

The Impact of CHF on the Healthcare Industry, the Nation, and the World

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Objectives

- Learn of the global, national and health system scope/impact of cardiovascular disease (CVD) and heart failure (HF)
- Review trends in CVD & HF incidence & prevalence
- Understand how HF impacts the demand for healthcare services in the healthcare system

Cardiovascular Disease (CVD) Impact

Currently, **1 in 3 Americans (36.9 percent)** have some form of cardiovascular disease, including high blood pressure, coronary heart disease, heart failure, stroke and other conditions.

- Source: *Heidenreich, Paul (VA PAHCS) et al*

CVD Trends

- Aging of the baby boom generation will produce a sharp rise by 2020 in the number of people who die from heart disease and stroke or survive with dependency

Source: Cooper et al., Circulation 2000;102:3137-47

By 2020...

CVD is projected to surpass infectious disease as the **world's** leading cause of death and disability.

Some of the increase in relative importance of CVD is due to improved public health measures and medical care leading to longer life spans and reduced mortality from other causes.

Source: Levenson, J., Skerritt, P. & Graziano, M. Reducing the Global Burden of Cardiovascular Disease: The Role of Risk Factors. 2009, *Preventive Cardiology*, 5(4), 1880-199.

By 2030 in the US ■ ■ ■

“We estimate that 40 percent of U.S. adults, or 116 million people, will have one or more forms of cardiovascular disease.

Between 2010 and 2030, real total direct medical costs of cardiovascular disease are projected to triple, from \$272.5 billion to \$818.1 billion.”

Source: *Heidenreich*, Paul (VA PAHCS) et al

Changes in Sources of Morbidity and Mortality as Societies Industrialize and Change

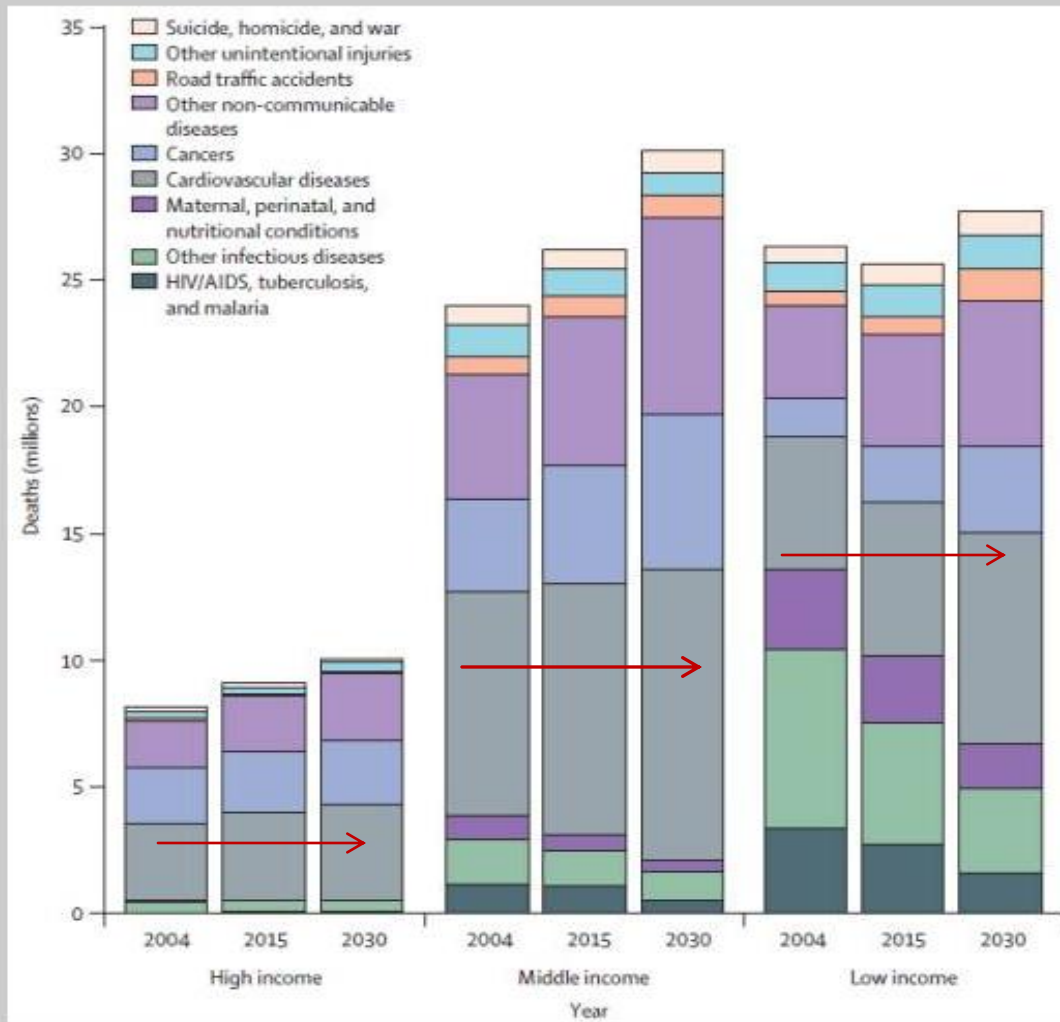
Shift from nutritional deficiencies and infectious diseases, to

