



## San Francisco Department of Health



### Black/African American Health Initiative

Thursday, May 23, 2014

25 Van Ness, Room 610

#### Agenda

- |                 |  |
|-----------------|--|
| 11:00 – 11:10am | Getting to know you  |
| 11:10 – 11:30am | Review Black/African American Health Initiative Framework  |
| 11:30 – 12:30pm | Exercise to identify contributing factors to Heart Health  |
| 12:30 – 12:50pm | Million Hearts Campaign <ul style="list-style-type: none"><li>- World Heart Day (September)</li><li>- Heart Disease Month (February)</li></ul> |
| 12:50 – 1:00pm  | Next Steps   |

*Protecting and Promoting Health & Equity*



## PHD Result and Headline Indicators

**POPULATION:** San Francisco’s vulnerable populations

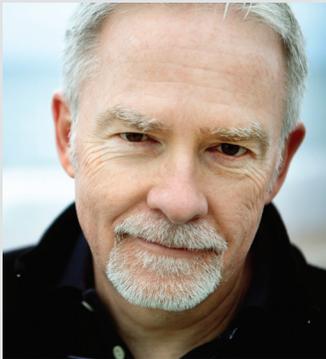
**RESULT STATEMENT:** San Franciscans have optimal health and wellness at every stage in life

FOCUS AREA	HEADLINE INDICATOR
 <b>Safe and Healthy Living Environments (CHIP)</b>	<ul style="list-style-type: none"> <li>• Percent exposed to air pollution</li> <li>• Percent of adults who smoke</li> <li>• Number of severe pedestrian injuries and deaths</li> </ul>
 <b>Healthy Eating and Physical Activity (CHIP)</b>	<ul style="list-style-type: none"> <li>• Percent of residents who have food security (resource, access, consumption)</li> <li>• Percent of residents who maintain a healthy weight</li> <li>• Percent of residents who have adequate physical activity</li> </ul>
 <b>Access to Quality Care and Services (CHIP)</b>	<ul style="list-style-type: none"> <li>• Percent of San Francisco residents enrolled in either health insurance or Healthy San Francisco</li> </ul>
 <b>Black/African American Health</b>	<ul style="list-style-type: none"> <li>• Percent of Blacks/African Americans with heart disease</li> <li>• Mortality rate of Black/African American women with breast cancer</li> <li>• Rates of Chlamydia among young Black/African American women</li> <li>• Mortality rates among Black/African American men due to alcohol</li> </ul>
 <b>Mother, Child, &amp; Adolescent Health</b>	<ul style="list-style-type: none"> <li>• Percent of pre-term infants</li> <li>• Rate of substantiated child maltreatment</li> <li>• Proportion of children with healthy teeth (annual dental visit and no caries)</li> </ul>
 <b>Health for people at risk or living with HIV</b>	<ul style="list-style-type: none"> <li>• Number of new HIV infections</li> <li>• Percent of newly diagnosed with HIV who receive care</li> <li>• Percent of HIV infected who are virally suppressed</li> </ul>



# Be one in a MILLION HEARTS™

Preventing 1 million heart attacks and strokes over 5 years



## Cardiovascular Disease in the U.S.

Cardiovascular disease, a broad term for all diseases that affect the heart or blood vessels, includes heart attack and stroke as well as conditions such as high blood pressure, coronary artery disease, and aortic aneurism.

- Together, heart disease and stroke are among the most widespread and costly health problems facing the nation today, accounting for more than \$444 billion in health care expenditures and lost productivity in 2010 alone.
- Many major risk factors—including blood pressure, cholesterol, smoking, and obesity—are controllable, and there are many important ways to lower risk of cardiovascular disease.

## About

Million Hearts™ is a national initiative to prevent 1 million heart attacks and strokes in the U.S. over the next 5 years. Launched by the Department of Health and Human Services (HHS) in September 2011, it aligns existing efforts, as well as creates new programs, to improve health across communities and help Americans live longer, more productive lives. The Centers for Disease Control and Prevention (CDC) and Centers for Medicare & Medicaid Services (CMS), co-leaders of Million Hearts™ within HHS, are working alongside other federal agencies and private-sector organizations to make a long-lasting impact against cardiovascular disease.

## The Issue

Heart disease and stroke are the first and fourth leading causes of death in the United States, making cardiovascular disease responsible for 1 of every 3 deaths in the country. Americans suffer more than 2 million heart attacks and strokes each year, and everyday, 2,200 people die from cardiovascular disease. Further, heart disease and stroke are among the leading causes of disability in our country, with more than 3 million people reporting serious illness and decreased quality of life.

## Our Goals

Preventing 1 million heart attacks and strokes by 2017:

- **Empowering Americans to make healthy choices** such as preventing tobacco use and reducing sodium and trans fat consumption. This can help reduce the number of people who need medical treatment such as blood pressure or cholesterol medications to prevent heart attacks and strokes.

- **Improving care** for people who do need treatment by encouraging a targeted focus on the “**ABCS**”—**A**spirin for people at risk, **B**lood pressure control, **C**holesterol management and **S**moking cessation—which address the major risk factors for cardiovascular disease and can help to prevent heart attacks and strokes.

## Our Support

Million Hearts™ is a public-private initiative that involves multiple federal agencies and key private organizations, including the American Heart Association, the American Pharmacists' Association, the YMCA, Walgreens, and UnitedHealthCare, among others. Over the course of its 5-year lifetime, Million Hearts™ hopes to secure commitment and participation from many more partners in health care, public health, industry, and government.

Collectively, these partnerships will help Million Hearts™ leverage and advance existing investments in cardiovascular disease prevention.



### Examples of Million Hearts™ activities:

- Educational campaigns to increase awareness about heart disease prevention and empower patients to take control of their heart health.
- Use of health information technology and quality improvement initiatives to standardize and improve the delivery of care for high blood pressure and high cholesterol.
- Community efforts to promote smoke-free air policies and reduce sodium in the food supply.



## Benchmarks for Success

Indicator	Baseline	2017 goal
Aspirin use for people at high risk	47%	65%
Blood pressure control	46%	65%
Effective treatment of high cholesterol (LDL-C)	33%	65%
Smoking prevalence	19%	17%
Sodium intake (average)	3.5g/day	20% reduction
Artificial trans fat consumption (average)	1% of calories/day	50% reduction

### How To Be One in a Million Hearts™

Preventing 1 million heart attacks and strokes in the next 5 years will require commitment from everyone—health care providers, pharmacies, hospitals, employers, communities, and individuals too. There are steps that each person can take to help the nation reach this goal. Million Hearts™ is asking Americans to sign the Million Hearts™ pledge at [millionhearts.hhs.gov](http://millionhearts.hhs.gov) and make a commitment to:

- **PREVENT** heart disease and stroke in your families by **UNDERSTANDING** the risks.
- **GET UP** and **GET ACTIVE** by exercising for 30 minutes several days a week.
- **KNOW** your **ABCS**:
  - Appropriate **A**spirin Therapy
  - **B**lood Pressure Control
  - **C**holesterol Management
  - **S**moking Cessation

- **STAY STRONG** by eating a heart-healthy diet that is high in fresh fruits and vegetables and low in sodium, saturated and trans fats, and cholesterol.
- **TAKE CONTROL** of your heart health by following your doctor’s instructions for medications and treatment.

