

# Course Announcements

## Due Dates

- Wed: A4
- Sun: Weekly project survey (*optional*)
- Finals week: (Wed 3/20) Final video\* + report\* + team eval survey
  - Video submitted on Canvas
  - Report submitted on GitHub
  - Team evaluation form is a Google Form (*req'd*)
  - There will also be a post-course survey (*optional*)

\* indicates group submission

## Notes:

- No labs this week - section is project-focused
- Please complete your SETs
- *During finals week* No normal OH; I will hold 10 min by appt.
  - Tues 12:30-1:30
  - Wed 2-3
  - Link coming soon

# Effective Communication

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# **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
- **Abstract** - *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 & discuss limitations

# 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

**01:**

## Your Audience



**02:**

## Storytelling



**03:**

## The Grammar of Graphics



**04:**

## The Glamour of Graphics







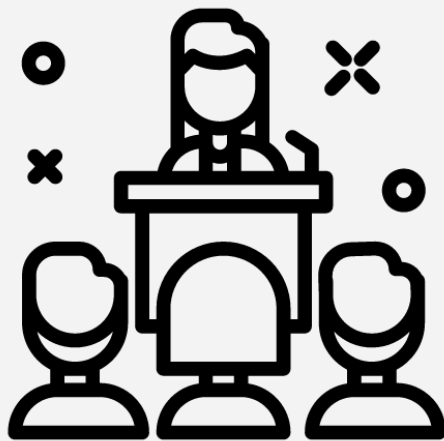
## **Presentation Goals**

1. Inspire
2. Educate
3. Entertain



## Ground Rules

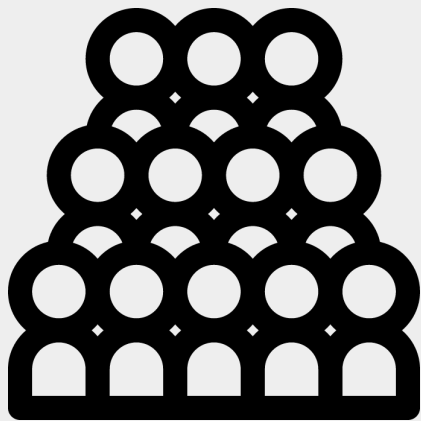
1. Prepare
2. Practice
3. Don't go over time



01:

Your Audience

# Your Audience



## Consider your audience.

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

## General

✓ background

⊘ limit technical details

🎉 emphasize take-home

## Presentation: General Audience

### Introduction & Background

- Details on background material
- Full explanation of question and why doing analysis



### Conclusion



### Analysis

- Limited discussion of approach
- Focused presentation of results

# Your Audience

## General

✓ background

🚫 limit technical details

🎉 emphasize take-home

## Technical

⬇️ limit background

💻 all-the-details

🎉 emphasize take-home

## Presentation: Technical Audience

Introduction  
&  
Background



Analysis

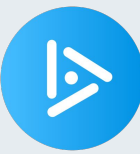
- Details on methodology
- Detailed results
- Discussion of tools/approach

Conclusion

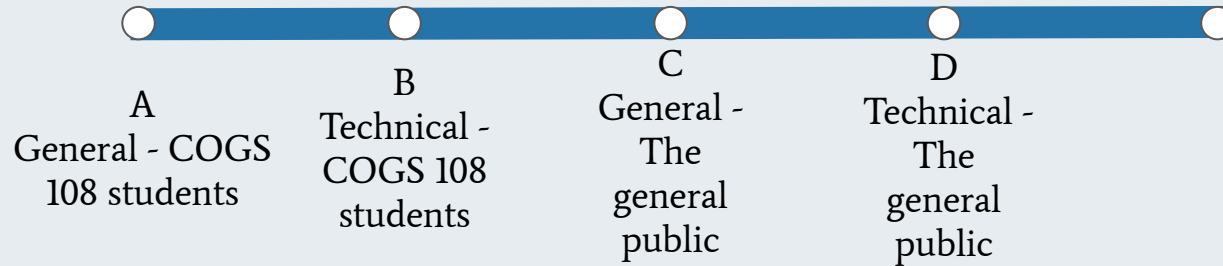




# Final Project Video



Who's your audience for the Final Project Video?





02:

Storytelling



## Storytelling: Ground Rules

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



## Outline Your Talk

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

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...

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

## Slide Design Matters

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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

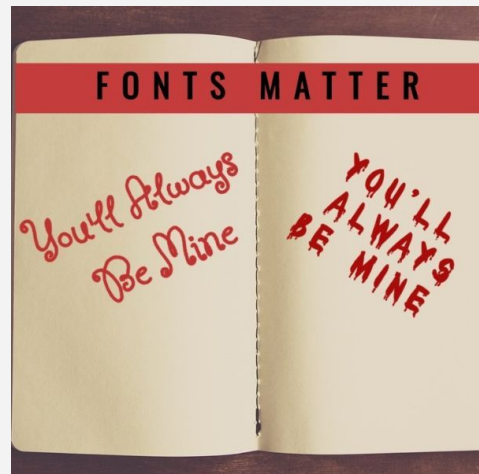
# Fonts matter



MEGAFLICKS



Fast Taco



# Fonts matter

Roboto family

Source family

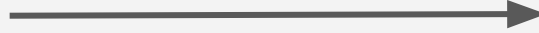
Fira family

Alegreya

Crete Round

Muli

<https://practicaltypography.com/>



This is not  
very easy to  
read.

This is much  
easier to read.

