

Community Management of Geriatric Patients in Disaster

Satellite Conference and Live Webcast
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Produced by the Alabama Department of Public Health
Video Communications and Distance Learning Division

Faculty

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Disaster

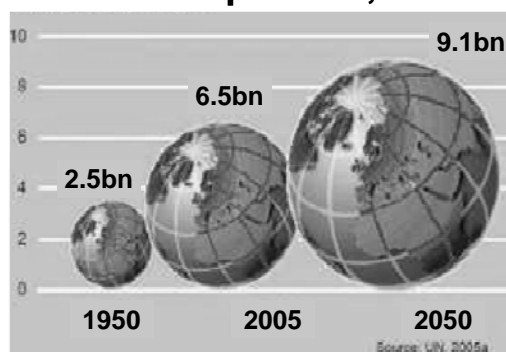
Overview

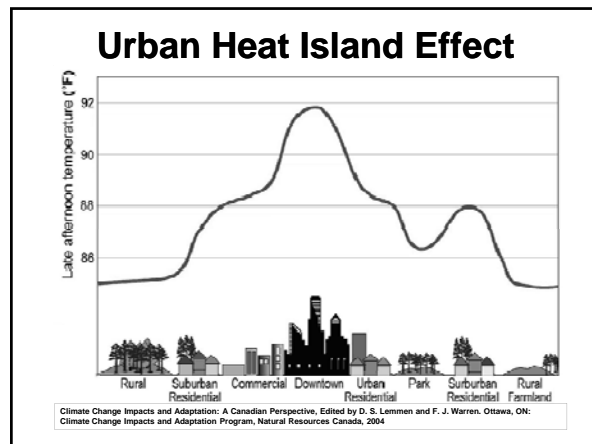
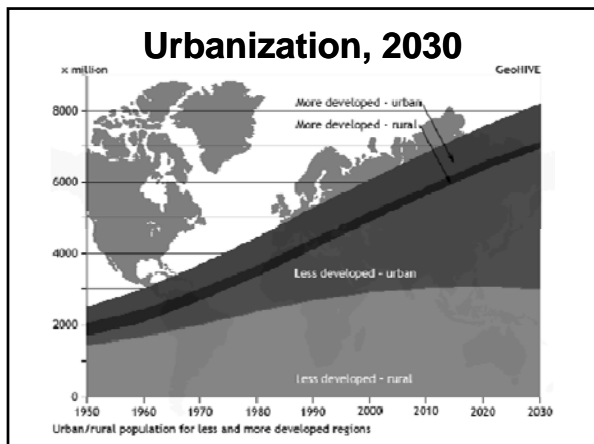
- Demographics
- Vulnerabilities
- Technology and history
- Doctrine, analysis, and planning
- The gathering storm

The Nature of Disaster

- The nature of disaster is to push us back down the path from whence we came, strip away our adaptations and trip us on our own optimism

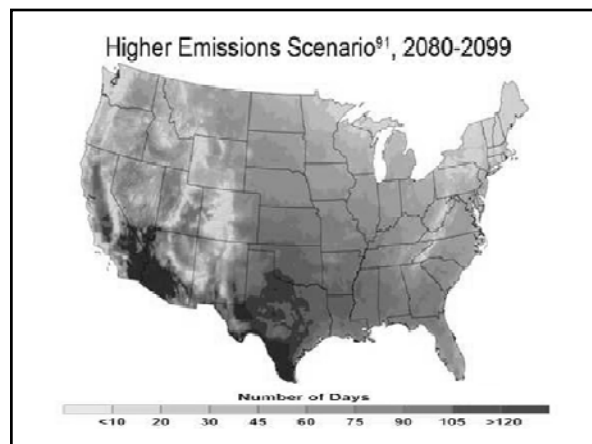
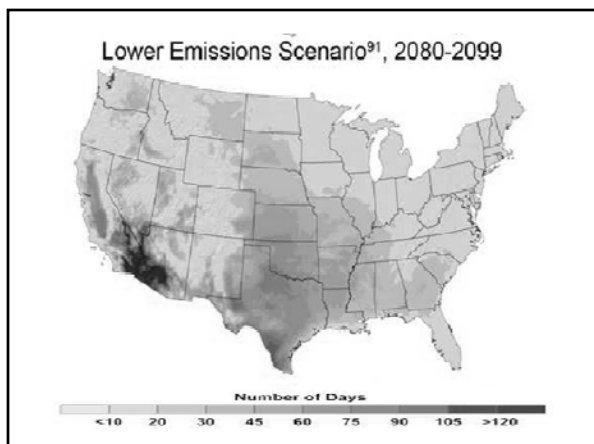
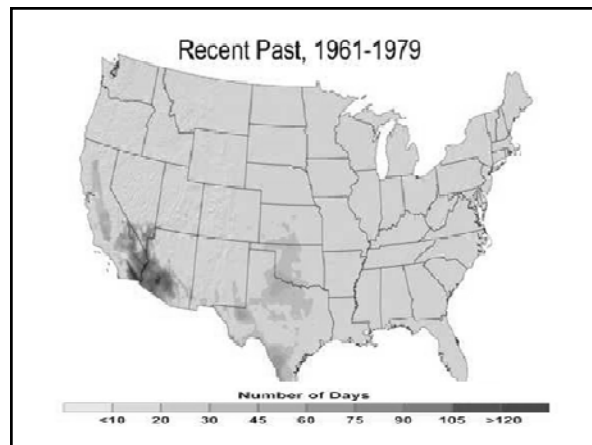
Global Population, 2050

