Effective Communication

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Lectures :http://casimpkinsjr.radiantdolphinpress.com/pages/cogs108_ss1_23/index.html

Written Communication

Data Science Reports

1. In-depth details of analysis
2. Full Explanation (nothing extra)
3. A handful of figures (w/ interpretation)
4. Tell a Story

What to avoid:

1. Explaining every little thing you did
2. Being too wordy
3. Using the wrong visualization/bad figures
4. Typos & Confusion

What to Include in COGS 108 Final Project Report

- Good Title - short and informative
- Overview - *brief* overview w/ results
- Background (+ references) - intro to topic + prior work
- Hypothesis - informed guess + why
- Datasets - what data you used
- Data Cleaning - what you did to clean/check the data
- Data Analysis - explore the data, explain the process, answer the ?
- Ethics & Privacy - consider the entire process
- Conclusion & Discussion - wrap it up - summarize what you did, what you got, what are the implications, limitations and where to go from here

Final Project: Video

3% of Final Grade
3-5 minutes

All members must be involved but it's not required that all members speak or that members' faces are on video.

Can be a slideshow presentation w/ voiceover.
Can be something more creative. Has to effectively communicate your project.

Oral Communication

Overview

01:

Your Audience

02:

Storytelling

03:

The Grammar of Graphics

04:

The Glamour of Graphics

Presentation Goals

1. Inspire
2. Educate
3. Entertain

Ground Rules

1. Prepare
2. Practice
3. Don’t go over time

Ground rules

Practicing
- Improves explanations
- Calms nerves
- Ensures you’re within the time limit

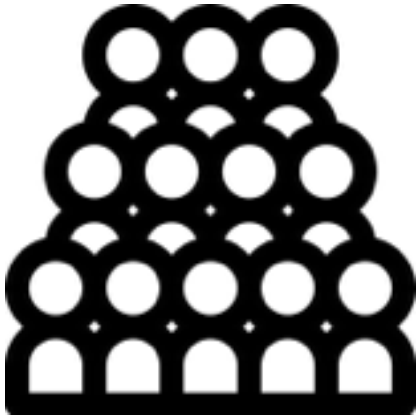
Speaking to a group
- Speak Clearly
- Express Excitement
- Silence is OK
- Be yourself!

Prepare
- Roll with the punches
- Have an extra copy of your slides
- Bring any adapters you may need
- Silence your phone

01:

Your Audience

Your Audience



Consider your audience.

- General vs. technical?
- Audience background?
- Setting?

Your Audience

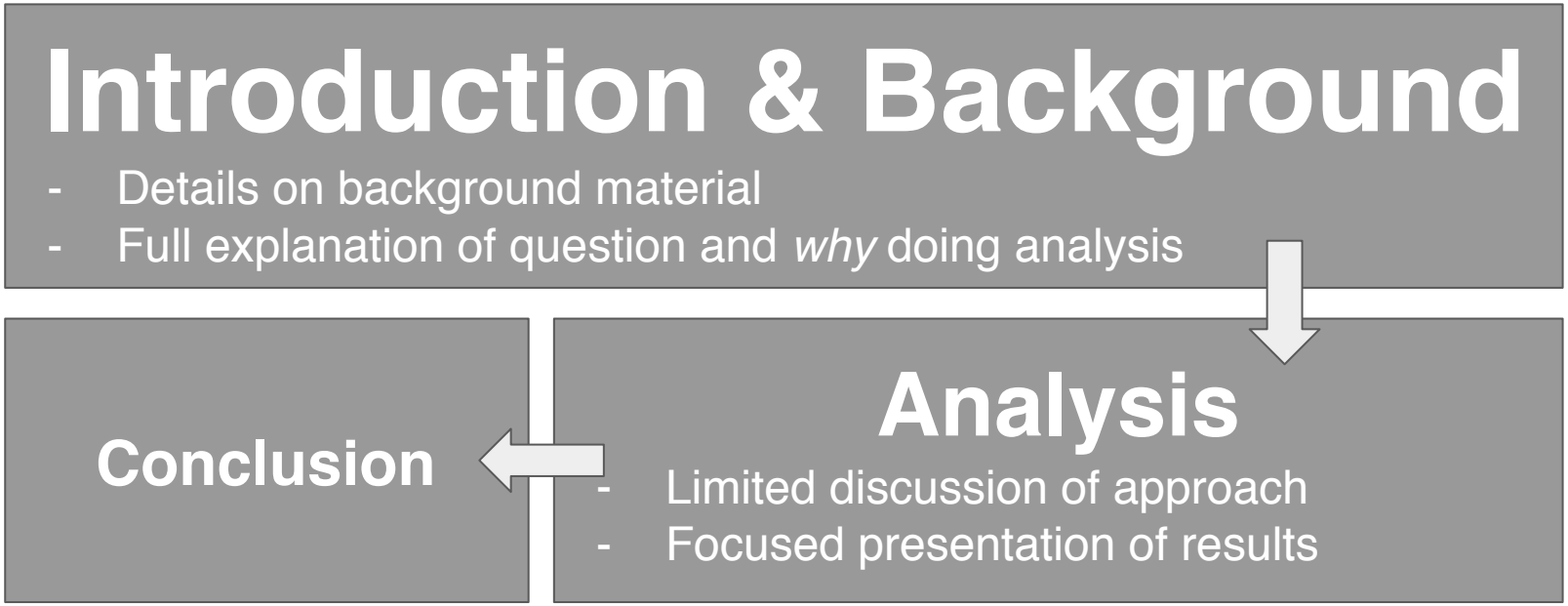
General

✔ background

⛔ limit technical details

🎉 emphasize take-home

Presentation: General Audience



Your Audience

General

✔ background

🚫 limit technical details

🎉 emphasize take-home

Technical

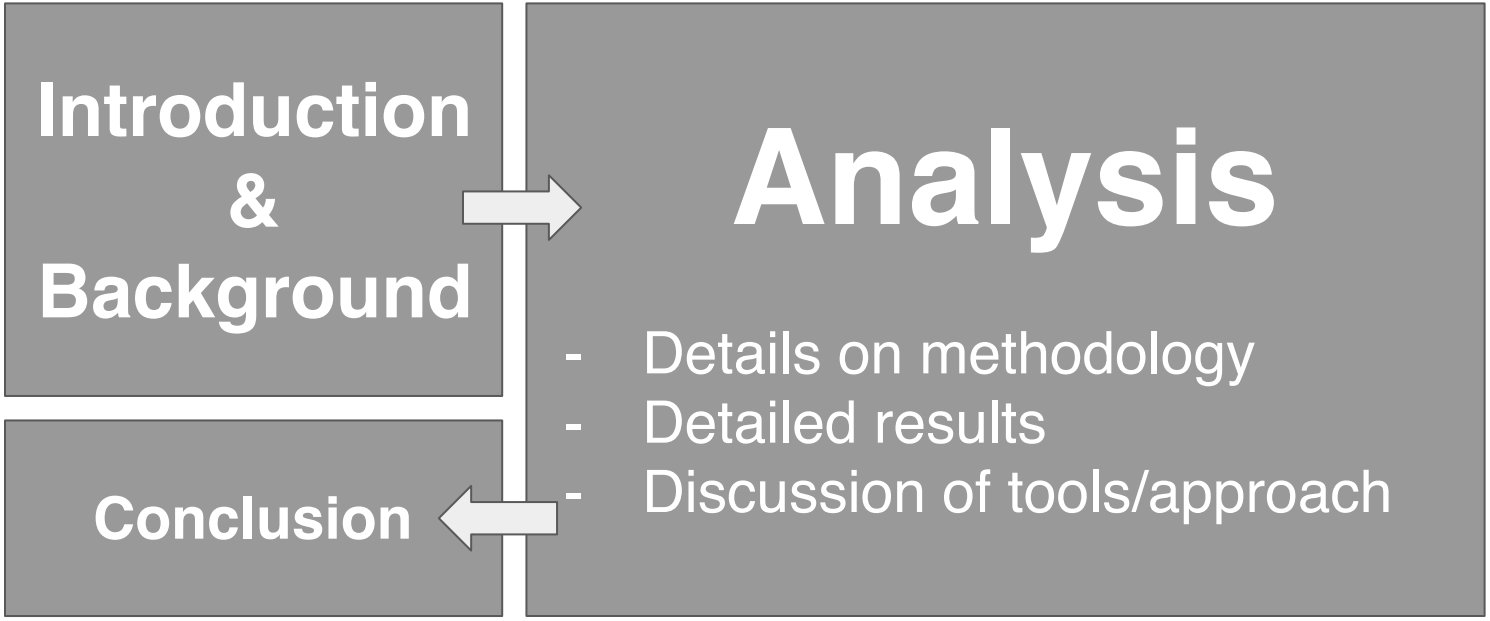
⬇ limit background

💻 all-the-details

🎉 emphasize take-home

Your Audience

Presentation: Technical Audience



02:

Storytelling

Storytelling: Ground Rules

1. Enticing, short title
2. Clear presentation
3. All the necessary info
4. Nothing extra

Storytelling

Outline Your Talk

1. Introduction
2. Topics (1, 2, 3)
3. Conclusion

Storytelling

In other words...
repetition is OK

Outline Your Talk

1. Tell them what you'll tell them.
2. Tell them.
3. Tell them what you told them.

Checklist

Talk

- ❑ Has a good title
- ❑ Tells a story
- ❑ Only essential info on slides
- ❑ Appropriate level of detail for audience
- ❑ Practiced
- ❑ Orienting audience to all figures
- ❑ Within time limit
- ❑ Take-home message explicitly clear

On your slides...

- Limit number of ideas
- Limit words
- Choose good fonts
- Make text readable
- Include references

Slide Design Matters

- Slides should have 3-4 bullet points, 5 MAX
- Use sub-bullets
- One main point per slide
- Avoid the following

Horse

This is not very easy to read.

This is much easier to read.

Use Large (enough) Text

This is not very easy to read.

This is much easier to read.

Choose Good Fonts

Fonts matter

MEGAFLICKS

Fast Taco

Fonts matter

Roboto family
Source family
Fira family
Alegreya

Crete Round
Muli

https://practicaltypography.com/

This is not very easy to read.

This is much easier to read.

Choose Good Colors
(see my 109 talk on perceptually aware visualization)

Color is Hard.

- Figures
- Slides
- Highlighting

Rule #1: Choose intuitive colors.

NOT IDEAL

BETTER

https://blog.datawrapper.de/colors/

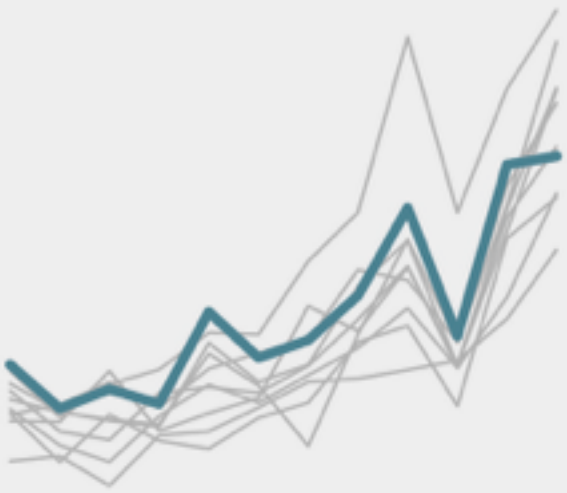
Rule #2: Consistency is key.

https://blog.datawrapper.de/colors/

Rule #3: Gray is (definitely) your friend.

