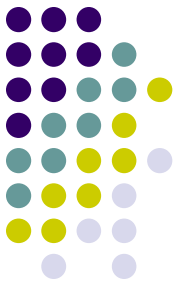


# **Are Americans Getting Sicker?**

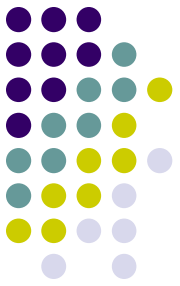
**Richard K. Thomas, Ph.D.**  
**University of Mississippi**

**Applied Demography Conference**  
**January 9, 2014**



# **Alternate Title**

**An Examination of Trends in the Morbidity  
Status of the U.S. Population:  
A Comparative Analysis of 20<sup>th</sup> Century  
Morbidity Rates and 21<sup>st</sup> Century Morbidity  
Rates**

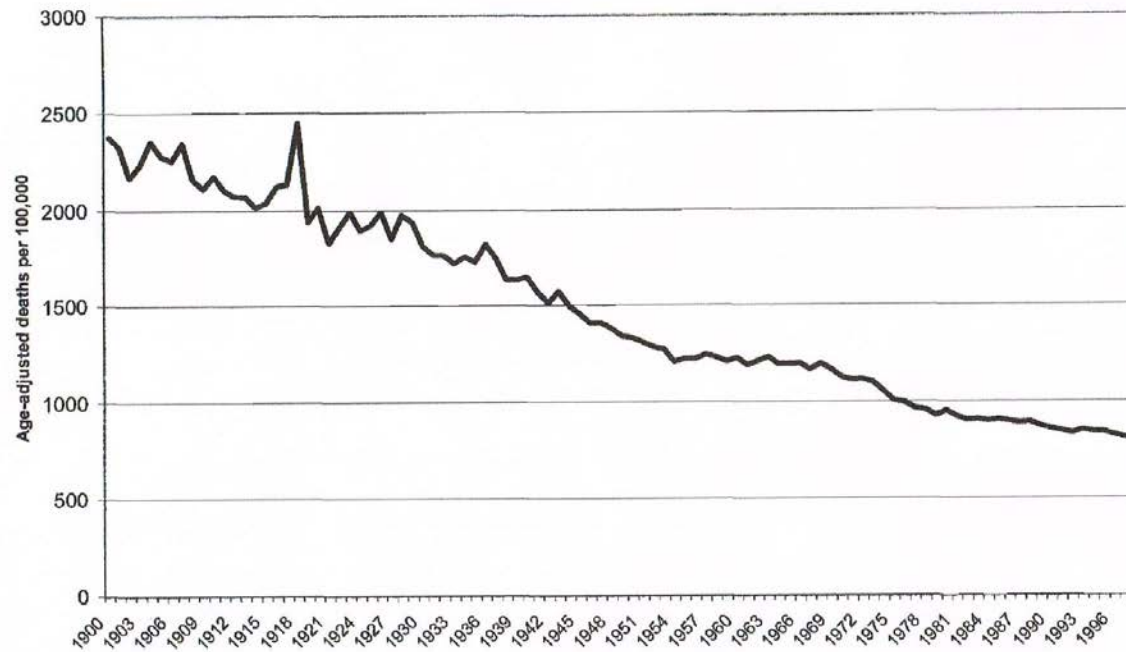
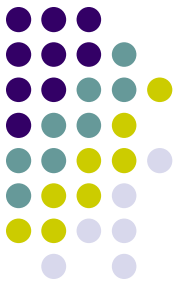


# **A Century of Improving Health Status**

**The 20<sup>th</sup> century characterized by:**

- A decline in overall mortality**
- A decline in infant and maternal mortality**
- Increasing life expectancy**
- The elimination of many common diseases**

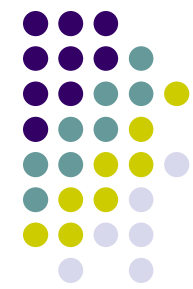
# A Century of Improving Health Status: Overall Mortality



