

Introduction & Background

In academic medical centers, invasive bedside procedures are frequently performed by trainees.¹ Universal protocol and timeout are to be performed prior to any invasive procedure to avoid 'never events'.² After Joint Commission and Clinical Learning Environment Review (CLER), bedside procedural safety was identified as an area for improvement at our institution. The Housestaff Quality and Safety Leadership Council elected improving timeout rates as our 2017 improvement project.

Aim

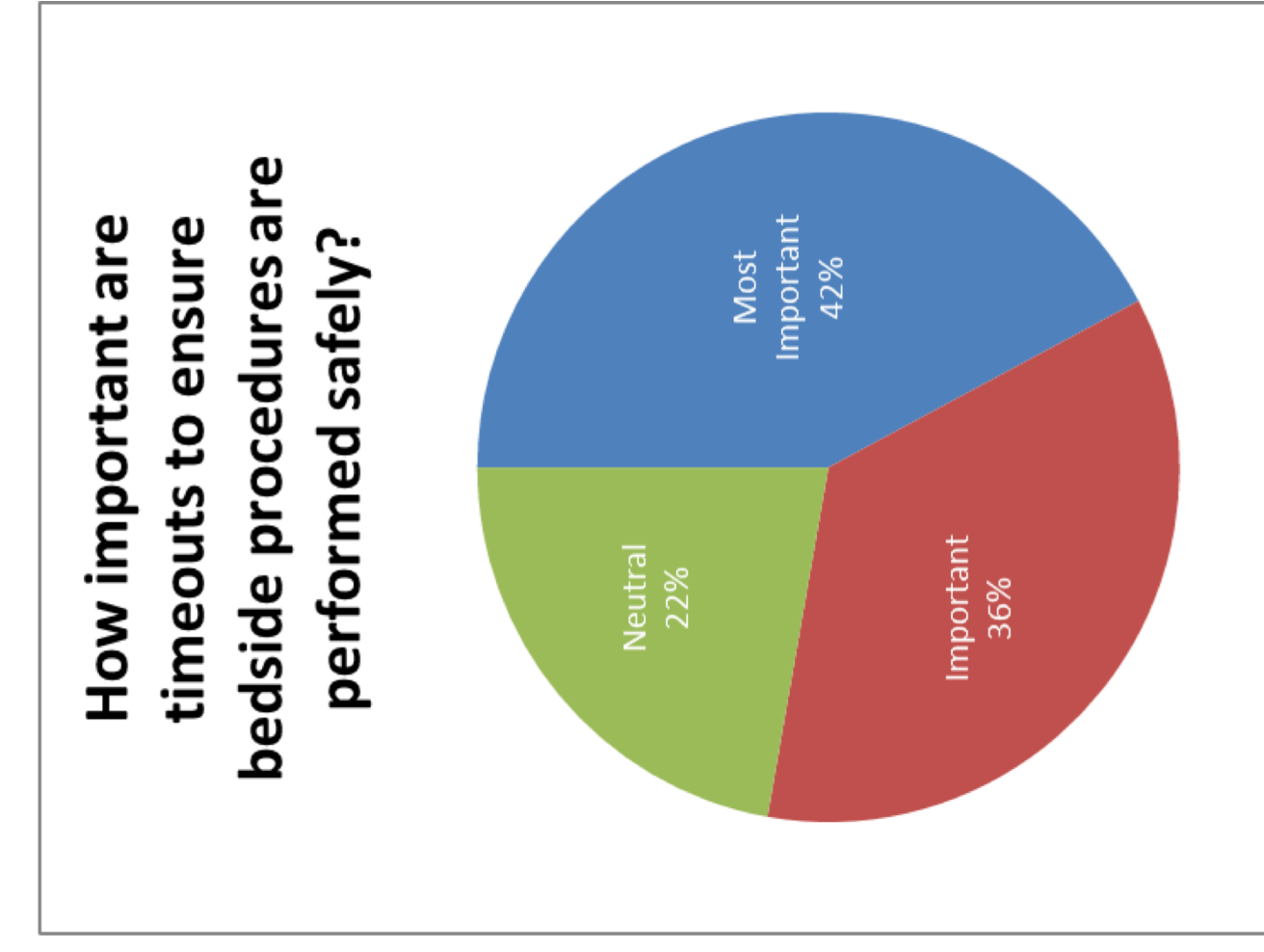
GOAL: Improve the safety of patients undergoing bedside procedures while maintaining the full spectrum of graduated autonomy in procedure training for residents.

