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Institute of Public Health
Research and Policy

Visualize This

Storytelling With Data

Session 1

Visualize This – Storytelling with Data

Anjali Deshpande, PhD, MPH, Clinical Associate Professor, University of Iowa, College of Public Health

Vickie Miene, MS, MA, LMHC, Executive Director, Institute for Public Health Practice, Research and Policy

Abigail Stock, MPH, Admin Services Specialist, Institute for Public Health Practice, Research and Policy

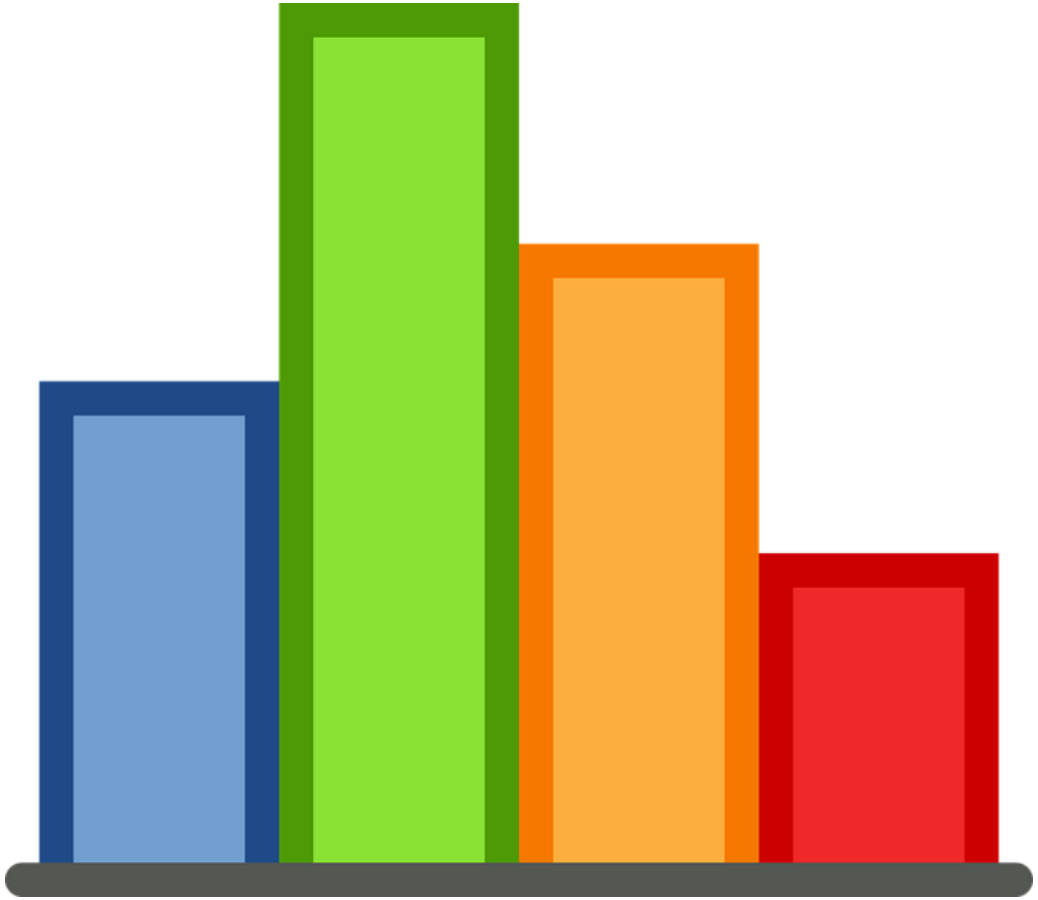
Training provided in partnership with the Institute for Public Health Practice, Research and Policy through a contract from the Iowa Department of Health and Human Services

Data Training Opportunities

- Data Basics
- Tackling Data
- Visualize This
- Disaggregate It

Check out our website to see upcoming training dates!

Menti.com



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Course Schedule

Tuesday, May 6th, 10:00am-11:30am CT Live Learning Session #1 – Kick off

"Work at home" **Course 1** and homework.

Tuesday, May 13th, 10:00am-11:30am CT Live Learning Session #2

"Work at home" **Course 2** and homework.

Tuesday, May 20th, 10:00am-11:30am CT Live Learning Session #3

"Work at home" **Course 3** and homework

Thursday, May 29th, 10:00am-11:30am CT Live Learning Session #4

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Accessing Training Resources

- Visit the webpage that was dropped in the chat.
- View the documents in the "Preview" panes or click the buttons to download the documents.
  - Download the activity worksheet to fill in your answers.
- Will also be included in the follow up email.

- *We ask that you do not share these slides beyond what we are doing today as this is University of Iowa property. We appreciate you keeping this information and using it for training purposes.*

Institute for Public Health Practice, Research and Policy

Who We Are | What We Do | Work With Us | Our Initiatives

Visualize This Resources – MN

Training Resources

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illustrate
understandable
interesting
thought
data
patterns
audience
conclusions
visualization
insight
cloud
attractive
trends
insights
powerful
analysis
simple
effective
easy
context
word
fast
words

It's not just a big-city problem, says **Dr. Elizabeth Jacobs** of the University of Wisconsin at Madison. "The largest rate of increase of limited-English-proficient people in our country is in rural areas," she said.

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Course Objectives

By the end of this course, participants will be able to:

- Summarize the basics of communication theory.
- Select strategies for creating effective messages, charts, and graphs.
- Develop clear and memorable stories from data.
- Create basic chart types using Excel.
- Access publicly-available resources that can be used for data visualization.

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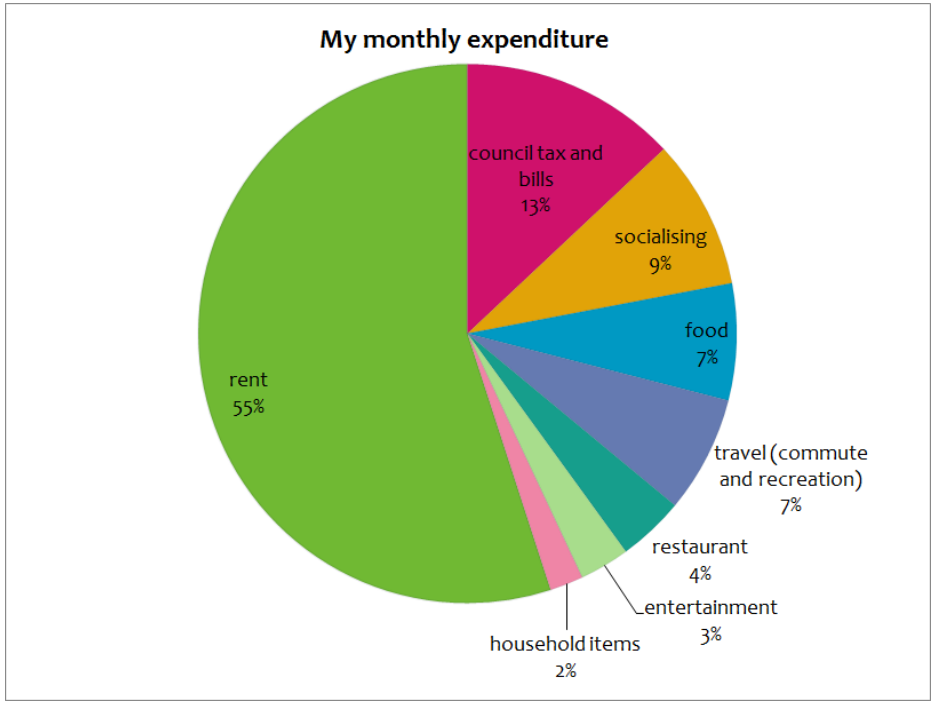
People don’t swing into action because of a pie chart.



