

Building an Integrated Population Health Culture in San Diego County



LIVE WELL
SAN DIEGO

Sunny Ramchandani MD MPH

"The views expressed are solely those of the author(s) and do not reflect the official policy or position of the US Navy, the Department of Defense, or the US Government."

The “Same Way” Syndrome



A Few San Diego Facts

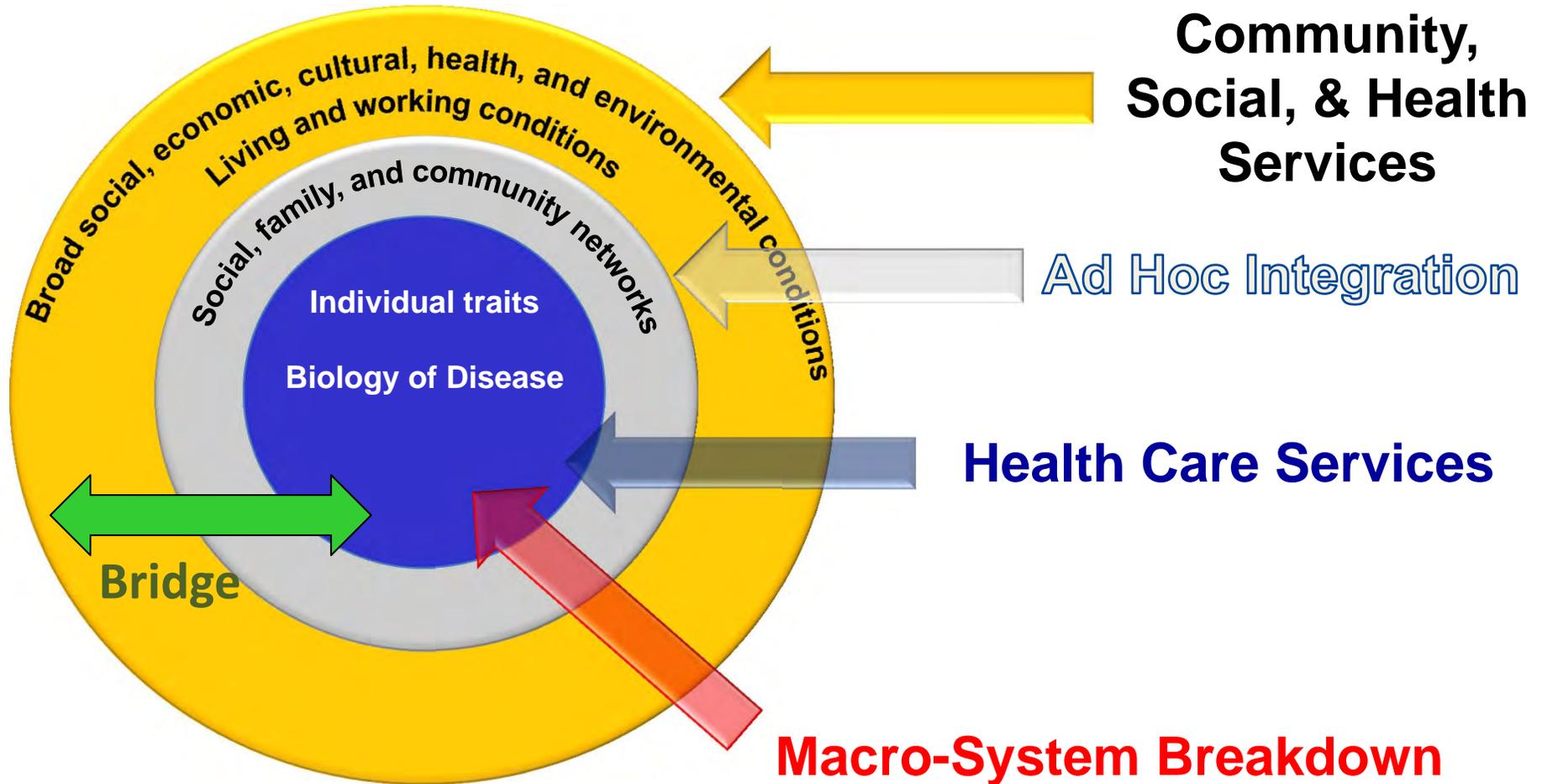
	Employer	# of Employees
1.	US Navy / Federal Government	45,500
2.	State of California	42,900
3.	University of California, San Diego	27,391
4.	County of San Diego	15,687
5.	Sharp HealthCare	15,231
6.	San Diego Unified School District	14,603
7.	Scripps Health	14,097
8.	Qualcomm	11,400
9.	City of San Diego	10,057
10.	Kaiser Permanente	7,731

Military/Veterans Chronic Disease Prevalence

Conditions	%
Hypertension (HTN)	48.9
Diabetes	23.6
Depression	22.6
Lower Back Pain (LBP)	22.2
Asthma	5.9
COPD	3.7
Serious, persistent mental illness	3.4
Ischemic heart disease (IHD)	2.6
Post Traumatic Stress Disorder (PTSD)	2.0
Stroke	1.0

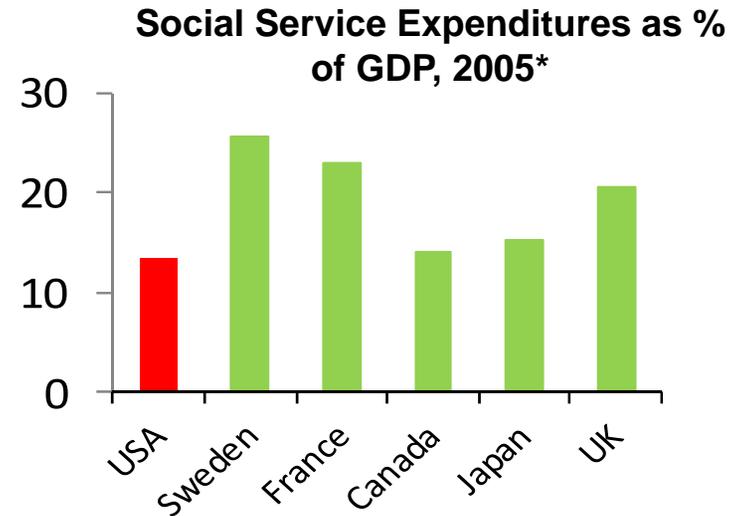
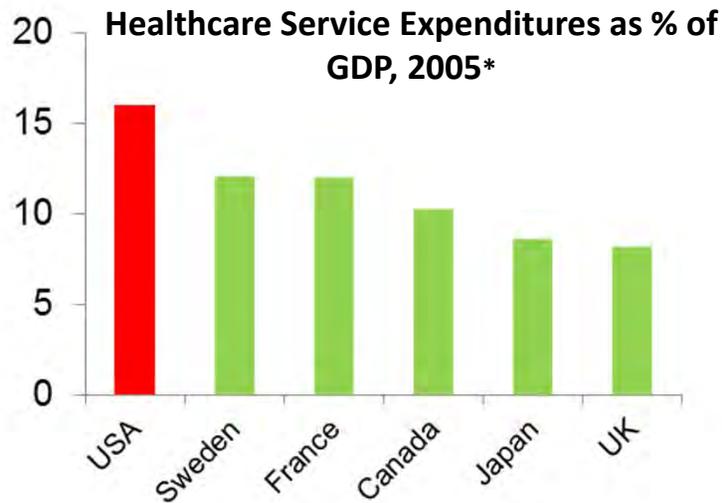
* MHS Conference, 2011

Population Health Determinants

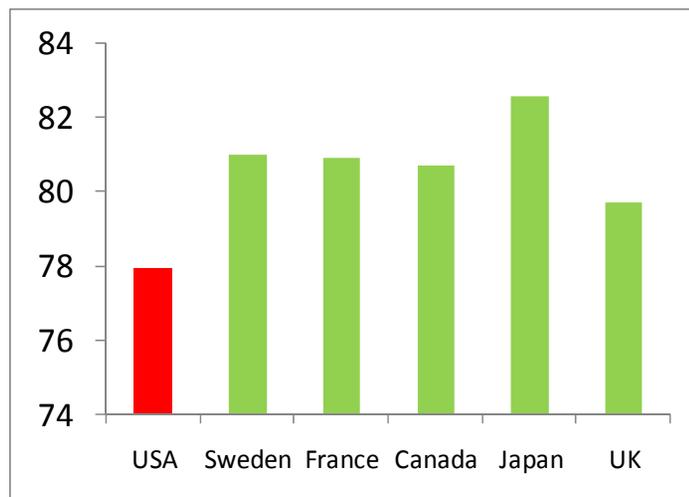


Institute of Medicine: Committee on Public Health Strategies to Improve Health – Jan 2011

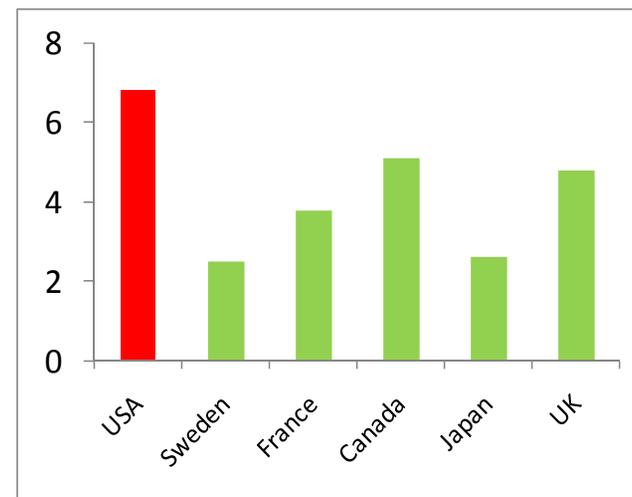
Healthcare Services vs. Social Services



Average life expectancy, 2007



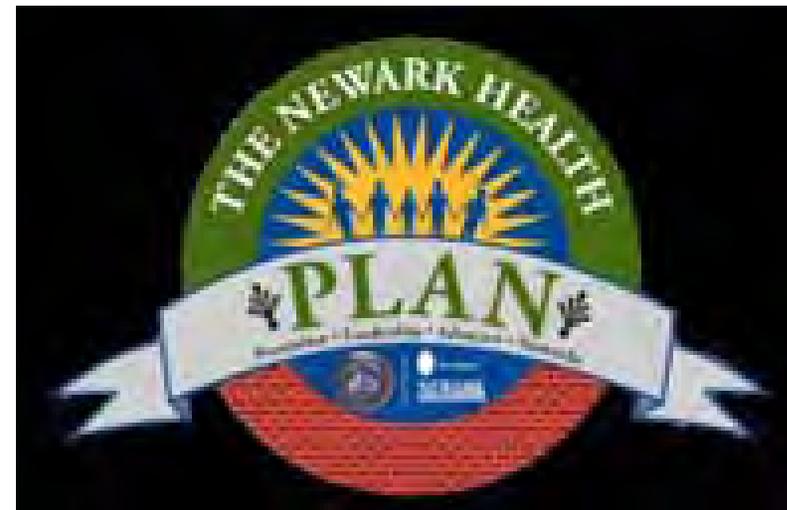
Infant Mortality (deaths per 1,000 live births)