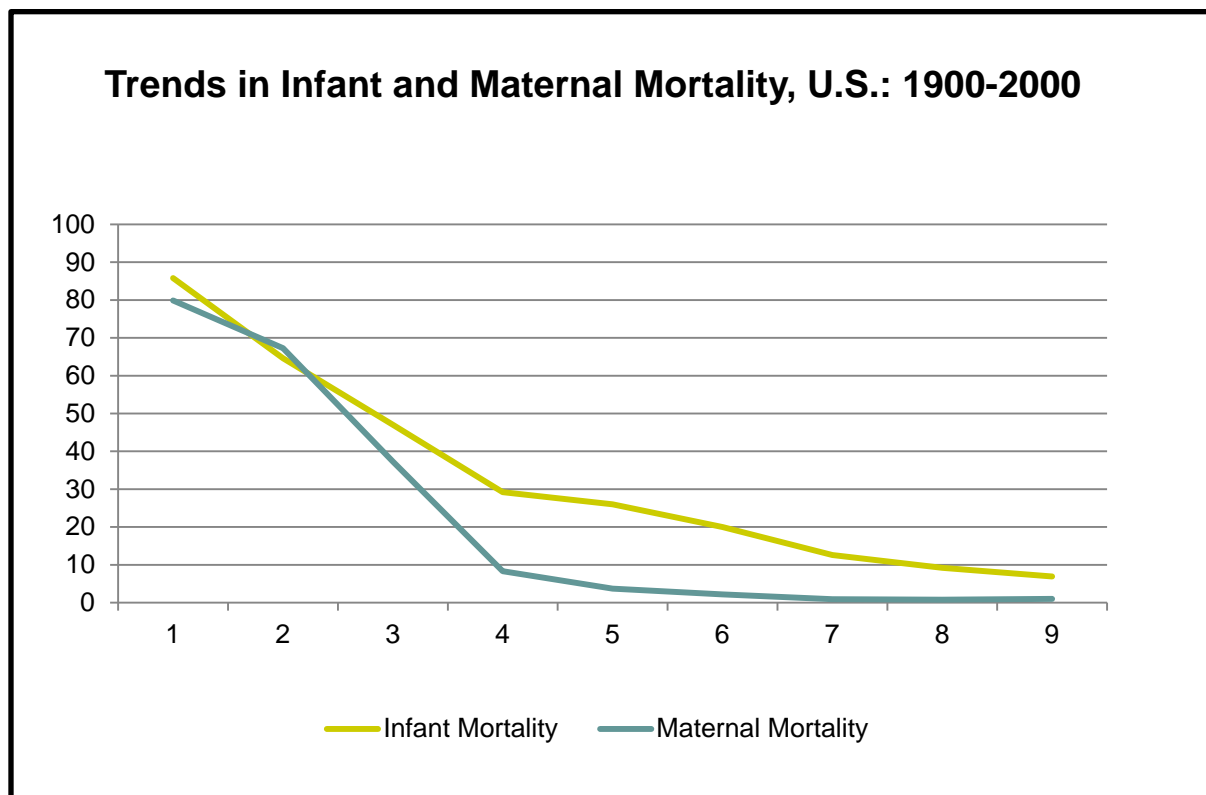
**Fig. 9.1** All cause mortality

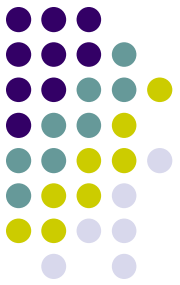
*Source:* United States Vital Statistics data.

*Note:* Death rates shown are adjusted to the standard population of the United States in 1940.

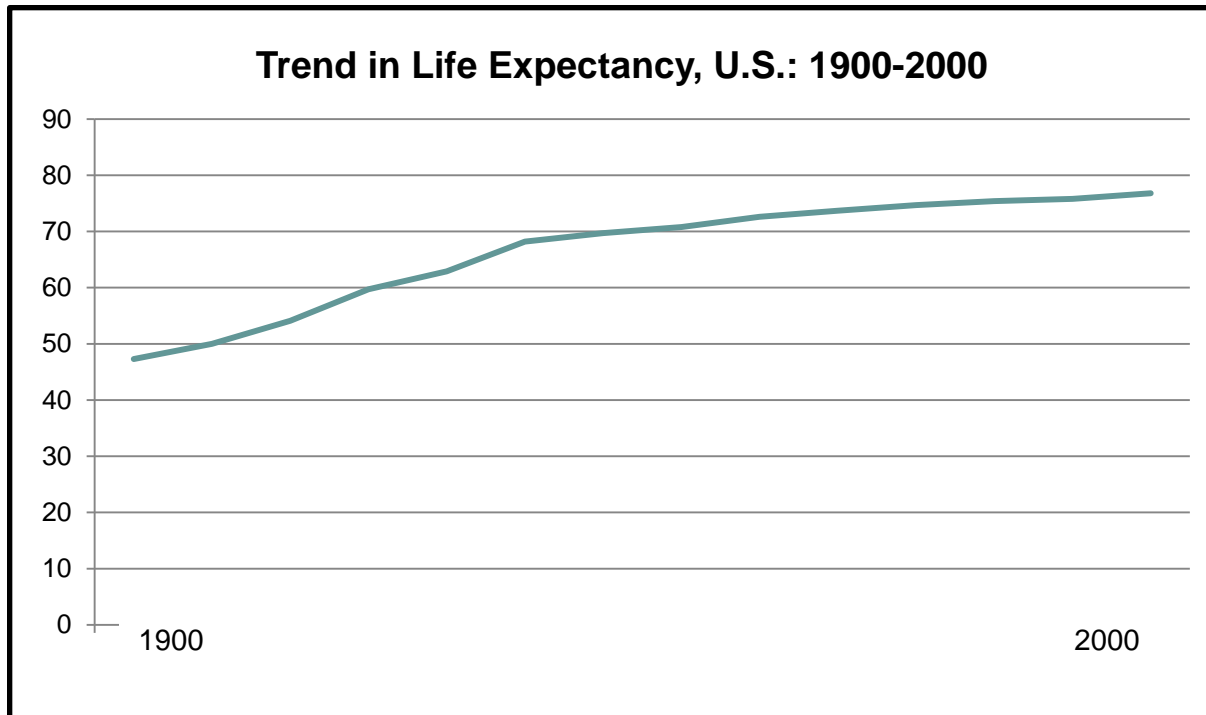


# A Century of Improving Health Status: Infant and Maternal Mortality

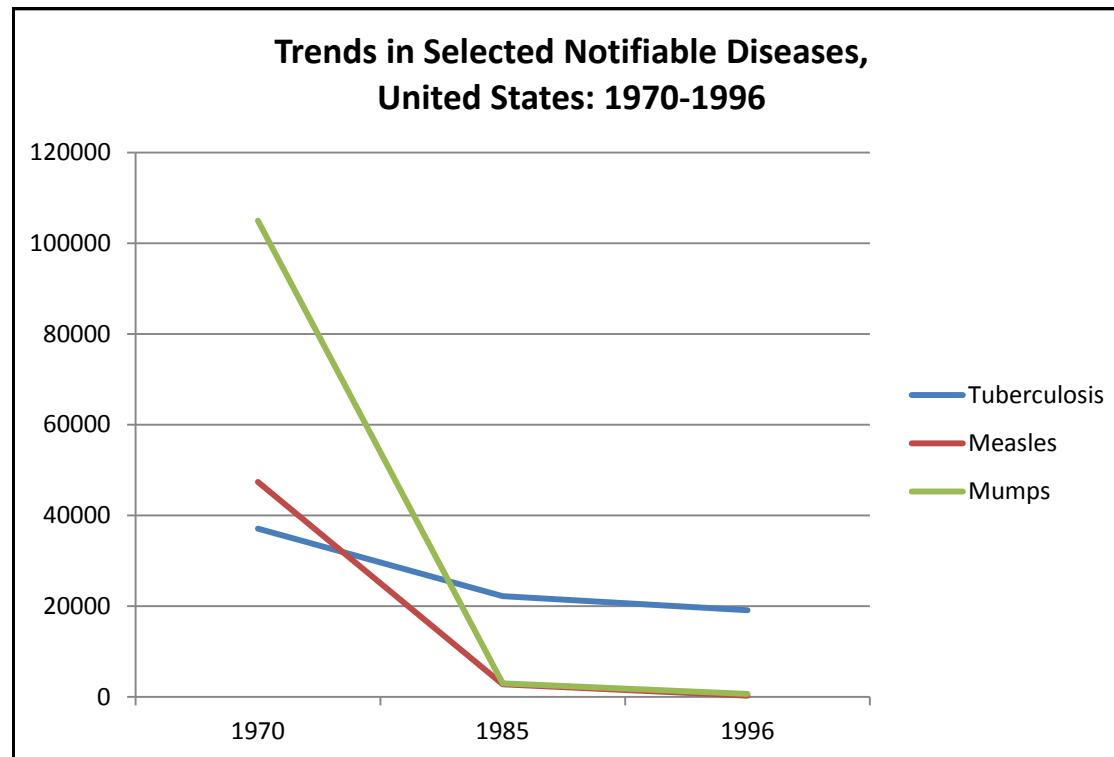
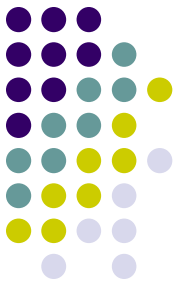