SMART Aim: Increase the rate of timeouts documented for bedside procedures from 29% to 50% by June 2018.

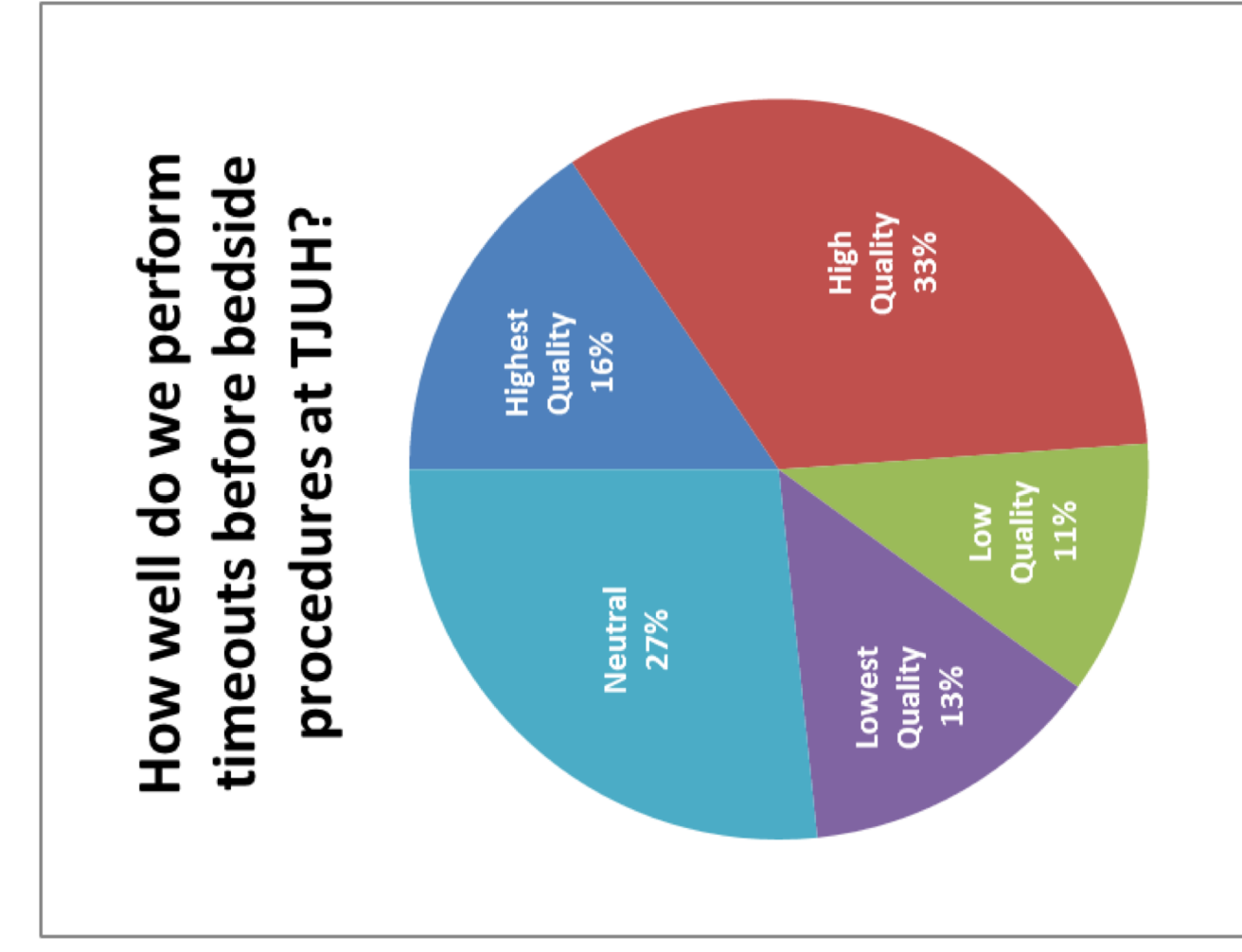
Methods

A survey was distributed to house staff to assess attitudes regarding timeouts for bedside procedures to ascertain baseline attitudes surrounding timeouts (Figure 1).

