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Beyond Word Clouds: Crafting Creative Qualitative Visualization

American Evaluation Association

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PATH

1 PATH and our orientation

2 The visualization process

3 Qualitative chart chooser

4 Case study

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PATH is a global team of innovators working to eliminate health inequities so people, communities, and economies can thrive.

Photos: PATH/Aaron Joel Santos, PATH/Gabe Bienczycki, PATH/Gabe Bienczycki

PATH

Specializing in designing, developing, and scaling solutions in five core areas:

- Vaccines
- Diagnostics
- Drugs
- Devices
- Health systems

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Why visualize qualitative data?

We want to tell a compelling, memorable story!

Visualizing qualitative data helps show patterns in textual datasets and gives readers greater analytic transparency

This can include ‘compressing’ or quantifying qualitative data (while retaining the richness of the text)

Defining our terms

- **Case:** a single record of data. Typically, this is a single respondent, but it could be a single focus group or a single interview.
- **Themes:** a shared conceptual category to which chunks of qualitative data are assigned, in order to identify patterns in the data
- **Within-case:** captures the pattern of multiple themes observed *within* a single case, in order to understand the nuanced perspective of individuals
- **Across-case**: presents the pattern of multiple themes *across* all of the cases to understand population level opinions and perspectives

	Theme: a concept used in analysis		**Theme 3:** Distrust of Vaccines
Case: a single respondent	Because my child has received the vaccines, he does not get sick, so I am very glad for the vaccines.	**Across-case:** Examining the nuances *across* the entire population. For instance, multiple cases show a trust in health workers, predominantly driven by their perception of competence (education), and their interpersonal experiences.	I used to worry about the vaccines, because the child's leg would swell. But I have learned.
Case 2			
Case 3	Please, we used to have measles here, but now because of the vaccines it has gone. I want them to bring a vaccine for malaria too.		
Case 4			The government blamed my church for the measles outbreak, and since then I have not taken the vaccine. It is in God's hands only.

Within-case: Examining the nuances *within* a single respondent. For instance, this woman's trust is heavily driven by interpersonal relationships, which exemplifies itself as a trust in the health worker (who she knows), but a distrust in vaccines (where she doesn't understand the ownership of)

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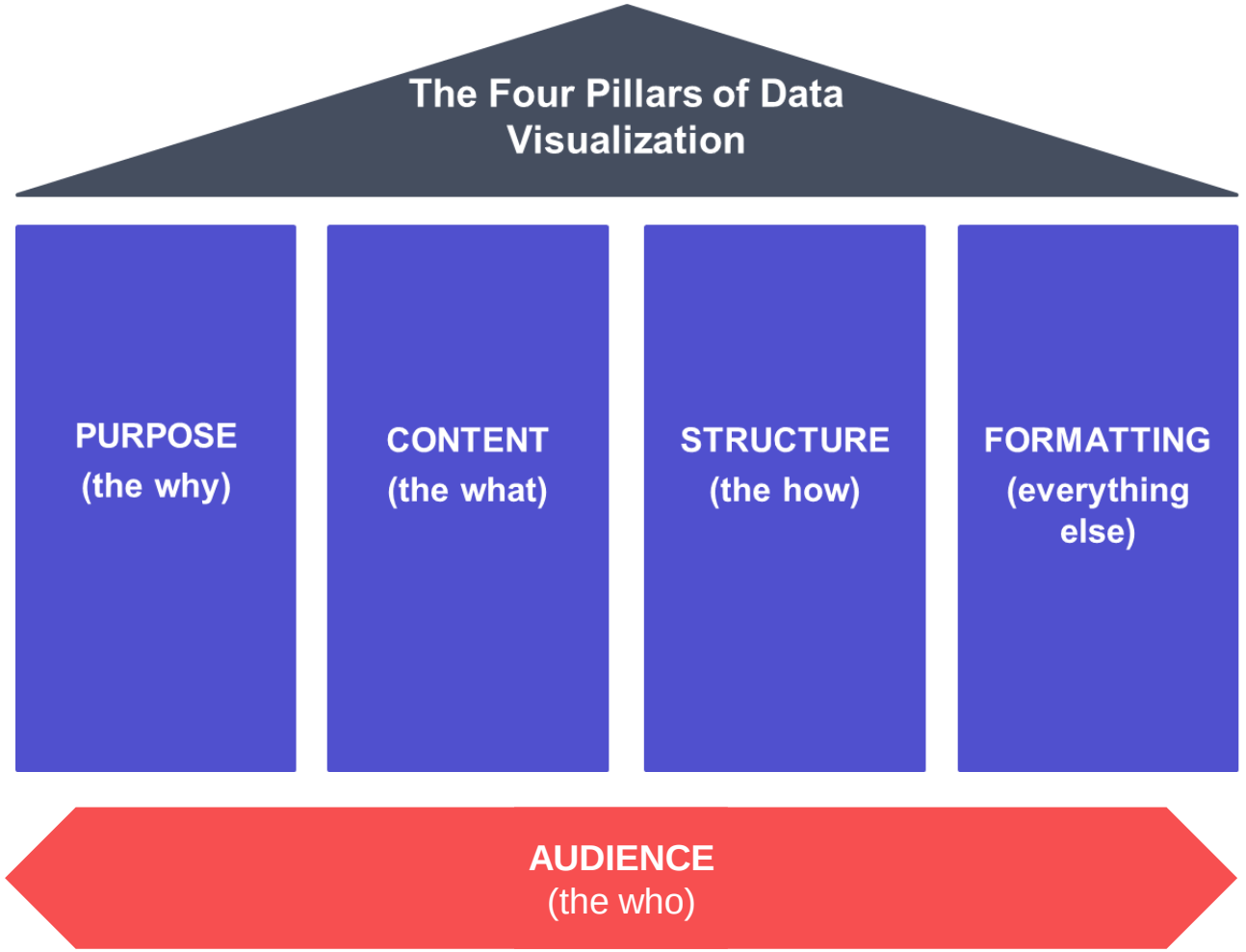
Creating visualizations: the process



Four Pillars of Data Visualization by Noah Iliinsky

Purpose > Content > Structure > Formatting

Identify the goal:

- Why am I creating this visualization (what is the purpose)?
- What is the business question being answered?
- Who is the audience and what do they need to understand?

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Purpose > Content > Structure > Formatting

Not all information is equally important!