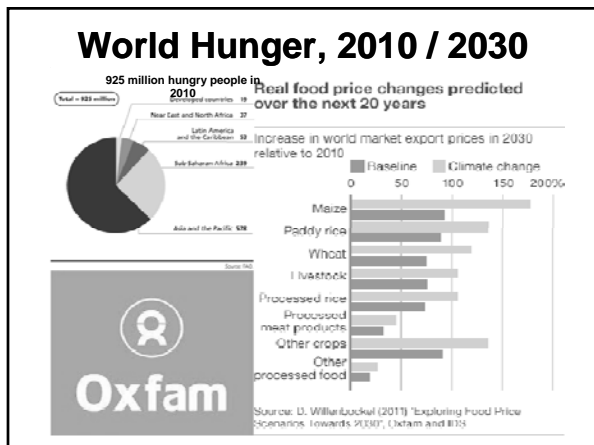
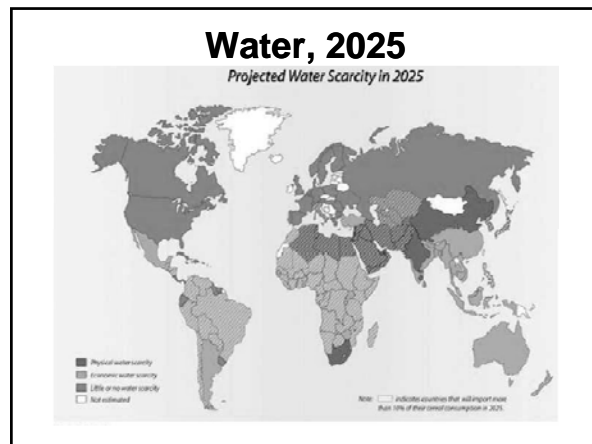
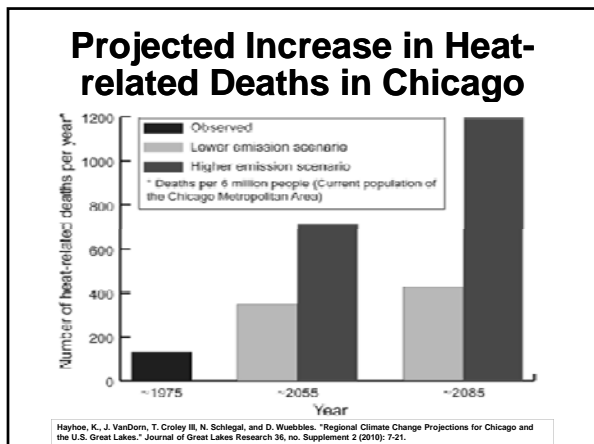




Number of Days Over 100°F

- The number of days in which the temperature exceeds 100 F by late this century, compared to the 1960s and 1970s, is projected to increase strongly across the United States





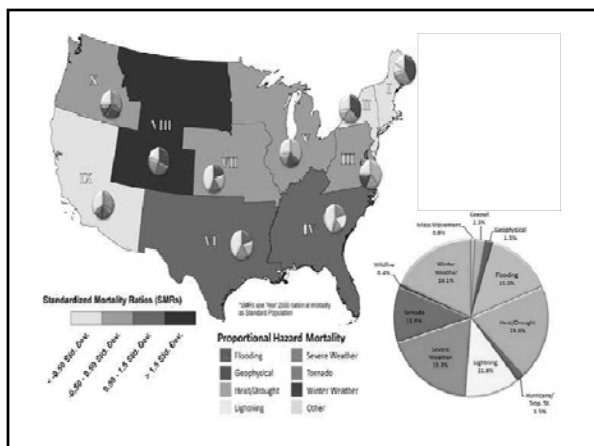
Hazard Induced Mortality

Federal Emergency Management Agency

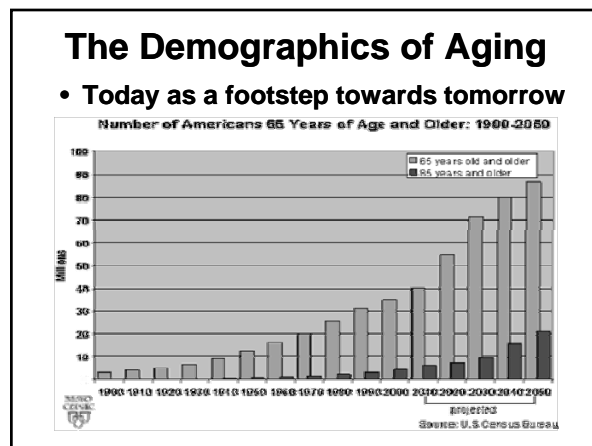
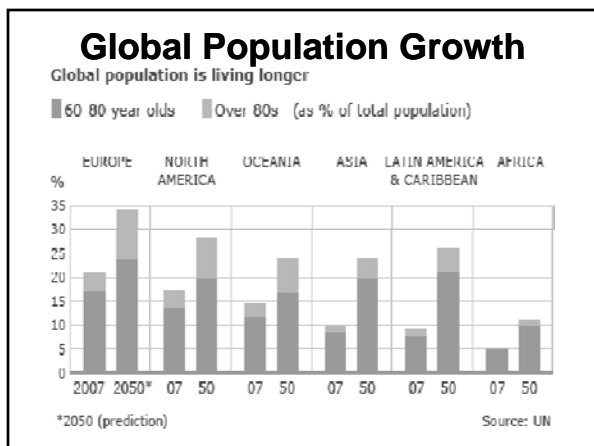
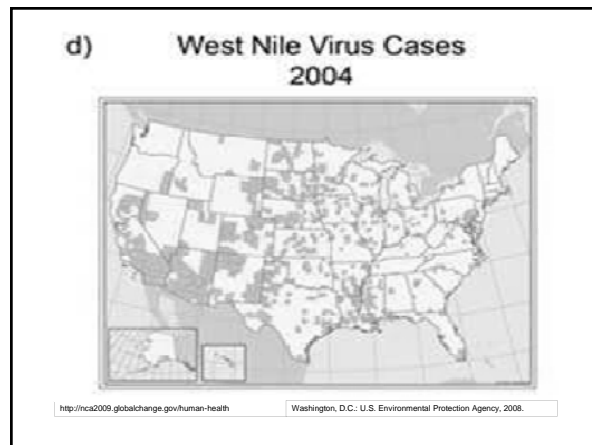
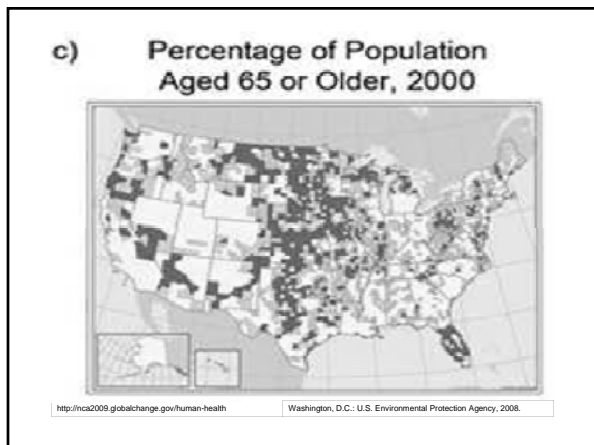
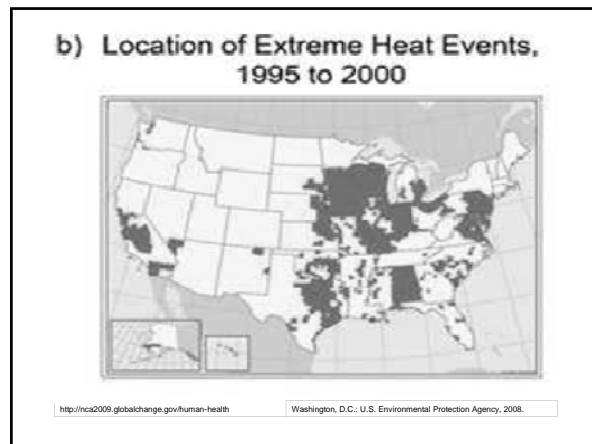
Management Agency

