Improving Healthcare Quality and Safety While Reducing Costs Through Clinical Pharmacy Service Integration

Steven W. Chen PharmD, FASHP, FCSHP, FNAP
Associate Professor and Chair
Titus Family Department of Clinical Pharmacy and Pharmacoeconomics and Policy
William A. Heeres and Josephine A. Heeres Endowed Chair in Community Pharmacy
Co-Chair Emeritus, HRSA Patient Safety & Clinical Pharmacy Services Collaborative

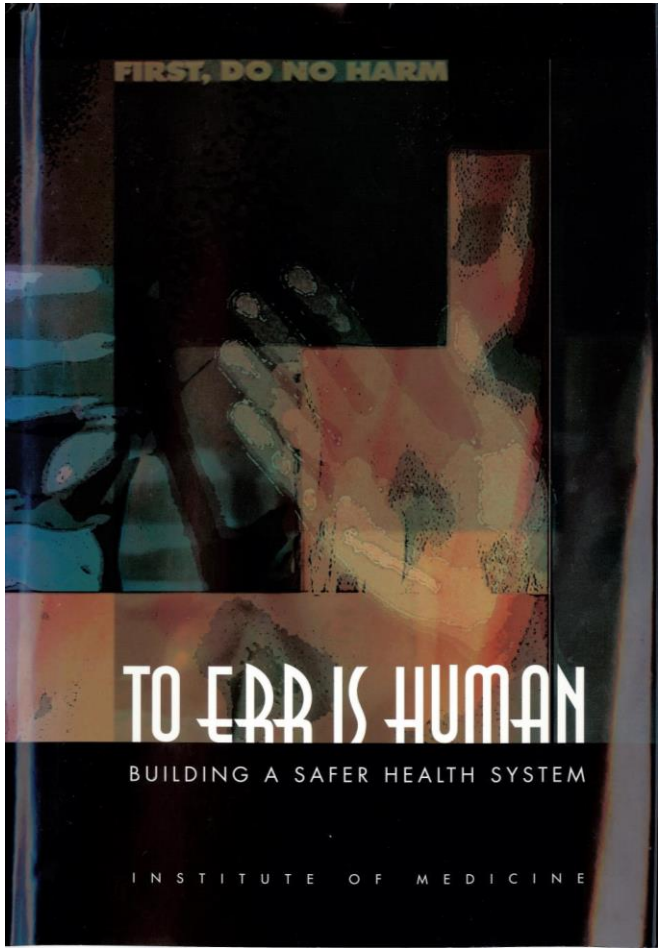
Questions to Run on…

- What are some successes your organization has had in improving medication-related quality and safety for patients with poor control of chronic disease(s)?
- How can your organization adapt the approaches shared to provide optimal medication therapy outcomes for your patients?
- What barriers prevent your organization from integrating clinical pharmacy services?

Outline

- Overview of the USC / AltaMed Healthcare Innovation Award (HCIA) program from CMMI
- Early results from the HCIA program
- Medical leadership perspective
- Patient perspective
- Stepwise process for implementation

Medication Safety Problems in U.S.



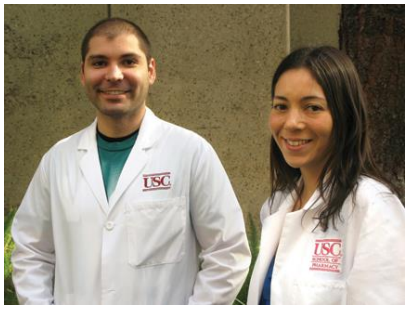
- 1.5 million people are injured each year due to medications
- ~25% of ambulatory patients experience adverse drug events
- 90% of chronic diseases require medications as first-line therapy
- *"…for every dollar spent on ambulatory medications, another dollar is spent to treat new health problems caused by the medication."*

Institute of Medicine (IOM), To Err Is Human: Building a Safer Health System, Washington, DC: National Academy Press; 2000.

$12 Million USC / AltaMed CMMI Project: Specific Aims

10 teams
Pharmacist + Resident +
Clinical Pharmacy Technician

Telehealth clinical pharmacy



Resident and technician training for expansion

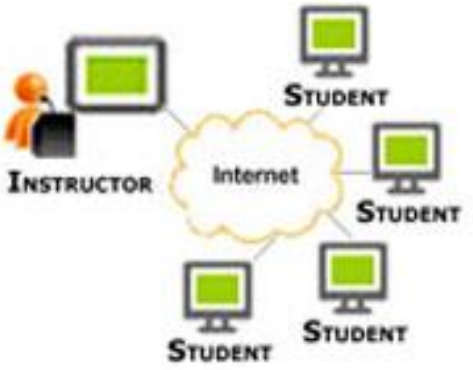
UNIVERSITY OF SOUTHERN CALIFORNIA

National Conference on Best Practices and Collaborations to Improve Medication Safety and Healthcare Quality

Feb 20-21, 2014

OUTCOME MEASURES

- ✓ Healthcare Quality
- ✓ Safety
- ✓ Total Cost / ROI
- ✓ Patient & provider satisfaction
- ✓ Patient access



Web-based pharmacist training and credentialing

Comprehensive Medication Management (CMM)

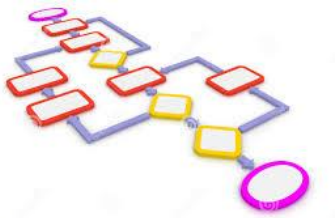
- Evidence-based
- Physician approved
- Pharmacist-led
- Preventive clinical service
  - ensuring optimal use of medications that is effective at improving health outcomes for high-risk patients while decreasing health care costs

Characteristic	MTM	CMM
Conduct a comprehensive medication therapy review to identify all medication-related problems	✓	✓
Confirm medication-related problems including assessment, point-of-care testing, medication-related labs	✓	✓
Assess ALL medications and medical conditions		✓
Develop individualized medication care plan to address medication-related problems and ensure attainment of treatment goals	✓	✓
Add, substitute, discontinue, or modify medication doses	✓	✓
Generate complete medication record	✓	✓
Document care delivered and communicate to health care team	✓	✓
Ensure care is coordinated with other health care providers	✓	✓
Provide follow-up care in accordance with treatment-related goals		✓
Requires collaborative practice agreement between pharmacist and physician		✓

USC Patient Targeting and Management Strategy

High cost patients

Frequent and recent acute care utilizers



48 EHR-embedded triggers to detect high risk patients

MD referrals

Clinical Pharmacy
USC School of Pharmacy

Comprehensive Medication Management

Treatment Goal Reached?

No

Yes

Clinical pharmacy tech "check-ins" every 2 months

Unstable

Pharmacist Comprehensive Medication Management Programs: Responsibilities

Interview patient, apply assessment skills as needed

Identify potential drug-related prob's

Consult w/ primary provider if needed

Order tests, drugs, consults as needed per collaborative practice agreement

Promote patient self-management, Document activities

Provide follow-up care to ensure successful outcome

High-risk patient with chronic medical conditions

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- Overview of the USC / AltaMed Healthcare Innovation Award (HCIA) program from CMMI
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Outcome: Recruit high risk patients

- Enrolled 6,000 patients since Oct 2012
    - Predominantly Hispanic, non-elderly women
- 3/4^{ths} have hypertension, 36% uncontrolled
- 2/3^{rds} have diabetes, 60% uncontrolled
- High rates of hospitalizations

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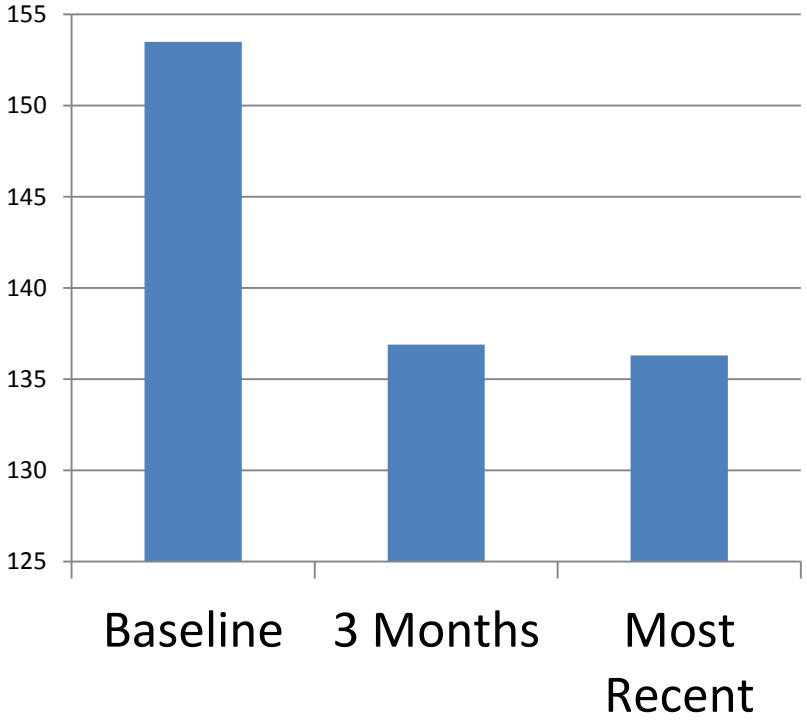
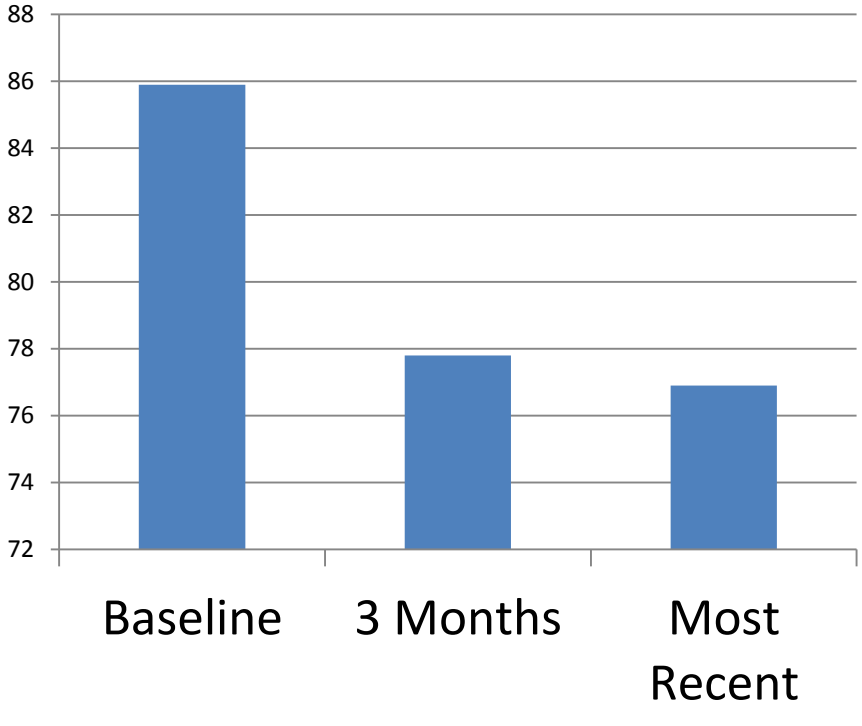
Outcome: Improvement in Clinical Markers

