



Storytelling with Data Visualization: From Numbers to Impact

Special Session

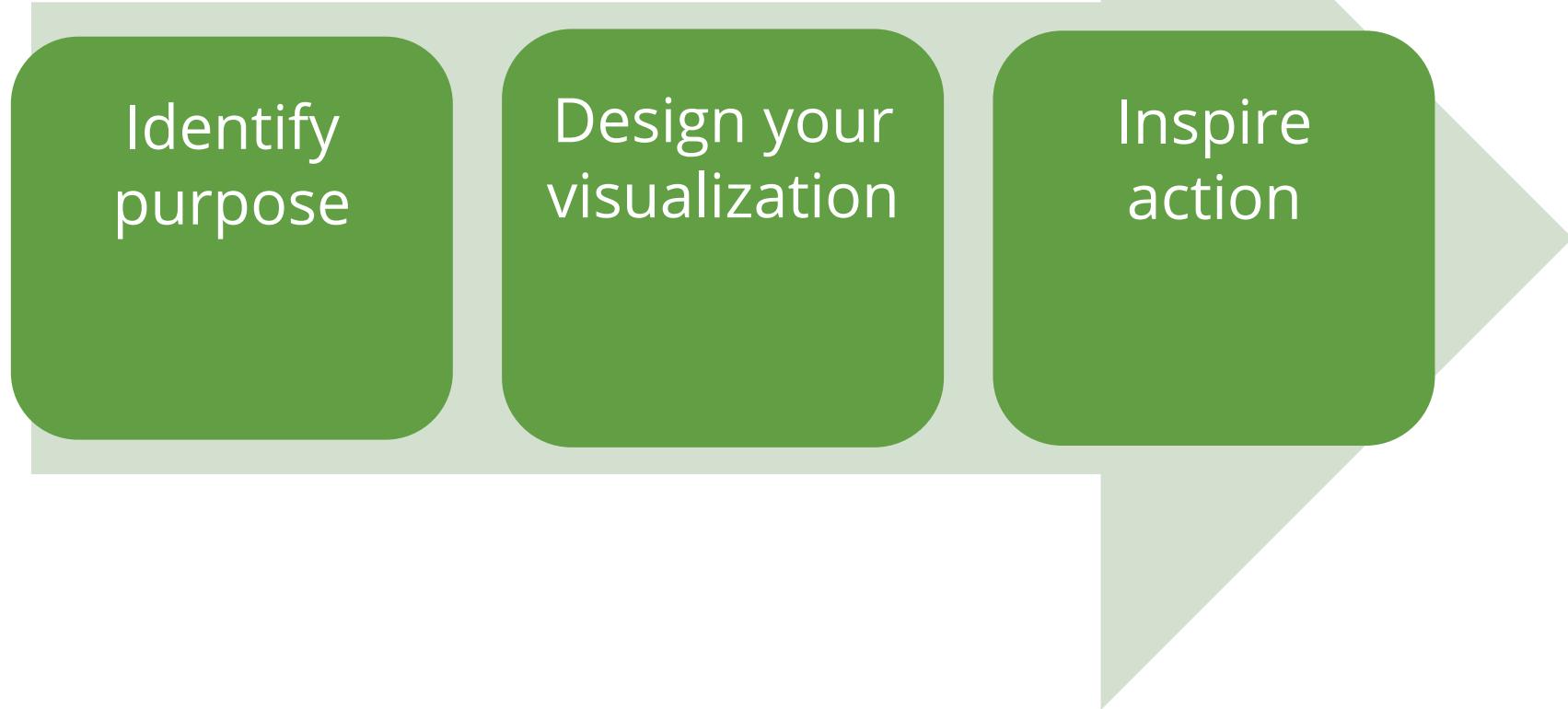
Session Goals

- Storytelling is easier than you think
- Small changes can make a big impact
- There are people in this room to support you
- It can be fun!



Storytelling with Data

Data Visualization Process



Identify your purpose

Start here



Identify your purpose

- Centering the purpose of a visualization throughout the design process will allow for more effective data messaging
- Purpose of your visualization hinges on audience
- Audiences have differing:
 - Baseline understanding
 - Needs
 - Uses

Questions to ask

- Who is your audience? What broader audience do they represent?
- What information do they need to know?
- How will this data inform their decisions/actions?



Example

Identify your purpose

Nathan Bunker

- Spends most of his free time exploring hiking trails in Southeast region of U.S.
- Travels predominantly by car
- Works from home but has school-aged children
- Works in data analysis role and understands complex medical language



Example

Who is your audience?

What do they want to know?

