness would represent a lost opportunity. The evidence we have observed—a high level of will for change and cooperation in the national health care community, an increasingly urgent expectation for improvement, and many requests from hospitals and patients that we continue this work—has provided us with the rationale to continue this national initiative in some form.

The same combination of frustration and optimism that sparked the 100,000 Lives Campaign fuels the new campaign.

The Objective

In summer 2006, as IHI reflected on the 100,000 Lives Campaign and charted its course forward, we debated whether we should continue to ask hospitals to focus on avoiding unnecessary mortality, to take on a new aim such as reducing waste or disparity, or even to seek to engage new participants in outpatient settings or health systems on other continents. To arrive at a new objective, IHI returned to its first principles as an organization, the Institute of Medicine's six aims for the United States health care system—a system that is safe, effective, patient-centered, timely, efficient, and equitable[8]—which translate into our own "no needless" list of targets for the organizations with which we work:

- No needless deaths
- No needless pain
- No helplessness
- No unwanted waiting
- No waste
- …for anyone.

IHI had begun to address the problem of needless deaths in the 100,000 Lives Campaign. For every fatal incident due to a deficiency in care, however, many more incidents of harm cause enormous amounts of needless pain. By broadening our target to all forms of suffering in hospitals, we believed that we might drive hospitals to higher levels of performance and deliver to patients and families much better care. Our primary aim, then, is to reduce the incidence of harm in hospitals—at our most ambitious, we believe that participating hospitals could find a way to avoid five million incidents of harm over a two-year period. So emerged the 5 Million Lives Campaign.

Three additional aims, growing out of the 100,000 Lives Campaign, also inform this new initiative—to enroll more than 4,000 hospitals (including many of the smaller rural and critical access facilities that had not yet joined the 100,000 Lives Campaign), to strengthen the national learning network of field offices and mentor facilities, and to continue to raise the profile of hospitals' important efforts to improve care with a broader public audience.

Definition of *Medical Harm*

The 5 Million Lives Campaign's aim is to support the reduction of medical harm, so defined:

> Unintended physical injury resulting from or contributed to by medical care (including the absence of indicated medical treatment), that requires additional monitoring, treatment, or hospitalization, or that results in death. Such injury is considered medical harm whether or not it is considered preventable, whether or not it resulted from a medical error, and whether or not it occurred within a hospital.

IHI's definition of *harm* is broader than those used by some other studies focusing on medical harm. In particular, it includes the following:

- Injuries that require additional monitoring or treatment but not necessarily additional hospital days—so-called "category E" events, as defined in the adaptation of the National Coordinating Council for Medication Error Reporting and Prevention (NCC MERP) medication error index,[9] which categorizes harm by severity from "E" events to "I" events.
- Injuries currently characterized as "nonpreventable" and injuries resulting from care where there was no medical error. (The analysis of an injury's "preventability" can be a difficult task, and any such assessment is somewhat arbitrary—or at least temporary—because many injuries now considered "nonpreventable" may become, through improvements and innovations in care, "preventable" in the future. Omitting the question of preventability therefore should make the measurement process more efficient, guarantee the capture of as much preventable harm as possible, and ensure the measure's future consistency.)
- Injuries associated with the disease process when indicated care is absent
- Medical harm that occurs outside the hospital when that harm results in a hospital admission

In arriving at our definition, we considered harm from the patient's viewpoint and tried to imagine which events patients would identify as appropriate targets for improvement. Our definition might be broader than others', but we believe that it is appropriate given this patient-centered perspective.