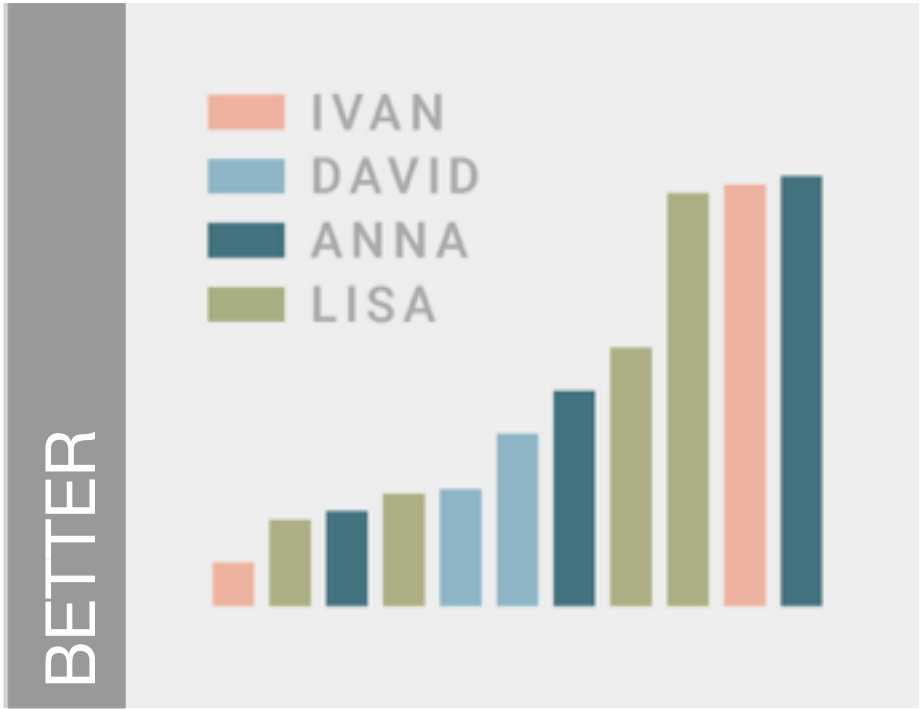
NOT IDEAL

BETTER



https://blog.datawrapper.de/colors/

Bonus: Gradients for continuous. Distinct for categories



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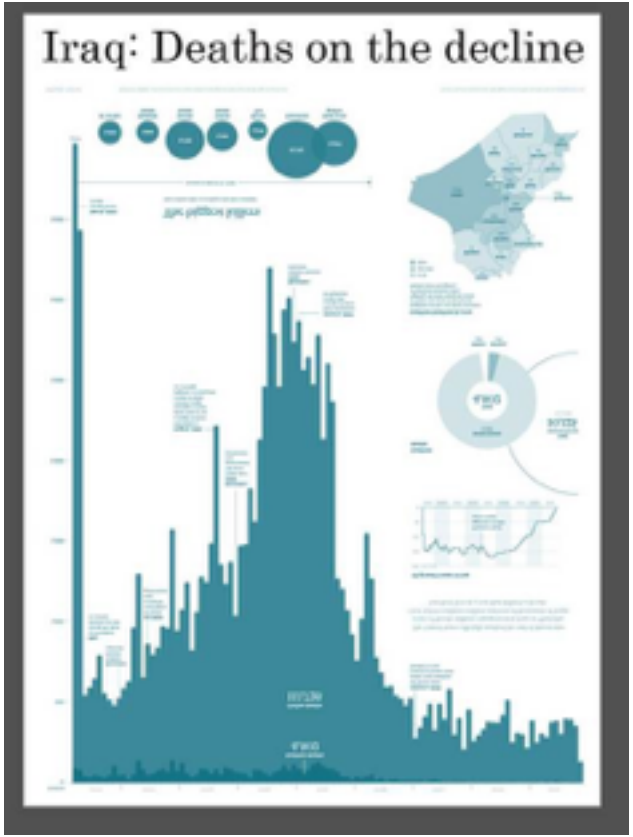
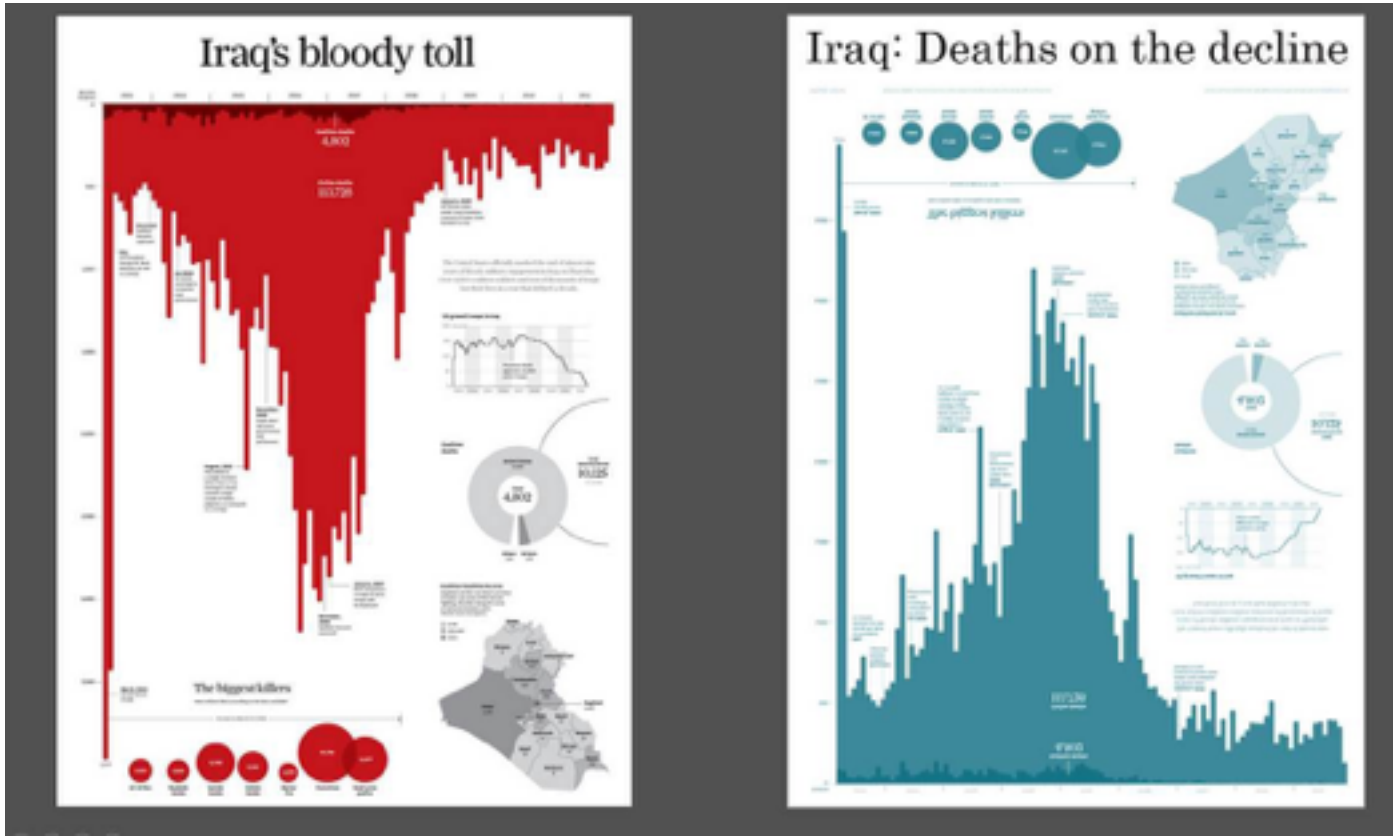
Design choices alter the tone of your message



https://medium.com/@Elijah_Meeks/what-charts-say-6e31cbba2047

Design choices alter the tone of your message



https://medium.com/@Elijah_Meeks/what-charts-say-6e31cbba2047

Title
This text is not really important, and it's not where I want you to focus your attention, so I'm going to play around with some things that allow you to focus on what I want you to focus on.

Size
This text is not really important, and it's not where I want you to focus your attention, so I'm going to play around with some things that allow you to focus on what I want you to focus on.

Hierarchy for Attention

Title
This text is not really important, and it's not where I want you to focus your attention, so I'm going to play around with some things that allow you to focus on what I want you to focus on.

Weight
This text is not really important, and it's not where I want you to focus your attention, so I'm going to play around with some things that allow you to focus on what I want you to focus on.

Hierarchy for Attention

Title
This text is not really important, and it's not where I want you to focus your attention, so I'm going to play around with some things that allow you to focus on what I want you to focus on.

Color
This text is not really important, and it's not where I want you to focus your attention, so I'm going to play around with some things that allow you to focus on what I want you to focus on.

Hierarchy for Attention

Title
This text is not really important, and it's not where I want you to focus your attention, so I'm going to play around with some things that allow you to focus on what I want you to focus on.

Spacing

This text is not really important, and it's not where I want you to focus your attention, so I'm going to play around with some things that allow you to focus on what I want you to focus on.

Hierarchy for Attention

Title
This text is not really important, and it's not where I want you to focus your attention, so I'm going to play around with some things that allow you to focus on what I want you to focus on.

Typeface

This text is not really important, and it's not where I want you to focus your attention, so I'm going to play around with some things that allow you to focus on what I want you to focus on.

Hierarchy for Attention

Title
This text is not really important, and it's not where I want you to focus your attention, so I'm going to play around with some things that allow you to focus on what I want you to focus on.

Title

SUBTITLE

This text is not really important, and it's not where I want you to focus your attention, so I'm going to play around with some things that allow you to focus on what I want you to focus on.

Hierarchy for Attention

IF YOU DON'T ALIGN STUFF

- It's distracting
- It's unhelpful to your viewers

ALIGN STUFF

- Worth the time
- Doesn't distract
- Helps viewers

Take the Time to Align

Checklist

Slides

- ❏ Consistent theme throughout
- ❏ Tone sets appropriate theme
- ❏ Good, consistent fonts
- ❏ Consistent, accessible colors
- ❏ Important stuff highlighted
- ❏ Alignment looks good
- ❏ Appropriate text/font size
- ❏ Appropriate whitespace
- ❏ Colors will project well

Visual Communication

Good Figures: Ground Rules

1. Left-align titles at top-left
2. Don’t make people tilt their head
3. Alignment should create clean lines & symmetry
4. ~~Borders~~ - don’t use them
5. Remove and lighten as much as possible
6. Legends suck
7. White space is like garlic - take the amount you need and triple it

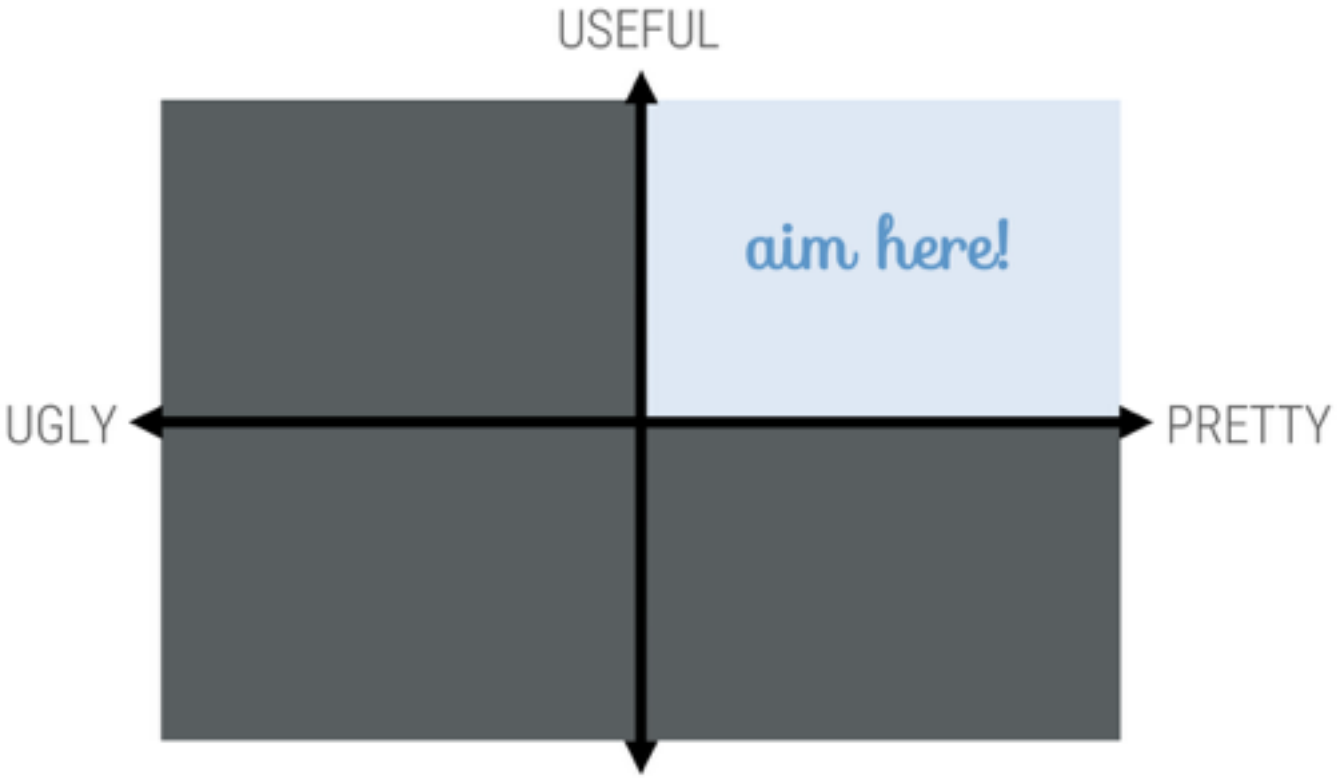
NOTE! These are directly taken from Will Chase’s rstudio::conf2020 talk: https://www.williamrchase.com/slides/assets/player/KeynoteDHTMLPlayer.html