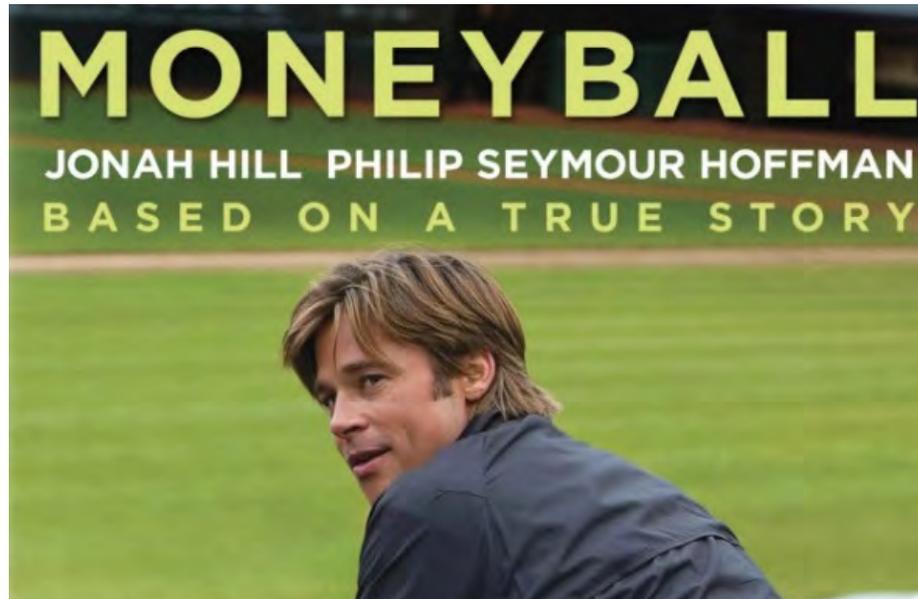
*Bradley EH, et al. Health and Social Services Expenditures: Associations with Health Outcomes. *BMJ Qual Saf* (2011).

*McGinnis JM, Russo PG, Knickman JR. The case for more active policy attention to health promotion. *Health Aff (Millwood)* 2002;21(2):78-93

Other Community Based Approaches

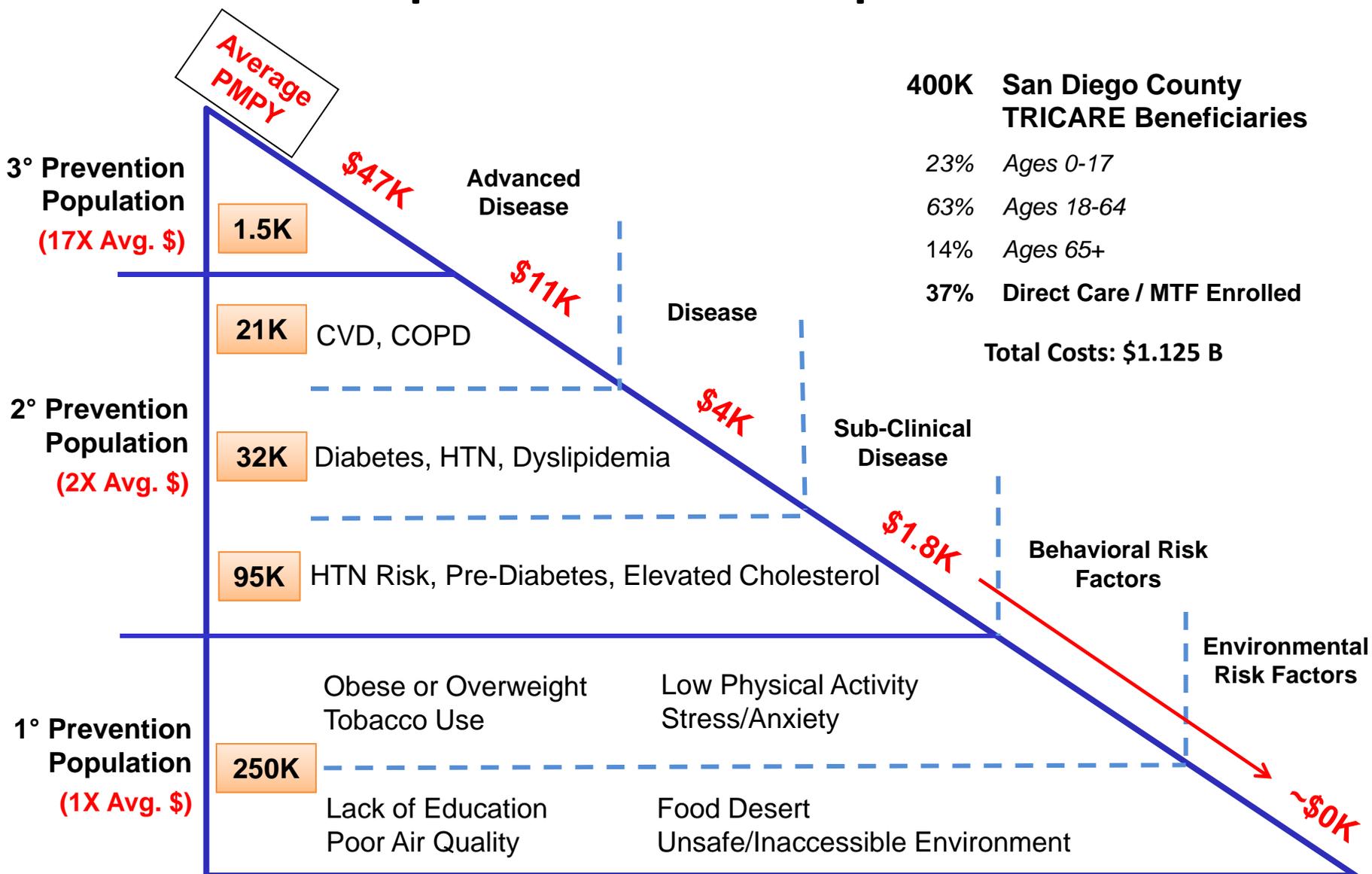


Sabermetrics, Anyone?

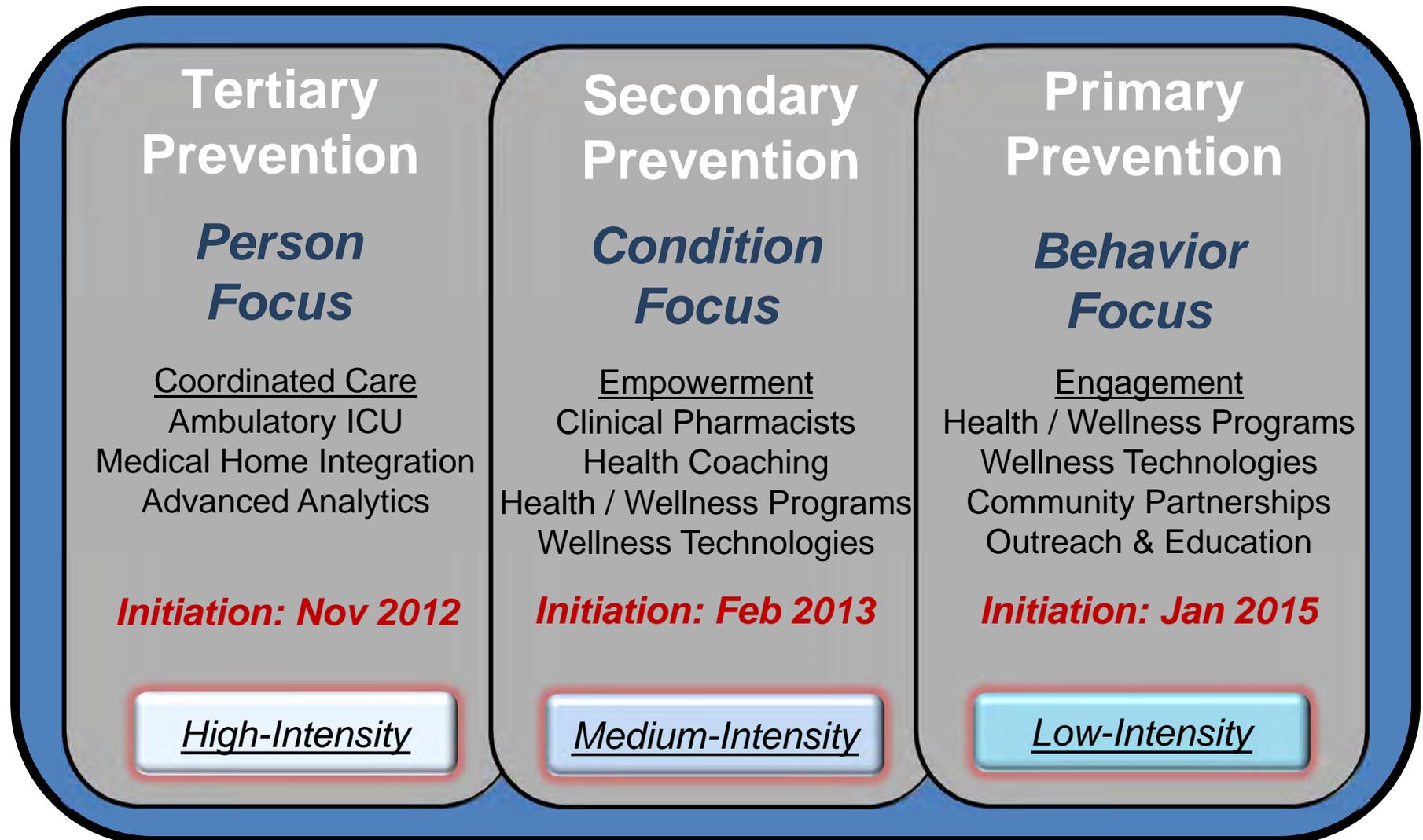


- Sabermetrics: The empirical analysis of baseball, especially baseball statistics that measure in-game activity.
 - Derived from the acronym **SABR**:
 - *Society for American Baseball Research.*