Visit [millionhearts.hhs.gov](http://millionhearts.hhs.gov) for more information about the Million Hearts™ initiative.



## Stay connected

 [facebook.com/millionhearts](https://facebook.com/millionhearts)

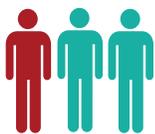
 [twitter.com/@millionheartsus](https://twitter.com/@millionheartsus)

# Million Hearts®

Begins with You

WORKING TOGETHER TO PREVENT  
**ONE MILLION**  
HEART ATTACKS AND STROKES

**1** of every **3**  
deaths is caused by  
heart disease and stroke



Health care costs  
for heart attack  
and stroke:  
**\$312.6**  
**BILLION**



Leading cause of  
**PREVENTABLE**  
**DEATH**  
in people 40–65  
years of age



**2 MILLION+**  
heart attacks and  
strokes each year

To prevent 1 million heart attacks and strokes, health care professionals and public health workers should do what we know works:

## FOCUS ON THE ABCS

- A**spirin when appropriate
- B**lood pressure control
- C**holesterol management
- S**moking cessation

## USE HEALTH IT

Use **electronic** health records and other health IT to identify patients who need support to improve their ABCS and then track their progress over time.

## USE TEAM-BASED CARE

- Use clinical innovations, including:
- ♥ Use everyone who interacts with patients to the top of their skills and license
  - ♥ Self-measured blood pressure monitoring with clinical support
  - ♥ Reward and recognize excellence in the ABCS

By doing what we know works, health care professionals, health care systems, and public health organizations can help prevent 1,000,000 heart attacks and strokes and **meet these goals by 2017:**

47% to **70%**  
increase in aspirin  
use for secondary  
prevention

46% to **70%**  
increase in blood  
pressure control

33% to **70%**  
increase in  
cholesterol  
management

23% to **70%**  
increase in help  
for those who want  
to quit smoking

**20%**  
reduction  
in sodium  
consumption

**50%**  
reduction  
in trans fat  
consumption

\* For more information on effectiveness of team-based care, visit:  
[www.thecommunityguide.org/cvd/teambasedcare.html](http://www.thecommunityguide.org/cvd/teambasedcare.html)

[www.cdc.gov/media/dpk/2013/dpk\\_13\\_in\\_2013.html](http://www.cdc.gov/media/dpk/2013/dpk_13_in_2013.html)  
[www.millionhearts.hhs.gov](http://www.millionhearts.hhs.gov)



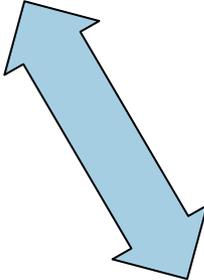
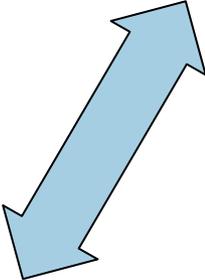
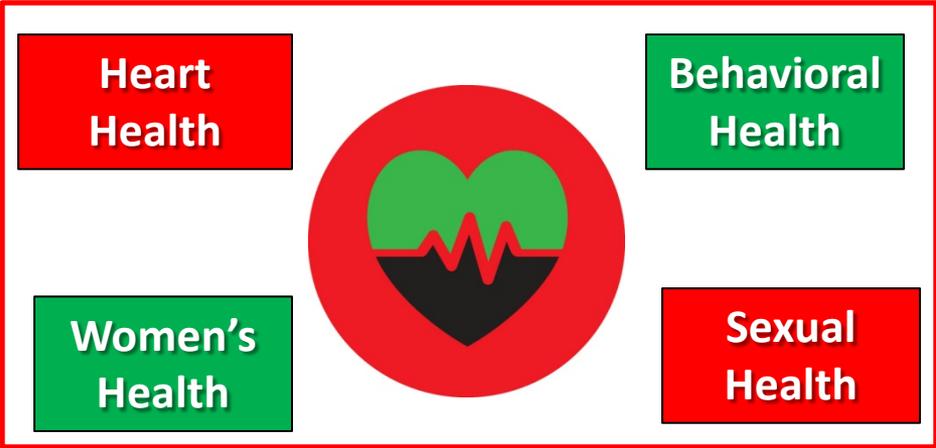
U.S. Department of  
Health and Human Services  
Centers for Disease  
Control and Prevention

# Black/African American Health Initiative Framework

Internal DPH

External Health Outcomes

Cultural Humility



Collective Impact  
(Alignment and  
Accountability)



Workforce  
Development



## Focus Area: Black/African American Health

Black/African Americans have been a part of San Francisco (SF) since the Gold Rush. William Leidesdorff, a Caribbean immigrant of African and Danish heritage, was the captain of the first steamship to enter SF harbor and later served as the City's Treasurer, becoming a significant civic leader. The Black population experienced significant growth from the Gold Rush through the 1970's. World War II increased the City's Black population. Many Black/African Americans came as part of the Great Western Migration, when a portion of the 5 million or more people who moved from the South, came to California and other western states. Many African Americans settled in the Fillmore District and most started in housing especially built to accommodate folks working in the Hunters Point Naval Shipyard, and other shipyards in the area.

In the 1950s, SF went through a large scale redevelopment and many Black residents were forced to move from their homes in the Fillmore to newly constructed projects in the Western Addition or to existing public housing that had been converted after the US Department of Defense gave its excess housing to the city. Many were forced to move to other cities such as Oakland. The out-migration of Black residents continues to occur. San Francisco's Black population was 78,931 in 1990, according to the U.S. Census Bureau. By 2010, it had declined to 50,768, a 35.7 percent decrease, comprising just 6.3 percent of The City's population of 805,235. While Black/African-Americans make up a little more than 6% of the population; data continues to show disparities in their health status. The SFDPH is committed to improving health amongst our Black residents. The department has selected four priority areas to focus on through this strategic plan.

Priority Areas Black/African American Health	
<b>Heart Health</b>	The department will work with the community and partners to tailor a campaign to increase awareness about heart disease prevention and empower Black residents to take control of their heart health. The department will also use quality improvement activities to standardize the delivery of care for patients with high blood pressure.
<b>Behavioral Health</b>	Through the integration of behavioral health and primary care and through partnerships with Community Providers, the department will address the mental wellbeing among Black male patients and develop strategies to decrease the misuse of alcohol.
<b>Women's Health</b>	The department is committed to advancing Black women's health in SF. The efforts will begin by supporting efforts to decrease the time between diagnosis and treatment and increasing efforts to ensure that women who are diagnosed with breast cancer achieve optimal health outcomes.
<b>Sexual health</b>	This priority areas will focus on increasing good reproductive and sexual health for young Black females, including good communication about sex, decrease rates of STDs, increase rates of condom use with culturally-specific sexual health programs and services.

This Strategic Plan identifies four headline indicators that will be used to measure progress in optimizing the health of the Black residents of SF. The next phase of the process will be to work with the department's San Francisco Health Network to review all of the current efforts and work together to develop common performance measures and strategies that aim to improve the quality of life in the Black/African American communities of San Francisco.