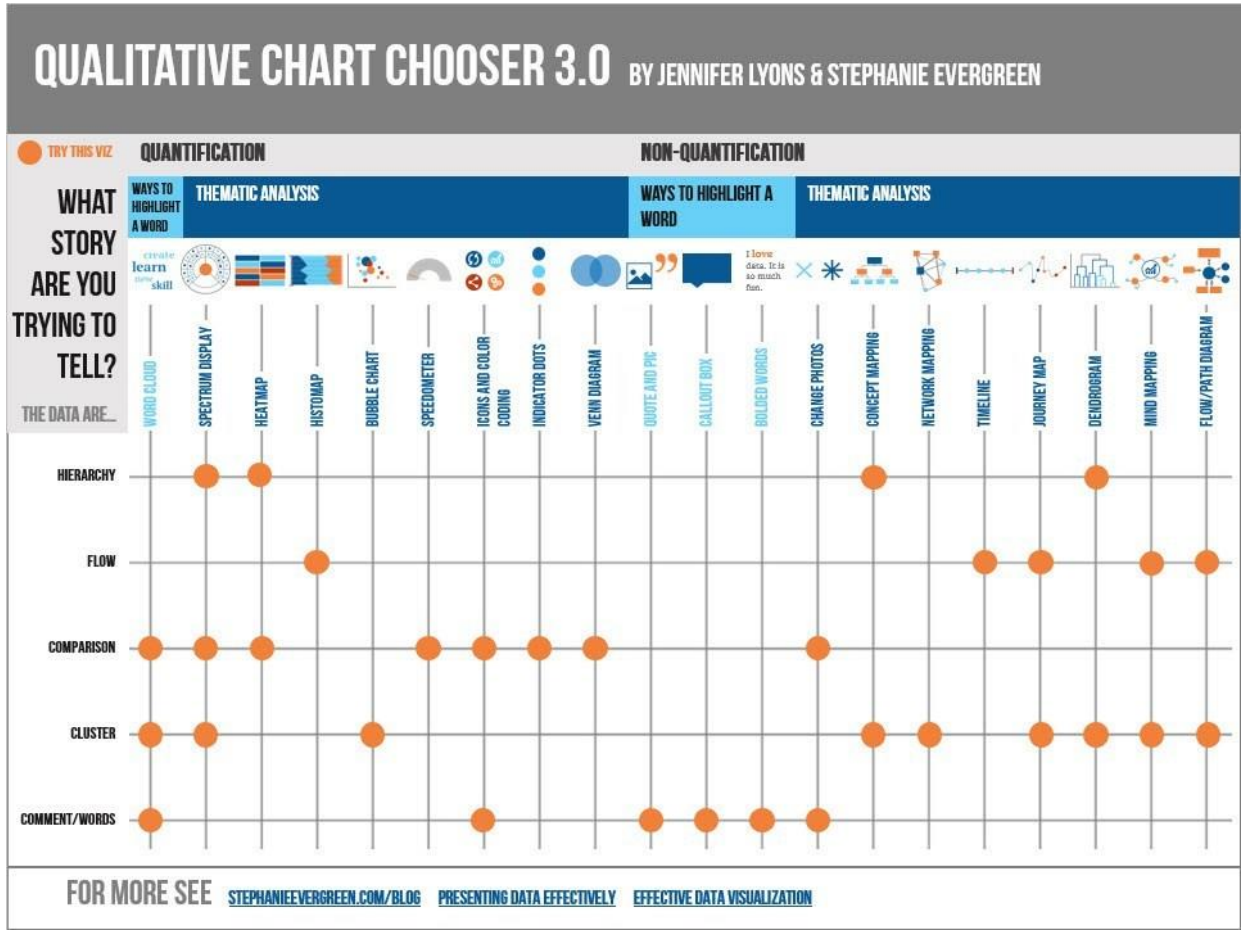
Consider:

- What data matter?
- What relationships matter?
- Are you looking at a single case or across multiple cases?

Avoid the kitchen sink!

Purpose > Content > Structure > Formatting

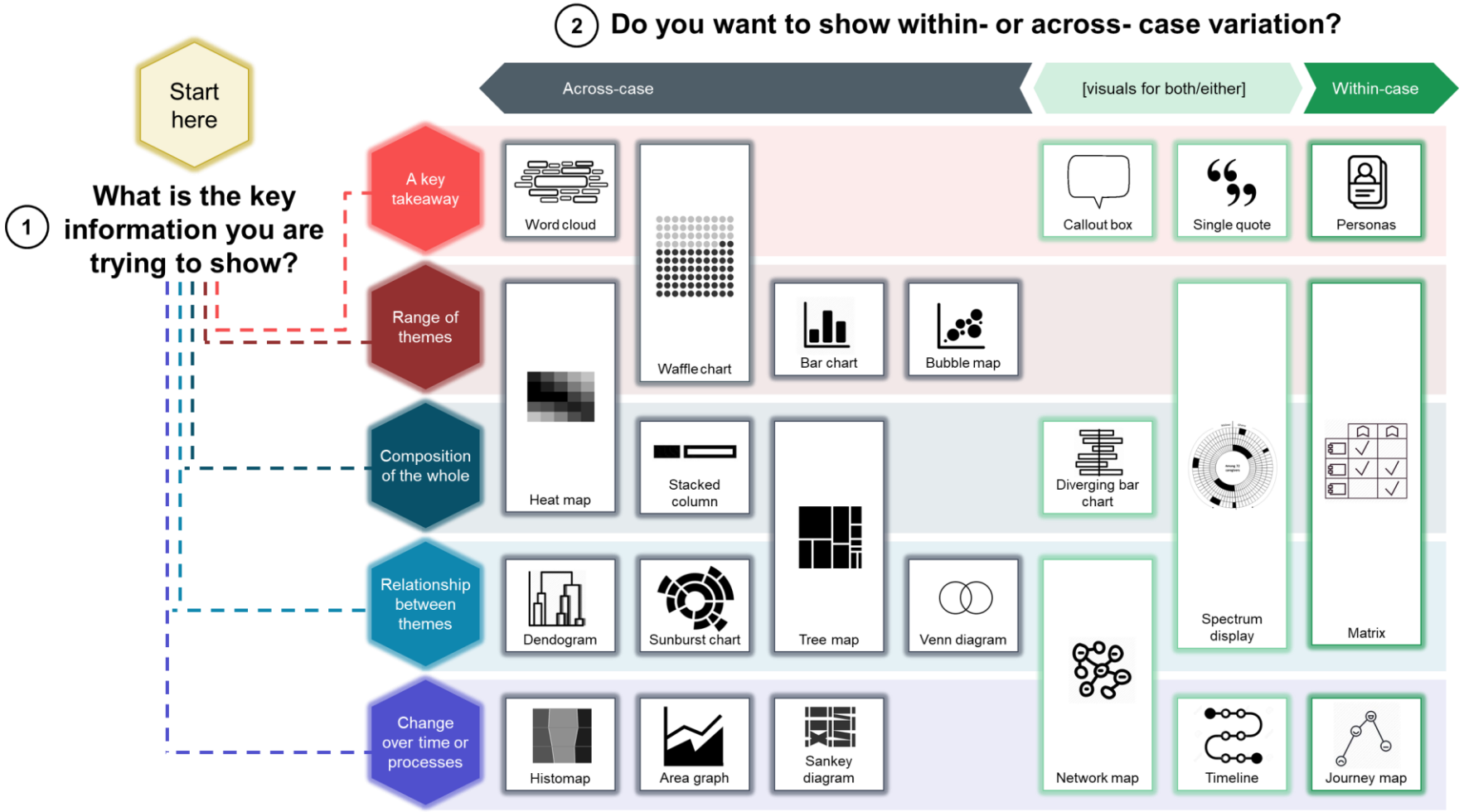
Our original inspiration:



https://stephanieevergreen.com/qualitative-chart-chooser-3/

Purpose > Content > Structure > Formatting

Our evolution:



Purpose > Content > Structure > Formatting

Designing the look and feel of the visualization:

- Consider audience and what they need to support their next steps
- What is the delivery method?

