

BACKGROUND

While many institutions have mock simulations for a code blue or rapid response, there is no standard practice for stroke alert simulations to train neurology residents. This lack of training means residents feel less confident when responding to stroke alerts and when giving tPA early in their training.

OBJECTIVES

- Teach incoming neurology residents how to respond efficiently and appropriately to stroke alerts
- Improve the confidence level of residents during stroke alerts

METHODS

The training session began with a one hour didactic session on how to respond to stroke alerts and when to appropriately administer tPA. There was then another hour of training on how to perform the NIH stroke scale (NIHSS). Next, nine residents each participated in two stroke simulations utilizing standardized patients. They were observed by an attending, fellow, or senior resident via video monitoring to ensure accurate history taking and correct NIHSS performance. The residents reviewed head CT imaging and determined if tPA should be given. If tPA was deemed appropriate, the residents explained the risks and benefits of the medication to the standardized patient. Following the simulation, there was an immediate feedback session to review particular areas for improvement. The residents completed pre- and post-simulation surveys to assess confidence in responding to stroke alerts.



New neurology resident taking history from standardized patient

RESULTS

- On the pre-simulation survey, 44% of residents reported confidence responding to a stroke alert compared to 78% of residents post-simulation
- Only 44% of residents felt confident performing an NIHSS prior to the simulation versus 100% after the simulation
- Confidence in decision-making ability to give tPA increased from 22% to 56% after the simulation

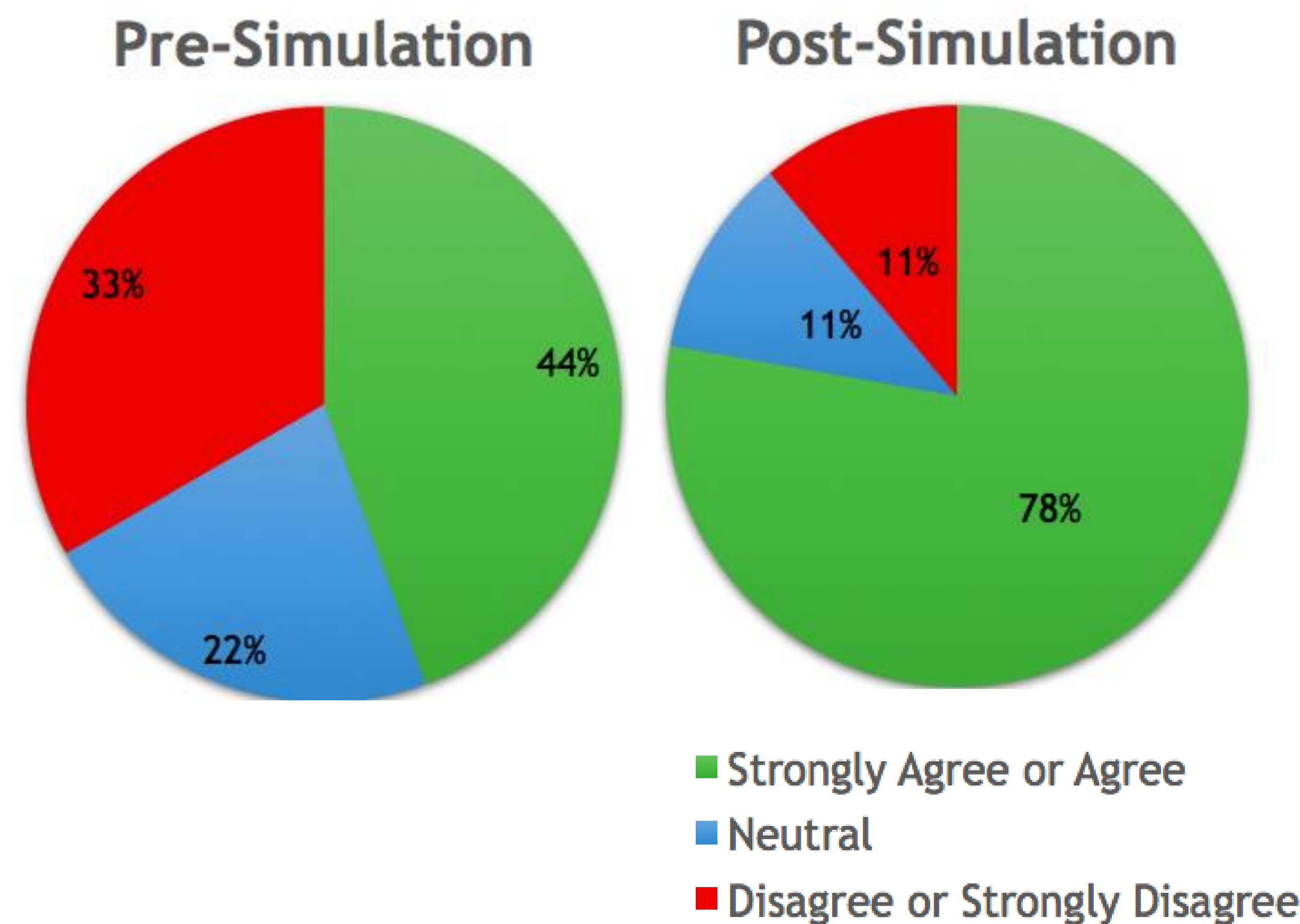


Figure 1. Survey data that residents feel confident responding independently to stroke alerts.

Confident Performing an NIHSS:	Pre-Simulation	Post-Simulation
Strongly Agree or Agree	44%	100%
Neutral	22%	0%
Disagree or Strongly Disagree	33%	0%

Confident in Giving tPA:	Pre-Simulation	Post-Simulation
Strongly Agree or Agree	22%	56%
Neutral	33%	33%
Disagree or Strongly Disagree	44%	11%

Figure 2. Survey data that residents feel confident performing an NIHSS or giving tPA

RESULTS

	Door to Needle Time Less than 60 minutes
FY16 (Jul 2015- June 2016)	60%
FY17 (Jul 2016- June 2017)	56%
July 2017- December 2017	91%

Figure 3. Percent of patients door to needle time 60 minutes or less

CONCLUSION

After stroke simulations with standardized patients, residents were more confident:

1. Responding to stroke alerts
2. Performing an NIHSS
3. Deciding to give tPA

Initial data has shown an improvement in door to needle time since implementation of the simulation program. Stroke simulation cases with standardized patients can be a valuable learning tool for new neurology residents to improve efficiency, resident confidence, and potentially patient outcomes.



New neurology resident performing NIHSS during stroke alert simulation