

## Evaluation

### Data Collection

Validated speaking up climate tools were used to evaluate the effectiveness of the education and interventions by administering surveys pre- and post-intervention. The tools included the *Speaking Up Climate for Patient Safety* (SUC-Safe) Scale and the *Speaking Up Climate for Professionalism* (SUC-Prof) Scale. These tools were validated in studying SUB in medical residents and have also been used to measure SUB in other healthcare providers including nurses (Martinez et al., 2015). The scale items in the tools were measured by utilizing a five-point Likert scale ranging from “strongly disagree” (1) to “strongly agree” (5), resulting in ordinal data for statistical analysis. The second item on the SUC-Safe Scale was negatively worded and reverse-coded. Additional survey questions via a *SPEAK* tool included custom questions designed to evaluate nurse speaking up comfort and trust and history of choosing not to speak up. Cronbach’s alpha was measured to determine internal consistency and suitability of tool use for the clinical nurse population in this organization. Reliability was high with SUC-Safe  $\alpha=0.81$ , SUC-Prof  $\alpha=0.84$ , and SPEAK  $\alpha=0.86$ .

Other data used to evaluate project objectives included the rate of Safety Event Notification System for Organizational Reliability (SENSOR) events involving communication and the quarterly rate of bedside nurse voluntary turnover.

### Outcomes

Statistical analysis of the SUC-Safe scale, SUC-Prof scale, and the SPEAK tool was conducted using the International Business Machines Statistical Package for Social Sciences (IBM SPSS) software by a qualified statistical analysis professional to compare pre and post intervention data using one sample *t*-Tests. For the SUC-Safe scale, compared to baseline,

participants post-intervention reported statistically significant higher levels of comfort speaking up about patient safety ( $M= 78.1 \pm 19.6$  vs  $78.9 \pm 19.6$ ,  $p<0.001$ ). For the SUC-Prof scale, compared to baseline, participants post-intervention reported statistically significant higher levels of comfort speaking up about professional issues ( $M= 65.9 \pm 21.8$  vs  $67.4 \pm 21.9$ ,  $p<0.001$ ). For the SPEAK tool, compared to baseline, participants post-intervention reported statistically significant higher levels of comfort and trust in speaking up ( $M= 77.1 \pm 21.4$  vs  $80.6 \pm 17.5$ ,  $p<0.001$ ). An exact McNemar's Chi Square test determined there was a statistically significant proportion of the participants ( $n=56$ ) who had and had not chosen to contact a provider for fear of their response ( $p<0.001$ ) post-intervention.

From the pre to post-intervention period, survey results showed an increase in the weighted average score for three of the five survey questions surrounding patient safety (Figure 1). In the SUC-Safe tool, the second question surrounding difficulty of speaking up about a patient safety issue in a clinical area, is negatively worded and a decrease in the weighted average score of 4.38 in 2021 to 4.16 in 2022 is a positive outcome. A question about meaningful change from speaking up did not see an increase, while questions about the culture making it easy to speak up, observing others speaking up, and being encouraged by colleagues to speak up all saw increases.

From the pre to the post-intervention period, survey results showed an increase in the weighted average score for three of the four survey questions surrounding professionalism in the SUC-Prof tool (Figure 2). The areas showing an increase were related to speaking up resulting in meaningful change, the culture making it easy to speak up, and willingness of peers to speak up even if the situation did not involve their own patient. The topic that did not show an increase

from pre to post intervention was being encouraged by colleagues to speak up about unprofessional behavior.

From the pre to post-intervention period, survey results showed an increase in the weighted average scores of all four questions on the SPEAK tool (Figure 3). The questions evaluating communication with providers saw an increase in the weighted average score from 8.34 to 8.98 (comfort speaking up to prevent provider from continuing unsafe practice) and 8.27 to 8.7 (trust in ability to engage in conversation with provider regarding course of action). The questions evaluating communication with colleagues saw an increase in the weighted average score from 9.17 to 9.45 (comfort speaking up to prevent colleague from continuing unsafe practice) and 9.06 to 9.11 (trust in ability to engage in conversation with colleague regarding course of action).