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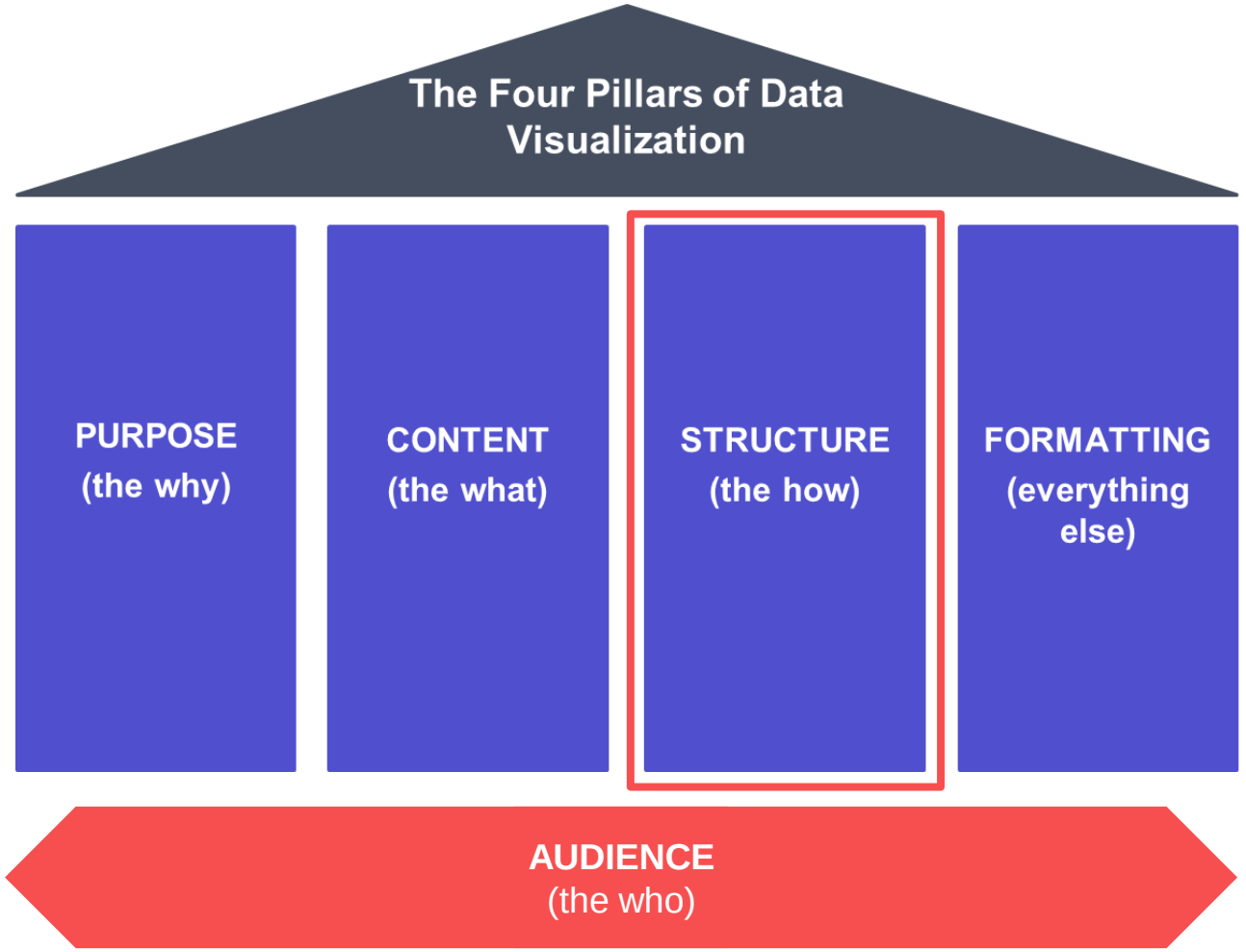
Creating visualizations: the process



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Start here

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2 Do you want to show within- or across- case variation?

Across-case | [visuals for both/either] | Within-case

- A key takeaway
  - Word cloud
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- Range of themes
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- Change over time or processes
  - Histomap
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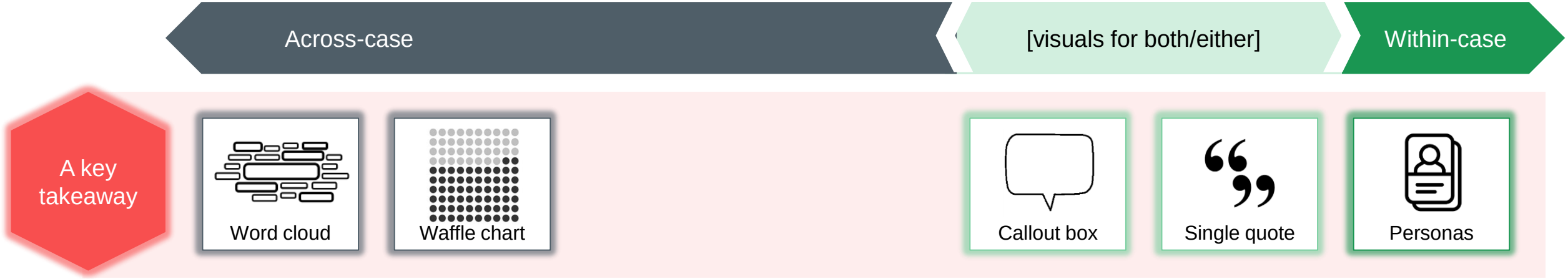
Deep Dive: Key Takeaways

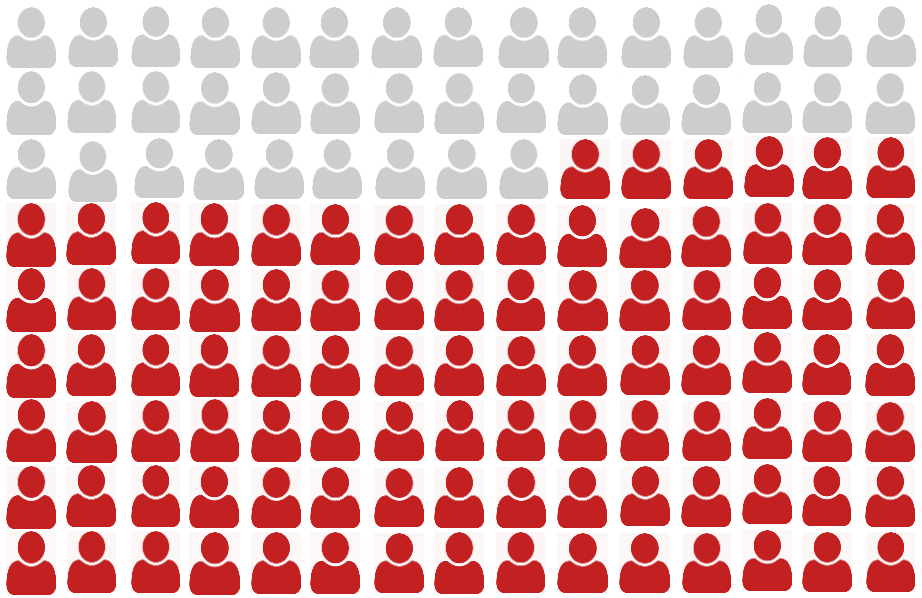


Key takeaways….

- Highlight an important quote, case, or theme
- Emphasize a ‘headline’ point you want your audience to remember

Example: Key Takeaways

95 out of 135 families **had not heard** about the new intervention.



"I don't think there have been any new services at the facility. If there are new services, they have an event where they tell us about these things, and we have not heard of any events. So I do not think there is anything new at the clinic."