How will they use that information?

Outdoor Enthusiasts need to know **transmission risk in their U.S. region** so that they can adjust their activities.



You've been tapped!

- Your table must create a data visualization to communicate what we know about the outbreak to your audience.
- We will do this together in 3 different parts



Using your audience handout:

Part One: Identify the **purpose** of your visualization

- Who is your audience? What broader audience do they represent?
- What information do they need to know?
- How will this data inform their decisions/actions?

Example: *Outdoor Enthusiasts need to know transmission risk in their U.S. region so that they can adjust their activities.*

Examples

Assisted Living Facility residents need to **know if infection is spreading in these facilities** so they can **make safe housing decisions**.

Educators and Administrators need to know **if children are more vulnerable to infection** so they can **decide whether to safely keep schools open**.

Government Officials need to know **if infection is spread by mass transit** so they can **decide whether to close public transportation**.

Health Officials need to know **behavioral risk factors for infection** so they can **prevent additional infections among the population**.

Design your visualization

Details matter



Design your visualization

Begin planning visualization with purpose and audience in mind



Think about what data will help meet audiences needs



Identify best visualization type and design elements to convey message

Questions to ask

- What data do you have that could provide answers to the audience's need? What other data would be useful?
- What type of data visualization would be best to convey this information to this audience?
- What additional considerations may be important to incorporate to make sure the visual meets the need of your audience? (visual, language, color, accessibility, etc.)

Outdoor Enthusiasts need to know transmission risk in their U.S. region so that they can adjust their activities.

What data do you have?

Region, Age, Urbanicity,
Transportation, *Activity*

What type of visualizations would be best?

Maps by region,
Bar charts by age

What additional considerations should you incorporate?

Utilize color to help interpret risk, use plain language

Visualization Types

Bar/Column
Chart

Line Graph

Pie Chart

Heat Map

Bubble
Charts

Scatter
Plots

Bullet
Graph

Maps

Lollipop
Chart



Using your audience handout:

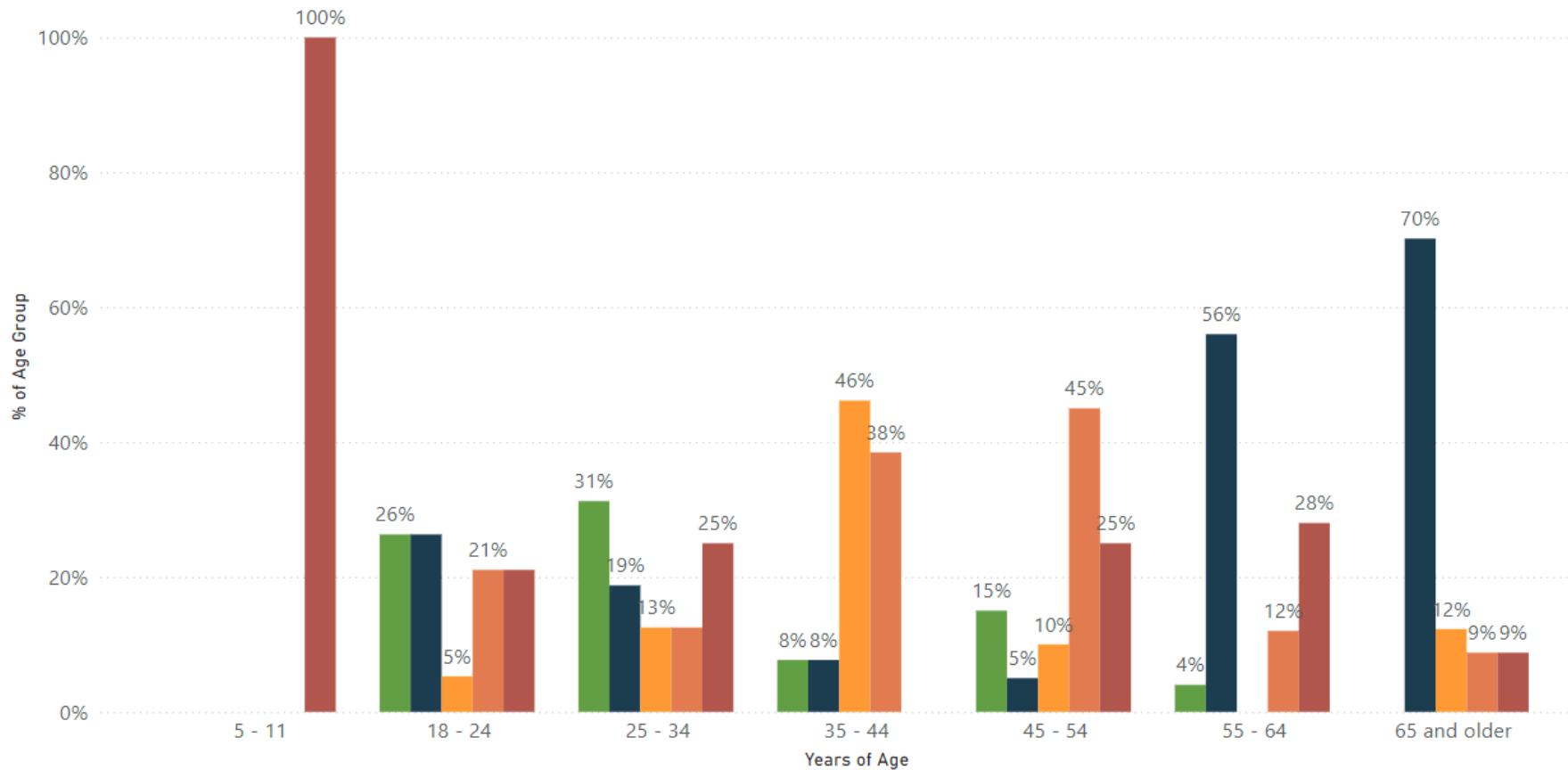
Part Two: Create the **data & design elements** of your visualization