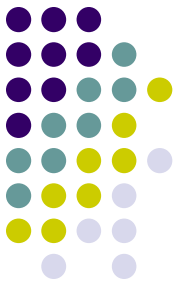


# A Century of Improving Health Status: Life Expectancy



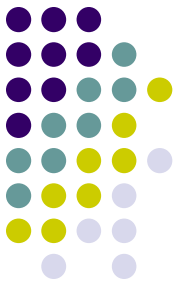
# A Century of Improving Health Status: Elimination of Disease





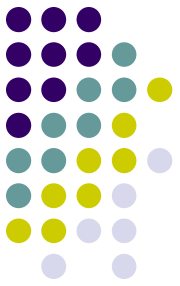
# **The 21<sup>st</sup> Century: A Reversal of Fortunes?**





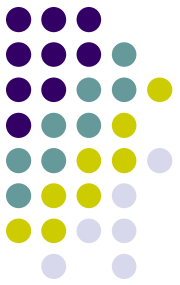
# Measuring Morbidity Change: Methodological Issues

- **Population to be considered**
- **Morbidity measurement**
- **Data availability**
- **Other issues**



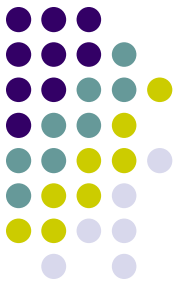
# Measuring Morbidity Change: Methodological Issues

- **Population to be considered**
  - **Total population**
  - **Relevant sub-groups**
    - **Adults**
    - **Children**
    - **Seniors**
  - **Only native-born citizens**



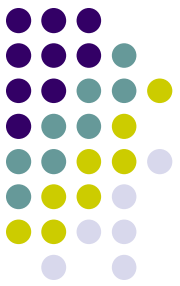
# Measuring Morbidity Change: Methodological Issues

- **Morbidity measurement**
  - **Global indicators**
  - **Aggregate indicators**
  - **Specific diseases**
- **Relative importance**



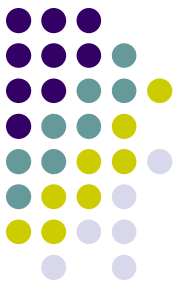
# Measuring Morbidity Change: Methodological Issues

- **Data availability**
  - **No central repository of health data**
  - **Inconsistency of data collection**
  - **Completeness of data collection**
  - **Time period covered**



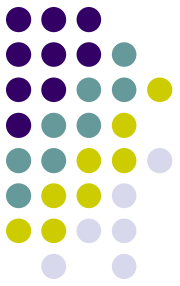
# Measuring Morbidity Change: Methodological Issues

- **Other issues**
  - **Data quality**
  - **Questionnaire consistency**
  - **Population/age range covered**
  - **Actual rates vs. reported rates**



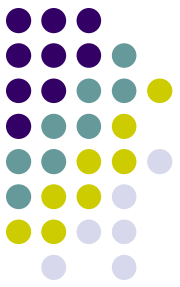
# Measuring Morbidity Change: Methodological Issues

- **Determining trend direction**
  - Trend reversal
  - Trend stagnation
  - Slowing rate of change
  - Comparative performance



# Measuring Morbidity Change: Research Plan

- **Specifying desired indicators**
- **Identifying available data**
- **Selection of most appropriate/  
complete data**
- **Creating a patchwork quilt of  
various rates**

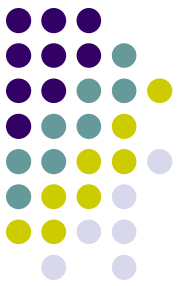


# Measuring Morbidity Change: Research Plan

**As is often the case in  
health demography:**

**We do the analysis with the data we  
have...rather than the data we would  
like to have.**



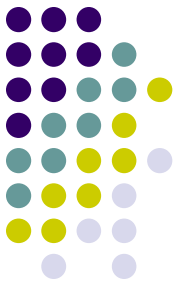


# Measuring Morbidity Change: Research Plan

**Technical note:**

**Intended to compare 1900-2000  
period with 2000-2010 period**

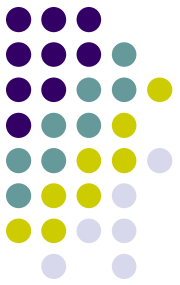
**Observed direction changes typically  
occurred in the 1990s**



# Measuring Morbidity Change: Findings

## Global indicators:

- Self-reported health status
- Mortality

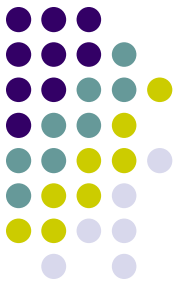


# Measuring Morbidity Change: Findings

## Self-reported health status

Until the mid-1990s:

- **Steady increase in “very good” and “excellent” responses**
- **Steady decrease in “fair” and “poor” responses**

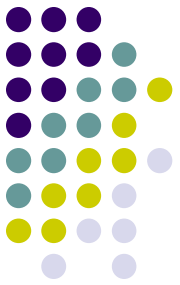


# Measuring Morbidity Change: Findings

## Self-reported health status

From the mid-1990s on:

- Decline in “very good” and “excellent” responses
- Increase in “fair” and “poor” responses

