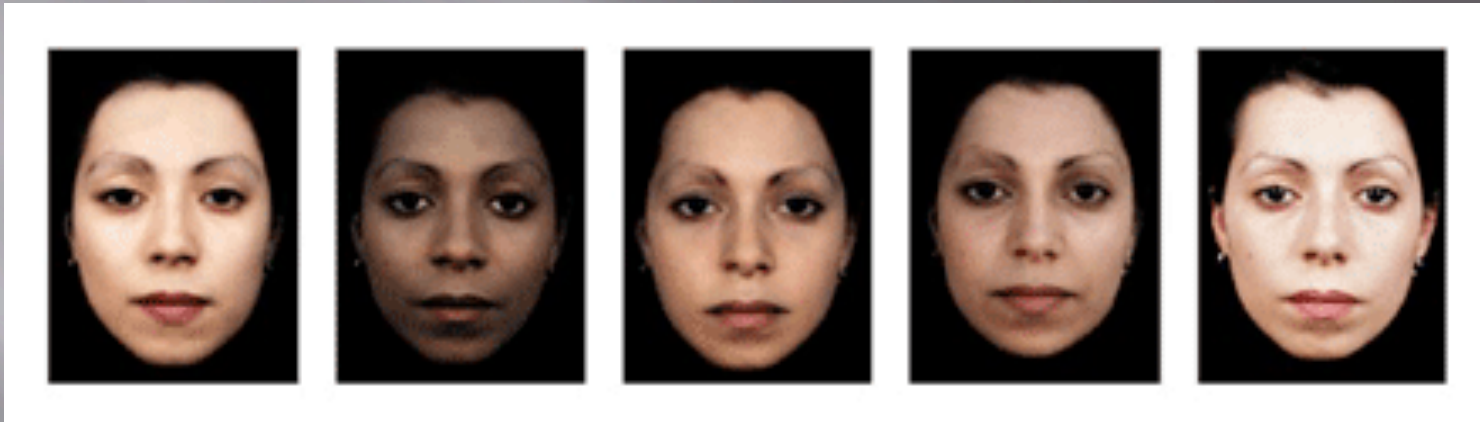


IMPLICATIONS OF RACIAL HEALTH DISPARITIES: RACE-BASED PHARMACEUTICALS



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What Are Health Disparities?

- ▣ Health differences between groups of people
- ▣ AKA health inequalities
 - Gaps in quality of health and health care across racial, ethnic, and socioeconomic groups
 - Can be based on cultural differences and sexual preference as well
- ▣ Involves
 - quality of treatment among groups
 - biological trends among groups

Who's Involved?

- ▣ In US, well documented in minority populations
 - African Americans, Native Americans, Asian Americans, and Latinos
- ▣ Higher incidence of chronic disease, higher mortality, and poorer health outcomes when compared to whites
 - Cancer incidence among African Americans 10% higher than among whites
 - African Americans and Latinos at about two times the risk as whites of developing diabetes
- ▣ Minorities have higher rates of cardiovascular disease, HIV/AIDS, and infant mortality than whites

Causes

- ▣ Personal, socioeconomic, and environmental characteristics of different ethnic and racial groups
 - Unsafe living- lead-based paint, fire-prone heating, allergens from infestations
 - Nutrition
 - High psychological stress
- ▣ Barriers certain racial and ethnic groups encounter when trying to enter the healthcare delivery system
 - Education
 - Employment
- ▣ Quality of healthcare different ethnic and racial groups receive

Popular Beliefs: Codeterminants

- ▣ Many view health disparities as results of race and class
- ▣ For treatment, better to use race
- ▣ Still, because race is socially constructed, race as a marker for disease susceptibility is not useful
 - Belief that blacks are biologically inferior to whites (cranial size, oxygen-carrying capacity) long been discredited
 - Prevalence of hypertension and diabetes is two to three times as high among African Americans as among whites,
 - ▣ However, oversimplification to assume that differences in genetic susceptibility could explain the observed racial disparities
 - ▣ Differences among members of one race, e.g. hypertension and diabetes prevalence rates in West Africans and black Americans or black Britons