### Figure 1

*Speaking Up Climate for Patient Safety (SUC-Safe) Weighted Average Score 2021 to 2022*

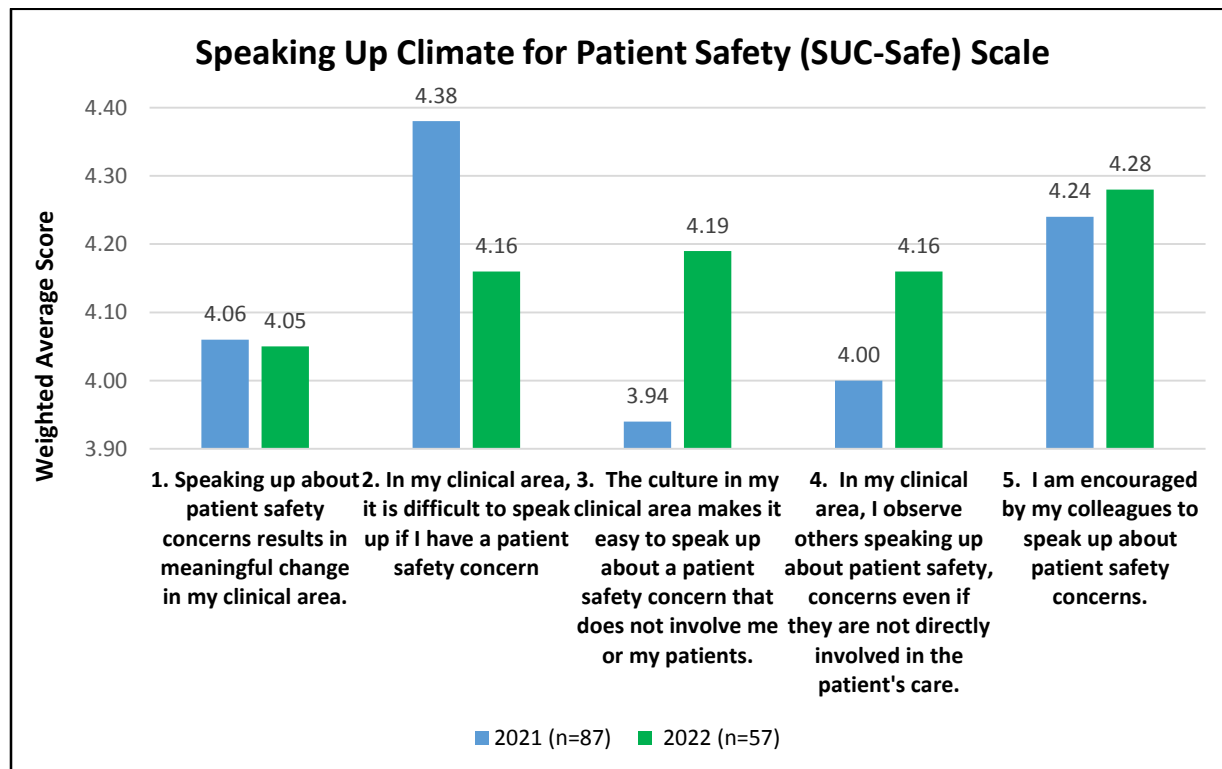


Figure 2

*Speaking Up Climate for Professionalism (SUC-Prof) Weighted Average Score 2021 to 2022*