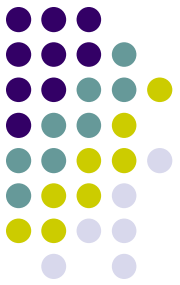


# Measuring Morbidity Change: Findings

## Self-reported health status\*

- Reporting “very good” or “excellent”  
1997 – 68.5%                      2011 – 61.1%
- Reporting “fair” or “poor”  
1997 – 9.2%                        2011 – 12.8%

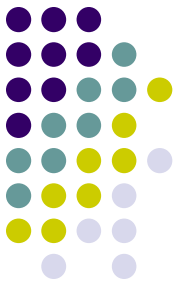
\*Age-adjusted



# Measuring Morbidity Change: Findings

## Self-reported health status

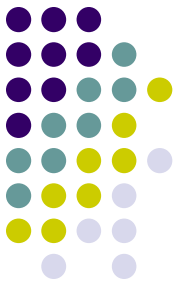
- Decline essentially across all demographic categories
- Some variation for specific subgroups
- The young-old and middle-old were outliers



# Measuring Morbidity Change: Findings

## Mortality trends

- Continued overall decline (but leveling off)
- Negative trends for some subgroups
- Negative trends for some causes



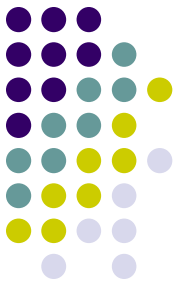
# Measuring Morbidity Change: Findings

## Mortality trends

### Negative trends for some subgroups

- **Poorly educated white women**
  - **Decline of 5 years life expectancy (1990-2008)**
- **Poorly educated white men**
  - **Decline of 3 years life expectancy (1990-2008)**



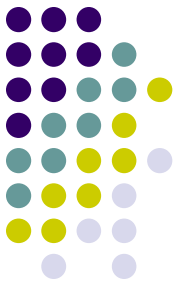


# Measuring Morbidity Change: Findings

## Life expectancy trends: 1985-2010

U.S. women dropped from:

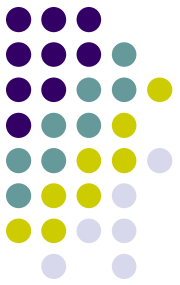
- 14<sup>th</sup> place to 41<sup>st</sup> place among the world's countries
- Middle of the pack to dead last among developed countries



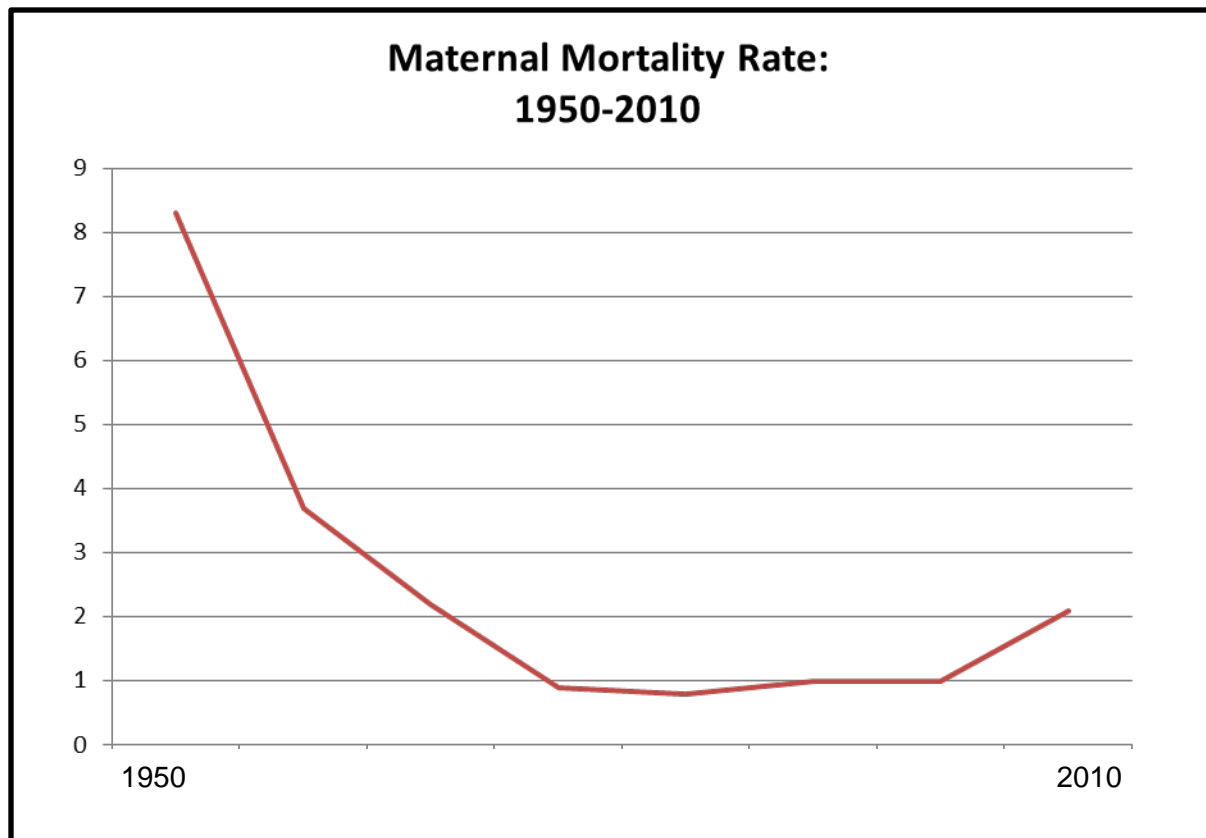
# Measuring Morbidity Change: Findings

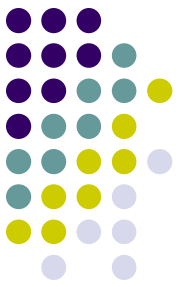
## Mortality trends

- Increased rate for maternal mortality
- From low of 0.7/100,000 to 2.1/100,000 (1987-2010)



# Measuring Morbidity Change: Findings

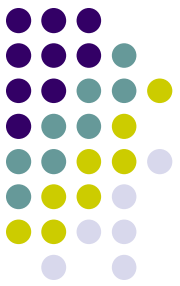




# Measuring Morbidity Change: Findings

**Aggregate indicators: Acute conditions:**

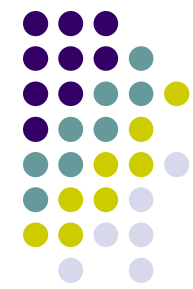
- **General decline but fluctuating**
- **Current rate – modern high**



