Public Health and Health Care
Coming Together to Detect, Connect, and Control

Accessible version: https://youtu.be/jsk4CxV3iYk

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Center for Medicare and Medicaid Innovation

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

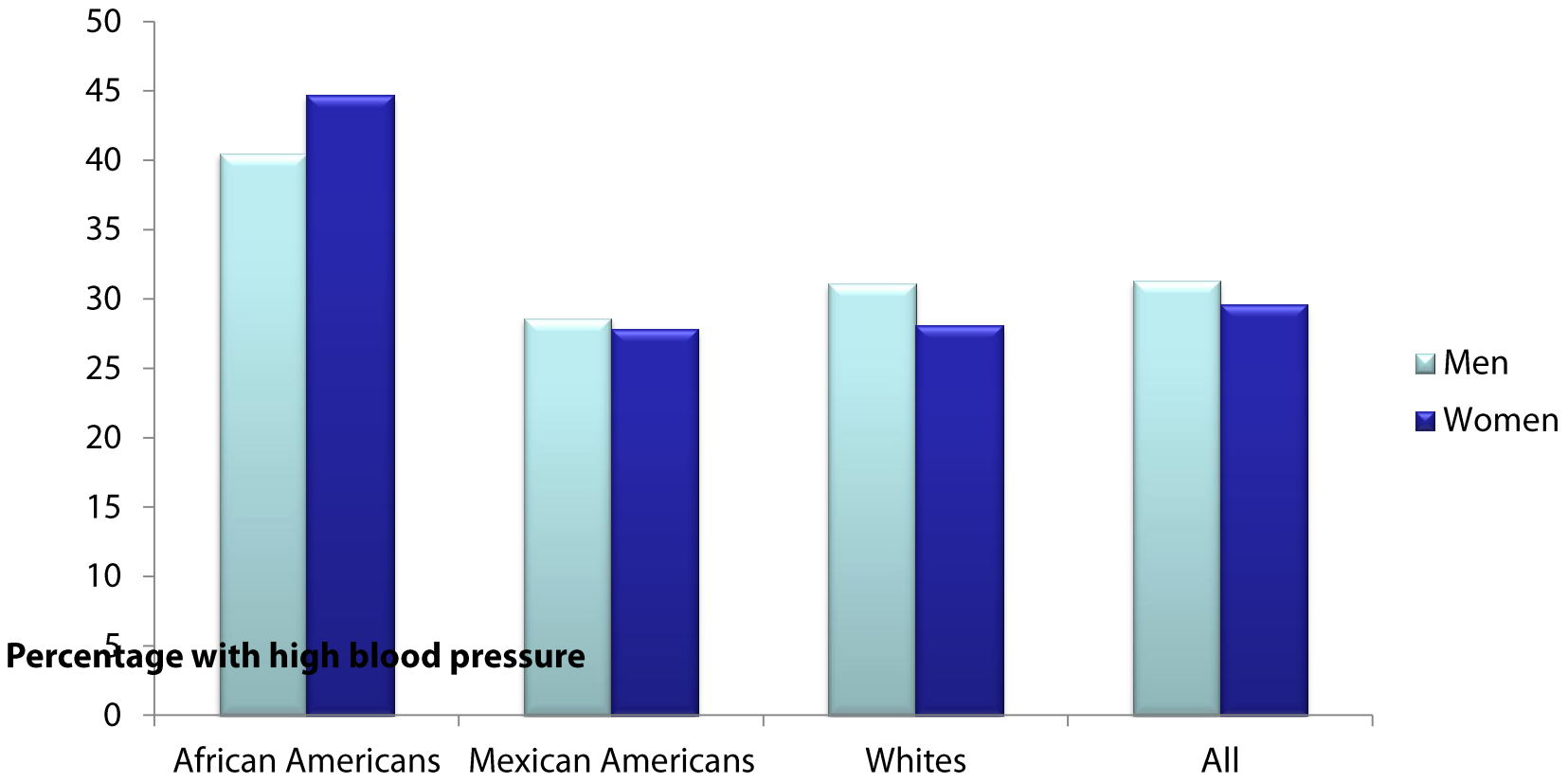
Blood Pressure 101

- **Force of blood against the artery walls**
- **Measured using 2 numbers**
  - Systolic: Pressure in the blood vessels when the heart contracts Diastolic: Pressure in the blood vessels when the heart relaxes between beats
- **Normally rises and falls throughout the day, but can damage organs if it stays high for a long time**

Blood Pressure Levels

Blood pressure levels	
Normal	systolic: <120 mm Hg diastolic: <80 mm Hg
At risk (prehypertension)	systolic: 120–139 mm Hg diastolic: 80–89 mm Hg
High	systolic: ≥140 mm Hg diastolic: ≥90 mm Hg

Blood Pressure Levels Vary by Race and Ethnicity



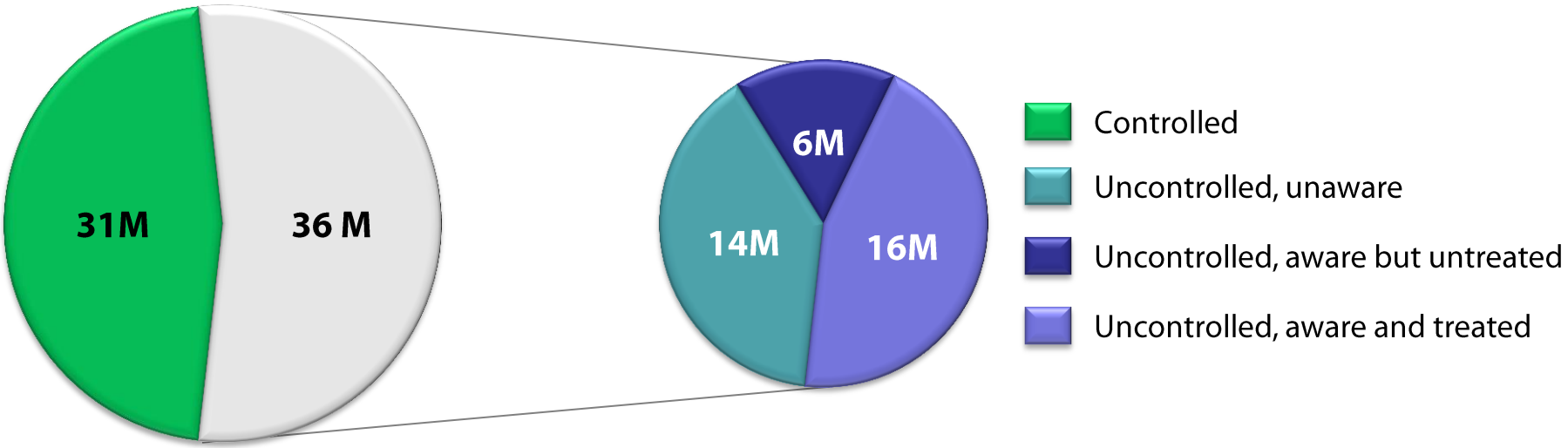
Burden of Hypertension

Leading risk factor for cardiovascular disease and a significant cause of morbidity and mortality

- **348,000 American deaths in 2008 include hypertension as primary or contributing cause**
- **$47.5 billion annually in direct medical expenses**

CDC. MMWR. 2012;61(35):703–9

Hypertension Status in the United States 2003–2010

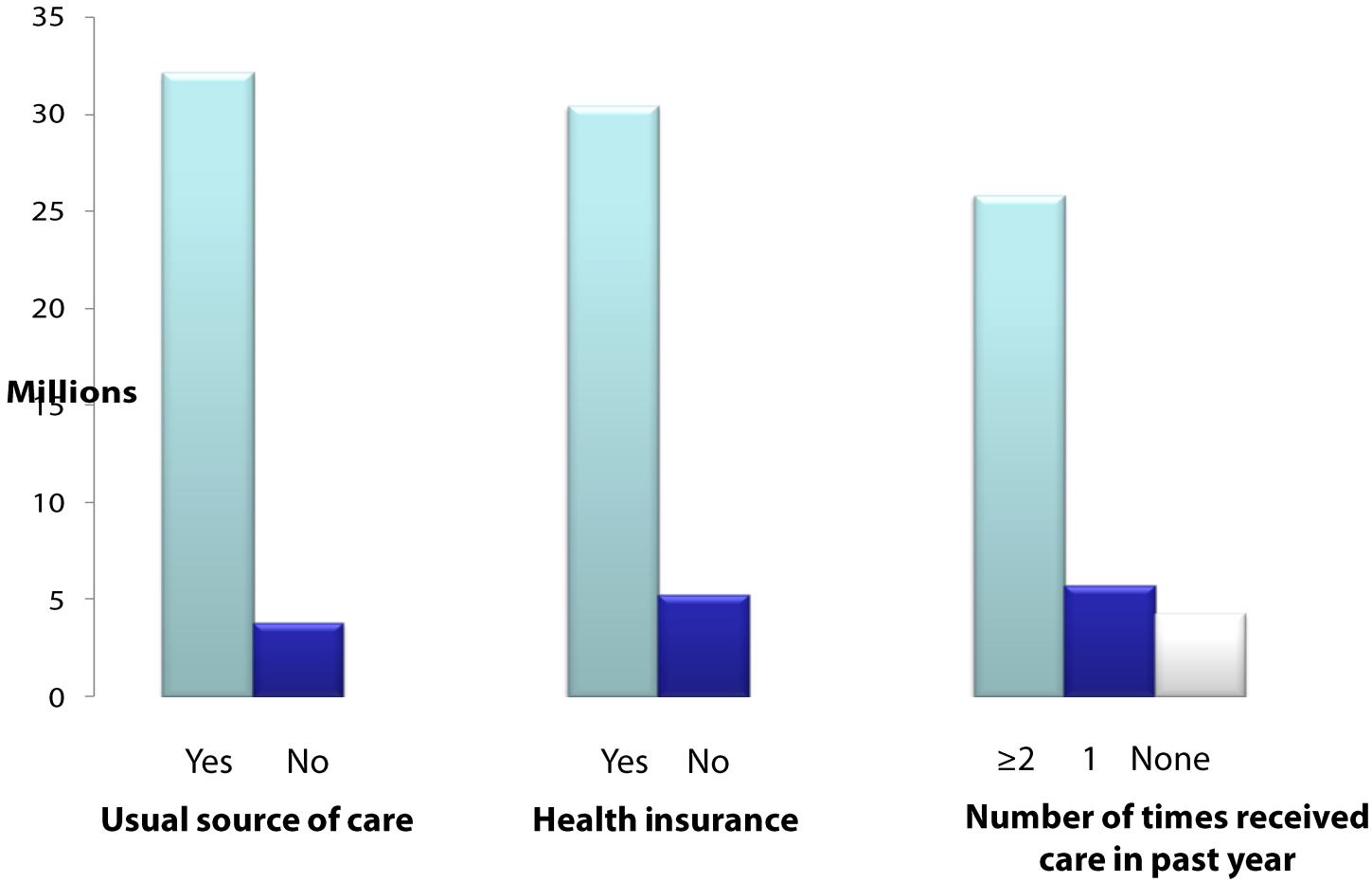


67 million adults with hypertension

36 million adults with uncontrolled hypertension

CDC. MMWR. 2012;61(35):703–9

Most People With Uncontrolled Hypertension Are Insured and Are Receiving Regular Care



CDC. MMWR. 2012;61(35):703–9

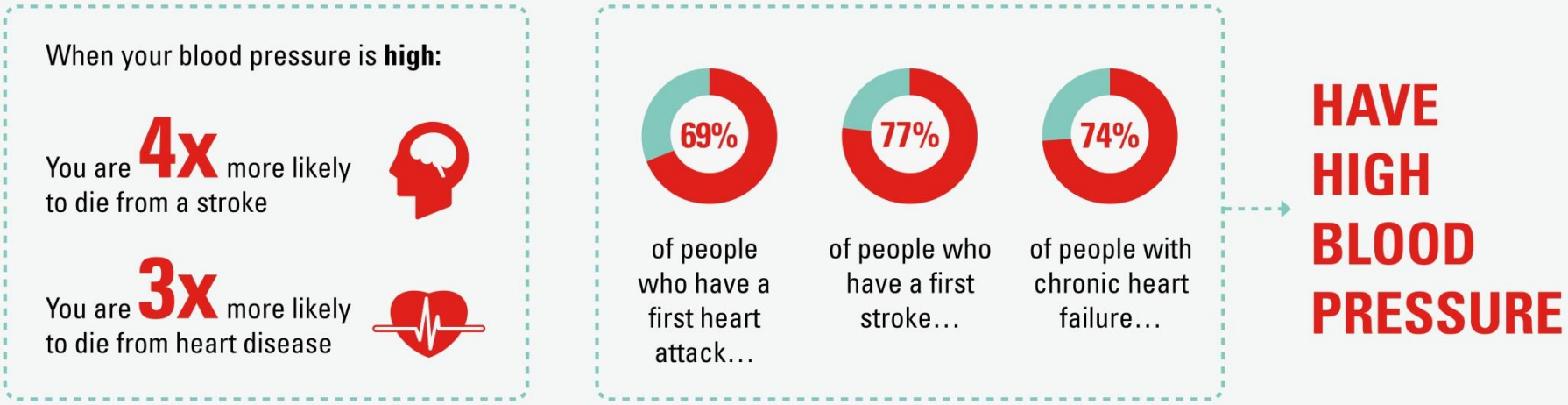
Why is Blood Pressure Control Challenging?