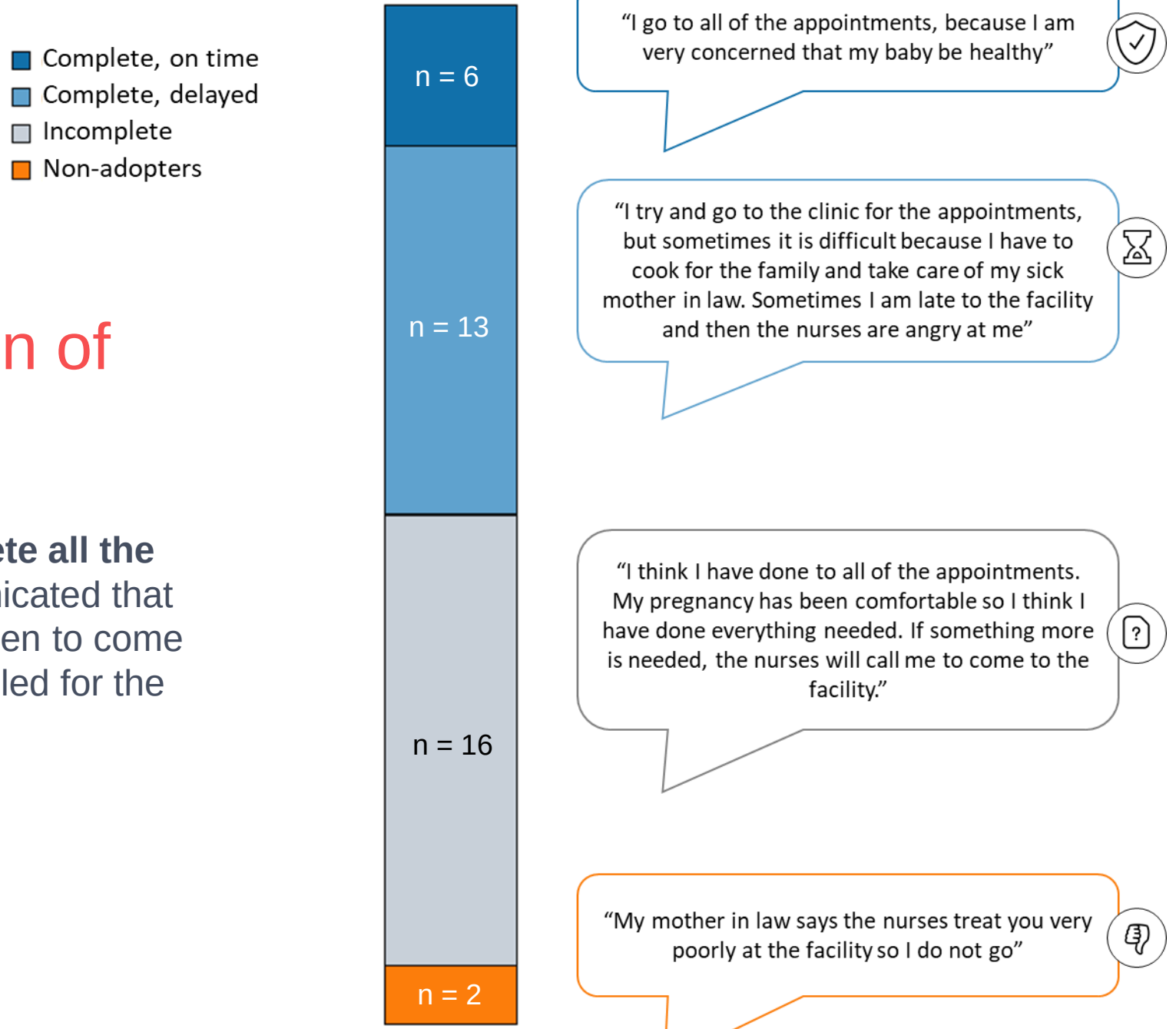
Deep Dive: Composition of the Whole

Composition of the whole….

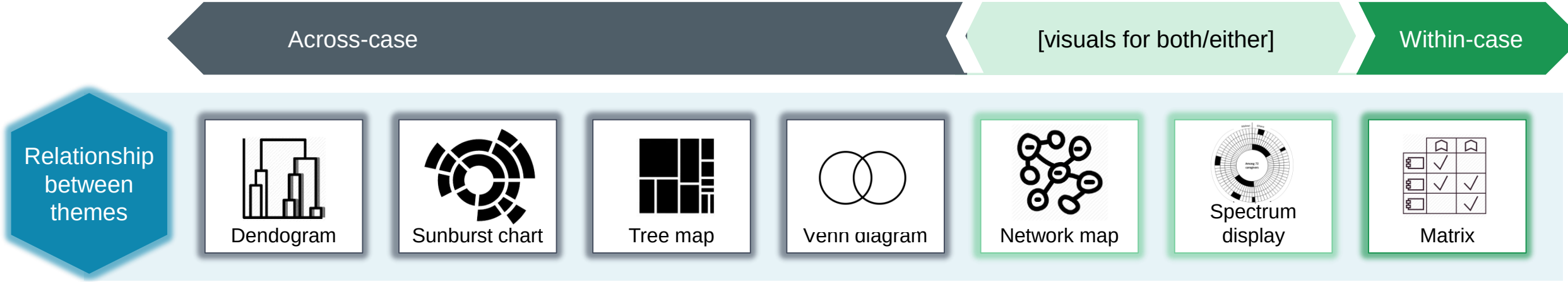
- Shows the proportional makeup of cases or themes within your sample

Example: Composition of the Whole

About half of mothers **did not complete all the intervention visits**. Mothers communicated that **they relied on nurses** to tell them when to come to the clinic and they had not been called for the service.



Deep Dive: Relationship Between Themes



Relationship between themes…

- Highlights the concordance and overlap between different cases and themes (or discordance)
- Emphasizes the interconnectivity of cases and themes

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Example: Relationship Between Themes

Most households own **a bed net.** However, only about **three quarters use the bed net as intended** for the child; those who don't, say that their child didn't like the net or someone else used it.

"I use the bed net all the time. It will help to keep my family healthy. Even when my child cries I make him use it."

"We have a bed net in the household, but the child cries when I put him under it, so I do not use it."

"We do not have a bed net. The government has not given in our village, and they are quite costly."

