Lesson/Week 13 Health Care Systems

✓I. Institutions, services, and expenditures:

Number of Hospital Beds per 100,000

Per Capita Health Expenditures

✓II. Personnel:

Number of Physicians per 100,000

Number of Nurses per 100,000

✓III. Immunization – Levels and Trends

✓IV. Health Care in the USA

Institutions: Health Service Coverage

"Coverage indicators are typically calculated by dividing the number of people receiving a defined intervention by the population eligible for – or in need of – the intervention."

www.WHO.int
Interactive maps: World Bank
http://data.worldbank.org/indicator/SH.MED.BEDS.ZS?display=graph

Health Care Workers

✓There are an estimated 100 million health care workers worldwide,
✓Still, there is a projected shortage of more than 4 million workers.
✓The World Health Organization (WHO) defines a health care worker (HCW) as anyone whose focus or activity is to improve health.
✓This definition includes providers (e.g., doctors, nurses and midwives) as well as technicians and managers.
✓There are nine categories of health care personnel:

1. Physicians
2. Nurses and Midwives
3. Dentists and dental assistants
4. Pharmacists
5. Laboratory scientists and technicians
6. Environment and public health workers
7. Community health workers and traditional healers
8. Other health care providers
9. Health managers and support workers

http://www.globalhealth.org/health_systems/health_care_workers/

Challenges Faced by Health Care Workers (HCW)

"Adequate health care provision depends on the availability of resources to retain health care workers and the availability of health care workers to manage the flow of those resources. In recent years, international donors and organizations have increased attention to funding for medical supplies, technology and management. However, the shortage of health care workers is a barrier in managing the flow of these resources.[1]

✓In 15 countries in sub-Saharan Africa, there are five or fewer physicians per 100,000
✓people – below the recommended 20 physicians per 100,000.

In 17 countries in sub-Saharan Africa, there are 50 or fewer nurses per 100,000 people
✓ – below the recommended 100 nurses per 100,000.

Vaccination coverage is directly linked to the density of nurses and other health-related
✓human resources, and is almost entirely independent of physicians.

Countries with less than 2.5 HCWs per 1,000 people were unable to provide 80%
✓ coverage for measles immunizations and deliveries by skilled birth attendants.

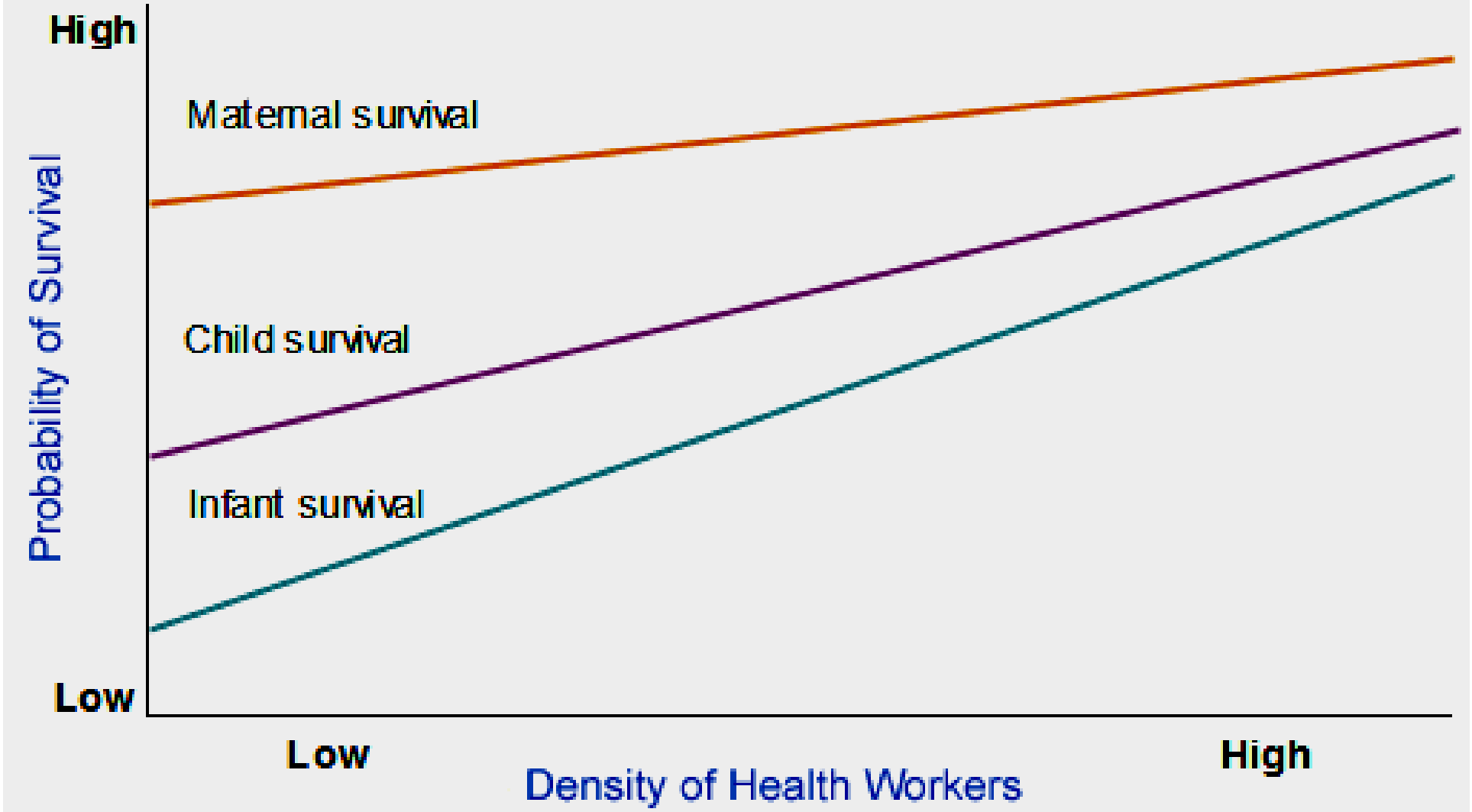
http://www.globalhealth.org/health_systems/health_care_workers/

Key Facts

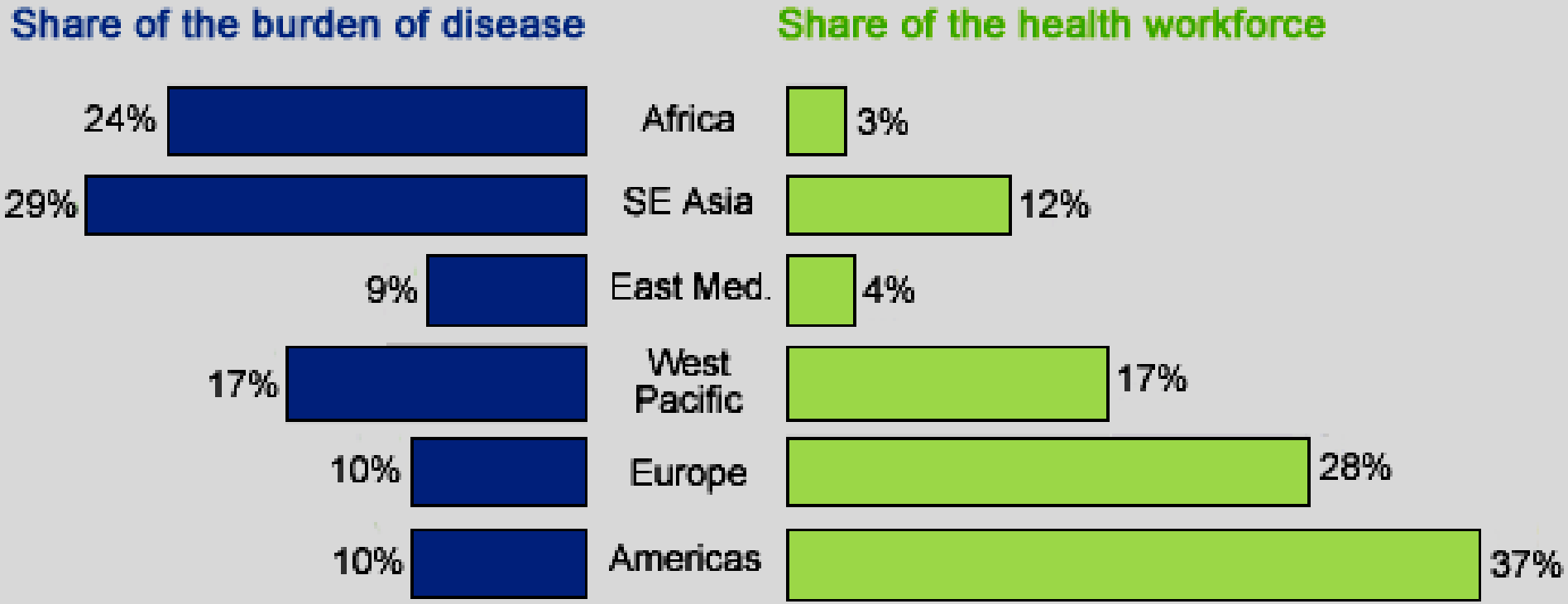
http://www.healthgap.org

- ✓In Africa, a mere 3% of the world's health workers struggle against all odds to combat 24% of the global disease burden
- ✓In Malawi, only 10% of the physician slots are filled while 10 people die every hour of AIDS in the country
- ✓Out of the 1200 physicians trained in Zimbabwe from 1990 to 2001, only 360 remain
- ✓More than 3000 nurses from African nations migrated and registered in the United Kingdom in 2002-2004
- ✓Ghana has lost 69% of physicians, 25% of nurses, and 42% of pharmacists which graduated between 1993-20025
- ✓Ethiopia's public health sector is loosing about 9.6% of their physicians every year to both the private healthcare sector and to other countries
- ✓In Ghana, research indicates that 50% of graduates of medical schools emigrate within 5 years, and 75% within 10 years.
- ✓Active recruiting by wealthy nations pull trained health care workers out of Africa.