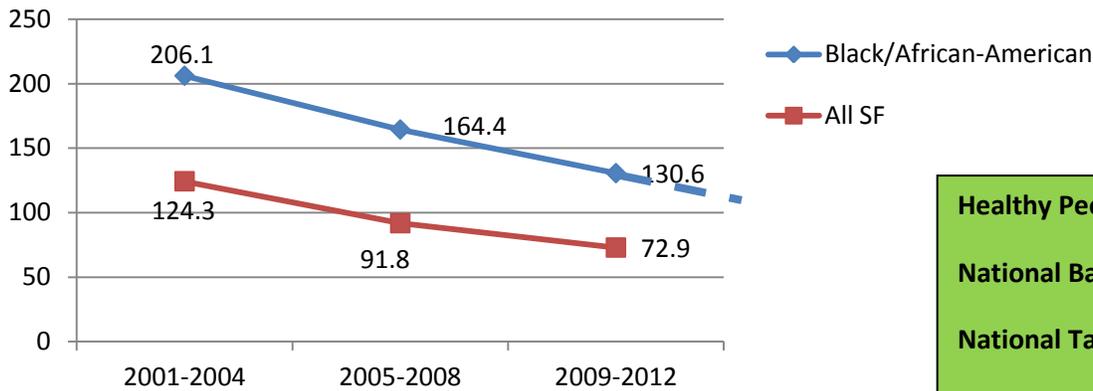
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## Headline Indicator: Percent of Blacks/African Americans with heart disease

### BASELINE CURVE

Black/African American and San Francisco Ischemic Heart Disease Rate, per 100,000 population



**Healthy People 2020:**

**National Baseline: 120.6**

**National Target: 100.8**

### STORY BEHIND THE BASELINE

As the result of better medical interventions, including support to decrease smoking and increase screening of cholesterol, hypertension (also known as high blood pressure), and universal access to care in San Francisco, there has been improvement overall. However, a great disparity remains for Black/African American San Franciscans. The trend may continue to go down, however it is unclear whether it is a result of better care or the significant out-migration of Black residents over the last 15 years, which might account for some of the changes seen in the data. However, the disparities in health remain at least double for all indicators. In a study published in 2008, heart disease is still the leading cause of premature death among Black/African American males in SF.

Black/African Americans have about a one-in-100 chance of developing heart failure while still in their 30s or 40s, a far higher rate than in whites. According to a longitudinal study that corroborates some differences between the races long observed in cross-sectional analyses, Black/African Americans' risk of heart failure at that age is closely tied to whether they have been diagnosed with hypertension, obesity, or renal dysfunction earlier in adulthood. One study showed that the precursors of heart failure are present when individuals are in their 20s. An elevated blood pressure and higher body-mass index were strongly associated with developing heart failure two decades later, when the individuals were in their 40s.

High blood pressure, obesity and diabetes are the most common conditions that increase the risk of heart disease and stroke. Studies have consistently reported a higher prevalence of hypertension in blacks than in whites, a main reason for the higher incidence of cardiovascular disease in blacks. Research suggests Black/African-Americans may carry a gene that makes them more salt sensitive, increasing the risk of high blood pressure. A higher sensitivity to alcohol could be added to that list.

Ischemic Heart Disease (Coronary Artery Disease) is the leading cause of death in the United States, affecting over 5 million Americans. It is a narrowing of the coronary arteries, the vessels that supply blood to the heart muscle, generally due to the buildup of plaques in the arterial walls, a process known as atherosclerosis. Plaques are composed of cholesterol-rich fatty deposits, collagen, other proteins, and excess smooth muscle cells.

Black/African-Americans are disproportionately affected by obesity. To assess differences in prevalence of obesity among blacks, whites, and Latino, in 2009, CDC analyzed data from Behavioral Risk Factor Surveillance System (BRFSS) surveys conducted during 2006--2008. Overall, for the 3-year period, blacks (35.7%) had 51% greater prevalence of obesity, and Latinos (28.7%) had 21% greater prevalence, when compared with whites (23.7%). Black/African Americans are twice as likely to be diagnosed with diabetes as whites. In addition, blacks are more likely to suffer complications from diabetes, such as end-stage renal disease and lower extremity amputations. Although Black/African Americans have the same or lower rate of high cholesterol as their non-Hispanic white counterparts, they are more likely to have high blood pressure.

## **WHAT WORKS**

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- Quality improvement strategies for hypertension management: a systematic review.
- The effectiveness of urban design and land use and transport policies and practices to increase physical activity: a systematic review.
- Recommendations to increase physical activity in communities.
- Obesity Prevention and Control: Technology-Supported Multicomponent Coaching or Counseling Interventions to Reduce Weight and Maintain Weight Loss.

## **PARTNERS**

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- San Francisco Health Network, Primary Care, Behavioral Health Services, Jail Health Services and Programs for Youth
- Community Based Organizations who provide services to Black/African Americans
- Colleges and Universities
- Churches and Religious Organizations
- Community (to participate and identify strategies)

## **STRATEGIES**

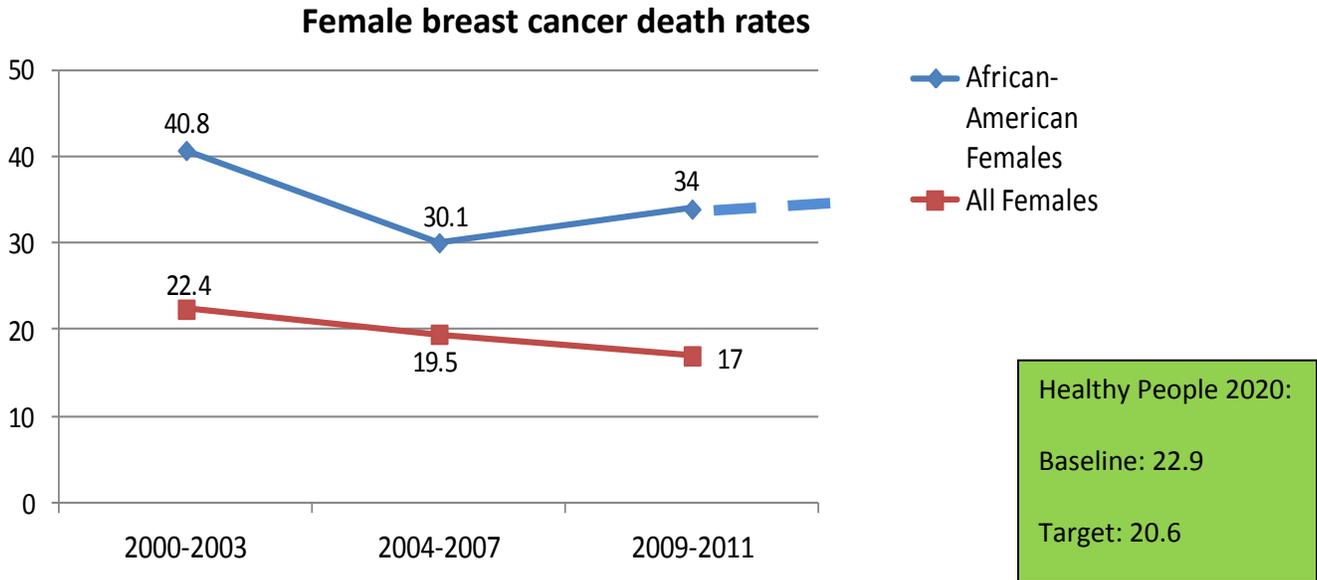
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- Customize and implement a culturally-appropriate Million Hearts Campaign for Black/African Americans in San Francisco
- Work with the SF Health Network to Increase screening for blood pressure, diabetes, and cholesterol
- Increase community-based physical activities and screening for hypertension, diabetes, and cholesterol



