

Implementing a Hospital-Acquired Pressure Injury Prevention Bundle in Critical Care

Insight from a nurse-led implementation science team

ABSTRACT

The emerging field of implementation science (IS) facilitates the sustainment of evidence-based practice in clinical care. This article, the third in a series on applying IS, describes how a nurse-led team at a multisite health system used IS concepts, methods, and tools to implement a hospital-acquired pressure injury (HAPI) prevention bundle on six critical care units, with the aim of decreasing HAPI incidence.

Keywords: critical care, hospital-acquired pressure injury, implementation science, intensive care, pressure injury, pressure ulcer

The importance of hospital-acquired pressure injury (HAPI) prevention cannot be understated. HAPIs are one of the most common iatrogenic complications in health care and lead to longer hospital stays; pain; infection; mortality; and higher costs, with an estimated cost of \$20,900 to \$151,700 per incident in the United States.¹ Pressure injuries (PIs) contribute to 60,000 U.S. deaths annually.¹ While rates of other hospital-acquired conditions, such as catheter-associated urinary tract infections and central line-associated bloodstream infections, have decreased in recent years, HAPI rates continue to remain high.²

Critically ill patients are particularly susceptible to HAPIs.³ Cox and colleagues identified mechanical ventilation, extracorporeal membrane oxygenation, continuous venovenous hemodialysis, diabetes, peripheral vascular disease, and vasopressor use as risk factors for HAPI development in this population.⁴ International guidelines echo such risk factors.⁵ Additionally, Kim and colleagues identified length of stay, blood gas abnormalities, hypotension, gastrointestinal bleeding, and cellulitis as HAPI risk factors.⁶ PI development

in critical care patients has been found to be associated with higher mortality rates.⁷

In 2017, in response to an increase in HAPI rates, a critical care improvement team at our health system implemented an evidence-based practice (EBP) project to reduce the incidence of HAPIs in a pilot ICU. This project's bundled approach included the use of educational materials on PI prevention, such as pamphlets for patients and a poster and resource binder for nursing staff. While the project was initially successful in decreasing HAPI incidence, the results were not sustained. Further, while many critical care units in our system had PI prevention initiatives in place, they had limited success due to inconsistencies in practice. HAPIs continued to be a problem across the system. The literature supports that a standardized and methodical approach to PI prevention is effective, with research findings demonstrating improvements from bundled care.⁸⁻¹¹

Implementation science (IS) is one route toward the successful introduction and sustainment of EBPs and is associated with stronger outcomes.¹² In 2022, a team of IS-trained nurses at our institution undertook a project to reduce HAPI rates on six critical care

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Table 1. Ten Elements of the Implementation Science Toolkit

Element	Description
1. Defining the problem	Interest, impact, location, why it matters, and the benefit in solving
2. Review of best available evidence	Quality, credibility, support, compelling nature
3. Assess determinants	Use the Tailored Implementation for Chronic Diseases framework. ²⁷ Assess and prioritize determinants.
4. Stakeholder analysis	Analysis of the influence of interest
5. Process mapping	The evidence-based intervention
6. Pareto charting	The interventions to determine what needs the most attention
7. Identifying implementation strategies	Establish strategies to overcome barriers and support facilitators ²⁸ ; map strategies to determinants ²⁶
8. Outcomes identification (Proctor model)	Implementation, service, and patient outcomes in SMART goals framing ²⁹
9. Logic model	Put it all together in a logic model ³¹
10. Plan, implement, and evaluate	Use responsibility charting for all intervention and implementation activities; finalize the go-live date; initiate the communication plan; establish the monitoring process

SMART = Specific, Measurable, Achievable, Realistic, Time-oriented.
 Note: This table first appeared in the December 2023 issue of *AJN*.³⁰

units by implementing a standardized bundled approach to HAPI prevention that built upon the approach used in the 2017 pilot. This article, the third in a series on applying IS, describes how the team leveraged IS frameworks and tools to achieve this goal.

LITERATURE REVIEW

PIs result from prolonged pressure—either from a person’s own body weight or from a medical device—that leads to decreased circulation and subsequent tissue ischemia, which can progress to necrosis.¹³ The return of circulation to the area causes an inflammatory response that can contribute to the tissue damage, with muscle tissue being particularly susceptible to this process.^{5,13} As the body’s largest organ, the skin receives 10% of the cardiac output.¹⁴ Compromised skin integrity may affect thermoregulation and fluid and electrolyte levels and increase the risk of infection.

Risk assessment is an important component of PI prevention. There are several risk scales available; while none cover all risk factors, they are useful tools when combined with clinical experience.¹⁴ The most widely known PI risk assessment tool is the Braden Scale for Predicting Pressure Sore Risk, which was introduced in the late 1980s and is used internationally.¹⁵ Huang and colleagues conducted a systematic review and meta-analysis on the Braden Scale’s accuracy and found

that it had an overall sensitivity of 0.78, a specificity of 0.72, and an area under the curve of 0.82.¹⁶ A recent study by Vocci and colleagues found that a novel PI risk assessment scale designed for use in the ICU demonstrated no improvement over the Braden Scale.¹⁷