- Silent nature of hypertension
- Lifetime medications are daily and an additional cost
- Healthy lifestyle contributes to control, but takes effort and practice

- It is common, but rarely the sole focus of attention
- Accurate diagnosis requires a pattern of readings
- Health care systems are designed to react, not to reach out
- Resistant hypertension in about 10% cases

Wofford MR, et al. Curr Hypertens Rep. 2009;11:323–8
Persell SD. Hypertension. 2011;57:1076–80

Hypertension Leads to Cardiovascular Disease



- **Cardiovascular disease causes 1 of every 3 deaths**
- **Every year**
  - >1.5 million heart attacks and strokes
  - 800,000 deaths
  - $312.6 billion in health care costs and lost productivity

Kochanek KD, et al. Natl Vital Stat Rep. 2011;60(3):1–51
Roger VL, et al. Circulation. Jan 3;2012;125(1):e2–220

Million Hearts®

Goal

Prevent 1 million heart attacks and strokes by 2017

- **US Department of Health and Human Services initiative, co-led by**
  - Centers for Disease Control and Prevention (CDC)
  - Centers for Medicare & Medicaid Services (CMS)
- **Partners across federal and state agencies and private organizations**

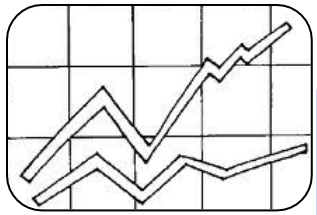
http://millionhearts.hhs.gov

Million Hearts®
Public Health and Health Care Coming Together

Keeping Us Healthy
Changing the Environment

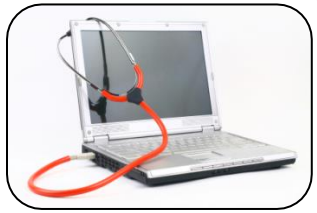
Baseline	2017 Target
21%	19%
~ 3.5 g/day	20% reduction
~ 1% of calories	50% reduction

Excelling in the ABCS
Optimizing Care



Prioritizing the ABCS

Appropriate aspirin therapy
Blood pressure control
Cholesterol management
Smoking cessation

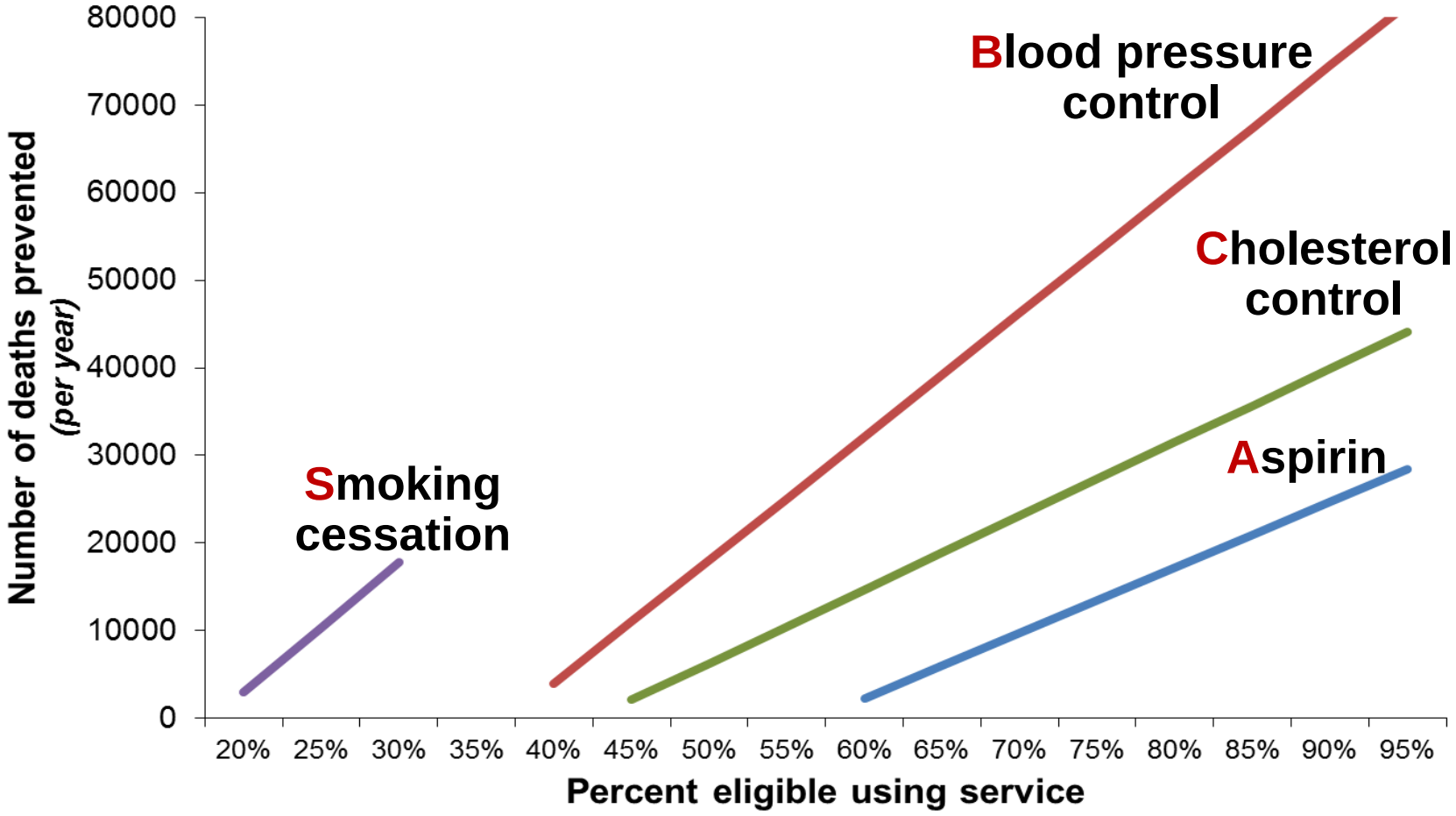


Health tools and technology

Innovations in care delivery

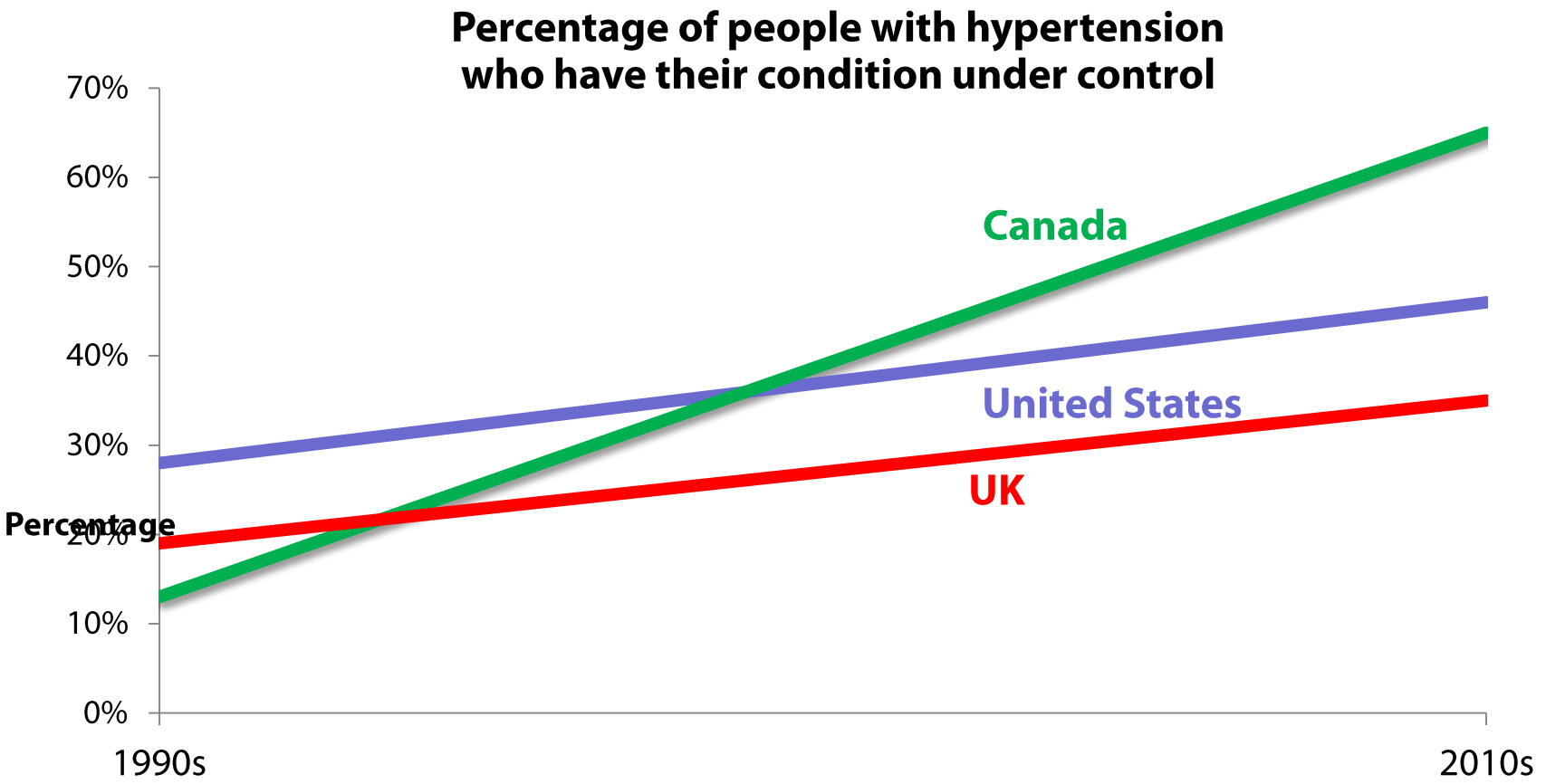
http://millionhearts.hhs.gov

Potential Impact on Deaths Prevented with Full Implementation of the ABCS



Farley T, et al. Am J Prev Med. 2010;38(6):600–609

Hypertension Control in the United States, Canada, and the UK



Data for Canada: McAlister et al. CMAJ 2011;183(9): 1007–13
Data for UK: Ramsey et al. BMJ 1999; 319:630–35
Data for US: CDC Vital Signs, Sept. 2012; NHANES 2003–2010

Million Hearts® Goals
ABCS

Intervention	Pre-initiative estimate	2017 Population-wide goal	2017 Clinical target
Aspirin when appropriate	47%*	65%	70%
Blood pressure control	46%#	65%	70%
Cholesterol management	33%#	65%	70%
Smoking cessation	23%#	65%	70%

* 2007–2008
# 2005–2008

Valderrama AL, et al. MMWR. 2011;60(36):1248–81

Million Hearts®
Achieving Blood Pressure Control

- Reduce sodium intake of the population
- Enhance detection and diagnosis
- Improve control of blood pressure in those under treatment
- Facilitate self-management
- Drive measurement and reporting

