Effective Communication Through Data Visualization

Child Trends & Ohio State PREP

June 13, 2019

Introductions

Child Trends

- Jenita Parekh, PhD
- Andra Wilkinson, PhD

Ohio State PREP

- Tecca Thompson, Ohio Department of Youth Services
- Margaret Hutzel and Natalie Wilson, Ohio University's Voinovich School of Leadership and Public Affairs

Objectives

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

- Understand different purposes of sharing data and how purpose informs what is shared
- Identify relevant outcomes and indicators to share
- Learn strategies for most effectively sharing data with stakeholders
- View data sharing products developed by grantees

Purpose & Identifying Data

Process
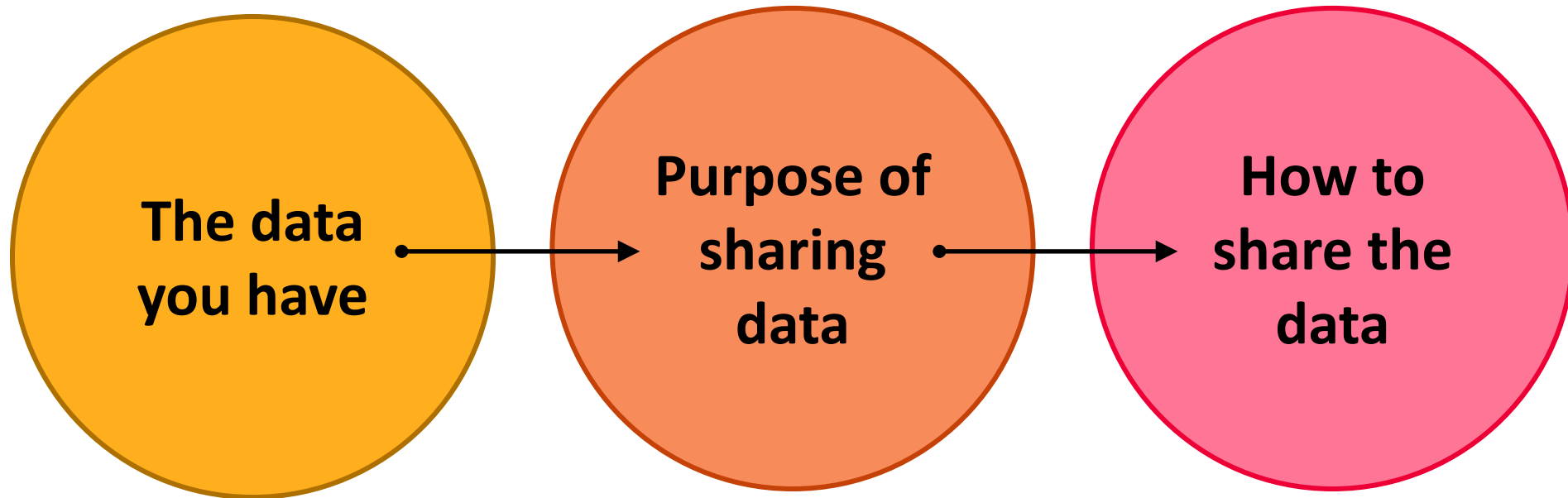
Purpose of Sharing Data

Demonstrate effectiveness

Advocate for more funding and promote sustainability

Get community support

Improve quality

Get feedback from community

Keep partners engaged

What types of audiences are you sharing data with?

Activity

What are some findings from your APP program that might be important to your stakeholders?

Please share your answers in the chat box!

If You Do Not Have Outcome Data…

Participant Information

- Age/Grade
- Languages spoken at home
- Race/Ethnicity
- Gender
- Living situation (e.g., foster care, juvenile justice system)

Program Reach

- Recruitment
- Retention
- # served
- # of facilitators trained
- # of locations
- Target populations

Participant Responses

- Program quality
- Perceptions of facilitators

Sharing Pre-Post and Evaluation Data

Present baseline characteristics

Levels of sexual activity and unprotected sex help describe need for programming

Present changes in knowledge, attitudes, intentions, self-efficacy, and skills associated with program content

Select meaningful outcomes that align directly with the theory of change, program content, and logic model

Adolescent Pregnancy Prevention and Adulthood Preparation outcomes
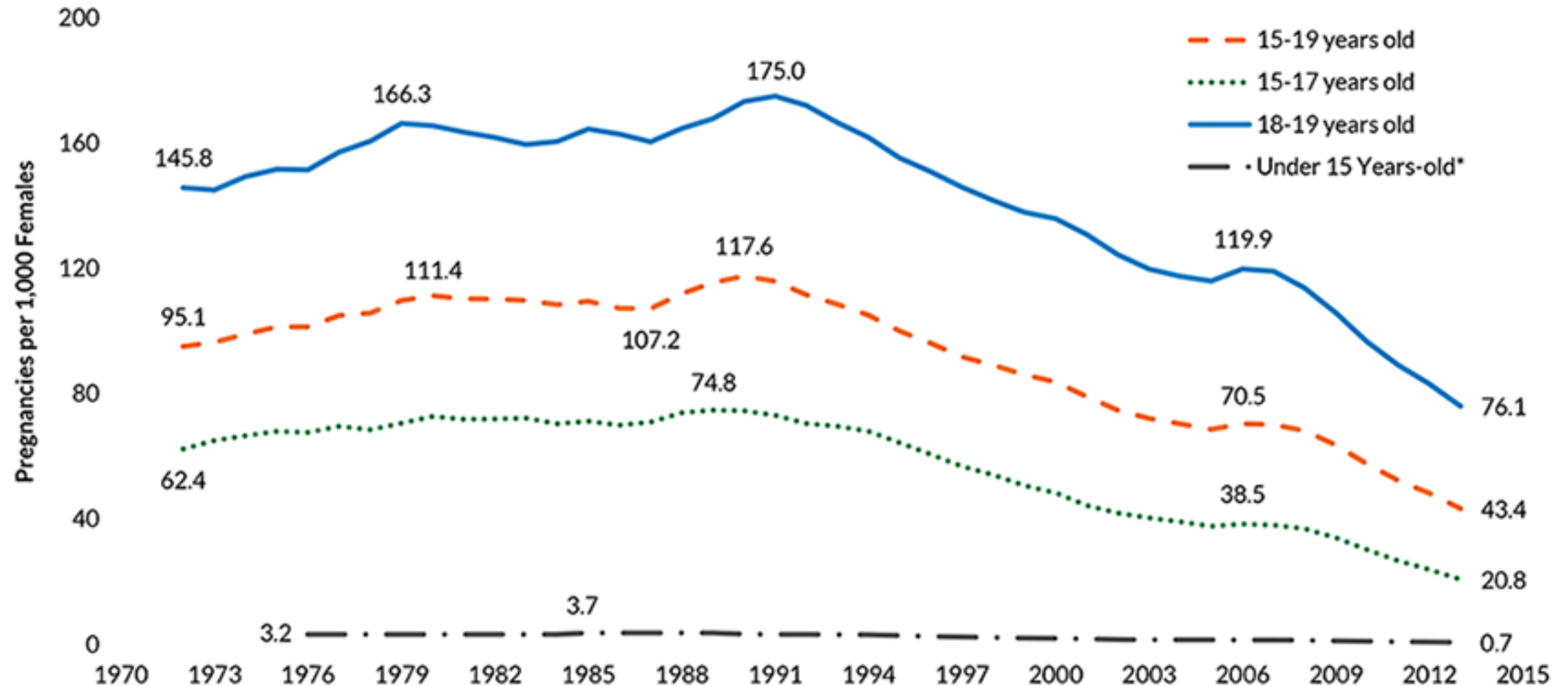
Data Visualization

