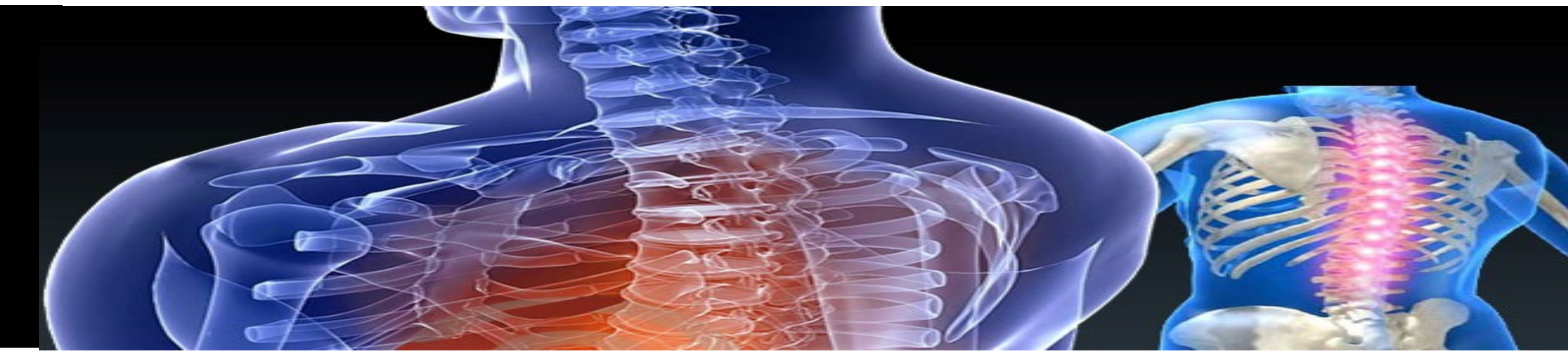


# Tele-Pre-Anesthesia Evaluation's Impact on First Elective Spine Surgical Case Delays and Cancellations

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## Background

- ❖ First scheduled spine case delays and cancellations compromise the on time start of subsequent cases; cause staff and patient dissatisfaction<sup>2,3</sup>; increasing patient anxiety and intraoperative hemodynamic instability<sup>3</sup>
- ❖ 138% increase in patients over age 65 having spine surgery since 2015<sup>1,4</sup> with significant medical co-morbidities requiring an extended pre-anesthesia evaluation time<sup>2</sup> Complex spine procedures performed include spinal fusions, decompressions, laminectomies, and hardware removals<sup>3</sup> associated with extensive blood loss and long operating hours and planned intensive care admissions<sup>4</sup>
- ❖ Pre-anesthesia evaluations at the clinical site are all done on the day of surgery; 60% of cases were delayed with associated case cancellations<sup>5</sup>
- ❖ Telemedicine has reduced barriers to care<sup>6</sup> increased compliance with pre-anesthesia assessment process<sup>7</sup>, improved patient and provider satisfaction, and facilitates patient optimization prior to the day of surgery<sup>2</sup>

## Purpose

- ❖ To evaluate the impact of **tele-pre-anesthesia evaluations** on the rate of delays and cancellations of the first elective spine surgical cases and anesthesia providers' usability perception of the **tele-pre-anesthesia evaluations**.

## Aims

- ❖ Decrease the rate of first elective surgical spine case delays <10%
- ❖ Decrease the rate of cancellations of first elective surgical spine cases <5%
- ❖ Determine anesthesia provider usability perception