Clinical Quality Measures

- **Million Hearts® pathway to high performance**
  - Simple, uniform set of impactful measures
  - Embedded in workflow and linked to reward

Controlling High Blood Pressure: *NQF 0018*

Percentage of patients 18–85 years old who had a diagnosis of hypertension and whose blood pressure was <140/90 mmHg during the measurement year

NQF, National Quality Forum

National Quality Forum Measure

- **Embedded in numerous programs**
  - Accountable care organizations
  - Physician quality reporting system
  - Meaningful Use Stage 1 optional, Stage 2 recommended core
  - Comprehensive Primary Care Initiative
  - Healthcare Effectiveness Data and Information Set (HEDIS)
  - Health Resources and Service Agency, Uniform Data System
  - Medicaid Adult Core Quality Measures

Blood Pressure Control
What It Will Take

- **Focus: Make it a priority**
  - Leadership and organizational structure and capacity
  - Measure and report
  - Implement payment models that recognize and reward outcomes
- **Health information technology**
  - Processes and tools to identify the undiagnosed and uncontrolled
  - Registries, clinical decision support, reminders, patient portals
  - Widely available home and community blood pressure monitors
  - Timely, low-cost feedback loop of measurement and advice
- **Team-based care**
  - Standardized treatment protocol or algorithm
  - Collaborative approaches to improving adherence
  - Self-measured blood pressure monitoring with clinical support

EHR, Electronic health record

Million Hearts®
Power of Public Health-Health Care Collaboration

- **Data and measures**
  - NQF 18: Population health measure used broadly in clinical system
- **Services**
  - Blood pressure control: Identified clinical service with maximum health benefit
  - Team-based care: Innovation in care delivery
- **Drivers**
  - Tobacco, sodium and trans fat reduction: Environmental changes
  - Recognition program: Incentives
  - Purchasers, payors and providers: Strategic partnerships

: Improved Detection of Hypertension Using Electronic Screening Algorithms and Quality Improvement Measures

Michael K Rakotz, MD

Former Vice Chair for Quality, Department of Family Medicine, NorthShore University HealthSystem

Director of Population and Virtual Health,
Northwestern Memorial Physicians Group

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

NorthShore University Health System

- **Location: Chicago Metropolitan Area**
- **Components**
  - Medical group with >800 physicians
  - 4 hospitals with >900 beds
  - Research Institute
- **Employees: >9,000**
- **Research budget: $76 million**
- **Principal Teaching Affiliate: The University of Chicago**

Understanding the Problem of Undiagnosed Hypertension in the NorthShore HealthSystem

- **How many undiagnosed untreated adult patients with hypertension existed in the NorthShore HealthSystem from June 2006–May 2010?**
  - Adults with a primary care physician in the system
  - Elevated blood pressure on ≥3 visits
    - Systolic blood pressure ≥140 or diastolic blood pressure ≥90
  - No diagnosis in the electronic health records (EHR)
  - Not taking blood pressure medication
- **Conducted as an electronic query within hours, using the Enterprise Data Warehouse**

EHR, Electronic health record

Results of Initial Query

- **150,000 adults had at least 1 visit to a NorthShore primary care provider**
  - 6,248 adults met criteria for having hypertension, but were undiagnosed and untreated according to their EHR
  - 3,177 additional patients were diagnosed with hypertension but were untreated
  - In total 9,425 untreated patients with hypertension were identified
- **From the time of 3rd occurrence of elevated blood pressure, 17,000 missed opportunities during office visits to make a diagnosis of hypertension**

EHR, Electronic health record

What Is The Problem Here, and Can We Fix It?

- Physicians miss opportunities to make the diagnosis of hypertension in patients with elevated blood pressure multiple times
- Can we eliminate undiagnosed hypertension at NorthShore?

Solving the Problem

- **Design a quality improvement project that leads to**
  - Better screening approach to identify patients at risk for hypertension
  - Increase accuracy/reliability of office blood pressure measurements
  - Better recognition of at-risk patients at point of care
  - Change culture around use of clinical decision support tools and quality improvement (administrators, staff, clinicians)

NorthShore Undiagnosed Hypertension Quality Improvement Project

- **Pilot: January 2011–June 2011**
- **Inclusion criteria**
  - Adults aged 18–79 years
    - Seen by a NorthShore Medical Group primary care physician listed in EHR in the past 24 months
    - All office blood pressure readings within 1 year of most recent office visit were used
- **Patients excluded if existing diagnosis of hypertension in EHR**
    - Past medical history
    - Problem list or encounter diagnosis

EHR, Electronic health record

Critical Components
Maximizing Benefit Using Health Information Technology

- Integrated Electronic Health Record (Epic)
- Dedicated informatics team
- Point of care alerts with non-disruptive workflows

An integrated EHR coupled with non-disruptive workflows and point of care alerts creates a population health management tool

EHR, Electronic health record

Using Electronic Algorithms to Detect Patients at Risk for Hypertension

- We queried the data in our EHR using 5 algorithms to identify patients who have elevated blood pressure and may have hypertension
- Algorithms based on accepted clinical practices, guidelines, and research literature (The NorthShore Hypertension Criteria)

EHR, Electronic health record

The NorthShore Hypertension Criteria

1. **Patients whose 3 most recent encounters yielded a mean SBP ≥140 mm Hg or a mean DBP ≥90 mm Hg and reading at the most recent encounter was SBP ≥140 or DBP ≥90 mm Hg**
2. **Patients whose 3 most recent encounters yielded a mean SBP ≥140 mm Hg or a mean DBP ≥90 mm Hg and reading at the most recent encounter was not SBP ≥140 or DBP ≥90 mm Hg**
3. **Patients satisfying algorithm 1 or having a reading at the most recent encounter of SBP ≥180 or DBP ≥100 mm Hg**
4. **Patients who had 3 encounters with a SBP ≥140 or DBP ≥90 mm Hg within 12 months before their most recent encounter**
5. **Patients satisfying algorithm 4 or having an encounter with a SBP ≥180 or a DBP ≥100 mm Hg within 12 months before their most recent encounter**

SBP, Systolic blood pressure
DBP, Diastolic blood pressure

Recalling Patients at Risk for Hypertension for a Diagnostic Visit

- **Any patient satisfying at least 1 NorthShore Hypertension criteria**
  - Placed on a notification list to come in for additional blood pressure measurements
- **Primary care physician**
  - Review patient list for accuracy and review chart to determine if outreach is appropriate
- **Patient outreach (telephone calls, letters)**
  - Notify patients they may be at risk for hypertension and schedule follow-up appointment

A Standardized Visit to Confirm Diagnosis Using Automated Office Blood Pressures (AOBP)

- **Why use a sequence of automated office blood pressures?**
  - Manual measurements of blood pressures in offices are unreliable
  - Office blood pressures do not correlate well with daytime mean ambulatory blood pressures, which are more highly predictive of morbidity
  - "White coat effect" is mitigated by AOBP machines
  - A more accurate/reliable blood pressure measurement may reduce clinician hesitation in making a diagnosis or modifying treatment in a patient with hypertension

Vidt DG, et al. Cleve Clin J Med. 2010;77(10):683–8

What Is an Automated Office Blood Pressure (AOBP) Visit?

- Standardized visit for more accurate diagnosis of hypertension in patients with multiple elevated blood pressures
- Appropriate sizing and placement of cuff
- Physicians and staff trained in use of AOBP
- Patient alone in room and properly positioned
- 6 readings taken at 1-minute intervals, 1st reading discarded, the remaining 5 readings averaged to give the AOBP mean (which better correlates to daytime mean ambulatory blood pressures)

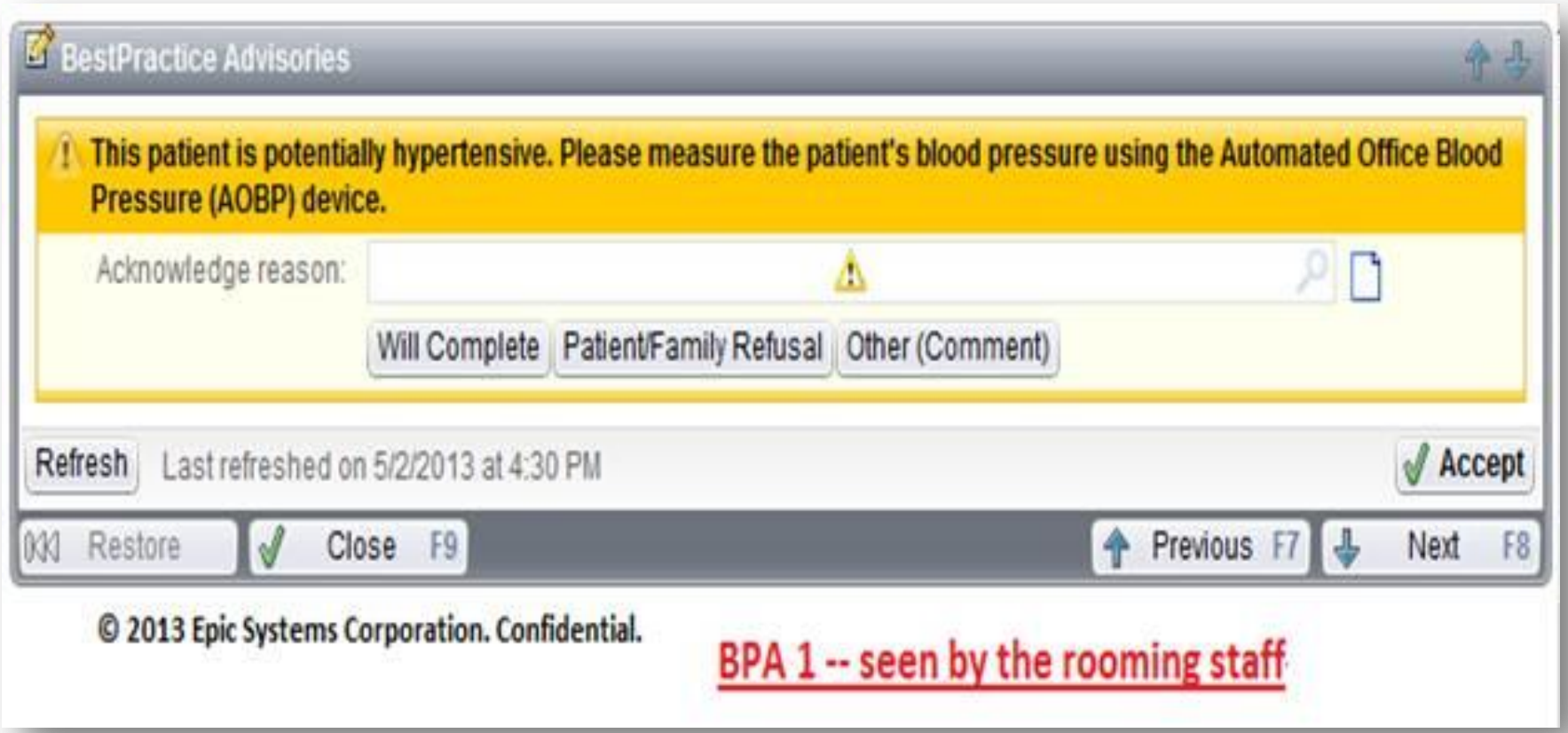
AOBP, Automated office blood pressure

If Patients Do Not Come in for AOBP Testing…

- Electronic "best practice advisory" alerts were created to fire at the point of care for patients who satisfy any of the NorthShore Hypertension Criteria
- These clinical decision support alerts fire in real time during office visits with primary care providers for both clinical staff and physicians