http://www.youtube.com/watch?v=hQDeDLwO2oc

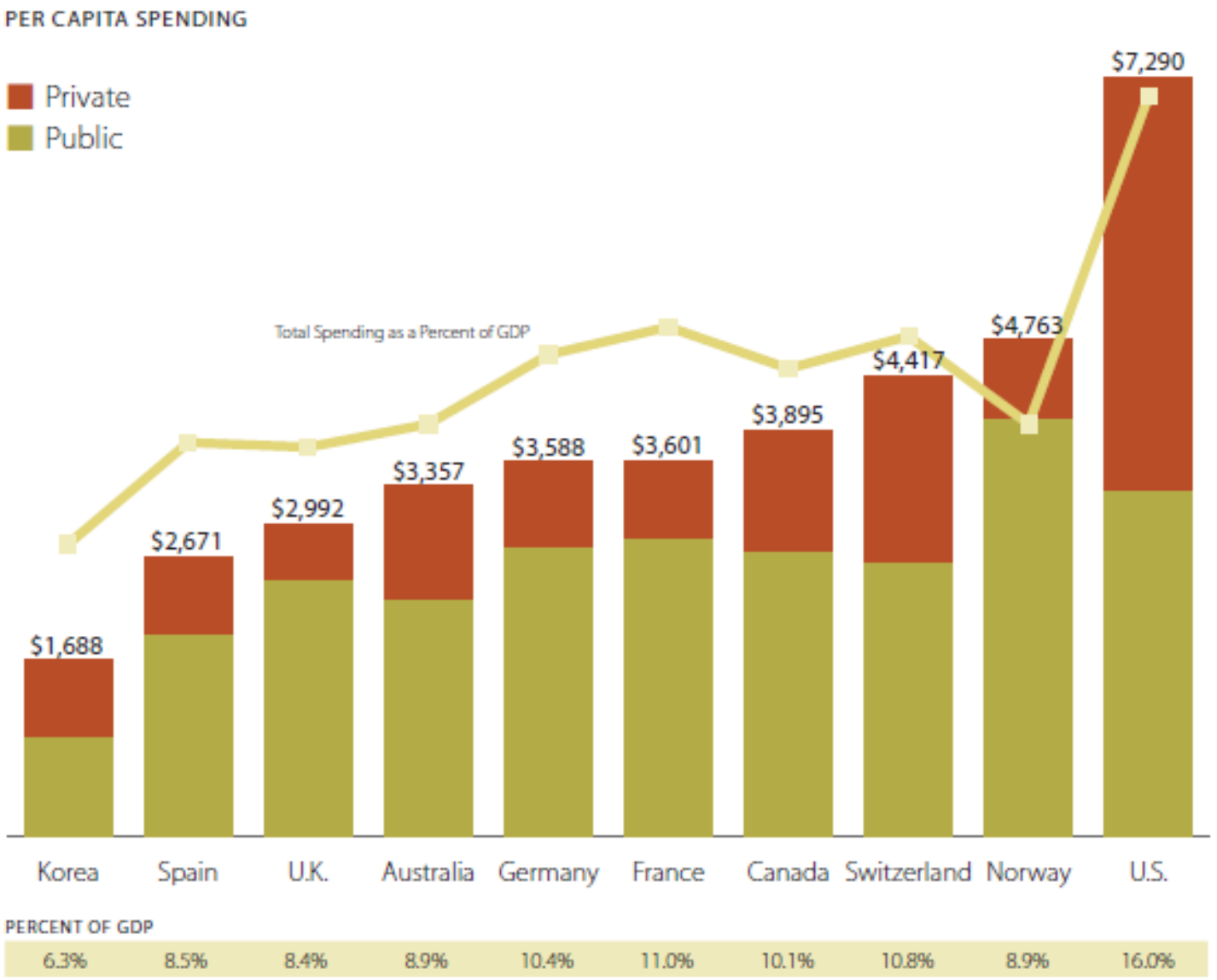


http://www.globalhealth.org/health_systems/health_care_workers/

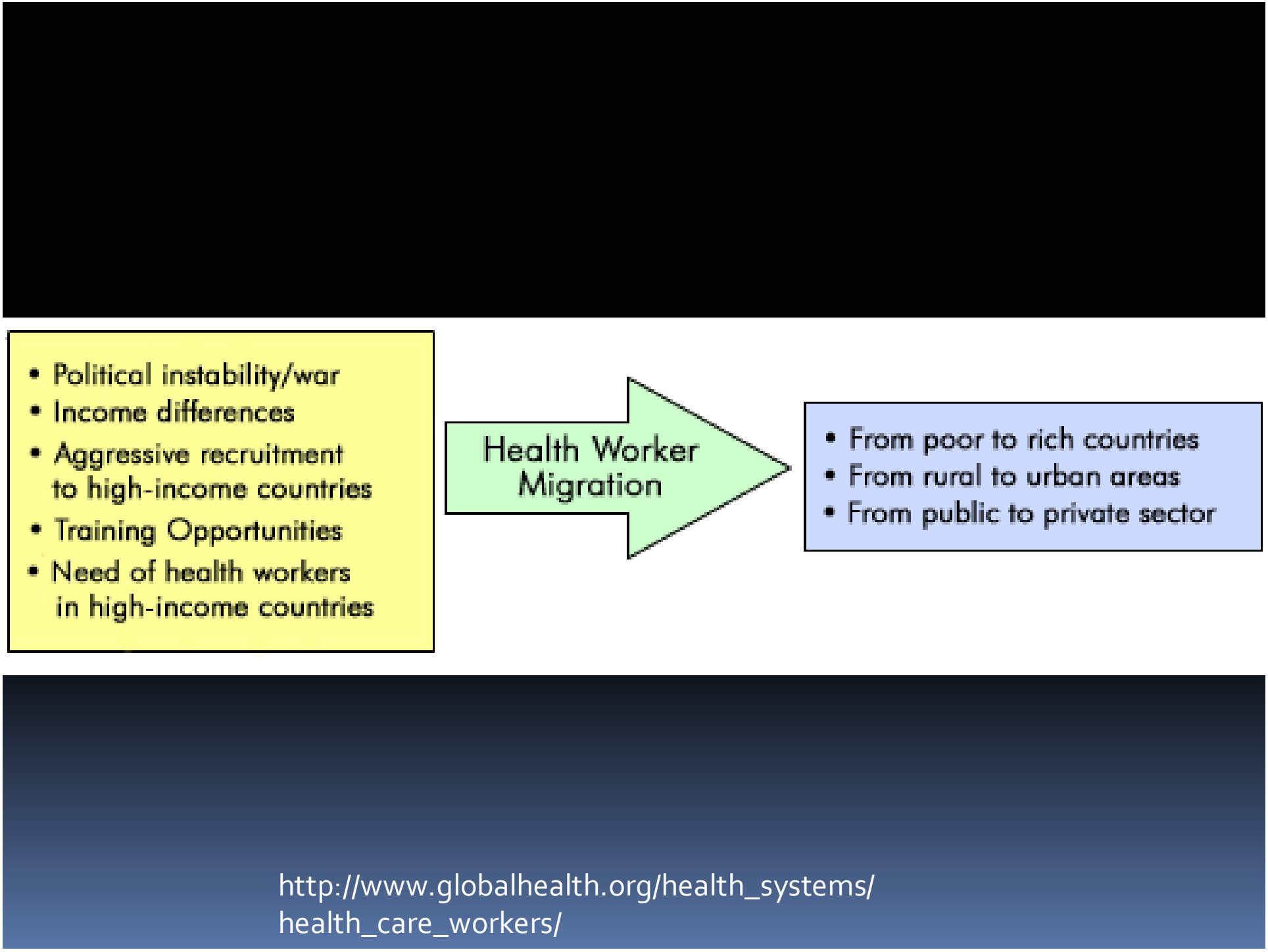


http://www.globalhealth.org/health_systems/health_care_workers/

Health Care Spending in Selected Developed Countries, 2007



http://www.chcf.org/~/media/Files/PDF/H/PDF%20HealthCareCosts10.pdf


• Political instability/war
• Income differences
• Aggressive recruitment to high-income countries
• Training Opportunities
• Need of health workers in high-income countries
Health Worker Migration
• From poor to rich countries
• From rural to urban areas
• From public to private sector
http://www.globalhealth.org/health_systems/health_care_workers/

Number of Physicians per 100,000 people. Top 20 Countries

http://earthtrends.wri.org

Cuba	591
Monaco	581
St. Lucia	517
Greece	500
Belarus	478
Georgia	465
Russian Federation	431
Belgium	423
Switzerland	397
Lithuania	395
Kazakhstan	388
Malta	388
Iceland	377
Norway	377
Netherlands	371
Armenia	370
Italy	370
Israel	367
Austria	366
Bulgaria	366

Number of Physicians per 100,000 people. Bottom 20 Countries

http://earthtrends.wri.org

Senegal	6
Burkina Faso	5
Eritrea	5
Lesotho	5
Papua New Guinea	5
Rwanda	5
Benin	4
Chad	4
Somalia	4
Togo	4
Burundi	3
Ethiopia	3
Liberia	3
Mozambique	3
Sierra Leone	3
Bhutan	2
Malawi	2
Niger	2
Tanzania	2
Zimbabwe	1

Summary

✓Industrialized countries tend to have more doctors per population than non-industrialized countries; this mirrors the finding levels.

✓ Life Expectancy tends to be higher in industrialized countries. However, there are exceptions.

✓Many countries of the former Soviet Union have very high physicians per capita rates.

✓Cuba also has a high number, and ranks third in the world, with 530 doctors per 100,000 people, behind Monaco (664) and Italy (554).

✓Cuba has a high life expectancy, despite the low spending rates on health care.

✓However, there is no direct correlation between number of physicians per a given population size and life expectancy.

✓ The measure of doctors per person provides only a rough guide to access to care. There are significant intracountry inequalities of access between rich and poor and urban and rural.

http://ucatlas.ucsc.edu/health/physicians/physicians.html

ETHIOPIA Population 81 million							
	Dentists	Medical Assistants	Midwives	Pharmacists	Physicians	Radiographers	
Male	48	4676	426	563	1718	269	
Female	12	2635	848	147	218	31	
Year	2003	2004	2003	2003	2004	2004	

ITALY Population 61 million							
	Physicians						
Male	156000						
Female	85000						
Year	2004						

Nurses and Midwives (Per 10,000 Population) 2000-2009 top 10 countries

Rank	Country Name	Rate per 10,000
	Global	**28**
1	Norway	163
2	Ireland	158
3	Netherlands	151
4	Belarus	126
5	Sweden	116
6	Switzerland	110
7	Australia	109
8	Uzbekistan	108
9	Luxembourg	104
10	Iceland	101
11	Canada	100

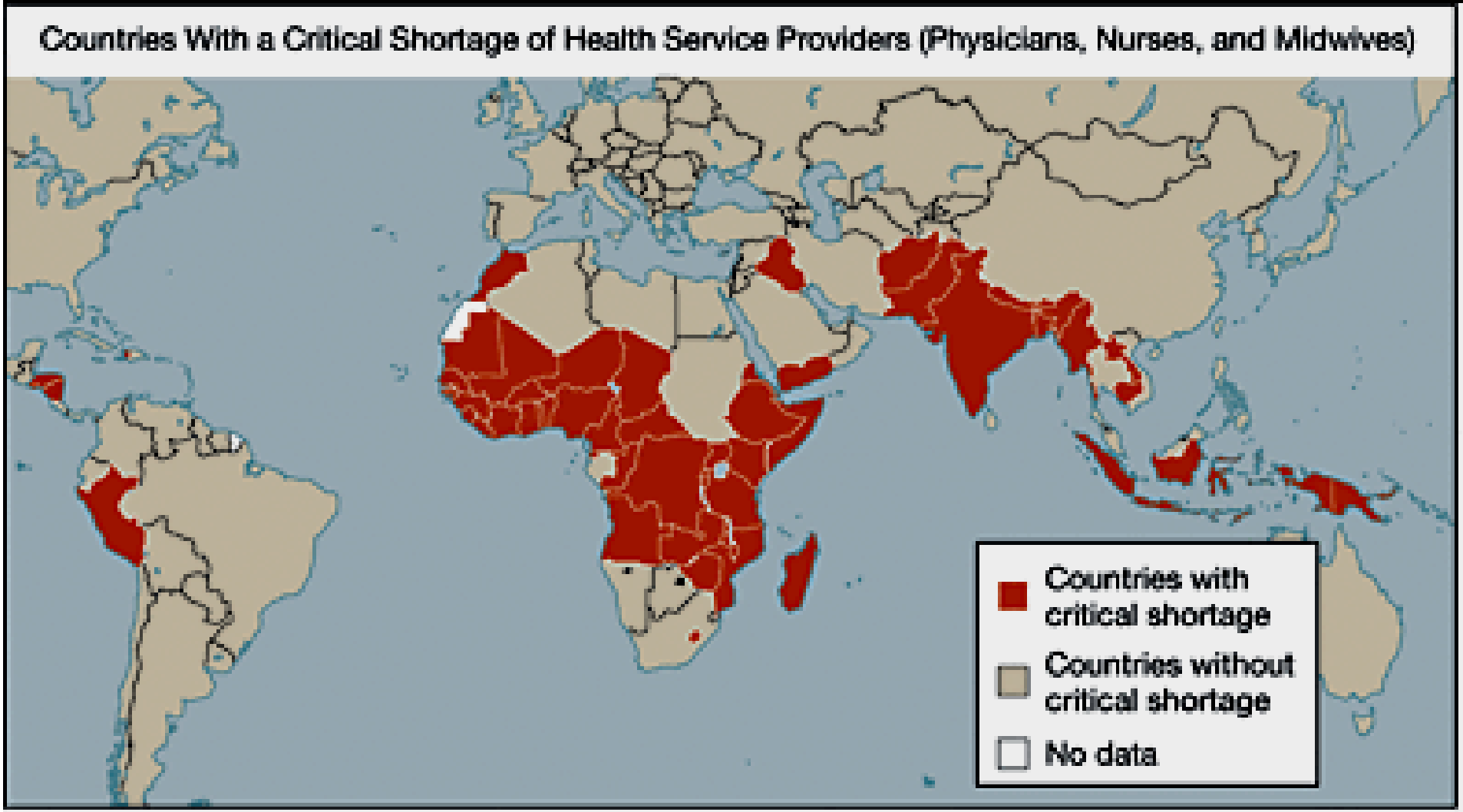
http://globalhealthfacts.org

Nurses and Midwives (Per 10,000 Population) 2000-2009 bottom 15 countries

81	Bangladesh	3
81	Chad	3
81	Liberia	3
81	Madagascar	3
81	Malawi	3
81	Mozambique	3
81	Togo	3
82	Bhutan	2
82	Burundi	2
82	Ethiopia	2
82	Mali	2
82	Sierra Leone	2
82	Tanzania	2
83	Niger	1
83	Somalia	1

http://globalhealthfacts.org

Global Patterns of HCW shortages



Source: World Health Organization (WHO). *The World Health Report 2006—Working Together for Health*; 2006. http://www.who.int/whr/2006/whr06_en.pdf. Accessed September 26, 2007.

