



International Actuarial Association Health Section  
2007 Colloquium

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# Income Protection Trends by Cause of Disability in the United States

IAAHS 2007

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13<sup>th</sup> – 16<sup>th</sup> May 2007

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# Income Protection Trends by Cause of Disability in the United States

## Agenda

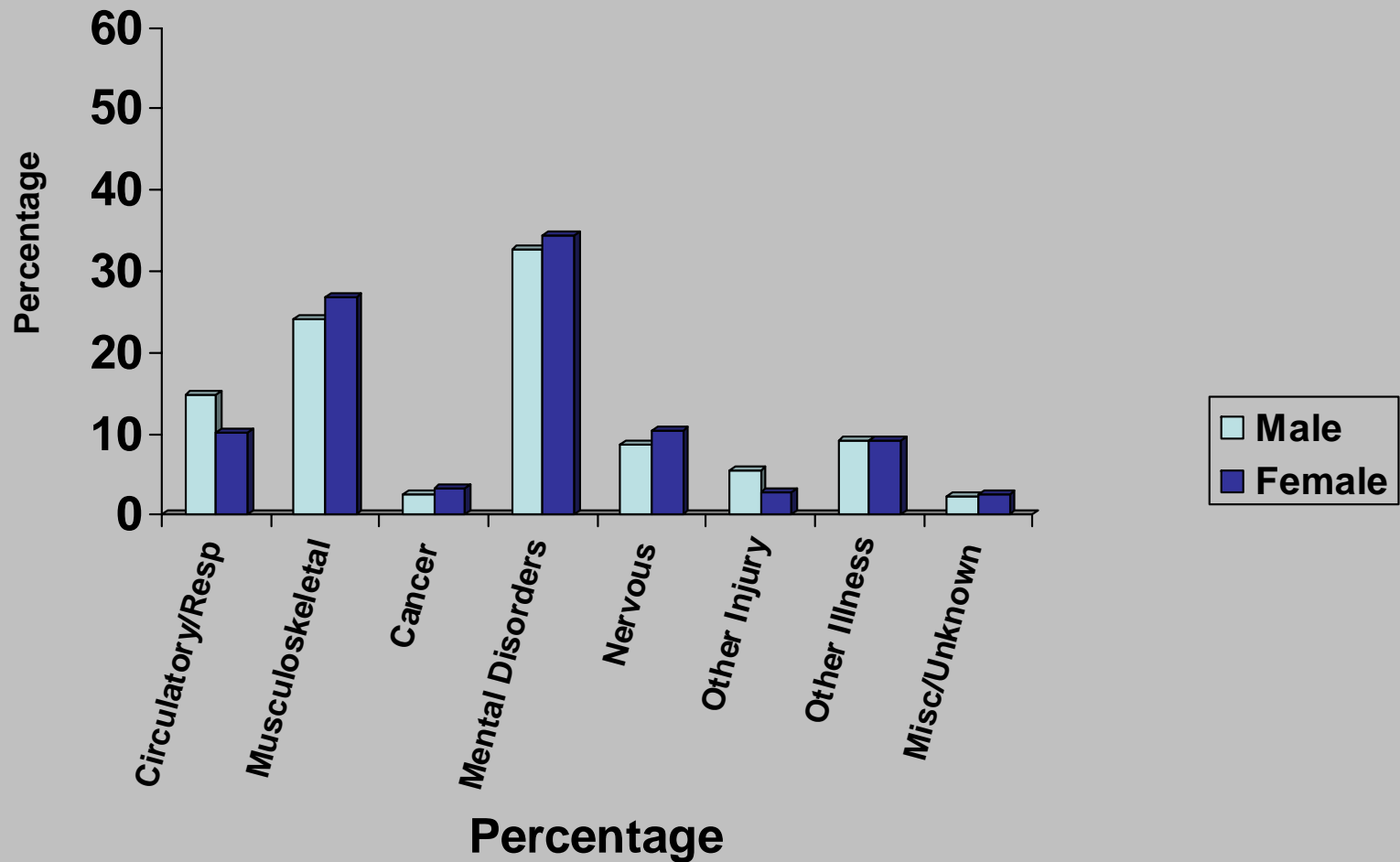
- Social Security Data
- Individual Disability Industry Data
- Other Trends
- HIV and AIDS in the United States
- The Rising Cost of Obesity

