Communicating data effectively

Kathleen Vidoloff, Ph.D.

Public Affairs and Policy Coordination

Preparedness, Surveillance, and Epidemiology Team

OREGON PUBLIC HEALTH DIVISION
Acute and Communicable Disease Prevention

Overview

- Audience segments
- Common mistakes audiences have when interpreting numbers
- Processing factors
- General strategies for communicating effectively
- Strategies for communicating health data
- Visualizing data best practices
  - Pie charts
  - Bar graphs
  - Line graphs
  - Data maps

	Individual characteristics	Occupational and institutional factors	Regular sources of information
General public	Variable by audience subgroup, but common factors include: • Level of interest in and involvement with health issues • Geographic location • Varying levels of education • Socioeconomic status • Health insurance status • Existing health beliefs, social beliefs, and worldviews • Gender • Age • Various social networks and cultures		Variable by audience subgroup, but trusted sources may include: • Healthcare providers • Television news • Internet Web sites • Other people (e.g., friends, relatives, neighbors, co-workers) • Radio/ethnic media
Policy makers	• Ambitious, hard-working, savvy • Attuned to financial implications • Intuitive decision-making is common • Want certainty from experts	• Public vs. private systems • Elected vs. appointed individuals • Formal and informal processes • Public policy typically made by legislators, executives, or administrators • Interpersonal relationships crucial • Rely on gatekeepers • Busy and subject to multiple communication efforts and requests	• Interpersonal sources • Attend to relevant news media coverage
Press	• Usually have progressive "mainstream" values and beliefs • Concerned about individual freedom issues • May be intimidated by scientists or health professionals • General reporters, specialty reporters, and editorialists	• Business considerations: attuned to topics of interest to the public • Short deadlines common • Differences between specific news media (e.g., newspapers, TV) • Certain characteristics make stories more "newsworthy" (e.g., local tie-in) • Prefer personal stories (narratives) • Much competition for news space • Follow news outlet "leaders" (e.g., elite papers such as *The New York Times*)	• Preselected list of trusted experts

Common mistakes when interpreting numbers

- Misunderstanding probability estimates
- Misunderstanding percentages
- Improperly converting proportions to percentages

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Processing factors

- Cognitive processing limits
- Satisficing
- People want to listen to the experts

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Processing factors

- Processing risk information
- Framing
- Scanning

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Processing factors

- Use of contextual clues
- Resistance to persuasion
- Role of emotion

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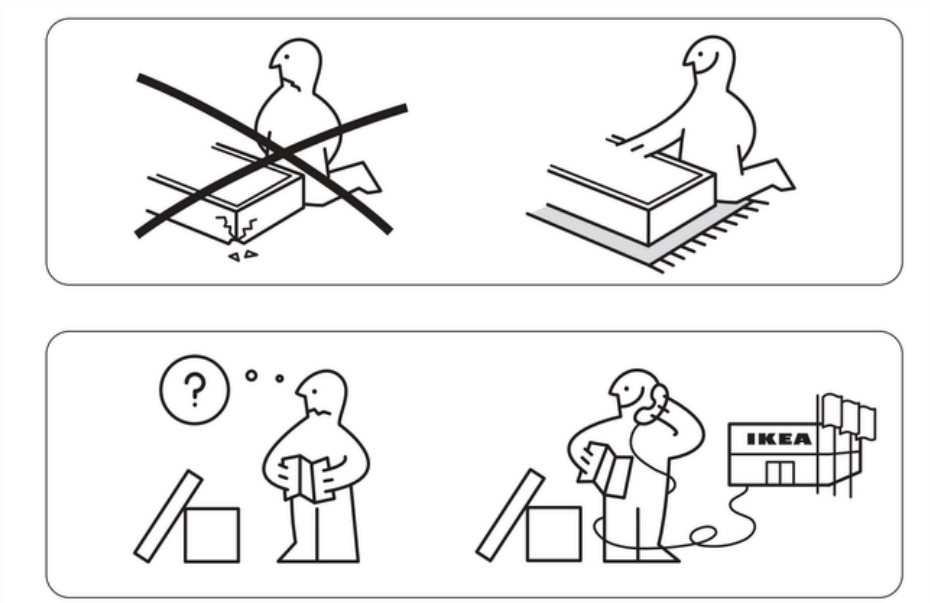
Strategies for communicating effectively

