



# Utility of Digital Otoscopy in Pediatric Patients

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## BACKGROUND

Digital otoscopy has emerged as a new and potentially useful tool when performing pediatric ear exams. Proposed benefits include:

- Improved visualization of middle ear anatomy
- Ability to review video taken during exams
- Improved otoscopy teaching for trainees

Prior research has predominantly focused on the Celscope Oto. The purpose of this study is to evaluate the impact of the Wispr digital otoscope on diagnostic confidence, as well as patient, provider, and resident experience.

## METHODS

### Setting

- Two urgent care (UC) clinics, a pediatric emergency department, and a general pediatric inpatient ward at a large academic medical center

### Study Population

- Children 0-6 years old presenting to UC between Dec 15, 2021 – Mar 15, 2022 with symptoms that prompted an ear exam

### Diagnostic Confidence

- Type of otoscope used was randomized for each patient encounter
- UC providers recorded their diagnosis and confidence in that diagnosis on a 1-10 scale after each exam

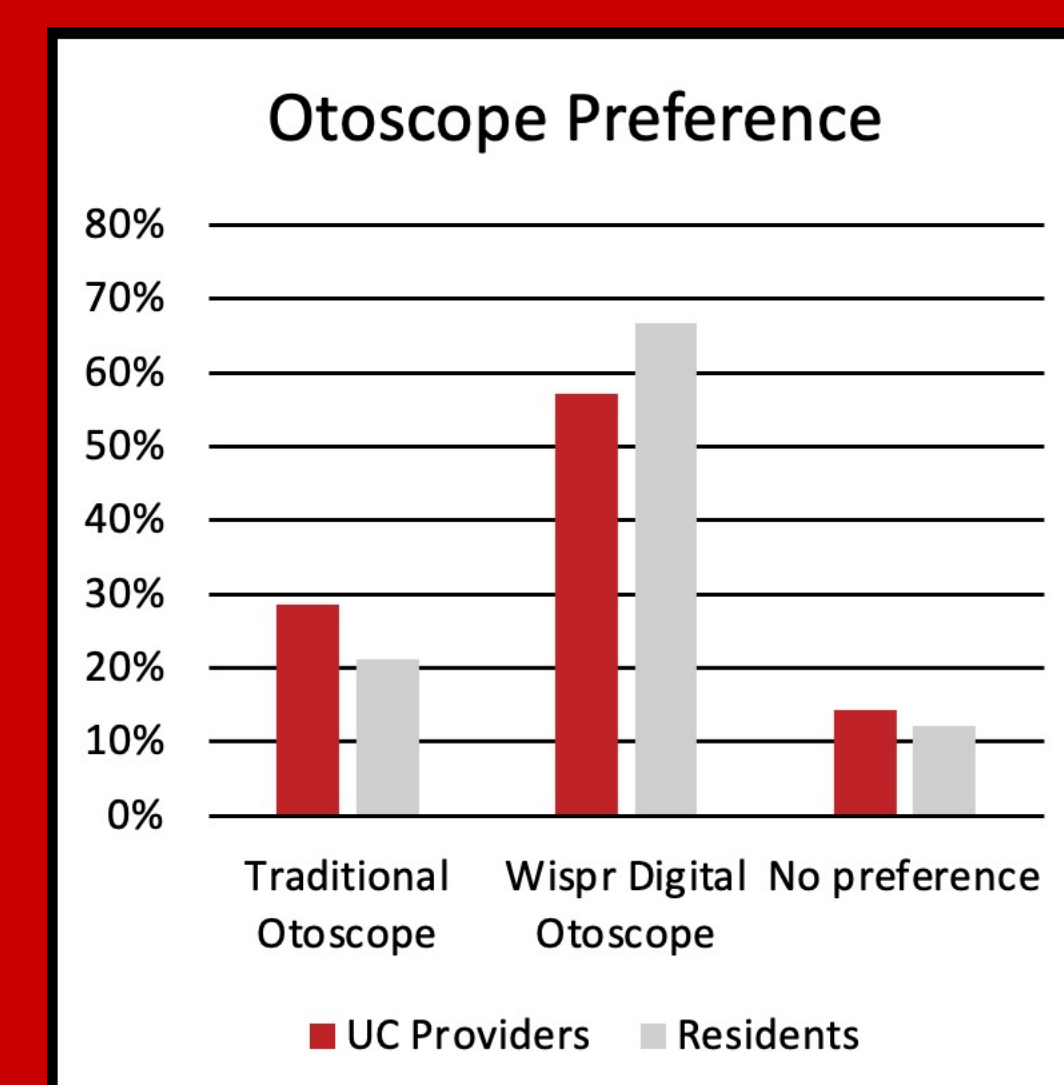
### Patient Family Experience

- Experience surveys were given to all families whose child was examined with the Wispr otoscope