Iteration

Take a sad plot & make it better

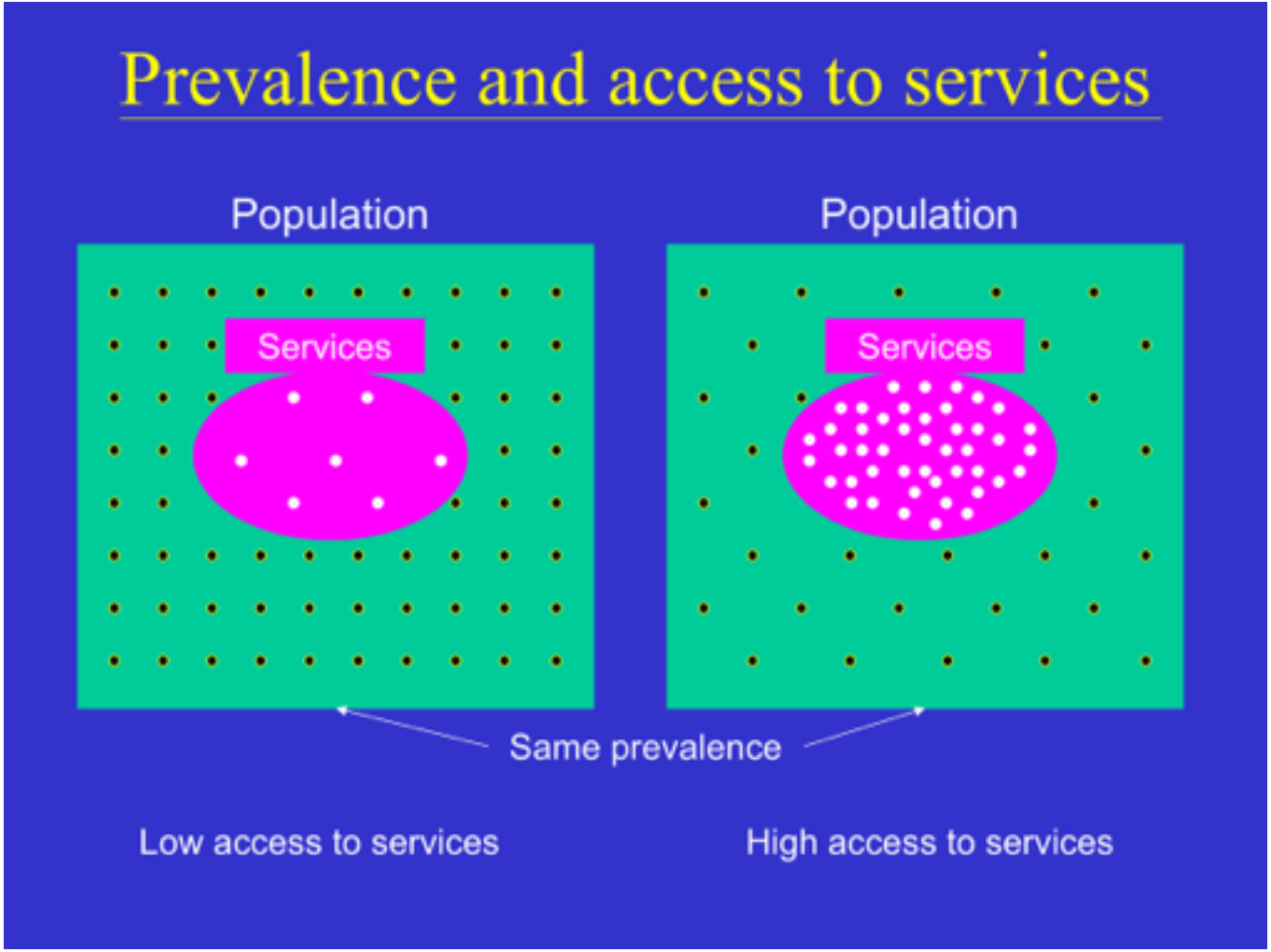
Inspiration: Allison Hill & https://policyviz.com/helpmeviz/

Iteration



Source: Jackie Wirz

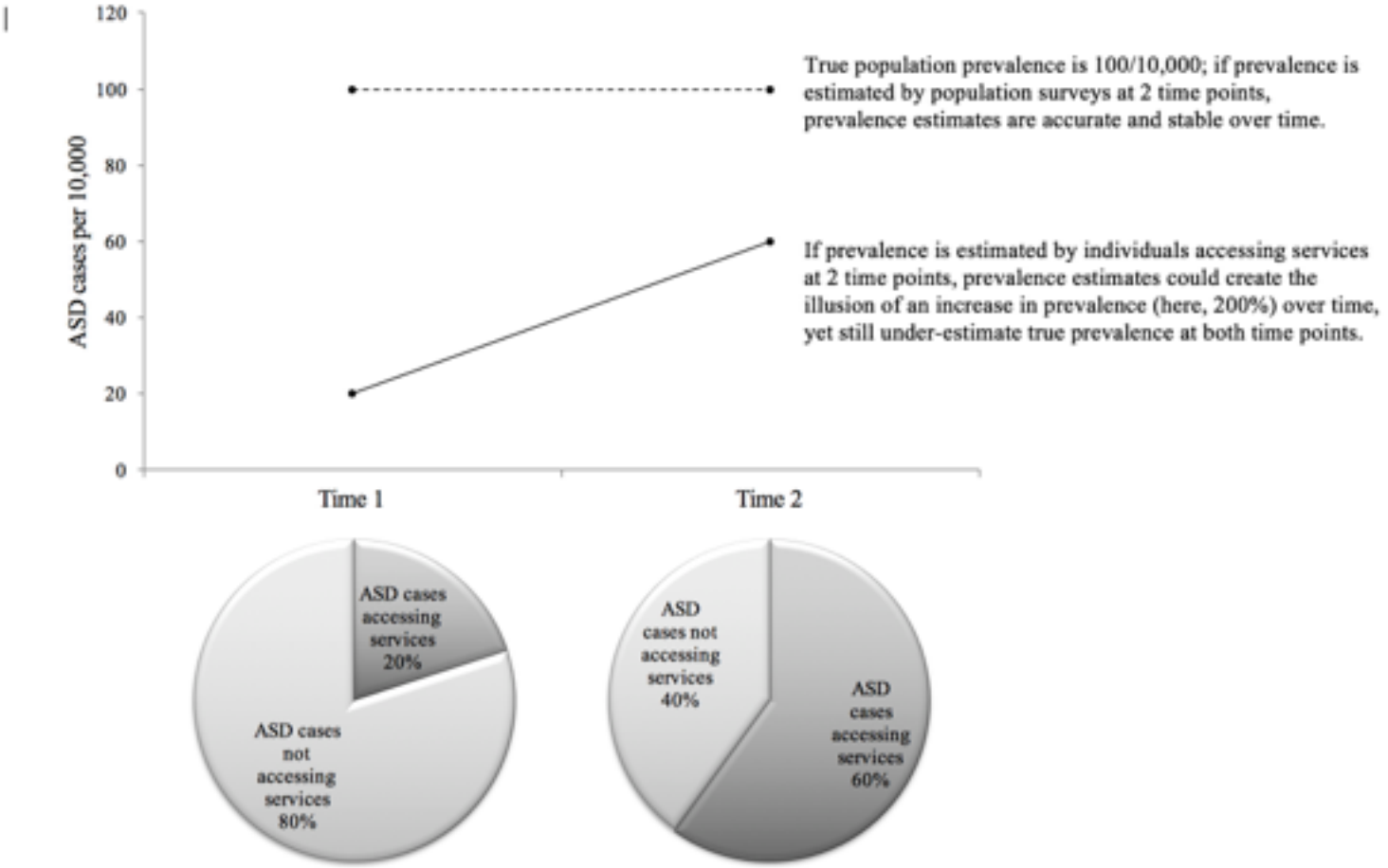
Iteration



Source: https://apreshill.github.io/ohsu-biodatavis

Iteration

Figure 3. Impact on prevalence estimates and trends of two methods for surveying ASD: population sampling, or reliance of service access counts (hypothetical data).



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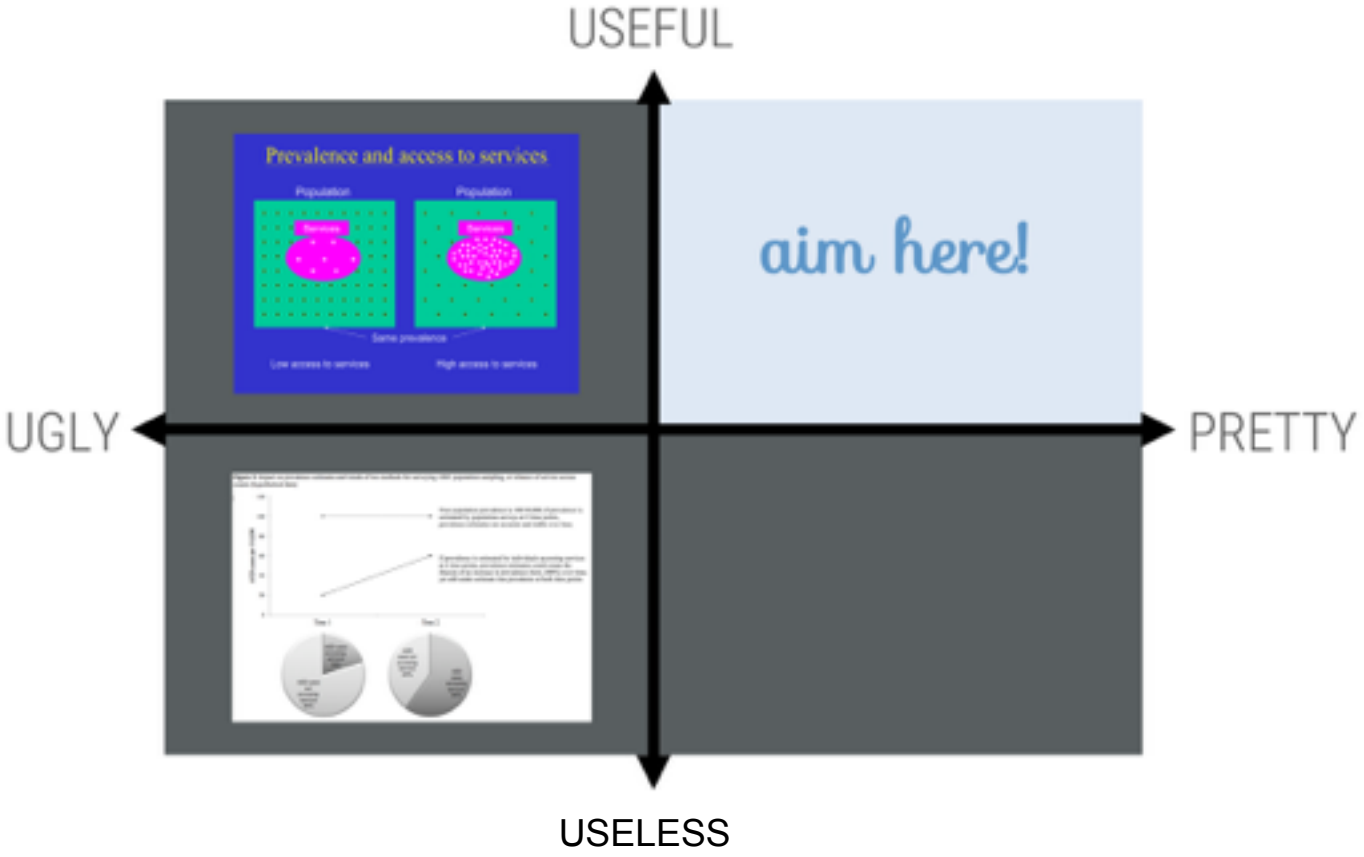
Iteration