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Module 1

Effective Communication in Public Health

Learning Objectives

- Identify audience characteristics that influence communication.
- Interpret my data analyses
- Create key messages for data communication
- Develop a clear and memorable story from my data using a What? So What? Now What? Framework.
- Describe the use of data visualizations vs. data dashboards.

Houston, we have a problem…

Leading Cancer Sites	Count	Population	Age-Adjusted Rate Per 100,000
Brain and Other Nervous System	22,376	323,405,935	6.3
Breast *	247,506	323,405,935	66.3
Cervix Uteri	12,984	164,162,118	7.7
Colon and Rectum	141,270	323,405,935	37.4
Corpus Uteri	54,930	164,162,118	26.4
Esophagus	17,478	323,405,935	4.4
Gallbladder	4,075	323,405,935	1.1
Kidney and Renal Pelvis	63,639	323,405,935	16.8
Larynx	12,243	323,405,935	3.1
Leukemias	48,082	323,405,935	13.1
Liver	28,254	323,405,935	6.9
Lung and Bronchus	218,229	323,405,935	56.0
Melanoma of the Skin	82,476	323,405,935	22.3
Myeloma	25,286	323,405,935	6.5
Non-Hodgkin Lymphoma	68,403	323,405,935	18.3
Oral Cavity and Pharynx	45,543	323,405,935	11.7
Ovary	20,418	164,162,118	10.3
Pancreas	49,093	323,405,935	12.7
Prostate	192,443	159,243,817	101.4
Stomach	24,146	323,405,935	6.4
Thyroid	47,755	323,405,935	14.0
Urinary Bladder, invasive and in situ	73,469	323,405,935	19.2

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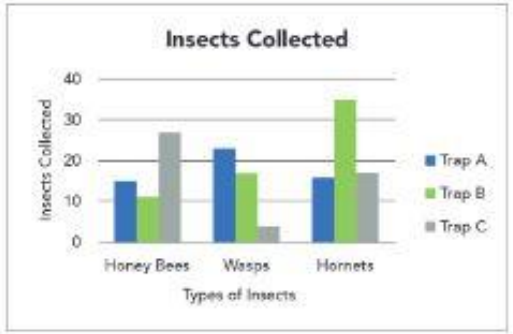
Using Graphs to Share Data

Types of Graphs

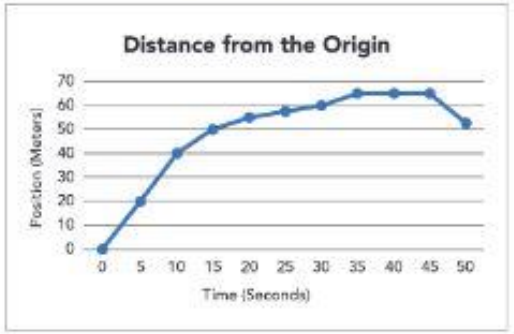
Bar Graph

Used for categorical data; good for comparing groups



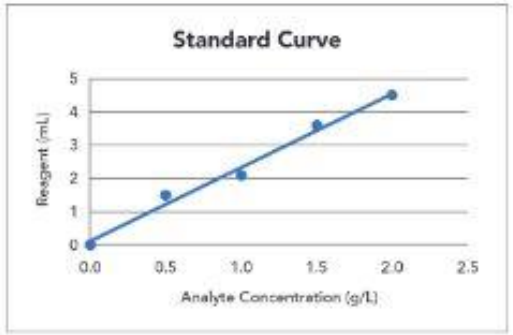
Line Graph

Used for continuous data; good for looking at data over time



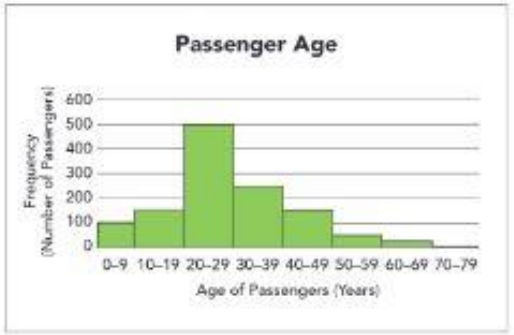
Scatterplot (XY Graph)