# Social Security Experience

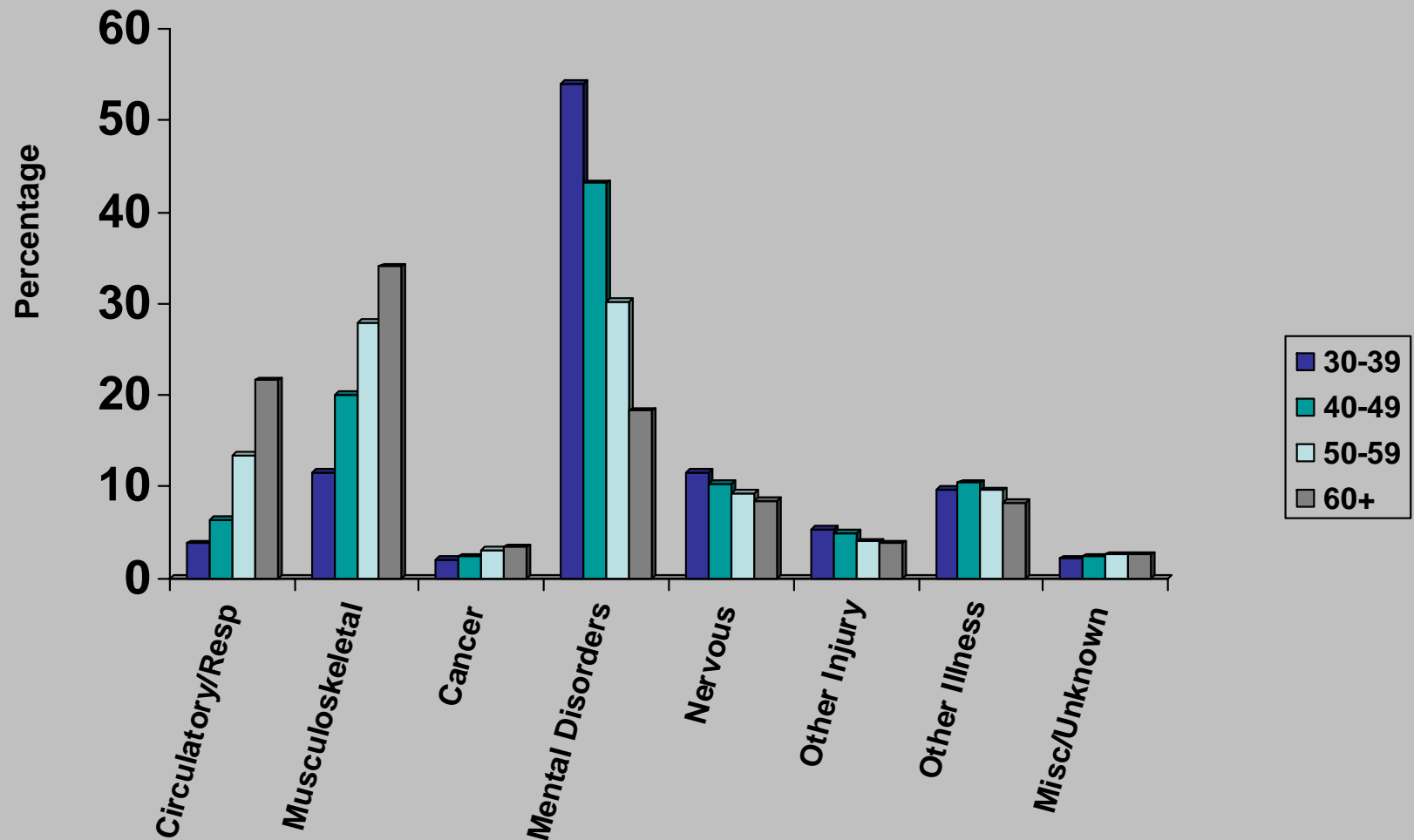
## Social Security Disability Income in the US

- Covers nearly all American workers
- Pays primary and dependent benefits
- Maximum benefits: About \$2,000 primary and \$1,000 dependent
- 5-Month benefit waiting period
- Benefits payable to normal retirement age (65-67)
- “Any occupation” definition of disability
- No underwriting

