



BRIGHAM AND  
WOMEN'S HOSPITAL



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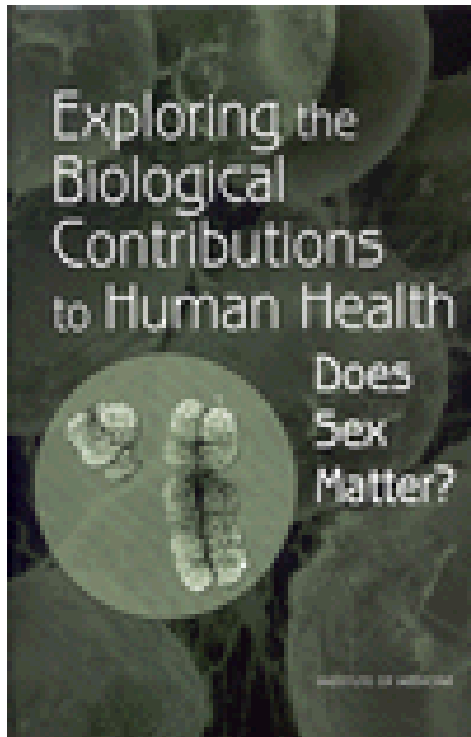
# **From Knowledge to Action: Using Sex and Gender and Health Research to Improve Policy and Practice**

**November 23, 2010**

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Chief, Division of Women's Health  
Executive Director, Connors Center for  
Women's Health and Gender Biology



# Sex Does Matter



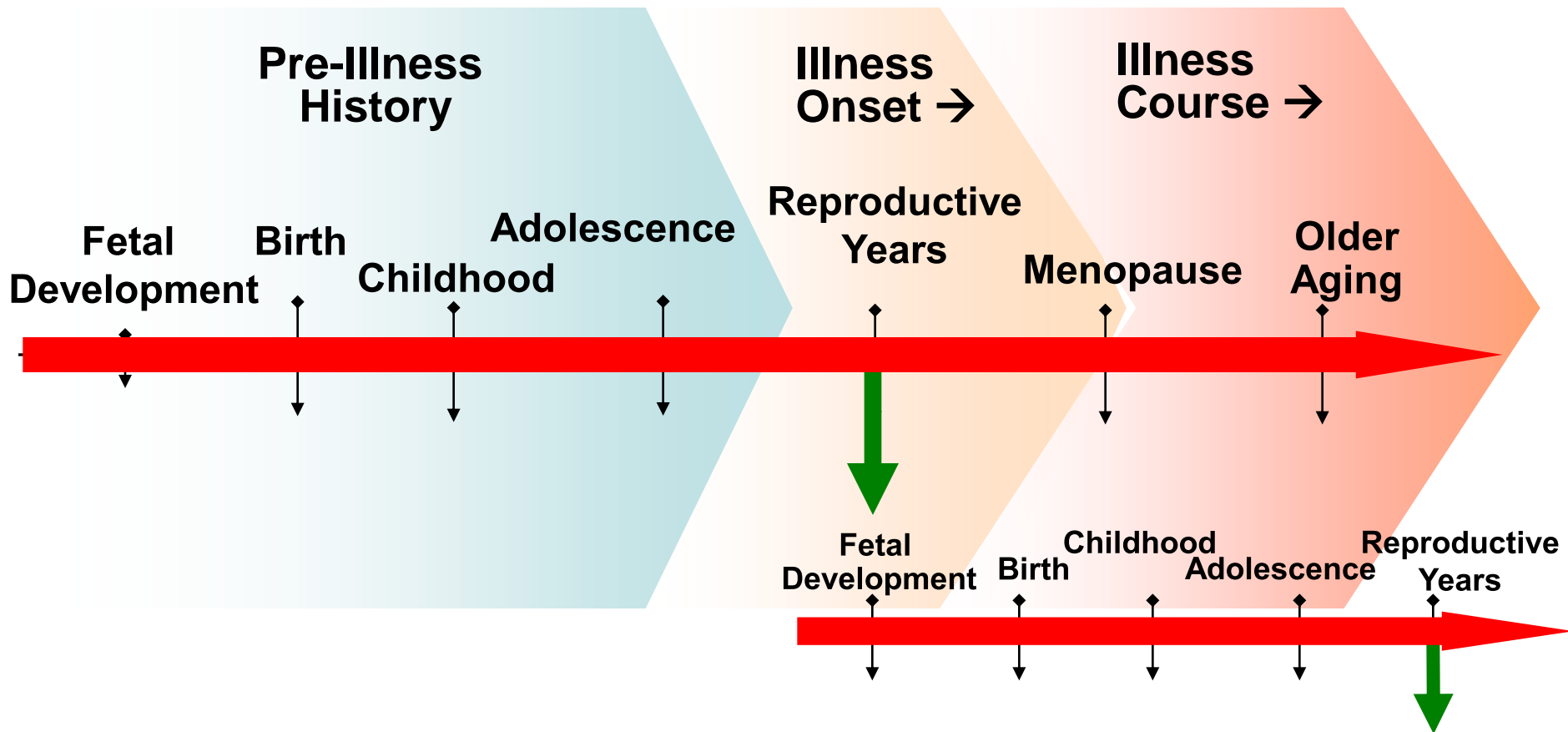
- Every cell has a sex
- Sex differences in health and disease
- Models of disease not based on women
- Gender plays a significant role
- 1993 NIH Revitalization Act: Congress mandated inclusion of women and minorities in clinical research.

# Women's Health as a Magnifier and Multiplier

- Women remain the primary care givers around the world
  - Women are the doctors, nurses, pharmacists and therapists
- In the U.S., women make over 70% of the healthcare decisions
- Women are demanding consumers of health care
  - Seek more health information, demand more education, press for prevention
- Women are the bearers of the next generation
  - Healthy women produce healthier children
- The health of women is a key indicator of a country's overall health— economic, education, health