- What data do you have that could provide answers to the audience's need? What other data would be useful?
- What type of data visualization would be best to convey this information to this audience?
- What additional considerations may be important to incorporate to make sure the visual meets the need of your audience? (visual, language, color, accessibility, etc.)

Assisted Living Facility Residents

Distribution of Infections Across Age Groups and Residence Types

Residence Type ● Apartment ● Assisted Living Facility ● Condo ● Congregate Housing ● Single-family home



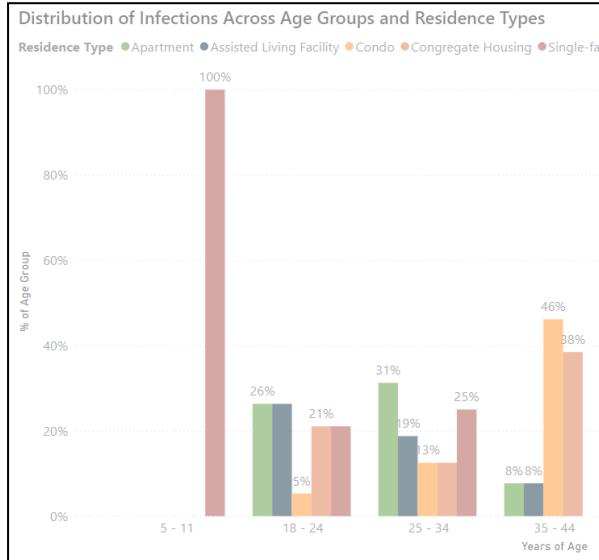
rs and older with infections
Assisted living facility residents.

Individuals 65 years and older
Assisted living facility residents.