Data Visualization

People should be able to understand your data in <30 seconds AND enjoy it

Questions to Ask Yourself Before Visualizing Your Data

1. Who is your audience?

2. What is the message you want to convey?

3. What data should you display?

4. Is this visualization intuitive?

Pregnancy Rates for Adolescent Females, by Age: Selected Years, 1972–2013

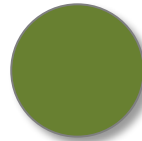# Basic Data Visualization Tips

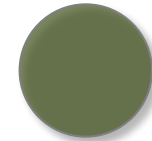Put informative titles in the upper left

Label axes and key info

Use sans serif rather than *serif* font

Hyperlink to extra information

Use COLOR

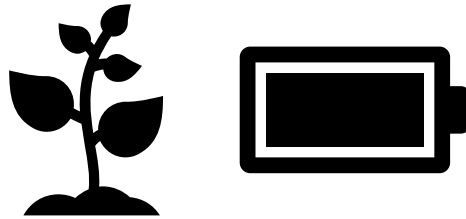Consider visibility, connotation, and contrast in colors

Color Tips

Visibility
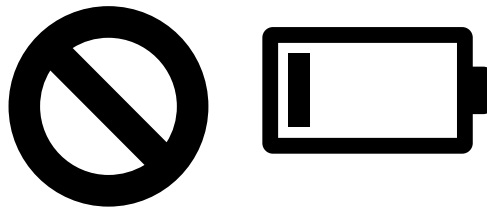
Light colors are hard to see

on a white background and

much easier to see on a

dark background

Connotation

Green = good

Red = bad

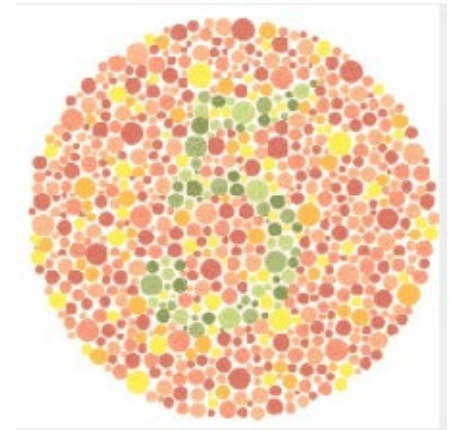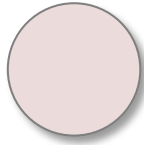## Contrast

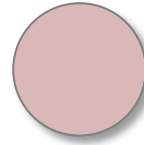Is this text easy to read?

Or is this better?

Consider color-blindness by avoiding same saturation
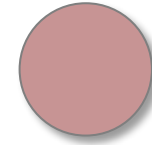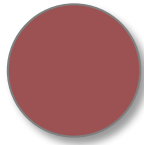
Common Data Visualization Errors

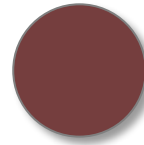Unnecessary lines (e.g., grid lines, borders, tick marks)

Changing >1 thing when *contrasting* text

More than three font colors

Vertical labels

Too much information. Less is more.
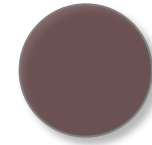
Too fancy. 3D graphics are rarely better.

Comparing Data (1)

Condom use at last sex among high school students, 2015

- Put comparisons next to each other
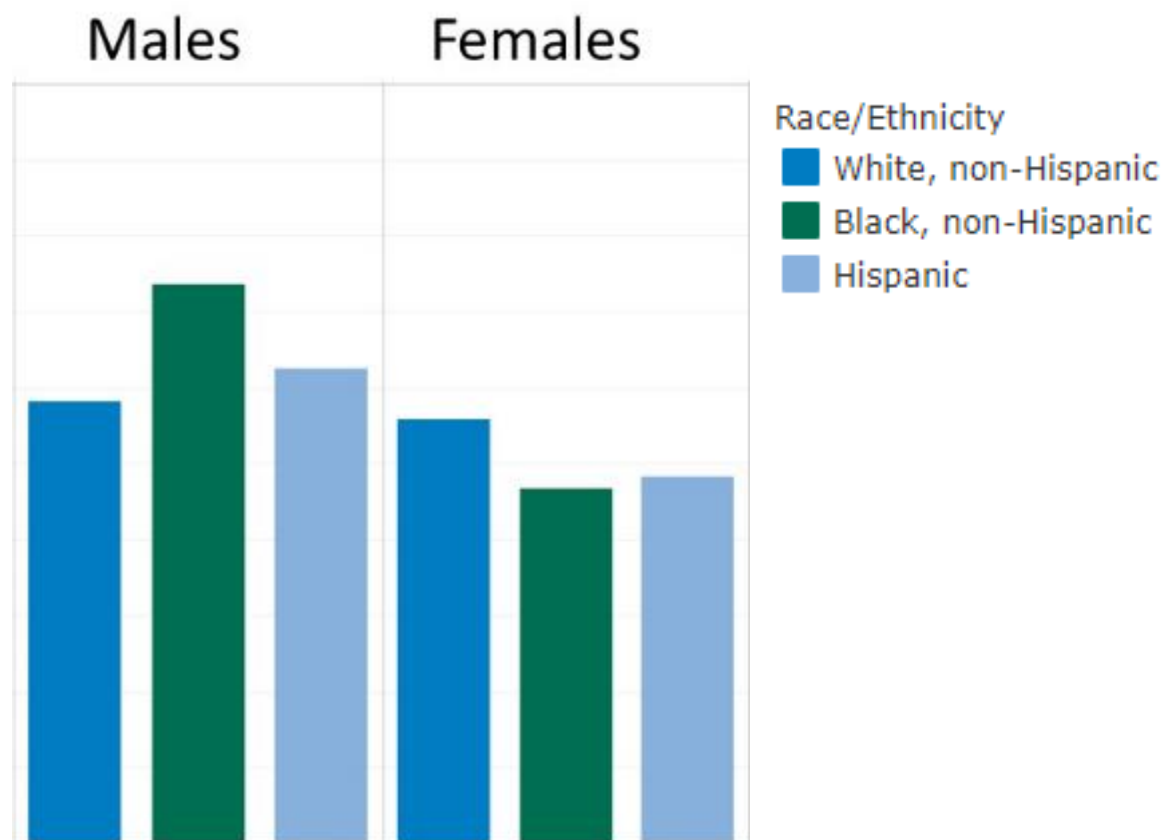
Comparing Data (2)