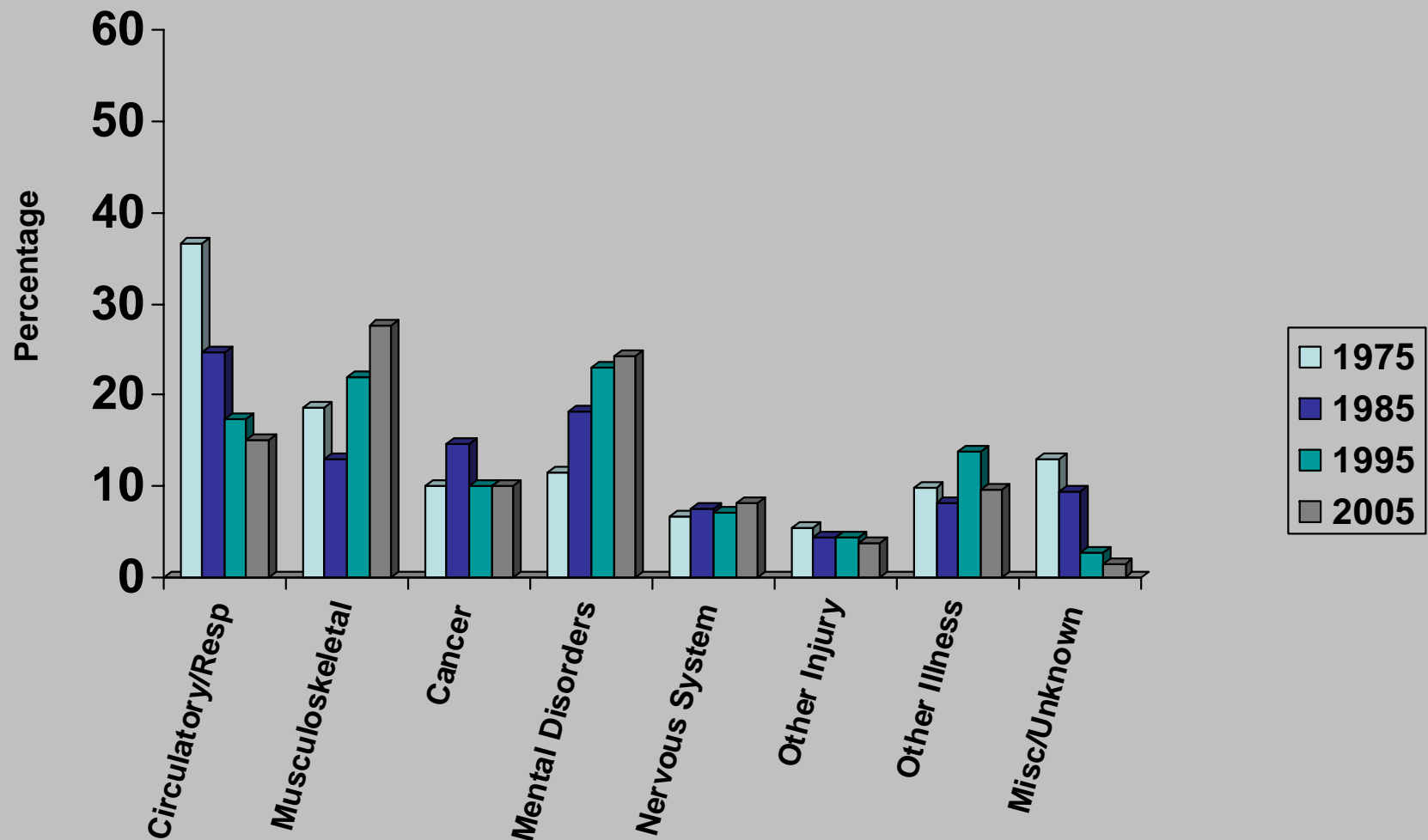
# Social Security Experience Claim Distribution by Gender



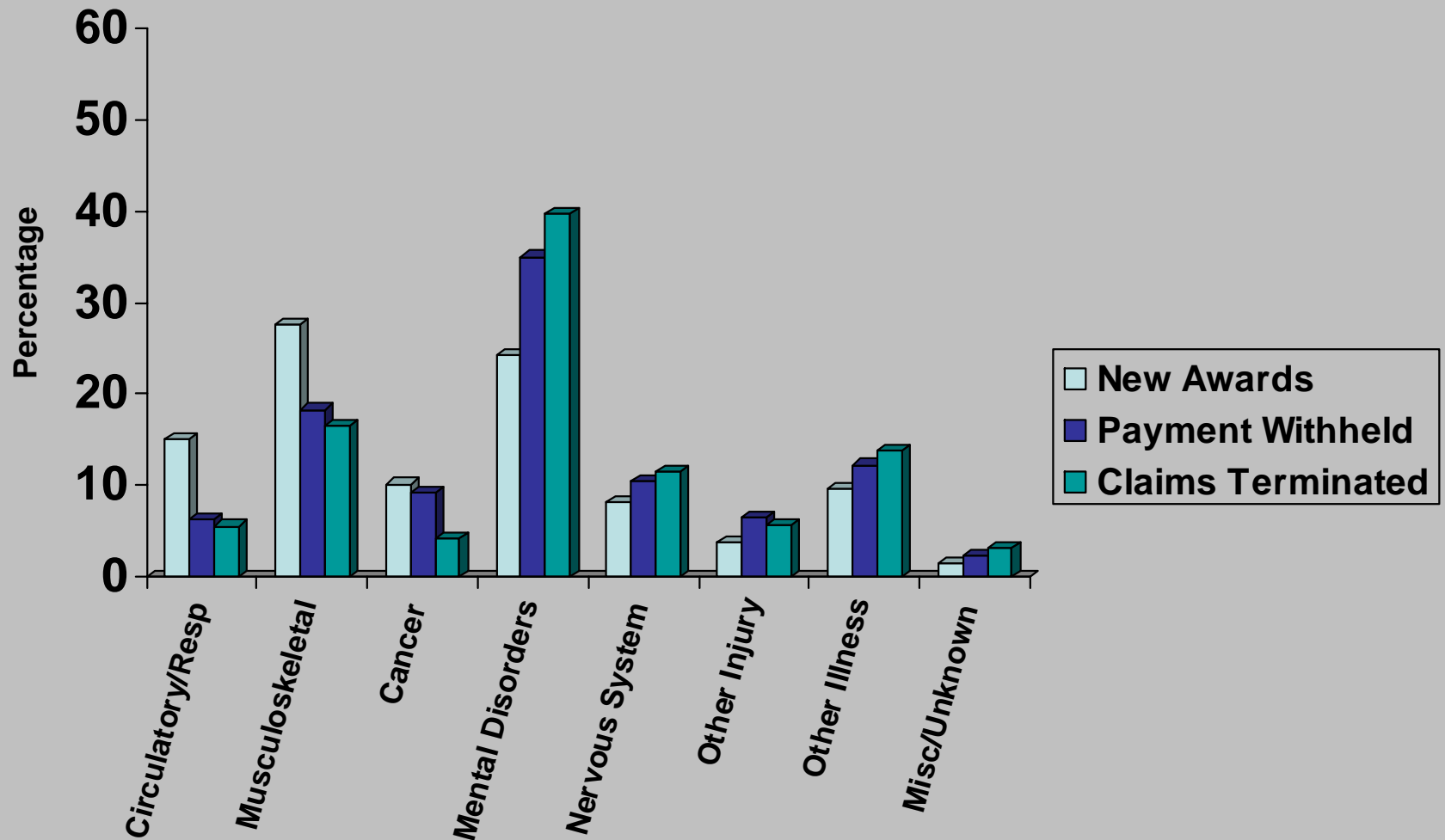
# Social Security Experience Claim Distribution by Age



