TRIO STUDIO: Recruitment for the Myocardial Ischemia and Transfusion (MINT)

By Kirsten Hendrickson
Administrative Manager, Rush Alzheimer's Disease Center
Rush University Medical Center

At IIT Institute of Design
Authors: Santosh Basapur, MS, Sherry Robison, MBA, Raj C. Shah, MD, and Prof. Keiichi Sato
Email for questions: basapur@id.iit.edu, srobison@bsd.uchicago.edu and/or raj_c_shah@rush.edu
May 9, 2018
TABLE OF CONTENTS

| Topic of Studio: MINT Study Recruitment and Communication Problem | 3 |
| Attendees: | 3 |
| Summary: | 3 |
| Top 3 Actions Proposed by the Studio Participants to Kirsten Hendrickson: | 3 |
| TRIO Studio Problem Description: | 4 |
| Main problem for the studio participants to solve: | 6 |
| Studio Methodology: | 6 |

Design Science Method: 6

Design Thinking Based Solutions: 7

Problem visualized with Insights: 7

High level insights: 9

Solutions Generated by Design Thinking Approach Team: 11

Appendix 1: 13

Appendix 2: 13

Addendum 1 - 30 Day Follow up: 19

Addendum 2 - 90 Day Follow up: 20

Addendum 3 - 1 Year Follow up: 21
TRIO STUDIO: Recruitment for the Myocardial Ischemia and Transfusion (MINT)

By: Kristen Hendrickson

Administrative Manager, Rush Alzheimer’s Disease Center
Rush University Medical Center

Facilitator: Santosh Basapur, IIT Institute of Design

Research Assistants: Abhignan Sai Godha, Divy Jain, Shuyi Liu, and Yun Yang (MDes Students)

Attendees:
Design Thinking Team: Jessica Shore Loyola Medical University, David Sedillo RUMC, Anna Alecci U of Chicago, Julie Johnson U of Chicago, Cherese Pullum RUMC, Sherry Robison ITM, U of Chicago, Drew Simon ITM RUMC, Raj Shah ITM RUMC, Gerald Stacey ITM U of Chicago, and Keiichi Sato, IIT Institute of Design

Summary
Kirsten Hendrickson, Rush University Medical Center (RUMC), introduced the goal of the MINT Study and the challenges of enrolling participants. She gave background information and introduced the challenges to the studio on how to best recruit for this study. MINT study aims to determine whether a liberal transfusion strategy with a threshold of 10 g/dL reduces the 30-day composite outcome of all-cause mortality or nonfatal myocardial reinfarction compared to a restrictive transfusion strategy with a threshold of 7 to 8 g/dL among 3,500 patients with an acute myocardial infarction and a hemoglobin concentration less than 10 g/dL.

Design thinking approach was primarily used to solve these problems faced by Kirsten and her team at RUMC. Many suggestions based in experiences at different institutions were made:

Top 3 Actions Proposed by the Studio Participants to Kirsten Hendrickson:

1. Ownership can be shifted to Nursing staff. They can be the person identifying eligible patient and asking for attending consent. Incentivize them.
2. Prescreen patient using EPIC and better target the patients.
3. Partner with area hospitals to cast a wider net for potential patients.
TRIO Studio Problem Description:

The flow from reviewing eligibility to approaching the patient has many players with varying responsibilities. How do we improve the number of patients we are able to approach for consent?

Kirsten Hendrickson, Rush University Medical Center (RUMC), introduced MINT Study. The main hurdle is the flow from reviewing eligibility to approaching the patient. It has many players with varying responsibilities making it complicated for the study team to recruit. Kirsten’s challenge to the studio was: How do we improve the number of patients we are able to approach for consent?

The trial is multi-institutional and will enroll 3500 hospitalized patients diagnosed with myocardial infarction who are anemic (have blood counts less than 10 g/dL) to receive either a liberal or a restrictive transfusion strategy. Patients assigned to the liberal transfusion strategy will receive a red blood cell transfusion if there is a blood count less than 10 g/dL. Patients assigned to the restrictive transfusion strategy are permitted to receive a blood transfusion if the blood count is below 8 g/dL and the doctor believes it is in the patient’s best interest. A transfusion will be strongly recommended if the blood count drops to less than 7 g/dL. If the patient has symptoms of angina (e.g., chest discomfort described as pressure or heaviness) that does not go away with medication, a blood transfusion will be ordered regardless of the blood count.

Patients will be followed up with a phone call, at 6 months to assess how well they are recovering from their heart attack.

Current recruitment strategy includes:

- Study staff reviews a list of all in-patients who meet criteria
- PI reviews any potentially eligible patients to confirm eligibility
- Attending for eligible patient is consulted to receive permission to approach the patient
- Patient is approached for enrollment

The flow from reviewing eligibility to approaching the patient has many players with varying responsibilities. It becomes difficult for the study team to improve the number of patients they are able to approach for consent.