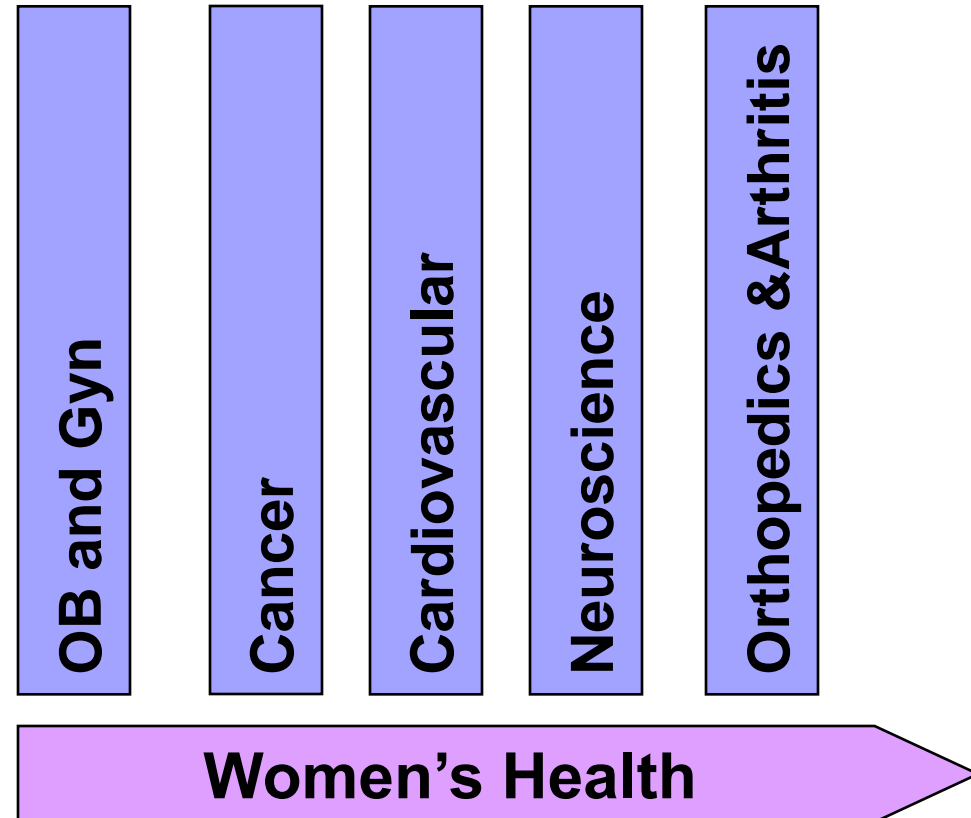


# Women's Health Across the Lifespan

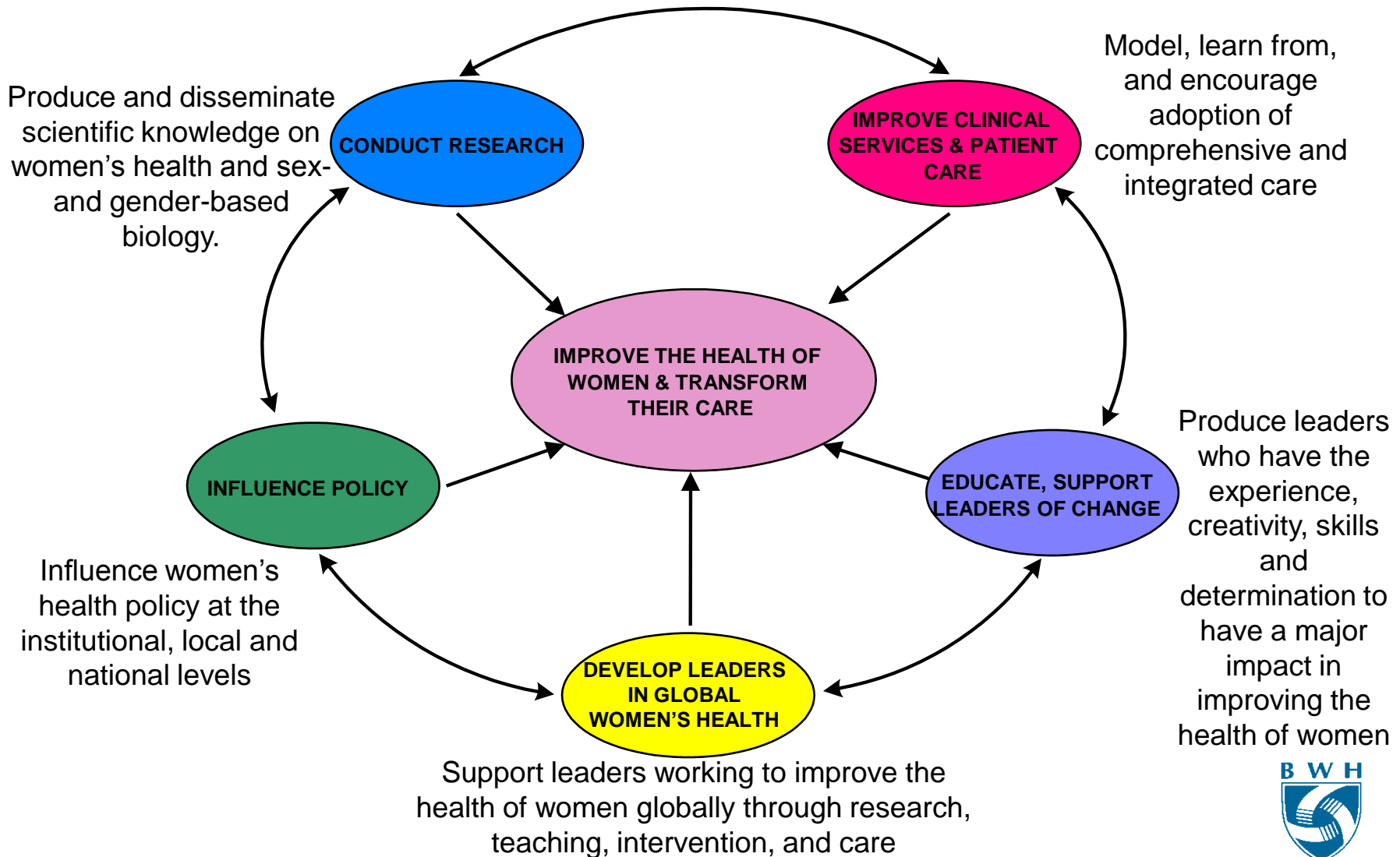


# Women's Health Across Fields in Medicine

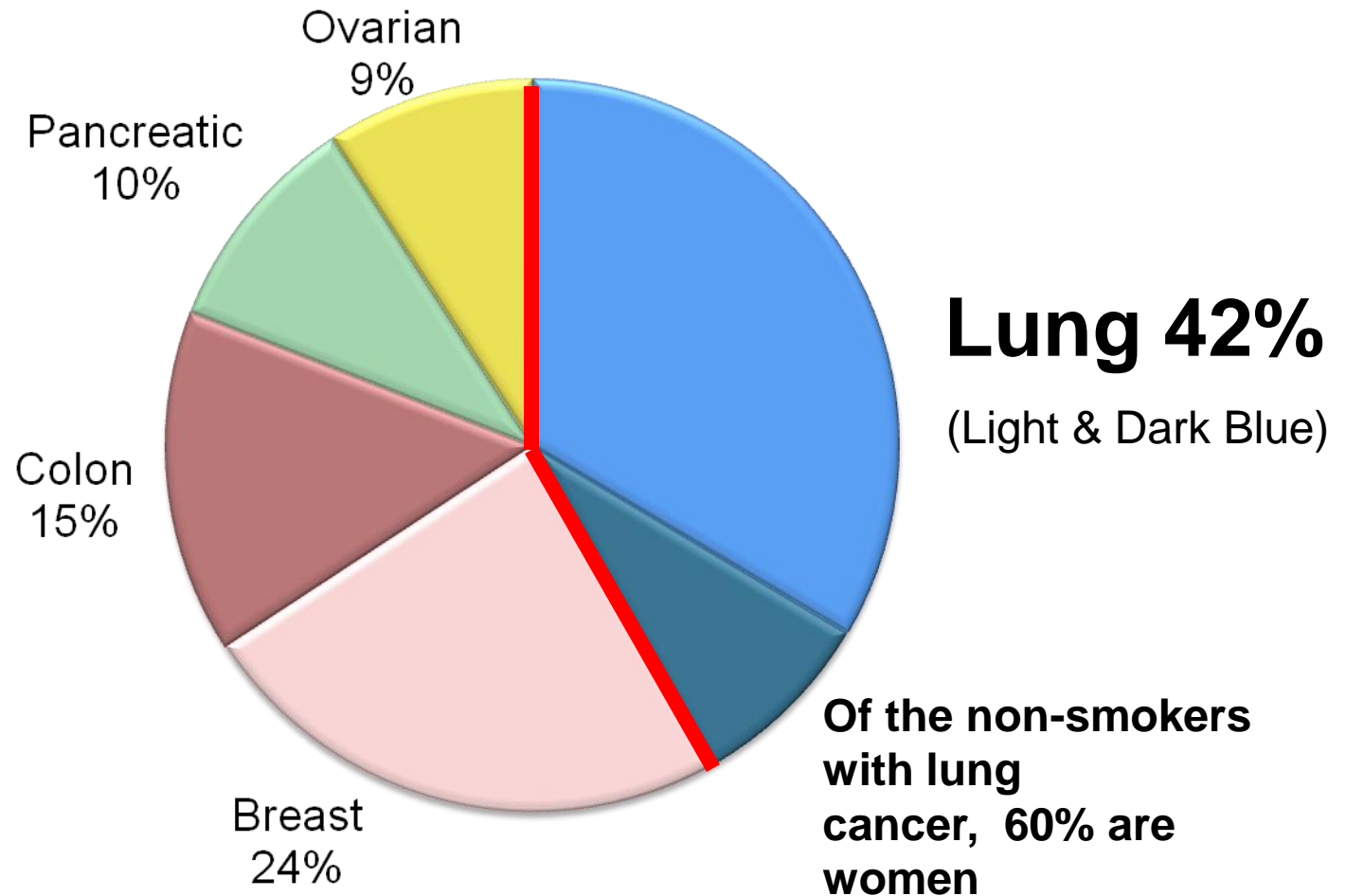
- Discover, disseminate, and integrate knowledge on women's health, gender biology and gender-specific care
- Translate this knowledge base to the highest standard of care for women, delivered in an environment that meets the needs of the women



# Women's Health Across Disciplines



# Top Cancer Killers/Women 2008



# Lung Cancer in Women

- Clinical program that addresses medical and psychosocial needs of women
  - National Lung Cancer Screening Trial
- Provides the infrastructure for discovery
  - Estrogen-regulated gene associated with mesothelioma outcome
- Enables partnership of investigators, clinicians, patients and advocacy organizations
  - Lung Cancer Mortality Reduction Act of 2009



# Lung Cancer in Women: Integration Across Disciplines - Research, Education, Policy

## OUT OF THE SHADOWS WOMEN AND LUNG CANCER

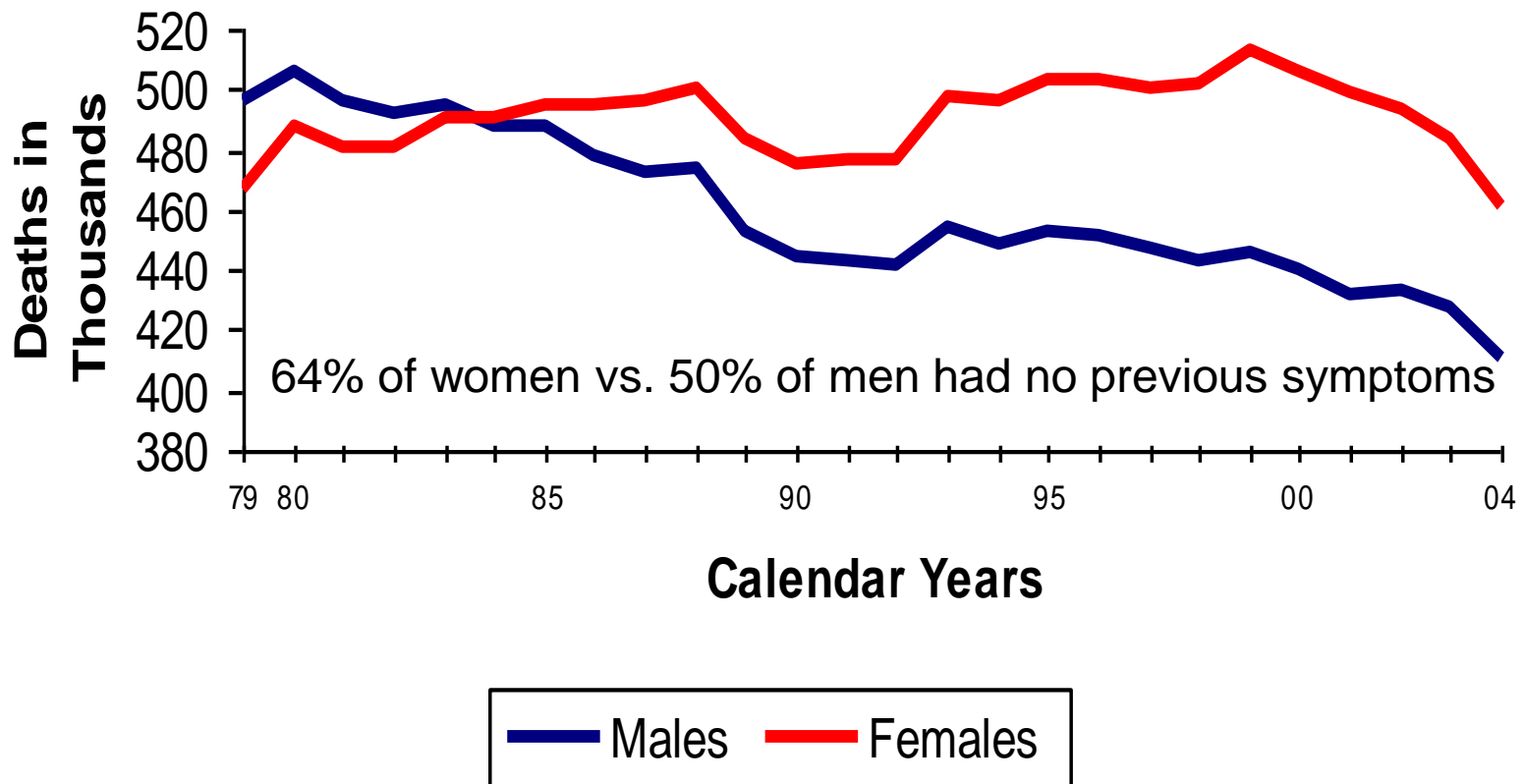
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Women's Health Policy and Advocacy Program