## Headline Indicator: Mortality rate of Black/African American women with breast cancer

### BASELINE CURVE



Source: California Department of Public Health annual county death files

### THE STORY BEHIND THE BASELINE

San Francisco was successful in reducing the black/white gap in mortality rate due to breast cancer between the years 2000-2007. The data shows that the gap widened again but, while the disparity is growing in many of the largest cities in the US, over the last 20 years, San Francisco has been able to maintain the status quo; and, if we do nothing different, that trend should continue. However, the gap remains unacceptable. As the data shows, a significant drop in the rate of death for both black and white women occurred between 2004 and 2007, lessening the disparity significantly. And, while there is a slight upward trend in the black rate, the current disparity is basically the same as in 2000.

San Francisco is fortunate to have a breast health program which provides patient navigation for those who are treated at our facilities. A significant factor reported by patient navigators within our system is that black women may be addressing co-morbidities which cause them to delay addressing a cancer diagnosis. And, recent studies have identified obesity as a factor in breast cancer.

Data shows that, generally, Black women are diagnosed at later stages than White women. Yet, the rate of screening for black and white women is nearly even today. There is recent research that shows that factors other than screening rates may be contributing to the continued disparity. A study of the quality of mammogram images in Chicago, IL found that racial/ethnic identity and lower income were associated with lower quality of technician analysis

Breast cancer is a type of cancer that forms in tissues of the breast. The most common type of breast cancer is ductal carcinoma, which begins in the lining of the milk ducts (thin tubes that carry milk from the lobules of the breast to the nipple). Another type is lobular carcinoma, which begins in the lobules (milk glands) of the breast. Invasive breast cancer is breast cancer that has spread from where it began to surrounding normal tissue. Breast cancer occurs in both men and women, although male breast cancer is rare.

which was subsequently associated with later stage at diagnosis; and, that university affiliated screening facilities provided more skilled technician image quality. The conclusion is that gains could be made in increasing image quality through better technician quality leading to earlier diagnosis. The department's breast health program completed its latest mammography technician training in Spring 2014 as a continuing quality improvement project.

San Francisco's breast cancer navigator program, by providing support to overcome these barriers, may be the primary answer to the question of how we have been able to keep the gap from growing.

#### **WHAT WORKS**

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- Patient navigation and peer educators
- Systematic approaches for tracking screening results and assurance that follow-up and treatments are provided within predetermined intervals
- Centralized data system used to monitor and assure the quality of screening and timely diagnosis and treatment

#### **PARTNERS**

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- San Francisco Health Network, Primary Care, SFGH Breast Clinic, Breast and Cervical Cancer Services, Behavioral Health Services
- San Francisco Women's Cancer Network
- Community Based Organizations who provide services to Black/African Americans
- Support groups/survivors, Community advocates, Churches and Religious Organizations
- Colleges and Universities
- Pharmaceutical companies - clinical trials

#### **STRATEGIES**

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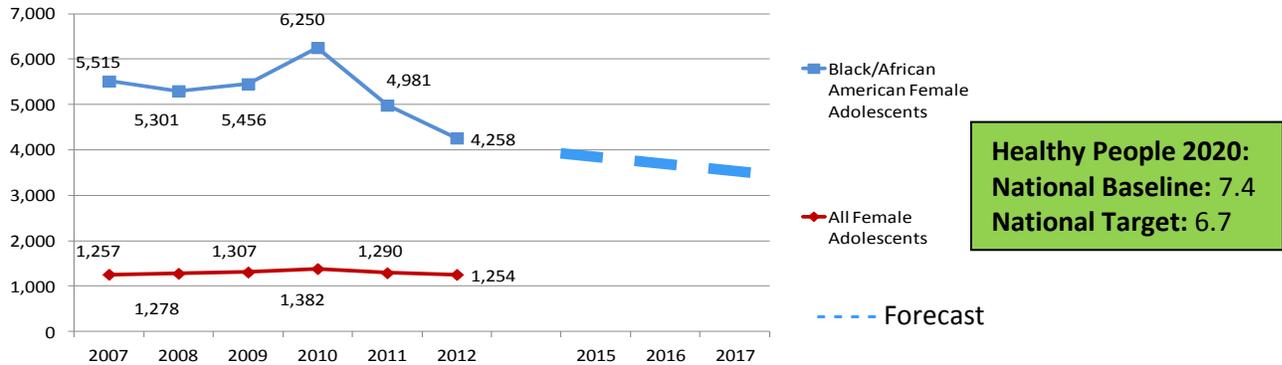
- Improve support systems for Black/African American women diagnosed with breast cancer
- Expand patient navigation programs in other settings including SFGH Women's Cancer Center
- Lessen time between screening that shows questionable results and diagnosis/treatment of Black/African American women



# Headline Indicator: Rates of Chlamydia among young Black/African American women

## BASELINE CURVE

### San Francisco Chlamydia Rates (per 100,000) Among Adolescent Females (<26), 2007-2012



## THE STORY BEHIND THE BASELINE

While the rates of chlamydia among Black/African American young women decreased between 2010-2012, rates of these infections are still disproportionately high compared to other young women in San Francisco. We are not certain of all the factors that led to the decrease, but there are several that may be contributing including high levels of screening and treatment in youth clinics and youth detention, providing treatment to the partners of patients diagnosed with chlamydia (expedited partner therapy), and sexual health education efforts through the SFDPH - Youth United Through Health Education (YUTHE) team and others. Based on our current knowledge, we forecast that chlamydia rates in young African American women in San Francisco will continue to decline in the coming years, but rates will still exceed those of their peers.

Chlamydia is the most commonly reported STD in the United States. It can cause serious, permanent damage to a woman's reproductive system, making it difficult or impossible for her to get pregnant later on. Chlamydia can also cause a potentially fatal ectopic pregnancy (pregnancy that occurs outside the womb).

Factors that might negatively affect the trend may be stigma about sexual health and STDs, economic and safety concerns that overshadow health, and the fact that the number of African American youth in San Francisco continues to decrease, with possible loss of community identity and cohesion. Furthermore, over 50% of chlamydia infections are asymptomatic, especially among females, and are diagnosed and treated solely through screening[1]. Chlamydia screening of all sexually active women 25 years and younger is a level "A" recommendation of the United States Preventive Services Task Force (USPSTF)[2] and covered without cost to patients under the Affordable Care Act, but screening levels at SFDPH clinics, including those that serve a large population of African American patients, are varied, and have room for improvement (SFDPH unpublished data).

