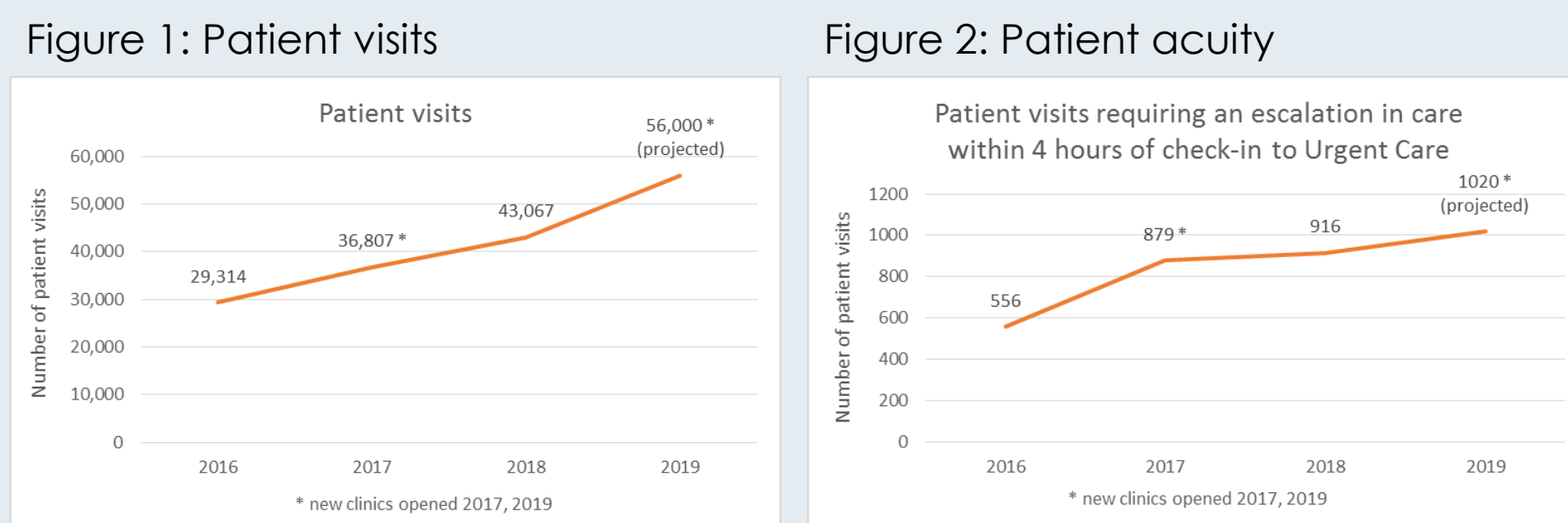


Using Simulations and Skills Stations to Enhance Emergency Preparedness in Pediatric Urgent Care

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Introduction

Children's Hospital of Wisconsin Urgent Care locations have encountered an increase in both patient visits (Figure 1) and patient acuity (Figure 2) in recent years.



Research shows:

- Emergency response skills deteriorate quickly after training^{1,2}
- Regularly and repeatedly practicing a skill may prevent rapid skill deterioration^{1,2,3}
- More frequent training is superior to conventional training to ensure high quality resuscitation skills^{1,2,3}

Aim

- Improve emergency preparedness by holding regularly scheduled multidisciplinary simulations and skills practice sessions in order to provide the best and safest care to our patients
- Simulation lab: participant assessment of feeling well prepared or very well prepared for an emergency will increase 20% from pre survey to post survey
- In-situ (in clinic) simulations: post simulation surveys will reflect 75% of participants feeling more prepared for an emergency after the simulation

Methods

Curriculum design and implementation

- High and low fidelity manikins
- Emergency scenarios: asthma and hypoxia, severe bronchiolitis, seizures, hyperthermia, sepsis, diabetic ketoacidosis, anaphylaxis, and cardiac arrest of the child and adult
- Deliberate practice of skills using equipment available in clinic
 - Cervical collar application +/- helmet removal
 - Weight estimation using measuring tool
 - Ventilation of a tracheostomy tube
 - Initiation of emergency response
 - Effective team communication

Survey design

- Likert scale pre survey:
 - Prior simulation experience
 - Prior involvement in clinical resuscitation
 - Self-assessment of emergency preparedness
- Likert scale post survey:
 - Self-assessment of emergency preparedness

Results

Simulations November 2017 – August 2019 n=17 (simulation lab n=11, in-situ n=6)
Total participants n=114, unique participants n=80, repeat visits n=34
Total surveys January 2019 – August 2019 n=40 (survey response rate 100%)