# More Women Die from Heart Disease than Men

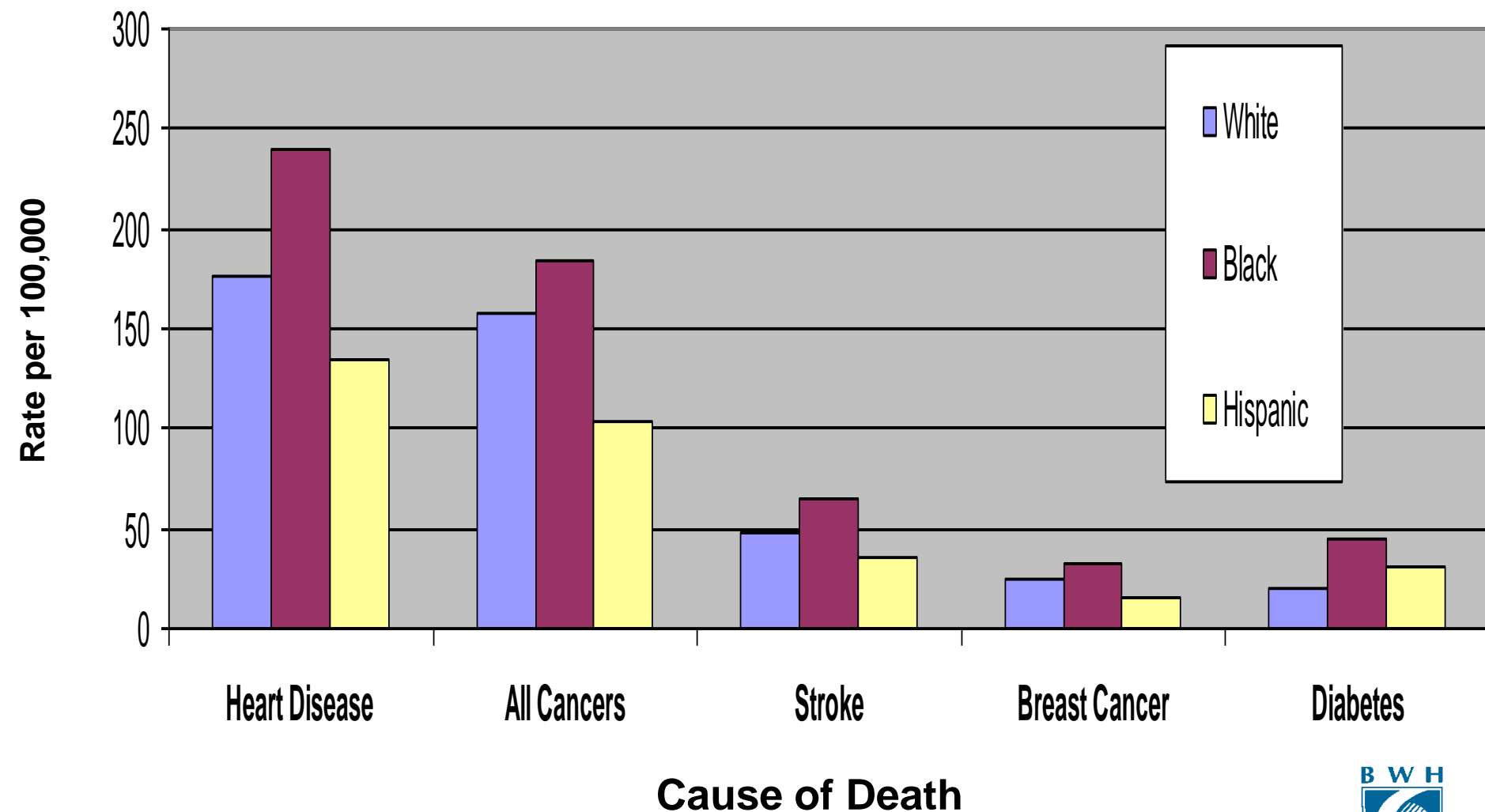
**Heart Disease Mortality in Women and Men  
Absolute Number of Deaths, 1979-2004**



Source: American Heart Association. Heart Disease and Stroke Statistics—2007 Update.



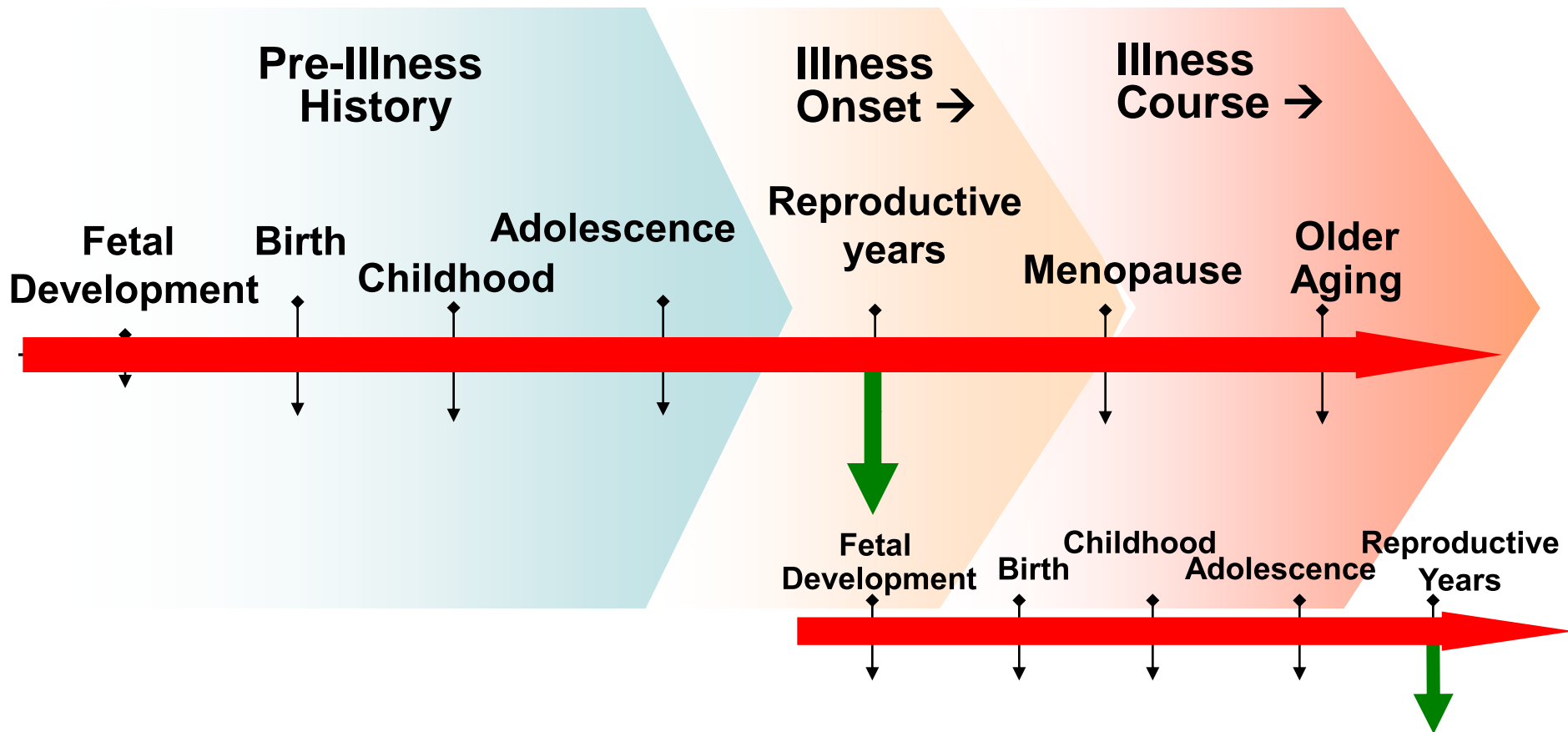
# Heart Disease is the Number One Cause of Death in Women



**Age Adjusted, 3-Year Cumulative Mortality Rates for U.S. Women by Race/Ethnicity 2003-2005.** Source: CDC, Mortality Rates, 2003-2005

