

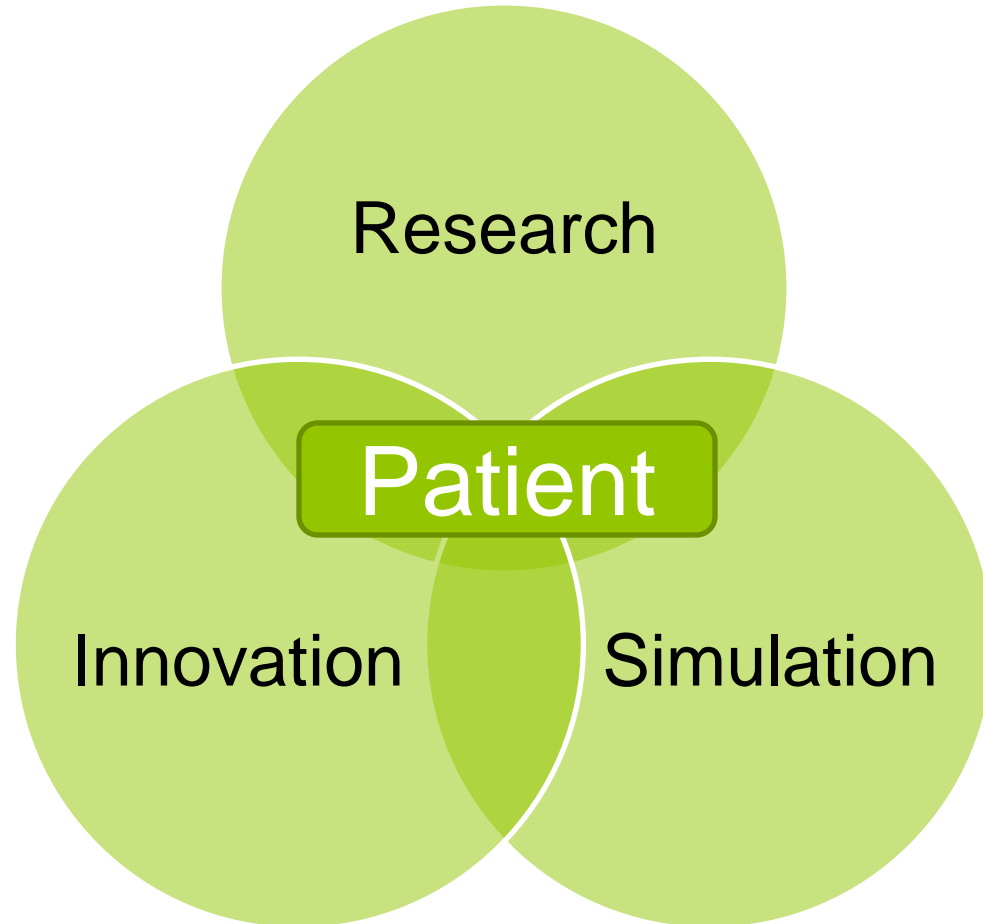
Improving Patient Adherence: Engagement and Critical Resources