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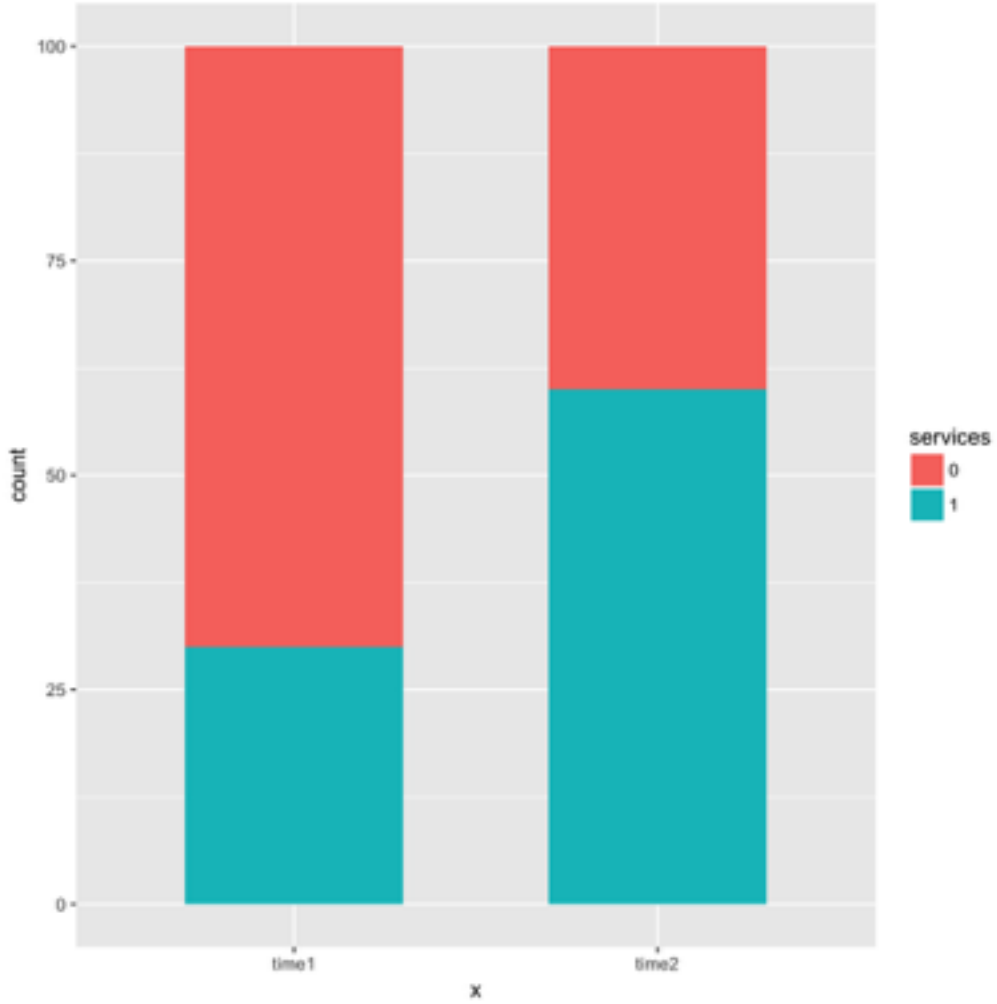

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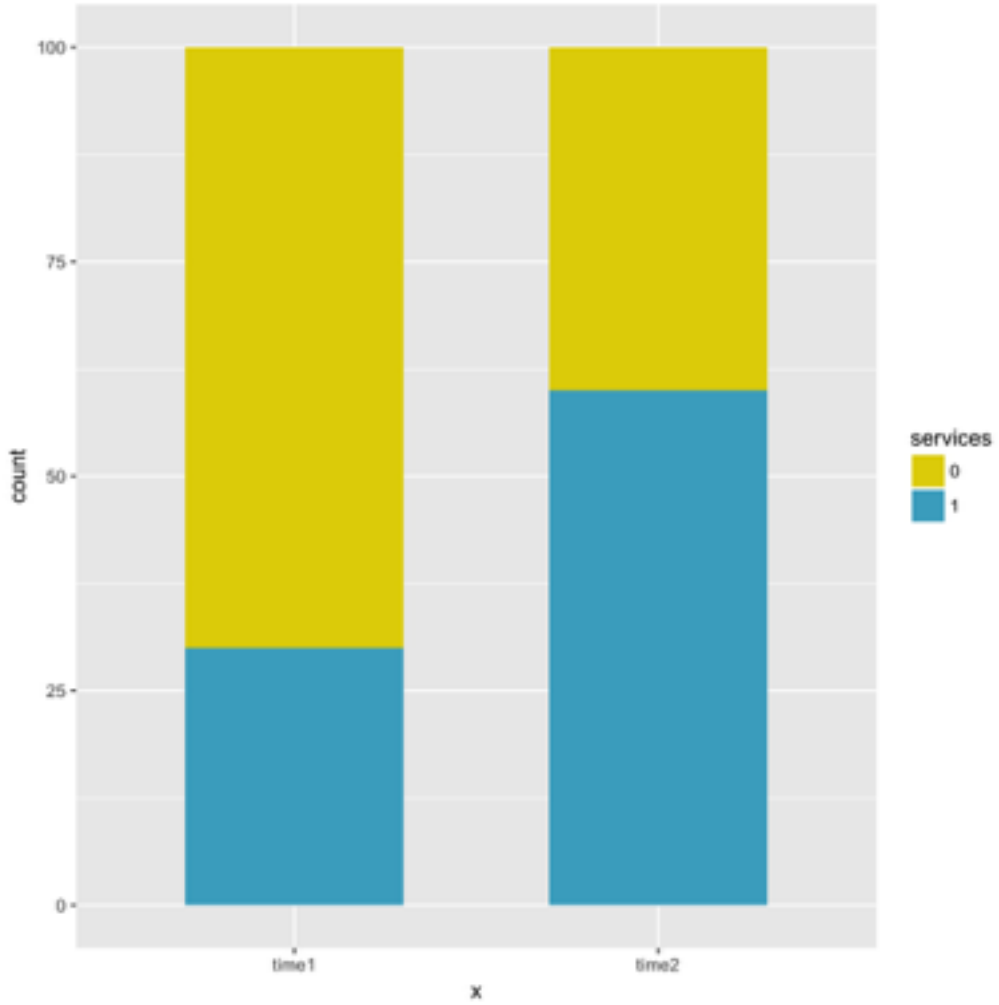

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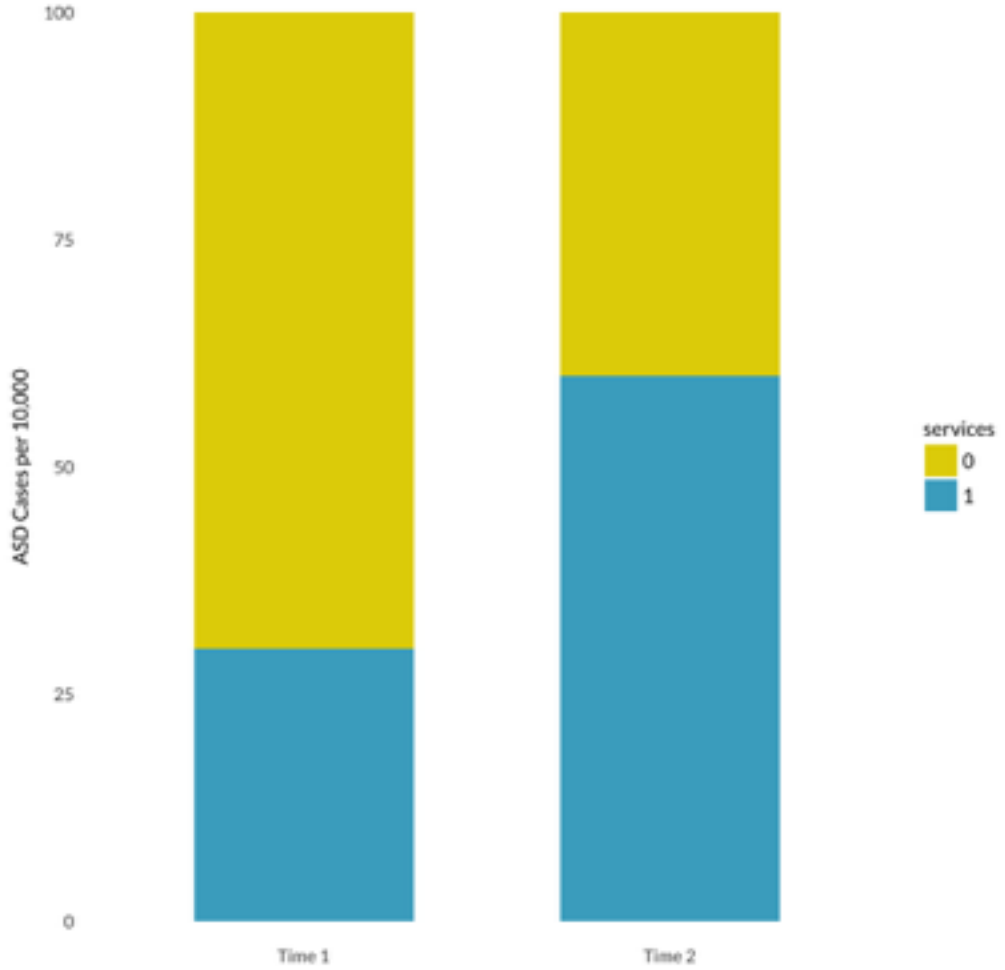

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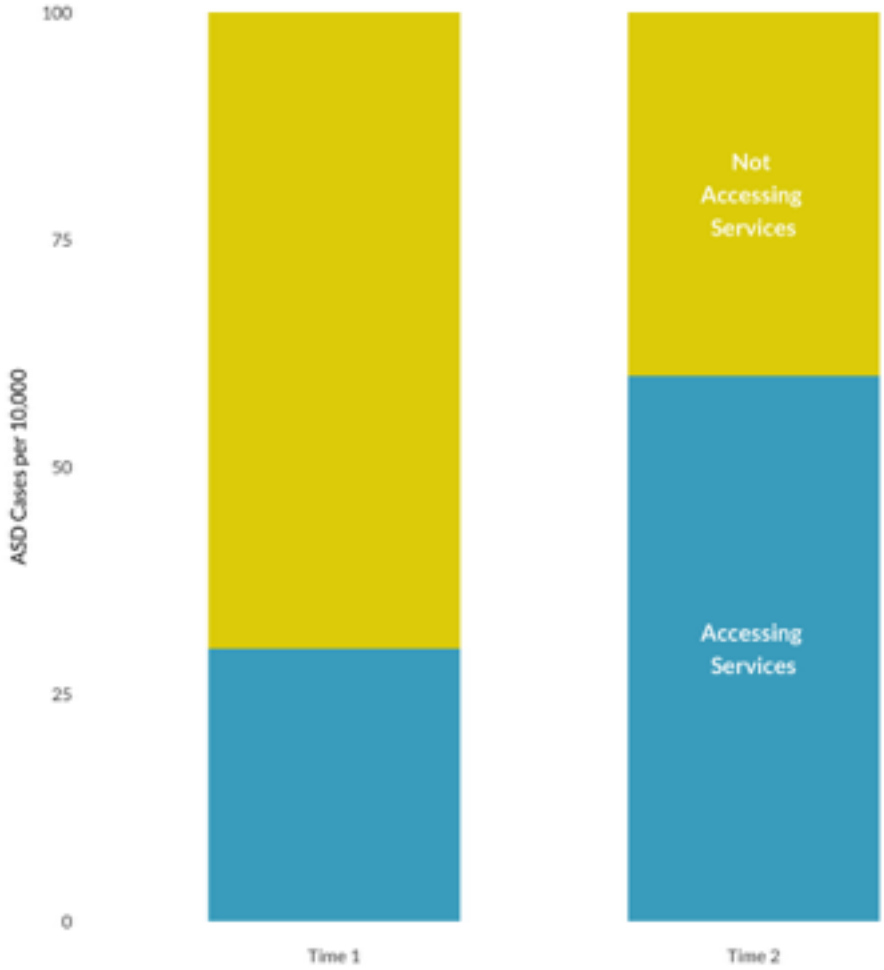

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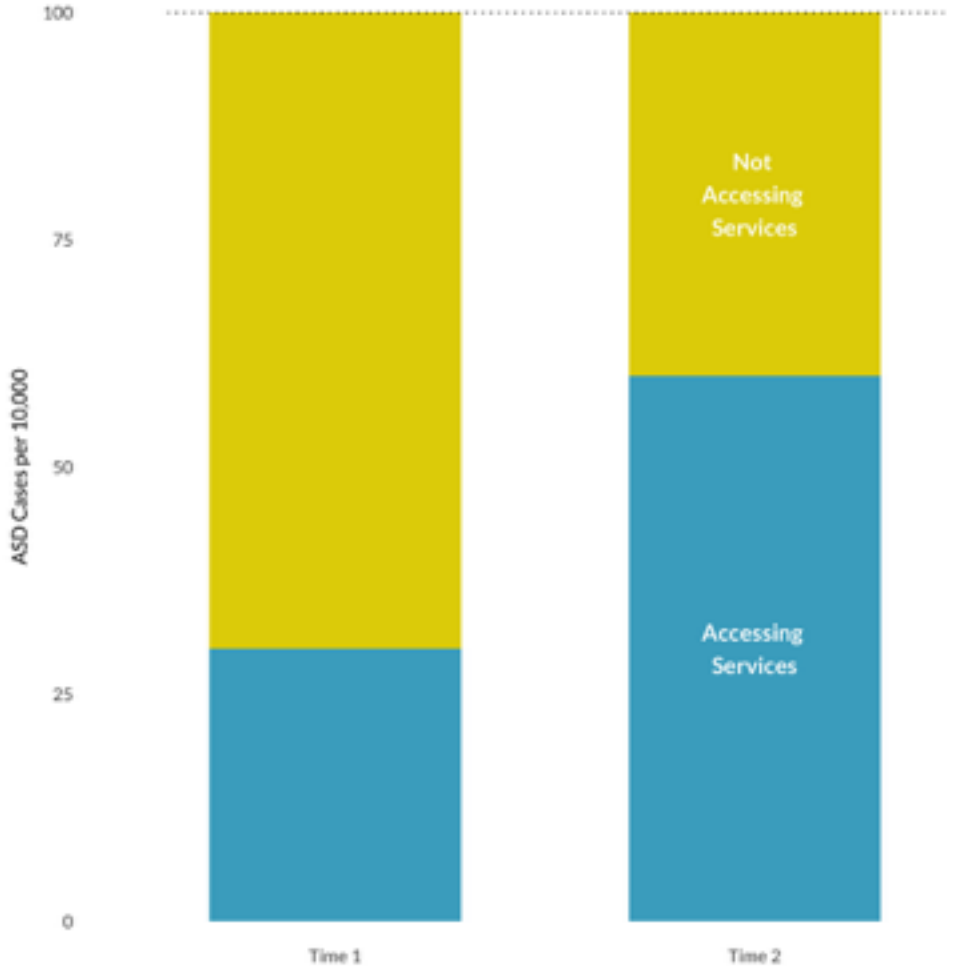