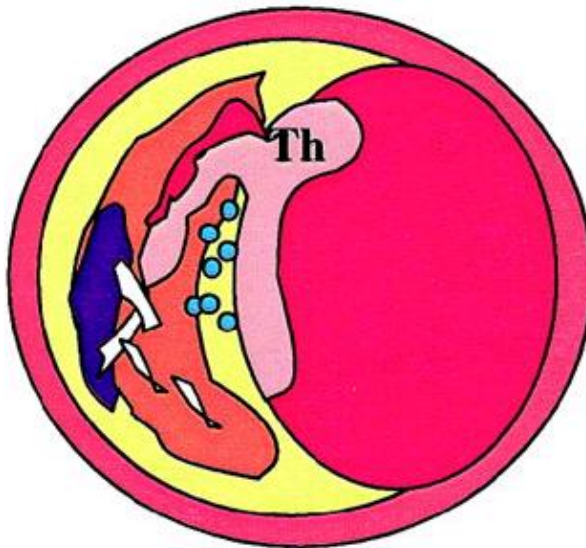


# Women's Health Across the Lifespan

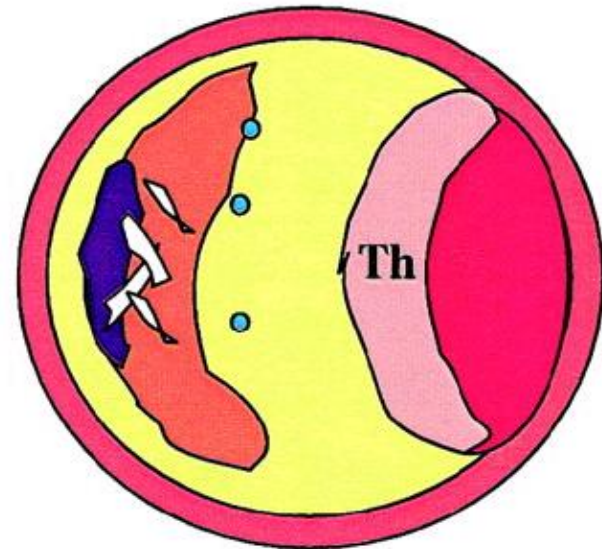


# Sex Differences in Physiology of Myocardial Infarction

## Plaque Rupture



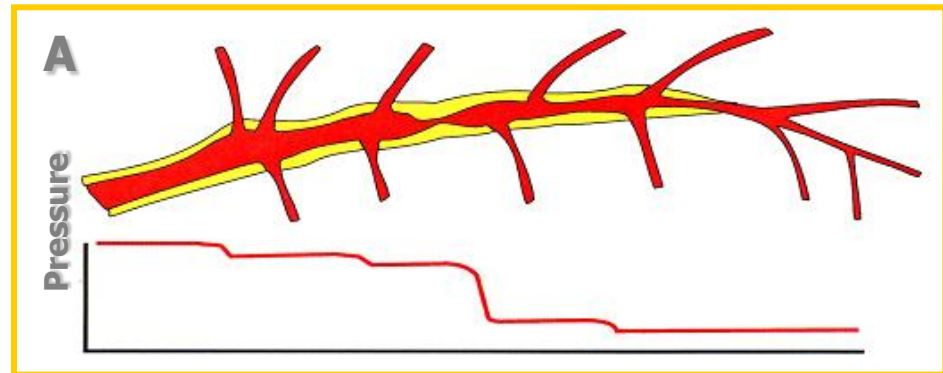
## Plaque Erosion



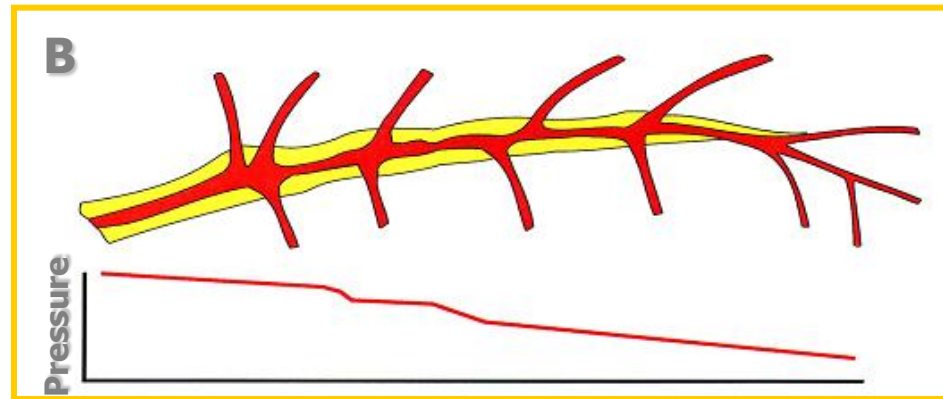
Source: Virmani et al, *Arterioscler Throm Vasc Biol.*  
2000;20:1262-1275.

# Cardiovascular Disease can be Different in Women

**Blockage in “male”  
coronary artery**



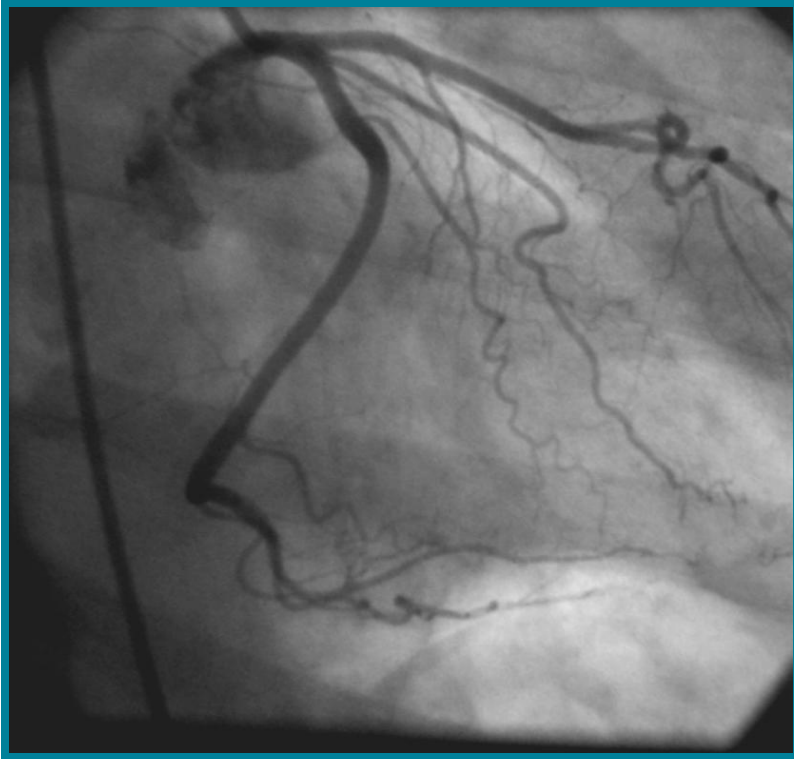
**Blockage in “female”  
coronary artery**



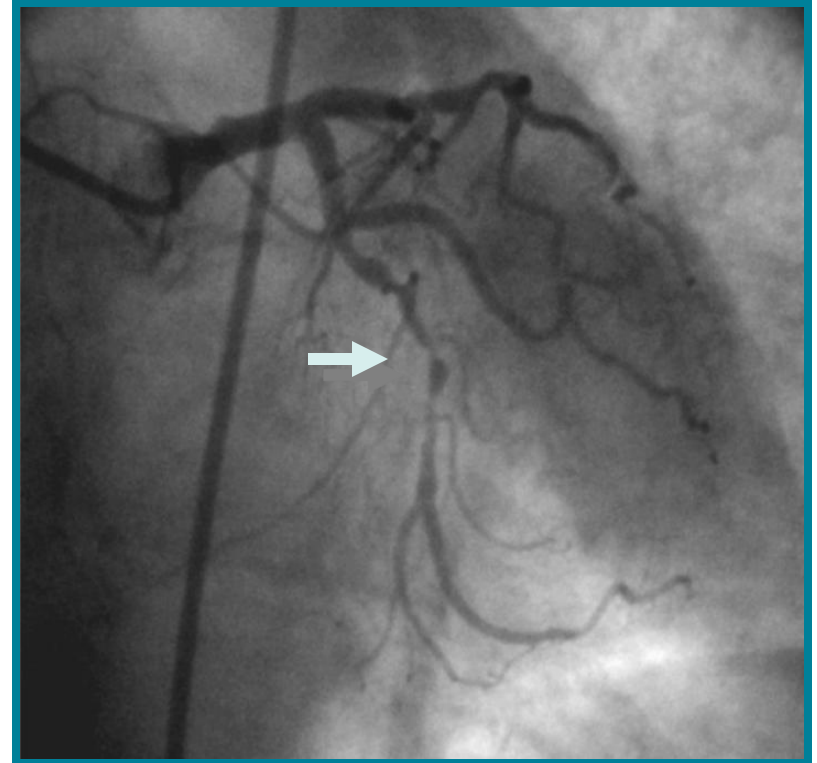
Gould. *Coronary Artery Stenosis and Reversing Atherosclerosis*, 2nd ed. 1999.