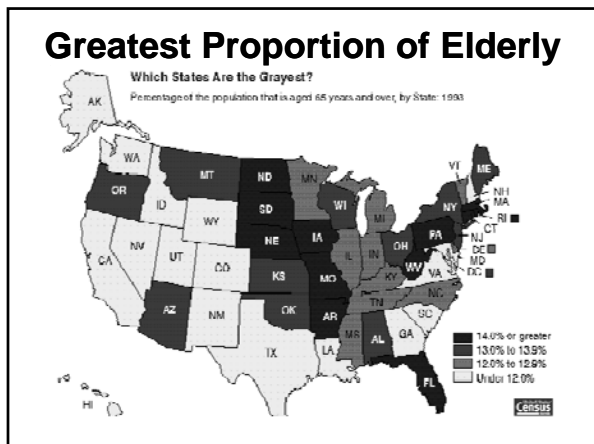
1970 to 2004

- Distribution of catastrophic natural disasters in the United States



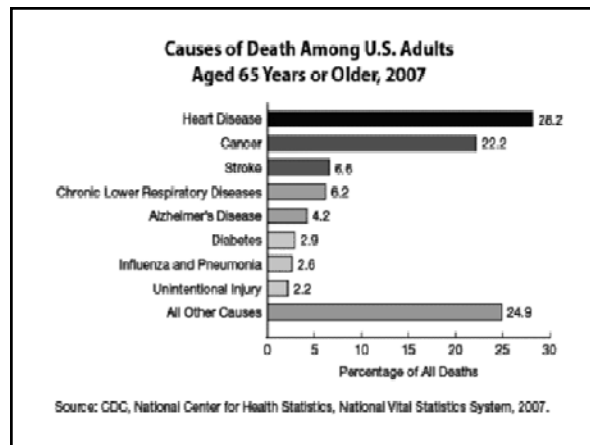
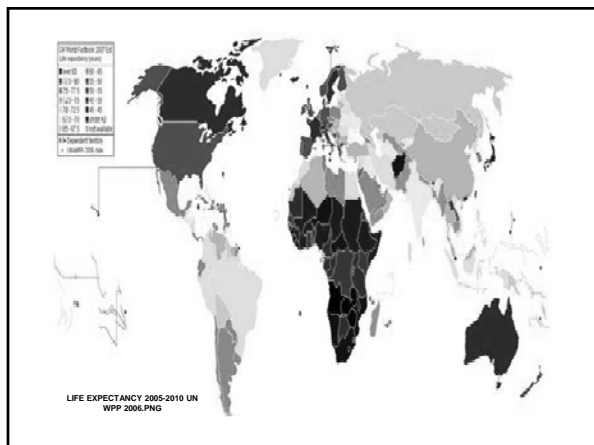
Geographic Vulnerability of U.S. Residents to Selected Climate-related Health Impacts





Present and Emerging Vulnerabilities

- It is a poor sword that cuts in only one direction



U.S. Causes of Death

- Leading causes of death for persons 65 years of age and older
- White
 - Heart disease
 - Cancer
 - Stroke
 - COPD
 - Pneumonia/Influenza

U.S. Causes of Death

- Black
 - Heart disease
 - Cancer
 - Stroke
 - Diabetes
 - Pneumonia/influenza

U.S. Causes of Death

- American Indian
 - Heart disease
 - Cancer
 - Diabetes
 - Stroke
 - COPD

U.S. Causes of Death

- Asian or Pacific Islander
 - Heart disease
 - Cancer
 - Stroke
 - Pneumonia/influenza
 - COPD