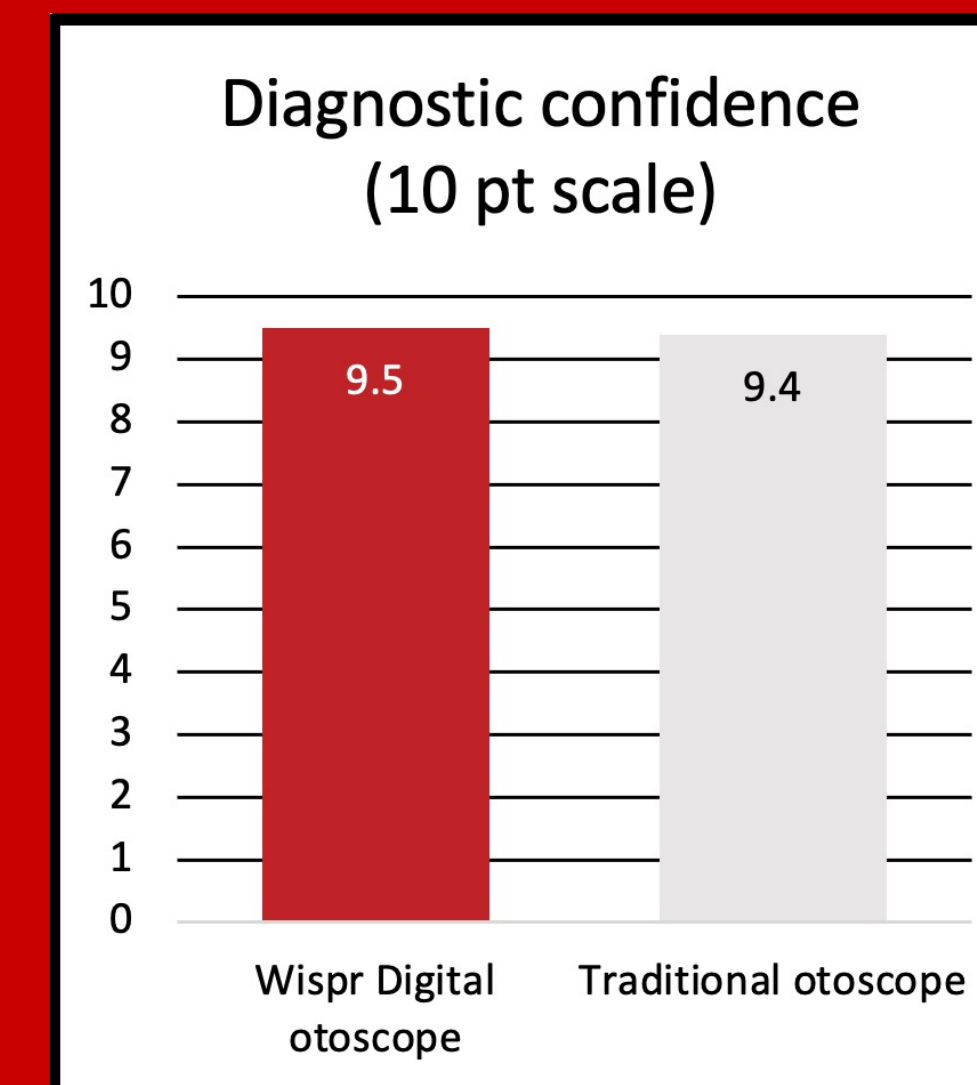
### Provider and Resident Experience

- UC providers who used the Wispr otoscope were surveyed regarding their experience
- Pediatric residents who have used the Wispr otoscope in any of the above listed study settings were invited to complete a survey