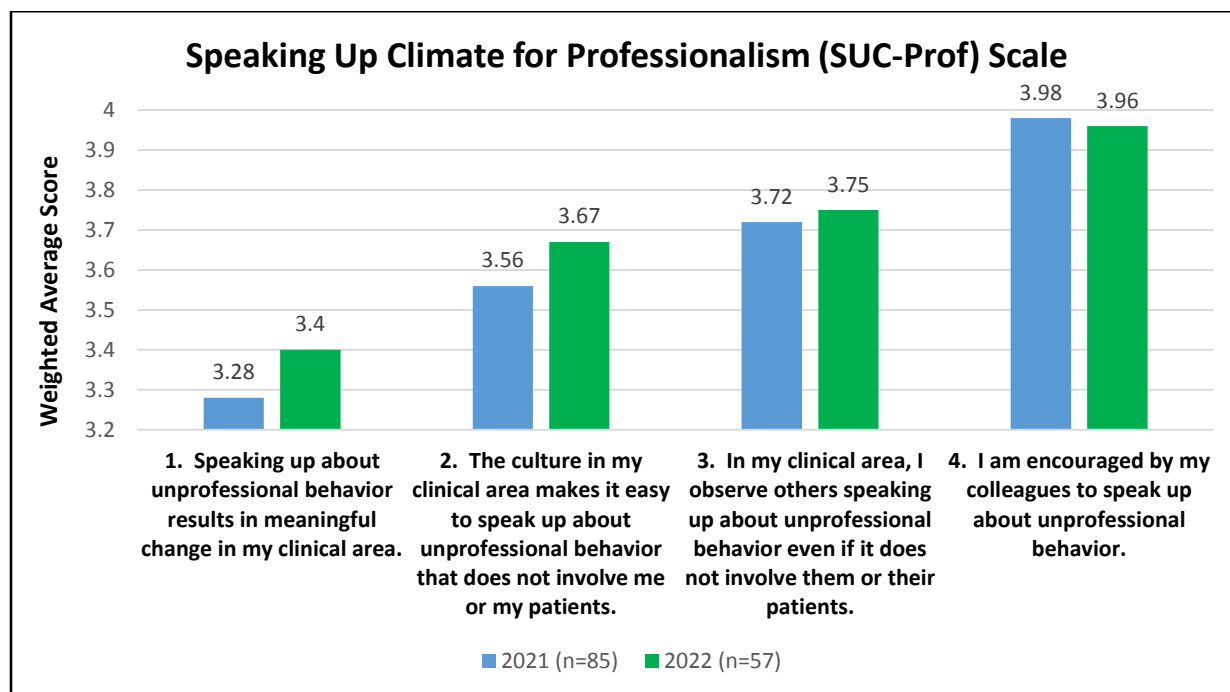
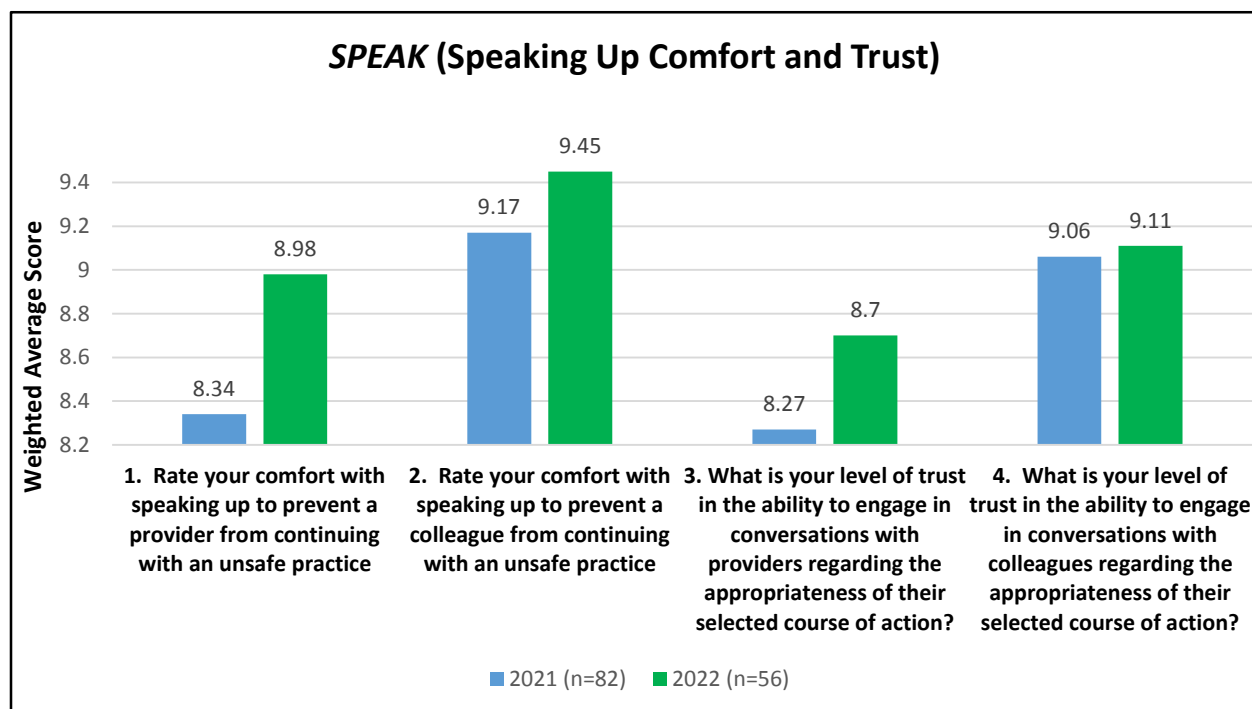