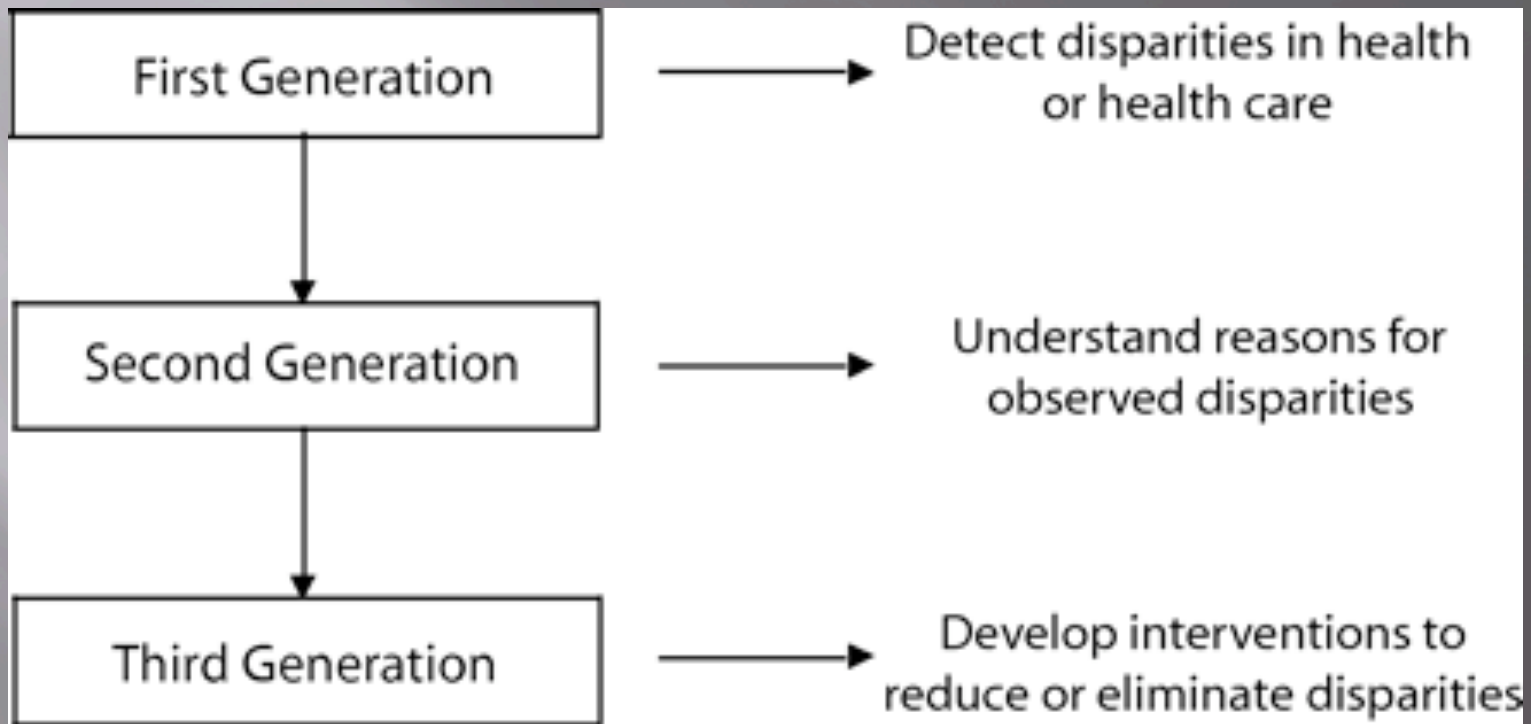
Efforts to Eliminate Health Disparities

- ▣ Healthy People 2010
 - started in January 2000 by the United States Department of Health and Human Services
 - a nationwide health promotion and disease prevention plan that is composed of 467 specific objectives, 28 goals, and two overarching goals to be achieved by 2010
 - Overarching goals
 - ▣ to increase the quality and length of life
 - ▣ to eliminate health disparities among subgroups of the population

Healthy People 2010

- Ten leading health indicators that are the immediate, major health concerns
 - physical activity, overweight and obesity, tobacco use, substance abuse, responsible sexual behavior, mental health, injury and violence, environmental quality where one lives, immunization, and access to health care
 - Identifies 6 major factors that contribute to disparities in the health of Americans
 - gender
 - race or ethnicity
 - education or income
 - disability
 - geographic location
 - sexual orientation