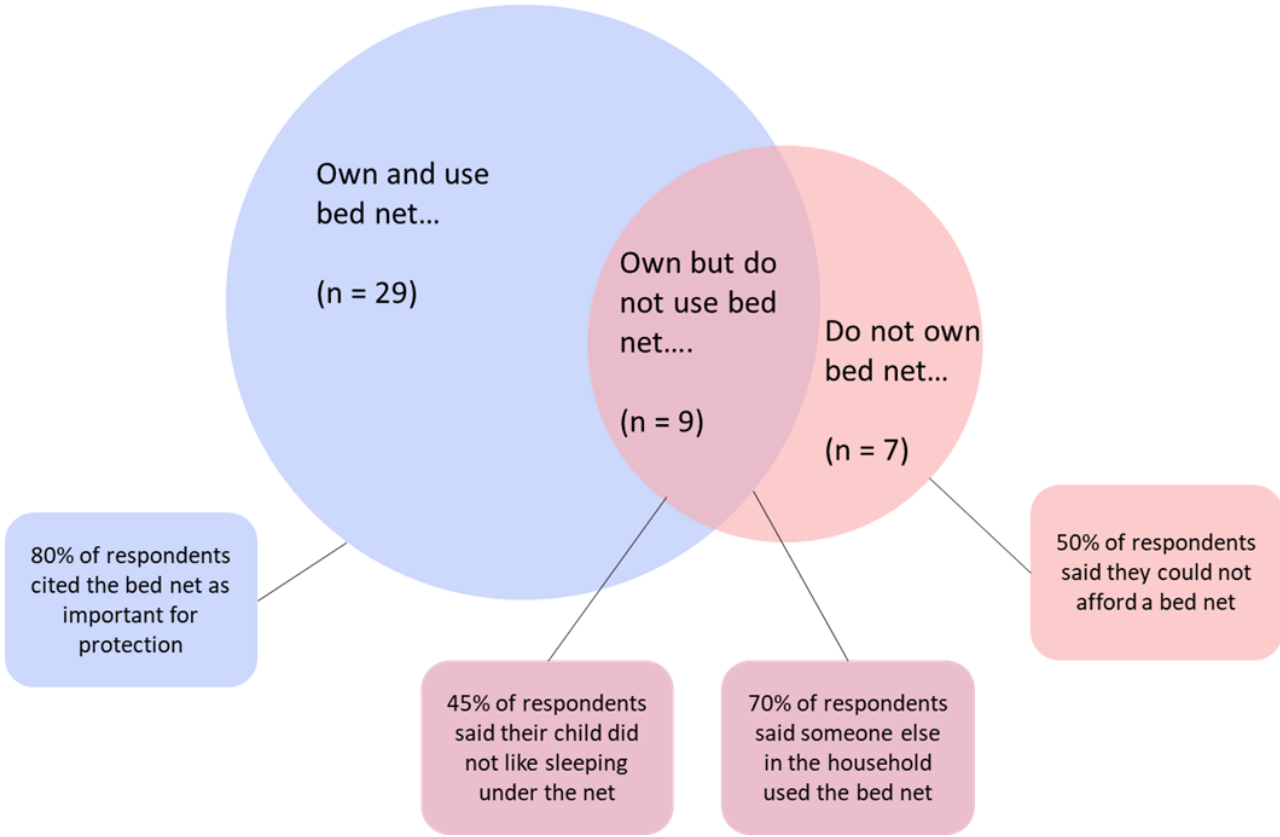
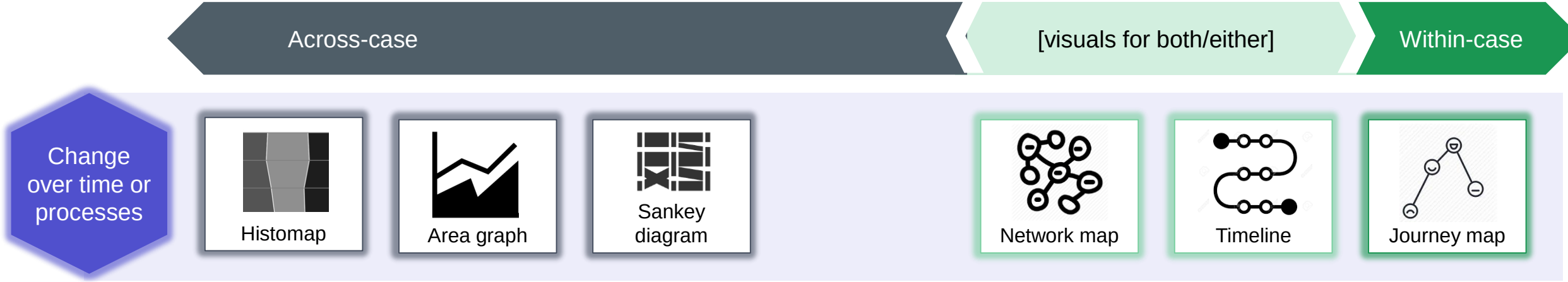


Chart Chooser: Change Over Time or Processes

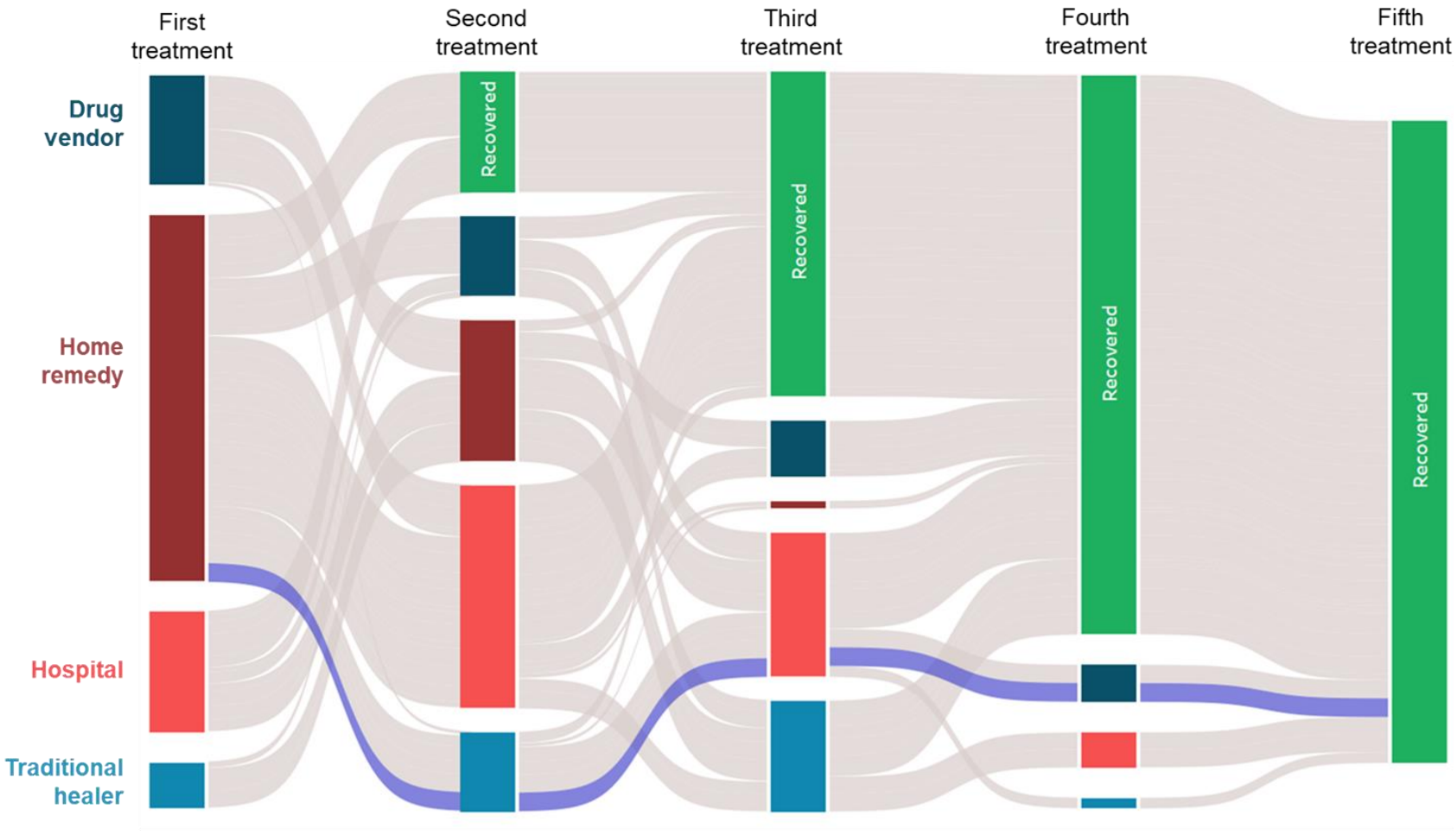


Change over time / processes…

- Illustrates the journey or pathway that an individual takes through a process
- Highlights longitudinal changes in themes or cases

Example: Change Over Time or Processes

Most parents first line of defense against malaria was **a home remedy, followed by a hospital visit**. About half of infants had recovered after two treatment attempts; most had recovered after three.