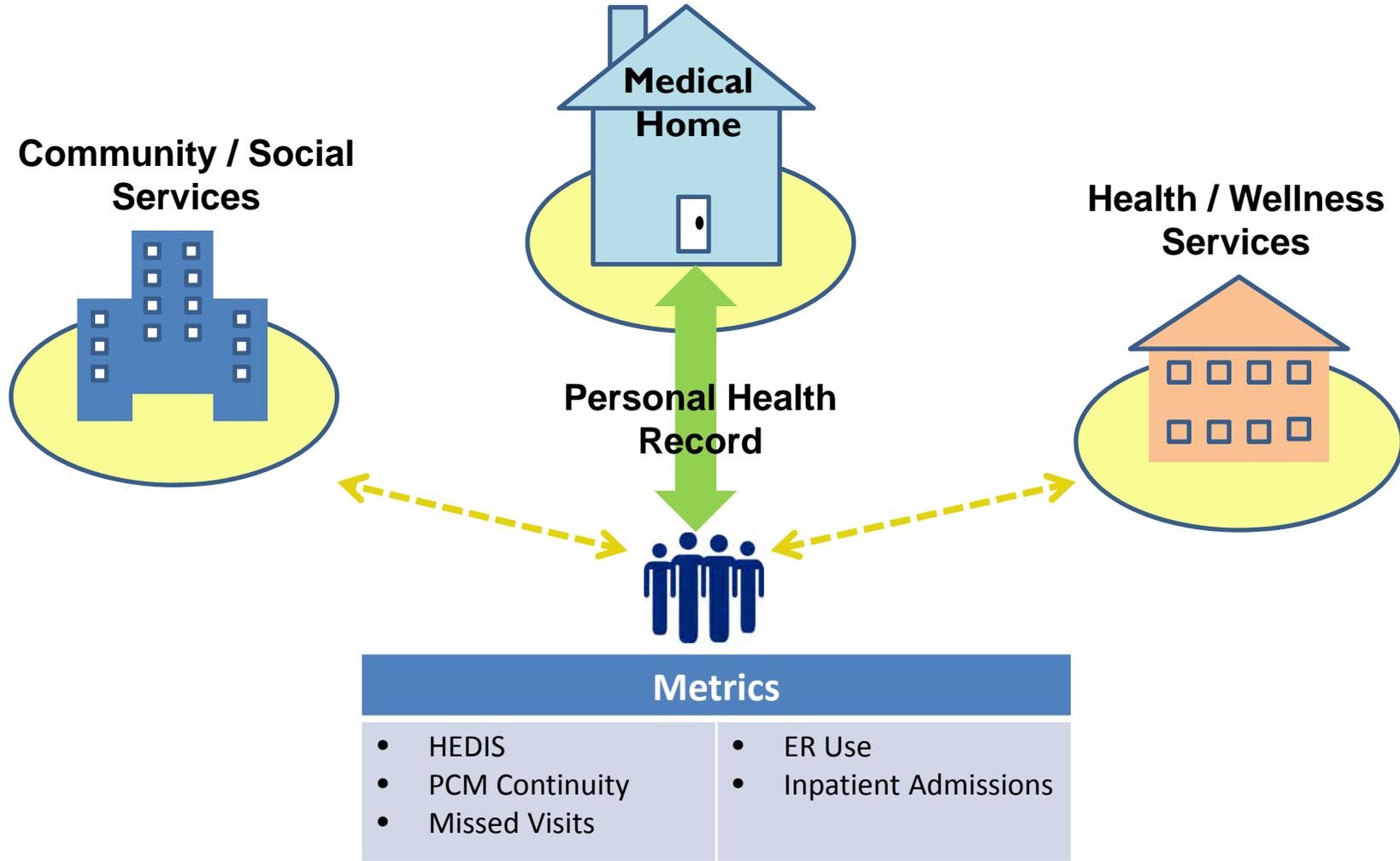
Population Snapshot



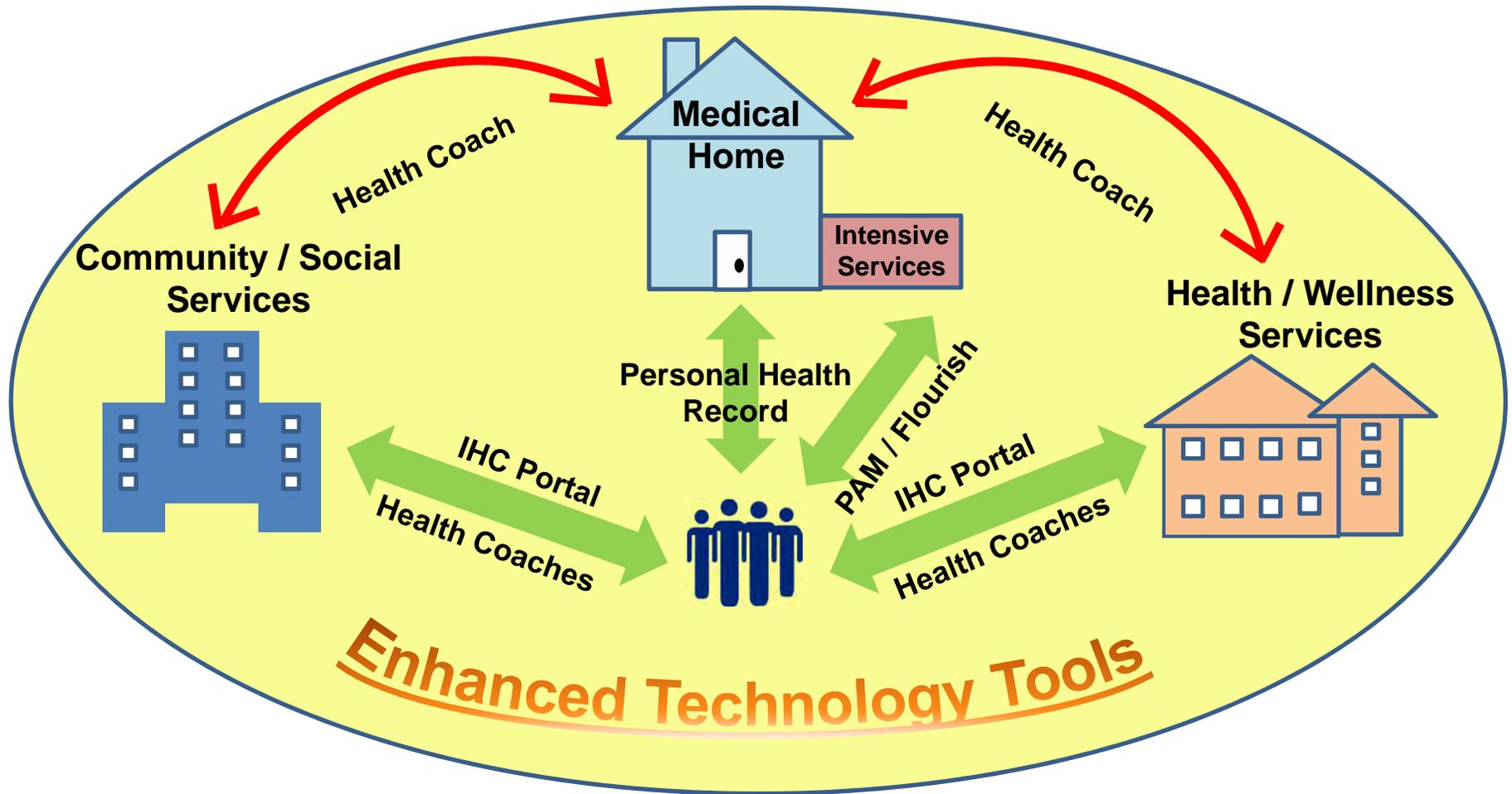
Strategy and Approach



Healthcare Delivery Model



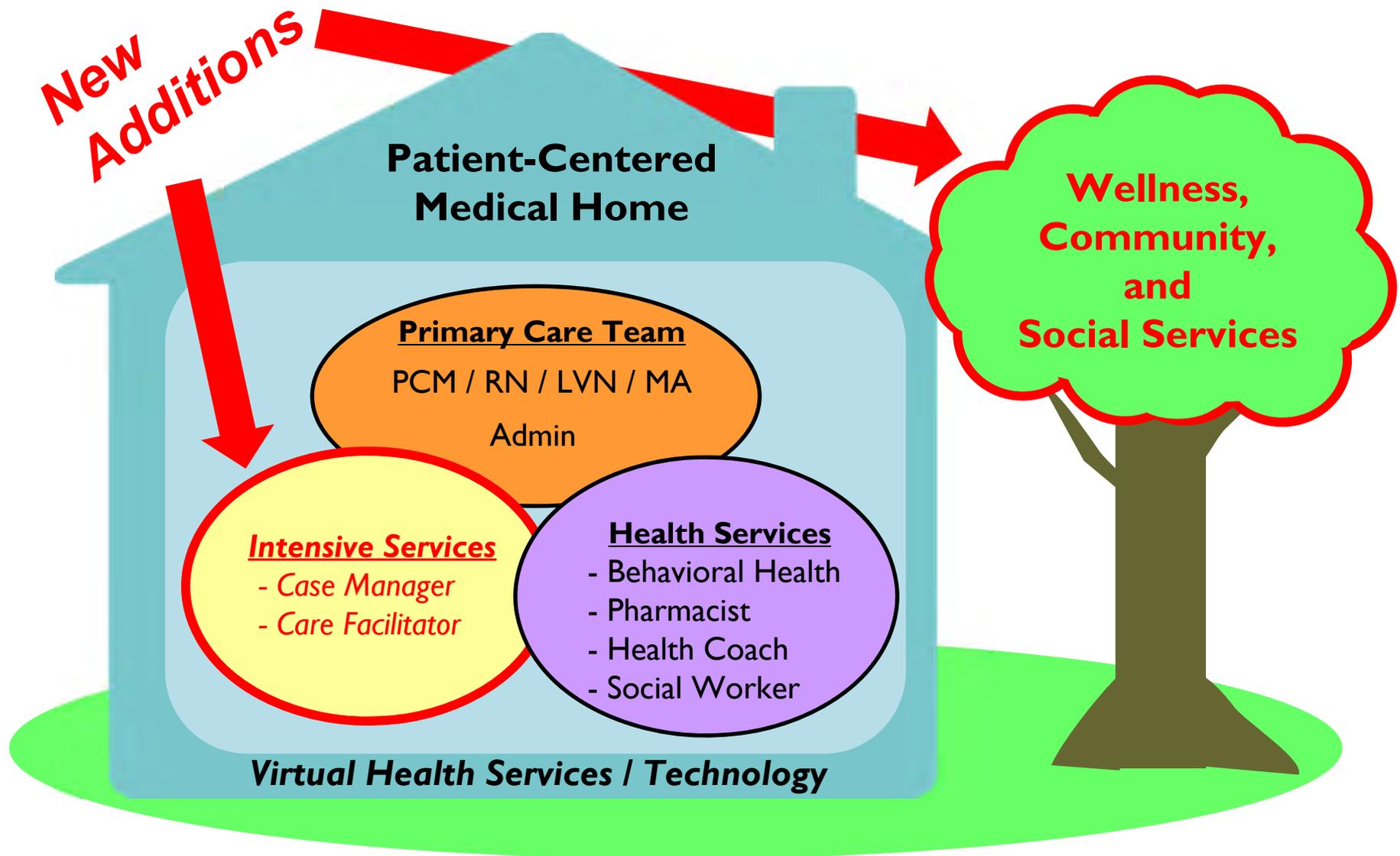
New Model



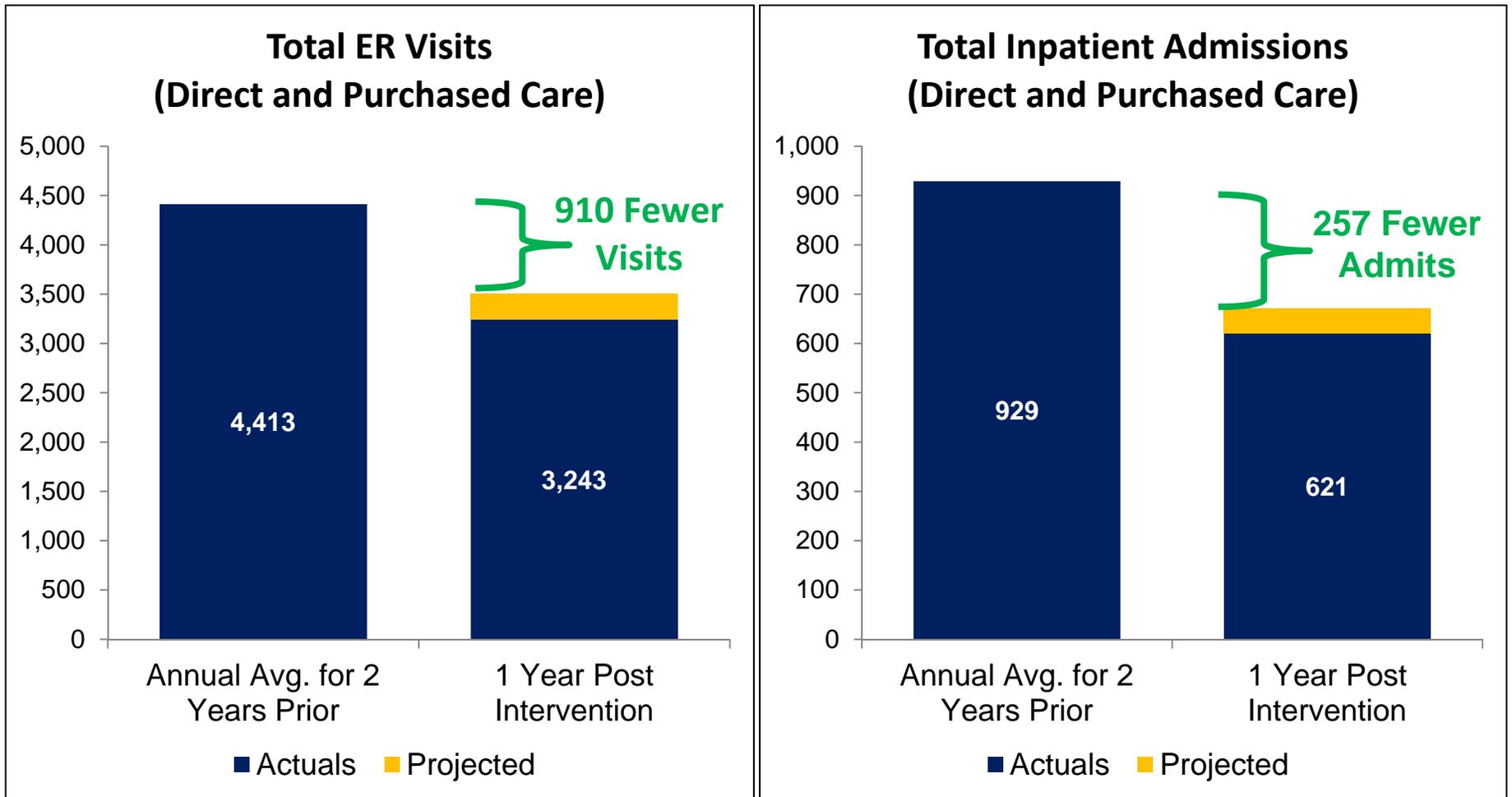
Metrics

- | | | |
|--|---|---|
| <ul style="list-style-type: none"> Physical Activity & Nutrition BMI | <ul style="list-style-type: none"> Controlled Chronic Diseases Patient Activation Score | <ul style="list-style-type: none"> Smoking Cessation |
|--|---|---|

