

# Improving Efficacy of Care of Pediatric Immunodeficient Patients Undergoing Bone Marrow Transplant

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## PROBLEM STATEMENT

- Primary immune deficient patients (PIP) awaiting bone marrow transplant (BMT) require the expertise of immunology and BMT providers, which includes advanced practice providers (APN).
- Management of PIPs requiring BMT is conducted in two clinics and there is no standard operating procedure after the patient is diagnosed in the immunology clinic.
- There is no published data on the use of a multidisciplinary clinic for PIPs requiring BMT.
- For PIPs requiring BMT, receiving care in separate clinics negatively impacts patient satisfaction and leads to redundant testing, which may result in increased treatment costs (Giaccone et al., 2020; Barrios et al., 2020).
- A survey was conducted with immunology and BMT providers and staff. The unanimous results indicated providers and staff felt the conjoint clinic would be beneficial.

## PROJECT PURPOSE

- The purpose of this quality improvement (QI) project is to implement a conjoint clinic with immunology and BMT providers to improve the efficacy of care of PIPs awaiting BMT.
- The objectives of this project are to demonstrate improvement in patient satisfaction by 10% and a reduction in duplicate diagnostic testing and costs by 10% within 12 weeks in PIPs requiring a BMT.
- Does a conjoint clinic compared to separate clinics affect patient satisfaction, the number of diagnostic tests ordered, and diagnostic testing costs?

## MODEL/NURSING THEORY

- The Donabedian conceptual model is based on structures, processes, and outcomes. The underlying framework for this model states that good clinical structure will lead to improved processes, which will produce desired patient outcomes (Polit & Beck, 2021).
- Parse's Human Becoming Theory guides health professionals to work together to provide patient care that allows the patient the best quality of life, sees the patient's perspective, and guides patients toward the healthcare goal (Mitchell, 1992).

## METHODS

### Subjects

- PIPs waiting for a BMT who were seen in the immunology clinic of the academic center
- Inclusion criteria:
- PIP diagnosis, requiring a BMT, and less than 21 years of age
- Exclusion criteria:
- Secondary immunodeficiency diagnosis and greater than 21 years of age

### Settings

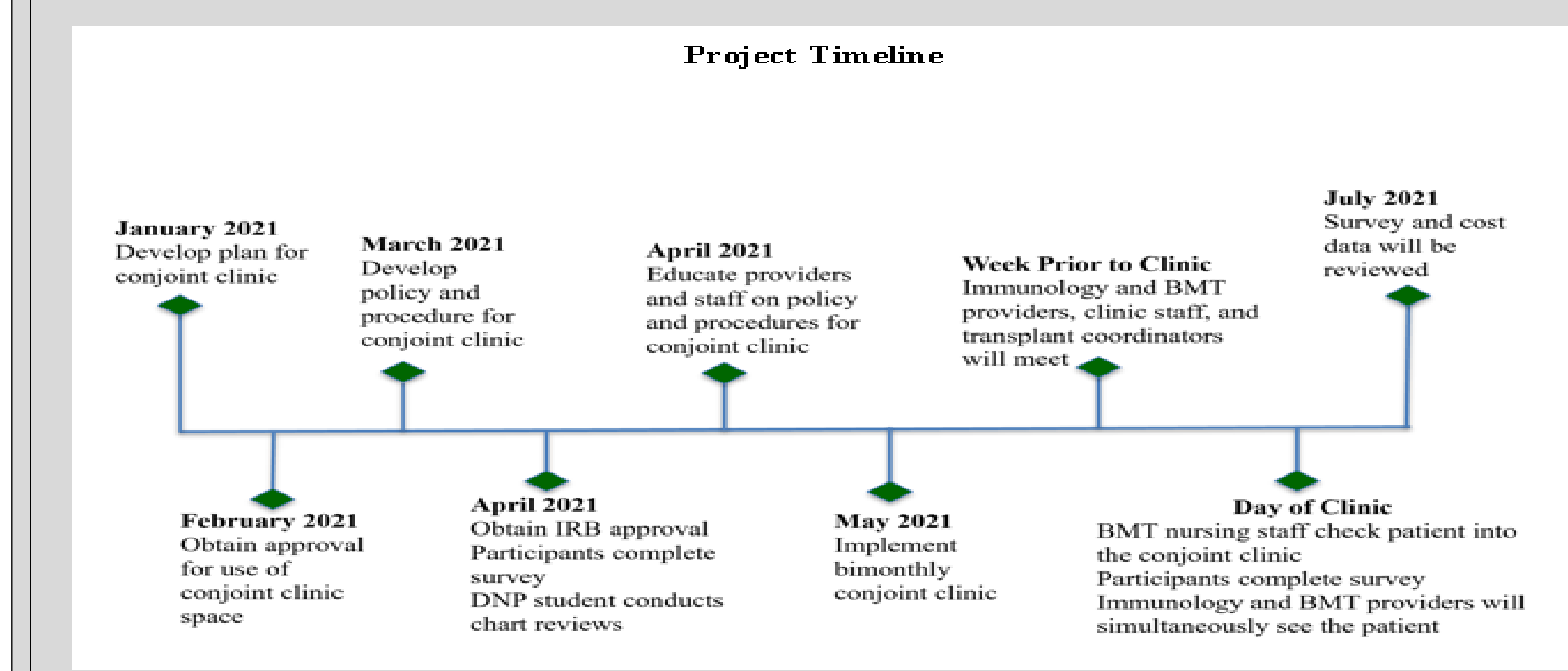
- The academic immunology and hospital based BMT clinics are located on the same floor of the outpatient care center at the children's hospital.
- Support and IRB approval were obtained from both institutions.
- The conjoint clinic was implemented in an outpatient clinic center at the children's hospital.