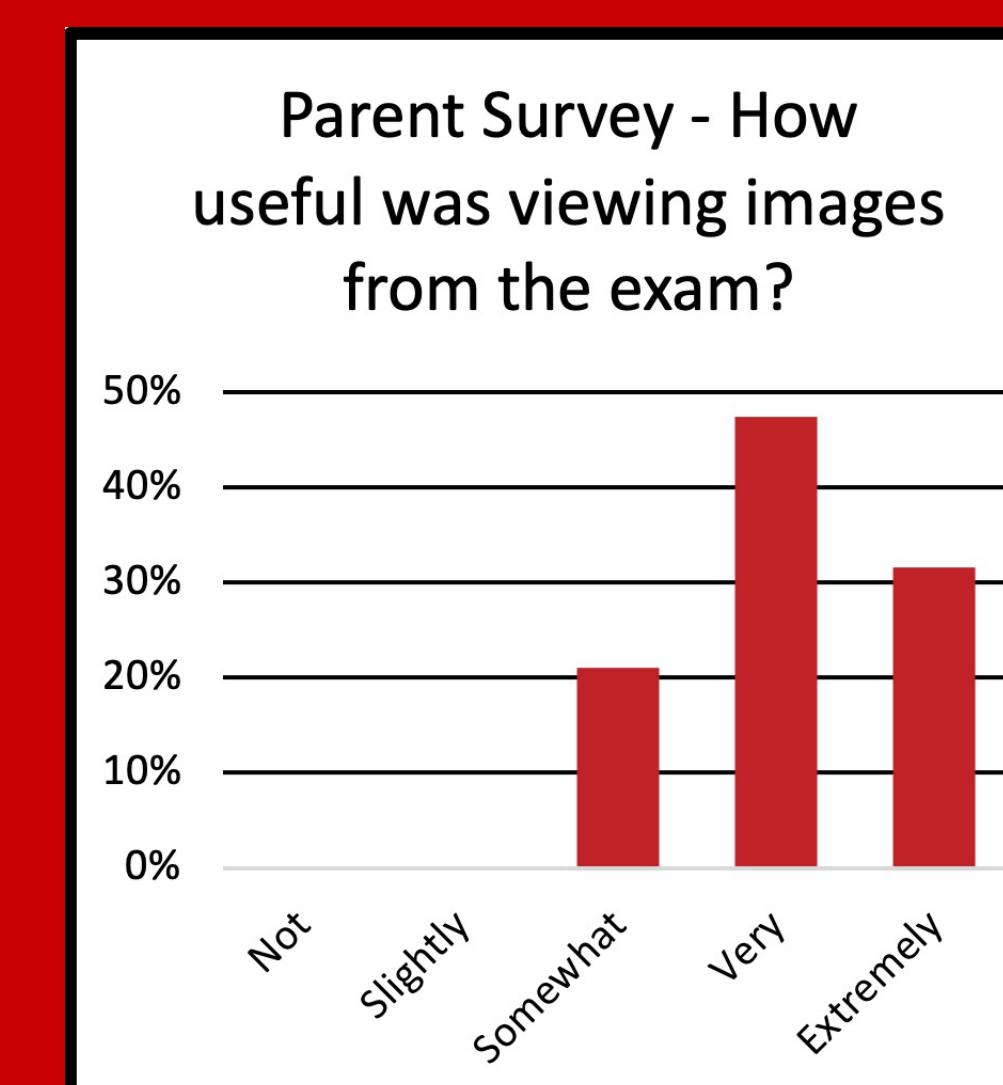
The Wispr digital otoscope was preferred over a traditional otoscope by patient families, urgent care providers, and residents. Diagnostic confidence was high and did not vary with the type of otoscope used.



Most residents (67%) and physicians (57%) expressed a preference for the Wispr digital otoscope



There was no difference in diagnostic confidence when using the Wispr digital otoscope (9.5, n = 52) or traditional otoscope (9.4, n = 54)



All parents were shown images of the exam and expressed a **universal preference** for the Wispr digital otoscope (100%, n=19).