Degenerative diseases : chronic diseases such as CVD, cancer, and diabetes

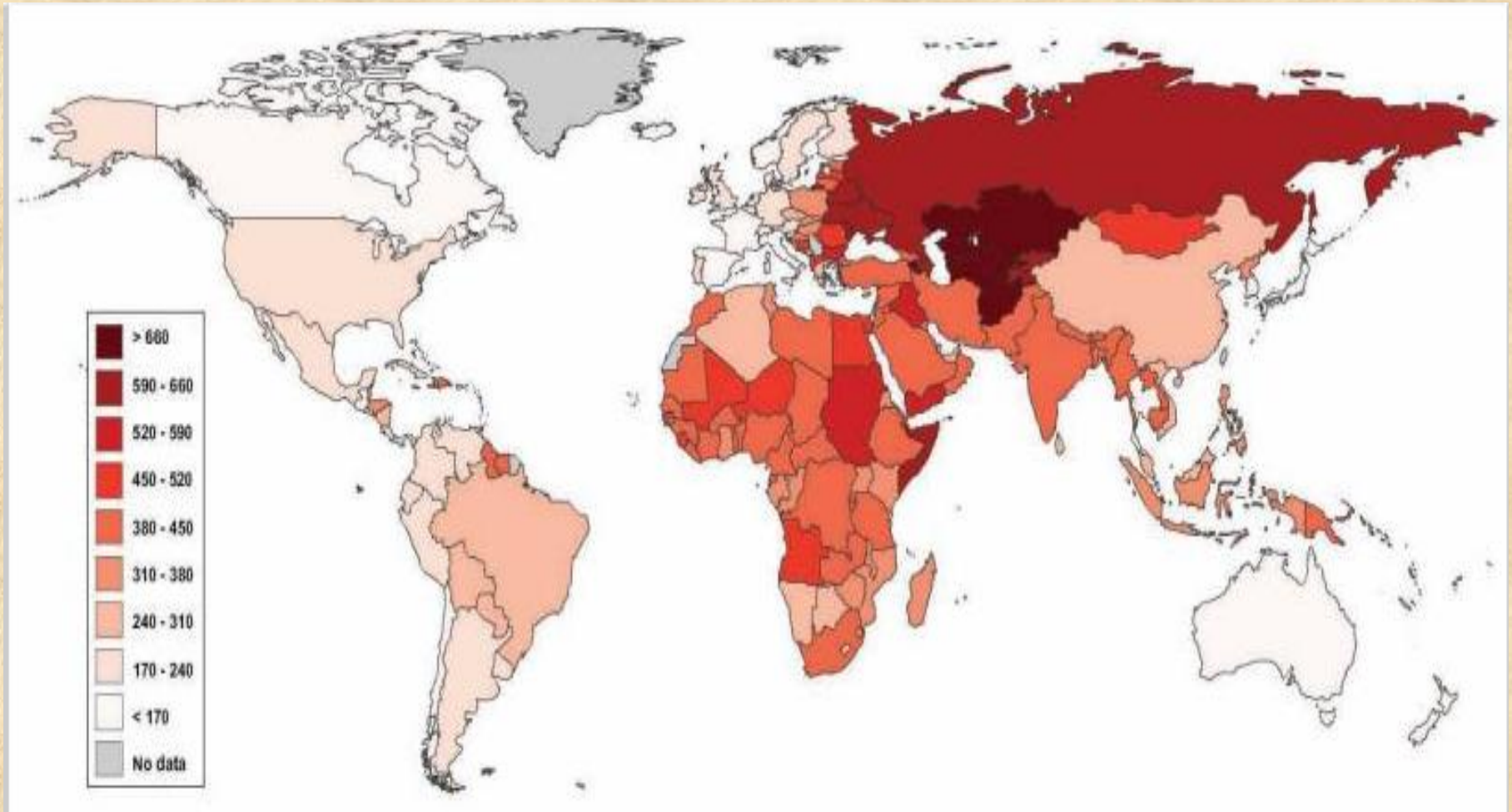
This shift has been termed “the epidemiologic transition.”