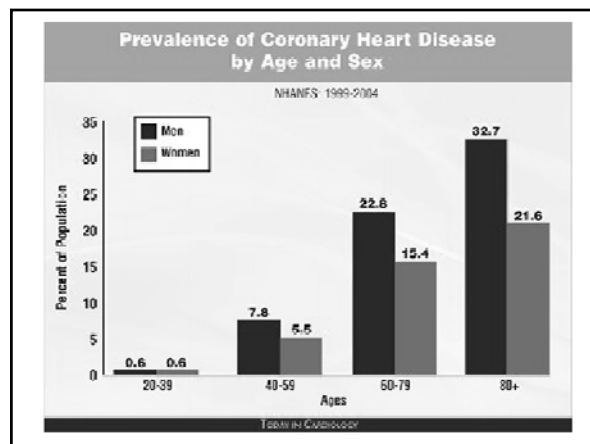
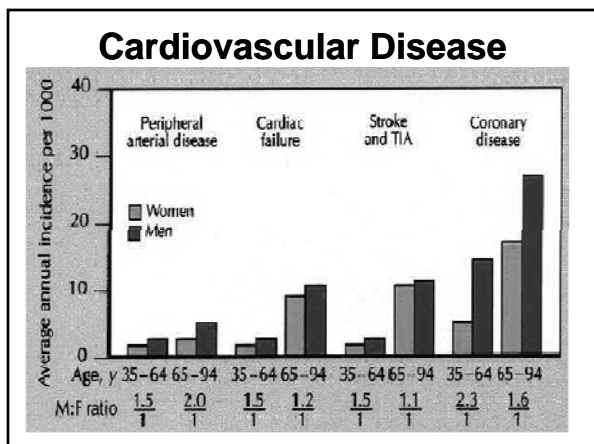
U.S. Causes of Death

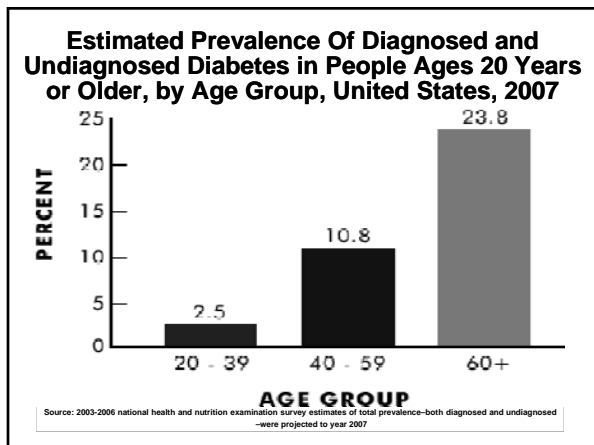
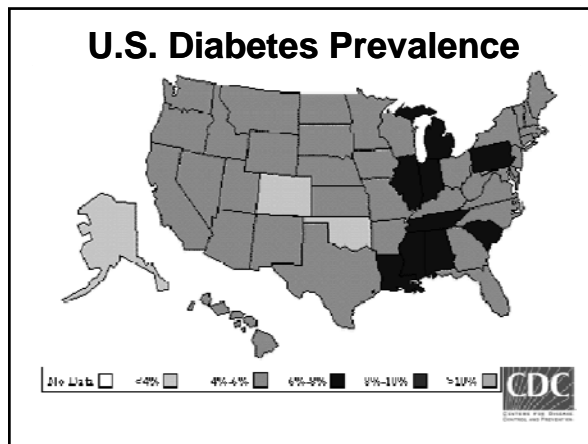
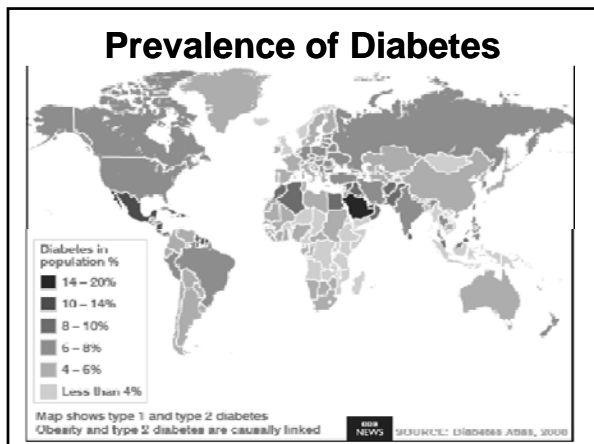
- Hispanic
 - Heart disease
 - Cancer
 - Stroke
 - COPD
 - Pneumonia/influenza

Hospitalizations Among U.S. Elderly

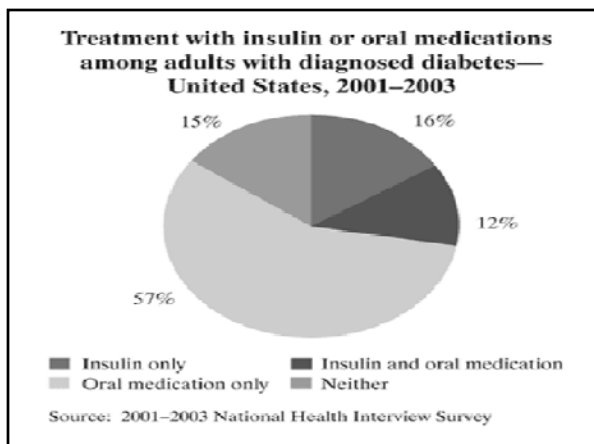
Number of discharges in thousands (percent of elderly discharges)

