MODULE 4 SLIDE DECK:
PRESENTING DATA
GRAPHICALLY AND WRITING
AN EMPIRICAL REPORT
Instructor Notes for Module 4

- This module transitions students from an initial exposure to California’s child welfare data (Modules 1 & 2), a consideration of answerable research questions relevant to county child welfare agencies, and the drafting of a structured abstract (Module 3), to experience with actual data analyses and research reporting. Its purpose is to:

  - Promote student understanding of the strengths and weaknesses of different methods for visualizing and presenting data
  - Provide students with an opportunity to download and manipulate child welfare data
  - Help students to think very concretely about the product of their research analysis by drafting a structured research report in the context of child welfare social work practice/policy.

Module 4: Presenting Data Graphically and Writing an Empirical Report
Module 4, Section 1

Presenting and Visualizing Data
Charting Basics

- Keep it simple
  - “minimize the ink to data ratio”
- Use consistent/clean color themes when possible
  - no need to distract reader
- Tables and charts should be self-explanatory
  - what is the story you wish to tell?
- Time should always be shown chronologically (i.e., left to right)
- Charts should summarize relationships not easily shown in tables
- Sort data by a meaningful relationship
  - rare that alphabetizing is useful
Starting with bad...the worst pie chart ever

Bad Chart #2

Total 12-Month Headcounts

Improvement...

Bad Chart #3

Improvement...

Bad Slide #4

Health care spending rising

Source: National Health Expenditures, January 2010, Centers for Medicare and Medicaid Services

Improvement...

Bad Chart #5

What Do You Most Want to Learn About Blogging?

ProBlogger.net

- Growing Ad Revenue
- Growing Affiliate Revenue
- Increasing Readership/Subs
- Writing Content
- Blog Tools and Platforms
- Blog Design
- Search Engine Optimization
- How to Start a Blog
- Expanding to a Network

“Chart Junk” (1)

“Chart Junk” (2)

9. Children 12-17 Years Old Who Have Repeated Grades by Residential Characteristics
(Percent of children repeating grades)

Region
- Northeast: 0%
- Midwest: 15%
- South: 21%
- West: 12%

Metropolitan
- Non-metropolitan: 19%
- Suburbs: 14%
- Central city: 17%

Survey of Income and Program Participation (SIPP), US Census Bureau, April 1998

Avoid comparisons across pie charts...

Racial Composition of Child Population in California

- Native American: 51.1%
- Hispanic: 31.8%
- White: 10.6%
- Black: 6.0%
- Other: 0.5%

Racial Composition of Children with Allegations of Maltreatment

- Native American: 52.8%
- Hispanic: 27.4%
- White: 15.0%
- Black: 4.0%
- Other: 0.8%
Stacked bar – can be useful for showing changes in proportions

California:
Ethnicity and Path Through the Child Welfare System, 2009

*missing values & other race excluded from % calculations*

*includes children age 18

<table>
<thead>
<tr>
<th>Category</th>
<th>Population (9,992,333)</th>
<th>Allegations (471,790)</th>
<th>Substantiations (90,472)</th>
<th>Entries (31,431)</th>
<th>In Care (59,484)</th>
<th>Exits* (36,850)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Native American</td>
<td>0.5 (10.6)</td>
<td>0.8</td>
<td>1.0 (3.9)</td>
<td>1.2</td>
<td>1.7</td>
<td>1.3 (3.3)</td>
</tr>
<tr>
<td>Asian/PI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td>51.1</td>
<td>52.8</td>
<td>53.2</td>
<td>49.7</td>
<td>45.8</td>
<td>48.3</td>
</tr>
<tr>
<td>White</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>31.8</td>
<td>27.4</td>
<td>26.7</td>
<td>25.6</td>
<td>24.5</td>
<td>25.7</td>
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<tr>
<td>Exits*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>21.7</td>
</tr>
</tbody>
</table>
Avoid comparisons across pie charts (part 2)...

Statewide Parolee Employment
December 2007

Not Employed 49%
Part Time 23%
Full Time at Minimum Wage 16%
Full Time Above Minimum Wage 12%

√ The percent not employed increased over the past year from 49% in December 2007 to 52% in December 2008.

Statewide Parolee Employment
December 2008

Not Employed 52%
Part Time 25%
Full Time at Minimum Wage 14%
Full Time Above Minimum Wage 9%

Simple stacked bar is often better…

Sort by a meaningful variable

### Table 2

**Violent offense rates in the 10 most populated states**

<table>
<thead>
<tr>
<th>State</th>
<th>Estimated population</th>
<th>Violent index offense rate</th>
<th>Percent change 1995-1999</th>
</tr>
</thead>
<tbody>
<tr>
<td>California</td>
<td>(33,145,121)</td>
<td>966.0</td>
<td>852.7</td>
</tr>
<tr>
<td>Texas</td>
<td>(20,044,141)</td>
<td>663.9</td>
<td>644.4</td>
</tr>
<tr>
<td>New York</td>
<td>(18,196,601)</td>
<td>841.9</td>
<td>727.0</td>
</tr>
<tr>
<td>Florida</td>
<td>(15,111,244)</td>
<td>1,071.0</td>
<td>1,051.0</td>
</tr>
<tr>
<td>Illinois</td>
<td>(12,128,370)</td>
<td>1,007.8</td>
<td>915.8</td>
</tr>
<tr>
<td>Penn.</td>
<td>(11,994,016)</td>
<td>427.3</td>
<td>432.5</td>
</tr>
<tr>
<td>Ohio</td>
<td>(11,256,654)</td>
<td>482.5</td>
<td>428.7</td>
</tr>
<tr>
<td>Michigan</td>
<td>(9,863,775)</td>
<td>687.8</td>
<td>635.3</td>
</tr>
<tr>
<td>New Jersey</td>
<td>(8,143,412)</td>
<td>599.8</td>
<td>531.5</td>
</tr>
<tr>
<td>Georgia</td>
<td>(7,788,240)</td>
<td>657.1</td>
<td>638.7</td>
</tr>
</tbody>
</table>

Sources: ICJIA calculations using Illinois State Police and U.S. Census Bureau data. FBI’s *Crime in the United States 1999*. 
Keep it simple

In the 2008 Democratic primaries, the division of votes in some states has been consistent across rural and urban areas; in others, urban, suburban and rural voters have behaved differently.