- Put comparisons next to each other
- Compare length, not areas

Participant demographics by age group and race/ethnicity

| <16 | 16–18 | 19–20 | 21–22 | 22–24 |

Legend: White, Black, Latino

Participant demographics by age group and race/ethnicity

<16   16-18   19-20   21-22   22-24

Legend: White, Black, Latino
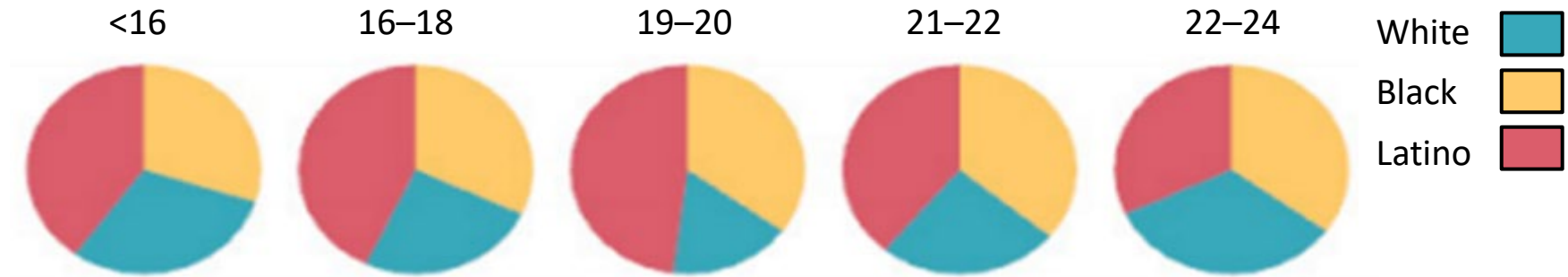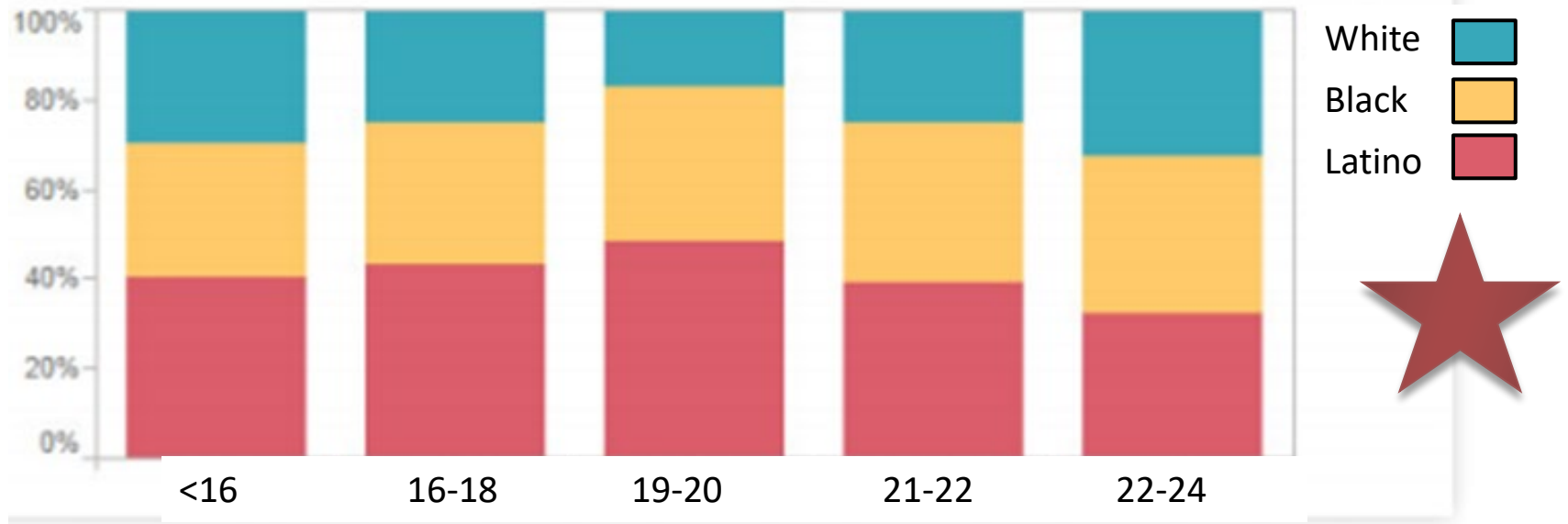
Comparing Data (3)

- Put comparisons next to each other
- Compare length, not areas
- Use >1 color
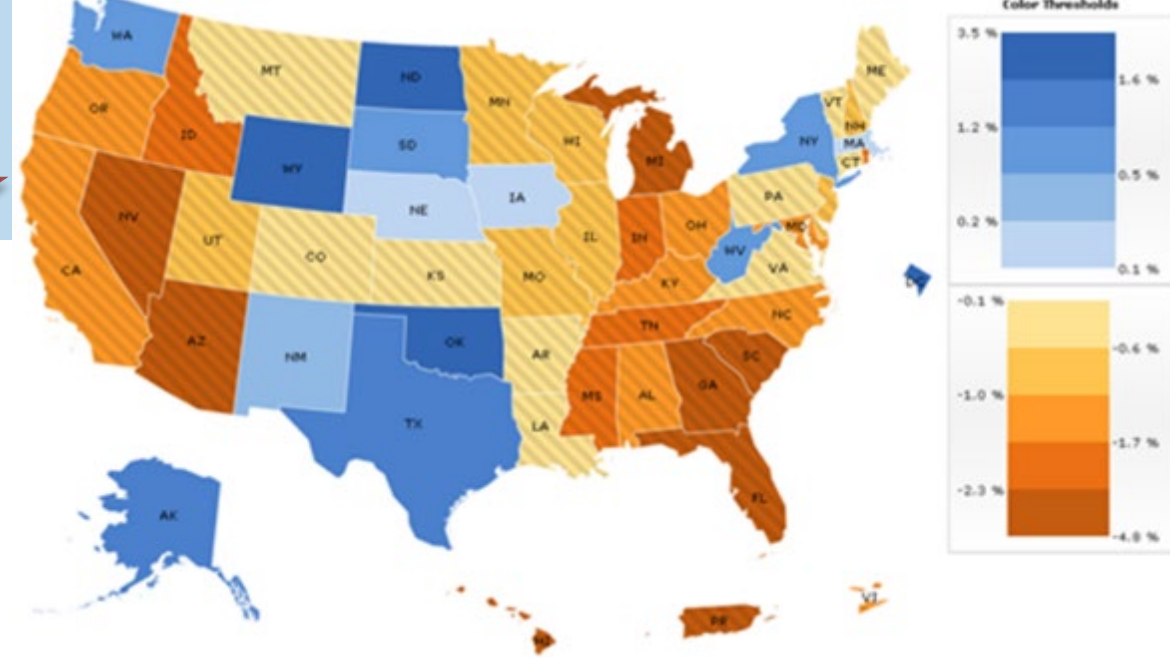
Teen birth rates per 1,000 Females 15-19

United States 18.8

- 8.1 - 13.8
- 14.2 - 16.2
- 16.4 - 21.2
- 21.3 - 24.6
- 26.6 - 32.8
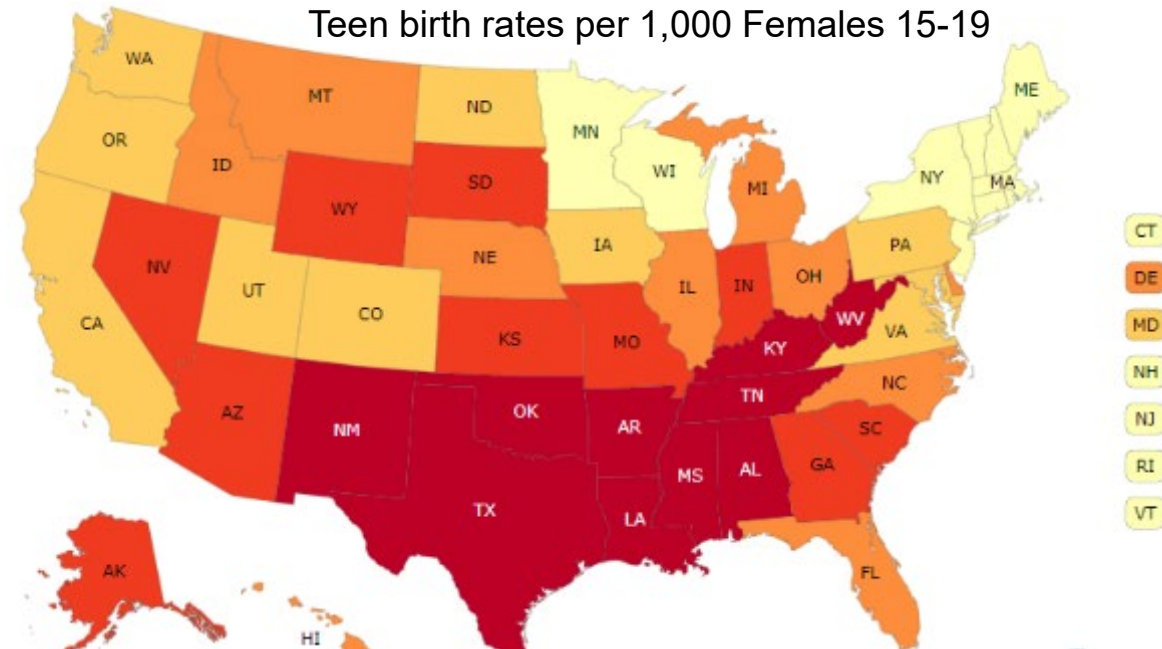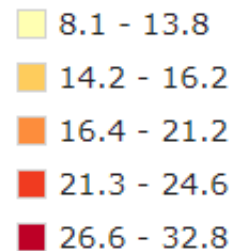
Align with Your Key Recommendation