Systolic Blood Pressure



Diastolic Blood Pressure



* Among those with uncontrolled hypertension at baseline

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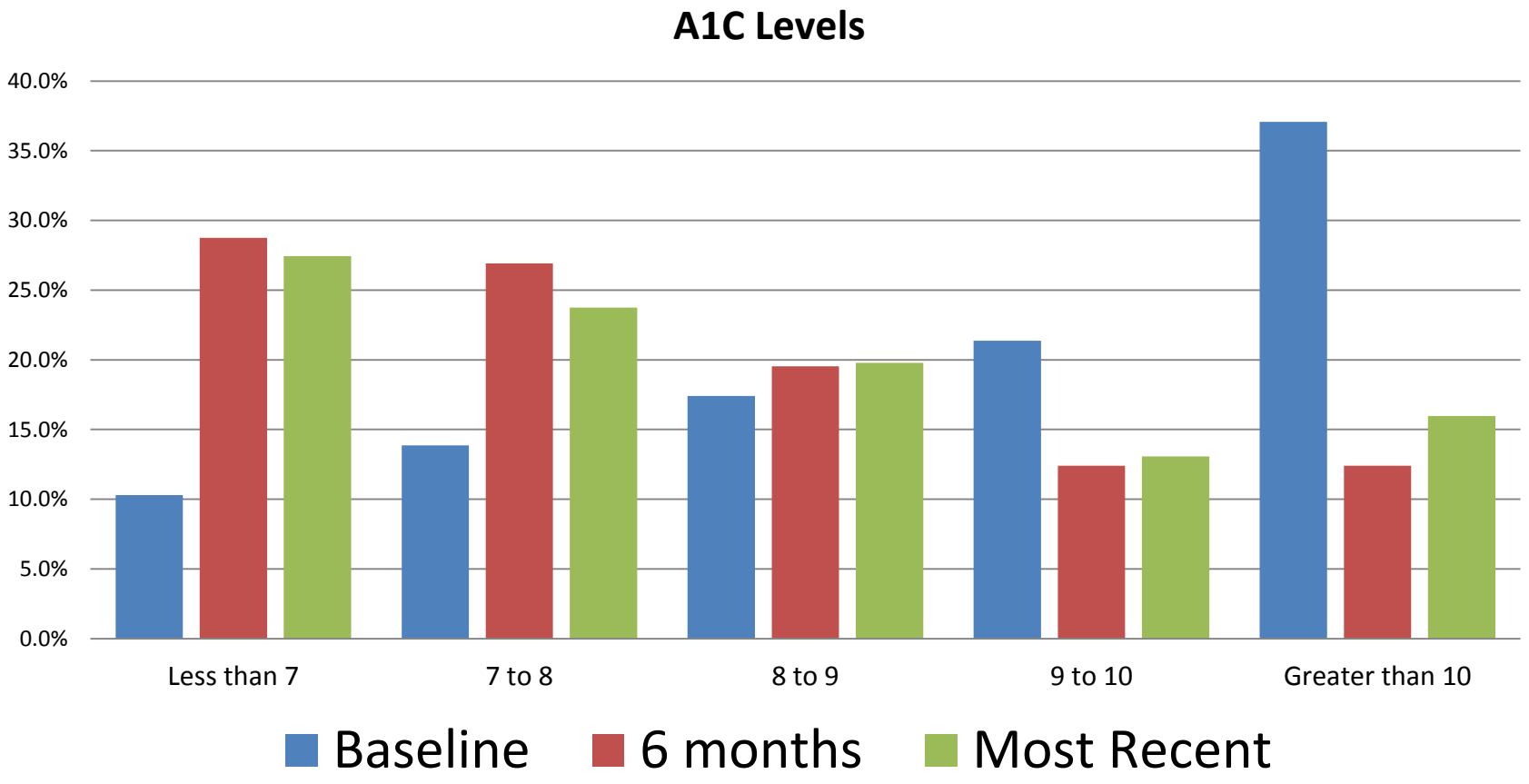
Outcome: Improvement in Clinical Markers



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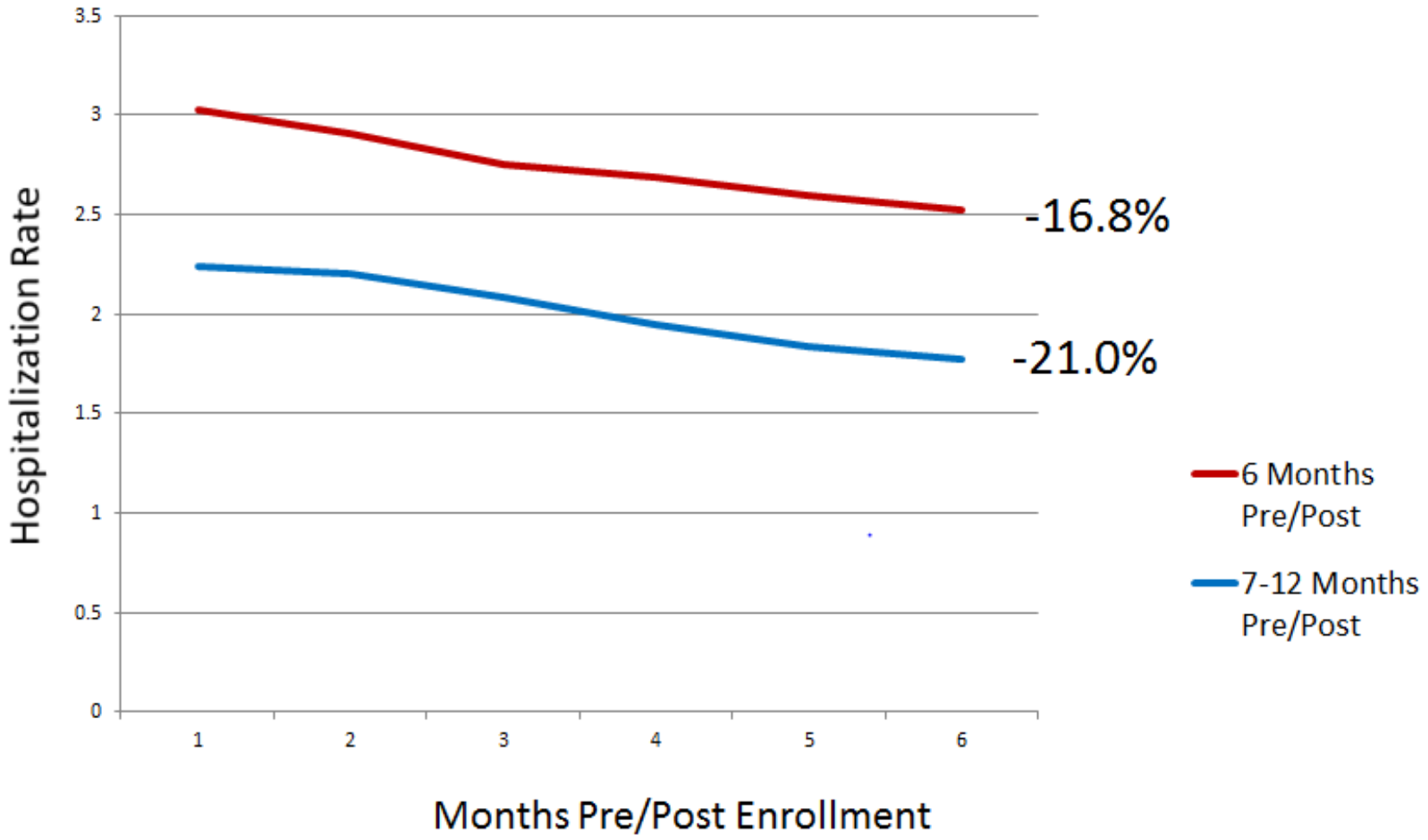
Outcome: Hospitalizations are declining



Control Group Selection

Propensity scoring to match CPS enrollees (treatments) to similar patients receiving care at non-treatment clinics (controls) in three steps:

- Wave 1 treatment patients
- PACE treatment patients from Wave 2
- Non-PACE treatment patients from Wave 2

Covariates used to model the propensity score:

- Demographics
- Health status
- Utilization
- Other

Summary of Difference-in-Differences Results (Treatment – Control)

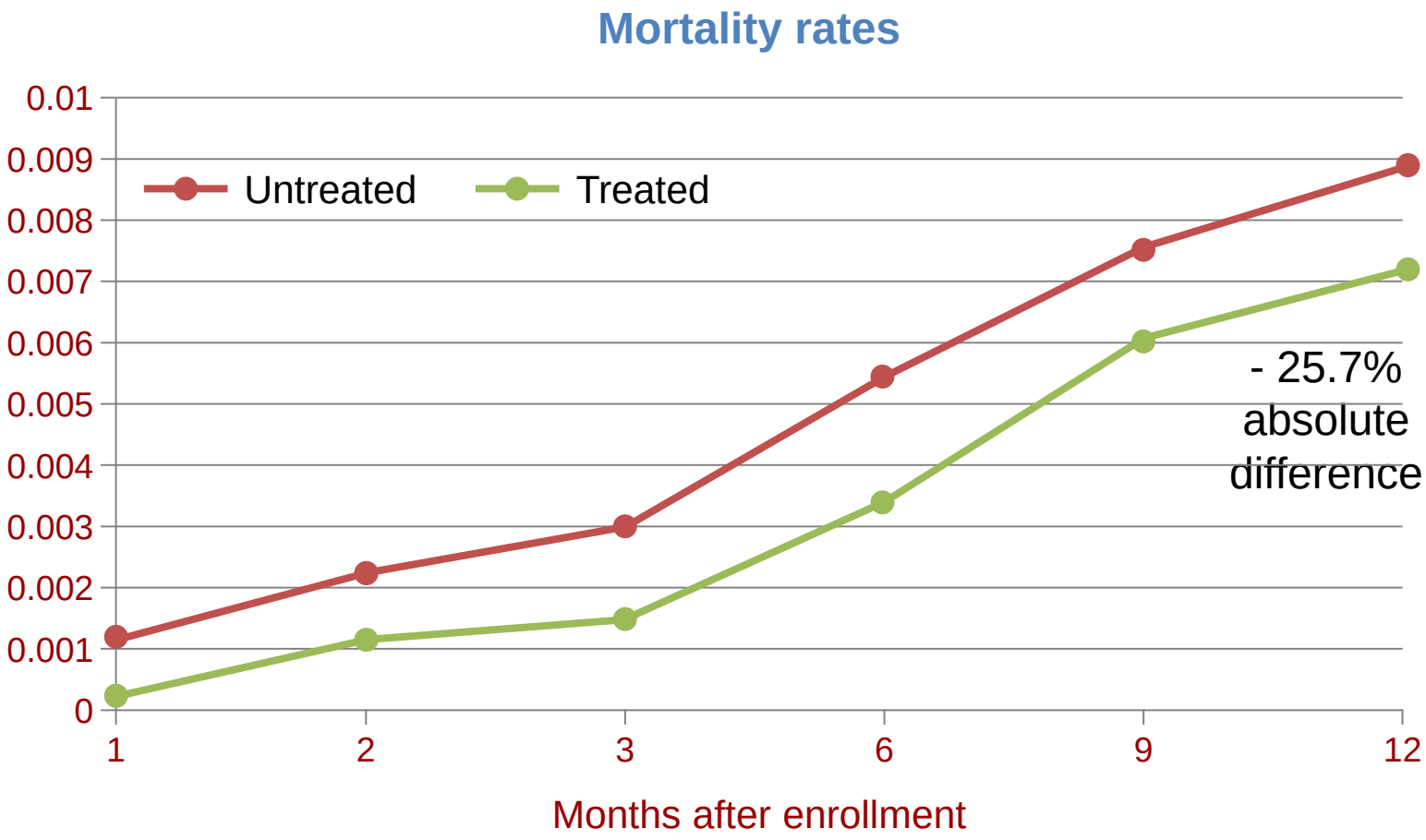
Clinical results

HbA1C average change in 6 months, uncontrolled at baseline	**-11%**
BP % under control in 6 months, uncontrolled at baseline	**-9.3%**

Utilization results (Probit Analysis)

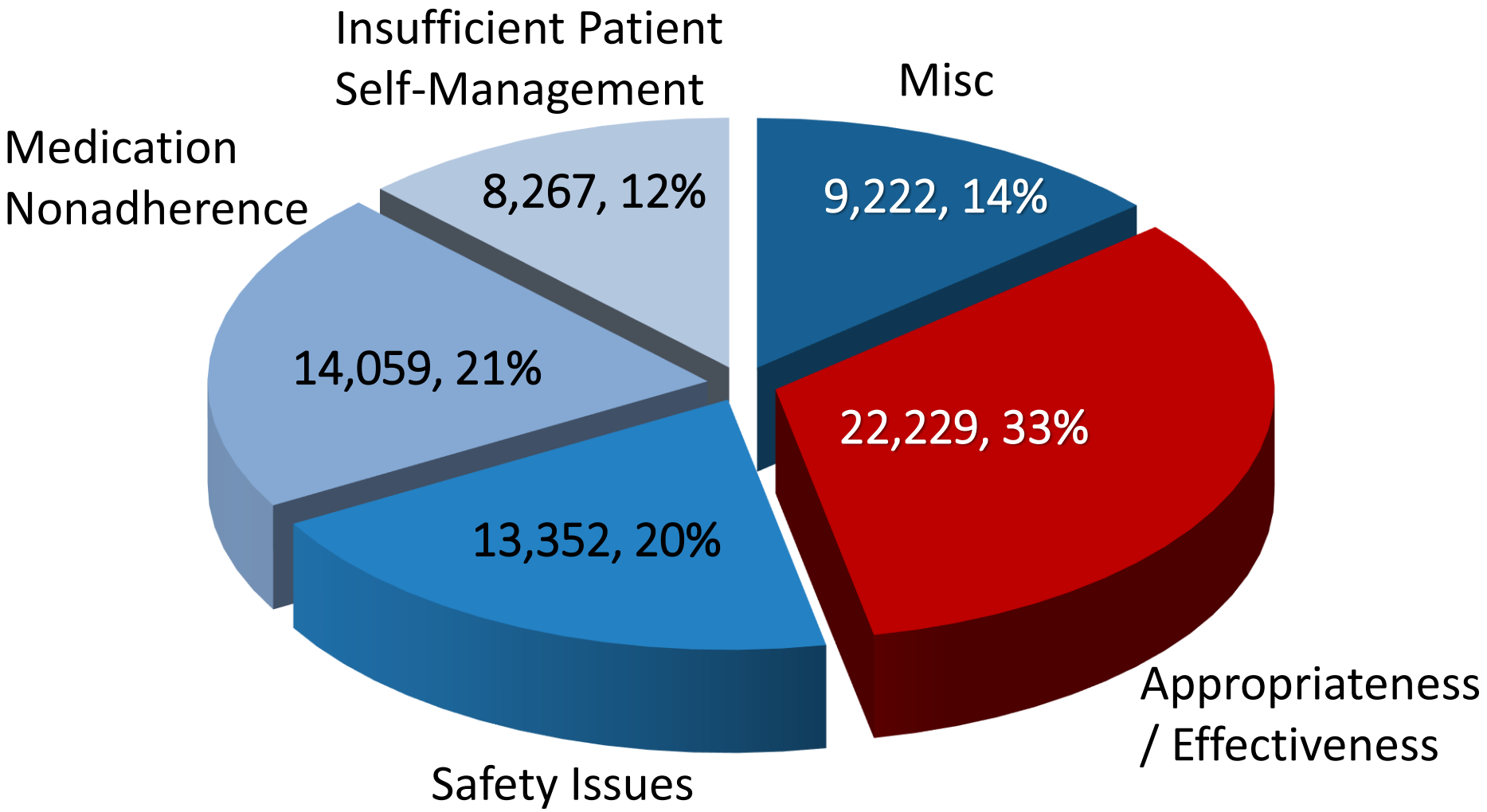
Readmissons per year per patient (6 month panel)	**-16%**
Readmissions per year per patient primarily attributed to medications (6 month panel)	**-33%**