Framework for Advancing Health Disparities Research



The Center for Health Equity Research
and Promotion

Process to Measure Progress

- ▣ Disparities are measured as the percent difference from the best group rate among the groups associated with a particular characteristic, with all indicators expressed in terms of adverse events
 - disparities for racial and ethnic groups are measured using the rate for the racial and ethnic group with the best rate as the reference point

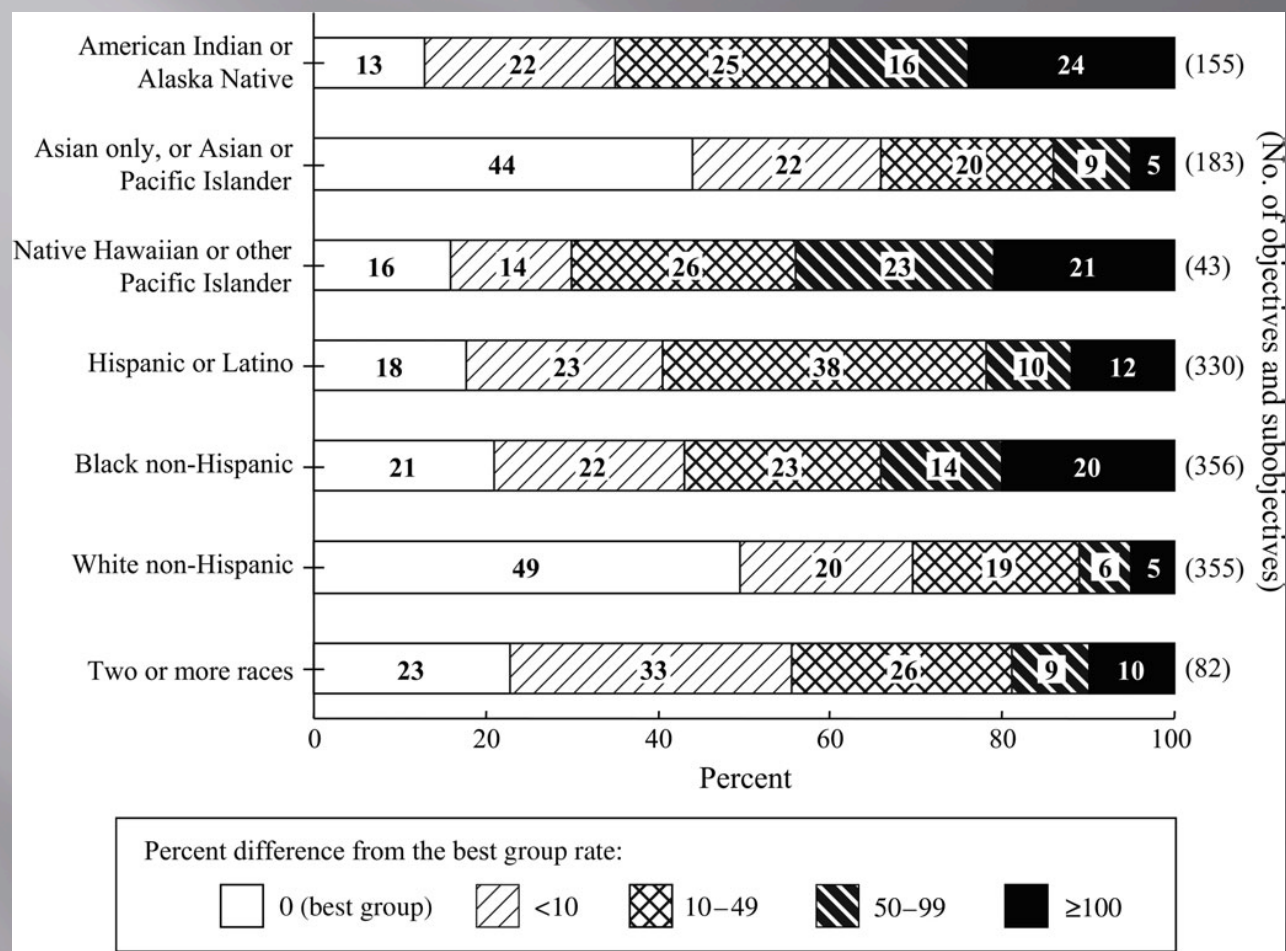


FIGURE 1. Percent distribution of Healthy People 2010 objectives and subobjectives, by size of the disparity, for various US racial and ethnic populations as of January 2005.