Choose Good Colors

## Color is Hard.

- Figures
  - Slides
  - Highlighting
-

# Rule #1: Choose intuitive colors.

NOT IDEAL



GOOD  
BAD



FOREST  
LAKE



FEMALE  
MALE

BETTER



GOOD  
BAD



FOREST  
LAKE



FEMALE  
MALE

## Rule #2: Consistency is key.

NOT IDEAL

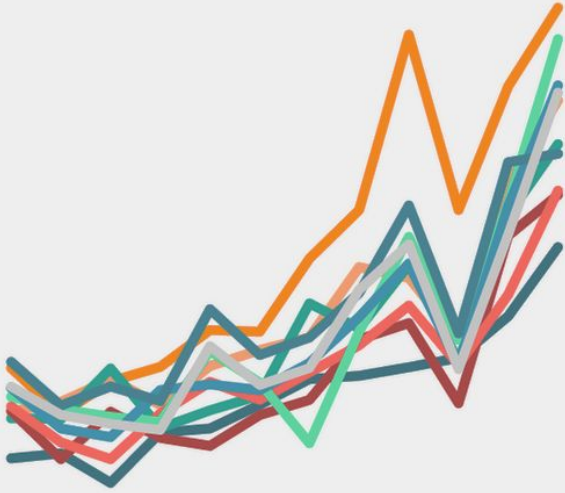


BETTER

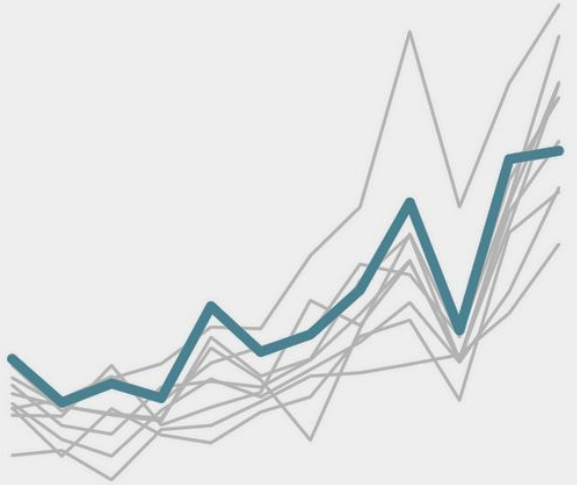


# Rule #3: Gray is (definitely) your friend.

NOT IDEAL



BETTER

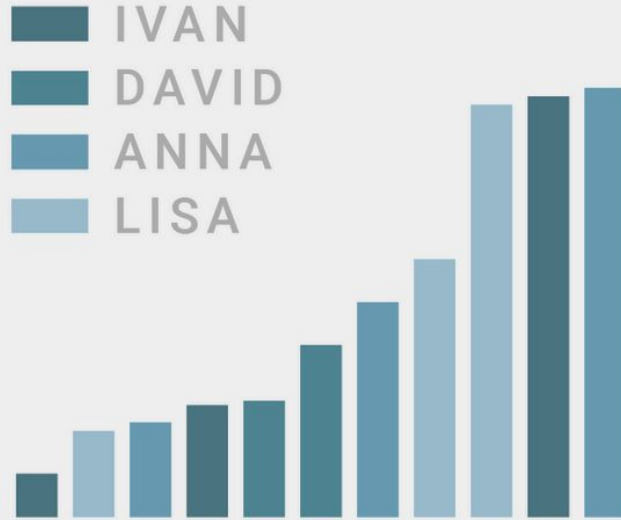


<https://blog.datawrapper.de/colors/>

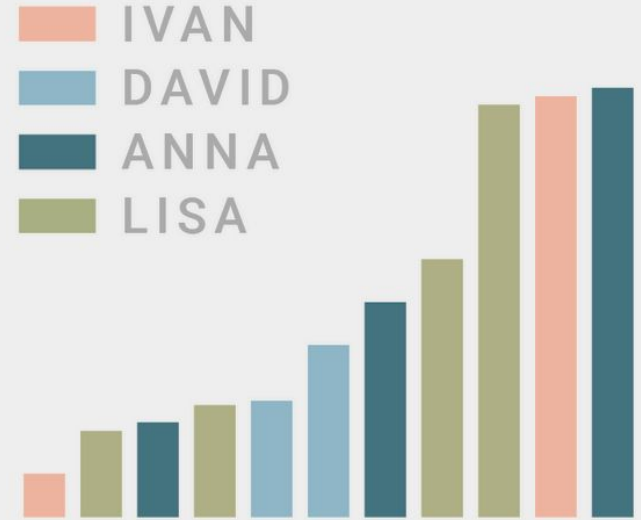


## Bonus: Gradients for continuous. Distinct for categories

NOT IDEAL

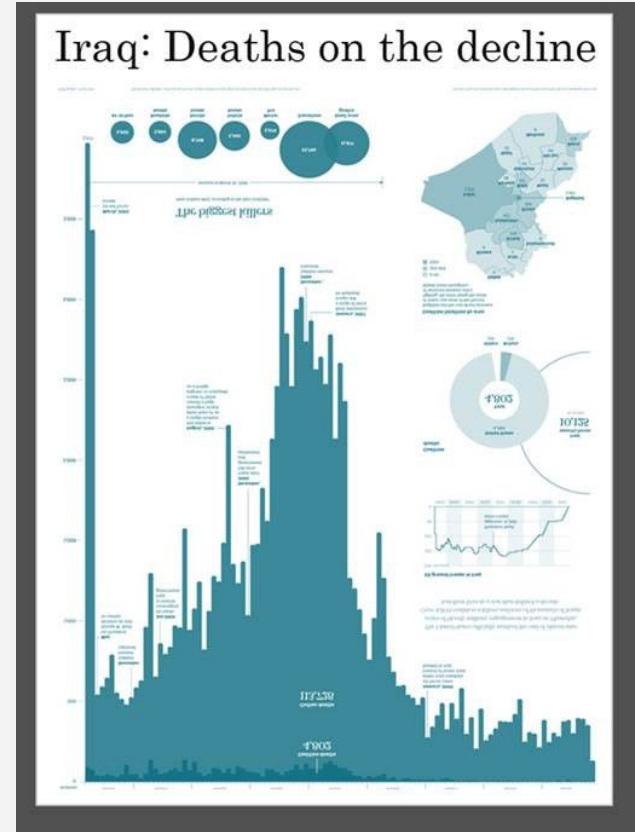


BETTER

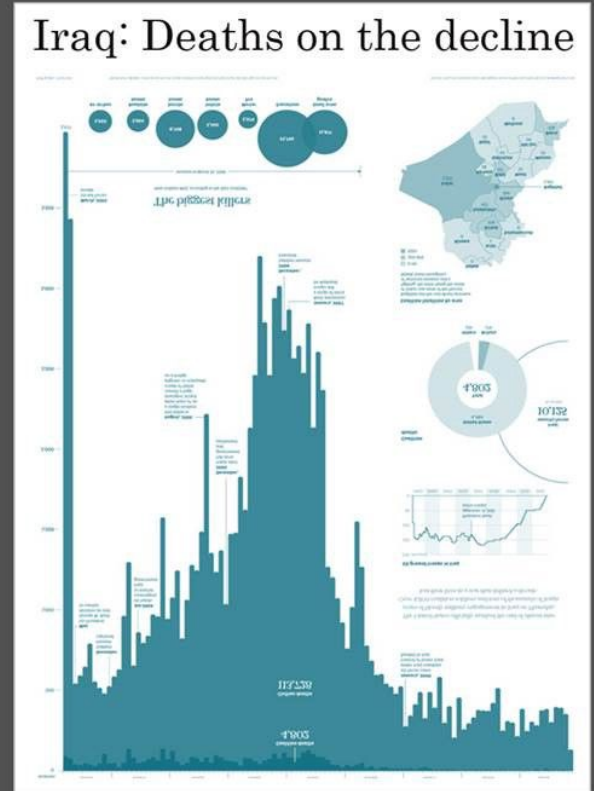


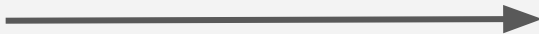
<https://blog.datawrapper.de/colors/>

## Design choices alter the tone of your message



[https://medium.com/@Elijah\\_Meeks/what-charts-say-6e31cbba2047](https://medium.com/@Elijah_Meeks/what-charts-say-6e31cbba2047)





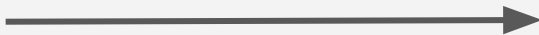
## Title

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



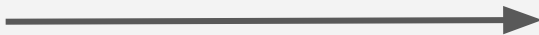
## Title

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

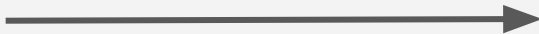
This text is not really important, and it's not where I want you to focus your attention, so I'm going to play around with some things that allow you to focus on what I want you to focus on.

## 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

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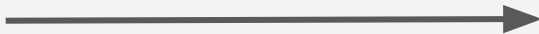
## Title

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.

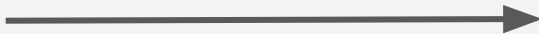
## Typeface

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

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Title

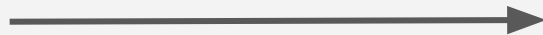
This text is not really important, and it's not where I want you to focus your attention, so I'm going to play around with some things that allow you to focus on what I want you to focus on.

**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



- You waste others' time
- IF YOU  
DON'T  
ALIGN  
STUFF
- It's distracting
  - It's unhelpful to your viewers

## ALIGN STUFF

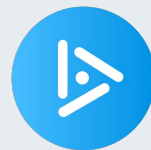
- Worth the time
- Doesn't distract
- Helps viewers

Take the Time to Align

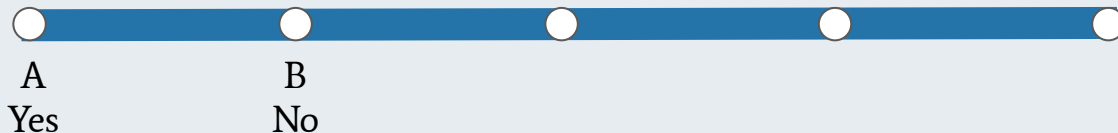
## Slides

- ☐ 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

# Final Project Video



Should you scroll through your jupyter notebook during your final project presentation?



# **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

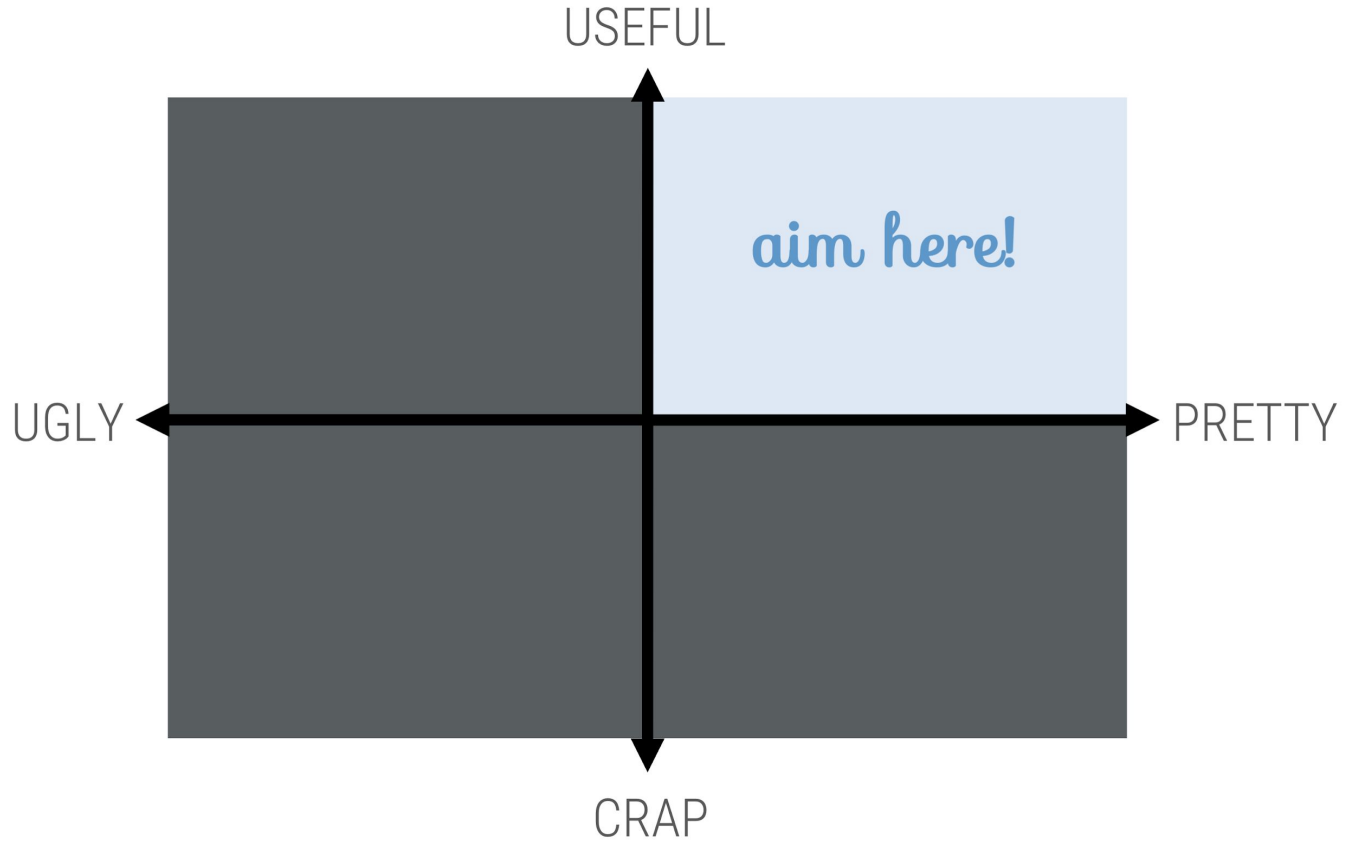
NOTE! These are directly taken from Will Chase's rstudio::conf2020 talk:  
<https://www.williamrchase.com/slides/assets/player/KeynoteDHTMLPlayer.html>