Used to show relationships between 2 variables



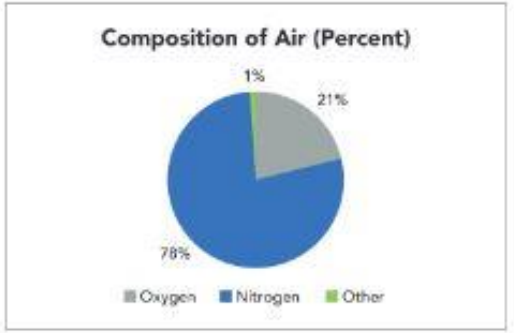
Histogram

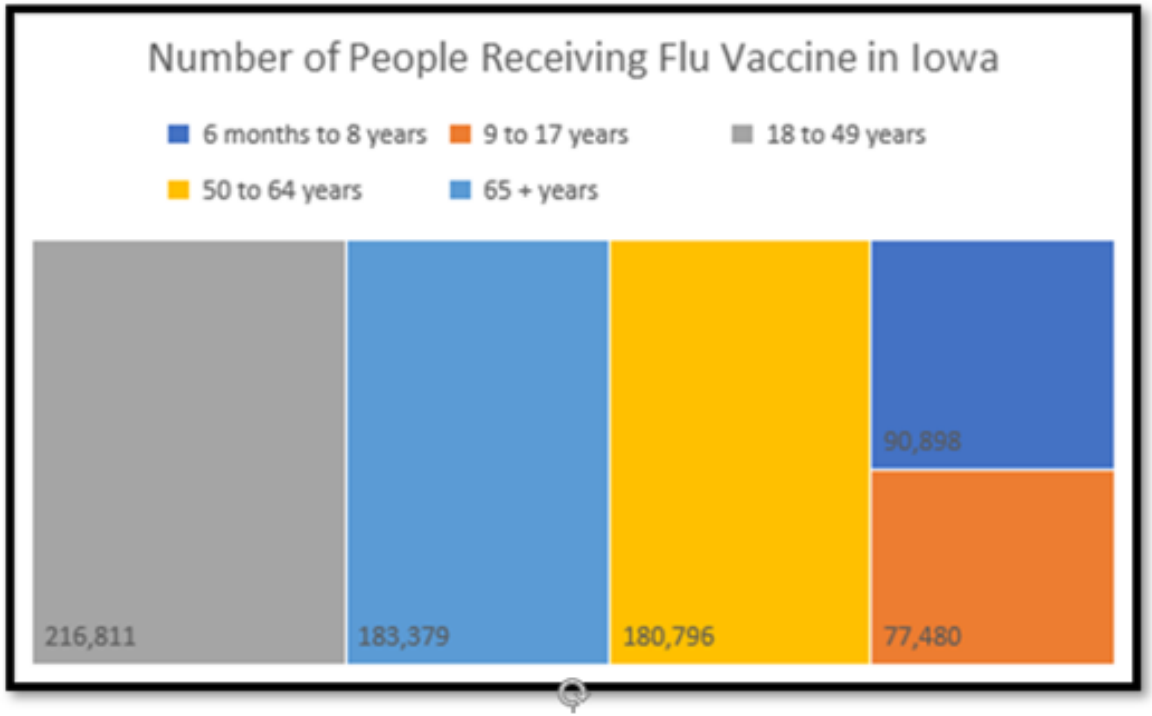
Shows frequency data, how often a given variable occurs

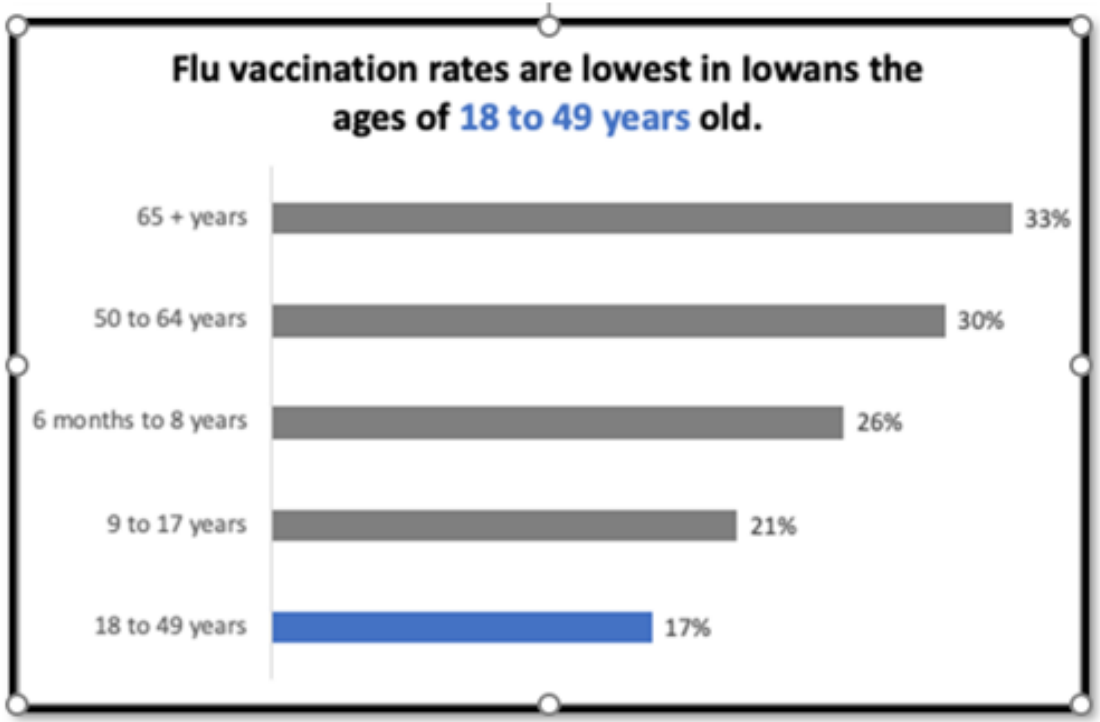


Pie Chart

Used to compare parts of a whole; does not have axes like graphs







Two things that work? Two things that don't work?

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Effective Communication

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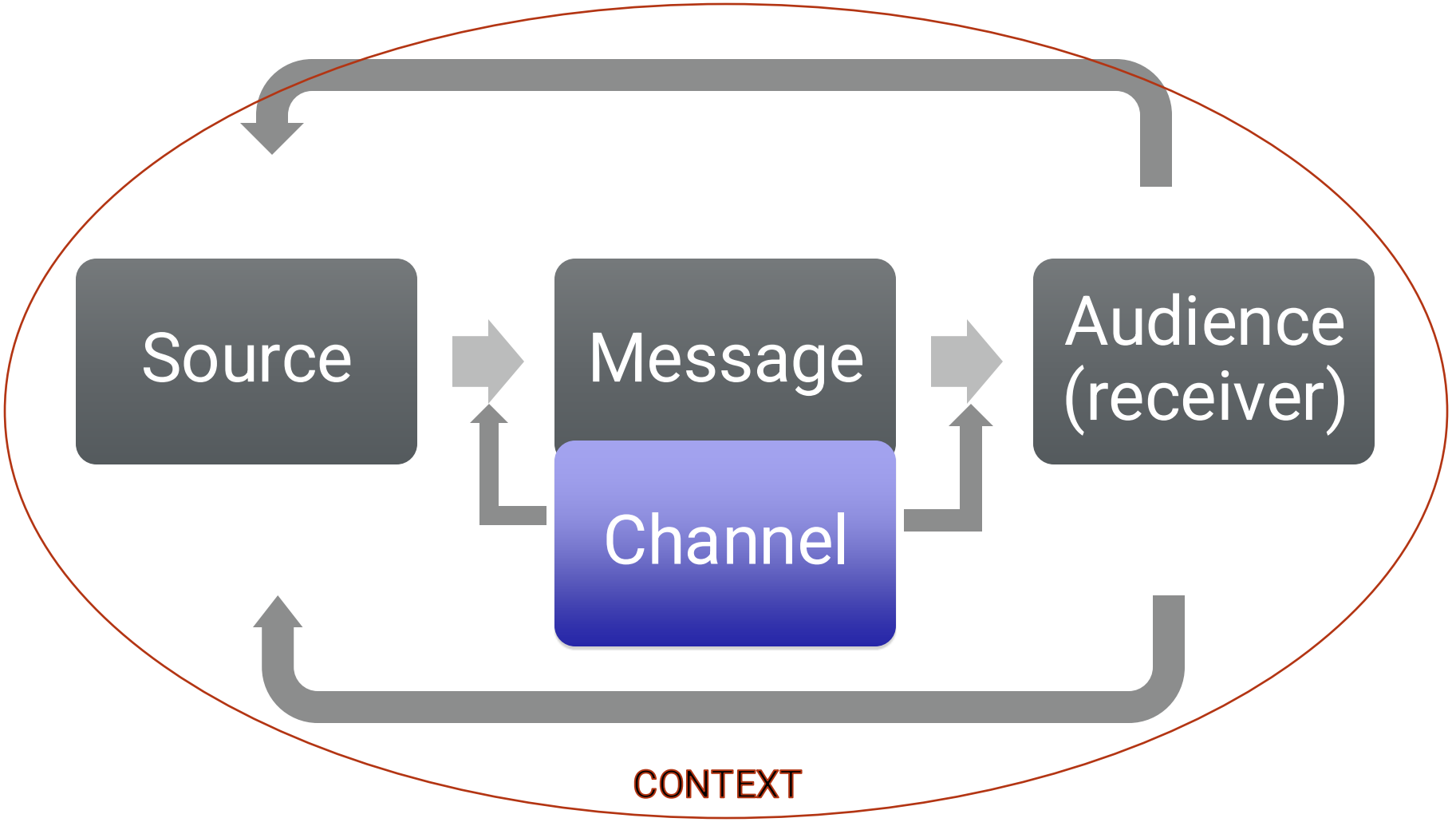
3 Questions to Ask