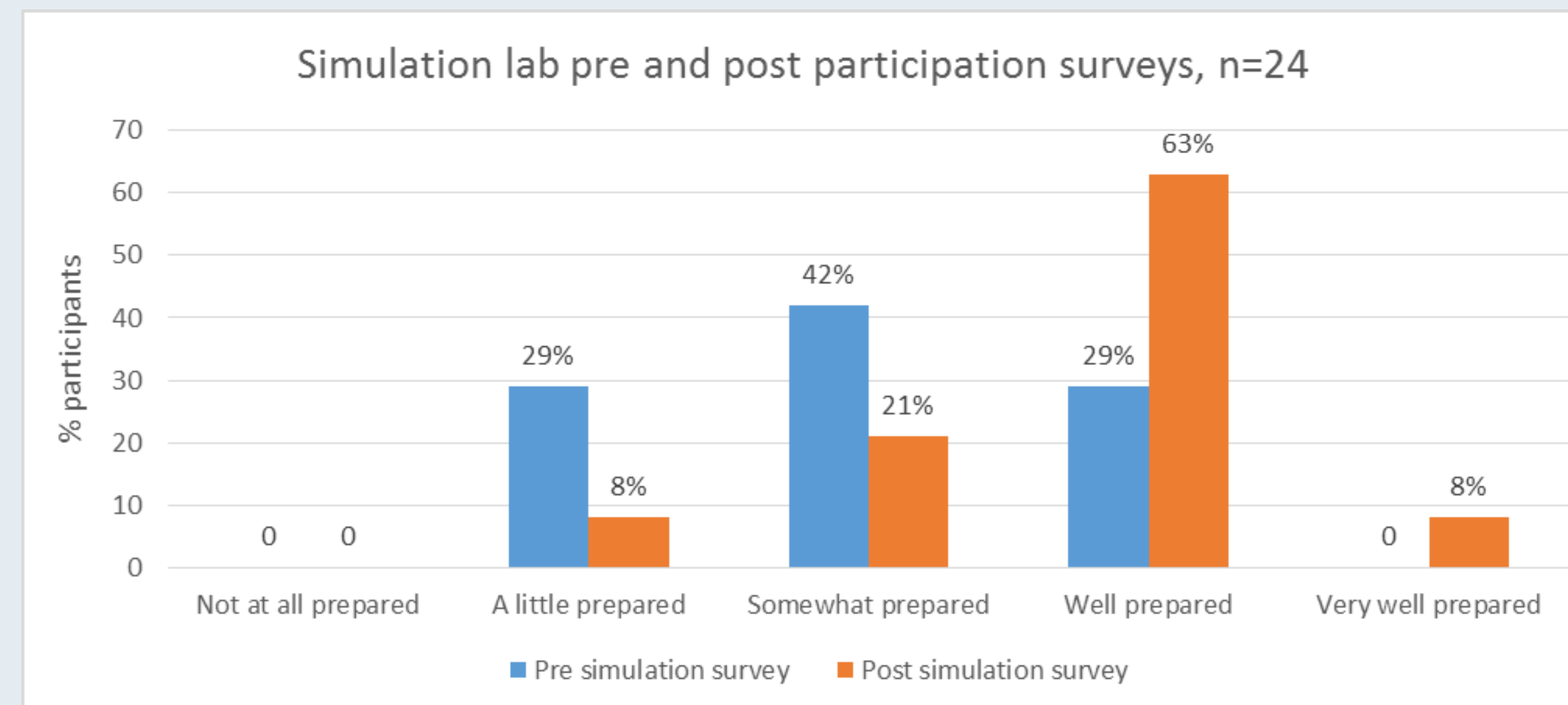
Pre-brief⁴ (simulation lab only)

- The basic assumption that all staff are intelligent, capable, and try their best
- Fiction contract: scenario is as real as possible but learning depends on full participation
- Preparatory information given, introduction to room and manikins

Debrief⁴ (simulation lab and in-situ)

