## Problem and Purpose

### Problem
- Comprehensive pre-anesthesia evaluation is necessary in the complex pediatric patient in order to identify issues that may lead to untimely surgery delays or cancellation.
- A thorough in-person clinic visit prior to the day of surgery is the standard method.
- Facility location, time constraints, and financial barriers can make this difficult for some families.
- Telemedicine is defined as the remote diagnosis and treatment of patients by means of telecommunications technology.

### Purpose
To implement using telemedicine for pediatric pre-anesthesia evaluation, and to evaluate patient and provider satisfaction.

## Evidence
- Limited evidence is available regarding the use of telemedicine specifically for pediatric pre-anesthesia evaluation.
- However, telemedicine has been shown to be beneficial for adult pre-anesthesia evaluation, and for multiple pediatric specialties.
- A total of 25 articles were reviewed that support the use of telemedicine, including five randomized controlled trials and three systematic reviews.

## Project Design
### Evidence-based Practice Model
The Iowa Model of Evidence-Based Practice to Promote Quality Care was followed with steps including: identify a problem, form a project team, review the literature, pilot a change, evaluate the data.

### Population
A convenience sample of six nurse practitioners (NPs) and 14 patients completed telemedicine pre-anesthesia visits during a five month period.
- Patient ages ranged from 2-21 years, with a mean of 8.33 years (SD 7.46)
- NP experience level ranged from 4-26 years, with a mean of 11.5 years (SD 5.57)

### Setting
Pre-Anesthesia Consultation Clinic at Cincinnati Children’s Hospital Medical Center Base Campus

### Intervention
A videoconferencing encounter was completed between an NP, the patient, and their parent. The encounter utilized the “Jabber” secure videoconferencing application.

## Outcomes
### Evidence
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### Data Collection
- Primary outcome measure was satisfaction. Patients/parents and providers completed a 5-point Likert-scale satisfaction survey after the telemedicine visit.
- Secondary outcome measures were amount of time used by the NP to complete the consult, and unanticipated delays or cancellations on the day of surgery.

### Survey results indicated very high satisfaction with using telemedicine.

### Patients and providers indicated high willingness to use telemedicine again.

### Overall satisfaction with using telemedicine was very high for both patients and providers. In addition:
- Time to complete telemedicine visits was shorter than those performed in person, with a mean of 33 minutes (n=12) as compared to 42 minutes for in-person visits (n=40).
- There were no unanticipated delays or cancellations on the day of surgery.
- Root causes were identified for both technical failures.

## Implications
- The results of this project indicate that it is feasible to continue using telemedicine to complete pre-anesthesia evaluations in children.
- Increased use of telemedicine has the potential to improve patient outcomes by improving the patient-provider relationship and increasing access to care.
- Due to the small sample size of this project, additional research is needed to identify which subpopulations of pediatric patients would most benefit from using telemedicine for pre-anesthesia evaluation.

## Conclusions
The research evidence that is available is generally supportive of using telemedicine. This pilot project provides evidence in support of using telemedicine in the setting of pediatric pre-anesthesia evaluation.

“The future of telemedicine is extremely bright. The sky is the limit as to the applications that are being developed and deployed” (Doarn, 2008, p. 52).

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Can You Hear Me Now?: A Pilot Project Using Telemedicine for Pediatric Pre-Anesthesia Evaluation

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