

**Implementing Two-Nurse Admission Skin Assessments to Reduce Hospital Acquired  
Pressure Injuries**

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### Abstract

**Problem & Purpose:** A medical-surgical unit in an academic center in the northeastern US identified a challenge with nursing staff needing to document pressure injuries on admission regularly. This unit had a three-fold increase in hospital-acquired pressure injuries (HAPIs) in the calendar year 2022 compared to 2020. Zero patients admitted to the unit had a two-nurse skin assessment documented on admission between July and September 2022. This project aimed to increase the frequency of pressure injuries identified on admission by a two-nurse skin assessment protocol and to decrease the number of HAPIs charged to the unit. **Methods:** Two RNs visualized the patient's skin on admission and completed assessment documentation. The project lead completed chart audits on all patients admitted to the unit and entered data into a HIPAA-compliant secure server, REDCap. The unit has 18 beds, 31 staff RNs, and one Wound Ostomy Continence Nurse (WOCN). During project implementation, the unit received 345 patient admissions. Stakeholders included the nurse manager, assistant manager, and hospital-based Clinical Nurse Specialist. **Results:** Compliance with the two-nurse admission skin assessment completion averaged 39%, and compliance with WOCN consult placement averaged 75%. Two HAPIs were charged to this unit during the project. **Conclusions:** There was suboptimal compliance with an assessment completion due to low RN staffing and high staff turnover. This low-cost improvement project has a possible high return on investment. Literature suggests that the best HAPI prevention occurs when combining a two-nurse admission skin assessment with other methods in a bundle approach, which could be a future consideration.

*Keywords:* hospital acquired pressure injury, admission skin assessment, wound ostomy continence nurse consult.

## **Implementing Two-Nurse Admission Skin Assessments to Reduce Hospital Acquired Pressure Injuries**

In 2016, the Agency for Healthcare Research and Quality (AHRQ) estimated a total of 677,000 patients suffered from a hospital acquired pressure injury (HAPI) in addition to their admitting diagnosis during their hospital stay (AHRQ, 2019). The Centers for Medicare and Medicaid Services (CMS) authorize payment for a pressure injury if documentation of this diagnosis occurs within twenty-four hours of admission (CMS, 2017). If documentation does not happen within the twenty-four-hour window, CMS will refuse payment for the pressure injury treatment, forcing the institution to bear the full expense.

A medical-surgical unit in a large academic center in the northeast US identified a unit-based challenge with nursing staff not regularly completing and documenting pressure injuries on admission. This unit found a three-fold increase in HAPIs in the calendar year 2022 as compared to the calendar year 2020. A chart review conducted between July and September 2022 of all adult patients cared for on this unit revealed that zero patients had a two-nurse skin assessment documented on admission. The lack of completion of a skin assessment on admission leaves opportunity for missed pressure injuries, forcing the hospitals to assume the burden of these injuries, and imposing the cost entirely on the hospital. Each HAPI adds an estimated \$14,506 to a hospital stay and costs the nation up to \$26.8 billion annually (AHRQ, 2019; Padula & Delarmente, 2019).

This project aimed to increase the frequency of pressure injuries identified on admission by a two-nurse skin assessment protocol and to decrease the number of HAPIs charged to the unit.

### **Available Knowledge**

The project lead completed a root cause analysis to understand the causes behind the increase in HAPIs on this unit. Figure 1 displays a fishbone analysis of the practice problem. The root causes identified included: (a) poor staffing, (b) high nurse-to-patient ratios, (c) lack of staff knowledge of HAPI prevention, and (d) the lack of admission skin assessments. A literature review identified the best available evidence to support the implementation of admission two-nurse skin assessments to prevent HAPI charges to the unit.

Tayyib and Lewis (2016) reported that the use of an admission skin assessment within a HAPI prevention bundle significantly lowered HAPI incidence in a critical care unit. Another study by Sving et al. (2016) demonstrated a decrease in HAPI incidence in a unit after the unit implemented pressure injury prevention interventions, including an admission-skin assessment. Tervo-Heikkinen et al. (2022) found that not completing a pressure injury risk and skin assessment can increase the risk of HAPI by fifteen percent. Several other studies revealed decreased HAPI incidence through the implementation of a pressure injury prevention bundle which included an admission skin assessment (Edsberg et al., 2022; Gupta et al., 2020; Kallman et al., 2022). The literature review revealed that the addition of a two-nurse skin assessment on admission has reduced pressure injury incidence on in-patient units. Appendix A displays the full evidence review table. Appendix B displays the evidence synthesis table completed based on this literature review.

### **Rationale**

The framework for implementing the two-nurse skin assessment in this medical-surgical unit was the Promoting Action on Research Implementation in Health Services (PARIHS) framework (Bergström et al., 2020). Figure 2 displays the PARIHS framework used in this

quality improvement project. The PARIHS framework describes the successful implementation as the function of quality evidence; the context of the implementation includes the culture of the unit and leadership, and the manner of facilitation of the process (Bergström et al., 2020). Ample evidence supports completing an admission skin assessment as a successful aid in HAPI prevention. Similar units in the same hospital reduced HAPI incidence by implementing a two-nurse admission skin assessment. Implementing a two-nurse skin assessment on this medical-surgical unit required a change in the unit's current practice and procedure. The culture of the unit was conducive to such a change. Staff education attained unit staff buy-in and helped ensure plausibility of the practice shift to aid in successful implementation.

## **Methods**

Implementation of the two-nurse skin assessment occurred in adult medical-surgical unit. The unit's patient population consisted of adult patients with various socio-economic backgrounds and primary diagnoses. The nurses cared for four to five patients, and the patient care technicians cared for up to 12 patients per twelve-hour shift. A charge nurse was available for assistance and a Wound Ostomy Continence Nurse (WOCN) was available to consult for assistance with wound management. A manager and an assistant manager helped with project implementation.

The unit culture promoted change, improvement, and progression. Staff members were receptive to new initiatives and education. During implementation, the unit struggled to maintain adequate staffing and the bedside staff regularly worked under-staffed. The unit was budgeted to function with a 1:4 nurse to patient ratio with a charge nurse that did not have an assigned patient load. During implementation, the unit frequently worked under a 1:5 nurse to patient ratio with the charge nurse having their own patient load. The workloads of the nurses and patient care

technicians had recently increased, causing many staff members to report experiencing burnout. The nurse's heavy workload was taken into consideration when planning the implementation.

Before implementation, nurses in this unit did not complete an admission skin assessment on patients coming to the unit. The nurses' admission process included the primary nurse completing a generalized nursing assessment, the patient care technician obtaining admission vital signs, and the unit clerk notifying providers of the patient's arrival. The nurse was previously required to document a full assessment on each assigned patient within twelve hours. The primary nurse typically admitted their patient alone, without assistance from another nurse. The culture on the unit did not include performing a thorough skin assessment upon admission. Instead, completing a focused skin assessment on any present wounds that the nurse or patient was aware of was typical. Hospital policy required nurses to document a skin assessment twice daily, although completion of this inconsistent. The implementation of the two-nurse admission skin assessment targeted changes in unit culture and procedures to close this practice gap.

Staff were educated on the practice change during week one of project implementation during the monthly staff meeting and two shift-change huddles. All educational material for staff to review was included in an email sent to all staff nurses, including those unable to attend education sessions in person. See Appendix C and D for the initial educational material given to staff. Implementation and data collection occurred over the next 14 weeks following week one of staff education.

After implementation, the admission process still included the nurse completing a full patient assessment, the patient care technician obtaining vitals, and the unit clerk notifying the provider of the patient's arrival. All patients admitted to the unit underwent a complete skin assessment by two registered nurses within 24 hours of unit admission. Within 24 hours of

admission, two nurses (one being the primary nurse) visualized the patient's skin, including high-risk pressure injury sites (tops of ears, elbows, sacrum, groin, heels, and any other existing wounds).

The primary nurse documented the completion of the skin assessment in the electronic health record (EHR) during their shift, and the second nurse co-signed the documentation. If a wound was present on admission, the primary nurse documented the wound's existence and assessment in the nursing wound-drains-airways flowsheet and placed a consult for the WOCN to see the patient. The WOCN then saw the patient within two days of consult request to assess the wound further and develop a care plan. See Appendix E for the initial admission process on this unit and Appendix F for the admission process including the implemented practice change.

