

Diving into Telemedicine for Pediatric Pre-Anesthesia Evaluation

Gretchen Rogers, DNP, APRN-CNP

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.
- A videoconferencing telemedicine evaluation may be a viable alternative that increases access to care.
- 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

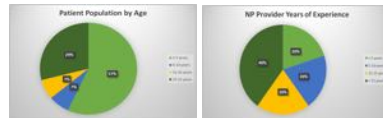
Evidence-based Practice Model

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.



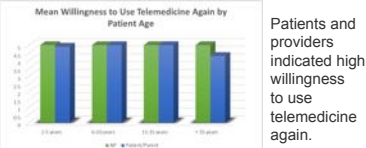
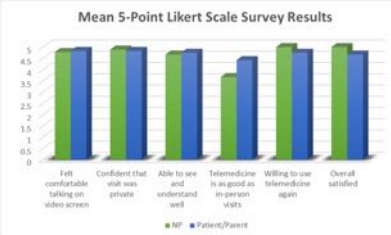
Data Collection

- 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.

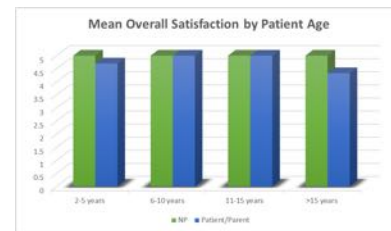
Outcomes

- A total of 14 encounters were performed by six NPs.
- Two of the encounters resulted in technical failures in which the telemedicine visit could not be completed.

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 consults 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).