# Social Security Experience Claim Distribution by Incurral Year



# Social Security Experience Claim Distribution by Status

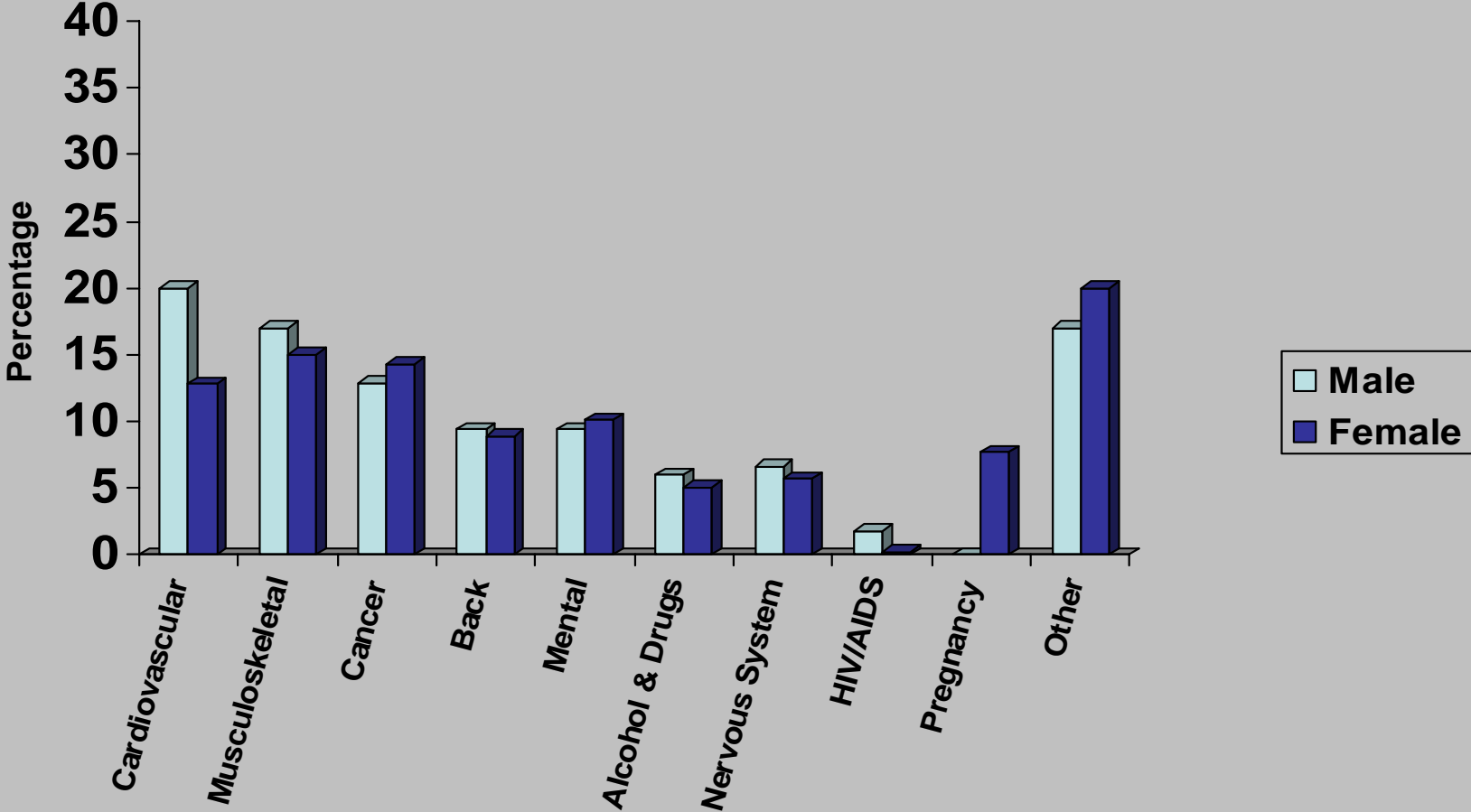


# Individual Disability Insurance Experience

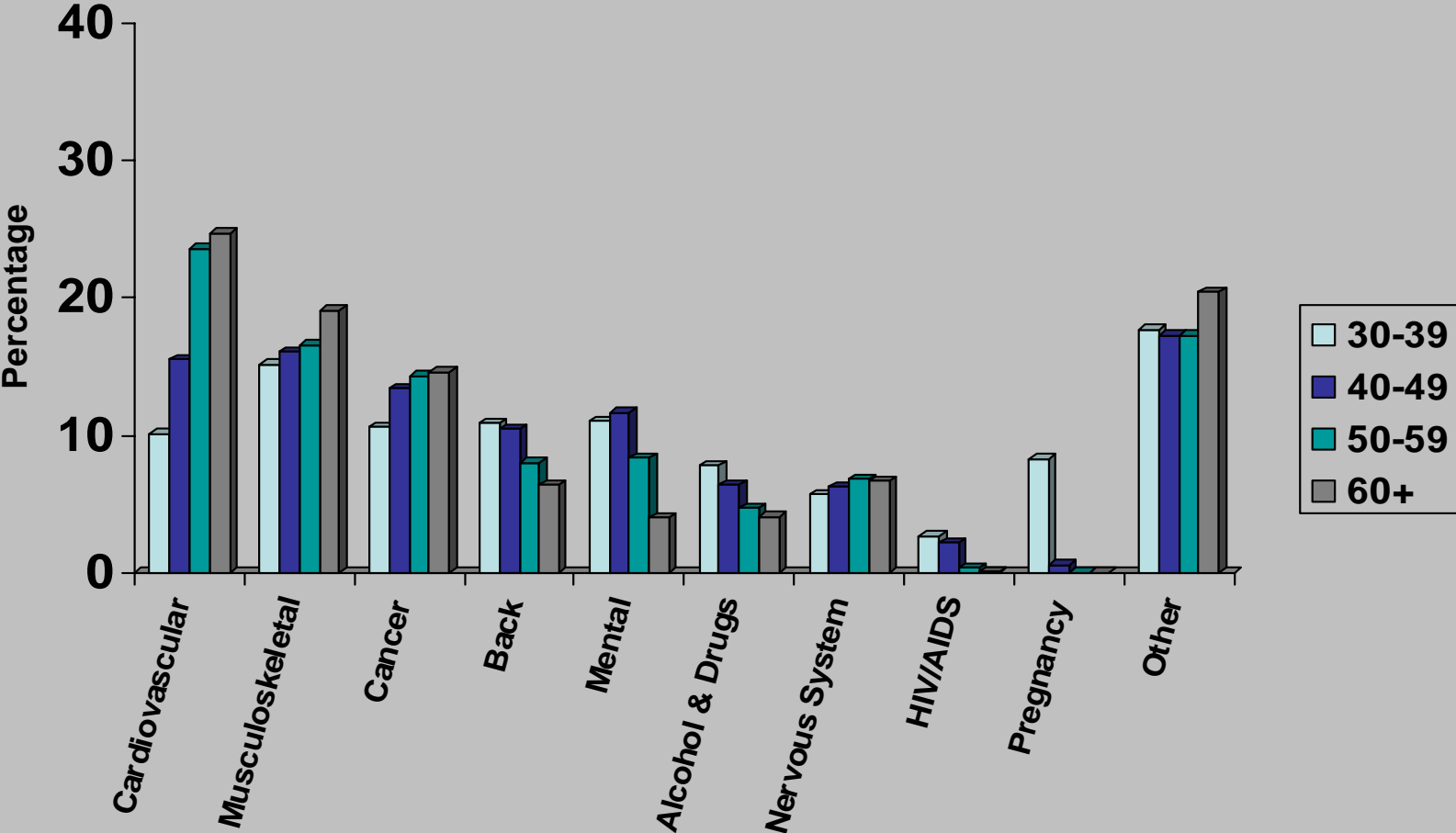
## Society of Actuaries Study, 1990-1999

- Intercompany Experience Study
- Twelve contributing companies
- 64% of total inforce premium
- Incidence Study: Claims incurred 1990-1999
- Claim Termination Study: Claims paid 1990-1999
- Cause of Disability: From termination study after 90 days of disability