# Take a sad plot & make it better

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

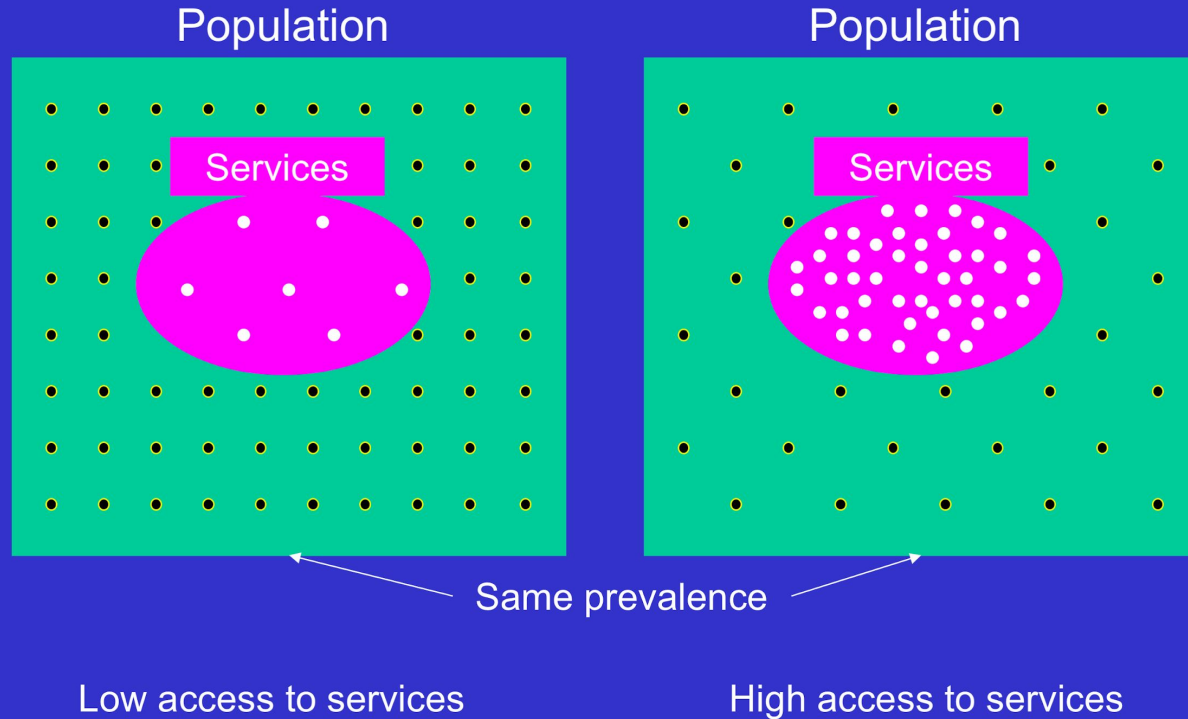
# Iteration



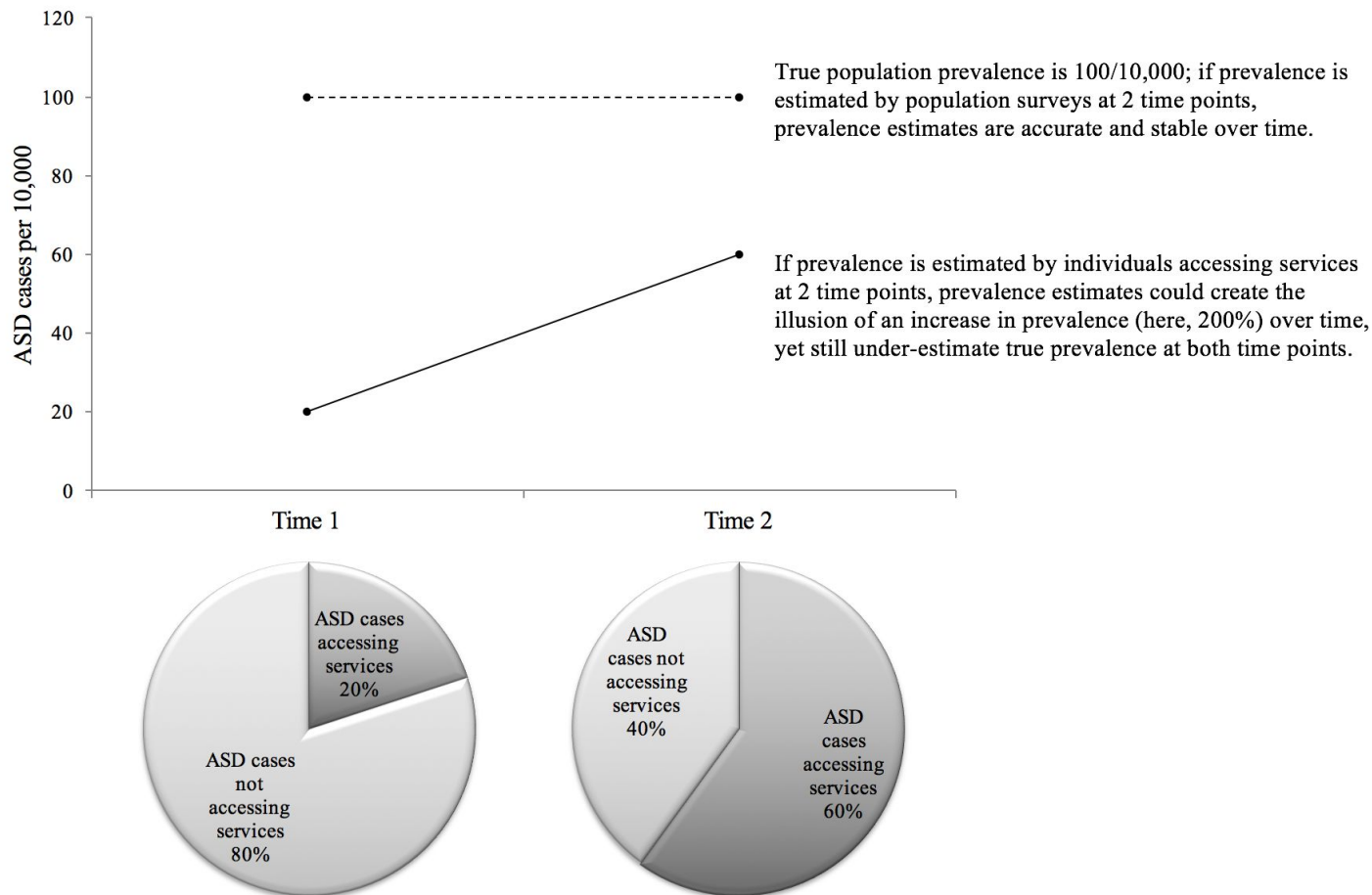
Source: Jackie Wirz



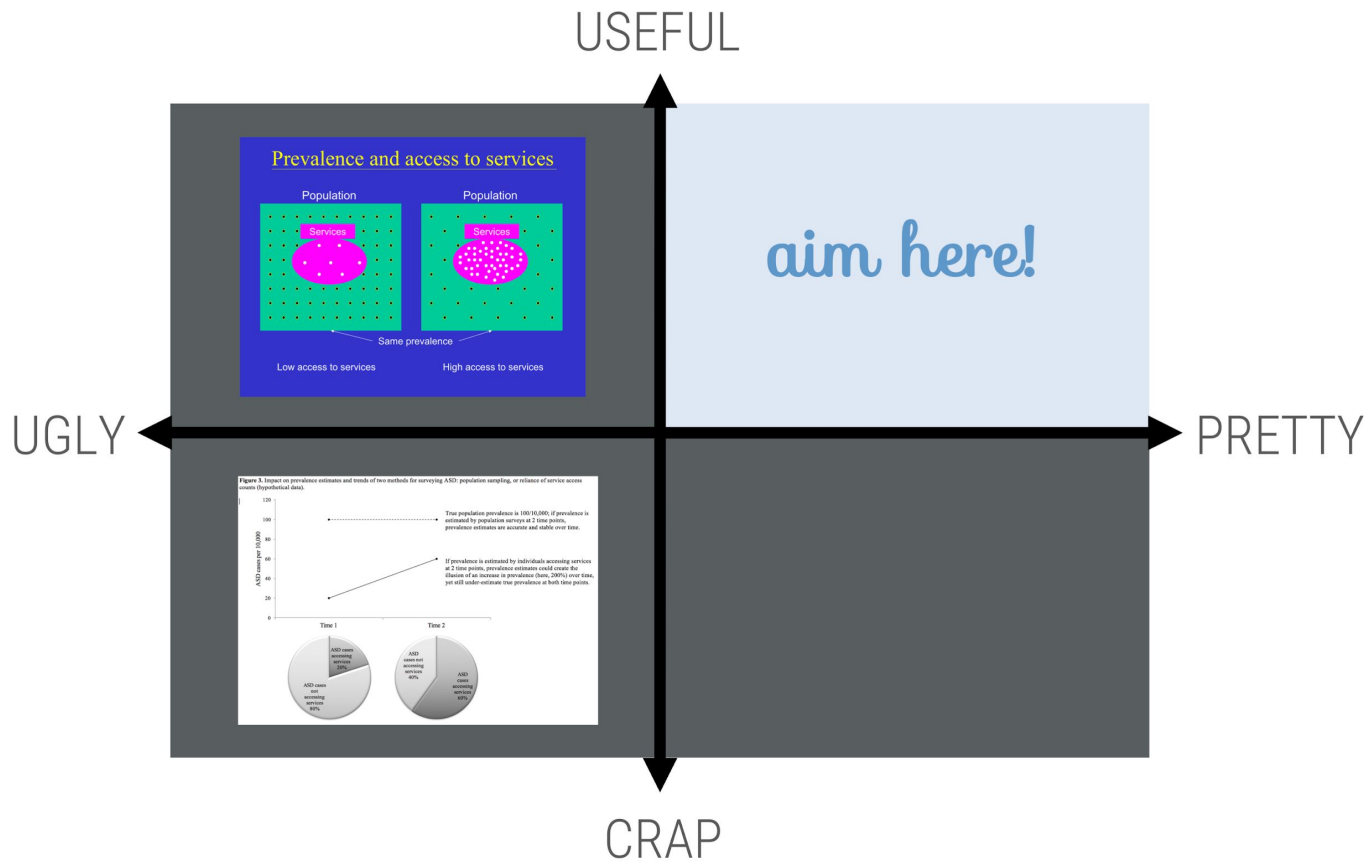
## Prevalence and access to services



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

