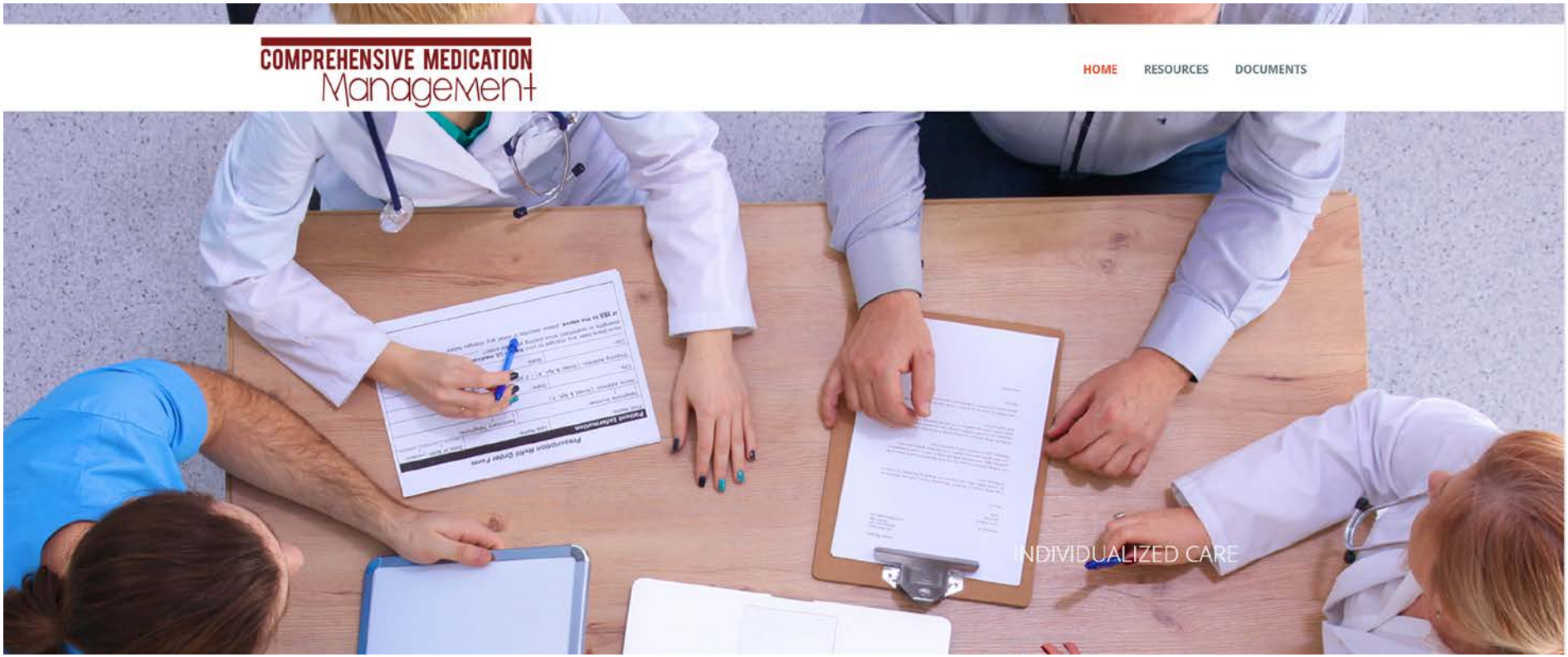


Steven W. Chen, PharmD, FASHP, FCSHP, FNAP
Associate Dean for Clinical Affairs
chens@usc.edu

Intent of this session

To share a **proven framework** for ensuring optimal results from medication therapy

Questions to run on…

- What medication-related problems do you have in your organization that remain unresolved?
- How can Comprehensive Medication Management be strategically implemented / expanded to deliver high value / ROI?

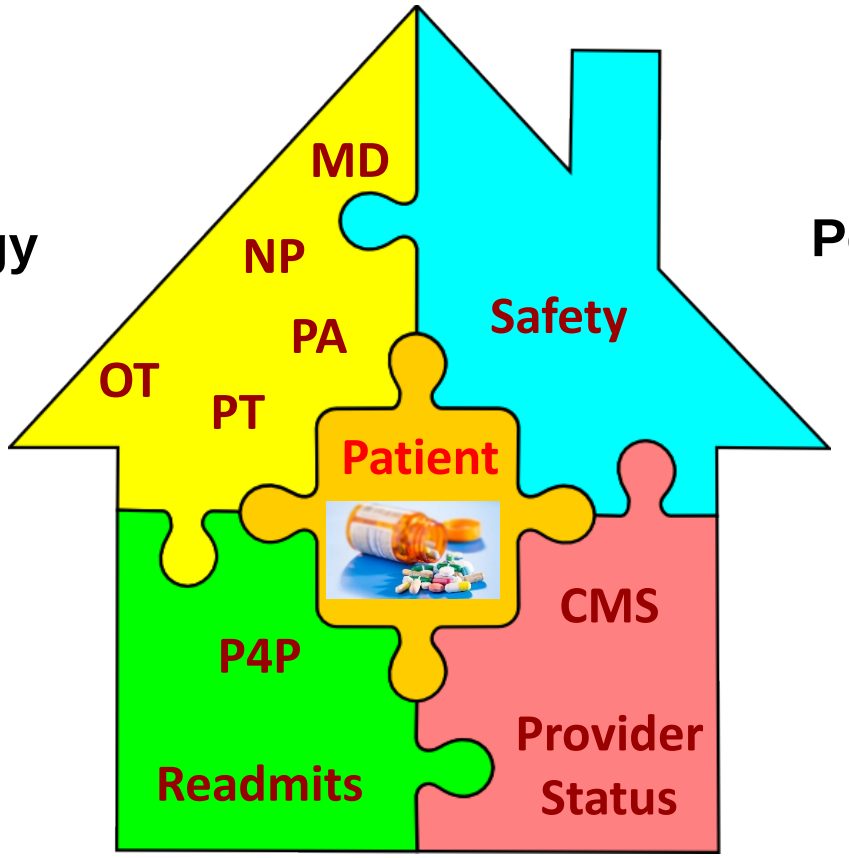
Outline

- Quality and safety gaps in healthcare
- Comprehensive medication management (CMM)
  - Definition and comparison to MTM
  - Final results from USC CMMI HCIA
- CMM at local, state, and national levels
- Next steps

Managed Care

Technology

Personalized Medicine



Big Data / Population Health

Specialty Pharmacy

High-risk / High-Cost / Problem Prone Patients

USC School of Pharmacy CMM Collaborations

California Department of Public Health

CDPH

CMS
CENTERS FOR MEDICARE & MEDICAID SERVICES

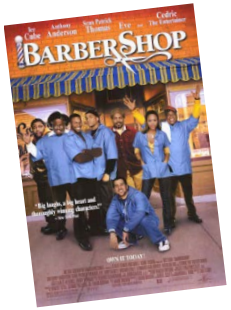
LOS ANGELES COUNTY DEPARTMENT OF
Mental Health
hope. recovery. wellbeing.

LOS ANGELES CHRISTIAN HEALTH CENTERS
"SERVING ALL, WITH OPEN HEARTS"

Kedren Health

IEHP
A Public Entity
Inland Empire Health Plan

QueensCare
FAMILY CLINICS



CareMore
It's what we do.™

American Heart Association | American Stroke Association
life is why™

INDIAN HEALTH SERVICE
PHS · 1955 ·

IPA
CALIFORNIA

HSAG
HEALTH SERVICES ADVISORY GROUP

County of Los Angeles
Public Health

UCLA Health

Keck Medical Center of USC

EXHIBIT ES-1. OVERALL RANKING

COUNTRY RANKINGS

Top 2*
Middle
Bottom 2*

OVERALL RANKING (2013)	AUS	CAN	FRA	GER	NETH	NZ	NOR	SWE	SWIZ	UK	US
Quality Care											
Effective Care											
Safe Care											
Coordinated Care											
Patient-Centered Care											
Access											
Cost-Related Problem											
Timeliness of Care											
Efficiency											
Equity											
Healthy Lives											
Health Expenditures/Capita, 2011**	**$3,800**	**$4,522**	**$4,118**	**$4,495**	**$5,099**	**$3,182**	**$5,669**	**$3,925**	**$5,643**	**$3,405**	**$8,508**

RANK THESE HEALTH CARE SYSTEMS ON OVERALL PERFORMANCE

Notes: * Includes ties. ** Expenditures shown in $US PPP (purchasing power parity); Australian $ data are from 2010.
Source: Calculated by The Commonwealth Fund based on 2011 International Health Policy Survey of Sicker Adults; 2012 International Health Policy Survey of Primary Care Physicians; 2013 International Health Policy Survey; Commonwealth Fund *National Scorecard 2011;* World Health Organization; and Organization for Economic Cooperation and Development, *OECD Health Data, 2013* (Paris: OECD, Nov. 2013).

http://www.commonwealthfund.org/~/media/files/publications/fund-report/2014/jun/1755_davis_mirror_mirror_2014.pdf


USC University of
Southern California


WASSERMAN
©12.0 THE BOSTON GLOBE
DIST. BY TRIBUNE MEDIA SERVICES
WWW.BOSTON.COM/WASSERMAN
DOC- CAN YOU SEE THE PROBLEM?
I'M AFRAID SO.
INSURANCE COMPANIES

HARD NUMBERS

By AMERICAN HEART ASSOCIATION NEWS

A sampling of U.S. data from the American Heart Association's 2018 heart disease and stroke statistics report.