Healthcare / Community Model



3^o Intervention Impact n = 499 (as of Apr 2015)



Valuation Periods:

NMCSD 1: Nov 2012 – Oct 2013, 50 patients

NMCSD 2: Jun 2013 – May 2014, 135 patients

NMCSD 3: Nov 2013 – Oct 2014, 74 patients

NMCSD 4: May 2014 – Dec 2014 (4 mo. Projected), 86 patients

*Projections are through December 2014 because of the M2 data delay

NHCP 1: Dec 2012 – Nov 2013, 10 patients

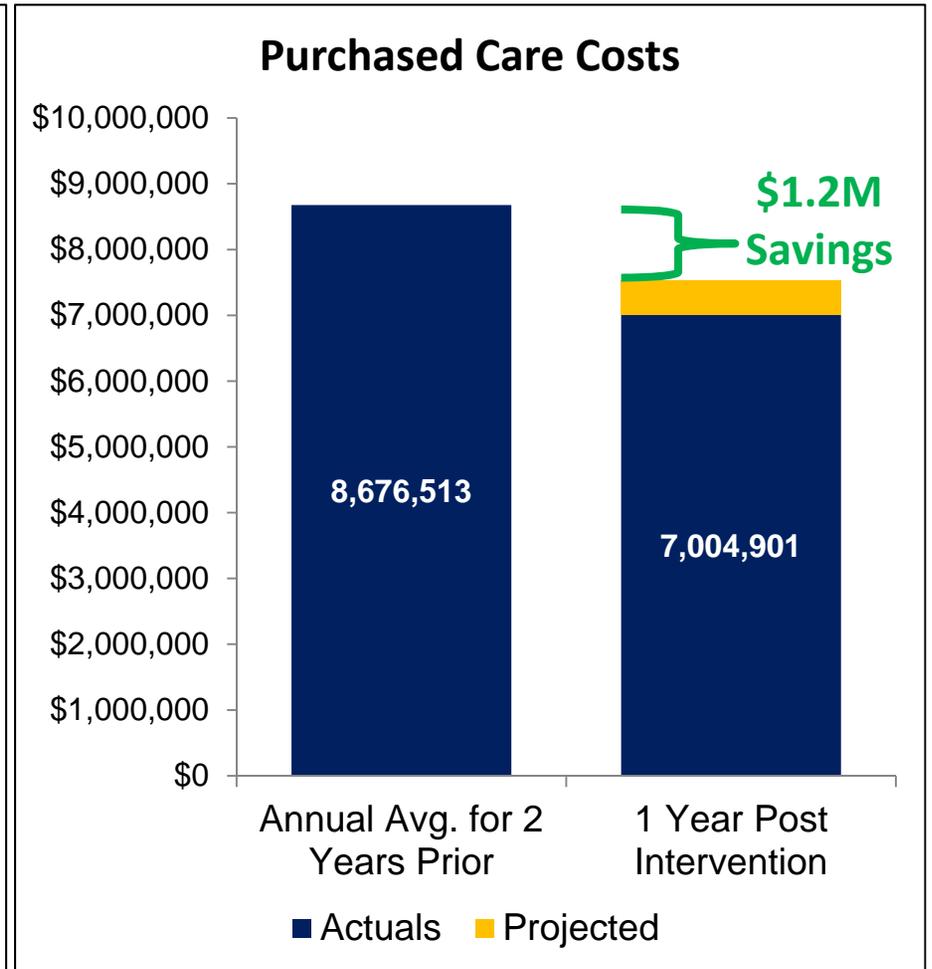
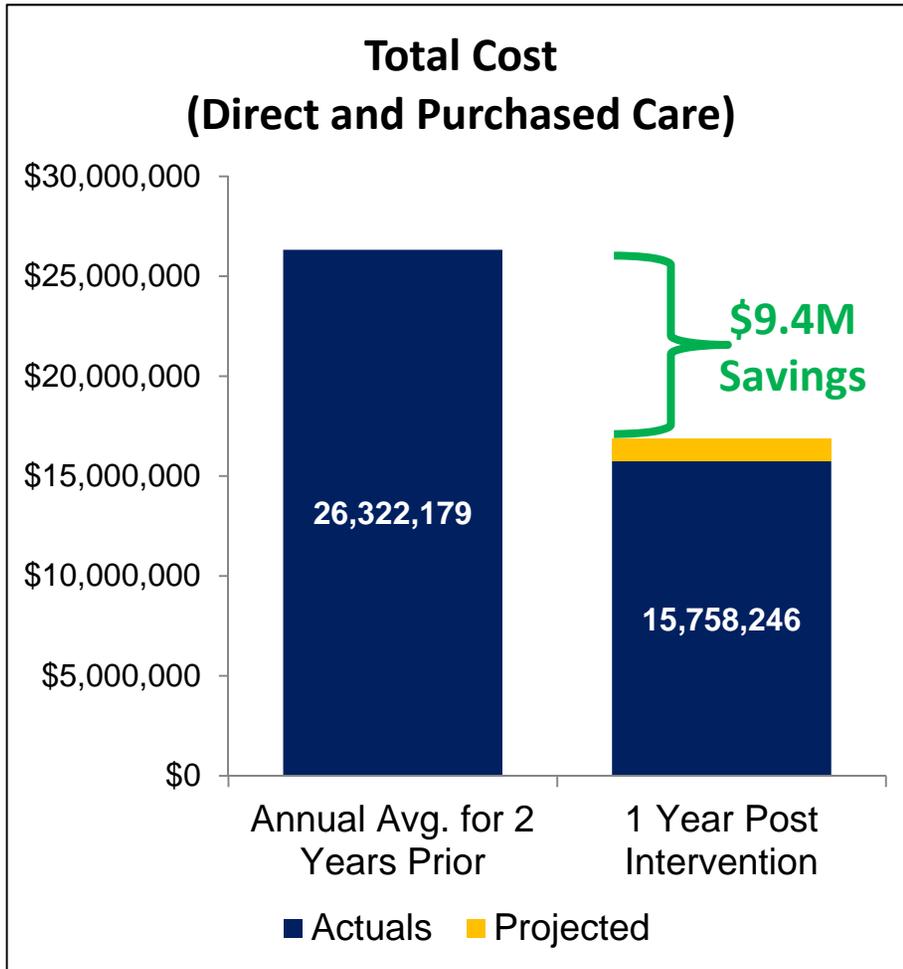
NHCP 2: Feb 2013 – Jan 2014, 16 patients

