Q5

Type of Project Grant

RESEARCH: To investigate a question and/or to develop a technology in pathology/lab medicine services that improves healthcare quality, cost, or access.

Q6

Estimate of Total Budget (no details at this time, just total value up to $5,000 for one year)

5,000

Q7

Short title: (<4 words)

Sickle cell patient alloimmunization

Q8

Full Title:

Alloimmunization after transition to adult care for patients with sickle cell disease.

Q9

Short Summary: (<250 words)

Sickle cell disease (SCD), the most common inherited blood disorder in the US, affects up to 100,000 Americans and 1 out of 365 African-American babies born in the US. Red blood cell transfusion is the mainstay of intervention in managing patients with SCD. Unfortunately, repeated RBC transfusions can lead to alloimmunization in up to 50% of the sickle cell patients. The alloimmunization could result in immediate and delayed hemolytic transfusion reactions, and hemolytic disease of the fetus and newborn. The expense for selecting an antigen-matched unit increases $100-200 for each negative antigen tested. The lifetime care cost for a sickle care patient is estimated to be greater than $460,000.

To better understand the risks of alloimmunization and thus reduce the cost of sickle cell patient management, we compared the alloimmunization rate of sickle cell patients previously cared at St Jude Children's Research Hospital (SJCRH) to that of patients transitioned to adult care in greater Memphis area including Methodist Hospital and Regional One Hospital. Our preliminary data revealed a 26.9% increase of alloimmunization rate among the 26 chronically transfused sickle cell patients who were initially cared at SJCRH and later transitioned to Methodist. We hypothesize that patients with SCD are at a higher risk of developing alloantibodies when transition to adult care.

The aims of the project are 1) To investigate the prevalence of alloimmunization in previous St. Jude sickle cell patients and after transition to adult care; 2) To identify causes/factors that contribute to the development of alloantibodies in patients with SCD after transition to adult care. The award grant will be used for data collection at different hospitals and data analysis. Completion of the study will lead to the understanding and improvement of Sickle cell patient healthcare utilization.