### Instrument tools

- Patient satisfaction was measured pre/post clinic visit utilizing the Medical Practice Press Ganey Survey.
- Eight categories, Likert scale, with a low score of 1 and a high score of 5

### Intervention and data collection

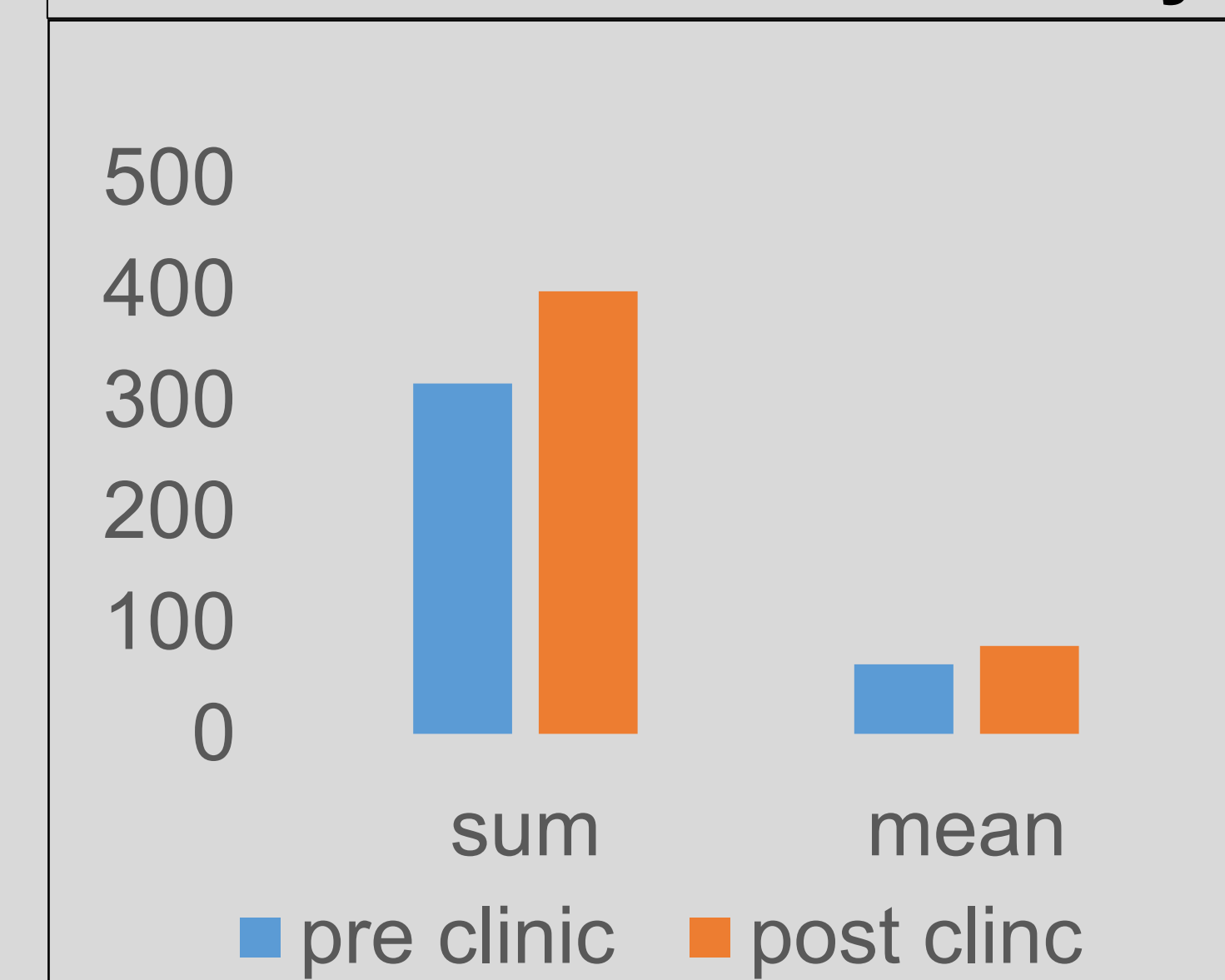
- Intervention data was collected over 12 weeks
- Patient satisfaction survey completed by each participant pre/post conjoint clinic
- Number of diagnostic and laboratory tests ordered before and after the implementation of the conjoint clinic were compared
- Cost of testing ordered before and after the implementation of the conjoint clinic were calculated and compared
- Statistical analysis performed with independent t-test