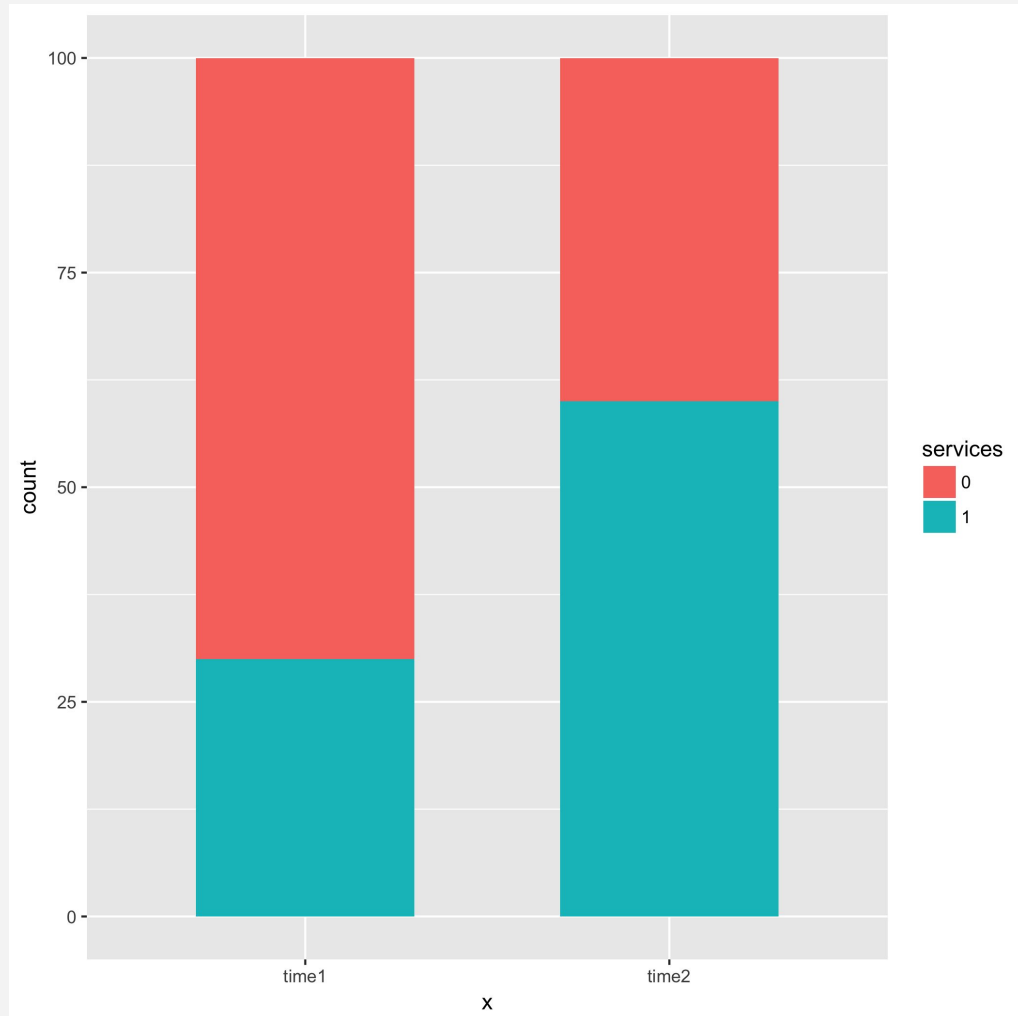


# Iteration



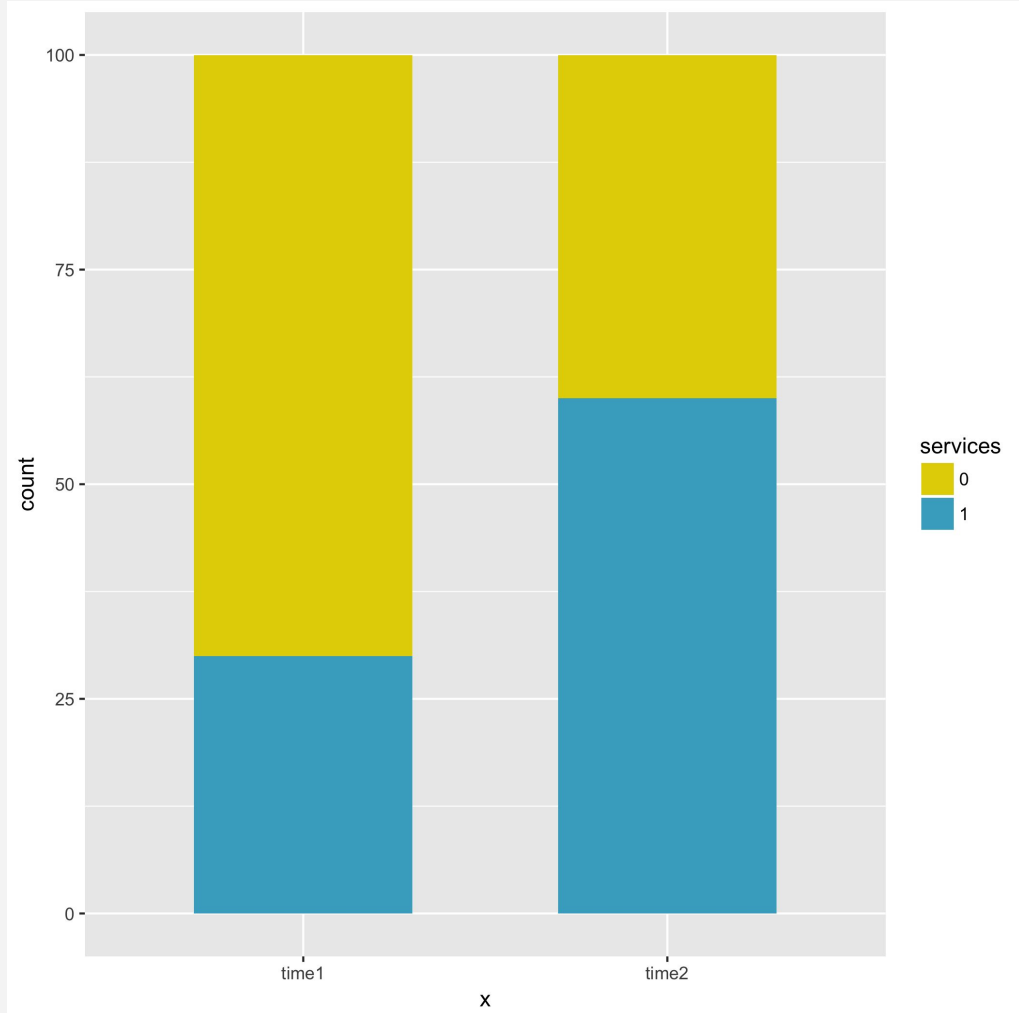
Source: Jackie Wirz

# Iteration



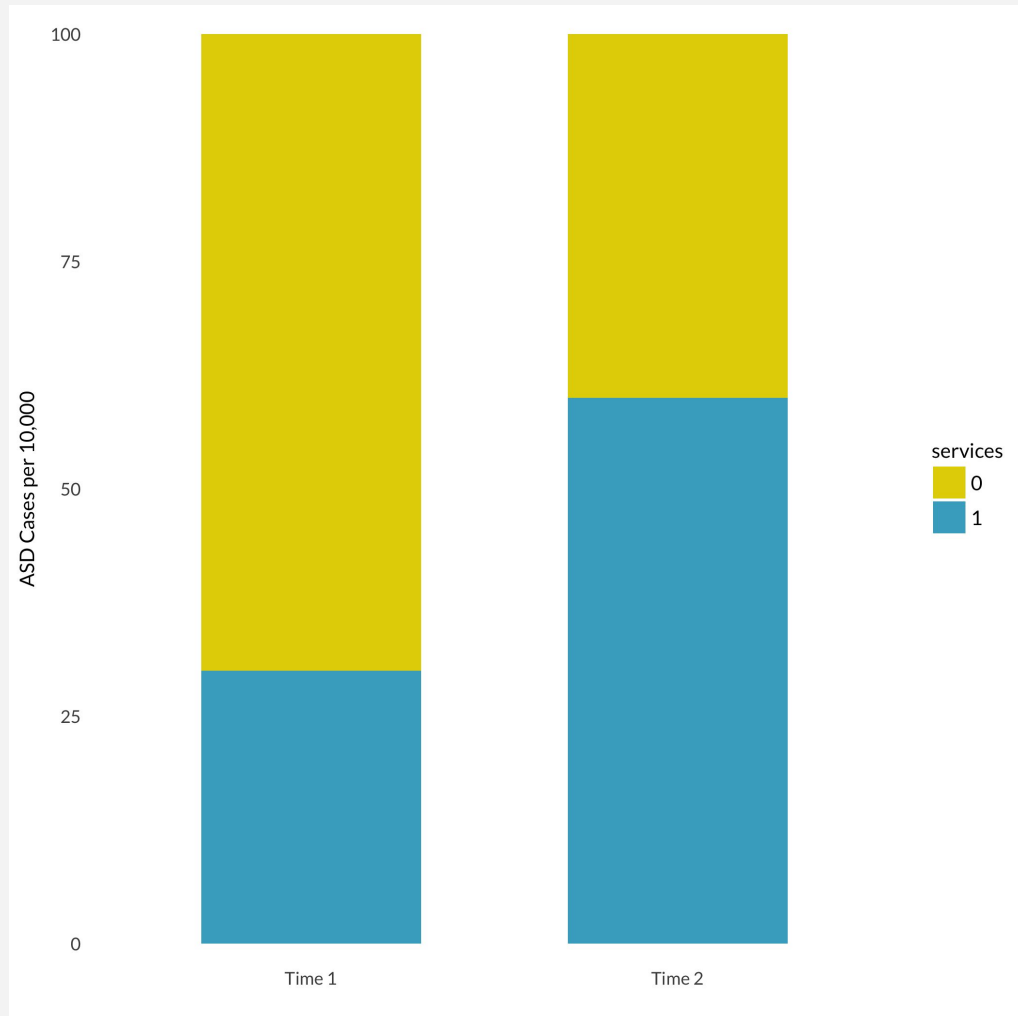
Source: <https://apreshill.github.io/ohsu-biodatavis>

# Iteration



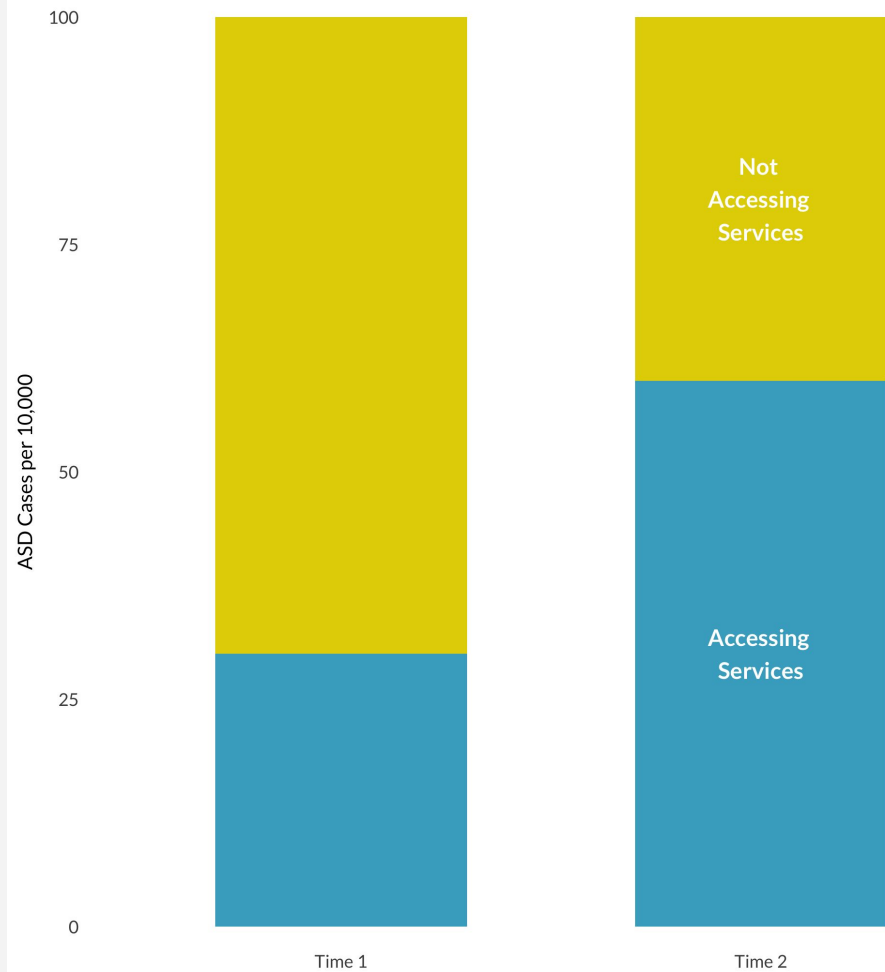
Source: <https://apreshill.github.io/ohsu-biodatavis>

