



**Data Visualization**  
*Tools, Techniques, and Best Practices*  
April 24, 2019

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**OMNI Evaluation Team**  
OMNISupport@omni.org

**Presented by Cheryl Winston, MPA**

OMNI Institute  
899 Logan Street, Suite 600  
Denver, CO. 80203

www.omni.org  
p. 303.839.9422 or 800.279.2070  
f. 303.839.9420

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**Webinar Guidelines**



-  Recorded for later viewing
-  Your mic is muted
-  Ask questions by typing into the chat box
-  For detailed questions, follow up after the webinar.

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### Today's Agenda

- 1 What is data visualization?
- 2 Consider your audience!
- 3 Common types of data viz
- 4 The good, the bad, and the ugly!
- 5 Let's get down to viz-ness!

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### Questions?



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### Quick Poll



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**What Is Data Visualization?**

da ta | \ dā-tā  
 visu-ā-l-iz-ā-ti-ōn | \, vī-shū-wā-lā-'zā-shān

“Data visualization is the graphical representation of information and data. By using visual elements like charts, graphs, and maps, data visualization tools provide an accessible way to see and understand trends, outliers, and patterns in data.... **A good visualization tells a story, removing the noise from data and highlighting the useful information.**”

Source: Data visualization beginner's guide:  
<https://www.tableau.com/learn/articles/data-visualization#25427ef4629820f719>




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**Why Use Data Visualization?**



-  It's engaging!
-  It's persuasive!
-  It's efficient!

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### But I'm not a designer! Why does this matter?

- Better convey how you would like others to produce or display important data.
- Critically interpret any data visualization, including spotting strengths and weaknesses.
- Add to your data storytelling toolkit.

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### Analyze your audience and tailor your viz to them!



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**Analyze your audience and tailor your viz to them!**

- Who is your audience?



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**Analyze your audience and tailor your viz to them!**

- Who is your audience?
- What is their capacity?



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**Analyze your audience and tailor your viz to them!**

- Who is your audience?
- What is their capacity?
- What do they need or expect?



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### Analyze your audience and tailor your viz to them!

- Who is your audience?
- What is their capacity?
- What do they need or expect?
- Will visualization add value and be effective?



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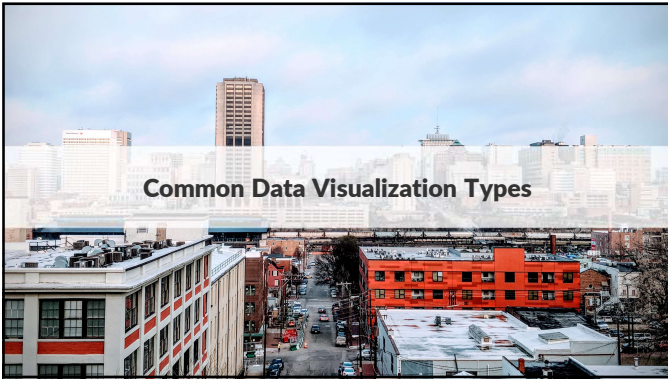
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### Common Data Visualization Types



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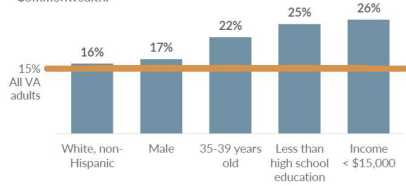
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### Bar Charts

Among all Virginia adults, the current cigarette smoking rate is 15%. However, the smoking rates among several subpopulations are disproportionately high compared to the average across the Commonwealth.



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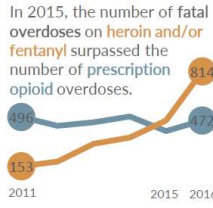
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### Line Graphs




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### Tables

|                                    |             | Rate per 100,000 (2015) | Rate per 100,000 (2016) | Change from 2015 to 2016* |
|------------------------------------|-------------|-------------------------|-------------------------|---------------------------|
| Opiate Prescription Drug Overdoses | Community X | 6.19                    | 7.44                    | No change                 |
|                                    | Community Y | 3.24                    | 4.00                    | ↑ Increased               |
| Heroin Overdoses                   | Community X | 4.83                    | 6.48                    | No change                 |
|                                    | Community Y | 3.53                    | 4.58                    | No change                 |
| Fentanyl Overdoses                 | Community X | 3.42                    | 8.54                    | ↑ Increased               |
|                                    | Community Y | 2.24                    | 6.45                    | ↑ Increased               |

\* Change is noted only when statistically significant.