- What is the purpose of this communication?
- Who will use the information?
- What are the key messages for this audience?

Purpose?

Knowledge or Action?

Basic communication model



Making Data Talk: Communicating Public Health Data to the Public, Policy Makers, and the Press (2009)
https://www.cancer.gov/publications/health-communication/making-data-talk.pdf

AUDIENCE

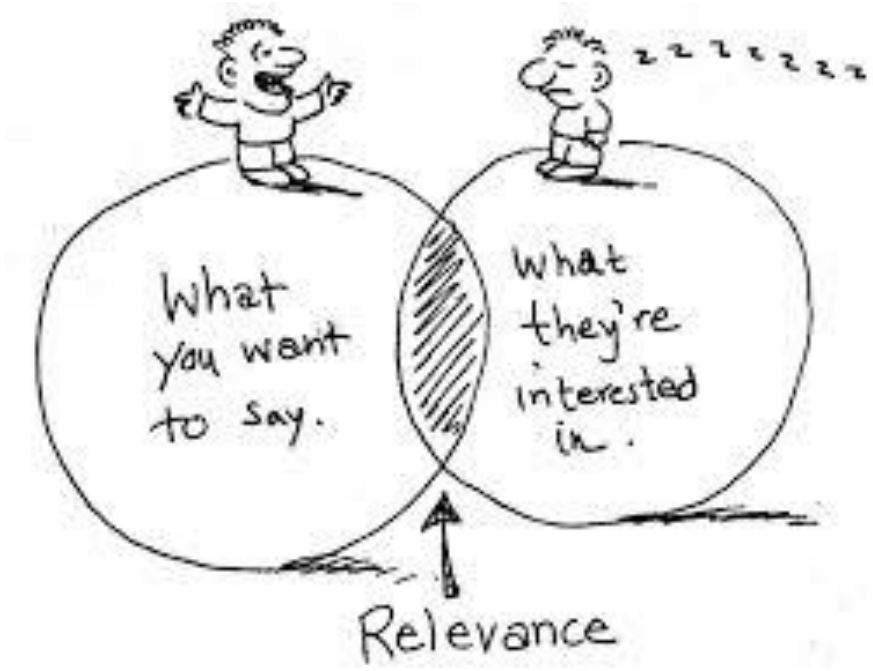
Communicate for someone….. not about something.

AUDIENCE:
Who are you communicating with?

- Elected Officials
- Legislative Staff
- Agency/Organization Leaders
- Community Groups
- Media
- Other?

Connect with your audience

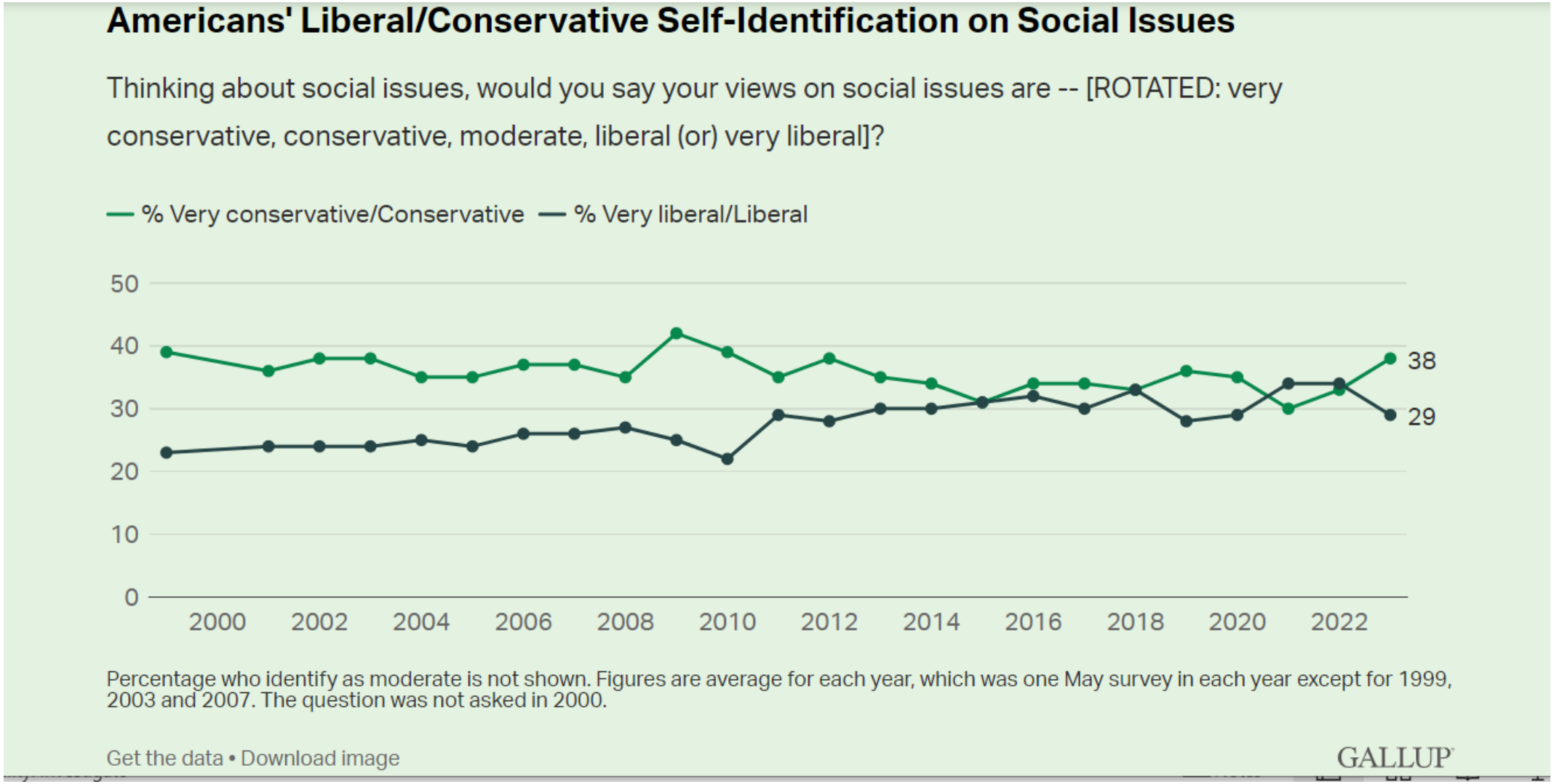
- Understand your audience/ their current position
- What do they care about?
- What are their information needs?
- How does your message solve their problem?
- Where, when and how do they seek information?
- What challenges are they likely to have?