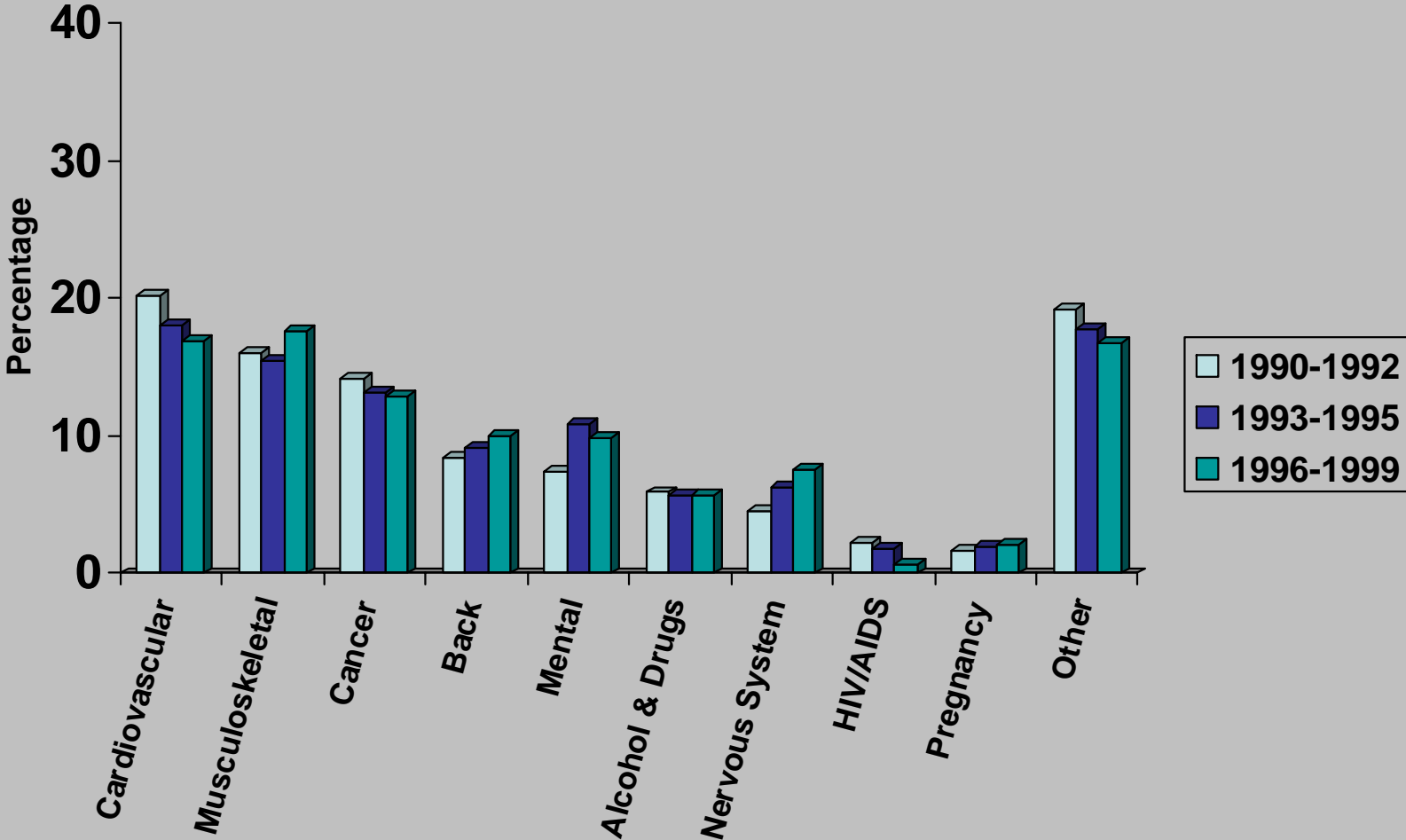
# Individual Disability Insurance Experience Claim Distribution by Gender



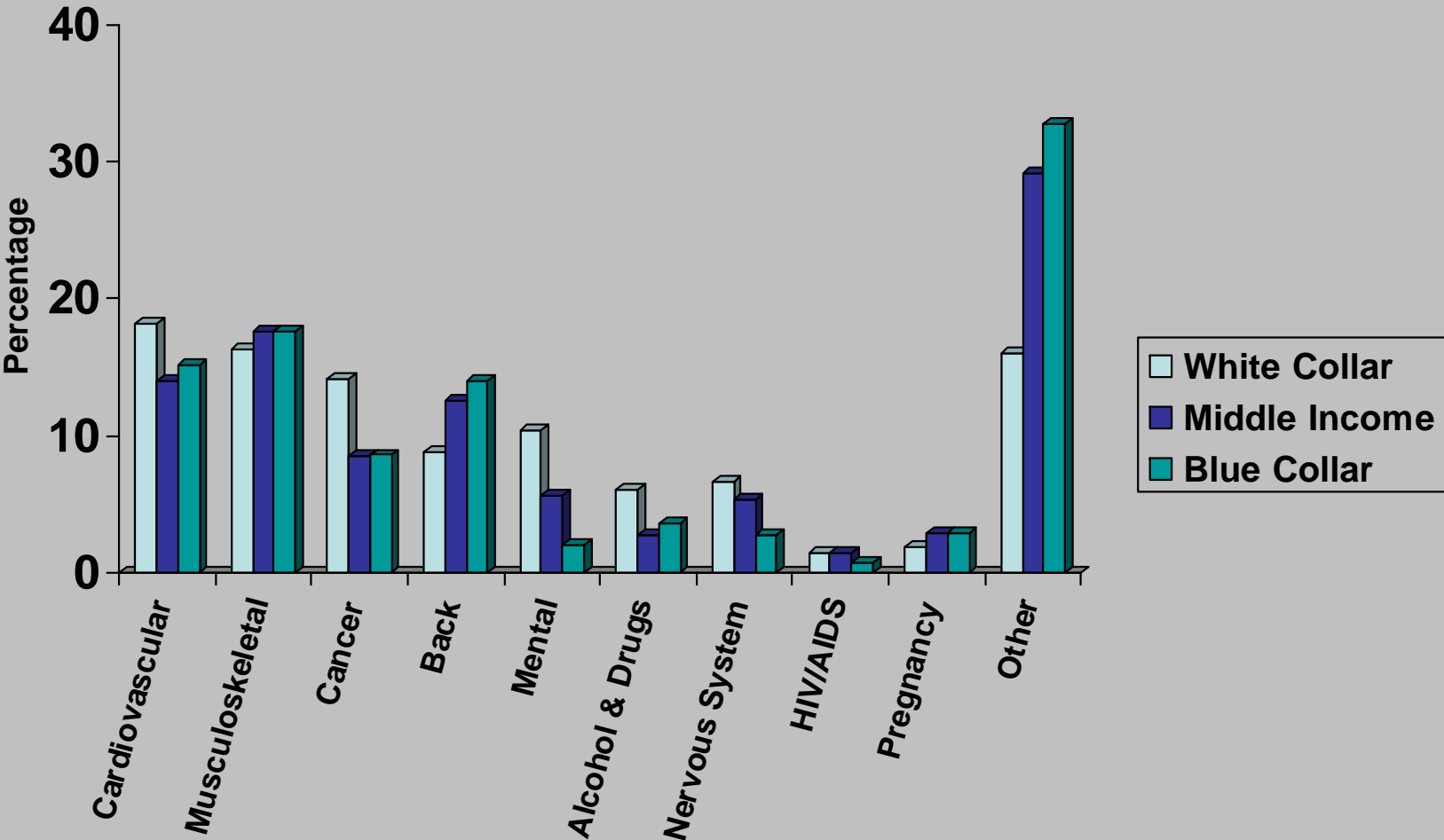
# Individual Disability Insurance Experience Claim Distribution by Age