## **WHAT WORKS**

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- Annual screening for all young women under age 26
- Condom distribution and Health Education
- Access to high quality sexual health services

## **PARTNERS**

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- San Francisco Health Network, Primary Care, and Programs for Youth
- Community Based Organizations and youth serving agencies
- San Francisco Unified School District and SF Juvenile and Adult Detention
- Community, especially youth (to participate and identify strategies)

## **STRATEGIES**

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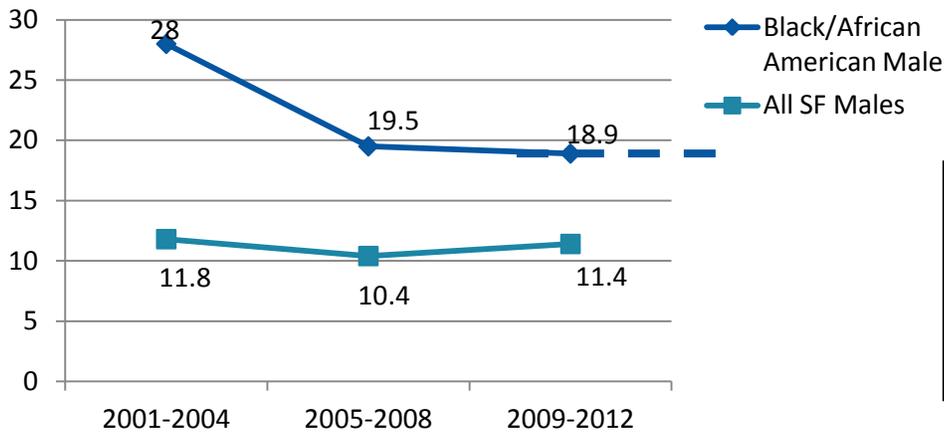
- Increase routine chlamydia/gonorrhea screening for Black/African American adolescent females
- Develop priority agenda through SFPDH African American Health Initiative Working Group
- Promote healthy sexual relationships among Black/African American young women



## Headline Indicator: Mortality rates among Black/African American men due to alcohol

### BASELINE CURVE

#### Black/African American and San Francisco Male Cirrhosis Death Rates, 2001-2012



**Healthy People 2020:**  
**National Baseline:** 9.1  
**National Target:** 8.2 (10% improvement)

Source: California Department of Public Health annual county death files

#### STORY BEHIND THE BASELINE

While there was a significant decline from 2001-2005 in the rates of death due to Cirrhosis in San Francisco (SF) amongst Black/African American male, the rate has been stable since 2005. Black males also continue to be disproportionately affected by the disease as compared to all males. This signifies that we will need to review our current strategies or the trend in rate of death will continue to stay the same. In a study published in 2008, alcohol disorders were the fourth leading cause of premature death among Black/African American males in SF.

Drinking alcohol has effects that can increase the risk of many harmful health conditions in addition to Cirrhosis. According to the CDC, excessive alcohol use, including underage drinking and binge drinking, can lead to increased risk of health problems. Excessive alcohol use has immediate effects that increase the risk of many harmful health conditions. These immediate effects are most often the result of binge drinking and include unintentional injuries, violence, risky sexual behavior, and alcohol poisoning. Over time, excessive alcohol use can lead to the development of cardiovascular problems neurological impairments, psychiatric problems, and social problems.

Cirrhosis is a slowly progressing disease in which healthy liver tissue is replaced with scar tissue, eventually preventing the liver from functioning properly. The scar tissue blocks the flow of blood through the liver and slows the processing of nutrients, hormones, drugs, and naturally produced toxins. It also slows the production of proteins and other substances made by the liver. [Hepatitis C](#), [fatty liver](#), and [alcohol abuse](#) are the most common causes of cirrhosis of the liver in the United States.

Research findings on drinking patterns and problems among African Americans can be summarized as follows: (1) African Americans report higher abstention rates than do whites; (2) African Americans and whites report

similar levels of frequent heavy drinking; (3) rates of heavy drinking have not declined at the same rate among African American men and women as among white men; and (4) variables such as age, social class, church attendance, drinking norms, and avoidance coping may be important in understanding differences in drinking and drinking problem rates among African Americans and whites.

Researchers have also found that, compared to whites, African Americans report later initiation of drinking, lower rates of use, and lower levels of use across almost all age groups. Nevertheless, African Americans also have higher levels of alcohol problems than whites. After reviewing current data regarding these trends, the researchers provide a theory to understand this apparent paradox as well as to understand variability in risk among African Americans. Certain factors appear to operate as both protective factors against heavy use and risk factors for negative consequences from use. For example, African American culture is characterized by norms against heavy alcohol use or intoxication, which protects against heavy use but also provides within-group social disapproval when use does occur. African Americans are more likely to encounter legal problems from drinking than whites, even at the same levels of consumption, perhaps thus resulting in reduced consumption but more problems from consumption. There appears to be one particular group of African Americans, low-income African American men, who are at the highest risk for alcoholism and related problems. Researchers theorize that this effect is due to the complex interaction of residential discrimination, racism, age of drinking, and lack of available standard life reinforcers (e.g., stable employment and financial stability). Further empirical research will be needed to test their theories and otherwise move this important field forward.

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#### **WHAT WORKS**

- Preventing Excessive Alcohol Consumption: Electronic Screening and Brief Interventions (e-SBI)
- Increasing alcohol beverage taxes is recommended to reduce excessive alcohol consumption and related harms
- Recommendations on maintaining limits on days and hours of sale of alcoholic beverages to prevent excessive alcohol consumption and related harms
- Recommendations for reducing excessive alcohol consumption and alcohol-related harms by limiting alcohol outlet density