- Simple formatting can highlight your key point

Percentage of Sexually Active[1] High School Students Who Reported Using Birth Control Pills at Most Recent Intercourse, by Gender: Select Years, 1991-2017

Legend: All Students, Male, Female

Data points labeled: 25%, 21%, 17%, 20%, 16%, 12%, 19%, 16%, 13%, 22%, 21%, 19%

Convey >1 Point
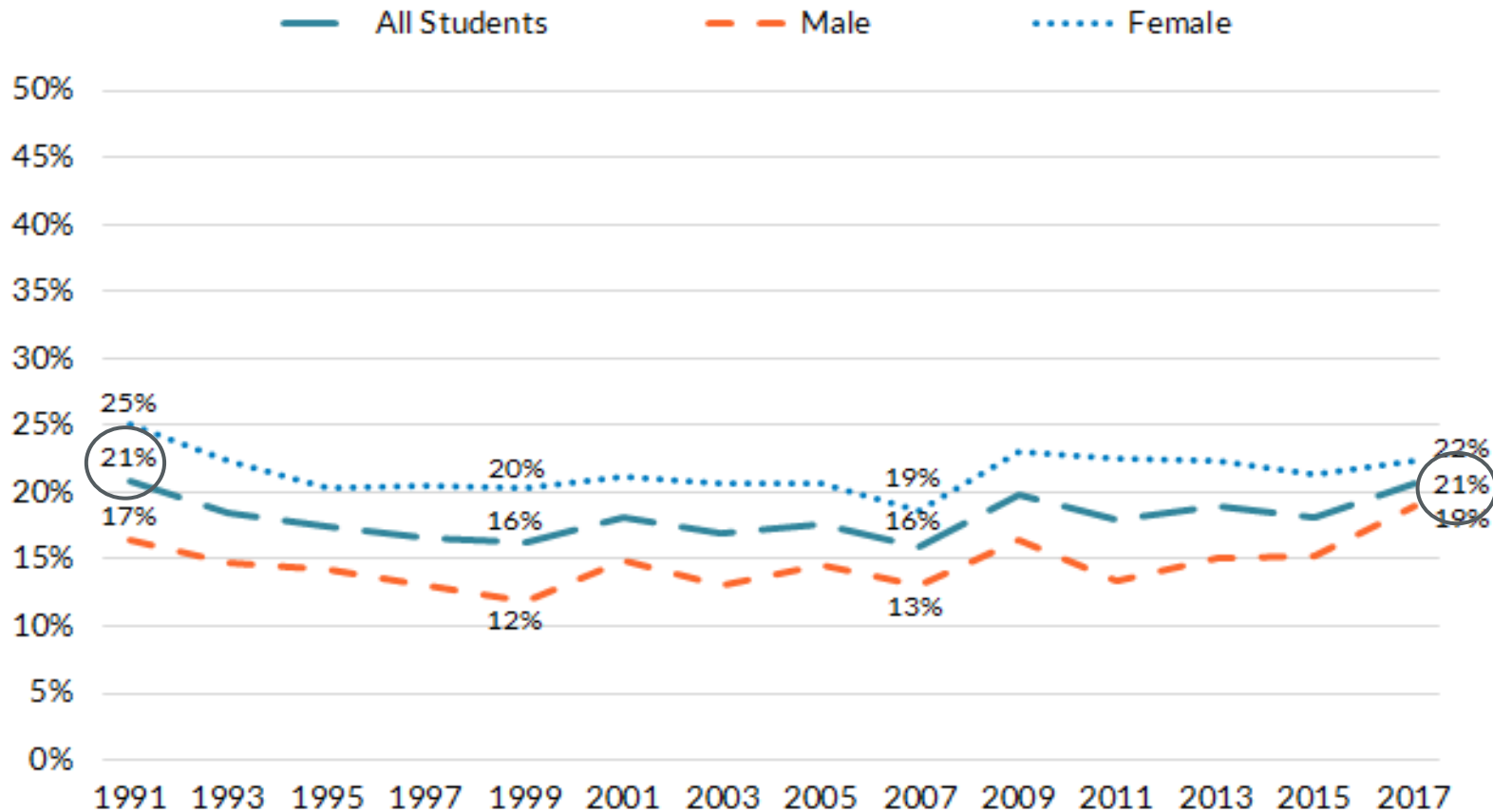
Sales Price, Quantity and Profit Correlation Scatter Plot
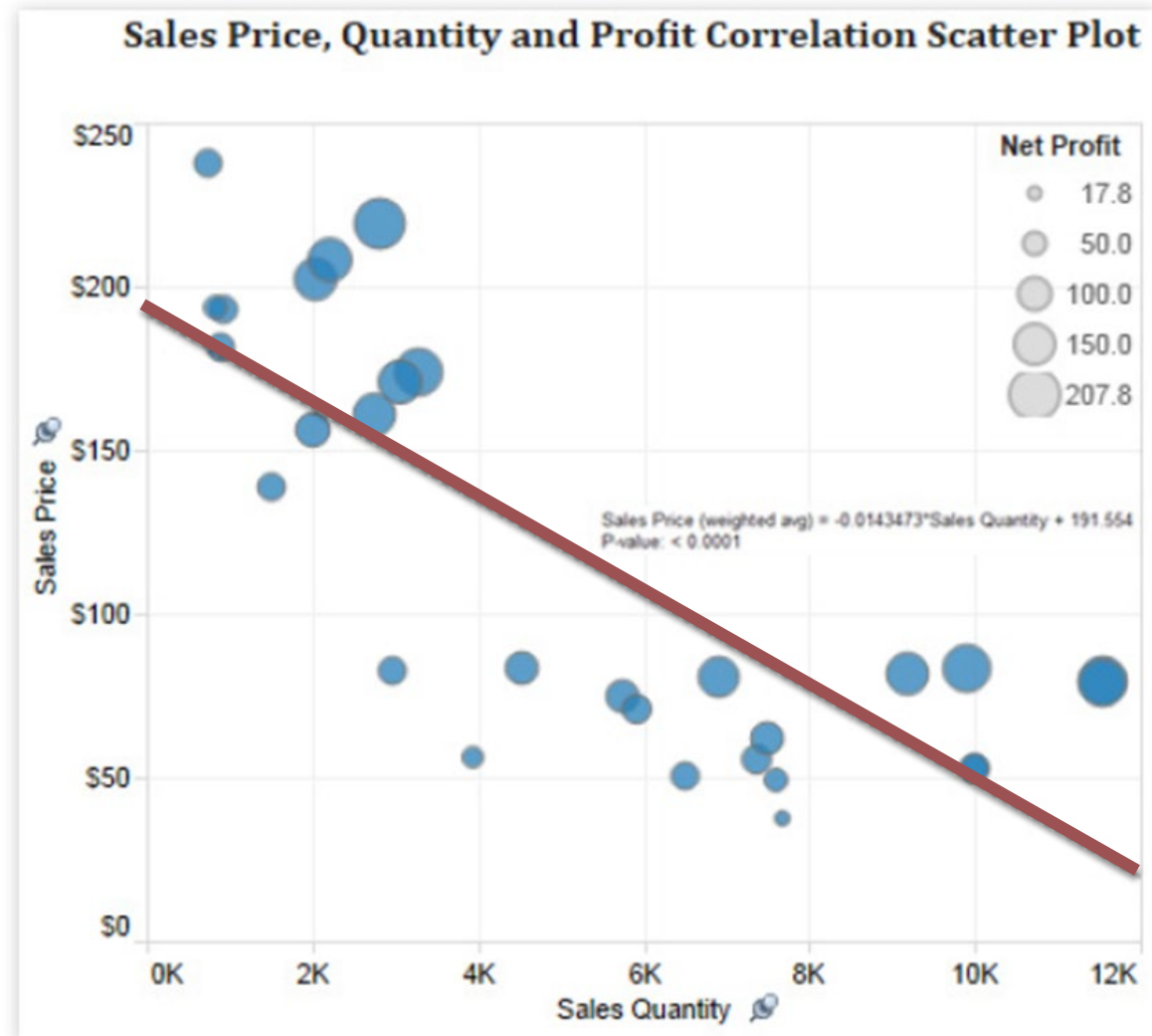
How Could We Make This Figure Better?
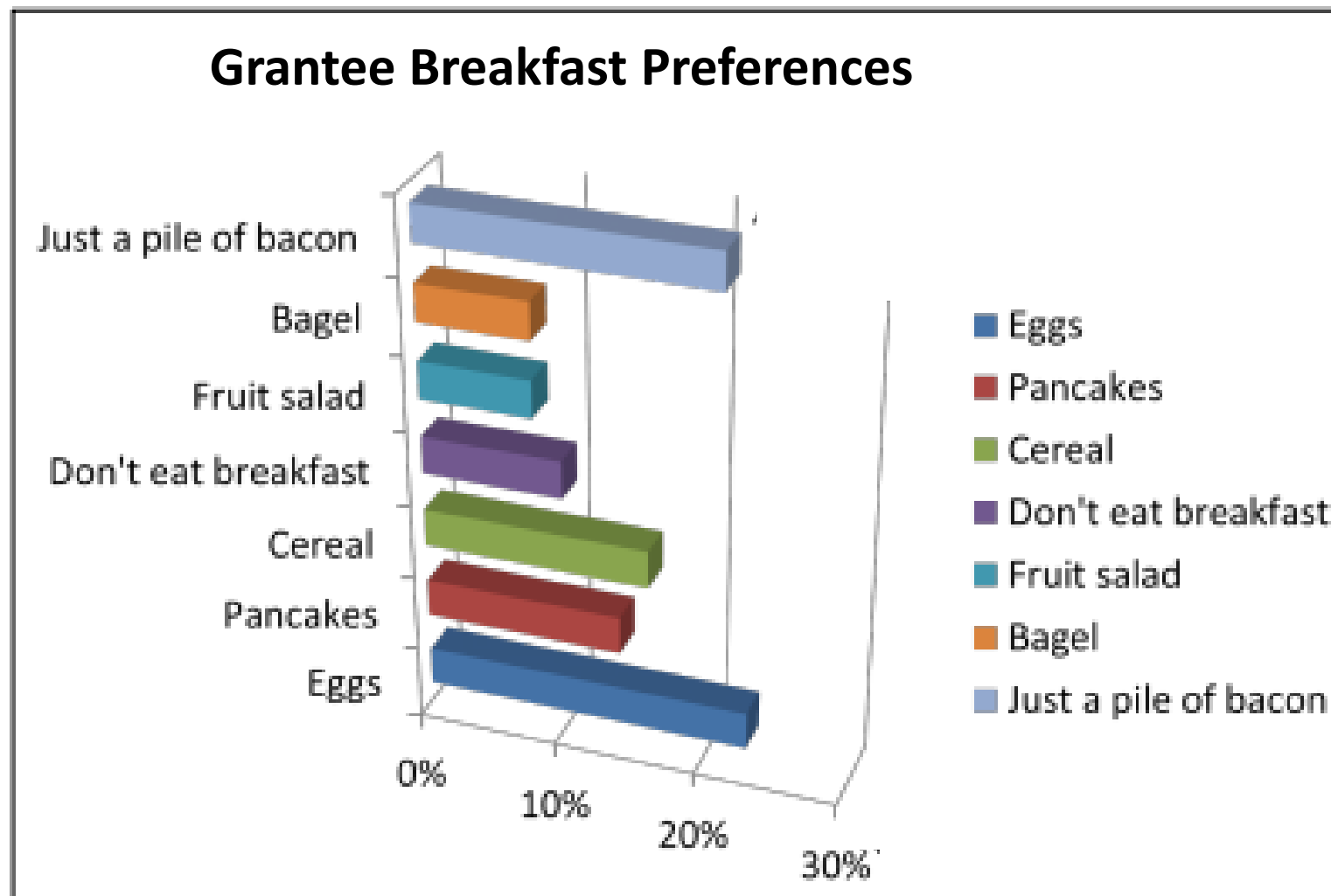
Grantee Breakfast Preferences