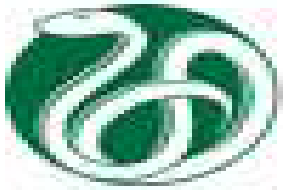
Michael J. Mirro, MD, FACC, FAHA, FACP

Clinical Professor of Medicine: Indiana University

Chief Academic/Research Officer

Parkview Health



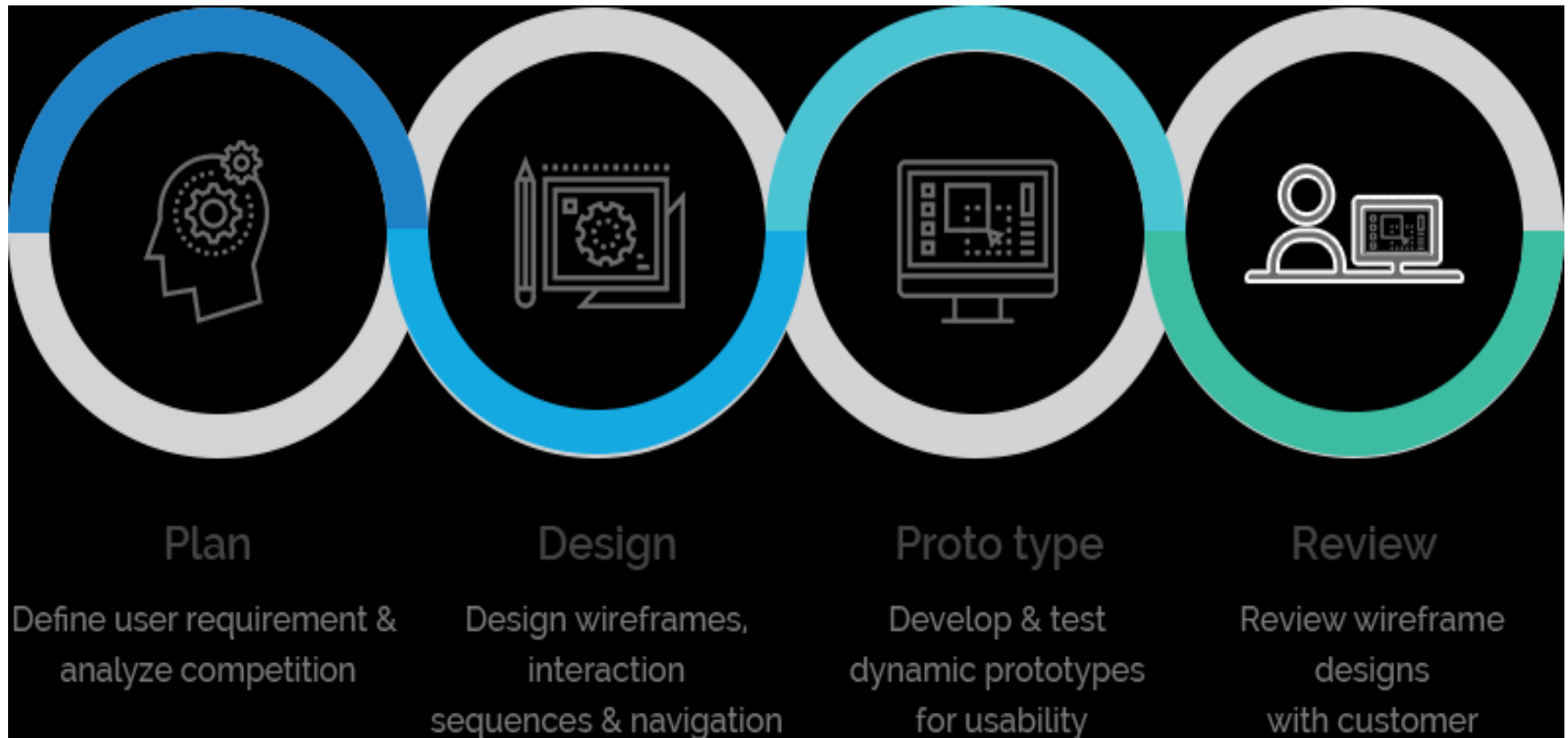


INSTITUTE OF MEDICINE

OF THE NATIONAL ACADEMIES

- *"Providing care that is **respectful** of and responsive to individual **patient preferences, needs, and values**, and ensuring that patient values guide all **clinical decisions**"*
- Research on patient-centered care:
 - --Improves patient satisfaction, adherence to meds, etc.
 - --Decreases resource utilization, cost, risk of litigation
- -"Crossing the Quality Chasm: A New Health System for the 21st Century," IOM 2001
- -Irwin et al, Chest 2006