When it comes to SOCIAL issues, do you usually think of yourself as…

	US state legislators Percentage (n)	EBPH Class PH Practitioners (IA 06/23)
Liberal	29 (235)	75 (21)
Moderate	20 (165)	7 (2)
Conservative	51 (418)	18 (5)

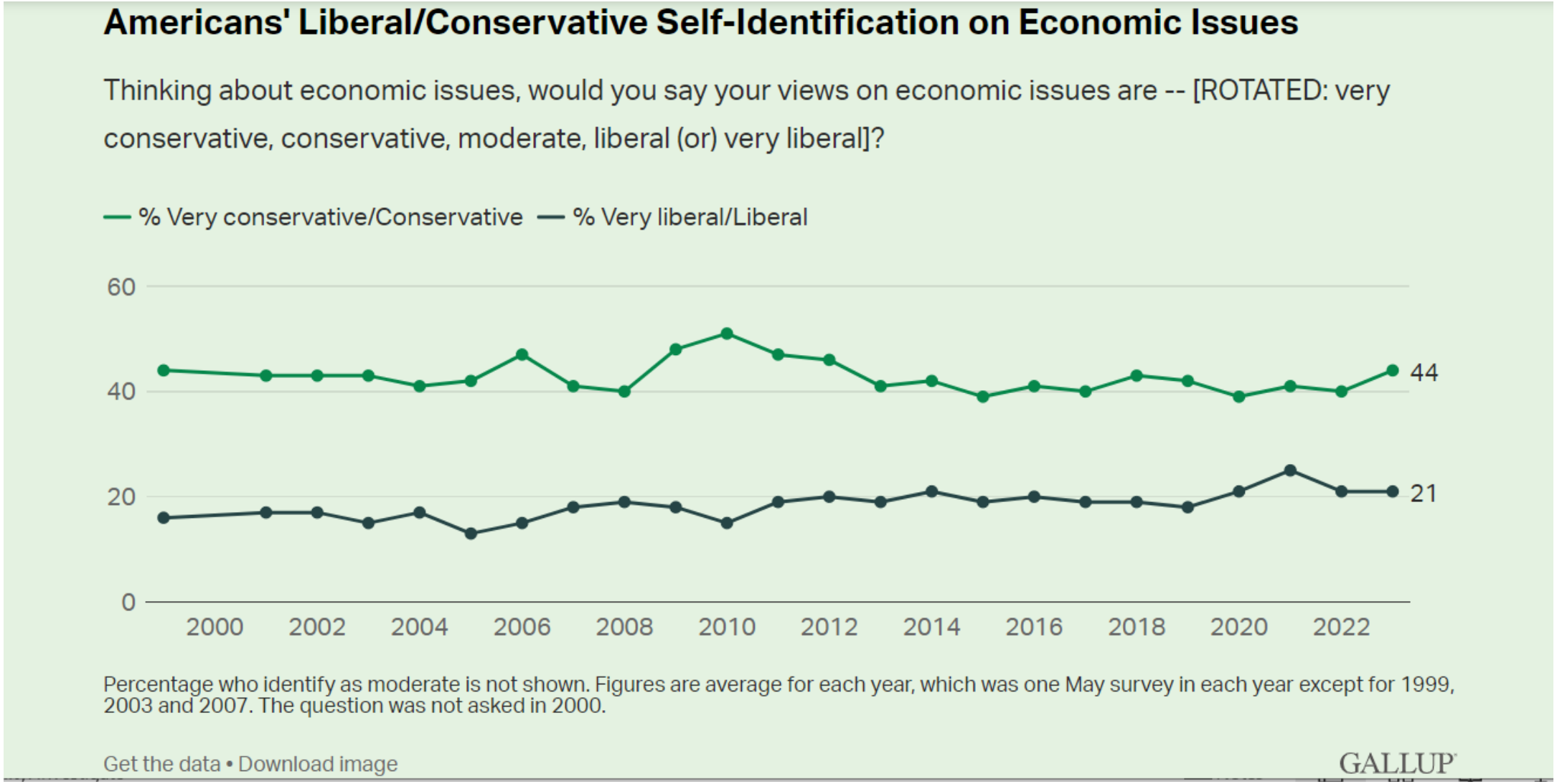
When it comes to SOCIAL issues, do you usually think of yourself as…



When it comes to FISCAL issues, do you usually think of yourself as…

	US state legislators Percentage (n)	EBPH Class PH Practitioners (IA 06/23)
Liberal	10 (86)	53 (15)
Moderate	21 (174)	29 (8)
Conservative	69 (568)	18 (5)

When it comes to FISCAL issues, do you usually think of yourself as…



Decision-makers look for health information/research that is:

Understandable	Concise	Unbiased	Accurate
Relevant (locally)	Actionable, with options	Timely/current	Cost-effective (when data exist)

Audiences have expectations for the information they receive

1. They expect to be told why they should believe or do what is recommended.
2. They expect to be given the rationale for how experts reach their conclusions.
3. They expect to know what to do with the information they receive.

Be aware of challenges

- Health literacy
- Accessibility
- Numeracy – misunderstanding of risk and probability
- Cognitive processing limits – the 7 digit phone number
- Uncertainty – go ahead, just embrace it!
- Framing – loss vs. gain
- Defensive processing
- Role of emotion

Questions?

MESSAGE - Persuading your audience

- The purpose for most communication in public health, but especially with decision makers, is persuasion.

- To persuade is to:
  - Create, strengthen, or change attitudes or behaviors

MESSAGE

Determine your *objectives*:

- What do you want your audience to **think/believe/know**?
- What do you want your audience to **feel?**
- What do you want your audience to **do?**

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If a speaker spoke in the forest
And no one did anything different--

Did they really speak at all?