Assisted Living Facility Residents

70% 

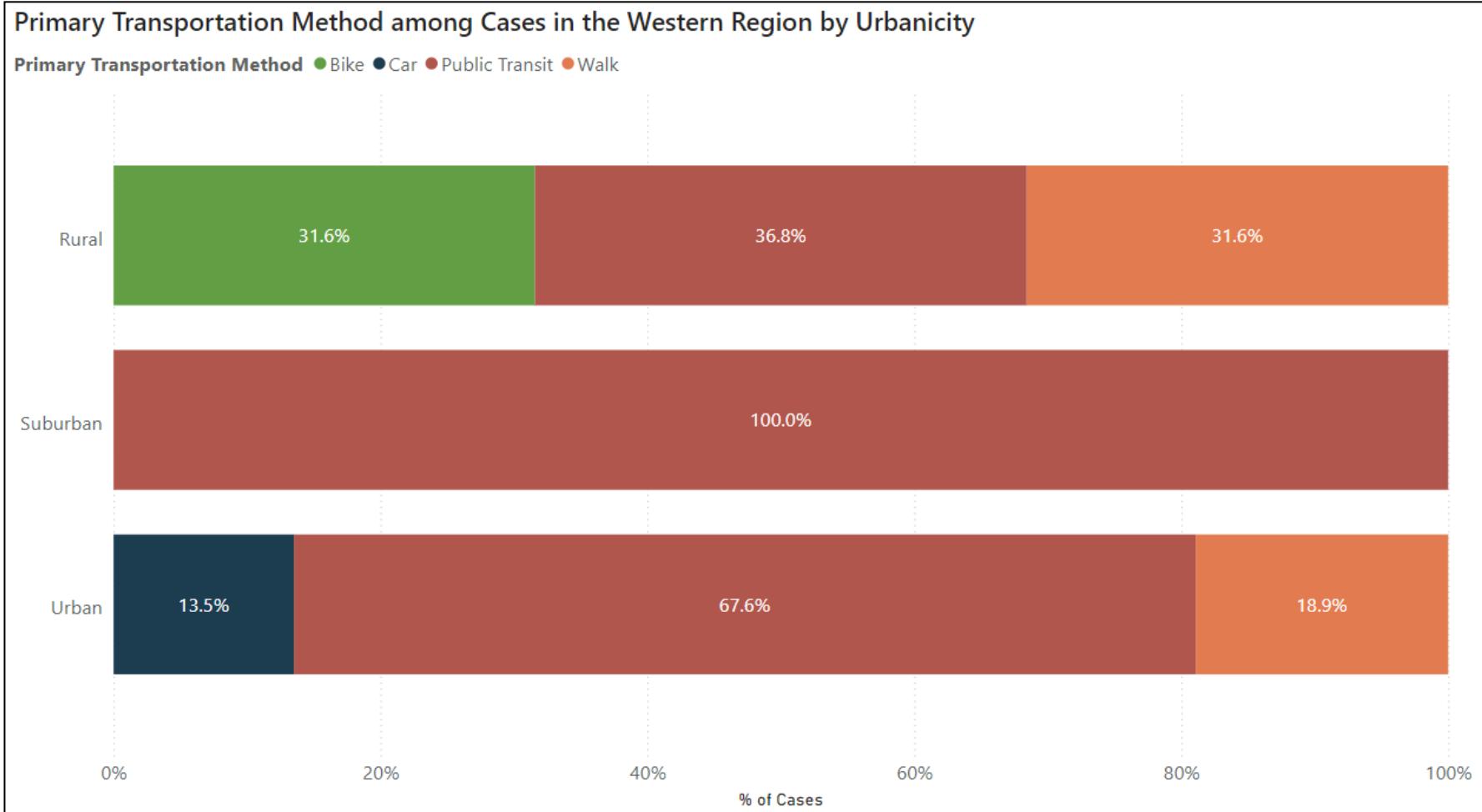
of people 65 years and older with infections
are **assisted living facility residents**.