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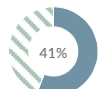
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### Pie Charts

Among Virginians, in the past 30 days:



of underage youth had at least one drink



of young adults 18-25 binge drank at least once



of all adults had at least one drink

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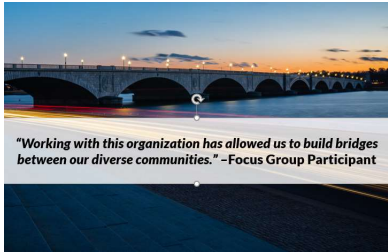
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### Photographs



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### Questions?



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### The Good, The Bad, and The Ugly



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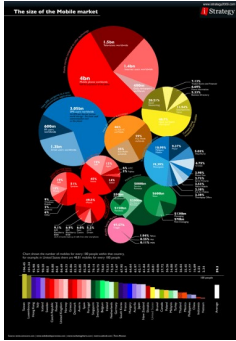
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### The Ugly...



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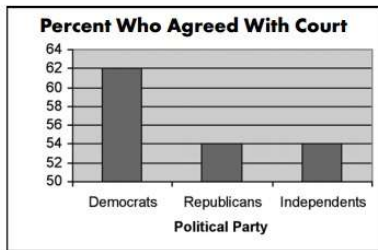
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### The Bad...



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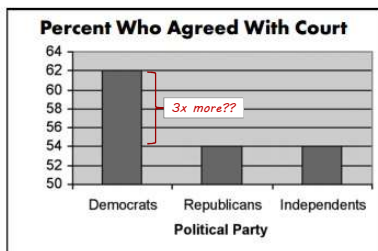
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### The Bad...



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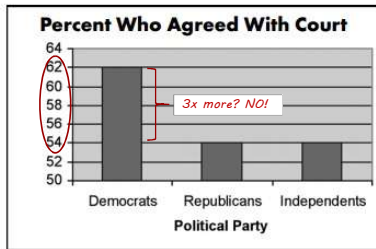
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### The Bad...




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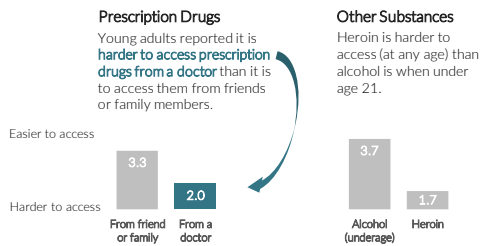
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### The Good...



Note: data presented here is fictional.

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### Best Practice Tips

- Highlight data to meet your audience's needs.
- Remove unnecessary components.
- Use the chart title to deliver your takeaway message.
- Use scale appropriately in charts.
- Use color intentionally and wisely.
- Arrange data meaningfully.

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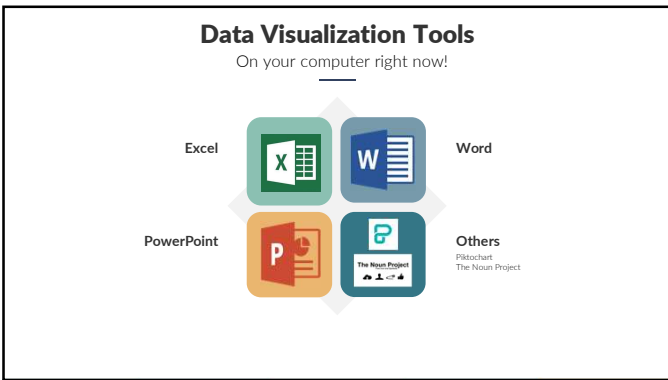
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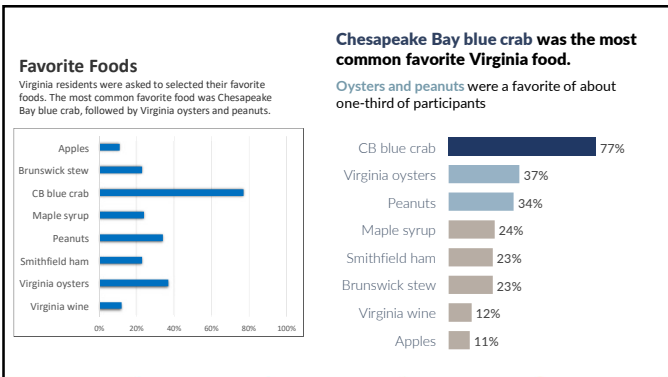
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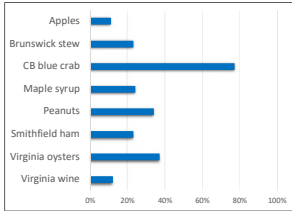
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### Favorite Foods