# Iteration



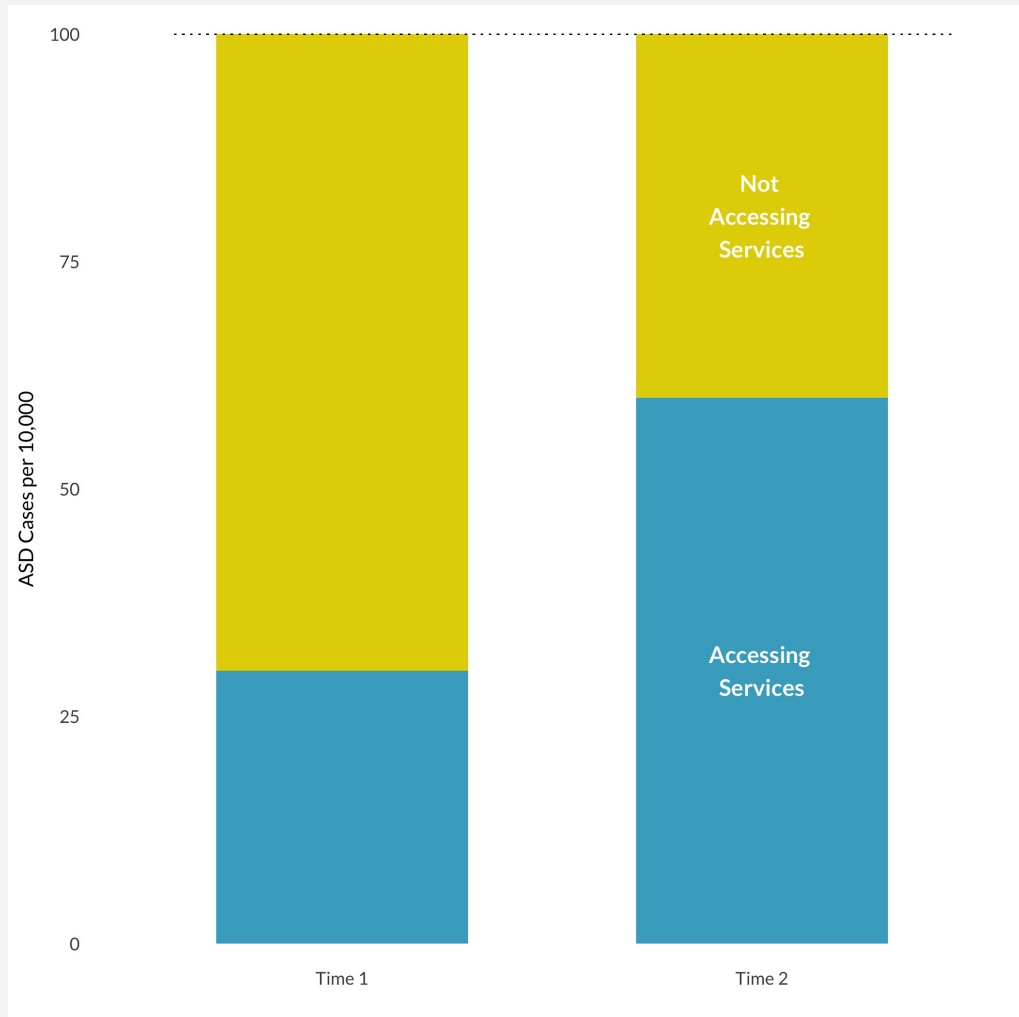
Source: <https://apreshill.github.io/ohsu-biodatavis>

# Iteration



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

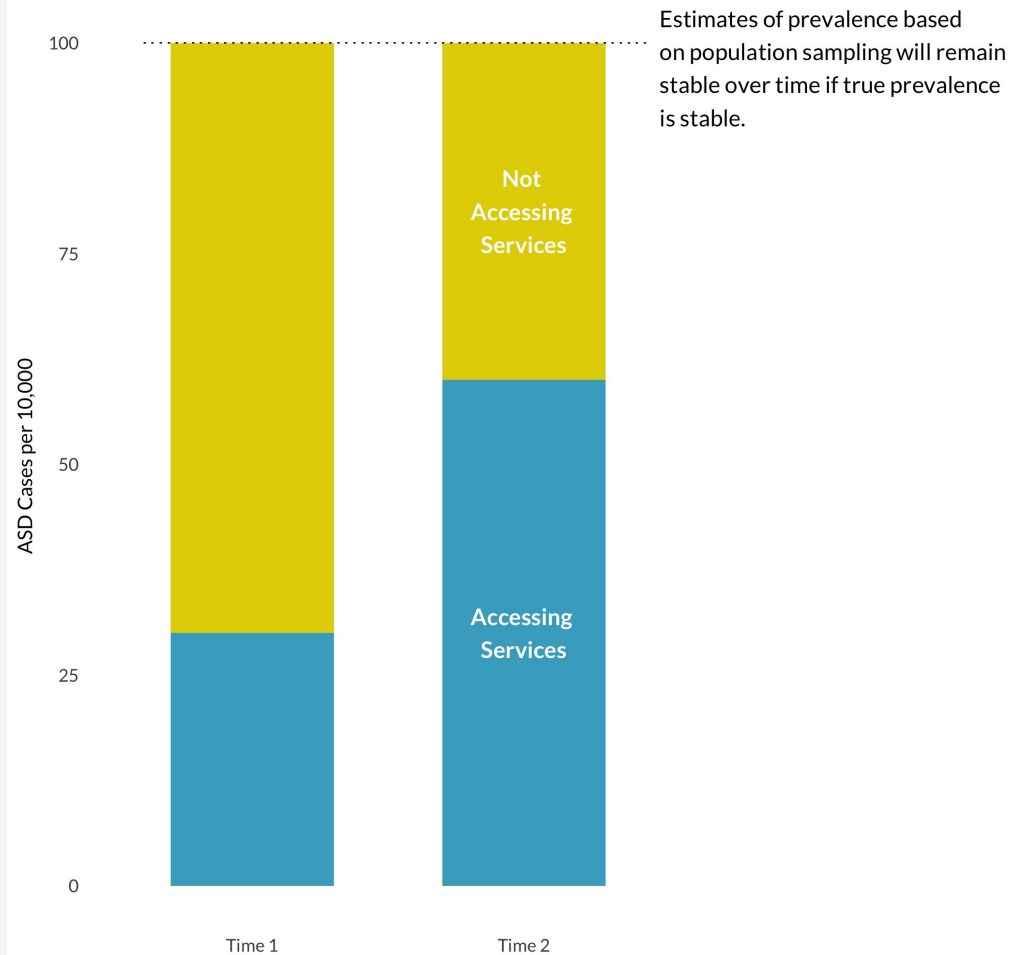
# Iteration



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

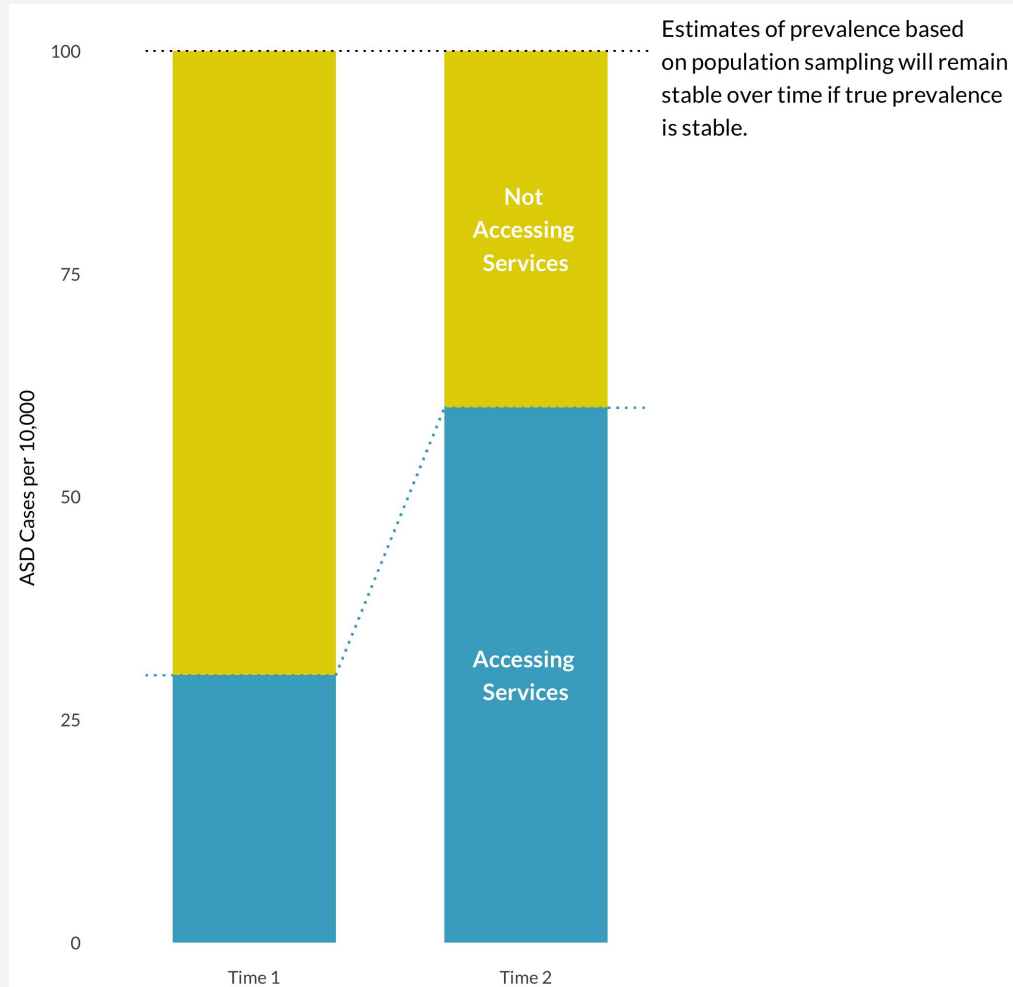


# Iteration



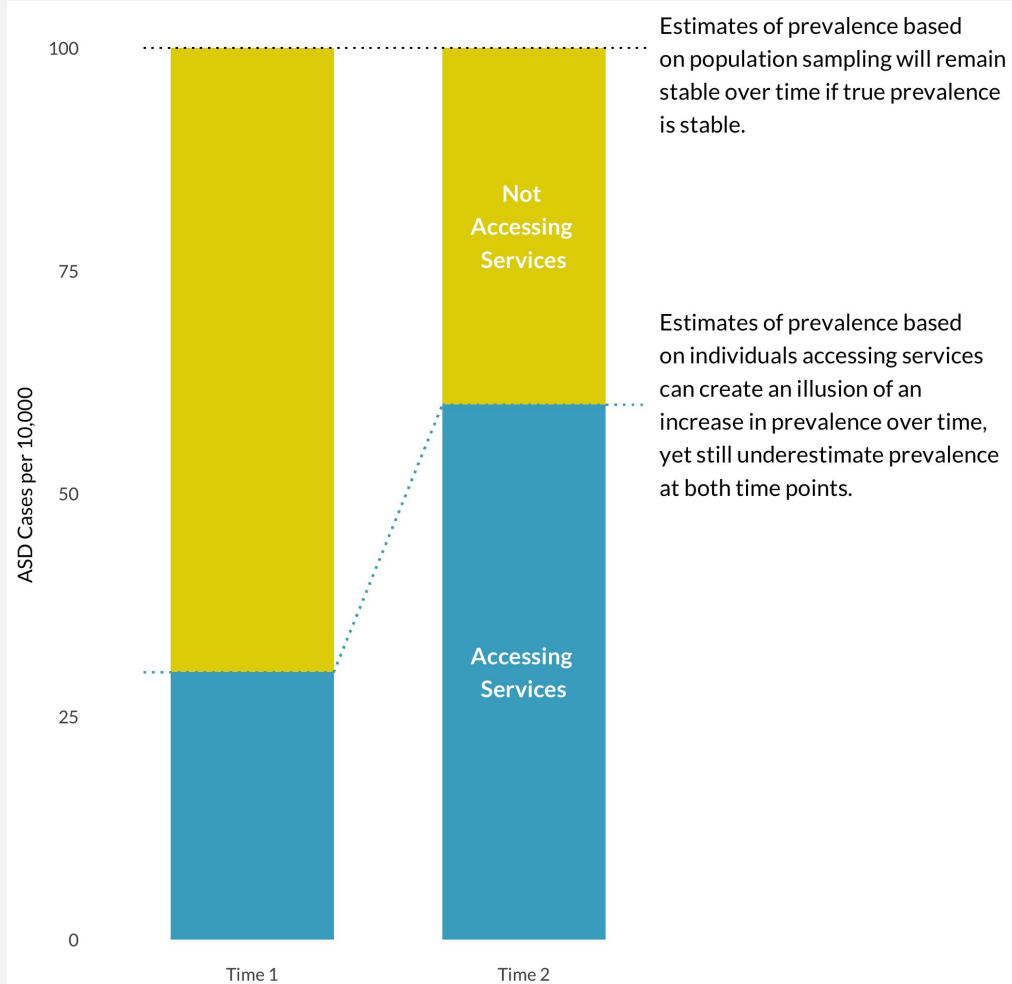
Source: <https://apreshill.github.io/ohsu-biodatavis>