The project lead (PL) conducted weekly chart audits on completion of the two-nurse admission skin assessment and reviewed all patients admitted to the unit. In addition, the PL reviewed the unit admissions book weekly to ensure all patient admissions were included in data collection and audited.

The PL, recognizing the crucial role of the staff, sought their formal commitments to the implementation after the initial education was completed. The PL also held intermittent drop-in educational sessions once a week throughout the implementation period, underlining the significance of this practice change and providing information on the new documentation requirements. Incentive structures such as staff pizza parties, provided by the project lead, were provided for staff when they met compliance benchmarks of 50% documentation compliance for a single week. Communication was kept open with staff about the progress of the project during monthly staff meetings and through weekly emails. Lastly, visual documentation reminders were

placed throughout the unit, on computers and on the nurses' station to help cue nurses to complete the needed documentation.

The measures studied were completion rates of the two-nurse skin assessment for any patient admitted to the unit, completion rates of the WOCN consult ordered (if not already placed by a prior nurse) for any patient admitted to the unit with an existing wound, and the HAPI incidence on the unit. The time frame for all measures is from the start of implementation to the end of the study (September 3, 2023, through December 9, 2023).

The completion rate of the two-nurse skin assessment was operationalized as follows: The numerator was the number of admitted patients to the unit with a documented two-nurse skin assessment within 24 hours of admission; the denominator was the total number of admitted patients to the unit. This measure aimed to have a 100% completion rate for documenting a two-nurse skin assessment within 24 hours of unit admission.

The completion rate of a WOCN consult request was operationalized as follows: The numerator was the number of admitted patients with a documented pressure injury on admission that had an active WOCN consult within 24 hours of unit admission (or already placed before unit admission); the denominator was the total number of admitted patients with a documented pressure injury on admission. This measure aimed to have 100% completion rate for an active WOCN consult for any patient admitted to the unit with an existing wound.

The measure chosen to track improvement in HAPI incidence was the amount of HAPIs charged to the unit during the implementation period. These data were available by monthly reports on the hospital-wide intranet and was pulled from the site by the PL.

The project lead completed all chart audits and entered all data into two chart audit tools. See Appendices G and H.



This project required International Review Board (IRB) designation as non-human subject research (NHSR). The PL received IRB consent and approval for NHSR on July 20, 2023. The PL was an employee by the project site hospital during implementation but did not work on the specific unit where implementation occurred. The PL ensured confidentiality of data by utilizing REDCap, a HIPAA-compliant database tool which was password protected and required duo-authorization to access. The PL adhered to expected privacy and confidentiality measures during all patient and staff encounters. Identifiers were coded as such within the REDCap system and were removed prior to downloading necessary data. Data were accessible to the PL and overseeing faculty only. The PL completed data analysis and disseminated data only in the aggregate without any patient identifiers.

## **Results**

The PL completed The Single Chart Audit on all 345 patients admitted to the medical-surgical unit during the 15-week project implementation. The PL included all audits in data collection; 136 patients underwent a two-nurse admission skin assessment within 24 hours of unit admission. The project goal was 100% completion and documentation of the two-nurse admission skin assessment within 24 hours of unit admission, and there was an average of 39% completion rate. Eight patients refused for the nurse to complete a two-nurse admission skin assessment and staff documented each refusal in the EHR. See Appendix I for a run chart displaying weekly data of the completion rate of the two-nurse admission skin assessment.

Compliance with the two-nurse admission skin assessment documentation was well below the project goal of 100% compliance. In the first five weeks of data collection there was a downward trend of compliance percentages, with the low reaching 9% compliance in week 5.

During those first five weeks, the project lead rounded on the unit once a week, typically during day shift, and sent out bi-weekly emails to staff to re-educate and update on data progression.

Starting week 6 and continuing through week 9, there was an upward trend in compliance with the peak reaching 58% documentation compliance in week 9. During week 6 through week 9, the project lead sent out weekly emails including data from the week to re-engage and motivate staff. The PL provided a staff pizza party during week 8 to celebrate greater than 50% documentation compliance. During week 9, the PL promised a dessert party to all staff when documentation surpasses 75% compliance.

A single decrease in compliance occurred in one data point during week 10 followed by an upward run above the median line through the end of implementation. During week 10, the PL re-engaged staff by sending out bi-weekly staff emails to recognize compliant staff. The PL also continued to round once a week on the unit and attended the unit's monthly staff meeting to keep communication open. Week 7 was the first week the compliance reached 50% and the PL rewarded staff with a pizza party during week 8.

During the two-nurse skin assessments, RNs discovered 103 wounds present on admission, and 78 of those patients had a WOCN consult placed within 24 hours. The project goal was 100% compliance with placing a WOCN consult for all wounds present on admission and there was an average of 75% compliance of WOCN consult placement. See Appendix J for a run chart displaying weekly data of compliance with WOCN consult placement within 24 hours of unit admission.

Compliance with WOCN consult placement started high at around 64% compliance. The run chart revealed little to no runs, trends, and shifts indicating little impact in data from the intervention. Week 8 through 11 did show a downward run of four data points. During week 10

the PL re-engaged staff with bi-weekly staff emails to recognize compliant staff. Consults then increased during week 12 data collection.

During data collection, two HAPIs occurred on the unit, on the same patient, and necessitated charges to the unit's cost center. Both HAPIs occurred during week two of implementation. Staff did not complete a two-nurse admission skin assessment on the patient that developed the HAPIs and did not document wounds on admission. The project goal was to have zero HAPI incidence on the unit during implementation and there were two HAPIs. After week 2 of data collection, no more HAPIs occurred on the unit. See Appendix K for a run chart displaying weekly data of HAPI incidence.

### **Discussion**

Frequent staff turnover and the use of supplemental staffing were large barriers to providing staff education and limited the ability to ensure all nurses on the unit understood required admission process changes and documentation. Chart audits revealed that most patients who did not undergo a two-nurse admission skin assessment received care from a nurse who was not regular unit staff. A large amount of supplemental staffing seems a likely reason for low compliance with two-nurse admission skin assessment completion. Multiple nurses reported they had trouble finding a second nurse during patient admission to complete the two-nurse admission assessment and the co-sign documentation in the EHR. Difficulty finding a second nurse during limit the primary nurse's ability to complete the two-nurse admission skin assessment during unit admission.

There is little-to-no cost associated with the implementation of the two-nurse admission skin assessment. The documentation requirements are already present in the current EHR and therefore there is no need for EHR changes. The average time to complete the two-nurse

admission skin assessment and documentation is about 10 minutes. This process change does add an additional process step for nurses, requesting a second nurse co-sign when completing the initial nurse assessment. This step takes minimal time, approximately 5 minutes per admission, making the total time spent approximately 15 minutes. The average salary of a nurse at this institution is \$44 an hour. Therefore, the estimated cost for a single assessment is about \$11. This change has the potential of saving the hospital over \$14,000 per wound caught on admission. The two-nurse skin assessment is a low-cost, low-risk implementation method with promising results to decrease HAPI charges on a medical-surgical unit.

Compliance with WOCN consult placement was consistently high during data collection. A total of 78 wounds were caught on admission and had a WOCN consult placed within 24 hours of admission. During the two HAPI occurrences on the unit, lack of WOCN consult referral did not contribute to these occurrences. Staff feedback revealed that placing a WOCN consult took little time and did not disrupt their previous workflow. Therefore, having WOCN consult requirements for all patients with a wound present on admission should continue as it has no cost and only a minor impact on current nursing workflow.

The hospital-based skin care committee further investigated the two HAPIs that necessitated charges to the unit during implementation. Both HAPIs were attributed to a medical device used on the patient during hospital admission. The wounds were found 6 days into patient admission after a unit transfer to a higher level of care. Although a two-nurse admission skin assessment was not documented on unit admission, nursing documentation indicated that no wounds were present on admission. It is likely that a two-nurse admission skin assessment would not have prevented these wounds from occurring.

Since data collection ended, nurses have continued to complete the two-nurse admission skin assessment. Senior clinical nurses have added auditing the skin assessment to their regular monthly audits. Regular auditing will help continue to hold nurses accountable and ensure that nurses are continuing to complete and document the admission skin assessment. The implementation of the two-nurse skin assessment has great support from the unit's assistant manager who conducts monthly staff meetings. The assistant manager also plans to continue to keep the skin assessment on the agenda at upcoming staff meetings to remind staff. The hospital-based skin care committee has plans to implement the two-nurse admission skin assessment as a requirement hospital-wide throughout all units. The low-cost, low-risk nature of this process change makes it a great candidate to be added to all units' admission process to help in HAPI prevention.