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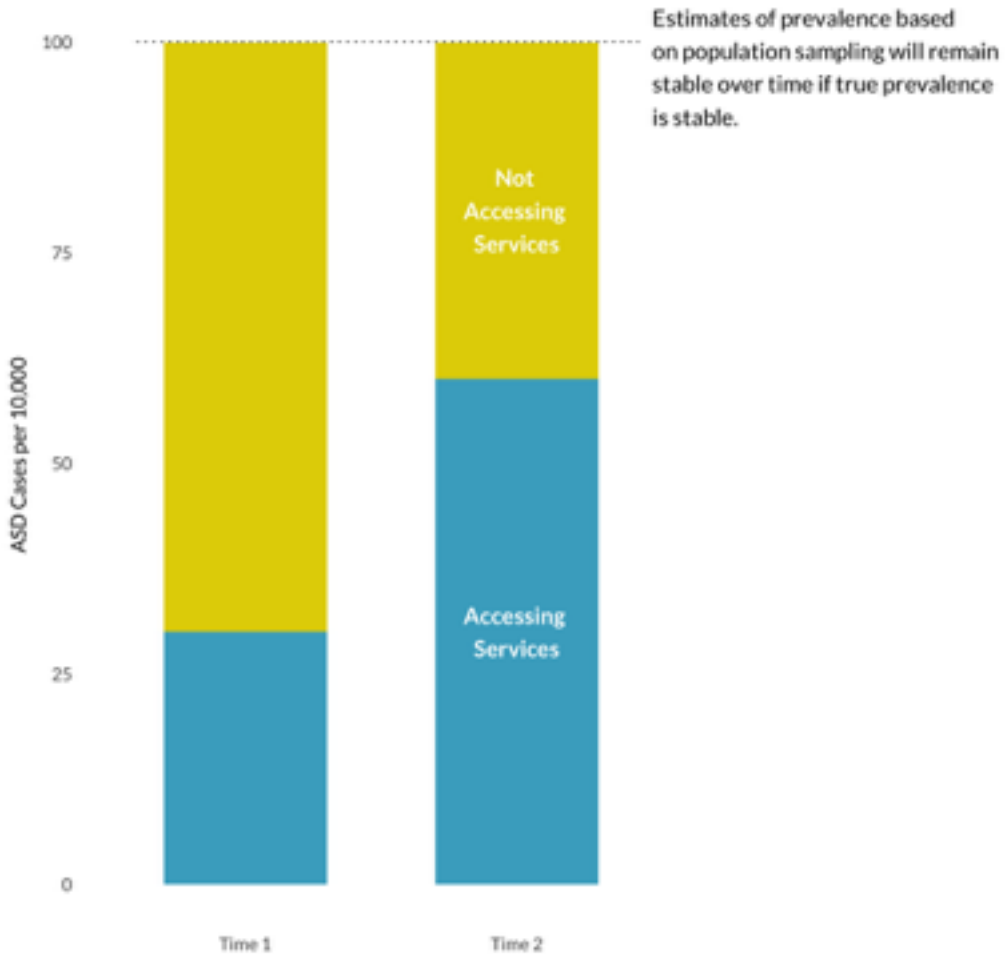

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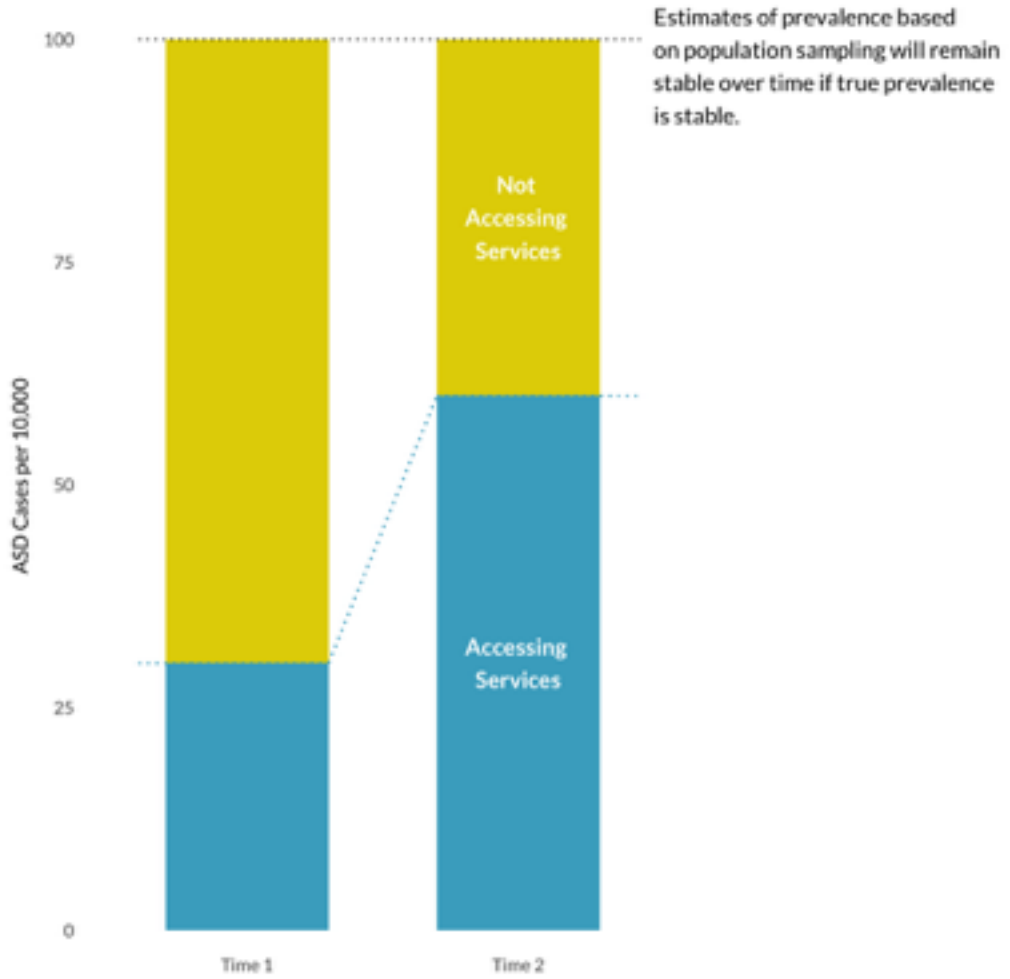

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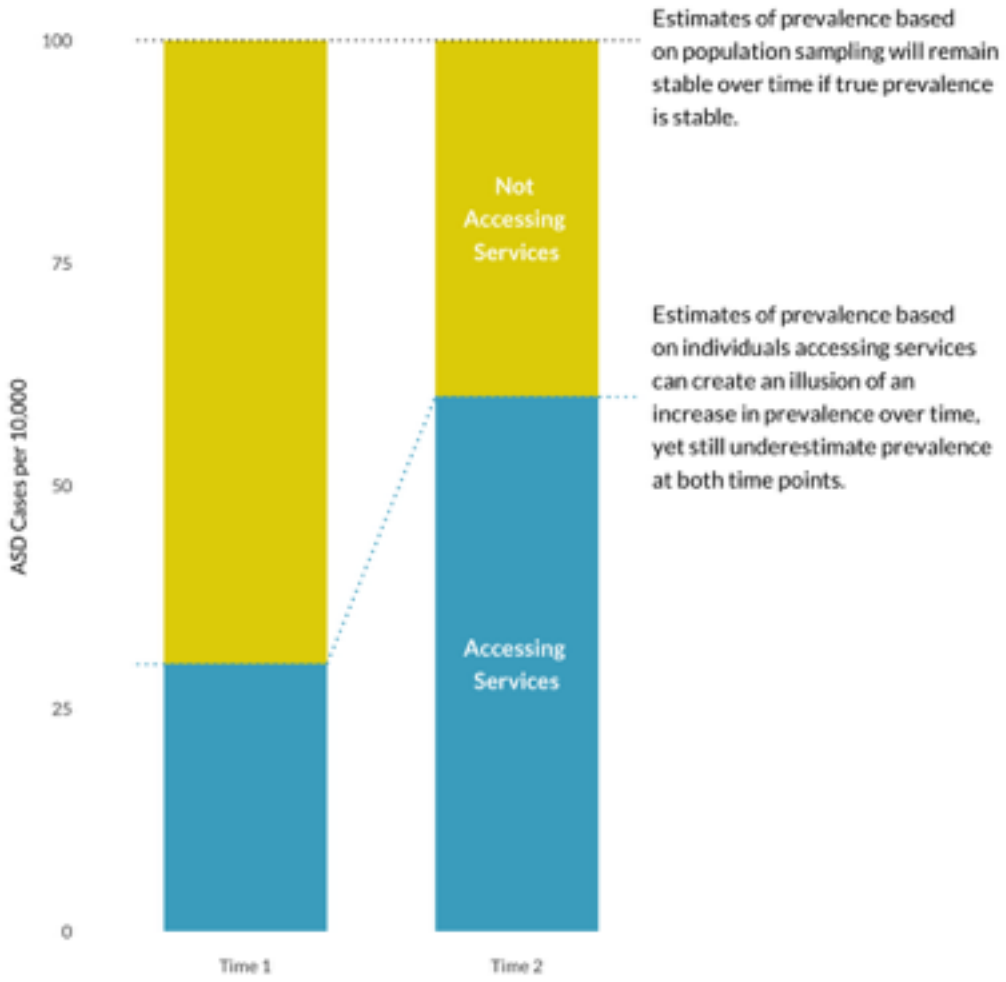

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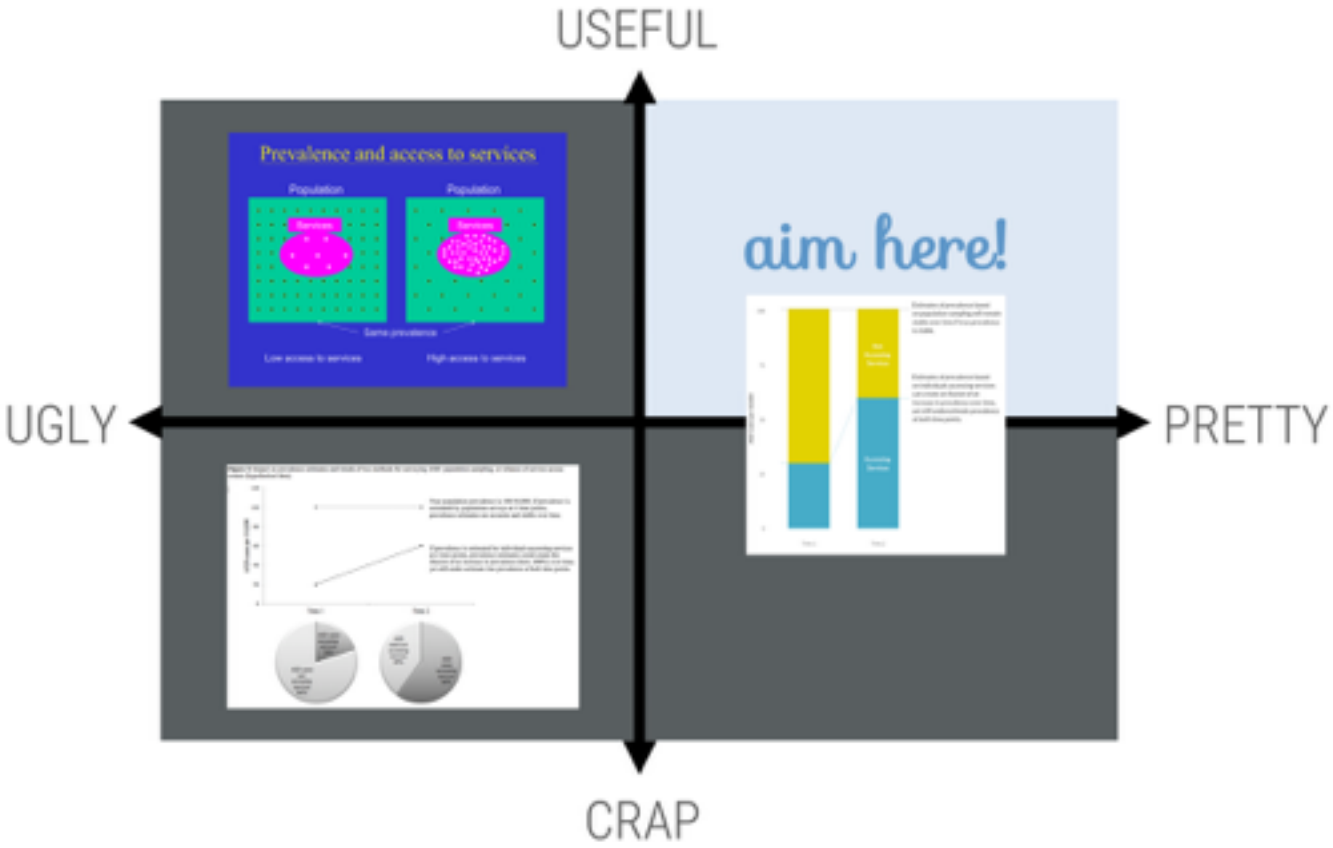
Activity