Patient Centered Design



Study	Duration (Patient Participation)	Design	Patient enrollment	Study intervention
ePHR-COPE: Deployment of PHRs to enhance CAD management	12 months (completed 2013)	Prospective, quasi-experimental observational	200 CAD patients post-coronary intervention (PCI stent and/or CABG)	Access to health information in NoMoreClipboard PHR, data input and health diary messaging to provider
ONC: Delivery of ICD RM Data to Patients via a PHR	3 months (completed 2014)	Feasibility, mixed methods observational	21 ICD patients (St. Jude Medical) undergoing remote monitoring	Delivery of data from remote monitoring to ICD patients through NoMoreClipboard
HCE: Medication Adherence for Patients with A-Fib	6 months (completed 2014)	2 arm randomized, prospective	90 A-Fib patients taking NOAC (dabigatran)	Medication/educational newsletters through MyChart
St. Jude Medical: Impact of Messaging RM ICD data to Patients via a PHR	6 months (completed 2016)	Randomized, un-blinded	191 ICD patients (St. Jude Medical) undergoing remote monitoring	Delivery of data from remote monitoring to ICD patients through MyChart
Janssen: Keep it SIMPLE – Messaging A-Fib patients in MyChart	Design phase: 6 months Intervention phase: 6 months (launched 2016)	Interventional; longitudinal	Design phase: 20 AF patients receiving oral anticoagulation for non-valvular AF and caregivers (optional)	Tailored health educational messaging through MyChart for patients with atrial fibrillation
Biotronik: Engaging Patients in Heart Failure Management	Design phase: 6 months Build phase: 6-12 months Intervention phase: 6 months (launched 2016)	Interventional; longitudinal	Design phase: 25 CHF patients who have a CRT device and caregivers (optional)	Access to implanted device data through MyChart

Lessons Learned

Informatics Research at Parkview

- Older patients will use PHRs
 - Older patients, with lower self-perceived capability, used technology login and use PHR functionality more often
- Patients not overwhelmed with complex health information
 - Patients understood and were comforted by presentation of complex health information from remote monitoring data from Cardiac Implanted Electronic Devices(ICDs)

Lessons from Informatics Research

- Calls to clinic actually reduced
 - Patients receiving reports in their PHR with complicated remote monitoring data from ICDs had a reduction in calls to clinic
- Focused PHR training impacts use
 - We found that providing training to participants mid-way through our year long trial boosted PHR logins and use

Lessons from Informatics

- Need to go beyond simple results release to fully engage patients
 - Improvement in health outcomes were not sustained in our study, need patient-centered design approach to interaction through PHR
- We currently have 3 funded projects where we are working directly with patient to deliver tailored messaging to patients, based on personal health information



Med Adherence: Pilot study

*Use of Electronic Personal Health
Records to Improve Medication
Adherence among Non-Valvular
Atrial Fibrillation Patients*

Study Overview

- Two-arm randomized, prospective 6-month study
- 90 AF patients taking NOAC medication, dabigatran
- PHR MyChart
 - Intervention: PHR training, medication educational newsletters
- Survey (baseline and end of study)
 - Questions pertaining to technology acceptance, medication knowledge, medication adherence, and patient activation measure (PAM)
- Medication possession ratio (MPR)

Results

Intervention Group

- Knowledge of dabigatran and MPRs increased significantly (3.77 → 4.23)

p-value: 0.007

- Self-reported medication adherence increased by 10%

Using 8-item self-report Morisky Med Adherence Scale

Control Group

- Knowledge of dabigatran and MPRs did not increase significantly (3.7 → 3.95)

p-value: 0.124

- Self-reported medication adherence increased by 4%

Focus Group

- Many patients asymptomatic at time of diagnosis
- Felt providers offered too little information about severity of disease state
- Patients unclear on mechanism of action of Dabigatran

-I have never seen a real difference in my condition. I have been taking it because I have faith in the medical professionals who prescribe it.

It scares you because you don't know what's wrong.

*-I know it is working because I bruise more easily.
-I know it's not working as well because I bruise more easily*

Topic	Patient Questions
Staying in therapeutic range	How do I manage INR levels? How do I balance diet and alcohol intake? How often do I need INR blood draws?
Home INR monitoring	What is home INR monitoring? When can I use home monitoring vs. going to clinic for monitoring? Who is best suited for home INR monitoring? Is this a good option for me?
Anticoagulant medication choice	What is the difference between Coumadin (warfarin) and new Novel agents? When will I get to talk about my medication choices with the doctor because my office visit is too short? How can I make an educated decision about switching from Coumadin to a Novel agent when I don't know about lab testing, reversal agents, or how much it will cost me? If I don't go in to the "Coumadin clinic" for testing anymore because I switch to a Novel agent, when will I see my health care team to ask questions between office visits? Why does ATU clinic only test Coumadin patients, can't they provide education on Novel agents in addition?
AF disease process	How does AF affect my other body systems in the long run? What changes can I make in my lifestyle to lessen AF burden on my body, mind and spirit?
Communication with healthcare provider	How can I get more time to talk with my providers about AF? How can I get quick answers to my questions?
Information and data feedback	How do I know my medicine is working? How can I track changes in my heart rhythm? Will I get too much information about how I am doing with my AF and will it make me more stressed?