Virginia residents were asked to selected their favorite foods. The most common favorite food was Chesapeake Bay blue crab, followed by Virginia oysters and peanuts.




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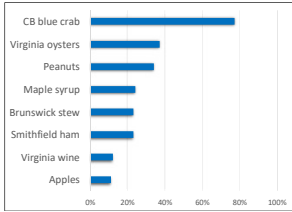
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1

Sort the data.

### Favorite Foods

Virginia residents were asked to selected their favorite foods. The most common favorite food was Chesapeake Bay blue crab, followed by Virginia oysters and peanuts.




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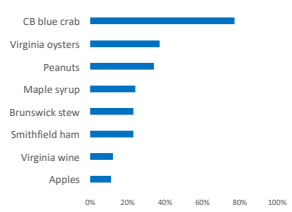
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2

Remove outline, gridlines, and shadows.

### Favorite Foods

Virginia residents were asked to selected their favorite foods. The most common favorite food was Chesapeake Bay blue crab, followed by Virginia oysters and peanuts.




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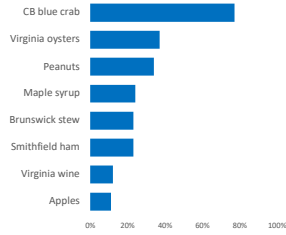
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3

**Widen bars.**

**Favorite Foods**

Virginia residents were asked to selected their favorite foods. The most common favorite food was Chesapeake Bay blue crab, followed by Virginia oysters and peanuts.

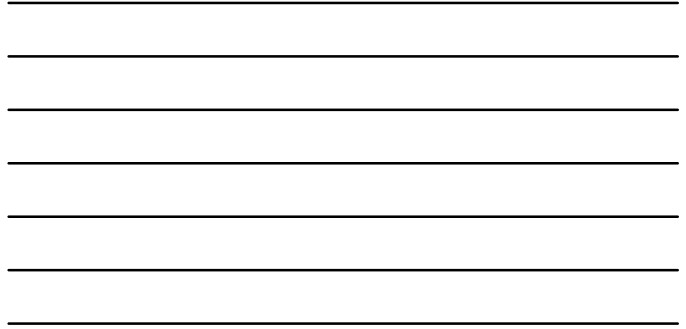
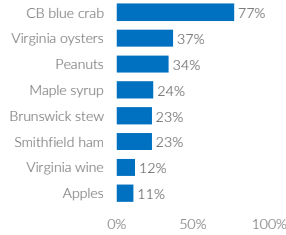


4

**Add data labels and adjust font.**

**Favorite Foods**

Virginia residents were asked to selected their favorite foods. The most common favorite food was Chesapeake Bay blue crab, followed by Virginia oysters and peanuts.