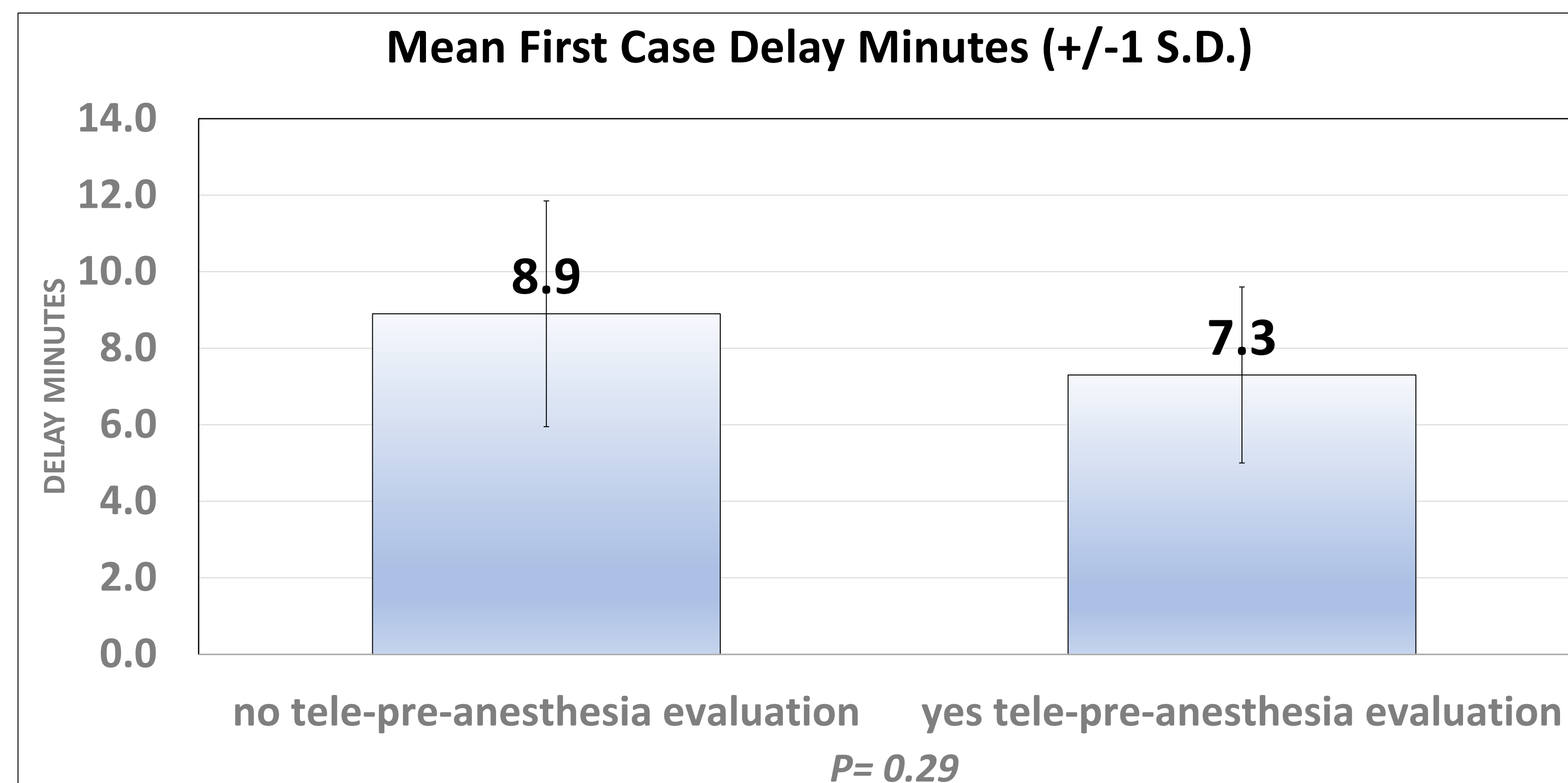
## Methods

- ❖ **Design:** Pretest, posttest design- over 22 weeks
- ❖ **Setting:** An urban 196-bed community hospital
- ❖ **Sample:** First case delay minutes and cancellations; Convenience sample of Anesthesia providers
- ❖ **Intervention:** Anesthesia providers performed **tele-pre-anesthesia evaluations** 5 days prior to procedure. Anesthesia providers' usability perception assessed via Systems Usability Scale survey