The Vizient Database was queried for thoracentesis, paracentesis, and lumbar punctures, representative bedside procedures, performed between July and September 2017 in order to establish a baseline rate of performance of preprocedural timeout. 234 charts were identified and reviewed. The average timeout documentation rate was 29% (Figure 2). Two interventions were trialed: a visual Timeout checklist placed on ultrasounds and procedure kits in the medical intensive care unit, and a simulated case to educate residents on procedure documentation methods.



N = 45, representing diverse specialties



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Figure 1: 66% of house staff respondents thought that timeouts are important to ensuring procedural safety, however only 50% of respondents thought that timeouts prior to the intervention were high or highest quality.

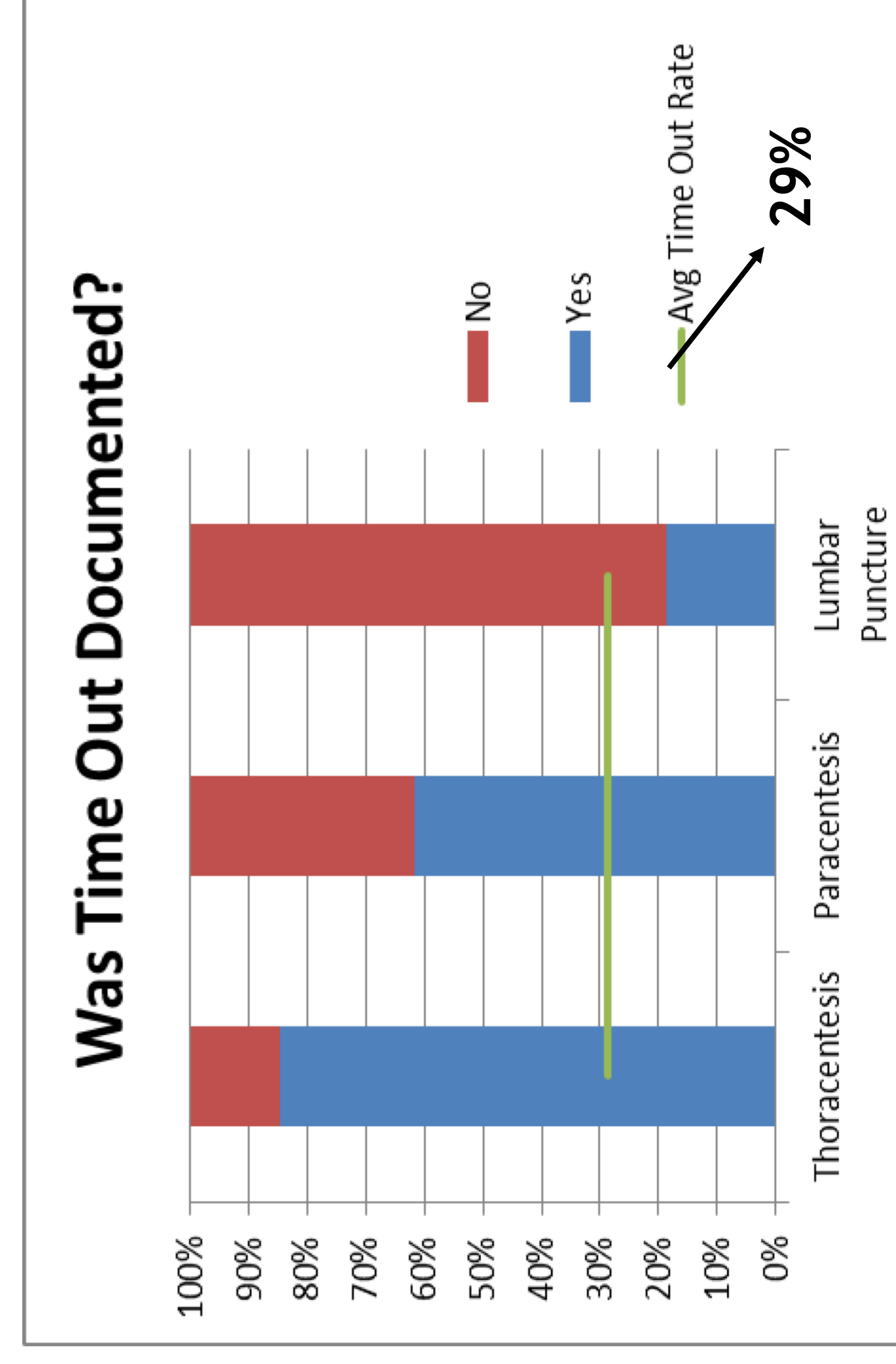


Figure 2: Bedside procedures were identified for review within the Vizient database. Wide variation was apparent in the rate of documenting a timeout depending on the procedure, with an average documentation rate of 29%.

Results

Checklist Intervention

During a one-month pilot, 64% of residents (N = 14) in the medical ICU reported noticing the timeout checklist signs (Figure 3), and 50% of residents reported that the signs increased the likelihood that they would perform a timeout (Figure 4). surveyed Before and after placement of the checklists, residents were surveyed regarding the likelihood of both involving nursing staff and performing a timeout prior to an invasive bedside procedure.



Figure 3: Copy of timeout checklist.