# Coronary Artery Disease

**Normal coronary artery**



**Diseased coronary artery**

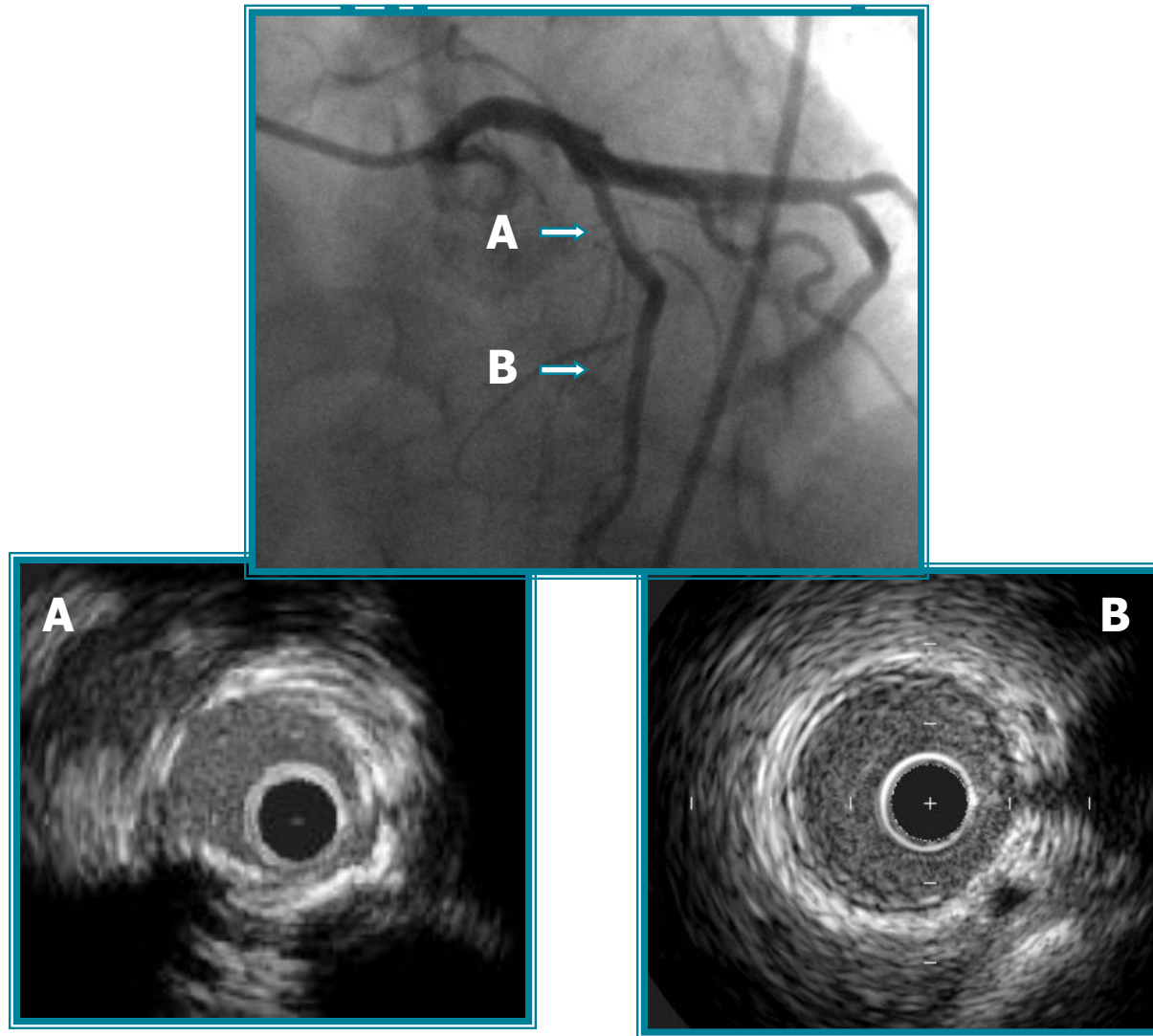


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# Heart Catheterization and



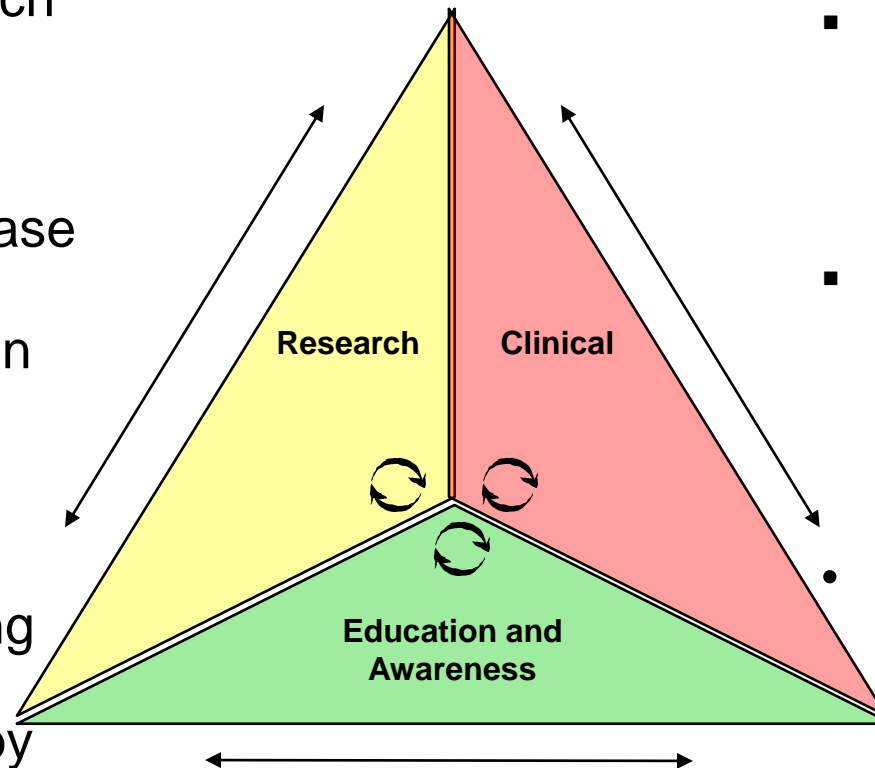
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# “Learning” Practice Model

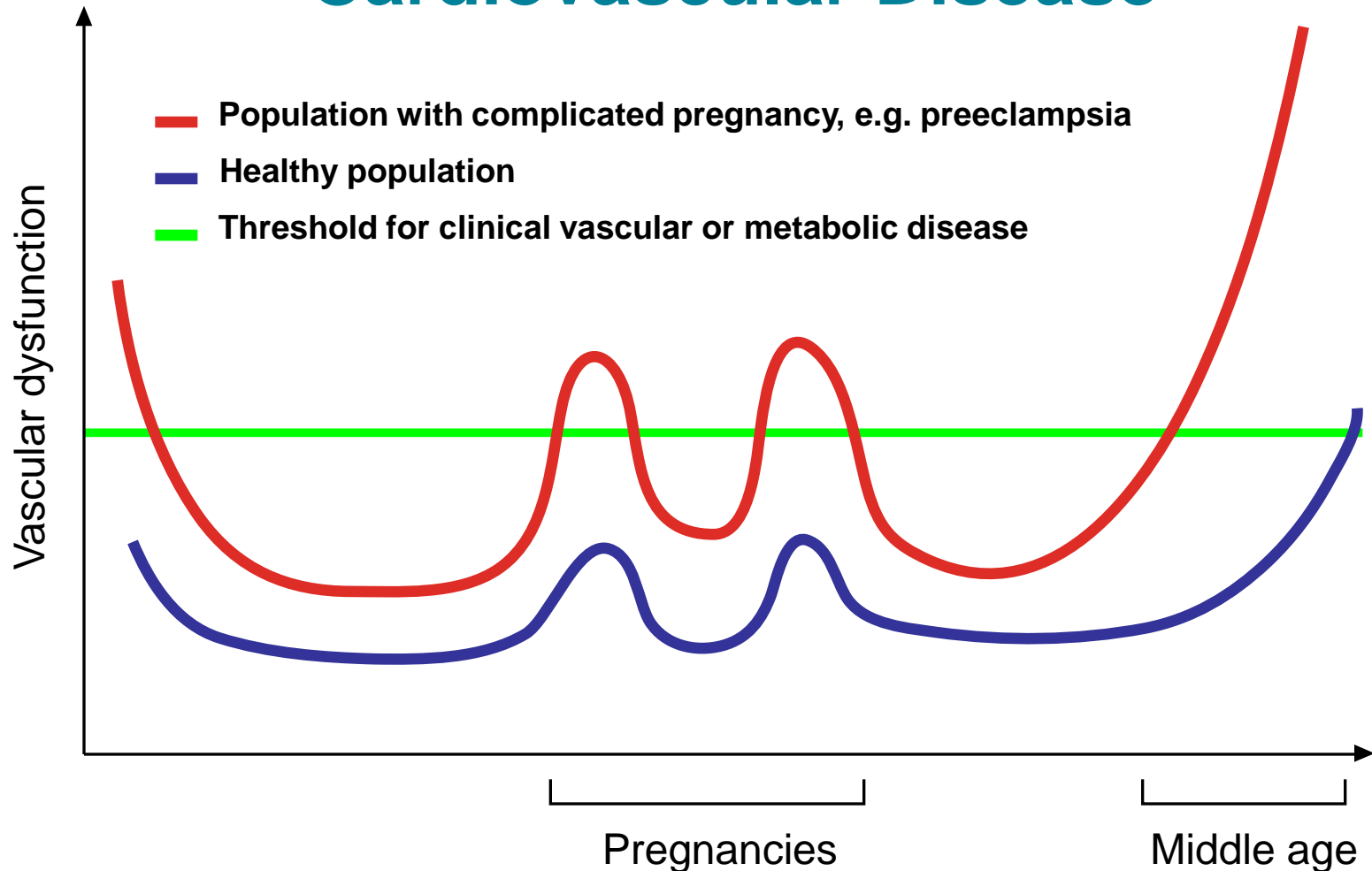
- Increase research to better understand sex differences in health and disease
- Expand inclusion of women in research and clinical trials
- Expand reporting of results by sex, race, and by sex/race



- Effectively translate research into clinical care
- Use sex-specific data to consider safety of interventions
- Sex-stratified quality measures

Improve education and awareness of women, investigators, physicians, and other health care providers

# Pregnancy as “Stress Test” for Cardiovascular Disease



Adapted with permission from Sattar, BMJ, 2002

# Gestational Diabetes Mellitus and Associated Risks

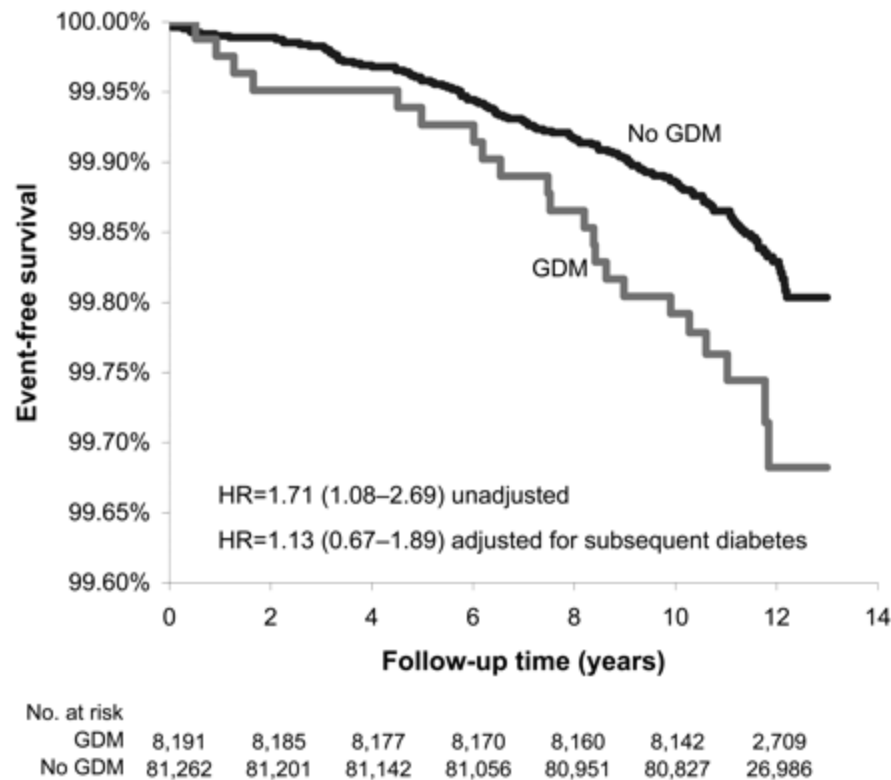
- Risk with subsequent pregnancy is 50-65%
- 50-70% will develop Type 2 DM over the lifecourse
- 20-30% will develop Type 2 DM in 7-10 years
- Increased risk of Type 2 DM in children of mothers with GDM

Kim, C., Newton, K.M., and Knopp, R.H. 2002. . Gestational diabetes and the incidence of type 2 diabetes. *Diabetes Care*. 25::1862-1868.