Results from this quality improvement project were congruent with what was expected from the available evidence (See Appendix A for Evidence Review Table). HAPIs did decrease on the unit when compared with data from the previous calendar year; the introduction of the two-nurse admission skin assessment may be an associated factor. In the available evidence, the assessment was frequently used in combination with multiple other HAPI prevention efforts in a bundle approach. Therefore, going forward, the introduction of a full HAPI prevention bundle, including the two-nurse admission skin assessment, can be beneficial to the unit to further enhance HAPI prevention.

### **Conclusion**

HAPI prevention is an ongoing effort that can always be improved upon. HAPIs are known to increase the cost of individual hospital stays as well as extend hospital stays and should be prevented to decrease hospital costs and improve patient outcomes. The implementation of a

two-nurse admission skin assessment on a medical-surgical unit has potential to decrease HAPIs on the unit by increasing documentation of existing wounds on patient admission. This is a nursing-based initiative that can be implemented with minimal cost and minimal risk. While it cannot fully prevent HAPIs from occurring, it has the potential to increase documentation of wounds on admission, preventing the unit from being charged with the prior-existing wound's costs.

Documentation of the two-nurse admission skin assessment had relatively low compliance with nurses on the medical-surgical unit. It was difficult to consistently get staff nurses to request and complete a co-sign documentation process because of short staffing, high patient-nurse ratios, and high staff turnover rates. This can hinder the likelihood to sustain this initiative. While it is a low-cost, low-risk option to HAPI prevention, these barriers limit the likelihood that this specific unit can sustain this process change.

Future expansion of this initiative would be beneficial to HAPI reduction. This initiative can be incorporated with a bundle approach including further HAPI prevention education, patient turning, and specialty mattress to mimic the best available evidence. The initiative took the first steps at introducing HAPI prevention methods on this unit and can be built upon in the future to add additional components. There were barriers to documentation compliance, the unit culture is supportive and would welcome future initiatives to decrease HAPIs.

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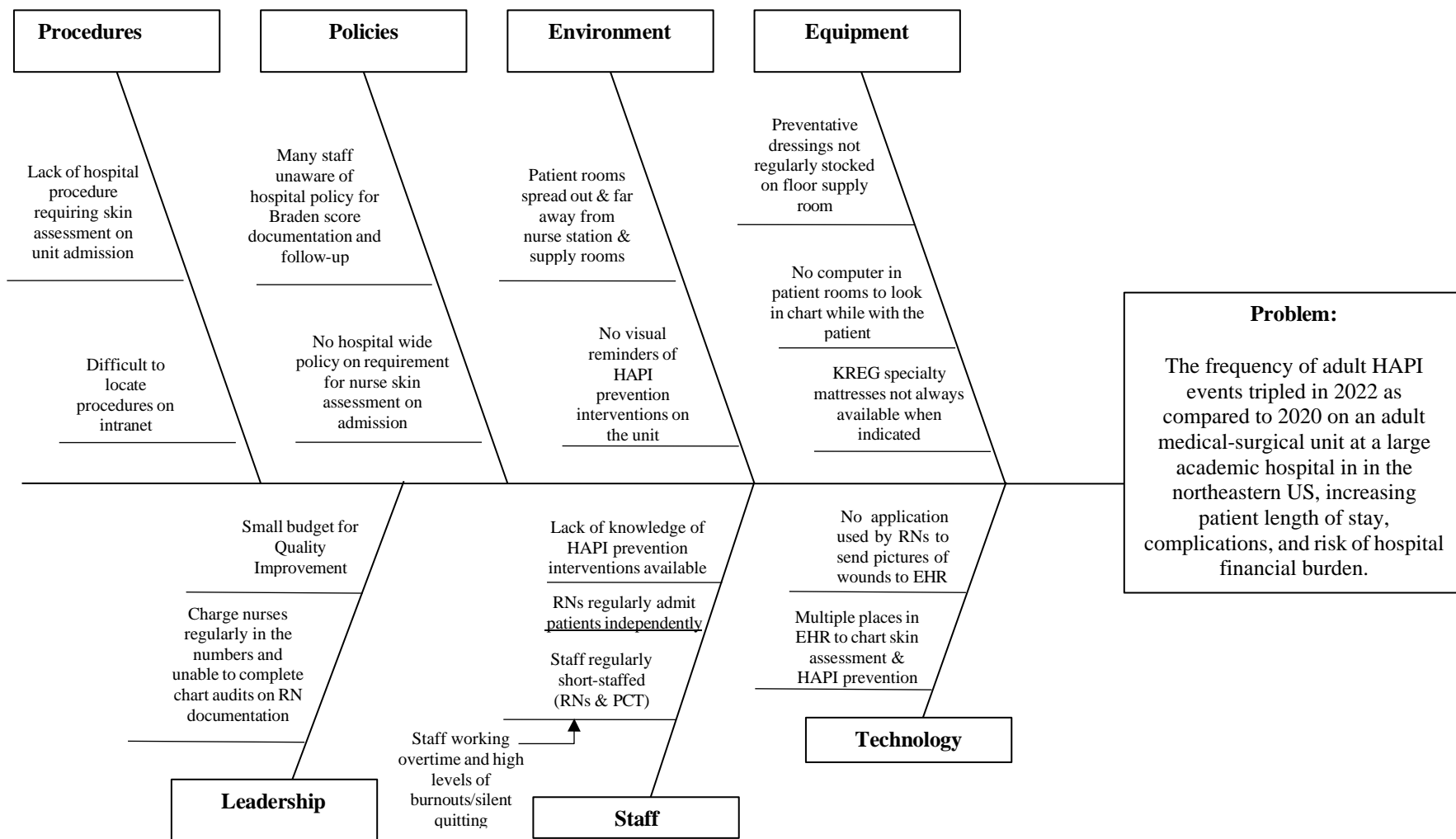
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Figures