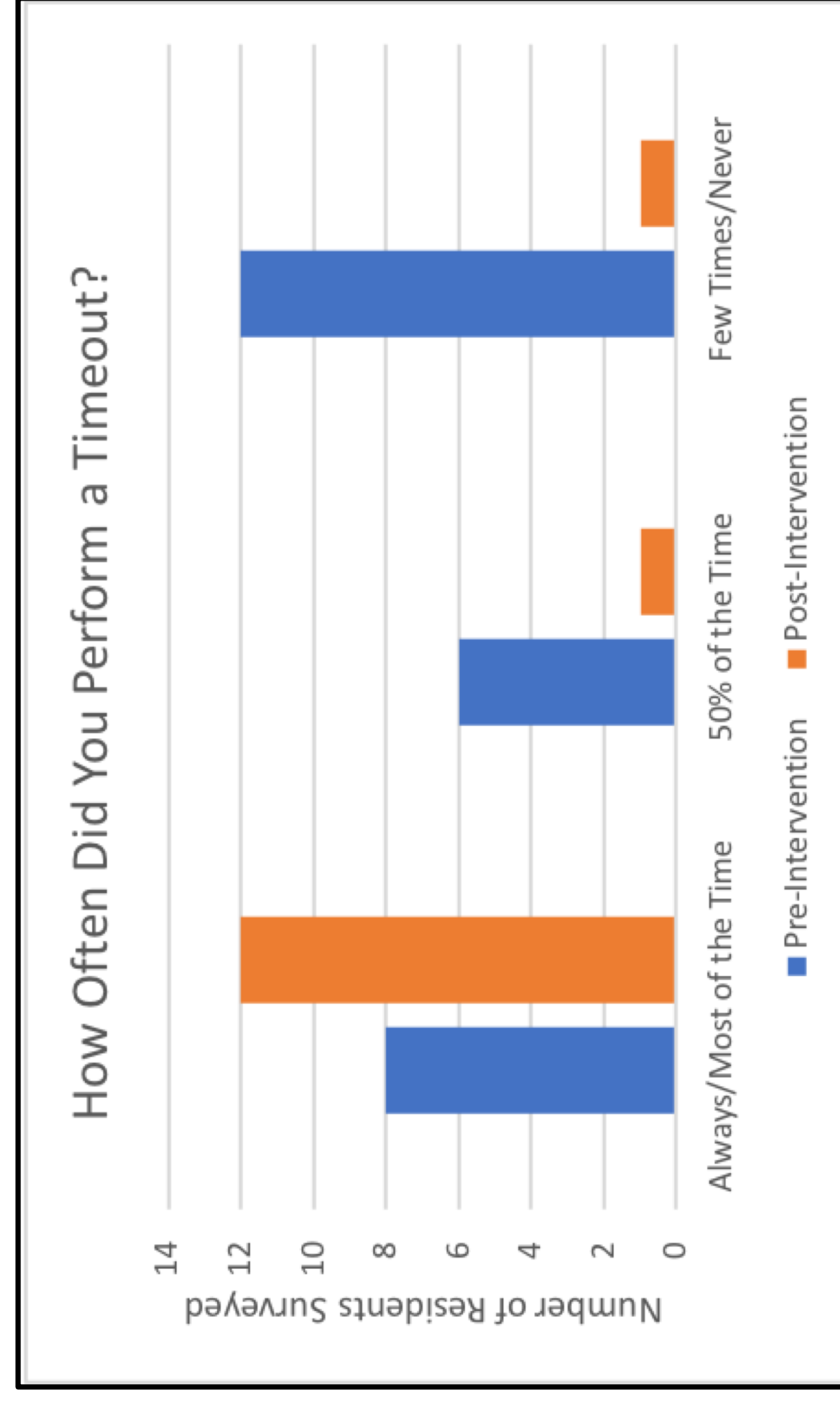