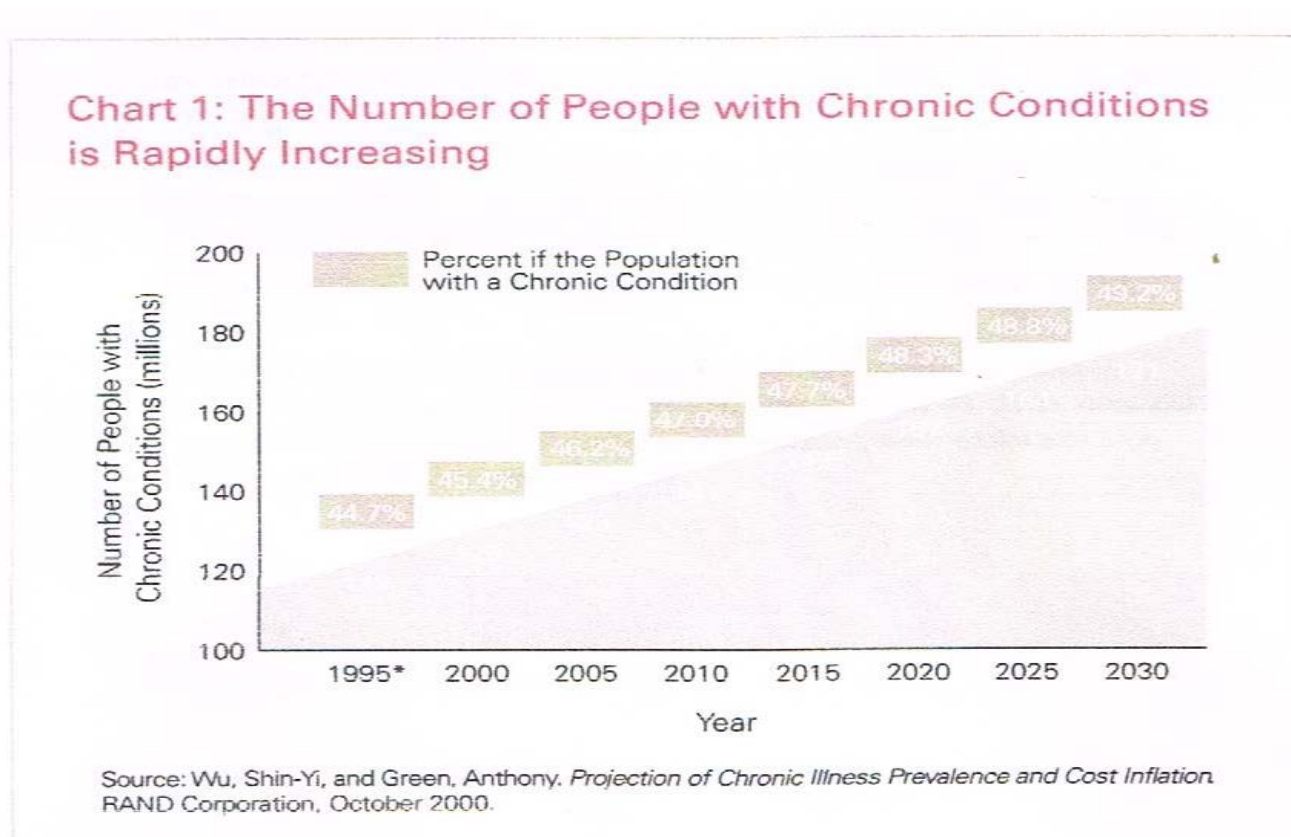
# Measuring Morbidity Change: Findings

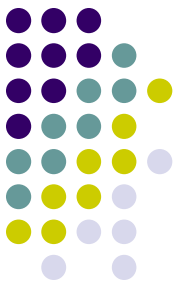
## Aggregate indicators: Chronic conditions:

- **Steady increase in population affected (1995-2010): 41.7% - 47.0%**
- **Steady increase in the number per person**



# Measuring Morbidity Change: Findings

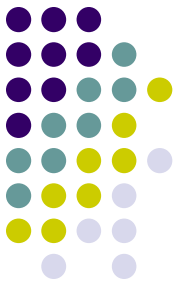




# Measuring Morbidity Change: Findings

## Aggregate indicators: Disability

- Increase in the proportion with disability
- Increase in the proportion with multiple disabilities
- Increased proportion of seniors requiring personal assistance requirements

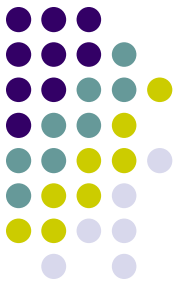


# Measuring Morbidity Change: Findings

## Aggregate indicators: Disability

- **Activity limitation: 11.8% - 28.7%**  
**(1970-2010)**
- **Any disability: 27.0% - 30.3%**  
**(1997-2009)**