Figure 3

*SPEAK (Speaking Up Comfort and Trust) Weighted Average Score 2021 to 2022*

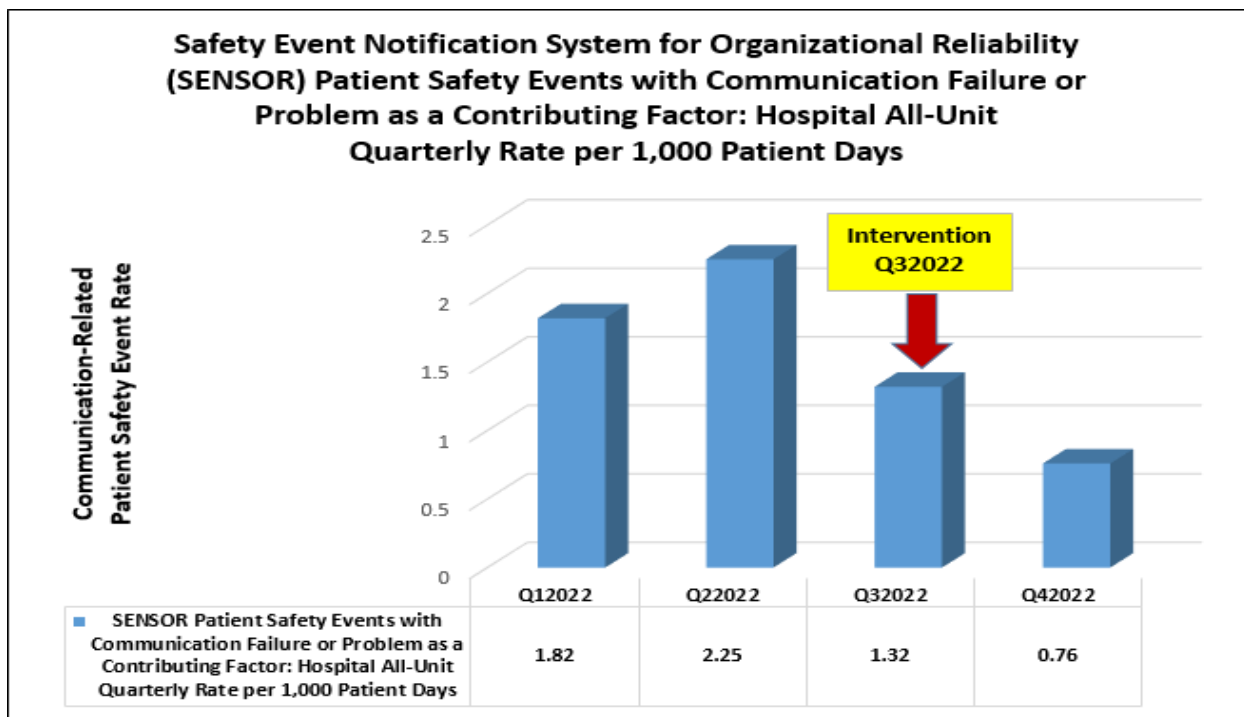


Qualitative data from the surveys were evaluated and resulted in categories of factors that influence the choice to not speak up. Those categories included fear of repercussions/retaliation, history of experiencing a negative response, belief that speaking up will not result in meaningful action, and feeling inexperienced. The Speaking Up Behavior educational program resulted in nurses feeling 73.24% more likely to speak up (n=41).