http://jama.ama-assn.org/content/298/16/1853.full

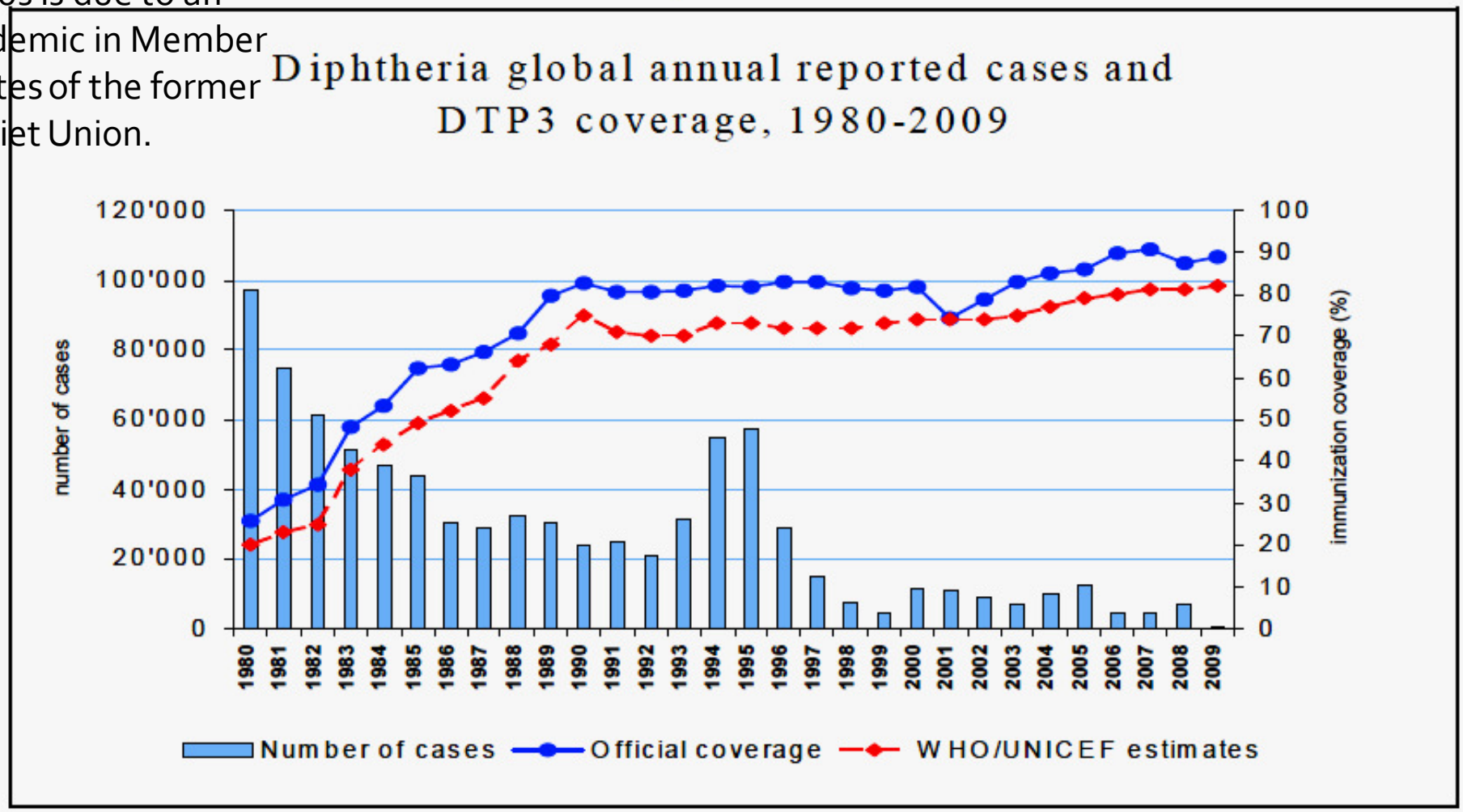
Immunization – Levels and Trends

http://whqlibdoc.who.int/hq/2010/WHO_IVB_2010_eng.pdf

The sudden increase in incidence during the 1990s is due to an epidemic in Member States of the former Soviet Union.

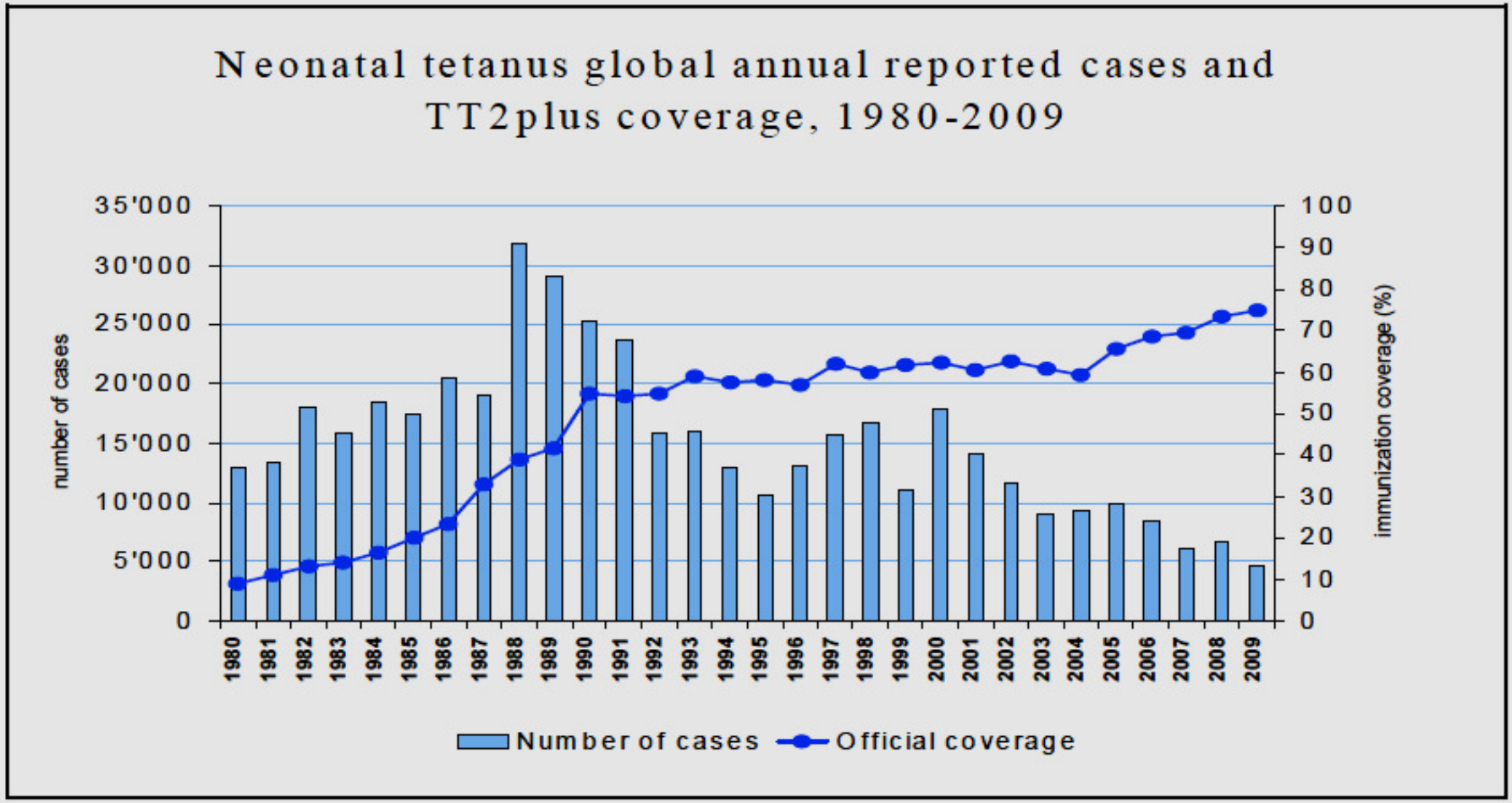
Global and regional summary

Diphtheria



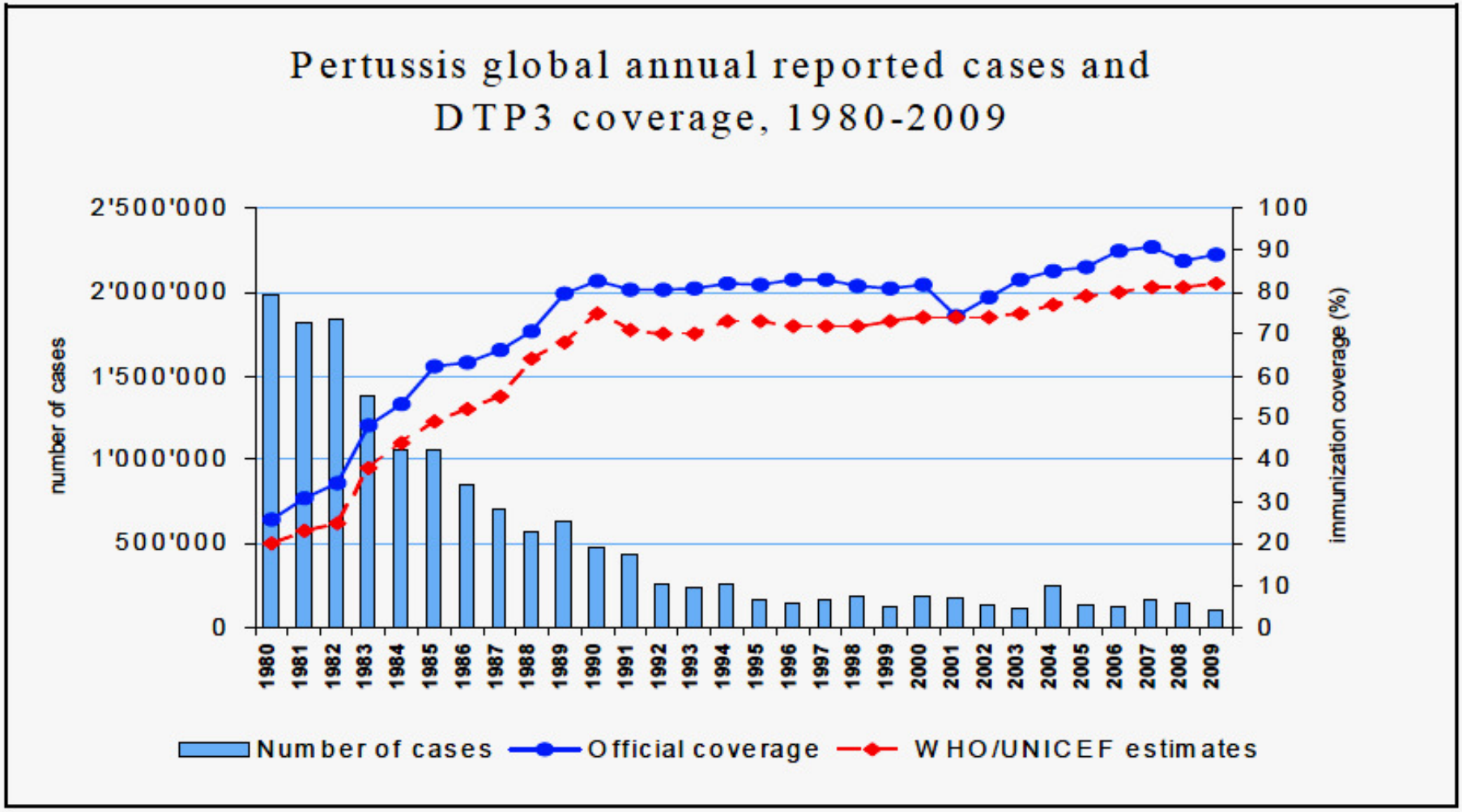
Global and regional summary

Neonatal tetanus



Global and regional summary

Pertussis



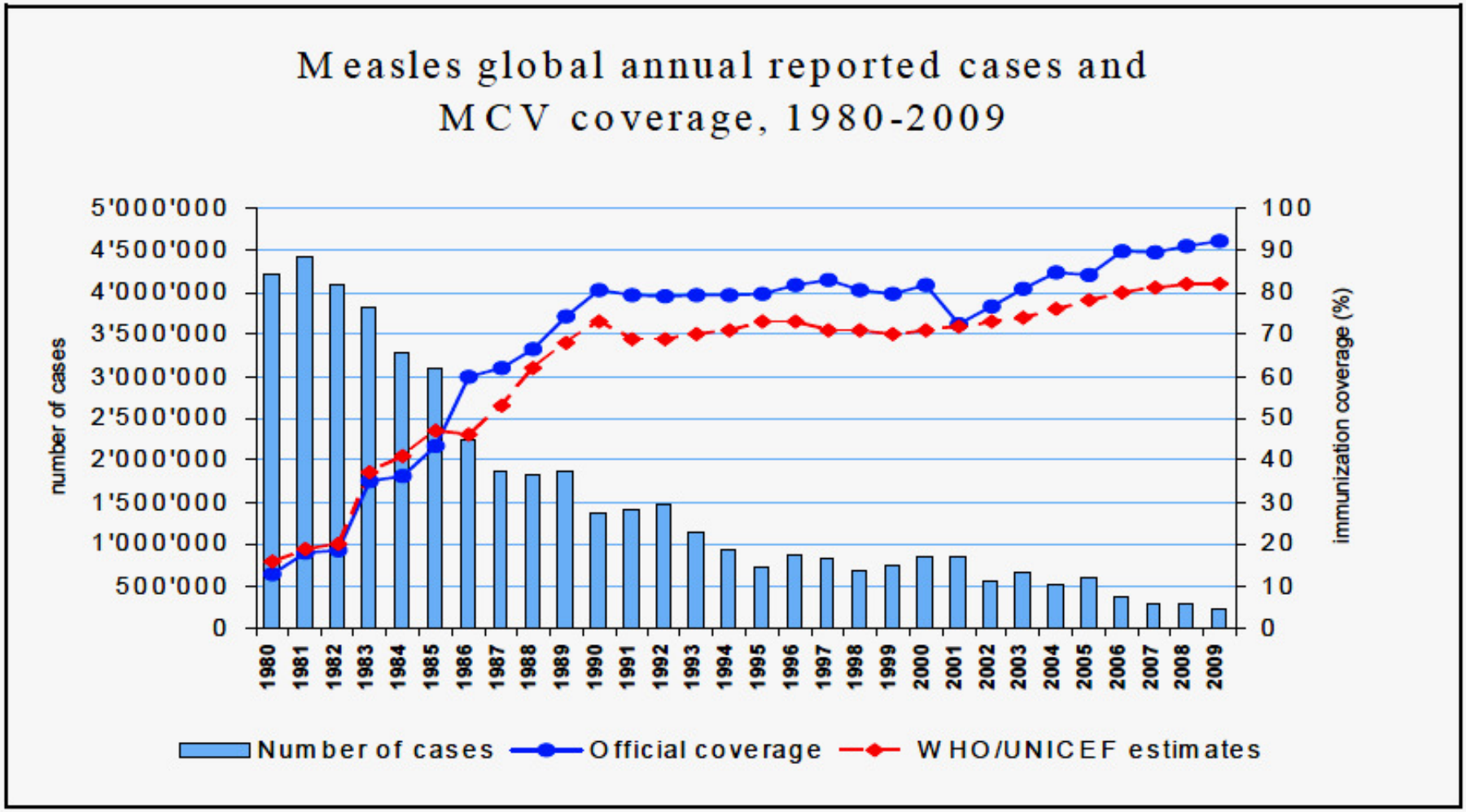
http://whqlibdoc.who.int/hq/2010/WHO_IVB_2010_eng.pdf