# Iteration

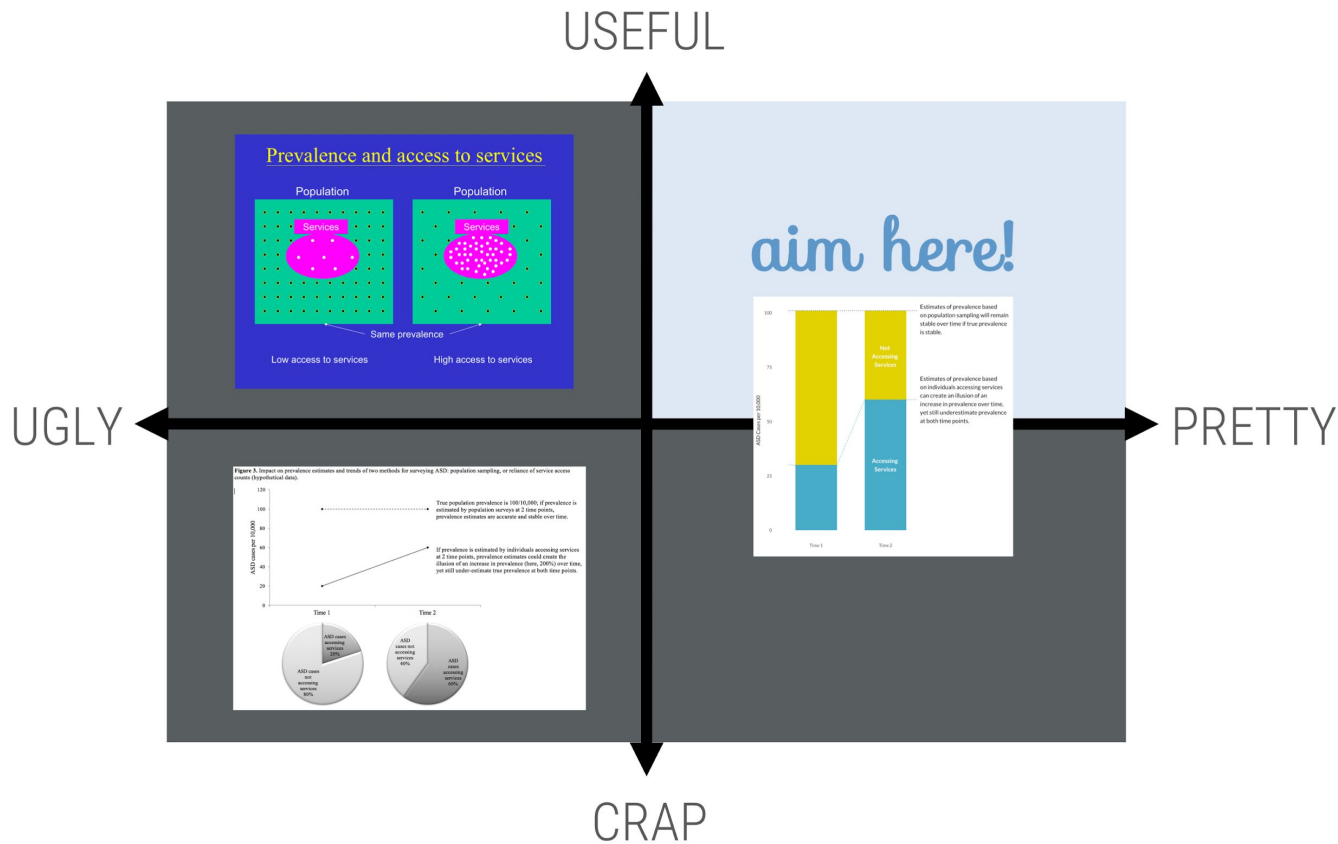


Source: <https://apreshill.github.io/ohsu-biodatavis>

# Iteration



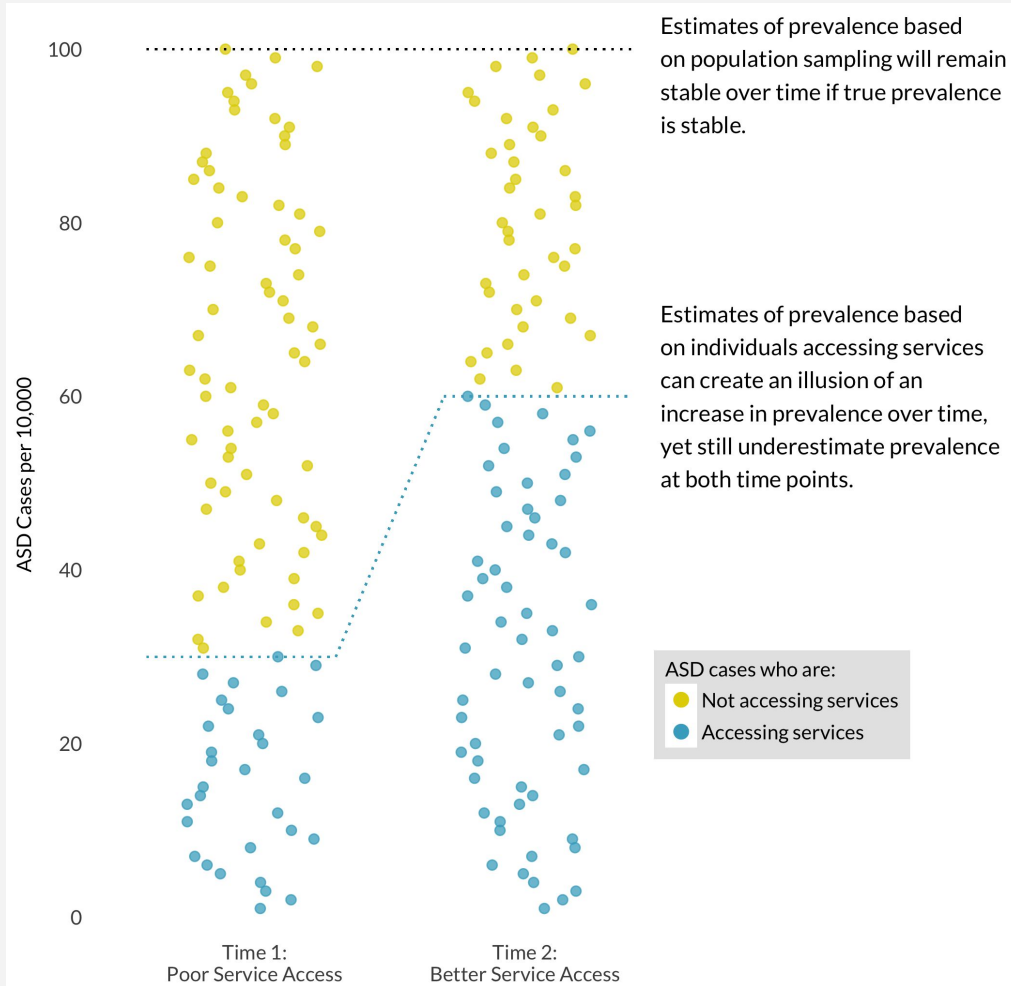
Source: <https://apreshill.github.io/ohsu-biodatavis>