## CONCLUSIONS

1. A majority of providers and parents reported a positive experience with the digital otoscope and expressed a preference for its use over a traditional otoscope.
2. Diagnostic confidence did not change based on the type of otoscope that was used
3. Pediatric residents reported they received more teaching when using the Wispr otoscope
4. Technical difficulties and unfamiliarity with the digital otoscope interface were common reasons that some residents and providers preferred the traditional otoscope

## ADDITIONAL KEY INFORMATION

### Introduction to the Wispr

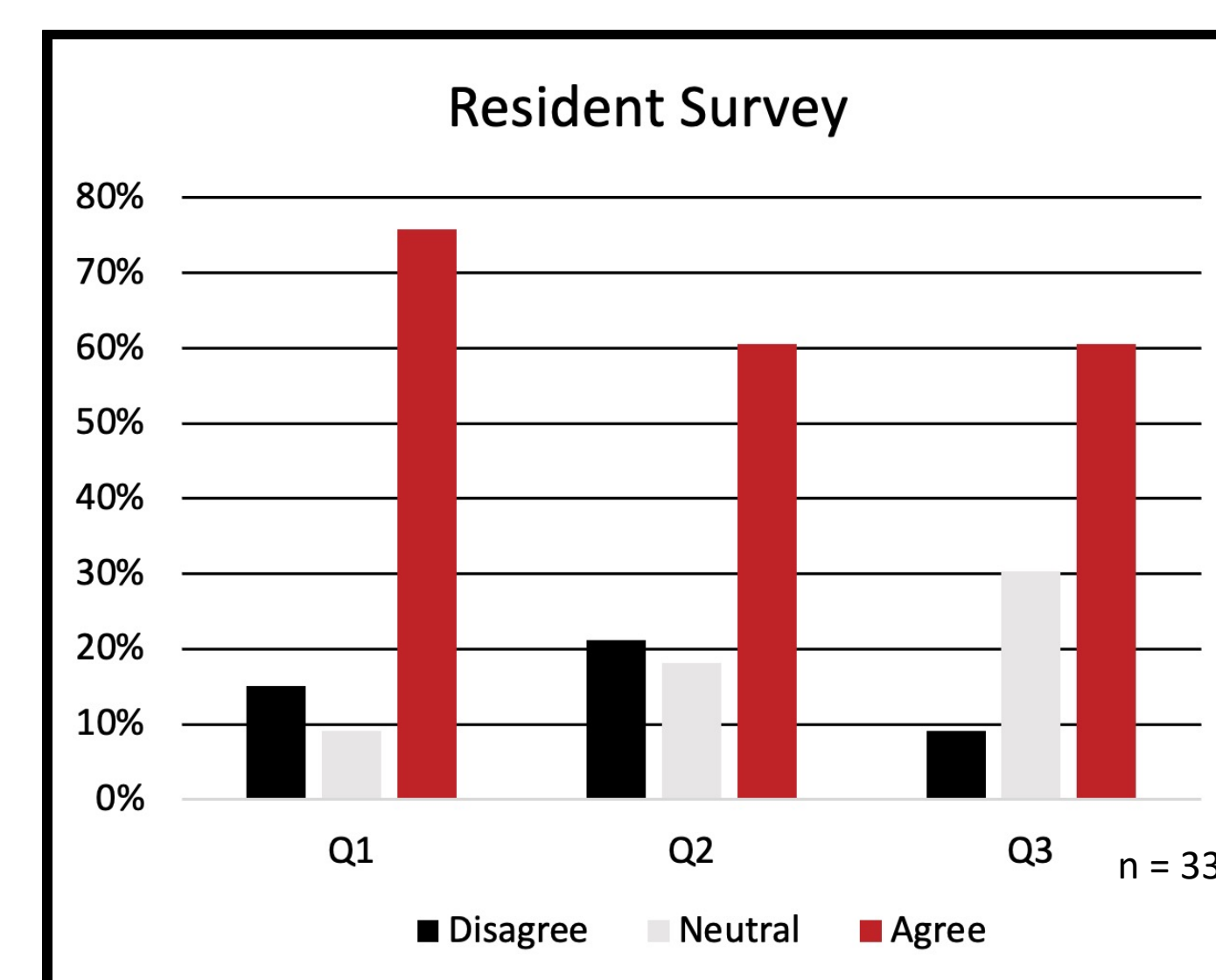
- Captures photos and video
- Review mode allows sharing of images with families, colleagues, and trainees
- Speculum thinner than traditional version
- Attaches to standard wall mount or rechargeable handles



### Acknowledgements:

- Dr. Elizabeth Cox for assistance with survey design
- Dr. Jim Berbee for providing a Wispr digital otoscope for each urgent care site to use during the study