- Determine whether data should be presented
- Be brief and concise
- Be complete and transparent with stats
- Identify and counter mistaken audience beliefs



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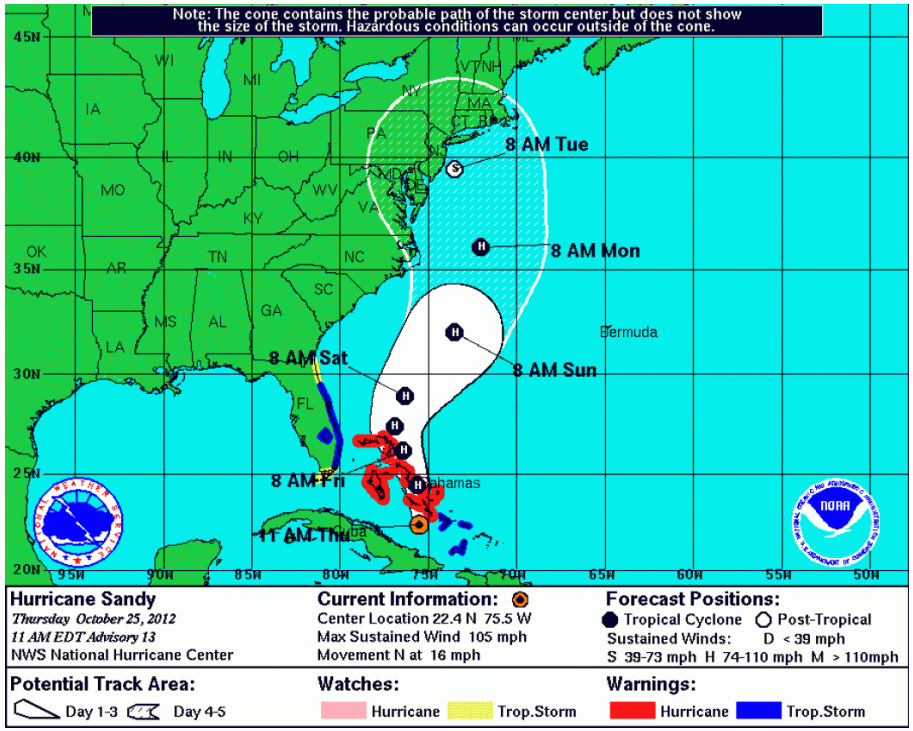
Strategies for communicating effectively

- Use familiar types of data and explain the scientific concepts
- Address uncertainty directly
- Ensure usability
- Provide contextual information



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Strategies for communicating health findings

