Reports of Crucial Rises in Mortality and Morbidity Among Middle Age Americans; Interpretive Challenges

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June 27, 2016
Weidenbaum Media Retreat
Age 45-54 Mortality Rates for U.S. White Non-Hispanics (USW), U.S. Hispanics (USH) and six rich industrialized comparison countries

What is “CDC WONDER”? 

Wide-ranging
Online
Data for
Epidemiologic
Research
Mortality by Cause, White Non-Hispanics Ages 45-54

Age and Sex Structure of the Population for the United States (numbers in millions)

Age-Adjusted Death Rates for Non-Hispanic Whites Ages 45-54

Age-Adjusted Death Rates for Non-Hispanic Whites Ages 45-54: Trends for Women and Men


Death Rates for Black and Hispanic adults have fallen since 1999, but have increased for WHITES, particularly women and young adults. The rise in deaths has been largely driven by drug overdoses.

Death Rates for Black and Hispanic Adults Have Fallen Since 1999

# THE MORTALITY STUDY SEQUENCE

<table>
<thead>
<tr>
<th>Event recognition, diagnoses, physician, medical examiner</th>
<th>Diagnostic error, avoidance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Death certificate completion</td>
<td>Erroneous, incomplete</td>
</tr>
<tr>
<td>Agency certificate accumulation</td>
<td>Interrupted</td>
</tr>
<tr>
<td>Data classification, coding (ICD 10)</td>
<td>Misclassified</td>
</tr>
<tr>
<td>Study preparation (WONDER)</td>
<td></td>
</tr>
<tr>
<td>Analyses, interpretations</td>
<td>Erroneous</td>
</tr>
</tbody>
</table>
**CAUSE OF DEATH** (See instructions and examples)

**PART I.** Enter the chain of events—diseases, injuries, or complications—that directly caused the death. DO NOT enter terminal events such as cardiac arrest, respiratory arrest, or ventricular fibrillation without showing the etiology. DO NOT ABBREVIATE. Enter only one cause on a line. Add additional lines if necessary.

**IMMEDIATE CAUSE** (Final disease or condition resulting in death)
- a. __________________________ Due to (or as a consequence of):
- b. __________________________ Due to (or as a consequence of):
- c. __________________________ Due to (or as a consequence of):
- d. __________________________

**SEQUENTIALLY LIST CONDITIONS**
- if any, leading to the cause listed on line a. Enter the

**UNDERLYING CAUSE** (disease or injury that initiated the events resulting in death) LAST
- a. __________________________ Due to (or as a consequence of):
- b. __________________________
- c. __________________________
- d. __________________________

**PART II.** Enter other significant conditions contributing to death but not resulting in the underlying cause given in PART I

**33. WAS AN AUTOPSY PERFORMED?**
- [ ] Yes  [ ] No

**34. WERE AUTOPSY FINDINGS AVAILABLE TO COMPLETE THE CAUSE OF DEATH?**
- [ ] Yes  [ ] No

**35. DID TOBACCO USE CONTRIBUTE TO DEATH?**
- [ ] Yes  [ ] Probably
- [ ] No  [ ] Unknown

**36. IF FEMALE:**
- [ ] Not pregnant within past year
- [ ] Pregnant at time of death
- [ ] Not pregnant, but pregnant within 42 days of death
- [ ] Not pregnant, but pregnant 43 days to 1 year before death
- [ ] Unknown if pregnant within the past year

**37. MANNER OF DEATH**
- [ ] Natural
- [ ] Homicide
- [ ] Accident
- [ ] Pending Investigation
- [ ] Suicide
- [ ] Could not be determined
FINAL FORMS

What death certificates can tell us, and what they can’t.

By Kathryn Schulz
“I know we’re not dating anymore, but I thought you should know I have termites.”
The “Mortality Gap” for Whites Spanned All Working-Age Years, Most Severe at Middle Age

The “Mortality Gap” for Middle-Aged Whites Persists After Excluding Poisoning, Suicide and Liver Disease

The “Mortality Gap” for Middle-Aged Whites Was Particularly Large in Parts of the South

Urban and Rural Mortality Rate Divergence

Six level urban-rural partition

1999 – 52.8
2013 – 122.8

### Changes in Morbidity, White Non-Hispanics 45-54

<table>
<thead>
<tr>
<th>Category</th>
<th>Mean 2011-2013</th>
<th>Δ1997 - 1999</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Physical Health:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excellent/Very Good</td>
<td>0.559</td>
<td>-0.067</td>
</tr>
<tr>
<td>Fair/Poor</td>
<td>0.159</td>
<td>0.043</td>
</tr>
<tr>
<td><strong>Mental Health:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kessler 6-score ≥13</td>
<td>0.048</td>
<td>0.009</td>
</tr>
<tr>
<td><strong>ADLs, difficulty</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Activities limited by physical or mental</td>
<td>0.244</td>
<td>0.032</td>
</tr>
<tr>
<td>health</td>
<td></td>
<td></td>
</tr>
<tr>
<td>**Alcohol consumption at risk for heavy</td>
<td>0.074</td>
<td>0.017</td>
</tr>
<tr>
<td>drinking**</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: “Rising morbidity and mortality in midlife among white non-Hispanic Americans in the 21st century”, Anne Case and Angus Deaton
1999-2013 Changes in Mortality Rates, Ages 45-54 (and 2013 Rates)