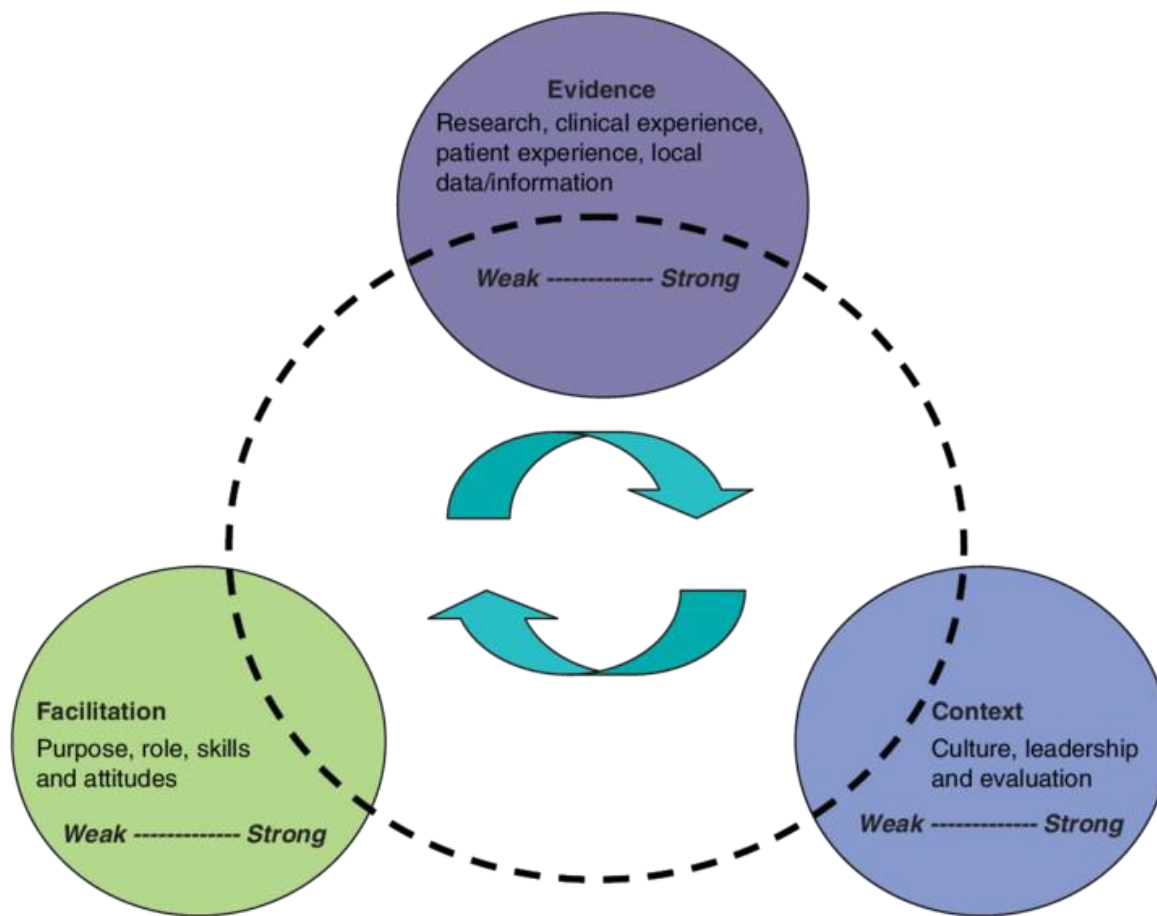
Figure 1

*Fishbone Analysis of HAPI events on a Medical-Surgical Floor*



**Figure 2**

*PARIHS Framework*



Boll & Kristensen, 2009

Appendix A

Evidence Review Table

Citation #1: <span style="float: right;">Level (JHNEBP): III</span>					
Sving, E., Hogman, M., Mamhidir, A. G., & Gunningberg, L. (2016). Getting evidence-based pressure ulcer prevention into practice: a multi-faceted unit-tailored intervention in a hospital setting. <i>International Wound Journal</i> , 13(5), 645-654. <a href="https://doi.org/10.1111/iwj.12337">https://doi.org/10.1111/iwj.12337</a>					
Purpose or Hypothesis	Type of Evidence and Research Design	Sample (population, size, setting)	Intervention Procedures	Primary Outcome/Measures	Results Conclusions
<p>“The aim of the study was to evaluate whether a multi-faceted, unit-tailored intervention using evidenced-based pressure ulcer prevention affects the performance of pressure ulcer prevention, the prevalence of pressure ulcers and knowledge and attitudes concerning pressure ulcer prevention among registered and assistant nurses.”</p>	<p>Quasi-experimental cluster study; pre &amp; post-test design</p>	<p><b>Population:</b> registered nurses, assistant nurses, and patients admitted to the unit</p> <p><b>Size:</b> Nurses: 169 registered nurses eligible, 145 participated Patients: 251 patients participated in the pre-test and 255 in the post-test surveys</p> <p><b>Setting:</b> 3 surgical and 2 medical units in a 344-bed general hospital in Sweden</p>	<p><b>Intervention:</b> Patients: Pressure injury prevention bundle (risk and skin assessment documented within 24 hours of admission to the unit, use of pressure redistributing material in bed and in chair, pressure relief/offload of heels, following a turning schedule in bed and in chair, use of sliding sheets in bed and use of other equipment to reduce pressure on the skin) Nurses: 1-day training for nurses -Nurses attended a 1-day training on HAPI prevention. A pre-training and post-training test were completed by each nurse in attendance. Quality measures gathered monthly</p>	<p><b>Measures:</b> Patients: pressure ulcer prevalence assessment (European Pressure Ulcer Advisory Panel), Modified Norton Scale to assess risk for developing pressure ulcers. Nurses: PUKAT knowledge assessment tool</p> <p><b>Outcomes Measures:</b> pressure ulcer prevention, prevalence of pressure ulcers and the nurses’ knowledge and attitudes concerning pressure ulcer prevention</p>	<p>After the training, more patients were provided pressure ulcer prevention (p=0.001), more prevention care was given &amp; more patients assessed for pressure injury risk (p=0.021).</p>
Citation #2: <span style="float: right;">Level (JHNEBP): I</span>					

Tayyib, N., Coyer, F., & Lewis, P. A. (2016). A two-arm cluster randomized control trial to determine the effectiveness of a pressure ulcer prevention bundle for critically ill patients. *Journal of Nursing Scholarship*, 47(3), 237–247. <https://doi.org/10.1111/jnu.12136>

Purpose or Hypothesis	Type of Evidence and Research Design	Sample (population, size, setting)	Intervention Procedures	Primary Outcome/Measures	Results Conclusions
<p>“This study tested the effectiveness of a pressure ulcer (PU) prevention bundle in reducing the incidence of PUs in critically ill patients in two Saudi intensive care units (ICUs).”</p>	<p>A two-arm cluster randomized experimental control trial</p>	<p><b>Population:</b> All patients 18 years or older admitted to the ICU &amp; were expected to stay in ICU for more than 24 hours</p> <p><b>Size:</b> Control Group: 70 participants (with a total of 728 days of observation)</p> <p>Intervention Group: 70 participants (784 days of observation)</p> <p><b>Setting:</b> 2 Saudi Arabian tertiary referral hospital ICUs</p>	<p><b>Control:</b> Received standard skin care as per the local ICU policies</p> <p><b>Intervention:</b> Received the PU prevention bundle</p> <p>-Trained staff on PU bundle and participant’s assessed skin regularly every 48 hours, to avoid any detection bias and ensure reliability of the PU assessment.</p> <p>Researcher visited ICU every other day to screen, recruit, and collect data using the data collection tools. Patients were followed until discharge, death, or up to a maximum of 28 ICU days, whichever occurred first.</p>	<p><b>Measures:</b> A baseline survey was completed including demographic and baseline clinical data. Daily patient data was also collected including Braden risk score, Sequential Organ Failure Assessment (SOFA) score, a skin assessment tool, and PU staging. Further, processes of care (i.e., bundle delivery) were measured. Data collection tools were revised by a panel of six expert nurses.</p> <p><b>Outcome Measures:</b> PU Incidence</p>	<p>PU incidence was significantly lower in the intervention group (7.14%) compared to the control group (32.86%).</p> <p>Regression revealed the likelihood of PU development was 70% lower in the intervention group.</p> <p>The intervention group had significantly less Stage I (<math>p = .002</math>) and Stage II PU development (<math>p = .026</math>).</p>
<p><b>Citation #3:</b></p>					<p><b>Level (JHNEBP): III</b></p>

Tervo-Heikkinen, T., Heikkila, A., Koivunen, M., Kortteisto, T., Peltokoski, J., Salmela, S., Sankelo, M., Ylitormanen, T., & Juntilla, K. (2022). Pressure injury prevalence and incidence in acute inpatient care and related risk factors: A cross-sectional national study. *International Wound Journal*, 19(4), 919-931. <https://doi.org/10.1111/iwj.13692>

Purpose or Hypothesis	Type of Evidence and Research Design	Sample (population, size, setting)	Intervention Procedures	Primary Outcome/Measures	Results Conclusions
<p>“The aim of this national cross-sectional study was to explore the prevalence of pressure injuries and incidence of hospital-acquired pressure injuries, and the relating factors in somatic-specialized inpatient care in Finland”</p>	<p>Multicentered cross-sectional observational study</p>	<p><b>Population:</b> Patients from inpatient units, rehabilitation units, and emergency follow-up units in Finnish health care organizations</p> <p><b>Size:</b> 15 hospitals, 503 units, and 5902 participants</p> <p><b>Setting:</b> in-patient units (somatic inpatient, rehabilitation, and emergency follow-up)</p>	<p>All adults on eligible units were recruited to participated (N=11,252) with no exclusion criteria. Patients gave their informed consent to participate (n=6160).</p> <p>Data was collected in two stages</p> <ul style="list-style-type: none"> <li>-Observational Data (assessment of skin, presence &amp; location of pressure injury &amp; if injury was related to device)</li> <li>-Background information (height, weight, age, gender, smoking status, mobility, mode of arrival to hospital, primary diagnosis, malnutrition risk, procedures underwent, skin assessment and outcome on admission)</li> </ul>	<p><b>Primary Outcome:</b> Pressure Injury Prevalence</p> <p>Variables measured: Unit type, hospital type, patient age, patient gender, patient BMI, patient smoking status, PI prevalence, HAPI prevalence, PI on admission, skin assessment completion, procedure, mode of arrival, primary diagnoses, PI risk calculated</p>	<p>Not completing PI risk assessment &amp; skin assessment on admission can increase HAPI risk 15-fold</p> <p>Surgical procedures increase HAPI risk 6-fold</p> <p>Medical patients were more likely to develop HAPI if admission skin assessment is not completed.</p>
<p><b>Citation #4:</b></p>					<p><b>Level (JHNEBP): III</b></p>