- Text labels with graphs
- Verbal qualifiers
- Metaphors
- Narratives

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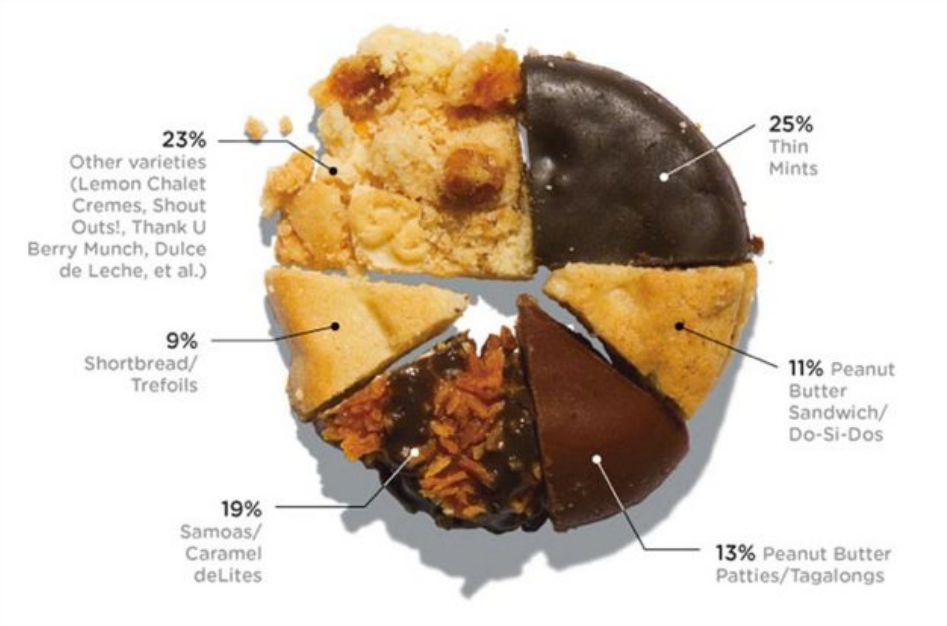
Visualizing data

Pie Charts

- Make sure the largest slice is at 12 o’clock
- Display slices clockwise in descending order
- Use short labels, position horizontally outside the chart



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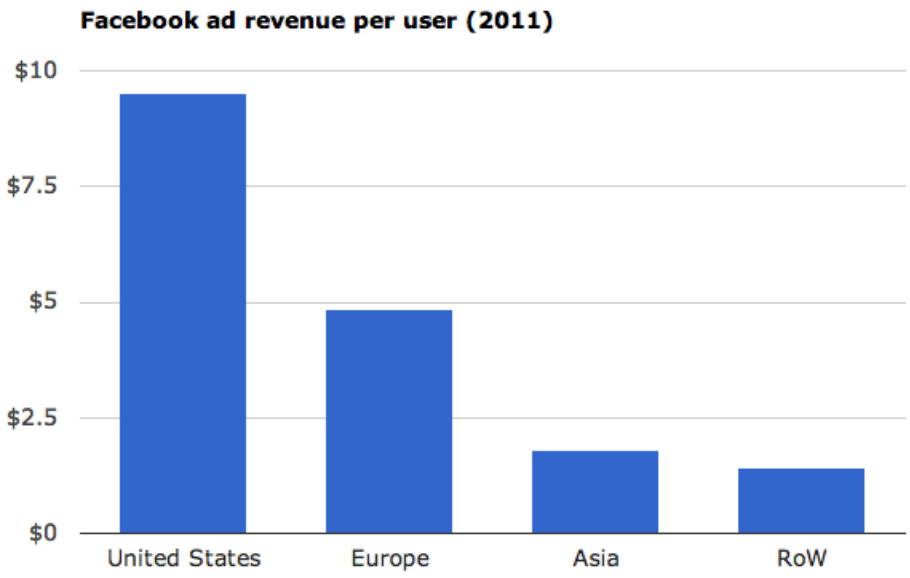
Visualizing data

Bar Graphs

- Use 6 or fewer bars
- Use colors with strong contrast
- Use bar of line to show baseline
- Use labels, titles, key messages
- Select values that represent patterns in data