<table>
<thead>
<tr>
<th>WNH by Education Class</th>
<th>Poisonings</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Less than high school or HS degree only</td>
<td>44.3 (58.0)</td>
</tr>
<tr>
<td>- Some college no BA</td>
<td>14.6 (20.6)</td>
</tr>
<tr>
<td>- BA degree or more</td>
<td>4.64 (8.08)</td>
</tr>
</tbody>
</table>

Source: “Rising morbidity and mortality in midlife among white non-Hispanic Americans in the 21st century”, Anne Case and Angus Deaton
Fewer Non-Hispanic Whites, Ages 45-54, Are Married or Employed in 2014

<table>
<thead>
<tr>
<th>Without health insurance</th>
<th>Employed</th>
<th>Married</th>
<th>&lt;200%</th>
<th>200%-&lt;400%</th>
<th>400%+</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>11.3%</td>
<td>79.9%</td>
<td>72.0%</td>
<td>16.0%</td>
<td>26.3%</td>
</tr>
<tr>
<td>2014</td>
<td>11.5%*</td>
<td>77.0%</td>
<td>67.8%</td>
<td>22.1%</td>
<td>27.5%</td>
</tr>
</tbody>
</table>

*In 2013, 15.3% of this population was without health insurance. The decline in 2014 reflects the coverage expansions of the Affordable Care Act. Source: Current Population Survey.

Suspected Social Contributors to Substance Abuse

- Limited education
- Unemployed
- Impoverished – economically challenged
- Lacking interpersonal support
- Inadequate living environment
- Compares to successful reference group
Mortality by Cause, white non-Hispanics ages 45-54

Americans are drinking themselves to death at record rates
In 2014, more people died from alcohol-induced causes (30,722) than from overdoses of prescription painkillers and heroin combined (28,647)

Source: Center for Disease Control
Drug Overdose

• Leading cause of injury death

• Majority are prescription drugs
Drug Overdose

- Majority are Opioid pain relievers

- Opioid overdose mortality:
  - Majority 25-64 years old
  - Fastest growth 55-64 year olds
OPIOIDS

Opioid Analgesics:
- Poppy sources: Morphine and Codeine
- Semi-synthetic Opioid analgesics
  - Oxycodone (OxyContin, Percocet)
  - Hydrocodone (Vicodin = Hydrocodone + Acetaminophen)
- Hydromorphone
- Oxymorphone
Methadone:

- A synthetic Opioid
OPIOIDS

Synthetic Opioid Analgesics (other than Methadone):

• Tramadol and Fentanyl
Heroin:

- An illicit (illegally-made) Opioid synthesized from morphine
46 daily deaths due to overdose of prescription painkillers (2014)

259M prescriptions filled/year (one bottle per person)
National Overdose Deaths

# of Deaths from Prescription Opioid Pain Relievers

Source: National Center for Health Statistics, CDC Wonder
National Overdose Deaths

# of Deaths from Benzodiazepines

Source: National Center for Health Statistics, CDC Wonder
National Overdose Deaths

# of Deaths from Heroin

Source: National Center for Health Statistics, CDC Wonder
Heroin Use is Part of a Larger Substance Abuse Problem

People who are addicted to...

- **Alcohol**: 2x
- **Marijuana**: 3x
- **Cocaine**: 15x
- **Rx Opioid Painkillers**: 40x

...more likely to be addicted to heroin.

Some states have more painkiller prescriptions per person than others.

HEROIN

• Rapidly addicting, inexpensive – use has increased as access to prescription drugs tightened

• Largest heroin use increase in the Midwest

• 80% of addicts not being treated
• Estimate 23% of those who use Heroin become dependent

• Nearly half started with prescription Opioids
• Treatment of Pain
  o FSMB advocated broader Opioid use
  o Pharmaceutical companies campaigned for increased use
  o Now insurers pay most of the prescription costs
Therapeutic Approaches (consult CDC)

- Weak receptor binding
  - Methadone, Buprenorphine (implant) during and after withdrawal
- Equip security guards with Nalaxone (Fentanyl)
- Remember Imodium
Therapeutic Approaches (consult CDC)

• Counselling, behavioral support, addiction treatment center
• Mandatory drug monitoring
• Nalaxone – emergency receptor black treatment
PREVENTION (General)

(18 Bills in the House)

- Return extra pills
- Enhance warning labels
- Create independent advisory panels
- Require provider training
NEW CDC Prescribing Guidelines for Chronic Pain

“Opioids pose a risk to all patients.”

- Use non-opioid therapies first.
- Do NOT use opioids routinely for chronic pain.
- Assessing risks and harms
- Start low and go slow, “Three days or less will often be sufficient”
- Monitoring and discontinuing

Source: “Prescriber Attitudes and Behavior Related to Prescription Opioid Pain Medication”
• Mandatory drug monitoring programs:
  
  o Real Time
  
  o Universal (all prescribers)
  
  o All controlled-substances
  
  o Active management (alerts and reporting)
Opioid prescriptions DROPPED 12-18% since 2012 high – particularly due to Federal restrictions on combination painkillers – such as Hydrocodone-Acetaminophen