Federal budget: expenditures

Federal outlays by source, in billions, fiscal year 2008

- 20.65% ($616.1 billion) National defense
- 20.69% ($617.0 billion) Social security
- 13.10% ($390.8 billion) Medicare
- Interest on the debt ($252.8 billion) 8.47%
- Medicaid and CHIP ($208.3 billion) 6.9%
- Other health ($72.3 billion) 2.4%
- Veterans benefits and services ($84.7 billion) 2.8%
- Other income security ($166.8 billion) 5.6%
- Retirement and disability ($117.9 billion) 3.9%
- Education, training, employment and social services ($72.0 billion) 2.4%
- Higher education ($19.3 billion) 0.6%
- Transportation ($77.6 billion) 2.6%
- Food and nutrition assistance ($60.7 billion) 2.0%
- Administration of justice ($47.1 billion) 1.6%
- Housing assistance ($40.6 billion) 1.4%
- Unemployment compensation ($45.3 billion) 1.5%
- Natural resources and environment ($31.9 billion) 1.1%
- Community and regional development ($23.9 billion) 0.8%
- International affairs ($28.9 billion) 1.0%
- General science, space and technology ($27.8 billion) 0.9%
- Agriculture ($18.4 billion) 0.6%
- General government ($20.3 billion) 0.7%
- Commerce and housing credit ($27.9 billion) 0.9%

Note: Energy spending equaled less than one percent of the budget. Federal outlays totaled $2.9 trillion in 2008.


California:
Declines in Total Caseload and Percentage in Care for 2 years or More

- % in Care 2+ Years
- Total Caseload

- 2000: 57%, 120,000
- 2001: 57%, 100,000
- 2002: 56%, 80,000
- 2003: 55%, 60,000
- 2004: 53%, 48,000
- 2005: 52%, 46,000
- 2006: 50%, 45,000
- 2007: 47%, 45,000
- 2008: 45%, 45,000
- 2009: 46%, 45,000
- 2010: 45%, 44,000

Year
Caseload Size
2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010
0 20,000 40,000 60,000 80,000 100,000 120,000

Make it self-explanatory
Difficulties in scaling...be wary of second y-axis
3 dimensional charts?

California:
Allegations per 1,000, by age and ethnicity, 2009
Strengths? Weaknesses?

Lifetime risk of maternal death

- Developed countries: 0.01%
- Developing countries: 1.3%

Historical and Projected Investigation Assignments
2005-2011

Source: CWS/CMS

Module 4: Presenting Data Graphically and Writing an Empirical Report
Online...one comedian’s take on charts!


Module 4: Presenting Data Graphically and Writing an Empirical Report
Module 4, Section 2

Writing an Analytic/Data Report
Report Outline/Development

- **BASICS:**
  - FOLLOW INSTRUCTOR DESIGNATED FORMAT
    - Number and Title all Tables & Charts
    - Include Sub-sections (numbered and titled)
    - Cite *all* sources in correctly formatted References
  - USE COMMON SENSE
    - Present Data in a Logical Order
    - Address Research Questions to reach study objectives
    - Be CLEAR, CONCISE, and OBJECTIVE
Report Components

- Title Page
- Structured Abstract (*completed in Module 3!*)
- Background / Problem Statement / Introduction
  - *Use the language you prefer*
- Agency Description
  - *If appropriate*
- Background / Review of Literature
  - *Use the language you prefer*
- Methodology
- Results / Findings
  - *Use the language you prefer*
- Discussion
- References
Background/Problem Statement/Introduction

- Include “Study Objective” or Study Purpose
- Describe the Child Welfare agency or broader system goal of your research
- Include Research Questions that will help reach the objectives of your study
Background or Review of Literature

- Explain
  - WHY are you pursuing your research project?
  - WHY are you using specific variables, outcomes, etc.?
    - WHAT literature base supports your decisions?
- Use Recent Research & Literature
- Use Headers to organize
  - helpful to writer and reader
Methodology

- **DESCRIBE**
  - Data Source (s)
  - Population or Sample
    - Specify years, grades, sample size, restrictions, etc.
  - Independent & Dependent Variables
    - Define these precisely
  - Study Design
  - Analysis

Module 4: Presenting Data Graphically and Writing an Empirical Report
Results or Findings

- Provide FACTS (and just the facts!)
- Present Data Findings
  - Descriptive Statistics
    - Embed data tables and charts in report
  - Inferential Statistics
    - Use detailed headings to order your findings

Module 4: Presenting Data Graphically and Writing an Empirical Report
Discussion

- **Discuss your Findings**
  - Do your findings align with existing research?
  - What was learned about a population or sample?
  - Any unexpected trends/absence of trends?
    - possible explanations?

- **Discuss Limitations**
  - How are findings limited?
    - data shortcomings? variable limitations? design problems?

- **Discuss Implications for Practice/Policy**

- **Conclude your Discussion**
  - Summarize your research
    - Possible directions for future/associated research?
QUESTIONS? PLEASE CONTACT:

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