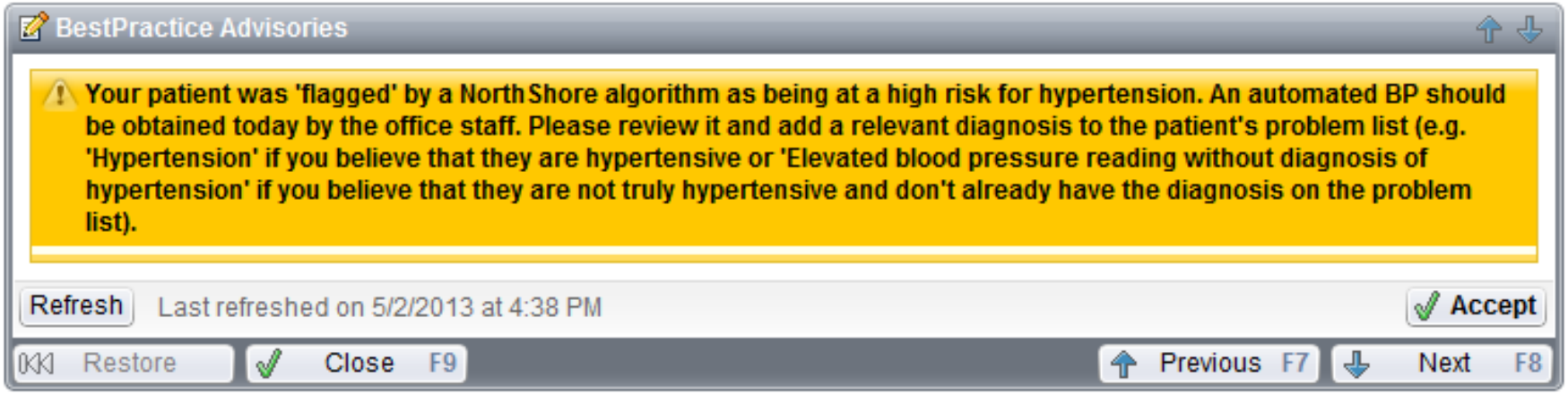
AOBP, Automated office blood pressure

Alerting the Clinical Staff to Measure the Patient's Blood Pressure Using the AOBP



AOBP, Automated office blood pressure

Informing the Physician that a Patient is Flagged by the NorthShore Hypertension Criteria



BPA 2-- seen by the MD

AOBP, Automated office blood pressure

Going "Live"
Results: January–August, 2012

- **435 previously undiagnosed and untreated patients were diagnosed with hypertension related to use of alerts and confirmatory AOBP readings**
- **For patients meeting any NorthShore Hypertension Criteria triggering recall to the office, 97%–98% now have a diagnosis in the electronic medical record**
- **Most of these newly diagnosed patients with hypertension have significant blood pressure elevations**
  - As a result, lifestyle modifications are recommended, and 94% of these patients are prescribed medication

AOBP, Automated office blood pressure

Lessons Learned

- **Screening for patients with undiagnosed hypertension using EHR data, combined with electronic alerts at the point of care is effective and can permanently eliminate the problem of undiagnosed hypertension patients "hiding in plain sight"**
- **Physician behavior can be impacted through**
  - Identification of a clinical problem
  - Clinical decision support tools
  - Nondisruptive workflows

EHR, Electronic health record

Looking Forward

- **EHRs and electronic screening can identify silent but clinically important conditions efficiently**
  - Hypertension, electrolyte abnormalities, diabetes, chronic kidney disease, hepatitis, hyperlipidemia, and hematologic abnormalities
- **72% of office-based physicians in the United States use EHR systems**
  - System like the NorthShore Hypertension Criteria and Alerts can be incorporated across all organizations using EHR

EHR, Electronic health records
CDC / NCHS, National Ambulatory Medical Care Survey, December 2012

What a Large Health System Can Do to Improve Hypertension Control

Peter Basch, MD, FACP

Medical Director, MedStar Million Hearts ®

Medical Director, Ambulatory EHR and Health IT Policy

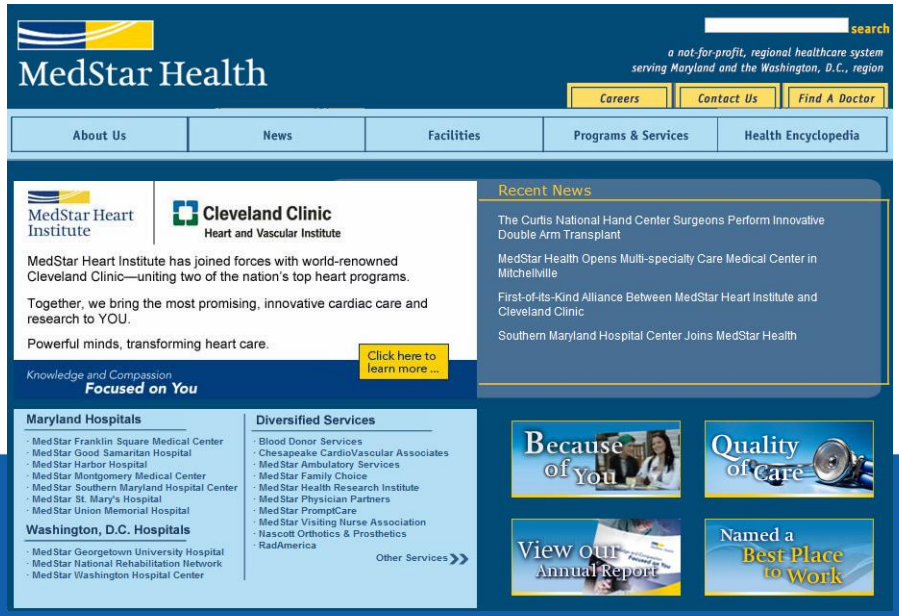
MedStar Health, Columbia, MD

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

MedStar Health: Largest Nonprofit Health System in the Maryland–Washington, DC Region

- **Components**
  - 1 research institute
  - 10 hospitals
  - 150 ambulatory sites
- **Staff**
  - 5,600 physicians
    - 1,500 employed
  - 30,000 associates
    - 7,000 nurses
    - 1,100 physicians in residency programs

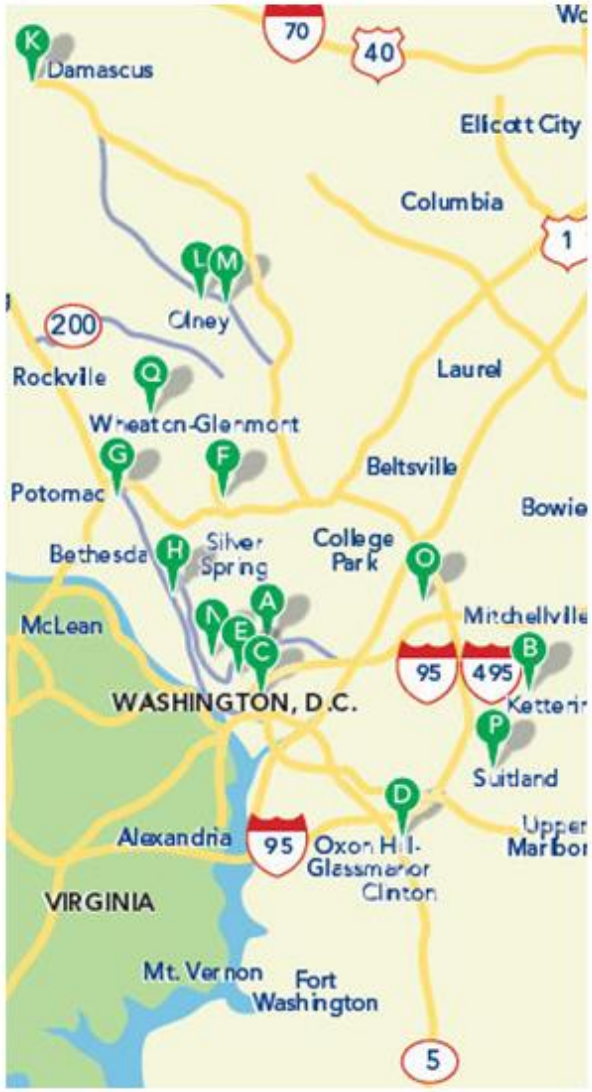
- **MedStar Health in 2012**
  - 160,000 admissions
  - 200,000 home health visits
  - 580,000 ED visits
  - ~1.5 million outpatient visits
    - ~0.5 million to primary care providers



ED, Emergency department

MedStar Health's Primary Care Network

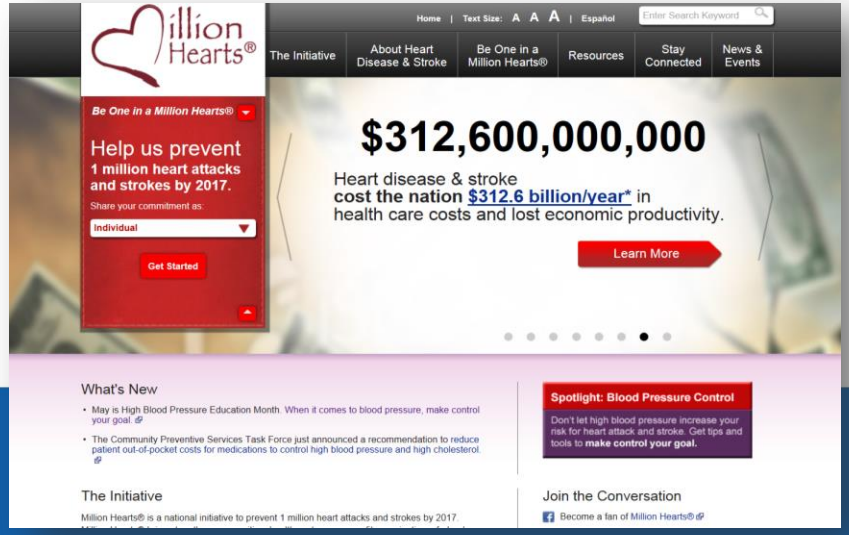
- **In 2012: 126,000 unique patients seen**
- **42 primary care locations**
- **162 primary care providers**
  - All using common guidelines for preventive and chronic care screening and management
  - All using the same EHR



EHR, Electronic health record

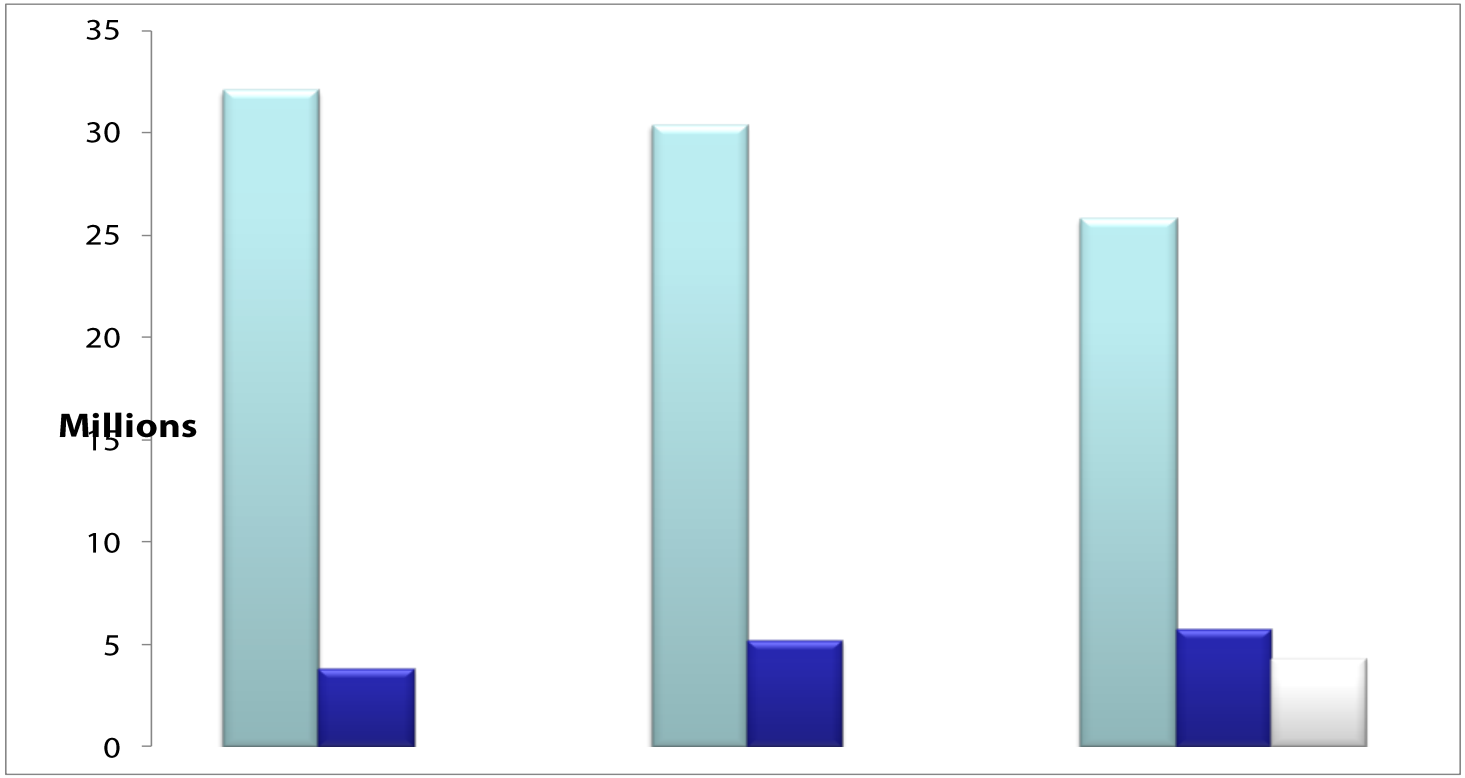
In 2012 MedStar Health Became the First Health System to Partner with Million Hearts®