Principal diagnosis	1997	2000	2004
Disruptive heart failure (CHF)	700 (6.3)	750 (8.2)	820 (8.3)
Pneumonia	727 (6.7)	718 (6.8)	718 (6.6)
Coronary atherosclerosis (hardening of the heart arteries)	626 (5.7)	731 (8.1)	841 (8.4)
Cardiac dysrhythmias	410 (3.7)	455 (5.0)	477 (4.7)
Adult myocardial infarction (AMI) (heart attack)	385 (3.5)	417 (4.6)	431 (4.3)
Osteoarthritis	315 (2.9)	283 (3.1)	405 (4.0)
Acute cerebrovascular disease (stroke)	484 (4.5)	429 (4.7)	370 (3.7)
Chronic obstructive pulmonary disease (COPD)	381 (3.5)	418 (4.6)	486 (4.8)
Rehabilitation care	299 (2.8)	229 (2.5)	241 (2.4)
Falls and electrolytic disorders	Not a top 10 condition in 1997	289 (3.2)	291 (2.9)
Fracture of neck of femur (hip fracture)	312 (2.9)	Not a top 10 condition in 2000	Not a top 10 condition in 2004

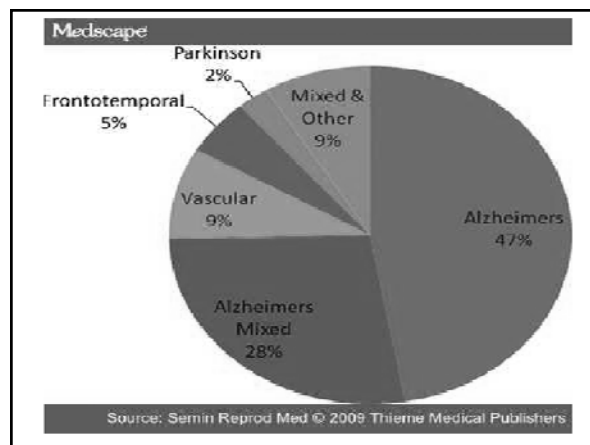
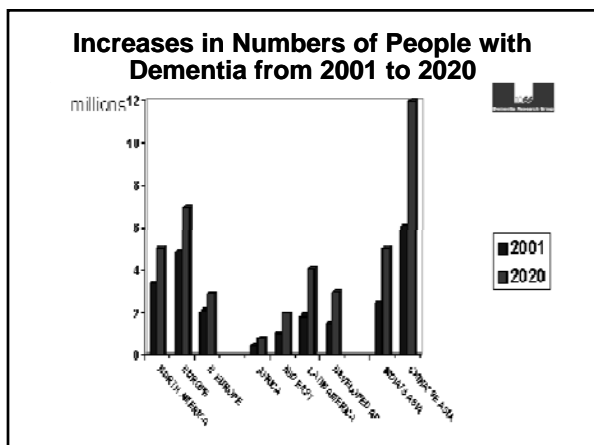
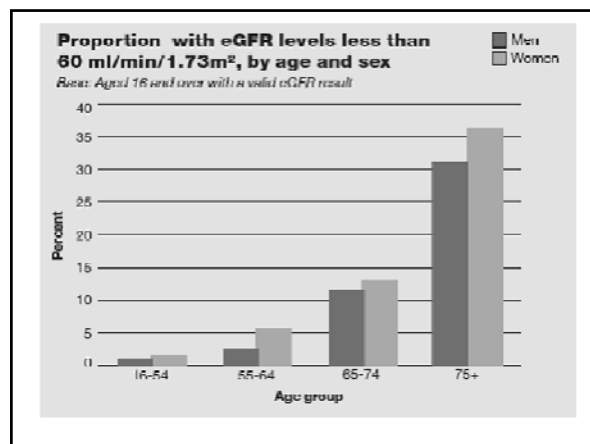
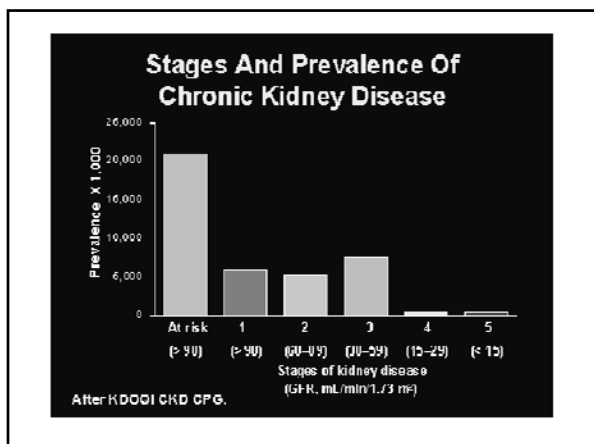




- ### People with Diabetes by Race and Ethnicity, 2004-2006
- Non-hispanic whites: 6.6%
 - Asian Americans: 7.5%
 - Hispanics: 10.4%
 - Non-hispanic blacks: 11.8%
 - American Indians and Alaska Natives: 16.5%



- ### Chronic Kidney Disease in U.S. and UK Population
- Stage I 5.9 m 3.3%
 - Stage II 5.3 m 3.0%
 - Stage III 7.6 m 4.3%
 - Stage IV 400k 0.2%
 - Stage V 300k 0.2%
- Renal Failure



The Prevalence of Dementia

Age Group	International Prevalence Rate
60 – 64	1.3%
65 – 69	2.2%
70 – 74	3.8%
75 – 79	6.5%
80 – 84	11.6%
85 – 89	20.1%
90+	41.5%

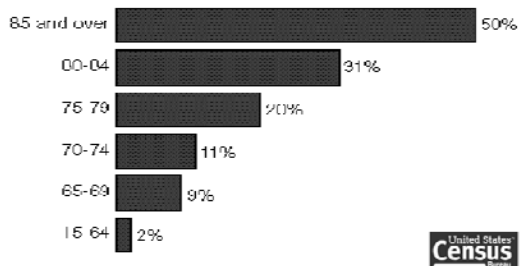
Needed Assistance Performing Everyday Activities

“There are only four kinds of people in the world; those who have been caregivers, those who currently are caregivers, those who will be caregivers, and those who will need caregivers.”