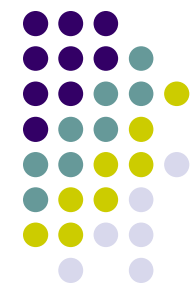




# Measuring Morbidity Change: Findings

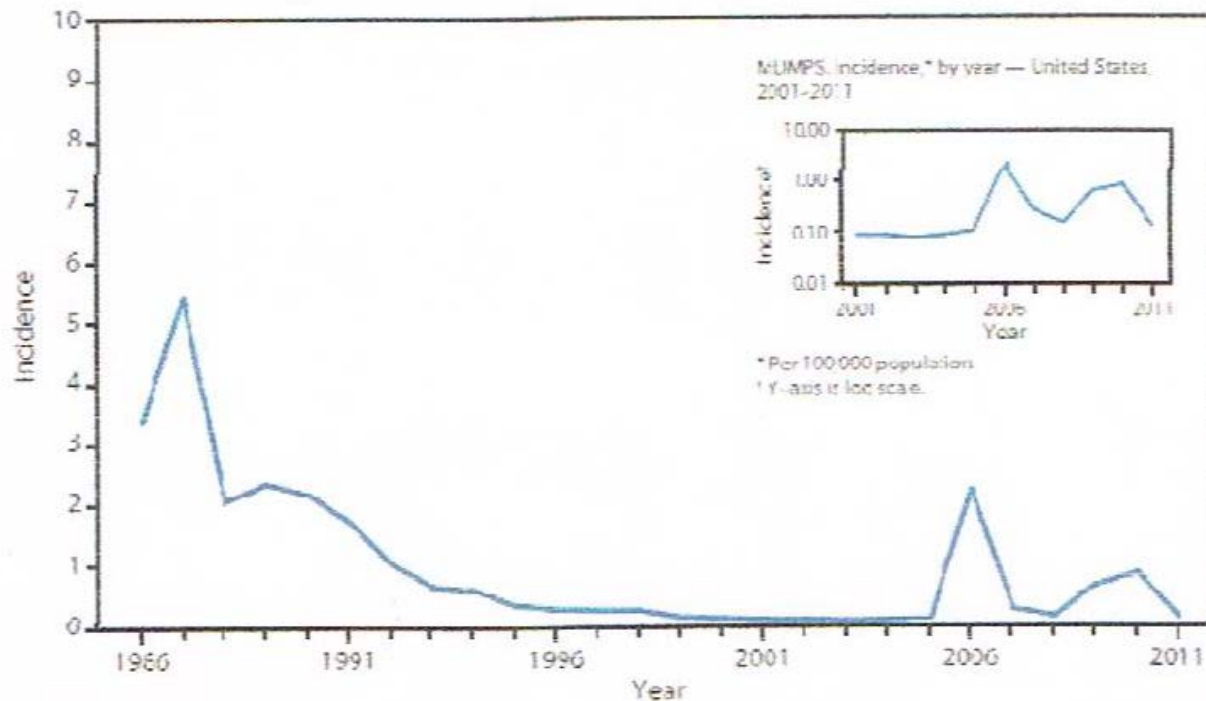
**Increased incidence of selected  
notifiable diseases (1997-2011):**

- **Mumps**
- **Malaria**
- **Legionnaire's disease**
- **Pertussis**



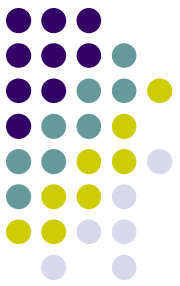
# Measuring Morbidity Change: Findings

MUMPS. Incidence,\* by year — United States, 1986–2011

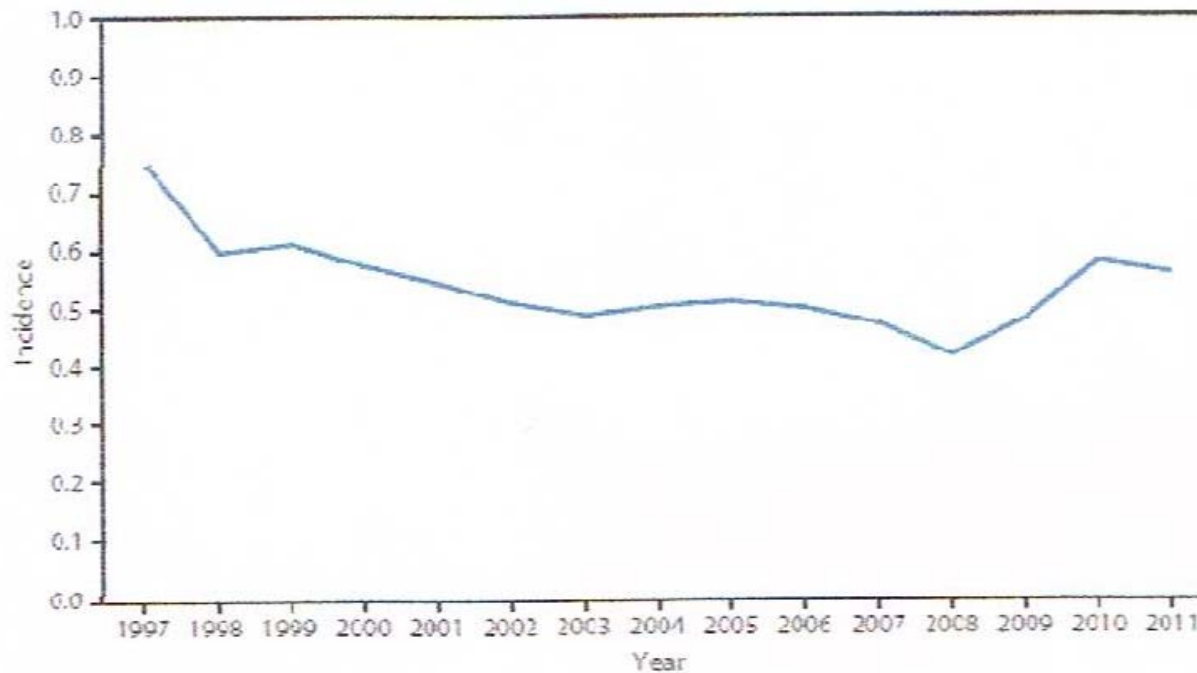


\* Per 100,000 population.