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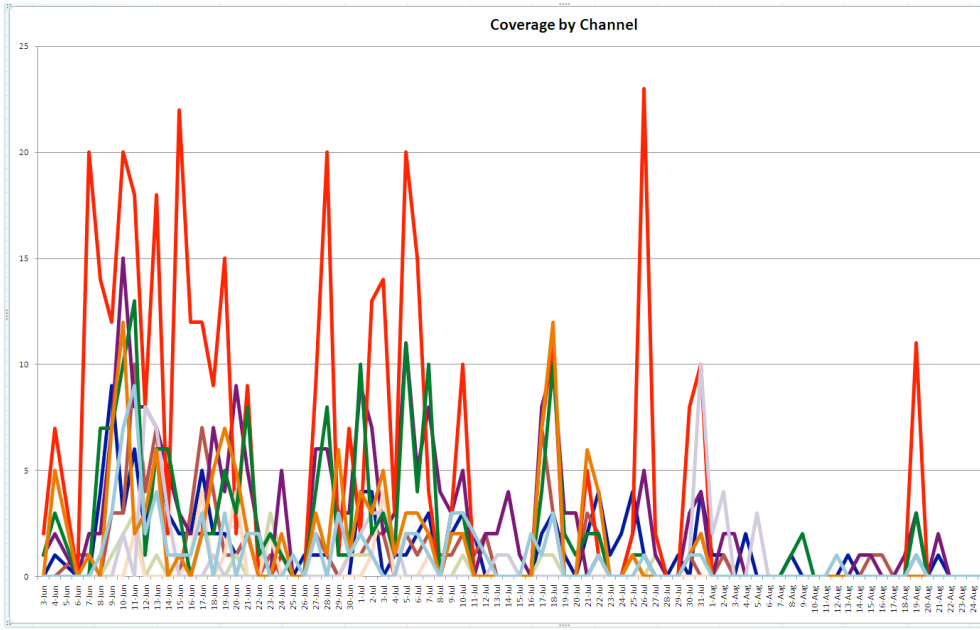
Visualizing data

Line Graphs

- Use arrows or text to highlight key info
- Include baseline data for comparison
- Use short, easy to understand labels
- Do not use more than 4 trend lines



Example: Too many lines

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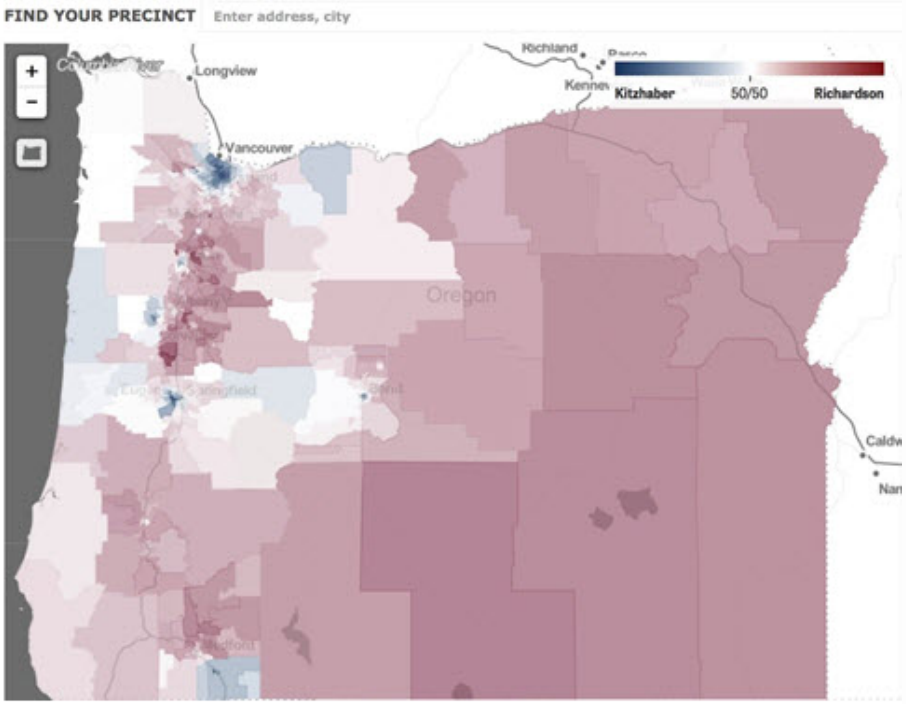
Visualizing data



Example: Use of color to illustrate variation

Data maps

- Use lines to demarcate geographic borders
- Use clear titles and labels
- Use color to illustrate variation in data
- Use sequential progression of colors

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Reference

Making Data Talk, National Cancer Institute

http://www.cancer.gov/publications/health-communication/making-data-talk.pdf

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