1 MILLION
PEOPLE WHO WILL HAVE A HEART ATTACK OR DIE FROM CORONARY HEART DISEASE THIS YEAR

16.5 MILLION
AMERICANS AGE 20 AND OLDER WHO ARE LIVING WITH CORONARY HEART DISEASE

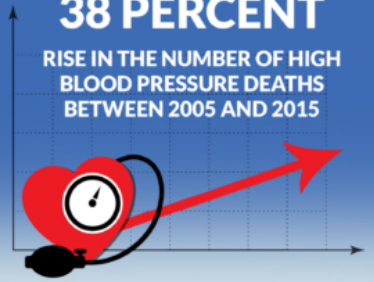
795,000
PEOPLE WHO WILL HAVE A STROKE THIS YEAR

356,000
CARDIAC ARRESTS THAT OCCUR OUTSIDE A HOSPITAL EACH YEAR

103 MILLION
ADULTS WITH HIGH BLOOD PRESSURE

6.5 MILLION
AMERICANS AGE 20 AND OLDER WHO ARE LIVING WITH HEART FAILURE

38 PERCENT
RISE IN THE NUMBER OF HIGH BLOOD PRESSURE DEATHS BETWEEN 2005 AND 2015



23 MILLION
ADULTS WITH TYPE 2 DIABETES

15 PERCENT
ADULTS WHO SMOKED IN 2015

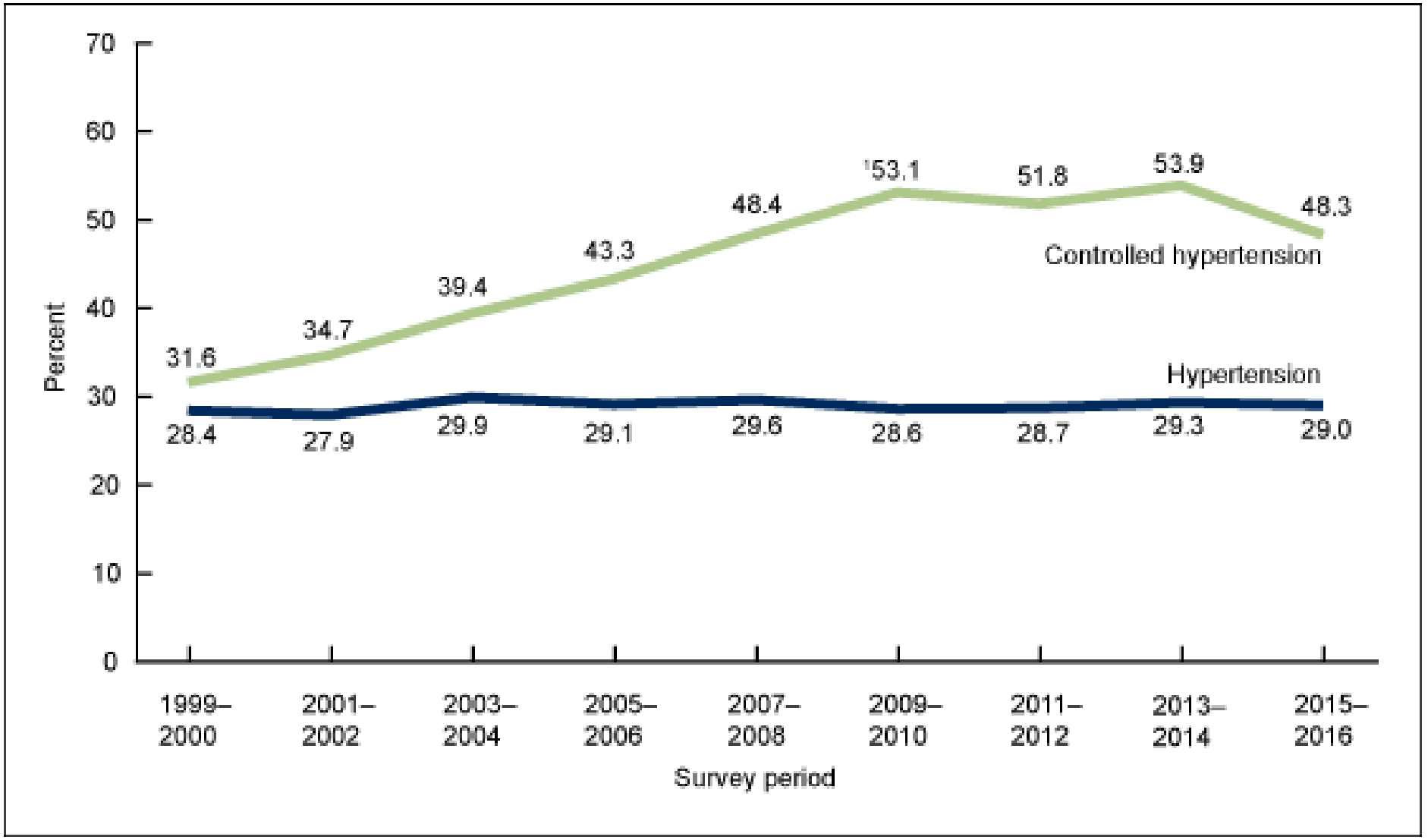
56 MILLION
PEOPLE 40 AND OLDER WHO ARE ELIGIBLE FOR CHOLESTEROL-LOWERING STATINS

38 PERCENT
ADULTS WHO WERE OBESE AS OF 2014

Source: "Heart Disease and Stroke Statistics-2018 Update: A Report from the American Heart Association," Circulation (numbers rounded)

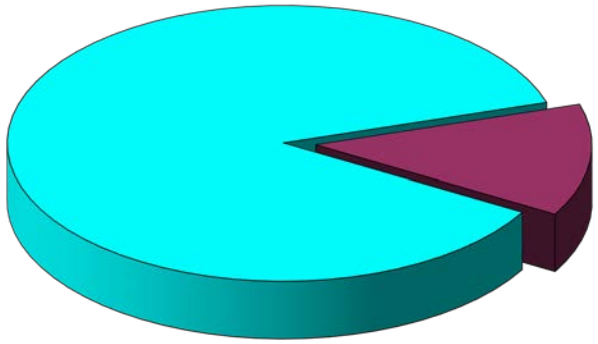
Published Jan. 31, 2018

Age-adjusted trends in hypertension and controlled hypertension among adults aged 18 and over: United States, 1999–2016



Study of ~7,200 Patients with Blood Pressure Above Goal:
Therapeutic Inertia- No Medication Change When Indicated

No Rx Change
(86.9%)



Rx Change
(13.1%)

If medication intensified on ~ 20% of visits, BP control rates would increase from 46.2% to 65.9% in 1 year

Hypertension. 2006;47:345-351

Medication-Related Problems in U.S.

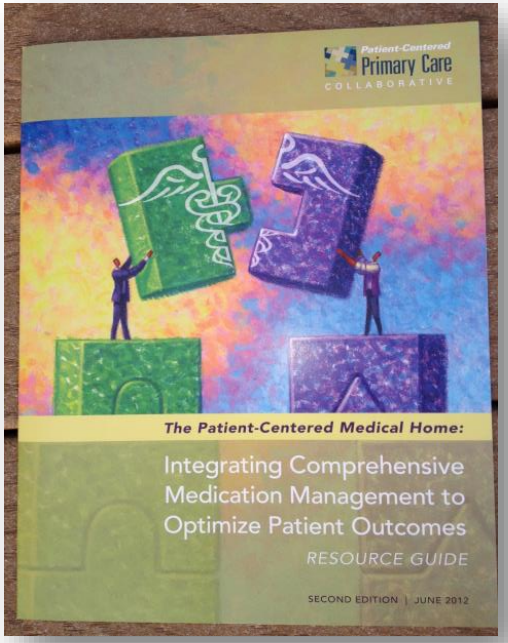
- Adverse effects from medications ~ 4th leading cause of death in U.S. (FDA)
- 75% of hospital readmissions among seniors are avoidable, primarily through better use of medications (James J., Health Affairs 2013)
- ½ of prescription medications taken every year in the US are used improperly (CDC, 2013)
- $528.4 billion in annual healthcare costs due to suboptimal use of medications for chronic diseases- 16% of total healthcare expenditures (Ann Pharmacotherapy, 2018)

Outline

- Quality and safety gaps in healthcare
- Comprehensive medication management (CMM)
  - Definition and comparison to MTM

Comprehensive Medication Management

The Patient-Centered Primary Care Collaborative (PCPCC) Defines Comprehensive Medication Management (CMM)



Integrating Comprehensive Medication Management to Optimize Patient Outcomes. *Resource Guide*

http://www.pcpcc.org/guide/patient-health-through-medication-management
https://innovations.ahrq.gov/qualitytools/patient-centered-medical-home-resource-guide-integrating-comprehensive-medication

Comprehensive Medication Management is a New Standard of Care

Ensures each patient's medications are individually assessed.

Assessment determines if medication is:

- appropriate for the patient
- effective for the medical condition
- safe given the comorbidities and other medications being taken
- able to be taken by the patient as intended

PCPCC Resource Guide- Integrating Comprehensive Medication Management to Optimize Patient Outcomes
https://www.pcpcc.org/sites/default/files/media/medmanagement.pdf
https://innovations.ahrq.gov/qualitytools/patient-centered-medical-home-resource-guide-integrating-comprehensive-medication

Comprehensive Medication Management is Patient Centered

CMM includes:

- individualized care plans that *achieve the intended goals of therapy*
- appropriate follow-up to determine actual *patient outcomes*
- patient understands, agrees with, and actively participates in the *treatment regimen*

CMM optimizes each patient's medication experience and clinical outcomes.

The Patient-Centered Medical Home: Integrating Comprehensive Medication Management to Optimize Patient Outcomes pg 5
http://www.pcpcc.org/guide/patient-health-through-medication-management

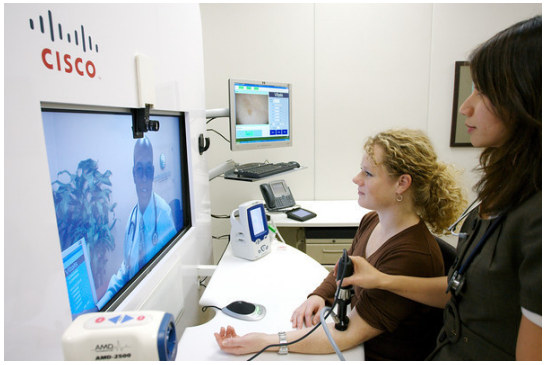
10-Step CMM Process

1. **Identify patients** that have not achieved treatment goals
2. **Understand** the patient's personal medication experience/history and preferences /beliefs.
3. Identify **actual use patterns** of ALL "medications"
4. **Assess each medication** for appropriateness, effectiveness, safety (including drug interactions), and adherence
5. Identify all **medication-related problems** that prohibit disease control
6. Develop a step-by-step **care plan** to achieve optimal outcomes
7. Secure **patient engagement and buy-in** in collaboration with PCP
8. **Document** all steps and current clinical status
9. **Follow-up** with patients to continue interventions until clinical goals/outcomes are achieved
10. **Work collaboratively** with physicians other team members to ensure the provision of optimal patient-centered care