Untreated (Cohort) vs. Treated Patients, USC CMMI Program

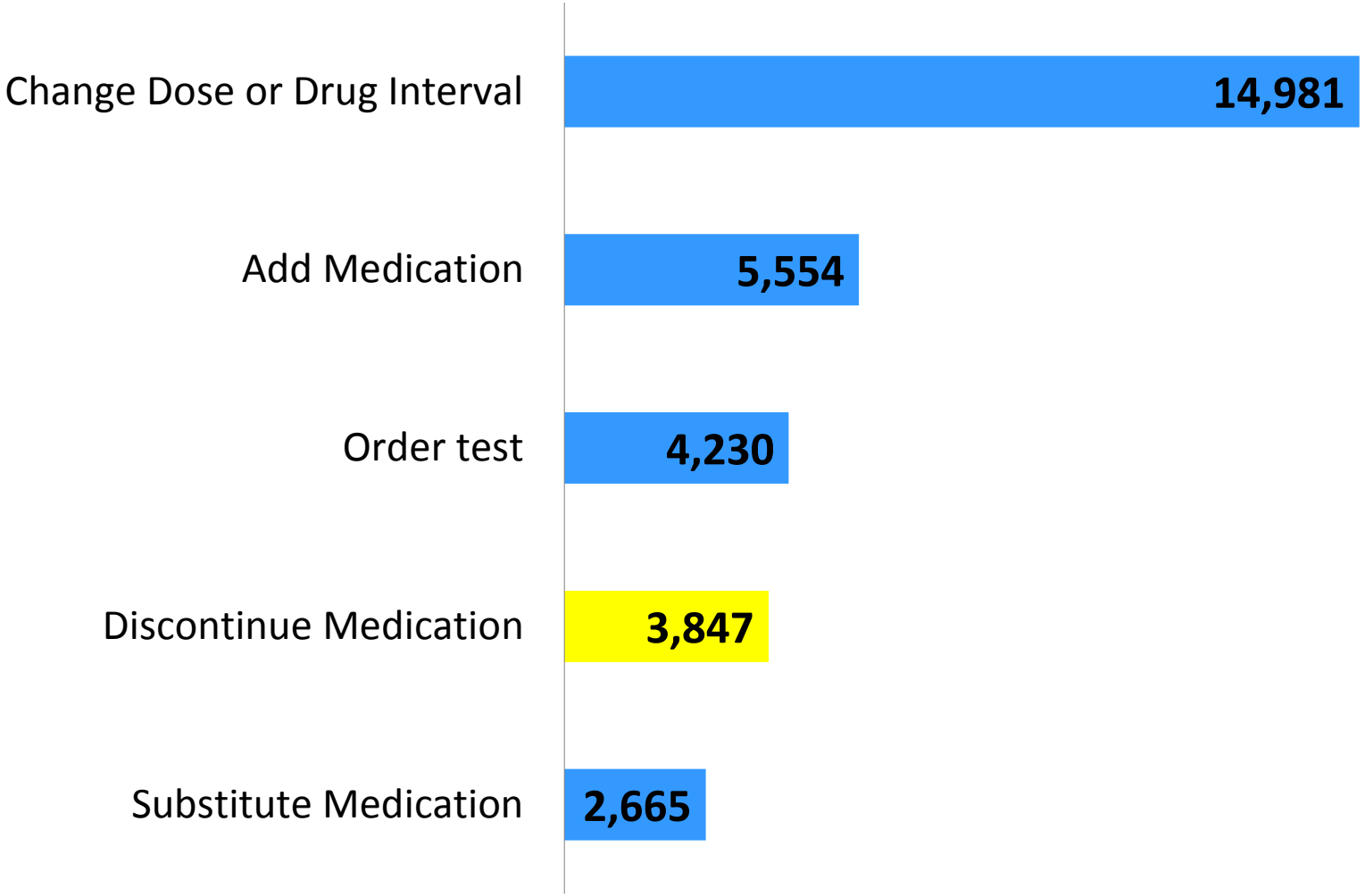


Preliminary analysis, data on file
USC Schaeffer Center for Health Policy & Economics

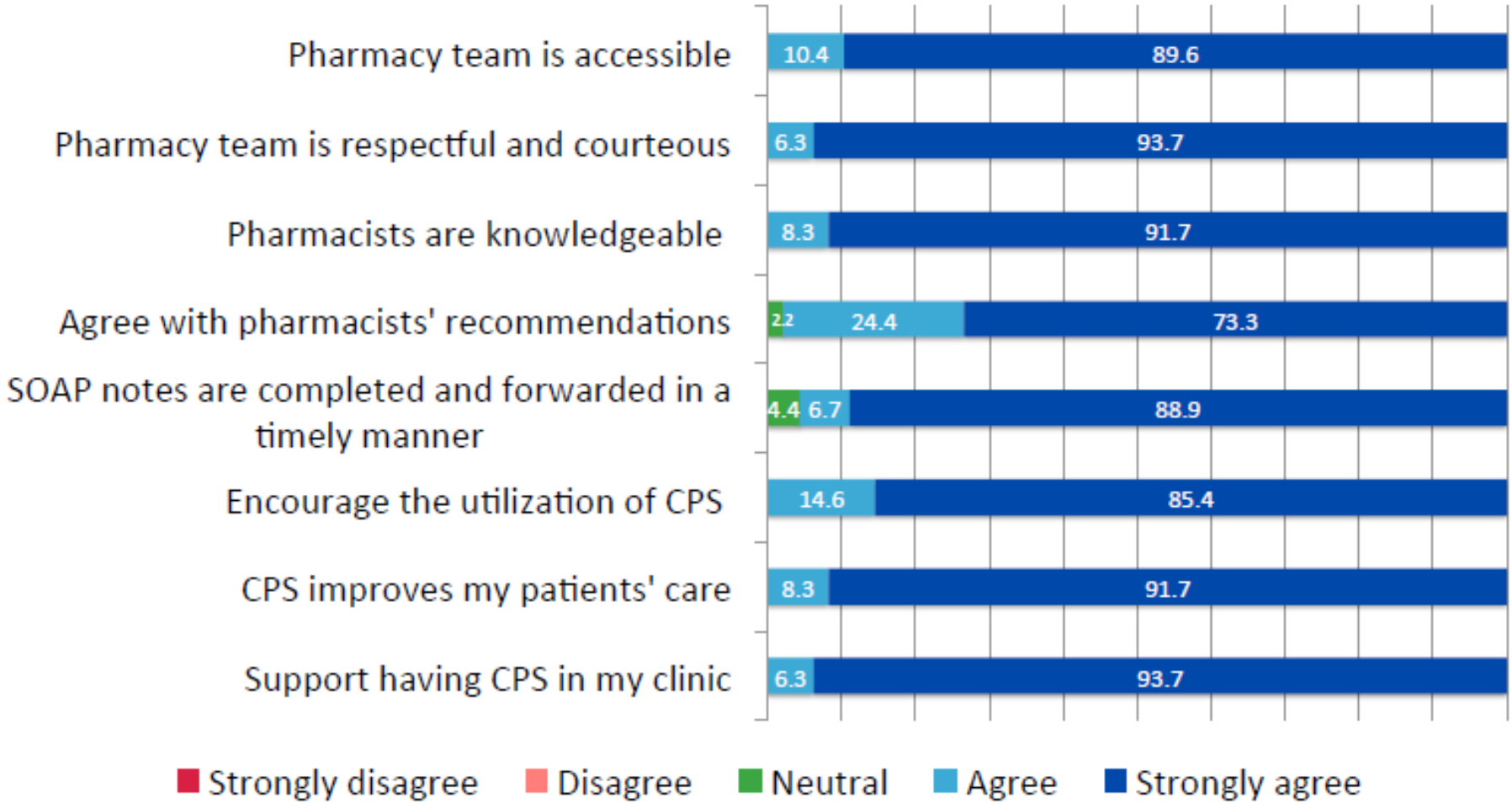
Medication-Related Problems Identified Through CMMI Clinical Pharmacy Program
67,169 problems among 5,775 patients (Avg 11.6 per patient)



Top Actions Taken by Pharmacists to Resolve Medication-Related Problems (excluding education)



Physician Satisfaction



Unsolicited letter from AltaMed Physician

”I am writing to you today of my own accord, I have offered to make my opinion known about the **excellent work that USC pharmacy team** is doing without solicitation because I think pharmacy team has done an **extraordinary job**.”

“Both Dr. Oh and Dr. Lin are **extremely diligent and knowledgeable professionals**, with **very good rapport with their patients**. I know that most of my **patients actually look forward to having their sessions with the pharmacy team** and have **learned a great deal regarding their chronic disease self-management**. **Improving patient clinical parameters** are an excellent proof of that.”

“Dr. Oh in particular has been an integral part of the work that we do here, **as a resident she goes above and beyond** to make sure the patient are well care for. We have had some really **mutually beneficial academic discussions** and she has **helped changed my practice** on a few occasions while **bringing in new research to my knowledge**. I am really grateful to have the opportunity to work with Dr. Oh and Dr. Lin and look forward to their continued mutually beneficial relationship with us.”

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- Medical leadership perspective

AltaMed

The Case for Clinical Pharmacy

Michael Hochman, MD, MPH

September 3, 2015

"Aren't pharmacists trying to practice medicine without a medical degree??"

- Pharmacists are filling a gap in the healthcare system
  - Prevent medication-related harm
  - Manage medications to help patients reach treatment goals
  - Work with most challenging patients with the greatest needs
    - More time for physicians to evaluate and diagnose
  - Strong support from Centers for Disease Control, Centers for Medicare and Medicaid Services, Health Resources and Services Administration, Patient-Centered Primary Care Collaborative, US Public Health Service

Pharmacists are the only healthcare professional excited about managing…

…this

Pharmacist Training Today

- All U.S. schools: Doctor of Pharmacy programs
  - 4 year graduate program
  - Almost all require undergraduate degree
- Train with all healthcare professionals
- 1-2 year postgraduate residency training
- Fellowships
- Board certification