NHCP 2.5: Jul 2013 – Jun 2014, 51 patients

NHCP 4: Nov 2013 – Oct 2014, 61 patients

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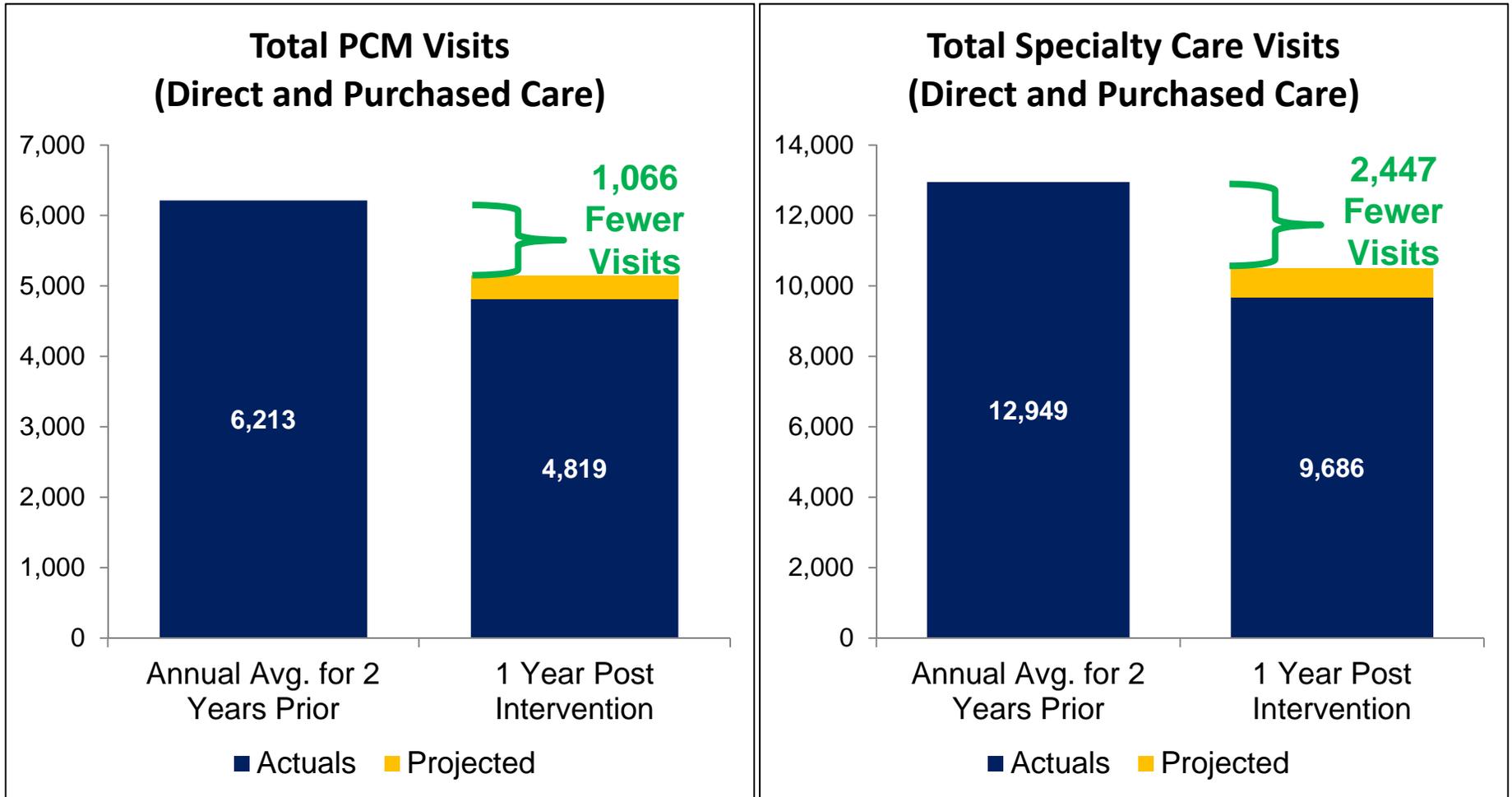
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Demographics & Biometrics for All Cohorts

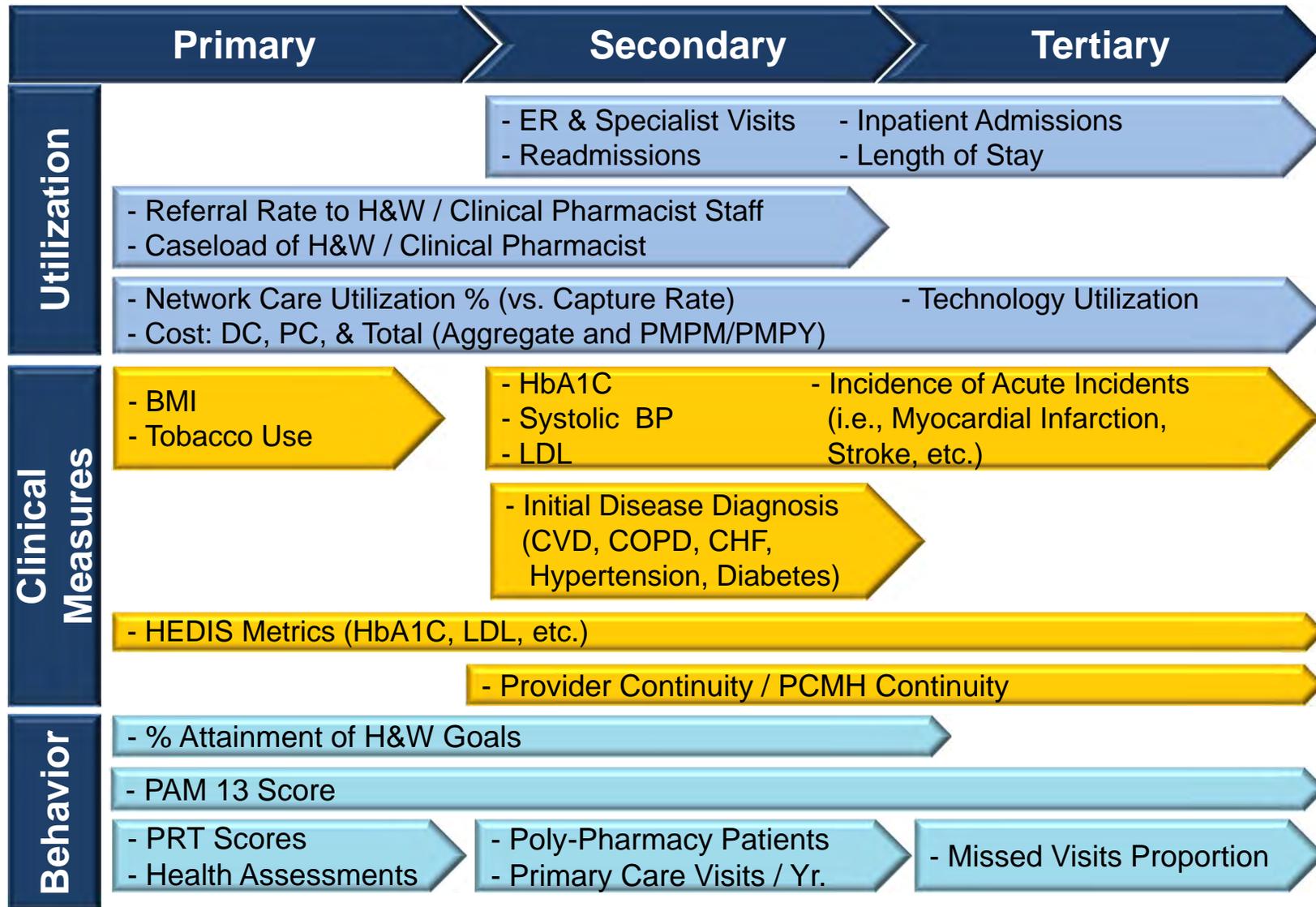
Condition Type	# In All Cohorts	Percent of Total (n= 499)
Asthma	31	6%
Chronic Pain	123	25%
Diabetes	152	30%
Heart Disease	203	41%
Hypertension	223	45%
Mental Health	224	45%
Obesity	45	9%

Age	Count	Percent
0 - 17	53	11%
18 - 34	77	15%
35 - 64	188	38%
65+	181	36%
Total	499	100%

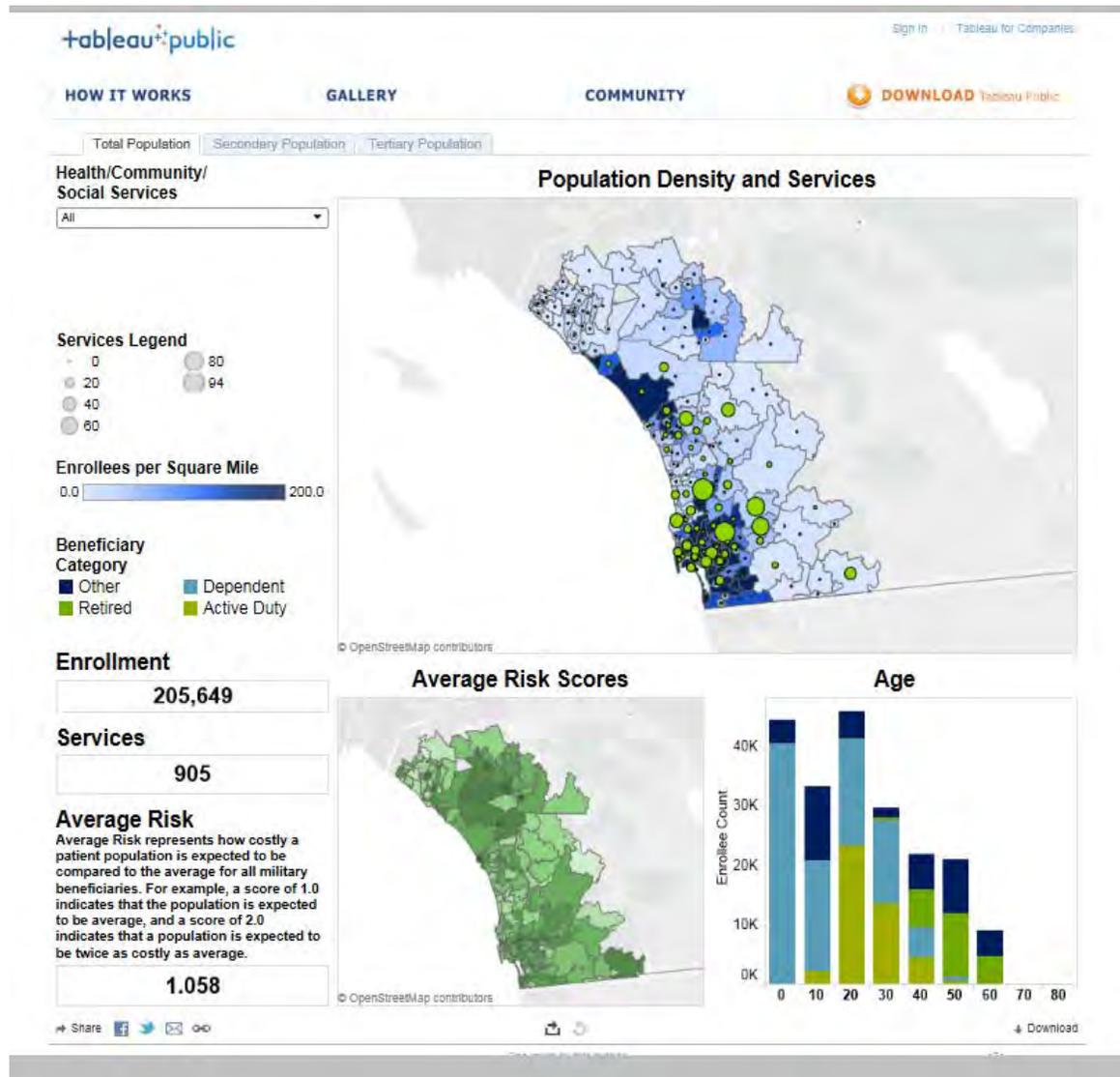
Gender	Count	Percent
Female	277	56%
Male	222	44%
Total	499	100%