From: The Patient-Centered Primary Care Collaborative

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		✓

Modes of CMM Delivery



1. **Medical Groups** (Pay for Performance, Chronic Disease Management)
   - Cedars-Sinai, Sharp, USC, UCLA
2. **Integrated into Medical Homes**
   - VA, Kaiser, safety net clinics
3. **Community Pharmacies**
   - Ralphs, Walgreens, independents
4. **Video telehealth-** USC, VA Health System
5. **Telephonic** ("low-hanging fruit")
   - MEDCO, Kaiser Permanente, SinfoniaRx, Heritage ACO, USC

http://www.pcpcc.net/files/medmanagepub.pdf

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

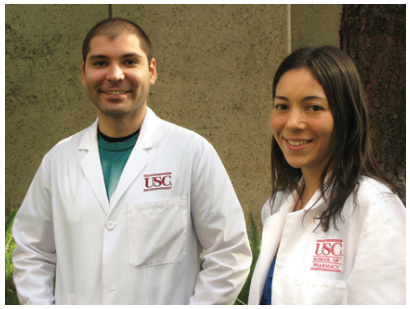
Outline

- Quality and safety gaps in healthcare
- Comprehensive medication management (CMM)
  - Definition and comparison to MTM
  - Final results from USC CMMI HCIA

$12 Million USC / AltaMed CMMI Project: Specific Aims

10 teams
Pharmacist + Resident +
Clinical Pharmacy Technician

Telehealth clinical pharmacy



Resident and technician training for expansion

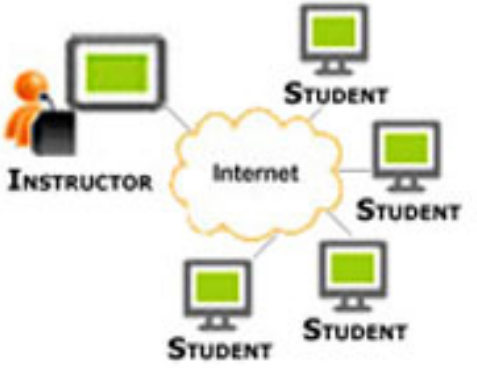
UNIVERSITY OF SOUTHERN CALIFORNIA

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

Feb 2014 & 2016

OUTCOME MEASURES

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

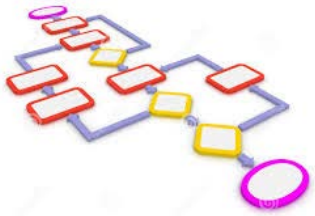


Web-based pharmacist training and credentialing

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

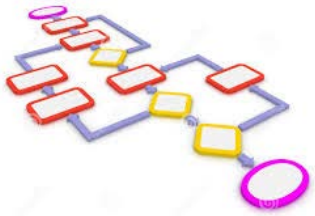
Clinical Pharmacy
USC School of Pharmacy

Comprehensive Medication Management

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

Comprehensive Medication Management

Treatment Goal Reached?

No

Yes

Clinical Pharmacy
USC School of Pharmacy

Unstable

Clinical pharmacy tech "check-ins" every 2 months

- 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
- Low-moderate rates of hospitalizations

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

Changes in Clinical Measures (% of Patients with Uncontrolled Disease)

Condition	% Uncontrolled			
	Managed Patients		Unmanaged Patients	
	Baseline	6 months	Baseline	6 months
High blood pressure (SBP/DBP)	100	39%	100	48%
Elevated cholesterol (LDL)	100	38%	100	52%
Elevated Blood Sugar (HgA1c)	100	34%	100	57%

Sample restricted to patients with *uncontrolled* condition at baseline.
Unmanaged patients received *usual care* from AltaMed primary care physicians.

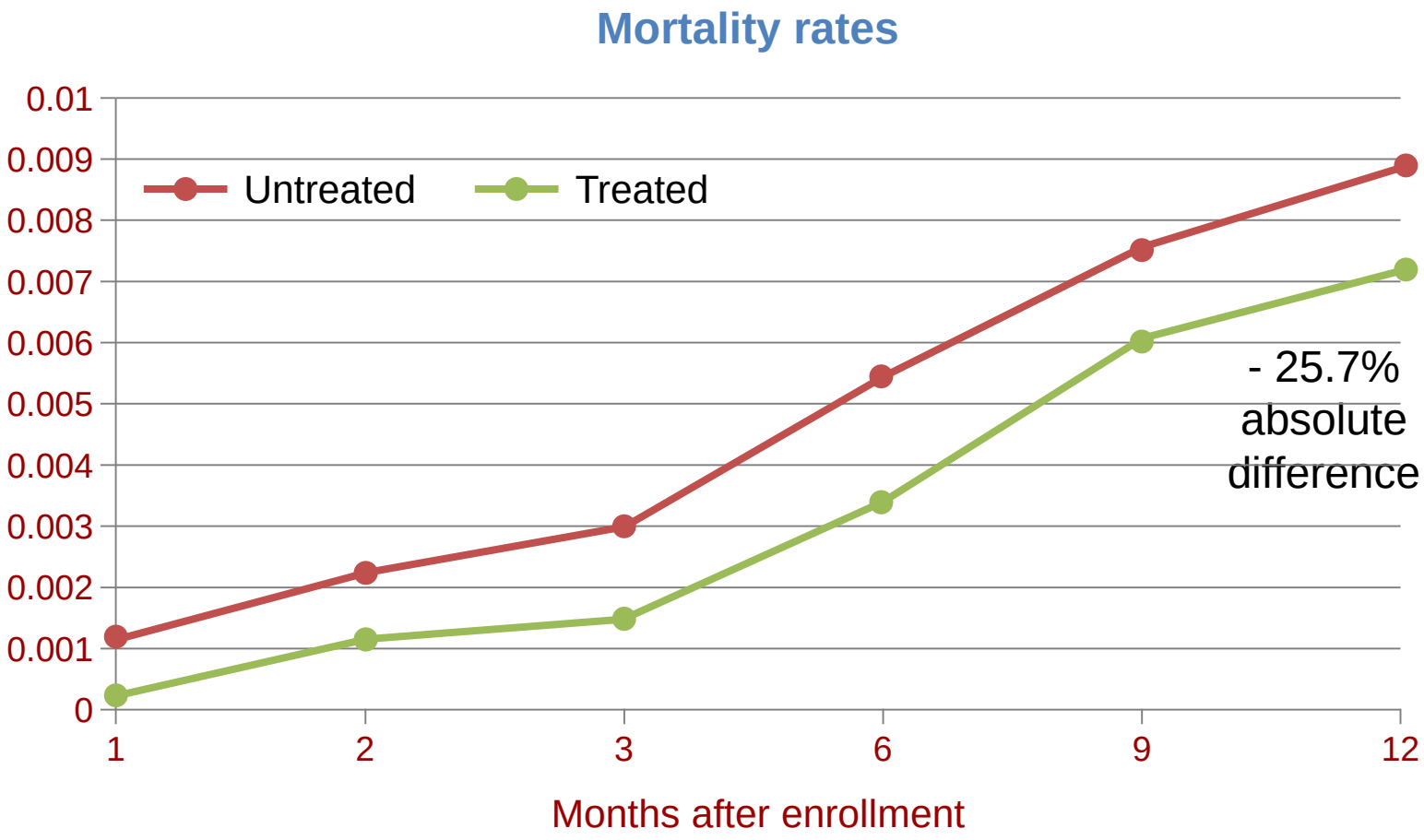
Interpretation: Program reduced rates of uncontrolled blood sugar (diabetes) by 23 percentage points relative to the unmanaged group (34% vs. 57%).

Summary of Difference-in-Differences Results for Utilization (Treatment – Control, Probit Analysis)

At 6 month follow-up:

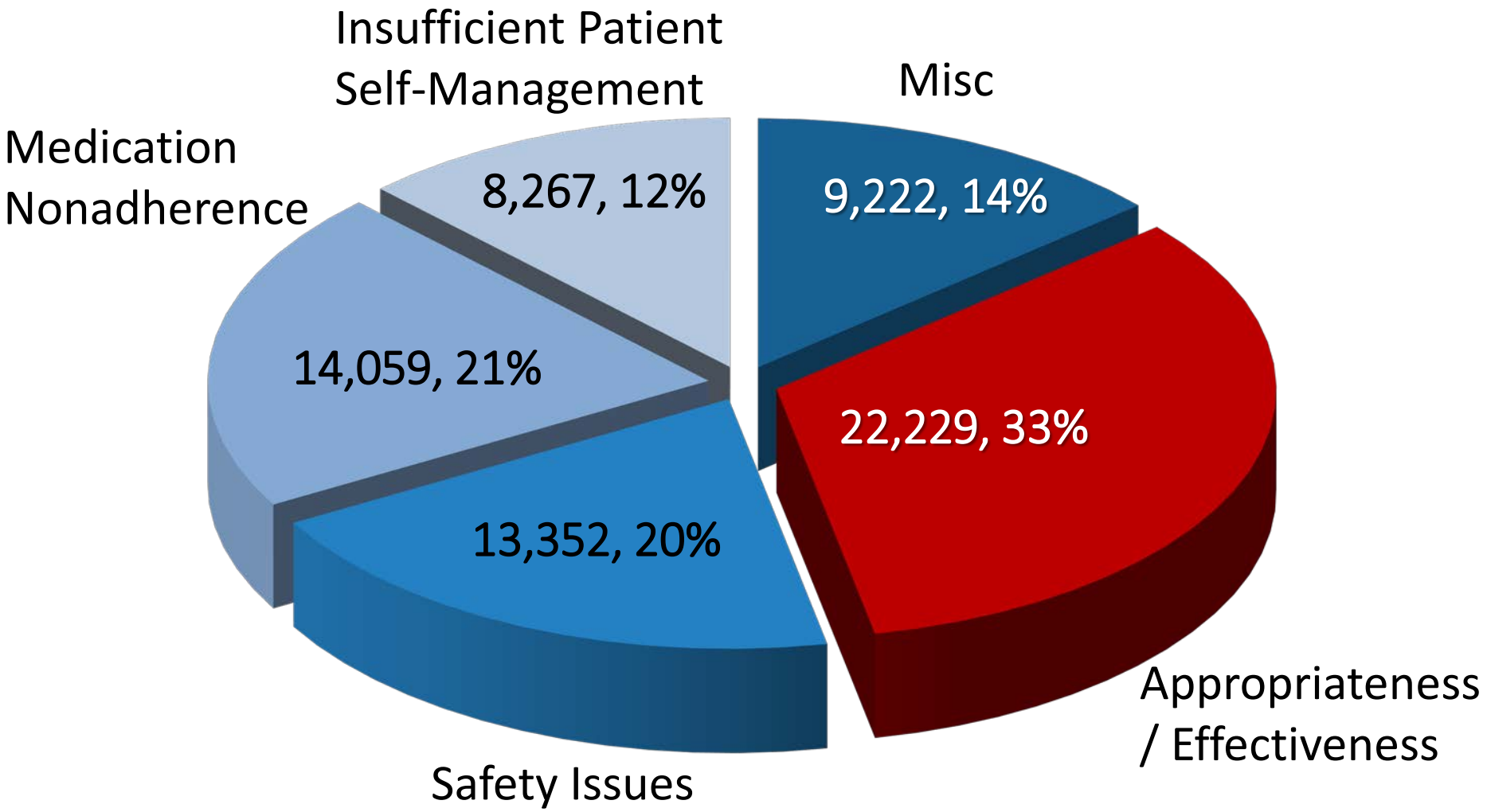
Readmissons per year per patient	**-16%**
Readmissions per year per patient primarily attributed to medications	**-33%**