My child fell ill when I had no money for transport, so I just bathed him at home

▼

But he was still ill, so I took him to the elders and they gave me holy water for him

▼

After waiting several days, I became quite scared so I took him to the nurse who gave me drugs

▼

His appetite was still poor though, so I don't think the drugs worked. I took him to the pharmacist, and he said, no, he is okay now

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Case Study 1: Evaluating the Feasibility of a New Vaccine Introduction

- We are conducting a qualitative study of the acceptability of a new vaccine that is introduced in three countries.
- Caregivers are interviewed to understand their perception of the health system, vaccination, and the new vaccine that has been introduced.
- Their interviews are inductively coded for the major themes around trust with respect to vaccination services.
- Each case has been assigned to a group based upon overall ‘sentiment’ of their interview: unsupportive, passive, or supportive of vaccination.

Case Study 1: Purpose and Content

Purpose:

Across the population, what is trust in the new vaccine?

Across the population, what is people's trust in vaccination generally?

Content:

72 interviews with caregivers of vaccine-eligible children*

*(each assigned to a group based on their overall stance on vaccination)

Thematic codes on trust:

- Benefits of the new vaccine
- Vaccine safety and efficacy
- Historical reference
- Health system performance
- Governmental intentions
- External influencers

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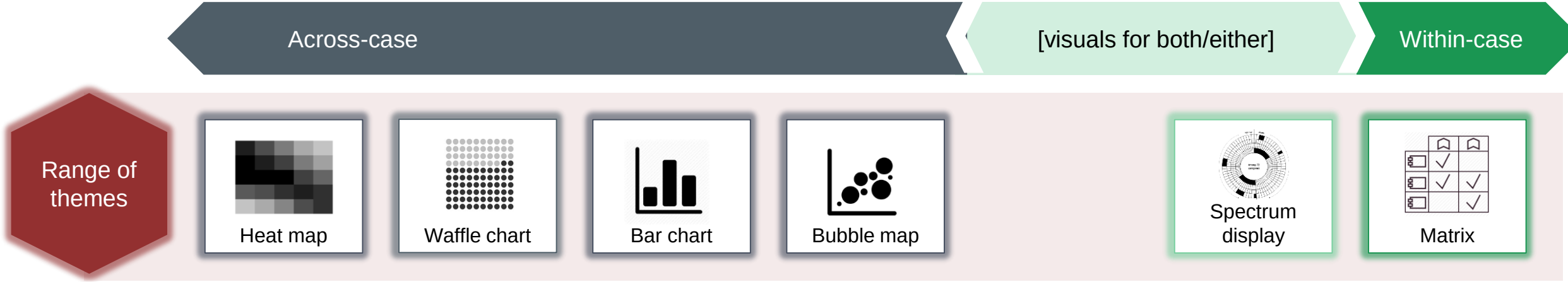
Chart Chooser: Range of Themes



Range of themes…

- Highlights the relative frequency of themes (most and least) and clustering
- Emphasizes the diversity of themes or cases within your data

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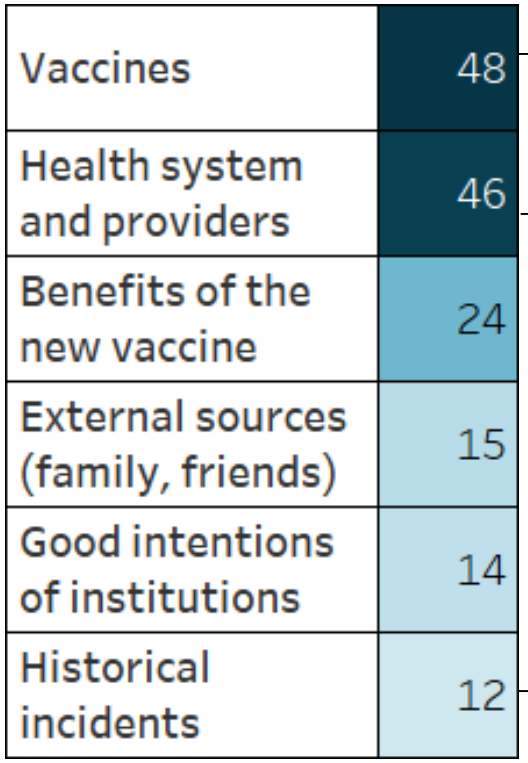
Case Study 1: What is the range of respondent trust and acceptance of vaccination?



"We are worried because if we don't get our vaccine the child may get disabled, that is why we rush to the clinic when the vaccine is around."

"The reason why I trust the doctors, they have the knowledge. They have gone to school to learn about health things, so when they say it, I trust it."

Measles made the body peel off. It was hidden in the child's body. Today, because of the vaccine to control measles, the infection is not that much serious as compared to the time before.

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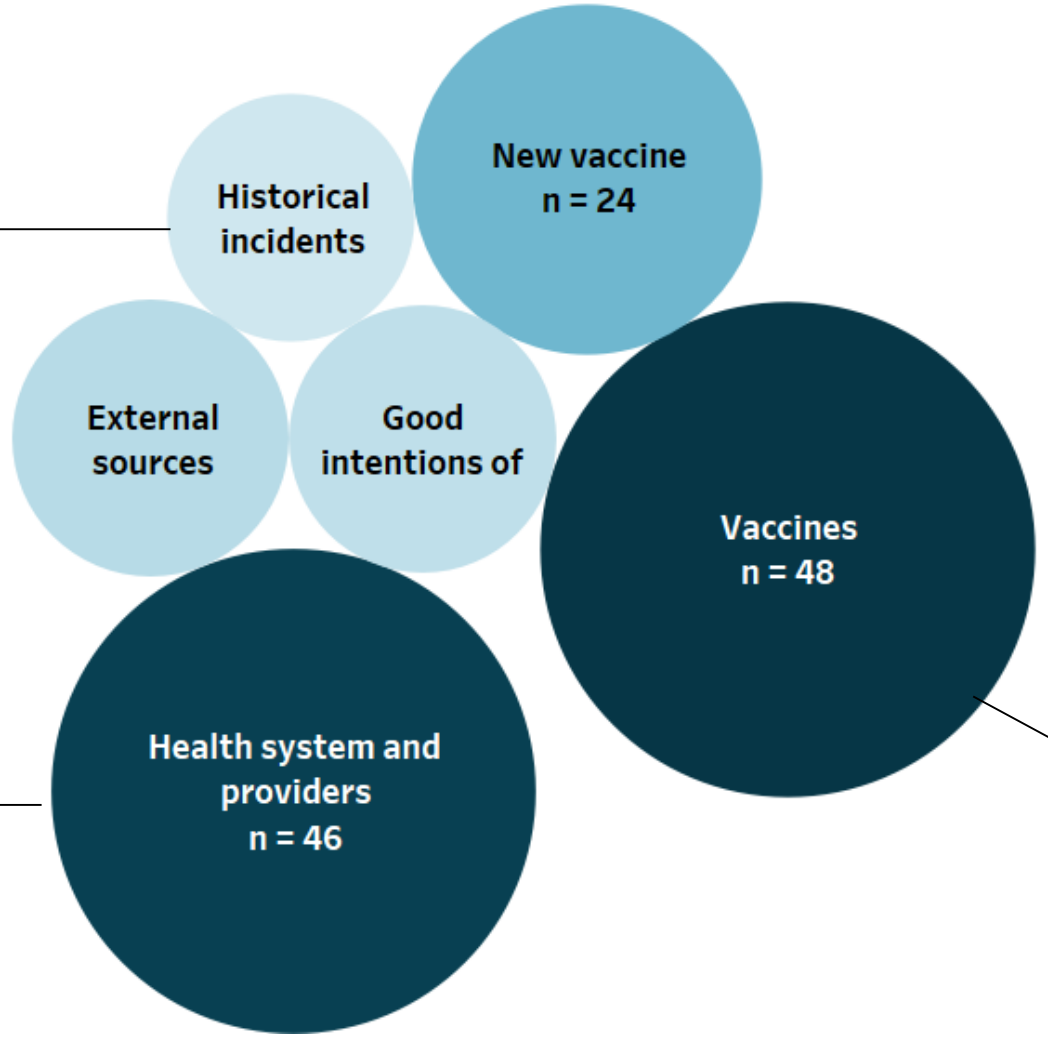

