

# **Actionable Research: Interdisciplinary Research in Health Literacy**

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**Vanderbilt University Medical Center**

# Overview

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- **What disciplines should be involved?**
- **PILL-CVD**
- **Lessons learned**
  - What strategies can be utilized to enhance the interdisciplinary nature of health literacy?
  - Rewards and challenges



# A Little About Me...

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## ■ Background

- Psychology, Spanish
- Preventive Medicine, Cancer Prevention & Control
- Primary Care, Hospital Medicine, Care Transitions
- Clinical Trials Research, Medication Adherence/Safety
- Behavioral Research Methods, Instrument Development

## ■ Research Focus

- Develop educational/behavioral interventions to improve patients' medication management at transitions of care, and test them in randomized controlled trials



# Primary Mentors and Collaborators

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- Medicine: Terry Jacobson, Viola Vaccarino
- Health outcomes/economics: Kim Rask
- Epidemiology: Julie Gazmararian, Brian Haynes
- Health education: Kara Jacobson
- Behavioral sciences: Karen Glanz, Colleen Dilorio
- Biostatistics: Brian Schmotzer
- Pharmacy: Jessica Praska, Akilah Strawder
- Nursing: Cathy Meade
- Medical writing and editing: Barry Weiss



# Vanderbilt Effective Health Communication Program

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- **Russell Rothman, MD, MPP: Medicine and Pediatrics**
  - Behavioral interventions in diabetes, obesity
- **Sunil Kripalani, MD, MSc: Hospital Medicine**
  - Educational and behavioral interventions, medication adherence and safety
- **Ken Wallston, PhD: Social Psychology**
  - Behavioral measurement, scale development
- **Shelagh Mulvaney, PhD: Child Psychology**
  - Interface between health technology and health behavior in adolescents with chronic illness
- **Kerri Cavanaugh, MD, MPH: Nephrology**
  - Physician-patient communication, dialysis outcomes
- **Richard White, MD: Medicine**
  - Underserved populations, Latinos with diabetes
- **Chandra Osborn, PhD: Social/Health Psychology**
  - Diabetes disparities, self-efficacy
- **Tony Brown, PhD: Sociology**
  - Physician-patient communication



# Pharmacist Intervention for Low Literacy in Cardiovascular Disease

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PILL  CVD

R01 HL089755



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# Background

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- **Patient safety can suffer at care transitions like hospital discharge**
  - 50% experience a medical error
  - 20-25% experience an adverse drug event
- **Most post-discharge adverse events are**
  - Associated with poor communication
  - Preventable or ameliorable
- **Greatest risk in**
  - Elderly
  - Cardiovascular patients
  - Patients with low health literacy
- **Pharmacists are poised to help**



# Specific Aim

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- **To determine the effects of an intervention consisting of pharmacist-assisted medication reconciliation, inpatient pharmacist counseling, low-literacy adherence aids, and tailored telephone follow-up on the incidence of serious medication errors after hospital discharge among patients with cardiovascular disease at two academic teaching hospitals.**



# Hypotheses

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- 1. Pharmacist-assisted medication reconciliation, inpatient pharmacist counseling, low-literacy adherence aids, and tailored telephone follow-up will decrease the incidence of serious medication errors in the first 30 days after hospital discharge compared with usual care.**
- 2. Patients with inadequate literacy skills will have greater reductions in serious medication errors than patients with marginal or adequate literacy.**