Measles immunization coverage is the percentage of one-year-olds who have received at least one dose of measles-containing vaccine in a given year.

http://whqlibdoc.who.int/hq/2010/WHO_IVB_2010_eng.p

Global and regional summary

Measles



Global and regional summary

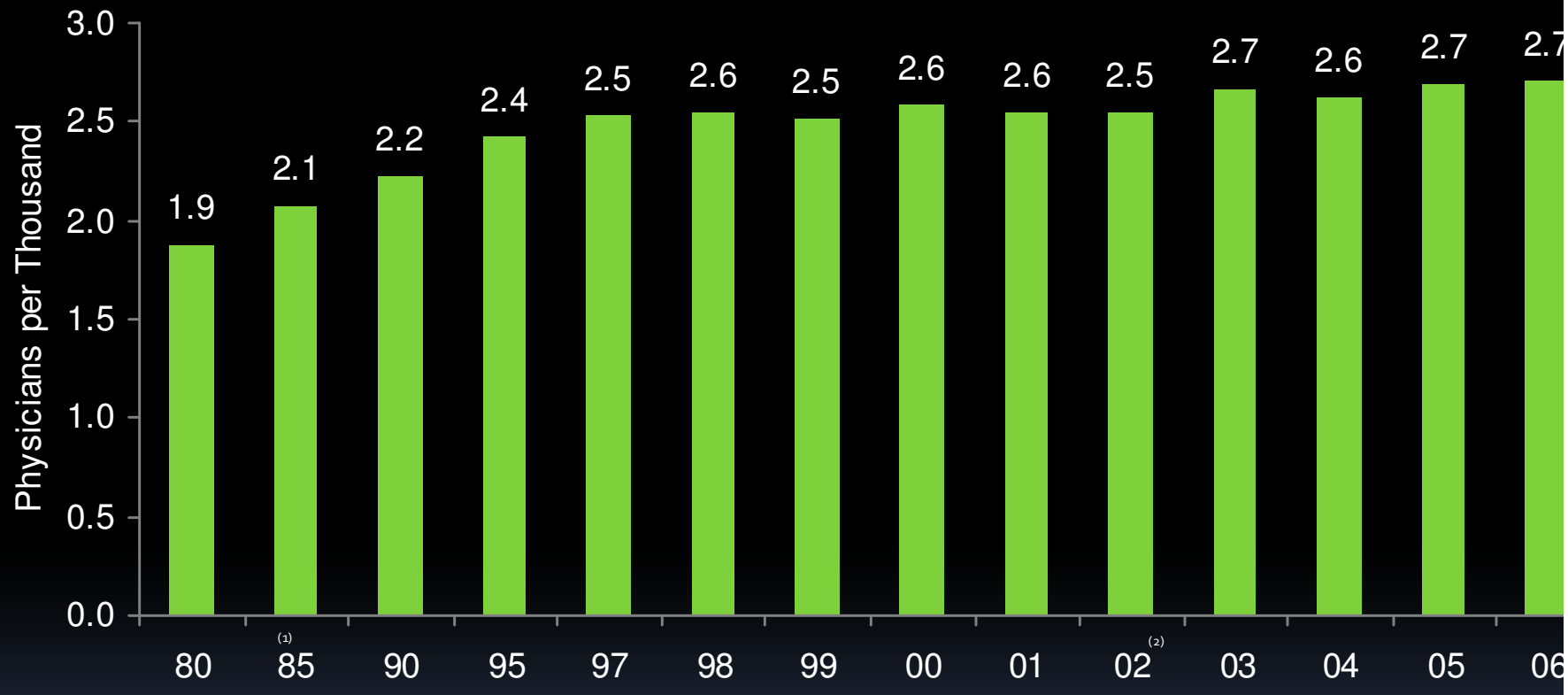
Regional and global summaries of measles incidence (number of reported cases): 1980, 1990, 1999-2009.

WHO regions	1980	1990	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
African Region	1'240'993	481'204	520'102	492'116	286'380	403'572	220'732	316'224	99'339	76'408	37'010	83'625
Region of the Americas	257'790	218'579	1'755	548	2'579	119	108	85	226	176	205	20
Eastern Mediterranean Region	341'624	59'058	38'592	41'103	42'616	52'110	59'804	15'069	23'303	15'670	12'120	36'605
European Region	851'849	234'827	37'421	58'364	46'714	28'199	29'503	37'332	53'344	6'949	8'879	7'499
South-East Asia Region	199'535	224'925	78'574	79'252	66'597	94'644	107'824	104'506	94'562	69'301	75'770	28'056
Western Pacific Region	1'319'640	155'490	176'493	175'382	129'285	101'810	91'763	128'016	103'156	112'280	147'986	66'603
Global	4'211'431	1'374'083	852'937	846'765	574'171	680'454	509'734	601'232	373'930	280'784	281'970	222'408

http://whqlibdoc.who.int/hq/2010/WHO_IVB_2010_eng.pdf

USA Health Care

Total Number of Active Physicians per 1,000 Persons, 1980 – 2006

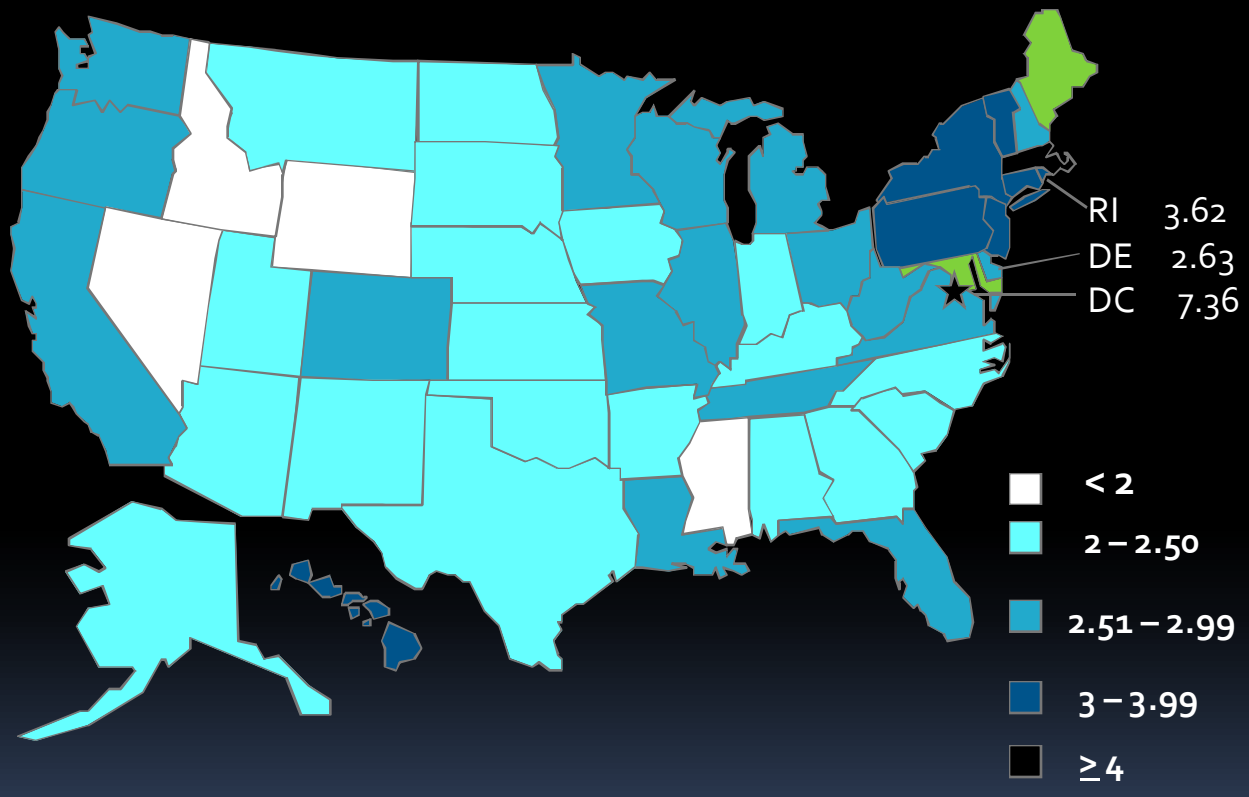


Source: National Center for Health Statistics. *Health, United States, 1982, 1996-97, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008 with Chartbook on Trends in the Health of Americans. Hyattsville, MD.*

(1) 1980 does not include doctors of osteopathy.

(2) 2004 and later years include both federal and non-federal physicians. Prior to 2003, data included non-federal physicians only.

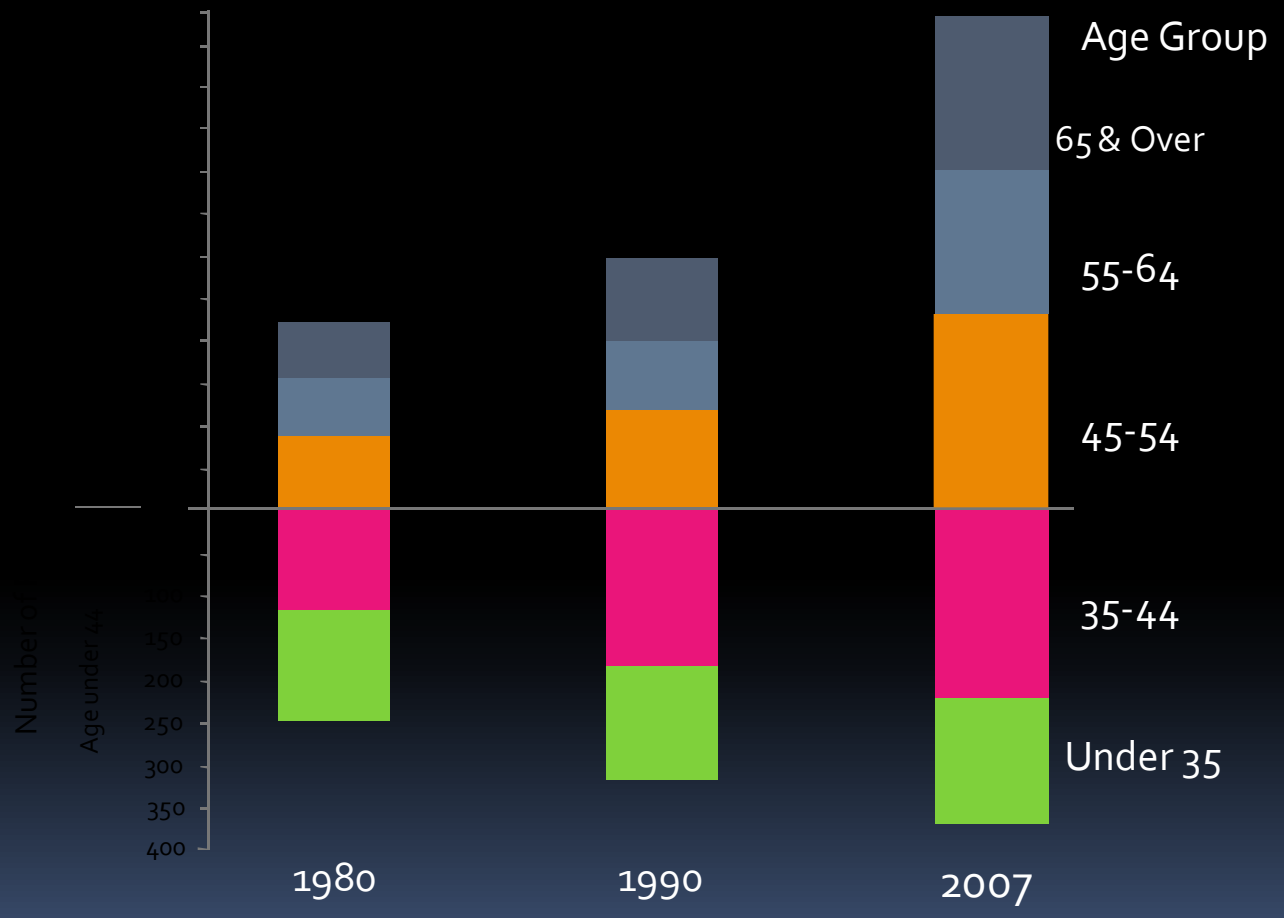
Total Number of Active Physicians per 1,000 Persons by State, 2006