The quarterly rate of SENSOR events per 1,000 patient days that involve communication showed a rate reduction from as high as 2.25 pre-intervention to 0.76 in the first measurement period post- intervention, as illustrated in Figure 4.

**Figure 4**

*SENSOR Communication-Related Patient Safety Events Rate per 1,000 Patient Days*

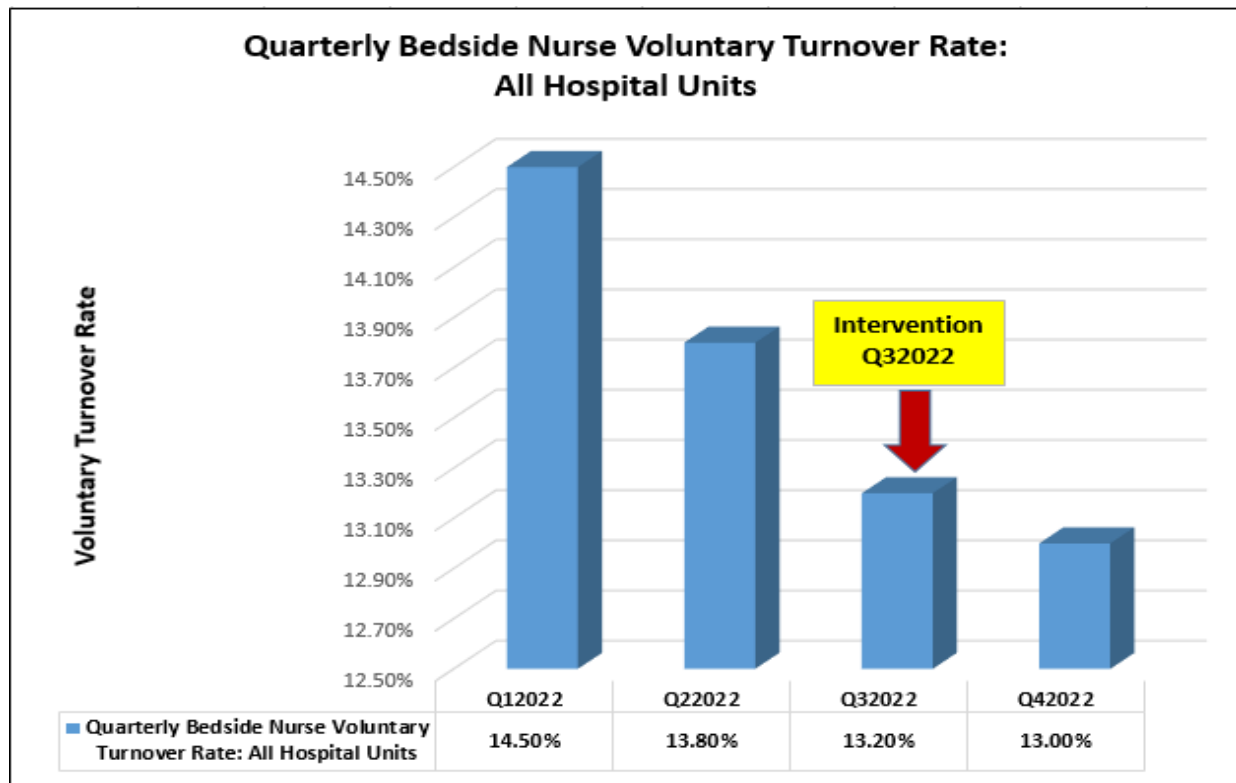


Nursing turnover data outcomes included a reduction in the quarterly bedside nurse voluntary turnover from up to 14.5% prior to the project interventions to 13.0% in the first measurement quarter following the interventions as illustrated in Figure 5. While this reduction