<p>Lin, F., Wu, Z., Song, B., Coyer, F., &amp; Chaboyer, W. (2020). The effectiveness of multicomponent pressure injury prevention programs in adult intensive care patients: A systematic review. <i>International Journal of Nursing Studies</i>, 102, 1-14. <a href="https://doi.org/10.1016/j.ijnurstu.2019.103483">https://doi.org/10.1016/j.ijnurstu.2019.103483</a></p>					
Purpose or Hypothesis	Type of Evidence and Research Design	Sample (population, size, setting)	Intervention Procedures	Primary Outcome/Measures	Results Conclusions
<p>The aim of this study is to evaluate the effectiveness of pressure injury prevention programs in reducing pressure injury prevalence and incidence in adult ICU populations and to appraise the program components/strategies used.</p>	<p>Systematic review of a combination of RCTs, quasi-experimental and nonexperimental studies</p>	<p><b>Sampling Technique:</b> Original peer reviewed studies and quality improvement studies included. Search completed on MEDLINE, PubMed, EMBASE, Ovid, CINAHL, and Cochrane Library.</p> <p><b>Eligible:</b> A total number of 21 papers included that met inclusion/exclusion criteria</p> <p>-Inclusion/ Exclusion Criteria: conducted in adult ICU, published in English or Chinese, multicomponent intervention, reported on implementation strategies, reported on program outcomes</p>	<p>Data extracted includes</p> <ul style="list-style-type: none"> <li>-author/year/country</li> <li>-sample &amp; setting</li> <li>-intervention/results</li> <li>-quality improvement assessment scores</li> </ul>	<p><b>Outcome Measures:</b></p> <p><u>Patient outcomes</u></p> <ul style="list-style-type: none"> <li>-changes in pressure injury incidence</li> <li>-pressure injury prevalence</li> <li>-incidence of pressure injury in stages</li> </ul> <p><u>Care process outcomes</u></p> <ul style="list-style-type: none"> <li>-compliance in intervention protocols</li> <li>-patient/staff satisfaction rates</li> <li>-participation rates</li> </ul> <p><u>Organizational outcomes</u></p> <ul style="list-style-type: none"> <li>-hospital &amp; ICU length of stay</li> <li>-cost to treat pressure injuries</li> </ul>	<p>Majority of the studies found a significant decrease in pressure injury incidence and period prevalence.</p> <p>Skin assessment, use of a skin barrier product, repositioning, and support surface use were commonly used in included papers, which is consistent with the recommendations from international clinical practice guide-lines.</p> <p>Success or outcome of pressure injury prevention did not have a relationship with the number of components in their implementation.</p> <p>Positive outcomes comes and strong theoretical rationales for the components in the programs suggest they are beneficial.</p>
<p><b>Citation #5:</b></p>					<p><b>Level (JHNEBP): II</b></p>

Kallman, U., Hommel, A., Borgstedt Risberg, M., Gunningberg, L., Sving, E., & Baath, C. (2022). Pressure ulcer prevalence and prevention interventions – A ten-year nationwide survey in Sweden. *International Wound Journal*, 19(7), 1736-1747. <https://doi.org/10.1111/iwj.13779>

Purpose or Hypothesis	Type of Evidence and Research Design	Sample (population, size, setting)	Intervention Procedures	Primary Outcome/Measures	Results Conclusions
<p>“The aim of this study was to describe pressure ulcer prevalence and prevention interventions in hospital care in Sweden based on nationwide surveys conducted over a 10-year period.”</p>	<p>Cross-sectional research survey design</p>	<p>Population: patients admitted to hospital in Sweden between 2011-2020.</p> <p>-Inclusion/exclusion criteria: all adults (≥18 years) who were admitted to the unit before 7 am on the day of each survey</p> <p>N&gt;130,000 patients</p>	<p>During the week in March between 2011-2020 surveys were sent out to all adults that met criteria in all Sweden hospitals.</p> <p>Survey completed by two nurses face-to-face with patient &amp; EHR</p> <p>Data gathered from EHR – admission skin assessment, risk assessment, demographics, &amp; frequency of interventions</p>	<p><b>Measures:</b> Surveys included patient gender, age, skin assessment, risk assessment, and preventive interventions they had been part of at the time of the survey (type of mattress and seat cushion in use, heel protection, sliding sheets, and repositioning intervals), Modified Norton scale score, &amp; pressure injury prevalence</p> <p>HAPIs were identified by visual skin assessment of the patients. Existing PUs were categorized according to the EPUAP–NPIAP-PPPIA classification system</p>	<p>The number of patients who were risk and skin assessed within 24 hours of hospital admittance increased over the years from 14.1 respectively 32.4% in 2011 to 51.1 respectively 70.2% in 2020</p> <p>Within 10 years of implementation of a national patient-safety program, HAPI prevalence in hospitalized patients decreased from 17.0% to 11.4%, while preventive measures such as the use of pressure-reducing mattresses, sliding sheets, heel protection, skin assessments, and repositioning plans increased.</p>

**Citation #6:** Gupta, P., Shiju, S., Chacko, G., Thomas, M., Abas, A., Savarimuthu, I., Omari, E., Al-Balushi, S., Jessymol, P., Mathew, S., Quinto, M., McDonald, I., & **Level (JHNEBP): III**



Andrews, W. (2020). A quality improvement programme to reduce hospital-acquired pressure injuries. *BMJ Open Quality*, 9(3). <https://doi.org/10.1136/bmjog-2019-000905>

Purpose or Hypothesis	Type of Evidence and Research Design	Sample (population, size, setting)	Intervention Procedures	Primary Outcome/Measures	Results Conclusions
<p>The hypothesis is “that implementation of a bundle approach to apply the already proven preventive measures would result in substantial improvement in their use, and consequently in the prevalence of PI. Goal is to achieve a 60% reduction in hospital acquired HAPI in inpatient units of HH, Doha, by 31 December 2018.”</p>	<p>Pre &amp; post implementation comparative study</p>	<p><b>Population:</b> Patients admitted to Heart Hospital (CTICU) <b>Size:</b> unknown size – all adult admitted patients to CTICU <b>Setting:</b> Heart Hospital in Doha, Qatar. 12-bed Cardiothoracic Intensive Care Unit (CTICU)</p>	<p>Staff implemented SSKIN bundle including making sure patient is on the correct support surface, early and regular skin assessment, patient turning, moisture management, and nutritional/fluid management</p>	<p><b>Measures:</b> subjective impressions of staff and their understanding of feasibility of change <b>Outcome Measures:</b> compliance with each SSKIN component</p>	<p>There was an 83.4% reduction in incidence of HAPI from 2014 to 2018 and was sustained for 4 years.</p>

**Citation #7:** **Level (JHNEBP): III**

Edsberg, L. E., Cox, J., Koloms, K., & VanGilder-Freese, C. A. (2022). Implementation of pressure injury prevention strategies in acute care: results from the

2018-2019 international pressure injury prevalence survey. *Journal of Wound, Ostomy, and Continence Nursing: Official Publication of The Wound, Ostomy and Continence Nurses Society*, 49(3), 211–219. <https://doi.org/10.1097/WON.0000000000000878>