Setting the Goal of Avoiding Five Million Incidents of Harm

The first step in setting this goal was to estimate that at least 15 million incidents of medical harm occur each year in the United States. This estimate is based on several years

Table 1. 5 Million Lives Campaign Interventions*

1. Deploy rapid response teams to patients at risk of cardiac or respiratory arrest
2. Deliver reliable, evidence-based care for acute myocardial infarction
3. Prevent adverse drug events through drug reconciliation (reliable documentation of changes in drug orders)
4. Prevent central line infections
5. Prevent surgical site infections
6. Prevent ventilator-associated pneumonia
7. Prevent pressure ulcers
8. Reduce methicillin-resistant *Staphylococcus aureus* (MRSA) infection
9. Prevent harm from high-alert medications
10. Reduce surgical complications
11. Deliver reliable, evidence-based care for congestive heart failure
12. Get boards on board

* Interventions 1–6 are continued from the 100,000 Lives Campaign.

of work by IHI's patient safety faculty, who have measured rates of medical harm in a sample of hospitals through patient chart review using the IHI Global Trigger Tool—a tool that aids the chart review process by identifying common events typically recorded in charts ("triggers") that signal the possibility that the patient has experienced harm, guiding the reviewers' investigations into whether and what harm occurred.[10–12] With this tool, IHI has consistently observed a rate of 40 to 50 incidents of harm per 100 admissions. Applying the lower end of this range to the estimated patient admission volume in the United States each year—roughly 37 million[13]—yields an estimate of approximately 15 million incidents of harm.

Next, IHI patient safety faculty, on the basis of their experience working with hospitals, roughly estimated that the best improvers in the United States might reduce their harm rate by 20% within one year. In a scenario in which (1) on average, hospitals could achieve this reduction in twice this amount of time, and (2) improvement would be linear (that is, hospitals would achieve roughly a 10% reduction in the harm rate after the first 12 months and would reach a 20% reduction only in the 24th month), roughly three million incidents of harm would be avoided. Such a goal—a two-year sustained improvement in the average hospital, at half the rate of harm reduction seen in the best improvers—would be extremely aggressive.

With this campaign, however, we hope to bring about a sea of change in national improvement, challenging current expectations of what is possible. Avoiding five million incidents of harm means that the average hospital will need to reduce harm rates by roughly one third within two years, rivaling the best performance we have observed. Such a reduction is achievable only if hospitals implement a comprehensive agenda of improvements to patient safety. Working on the 12 campaign interventions—the 6 interventions from the 100,000 Lives Campaign and the 6 new interventions (Table 1, left)—alone will be insufficient, and we actively encourage the selection and implementation of other best practices. Furthermore, hospitals will need to make fundamental changes in their safety culture and improvement infrastructure and will need to collaborate with other hospitals and quality organizations to an unprecedented degree.

Measurement of Progress

Any improvement initiative at any scale must have measurement of progress as a core component. Our measurement strategy is twofold:

- We will measure hospital-level, all-cause outcomes—adding a "harm avoided" measure to stand alongside the continued measurement of "lives saved."
- We will collect and track intervention-specific process and outcome indicators.

First, to measure progress toward the campaign goal of five million incidents of all-cause ("global") harm avoided, we will study the change in rates of harm within a representative sample of campaign hospitals, comparing harm rates from baseline (precampaign) to campaign-period harm rates. The change in harm rates between precampaign and all campaign time periods will be used to estimate the number of harm events that would have occurred during campaign periods but did not because of improvement in hospitals. The findings within these sample hospitals will be projected to the total campaign patient volume to generate a campaignwide estimate of "harm events avoided." We plan to abstract harm rates within the sample hospitals by reviewing a random sample of patient charts using the IHI Global Trigger Tool as a review aid.[14] Notably, such a calculation of aggregate harm avoided will

not provide sufficient information for us to isolate the impact of the campaign from that of other concurrent improvement activities. As in the previous campaign, the primary goal of measurement is to quantify the *total* improvement in participating hospitals rather than the subset of improvement attributable to the campaign or work in the campaign intervention areas.

Also at the hospital level, we will continue to measure "lives saved" by collecting mortality data from participating hospitals, applying the same approach used in the 100,000 Lives Campaign calculation, but with a new baseline period of calendar year 2006. We feel that this measure continues to be a valuable indicator of hospitals' overall improvements in care and that it provides a translation of sometimes esoteric risk-adjusted mortality rates into terms that are compelling to both caregivers and patients.