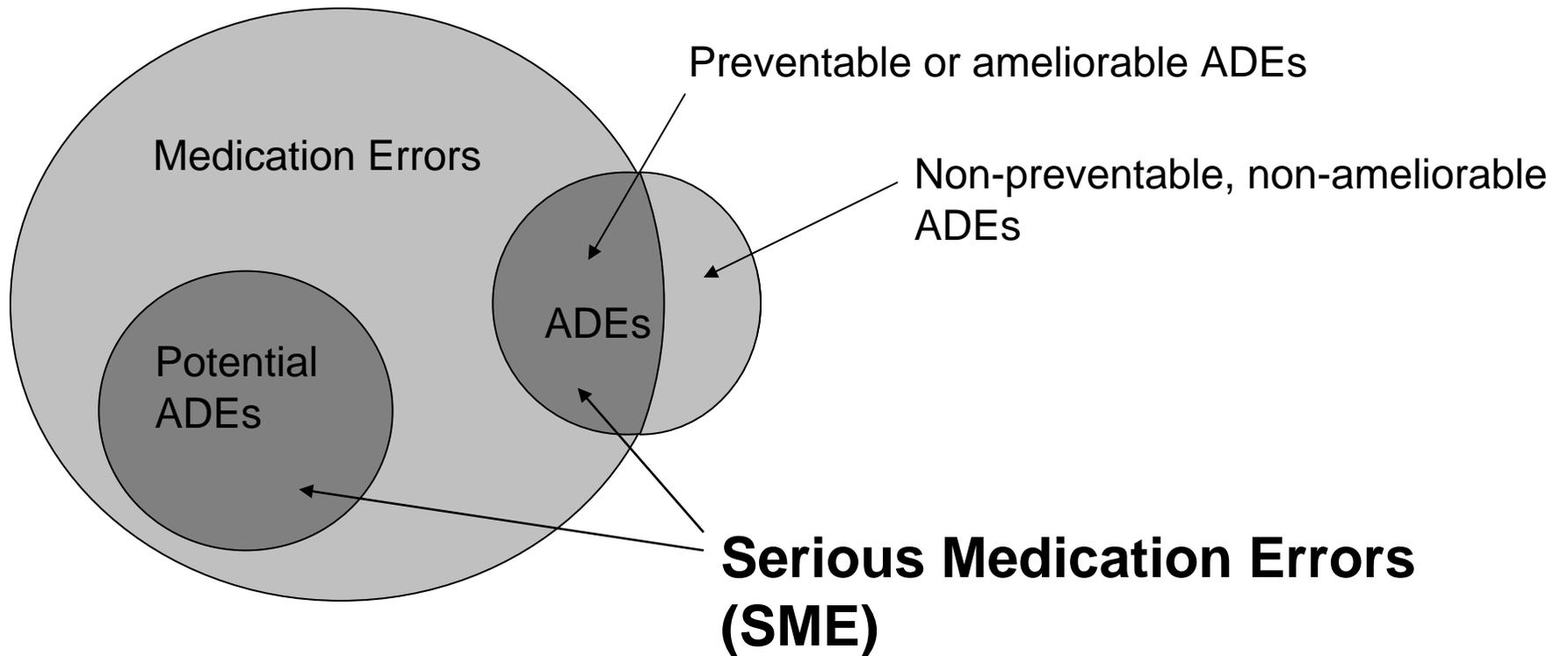
# Key Definitions

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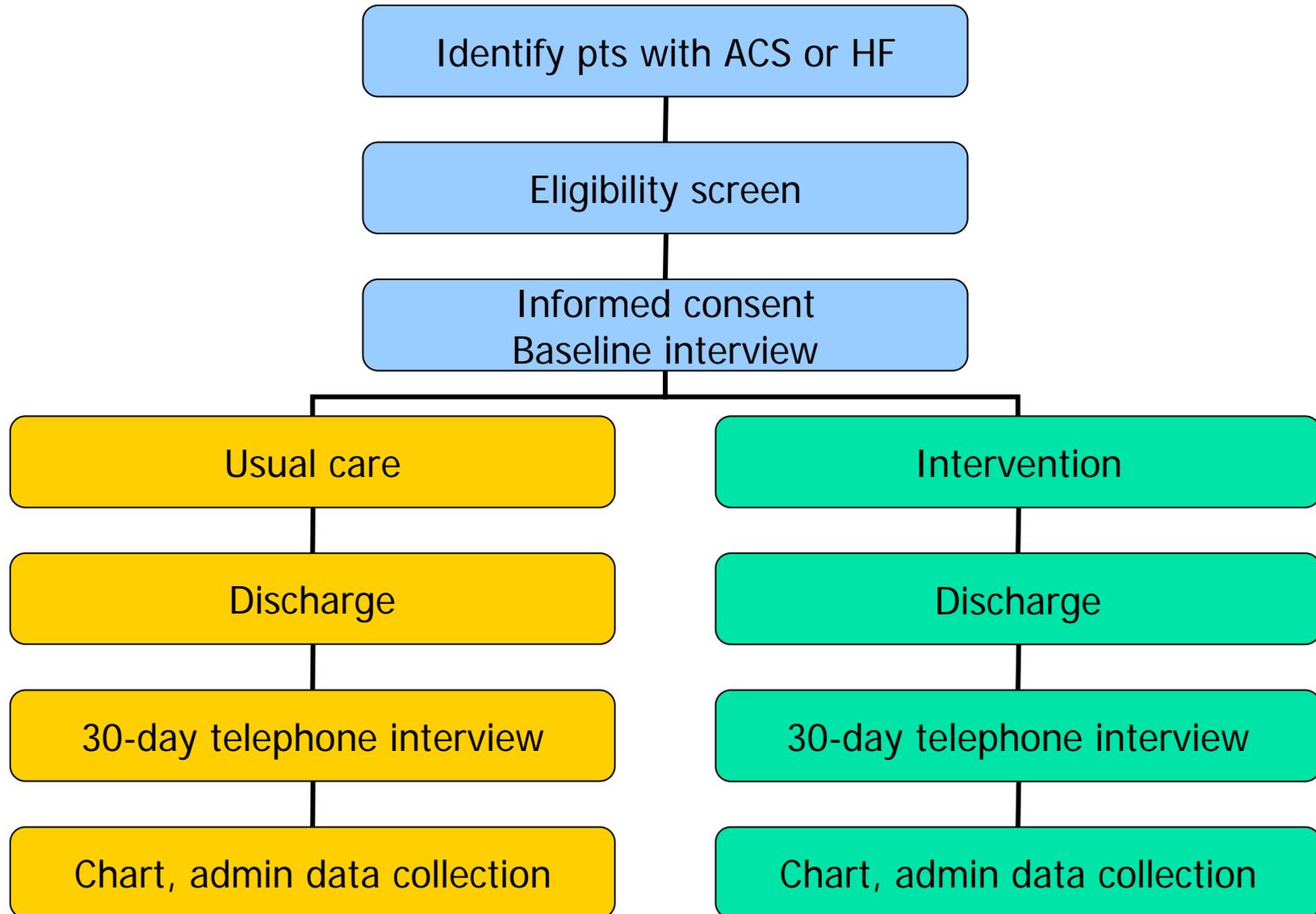
- **Serious medication error (SME)**: any preventable or ameliorable adverse drug event (ADE), as well as potential ADEs due to medication discrepancies or non-adherence
- **Discrepancies**: differences between what patients think they should be taking and regimens ordered by physicians
- **Non-adherence**: differences between what patients think they should be taking and what they actually take