<http://www.jci.org/cgi/content/full/115/3/485>



# Cardiovascular Events in Women with Gestational Diabetes



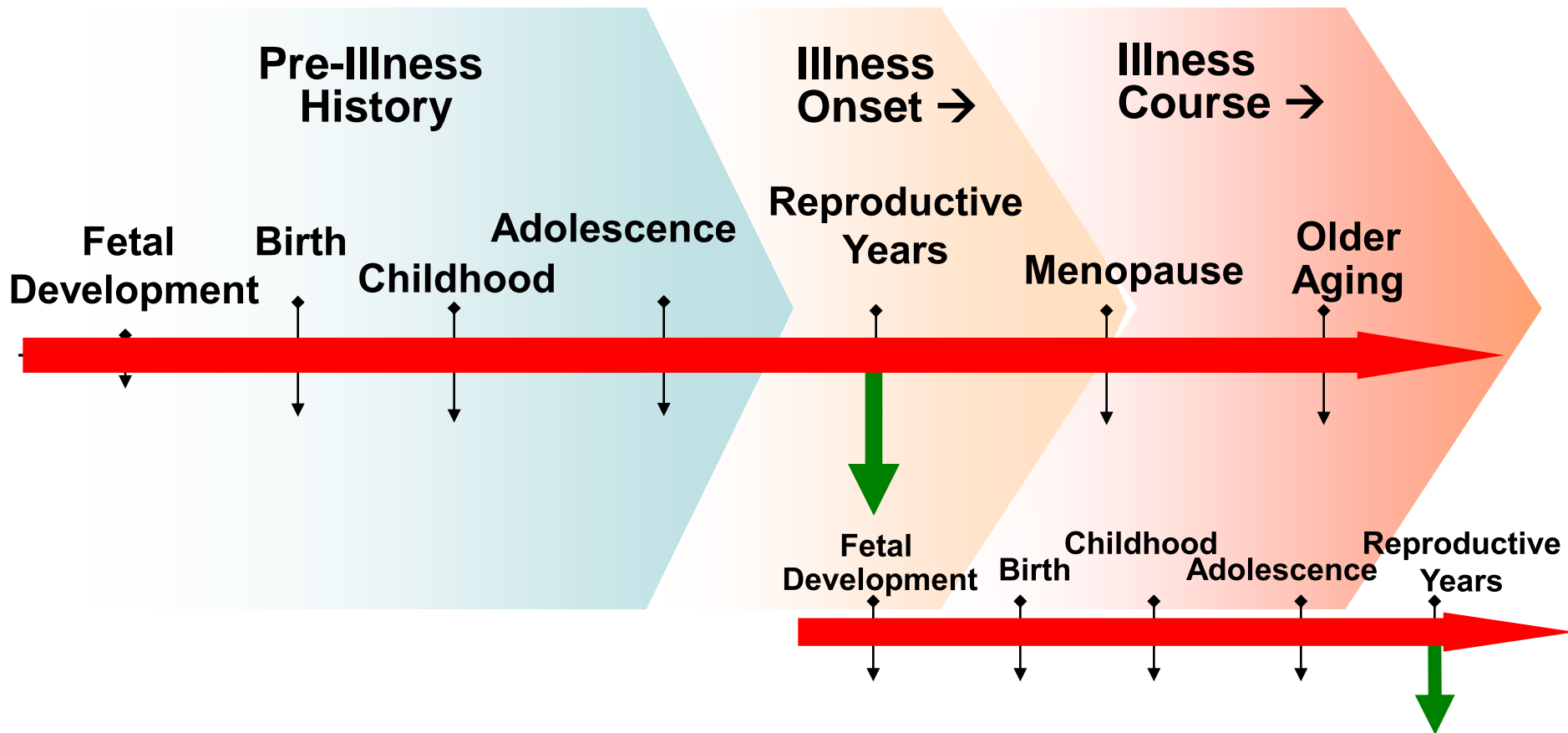
Shah BR, et al. Diabetes Care. 2008; 31: 1668-1669.



# Gestational Diabetes and the Health of Women: Gaps and Opportunities

- Lack of guidelines on how to care for women pre- or post-pregnancy to decrease risk
- Currently no formal method to track the population through billing
- Need to address full scope of “cardio-metabolic disorders” in younger women who are pregnant or soon to be pregnant that affect health of women and children over the lifespan

# Women's Health Across the Lifespan



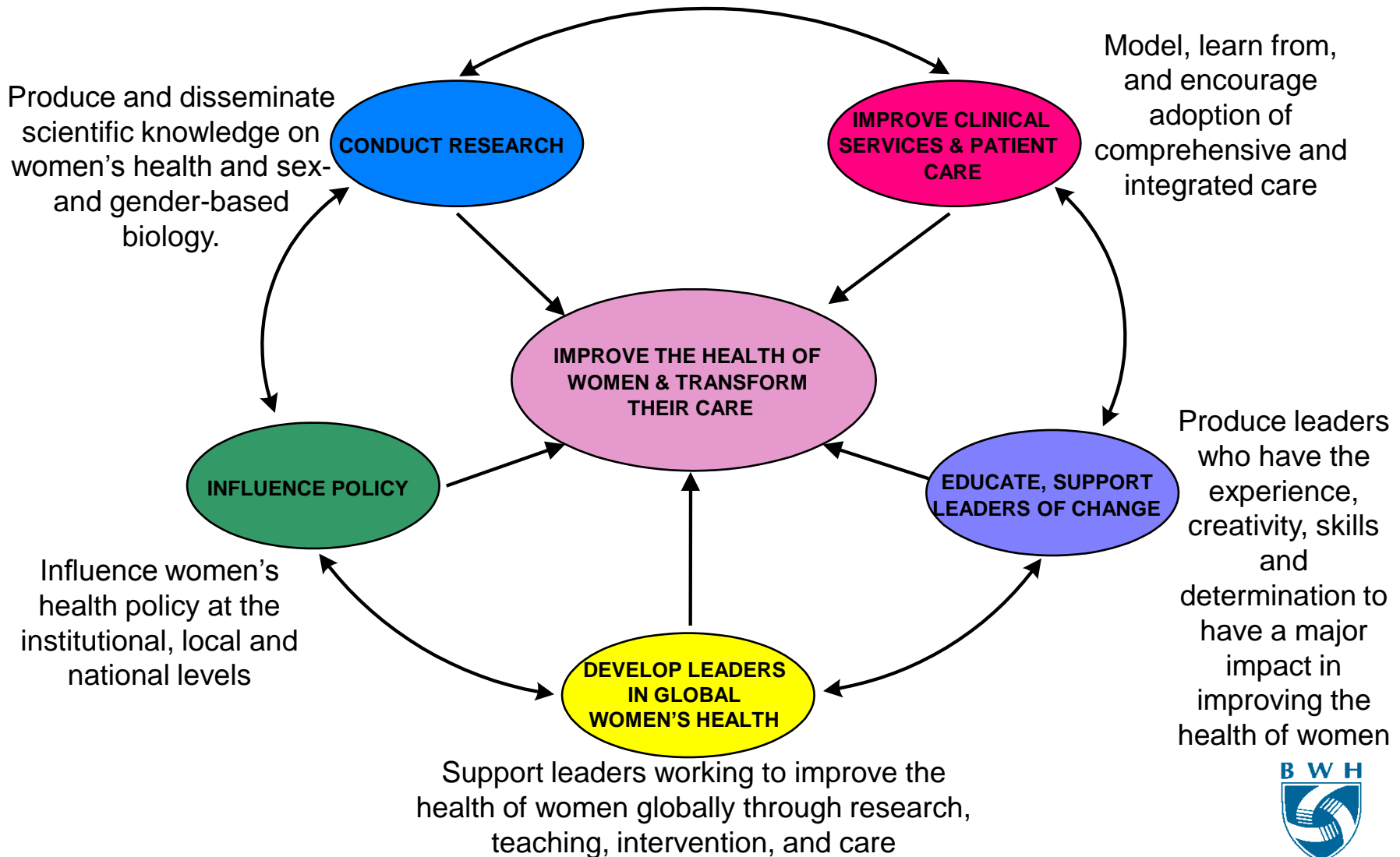
THE FAMILY COHORT STUDY:

## What we can learn to transform medicine for mothers



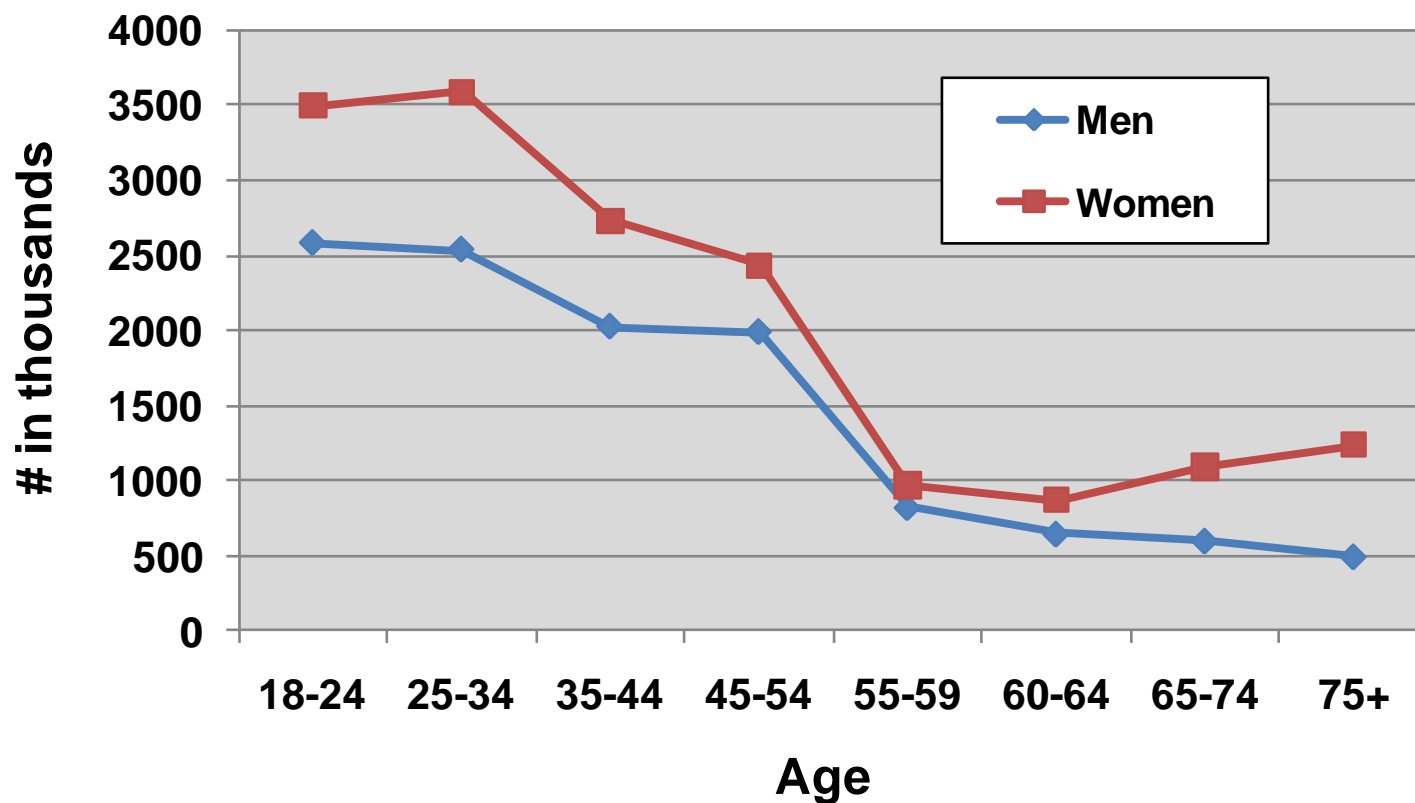
- Why do pregnancy complications predict early mortality in the 25% of mothers who experience them?
- Can we design a novel cardiovascular screening system to follow women who have had complex pregnancies?
- What are the intersections of psychological health with physical health, and how do they differ for men and women?