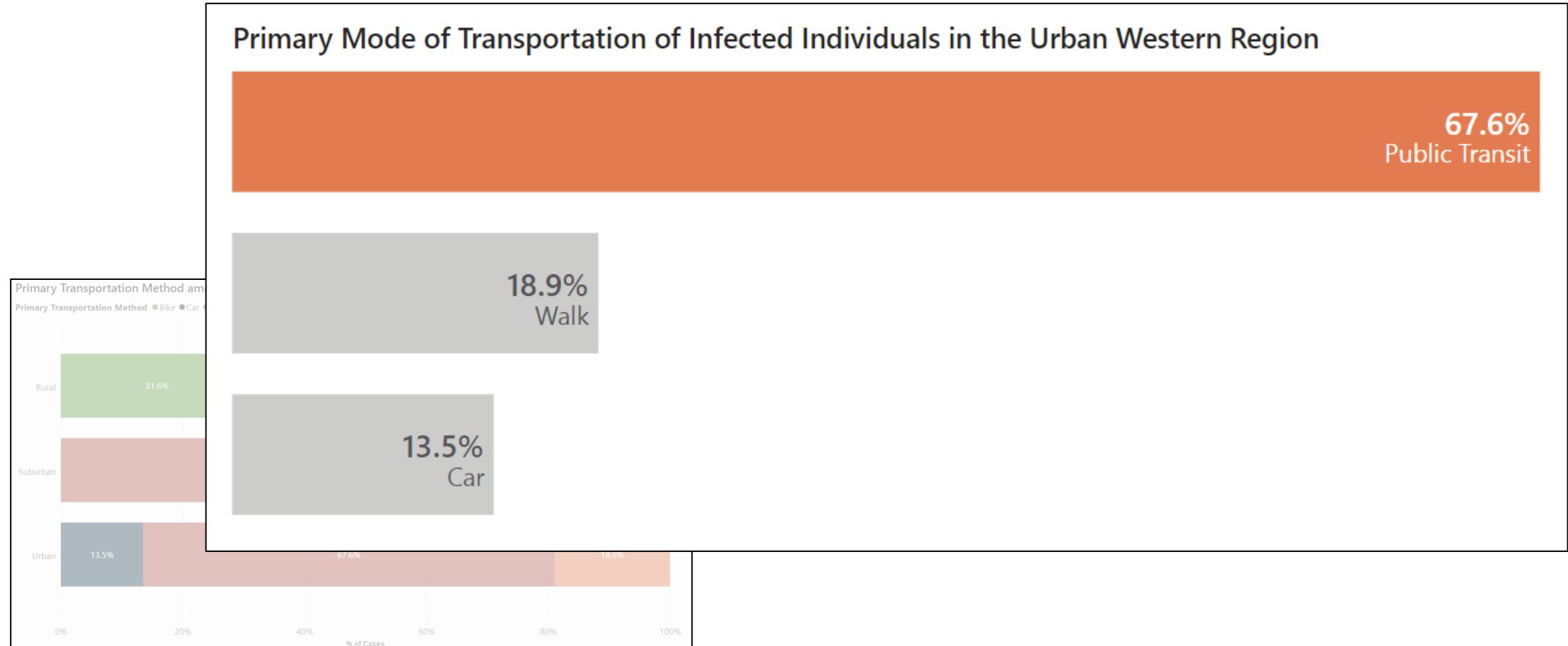
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of infected individuals 65 years and older
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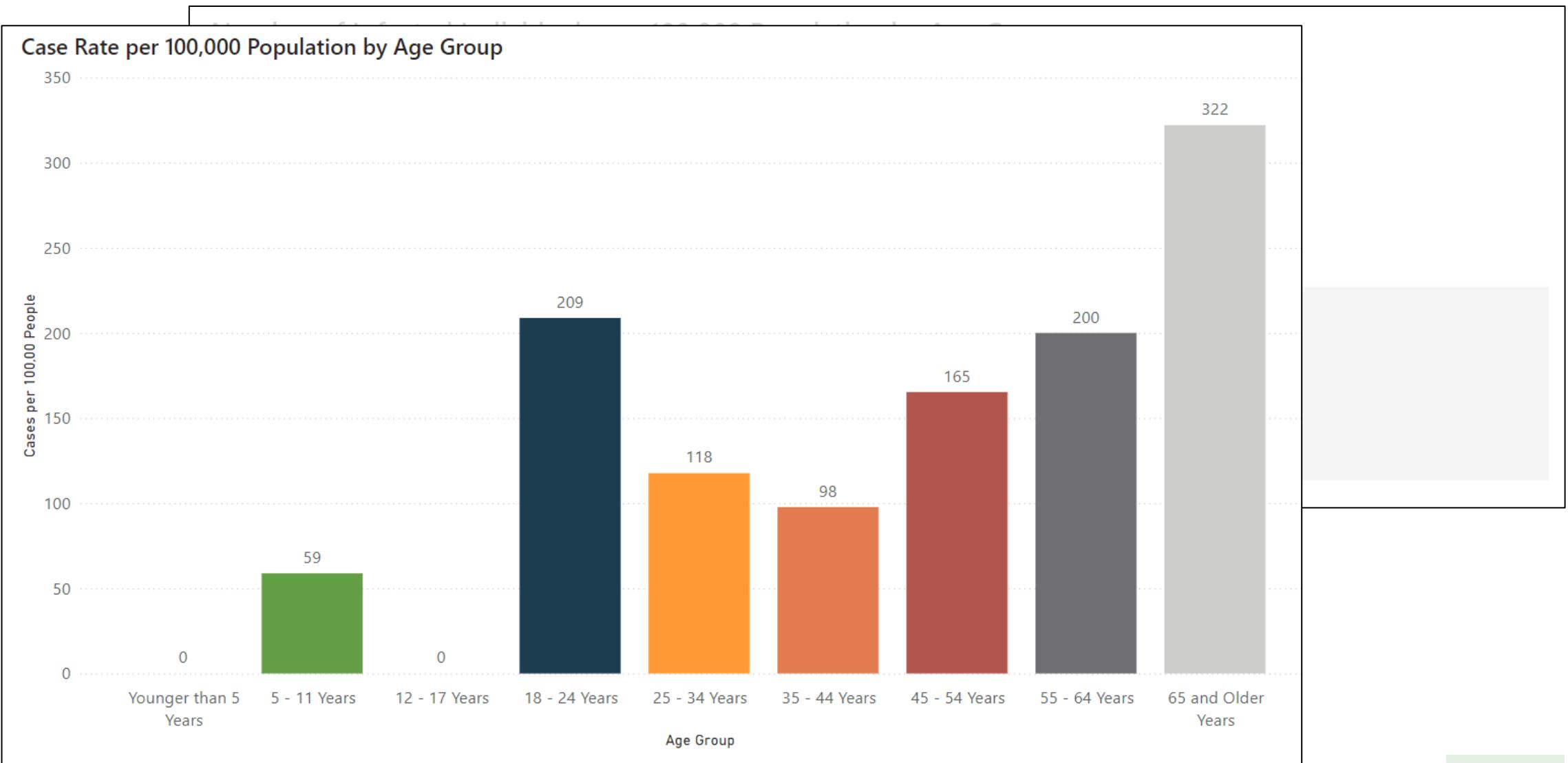
Government Officials