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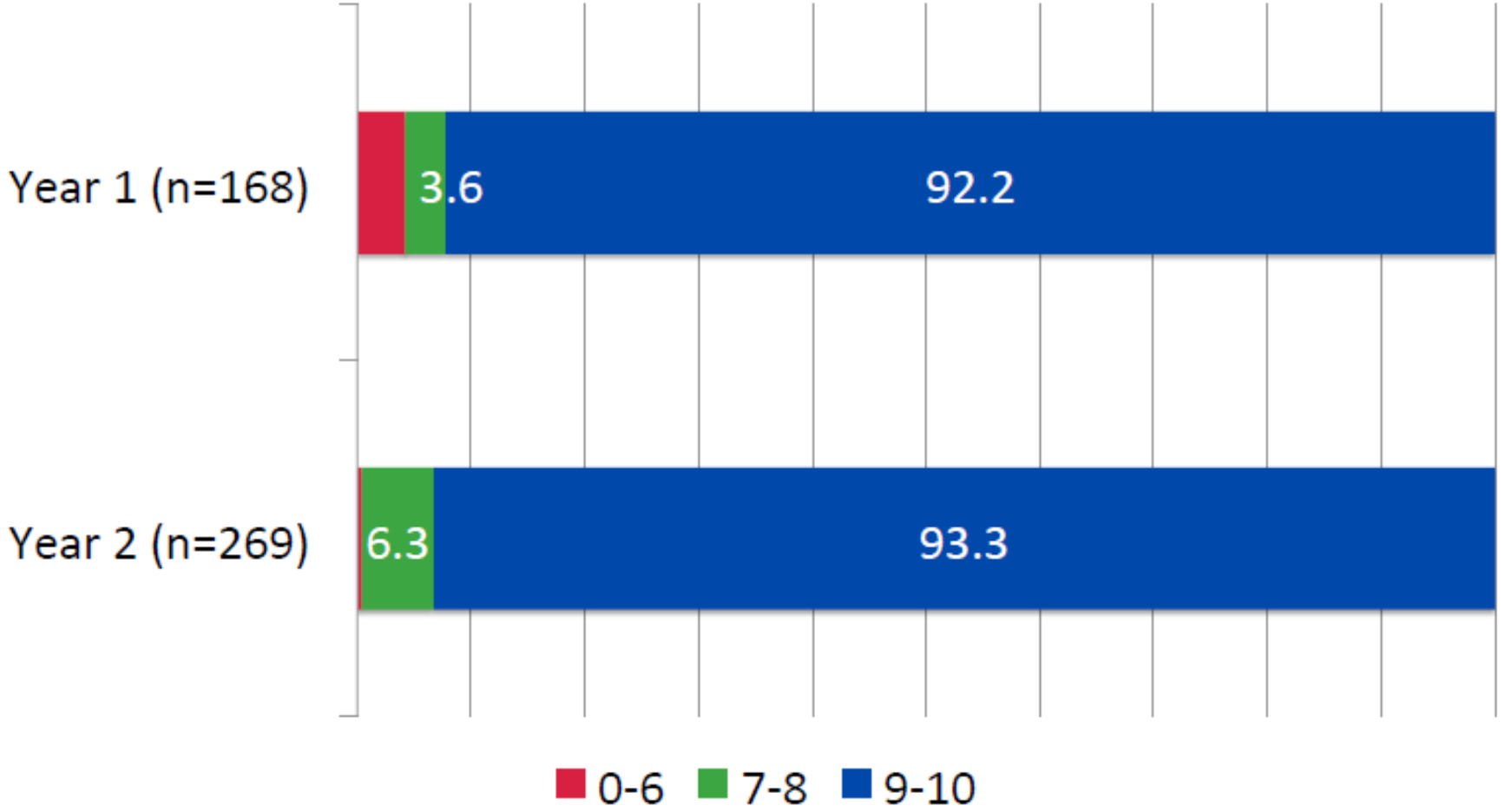
USC University of Southern California


USC

Patient Satisfaction



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Unsolicited letter from AltaMed patient

- I wanted to take this time to commend and congratulate *Alta Med Healthcare* in implementing such **a vital and useful program** for their patients. The *Clinical Pharmacy Service* is a **benchmark that all other Health Care providers could learn from and try to emulate**. And in an era where severe cuts are the norm at the *State* and *Local* levels, I can't begin to express **how fortunate I feel to be a benefactor** of this program. It is well **staffed with professionals** who seem to want to make a positive difference in their community outreach. I was made aware that the *Clinical Pharmacy Service* was established through a grant to maintain a more efficient protocol between Dr. and patient. In reflective thought **I can't think of money better spent**.
- However **when I was first introduced to this program I was quite leery** to say the least… I'm quite busy and after seeing my primary care physician **the last thing I wanted to do is spend more time with a clinical pharmacist**… But **after my first visit with *Dr. Hamai* I became a true believer**. I was so taken back and impressed with her immeasurable knowledge and seasoned professionalism.

Patient letter (cont.)

- Being insulin dependent for over a quarter century I thought I had a real grasp on my condition, but she opened my eyes to a number of things that I wasn't even aware existed. Long term complications from diabetes can be quite devastating; to say the least and I really felt she had my best interest in mind. Not only was *Dr. Hamai* instrumental in shedding insight regarding my condition, but her team of *Gabriella* and *Wendy* also proved to be more than worthy on the support side. In fact *Gabriella* brought to my attention that I might not be getting the most efficient readings from my glucometer given the way I was administering my blood sample. ***Wendy's* phone follow-up was more than I could have asked for with respect to having a trusted liaison to the program**.
- As I look at this program in retrospect, **I can only see the positive long term effects and cost savings to the community at large.** Cost savings in the way of much needed education and support that can make all the difference from falling victim to one's disease or gaining the upper hand in living and controlling it. **My hopes are that the *Clinical Pharmacy Service* program does not fall victim to any budget shortfall in the future and continues to thrive in the community. Knowledge is power and this program embraces that statement ever so**.

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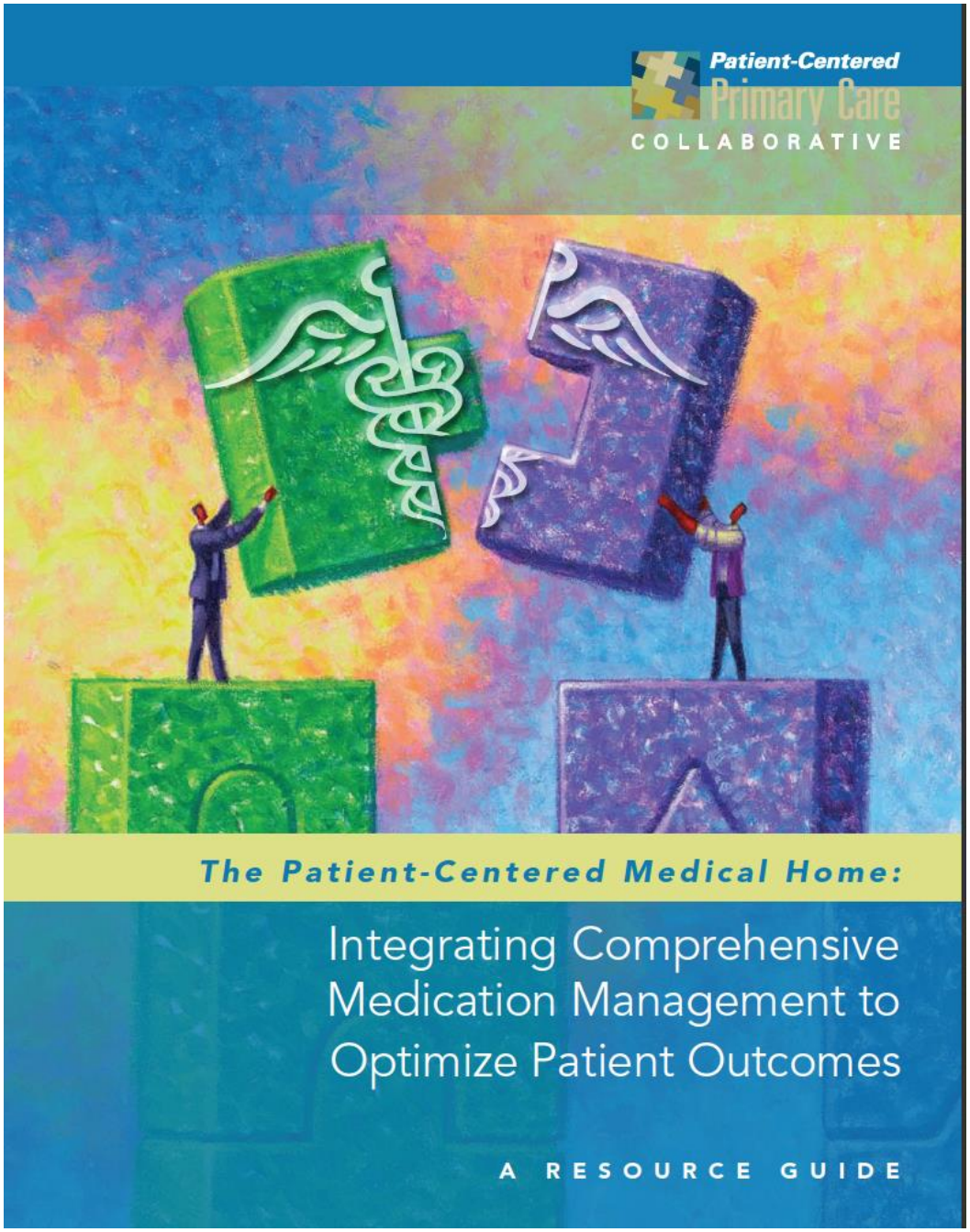

https://www.pcpcc.org/sites/default/files/media/medmanagement.pdf

Improving Patient and Health System Outcomes through Advanced Pharmacy Practice

A Report to the U.S. Surgeon General 2011

Office of the Chief Pharmacist

"…medication management services demonstrated an ROI of as high as 12:1 and an average of 3:1 to 5:1."