# Individual Disability Insurance Experience Claim Distribution by Incurral Year



# Individual Disability Insurance Experience Claim Distribution by Occupation Class

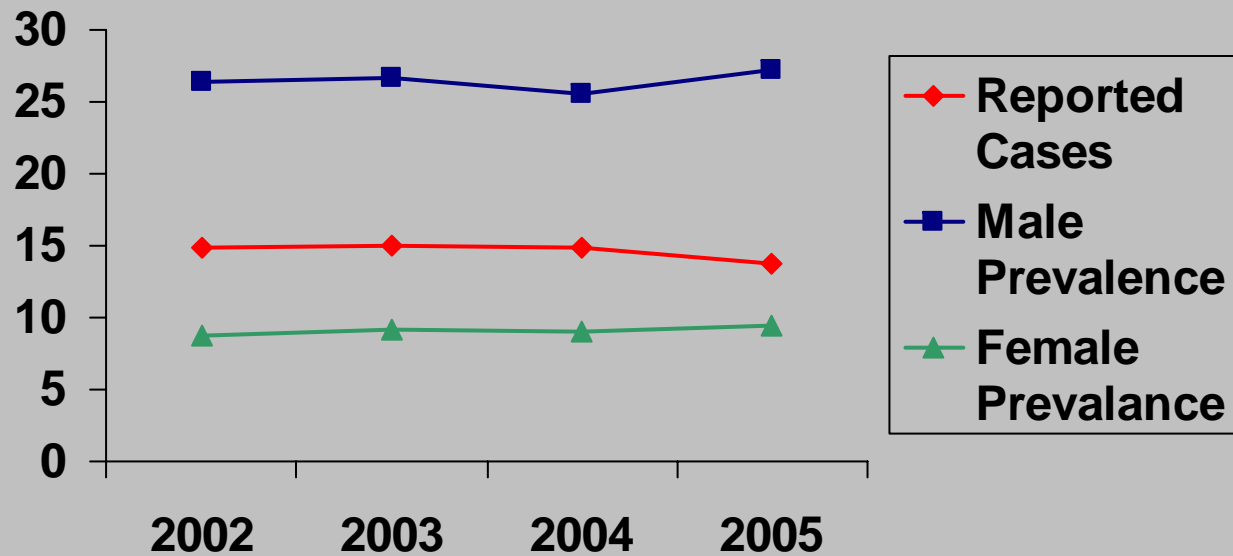


# Other Trends in Cause of Disability

- Lower frequency of cardiovascular and cancer claims
- Lower frequency and severity for AIDS/HIV claims
- Higher frequency and severity of psychiatric claims
- Higher frequency of other “subjective” claims
- Higher frequency of obesity-related claims