The Braden Scale is composed of six subscales—sensory perception, moisture, activity, mobility, nutrition, and friction/shear—and has a total overall risk score of 6 to 23, where a lower score indicates a higher risk of PI development.¹⁸ A score of 15 to 18 is considered at risk, 13 to 14 is moderate risk, 10 to 12 is high risk, and 9 or less is very high risk.¹⁹ Although interventions are often based on the total score, the subscale scores offer more targeted insight on a patient’s PI risk. Experts recommend evaluating patients based on the subscale scores, rather than just the total score, and providing tailored prevention interventions accordingly.^{20,21} Lim and colleagues noted that the Braden subscales were independent predictors of PIs, where sensitivity scores per subscale ranged from 0.46 to 0.68 and specificity scores from 0.69 to 0.87.²² Wyatt demonstrated that using the Braden subscales to guide HAPI prevention in critical care may have value, realizing a 63.5% reduction in ICU HAPI rates in a pilot study.²³

Bundled interventions may be effective in reducing HAPIs. In a clinical trial of a PI prevention bundle on

three critical care units at a tertiary hospital in Saudi Arabia, Tayyib and colleagues reported that the incidence of medical device–related PIs decreased from 13.5% to 0.89%.¹¹ In a pilot study, Rivera and colleagues reported a decrease in the incidence of HAPIs indexed per patient care days of 3.4 to 0.48 over a 10-month period with the use of a prevention bundle on a critical care unit at a tertiary hospital in New York City.¹⁰ A combined retrospective/prospective cohort study by McLaughlin and colleagues in an academic tertiary care ICU found that the use of an intervention bundle decreased HAPI incidence from 6% to 2%.⁹

PI prevention bundles should incorporate the clinical practice guidelines from the European Pressure Ulcer Advisory Panel, National Pressure Injury Advisory Panel, and Pan Pacific Pressure Injury Alliance.⁵ These guidelines include considering PI risk factors related to the patient’s general health, mobility, age, comorbidities, and therapies, as well as conducting a comprehensive skin assessment using a risk assessment tool upon admission, with transfers, and prior to discharge. The frequency of skin assessments should be based on the patient’s risk of injury. Pre-

and are not enculturated due to a lack of systemization and continued key stakeholder involvement and support. In 2021, with the aim of improving EBP integration, our organization initiated a program in which nurses from across the system were trained as IS specialists.³⁰ The EBP Implementation Subcouncil of our Shared Governance Nursing Congress, which directs our organization’s IS work, chose five previously completed EBP projects for IS specialist teams to implement systemwide and revitalize using IS strategies. One of these was the 2017 project to reduce HAPIs in a pilot ICU.

Our institutional review board approved this project as exempt from human subjects oversight.

Setting. Our organization, a not-for-profit health care system in northern Virginia, provides care to more than 2 million patients annually. It encompasses five Magnet-designated hospitals, over 200 primary and specialty care practices, emergency and urgent care centers, and outpatient services. The HAPI prevention project was implemented in all five hospitals on six critical care units comprising adult medical–surgical ICUs, adult cardiovascular units, and adult neuroscience ICUs.

The robust use of IS concepts, models, frameworks, and tools to implement EBPs supports a stronger likelihood of sustained results.

vention interventions include moisture management, ensuring adequate nutrition and hydration, using pressure redistribution surfaces, limiting the number of layers between the patient and surface, paying special attention to off-loading the heels, and repositioning and mobilizing the patient.⁵

EBP implementation. Weiner and colleagues noted that “partial implementation [of EBPs] yields partial benefits.”²⁴ In health care, EBP implementation typically involves automating a change, communicating it, providing education, and measuring outcomes. However, the robust use of IS concepts, models, frameworks, and tools to implement EBPs supports a stronger likelihood of sustained results.²⁴ Wensing and colleagues offered a model for using IS³²; one of us, APB, an external IS consultant, used it to create a 10-step toolkit to guide our team’s IS work (see Table 1^{26–31}).

METHODS

Our organization offers nurses opportunities to work on EBP projects and provides financial support for such projects. Unfortunately, many of the projects are not disseminated beyond the initial unit

Implementation team. The IS team that led this project included eight RNs from all five hospitals: one certified wound, ostomy, and continence nurse (CWOCN), one clinical nurse specialist (CNS), one nurse educator, and five staff nurses from critical care units. The team members had previously completed 24 hours of IS training and attended a 16-hour educational workshop. A doctorally prepared nurse expert in EBP and IS supported us, and we consulted with experts from quality improvement (QI), nursing informatics, marketing, supply chain management, and patient and family advisory councils. Two of us (RRJ, a CNS, and DT, a nurse educator) served as facilitators who reported on our progress to the EBP Implementation Subcouncil, which tracks IS projects and outcomes.

STEPS IN THE PROCESS

Our work on the HAPI prevention project began in January 2022 and followed the 10-step IS toolkit, as described below.