# Women's Health Across Disciplines





## Men & Women Below 100% Poverty, U.S. 2009



Source: U.S. Census Bureau, Current Population Survey, 2010 Annual Social and Economic Supplement.

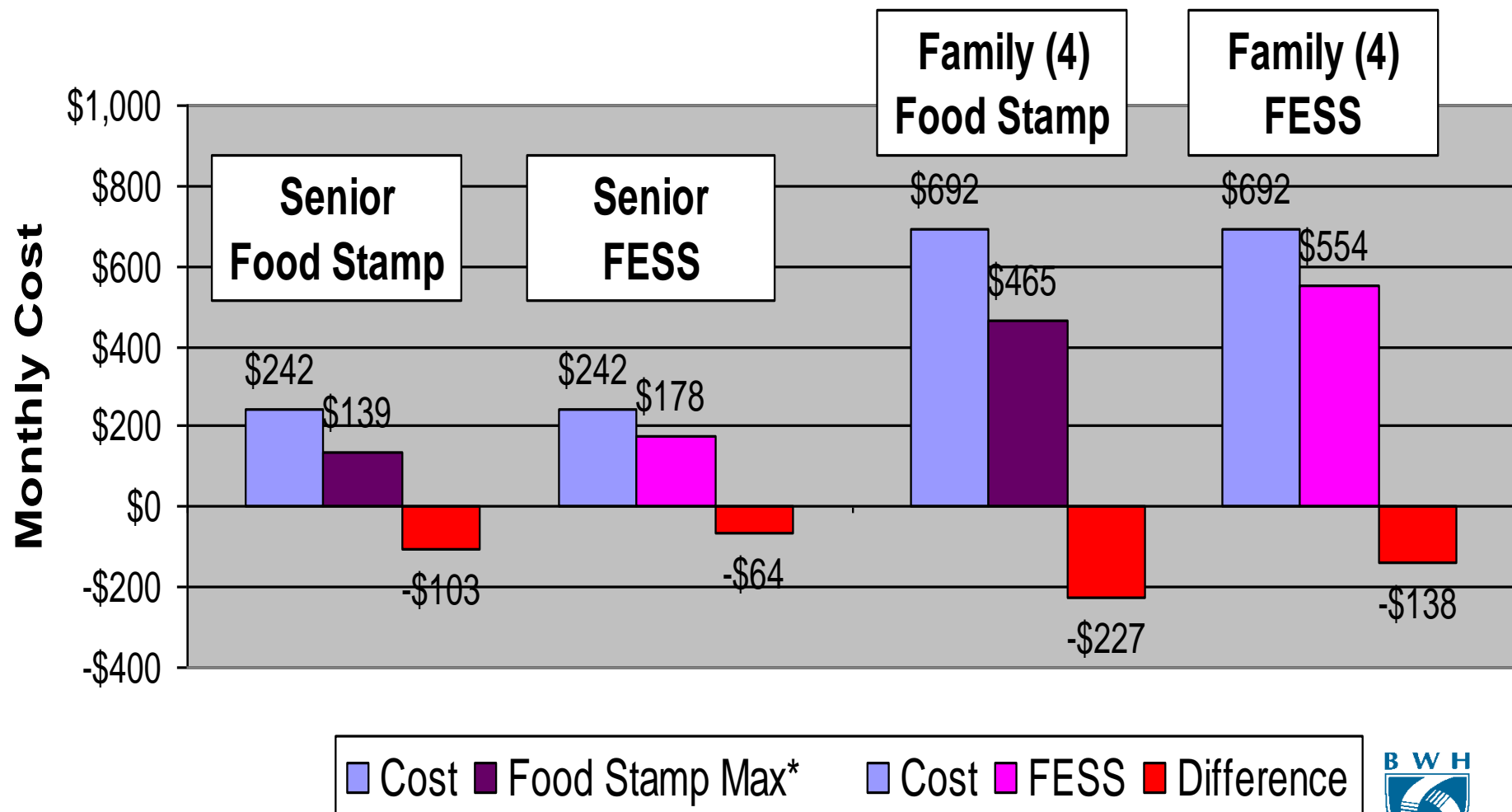


# Healthy Heart Study

- Look at affordability of healthy diet in two lower-income, diverse Boston neighborhoods
- Conducted series of focus groups to develop culturally-appropriate and heart healthy menus
- Conducted cost assessments at large local grocery stores to develop conservative estimates for monthly food cost
- Compared cost of heart-healthy menus to monthly allowance under federal safety-net Food Stamp program



# Affordability of a Healthy Diet in Boston Neighborhood



\* Fiscal Year 2004



# The Boston Collaborative for Food & Fitness

- Improve access to healthy food and safe environments for active living
- Collaborate with NGOs, government agencies and two academic medical centers to influence:
  - Community food environments (e.g. stores, farmer's markets)
  - School food systems
  - Active living (e.g. open spaces/safe sidewalks)
  - Health care systems that support access to healthy, affordable food



# Goals of the Boston Food Policy Council

1. Increase access to affordable, healthy, nutritious food for all Boston residents
2. Expand Boston's capacity to produce, distribute, and consume local food
3. Promote food as an economic development strategy
4. Expand existing public and private partnerships and establish new partnerships with foundations and corporate leaders