Source: National Center for Health Statistics. (2008). *Health, United States, 2008 with Chartbook on Trends in the Health of Americans. Hyattsville, MD.*

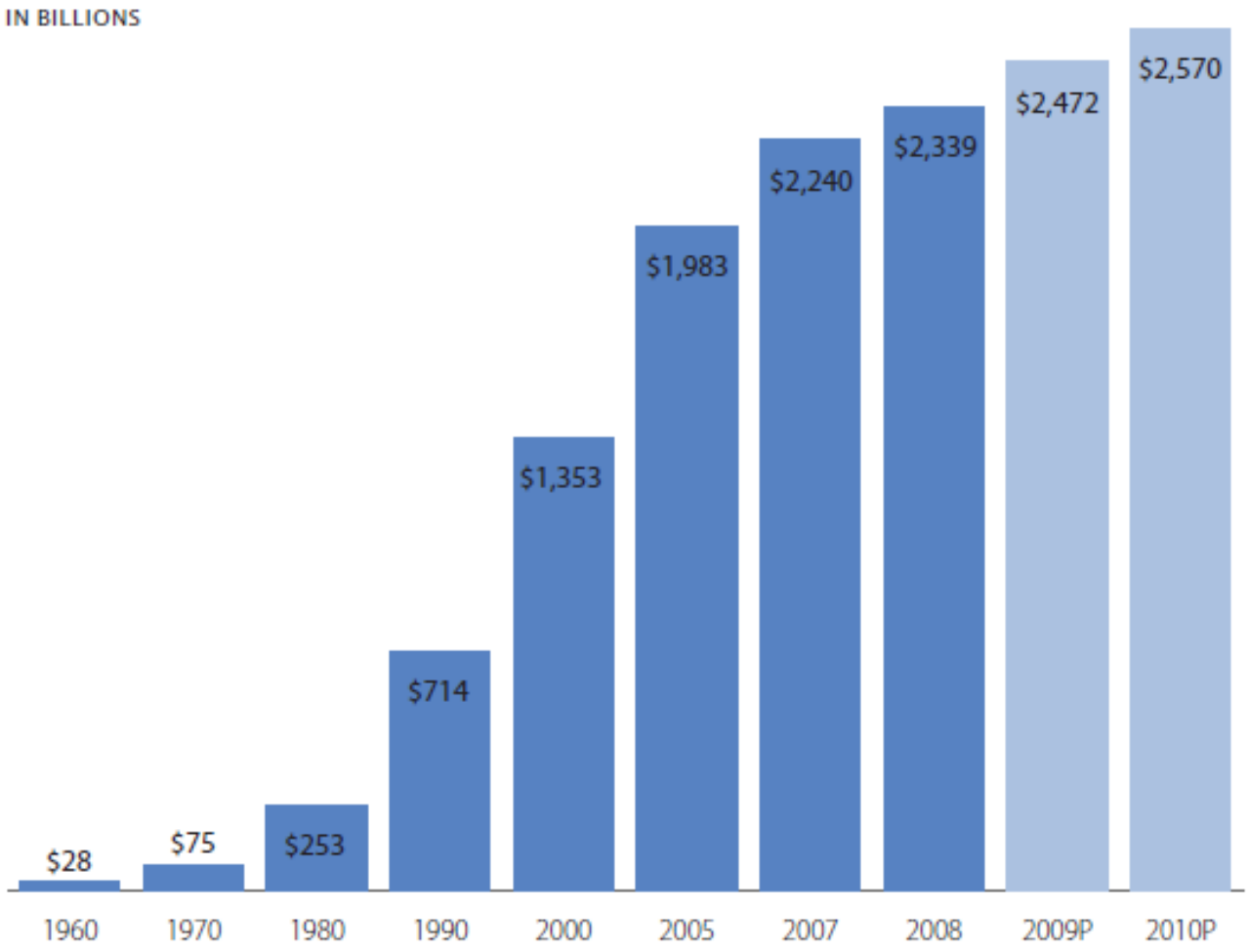
(1) Includes active federal and non-federal doctors of medicine and active doctors of osteopathy.

Chart 5.8: Number of Physicians by Age, 1980, 1990, and 2007



Source: American Medical Association. (2009 Edition). *Physician Characteristics and Distribution in the US*.

National Health Spending, 1960–2010*



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Spending Levels
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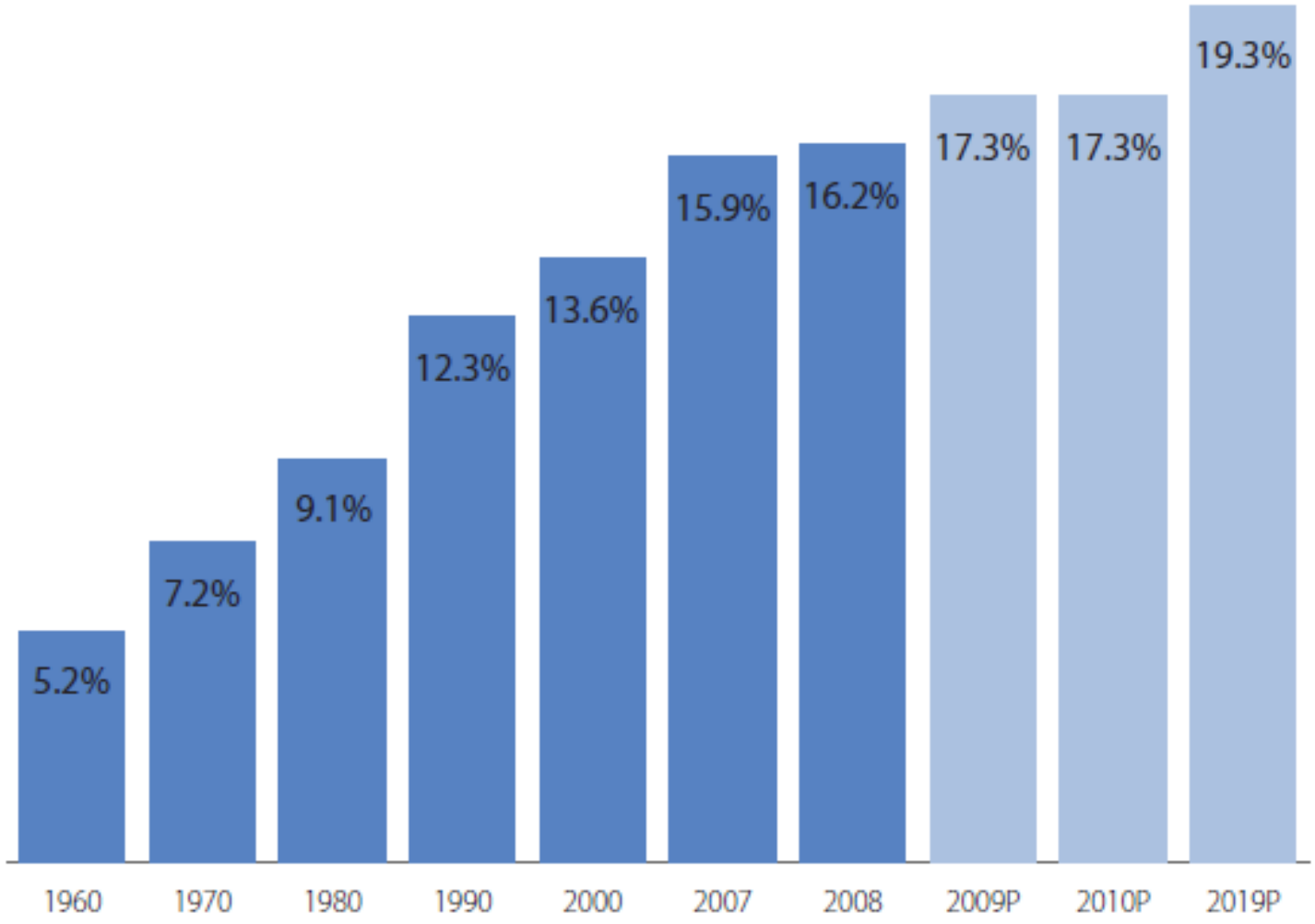
Health spending exceeded $2.3 trillion in 2008 and is projected to surpass $2.5 trillion in 2010.

http://www.chcf.org/~/media/Files/PDF/H/PDF%20HealthCareCosts10.pdf

National Health Spending as a Share of GDP, 1960–2019*



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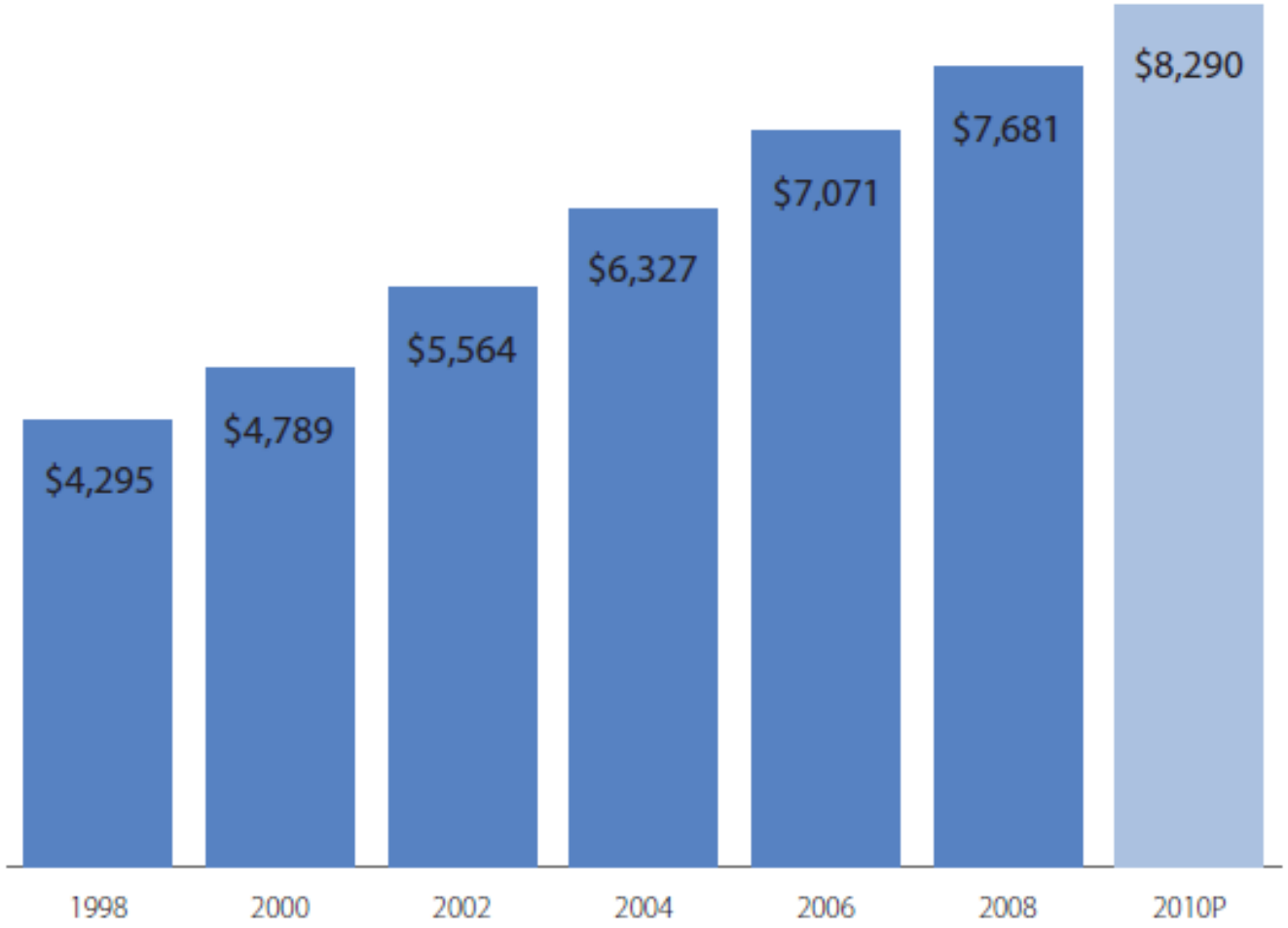
National Health Spending Per Person, 1998–2010*



Health Care Costs 101

Spending Levels

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The annual amount spent per person on health care increased 79 percent between 1998 and 2008.