Step 1: Defining the problem. Our first step was to evaluate the current state of PI prevention practices at our health system by conducting an informal

Table 2. Relevant TICD Components and Related Determinants

TICD Component ²⁷	HAPI Bundle Facilitators	HAPI Bundle Barriers
Guideline factors	The HAPI prevention bundle is evidence based	
Individual health professional factors	Baseline knowledge about PIs, nurse altruism	Nurses' perception that the practice change may not make a difference; concern about increased workload
Patient factors	Patient desire to prevent PIs	Education needed; patients may refuse interventions
Professional interactions	Support of wound/ostomy nurse team; skin champions; system skin committee	Concern about leadership and provider support
Incentives and resources	Nurse altruism	Inconsistent resources across units
Capacity for organizational change	Strong leadership support for the project	Need for financial resources to provide supplies and staff; need for EHR system changes

EHR = electronic health record; HAPI = hospital-acquired pressure injury; PI = pressure injury; TICD = Tailored Implementation for Chronic Diseases.

analysis in which we compared practices across units. This analysis unearthed inconsistencies. Clinical nurses used evidence-based interventions and products for PI prevention; however, there was no system standard to guide the work. Additionally, they applied interventions that were not necessary, resulting in product waste and preventable burden on the clinician. Inversely, risk-targeted interventions that were essential might have been missing in an effort to provide all interventions to every patient regardless of risk factors. The latter is a consequence of a long-standing focus on only the total Braden Scale risk score and not the subscale scores.

We described the problem as: “PIs have increased on the critical care units, which leads to longer lengths of stay and patient harm. We think nursing staff and patients will benefit from [a bundled approach to HAPI prevention].”

Step 2: Review of best available evidence. Our literature review, as described earlier, provided us with information on current PI prevention measures and projects that used a bundled approach. It also highlighted the need to use the Braden subscale scores to individualize PI prevention. To synthesize the results, we used the Johns Hopkins Evidence-Based Practice Model for Nurses and Healthcare Professionals framework.³³ The search, which was conducted by our system’s librarians using EBSCOhost, yielded high-quality evidence that recommended using a bundle to prevent HAPIs.

During each shift, our system’s nurses assess patients’ skin integrity and use the Braden Scale to evaluate PI development risk. Although our team reviewed alternative risk assessment scoring tools for potential use in our project, we decided to continue using the Braden Scale because it is well validated in the literature and familiar to the bedside teams. How-

ever, we shifted our focus toward using the individual subscale scores, rather than the total score, to guide prevention interventions.

Based on our review of the evidence, we developed a new HAPI prevention bundle that uses targeted interventions based on Braden subscale scores and turning clocks to prompt timely patient turning and repositioning.

Step 3: Assess determinants. Our next step was to identify the barriers and facilitators—known as determinants—that might influence the implementation and success of the HAPI prevention bundle.³⁴ We referred to Flottorp and colleagues’ Tailored Implementation for Chronic Diseases (TICD) framework, which categorizes determinants into seven domains, six of which we considered relevant to our project: guideline factors, individual health professional factors, incentives and resources, patient factors, professional interactions, and capacity for organizational change.²⁷

We conducted a survey of our system’s critical care bedside nurses to help us identify which determinants within the guideline factors, individual health professional factors, and incentives and resources domains would impact our project. (Our team believed these three domains were the most crucial to address.) The 11-question survey was distributed electronically and included a question on whether respondents viewed the evidence supporting the use of HAPI prevention bundles (presented at the beginning of the survey) as sufficient. Respondents were also asked whether using the bundle would be worth their time if it reduced PIs and increased their confidence in PI prevention (guideline factors), how they would like to learn about the bundle and whether they believed they and their colleagues would be able to adhere to its use (individual health professional factors), and

what resources they would need in order to comply with the practice change (incentives and resources).

Seventy-six nurses responded to the survey. Most (96%) agreed that the evidence on PI prevention bundles was sufficient. Almost three-quarters believed using the bundle would “definitely” be worth their time, while another quarter said it would “possibly” be worth their time. Nearly all respondents were hopeful that the bundle would reduce PIs, yet 57% felt that adherence might be a challenge. In-person demonstration was the preferred mode of education. Respondents identified adequate staffing and supplies as resources needed to comply with the practice change.

The IS team discussed and identified determinants within the patient factors, professional interactions, and capacity for organizational change domains that we believed would influence our project. These included the need to provide patient education on PI prevention (patient factors), engage with members of the wound/ostomy nurse team and the system skin committee and utilize clinical champions (professional interactions), and ensure leadership support (capacity for organizational change).

In the survey and in one-on-one conversations, we asked staff to identify facilitators related to the domains that would promote their use of the bundle and its success. The top facilitators identified were leadership support, wound/ostomy nurse team support, and staff attitudes and behaviors toward the practice change, which we assessed to be related to nurse altruism—the desire to do what is best for their patients.

Based on the survey findings and IS team discussions, we established a list of key project determinants (see Table 2²⁷).

Step 4: Stakeholder analysis. Next, we identified project stakeholders—those we thought would be interested in the practice change and influential in its implementation. They included leaders at all levels of the organization, unit-based practice councils, nursing teams (including clinical technicians), wound/ostomy coordinators, respiratory care practitioners, professional practice staff (CNSs, educators,

mentors), patients, and families and caregivers. We created a comprehensive communication plan to keep stakeholders informed and engaged throughout the project. Ongoing communication between our team and the affected units’ shared governance unit-based councils as well as our system’s skin committee was a key component of this plan.

Leaders are especially important stakeholders. Evidence indicates that units with high rates of EBP implementation also have high leadership engagement and support.³⁵ Unit-level leadership support was especially crucial to our project, as such leaders help ensure that units consistently have the necessary supplies. For example, one concern we identified was that pillows for off-loading bony prominences and repositioning patients were in short supply on some units. Through ongoing dialogue with unit leaders, we were able to increase the availability of these pillows, thus supporting the uptake and sustainability of our work.