--Apologies to George Berkeley

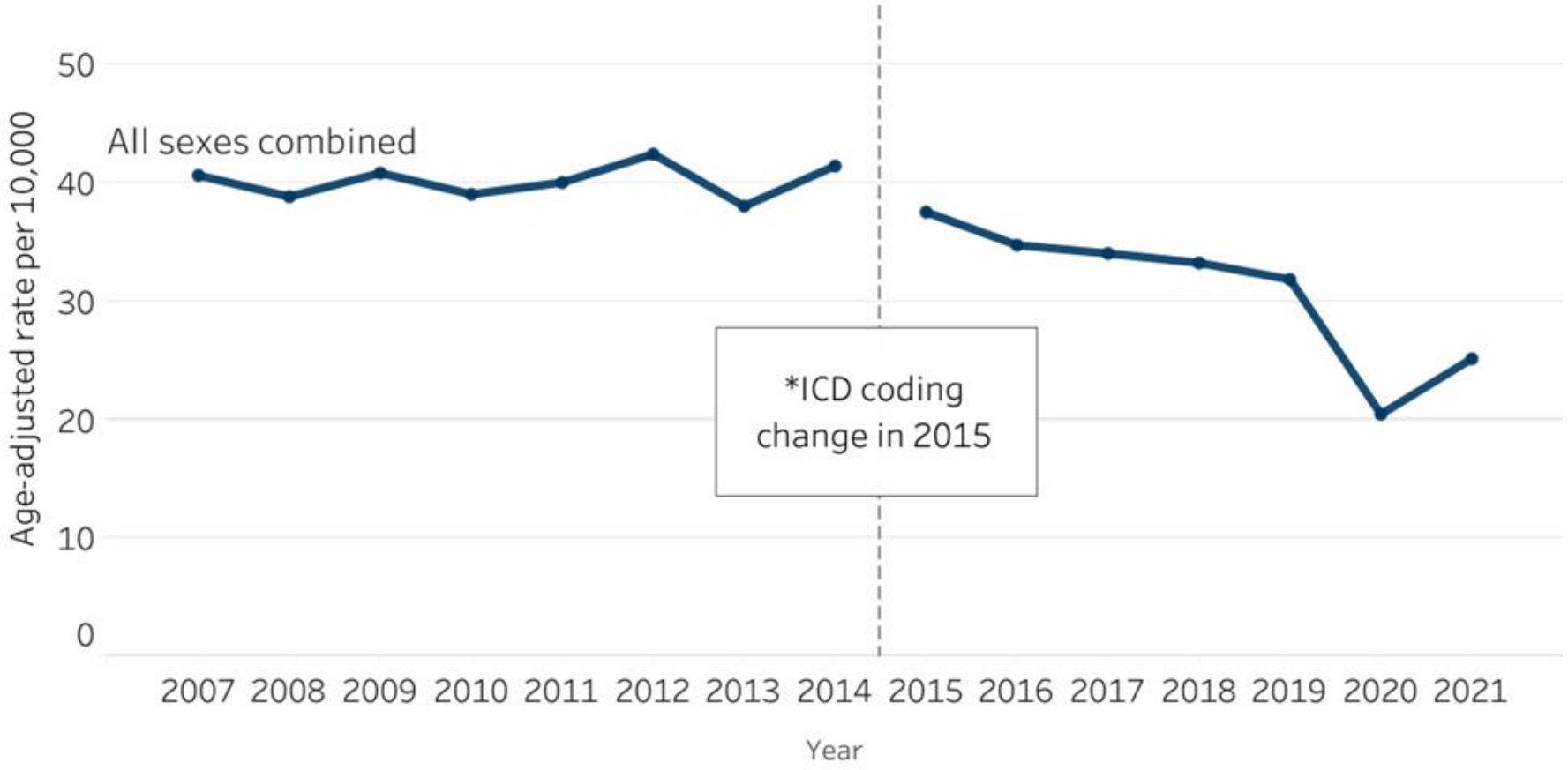
MESSAGE: SOCO
(Single Overriding Communication Objective)

<u>The change you want to see in your audience as a result of this communication</u>

<u>One audience, one message, one issue</u>

- Define your purpose:
  - We want **[audience]** to **[do what]** in order to **[benefit how]**
- Who is the *main* audience?
- What is the *call to action (i.e., what you want them to do.* Consider what is realistic and doable?
- What is the *main benefit* of taking action?