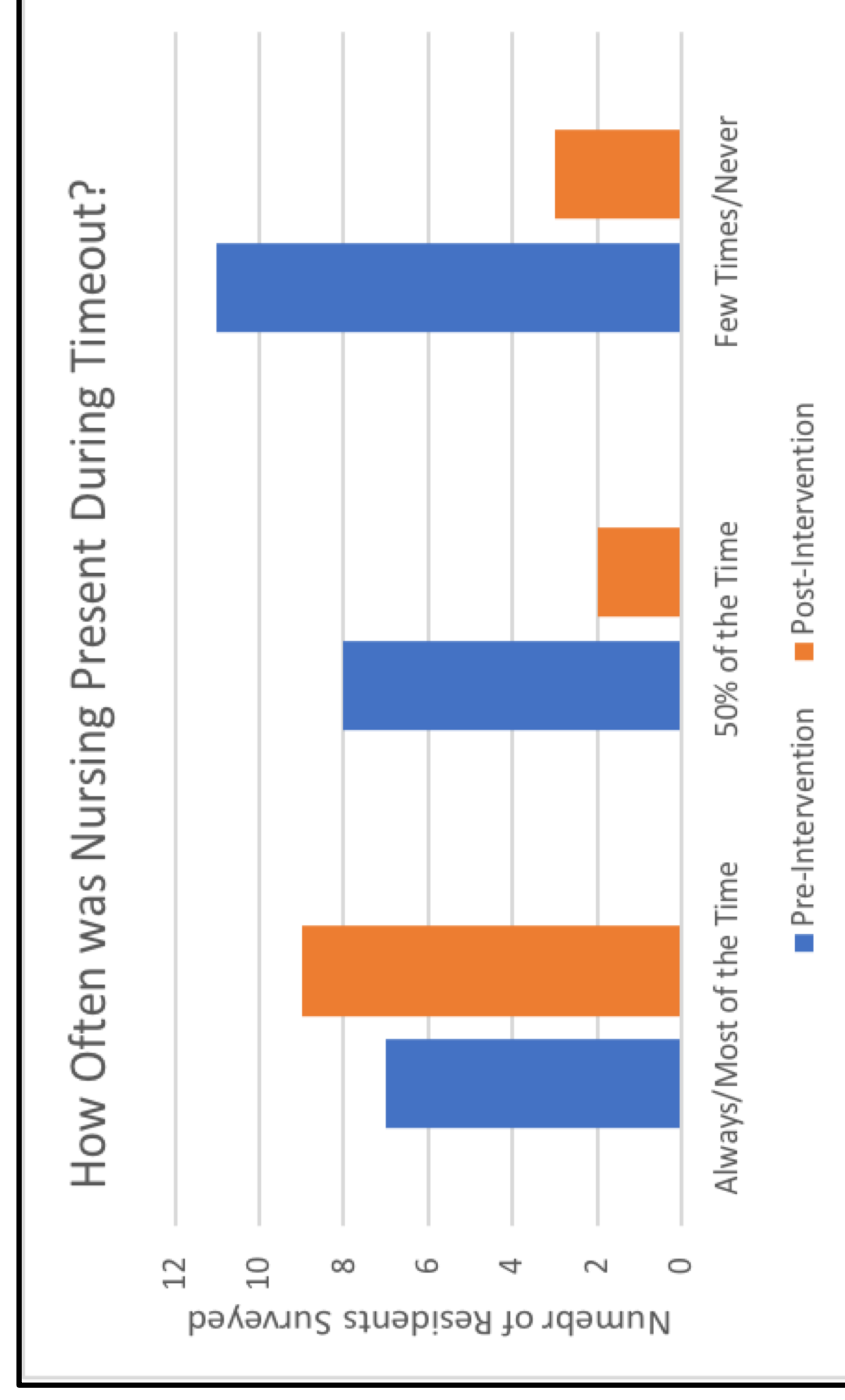