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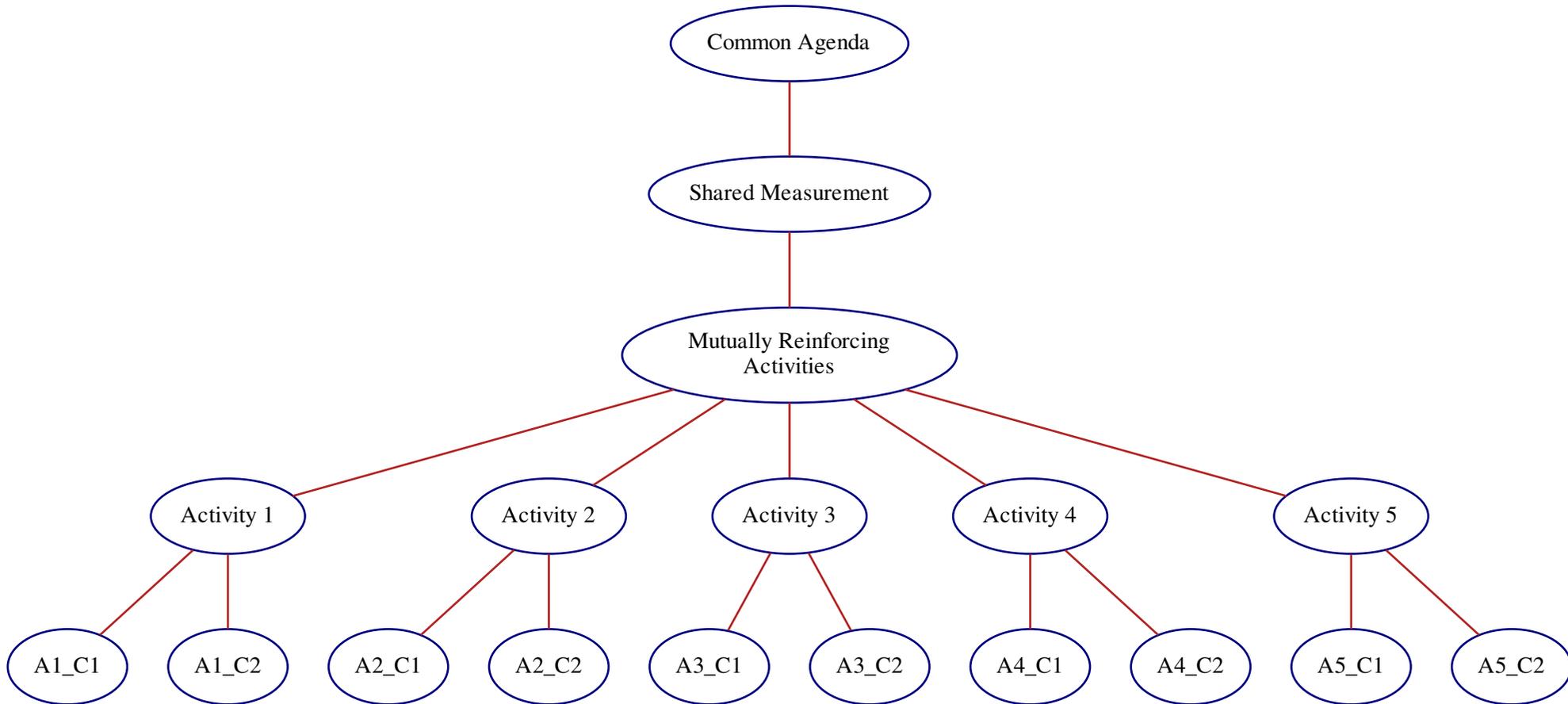
#### **PARTNERS**

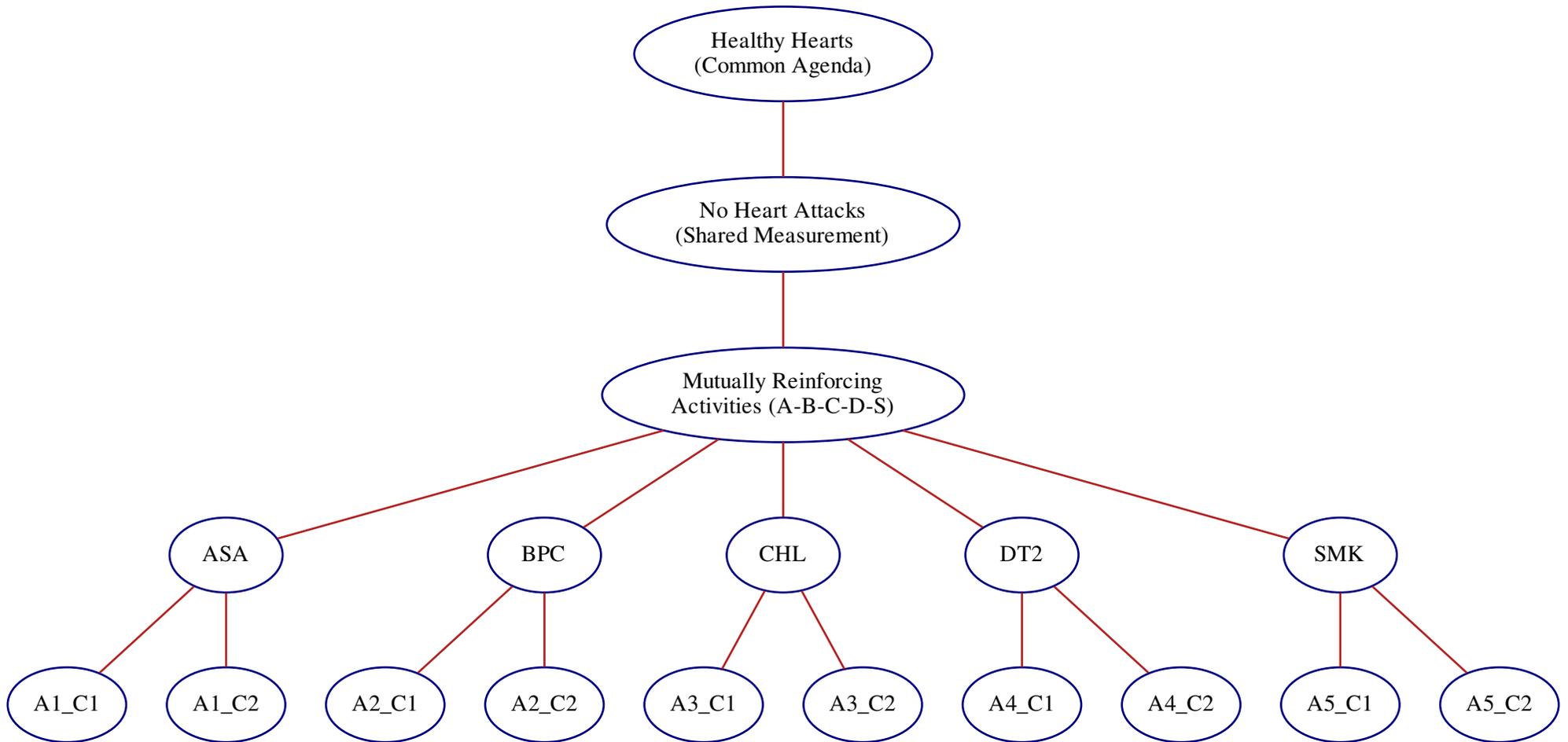
- San Francisco Health Network, Primary Care, Behavioral Health Services, Jail Health Services and Programs for Youth
- Law enforcement and criminal justice system
- Community Based Organizations who provide services to Black/African Americans
- Colleges and Universities
- Churches and Religious Organizations
- Community (to participate and identify strategies)

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#### **STRATEGIES**

- Implement and improve SF performance standards for all off-sale alcoholic beverage premises
- Work with the SF Health Network to develop evidence based practice and harm reduction approaches within for African-American males who use alcohol





Research article

Open Access

## Calculating expected years of life lost for assessing local ethnic disparities in causes of premature death

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### Abstract

**Background:** A core function of local health departments is to conduct health assessments. The analysis of death certificates provides information on diseases, conditions, and injuries that are likely to cause death – an important outcome indicator of population health. The expected years of life lost (YLL) measure is a valid, stand-alone measure for identifying and ranking the underlying causes of premature death. The purpose of this study was to rank the leading causes of premature death among San Francisco residents, and to share detailed methods so that these analyses can be used in other local health jurisdictions.

**Methods:** Using death registry data and population estimates for San Francisco deaths in 2003–2004, we calculated the number of deaths, YLL, and age-standardized YLL rates (ASYRs). The results were stratified by sex, ethnicity, and underlying cause of death. The YLL values were used to rank the leading causes of premature death for men and women, and by ethnicity.

