Introduction:
Goal directed therapy has been shown to improve morbidity, mortality and costs in a number of different medical settings. ROTEM® (TEM Systems, Inc., Durham, NC) allows for a rapid test that may improve blood utilization and outcomes [1, 2]. The pediatric cardiac operating room is a major site of blood product utilization in a children’s hospital. There are both procedural and patient risk factors for intraoperative coagulopathy. We implemented a quality improvement project using ROTEM® to improve blood utilization in the pediatric cardiac operating room.

Methods:
A quality improvement project was initiated in attempt to decrease the amount of cryoprecipitate wasted during cardiac surgery. Cryoprecipitate use was chosen as the primary measure because of high waste, likely secondary to inability to reuse once thawed. A transfusion pathway was established in collaboration with the transfusion medicine department after reviewing relevant literature. [3] The guidelines recommended fibrinogen concentrate (RiaSTAP®, CSL Behring, King of Prussia, PA) as an alternative to cryoprecipitate for bleeding secondary to hypofibrinogenemia in patients weighing more than 5 kg. The guidelines were discussed with all anesthesia and surgical providers at their quality conferences and implemented in April 2015. A review was completed on the cryoprecipitate use and waste 7 months before and after implementation of the protocol.

Results:
The average number of cryoprecipitate units wasted from October 2014 to March 2015 was 43.3±14 95% CI: (32.9-53.7). The average number of units wasted from April 2015 to October 2015 was 12.7± 6.1 with 95% CI of (7.1-18.3). The run chart (fig 1) shows a sustained decrease in the waste of cryoprecipitate after implementation of the transfusion pathway. The average number of cryoprecipitate transfused during these two periods were 33.9± 8.1 and 20±8.1 with a 95% CI of (26.4-41.4 and 12.5-27.5) respectively. Only 3.4 vials of fibrinogen concentrate were used on average each month following protocol initiation. The average number of cases per month from these two periods of time were 78.7± 5.4 and 86.4± 8.5.

Conclusion: The use of the new goal directed transfusion pathway decreased the amount of cryoprecipitate wasted in the 7 months following its initiation. There is a trend towards a decrease in the cryoprecipitate used, though this was not an outcome measure.