Figure 4: Results of pre and post-intervention survey. Rate of reported timeouts consistently performed improved from 31% to 86%; rate of reported nursing involvement in bedside procedures improved from 27% to 64%.

Procedure Documentation Intervention

Notable heterogeneity was observed in procedure documentation methods within Epic, including free text notes, dot phrases, and use of the Procedure Documenter. The Procedure Documenter is the preferred method of documenting, and, when surveyed, residents who used the documenter reported a high degree of satisfaction. We designed a case for use in a simulated EHR environment allowing residents to practice this documentation method and teaching "tips and tricks" for efficient note writing. We conducted usability testing with 16 residents across varied GME specialties to determine the value of this exercises.

- Average of 5 minutes to complete one case
- Only 62% already used process demonstrated to document procedures
- 75% reported learning new tools to document procedures and 50% reported they will change the way they document procedures in the future
- 88% of respondents felt the cases had moderate to high educational value

Conclusions

Our interventions had moderate success in:

- Raising awareness of the need to perform a high-quality interprofessional timeout
 - Increasing self-reported rate of timeout performance in the MICU
 - Creating a highly valued, self-paced learning opportunity for appropriate documentation.
- Limitations include the small sample size, single unit implementation of the checklist, and short duration of follow-through. The fact that the pre- and post-intervention sample sizes were not identical suggests that the same participants did not complete the survey, which introduces some reporting bias. It is also possible that residents who did not complete a timeout did not complete the survey.

Next steps include:

- Improve modeling of timeouts by supervising physicians, including senior residents, fellows, and faculty
- Partnering with nursing leadership to develop robust and better defined interprofessional processes
- Incorporating periprocedural education in all required procedure training sessions, including our simulated documentation case
- Identifying accurate sources of data for audit and feedback interventions and to track change over time

Lessons Learned

Educational interventions are often considered low yield. For processes reliant on trainees, where staff turnover happens yearly, it is important that education is hard wired, and that EHR infrastructure and institutional culture support safe patient care practices. Multipronged approaches are more likely to be effective than single interventions.

The probability of success in changing invasive bedside procedure safety culture improves when both nurses and housestaff play a role in the pre-procedure timeout.

References:

- Huang GC et al. Beyond the Comfort Zone: Residents Assess Their Comfort Performing Inpatient Medical Procedures. American Journal of Medicine (2006) 119: 71.e17-1.e24.
- The Joint Commission. Speak Up: The Universal Protocol for Preventing Wrong Site, Wrong Procedure, and Wrong Person Surgery. https://www.jointcommission.org/assets/1/18/UP_Posters1.pdf