Patient Type	Count	Percent
Active Duty	30	6%
Dependent	296	59%
Other	1	0.2%
Retired	172	34%
Total	499	100%

Outcome Metrics



Population Health Mapping



- https://public.tableausoftware.com/views/EnrollmentServicesandRisk/TotalPopulation?:embed=y&:display_count=no

Cultural Health Determinants: Live Well!

THE NEW ENGLAND JOURNAL OF MEDICINE

SPECIAL ARTICLE

The Spread of Obesity in a Large Social Network Over 32 Years

Nicholas A. Christakis, M.D., Ph.D., M.P.H., and James H. Fowler, Ph.D.

ABSTRACT

BACKGROUND

The prevalence of obesity has increased substantially over the past 30 years. We performed a quantitative analysis of the nature and extent of the person-to-person spread of obesity as a possible factor contributing to the obesity epidemic.

METHODS

We evaluated a densely interconnected social network of 12,067 people assessed repeatedly from 1971 to 2003 as part of the Framingham Heart Study. The body-mass index was available for all subjects. We used longitudinal statistical models to examine whether weight gain in one person was associated with weight gain in his or her friends, siblings, spouse, and neighbors.

RESULTS

Discernible clusters of obese persons were present in the network at all time points, and the clusters extended to three degrees of separation. These clusters did not appear to be solely attributable to the selective formation of social ties among obese persons. A person's chances of becoming obese increased by 57% (95% confidence interval [CI], 6 to 123) if he or she had a friend who became obese in a given interval. Among pairs of adult siblings, if one sibling became obese, the chance that the other would become obese increased by 40% (95% CI, 21 to 60). If one spouse became obese, the likelihood that the other spouse would become obese increased by 37% (95% CI, 7 to 73). These effects were not seen among neighbors in the immediate geographic location. Persons of the same sex had relatively greater influence on each other as compared with those of the opposite sex. The spread of smoking cessation did not account for the spread of obesity in the network.

CONCLUSIONS

Network phenomena appear to be relevant to the biologic and behavioral trait of obesity, and obesity appears to spread through social ties. These findings have implications for clinical and public health interventions.

THE NEW ENGLAND JOURNAL OF MEDICINE

SPECIAL ARTICLE

The Collective Dynamics of Smoking in a Large Social Network

Nicholas A. Christakis, M.D., Ph.D., M.P.H., and James H. Fowler, Ph.D.

ABSTRACT

BACKGROUND

The prevalence of smoking has decreased substantially in the United States over the past 30 years. We examined the extent of the person-to-person spread of smoking behavior and the extent to which groups of widely connected people quit together.

METHODS

We studied a densely interconnected social network of 12,067 people assessed repeatedly from 1971 to 2003 as part of the Framingham Heart Study. We used network analytic methods and longitudinal statistical models.

RESULTS

Discernible clusters of smokers and nonsmokers were present in the network, and the clusters extended to three degrees of separation. Despite the decrease in smoking in the overall population, the size of the clusters of smokers remained the same across time, suggesting that whole groups of people were quitting in concert. Smokers were also progressively found in the periphery of the social network. Smoking cessation by a spouse decreased a person's chances of smoking by 67% (95% confidence interval [CI], 59 to 73). Smoking cessation by a sibling decreased the chances by 25% (95% CI, 14 to 35). Smoking cessation by a friend decreased the chances by 36% (95% CI, 12 to 55). Among persons working in small firms, smoking cessation by a coworker decreased the chances by 34% (95% CI, 5 to 56). Friends with more education influenced one another more than those with less education. These effects were not seen among neighbors in the immediate geographic area.

CONCLUSIONS

Network phenomena appear to be relevant to smoking cessation. Smoking behavior spreads through close and distant social ties, groups of interconnected people stop smoking in concert, and smokers are increasingly marginalized socially. These findings have implications for clinical and public health interventions to reduce and prevent smoking.

Live Well, San Diego!

- 3 – 4 – 50!
 - The key to impact upstream determinants
- Drive from Healthcare to Wellness!
- Era of Economic Austerity
 - The tie of Health to our financial solvency

Questions/Discussion



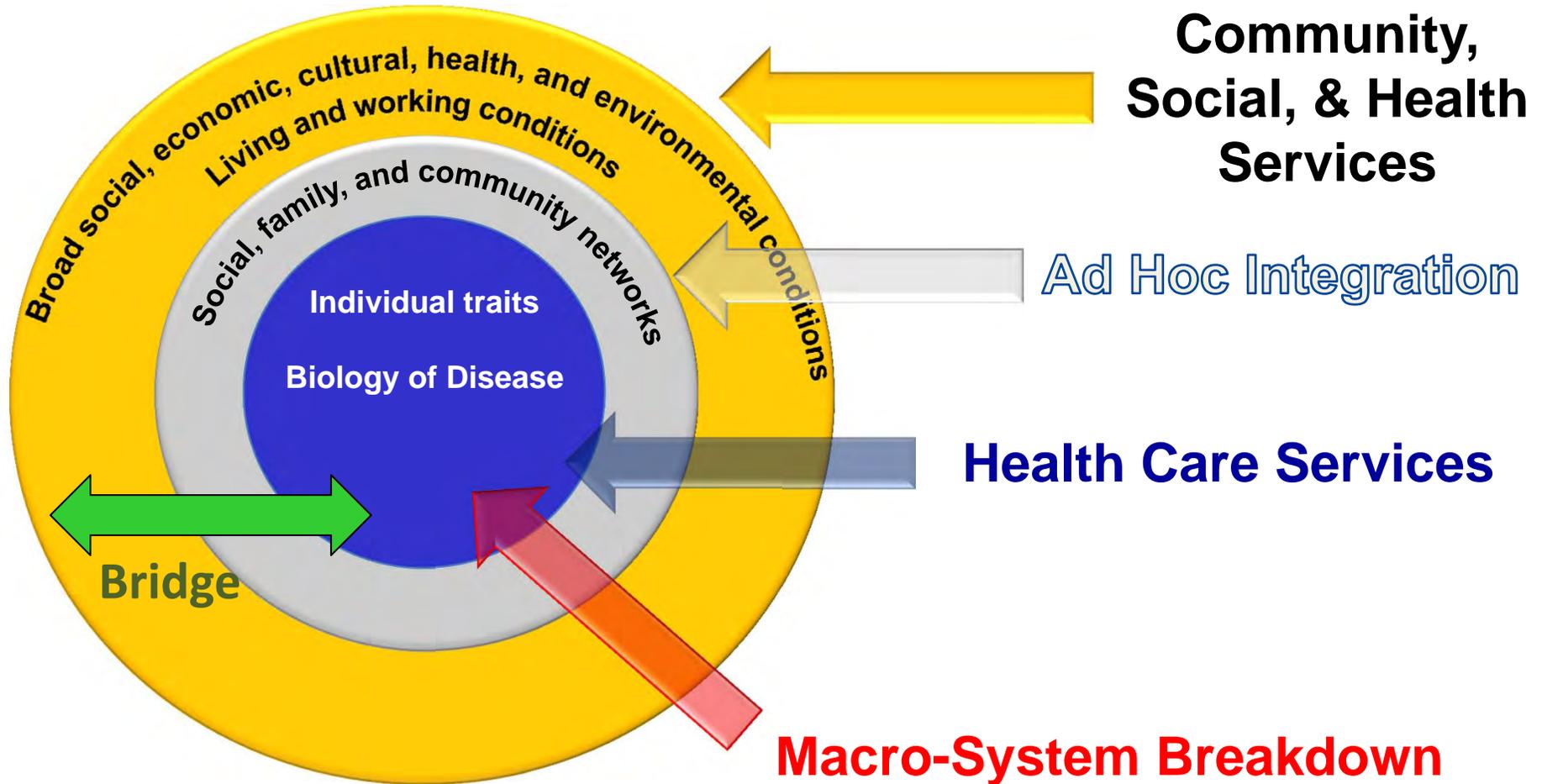
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BACKUP

Technology Pilot Milestones

Month	Q4 2014	Q1 2015	Q2 2015	Q3 2015	Q4 2015
Primary / Secondary Prevention					
Finalize IT and Legal Requirements					
Identify Target Populations					
Train-the-Trainer					
ESC Pilot					
Administrator / Champions Pilot					
Relay Health Integration					
Beneficiary Pilot					
Integration of Technology into H&W					
Integration of Technology into MHP					
Advanced Analytics & Reporting					

Population Health Determinants



Institute of Medicine: Committee on Public Health Strategies to Improve Health – Jan 2011

Proactive IHC List Scorecard

PCMH Team

- PCMH Team 10
- PCMH Team 01
- PCMH Team 02
- PCMH Team 03
- PCMH Team 04
- PCMH Team 05

PCM

- PCM 16
- PCM 01
- PCM 02
- PCM 03
- PCM 04
- PCM 05

Case Manager

- Case Manager 20
- Case Manager 01
- Case Manager 02
- Case Manager 03
- Case Manager 04
- Case Manager 05