- **A**spirin consistently recommended for those where benefits outweigh risks
- **B**lood pressure screening and treatment to goal
- **C**holesterol screening and treatment to goal
- **S**moking: Determine status for current smokers, aggressively counsel/treat towards quitting



http://millionhearts.hhs.gov/abouthds/prevention.html

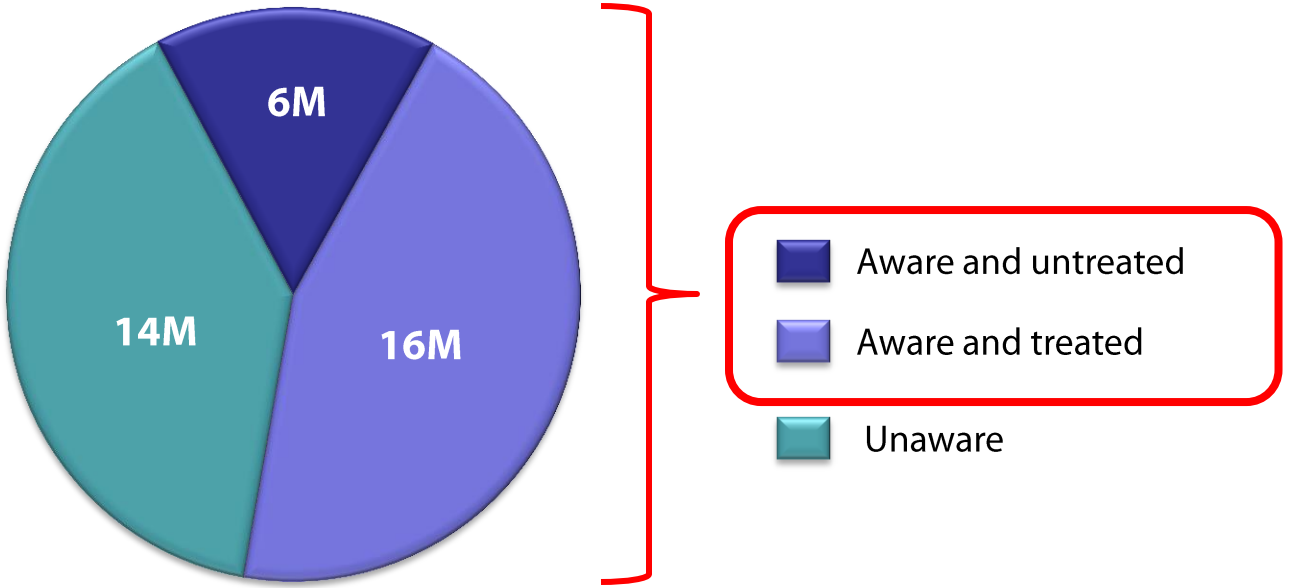
Most People With Uncontrolled Hypertension Are Insured and Are Receiving Regular Care



CDC. MWWR. 2012;61(35):703–9

Most People with Uncontrolled Hypertension Were Aware of their Condition

Awareness and treatment among adults with uncontrolled hypertension (millions)



CDC. MWWR. 2012;61(35):703–9

Blood Pressure Goals
One Size Does Not Fit All

- **Current JNC and other relevant specialty society recommended blood pressure goals (Endorsed by MedStar Health primary care providers)**
  - Hypertension <140/90
  - Diabetes <130/80
  - Chronic kidney disease <130/80
  - Proteinuria (>1 gm/day) <125/75
  - Stroke <120/80

JNC, Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure
http://www.nhlbi.nih.gov/guidelines/hypertension/express.pdf
http://www.kidney.org/professionals/kdoqi/guidelines_cvd/guide12.htm
http://stroke.ahajournals.org/content/early/2010/10/21/STR.0b013e3181f7d043.full.pdf

MedStar Health: Distribution of Blood Pressure Goals for Patients Seen by our PCPs in 2012

- **Of the 54,000 patients seen in 2012 with hypertension, diabetes, chronic kidney disease, proteinuria >1gm/day, or stroke**
  - 62.9% had hypertension alone; no relevant co-morbidities
    - Blood pressure goal is <140/90
  - 34% also had diabetes or kidney disease
    - Blood pressure goal is <130/80
  - ~2% also had stroke
    - Blood pressure goal is <120/80
  - ~1% also had proteinuria
    - Blood pressure goal is <125/75

MedStar Health Baseline: Screening and Individualized Goal Setting

Our Endorsed Guidelines	Performance
USPSTF blood pressure screening protocol ➢ Blood pressure taken at least once every 2 years	Exceeded guidelines Blood pressure measured for most adult patients at every visit
Individualized blood pressure goals per JNC and other guidelines ➢ Based on presence of additional diagnoses (such as diabetes, chronic kidney disease)	No blood pressure goals in EHR ➢ Providers not aware ➢ Patients not aware ➢ Absence of individualized blood pressure goal means we <u>cannot</u> determine if blood pressure is at goal

USPSTF, US Preventive Services Task Force
JNC, Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure
EHR, Electronic health record

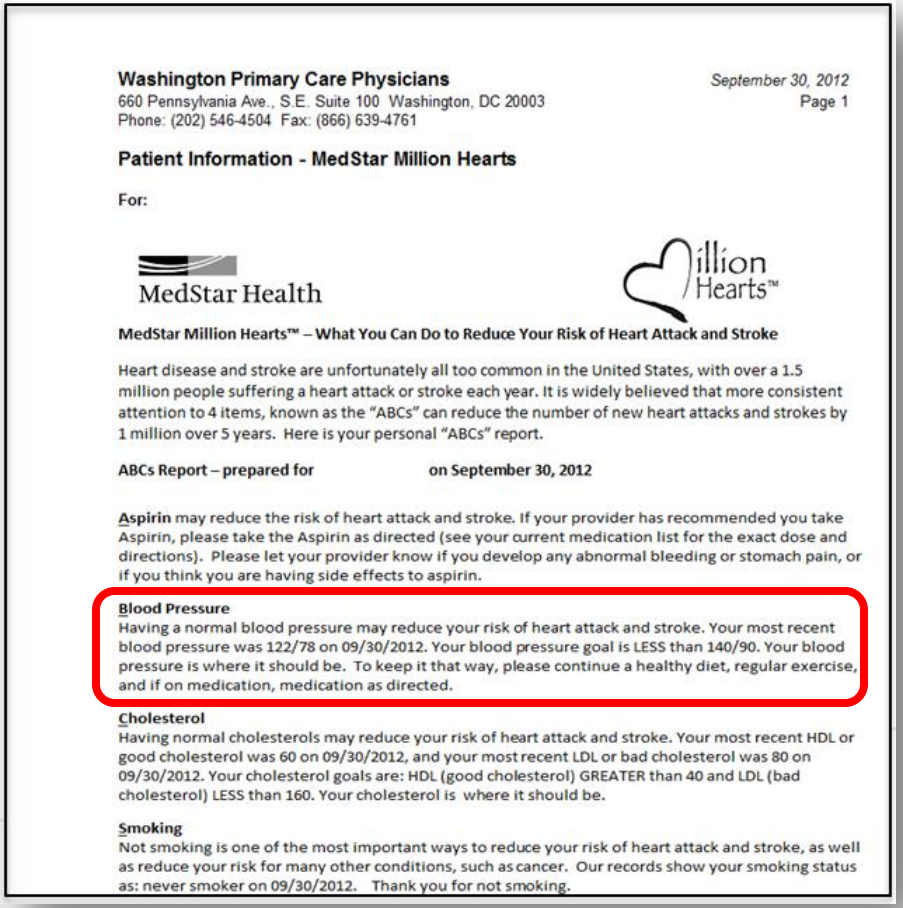
Making the EHR a Virtual Member of the Care Team

Automate BP Goal Setting and Increase Awareness of Provider and Patient when Blood Pressure Is not at Goal

- **Embed USPSTF screening guidelines and entity endorsed blood pressure goals into EHR as actionable and patient-specific guidance**
- **Prompting providers**
  - **ONLY when necessary**
    - If blood pressure not measured
    - Automate goal setting: When new diagnoses suggest blood pressure goal should be changed
  - **ALWAYS when blood pressure is not at goal**
    - Engage providers in decision making
    - Allow easy access to data on credible reasons why blood pressure may not be at goal for any particular visit
- **ALWAYS make patients aware of their blood pressure goal and whether or not they are at goal**

EHR, Electronic health record
BP, Blood pressure
USPSTF, United States Preventive Services Task Force

What Patients See



Washington Primary Care Physicians
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Phone: (202) 546-4504 Fax: (866) 639-4761

September 30, 2012
Page 1

Patient Information - MedStar Million Hearts

For:

MedStar Health

illion Hearts™

MedStar Million Hearts™ – What You Can Do to Reduce Your Risk of Heart Attack and Stroke

Heart disease and stroke are unfortunately all too common in the United States, with over a 1.5 million people suffering a heart attack or stroke each year. It is widely believed that more consistent attention to 4 items, known as the "ABCs" can reduce the number of new heart attacks and strokes by 1 million over 5 years. Here is your personal "ABCs" report.