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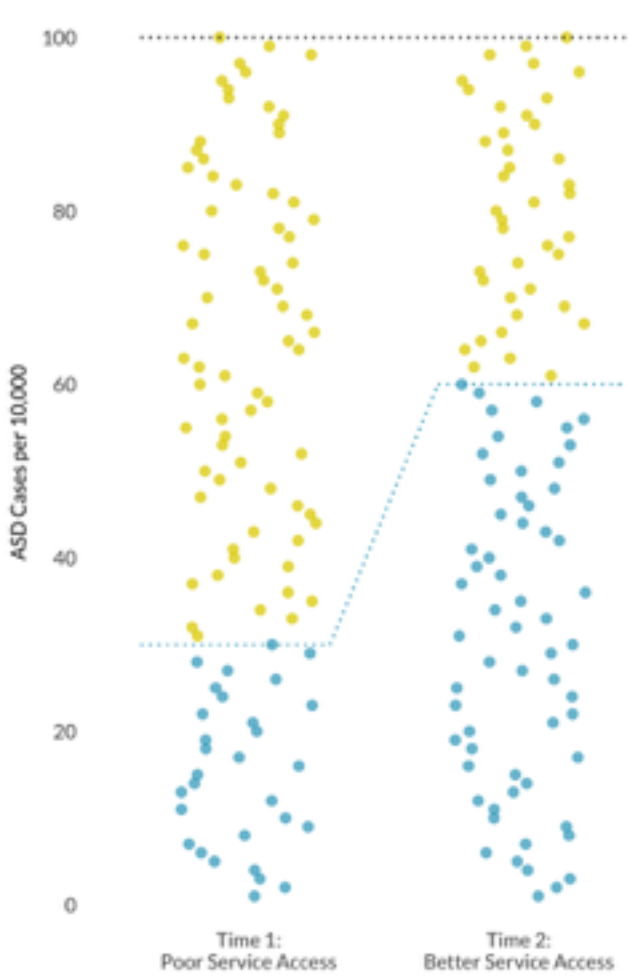

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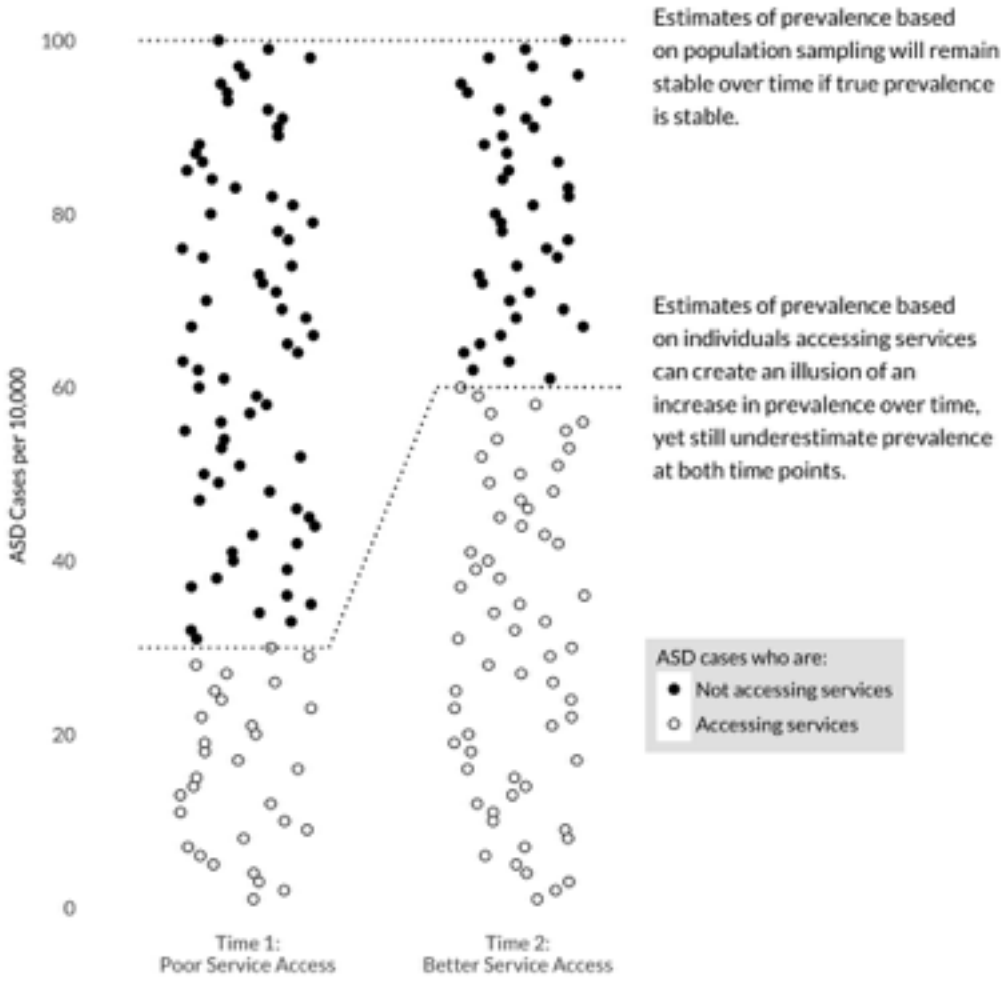

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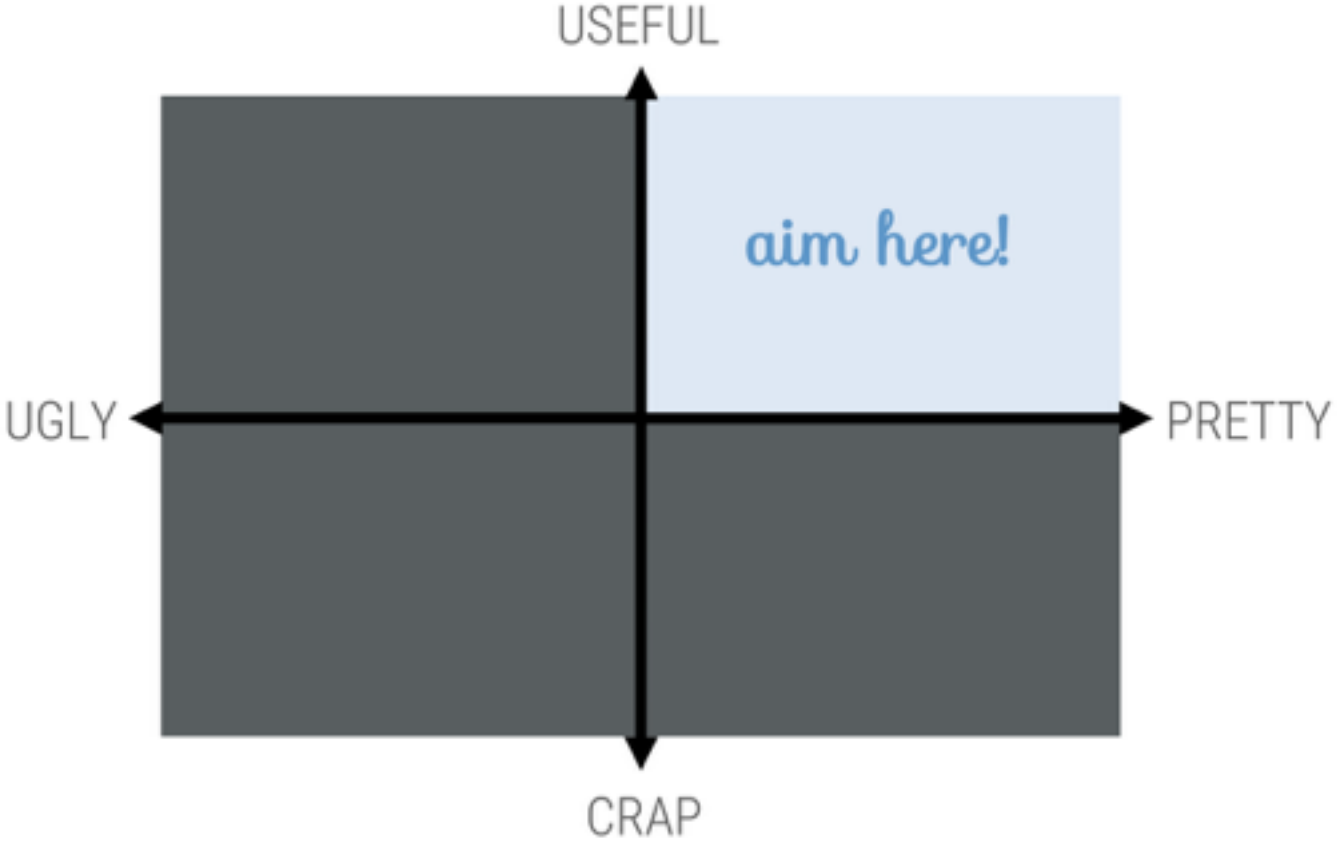
Iteration