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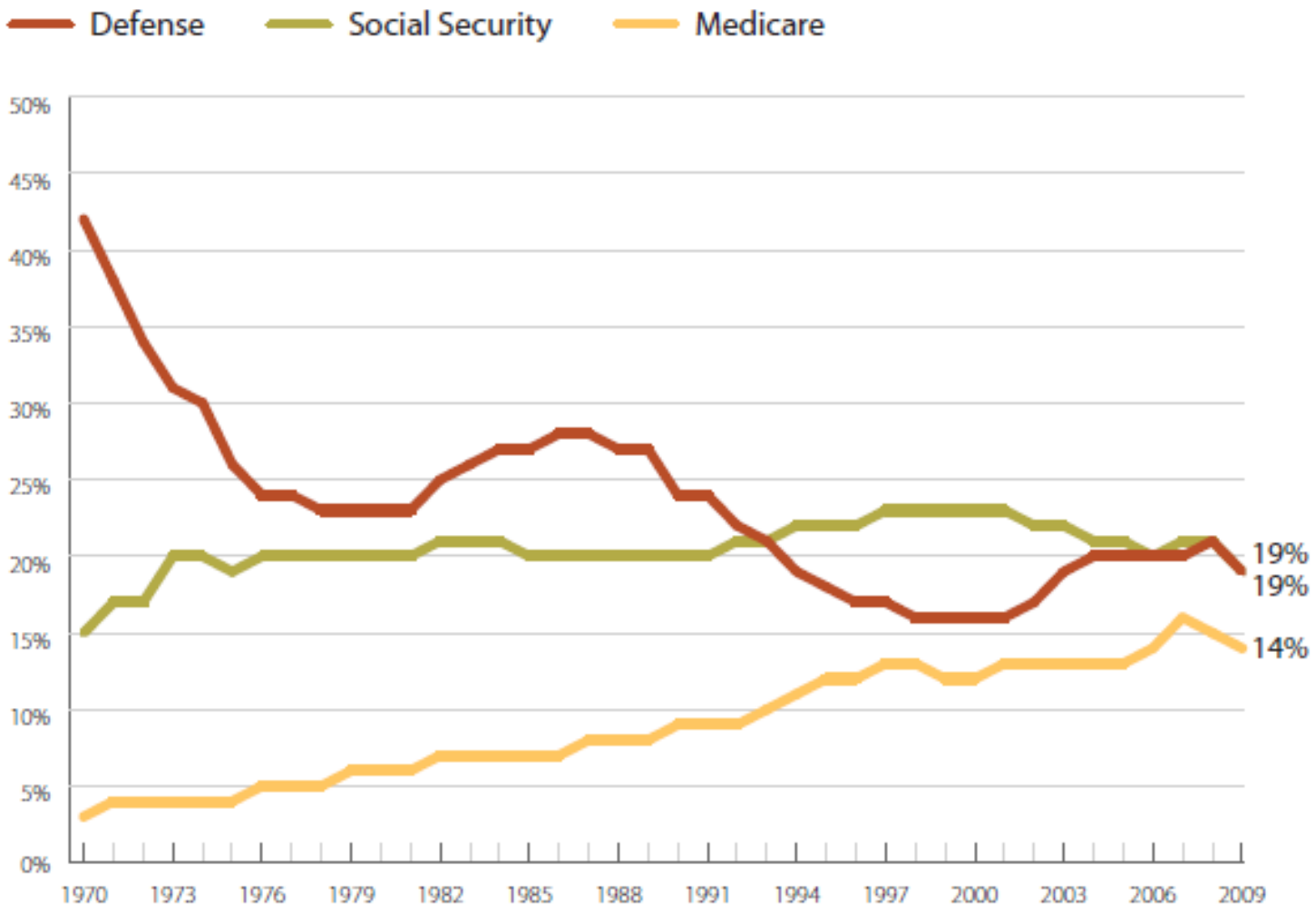
Major Programs as a Share of the Federal Budget, 1970–2009



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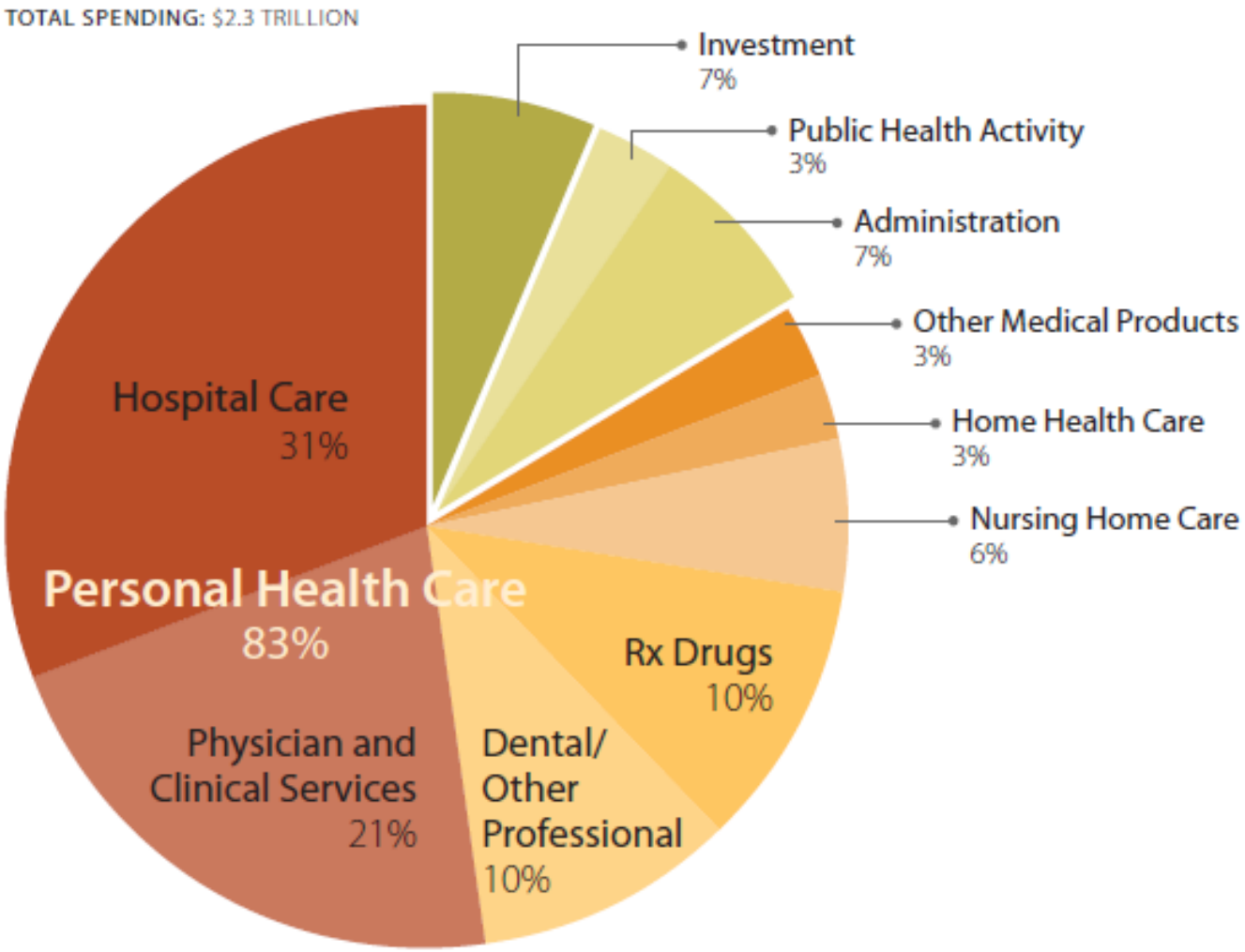
Spending Distribution, by Category, 2008



Health Care Costs 101
Spending Categories

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Hospital and physician services take the largest share of the health care dollar. Prescription drugs account for 10 percent.

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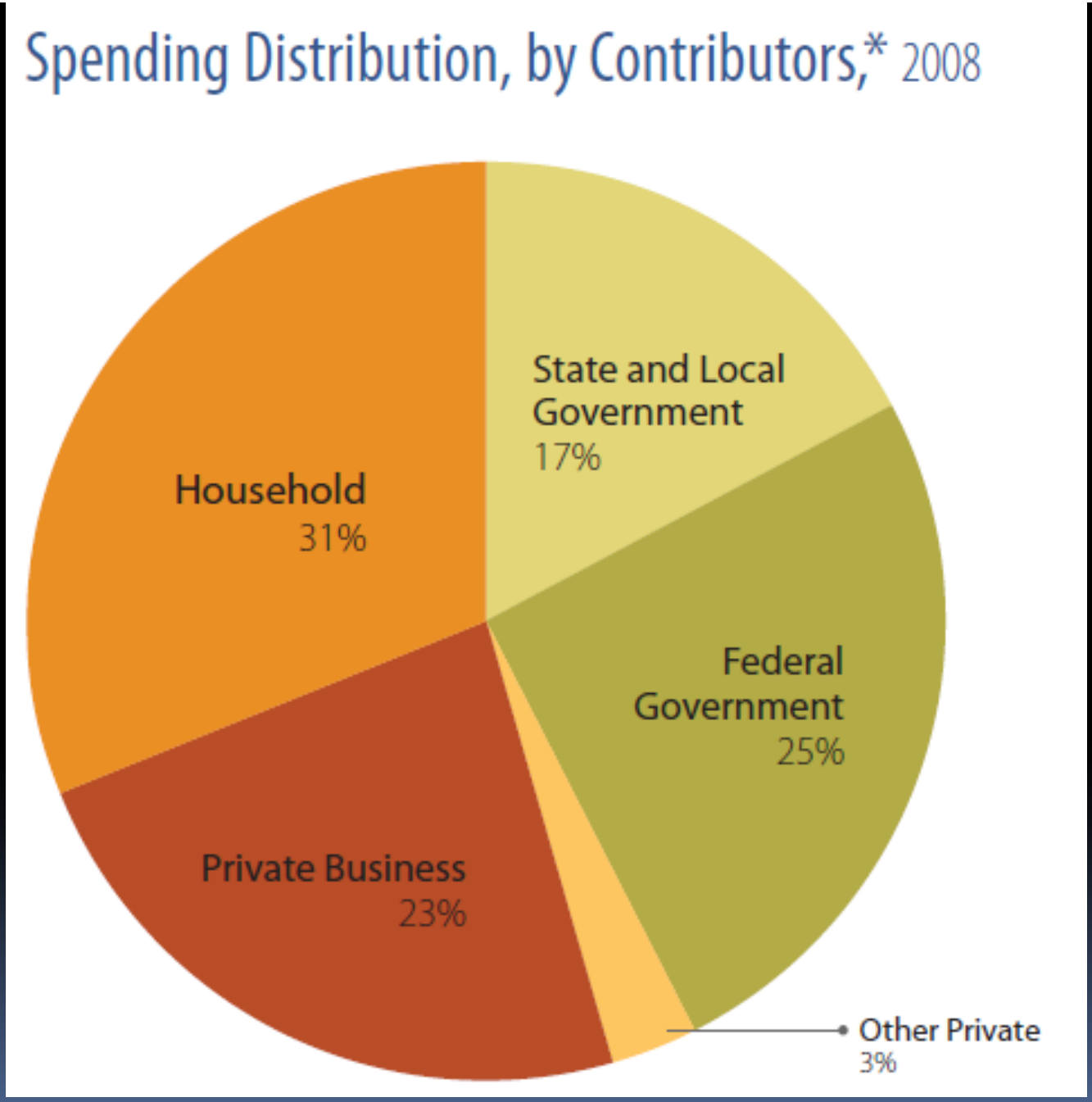