Patient Name

- Patient 36
- Patient 37
- Patient 38
- Patient 39
- Patient 40
- Patient 41

Actionability

- 5
- 1
- 2
- 3
- 4
- (blank)

Age: 75 Gender: M Ben. Cat.: Retiree Enroll: Plus Phone: 555-5555 Zip Code: 90140 Most Recent DC PCM: Apr 2014

Cost

Sum of Direct Care Cost
Sum of Purchased Care Cost

ER and Inpatient

Sum of DC ER Visits
Sum of PC ER Visits
Sum of DC Inpatient Admissions
Sum of PC Inpatient Admissions

Visits

Sum of DC PCM Visits
Sum of PC PCM Visits
Sum of DC Specialist Clinician Visits
Sum of PC Specialist Clinician Visits

Flags, Chronic Conditions, and HEDIS

Actionability:	ER	Hospitalization	Missed Visits	Cost Spike	Mult. Specialist
	1	1	1	1	1

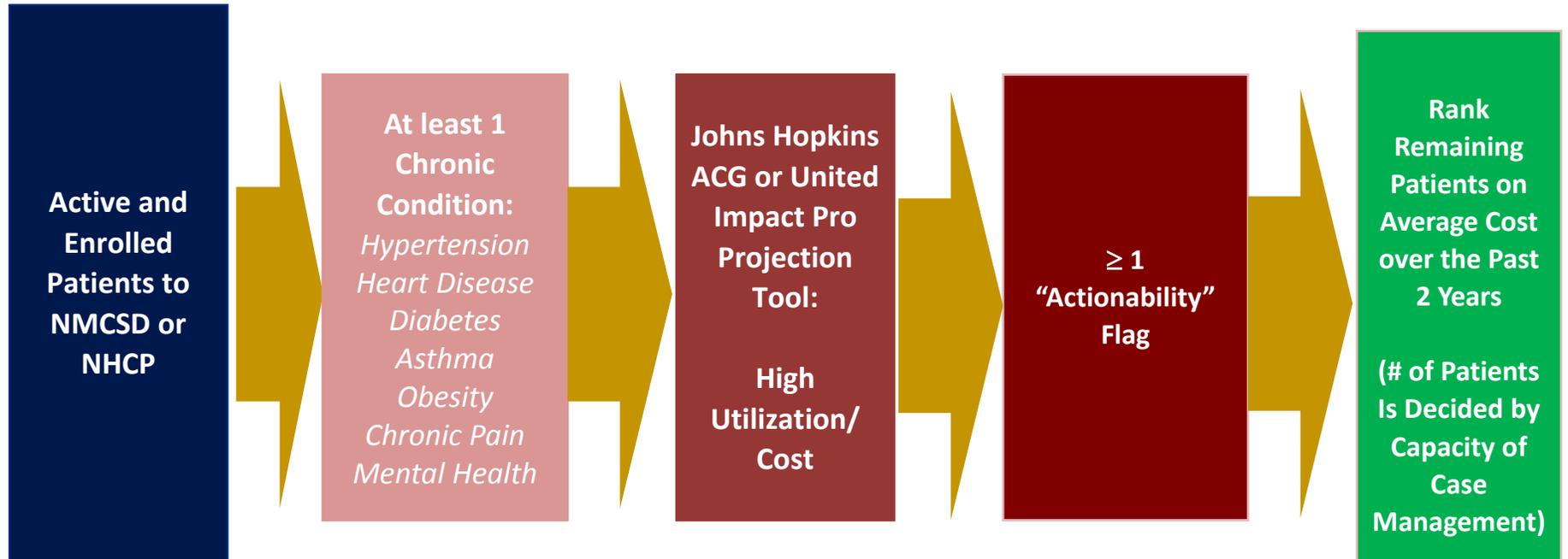
Chronic Costs	
Asthma	\$0
Chronic Pain	\$1,858
Diabetes	\$21
Heart Disease	\$49,493
Hypertension	\$313
Mental health	\$143
Obesity	\$0

HEDIS		
	Latest Date	In Compliance
Breast Cancer		N/A
Cervical Cancer		N/A
Colorectal Cancer (Type: C)	6/2/2011	Yes
LDL	5/2/2013	No
Hemoglobin A1c	11/1/2012	No
HEDIS Compliance Percent		33%

Integrated Health Community: Program Alignment

IHC Prevention Strategy	National and Local Program Alignment	
Primary Prevention	<ul style="list-style-type: none"> • BUMED Medical Home Port • MHS Quadruple Aim • Navy and Marine Corps Public Health Center • NMCSD/NHCP Health and Wellness • Live Well, San Diego! • National Prevention Strategy 	<ul style="list-style-type: none"> • 21st Century Sailor & Marine • Total Force Fitness • Operation Live Well, Healthy Base Initiative • Health Wellness Assessment • SDHHSA 3-4-50 campaign • California 'Health in All Policies' • HHS Million Hearts Initiative • CDC Sodium Reduction in Communities • Let's Move!
Secondary Prevention	<ul style="list-style-type: none"> • BUMED Medical Home Port • MHS Quadruple Aim • Navy and Marine Corps Public Health Center • NMCSD/NHCP Health and Wellness • Right Care Initiative • National Prevention Strategy 	<ul style="list-style-type: none"> • Operation Live Well, Healthy Base Initiative • Health Wellness Assessment • IBHC Practice Manual • HHS Million Hearts Initiative • CDC National Heart Disease and Stroke Prevention
Tertiary Prevention	<ul style="list-style-type: none"> • BUMED Medical Home Port • MHS Quadruple Aim • HHS Million Hearts Initiative 	<ul style="list-style-type: none"> • Health Wellness Assessment • IBHC Practice Manual