Untreated (Cohort) Versus Treated Patients, Preliminary Findings, USC CMMI Program

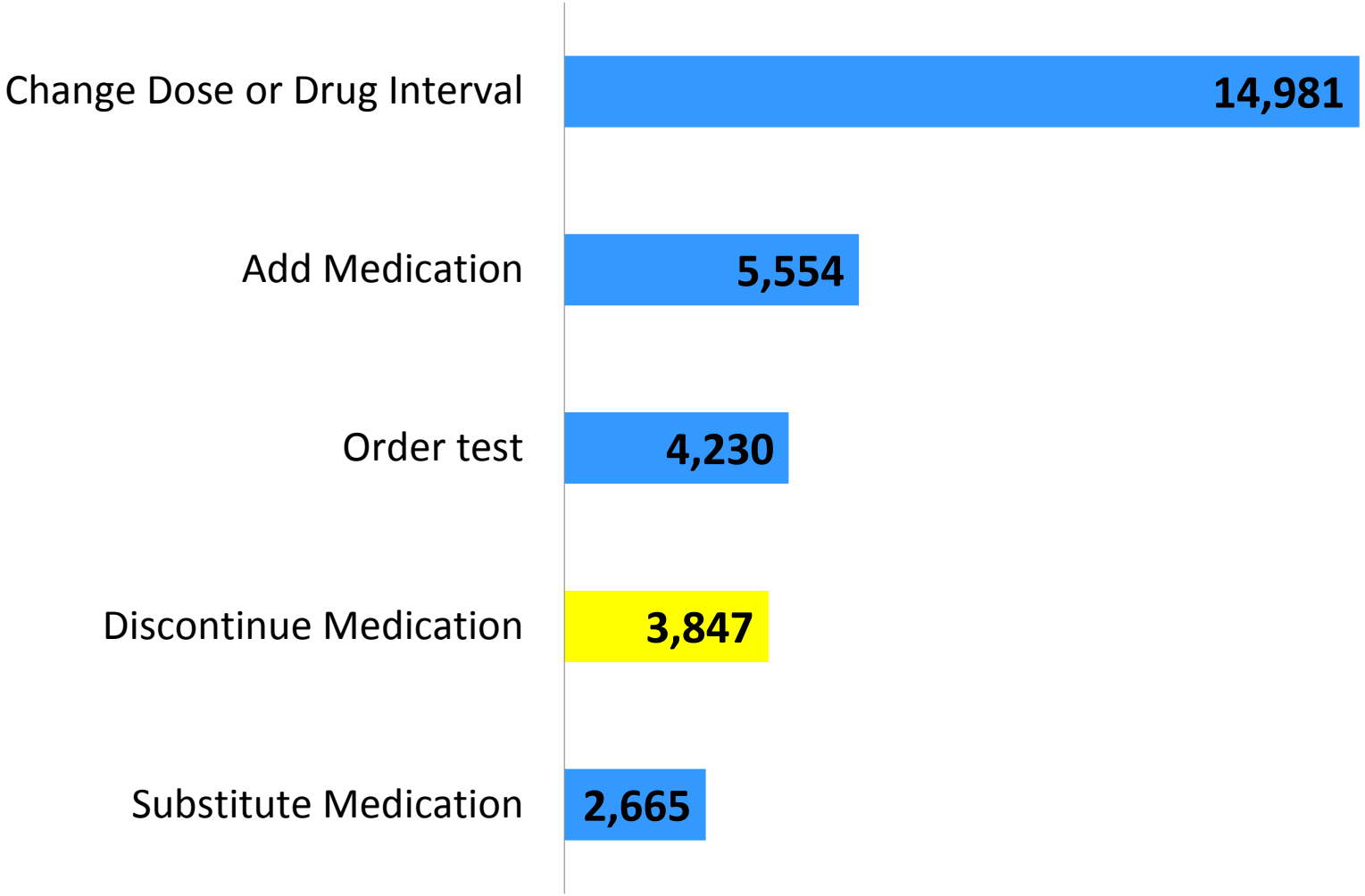


Medication-Related Problems Identified Through CMMI Clinical Pharmacy Program

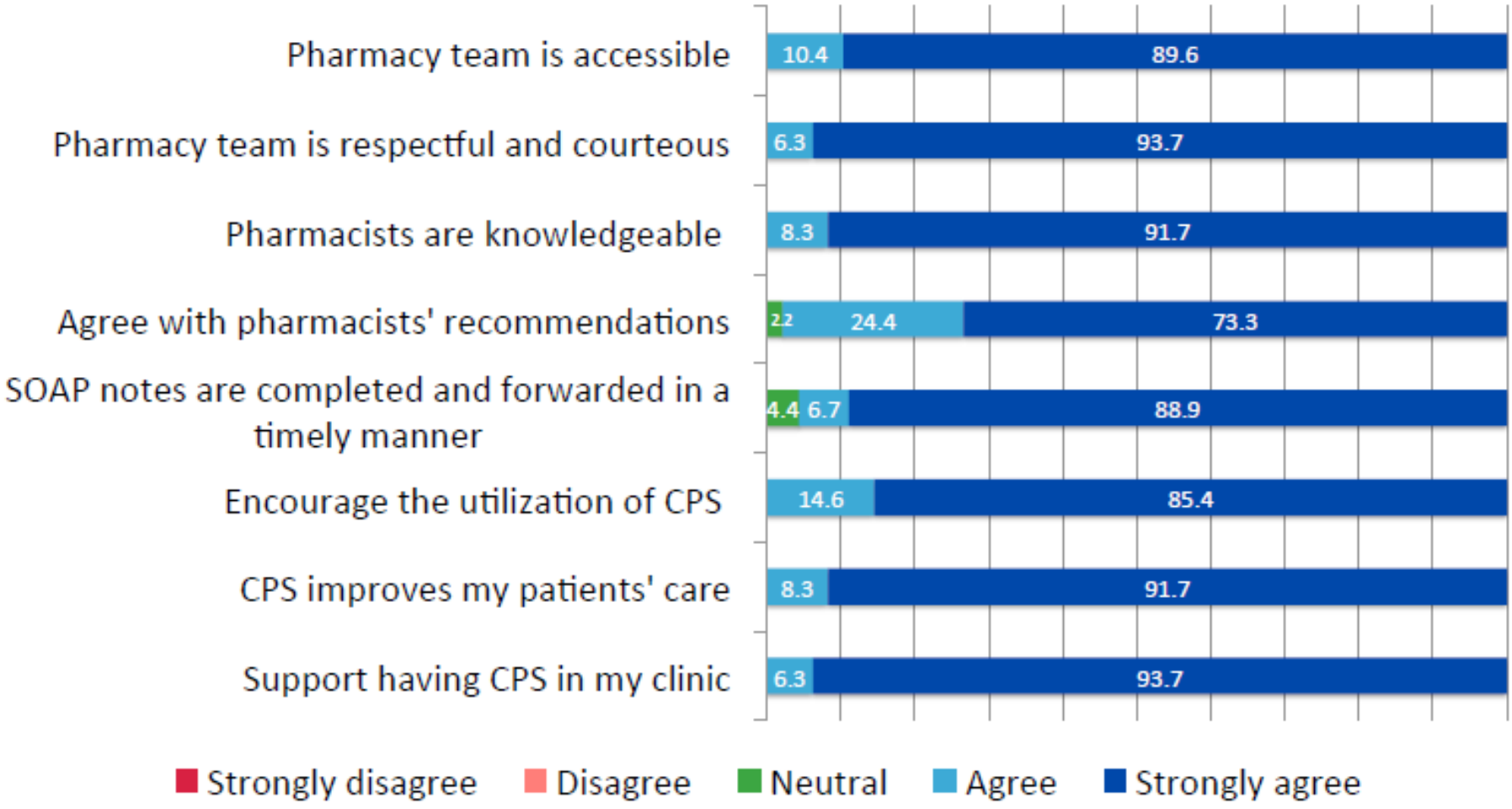
67,169 problems among 5,775 patients (Avg 11.6 per patient)