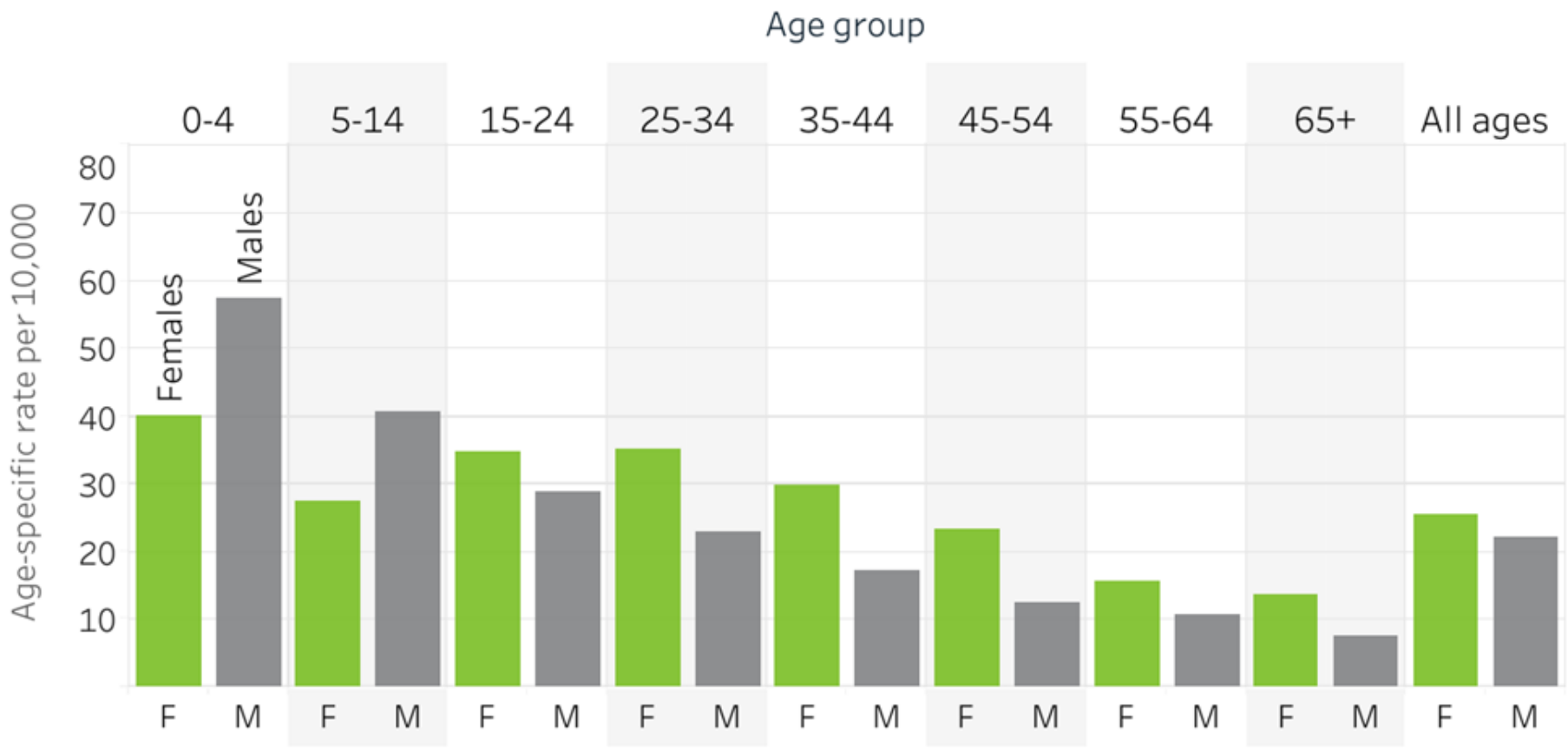
Asthma ED visit rates in Minnesota



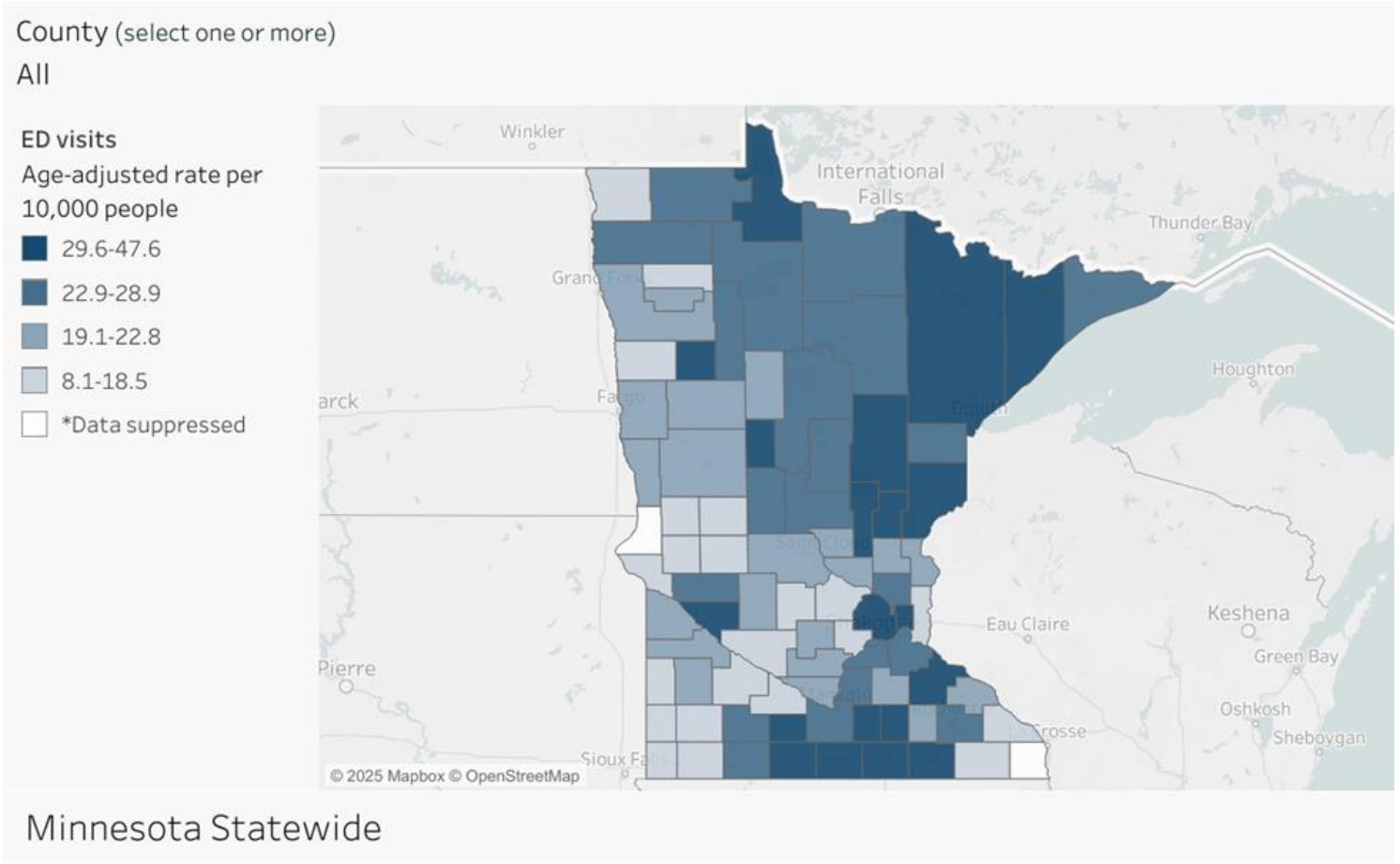
Asthma ED visit rates in Minnesota, by age and sex in 2021

Age groups (select one or more)
All

Sexes (select one or more)
All



Asthma ED visit rates for 2019-2021 by county



In **Minnesota** from 2019-2021,
the statewide age-adjusted rate was **29.8** cases per 10,000.

Single Overriding Communication Objective (SOCO)

We want **parents** to **get their <5 yo kids evaluated for asthma by their pediatrician and develop an asthma care plan** in order to **better manage their child's asthma and reduce the child's risk of preventable ED visits** in the future.

Creating Effective Messages

1. Define your issue and your audience
2. Use data to focus on one topic
3. Find and use reliable data sources
4. Find meaningful comparisons for your specific audience
5. Inspire action—tell your audience what you want them to do.
6. Turn your story into a visualization!

Questions?

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The Importance of Storytelling in Public Health

Part 1. Telling An Impactful Story

Individual vs. Collective (Population)