Government Officials



School Administrators



School Administrators

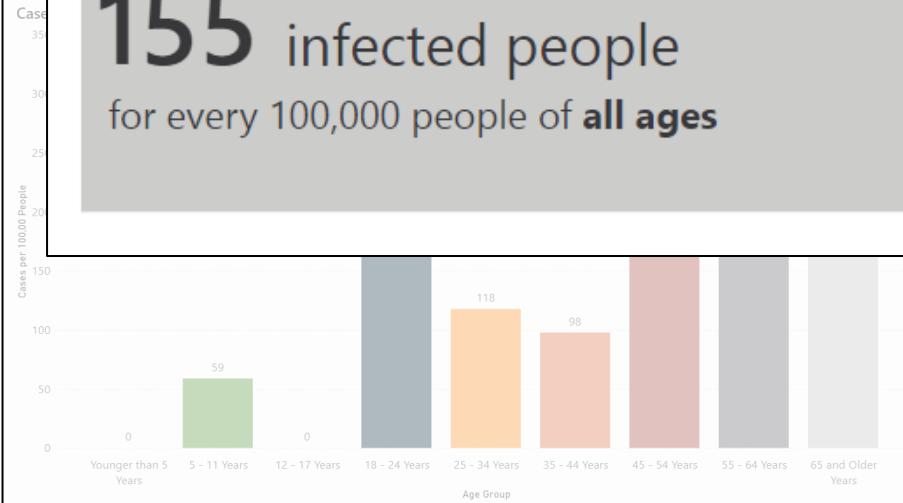
Number of Infected Individuals per 100,000 Population by Age Group

59 infected children

for every 100,000 children **5-11 years old**

155 infected people

for every 100,000 people of **all ages**



Inspire action

What now?



Inspire action

- You won't always be there to interpret the visualization for your audience
- What can you create to convey a consistent message?
- Ensure distribution to audience that needs it



Format matters!

Dashboard

- Interactivity for needs of various audiences
- Can use multiple visualizations for more complex data stories
- Ongoing data updates

- Can be harder for some to interpret
- Higher development costs

Infographic

- Can get a message across quickly
- Great for wide distribution
- Able to include key insights or next steps

- Need to be able to summarize visual easily
- Static visuals

Oral Presentation

- Combines narrative, data, and visualizations
- Adaptable to the needs of different audiences

- Visualization must be easy to digest quickly
- Not scalable for larger audiences
- Content generally not interactive

Questions

- What kinds of calls to action and next steps can you provide to assist your audience in utilizing the data?
- What other elements or perspectives might affect the interpretation across various audiences?
- What other considerations can you include to ensure your data does no harm and has the greatest impact?



Using your audience handout:

Part Three: Plan for the **communication and distribution** of your data visualization

- How should you distribute this data visualization with your audience in mind? (ex: mobile content, dashboard, presentation, in local media)
- What strengths or challenges might your audience have in interpreting the data or applying this call to action?
- What other information or resources might be important to include along with your visual to ensure consistent messaging is conveyed?