Step 5 and 6: Process mapping and Pareto charting. Our QI consultant guided us in developing a process map that outlined the steps in our new HAPI prevention process from admission through discharge (see Figure 1 at <https://links.lww.com/AJN/A270>). This entailed reviewing the process and project interventions used in the 2017 pilot and adding new interventions per our literature review. The process map assisted in communicating expectations to all involved in the project.

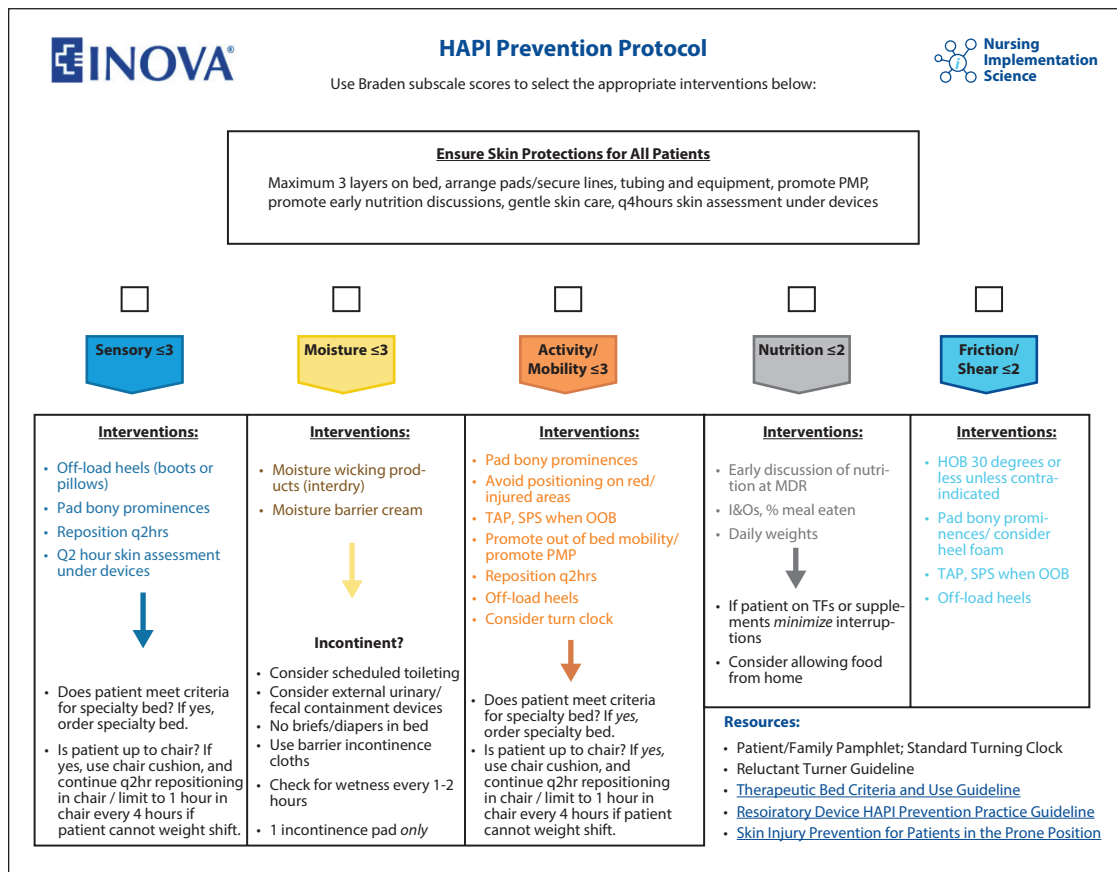
Pareto charting, the next step in our toolkit, is a method that can help streamline a process by identifying steps in the process that are not necessary. However, in this project, we determined that all the steps in our process map were necessary and opted not to use this method.

Step 7: Identifying implementation strategies. Next, we mapped our project determinants (barriers and facilitators) to implementation strategies. This process is evidence based²⁶ and is critical to achieving sustained results. We referred to the Expert Recommendations for Implementing Change—a compilation of 73 implementation strategies that can be tailored to address determinants—and selected several to use²⁸:

Figure 2. Braden Scale EHR Widget

Braden Scale from 09/18/23 2115 to 09/19/23 2115								
Date and Time	Sensory Perceptions	Moisture	Activity	Mobility	Nutrition	Friction and Shear	Braden Scale Score	User
09/19/23 0800	2	3	1	2	3	2	13	JS

Figure 3. HAPI Prevention Bundle Bedside Tool



HOB = head of bed; I&O = intake and output; MDR = multidisciplinary rounds; OOB = out of bed; PMP = progressive mobility protocol; SPS = seated positioning system; TAP = turn and position; TF = tube feeding.

Change records systems. To optimize the accessibility and feasibility of our intervention, we decided to add a Braden Scale widget to the first screen of the electronic health record (EHR) showing the patient's subscale scores from the prior 24 hours (see Figure 2). The widget enables the nurse to easily view the subscale scores, which guide the bundle interventions.