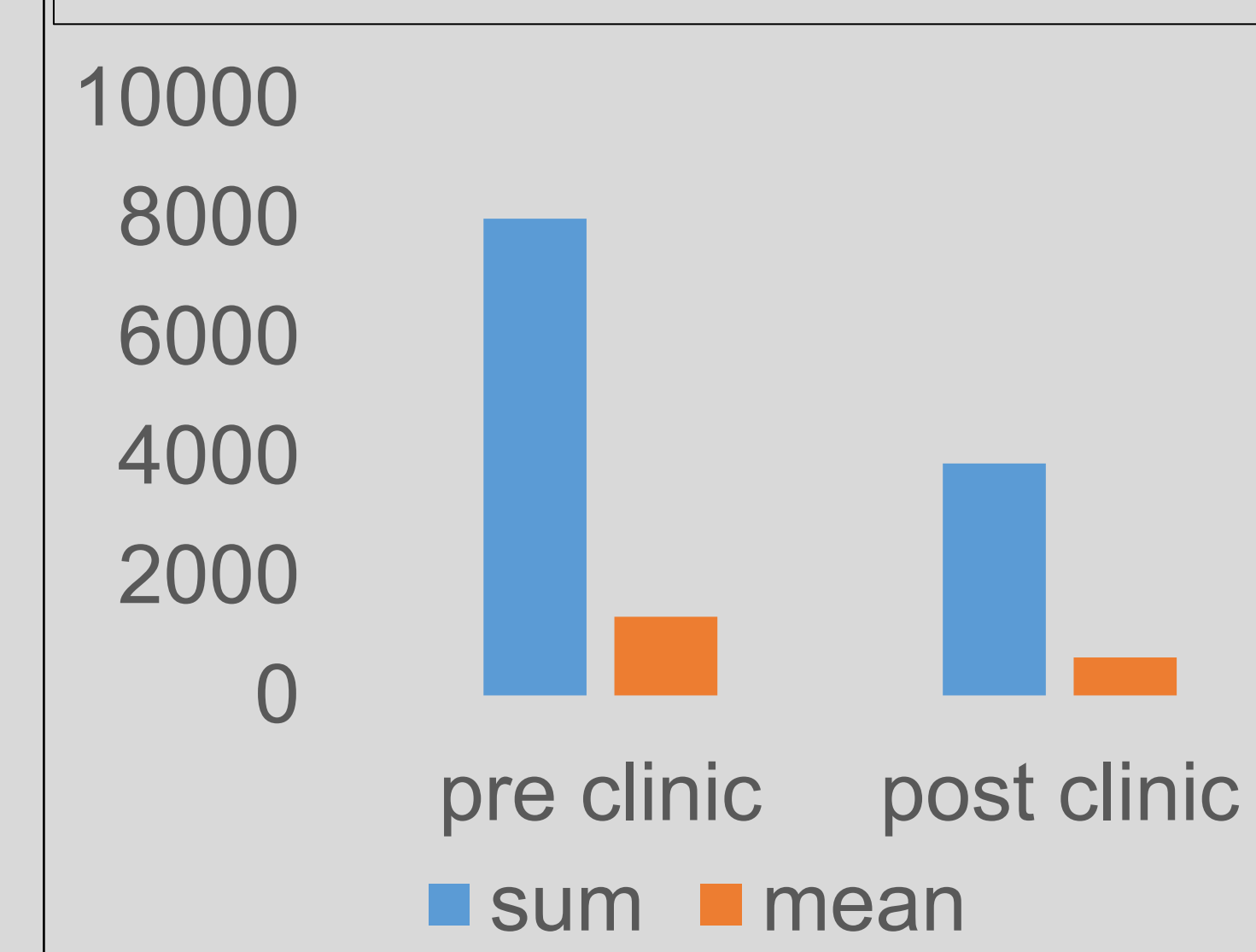
## RESULTS

- Patient satisfaction was measured utilizing the Medical Practice Press Ganey survey. The mean of each category were compared between patients seen in separate clinics and those seen in the conjoint clinic.
- An independent t-test demonstrated statistical significance
  - Results indicated that patient satisfaction improved by 21% ( $p=.0003$ )
  - Results indicated that the number of redundant test ordered decreased by 48% ( $p<.0058$ )
  - Results indicated that the cost of tests ordered decreased by \$683 ( $p<.0026$ )