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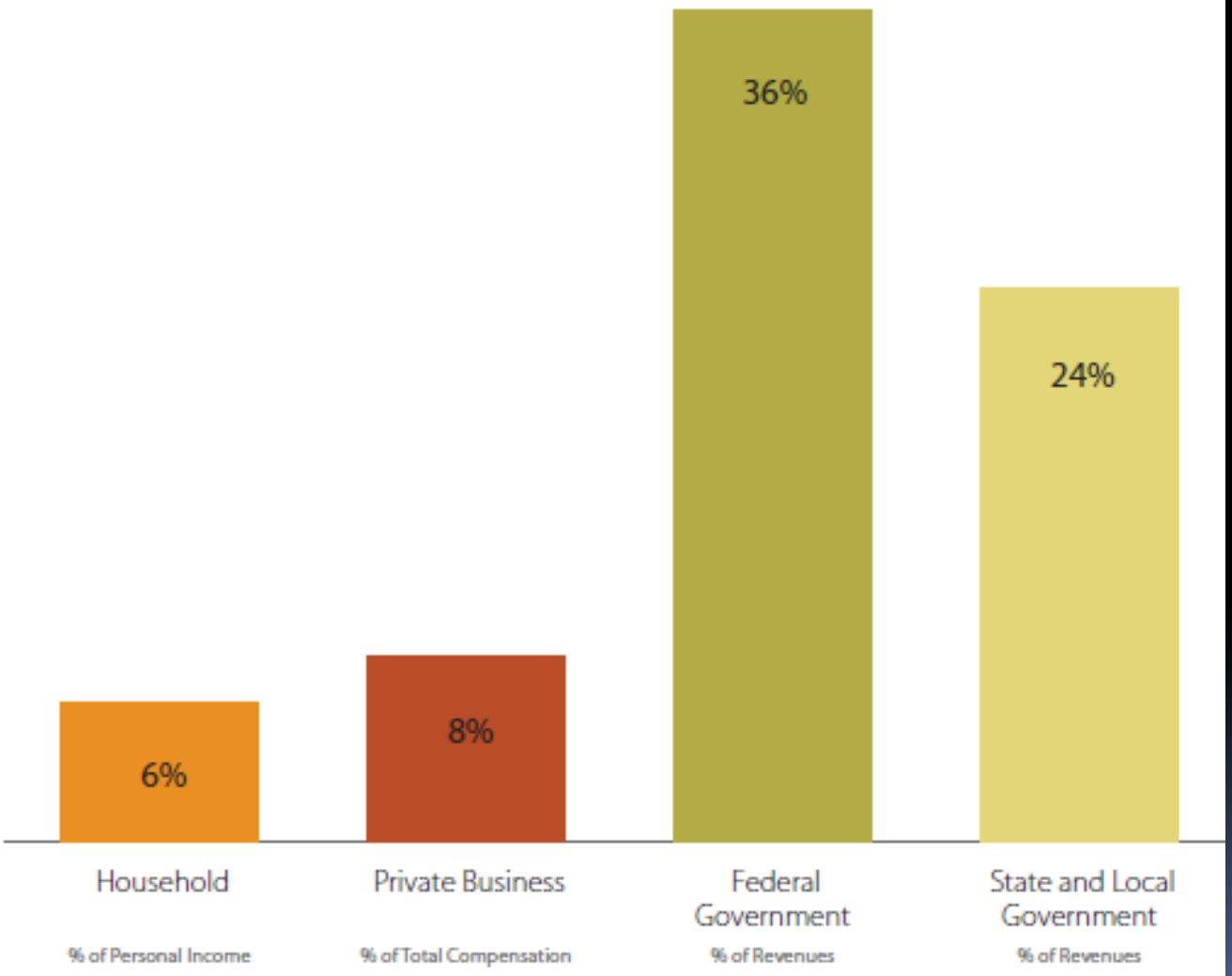
Health Care's Share of Resources, 2008



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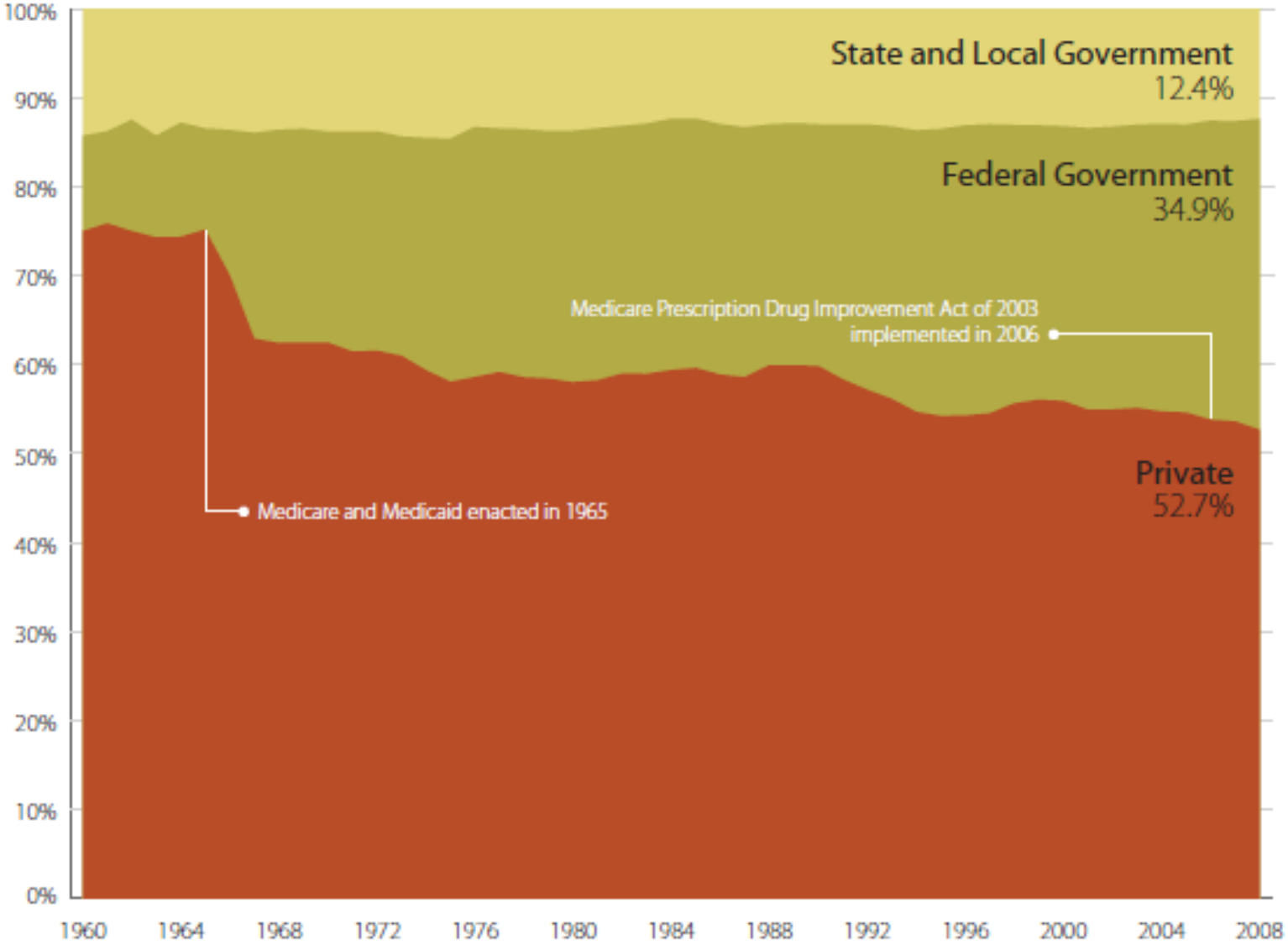
Historic Payment Sources, 1960–2008



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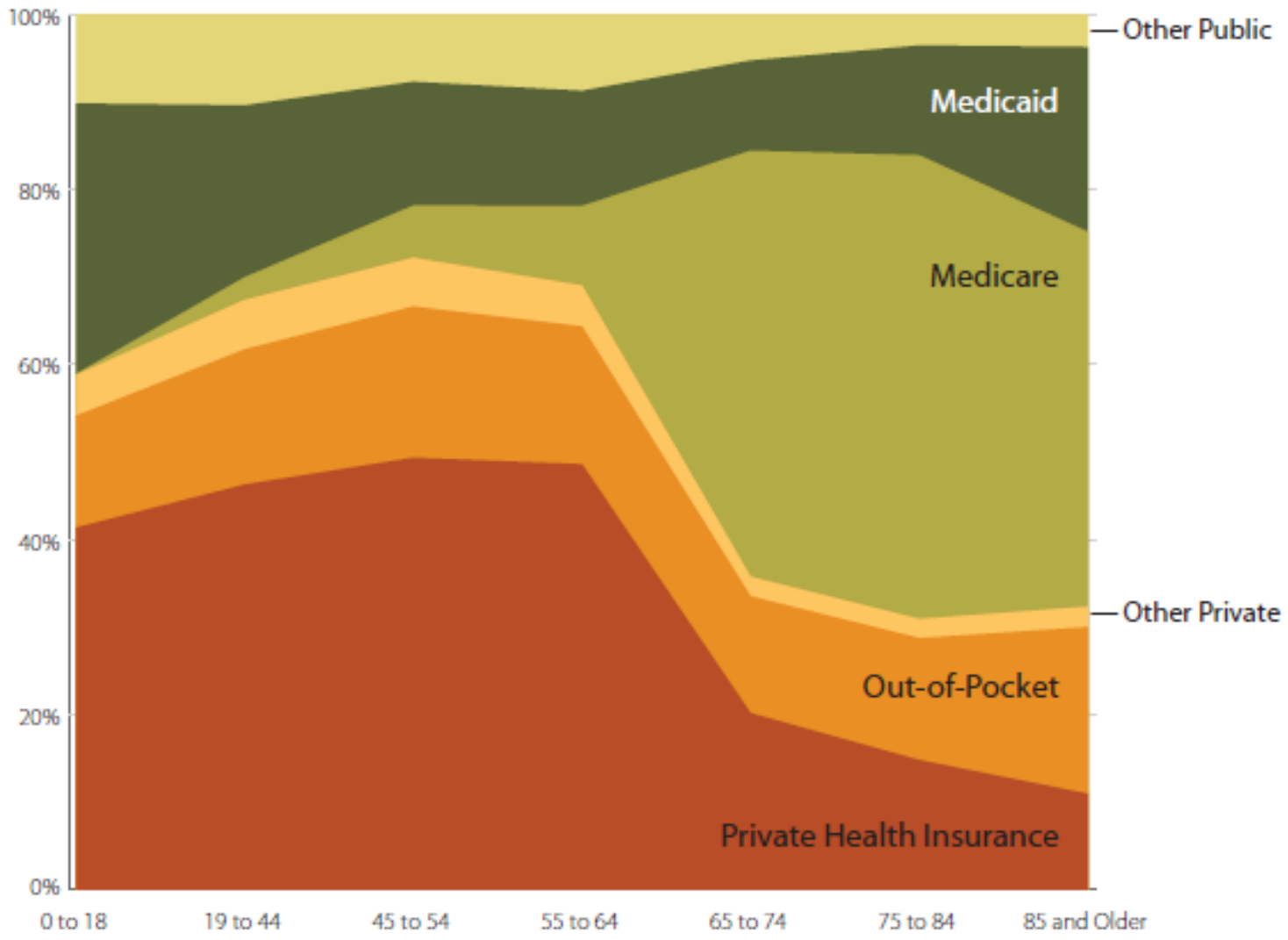
Distribution of Payers, by Age Group*



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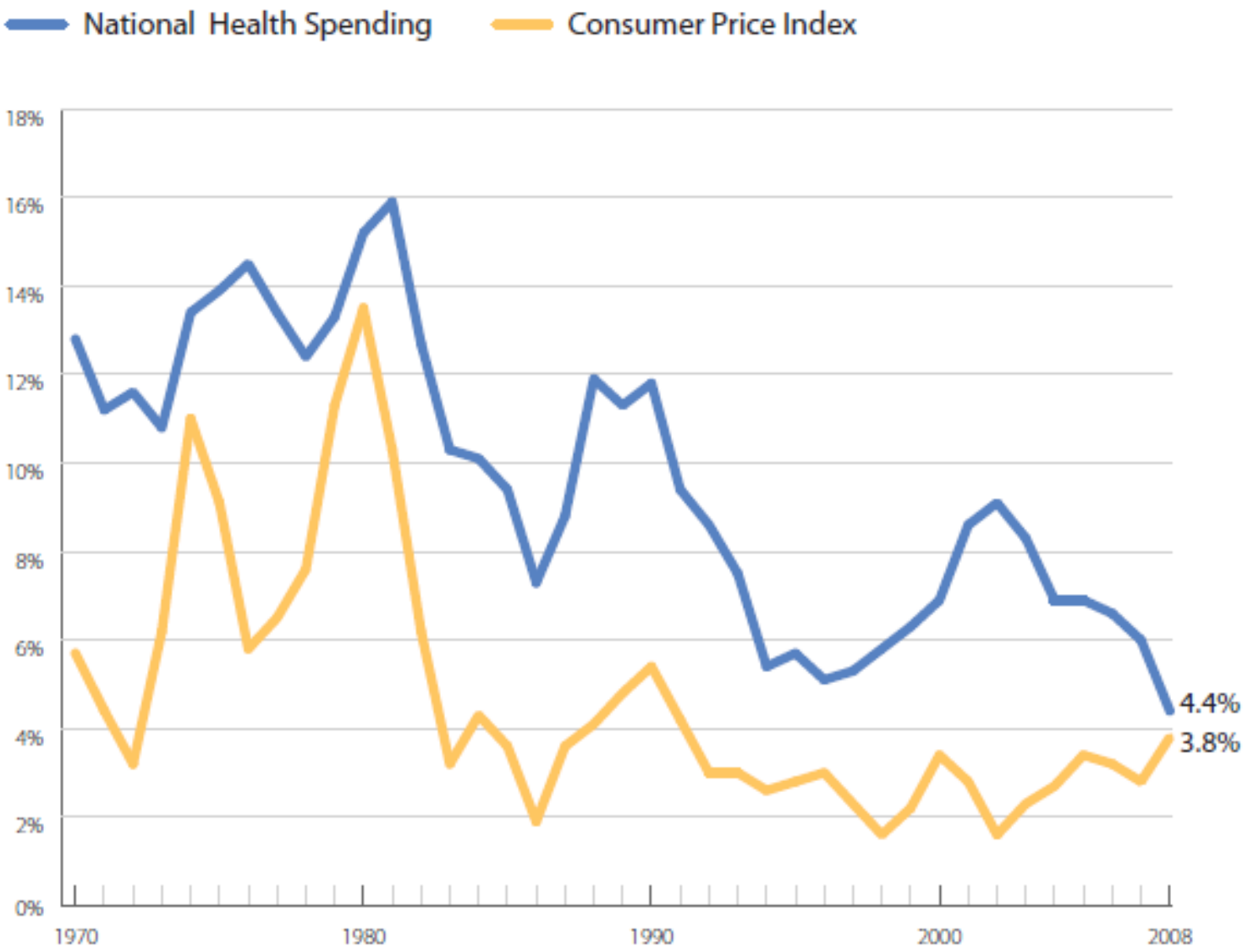
Annual Growth Rates, Spending vs. Inflation, 1970–2008