- Re-examine scenario for learning

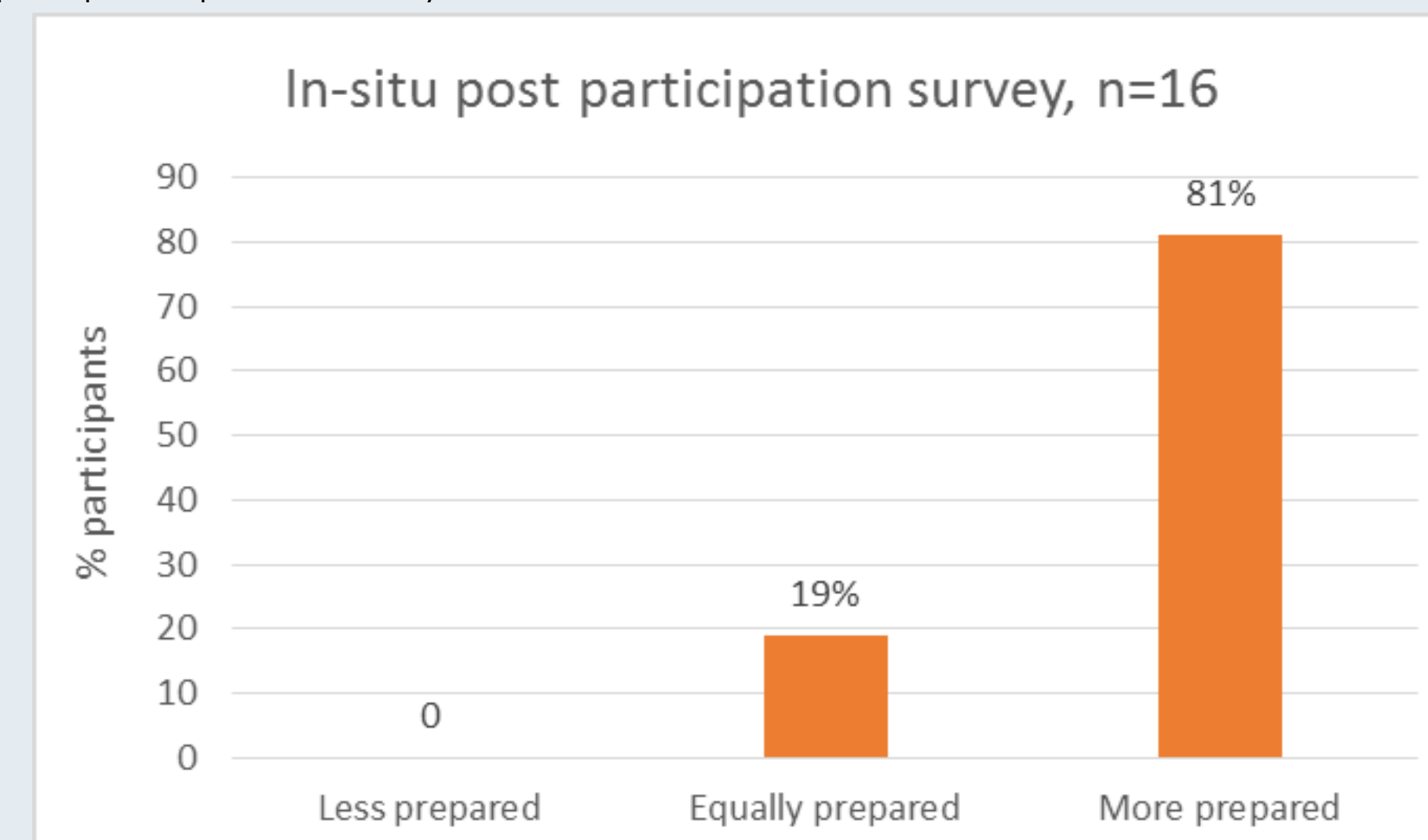
Figure 3: Simulation lab, pre and post survey comparison



In the simulation lab (Figure 3):

- A little prepared decreased by 21%
- Somewhat prepared decreased by 21%
- Well prepared increased by 34%
- Very well prepared increased by 8%

Figure 4: In-situ, post participation survey



In-situ simulations (Figure 4):

- More prepared after the simulation: 81%

Conclusions

- Staff preparedness increased after simulation participation
- All staff play an important role during an emergency
- According to research, regular and repeated practice may increase skill retention and prevent skill deterioration^{1,2,3}
- Multidisciplinary simulations are essential to increase staff preparedness to perform high quality care during an emergency event

Limitations

- Survey data is self-reported and subjective
- Unable to assess improvement in preparedness from in-situ simulations given no pre participation survey
- Difficult to compare data between simulation dates as scenarios may differ between simulations

Next steps

Future data could compare preparedness to:

- Years working in Urgent Care
- Total years of experience in healthcare
- Previous simulation attendance
- Role within Urgent Care

Inter-departmental simulations

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