Projected Global Deaths by Cause

Source: [Beaglehole and Bonita, 2008](#).

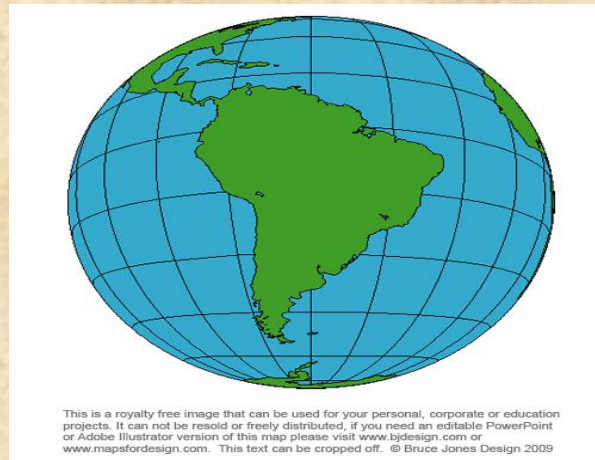


Age-standardized deaths due to cardiovascular disease (rate per 100,000) Source: 2004, WHO



Heart Failure in the World

- Latin American countries (LAC) are undergoing the first phase of an epidemic of coronary artery disease (CAD) that probably will lead to an increased incidence of HF.



2. Source: Lown, Cardiovascular Research Foundation (2004).

The Source of CVD Global Impact

Much of the increasing global impact of CVD is attributable to **economic, social, and cultural changes** that have led to increases in risk factors for CVD.

Risk factors include: tobacco use, diet, obesity and physical activity, diabetes, hypertension, high cholesterol.

Heart Disease Impact in US

Heart disease was the nation's leading cause of death in 2010 for **women and men** and for nearly every racial and ethnic group.

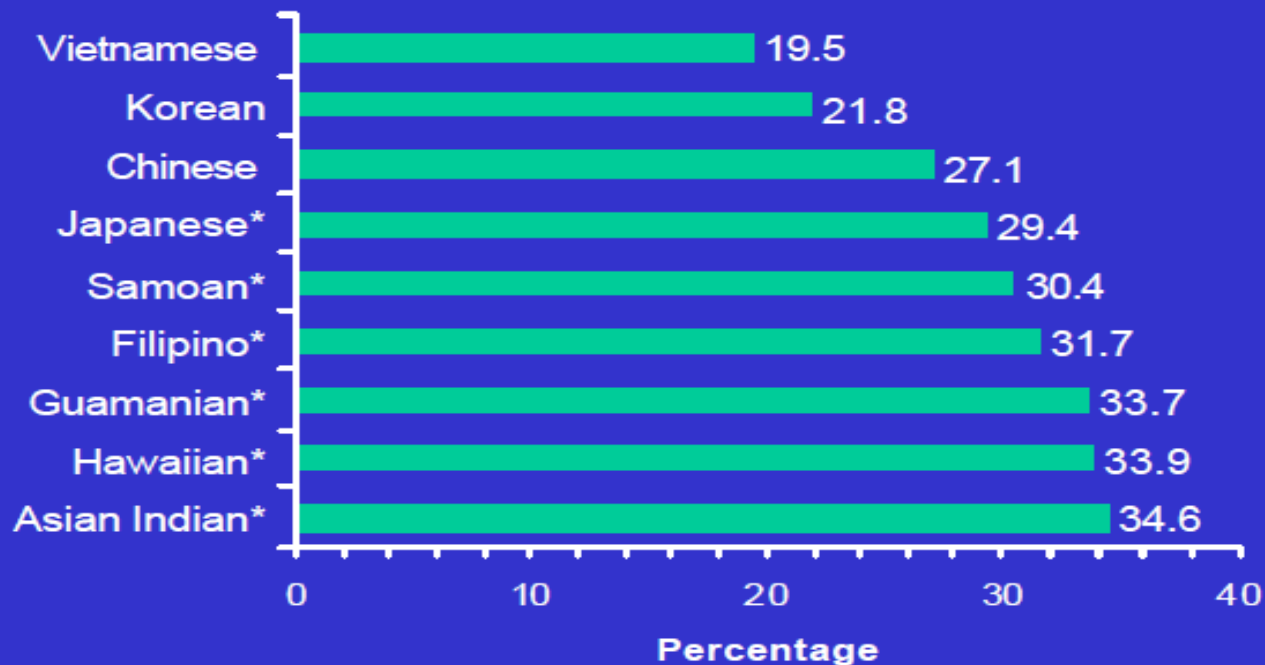
Source: CDC, 2011

Heart Disease--Not Just an Older Adult's Issue:

- Heart Disease accounts for **17%** of all healthcare spending in the US.
- Heart Disease is the **third leading** cause of death among **women aged 25–44** years and the **second leading** cause of death among **women aged 45–64** years.

Asian and Pacific Islander Americans

Heart Disease as Percentage of All Deaths



*Heart disease is the leading cause of death



Heart Failure is:

- a chronic, progressive disease that is characterized by frequent hospital admissions and high mortality rates.
- characterized by the inability of the heart to pump an adequate amount of blood to achieve the demand of the different organ systems and/or doing so at increased filling pressures.

Heart Failure in the World

Worldwide –

- 22 million cases (prevalence)₁
- 2 million new cases a year (incidence)₁

Source: American Heart Association

Heart Failure in the Nation

- About **5.3 million Americans** are living with HF today
- HF is one of the **most common** reasons people 65 and older go into the hospital in US
- HF generates high medical resource consumption and is the **most costly CVD** in the US

The Public Health Impact of HF

- Heart failure prevalence increases with age. Heart Failure affects 6-10% of people over the age of 65 (AHA, 2007).
- 660,000 new cases are diagnosed yearly-- 10 people out every thousand people >age 65

HF Admissions/Readmissions

- 1,000,000 HF patients are admitted to hospitals each year.
- HF is the leading cause of hospital readmissions, which cost Medicare \$17 billion a year, and account for 20% of Medicare payments.
- About 20% of patients admitted for HF are readmitted within 30 days.
- Source: American Heart Association, 2010.

Heart Failure in the VA

Heart failure is the number one reason for discharge for Veterans treated within the VA healthcare system

Racial/Ethnic Groups are Impacted Differently

- **African Americans** between the age of 45 and 65 have a **70% higher rate of HF**, with **mortality rates of 2.5 times** more than the Caucasian population (CDC, 2011).
- **Hispanics** reportedly have **higher HF rates**, develop HF earlier, have more related hospitalizations, **die earlier** than white-non Hispanics (Bahrami H et al., *Arch Intern Med.* 2008;168(19):2138-2145)

HF morbidity and mortality for African Americans

- African Americans are at greater risk for HF than Caucasians, with approximately 3% of all African-American adults affected.
- Age of onset is significantly younger in African Americans than in whites, and HF is less likely to be due to ischemic heart disease.
- Incident HF before 50 years of age is substantially more common among blacks than among whites.

Source: .Heart Failure Society of America, 2010 Heart Failure Practice Guideline
http://www.heartfailureguideline.org/hf_in_african_americans/125