# Serious Medication Errors



# Study Schema



# Study Groups

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## ■ Usual care:

- Pharmacists perform routine evaluations of medication orders
- Physicians perform medication reconciliation with verification by nurses/pharmacists
- Nurses/MDs provide medication counseling at discharge, no routine phone follow-up

## ■ Intervention:

- Pharmacist assistance with medication reconciliation
- Pharmacist counseling of patients at discharge
- Low-literacy patient education tools
- Follow-up phone call 1-4 days after discharge and subsequently if needed



# Baseline Data Collection and Other Covariates

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- **Baseline:**

- Sociodemographic factors
- Medical comorbidities
- Cognitive function (Mini-Cog)
- Education, health literacy (s-TOFHLA)
- Understanding of pre-admission med regimen

- **At or after discharge:**

- Length of stay
- Discharge med regimen, number of med changes
- Social support, home care



# Outcomes

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- **Primary:**

- Number of serious medication errors (SMEs)
  - Preventable or ameliorable ADEs
  - Potential ADEs due to discrepancies or non-adherence

- **Secondary:**

- Number of ADEs at different severity levels
- Disease-specific quality of life (Kansas City Cardiomyopathy and Seattle Angina Questionnaires)
- Healthcare utilization (ER visits, rehospitalization)
- Cost-effectiveness of intervention



# Research Team

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- **Investigators (Physician-Scientists)**
  - Site PI at BWH: Jeff Schnipper
- **Pharmacists**
- **Study staff: International Health, Behavioral Sciences/Economics, Psychology/Sociology**
- **Statisticians**
- **Health economist**



# Study Progress

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- **Began enrollment 4/08**
- **Enrollment to date: ~350 (out of 862)**
  - 20-25 patients per week
- **Stay tuned!**



# What Disciplines Should Be Involved?

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- **Traditional disciplines**

- Medicine, Nursing, Pharmacy, Epidemiology, Health Education, Health Communication, Psychology

- **Don't forget about**

- Education, Informatics, Human Factors, Health Marketing, Quality Improvement/Health Services Research, Behavioral Sciences, Sociology, Community Health, Anthropology, Cultural Competency, Dentistry, Nutrition



# Lessons Learned: Enhancing the Interdisciplinary Nature of Health Literacy

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## ■ **Cross-train**

- Cancer, Culture, and Literacy Institute
- Behavioral Sciences, Medical Anthropology

## ■ **Cross-fertilize**

- Join a diverse program
- Look for collaborators outside your field
- Submit a grant as Co-PIs
- Mentor, co-mentor, and be mentored
- Hire diverse research staff



# Lessons Learned: Rewards of Interdisciplinary Research

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- **Diverse perspectives**
  - Inform various aspects of the research
  - Study design, interventions, interpretation of findings, limitations
  - Exploratory secondary analyses
- **Different skill sets**
  - Synergy
  - Learn from each other



# Lessons Learned: Challenges of Interdisciplinary Research

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- **Diverse perspectives**
  - Be sure to gather and appreciate them
  - Need effective communication within team
- **Different skill sets**
  - Must learn strengths/weaknesses of each team member
  - Have to learn as a manager how to best utilize the team's diverse skills



# Opportunities/Challenges for Interdisciplinary Research

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- **How can an interdisciplinary approach shed light on difficult questions in health literacy research?**
  - Why is HL associated with only some outcomes?
  - What steps in the disease pathway are influenced by HL?
  - How to design more effective interventions?



# What Questions Do You Have?

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