Second, to monitor progress on each campaign intervention, we will continue to collect "intervention-level measure" data (for example, pressure ulcer incidence per 100 admissions, unreconciled medications per 100 admissions) from campaign hospitals that choose to submit such information, and we will partner with other organizations that maintain databases of these data who are able to share intervention-level results for campaign hospitals.

The 5 Million Lives Campaign's "Platform"

This campaign's platform—its clinical foundation—consists of the six interventions from the 100,000 Lives Campaign and six new interventions (Table 1). The new interventions were selected because of their potential impact as remedies to major sources of harm and suffering, their track record as effective solutions in numerous facilities, their relative straightforwardness, and because, at least in several cases, they clearly relate to the previous campaign's efforts to reduce infection, adverse drug events, and cardiac and surgical complications. The campaign asks hospitals to adopt each of the following best practices as rapidly as possible:

■ *Prevent Pressure Ulcers . . . by reliably using science-based guidelines for their prevention.* Although pressure ulcers are largely preventable,[15] their incidence is disturbingly high, with an estimated 2.5 million acute care patients treated annually.[16] Risk identification using a validated scale is essential.[17,18] Prevention strategies are primarily low-tech (turning of patients, basic skin care, proper nutrition and hydration)[19–22]; care processes must be redesigned for these practices to occur reliably.

■ *Reduce Methicillin-Resistant* Staphylococcus aureus *(MRSA) Infection . . . by reliably implementing scientifically proven infection control practices.* Incidence of MRSA has increased alarmingly in the United States, accounting, for example, for 63% of *S. aureus* infections acquired in intensive care units in 2004.[23] Estimates are that more than 126,000 hospitalized patients are infected by MRSA annually. Prevention of transmission in health care settings is fundamental for reduction—by implementing reliable hand hygiene with all patients and especially infected patients, contact precautions for infected and colonized patients, and proper cleaning and decontamination of the environment and equipment.[24–32] Some organizations use surveillance cultures to identify colonized patients and apply the same prevention strategies as for infected patients.[33–36]

■ *Prevent Harm from High-Alert Medications . . . starting with a focus on anticoagulants, sedatives, narcotics, and insulin.* The Institute of Medicine estimates that 1.5 million preventable adverse drug events occur annually in the United States.[37,38] Some medications can lead to serious, unintended harm even when used correctly. Focused studies of these medications reveal the frequency and serious nature of the harm that can occur.[39–46] To reduce these harms, hospitals must implement processes to (1) prevent error and harm, (2) identify errors and harm when they occur, and (3) provide immediate mitigation. Effective changes include using standard approaches (for example, order sets, protocols), visual reminders, double-checks, and others that account for human factors.

■ *Reduce Surgical Complications . . . by reliably implementing all the changes in care recommended by the Surgical Care Improvement Project (SCIP).*[47] Nearly 30 million inpatient surgeries occur in the United States annually,[48] and conservative estimates indicate that up to 3.5 million of these may lead to unintended harm.[49,50] Hospitals can reduce this harm by implementing the changes to reduce surgical site infection introduced in the 100,000 Lives Campaign, continuing beta-blockers for patients already receiving them before admission,[51] using deep vein thrombosis and pulmonary embolism

(DVT/PE) prophylaxis,[52] and considering the use of the ventilator bundle for all surgical patients receiving postoperative mechanical ventilation.

■ *Deliver Reliable, Evidence-Based Care for Congestive Heart Failure . . . to reduce readmissions.* Nearly five million people in the United States have a diagnosis of congestive heart failure (CHF),[53] a cause of recurring hospital admissions. Medicare data indicate that, among 616,000 discharges in 2005, 27% of CHF patients were readmitted within 30 days, and nearly 50% were readmitted within 90 days.[54] Reduction in these admissions is likely with provision of evidence-based care, especially clear discharge instructions,[55,56] and preventive care for infections that may exacerbate the disease.[57]

■ *Get Boards on Board . . . by defining and spreading the best-known leveraged processes for hospital boards of directors, so that they can become far more effective in accelerating organizational progress toward safe care.* Successful organizations in this campaign—or any improvement effort—will share common organizational characteristics that support change, and engaged leadership is one recurrent property of a successful organization. Boards of trustees, in particular, can help instigate action throughout hospitals by studying harm in the organizations, setting and reviewing improvement objectives, and supporting and recognizing successes. This campaign seeks to engage governance structures as major levers of change in facilities across the United States.