Hispanic Americans

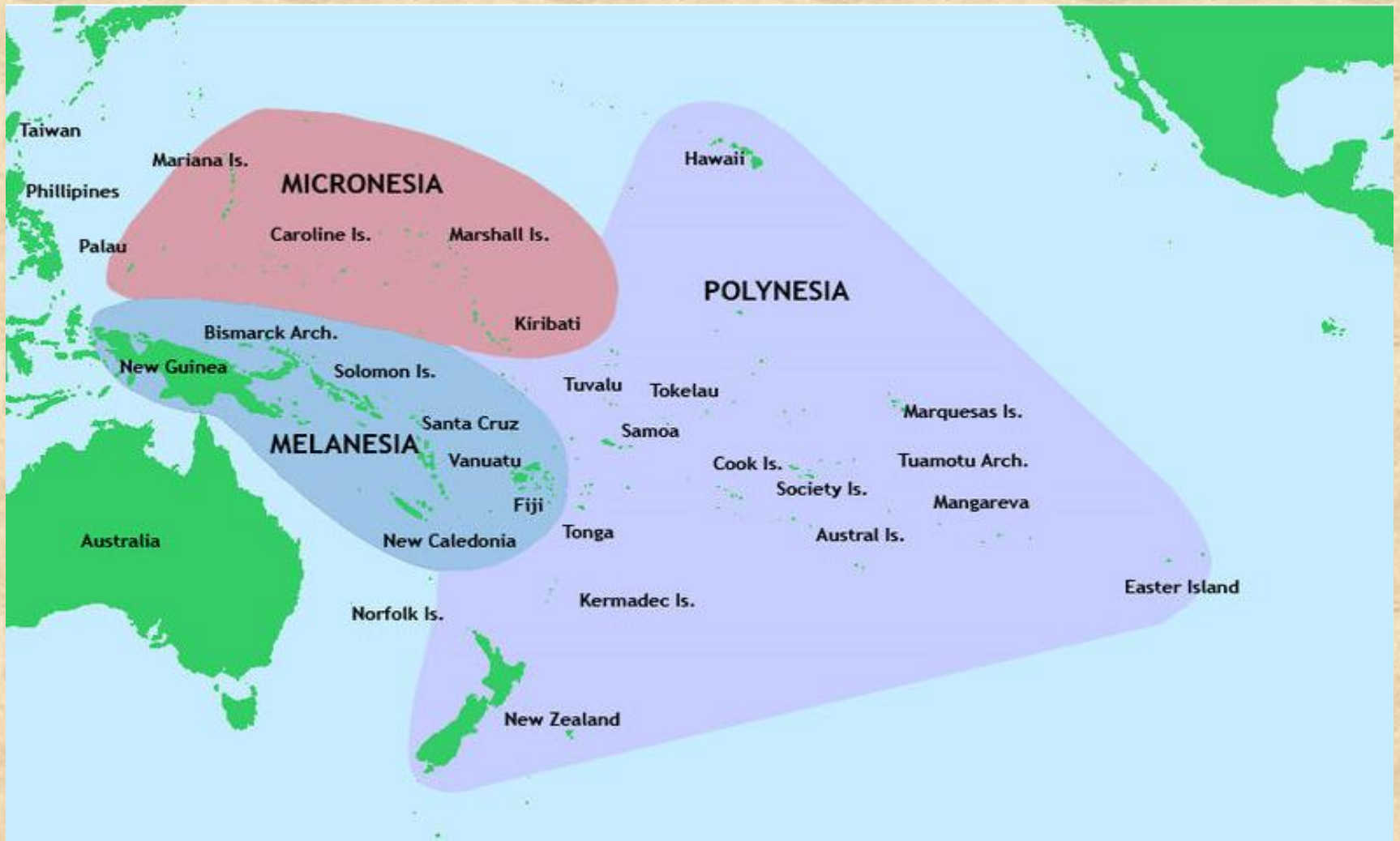
- Current data show that Hispanics with HF are more likely to be younger and underinsured than non-Hispanic whites.
- They have higher rates of readmissions but have lower in-hospital and short-term mortality rates.
- Large-scale heart failure (HF) studies in Hispanic Americans are limited.

Source: Vivo, R., Krim, S., Cevik, C. & Whittles, R. J Am Coll Cardiol, 2009; 53:1167-1175, doi:10.1016/j.jacc.2008.12.037

Asian and Pacific Islander Subgroups

- Variability in CVD risk across subgroups, though many studies group Asian American together, masking differences in risk
- **Higher rates** of hospitalization for ischemic heart disease in **Asian Indians**, **lower rates in Chinese**
- Hypertension rates **are higher** in Filipinos than in other Asian American subgroups
- Asian Americans and Pacific Islanders may have longer “door to drug times” for acute interventions
- Some Asian Americans have **a greater incidence** of hemorrhagic stroke than whites

Pacific Islands at a glance:



Socioeconomic Status (SES) Matters

Socioeconomic Status (SES) is associated with higher HF admission risk in post-menopausal women

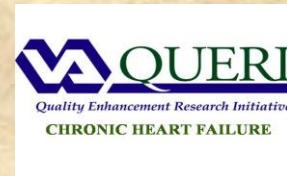
Source: Shah, R. Journal of the American College of Cardiology ,September 22,2011.

One Avoidable CVD Risk Factor: More than 1 billion of the world's inhabitants smoke

- Smoking/tobacco use is an avoidable cause of CVD and total mortality.
- In 1990, an estimated 6% of all deaths worldwide were attributable to tobacco.
- 14% of youths aged 13-15 throughout the world smoke cigarettes and 25% of them started this habit before the age of 10.
- As smoking rates rise in the developing economies, smoking will account for more than 12% of deaths by 2020, killing more people than any single disease, including human immunodeficiency virus (HIV) infection.

