



## Introduction

- Pharmacogenomics (PGx) is a method of analyzing the response of a person to medications regarding the genetic code
- Anesthesia providers are lacking information and knowledge regarding PGx and its utility in managing their patients
- Offering an educational tool to anesthesia providers regarding the utility of PGx as well as how to interpret its results could lead to a better understanding and incorporation of PGx into anesthetic practice
- The ultimate aim would be that anesthesia providers gain more awareness about PGx and seek to educate themselves further on the topic in order to themselves incorporate it into their anesthetic practice
- A tailored management plan unique to each patient's genetic code not only provides for a safer anesthetic but more predictable outcomes as well
- Would a didactic educational presentation alleviate concerns of anesthesia providers regarding implementation and interpretation of pharmacogenomic testing into current anesthetic practice?

## Literature Review

- Keywords:** pharmacogenomics, pharmacogenetics, precision medicine, tailored medicine, genetics, cytochrome enzyme, drug metabolism, poor-metabolizer, ultra-metabolizer, anesthesia allele: variants, single-nucleotide polymorphism
- Initial search led to 11,691 articles of which 41 articles were included in the meta analysis and referenced

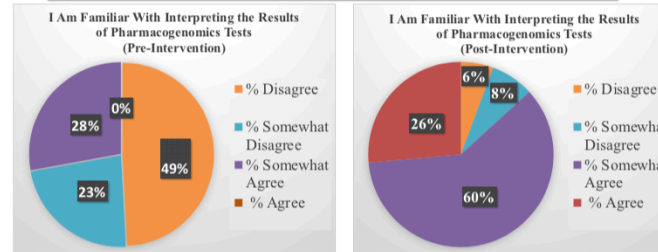
### TRADITIONAL TREATMENT:



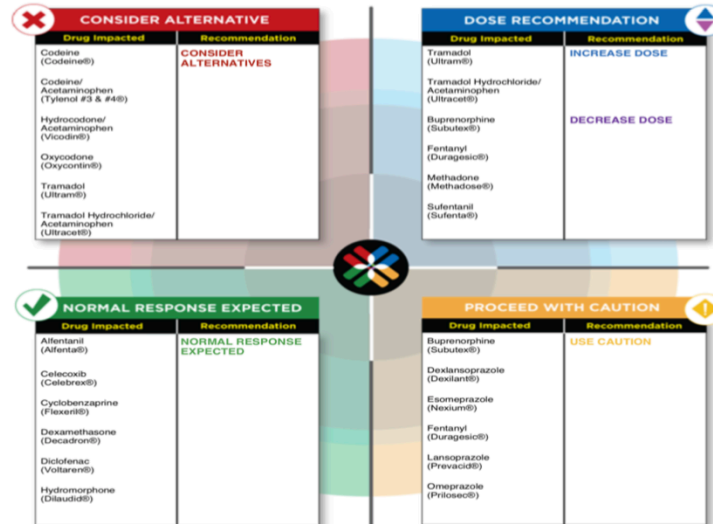
## Methodology

- Prospective, descriptive, multicohort design which examined the impact of a didactic educational presentation with use of a highly reliable survey set
- Three times and settings where the pre-survey was administered, followed by the educational presentation and subsequent post-survey evaluation which mimicked the initial survey
  - New Jersey urban-academic medical center
  - New Jersey sub-urban academic medical center
  - NJANA Fall Symposium
- n= 60 CRNAs and RRNAs
- This provided statistically measurable, qualitative continuous and categorical data as to the efficacy of the educational intervention

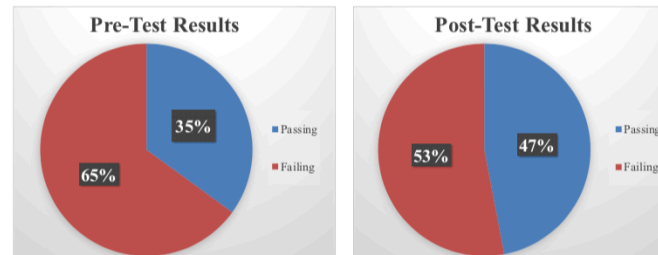
## Results



- Lack of education is the main reason for the trepidation of providers toward the use of pharmacogenomics
- Significant increase in anesthesia provider confidence in interpreting PGx test results from 0% to 26% agree
- Overall test results, 35% passing rate with pre intervention survey and 47% passing with post intervention survey



- Pharmacogenomics testing is expanding, and the majority of the providers are unable or unwilling to utilize PGx results related to lack of understanding, liability and general misinformation regarding interpretation



## Discussion

- 73% of anesthesia providers confirmed that they lack education on PGx
- 92% stated that they want more information about PGx
  - This was overwhelmingly CRNA/RRNA dominant
- Statistically significant positive correlation with educational intervention and participants improved understanding & interpretation of PGx reports ( $P < 0.05$ ) which leads to positive steps toward integration
- PGx can help reduce costs and expenses
- Decrease ADRs and improve patient outcomes → improve quality and safety
- More information → better patient care → tailored anesthetic
- Lifelong learners need to keep up with the advancements in medicine
- PGx is continually growing and used throughout Europe and in US hospitals as a safeguard for patients to receive the best possible care
- PGx has marketing value that is just being explored
- Limitations of the study → Smaller sample size with fewer complete responses than anticipated



## Conclusion

- More education is needed on the topic of PGx
- Practitioners recognize it is an area of weakness and is relevant to their practice
- Offer a 30-minute didactic, educational presentation on the topic of PGx and how to incorporate this into practice

## References

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