**Results:** In the years 2003–2004, 6312 men died (73,627 years of life lost), and 5726 women died (51,194 years of life lost). The ASYR for men was 65% higher compared to the ASYR for women (8971.1 vs. 5438.6 per 100,000 persons per year). The leading causes of premature deaths are those with the largest average YLLs and are largely preventable. Among men, these were HIV/AIDS, suicide, drug overdose, homicide, and alcohol use disorder; and among women, these were lung cancer, breast cancer, hypertensive heart disease, colon cancer, and diabetes mellitus. A large health disparity exists between African Americans and other ethnic groups: African American age-adjusted overall and cause-specific YLL rates were higher, especially for homicide among men. Except for homicide among Latino men, Latinos and Asians have comparable or lower YLL rates among the leading causes of death compared to whites.

**Conclusion:** Local death registry data can be used to measure, rank, and monitor the leading causes of premature death, and to measure and monitor ethnic health disparities.

conditions of highly premature death, these were further subranked by their average *YLL* values. Age-standardized *YLL* rates were included to allow comparisons of ethnic groups within sex strata.

**Numerical computing**

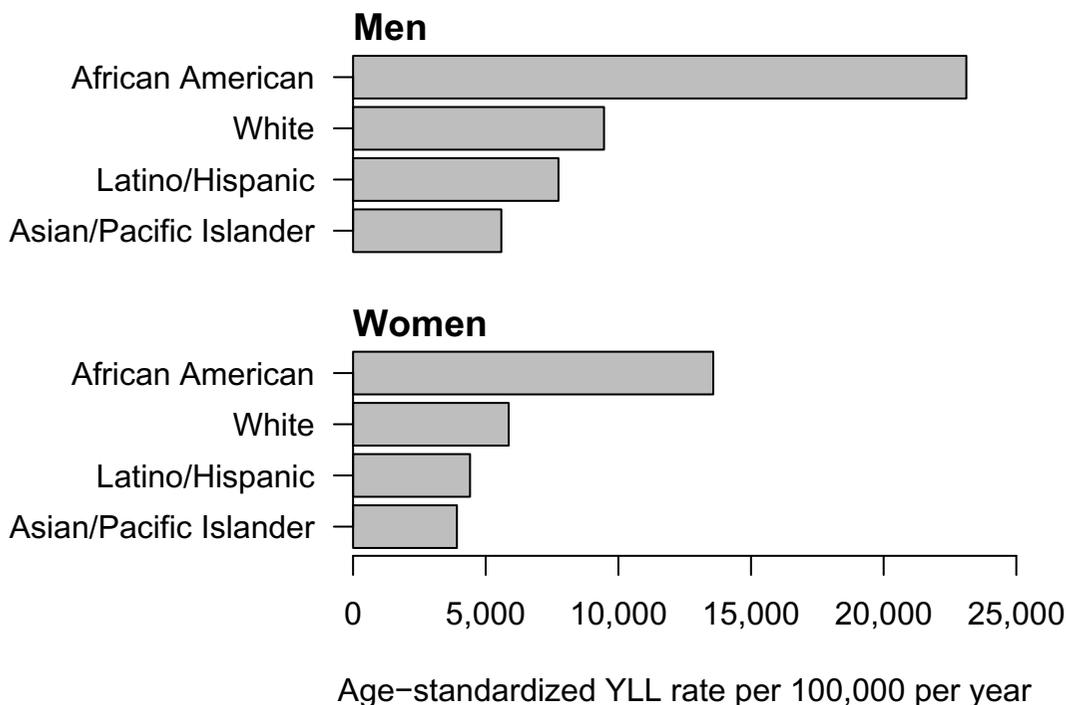
All analyses and graphics were conducted in R – a widely available, open source programming language for statistical computing and graphics [19]. To facilitate the *YLL* calculation for readers, we provide and demonstrate a numerical function for R [see Additional file 3].

**Results**

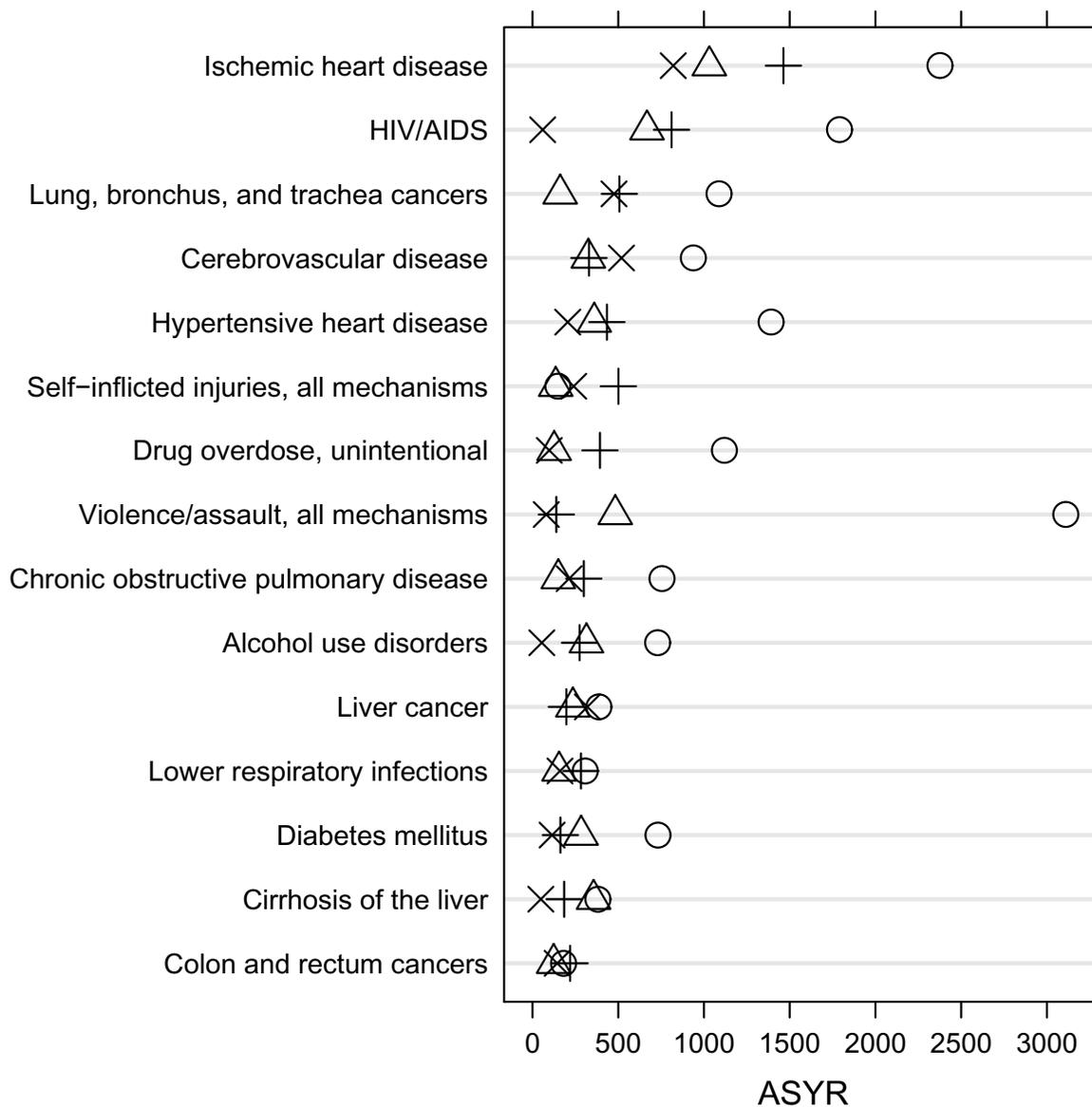
Displayed in Table 4 is the spreadsheet format for calculating expected years of life lost (*YLL*) for San Francisco men and women. The age-interval specific number of deaths ( ${}_nD_x$ ), average age of death ( ${}_na_x$ ), standard life expectancy ( ${}_ne_x^s$ ), and years of life lost ( ${}_nY_x$ ) are shown. In the years 2003–2004, 6312 men died with 73,627 years

of life lost, and 5726 women died with 51,194 years of life lost.