could be attributed to other uncontrolled organizational factors, the SUB intervention was the only intentional change directed to reduce nurse turnover.

**Figure 5**

*Quarterly Bedside Nurse Voluntary Turnover Rate*



A project limitation was the lack of several post-intervention data points for outcome evaluation. Nurse turnover and SENSOR data was available for one quarter following the interventions; while, an ideal evaluation of outcome data would include several data points to determine meaningful project intervention impact. Another project limitation was lower than desired engagement of registered nurses due to lean staffing with 50% or more of the registered nurses being agency nurses. This impacted involvement in the educational component of the project, as 68 of 143 registered nurses in the organization (47.6%) participated in the role-playing educational program. Sustainability was planned through an annual computer-based

learning (CBL) program, which is limited at this time due to health system resources focused on priority education projects before a Speaking Up Behavior computerized education program can be scheduled. Due to this, additional in person nursing skills days were given with a goal of engaging 80% of the organization's registered nurses and will continue until an annual CBL is deployed.

### **Impact on Practice**

Immediate impacts post project implementation in the organization were nurse recognition of organizational culture change along with leadership and medical staff support of speaking up. The first impact of the project was policy change, with the Medical Executive team reviewing the recommendation of using a formal SUB communication tool and acknowledging its use. The resulting administrative communication policy revision gave speaking up a formal structure for all colleagues to use and provided colleagues who might be fearful of speaking up the comfort of knowing staff are backed by policy. An additional impact to the organizational culture was the adoption of intentional leader walking rounds with a focus on safety, which were carried out regularly while openly asking colleagues to share safety concerns. These rounds incorporated a feedback loop to ensure all concerns received follow-up communication and resolution. Speaking Up Behavior Debriefing tools were used by nurses immediately following the educational intervention to report instances of speaking up to medical providers or their nurse manager advocate for patient safety. Another impact to the culture was recognizing those who identified safety issues and spoke up to ensure a safe outcome with the Great Catch and Life Saver awards. There have been six colleagues recognized with the awards since the multifaceted SUB interventions began.

A long-term impact of this project could result in improved patient safety communication and a decrease in SENSOR events reported involving a failure in communication. Additionally, multifaceted SUB interventions impact nurse perception of a healthy work environment, which will be evidenced by further reduction in bedside nurse voluntary turnover.

## **Conclusions**

A multifaceted approach to promoting SUB in a community hospital resulted in organizational culture change with structured tools in place such as a SUB communication tool, administrative policy, and debriefing tools. Also, the SUB project team adopted positive recognition programs through Great Catch and Life Saver awards recognizing staff for SUB efforts that improved patient outcomes. Nurses who attended a SUB educational intervention were 73.24% more likely to utilize SUB, and the project interventions resulted in statistically significant increases in perceived ease of speaking up for patient safety and professionalism, as well as comfort and trust in speaking up. The project interventions were related to a reduction in patient safety events involving communication as a contributing factor and bedside nurse voluntary turnover.

Recommendations for the future include ongoing implementation of promoting SUB, with new colleagues being educated on the use of the structured SUB communication tool during onboarding, and leaders receiving support to continue walking rounds with follow-up communication. Additionally, the factors nurses identified as reasons for choosing not to speak up, including fear of repercussions/retaliation, history of experiencing a negative response, belief that speaking up will not result in meaningful action, and feeling inexperienced, need to be addressed as part of project sustainment.