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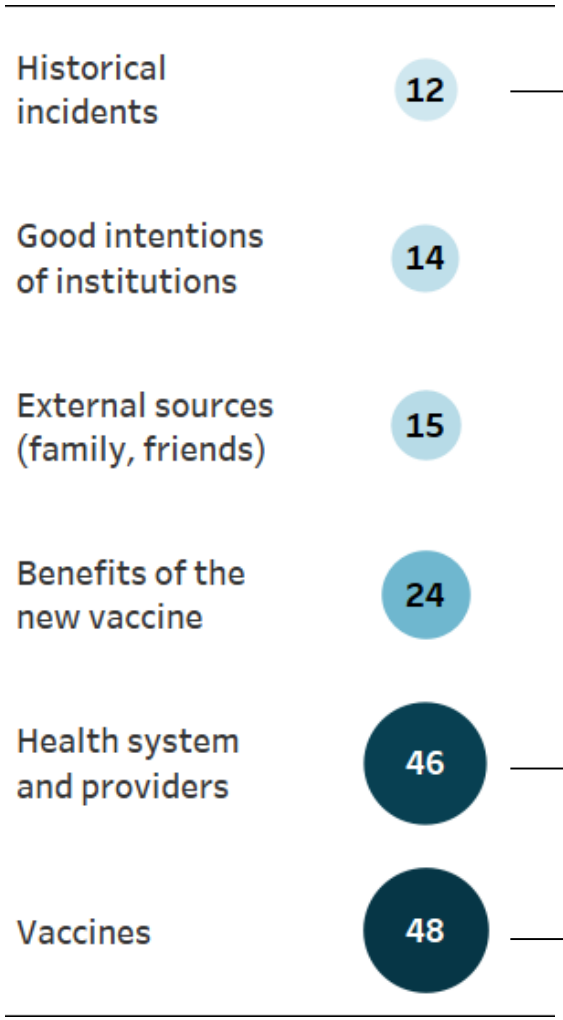

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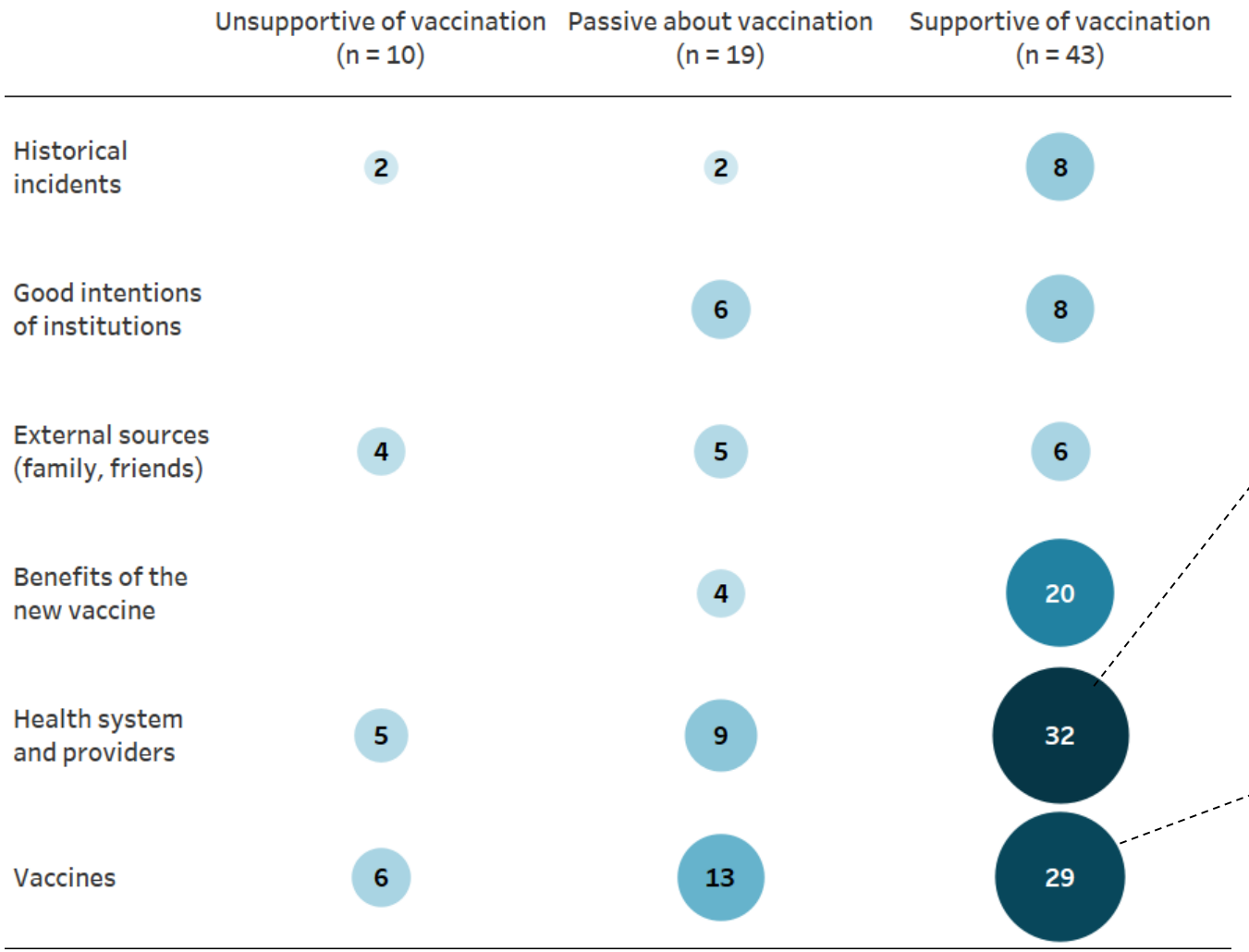

