The Problem
- Time in therapeutic range (TTR) is a measure of the amount of time spent in the therapeutic range, typically INR 2-3 or 2.5-3.5.
- Time spent outside the therapeutic range increases the risk of clot, embolism or bleeding.
- The benchmark for a high quality anticoagulation center in the United States is an average TTR of >64%.
- BIDMC is consistently above 64%, but each percentage point increase in TTR reduces the risk of harm to our patients.
- One of the 2014 operating goals for BIDMC is to reduce harm related to anticoagulation management by increasing the TTR by 2 percentage points in our Anticoagulation Management Service (ACMS) patients.

Aim/Goal
Increase the average TTR for the Anticoagulation Clinic by 2% by targeting the patients with lowest TTR.

The Team
- Stoneman Group: Angela Higgins, MD, Patricia Peter, MD, and Anna Wolfson, MD
- Anticoagulation Group: Diane Brockmeyer, MD, Jennifer Mackey, and all the anticoagulation nurses

Methods
In order to identify an intervention, we analyzed patients at highest risk:
- TTRs were calculated for a randomly chosen sample of 208 of 760 patients on anticoagulation.
  - The lowest quartile was identified and analyzed.
- Anticoagulation nurses were asked to identify 2-3 patients they have had difficulty managing.
  - Charts were reviewed to identify barriers and common themes.
  - Primary care doctors were contacted to identify obstacles to care.

The Results/Progress to Date

Lessons Learned
After reviewing the data and performing chart reviews, it was difficult to identify unifying themes for the patients with low TTRs. Each patient has his or her own unique obstacles to achieving ideal TTR and thus one simple intervention is not going to be a perfect fit for all patients. With this in mind, we proposed a patient centered multidisciplinary approach.

Next Steps/What Should Happen Next
We propose a multidisciplinary approach targeting patients with TTR <50% as follows:
- Step 1. Anticoagulation RN will email PCP to alert them of their patient’s low TTRs with the goal of identifying a simple intervention.
- Step 2. Interdisciplinary meeting with patient, family, PCP, representative from anticoagulation clinic during PCP clinic visit to discuss indication, barriers, and interventions.
- Step 3: Implement and monitor for 2-3 months for improvement