Health Official

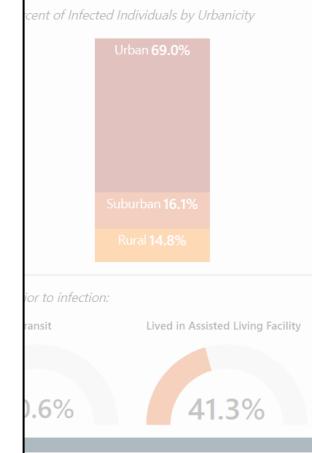
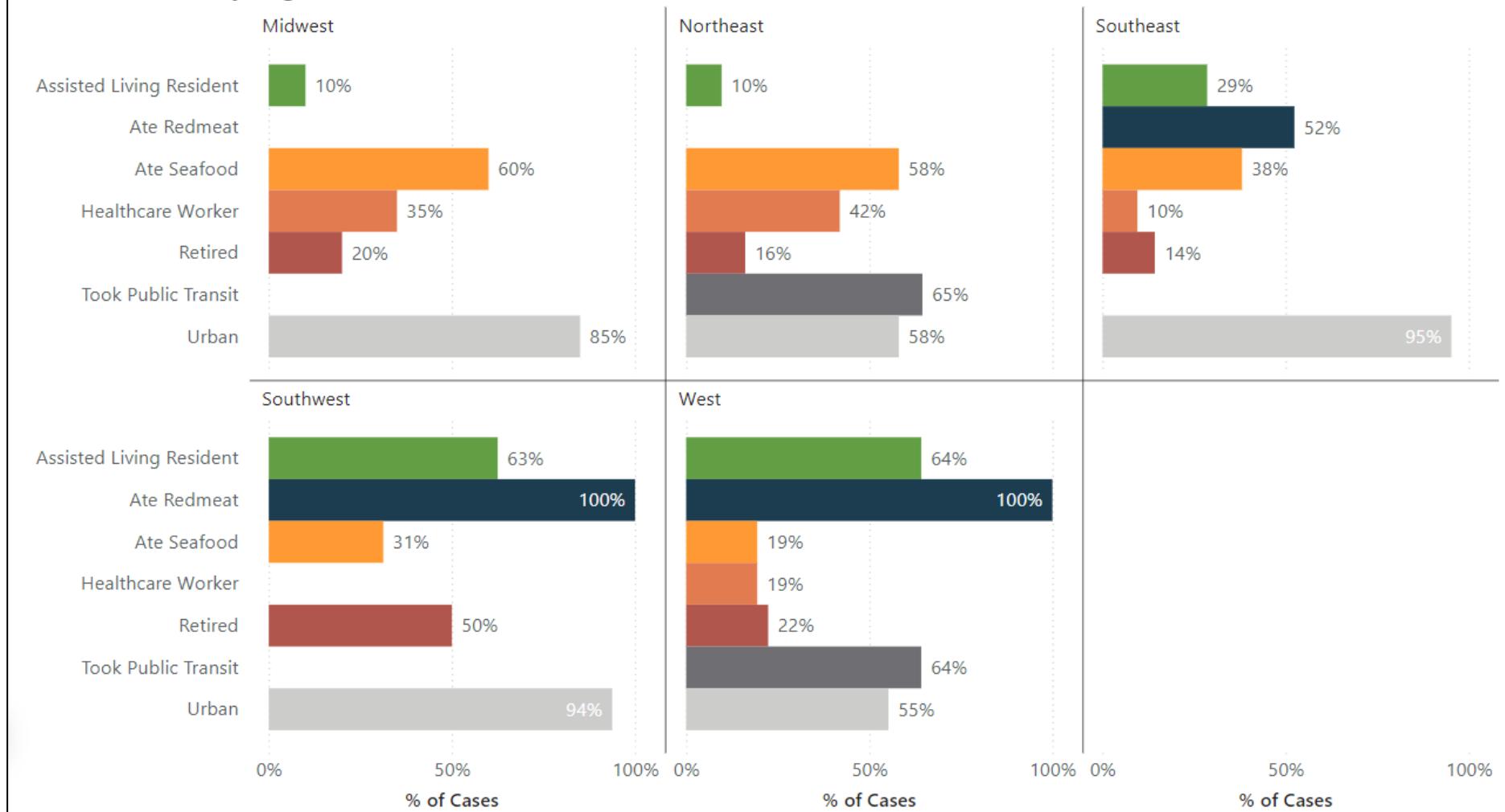
Regional Infection Risk Data Dashboard