Intervene with patients/consumers to enhance uptake and adherence. We used this strategy to address our identified need for improved patient and family education on PI prevention. Awareness of the importance of HAPI prevention is key to their participation in prevention efforts. With assistance from our system's patient and family advisory council and marketing department, we created an informational brochure titled "Preventing Pressure Injuries" that outlines the patient's role in prevention and why it matters, the stages of PIs, risk factors, general prevention measures, and what to expect from staff pertaining to PI prevention. For example, it noted that the patient's nurses would be looking at all areas of the patient's skin and explained the rationale for frequent turning and repositioning.

Develop and distribute educational materials. Staff education was an integral step in orienting our teams to the new protocol. We began by presenting an "elevator speech," a brief introduction to the project, to the unit-based practice councils on participating units and to hospital leadership. In response to the survey feedback that nurses preferred in-person demonstrations to learn about the practice change, we held education sessions on the units and presentations at unit-based council meetings and provided information to be reviewed at daily and weekly nursing huddles. We created a HAPI prevention bundle bedside tool (see Figure 3), which outlines targeted interventions for each Braden subscale. A laminated copy of the tool was posted in each patient room along with turning clocks (one for patients with sacral PIs and one without) that serve as a visual cue for nurses and patients and families to improve compliance with repositioning of patients at two-hour intervals (see Figure 4). Additionally, we created a product resource guide with visual and text guidance on the indications for and use of PI prevention products,

as well as a nursing education poster board that explained the new bundle and included the process map. These resources were placed on each participating unit.

Identify and prepare champions. Although some of the critical care units already had skin care champions who disseminated information on skin care and PI prevention to bedside teams, we engaged additional clinical champions to facilitate the implementation of our protocol. We taught the champions how to use an electronic rounding tool we developed to collect data related to bundle adherence. Additionally, the champions supported their colleagues by providing education and real-time feedback on the bundle's use.

Revise professional roles. Our project team recognized that PI prevention is a team effort involving nurses, clinical technicians, and at times, respiratory therapists. Our HAPI prevention bedside tool and the turning clocks aimed to foster collaboration between these disciplines. Specifically, these tools helped to empower nurses and clinical technicians to initiate turning and repositioning of patients and to promote continuity of care for PI prevention. Respiratory therapists were proactive in assessing patients for potential PIs and collaborating with nurses to prevent PIs related to respiratory equipment such as oxygen tubing and face masks.

Seek guidance from experts in implementation. Although our team had received IS training, this work

was new to us; therefore, we harnessed the expertise of our external IS consultant. Additionally, we attended monthly systemwide IS specialist meetings in which we shared our experiences with our fellow IS-trained clinicians and gained more insight into the practice of IS. We provided updates and reported on our project outcomes. Attending these meetings helped us stay focused and ensure we were on the right trajectory for project success and sustainability.

Audit and provide feedback. We utilized the aforementioned electronic rounding tool to evaluate the following questions:

- Is the HAPI prevention bundle tool visible at the bedside?
- Is the bundle being followed? If not in its entirety, what is missing?

Midway through implementation, we analyzed data collected from the tool and identified the top three inconsistencies in adherence to the bundle: floating of heels, use of heel foams, and turning clock use. To address these inconsistencies, we offered education through microlearning modules and huddles and engaged supply chain representatives to ensure we had all the supplies needed.

Throughout the project, we continuously examined HAPI incidence data and responded accordingly. For example, when we noticed an increase in heel-related PIs, we quickly addressed it by creating and deploying a microlearning module on proper heel