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



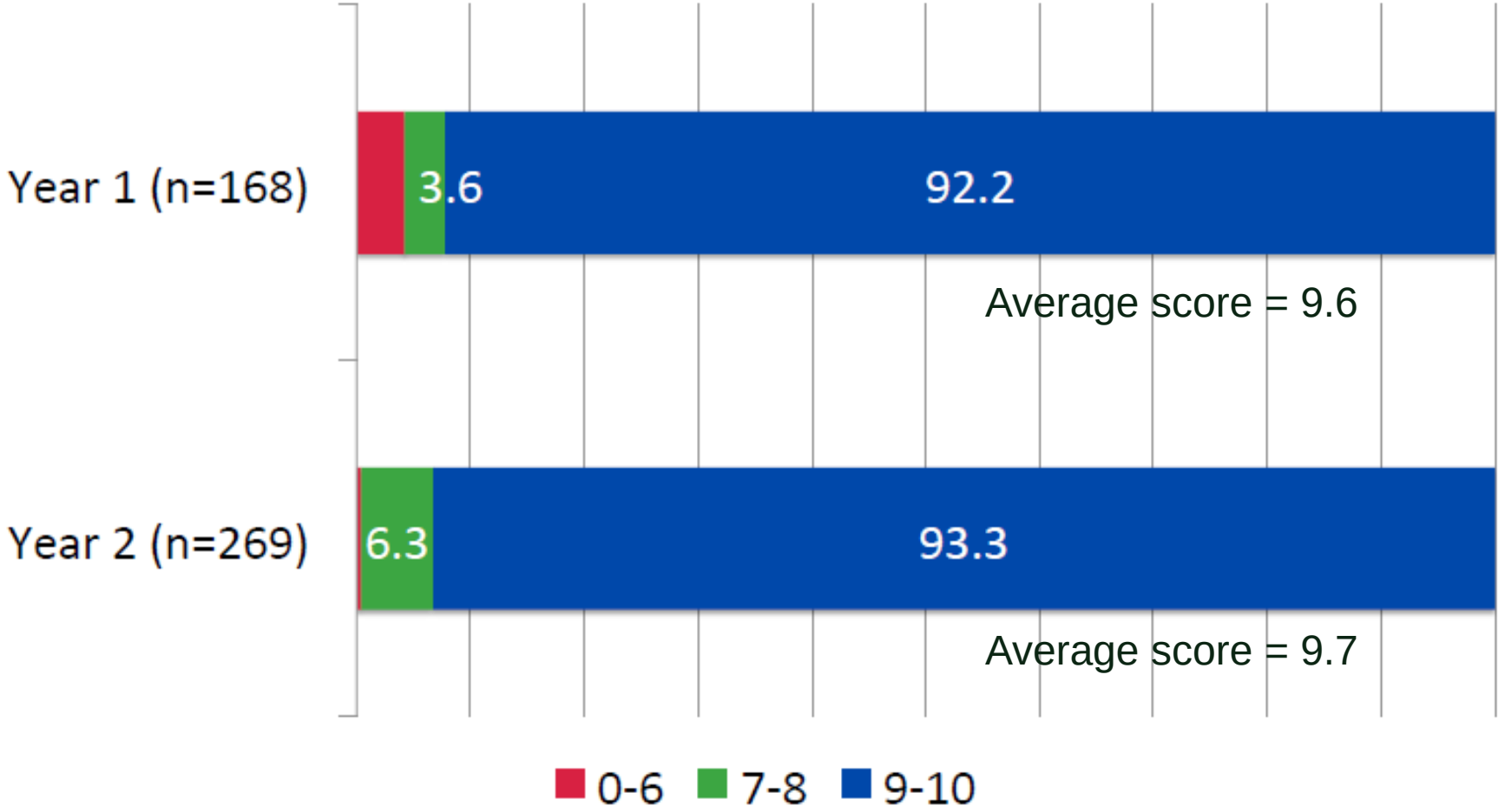
Physician Satisfaction



The typical primary care physician needs 18 hours a day to provide standard care, which does not include anything beyond preventative and common chronic disease care

Ann Fam Med. 2005 May; 3(3): 209–214
Am J Public Health. 2003 April; 93(4): 635–641

Patient Satisfaction



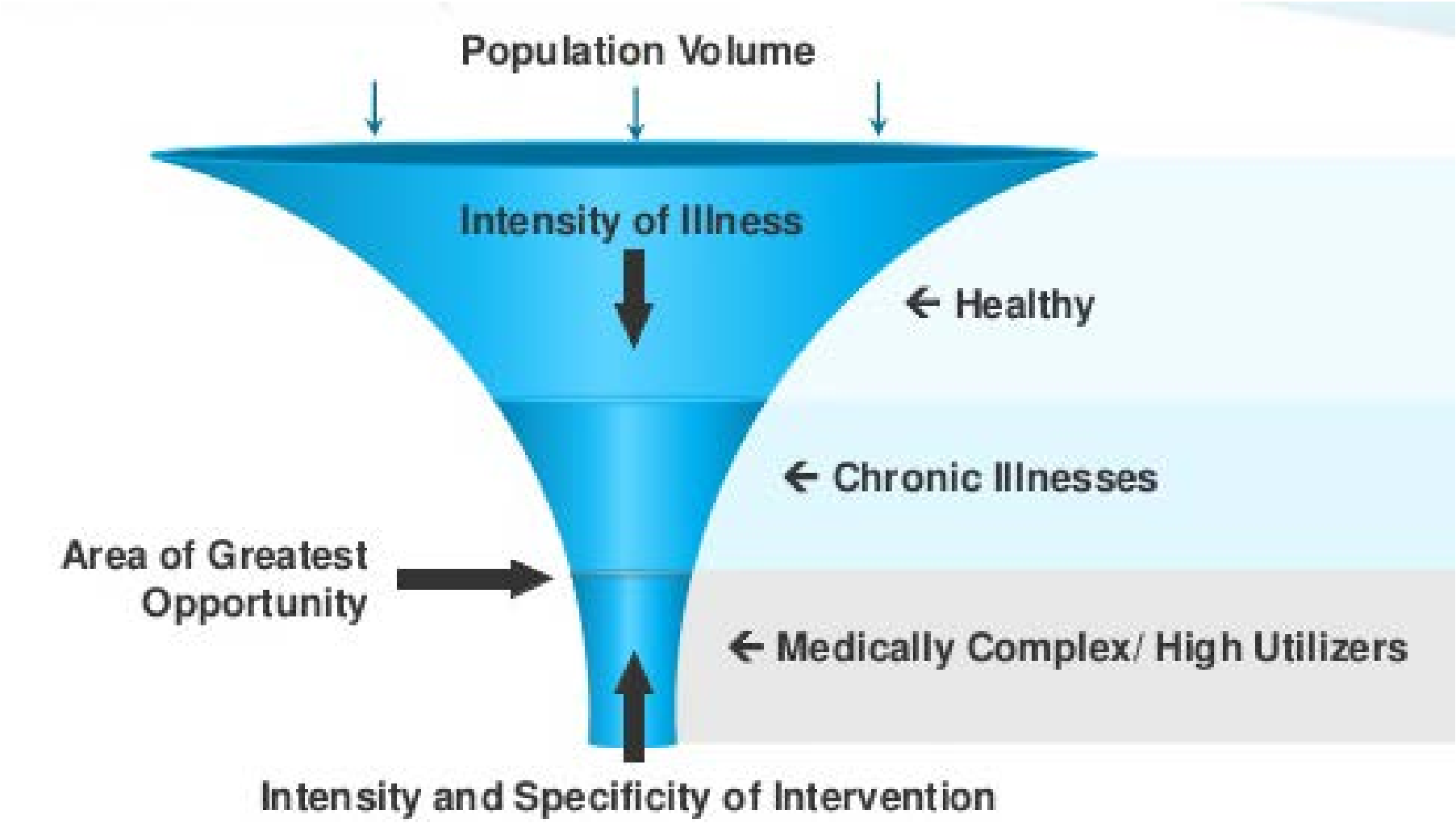
USC School of Pharmacy

Value Proposition-
Comprehensive Medication Management

Integration of CMM 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!*

Greatest Opportunity for Applying Advanced Care Initiatives such as CMM…



Top 10 Potentially Preventable Readmissions

APR DRG Number	Medical APR DRG Description
194	Heart Failure
140	Chronic Obstructive Lung Disease
750	Schizophrenia
139	Other Pneumonia
751	Major Depressive Disorder
198	Angina Pectoris and Coronary Atherosclerosis
753	Bipolar Disorders
720	Septicemia and Disseminated Infection
460	Renal Failure
201	Cardia Arrhythmia and Conduction Disturbance

All Patients Refined Diagnosis Related Groups (**APR DRG**) is a classification system that classifies patients according to their reason of admission, severity of illness and risk of mortality

Goldfield et al. *Health Care Financing Review*. Fall 2008;30(1): 75–91. Available at: http://www.cms.gov/Research-Statistics-Data-and Systems/Research/HealthCareFinancingReview/downloads/08Fallpg75.pdf

Outline

- Quality and safety gaps in healthcare
- Comprehensive medication management (CMM)
  - Definition and comparison to MTM
  - Final results from USC CMMI HCIA
- CMM at local, state, and national levels

USC Value-Based Partnerships

County of Los Angeles Public Health

CDC Centers for Disease Control and Prevention

Our Health · Our Community · Our Los Angeles County
Los Angeles County Health Agency

Cerritos College

Los Angeles County Department of Mental Health
hope. recovery. wellbeing.

Kedren Health

California Department of Public Health
CDPH

Indian Health Service · PHS · 1955

QueensCare Family Clinics

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

CareMore
It's what we do.™

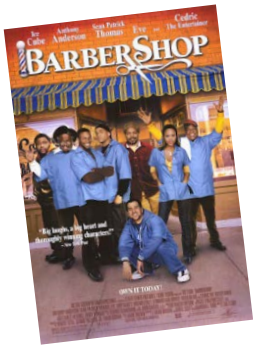
IPA California

IEHP
A Public Entity
Inland Empire Health Plan

BlueShield

HSAG Health Services Advisory Group

CMS
Centers for Medicare & Medicaid Services



Keck Medical Center of USC

UCLA Health

Right Care Initiative

American Heart Association | American Stroke Association
life is why

Business Case for Spread and Sustainment of Advanced Practice Pharmacist Programs

- **Cost savings / ROI:** Reduction in acute care utilization for high-risk populations (e.g., Whole Person Care)
- **Direct billing**: LA County Dept of Mental Health (85% of physician payment rate)
- **Gain sharing / P4P**
- **340B program**
- **Medicare Quality Payment Program:** https://qpp.cms.gov/
- **Traditional fee-for-service billing:** Incident-to +/- hospital fee or POC testing, diabetes self-management, chronic care management, care transitions, Annual Medicare Wellness visits

ONLINE FIRST

Effectiveness of a Barber-Based Intervention for Improving Hypertension Control in Black Men

The BARBER-1 Study: A Cluster Randomized Trial

Ronald G. Victor, MD; Joseph E. Ravenell, MD, MS; Anne Freeman, MSPH; David Leonard, PhD; Deepa G. Bhat, ME; Moiz Shafiq, MD; Patricia Knowles; Joy S. Storm, BS; Emily Adhikari, BA; Kirsten Bibbins-Domingo, PhD, MD, MAS; Pamela G. Coxson, PhD; Mark J. Pletcher, MD, MPH; Peter Hannan, MStat; Robert W. Haley, MD

Background: Barbershop-based hypertension (HTN) outreach programs for black men are becoming increasingly common, but whether they are an effective approach for improving HTN control remains uncertain.