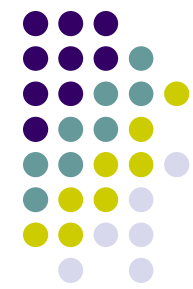
# Measuring Morbidity Change: Findings



Malaria. Incidence,\* by year — United States, 1997–2011

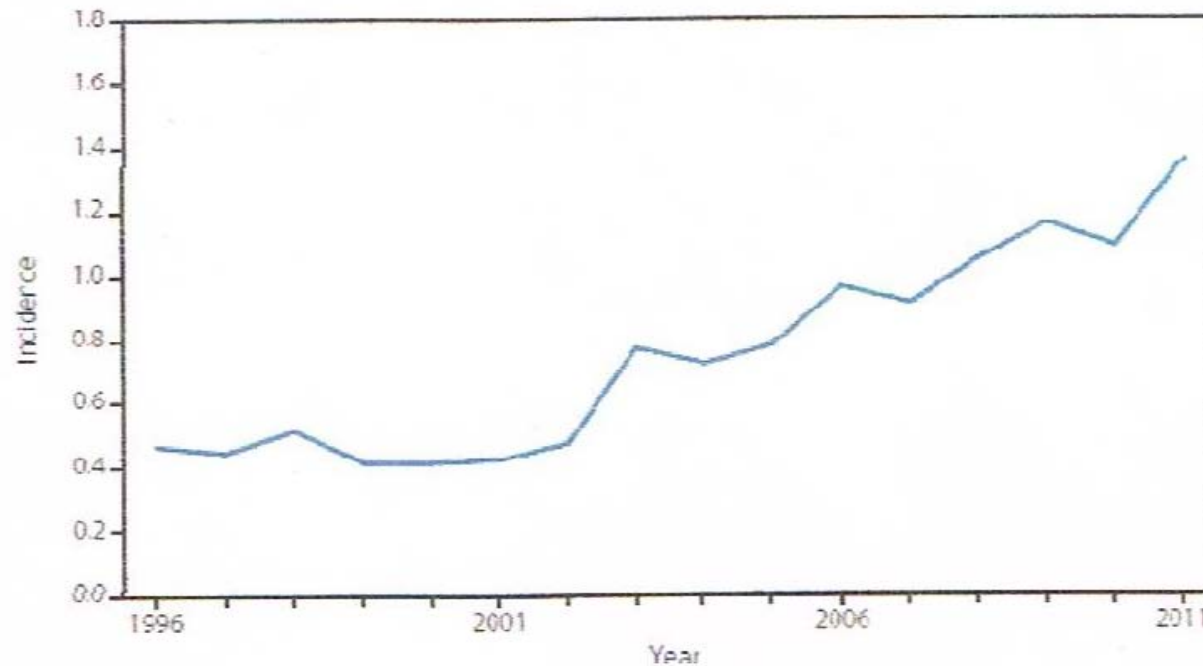


\* Per 100,000 population.

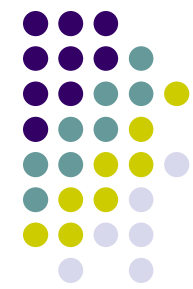


# Measuring Morbidity Change: Findings

LEGIONELLOSIS. Incidence,\* by year — United States, 1996–2011

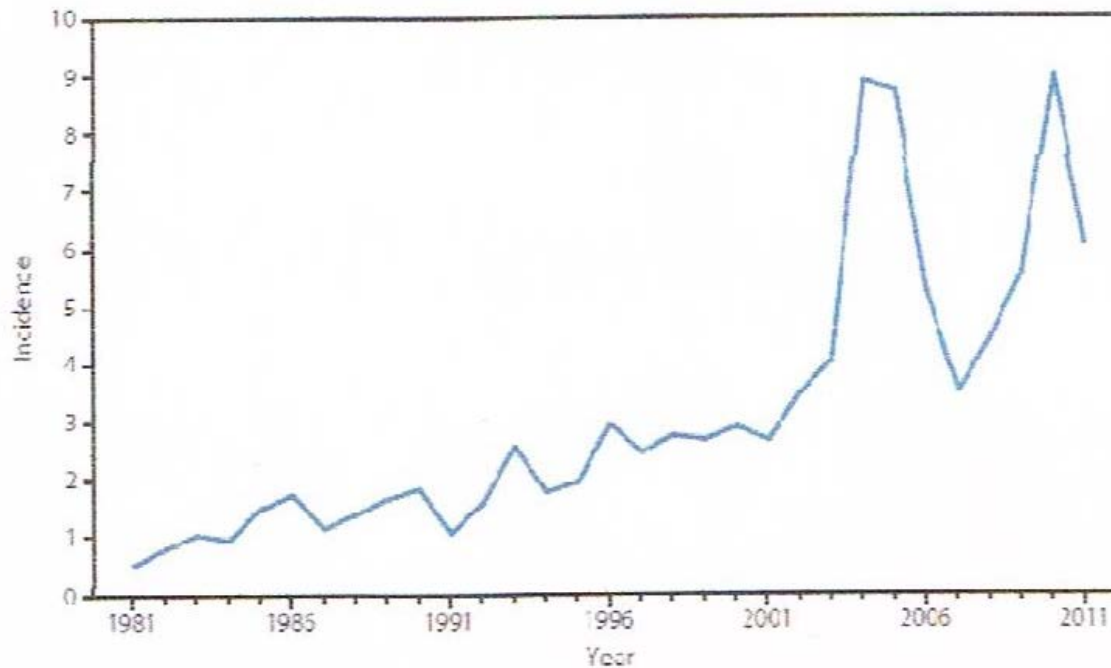


\* Per 100,000 population.

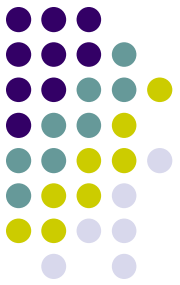


# Measuring Morbidity Change: Findings

PERTUSSIS. Incidence,\* by year — United States, 1981–2011



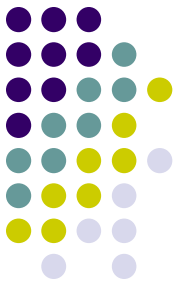
\* Per 100,000 population.



# Measuring Morbidity Change: Findings

## Persistence of selected notifiable diseases (2011):

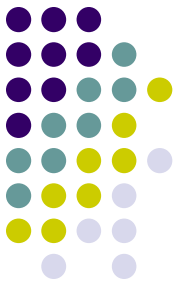
- Tuberculosis – 10,528
- Chickenpox – 14,513
- Coccidioidomycosis – 22,634
- Giardiasis – 16,747
- Salmonellosis – 51,887
- Shigellosis – 13,352



# Measuring Morbidity Change: Findings

## On-going epidemic of sexually transmitted infections (2011):

- Chlamydia – 1,412,791
- Gonorrhoea – 321,849
- Syphilis – 46,042
- HIV – 35,266



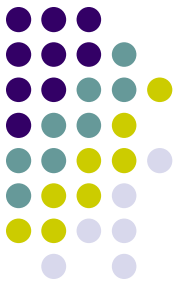
# Measuring Morbidity Change: Findings

## Mortality trends

### Negative trends for some causes

- **Increased mortality rates for:**
  - **Flu/pneumonia**
  - **Diabetes**
  - **Chronic lower respiratory diseases**
  - **Chronic liver disease/cirrhosis,  
Parkinson's disease**
  - **Pneumonitis**