Breakfast preferences focus on protein.

But 1 in 10 fellow evaluators do not consume adequate energy for their first meal of the day.

Category	Percentage
Eggs	23%
Just a pile of bacon	21%
Cereal	16%
Pancakes	14%
Don't eat breakfast	10%
Bagel	8%
Fruit salad	8%
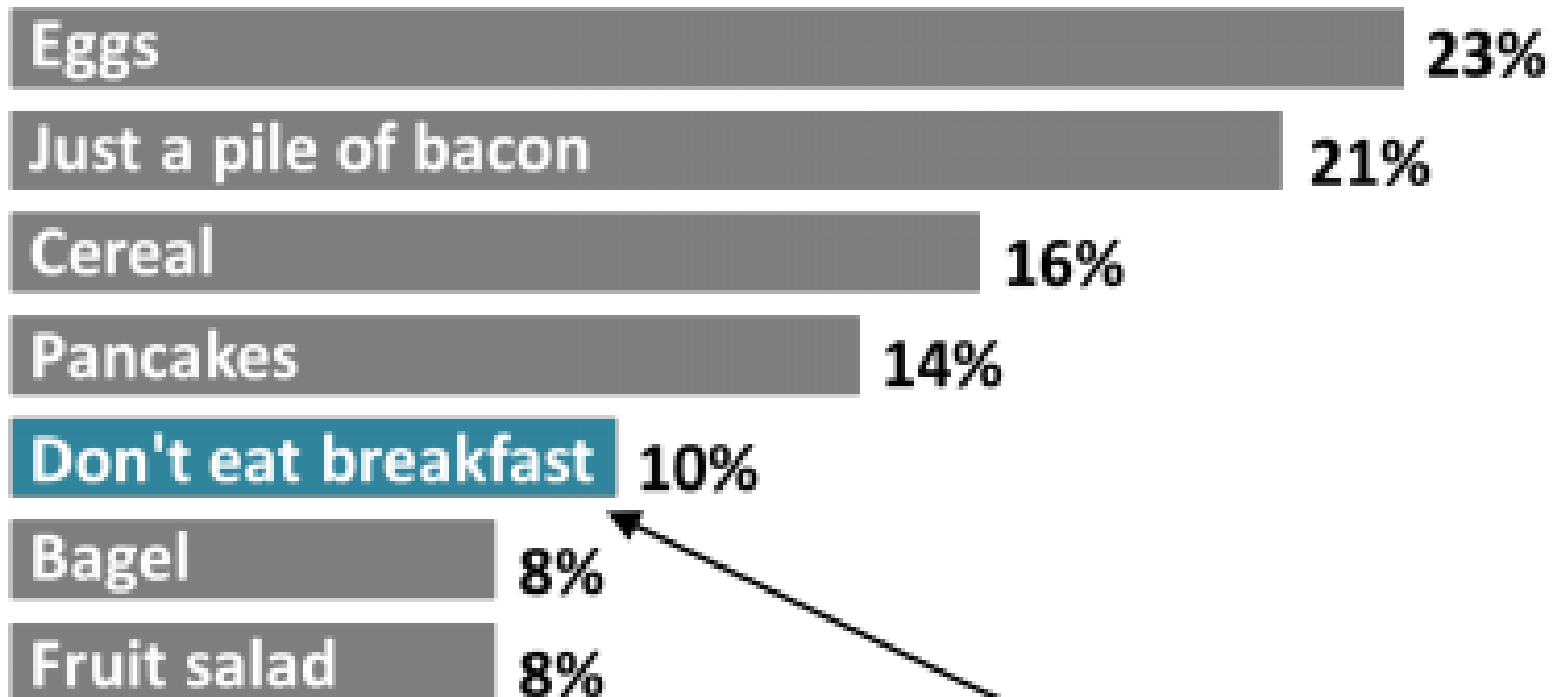
Example of What Data Visualization Can Do