Displayed in Table 5 is the spreadsheet format for calculating direct age-standardized *YLL* rates (*ASYR*) for San Francisco men and women, combining years 2003–2004. The sex and age-interval specific population estimates ( ${}_nN_x$ ), expected years of life lost ( ${}_nY_x$ ), expected *YLL* rate ( ${}_nY_x^s$ ), and weighted expected *YLL* rate ( ${}_nY_x^s$ ) are displayed in each column. The *ASYR* for men was 65% higher compared to the *ASYR* for women (8971.1 per 100,000 persons per year vs. 5438.6 per 100,000 persons per year). Displayed in Table 6 are the *YLL*, number of deaths, average *YLL*, age-standardized *YLL* rates, and *ASYR* ratios stratified by sex and ethnicity. While whites and Asians account for the largest number of deaths (as expected based on population estimates), African American men and women have the highest age-standardized *YLL* rates



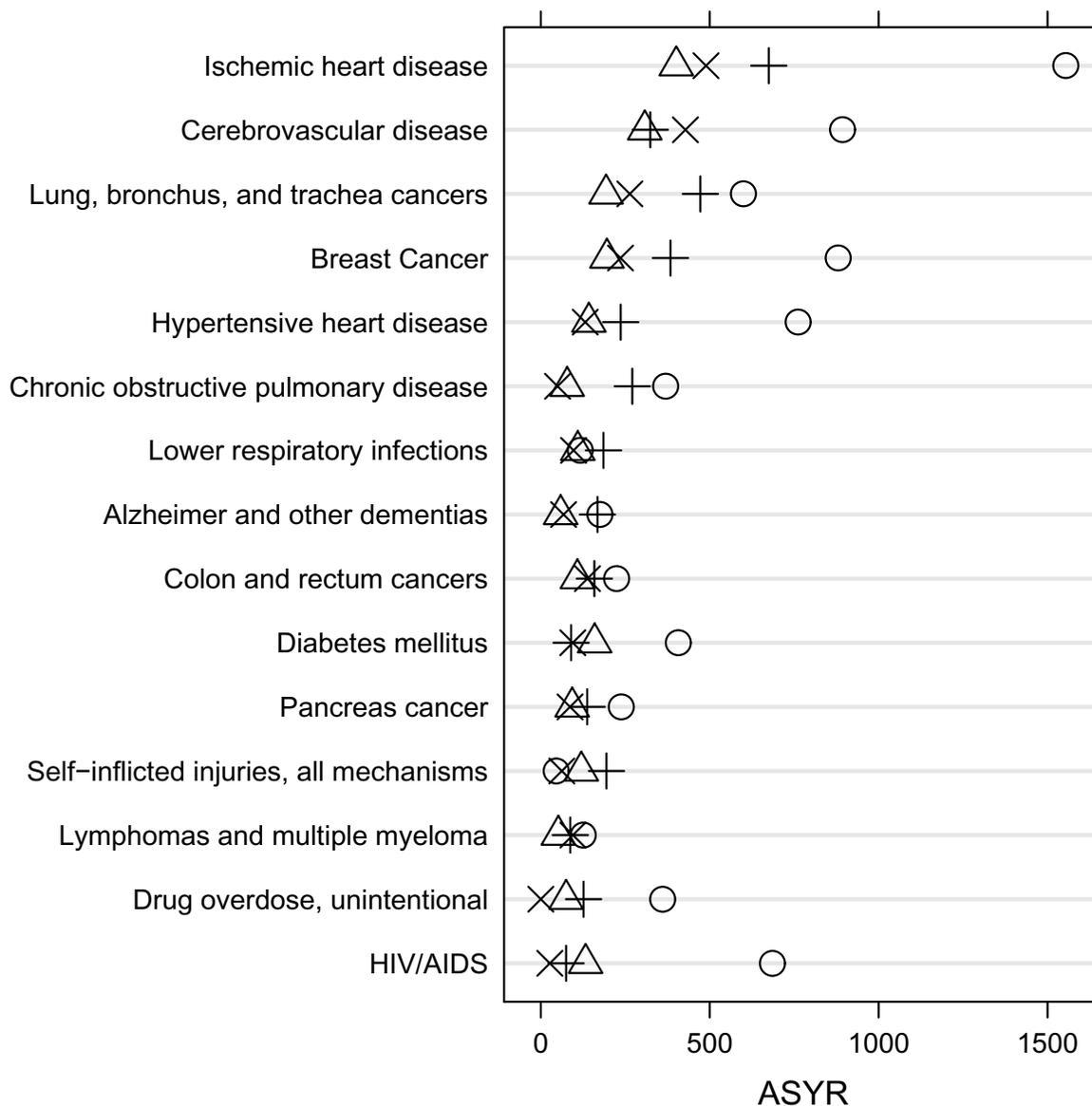
**Figure 1**  
**Comparison of age-standardized expected years of life lost rates (ASYRs), By sex and ethnicity, San Francisco, 2003–2004.**



**Figure 2**  
**Leading causes of premature death among men (ranked by YLLs), comparing age-standardized YLL rates (ASYR) by cause of death and ethnicity, San Francisco, 2003–2004.** Symbols: African American (○), Latino/Hispanic (△), Asian/Pacific Islander (×), White (+).

mortality burden not requiring population estimates. It was used to rank the 15 leading causes of death for men and women (Table 7). However, these 15 leading causes were influenced by the larger number of deaths among older residents. To highlight premature, preventable causes of death, we then ranked these top 15 causes by

their average YLLs. Notably, many of the leading causes of death have strong social determinants. Alternatively, the ASYR could have been used to rank the leading causes of death; however, this was not our first choice because it requires population estimates, and the rankings would still be influenced by older deaths. Given our availability



**Figure 3**  
**Leading causes of premature death among women (ranked by YLLs), comparing age-standardized YLL rates (ASYR) by cause of death and ethnicity, San Francisco, 2003–2004.** Symbols: African American (○), Latino/Hispanic (△), Asian/Pacific Islander (×), White (+).

of population estimates, ASYRs were used to make comparisons among ethnic groups (Table 6 and Additional file 1). However, only the YLLs (including average YLLs) were necessary to rank the leading causes of premature death. Similar analyses were conducted for each ethnic group [Additional file 1].

This study has several strengths. First, we used a simple measure of premature mortality – expected years of life lost – that can be calculated from death registry data that is readily available, population-based, and complete for the whole population. Second, YLL estimates can be calculated for a comprehensive list of causes of death. Third,