Methods: To evaluate whether a continuous high blood pressure (BP) monitoring and referral program conducted by barbers motivates male patrons with elevated BP to pursue physician follow-up, leading to improved HTN control, a cluster randomized trial (BARBER-1) of HTN control was conducted among black male patrons of 17 black-owned barbershops in Dallas County, Texas (March 2006–December 2008). Participants underwent 10-week baseline BP screening, and then study sites were randomized to a comparison group that received standard BP pamphlets (8 shops, 77 hypertensive patrons per shop) or an intervention group in which barbers continually offered BP checks with haircuts and promoted physician follow-up with sex-specific peer-based health messaging (9 shops, 75 hypertensive patrons per shop). After 10 months, follow-up data were obtained. The primary outcome measure was change in HTN control rate for each barbershop.

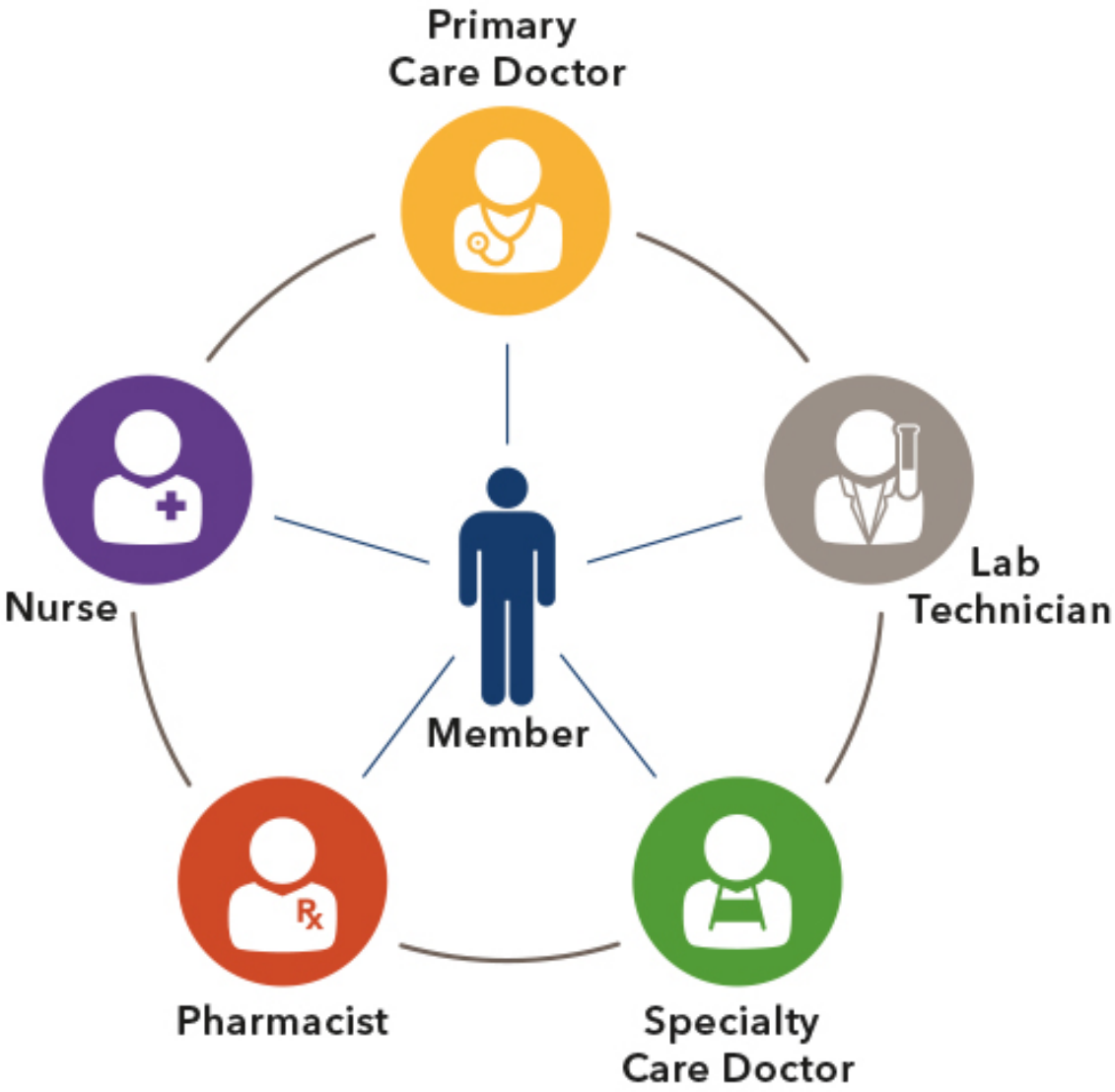
Results: The HTN control rate increased more in intervention barbershops than in comparison barbershops (absolute group difference, 8.8% [95% confidence interval (CI), 0.8%-16.9%]) ($P=.04$); the intervention effect persisted after adjustment for covariates ($P=.03$). A marginal intervention effect was found for systolic BP change (absolute group difference, −2.5 mm Hg [95% CI, −5.3 to 0.3 mm Hg]) ($P=.08$).

Conclusions: The effect of BP screening on HTN control among black male barbershop patrons was improved when barbers were enabled to become health educators, monitor BP, and promote physician follow-up. Further research is warranted.

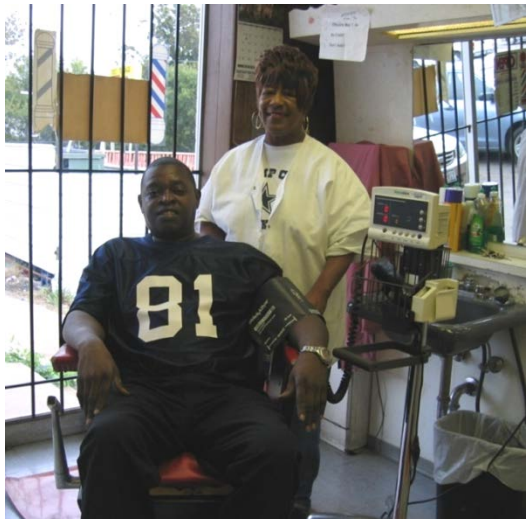
Trial Registration: clinicaltrials.gov Identifier: NCT00325533

Arch Intern Med. 2011;171(4):342-350.
Published online October 25, 2010.
doi:10.1001/archinternmed.2010.390

Kaiser Permanente team-based care model



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



Barber fidelity
Patron acceptance

Pharmacists?

Physician inertia

Non-Adherence

Better medical treatment

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

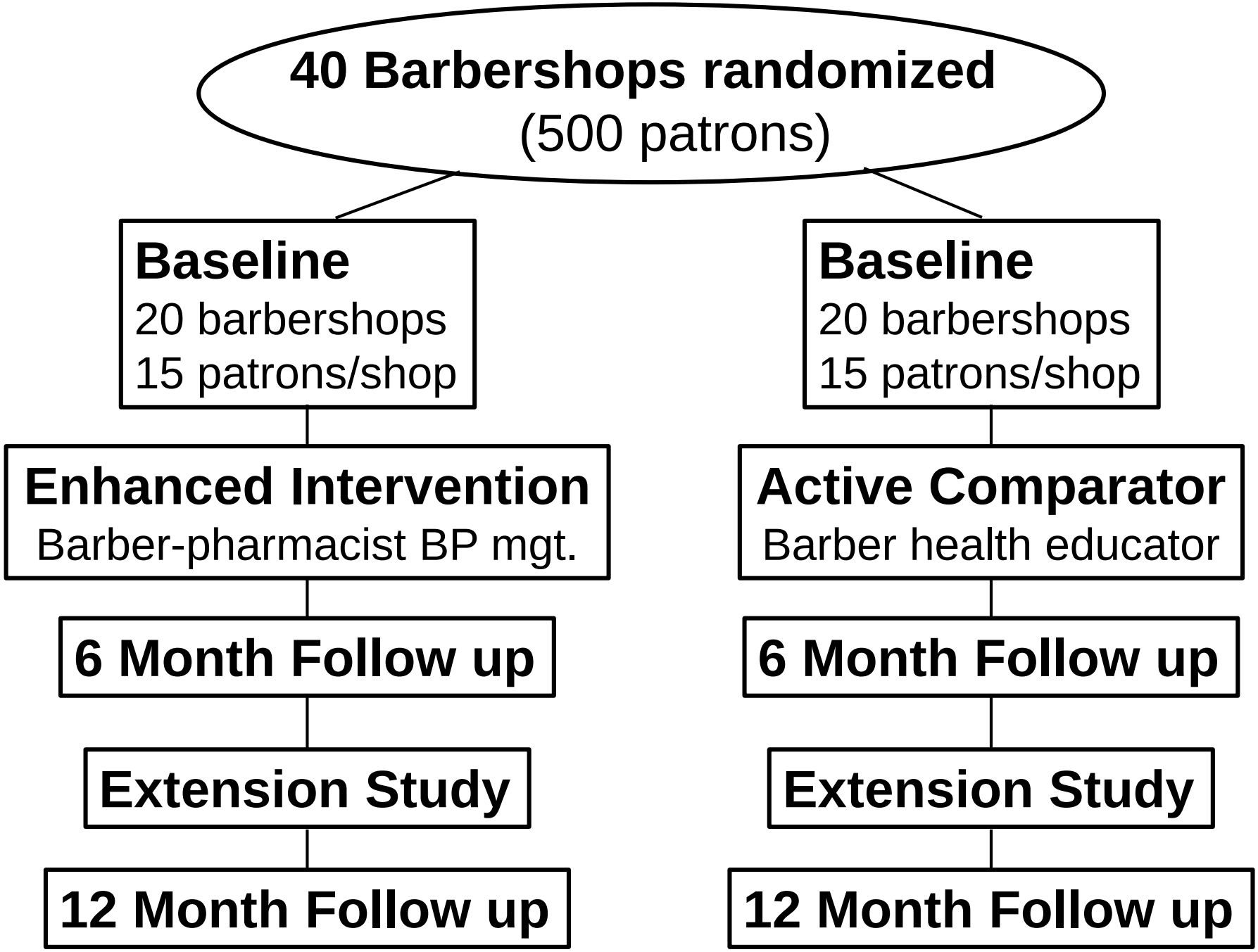
A Cluster-Randomized Trial of Blood-Pressure Reduction in Black Barbershops

Ronald G. Victor, M.D., Kathleen Lynch, Pharm.D., Ning Li, Ph.D., Ciantel Blyler, Pharm.D., Eric Muhammad, B.A., Joel Handler, M.D., Jeffrey Brettler, M.D., Mohamad Rashid, M.B., Ch.B., Brent Hsu, B.S., Davontae Foxx-Drew, B.A., Norma Moy, B.A., Anthony E. Reid, M.D.,* and Robert M. Elashoff, Ph.D.