ABCs Report – prepared for on September 30, 2012

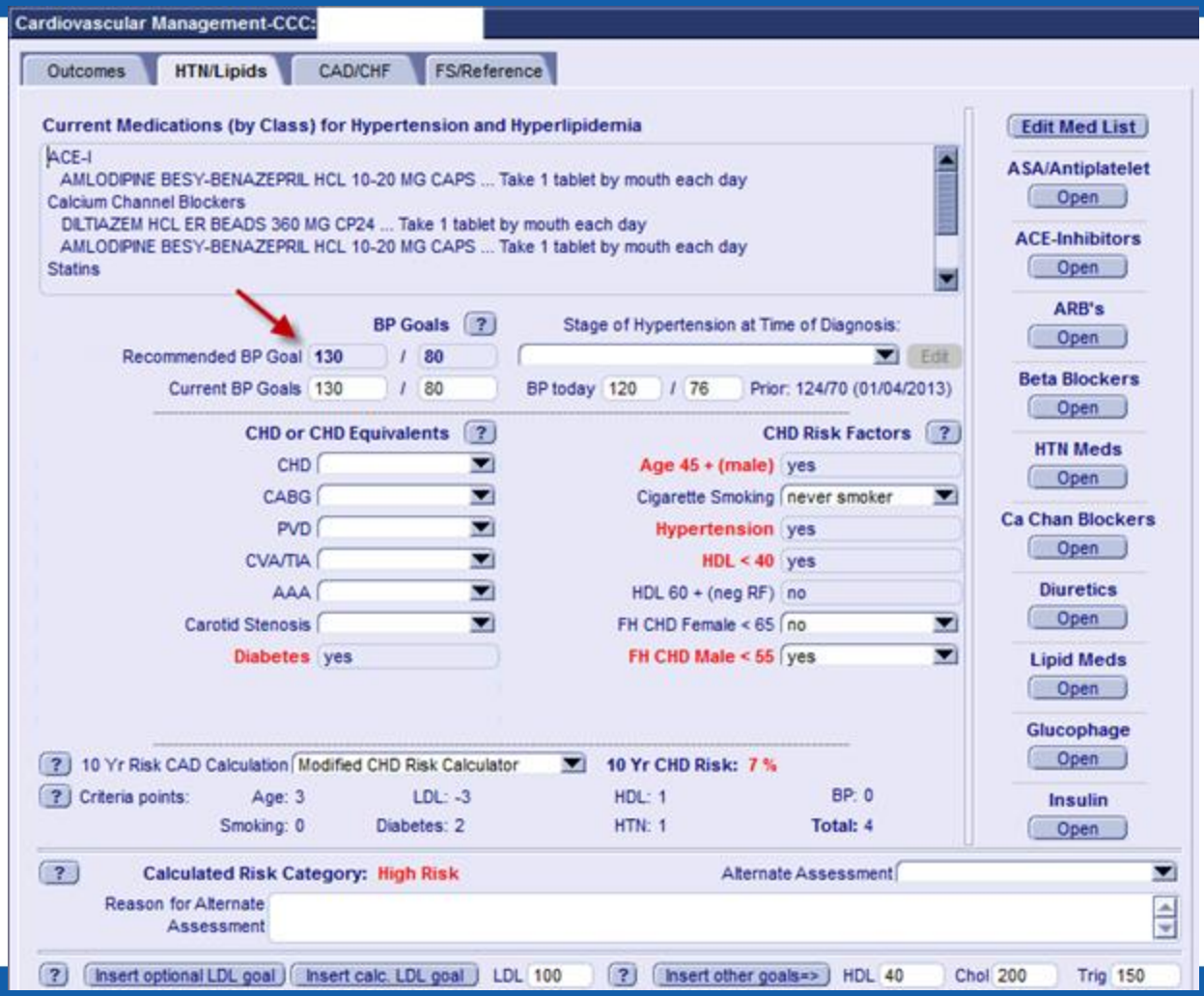
Aspirin may reduce the risk of heart attack and stroke. If your provider has recommended you take Aspirin, please take the Aspirin as directed (see your current medication list for the exact dose and directions). Please let your provider know if you develop any abnormal bleeding or stomach pain, or if you think you are having side effects to aspirin.

Blood Pressure
Having a normal blood pressure may reduce your risk of heart attack and stroke. Your most recent blood pressure was 122/78 on 09/30/2012. Your blood pressure goal is LESS than 140/90. Your blood pressure is where it should be. To keep it that way, please continue a healthy diet, regular exercise, and if on medication, medication as directed.

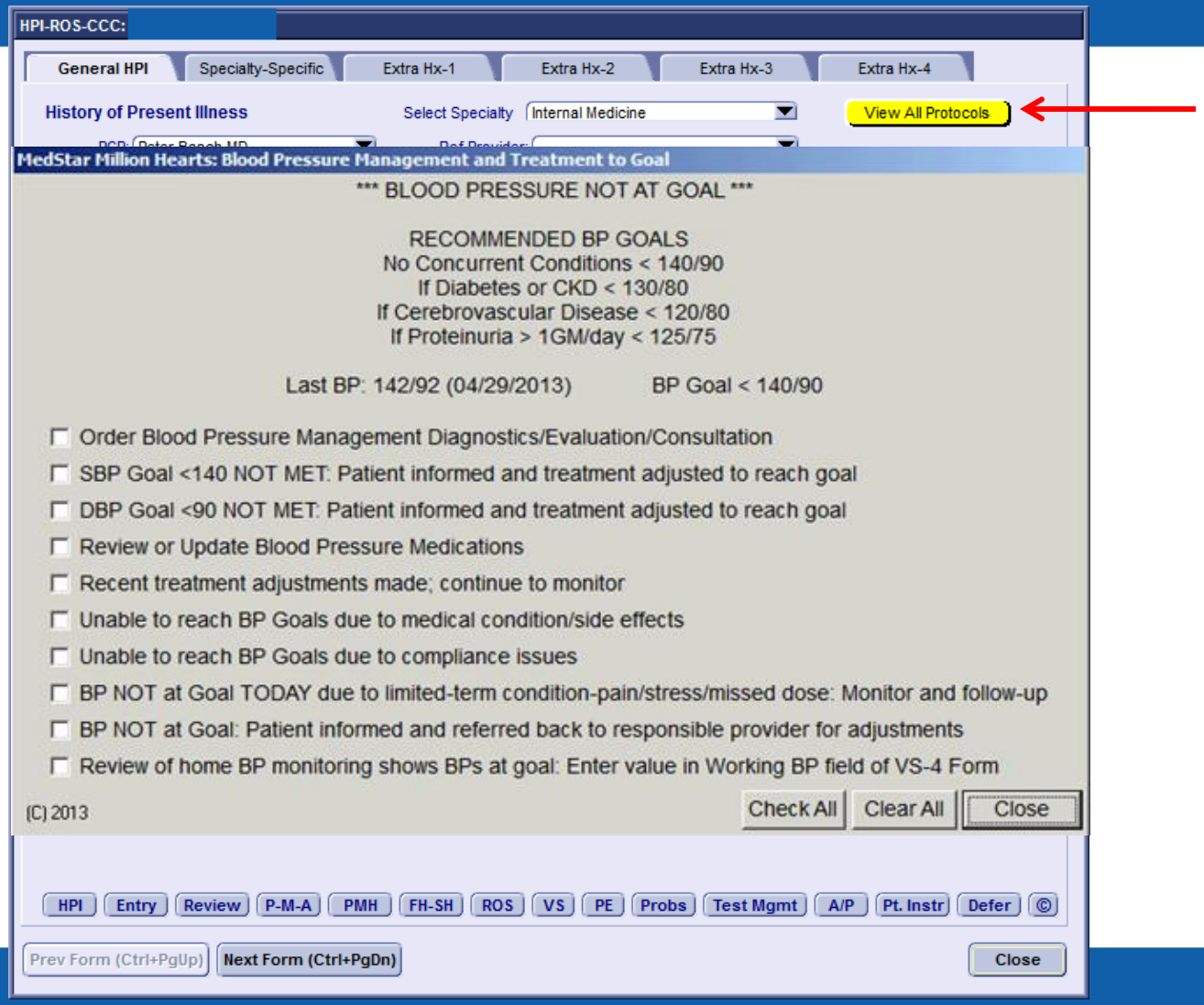
Cholesterol
Having normal cholesterols may reduce your risk of heart attack and stroke. Your most recent HDL or good cholesterol was 60 on 09/30/2012, and your most recent LDL or bad cholesterol was 80 on 09/30/2012. Your cholesterol goals are: HDL (good cholesterol) GREATER than 40 and LDL (bad cholesterol) LESS than 160. Your cholesterol is where it should be.

Smoking
Not smoking is one of the most important ways to reduce your risk of heart attack and stroke, as well as reduce your risk for many other conditions, such as cancer. Our records show your smoking status as: never smoker on 09/30/2012. Thank you for not smoking.

What Nobody Sees: In the Background "Smart" Form with Embedded Algorithms



What Our Primary Care Providers See



Early Reports for Blood Pressure Control
January, February 2013

# of Patients	% with BP	BP <140/90	% with BP goal defined	BP at goal
2,745	99.5	71.4	92.7	64.9
1,145	94.8	71.7	88.0	59.6
4,300	98.2	80.2	76.9	75.9
2,610	99.7	75.5	97.6	63.6
25,102	99.2	80.9	91.9	72.6
288	85.4	83.7	81.6	79.9
2,896	97.3	71.8	89.8	60.1
2,189	96.9	66.9	46.3	54.7
41,275	**98.0**	**78.2**	**88.5**	**70.8**

BP, Blood pressure

Summary

- **MedStar Health is a large health system managing >50,000 patients with hypertension**
  - Almost 40% of these patients have a blood pressure goal that is <140/90
- **Before the Million Hearts® partnership**
  - No setting of patient-specific blood pressure goals
  - No communication of goals and at-goal status to the patients
- **Focus on hypertension control: Results**
  - Leveraged EHR and Meaningful Use implementation and embed a highly useable yet sophisticated system to consistently
    - Create evidence-based goals
    - Show when a patient's status was not at goal
    - Communicate this information to the patients

While our clinicians are struggling like many to find Meaningful Use "meaningful" – they are fully committed to our Million Hearts® program, even though it adds complexity and time to their day

Public-Private Partnership on Hypertension
A Health Priority for Philadelphia

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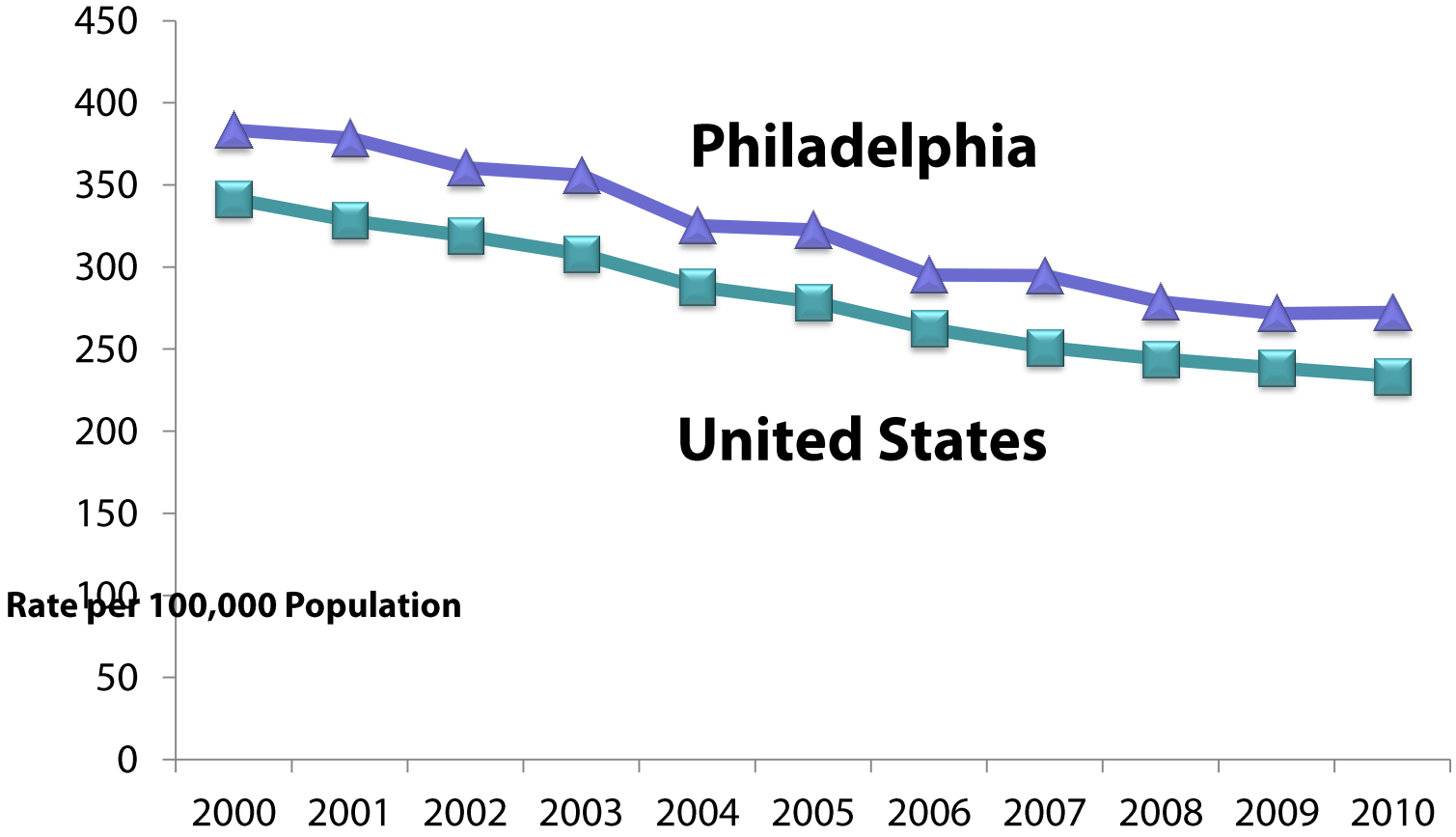
Philadelphia Department of Public Health