Purpose or Hypothesis	Type of Evidence and Research Design	Sample (population, size, setting)	Intervention Procedures	Primary Outcome/Measures	Results Conclusions
<p>“The purpose of this study was to evaluate the implementation of pressure injury (PI) prevention strategies in adult acute care settings in the United States using the data from the 2018/2019 International Pressure Ulcer Prevalence (IPUP) Survey.”</p>	<p>Observational, cohort study with cross-sectional data collection</p>	<p><b>Population:</b> Data pulled from 2018/2019 International Pressure Ulcer Prevalence (IPUP) Survey. Survey included all patients admitted to hospital in a 24-hour period over 2-3 days.</p> <p><b>Size:</b> 296,014 patients (2018 n=914 facilities &amp; 2019: n=887 facilities)</p> <p><b>Setting:</b> Hospitalized patients in acute care facilities in the United States that participated in IPUP data collection</p>	<p>Hospitals voluntarily agreed to be included in IPUP survey. Hospital staff completed survey during collection days after implementing hospital-specific pressure injury prevention bundle</p>	<p><b>Outcome Measures:</b> Mobility status, support surface type in use, number of linen layers present, heel elevation status, and HOB angle, skin assessment, repositioning, pressure redistribution (support surface), moisture management, and nutrition support</p>	<p>Overall pressure injury prevalence was 8.97% and HAPI prevalence 2.58%. Admission skin assessments were performed for 86% of the patients with a Braden Scale score of 18 or less and with no HAPI present, versus 96.8% of those with HAPIs. About 1.1% of patients were not assessed. Only a small percentage (~1.1 %) were not assessed.</p> <p><i>-The results from this study show that there are high levels of compliance with skin assessments on admission when implemented on medical-surgical units</i></p>

## Appendix B

*Evidence Synthesis Table*

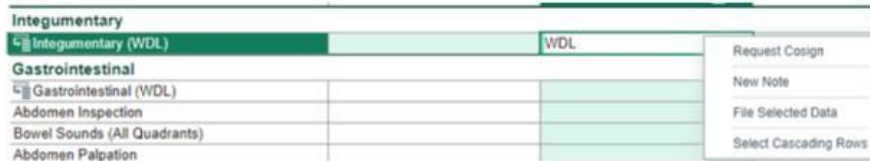
<b>Implementing Two-Nurse Admission Skin Assessments to Reduce Hospital Acquired Pressure Injuries</b>			
<b>JHNEBP Model Level</b>	<b>Total Number of Sources</b>	<b>Author and Quality Rating of each study</b>	<b>Synthesis of Findings</b>
<b>Level I</b> Experimental study · Randomized Controlled Trial (RCT) · Systematic review of RCTs with or without meta-analysis	1	Tayyib, N., et al. - A	These findings indicate a benefit in implementing a routine admission skin assessment, while embedded in a pressure injury prevention bundle, for all patients. Conclusions show the effectiveness of bundled approach including admission skin assessment to best prevent HAPIs.
<b>Level II</b> Quasi-experimental studies · Systematic review of a combination of RCTs and quasi-experimental studies, or quasi-experimental studies only, with or without meta-analysis	1	Kallman, U., et al. - B	Regularly completing skin assessments can lead to decreased HAPI prevalence overtime. Incorporating skin assessment with other pressure injury prevention interventions can lead to overall decrease in HAPI incidence.
<b>Level III</b> Non-experimental study · Systematic review of a combination of RCTs, quasi-experimental, and non-experimental studies, or non-experimental studies only, with or without meta-analysis · Qualitative study or systematic review of qualitative studies with or without meta-synthesis	5	Edsberg, L. E, et al. - B Gupta, P., et al. – B Lin, F., et al. - A Sving, E., et al. – B Tervo-Heikkinen, T., et al. - A	These findings support effective training and education of staff prior to implementation to ensure best results from 2 RN skin assessment implementation. They support the use of -nurse skin assessment to help address HAPI prevention. They show high compliance rates with 2-nurse skin assessments which has in turn decreased HAPI incidence.
<b>Level IV</b> Opinion of respected authorities and/or reports of nationally recognized expert committees/consensus panels based on scientific evidence	--	--	--
<b>Level V</b> Evidence obtained from literature reviews, quality improvement, program evaluation, financial evaluation, or case reports · Opinion of nationally recognized expert(s) based on experiential evidence	--	--	--
<b>Overall Quality Rating w/rationale and Recommendation: III</b>			



Appendix C

## 2 RN SKIN ASSESSMENT DOCUMENTATION

1. Document Admission Integumentary Assessment in Flowsheets
  - Include any wounds present on exam
2. Right Click on Integumentary System 'WDL or X'
  - **Request Cosign** of Integumentary system



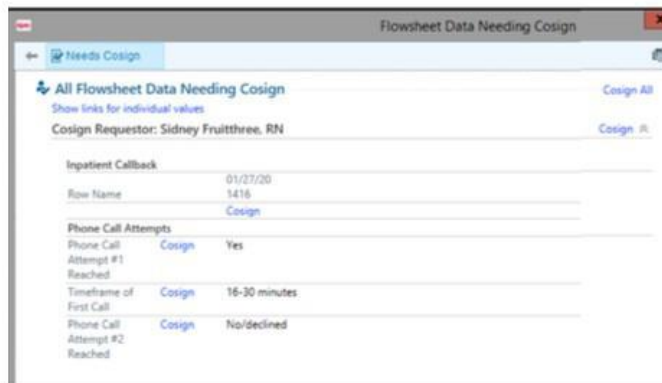
- Type 2<sup>nd</sup> RNs name (First and Last Name) in field & hit accept



3. 2<sup>nd</sup> RN Clicks **Cosign** in their EPIC flowsheets next time they login



- Flowsheet Data Needing Cosign will pop-up: **click Blue Cosign** on the documentation you want to cosign



## Appendix D

# THE 5 W'S OF THE 2 RN ADMISSION SKIN ASSESSMENT

## **WHO** NEEDS A 2 RN ADMISSION SKIN ASSESSMENT?

- All patients admitted to the unit

## **WHAT** IS THE 2 RN ADMISSION SKIN ASSESSMENT?

- 2 RNs visualize patients skin including high-risk pressure injury areas to look for existing wounds/skin breakdown
- High-risk pressure injury sites: tops of ears, back of head, elbows, sacrum, groin, heels
- If there are any wounds, pressure injuries, skin breakdown present – document in EPIC & place a WCON consult

## **WHEN** TO COMPLETE THE 2 RN ADMISSION SKIN ASSESSMENT?

- During the shift when the patient is admitted to the unit

## **WHERE** DO I DOCUMENT THE 2 RN ADMISSION SKIN ASSESSMENT?

- Primary RN: document initial integumentary assessment in flowsheet
  - Include any present wounds, breakdown, pressure injuries
  - Request cosign of the integumentary assessment from 2<sup>nd</sup> RN
  - Place WCON consult order if any wounds, breakdown, pressure injuries found on assessment
- Second RN: accept cosign in your EPIC