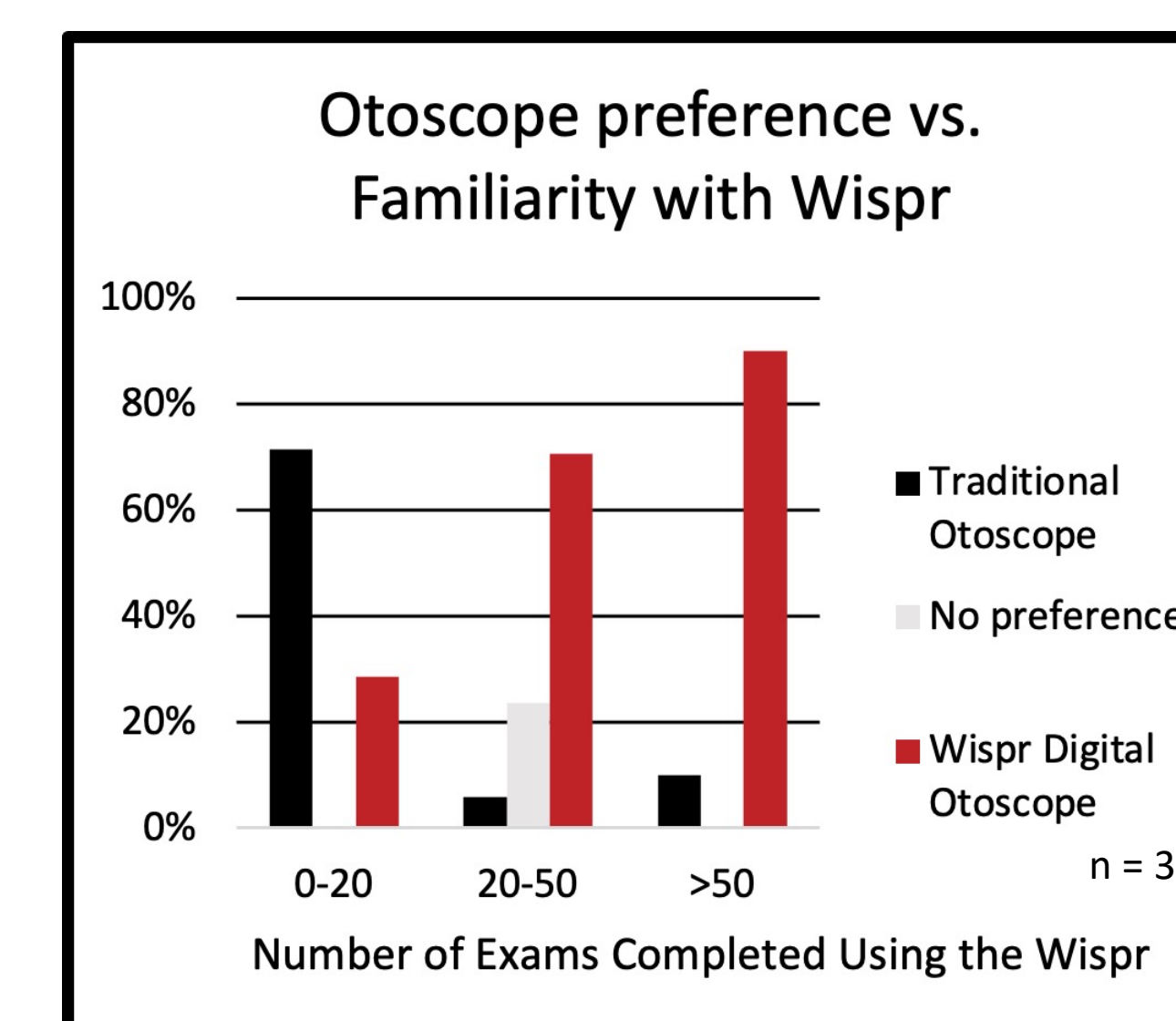
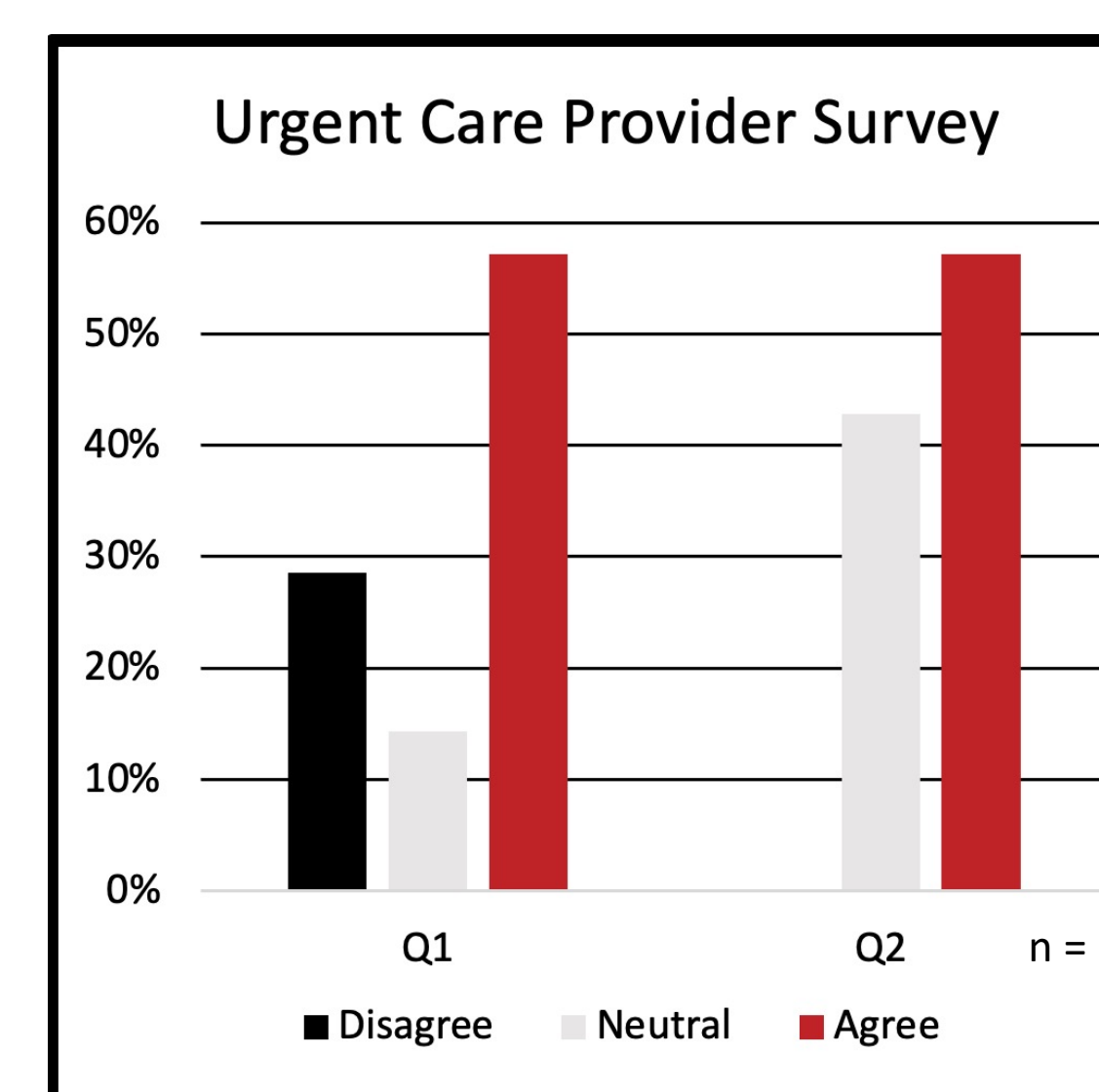
## RESULTS



Q1 - The Wispr otoscope was easy to operate  
Q2 - I felt more confident in my diagnosis when using the Wispr otoscope compared to a traditional otoscope  
Q3 - I received more otoscopy teaching when using the Wispr otoscope compared to a traditional otoscope

### Participant Comments:

- "A bit of a learning curve when first using, but once you get the hang of it, it's awesome"
- "Being able to review the images after the exam with my attending has made my life and patients' lives easier"
- "I had technical difficulties getting a clear picture and getting it to capture images"
- "Absolutely superior diagnostic potential and supports communication with patients and families"



Increased experience with the Wispr otoscope was associated a stronger preference for the Wispr otoscope over the traditional otoscope