Current approach includes presentation of information on MINT to units of Cardiology and Cardiovascular surgery and to nursing leaders. The study team has attempted to reduce the time from first eligibility screen to approaching the attending physician in an attempt to avoid missing an eligible patient. The issue is that this takes time, effort and personal connections with the attending.
Figure 1. Digitized view of whiteboard about issues in “MINT Study”
Main problem for the studio participants to solve:
How to develop communication flows with attending physicians and their clinical staff to improve the patient recruitment process?

Studio Methodology
Design Science approach was used to solve this problem(s).

Design Science Method
We used the Design Science approach with five steps:

1. Created a free form mind map of the problem and identification of issues – Mind Mapping technique
2. Actionable insights were identified
3. Generated ideas to address issues
4. Synthesized solutions from the smaller ideas – Creative integration of smaller ideas led by Design Thinking Expert facilitator was done using white boards.
5. Solutions were proposed and were rated by the team on implement-ability (0-4 scale)
Design Thinking Based Solutions:

Problem visualized with Insights
The group first discussed the problem and its context yielding the following context diagram:

![Mind Map of Issues](image)

Figure 2. Mind Map of Issues
Figure 3. Stakeholder Map
High level insights:
Following the context discussions, insights were generated as follows:

Figure 4. Insights Generated during Discussion
Synthesis

- Understand communication decision culture
- Direct $ incentives to nurses + professional development
- Prelim results & abstract to faculty so that they can participate
- Case conferences to “put attendings” on the spot
- Opportunities for direct incentive for work/favor out of scope
- Change PI to more embedded
- Setting up a process of notification for ST + non-ST elevation
- If you don’t object by xy date, we will proceed (attendings)

Patient - side solutions

- About (When) & you do need blood transfusion
- Tackle the fear
- Refine verbal consent conversation
- Intro yourself, PI + context of team, then ask for consent
- Patient can get scared, later discharged, transfusion = NO
- Is it possible to get the attendings on the research team? In order to speed up approval.
Following the context discussions, insights were generated as follows:

1. Include these communications in already existing chain of communications (with attending)
2. Understand communication - decision culture and then communicate to the correct people
3. Change PI to be more embedded
4. Shut down study at site with low interest from attendings
5. Incentivize attending or compel them
   a. Add to the study as a co-investigators
   b. Case conferences – put attending on the spot
   c. If you do not object by XY date, we will proceed with recruitment – an opt out rather than opt in condition – without deviating from protocol or with approved deviation from protocol
6. Setting up a process of notifications for ST and non-ST elevation
7. Do intro at unit level
   a. Introduce PI, context, and study before asking for consent from individual attending
   b. Present preliminary results and abstract of research to faculty in an attempt to get attendings interested
8. Nurses to be incentivized to convince attending
   a. Direct incentives from department funding (WOW awards, donuts, etc.)
   b. Other incentives for nurses – study credits? Research participation? Abstract for conference?
   c. Magnate status related incentives
9. Patient side solutions
   a. Tackle fear of patients about transfusion by clarifying that it would be done as part of standard of care – by participating in this study they are just doing it ahead of time
   b. Refine verbal consent and conversation with help from other studies who have tackled this problem (UofC for instance has done similar studies)

Solutions Generated by Design Thinking Approach Team:
Four relatively comprehensive yet pragmatic solutions were created to solve the issues of getting consent from attending. They are as follows:

1. Ownership to Nursing: Use nursing staff for recruitment – allow nurses to raise the potential of participation to the attending whenever a patient is eligible. Ask the nurse to contact the study team, as well, so that they can readily recruit. Incentive appropriately. Be cautious of NIH rules for incentives. Nursing managers can identify nurses who would be willing to participate.

2. EPIC based pre-screening of candidates for eligibility. This way the study team can better target the unit nurses and attending.

3. Partner with Area Hospitals: Reach out to Rush Oak Park.
4. **Medical Students and Residents**: The MINT study can be a very interesting learning opportunity or project for medical students, residents or fellows. It would be productive to use them when they are on-call or rounding in the units. They can bring it up to the attending and assist with the consenting process. Medical students can be the right intermediaries.

<End of Document. Thank you.>
Appendix 1.
Slides used by Kristen Hendrickson, RUMC for the studio kick off.

Appendix 2.
Actual pictures of white board from the studio session.
1. Nursing
   - 1:2 units
   - COPIT Nursing
   - Ownership

2. Epic Prescreen

3. Area Hosp.

4. Med Student
   - Meltzer Rec. Hr.
Addendum 1 – 30 Day Follow up

Top 3 Actions Proposed by the Studio Participants:

   1. **Ownership can be shifted to Nursing staff. They can be the person identifying eligible patient and asking for attending consent. Incentivize them.**

**Implementation and Results:**

Since TRIO Design Studio on May 9, 2018, MINT has engaged a cardiology Fellow to help identify eligible patients and to assist with cardiologist approval.