Dec 2011, http://www.usphs.gov/corpslinks/pharmacy/comms/pdf/2011advancedpharmacypracticereporttotheussg.pdf

A PROGRAM GUIDE FOR PUBLIC HEALTH

Partnering with Pharmacists in the Prevention and Control of Chronic Diseases

National Center for Chronic Disease Prevention and Health Promotion

http://www.cdc.gov/dhdsp/programs/spha/docs/pharmacist_guide.pdf

Comprehensive Medication Management Programs: Description, Impacts, and Status in Southern California, 2015

12/23/2015

https://www.cdph.ca.gov/programs/cdcb/Documents/CMMWhitePaperCDPH2015Dec23FINALrev.pdf

Value Proposition- Comprehensive Medication Management

Integration of comprehensive medication managment for high-risk patients:

- *Lowers total healthcare costs (↓hospitalizations / readmits)*
- *Improves healthcare quality measures (Pay for performance)*
- *Improves medication safety (priority for CMS, others)*
- *Improves provider access (PCMH measure, video telehealth) and satisfaction (less staff turnover)*
- *Improves patient satisfaction (retention)*
- *Saves lives*

Modes of Clinical Pharmacy Service Delivery

Higher complexity

Lower complexity

1. **Medical Groups** (Pay for Performance, Chronic Disease Management)
   - Cedars-Sinai, Sharp, USC
2. **Integrated into Medical Homes**
   - VA, Kaiser, safety net clinics including AltaMed, QueenCare, LA Christian
3. **Community Pharmacies**
   - Ralphs, Walgreens, independents
4. **Video Telehealth-** VA, USC
5. **Telephonic**
   - MEDCO, SinfoniaRx, Kaiser Permanente, USC, Heritage ACO

Limited scale

Broader scale

http://www.pcpcc.net/files/medmanagepub.pdf
http://www.cdc.gov/dhdsp/programs/nhdsp_program/docs/pharmacist_guide.pdf

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Collaborations to Develop High-Impact, Sustainable Results

California Department of Public Health

CDPH

IPA California

Health Services Los Angeles County

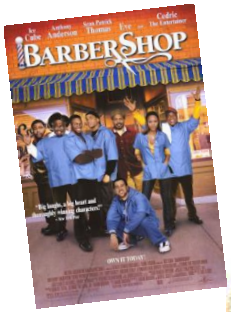
AltaMed

Los Angeles Christian Health Centers
"Serving All, With Open Hearts"

Heritage California ACO

QueensCare Family Clinics

Keck Medical Center of USC



American Heart Association | American Stroke Association
life is why

CareMore
It's what we do.™

UCLA David Geffen School of Medicine

UCLA Health

HSAG Health Services Advisory Group

Can barbers cut BP too?

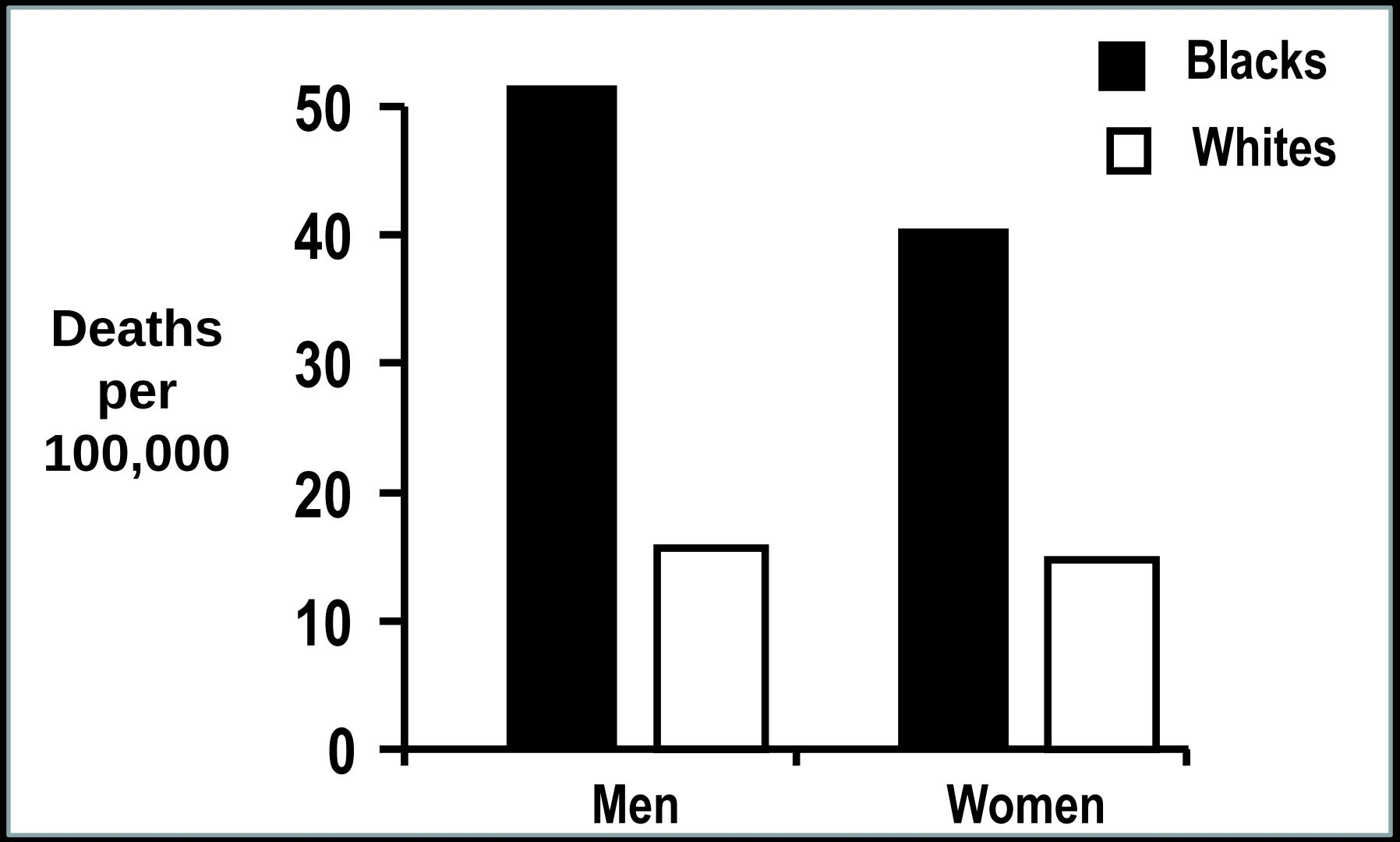
Ron Victor, M.D.

Burns & Allen Chair in Cardiology Research Professor of Medicine, UCLA
Director, Hypertension Center
Associate Director, Cedars-Sinai Heart Institute

High Blood Pressure
(Hypertension, HTN)

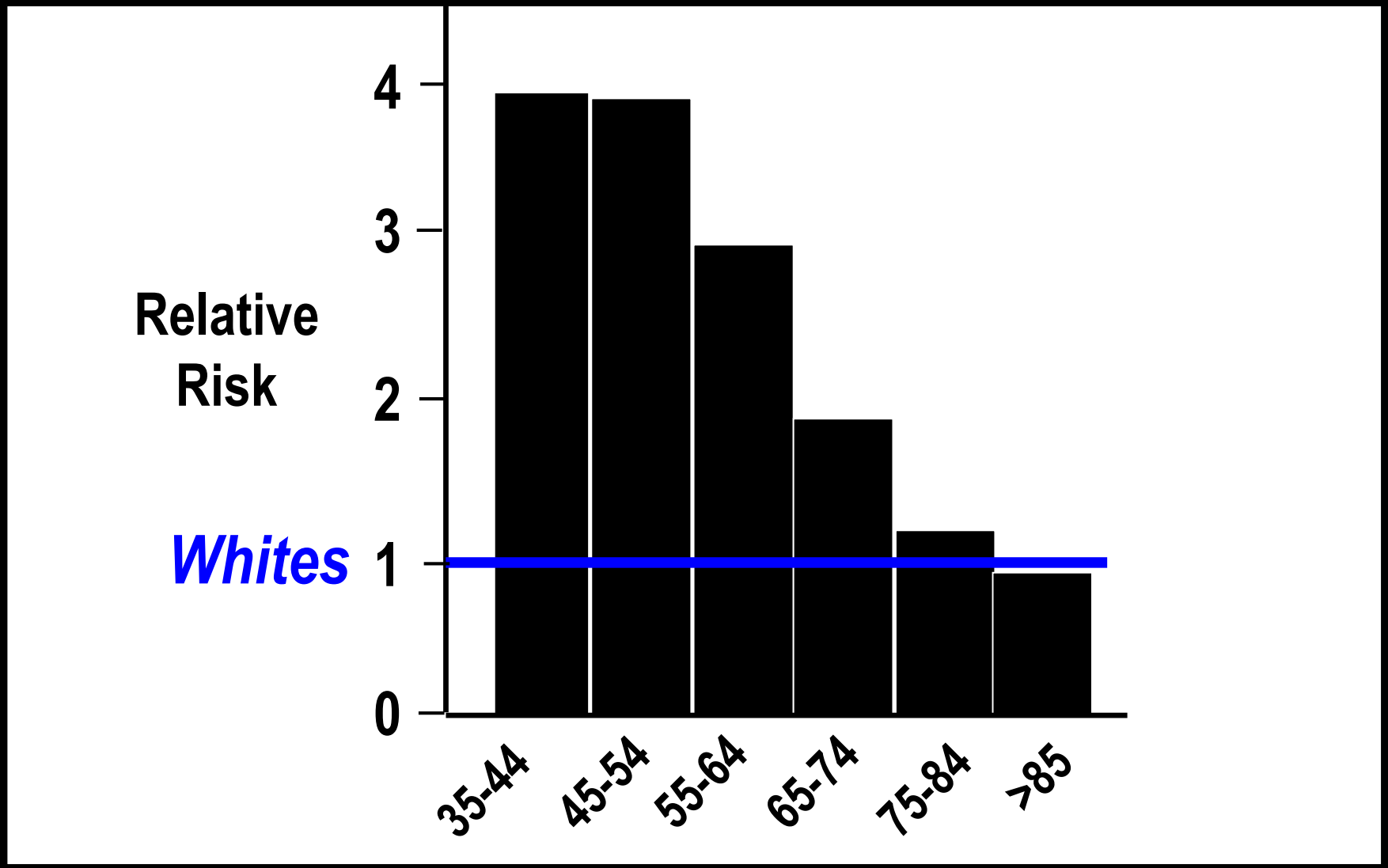
- 70 million Americans
- 1 billion people
- <1 in 3 controlled
- 40% of heart attacks, 50% of strokes
- Cost to US health care $100 billion/yr

Disparity in death rates from HTN



AHA 2009 Update: (NCHS, 2005)

Disparity in stroke deaths



CDC: *MMWR, 2000*

Gerald Le Vert

Heart Attack
age 40

Barry White

Kidney Failure
age 59

These men died young from complications of uncontrolled high blood pressure.