N Engl J Med 2018; 378:1291-1301

Community Advisory Board

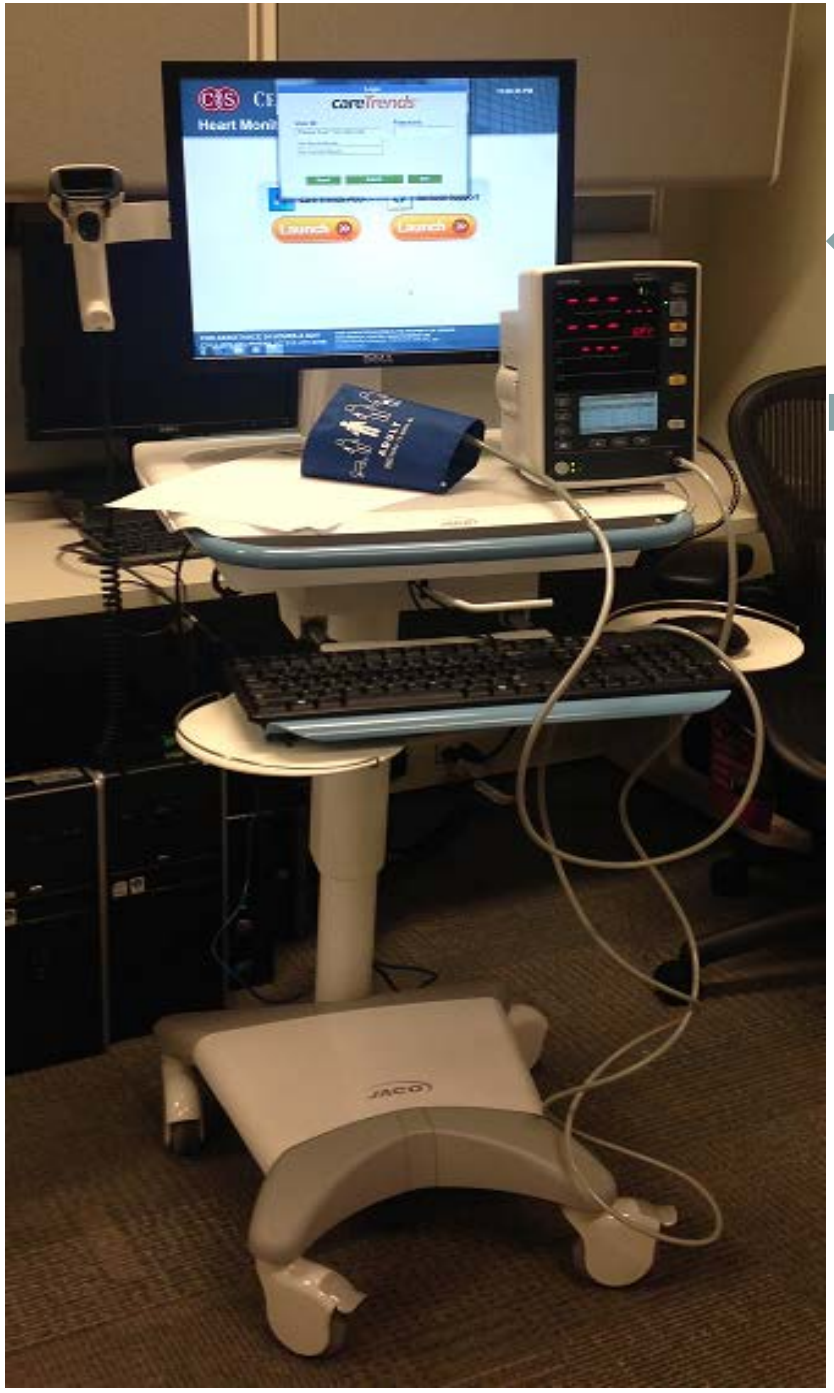
Brian Davis, Ron Victor MD, Tony Reid MD,
Robert Elashoff PhD, James Smith,
Stanley White, Luther Sherman


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

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.



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

Table 1. Baseline Characteristics of the Barbershops and Trial Participants.*

Characteristic	Intervention Group	Control Group
Barbershops		
No. of barbershops	28	24
Years in business	17.3±14.2	18.1±8.3
No. of barbers per shop	4±2	4±2
Participants		
No. of participants	132	171
Age — yr	54.4±10.2	54.6±9.5
Married or living with a partner — no./total no. (%)	61/131 (46.6)	86/171 (50.3)
Highest educational level — no./total no. (%)		
Not a high school graduate	6/131 (4.6)	13/171 (7.6)
High school graduate or GED equivalent	30/131 (22.9)	49/171 (28.7)
Some college or associate's degree	67/131 (51.1)	76/171 (44.4)
Bachelor's degree	21/131 (16.0)	23/171 (13.5)
Graduate or professional degree	7/131 (5.3)	10/171 (5.8)

Annual household income — no./total no. (%)		
$0–$15,999	31/123 (25.2)	34/168 (20.2)
$16,000–$24,999	20/123 (16.3)	15/168 (8.9)
$25,000–$39,999	9/123 (7.3)	19/168 (11.3)
$40,000–$49,999	14/123 (11.4)	21/168 (12.5)
$50,000–$74,999	20/123 (16.3)	34/168 (20.2)
$75,000–$99,999	16/123 (13.0)	21/168 (12.5)
≥$100,000	13/123 (10.6)	24/168 (14.3)
Regular medical care provider — no./total no. (%)	101/131 (77.1)	134/170 (78.8)
Any health insurance — no. (%)	112 (84.8)	150 (87.7)
Barbershop patronage		
Duration of patronage — yr	10.2±9.6	11.5±9.0
Frequency of visits — every no. of wk	2.0±0.9	2.1±1.1
Cardiovascular risk factors†		
Body-mass index‡	30.8±5.4	31.2±6.0
Current smoker — no./total no. (%)	43/130 (33.1)	51/171 (29.8)
Diabetes — no. (%)	28 (21.2)	38 (22.2)
High cholesterol level — no. (%)	46 (34.8)	41 (24.0)

Table 2. Primary and Secondary Blood-Pressure Outcomes.*

Outcome	Intervention Group (N=132)	Control Group (N=171)	Intervention Effect	P Value†
Blood pressure				
Systolic blood pressure — mm Hg‡				
At baseline	152.8±10.3	154.6±12.0		
At 6 mo	125.8±11.0	145.4±15.2		
Change	−27.0±13.7	−9.3±16.0	−21.6 (−28.4 to −14.7)§	<0.001
Diastolic blood pressure — mm Hg				
At baseline	92.2±11.5	89.8±11.2		
At 6 mo	74.7±8.3	85.5±12.0		
Change	−17.5±11.0	−4.3±11.8	−14.9 (−19.6 to −10.3)§	<0.001
Hypertension control at 6 mo — no. (%)				
Blood pressure <140/90 mm Hg	118 (89.4)	55 (32.2)	3.4 (2.5 to 4.6)¶	<0.001
Blood pressure <135/85 mm Hg	109 (82.6)	32 (18.7)	5.5 (2.6 to 11.7)¶	<0.001
Blood pressure <130/80 mm Hg	84 (63.6)	20 (11.7)	5.7 (2.5 to 12.8)¶	<0.001

Table 3. Blood-Pressure Medications at 6 Months.*

Variable	Intervention Group (N=132)	Control Group (N=171)	Mean Difference or Relative Risk (95% CI)†	P Value‡
Mean no. of blood-pressure medications per participant	2.6±0.9	1.4±1.4	1.9 (1.3–2.4)	<0.001
Drug class				
First-line drugs — no. (%)				
ACE inhibitor or ARB	130 (98.5)	71 (41.5)	2.4 (2.0–2.8)	<0.001
Calcium-channel blocker	125 (94.7)	56 (32.7)	3.0 (2.4–3.6)	<0.001
Diuretic	61 (46.2)	49 (28.7)	1.6 (1.3–2.1)	<0.001
Add-on drugs — no. (%)				
Aldosterone antagonist	14 (10.6)	2 (1.2)	7.0 (2.5–19.2)	<0.001
Beta-blocker	14 (10.6)	33 (19.3)	0.5 (0.3–0.8)	0.008

* Plus–minus values are means ±SD. ACE denotes angiotensin-converting enzyme, and ARB angiotensin-receptor blocker.
† Mean difference is shown for number of blood-pressure medications per participant, and relative risk is shown for drug class.
‡ For number of blood-pressure medications per participant, the P value was calculated from linear mixed-effects models with random intercepts for clusters. For drug class, P values were calculated from generalized estimating equations with a compound symmetry working correlation to account for cluster effects. For all P values, the estimated between-group difference was controlled for baseline systolic blood pressure, routine doctor, and high cholesterol level.