95% of youth demonstrated a statistically significant increase in **sexual knowledge**.

Statistically significant increase in mean sexual knowledge score — PRE: 5.8, POST: 9.2

Statistically significant increase in the number of youth who know where to access contraceptives — PRE: 71%, POST: 100%

Data Sharing

Strategies for Sharing Data With Community Stakeholders

Data Party

- Time-limited event of several hours where diverse stakeholders come together to collectively look at and discuss data that have been collected
- Examples: gallery walk, data placemats, "world café," data dashboards

Data Walk

- Interactive way for community stakeholders to engage in dialogue about research findings in the community
- Participants rotate through "stations" where data are displayed visually and textually to tell a story for participants to interpret, discuss, and reflect on in small groups

Data Placemat

- Share preliminary evaluation findings with stakeholders before presenting final evaluation findings
- 11-by-17-inch sheet of paper that displays thematically grouped data in the form of charts, graphs, and quotes

Following up After Sharing Data

- Offer to meet/have a call to talk through the data (particularly if there are large potential implications or if the data are complex) and see whether stakeholders want additional information
- Ask for their input on the implications of the data
- If the implications are clear, ask for their input (and even their help) on your potential next steps (e.g., how can we work together to close this gap?)
- Determine how regularly stakeholders would like to receive information

Data Visualization Resources

- How to Build Data Visualizations in Excel
  - https://stephanieevergreen.com/how-to/ ⬈
- Data Visualization Checklist
  - http://stephanieevergreen.com/dataviz-checklist/ ⬈
- Data Visualization Catalogue
  - https://datavizcatalogue.com/index.html ⬈
- Presentation Guru – How to Get Instant Feedback From Your Audience
  - https://www.presentation-guru.com/how-to-get-instant-feedback-from-your-audience/ ⬈
- Infogram – How to Choose the Right Chart for Your Data
  - https://infogram.com/page/choose-the-right-chart-data-visualization ⬈
- Dabbling in the Data
  - https://www.publicprofit.net/Dabbling-In-The-Data ⬈

Grantee Spotlight:
How Ohio State PREP Uses Data

Ohio State PREP Programming

- Reducing the Risk—
  20 modules
- Making Proud Choices—
  8 modules plus adulthood
  preparation topics; rollout in
  summer 2019

Ohio State PREP Includes 9 Regional Sub-grantees

▮	Region 1: Lucas County Health Dept.	▮	Region 6: Canton City Health Dept.
▮	Region 2: Planned Parenthood of S.W. Ohio	▮	Region 7: Cuyahoga County Board of Health
▮	Region 3: Planned Parenthood of S.W. Ohio	▮	Region 8: Summit County Public Health
▮	Region 4: Nationwide Children's Hospital	▮	Region 9: Nationwide Children's Hospital
▮	Region 5: Belmont, Noble & Perry County Health Dist./Dept.		

Data Purposes

- Meet federal reporting requirements
- Make state-level program improvements
- Monitor and support sub-grantees
- Provide sub-grantees tools/information
  - Recruit agencies
  - Inform local coalitions/stakeholders

FYSB Family & Youth Services Bureau

Examples From Regional Reports

A total of 163 youth participated in PREP in Region 9 from October 1, 2017, to September 30, 2018. Of those, 119, or 73%, completed 75% of the curriculum, according to attendance records kept by the instructors.

Race	#	%
White	74	45.4%
Black	56	34.4%
American Indian/Alaska Native	8	4.9%
Native Hawaiian/Pacific Islander	4	2.5%
Asian	2	1.2%

Completed 75% of curriculum 73.0%

Did not complete 75% of curriculum 23.9%

Unknown 3.1%
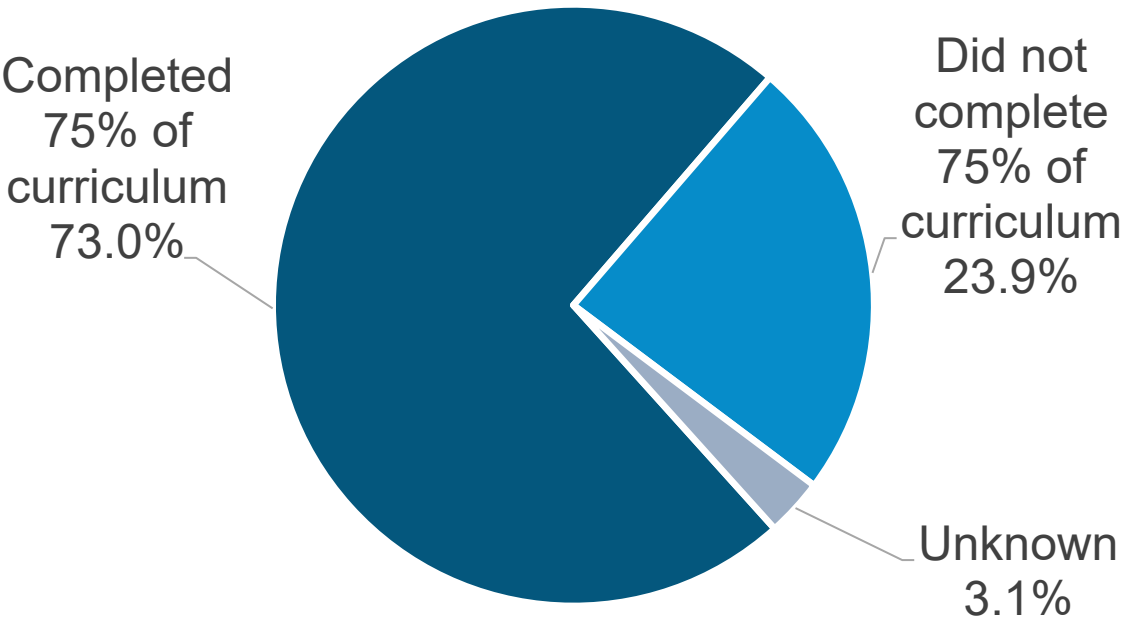
Example of Knowledge Improvement

Sharing needles for tattooing or piercing is a risk behavior.

93%
92%

Having sex without a condom is a risk behavior.