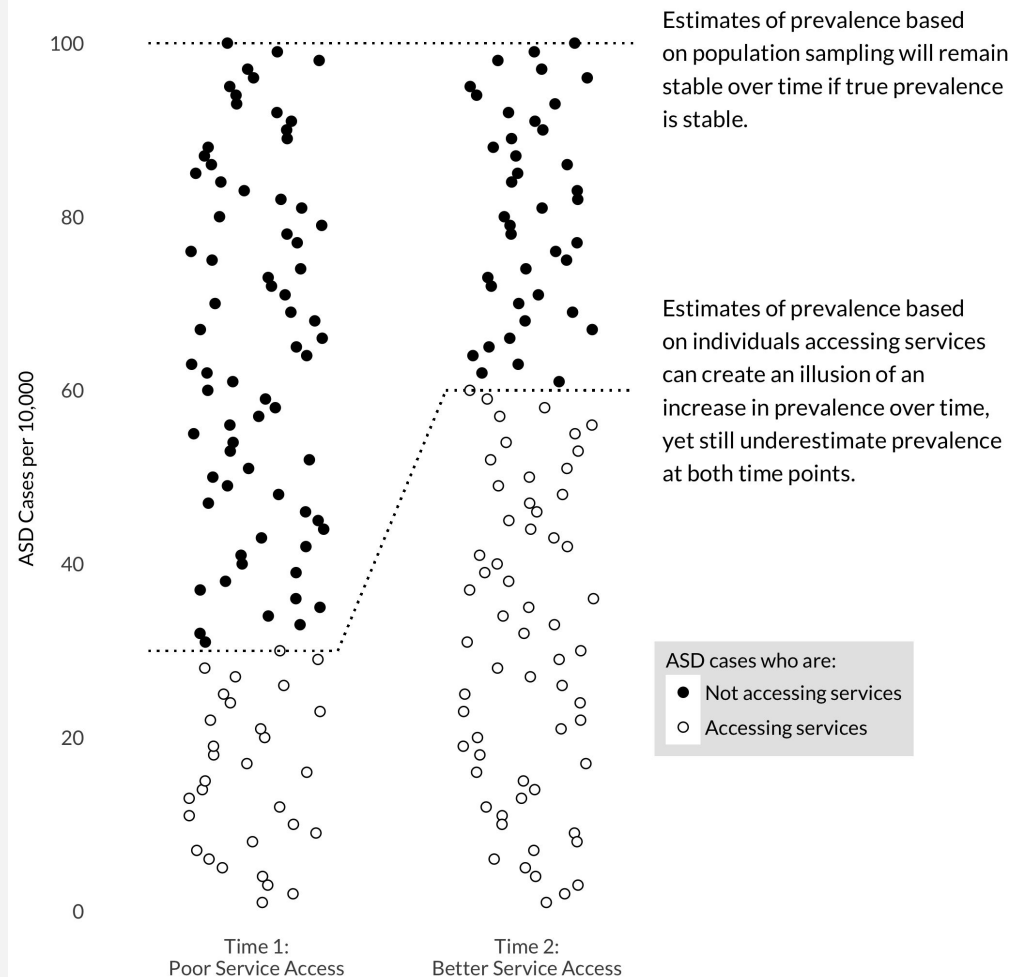
Source: Jackie Wirz

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

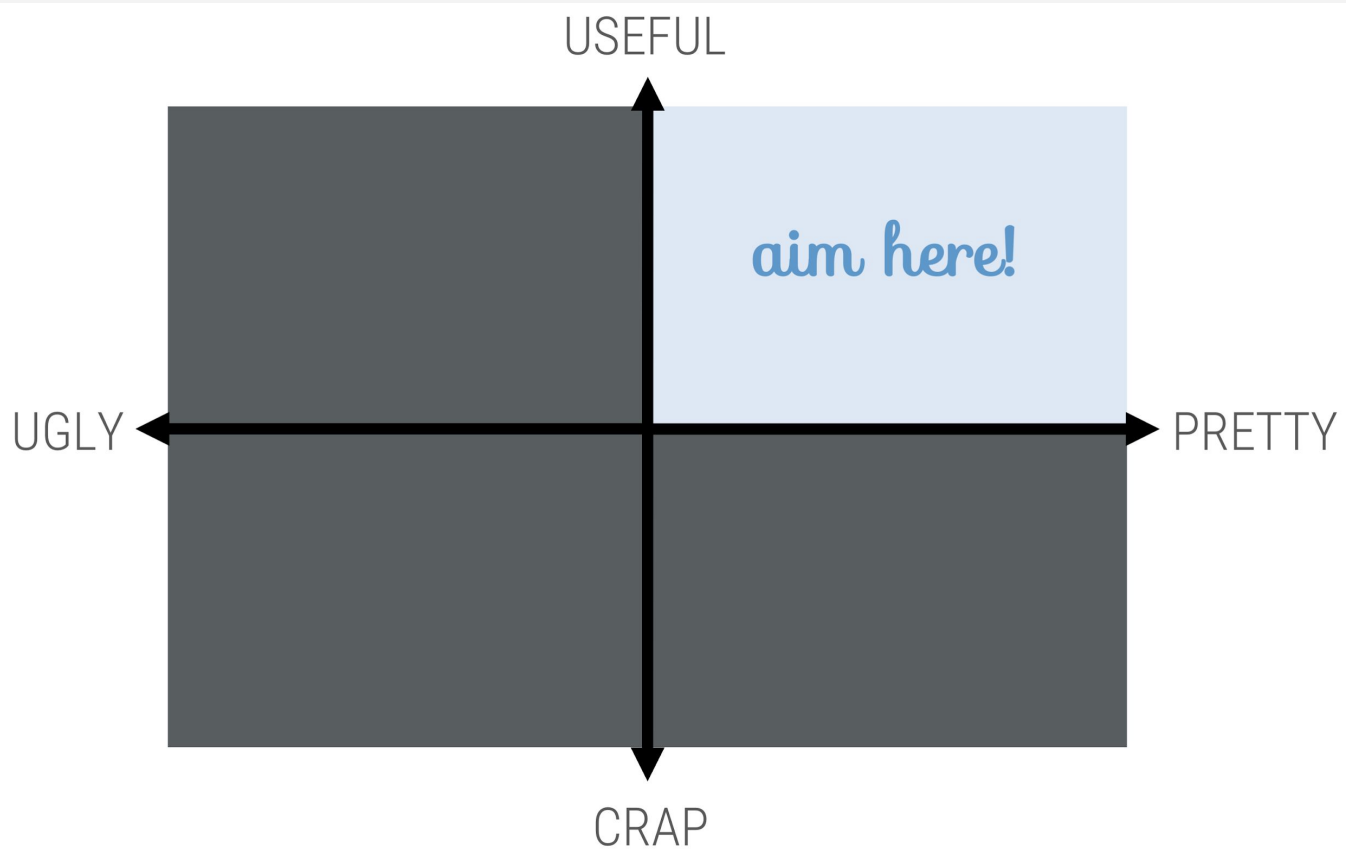
# Iteration



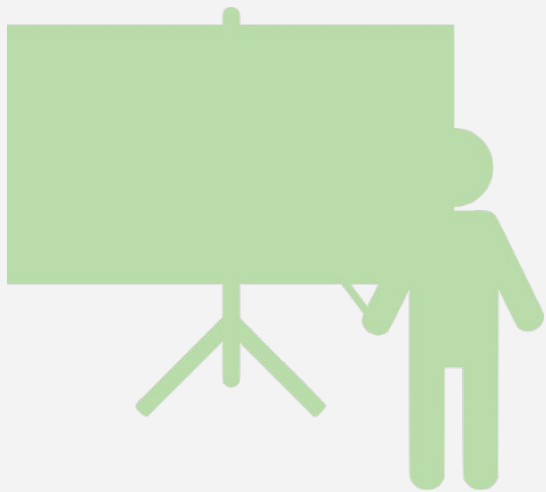
# Iteration



**Your turn: Take a sad plot & make it better**



Source: Jackie Wirz



## **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



## Moonville: active users over time



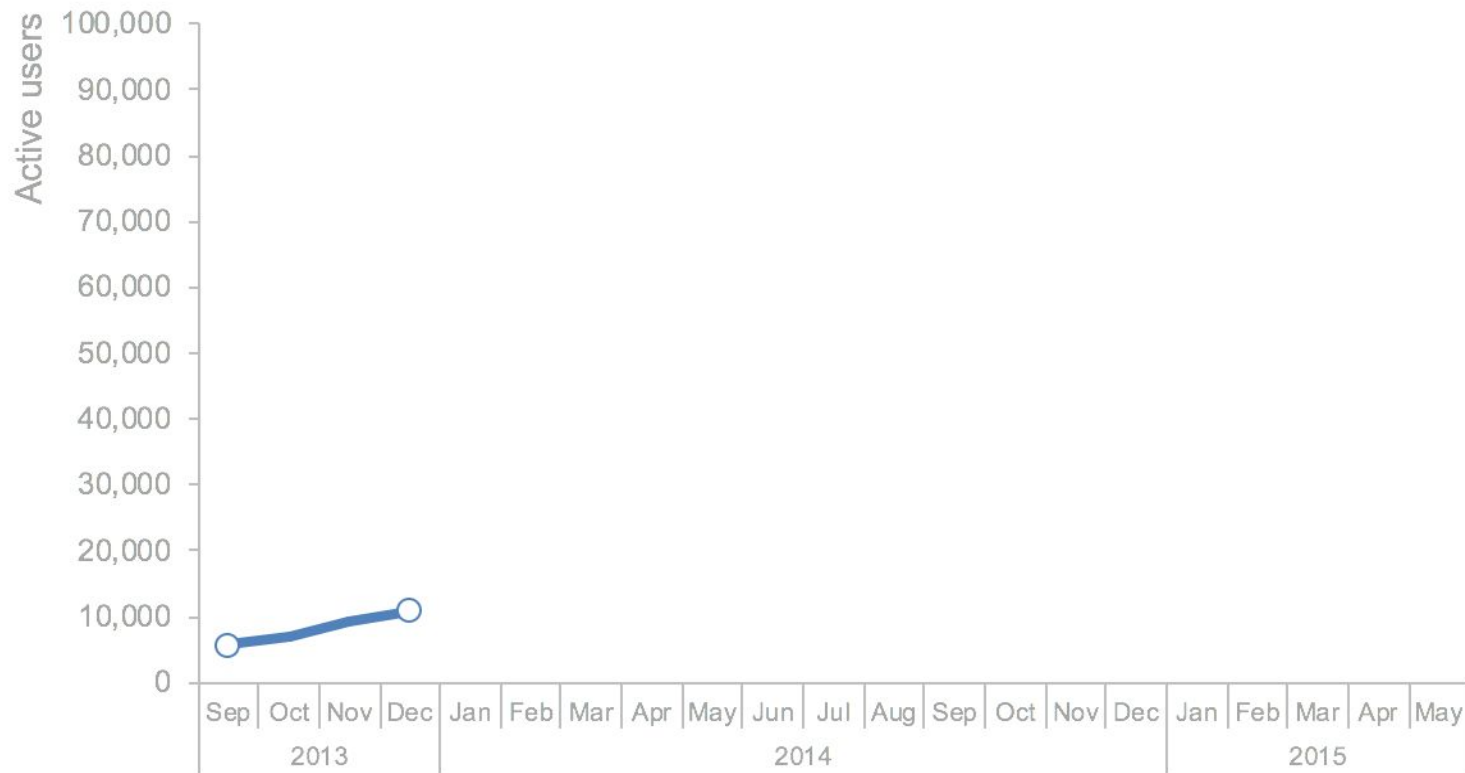
Data source: ABC Report. For purpose of analysis "active user" is defined as the number of unique users in the past 30 days.