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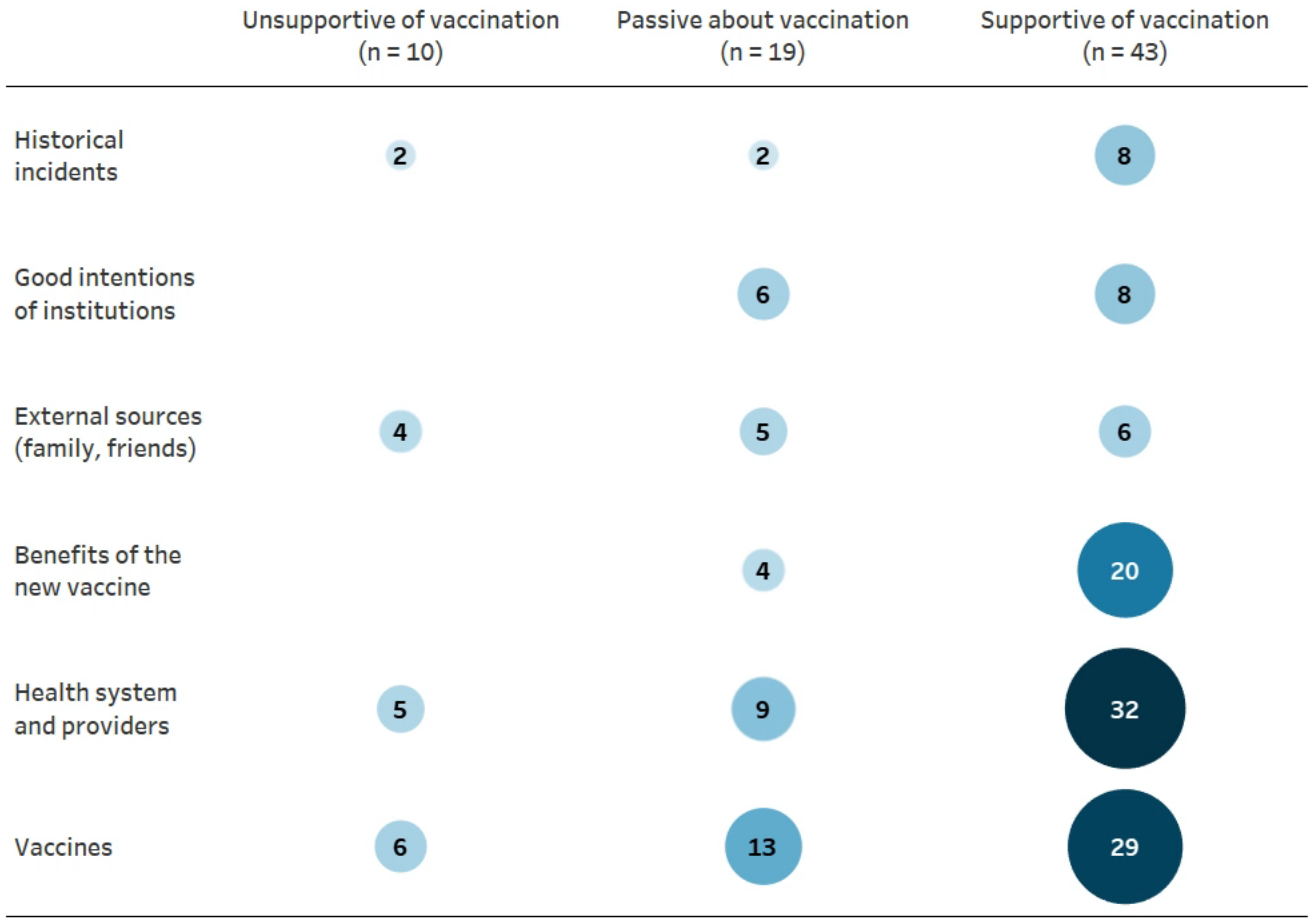


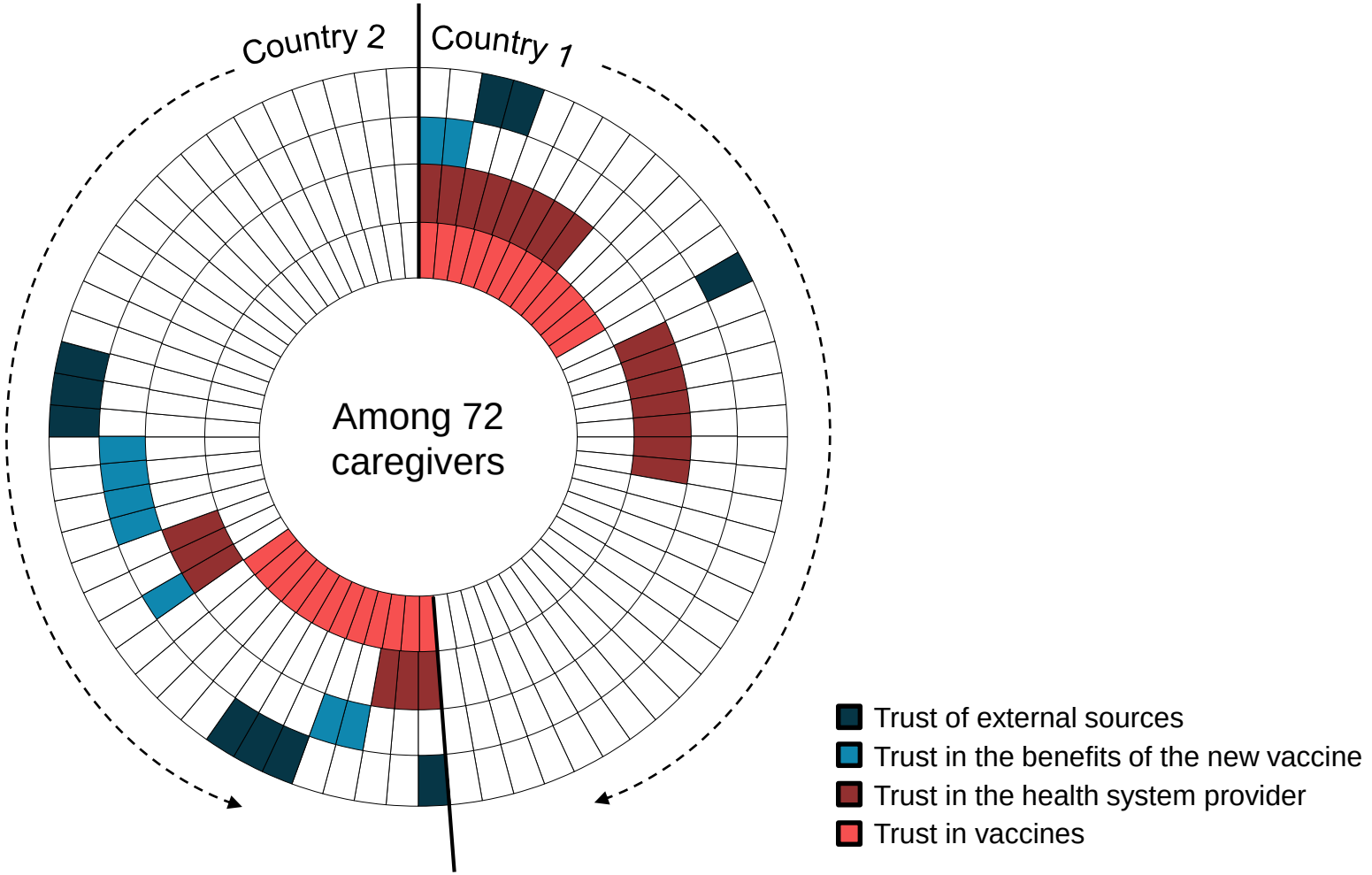
We can also add interactivity!

Bonus: what if we want to visualize trust within-case?

Case Study 1: Re-imagined as a within-case visualization!

A spectrum display shows the range of themes across each individual case!

We can also partition the wedges to capture the group information.



Questions?

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