Your turn: Take a sad plot & make it better



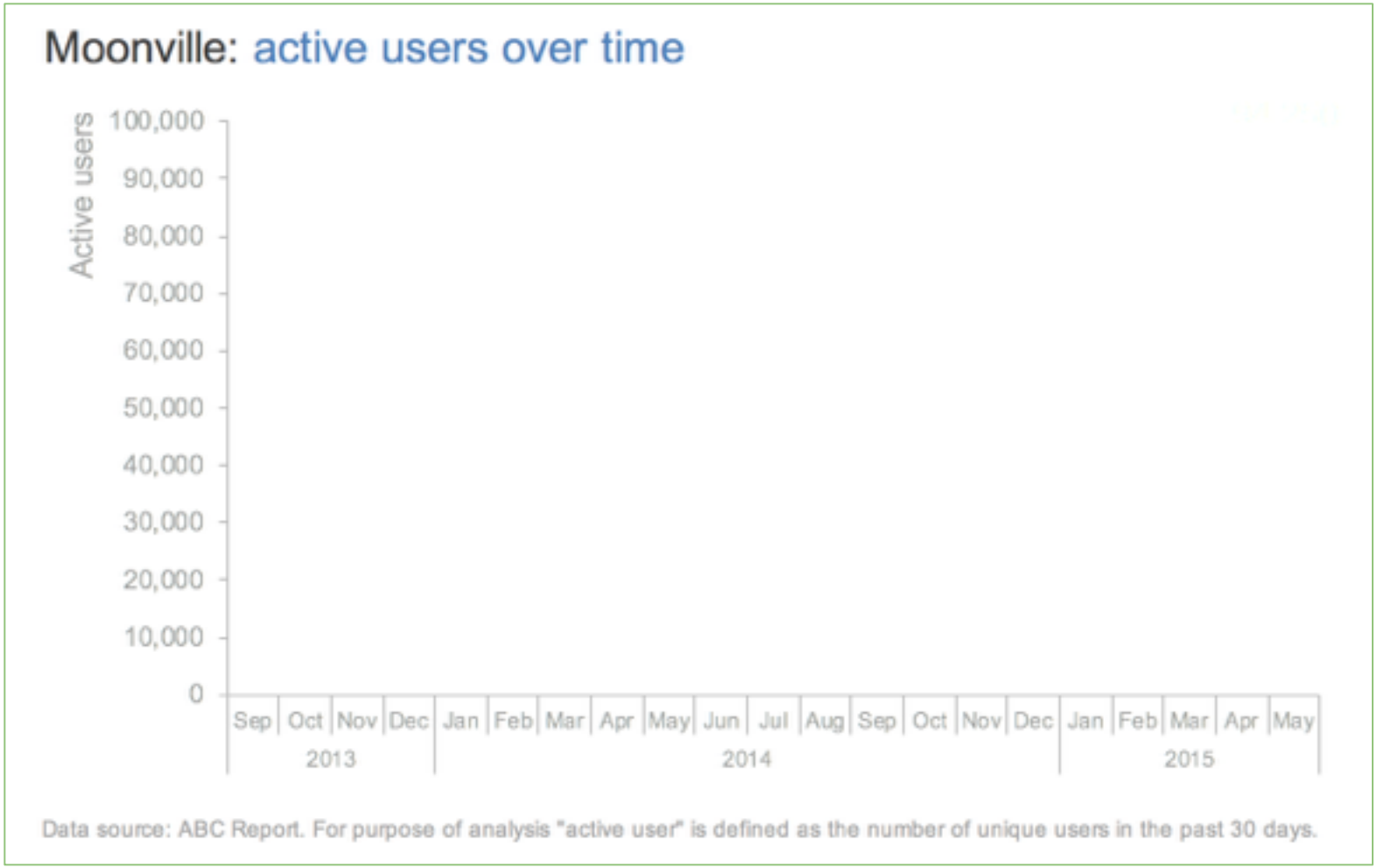
Source: Jackie Wirz

Your Audience

Presentations: for listening

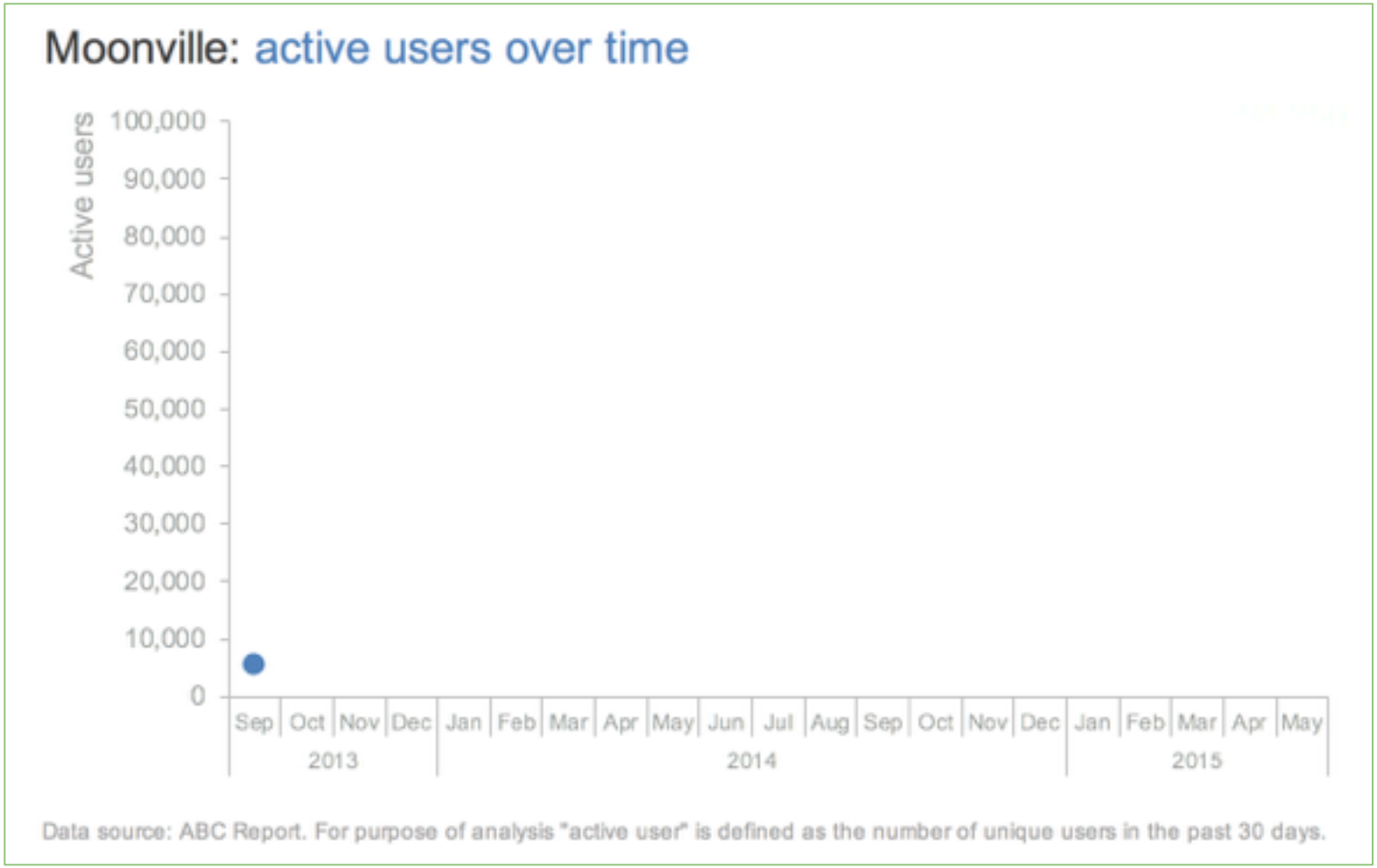
- don’t read directly off slides
- use animation to build your story (not to distract)
- introduce your axes
- benefit: words to explain out loud what you’re showing

Your Audience



Storytelling with Data (Nussbaumer Knaflic)

Your Audience



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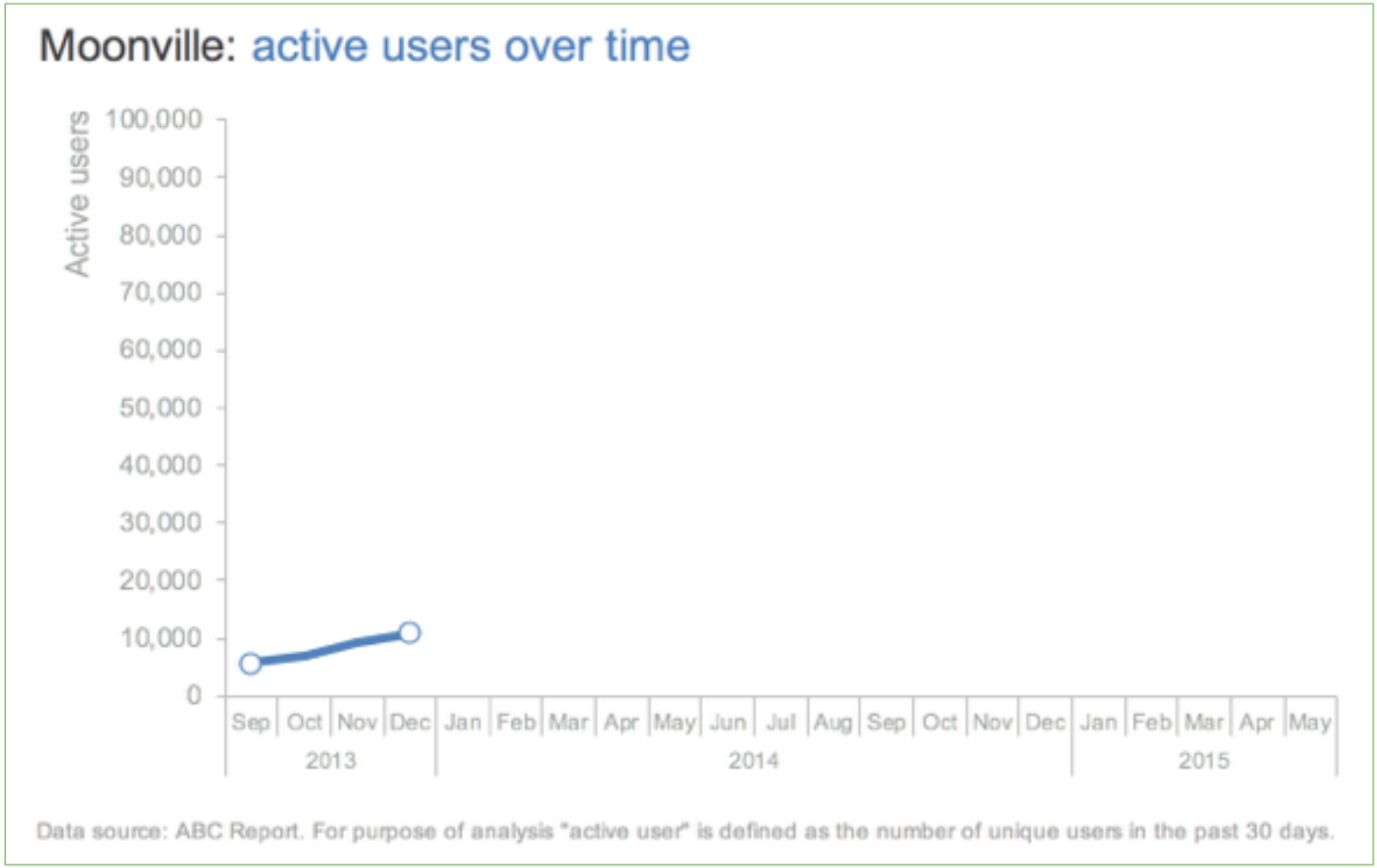

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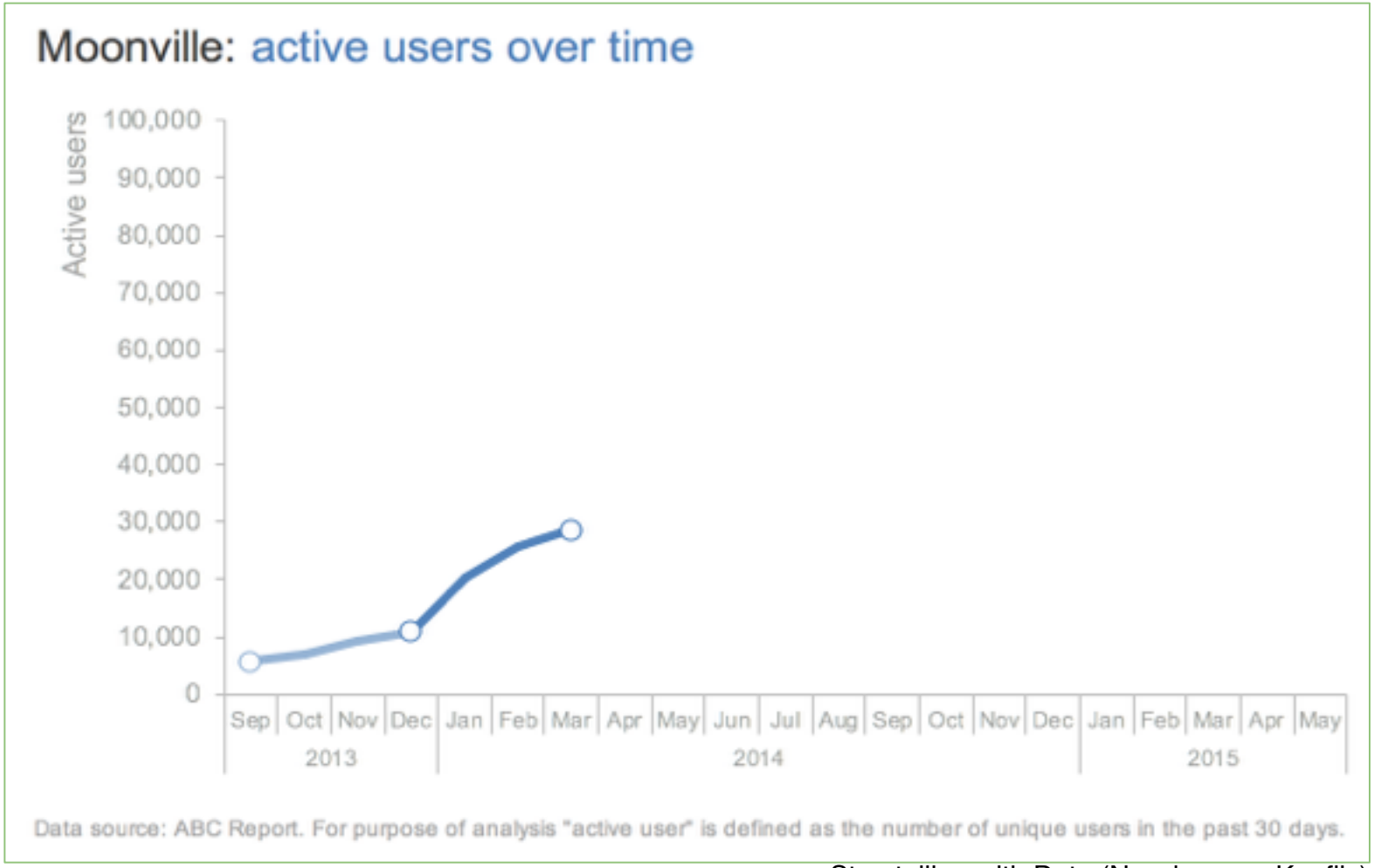