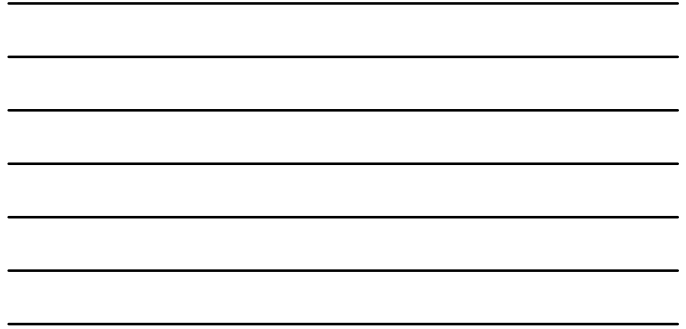
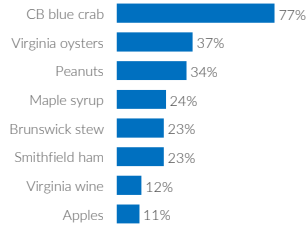


5

**Remove axis labels.**

**Favorite Foods**

Virginia residents were asked to selected their favorite foods. The most common favorite food was Chesapeake Bay blue crab, followed by Virginia oysters and peanuts.

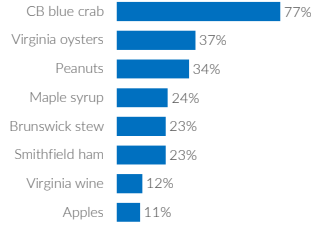


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**Make the title the takeaway message.**

**Chesapeake Bay blue crab was the most common favorite Virginia food.**

Oysters and peanuts were a favorite of about one-third of participants




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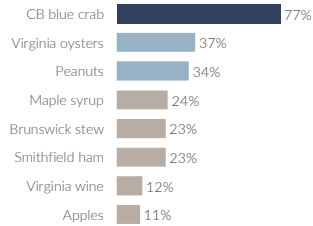
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**Use color intentionally.**

**Chesapeake Bay blue crab was the most common favorite Virginia food.**

Oysters and peanuts were a favorite of about one-third of participants




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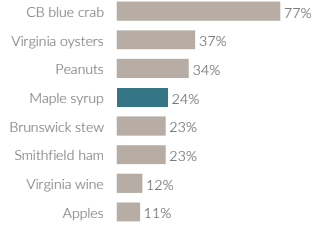
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7

**Use color intentionally.**

**In 2018, maple syrup dropped out of the top three Virginia favorite foods for the first time.**




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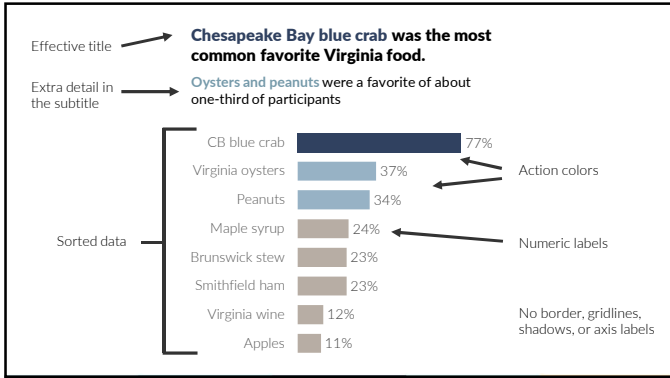
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**Data Visualization and Your Work**

Next Steps

- Where do you have an opportunity in your prevention work to make a new or improved visual?
- What other support or information would be helpful to build your data visualization skills?
- Contact OMNI Support for feedback and tips!*

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### Effective Data Visualization

“ Effective data visualization is a delicate balancing act between form and function. The data and the visuals need to work together, and there’s an art to combining great analysis with great storytelling. ”



Source: Data visualization beginner's guide  
<https://www.tableau.com/learn/articles/Data-Visualization#BCAS7uFuJdRNDHP-39>

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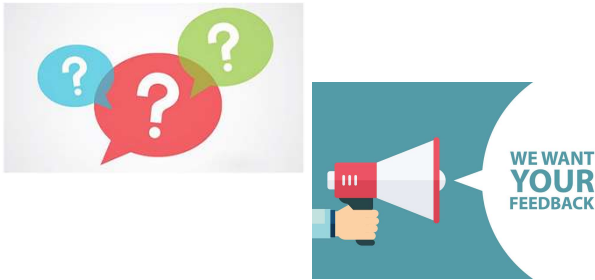
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### Closing Business



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**OMNI EvaluationTeam**  
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**Thank you!**

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