Implications

- ▣ Race-based pharmaceuticals
- ▣ Discussion of race-specific medicine usually differentiates between
 - scientific use of race as a biological category and
 - the ideological battle over race as a social identity.
- ▣ Some have criticized race-based medicine as a scientifically flawed and commercially corrupted misuse of biomedical research
- ▣ Others have supported racial therapeutics to redress past discrimination and cater to demands for science to attend to the health needs of African Americans.
- ▣ Nonetheless, these therapeutics can reinforce a harmful understanding of race

Race-based Medicine

- ▣ African-American Heart Failure Trial (A-HeFT)
 - fixed dose combination of isosorbide dinitrate/ hydralazine (FDC I/H) or placebo in black heart failure (HF) patients treated with contemporary HF medications
 - FDC I/H was effective in reducing mortality and improving event-free survival
 - 43 percent relative decrease in the rate of death due to heart failure among blacks

Race-based Medicine

- ▣ BiDil
- ▣ the first drug with a race-specific indication
- ▣ Granted approval by FDA June 23, 2005
- ▣ combines two generics long recognized as benefiting patients with heart failure, irrespective of race or ethnicity

Criticisms

- ▣ Treats race as a placeholder — a makeshift, ill-defined marker for the undiscovered genetic variations that lead to differences in responsiveness to drugs
- ▣ Market and regulatory incentives shape research agendas
- ▣ Has not established that adding isosorbide dinitrate and hydralazine to conventional therapy for heart failure benefits blacks more than other racial or ethnic groups
 - The study enrolled only self-identified blacks

Criticisms

- ❑ Exploits race to gain commercial and regulatory advantage in the pharmaceutical marketplace
- ❑ Reifies and biologizes racial groups to create the impression that the best way to address health disparities is through commercial drug development
- ❑ Distorts public understanding of health disparities by exploiting race in the service of product promotion
- ❑ Cheats consumers
- ❑ Threatens to set in motion a trend in the pharmaceutical industry for turning other widely used and cost-effective generics into patented, expensive drugs in the name of alleviating health disparities

A Better Approach

- ▣ Personalized medicine– genomics-based pharmaceuticals
- ▣ Human Genome Project, the increased technological capacity to map the entire human genome (the library of DNA building blocks) and the national efforts to reduce racial disparities in health and health care
- ▣ Clear evidence of a well-understood genetic contribution to common diseases can provide valuable insights for health management
 - ▣ As in cases of some breast and colon cancers

A Genomics Approach to Treatment

- ▣ Pharmacogenetics and pharmacogenomics deal with the genetic basis that underlie variable drug response in individual patients
 - Seek to identify the variant genes affecting the response to drugs in individual patients
- ▣ Pharmacogenomic analysis can identify disease susceptibility genes representing potential new drug targets
 - Will lead to new approaches in drug discovery, an individualized application of drug therapy, and new insights into disease prevention
 - Pharmacogenomics may help focus effective therapy on smaller patient subpopulations characterized by distinct genetic profiles
 - To breakthrough, novel technologies will be needed, legal and ethical questions must be clarified, health care professionals must be educated, and the public must be informed about implications of genetic testing in drug therapy and disease management

Resources

- http://en.wikipedia.org/wiki/Health_disparities
- <http://jama.ama-assn.org/cgi/content/full/291/24/2985>
- <http://content.healthaffairs.org/cgi/content/full/24/4/343>
- <http://www3.interscience.wiley.com/cgi-bin/fulltext/121385665/PDFSTART>
- http://www.sciencedirect.com/science?_ob=ArticleURL&udi=B6WHG-4T5V9FB-4&user=145269&rdoc=1&fmt=&orig=search&sort=d&view=c&acct=C000012078&version=1&urlVersion=0&userid=145269&md5=1bb21deb1ad66ef8ba86fb40b81d7e24
- <http://content.nejm.org/cgi/content/full/351/20/2035>
- <http://aje.oxfordjournals.org/cgi/reprint/166/1/97>
- <http://www.springerlink.com/content/r63m6862174w3280/>