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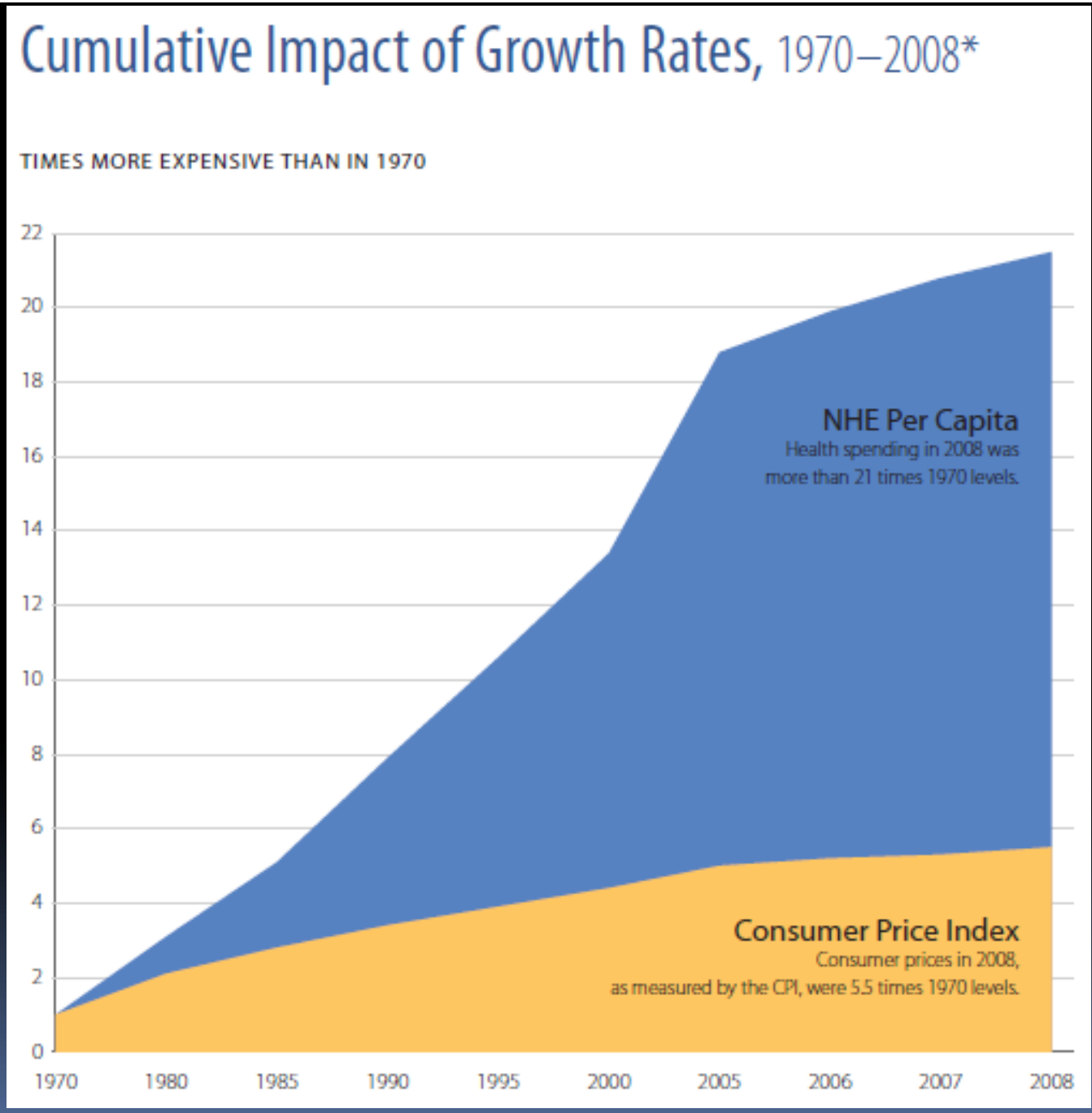
Cumulative Impact of Growth Rates, 1970–2008*



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Health Disparities & Inequalities

http://www.cdc.gov/minorityhealth/reports/CHDIR11/FactSheets

Health Disparities & Inequalities in the US

http://www.chcf.org/~/media/Files/PDF/H/PDF%20HealthCareCosts10.pdf

Housing–related

✓The proportion of unhealthy housing units decreased from 2007 to 2009.

✓• Among housing units classified as unhealthy, the magnitude of disparities decreased across racial/ethnic, income, and education-level categories.

✓• The disparity by race/ethnicity, socioeconomic status, disability status, and education level, however, is still substantial.

✓Non-Hispanic blacks had the highest percentage of householders living in inadequate, unhealthy housing, followed by Hispanics and American Indians/Alaska Natives.

Air Quality-related

✓During 2006–2008, a total of 53 counties did not meet the standard for fine particulate matter and during 2007–2009, a total of 201 counties did not meet the standard for ozone. For both pollutants, approximately half of these counties are in metropolitan statistical areas of ≥1 million population.

✓• Minority groups, including Asians and Hispanics, were more likely to reside in these counties in comparison with non-Hispanic whites. Pollution sources (e.g., heavy traffic) and other environmental hazards often affect these areas.

Health Insurance Coverage

✓• Insurance coverage is strongly related to better health outcomes.

✓Substantial disparities in uninsured rates were observed among all the demographic and socioeconomic groups.

✓• Disparities by sex existed during both 2004 and 2008, with a higher percentage of males being uninsured.

✓• The uninsured rate for young adults aged 18–34 years was approximately double the uninsured rate for adults aged 45–64 years.

✓• Hispanics and non-Hispanic blacks had substantially higher uninsured rates, compared with Asian/Pacific Islanders and non-Hispanic whites.

Influenza Vaccination

✓During the 2009–10 influenza season, lower influenza vaccination coverage was observed for non-Hispanic blacks and Hispanics, compared with non-Hispanic whites among all persons aged ≥6 months.

✓• Although racial/ethnic disparities in childhood vaccination coverage have improved throughout the past decade, substantial disparities among adults aged ≥65 years have persisted.

Colorectal Screening for Cancer:

✓Overall use of colorectal cancer tests increased from 2002 to 2008, however, disparities exist in the prevalence of colorectal cancer testing among certain groups.

✓• Persons aged ≥50 years who reported having had tests within recommended intervals was greater among persons aged ≥65 years, than among those aged 50–64 years. The proportion of persons obtaining appropriate screening was greater for:

✓o Non-Hispanic whites compared with all other races

✓o Men compared with women

✓o Persons with a disability compared with those with no disability

✓o Persons with health insurance, compared with those without health insurance

Infant Deaths

✓• In 2006, the overall U.S. infant mortality rate was 6.68 infant deaths per 1,000 live births, with considerable disparities by race and Hispanic origin.

✓• The highest infant mortality rate was for non-Hispanic black women with a rate 2.4 times that for non-Hispanic white women.

✓• Analysis on trends and variations in infant mortality reveals not only considerable differences in infant mortality rates among racial/ethnic groups but the persistence of disparities over time.

Motor Vehicle Related Deaths

✓In 2007, the overall motor vehicle-related age-adjusted death rate for the United States was 14.5 deaths per 100,000 population.

✓• American Indian/Alaska Natives had the highest death rate at 29.1 deaths per 100,000 population.

✓• For all racial/ethnic groups, males had death rates that were 2–3 times higher than that of females.

Suicides:

✓• In 2007, a total of 34,598 suicides occurred in the United States — 83.5% of the suicides were among non-Hispanic whites, 7.1% among Hispanics, 5.5% among non-Hispanic blacks, 2.5% among Asian/Pacific Islanders, and 1.1% among American Indians/Alaska Natives.

✓• Suicide rates by race/ethnicity and age group demonstrated different patterns. Though the greatest percentage of suicides occurred among non-Hispanic whites, the highest race/ethnicity and age-specific rates were among American Indian/Alaska Native adolescents and young adults.

✓• In each of the racial/ethnic groups, suicide rates were higher for males than for females.

Drug-Induced Deaths:

✓• In 2007, a total of 38,371 drug-induced deaths occurred in the United States.

✓• Prescription drugs caused more deaths than illicit drugs.

✓• Other than Hispanics, all racial/ethnic groups have had increases in drug-induced death rates in recent years.

✓• The highest rates overall of drug-induced deaths were among non-Hispanic whites for each year examined.

Coronary Heart Disease and Stroke

✓• A comparison of rates by race reveals that black women and men have much higher coronary heart disease (CHD) death rates in the 45–74 age group than women and men of the three other races.

✓• A higher percentage of black women (37.9%) than white women (19.4%) died before age 75 as a result of CHD, as did black men (61.5%) compared with white men (41.5%).

✓• The same black-white difference was seen among women and men who died of stroke: a higher percentage of black women (39%) died of stroke before age 75 compared with white women (17.3%) as did black men (60.7%) compared to white men (31.1%).

Homicides:

✓In 2007, disparities in homicide deaths by age, race/ethnicity, and sex were evident, and the homicide rate was particularly high among young black males.

✓• Homicide rates were highest among persons aged 15–34 years, and the overall rate for males was approximately 4 times that of females.

✓• During the 9-year study period (1999-2007), homicide rates were consistently highest among non-Hispanic blacks, but their rates were half of those reported for this demographic group in the early 1990s.

Obesity

✓• Racial/ethnic differences have not changed substantially during 1988–1994 and 2007–2008. Among the majority of sex-age groups, the prevalence of obesity is lower among whites than among blacks and Mexican-Americans.

✓• Among females, the prevalence of obesity is highest among blacks, whereas the prevalence among males aged ≤20 years is highest among Mexican-Americans.

✓• Differences are limited regarding obesity prevalence across racial/ethnic groups among men aged ≥40 years.

✓• An inverse association exists between family income and obesity prevalence among white females (all ages) and white males (aged 2–19 years), but the association is weak or positive (black men aged ≥20 years) among other groups.

✓• Racial/ethnic differences in obesity prevalence persist after controlling for differences in family income.

Preterm Births:

✓• Approximately one of every five infants born to non-Hispanic black mothers in 2007 was born preterm, compared with one of every eight to nine infants born to non-Hispanic white and Hispanic women.

✓• The 2007 preterm birth rate for non-Hispanic black infants was 59% higher than the rate for non-Hispanic white infants and 49% higher than the rate for Hispanic infants.

HIV infection:

✓• A total of 35,526 persons aged ≥13 years received a diagnosis of HIV infection in 2005 in the 37 states included in the analysis, compared with a total of 34,038 in 2008.

✓• Racial/ethnic minorities, except Asians, continue to experience a disproportionate burden of HIV diagnoses, as do men who have sex with men (MSM).

✓• Disparities continue to widen among black/African-American and American Indian/Alaska Native males compared with white males, as well as among MSM compared to other males.

Diabetes:

✓Marked disparities in age-standardized prevalence of diagnosed diabetes among U.S. adults were found in the study.

✓• Statistically significant socioeconomic, age, and disability disparities in the age-standardized incidence of diagnosed diabetes also were identified.

✓• No evidence indicated that racial/ethnic disparities in prevalence and incidence of diagnosed diabetes decreased from 2004 to 2008; however, socioeconomic disparities worsened during the same interval.

Cigarette Smoking:

✓Data for 1965–2008 indicate declines in smoking among both male and female non-Hispanic white and non-Hispanic black adult smokers aged ≥18 years. Despite these declines, data for 2006–2008 indicate a much higher smoking prevalence among American Indian/Alaska Native men and women.

✓• Persons whose household incomes were below or near the federal poverty level had substantially higher prevalence of smoking, compared with persons whose household incomes were above the federal poverty level.

✓• Smoking significantly decreased with increasing levels of educational attainment.

✓• Persons who were unemployed also had a high prevalence of smoking.

Recommended Actions to Reduce Health Disparities

1. Increasing community awareness of disparities as persistent problems that represent some of the most pressing health challenges in the U.S.
2. Setting priorities among disparities to be addressed at the federal, state, tribal, and local levels
3. Articulating valid reasons to expend resources to reduce and ultimately eliminate priority disparities
4. Implementing the dual strategy of universal and targeted intervention strategies based on lessons learned from successes in reducing certain disparities (e.g., the virtual elimination of disparities in certain vaccination rates among children)
5. Aiming to achieve a faster rate of improvement among vulnerable groups by allocating resources in proportion to need and a commitment to closing gaps in health, longevity, and quality of life