Rosalynn Carter, former first lady

The Need for Personal Assistance With Everyday Activities Increases With Age

Percentage of persons needing assistance with everyday activities, by age: 1990-91
(Civilian noninstitutional population)



Going Solo

- **By 2000, 60% of the widowed elderly were living by themselves**
- **During the Chicago heat wave of 1995 hundreds of people living alone died not just because of the heat but because their solitary lives left them without a support network**

Emergency Demographics

- **Older adults accounted for almost 16 million visits to EDs in 2004, or 14% of all visits**
- **Based on current population based visit rates by 2030, older adults will make approximately 35 million ED visits and comprise nearly 25% of all visits**

— Roskos ER, WILBER ST. The Effect of Future Demographic Changes on Emergency Medicine [Abstract]. Ann Emerg Med. 2006; 48:65.

Mortality Demographics

- **Victims of Hurricane Katrina identified at the St. Gabriel and Carville morgues**
 - 46% were 75 years or older and
 - 70% were older than 60 years

Mortality Demographics

- **2004 Indian Ocean tsunami, there were more deaths in people older than 60 years than in any other age group**

Elderly Populations in Disasters

- **September 11, 2001**
 - Homebound patients were affected, unable to receive services
- **2003 Blackout in NYC**
 - Most hospital admissions were elderly

Elderly Populations in Disasters

- 2005 Hurricane Katrina
 - 74% of deaths were in individuals over age 60
 - 50% in those over age 75

Katrina Population of New Orleans Adults

- Estimated 233,876 people
 - Diabetes 9.0%
 - Angina / coronary heart disease 4.6%
 - Previous myocardial infarction 3.0%
 - Prior stroke 2.0%

Katrina Population of New Orleans Adults

- Current asthma 6.3%
- Overall one of these conditions 25.4%
- Stress and Cardiovascular Disease: Lessons From Katrina; Edward D. Frohlich, M.D., F.A.C.C.; Robert S. Schwartz, M.D., F.A.C.C

Katrina and Rita

- 25 - 40% of those living in the regions affected by hurricanes Katrina and Rita lived with at least one chronic disease
- Chronic illness accounted for 33% of visits, peaking 10 days after hurricane landfall

– Chronic DISEASES AND NATURAL HAZARDS: IMPACT OF DISASTERS ON DIABETIC, RENAL, & CARDIAC PATIENTS; ANDREW C. MILLER, MD; BONNIE ARQUILLA, DO, <http://pdm.medicine.wisc.edu>

1995 Kobe Earthquake

- Three-fold increase of MI in people close to the epicenter
 - Particularly women
- Holter monitoring during earthquake
 - Derangement of heart rate variability
 - Disrupted diurnal cardiovascular variability

1995 Kobe Earthquake

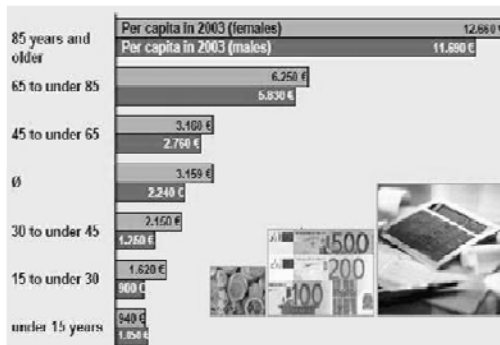
- Earthquake-induced nondipping
- Night-time onset of cardiovascular events
- Near doubling in the frequency of strokes

– Stress and Cardiovascular Disease: Lessons From Katrina; Edward D. Frohlich, M.D., F.A.C.C.; Robert S. Schwartz, M.D., F.A.C.C

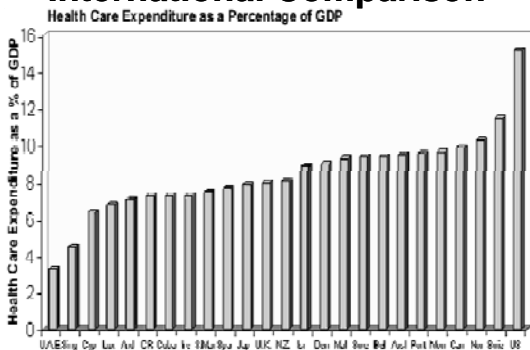
Evolving Technology

- The good news is that there have been enormous advances in technology
- The bad news is that there have been enormous advances in technology

Annual Cost for Health Care



International Comparison



The Lessons of History

“Those who cannot remember history are condemned to repeat it.”

Georges Santayana

Biological Terrorism “Category A” List (CDC)

- Anthrax
- Smallpox
- Plague
- Tularemia
- Botulinal Toxin

Biological Terrorism “Category A” List (CDC)

- Viral Hemorrhagic Fevers
 - Ebola and Marburg
 - Lassa Fever

Irish Potato Famine

- **Phytophthora infestans, late blight**
- **1845 – 1852**
- **1,000,000 dead, 25 % of population**

Doctrine

- **Of the thousand possible ways of doing business we had better not be trying to do business in a thousand ways**
- **Speak with one voice**
- **That Others May Live**

The Three Tyrannies

- **Time**
- **Logistics**
- **Communications**

The Delta Analysis: The Best Is the Enemy of the Good

- **Virtual Plan**
- **Initial Operational Capability**
- **Standards of care for consequence management**

The Delta Analysis: The Best Is the Enemy of the Good

- **Operational Model**
 - **People**
 - **Logistics**
 - **Communications Infrastructure**
 - **Risk Communications**

The Operational Model

- **The best amalgam of risks, vulnerabilities, strengths, assets, geography, climate and local peculiarities to deal with this peril for this community in this jurisdiction**
- **The science is the same everywhere but in every place and circumstance the operational model will be different**