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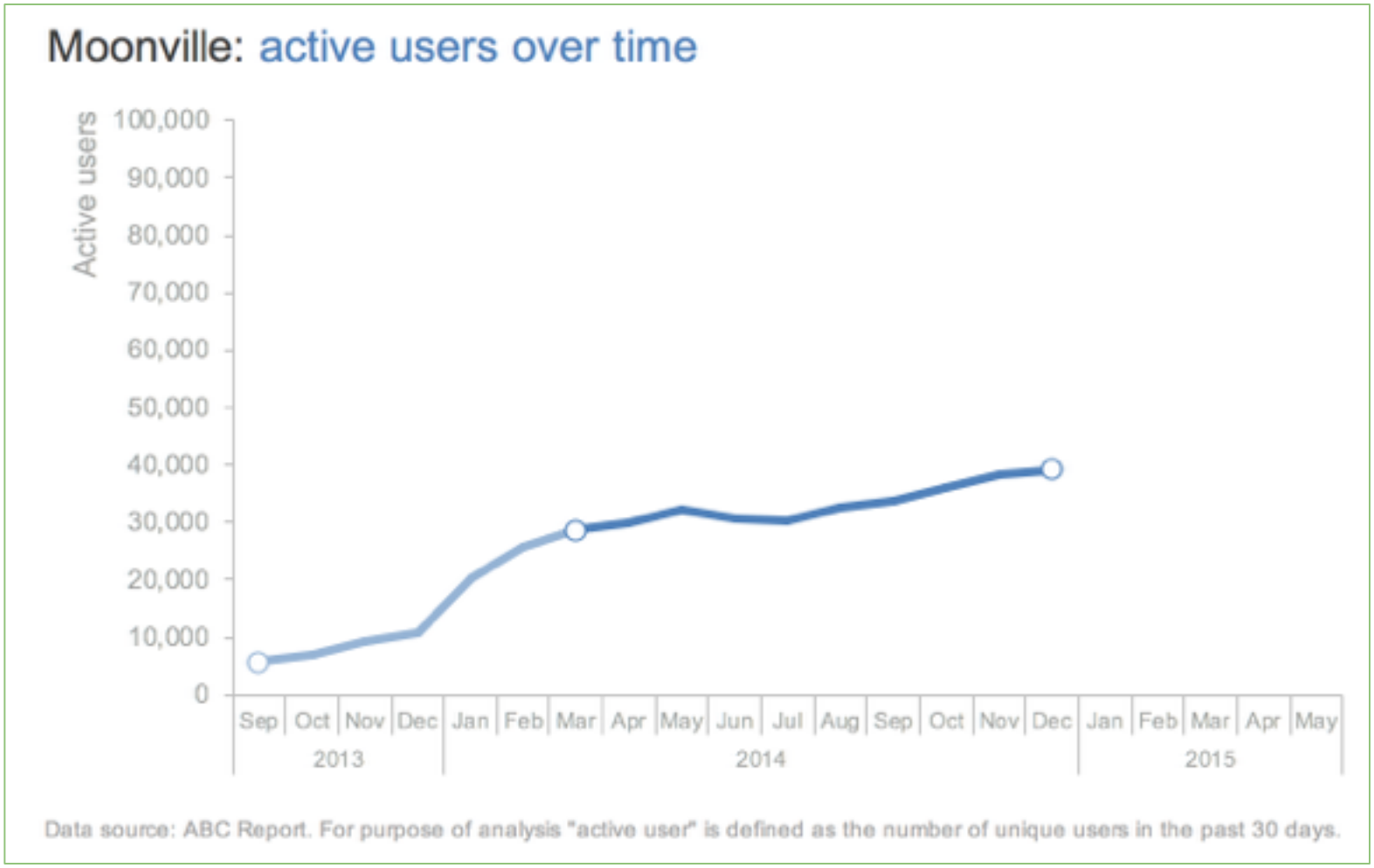

Storytelling with Data (Nussbaumer Knaflic)

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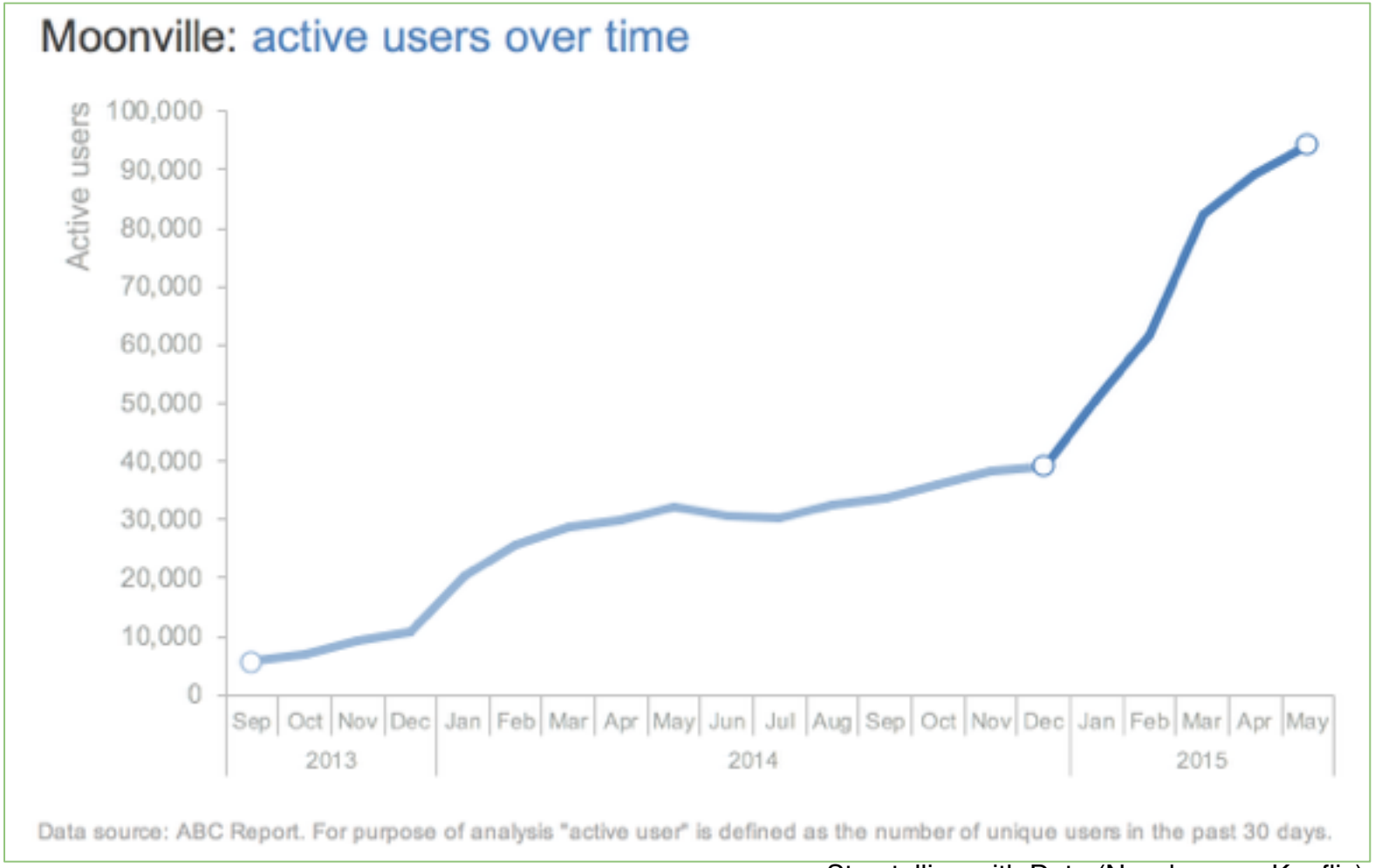


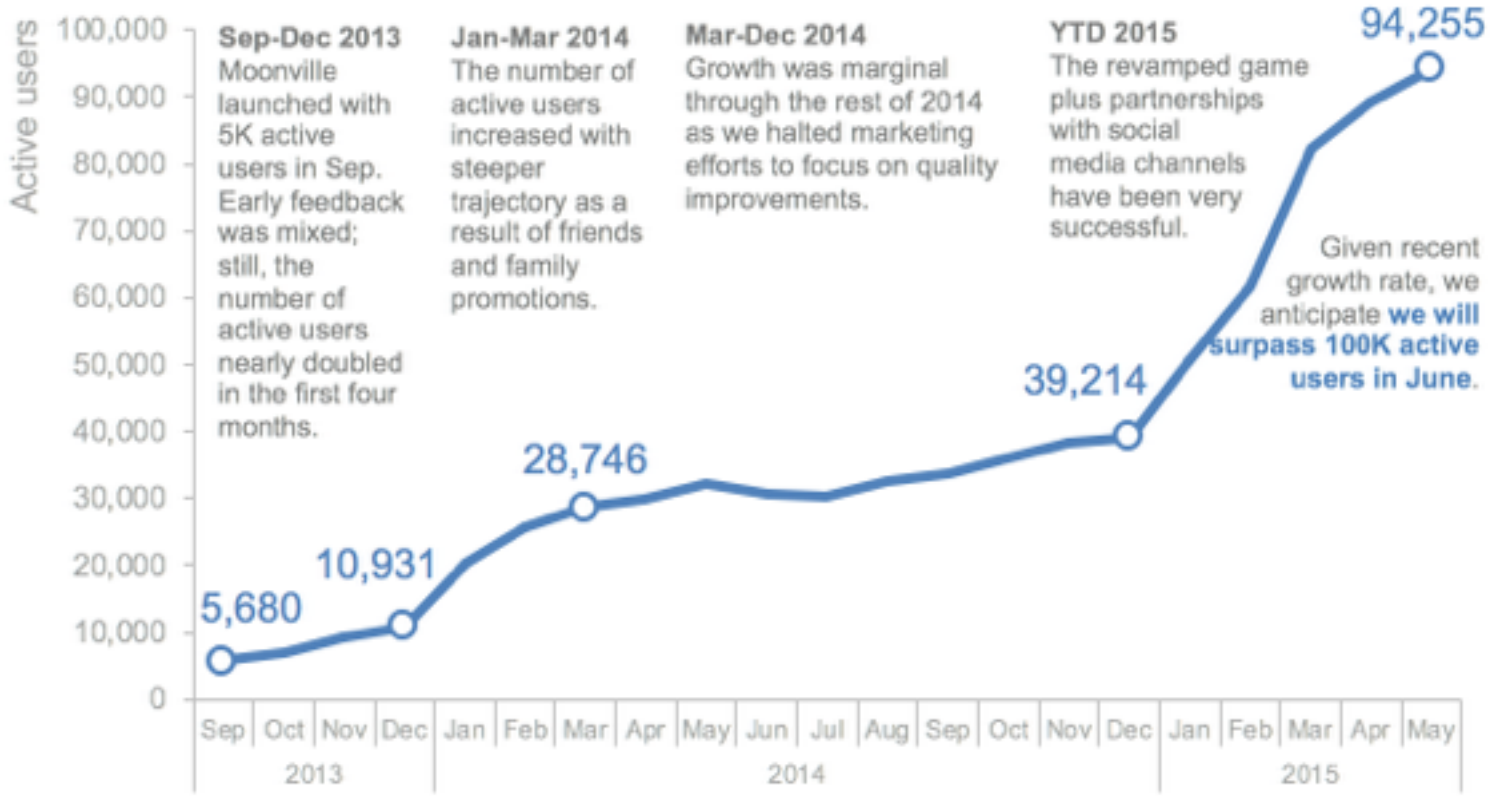
Storytelling with Data (Nussbaumer Knaflic)

Reports: for reading

- more on a single visualization
- explanation must be there in text
- Benefit: people have time to look at what you’ve sent

Your Audience

Moonville: active users over time



Data source: ABC Report. For purpose of analysis "active user" is defined as the number of unique users in the past 30 days.

Checklist

Figures

- ❑ Have informative titles
- ❑ Appropriate figures used
- ❑ Adhering to ‘less is more’
- ❑ Mappings clear (maybe a legend)
- ❑ Have consistent colors
- ❑ Take-home message clear
- ❑ Alignment all good
- ❑ Appropriate whitespace

Note: This **takes longer than you expect** it would. You can spend hours on a single figure. But, you worked *really* hard to understand the data and do the project. Now it’s time to show it off! You get to do this through your presentation of your results - **spend the time to do this effectively**.

Poster presentation

We don’t need it for this class,
but you might in the future

Better poster template: https://osf.io/6ua4k/