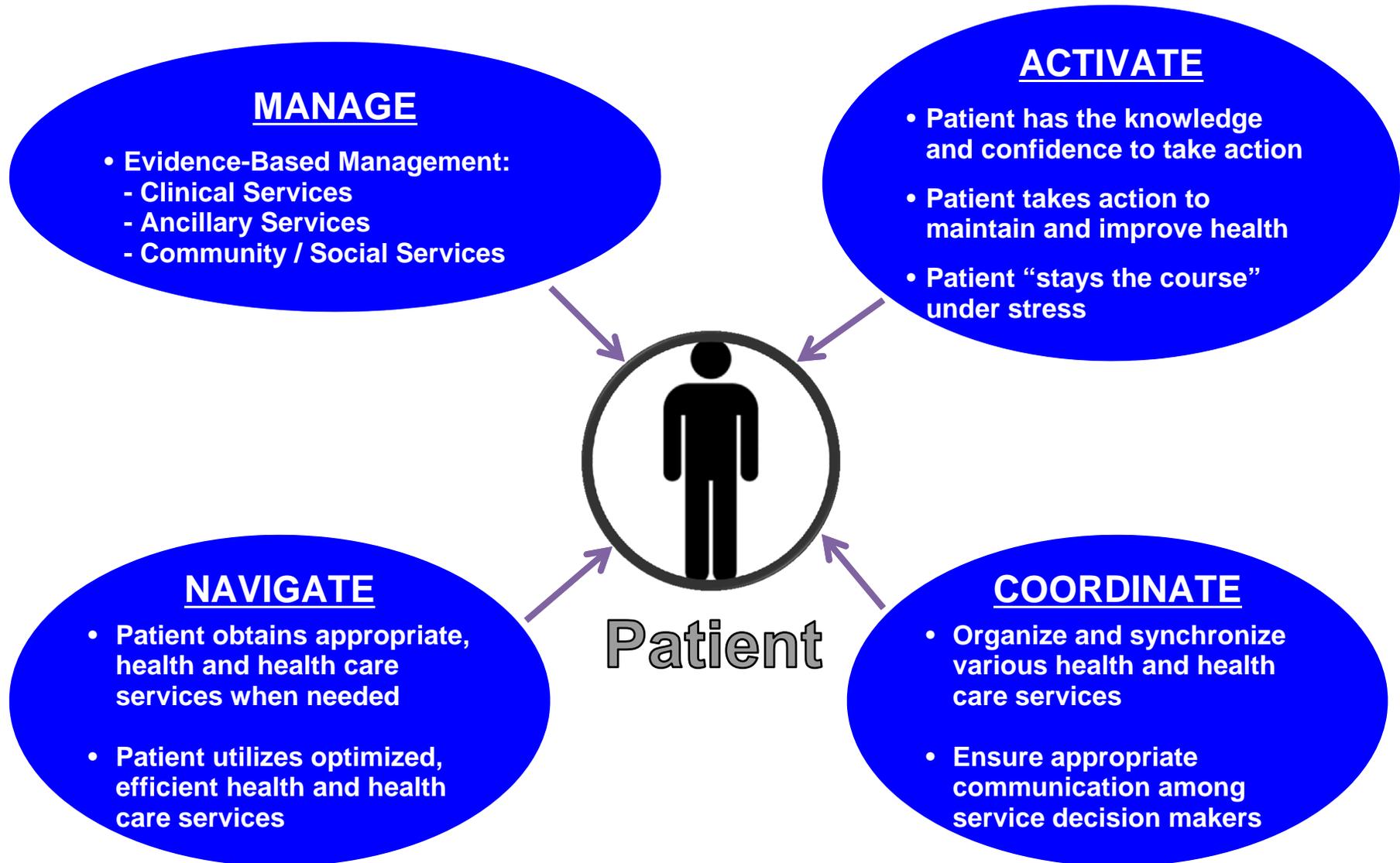
3° Population Identification



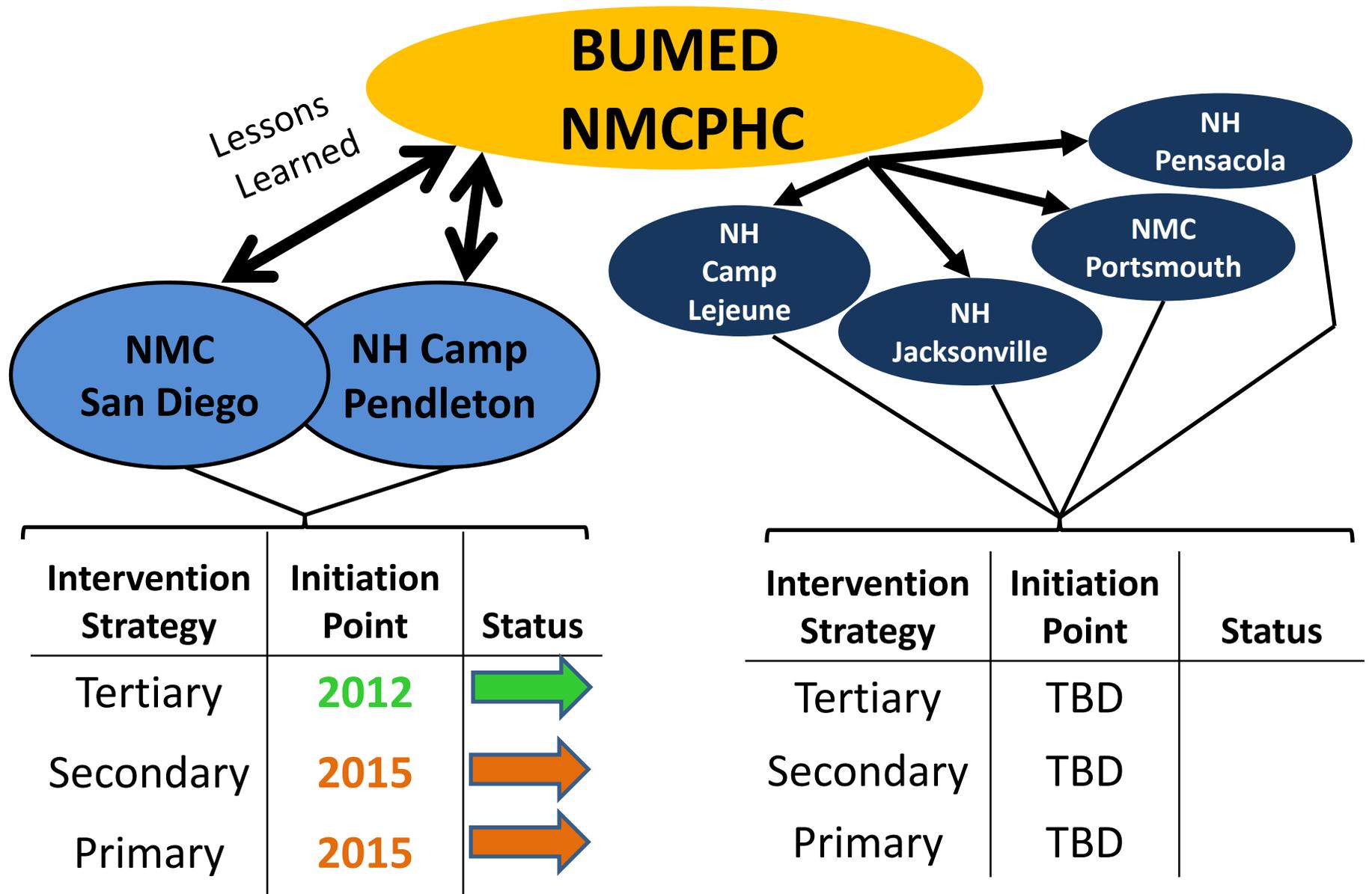
"Actionability" Flags:

- Recent ER Use (> 2 visits in last 6 months)
- Recent Inpatient Admission (> 1 admission in last 6 months)
- Recent Cost Spike (> \$3000 / month in last 6 months)
- Multiple Specialists (> 2 types of specialist visits in the last 6 months)
- Missed Visits (> 1 missed visit in the last 6 months)

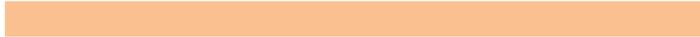
MANiC Intervention Strategy



Current Enterprise Plan



IHC Contract Deliverables

Strategic Task Area	Fall 2014	Winter 2015	Spring 2015	Summer 2015
BUMED Contract BPR Support *				
Program Strategy Development				
Operational Implementation Guidance				
Data Analytics Development				
BUMED Population Health Program Funding (Local Contracts)				
Communications Implementation				
Community Outreach Support (Web Portal, etc.)				
Health Promotion Support				
Data Analytic Support				
Wearable Technology / Health Portal				

**Provided by Deloitte LLC until Jan 2015. New BUMED BPR Contract scheduled to initiate Feb 2015.*

PAM: The Premiere Measure

- Hospitals and health care systems in 30+ states administer PAM
- Used in health care systems that serve over a 130 million members
- The PAM is used in over 21 countries
- PAM is required in the ACA section 3026 (Community Care Transition Program)
- 6 VA hospitals currently use PAM
- 135 peer-reviewed published studies, using the PAM, have demonstrated improved patient outcomes and controlled costs

Top Hospitals and Health Care Systems Using PAM

Johns Hopkins	Coventry Health Care
United Health Group	MEDICA
Blue Cross of California	Oregon Health Authority
WellPoint	Washington State Health Care Authority
South Carolina Healthy Connections	Ohio Department of Medicaid

Patient Activation Measure

1.	When all is said and done, I am the person who is responsible for taking care of my health	Disagree Strongly	Disagree	Agree	Agree Strongly
2.	Taking an active role in my own health care is the most important thing that affects my health	Disagree Strongly	Disagree	Agree	Agree Strongly
3.	I know what each of my prescribed medications do	Disagree Strongly	Disagree	Agree	Agree Strongly
4.	I am confident that I can tell whether I need to go to the doctor or whether I can take care of a health problem myself.	Disagree Strongly	Disagree	Agree	Agree Strongly
5.	I am confident that I can tell a doctor concerns I have even when he or she does not ask.	Disagree Strongly	Disagree	Agree	Agree Strongly
6.	I am confident that I can follow through on medical treatments I may need to do at home	Disagree Strongly	Disagree	Agree	Agree Strongly
7.	I have been able to maintain (keep up with) lifestyle changes, like eating right or exercising	Disagree Strongly	Disagree	Agree	Agree Strongly
8.	I know how to prevent problems with my health	Disagree Strongly	Disagree	Agree	Agree Strongly
9.	I am confident I can figure out solutions when new problems arise with my health.	Disagree Strongly	Disagree	Agree	Agree Strongly
10.	I am confident that I can maintain lifestyle changes, like eating right and exercising, even during times of stress.	Disagree Strongly	Disagree	Agree	Agree Strongly

PAM: A Measure That Improves Outcomes

The normal distribution of a patient population is spread across all 4 activation levels

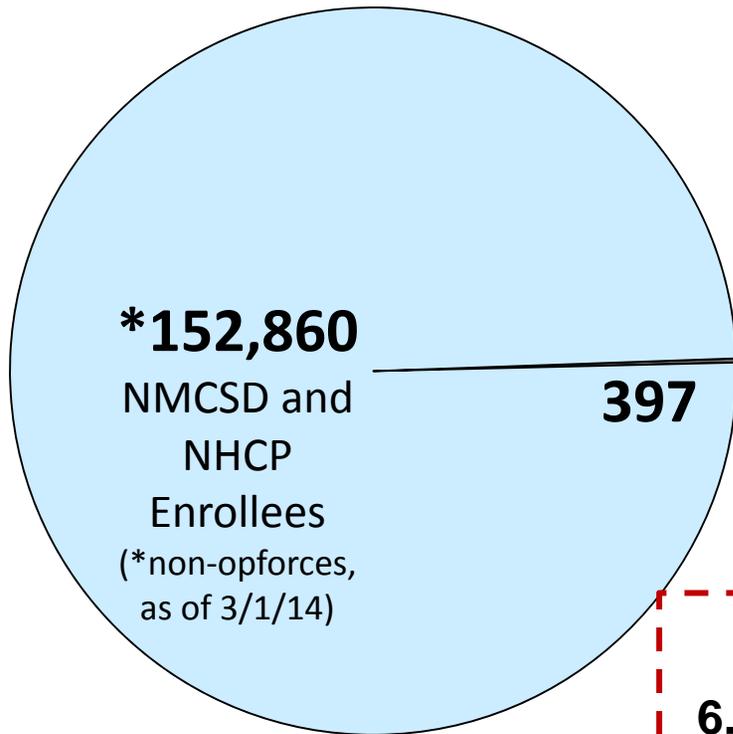
↑ PAM Level ↓ Cost

Organization	Intervention (Based on PAM Level)		Sample Size	Outcomes
	Who	What		
PeaceHealth Medical Group	All Medical Home Clinic Staff Members	Tailored Patient Interaction	1500	47% ↓ ER and Urgent Care Visits 21% ↑ Control Blood Pressure 14% ↑ Patient Appointment Access
StayWell Health Management	Telephonic-Health Coaches	Tailored Condition-Management Coaching and Care	1874	22% ↓ ER Visits 33% ↓ Inpatient Admission
Washington State Medicaid	RNs	Tailored Care Coordination Processes	182	80% ↓ Cost for ER / Inpatient Admissions

AICU / 3° Population

Population Size

(153k Total Enrollees to NMCS D and NHCP)



***152,860**

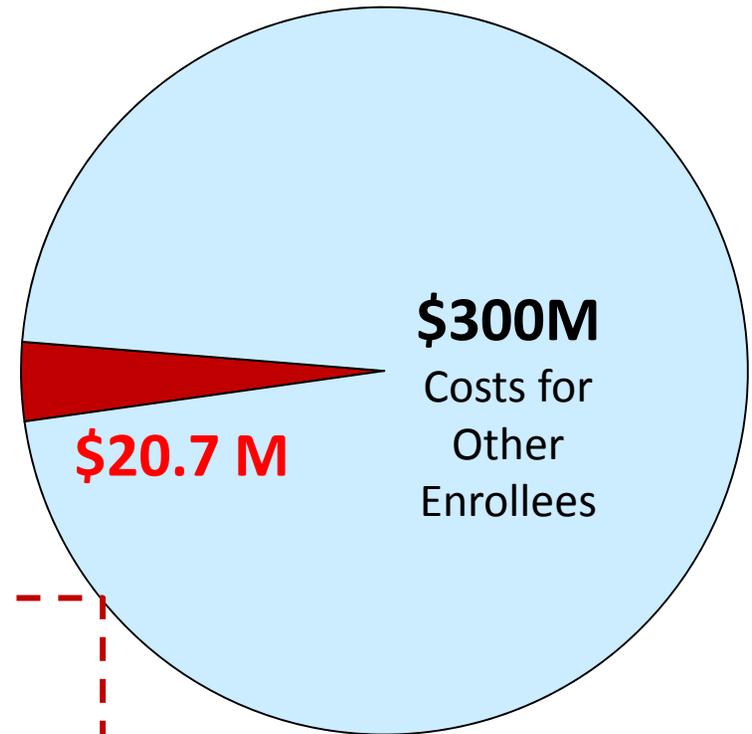
NMCS D and
NHCP
Enrollees

(*non-opforces,
as of 3/1/14)

397

Average Annual Cost (FY12-13)

(Annual Health Care Costs of \$300M)



\$300M

Costs for
Other
Enrollees

\$20.7 M

0.3%

6.9%

of patients = of costs

15 times the average per member per year costs (PMPY)

PMPY: \$52,245

Per Member Per Month Cost (PMPM): \$3,400