Figure 4. Turning Clocks

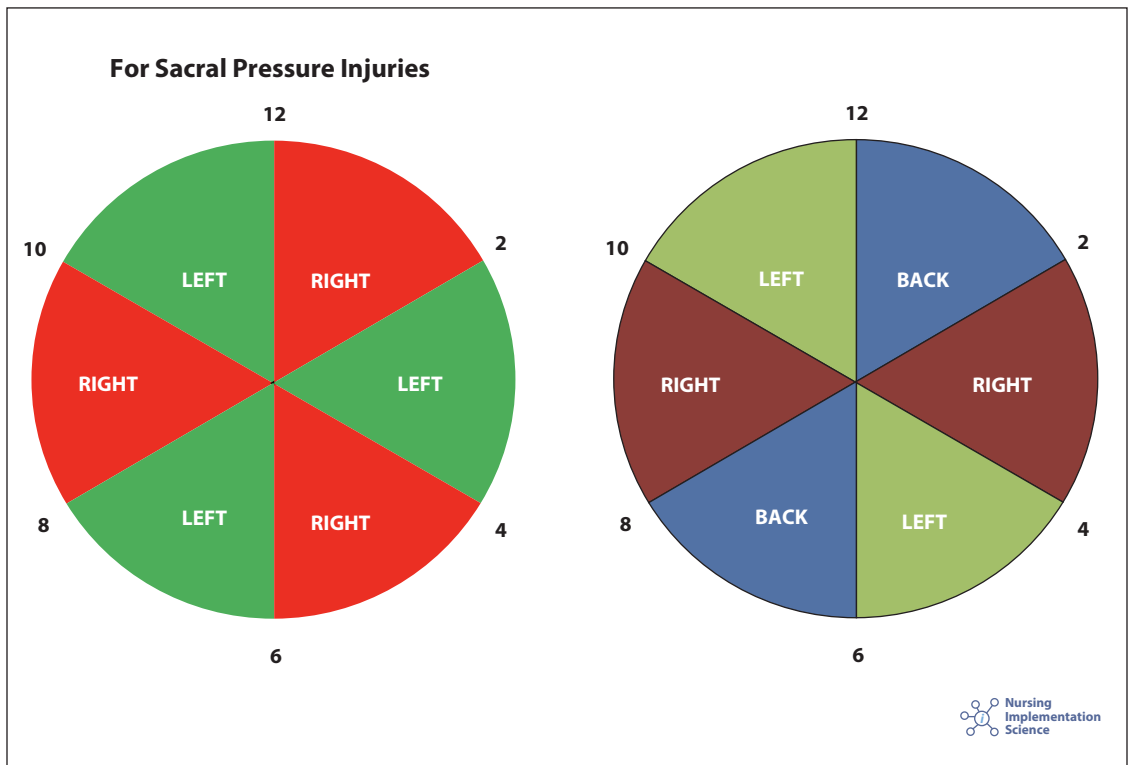
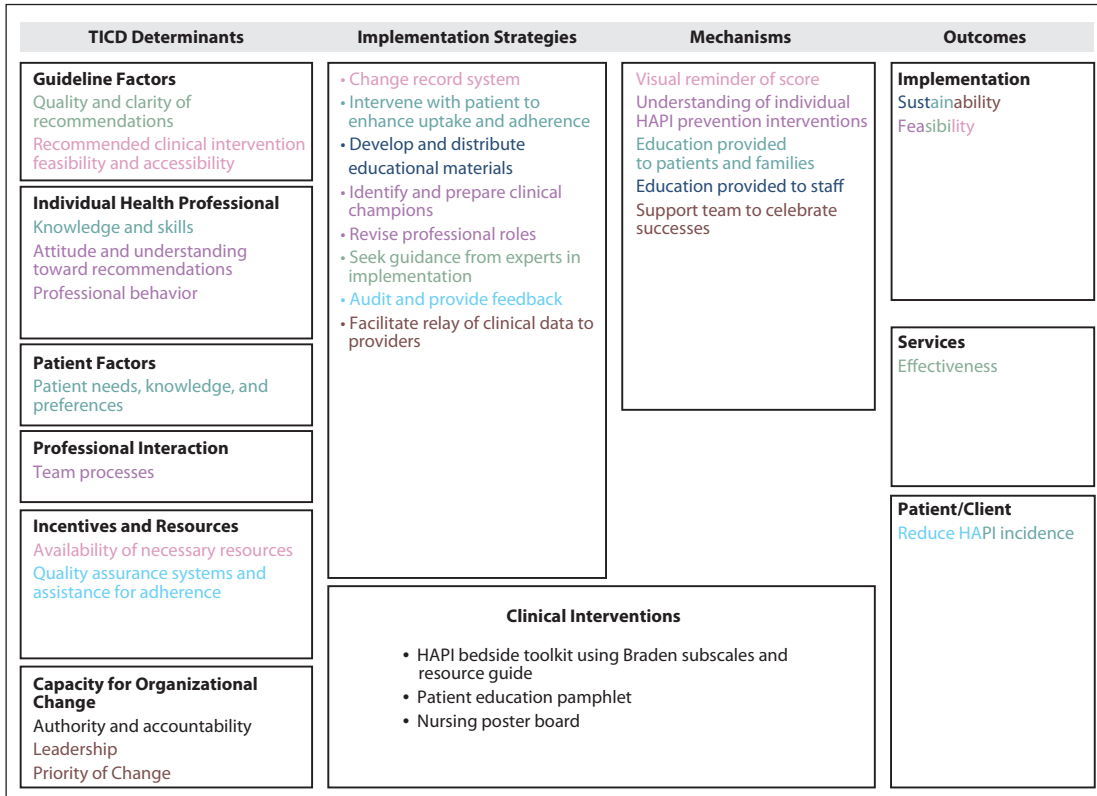


Figure 5. HAPI Prevention Project Logic Model



HAPI = hospital-acquired pressure injury; TICD = Tailored Implementation for Chronic Diseases.

off-loading. Further auditing ensured that our teams were in compliance with the project.

Facilitate relay of clinical data to providers. An important maintenance strategy was to provide unit staff with data related to the adherence audits and HAPI incidence. We disseminated these findings to the unit-based councils and at additional care site meetings.

Steps 8, 9, and 10: Outcomes identification; logic model; plan, implement and evaluate. Using Proctor and colleagues' model,²⁹ we identified our project's implementation outcomes (feasibility and sustainability), service outcomes (effectiveness, measured as adherence to the bundle), and client outcomes (the HAPI rate).

We created a logic model to help us visualize the connections between our project determinants, implementation strategies and their mechanisms, and desired outcomes (see Figure 5).³¹ Ensuring such connections are made is critical to the long-term sustainment of EBPs.²⁶ We color-coded the model to make the relationships between corresponding items clear.

The HAPI prevention project officially kicked off on the target units in November 2022. The use of the electronic rounding tool allowed us to identify data trends over time and ensure the project was on track.

