Collaborative Oncology Testing: Development of an Interprofessional Team

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Conflict of Interest

- The authors certify that they have no affiliation with any organization or entity with any financial or non financial interest.
Objectives

- Define interprofessional team
- Identify the research roles/responsibilities of each interprofessional team member
- Describe the foundation required to implement a research project
- Identify unique needs for a research team
- Explain how the team maintains a cohesive relationship to meet the study requirements
Introduction

- Interprofessional team consists of team of different professions to collaborate and bring knowledge and skills of their disciplines

(Mitchell et al., 2011)
Interprofessional Collaboration and Education

- Healthcare professionals are not trained in interprofessional setting
  - Miscommunication
  - Lack of coordinated care
- It is necessary to work in collaborative environment
- Positive outcome of interprofessional collaboration
  - Effective team cohesion
  - Patient satisfaction
  - Less hospital readmissions
  - More effective results

(VanderWielen et al., 2014)
Both solid tumors and hematologic cancers continue to be health issues in the state of South Carolina.

African American women seem to develop a more aggressive type of breast malignancy and both genders develop life-threatening leukemia.
Purpose

- Development of an interprofessional team from three facilities is an important foundation for successful completion of a research study requiring patients, a data collection team and building the multi-gene technology
Purpose Cont.

- The research triangle embracing the three facilities includes approximately 60–90 one-way miles on each side of the triangle for the researchers to come together
Specific Aims

- To establish a diagnostic tool not currently available in SC that can identify additional risk variants in breast and leukemia cancer patients, especially those from diverse populations.
- To validate Next Generation Sequencing (NGS) diagnostic panels developed by the diagnostic laboratory for the identification of mutations present in the SC population with newly diagnosed breast cancer or leukemia.
Specific Aims Cont.

- Determine if additional risk variants in other breast cancer related genes (other than \textit{BRCA1/2} mutations) or leukemia–related genes can be identified.
- Compare the lab diagnostic results with commercial laboratories utilized to identify variants in the breast cancer and leukemia susceptibility genes.
Specific Aims Cont.

- Assess the number and significance of uncertain variants from the lab diagnostic panels
- Identify if these additional risk variants can be used to advise patients on prevention or treatment
- Determine if genotypes predict clinical outcomes in different ethnicities
Specific Aims Cont.

- Work towards at least a 3 week turn-around time for the NGS panels to ensure timely surgical or chemotherapy intervention for malignancies
- Develop opportunities to collaborate with other institutions and laboratories throughout SC in order to create a more cohesive network of oncology-based services in SC
The Method

- Creation of grant application
  - Co-created by faculty members at a state university and a local genetic research/clinical facility
- Study design and protocol
- Multiple collaborative meetings
- IRB process
- Patient recruitment
- Data and sample collection
- Sample transfer to the lab facility
- NGS and bioinformatics analysis
Research Roles/Responsibilities

- **Faculty (PI)**
  - Assume primary responsibility for the administration of the proposed project
  - Responsible for assuring that the grant is implemented according to the proposal
  - Supervises all aspects of the University portion of the project
  - Directs the doctoral students
Lab faculty members (Co-PIs)

- Provide lab services to the project
- Oversee NGS design, testing and validation of the targeted NGS panel
- Provide data review and reporting of the specimens
- Direct bioinformatics personnel
Research Roles/ Responsibilities Cont.

- Healthcare Genetics Doctoral Students
  - Collect demographic/ phenotypic/oncologic information from each participant
  - Collect tumor tissue sample, register and save to a biobank per protocol
  - Prepare sample for transport to the lab facility
Research Roles/ Responsibilities Cont.

- Healthcare Genetics Doctoral Students
  - Monitor literature for “new” breast cancer and leukemia susceptibility genes
  - Conduct results information sheet study
  - Implement diverse recruitment strategies to assure meeting accrual goals for under–insured breast cancer and leukemia patient populations in SC
Research Roles/Responsibilities
Cont.

- **Laboratory Technologist**
  - Nucleic acid extraction
  - Perform Next Generation Sequencing
  - Align individual sequence reads to reference genome
  - Validation of NGS variants using Sanger sequencing

- **Bioinformatics specialist**
  - Interpret the results and compare them to various genomic databases
  - Data mining to identify new mutation signatures
The Outcome

- More than 70 patients already on the study
- NGS result is ready for review by the lab facility
- The cohesive team is planning to submit a follow-up grant to the external foundation and a national funding source over the next 12 months
References