Outline

- Quality and safety gaps in healthcare
- Comprehensive medication management (CMM)
  - Definition and comparison to MTM
  - Final results from USC CMMI HCIA
- CMM at local, state, and national levels
- Next steps

Business Case for Spread and Sustainment of Advanced Practice Pharmacist Programs

- **Cost savings / ROI:** Reduction in acute care utilization for high-risk populations (e.g., Whole Person Care)
- **Direct billing**: LA County Dept of Mental Health (85% of physician payment rate)
- **Gain sharing / P4P**
- **340B program**
- **Medicare Quality Payment Program:** https://qpp.cms.gov/
- **Traditional fee-for-service billing:** Incident-to +/- hospital fee or POC testing, diabetes self-management, chronic care management, care transitions, Annual Medicare Wellness visits

Project Overview:
The California Right Meds Collaborative

- A **comprehensive medication management (CMM) collaborative** for the state of **California**, initially focusing on key counties as well as **Cook County in Chicago** that will advance the ability of community pharmacists to provide high-impact services for underserved populations
- An ongoing source of **best practices, tools, resources, support, coaching,** and **expertise** that will ensure the success of CMM programs in improving health outcomes while lowering costs for the most challenging high-risk underserved patients in alignment with health system priorities

The California Right Meds Collaborative

- Based on HRSA Patient Safety and Clinical Pharmacy Services Collaborative
  - IHI Breakthrough Learning Series
- Finalize Change Package and Workbook
- Host 2 launch webinars to generate interest and enrollment in select areas
- First live meeting targeted for June 2018 (Q 6 months)
- Monthly webinars
- Develop pool of regional coaches
- Funding: Mix of external funding and modest membership dues (CE-level) from participants

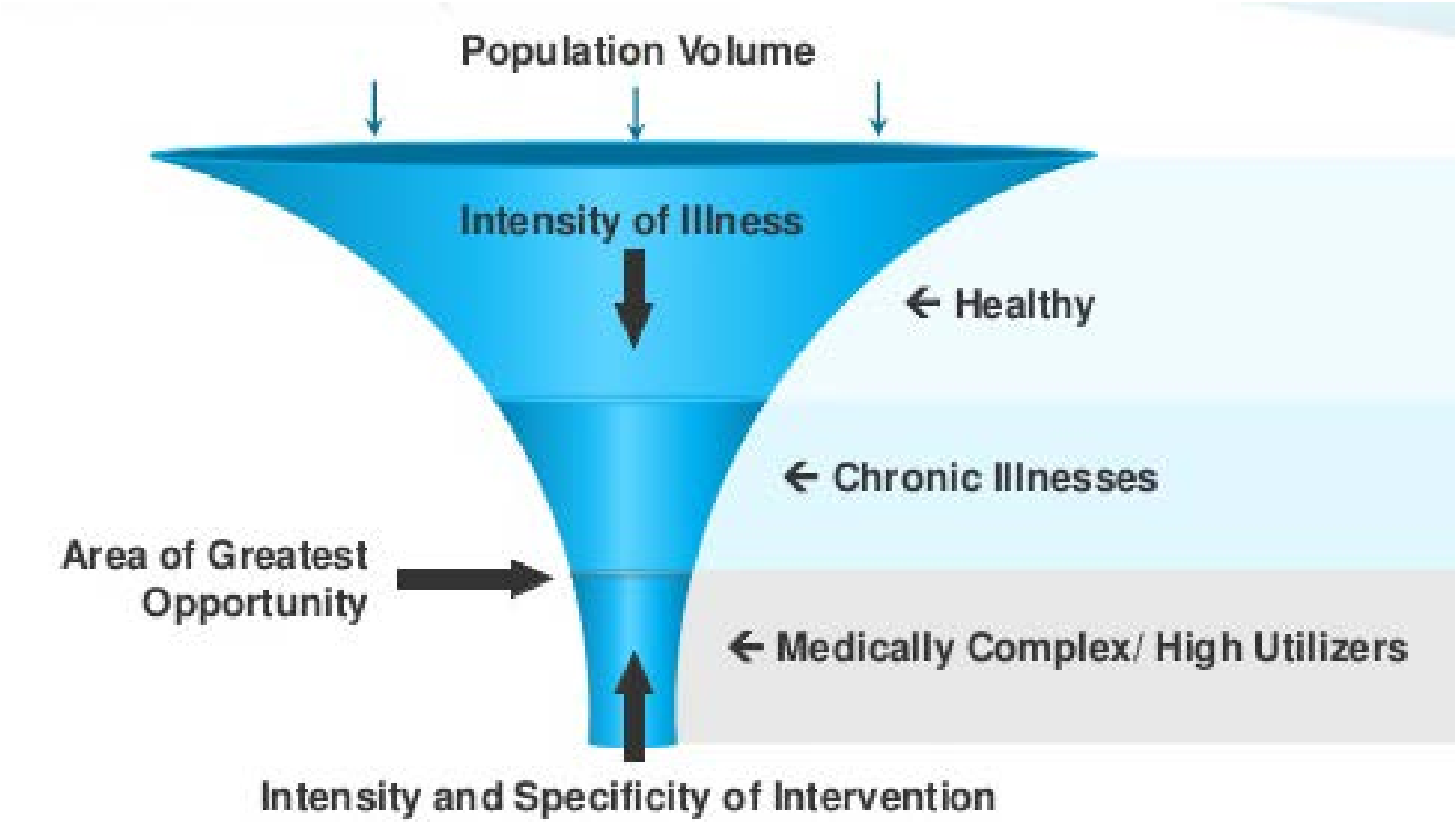
Top 10 Potentially Preventable Readmissions

APR DRG Number	Medical APR DRG Description
194	Heart Failure
140	Chronic Obstructive Lung Disease
750	Schizophrenia
139	Other Pneumonia
751	Major Depressive Disorder
198	Angina Pectoris and Coronary Atherosclerosis
753	Bipolar Disorders
720	Septicemia and Disseminated Infection
460	Renal Failure
201	Cardia Arrhythmia and Conduction Disturbance

All Patients Refined Diagnosis Related Groups (**APR DRG**) is a classification system that classifies patients according to their reason of admission, severity of illness and risk of mortality

Goldfield et al. *Health Care Financing Review*. Fall 2008;30(1): 75–91. Available at: http://www.cms.gov/Research-Statistics-Data-and Systems/Research/HealthCareFinancingReview/downloads/08Fallpg75.pdf

Whole Person Care, Health Homes Section 2703



LA County High Risk Patient / Mental Health Collaboration

LOS ANGELES COUNTY DEPARTMENT OF Mental Health
hope. recovery. wellbeing.

- 14 FTE
- CMM- psych & related comorbidities
- Refill Drop-In/Bridge Services (missed appointment)
- Opioid management / prevention services (Buprenorphine/Naltrexone, etc,)
- LAI Induction Services
- Clozapine Medication Group
- Transitions of Care

COUNTY OF LOS ANGELES Public Health

- Whole Person Care (CMS 1115 Waiver) program for LA County (population 10 million, 4 million Medicaid)
- 100,000 targeted patients (2.5% of all Medicaid) for transitional support services
- 8 FTE allocated to Regional Coordinating Centers
- 4-5 FTE allocated to jail transition

USC School of Pharmacy

- Program strategy and co-management
- Tie resources together between the university and the county (e.g., data analytics, pharmacoeconomic analyses, precision medicine, students)

ACHIEVING EXCELLENCE IN PHARMACEUTICAL CARE

A STRATEGY FOR SCOTLAND

IMPROVED AND INCREASED USE OF **COMMUNITY PHARMACY SERVICES**

PHARMACY TEAMS **INTEGRATED INTO GP PRACTICES**

TRANSFORMED **HOSPITAL PHARMACY SERVICES**

PHARMACEUTICAL CARE THAT SUPPORTS **SAFER USE OF MEDICINES**

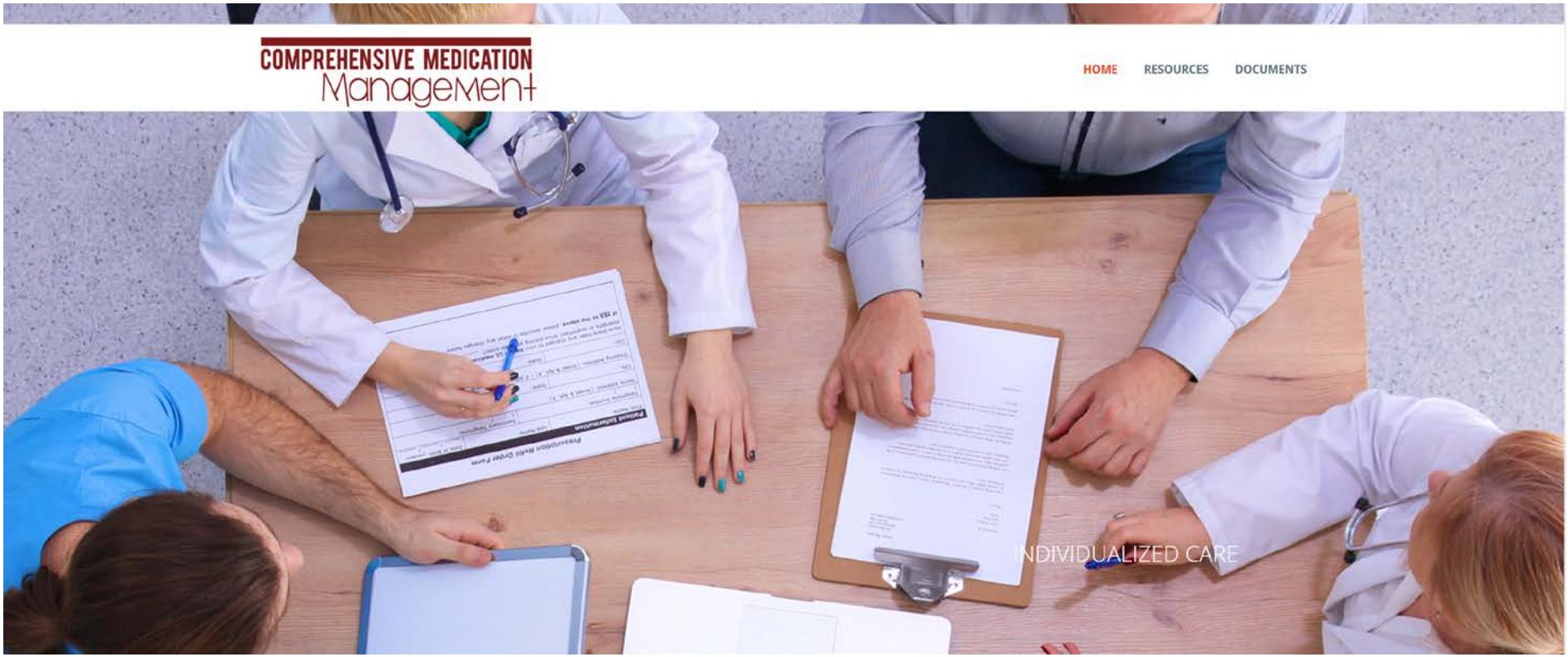
IMPROVED PHARMACEUTICAL CARE **AT HOME OR IN A CARE HOME**

ENHANCED ACCESS TO PHARMACEUTICAL CARE IN **REMOTE AND RURAL COMMUNITIES**

PHARMACY WORKFORCE WITH **ENHANCED CLINICAL CAPABILITY AND CAPACITY**

IMPROVED SERVICE DELIVERY THROUGH **DIGITAL INFORMATION AND TECHNOLOGIES**

SUSTAINABLE SERVICES THAT MEET POPULATION NEEDS



http://pharmweb.usc.edu/MedicationManagement/