The data collected helped guide our team toward next steps in project maintenance and sustainability.³⁵

RESULTS

Feasibility and sustainability. After implementing the HAPI prevention bundle, we surveyed the nurses on the participating units for their perceptions of the project. Of the 85 respondents, 89% agreed that the project was feasible, 87% agreed that it met their approval, and 86% agreed it was a good match for their unit.

Effectiveness (adherence). Adherence to the bundled interventions—assessed using data from 1,318 audits—was 85% in August 2023, a 20% increase from November 2022, when the interventions were first implemented.

HAPI incidence. Lastly, we saw a 20% reduction in HAPIs on the participating critical care units following implementation of the HAPI prevention bundle, with a year-over-year reduction in five out of 10 months and a decreasing trend line (see Figures 6 and 7).

DISCUSSION

Our IS project harnessed the best evidence on preventing PIs and bundled it with the well-accepted Braden Scale assessment. Although none of the interventions

used in this project were novel, we implemented a back-to-the-basics evidence-based framework in which we put the patient first.

While we experienced several successes, our project was not without hurdles. Staff buy-in was a barrier at the beginning of the project, and at times throughout. Nurses were already familiar with the project interventions and the Braden Scale, so it was difficult to direct their focus toward using targeted interventions based on the Braden subscale scores instead of the total score. Leadership was both a barrier and a facilitator. For instance, some leaders were not fully on board with the project, which was reflected in less-than-positive attitudes about it. However, other leaders were invaluable in getting staff buy-in and promoting our project's success. These leaders helped ensure the availability of supplies, encouraged the use of the HAPI prevention bedside tool, and championed the consistent use of the turning clocks.

We capitalized on existing knowledge by bringing the Braden subscales to the forefront of PI assessment and prevention coupled with evidence-based interventions. The components of our project—the HAPI prevention bedside tool, the turning clocks, and the EHR widget—helped staff identify, communicate, and carry out individualized plans to prevent HAPIs. We also provided education on knowing when to escalate cases to the wound care nursing team and made available additional PI prevention resources and guidelines.

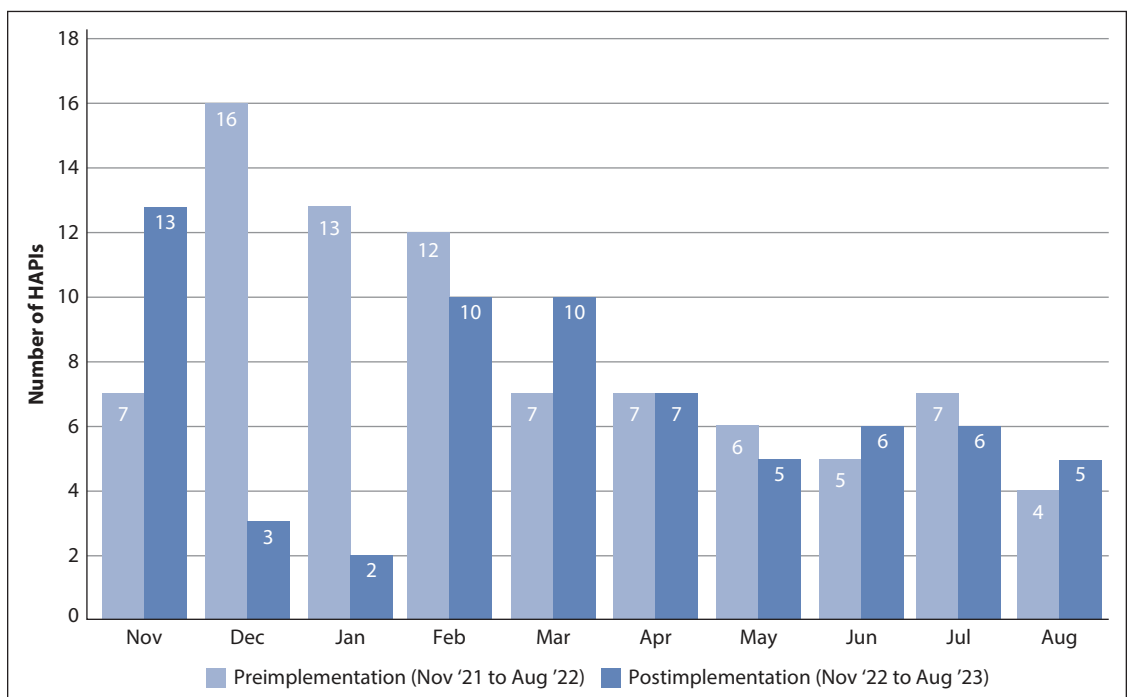
Utilizing IS principles to proactively address barriers and facilitators and using guided frameworks for implementation was critical to the project's success in demonstrating reduced HAPI rates over 10 months. In the postimplementation survey, respondents commented that the initiative helped their unit and was well received. The turning clocks were particularly popular with our clinical technicians in helping them partner with nursing to ensure patients were turned regularly.

Limitations. A limitation of this project is that there were several preexisting PI reduction strategies in place on the units. These strategies had varying levels of uptake and support throughout the organization and were not changed in this project, but rather reorganized according to the Braden subscales to promote individualized care. Additionally, because this work was not a research project, we did not assess data at the patient level and no predictive analysis was possible.