# AIDS in the United States

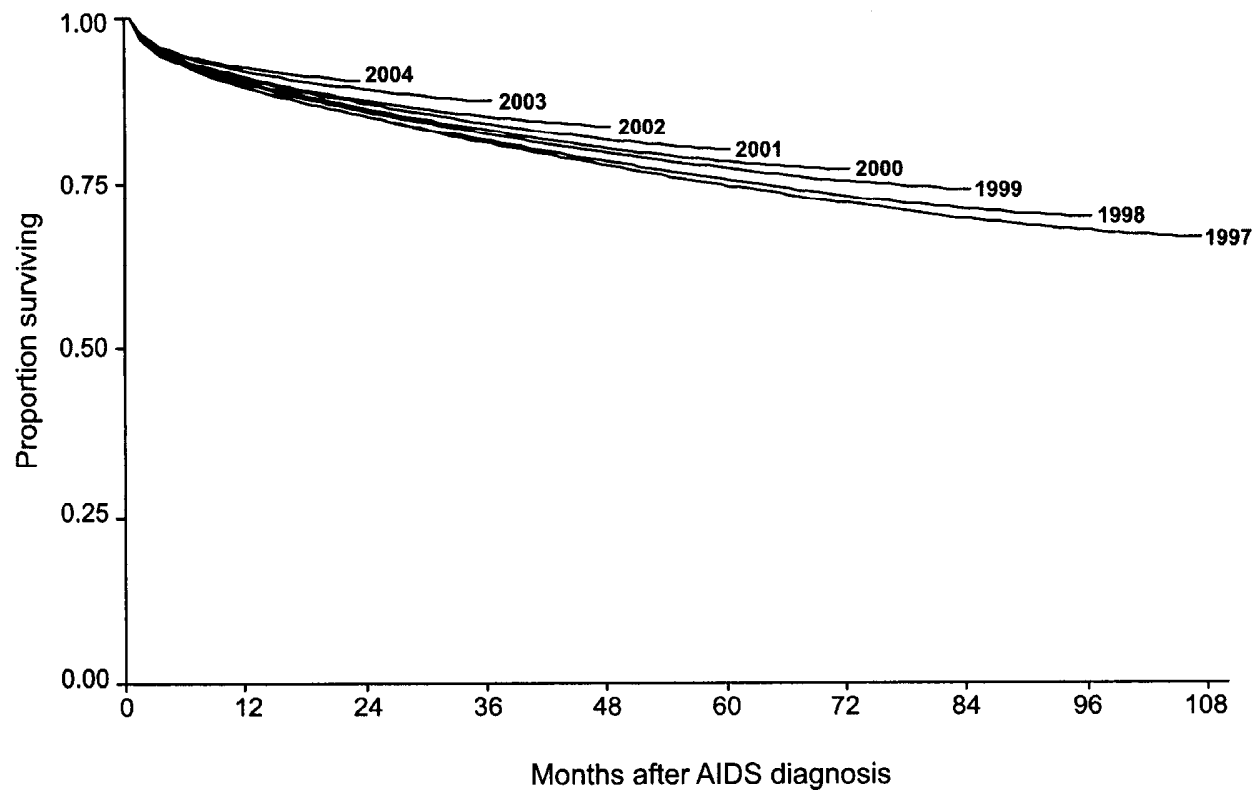
Reported Cases and Prevalence  
Rate per 100,000



Source: CDC HIV/AIDS Surveillance Reports

# Estimated AIDS Survival Rates by Year of Diagnosis

**Figure 2. Proportion of persons surviving, by months after AIDS diagnosis during 1997–2004 and by year of diagnosis—United States and dependent areas**



Source: CDC HIV/AIDS Surveillance Report, 2005

# The Rising Cost of Obesity

## Body Mass Index

$$BMI = \frac{Weight(kg)}{Height(m)^2} = 703 \cdot \left[ \frac{Weight(lbs)}{Height(inches)^2} \right]$$

### Measuring Obesity

Underweight

Normal

Overweight

Obese

Extremely Obese

### BMI

<18.5

18.5 – 24.9

25.0 – 29.9

30.0 – 39.9

> 40.0

# Body Mass Index??



# The Rising Cost of Obesity

The Prevalence of Obesity is Rising

|                 | <u>1988-1994</u> | <u>1999-2000</u> |
|-----------------|------------------|------------------|
| Overweight      | 55.9%            | 64.5%            |
| Obese           | 22.9%            | 30.5%            |
| Extremely Obese | 2.9%             | 4.7%             |

## Obesity Increases Other Health Risks

- Hypertension
- High Cholesterol
- Diabetes
- Heart Disease
- Stroke
- Arthritis
- Gallstones
- Sleep Apnea
- Cancer

# The Rising Cost of Obesity

## Proportion of Health Insurance Claims with Obesity Code

|                                       |             |
|---------------------------------------|-------------|
| Chronic Obstructive Pulmonary Disease | 2.0%        |
| Heart Failure and Shock               | 3.0%        |
| Chest Pain                            | 2.0%        |
| Stomach and Intestinal Procedures     | 21.0%       |
| Hernias                               | 6.0%        |
| Hip & Knee Replacement                | 5.0%        |
| Bone Disease and Arthropathy          | 7.0%        |
| Cellulitis                            | 4.0%        |
| <b>All Claims</b>                     | <b>0.3%</b> |

Note: Obesity is vastly undercoded for health claims since it is a secondary diagnosis

Source: Milliman Research Report (3/2004)

# Cause of Disability in the U.S.

## Conclusions

- Variation by age and sex
- Proportion of cancer and cardiovascular claims is decreasing
- Proportion of musculoskeletal and psychiatric claims is rising
- AIDS and HIV costs are small and stable
- Obesity costs, while hard to measure directly, are rising