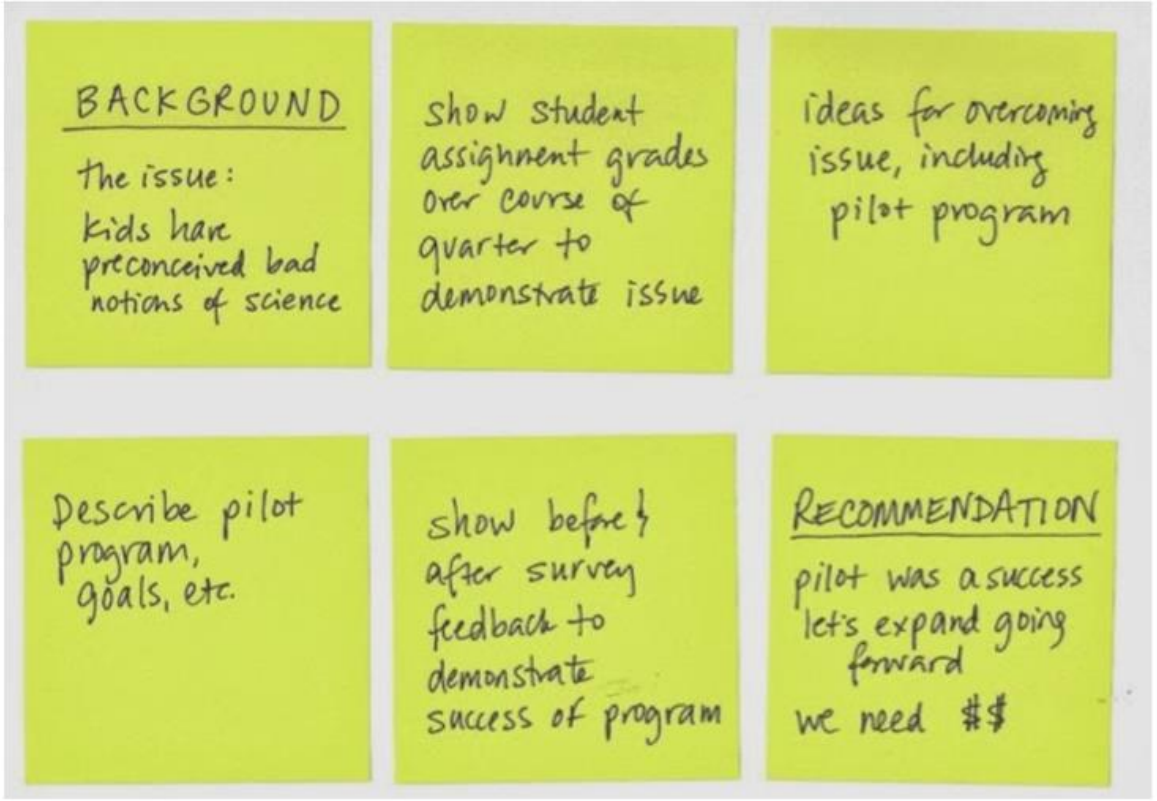
Sick Individual
Individual Responsibility
Individual Behavior

Sick Population
Collective Responsibility
Policy Solution

Part 2. How do we get from here to there?

Creating a Good Story with your Data is a Process!

It's about the message—not the software!

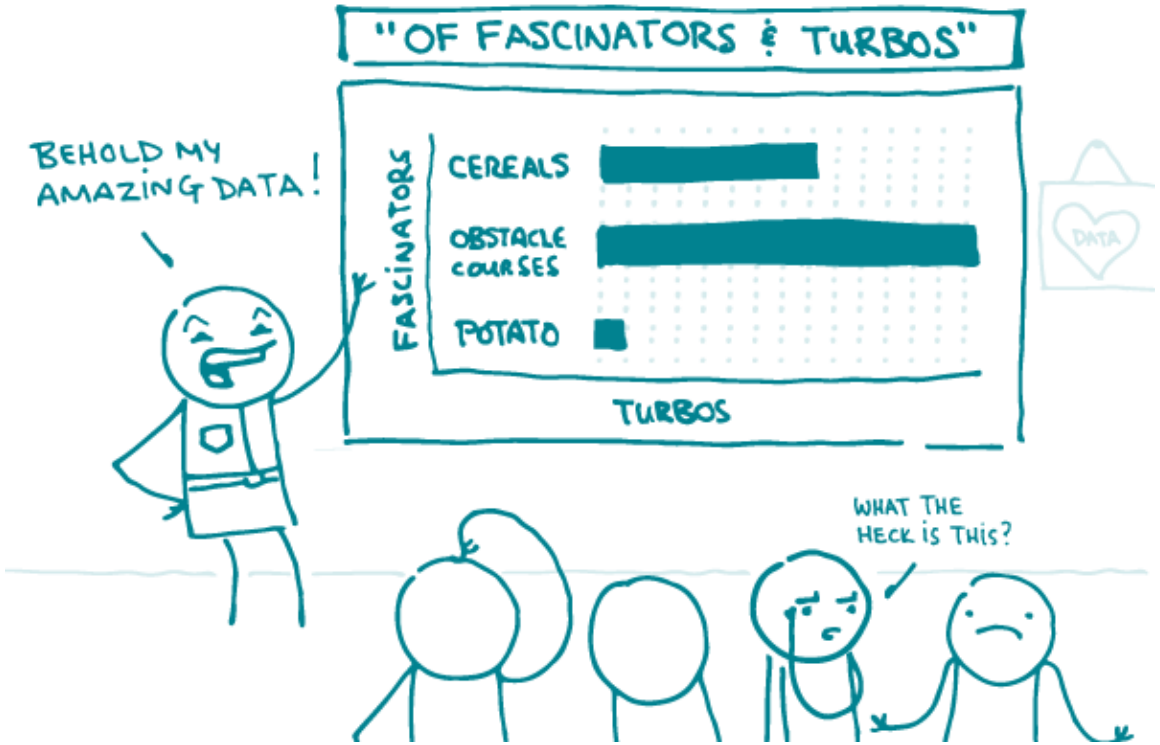


http://www.storytellingwithdata.com/blog/2014/02/storyboarding

Our MN Asthma Example

- **WHAT?** Minnesota's rate of asthma ED visits declined from 2015 to 2021. Overall, women have higher rates of asthma related ED visits but in children under 14 years, males were seen in the ED for asthma at higher rates than females. In fact the highest usage of the ED for asthma was among children 0-4 years old, with males about 50% higher than females. A number of eastern MN counties have high rates of asthma related ED visits which may be due to the prevalence of specific asthma triggers or reduced access to medical care.
- **SO WHAT?** Visits to the Emergency Department for Asthma are considered preventable. The health impact and related costs can be overwhelming for a family. Uncontrolled asthma can have serious health implications. Asthma can be controlled through proper treatment and disease management.
- **NOW WHAT?** The CDC recommends that school aged children receive comprehensive attention for their asthma through school based efforts. Pediatricians can provide patient education on proper treatment and environmental triggers. Parents can work with their childcare providers to develop and implement asthma care plans. And finally, legislators and local officials can ensure that adequate funding for school-based health programs and asthma interventions is available to school districts.

Data and Storytelling – A picture is worth a thousand words



Well, not always…

- Data visualization – graphical presentation of data/info to identify trends, patterns, outliers
- Data analytics—the analysis of raw data to make meaningful insights
- Data dashboards– a collection of data visualizations that allows you to pull different but related pieces together
- Data storytelling—the interpretation of your data/analysis in a clear and compelling way that leads to action

Resources

- NCI: Making Data Talk: A Workbook
  https://www.cancer.gov/publications/health-communication/making-data-talk.pdf
- Using Graphics to Report Evaluation Results
  http://learningstore.uwex.edu/assets/pdfs/G3658-13.PDF
- Public Health Reaching Across Sectors (PHRASES) toolkits https://www.phrases.org/
- WHO Risk Communication training
  https://www.who.int/risk-communication/training/Module-D1.pdf?ua=1

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Homework

- Select data to use throughout this course – it will be used to complete your final homework assignment
  - This data can be any data that you are interested in
  - Raw or analyzed
  - Program or surveillance data
  - You can work alone or in a pair

Thank you!

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anjali-deshpande@uiowa.edu
vickie-miene@uiowa.edu
abigail-stock@uiowa.edu