IMPLICATIONS FOR PRACTICE

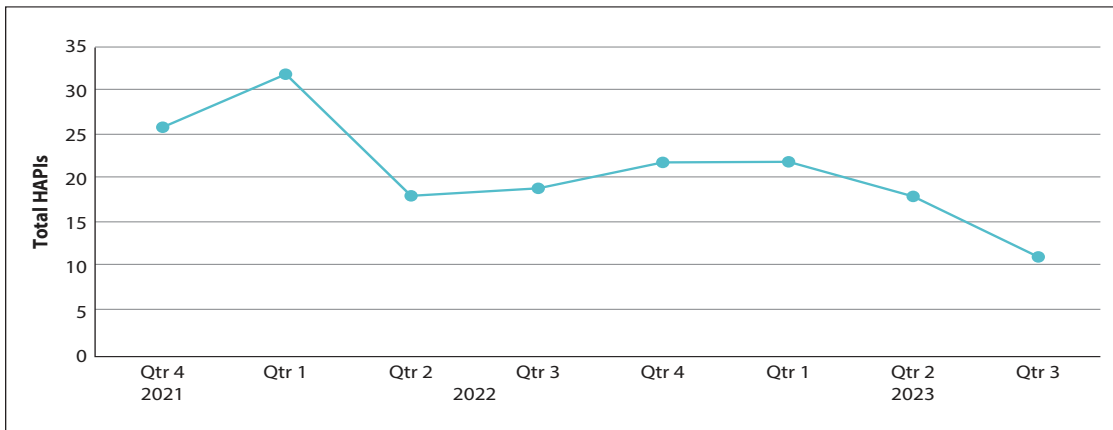
HAPI prevention is an integral part of patient care in the critical care environment. The literature supports the use of a HAPI bundle at the bedside and the Braden subscales to individualize PI prevention. However, evidence is not enough. Using IS frameworks, models, and tools pushed our project to higher levels of success and to sustainment over time. The project demonstrated that using implementation strategies, such as placing

Figure 6. HAPI Incidence Pre- and Postimplementation of the Prevention Bundle



HAPI = hospital-acquired pressure injury.

Figure 7. HAPI Incidence Trend Pre- and Postimplementation of the Prevention Bundle



HAPI = hospital-acquired pressure injury.

Note: The preimplementation period was November 2021 to August 2022; the postimplementation period was November 2022 to August 2023.

information at the bedside for use by the whole team and involving the patient and family in PI prevention, leads to better patient outcomes.

Implications for practice involve considering a PI prevention workflow that addresses each unit's unique culture and varying nurse-to-patient and tech-to-patient ratios. IS underscores that context matters. Units faced with staffing challenges and nurses juggling competing priorities could benefit by setting clear expectations for technicians on how and when to turn patients. Wound care nurses are a valuable resource for early intervention and ensure that the most up-to-date interventions and equipment are used by bedside teams. Developing a sustainable HAPI prevention plan requires a deep dive into organizational context and the inner workings of each unit. Embracing challenges and fostering openness to change is achievable.

Additional implications for practice relate to the practice of IS itself. IS is a set of relatively new methods for implementing change. Each method is designed to address those factors involved in making a change "stick." As with any change, the first step is to define the problem. Often the problem is not well defined or is defined from just one perspective (from the project team or leadership, for example, and not the bedside team). Literature and guideline review can also help to define the approach to the problem.

IS complements usual change processes, including the identification of stakeholders, the use of process maps, planning the actual EBP implementation, and evaluation of the project. Unique processes of IS include assessing determinants; mapping determinants to implementation strategies and enacting these strategies; obtaining consistent feedback throughout from stakeholders; and taking a broader view of project evaluation, as guided by Proctor and colleagues.²⁹ Among the most challenging aspects of these processes

are the constant bidirectional flow of information required to feed the process and the tendency to use larger numbers of implementation strategies, rather than targeted strategies. All IS elements are important and components cannot be used in isolation, or else a risk of partial implementation and lack of sustainment exists. Robust use of the frameworks, tools, and methods occurs with comprehensive training in the IS process. Engaging team members who are ready and willing to stick with a long-term process is also key. This work is not a quick fix.

In IS, potential pitfalls include insufficiently assessing project barriers and facilitators and inaccurately or inadequately mapping implementation strategies. When done sufficiently and accurately, these two factors are key in sustaining results.²⁶ Providing project oversight to assess these factors over time makes sense.

NEXT STEPS

In October 2023, we presented the project and its results at our Shared Governance Nursing Congress meeting and recommended expanding the initiative to all inpatient adult units in the health system. This demonstrates the sustainment strategy of disseminating findings internally and reporting to senior leaders.³⁵ The Nursing Congress approved the expansion, and the IS team began working with the HAPI subcommittee of our system's skin committee to implement the project systemwide. The skin committee is a multidisciplinary team that includes CWOCNs; its HAPI subcommittee, which comprises staff from each hospital, was charged with assisting with implementation in collaboration with the IS specialists and members of the professional practice team.

Next, we presented the project to each hospital's nursing leadership group to outline its scope and discuss implementation and sustainability. We also presented it at the unit-based level to facilitate discussion with key

stakeholders and garner feedback. These key stakeholders will be able to assist with any additional unique barriers and facilitators that could potentially affect the success of the project on their unit. The HAPI prevention project expansion is now in the early stages of systemwide implementation. ▼

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