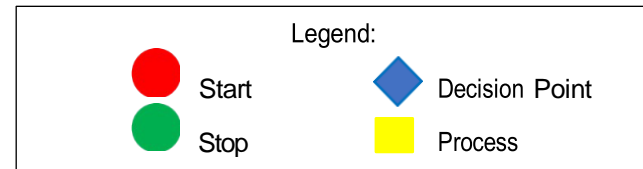
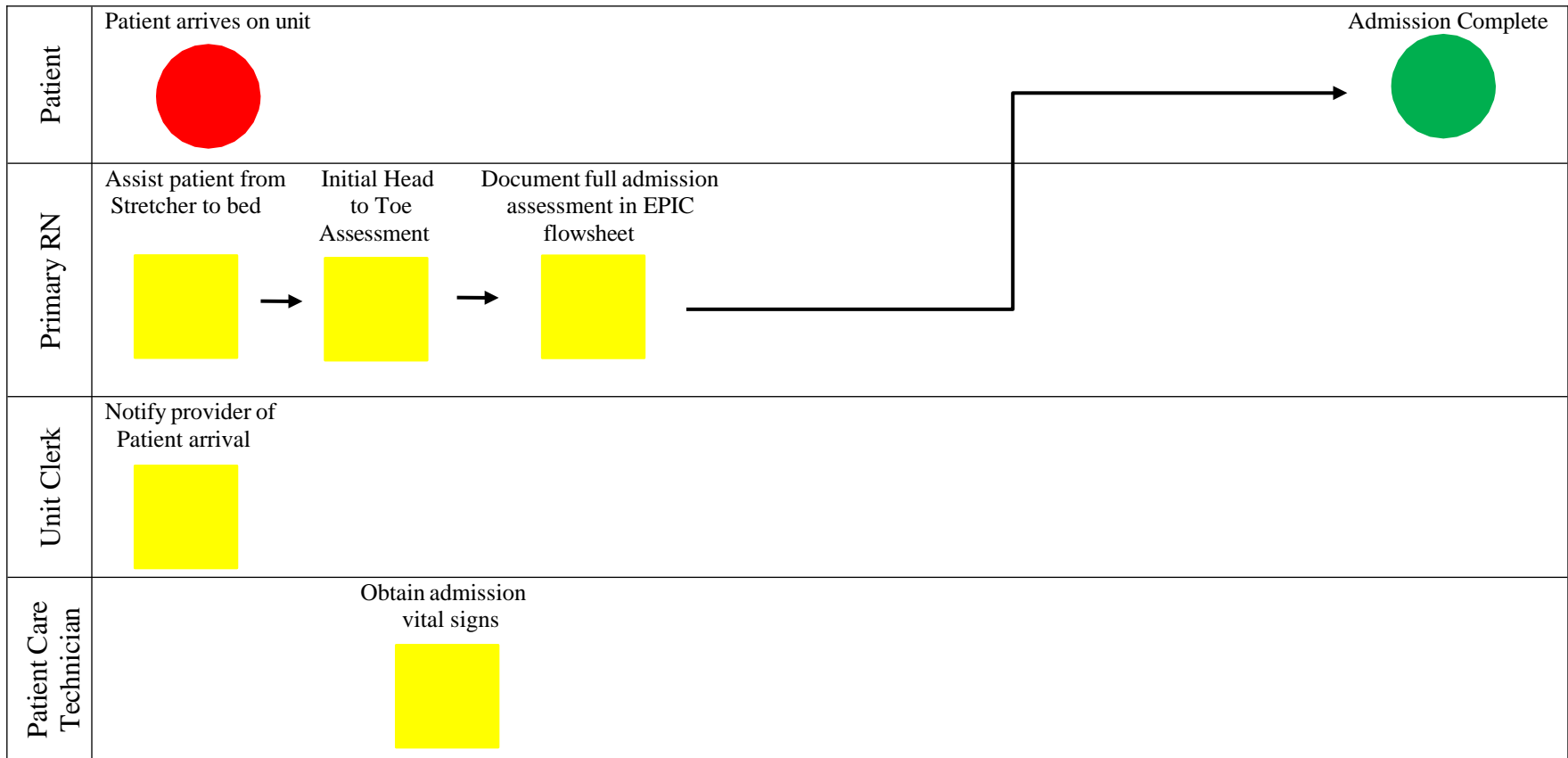
## **WHY** DO I NEED TO COMPLETE THE 2 RN ADMISSION SKIN ASSESSMENT?

- Catch pressure injuries/wounds/skin breakdown on admission
- Prevent the unit being charged for HAPI
- Shorten time between patient admission and initiating wound treatment

TWO-NURSE ADMISSION SKIN ASSESSMENT

Appendix E

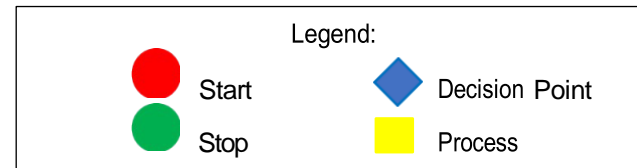
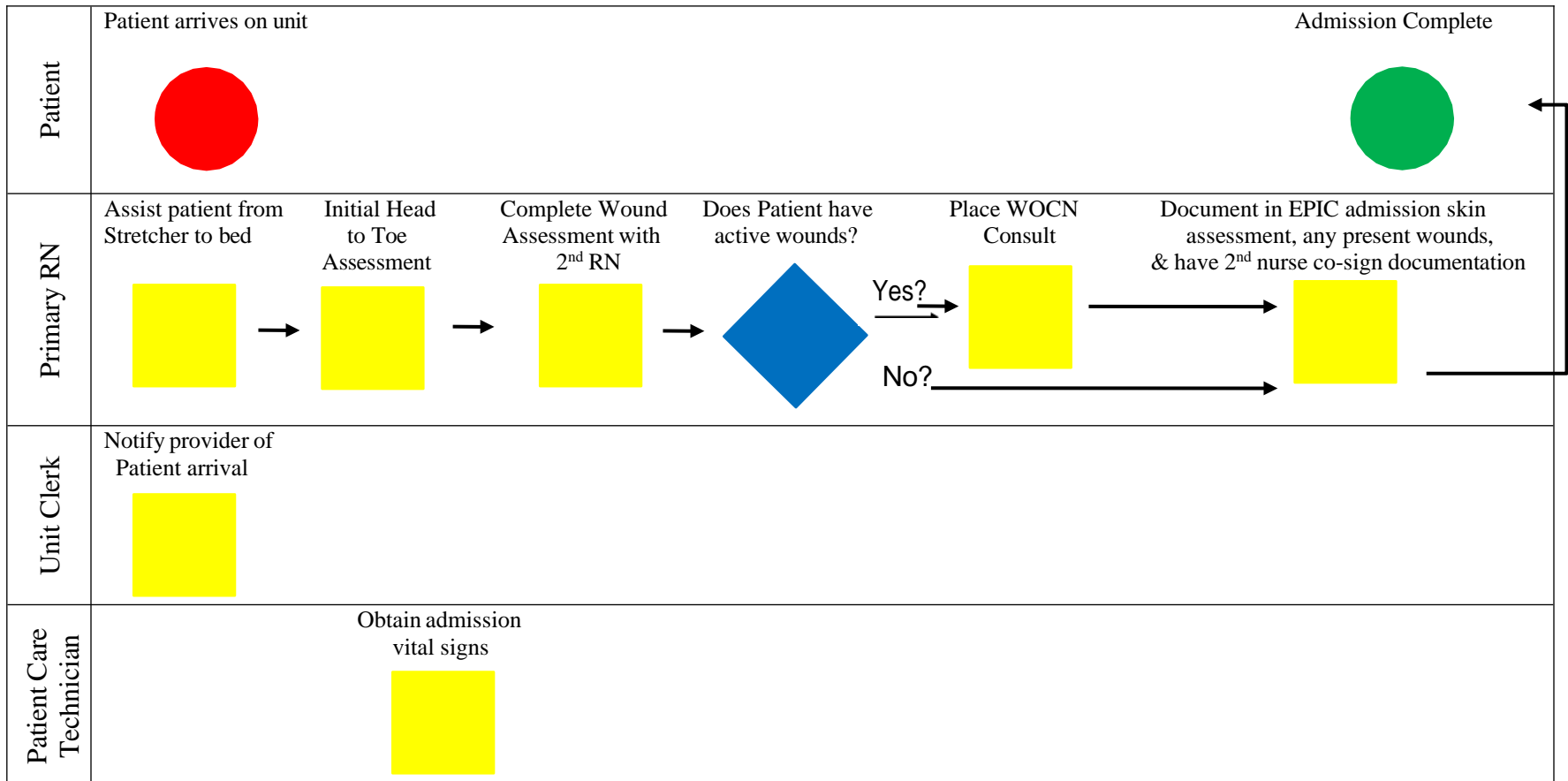
Current Process Map of Unit Admission on Medical-Surgical Floor



TWO-NURSE ADMISSION SKIN ASSESSMENT

Appendix F

Desired Process Map of Unit Admission on Medical-Surgical Floor






## TWO-NURSE ADMISSION SKIN ASSESSMENT

## Appendix G


*Single Chart Audit*

<b>Data Entry Number</b>	<input type="text"/>	
<b>Date of Admission</b>	<input type="text"/>  Today D-M-Y	
<b>Two-Nurse Skin Assessment completed within 24 hours of Admission?</b>	<input type="radio"/> Yes <input type="radio"/> No	reset
<b>Patient refused skin assessment?</b>	<input type="radio"/> Yes <input type="radio"/> No	reset
<b>Wound present on admission</b>	<input type="radio"/> Yes <input type="radio"/> No	reset
<b>WOCN Consult Placed within 24 hours of admission</b>	<input type="radio"/> Yes <input type="radio"/> No	reset