Rick James

Heart Failure
age 56

Luther Vandross

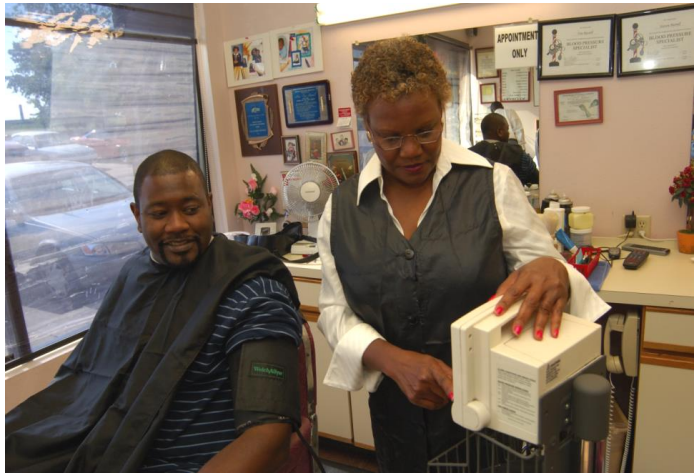
Stroke
age 54

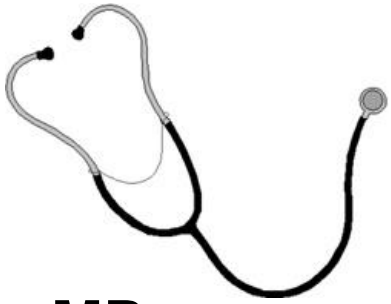
Role Model Poster

Health…It's A Family Affair

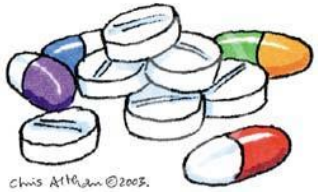
I am 45. I have always made sure my daughters go to the doctor but didn't make time to get a doctor for myself. I've been too busy working and providing for my family. I wasn't feeling well for a couple of months and finally let my daughter take me to the emergency room. They prescribed medication for hypertension, diabetes and cholesterol but didn't get me an appointment to follow up with a doctor. Mrs. Byrd did. She got me my own doctor within a week. I feel that I was treated well and will work with the doctor and do what it takes to get my blood pressure, diabetes and cholesterol under control. I want to be there for my children for a very long time.

Barber-Based Intervention





MD



BP medication

Hess et al. *Hypertension*. 2007

BARBER-2 Trial (in Los Angeles):
How to optimize intervention potency?

Barber fidelity
Patron acceptance

Pharmacists?