92%
90%

Hugging is not a risk behavior.

90%
91%

Using the same condom twice is a risk behavior.

64%
88%

49%
70%
Donating blood is not a risk behavior.
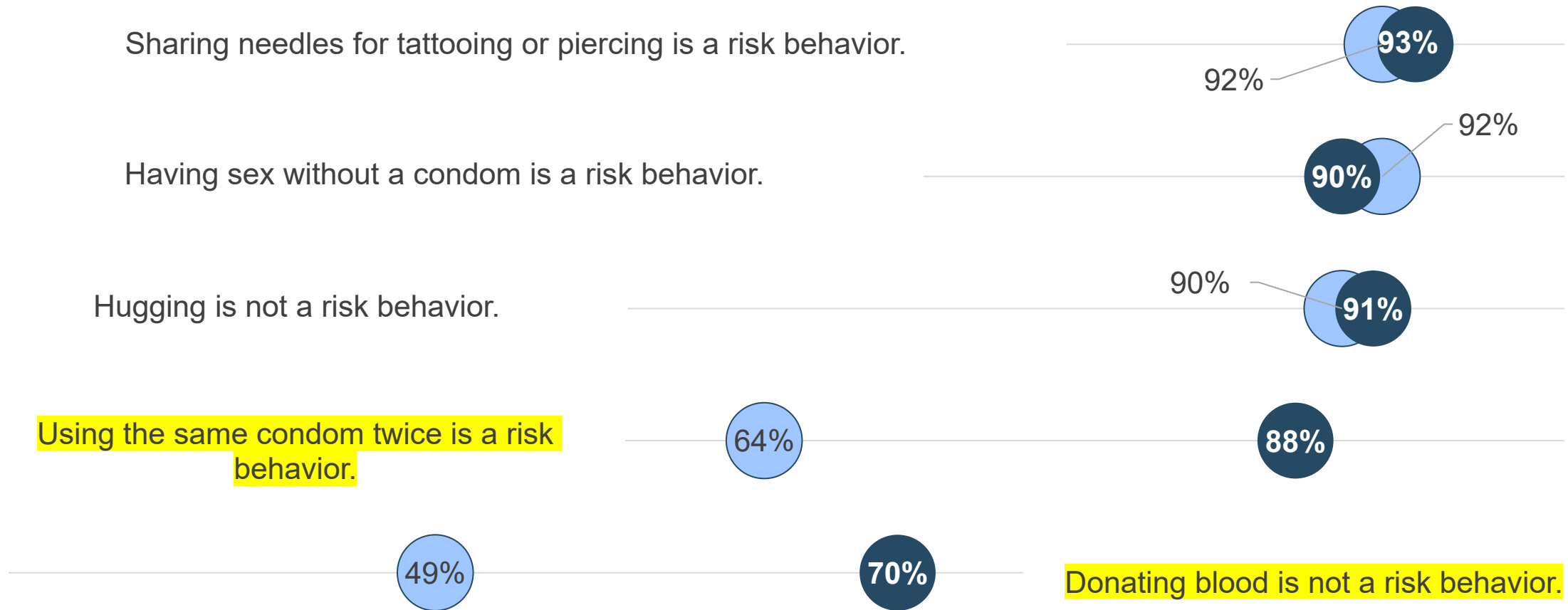
Key: Before PREP = lighter circle   After PREP = darker circle

Family & Youth Services Bureau

Example From Ohio State PREP Evaluation Report

A very high percentage of Ohio PREP youth participants report they have had sexual intercourse, and a high percentage report multiple partners. Of all youth participants answering the question (665), 83.8% report having had sexual intercourse, described as "the act that makes babies."

Figure 1. Nearly 84% of youth entering the PREP program have had sex.

Agency Recruitment Example

PREP is a federally funded program focused on teaching young people age 14-19, STI (including HIV) and pregnancy prevention (including condom use and abstinence) as well as preparing them for adulthood through education on financial literacy, healthy relationships and career building. Ohio's program is administered by the Ohio Department of Youth Services with numerous regional partners who provide the evidence-based prevention programming to youth. Staff with Ohio University's Voinovich School of Leadership and Public Affairs provide technical assistance and evaluation services.

Youth note important points they learned in PREP:

"How to use protection."

"How to keep a healthy relationship."

"Don't have sex without a condom."

The majority (72%) of Ohio PREP youth participants enter the program via the juvenile justice system; they are in juvenile detention centers or court-ordered treatment centers. Some are on probation or in diversion programs that are also court ordered. The remainder served are mostly youth in foster care.

Nearly 84% of youth entering Ohio PREP have had sex.

In the last program year 894 youth participated and 63% completed the program.

Overall, Ohio youth engaged in PREP not only show **increased knowledge of sexual health, prevention of pregnancy and STIs**, but they also show **improved intentions to use condoms and hormone-based birth control.**

Among the Facilitators trained to provide the intervention, Ohio **PREP is increasing knowledge of STIs/teen pregnancy prevention and knowledge of the rights of youth related to accessing reproductive health care.**

Over 80% of participating youth note the **material was clear,** they had a **chance to ask questions,** they felt **respected as a person** and the **discussions or activities helped them learn the program lessons.**

"Be assertive when saying no."

"Knowing how to handle money."

"How to budget and set up a bank account."

"How to fill out a check."

"STDs are very common in teens."

The PREP Coordinator in your region is:

Counties served:

Example Newsletter (1)

- Regional sub-grantee newsletter incorporating regional data

Did You Know?

Upon completing PREP,

62% of Region 1 youth said that they were much or somewhat more likely to use condoms.

At entry,

Meet the PREP Provider

Youth Treatment Center

Agency name and location: Lucas County Youth Treatment Center, Toledo, OH

Description of organization: The Lucas County Youth Treatment Center (LCYTC) is a 32-bed secure residential correctional facility for felony offenders ages 12-18. Operated by Lucas County Juvenile Court and funded by the Ohio Department of Youth Service, LCYTC exists to provide community-based corrections to youth who would otherwise be committed to a state institution.

One interesting thing about your agency (recent awards, licenses or certifications, success stories working with the youth, etc.): The Lucas County Youth Treatment Center is in the first year of implementing the PREP curriculum. Residents have been engaged in the group sessions and have found the group beneficial. Staff note an increase in residents requesting confidential testing for sexually transmitted diseases which speaks to their understanding of the material being presented and knowing their risk factors.

- Regional sub-grantee newsletter incorporating regional data

the material being presented and knowing their risk factors.

At entry,

51% of youth stated their reason for not wanting to have sex is not wanting to get pregnant or get someone pregnant.

At exit,

That number increased to **62%**

Success Stories

If you would like to be featured in *"Meet the PREP Provider,"* we want to hear from you. Please email us your accomplishments, awards, and success stories working with youth so that we can feature you in our next newsletter. We want to acknowledge you for all the amazing things you do for our youth!

"No unprotected sex, manage your money wisely, have the courage to say no." –Region 1 Youth on what they learned in PREP

Example Newsletter (1)

- Regional sub-grantee newsletter incorporating regional data

Personal Responsibility Education Program (PREP)

Kelli Trenger, PREP Program Manager
Canton City Public Health

Molly Malloy, RN, PREP Coordinator/Trainer
Canton City Public Health

Frank Catrone, RN, PREP Trainer
Canton City Public Health

CANTON CITY PUBLIC HEALTH

Effective July 19, 2018, Canton City Health Department has changed its organizational name and logo. We are now Canton City Public Health.