## Data Analysis

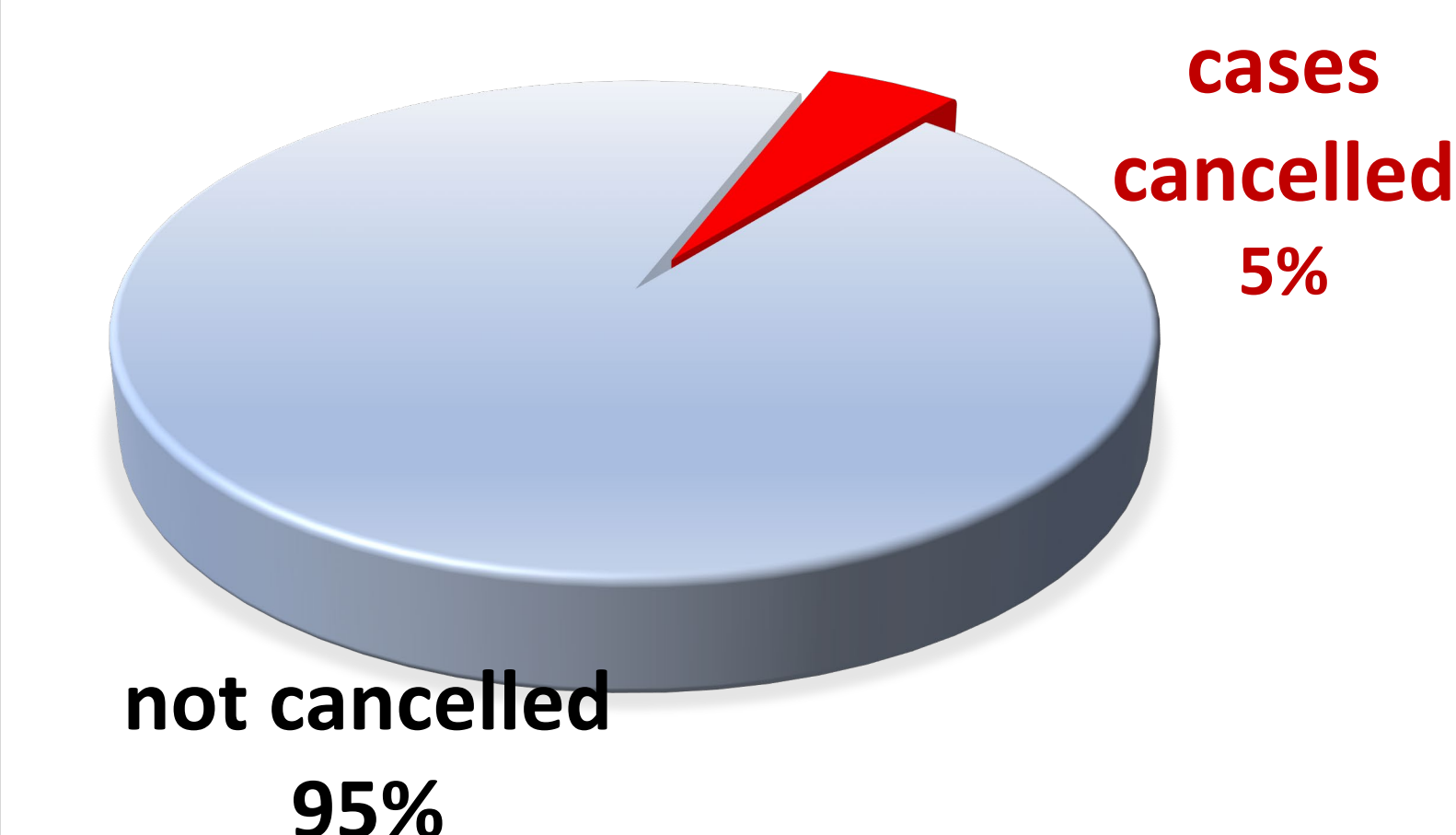
- ❖ **Independent t –test:** to evaluate mean differences in minutes of delay
- ❖ **Chi-squared:** to evaluate mean differences in cancellation occurrence
- ❖ **Descriptive statistics:** to describe anesthesia provider type and SUS scores