Physician inertia

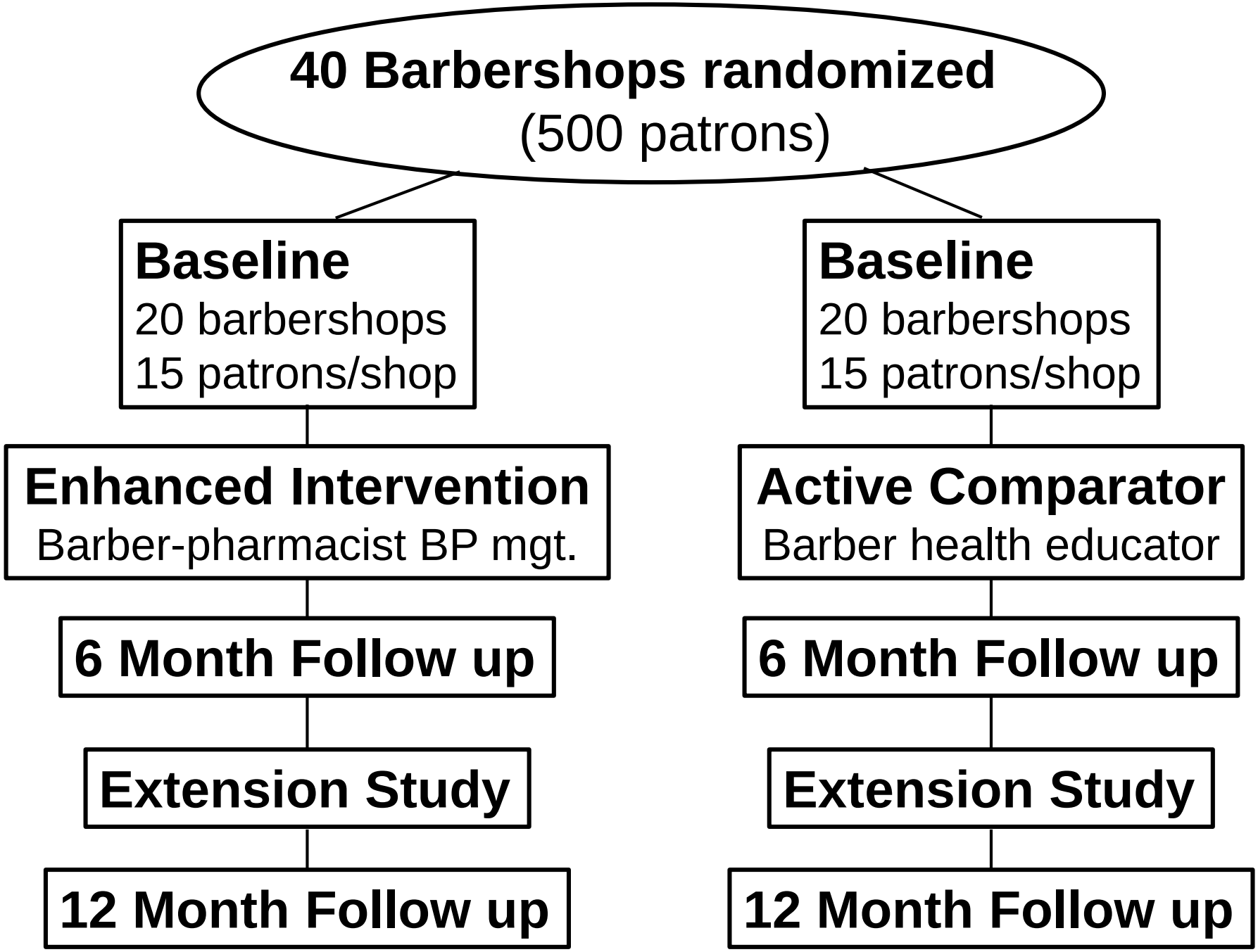
Non-Adherence

Better medical treatment

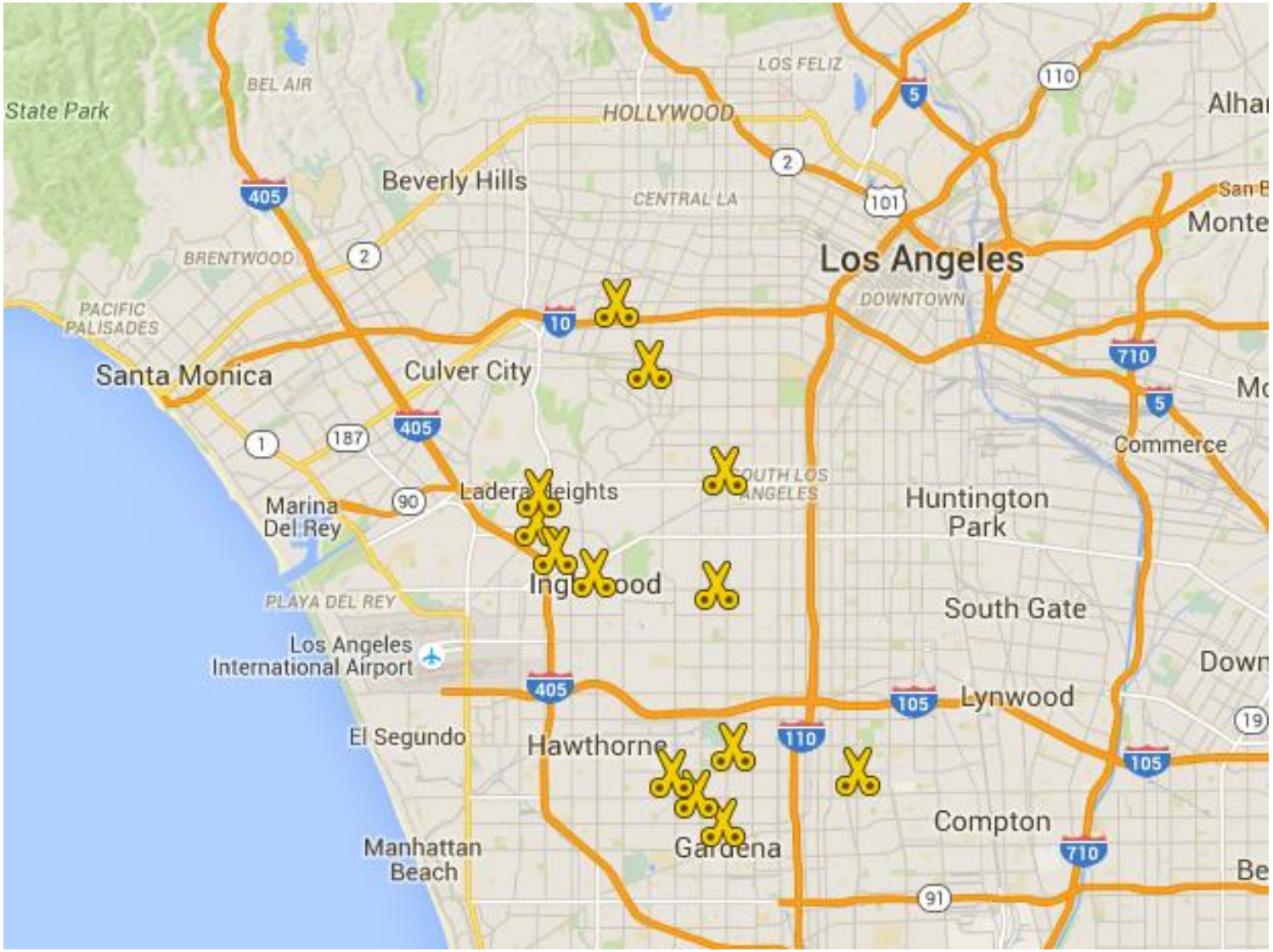
The LA Blood Pressure Barbershop Study

- PI: Ronald Victor, MD
- NIH-funded R01 grant
- 2015-2019
- ClinicalTrials.gov Identifier
  NCT 02321618

NIH
National Heart, Lung, and Blood Institute


40 Barbershops randomized
(500 patrons)
Baseline
20 barbershops
15 patrons/shop
Baseline
20 barbershops
15 patrons/shop
Enhanced Intervention
Barber-pharmacist BP mgt.
Active Comparator
Barber health educator
6 Month Follow up
6 Month Follow up
Extension Study
Extension Study
12 Month Follow up
12 Month Follow up

Setting


BEL AIR
State Park
HOLLYWOOD
LOS FELIZ
Beverly Hills
CENTRAL LA
Los Angeles
DOWNTOWN
BRENTWOOD
PACIFIC PALISADES
Santa Monica
Culver City
Marina Del Rey
PLAYA DEL REY
Los Angeles International Airport
El Segundo
Manhattan Beach
Hawthorne
Gardena
Inglewood
SOUTH LOS ANGELES
Huntington Park
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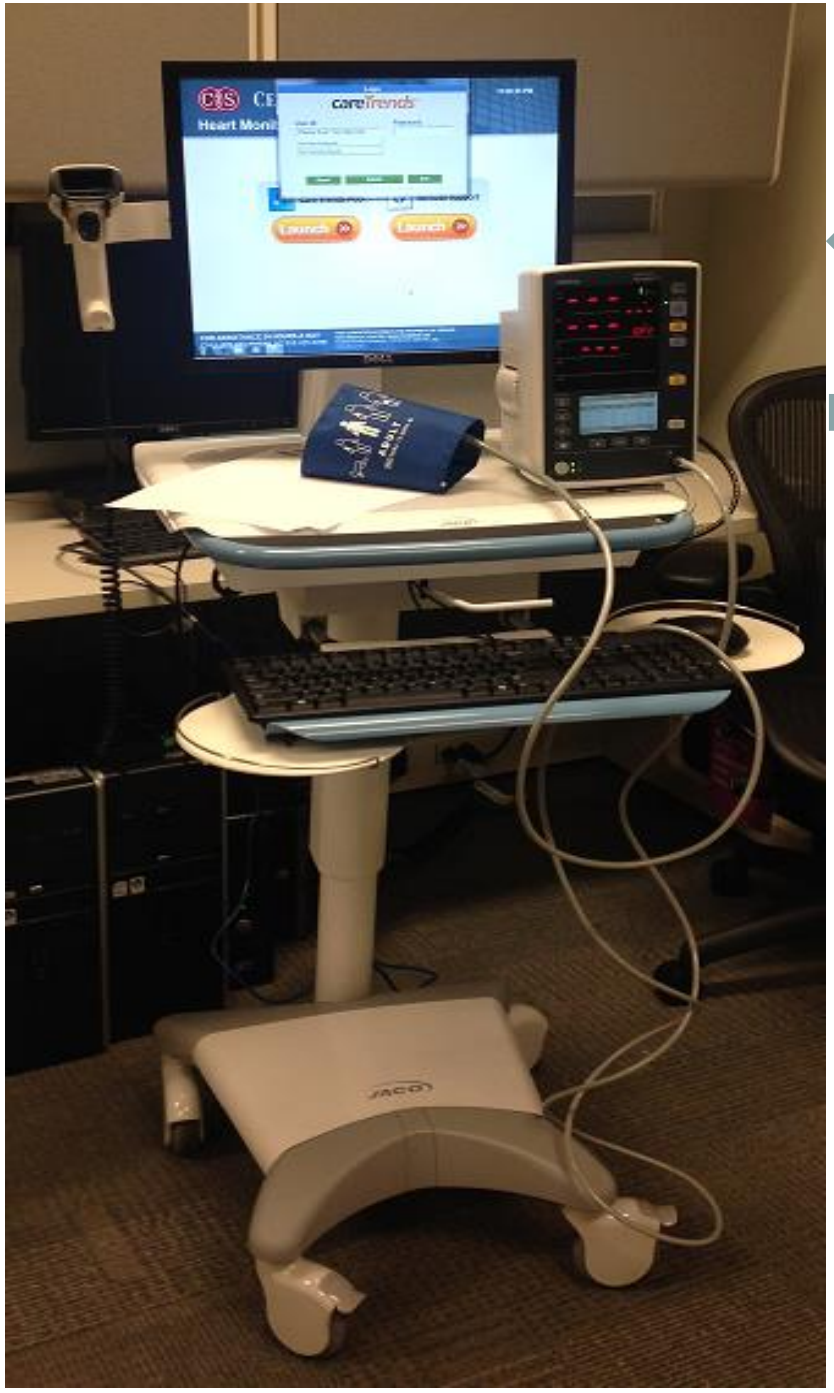
91
19



Enhanced Intervention

Barber‘s Blood Pressure Work Station

Wireless transmission

The LA Barbershop Blood Pressure Study

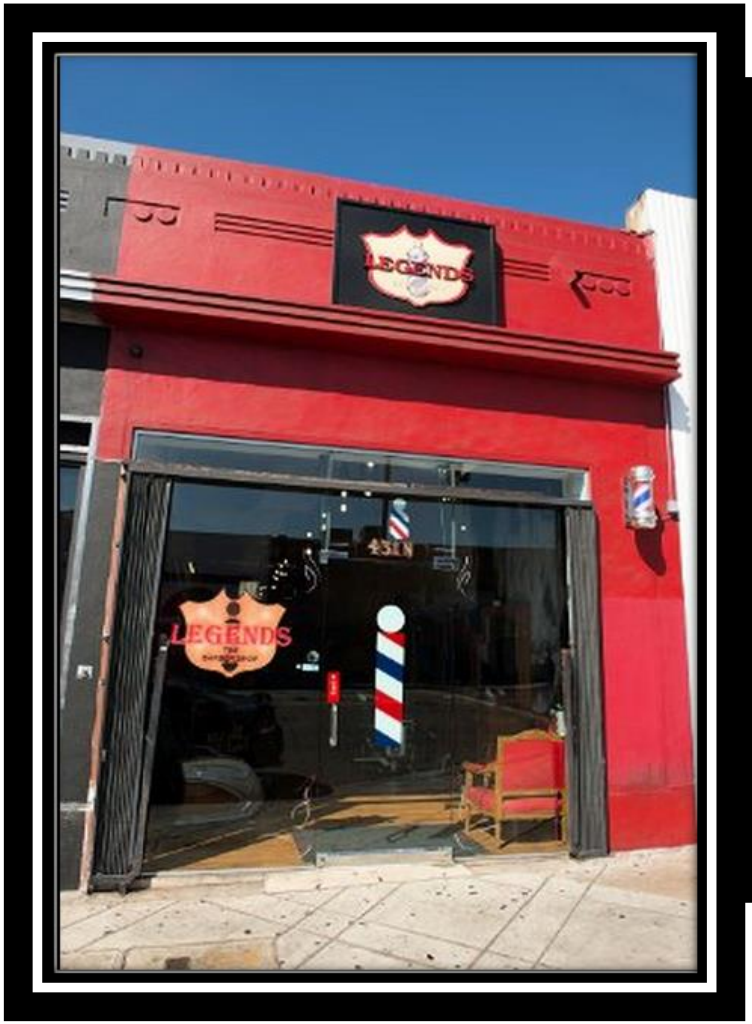
000585

Cut Your Pressure Too

Cohort member card with barcode

Pharmacist visits

Community Advisory Board



Brian Davis, Ron Victor MD, Tony Reid MD,
Robert Elashoff PhD, James Smith,
Stanley White, Luther Sherman

- How can you adapt the approaches shared to provide optimal medication therapy outcomes for your patients?
- What barriers prevent you from integrating comprehensive medication management services?
- What can you do next Tuesday to begin offering comprehensive medication management in your organization?