# Access to Healthy and Affordable Food

Obesity and  
diabetes  
presenting in  
the physicians  
office

***Why?***

Obesity and  
diabetes  
presenting in  
the community

***Public Health***

***Need access to  
healthy, affordable food***

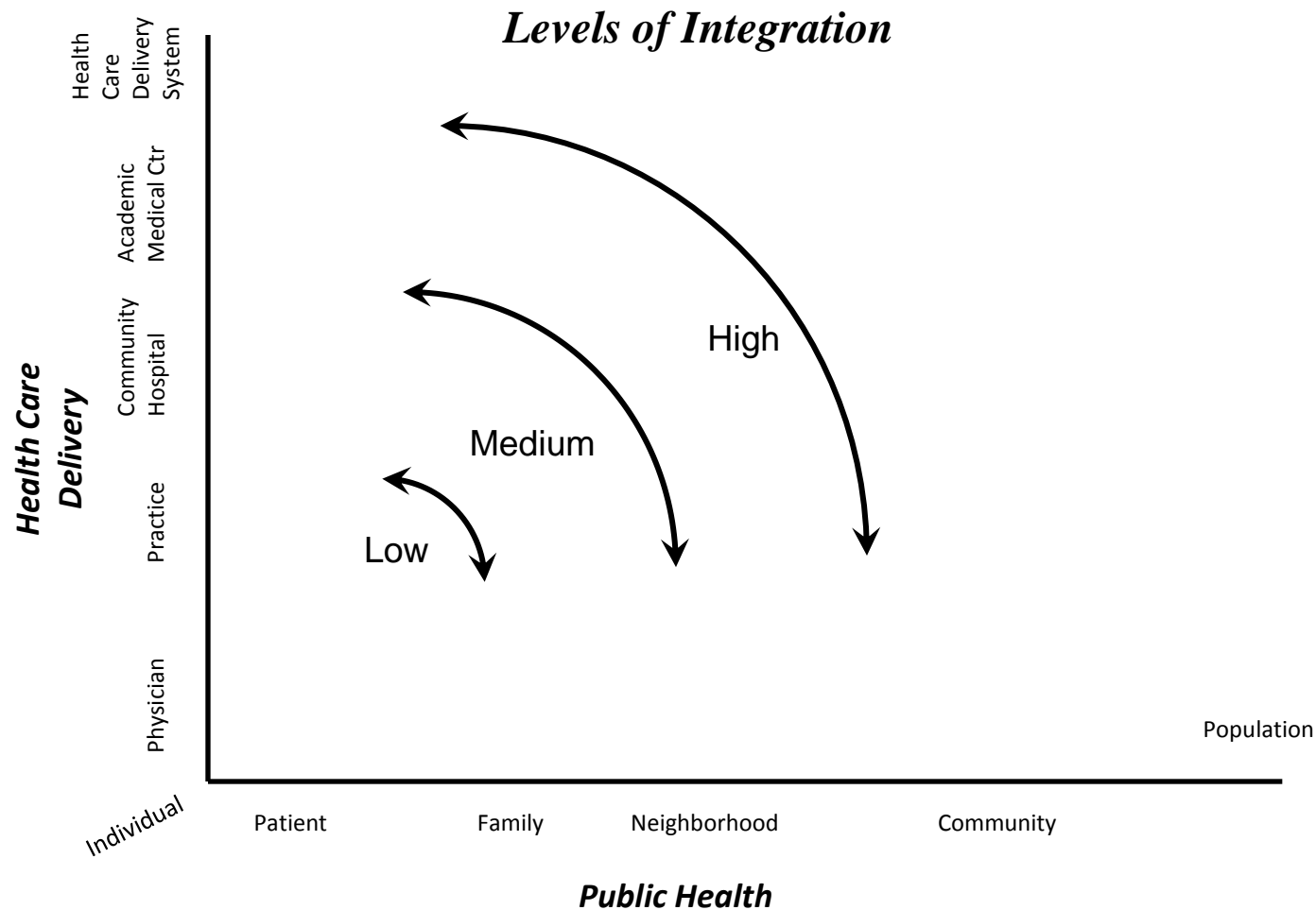
***Health Care  
Delivery***

Access to  
healthy, afforda  
ble food  
supported by  
the physician

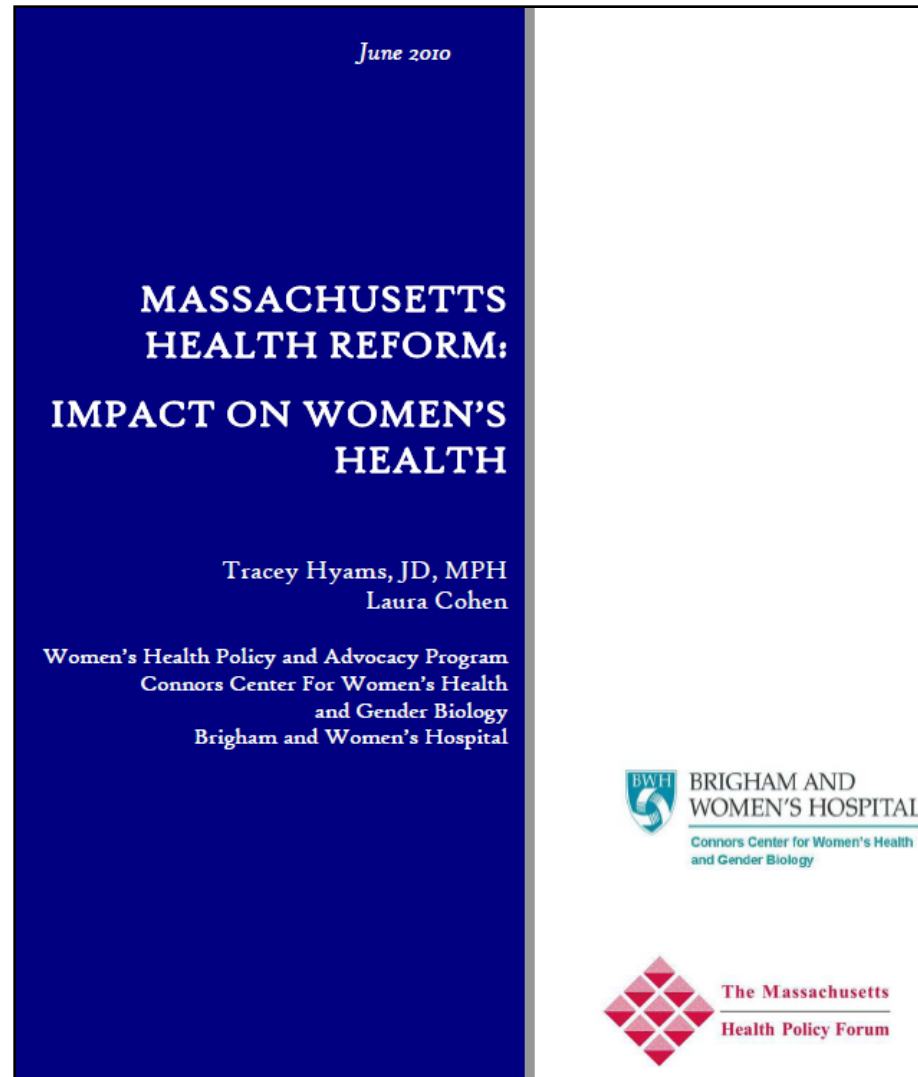
Access to  
healthy, afforda  
ble food  
supported by  
the community



# Integration Across Fields: Public Health and Health Care Delivery



# Integration Across Disciplines: Research, Policy, Advocacy







## HC Reform: Goals / Research Questions

- a. Define a *strategy* and *framework* for creating an effective women's health implementation agenda within ACA
- b. Examine the intersection of women's health and health reform - structure, process and outcomes (*see next slide*)
- c. Synthesize work being done by federal agencies; identify gaps; then translate evidence into action
- d. Define a research agenda with an action agenda attached
- e. Begin to develop models of care for women across the lifespan
- f. Discuss practicality of implementation at the state level/ identify threads of assistance



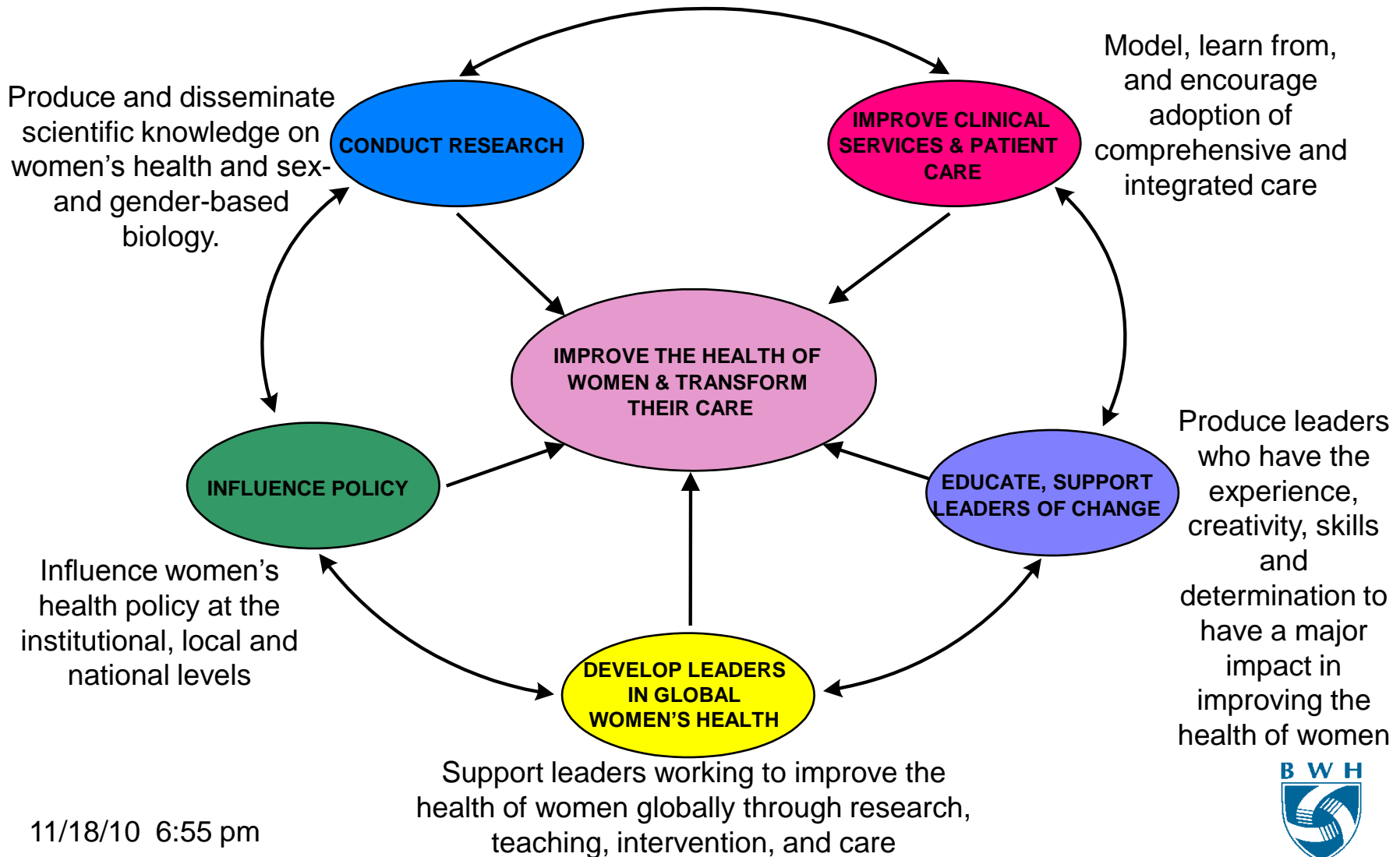
# Global Women's Health

“... In the new global economy, individual countries and regions would find it difficult to make economic or social progress if a disproportionate percentage of their female population remained poor, uneducated, unhealthy and disenfranchised.”

Hilary Clinton on the  
U.N. Fourth World Conference on Women



# Women's Health Across Disciplines



# Integration Across Disciplines in Botswana : Research, Education and Policy



- Has become one of the fastest growing countries in the world
- Has the second highest rate of HIV infection in the world
- 1 in 3 pregnant women are HIV positive (2007)
- Global Women's Health Fellows study efficacy of preventing HIV transmission through breastfeeding
- Research findings integrated into approaches of the Ministry of Health
- Developing relationship with new medical school to help develop women's health curriculum

# Integration Across Disciplines in Malawi: Leadership and Policy



- One of the least developed countries in the world
- Among the highest maternal mortality rates in Africa
- Vice President Joyce Banda aims “to assist women and girls gain social and political empowerment through entrepreneurship and education”
- Adopting culturally-appropriate models of integration across disciplines
- Serve as example/”case study” for leadership development in global women’s health

# Leadership for Women's Health: Building the Field Globally to Improve Lives

## Identify Global Leaders

Identify and recruit the most promising and up-and-coming leaders in different world regions

## Support and Develop Leaders

Support growth by making available full, multi-disciplinary resources of Harvard University

## Establish Field of Women's Health Leadership

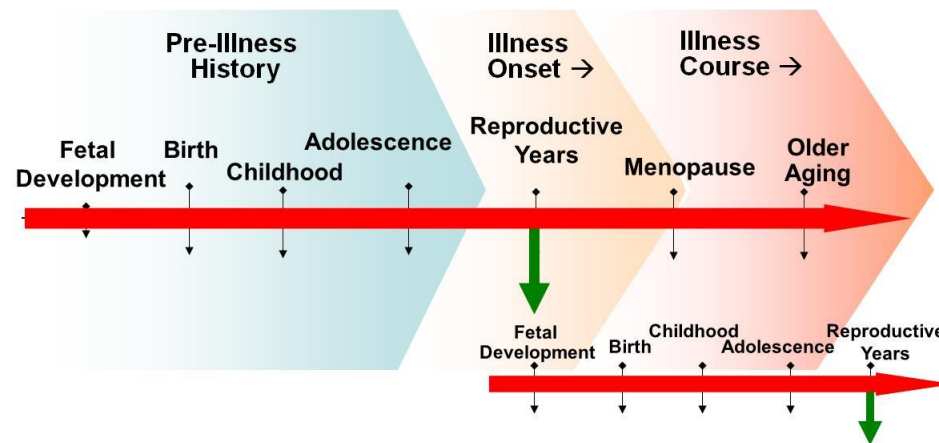
Build the field through robust research and case development

## Sustain Leaders Globally

Develop a sustained training and collaborative network to improve the health of women around the globe

# Women's Health: Integration Across the Lifespan and Disciplines

## Women's Health Across the Lifespan



## Women's Health Across Disciplines