In an effort to expand its platform, the 5 Million Lives Campaign has invited participating hospitals, field offices, and partners to introduce their own innovations and interventions in pursuit of overall harm reduction. It would be neither sensible nor productive to ask hospitals to focus on the campaign's 12 interventions alone. Hospitals may legitimately choose to redesign existing processes or to invest their resources in targeting other harm areas, and if our learning network functions well, we should continuously uncover, map, and disseminate new best practices and ideas across the United States, helping hospitals to assess where the greatest harm lies in their facilities and helping them to stop it, whatever it is.

The campaign also seeks to document successful reduction in cost associated with harm reduction (and related reduction in inpatient days) on the basis of the potential for cost savings associated with decreases in harm events such as infection and medication errors.[58–60]

How the Campaign Functions

As in the 100,000 Lives Campaign, there is no cost to participate; new enrollees simply complete a one-page sign-up form. They are asked to submit mortality data and updated hospital profile data (with basic demographic information and information on which interventions they are pursuing) on a quarterly basis and are encouraged to submit intervention-level data.

The 5 Million Lives Campaign does, however, introduce some improvements that should enhance the participant experience. In order to reduce confusion and to help participants align the campaign's interventions and recommended intervention-level measures with other national quality initiatives, IHI and its national partner organizations have documented and published areas of alignment.[61] In addition, the new initiative will seek to build connections to new audiences, such as patients and families, providers of care in outpatient settings, and members of employer and payer organizations.

Support to Hospitals

In addition to offering guidelines and improvement strategies, the campaign has established a national network of hospitals, field offices, and partners joined together in a pattern of continuous learning and exchange. Free resources—such as "How-to Guides" on each intervention, tools for managing and measuring change, and detailed success stories from participants—are all available at http://www.ihi.org/IHI/Programs/Campaign/ (augmented by a series of national conference calls and online discussions). However, a number of additional supports are also available on a national and local level. To start, partner organizations have developed complementary tools for the professional groups and specialty societies that they represent and, by recognizing high achievement and even rewarding it in some cases, they create an environment that encourages improvement. To further break down the large population of participating facilities into more manageable local networks, field offices ("nodes") have emerged in all 50 states to recruit participating facilities (5 states report enrollment of every eligible facility) to bring together hospitals for face-to-face learning and exchange and to collect feedback on successful strategies and barriers to

introducing best practice. Large systems have also acted as nodes, convening their constituent organizations to set systemwide aims, create educational opportunities, and identify standards and resource changes that might support sustainable progress. Beyond grouping by geography or system affiliation, this campaign also seeks to bring together "affinity groups"—facilities of similar type (for example, pediatric, rural, public, academic) whose shared structure and constraints drive them to learn from one another through calls, meetings, and other gatherings. The nodes leverage the multiplicity of experiences and solutions in participating hospitals, rapidly sharing a variety of effective solutions that drive change.

In all states and health care systems, the campaign has encouraged nodes to identify facilities whose superior performance and willingness to share their innovations and practical ideas mark them as potential coaches (mentors) to other hospitals in the area and around the nation. Participants repeatedly recognize this peer exchange as an invaluable resource that most frequently provides useful solutions to persistent problems. In addition, the campaign seeks to develop appropriate tools and guides for each of the key stakeholder groups that must contribute to change within successful hospitals—including boards and executives, clinician leaders, quality managers, frontline providers and, of course, patients and families themselves.

The campaign's communication effort seeks to complement all this activity by creating awareness of facilities' improvement activities and results in their local areas and by sharing success stories and new ideas broadly within the community of participating hospitals.

Conclusion

We hope that—together with complementary partner initiatives—the 5 Million Lives Campaign will act as a major driver of national improvement, creating a lasting legacy of collaboration, learning, and optimism about what is possible. J

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