Due to staff turnover, nursing staff has yet to be approached and educated on the study. Once the new coordinator is trained, nursing staff will be introduced to the study.

Recruitment has been focused on a single unit; Cardiac ICU.

   2. **Prescreen patients using EPIC and better target the patients.**

**Implementation and Results:**

A streamline screening process has been put in place, which involves having a more detailed EPIC report sent daily as to which patients would be eligible for MINT.

   3. **Partner with area hospitals to cast a wider net for potential patients.**

**Implementation and Results:**

Currently, due to staff turnover, the study has not had an opportunity to recruit at Rush Oak Park.

**Misc:**

Recruitment prior to Design Studio was 1 subject; as of June 26, 2018, 2 subjects have been recruited to the study.
### Addendum 2 – 90 Day Follow up

Top 3 Actions Proposed by the Studio Participants:

1. **Ownership can be shifted to Nursing staff. They can be the person identifying eligible patient and asking for attending consent. Incentivize them.**

   **Implementation and Results:**

   Since TRIO Design Studio on May 9, 2018, MINT has engaged a cardiology Fellow to help identify eligible patients and to assist with cardiologist approval.

   Due to staff turnover and staff time allowance, nursing staff has yet to be approached and educated on the study. Once the new coordinator is trained, nursing staff will be introduced to the study.

   Recruitment has been focused on a single unit; Cardiac ICU.

2. **Prescreen patients using EPIC and better target the patients.**

   **Implementation and Results:**

   A streamline screening process has been put in place, which involves having a more detailed EPIC report sent daily as to which patients would be eligible for MINT.

3. **Partner with area hospitals to cast a wider net for potential patients.**

   **Implementation and Results:**

   Currently, due to staff turnover, the study has not had an opportunity to recruit at Rush Oak Park. There is not enough staff, right now, to do this study at Rush Oak Park.

4. **Use medical students and residents for recruitment.**

   **Implementation and Results:**

   A cardiology Fellow has been added to the study to assist with recruitment. The Fellow is currently recruiting and checking with the attending physician to see if they would be a good candidate for the study.

   **Misc.:**

   Recruitment prior to Design Studio was 1 subject; as of August 10, 2018, 2 subjects have been recruited to the study.
Addendum 3 – 1 Year Follow up

Top 3 Actions Proposed by the Studio Participants:

1. **Ownership can be shifted to Nursing staff. They can be the person identifying eligible patient and asking for attending consent. Incentivize them.**

   **Implementation and Results:**
   Since TRIO Design Studio on May 9, 2018, MINT has engaged a cardiology Fellow to help identify eligible patients and to assist with cardiologist approval.

   Due to staff turnover and staff time allowance, nursing staff has yet to be approached and educated on the study. Once the new coordinator is trained, nursing staff will be introduced to the study.

   Recruitment has been focused on a single unit; Cardiac ICU.

2. **Prescreen patients using EPIC and better target the patients.**

   **Implementation and Results:**
   A streamline screening process has been put in place, which involves having a more detailed EPIC report sent daily as to which patients would be eligible for MINT.

3. **Partner with area hospitals to cast a wider net for potential patients.**

   **Implementation and Results:**
   Currently, due to staff turnover, the study has not had an opportunity to recruit at Rush Oak Park. There is not enough staff, right now, to do this study at Rush Oak Park.

4. **Use medical students and residents for recruitment.**

   **Implementation and Results:**
   A cardiology Fellow has been added to the study to assist with recruitment. The Fellow is currently recruiting and checking with the attending physician to see if they would be a good candidate for the study.

**Misc.:**

Recruitment prior to Design Studio was 1 subject; as of August 10, 2018, 2 subjects have been recruited to the study.

Dr. Vokes from University of Chicago did a talk at Rush about her successful recruitment to the MINT study.
About the Institute for Translational Medicine (ITM)

The ITM is a partnership between the University of Chicago and Rush in collaboration with Advocate Health Care, the Illinois Institute of Technology (Illinois Tech), Loyola University Chicago, and NorthShore University HealthSystem that’s fueled by about $35 million in grants from the National Center for Advancing Translational Sciences at the National Institutes of Health through its Clinical and Translational Science Awards (CTSA) Program.

We’re part of a network of more than 55 CTSA Program-supported hubs across the country working to slash the time it takes to develop and share new treatments and health approaches. We work with you and for you to make participating in health research easy, so that together we improve health care for all.

Join the movement and learn more about how we help researchers, physicians, community members, industry, government organizations, and others. Visit us at chicagoitm.org and connect with us on Facebook, Twitter, Instagram, YouTube, and LinkedIn @ChicagoITM.

TRIO is supported by the National Center for Advancing Translational Sciences (NCATS) of the National Institutes of Health (NIH) through Grant Number UL1TR002389 that funds the ITM. The content is solely the responsibility of the authors and does not necessarily represent the official views of the NIH. Please cite the grant in your publications to ensure TRIO can continue helping researchers like you.