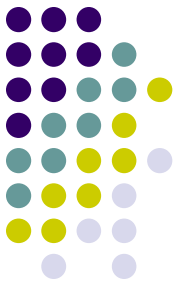




# Measuring Morbidity Change: Findings

## Selected chronic diseases among adults (1979/81-2011):

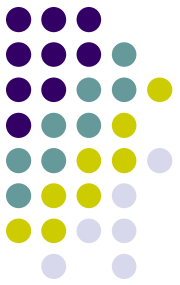
- **HBP: 11.1% - 24.3%**
- **CHD: 2.4% - 6.3%**
- **Stroke: 0.9% - 2.6%**
- **Cancer: 6.5% - 8.0%**
- **Emphysema: 1.0% - 1.9%**
- **Asthma: 3.1% - 8.1%**



# Measuring Morbidity Change: Findings

**Provisional explanation:**

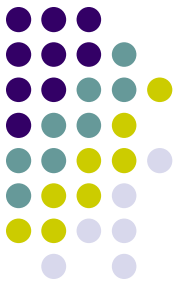
**U.S. population is older on average so  
we should expect a higher prevalence  
of chronic disease**



# Measuring Morbidity Change: Findings

## Increased prevalence of chronic diseases: 2001-2010

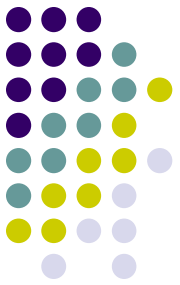
- Adults (45-64) with 2-3 – significant increase
- Adults (45-64) with 4+ - significant increase
- Adults (65+) with 2-3 – significant increase
- Adults (65+) with 4+ – significant increase



# Measuring Morbidity Change: Findings

**Increased prevalence of selected  
chronic diseases among older adults  
(45-64): 2008-2011**

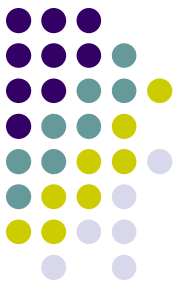
- **High blood pressure**
- **Diabetes**
- **Asthma**
- **Cancer**
- **Depression**



# Measuring Morbidity Change: Findings

Aggregate indicators of chronic disease among seniors:

|           | <u>1998</u> | <u>2008</u> |
|-----------|-------------|-------------|
| 1 or more | 86.9%       | 92.2%       |
| 4 or more | 11.7%       | 17.4%       |

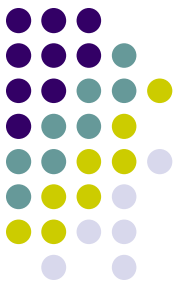


# Measuring Morbidity Change: Findings

## Child health indicators

### Significant increases in:

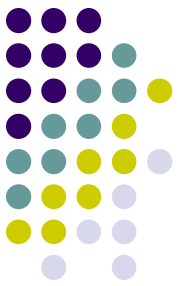
- Physical health problems (especially chronic disease)
- Mental health problems
- Disability



# Measuring Morbidity Change: Findings

## Child health indicators: Significant increases in:

- Asthma
- Other respiratory illnesses
- Allergies
- Hypertension
- Other heart problems
- Diabetes

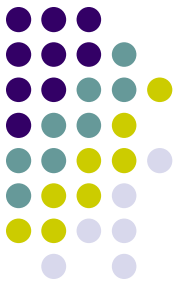


# Measuring Morbidity Change: Findings

## Child health indicators (ages 2-8):

- **Any chronic condition:**
  - From 12.8% - 26.6% (1988-2006)
- **Obesity:**
  - From 13.1% - 14.9% (1988-2010)



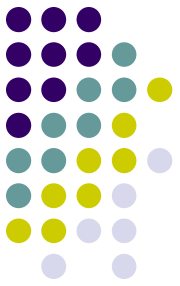


# Measuring Morbidity Change: Findings

**Child health indicators:**

**Mental health indicators:**

- **Increases in:**
  - **Autism**
  - **ADHD**
  - **Other**

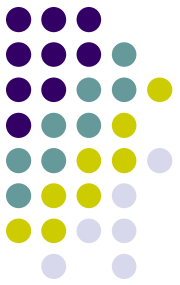


# Measuring Morbidity Change: Findings

## Child health indicators:

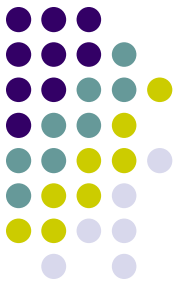
- **Disability indicators (1984-2004):**
  - Activity limitation: 5.1% - 7.0%
  - Needs ADL help: 0.3% - 0.6%
  - Prematurity: 10.6% - 11.5%\*

**\*1990-2012**



# Measuring Morbidity Change: Conclusions

**Are, in fact, Americans getting sicker?**

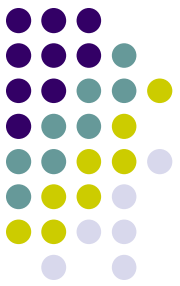


# Measuring Morbidity Change: Conclusions

**One final complicating factor:**

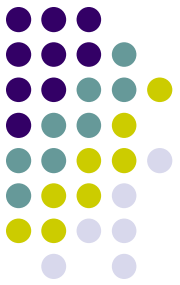
**How much of the increase in reported incidence/prevalence be attributed to:**

- **Better diagnostic tests**
- **More frequent diagnostic tests**
- **More frequent physician visits**



# Measuring Morbidity Change: Conclusions

- **Difficult to draw a global conclusion**
- **Clear evidence of deteriorating health status for some segments of the population**
- **Increases in many of the conditions with significant implications**
- **Presence of conditions considered unacceptable for a developed society**



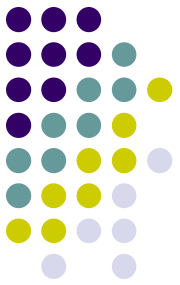
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**At the same time...**

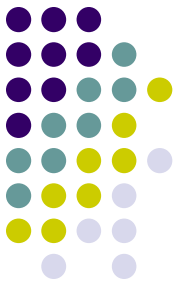
- **Continued improvement in some indicators**
- **Continued elimination of some health threats**
- **Reduction of impact of the major killers**



# Measuring Morbidity Change: Conclusions



**At this point, the jury is still out.  
Additional research will be required.**



# Measuring Morbidity Change: Contact Information

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