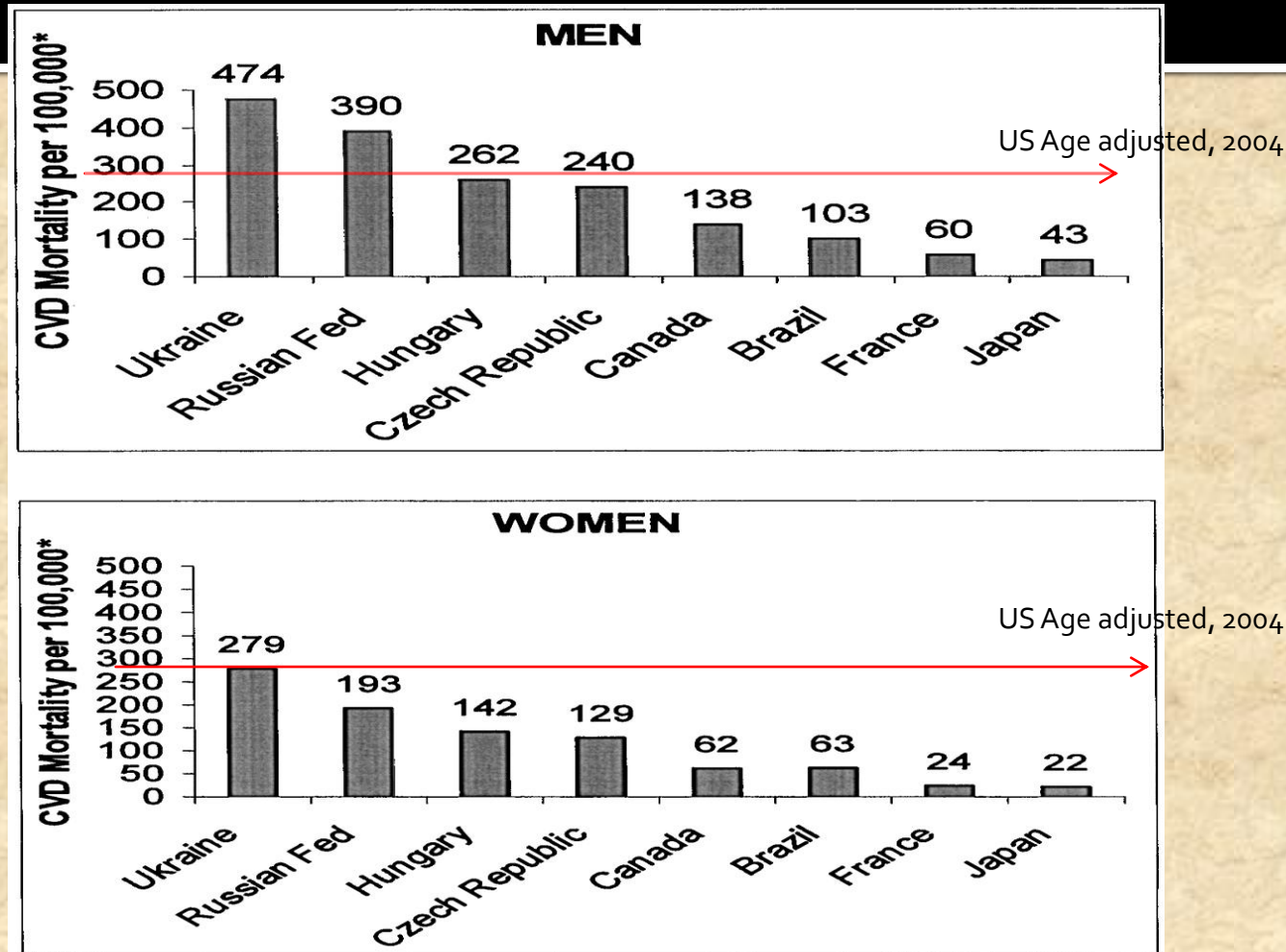
Summary

- The burden of HF in US and globally **is significant**, and risk factors are plentiful.
- Risk factor identification and reduction is **one of our roles**, in partnership with patient/family.
- You/we all play a key role in clinical stabilization, treatment and health/self-care education efforts in managing HF.



Thank You

Figure 1. CVD mortality in selected countries demonstrating marked international variations. *Rates adjusted to WHO Standard Population.



Yusuf S et al. *Circulation* 2001;104:2746-2753