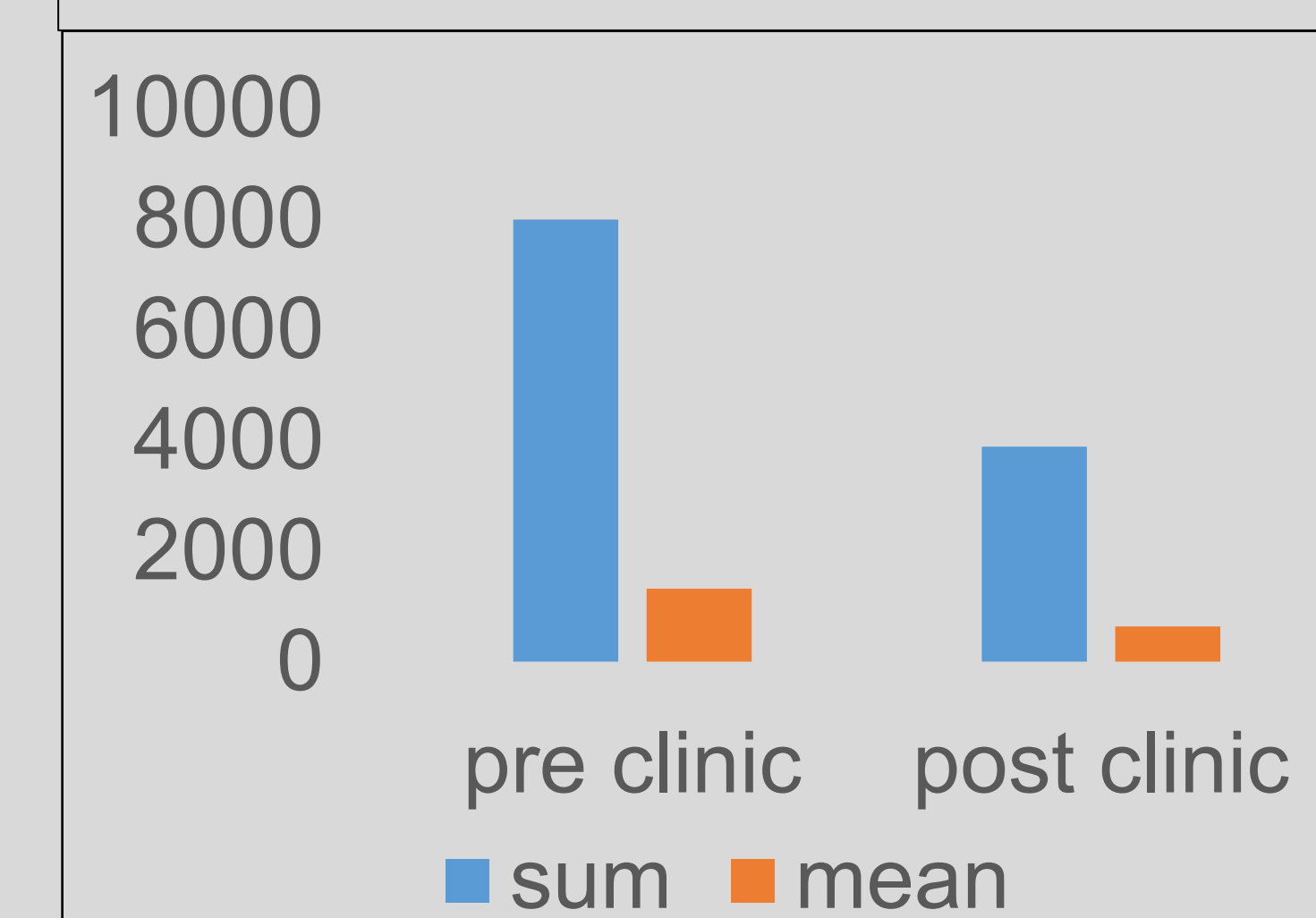
### Patient Satisfaction Survey



### Number of Tests Ordered



### Cost of Tests Ordered



## DISCUSSION

- As PIPs that require BMT are rare, it is imperative that patients in need of a transplant receive specialized care to improve outcomes.
- The conjoint clinic with immunology and BMT providers caring for PIPs requiring BMT aided in quality and consistent care.
- The conjoint clinic with specialists specifically trained and educated to implement BMT procedures provided the care necessary to improve patient satisfaction, decrease the number of tests ordered and associated costs.
- Implementation of protocols and procedures specific to the conjoint clinic improved workflow
- Patients seen in the conjoint clinic had fewer no shows or canceled visits than patients seen in separate clinics.

## IMPLICATIONS FOR ADVANCED PRACTICE

- The results of the successful implementation of this conjoint clinic address a gap in the literature.
- Implementation of a conjoint clinic for PIPs awaiting BMT will lead to improved patient satisfaction and decrease in number of test ordered and cost.
- This conjoint clinic may lead to the creation of conjoint PIPs and BMT clinics across the state.
- Immunology and BMT providers follow similar policies and procedures; the care provided to PIPs will be consistent despite the location

## SUSTAINABILITY

- Assignment of specific roles for providers and staff
  - Nurse champion
  - Transplant coordinator
  - Conjoint clinic team
- The use of a designated nurse champion will aid in consistent adherence to policies and procedures into the future.



## REFERENCES

Implementation of a conjoint clinic improved patient satisfaction by 21%, decreased the number of tests ordered and associated costs by 48% and 49% respectively.