Administrative Challenges Hurricane Katrina 2005

- At the Louisiana Superdome a search of personal belongings was required before entry was permitted
- Medications in containers other than the original dispensed container were confiscated and destroyed

Administrative Challenges Hurricane Katrina 2005

- Many patients left home with enough medication for the presumed 3 to 4 day evacuation period, only to have their medications taken from them prior to the storm

Administrative Challenges Hurricane Katrina 2005

- Prescription refill policies of commercial insurance, Medicare part-D providers, and Medicaid do not allow refills except once per 30-day period at local retail pharmacies

- Chronic Diseases and Natural Hazards: Impact of Disasters on Diabetic, Renal, and Cardiac Patients; Andrew C. Miller, MD; Bonnie Arquilla, DO; <http://pdm.medicine.edu>

Isolation

- Isolation
 - Separation of people with infectious illness from healthy people
 - Infection Control Measure
- People in isolation may be cared for in their homes, in hospitals, or at designated health care facilities

Quarantine

- Quarantine
 - Separation and restriction of healthy people who are not yet ill but have been exposed to an infectious agent
 - Protects public from exposure
 - Stops the spread of illness

Quarantine

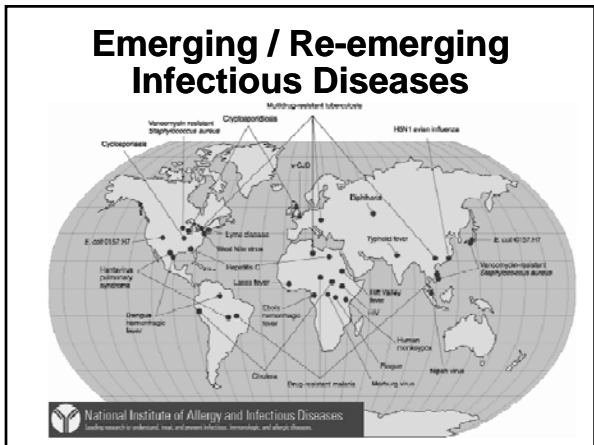
- Medically very effective in protecting the public from disease

Casualty Management

- Evacuation
- Enroute care
- Centers of excellence

Casualty Management

- Community management
 - Local facilities
 - Field medical facilities
 - Community facilities/pods
 - Self aid and buddy care
 - Home care

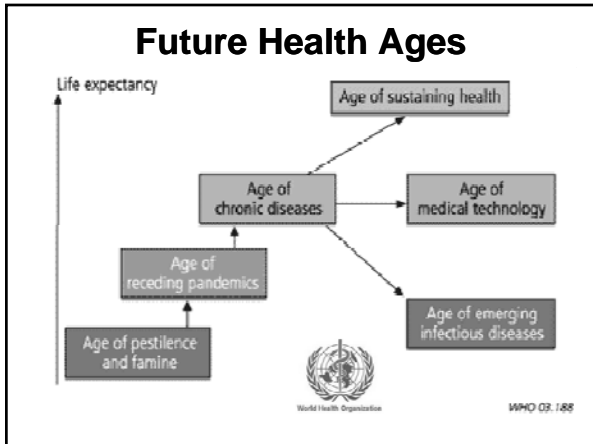


Future Health Ages

- Age of emerging infectious diseases
 - Emergence of new infectious diseases or the re-emergence of “old” diseases
- Age of medical technology
 - Increased health risks caused by lifestyle and environment offset by economic growth and technology

Future Health Ages

- Age of sustained health
 - Investments in social services will lead to a sharp reduction in lifestyle-related diseases



Radiological Attack / Event

- The nationwide trend of locating a majority of the major urban health care institutions in downtown areas would result in a staggering loss of the total institutional health care delivery following nuclear weapon use

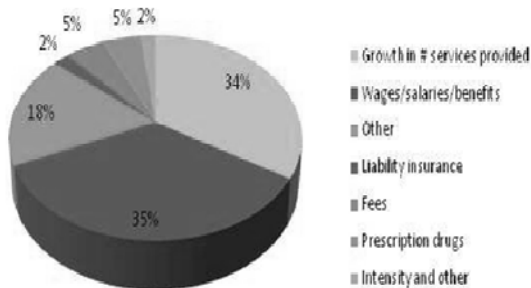
- Vulnerability of Populations and the Urban Health Care Systems Nuclear Weapon Attack; William C. Bell and Cham E. Dallas

Radiological Attack / Event

- Losing at least half of your health care responders in the first minute of the attack is all the more damaging because so many of the thermal and trauma injuries require immediate care and cannot wait for the time-consuming importation of replacement medical worker