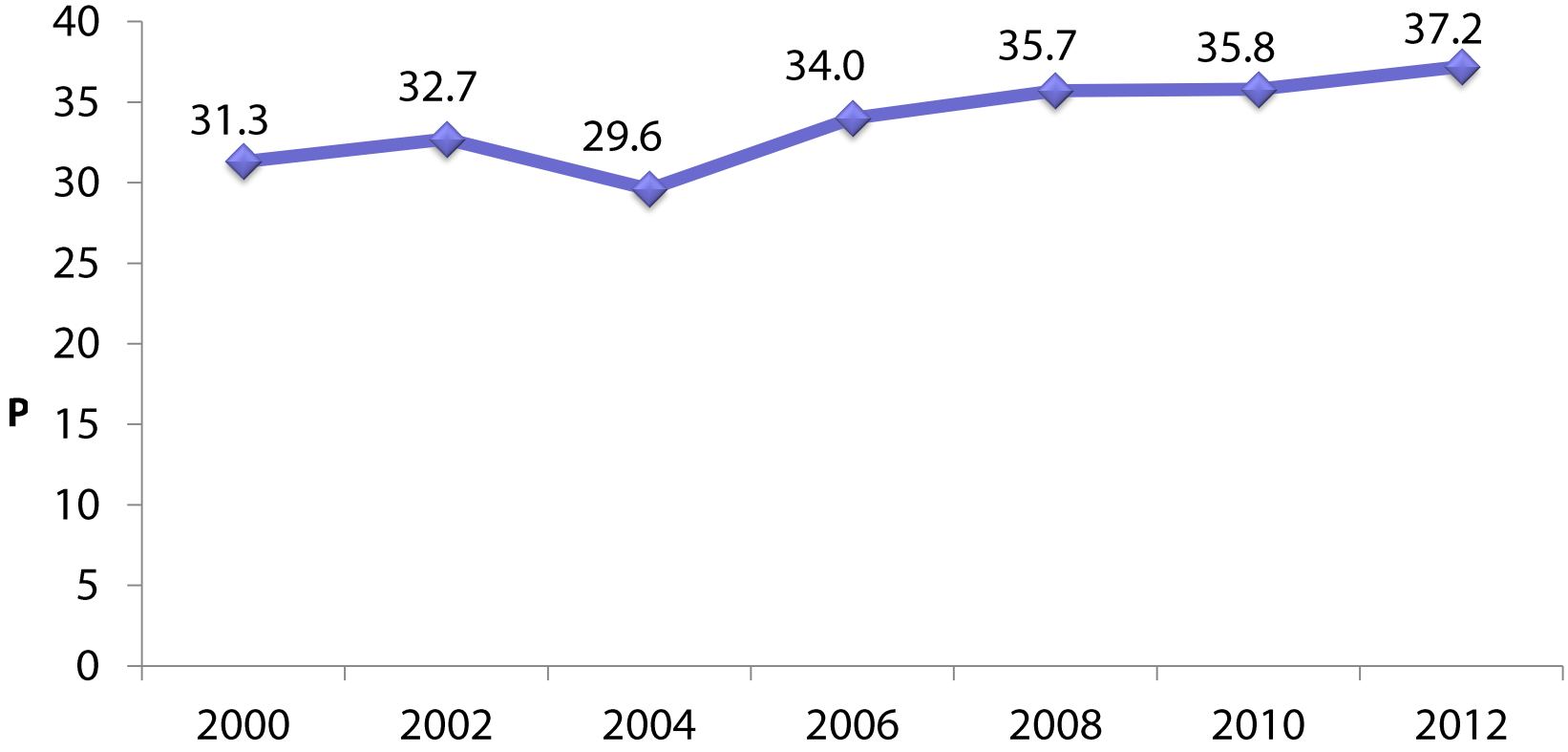
U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

Age-adjusted Cardiovascular Disease Mortality, United States and Philadelphia, 2000–2010



Philadelphia Department of Public Health Vital Statistics and CDC

Hypertension in Philadelphia Adults, 2000–2012



Public Health Management Corporation Household Survey, **2000–2012**

Philadelphia's Challenge

- **Health care environment dominated by larger players, intense competition, and fragmented health information sources**
- **Multiple players and factors in the mix**
  - 5 academic health centers, each with its own health system, clinics, hospitals, and EHR systems
  - Several large insurers dominate the market
  - Medicaid population under managed care and split among 4 companies that provide services under contract with the state Department of Public Welfare
  - Uninsured, many of whom find care at the city's >30 federally qualified health centers

EHR, Electronic health record

Addressing the Challenge

- **2010: PDPH awarded a CDC cooperative agreement**
- **One key goal: Improve public health data infrastructure**
- **Strategy: Gather, house, analyze and share more and better data related to three areas: Hypertension, cancer screening, and adult immunization**
- **Office of Health Information and Improvement within the Health Commissioner's Office established to implement the project**
  - Build the relationships
  - Secure the physical and data-related resources

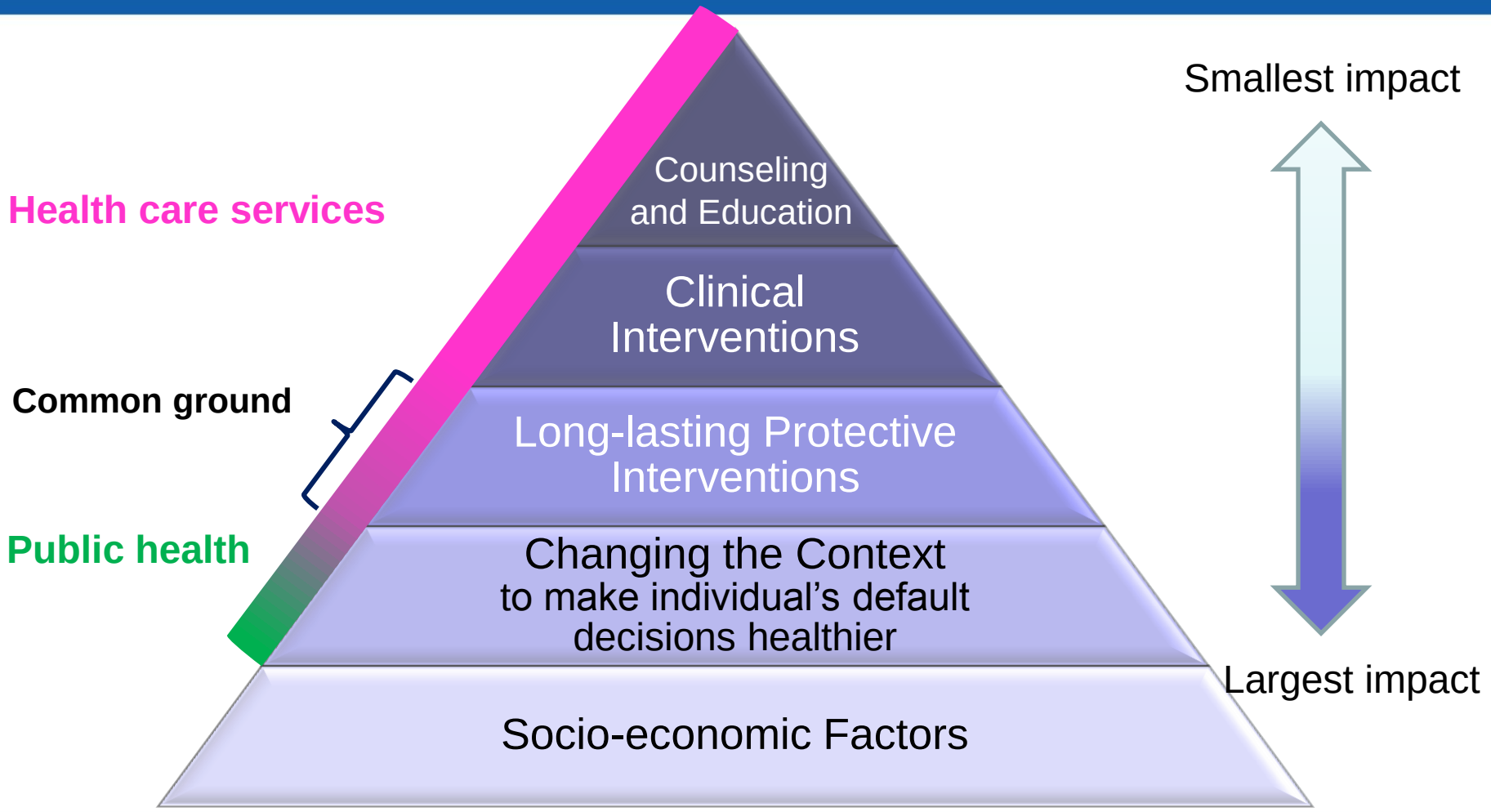
Building and Expanding Partnerships

- **Office of Health Information and Improvement has 2 Working Groups with broad representation**
  - State Department of Health
  - State Department of Public Welfare
  - Several Philadelphia Academic Health Systems including
    - 2 academic medical practices
    - 1 major policy institute representative
  - Private physician community
  - Community Health Promotion not-for-profit
  - Large Community Health Services not-for-profit
  - Federation of Philadelphia federally qualified health centers
  - Regional Hospital Association
  - National Association of Public Health Statistics and Information Systems

Developing Project Fundamentals Together

- **Collaborative approach**
  - Important to articulate and discuss the respective approaches of public health and clinical services to the problem of hypertension
- **Mutual understanding needed on chief points**
  - More and better data are needed, not just vital statistics
  - If all agree that hypertension is a problem that could be handled more effectively
    - Gather city-wide data related to prevalence and control
    - Share the information
    - Construct interventions and develop policies that complement an ongoing PDPH initiative