## Results

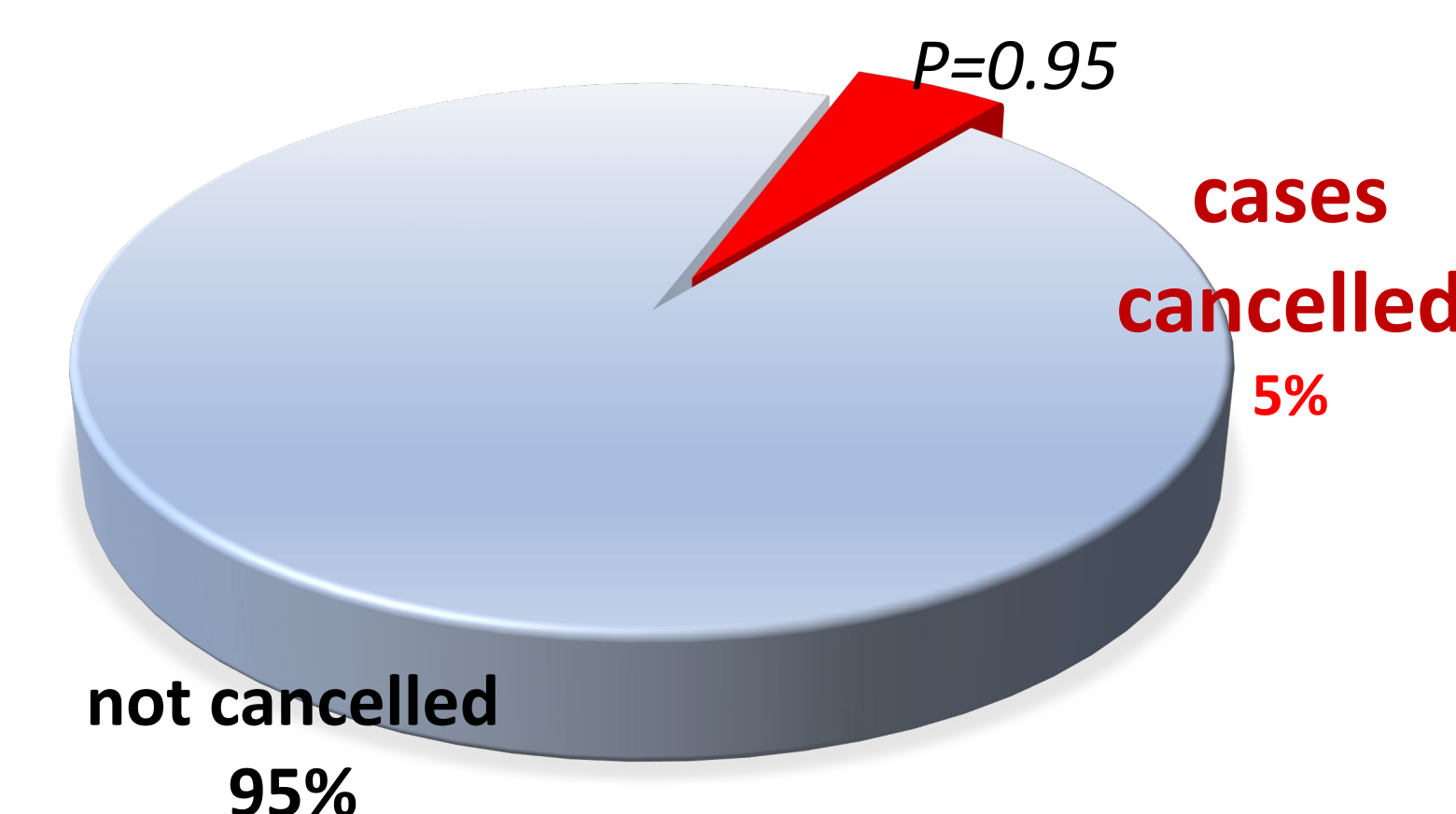


- ❖ 74 out of 285 (26%) cases received a **tele-pre-anesthesia evaluation**.
- ❖ First spinal surgical case was delayed was 7.3±9.6 minutes post-intervention and 8.9±11.7 minutes pre-intervention.
- ❖ 15 total cases were cancelled
- ❖ 4 (5.4%) in the group without the **tele-pre-anesthesia evaluation**
- ❖ 11 (5.2%) in the group with the **tele-pre-anesthesia evaluation**.
- ❖ 9 (90%) of anesthesia providers reported SUS scores of ≥ 68 points which indicate highly usable

### ELECTIVE SPINE CASES WITHOUT TELE-PRE-ANESTHESIA EVALUATION



### ELECTIVE SPINE CASES WITH TELE-PRE-ANESTHESIA EVALUATION



## Conclusions

- ❖ Differences in first spine surgical case delay minutes and the number of cancellations were not statistically significant between the two groups, using the **tele-pre-anesthesia evaluation method**.
- ❖ Anesthesia providers perceived the **tele-pre-anesthesia evaluation** method as highly usable and found the consolidated patient information that was generated from the tele-pre-anesthesia evaluation visit easy to access on the day of surgery.
- ❖ Patient's verbalized high satisfaction from meeting with anesthesia team on the tele-pre-anesthesia evaluations due to increased patient – provider interaction
- ❖ Increased interdisciplinary communication and collaboration
- ❖ Further studies are needed to examine patient satisfaction and cost benefit

## Limitations

- ❖ Underrepresentation of anesthesia providers
- ❖ COVID-19 constraints on staff participation
- ❖ Other factors contributing to delays and cancellations were not accounted for. For example late patient arrival or cancellations, late surgeons, operating room set-up delays, facility or equipment delays, or late arriving anesthesia staff
- ❖ Limited timeframe under which the project was conducted
- ❖ Delayed upload of patient information in EMR by surgeon's offices

## References

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