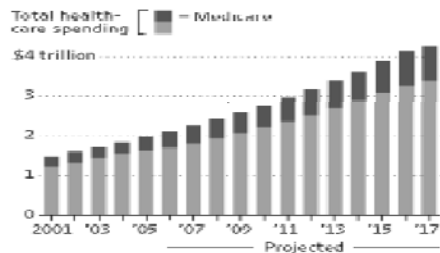
Surge Capacity

Drivers of U.S. hospital spending growth, 2004-08

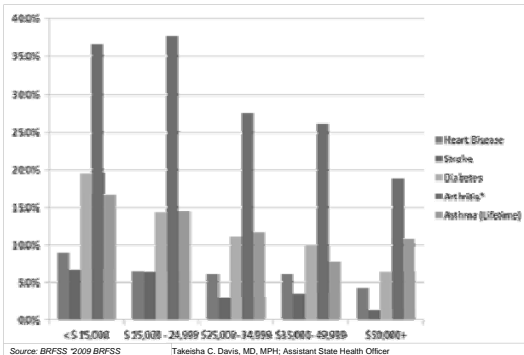


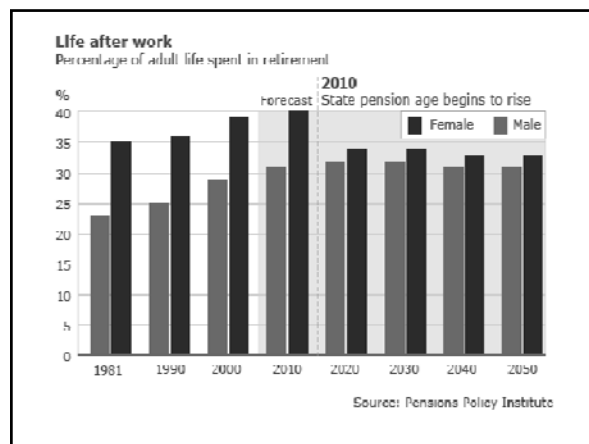
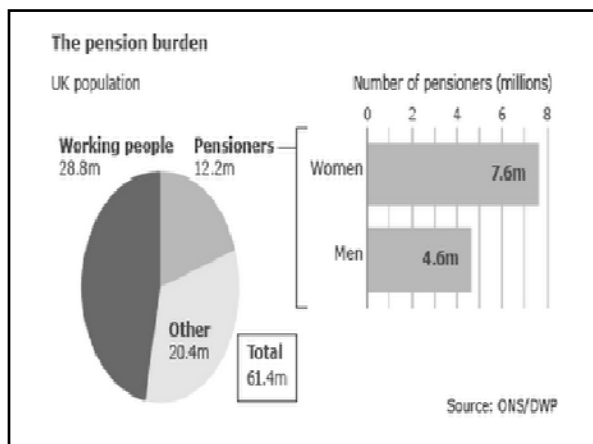
Footing the Bill

The cost of insuring aging baby boomers will help push up national health expenditures in the next decade



Disease Prevalence by Income, 2010





Is Geriatric Medicine Terminally Ill?

- Unpopular career choice for physicians
 - Low prestige
 - Futility of care
 - Low remuneration

Is Geriatric Medicine Terminally Ill?

- Elderly patients take longer
 - 20% of time in unreimbursed “coordination”
- Nursing home care
 - Low reimbursement
 - Excessive regulation
 - Unrealistic time expectations

Gaps Found in Nursing Homes’ Disaster Plans

- Emergency plans required by the government often lack specific steps such as:
 - Coordinating with local authorities
 - Notifying relatives
 - Pinning name tags and medication lists to residents in an evacuation

Gaps Found in Nursing Homes’ Disaster Plans

- That means the plans may not be worth the paper they’re written on

Gaps Found in Nursing Homes' Disaster Plans

- 3 million people spent at least some time in a nursing home during 2009
- Nearly 40 percent of them, 1.2 million, were in the top 10 disaster-prone states
- 35 residents of St. Rita's Nursing Home near New Orleans perished during Katrina

Gaps Found in Nursing Homes' Disaster Plans

- Some drowned in their beds
- Identified many of the same gaps in nursing home preparedness and response
 - Did not describe how to handle a resident's illness

Gaps Found in Nursing Homes' Disaster Plans

- No information about specific medical needs
 - Feeding tubes and breathing equipment
- Silent on how to identify residents
- No provision for medication lists
- No 7 day supply of drinking water

Gaps Found in Nursing Homes' Disaster Plans

- Transportation was an Achilles' heel

Our Reality

- How we provide health care and public health in Louisiana hasn't changed much since Medicaid was enacted in 1965

Evacuation of Fragile Patients

- Lifesaver exercises
 - Federal air transportation teams
 - NDMS reverse flow
 - First and second wave
 - Tracking system

Evacuation of Fragile Patients

- Hurricane Gustav – City of New Orleans
 - Pre-identified patients
 - Assembly sites and system
 - Bus and rail
- Reception capability
- Electronic medical records

SWIFT LEVEL TOOL IN DISASTER PREPAREDNESS

SWiFT Level	Explanation	Preparatory Steps
1	Cannot perform at least one basic ADL (activities of daily living: eating, bathing, dressing, toileting, walking, continence) without assistance	Evacuate early rather than late depending on the circumstance. If possible, keep with family member, companion, or caregiver. Receives assistance in gathering all assistive devices, including eye glasses, walkers, hearing aids, list of medicines, names of doctor(s), family contact telephone numbers, and important papers, so they are accessible.
2	Trouble with instrumental activities of daily living (i.e., finances, benefits management, assessing resources)	Gather, with assistance if necessary, all assistive devices, including eye glasses, walkers, hearing aids, list of medicines, names of doctor(s), family contact telephone numbers, and important papers, so they are accessible.
3	Minimal assistance with ADL and instrumental activities of daily living	Advise individuals to have all assistive devices, including walkers, eye glasses, hearing aids, list of medicines, names of doctor(s), family contact telephone numbers, and important papers together and accessible.



Community Care

- Centers of Excellence
- Hospital at Home



Community Care

- Community cadre and resources
 - Personnel
 - Equipment and supply
 - Pharmaceuticals
- Forward surgical capability
 - Mobile forward surgical teams
 - Salvage surgery
- Medical organization and command

Community Preparedness

- Education of population at large
- Preparation of specific plans
- Self aid and buddy care
- Support teams with roles and capabilities

Community Preparedness

- Risk communications
 - What do I need to know?
 - Where do I get more information
 - What do I need to do?
- Communications adjuncts

Back to the Future

- **Shape the Battlefield**
- **If we don't deal with these issues now, our children will face them in the future**

Back to the Future

"The good news to a hungry person is bread."

Desmond Tutu

Summary

- **Demographics**
- **Vulnerabilities**
- **Technology and History**
- **Doctrine, Analysis, and Planning**
- **The Gathering Storm**

"Plans are nothing, planning is everything."

Eisenhower, Patton