Impact Pyramid
Factors that Affect Health



Frieden TR. Am J Public Health 2010;100(4):590–5

Existing Initiative: Change the Environment to Make Healthy Choices Possible

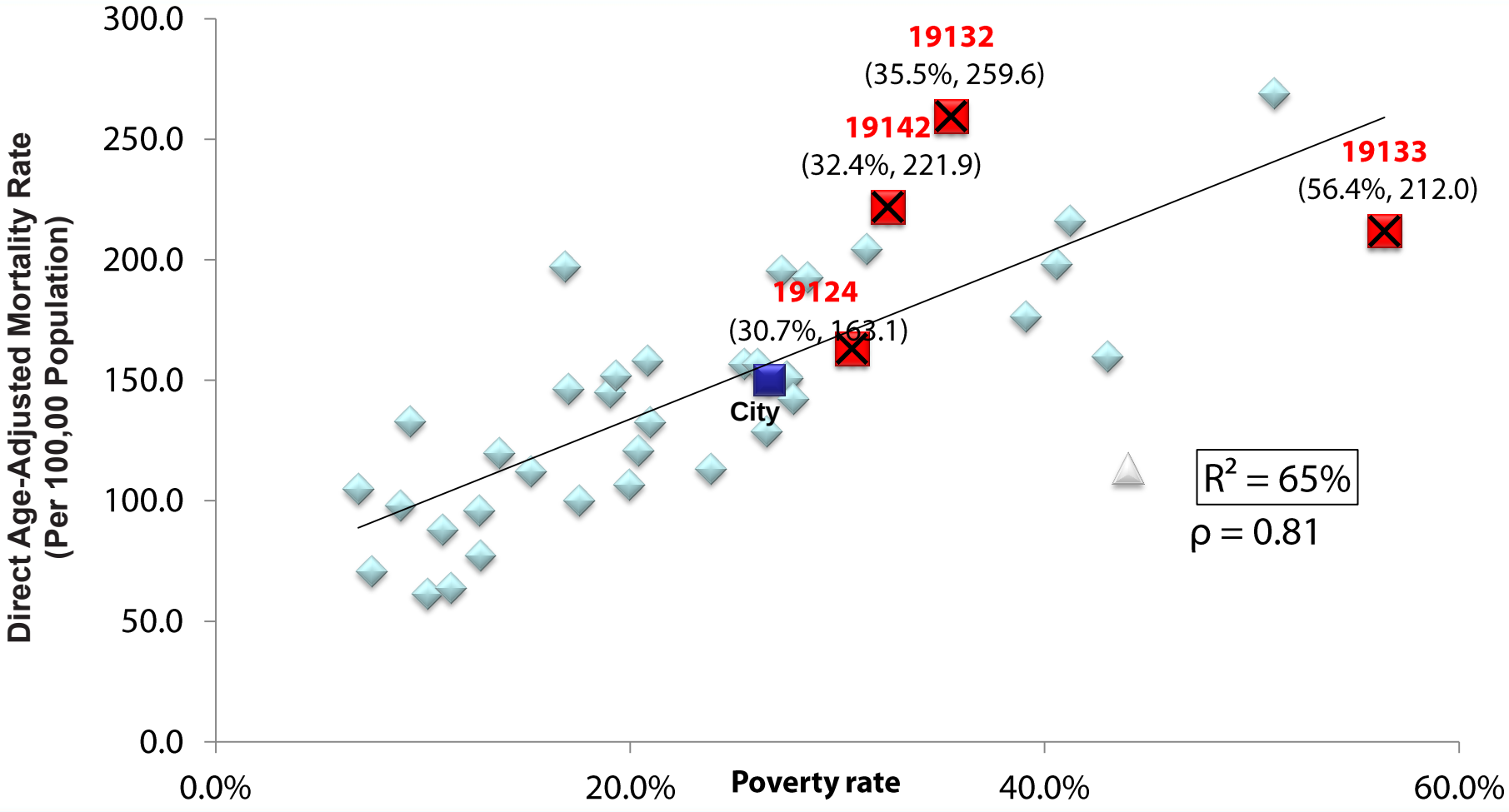
Get Healthy Philly

- Partnership effort with multiple sectors
- Turned >600 corner stores into healthy corner stores with fresh fruits and vegetables
- Increased the number of farmers markets with supplements for food stamps ("Philly Food Bucks") that allow the purchaser to get even more healthy food at no additional cost
- Expanded the mileage of the city's walking and biking paths
- Helps consumers who smoke to access resources that will help them to quit

http://www.phila.gov/health/Commissioner/CPPW.html

Philadelphia Rates of Premature Mortality due to Major Cardiovascular Disease

By Poverty Rate and Zip Code, 2005–2007



Sources of data include the PA Department of Health for 2005 - 2007 death records and the American Community Survey for the 2010 poverty rate. The y-axis in all cases is the direct age-adjusted mortality rate in 18-64 year-olds per 100,000 population. Charts depict zip codes with ≥ 20 deaths in the age group. The "X" markings denote the focus zip codes. Citywide data have been shown for comparison purposes.

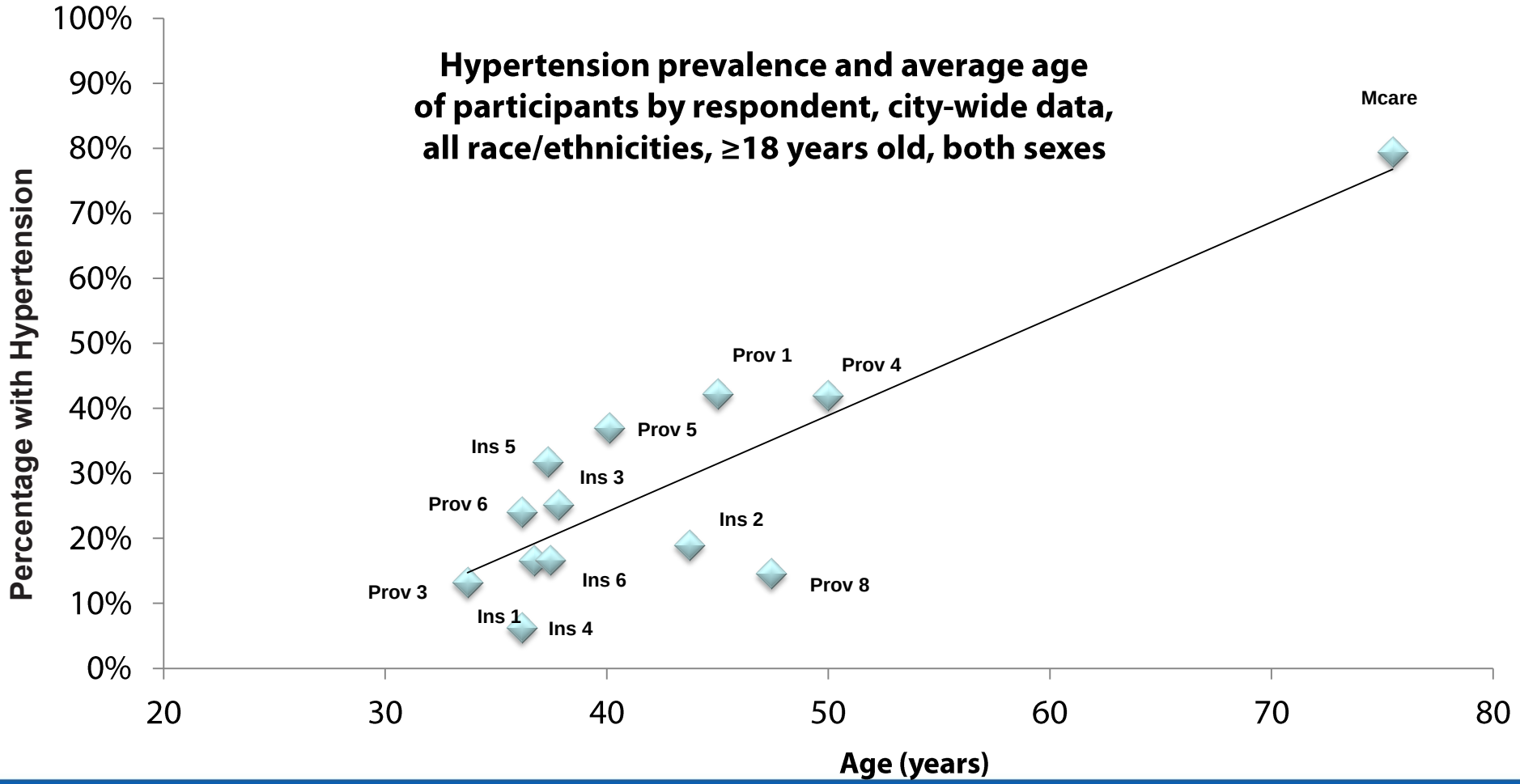
Data Request to Partners

- **De-identified aggregated data**
  - Total population (age, sex, race/ethnicity and insurance type)
  - People with hypertension (ICD-9 codes)
  - People with hypertension under control (<140/80)
- **Excellent response from partners**
  - Some gaps in data on control of hypertension
  - Complete data on age-related correlation for prevalence
  - Continuing to gather data to fill out the prevalence picture

Initial Results
Success with Gaps

- **Insurer data: 585,922 of adults ≥18 years old (~50%)**
  - Overall population
    - 24.2%: Hypertension prevalence
    - Blood pressure controlled: 35.4–62.5% (including Medicare)
  - Medicare population alone
    - 79.5%: Hypertension prevalence
    - Blood pressure controlled: 62.5%
- **Provider data: 355,057 adults ≥18 years old (~30%)**
    - 17.1%: Hypertension prevalence
    - Blood pressure controlled: 42.1–65.7%
- **For target ZIP codes, ZIP code-level information from some insurers and providers was available**

Hypertension in Philadelphia, 2011



Data have not been age-adjusted

Next Steps

- **Refine the picture**
  - Analysis of incidence of hypertension is ongoing using hospital discharge data (Pennsylvania Health Care Cost Containment Council database)
- **Continue with data collection**
  - Solicit updated data from partners
  - Mine additional datasets
    - United States Renal Data System
    - Medicaid database: Emphasis on vulnerable populations
- **Bring additional partners to the table**
- **Shared perspectives ⟶ collaborative action plan**

Summary
Hypertension in the United States

Leading risk factor for cardiovascular disease and a significant cause of morbidity and mortality

- 348,000 deaths in 2008 include hypertension as primary or contributing cause
- $47.5 billion annually in direct medical expenses

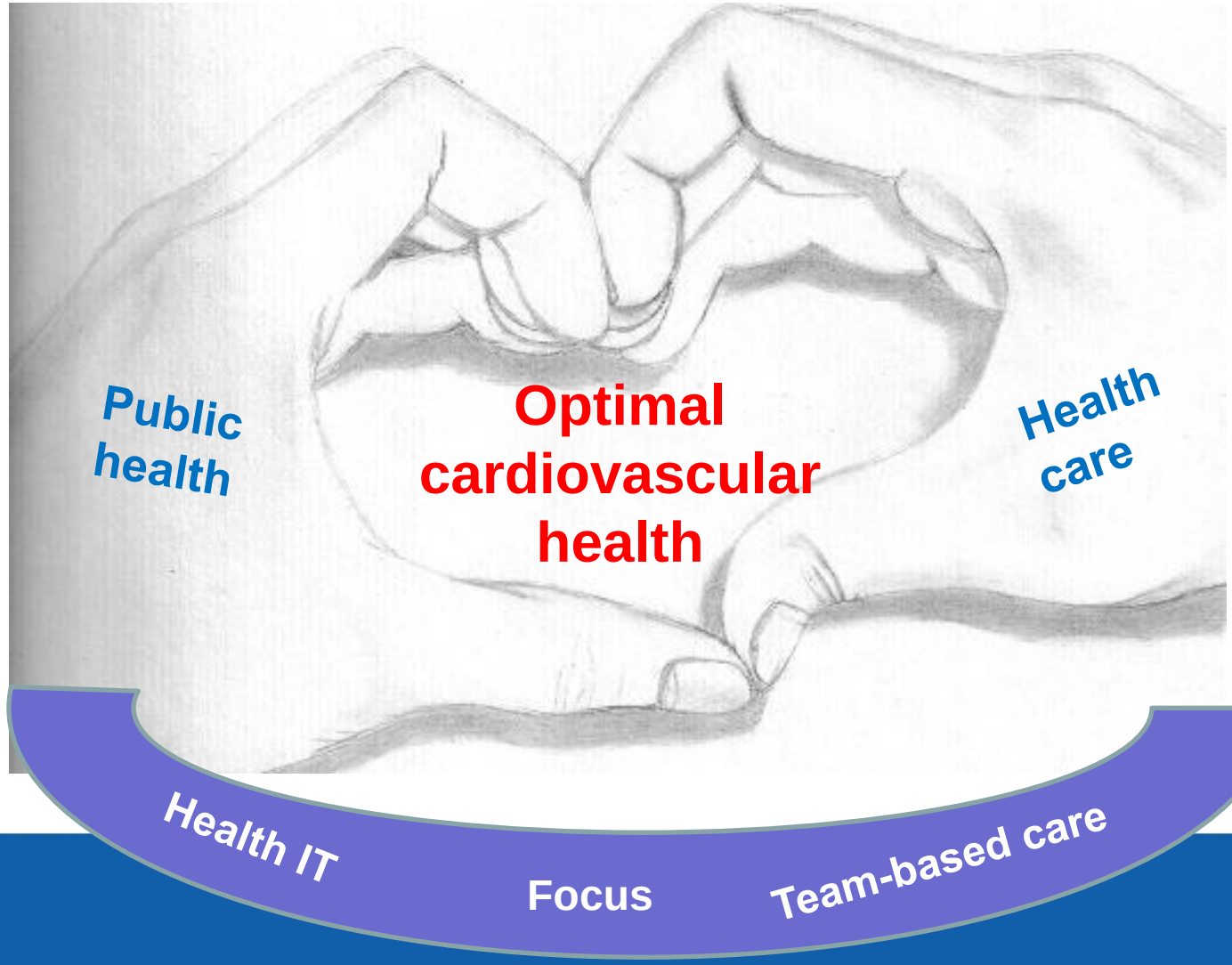
Each year cardiovascular disease causes 1 of every 3 deaths

- >1.5 million heart attacks and strokes and 800,000 deaths
- $312.6 billion in health care costs and lost productivity

Public Health and Health Care
Getting the Collaboration Right

Lessons learned

- Share the data
- Set a common goal
- Monitor progress
- Celebrate success



Way Forward

Leave no one uninformed

Leave no one undetected

Leave no one unprotected