Data as of 5.7.2024

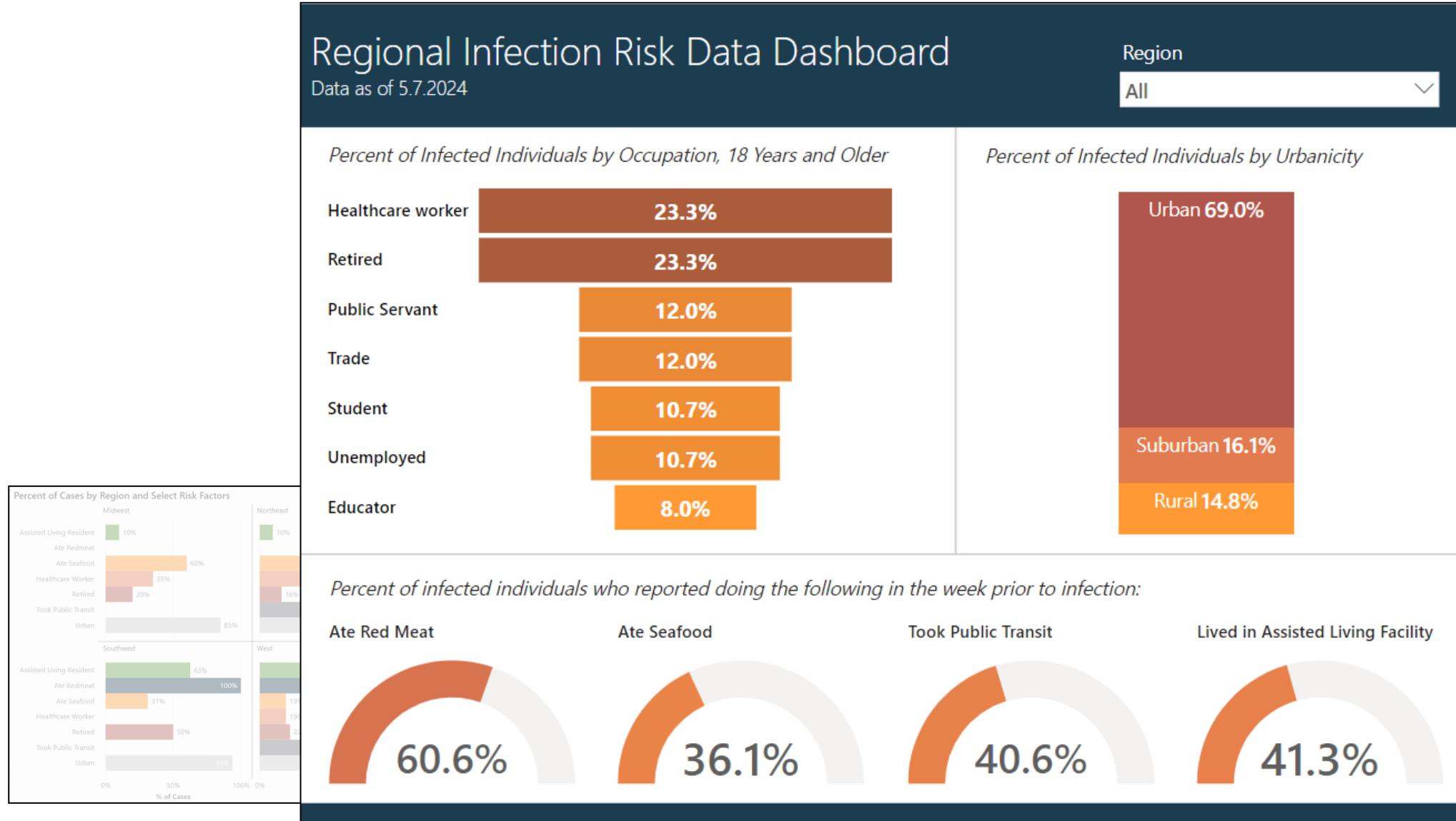
Region

All

Percent of Cases by Region and Select Risk Factors



Health Official



Assisted Living Facility Residents

70% 

of people 65 years and older with infections
are **assisted living facility residents**.

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of infected individuals 65 years and older
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Ways to keep yourself or your loved one healthy in assisted living facilities:

- Consider staying with a relative outside the facility
- Limit attendance at group activities
- Encourage early vaccination when available



A photograph of palm tree fronds against a bright, clear sky. The fronds are dark green on top and transition to a golden-yellow at the base, suggesting sunlight. The background is a solid, bright cyan color.

Wrap Up

Remember:

- Storytelling is easier than you think
- Small changes can make a big impact
- There are people in this room to support you
- It can be fun!

Get connected

- Continue this conversation with your peers on the **IIS Data Analyst Forum**
- Kate Lewandowski (Washington State Department of Health): Katherine.Lewandowski@doh.wa.gov
- Taylor Boomsma (AIRA): tboomsma@immregistries.org

Get Involved

- **Data Visualization User Groups for Tableau and Power BI**
 - Present your work and learn from your peers!
- **IIS Data Analyst Collaborative (IDAC)**
 - Bi-monthly active discussion on topics relevant to IIS data analysts
- **IIS Data Analyst Forum (IDAF)**
 - Engage with the community in real time in an on-line forum
- **IIS Data Analyst Network (IDAN)**
 - Pair program for professional peer support



Special Thank You

Sydney Kuramoto – Minnesota Department of Health

Tavio Pirocchi – Colorado Department of Public Health and Environment