Patient Partners Feedback

Med Adherence: Keep it Simple

*Improving Anti-Coagulation
Medication Adherence for Patients
with Non-Valvular Atrial Fibrillation*

Keep it SIMPLE

- **S**implify the regimen
- **I**mpart knowledge
- **M**odify patient beliefs and human behavior
- **P**rovide communication and trust
- **L**eave the bias
- **E**valuate adherence

- **Hypothesis:** Tailored messaging delivered via a personal health record will enhance patient engagement and health literacy related to atrial fibrillation and anti-coagulant therapy, which in turn will improve medication adherence and health outcomes

Study Aims

- Determine AF **patient preference** for content, timing, and delivery mode of tailored educational information about AF and anticoagulant therapy
- Determine impact of tailored messaging via personal health record on **adherence** to anti-thrombotic therapy and **health outcomes** in people living with AF
- Determine **feasibility** of measuring medication adherence with queries to Surescripts electronic prescribing software and use of AdhereTech 'smart' pill bottles

Study Data

Quantitative

- **EMR**
 - Demographics
 - Risk for bleeding
 - Risk of stroke
 - Health outcomes
 - Patient engagement
- **Survey**
 - Med adherence
 - Patient engagement
 - Technology acceptance
 - Health literacy
- **Surescripts & 'Smart' Pill Bottles**
 - Med adherence

Qualitative

- **Focus Groups & Design Session**
 - Define needs for intervention and cover gaps in survey data
 - Wireframe testing of PHR functionality
 - Develop educational content for tailored health messages
- **Technology Trial**
 - Interview patients at baseline and six months

Study Overview – Focus Groups

- *Sample Size:* 3 Focus Groups with patients (N=10) and their caregivers/partners as applicable (N=7)
 - Patients newly diagnosed with AF in last 6 months
 - Patients switching OAC medication in last 6 months
- *Duration:* 2-3 hours for each focus group
- *Objective:* Determine patient preference for the **content**, **timing**, and **delivery mechanism** of tailored health education aimed at improving medication adherence

Study Overview – Design Survey

- *Sample Size:* 50 patients
- *Duration:* <1 hour per individual
- *Objective:* Further refine patient preference for the content of tailored health education

Study Overview – Design Session

- *Sample Size:* 20 patients
- *Duration:* 1-2 hours per individual
- *Objective:* Test high fidelity prototypes of interventional messaging to be used in the technology trial and receive patient feedback to develop final model

Study Overview – Technology Trial

- *Sample Size:* 160 patients receiving oral anticoagulation (VKA or NOAC)
- *Duration:* 6 months
- *Intervention:* MyChart messaging
- *Study Type:* Two-arm comparative effectiveness study
 - *Control:* Patient portal and training
 - *Experimental:* Patient portal and training plus tailored health education messaging
- *Objective:* Examine impact on **patient engagement, health literacy, medication adherence**, and **health outcomes**

Focus Group Themes

Analysis in progress

- Majority of patients felt they did not receive enough education about AF or their medication during their office visit or time of diagnosis
- Several patients liked the idea of receiving information at home that they can review on their own time (and that this information should come from a trusted source, such as their healthcare team)
- Majority of patients emphasized importance of being told the seriousness of their condition and why they are taking the medication
- Many patients felt it was their responsibility to take their medication, but that follow up should be made in regards to education and whether or not they are taking their medication as prescribed



IDIOCY

NEVER UNDERESTIMATE THE POWER OF STUPID PEOPLE IN LARGE GROUPS.

Informatics Team



- *Lead by Tammy Toscos, PhD and Michael Mirro, MD*