TWO-NURSE ADMISSION SKIN ASSESSMENT

Appendix H

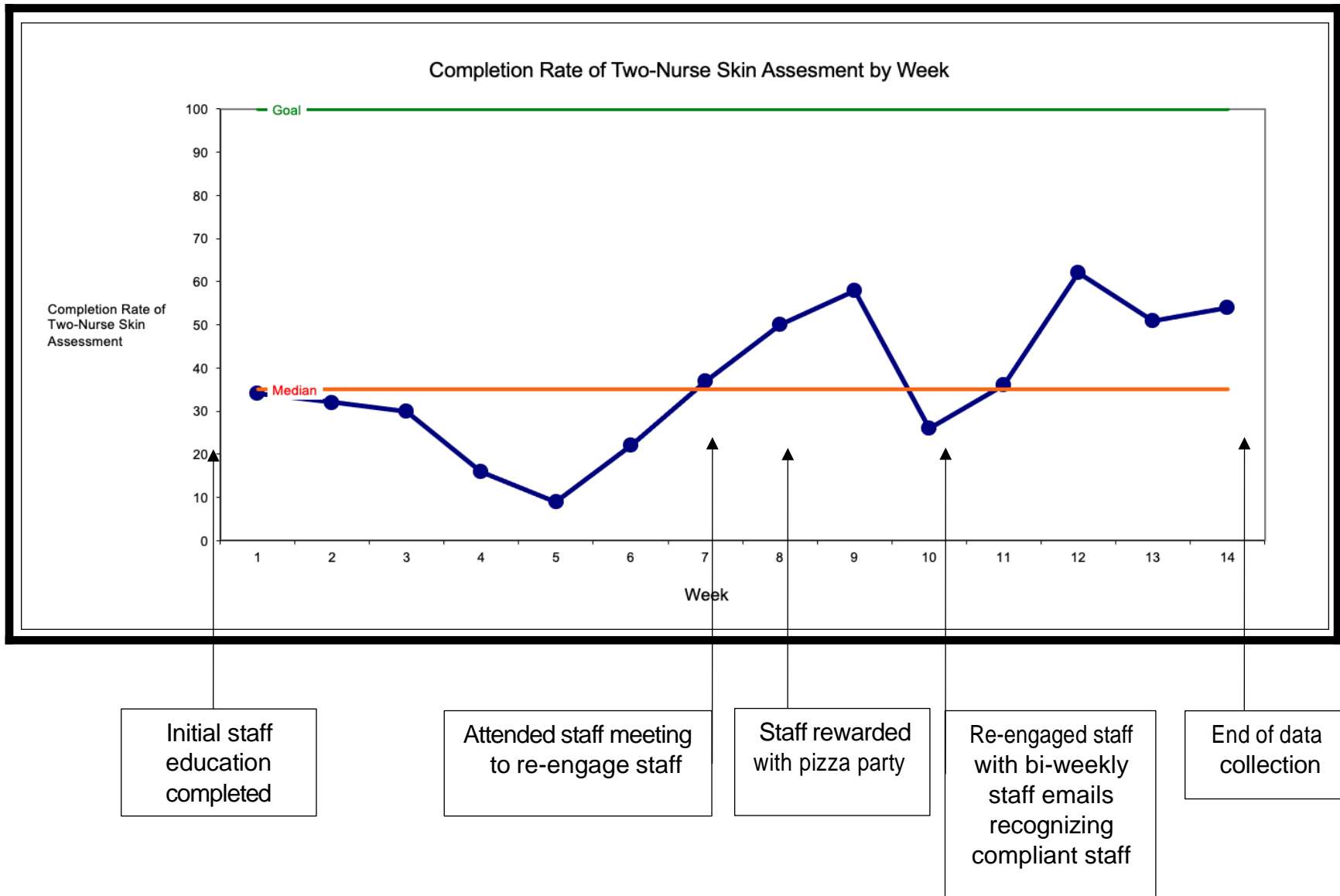
*HAPI Incidence Audit*

<b>Admission date</b>	<input type="text"/>	 Today D-M-Y
<b>HAPI occurrence during admission</b>	<input type="radio"/> Yes <input type="radio"/> No	reset
<b>Days admitted prior to documentation of HAPI occurrence</b>	<input type="text"/>	
<b>Wound present on admission?</b>	<input type="radio"/> Yes <input type="radio"/> No	reset
<b>WCON placed?</b>	<input type="radio"/> Yes <input type="radio"/> No	reset
<b>2 RN admission skin assessment documented within 24 hours of admission</b>	<input type="radio"/> Yes <input type="radio"/> No	reset

# TWO-NURSE ADMISSION SKIN ASSESSMENT

## Appendix I

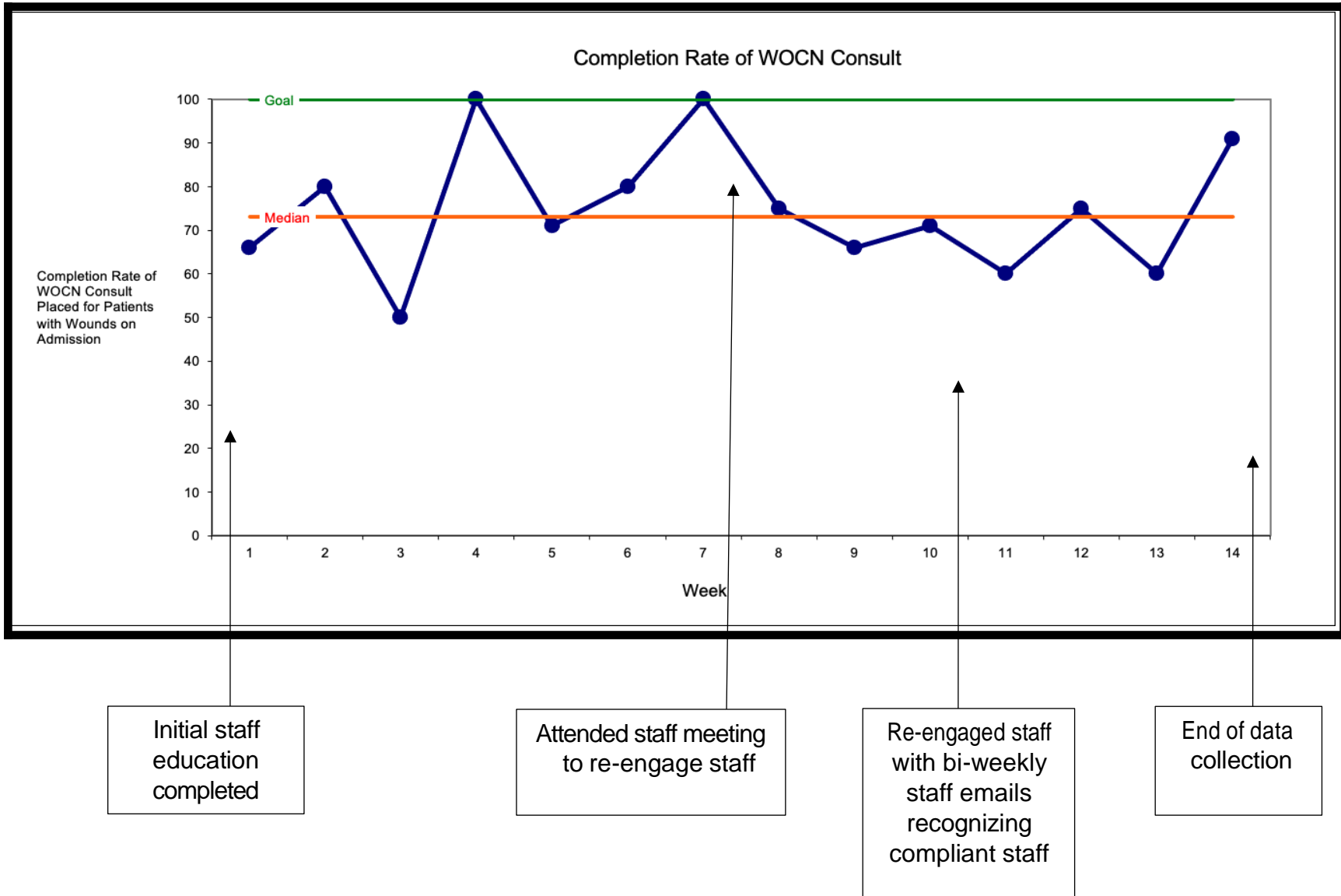
Run Chart of Compliance of Two-Nurse Skin Assessment by week



# TWO-NURSE ADMISSION SKIN ASSESSMENT

## Appendix J

Run Chart of Compliance with WOCN Consult Placement



TWO-NURSE ADMISSION SKIN ASSESSMENT

Appendix K

Run Chart of HAPI Occurrence