YOUTH CLASSES

Agencies Implementing Youth Classes
July 2018 – August 2018

Indian River
Juvenile Correctional Facility
(Stark County)
&
Mahoning County Juvenile Justice Center

SHARE YOUR SUCCESS

Region 6 would like to feature a success story in our newsletter regarding a positive experience that your agency encountered while teaching the youth the PREP curriculum. (See page 3) Please email mmalloy@cantonhealth.org or call (330) 489-3322 with your one to two paragraph summary to share with our Region 6 partners.
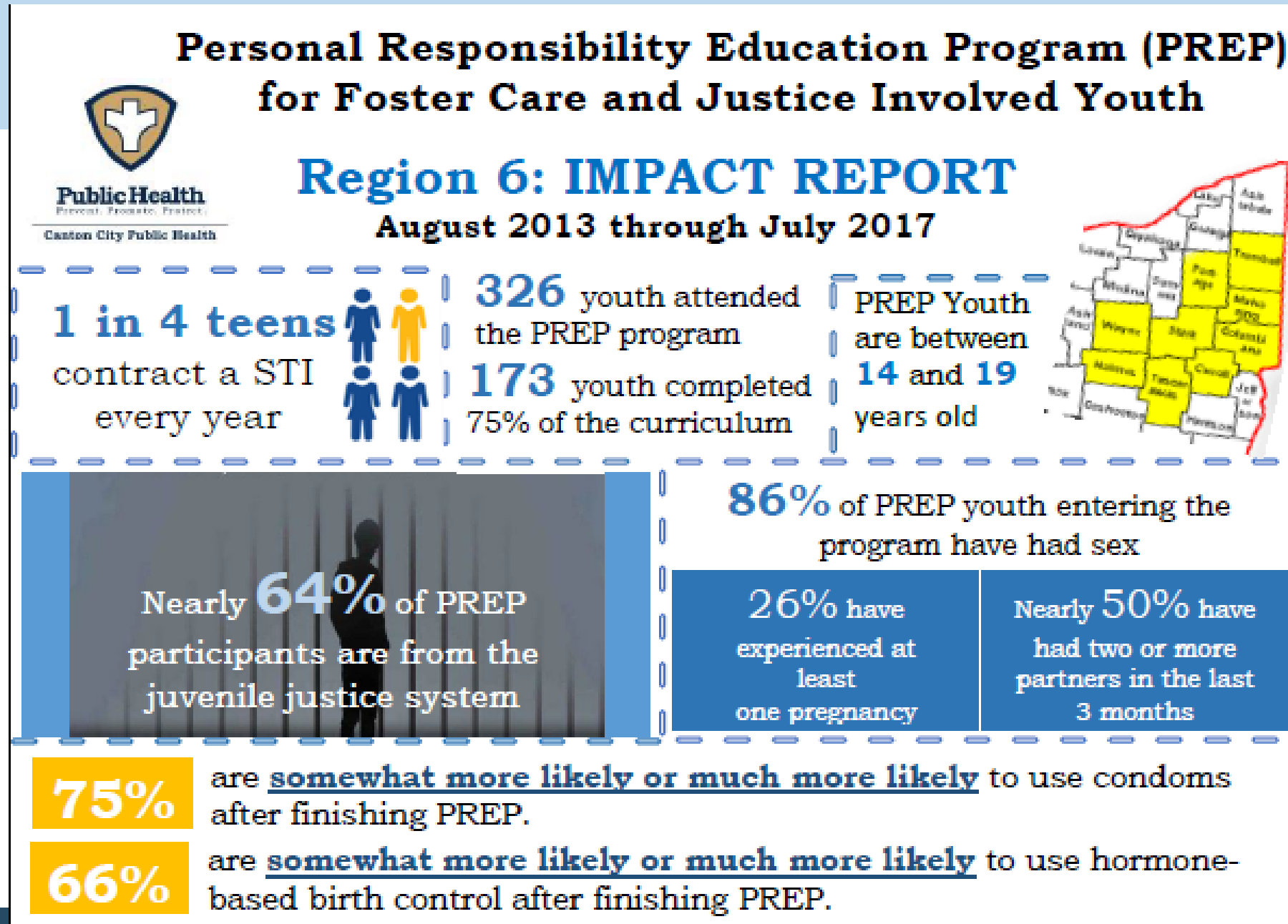
Save the dates

Region 6 Coalition Meeting & Training

When: Wednesday, October 31, 2018 10 AM -12 PM

Where: Canton, Ohio

Training Topic: Kids, Technology and the Law

Example Newsletter (2)

- Regional sub-grantee newsletter incorporating regional data
  - 1 in 4 teens contract a STI every year (graphic used)
  - Nearly 50% have had two or more partners in the last 3 months (change in font size)

Personal Responsibility Education Program (PREP) for Foster Care and Justice Involved Youth

Public Health — Prevent. Promote. Protect. — Canton City Public Health

Region 6: IMPACT REPORT
August 2013 through July 2017

1 in 4 teens contract a STI every year

326 youth attended the PREP program
173 youth completed 75% of the curriculum

PREP Youth are between **14** and **19** years old

Nearly **64%** of PREP participants are from the juvenile justice system

86% of PREP youth entering the program have had sex

26% have experienced at least one pregnancy

Nearly **50%** have had two or more partners in the last 3 months

75% are somewhat more likely or much more likely to use condoms after finishing PREP.

66% are somewhat more likely or much more likely to use hormone-based birth control after finishing PREP.

- Regional sub-grantee newsletter incorporating regional data
  - 326 youth reach (increasing size of oval for reach)

Successes and Challenges

- Tracking youth attendance and program completion rates helped inform new program selection decision.

- Providing Regional Coordinators with their data on cohort completion length increased awareness and generated improvement.

- One challenge is the significant time needed to disaggregate data and create reports for nine regions.

Questions?

FYSB Family & Youth
Services Bureau

Taking Action

What is one action step you will take based on what you learned?

Thank You!

Jenita Parekh
jparekh@childtrends.org

Andra Wilkinson
awilkinson@childtrends.org

Tecca Thompson
tecca.thompson@dys.ohio.gov

Margaret Hutzel
hutzel@ohio.edu

Natalie Wilson
wilsonn3@ohio.edu

FYSB Family & Youth Services Bureau

References

- Better Evaluation. (2015, December 9). *World café*. Retrieved from https://www.betterevaluation.org/en/evaluation-options/worldcafe

- Better Evaluation. (2017, December 5). *Data dashboard*. Retrieved from https://www.betterevaluation.org/en/evaluation-options/data_dashboard

- Better Evaluation. (2018, February 21). *Data walk*. Retrieved from https://www.betterevaluation.org/en/evaluation-options/data_party

- Data Society. (2015, December 23). *Four questions you should ask before visualizing your data*. Retrieved from https://medium.com/the-data-experience/four-questions-you-should-ask-before-visualizing-your-data-cd20a302eb65

- Depict Data Studio. (2018, March 13). *It's not you, it's me: When you realize your reports, not your readers, are the problem*. Retrieved from https://depictdatastudio.com/your-reports-are-the-problem/

- Murray, B., Falkenburger, E., & Saxena, P. (2015, November 10). *Data walks: An innovative way to share data with communities*. Washington, DC: Urban Institute. Retrieved from https://www.urban.org/research/publication/data-walks-innovative-way-share-data-communities/view/full_report

- Pankaj, V., & Emery, A. K. (2016). Data placemats: A facilitative technique designed to enhance stakeholder understanding of data. In R. S. Fierro, A. Schwartz, & D. H. Smart (Eds.), *New Directions for Evaluation: Vol. 149. Evaluation and facilitation* (pp. 81–93). doi:10.1002/ev.20181 https://onlinelibrary.wiley.com/doi/pdf/10.1002/ev.20181

- Robinson, S. B. (2014). *Audience engagement strategy book*. Available from https://www.betterevaluation.org/en/resources/guide/audience_engagement_strategy_book