## Moonville: active users over time



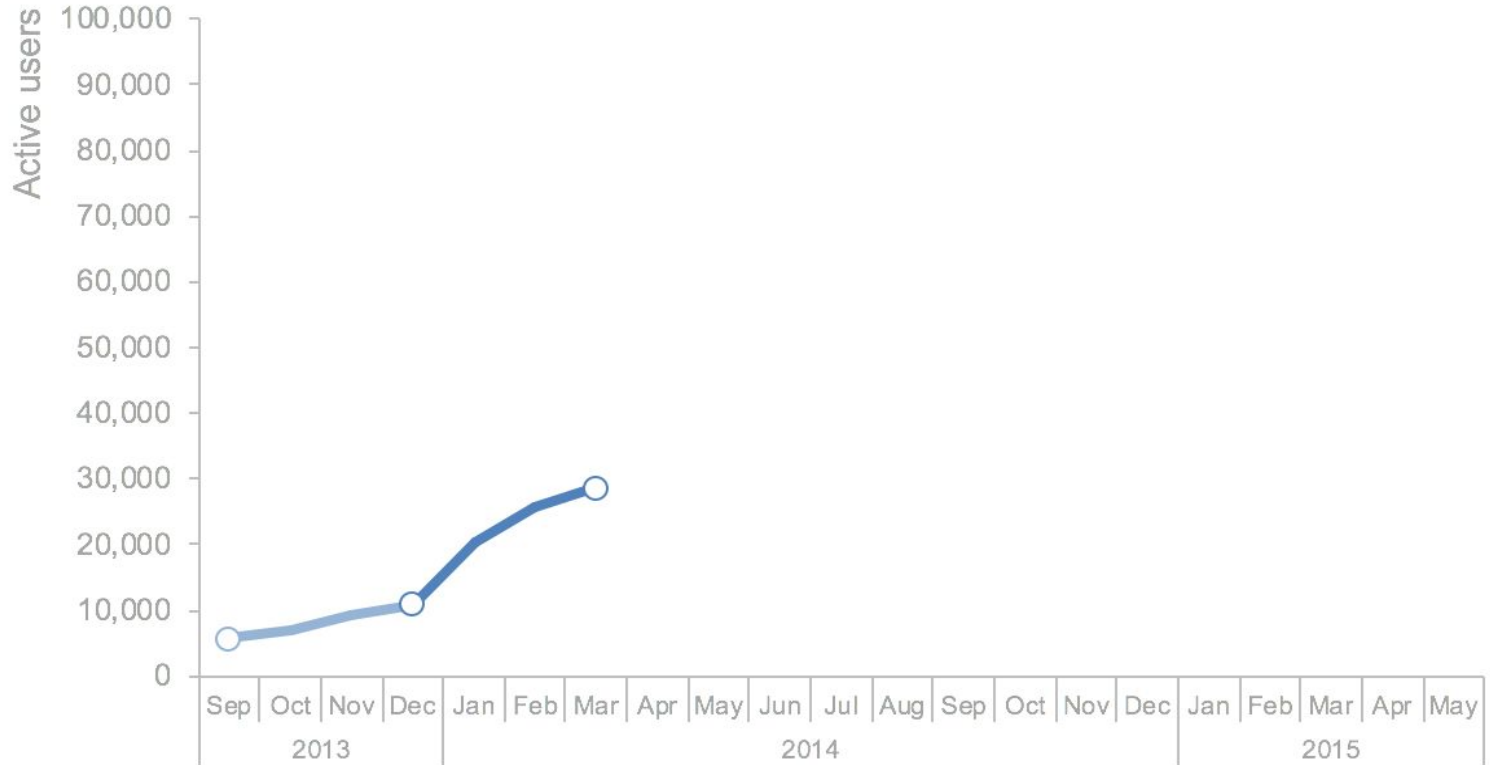
Data source: ABC Report. For purpose of analysis "active user" is defined as the number of unique users in the past 30 days.

## Moonville: active users over time



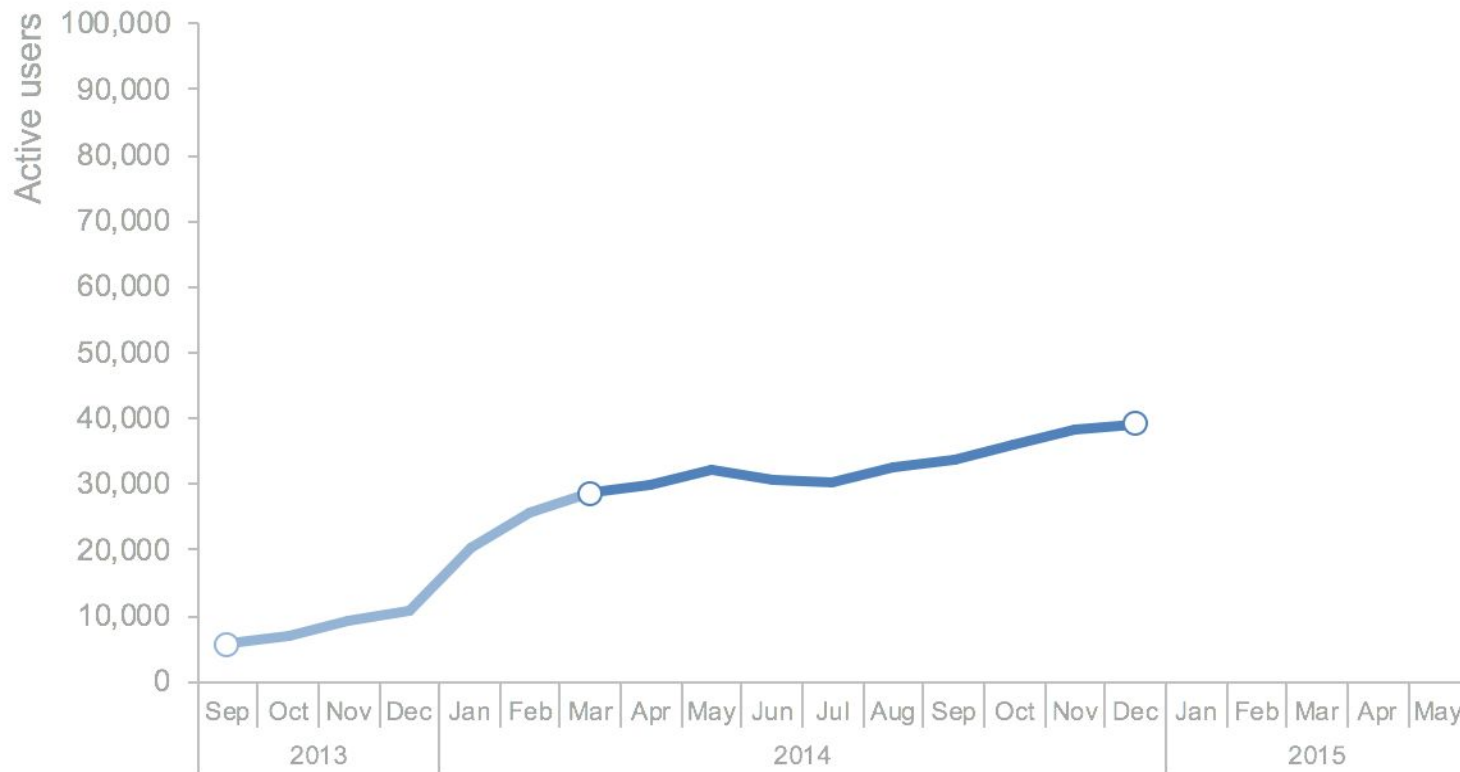
Data source: ABC Report. For purpose of analysis "active user" is defined as the number of unique users in the past 30 days.

## Moonville: active users over time



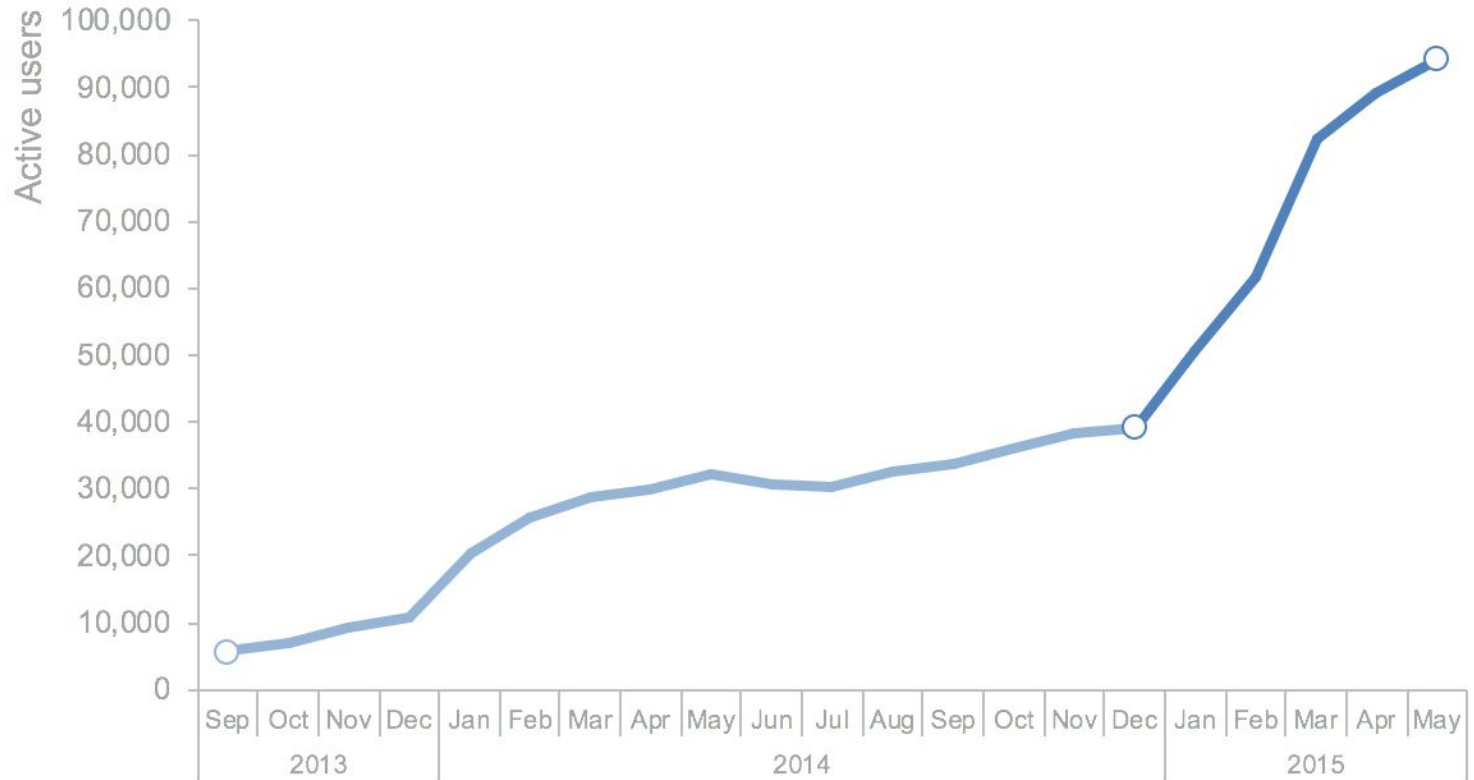
Data source: ABC Report. For purpose of analysis "active user" is defined as the number of unique users in the past 30 days.

## Moonville: active users over time

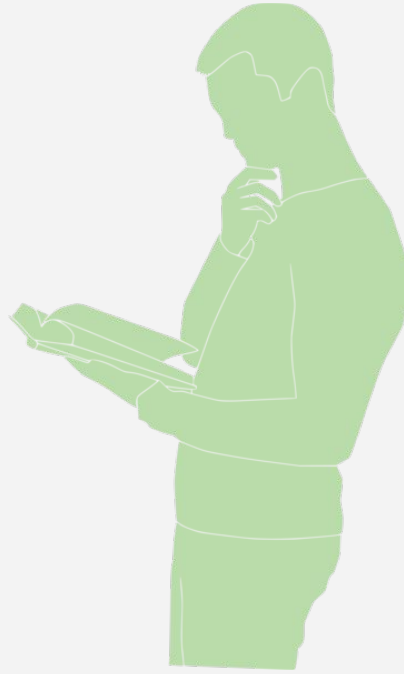


Data source: ABC Report. For purpose of analysis "active user" is defined as the number of unique users in the past 30 days.

## Moonville: active users over time



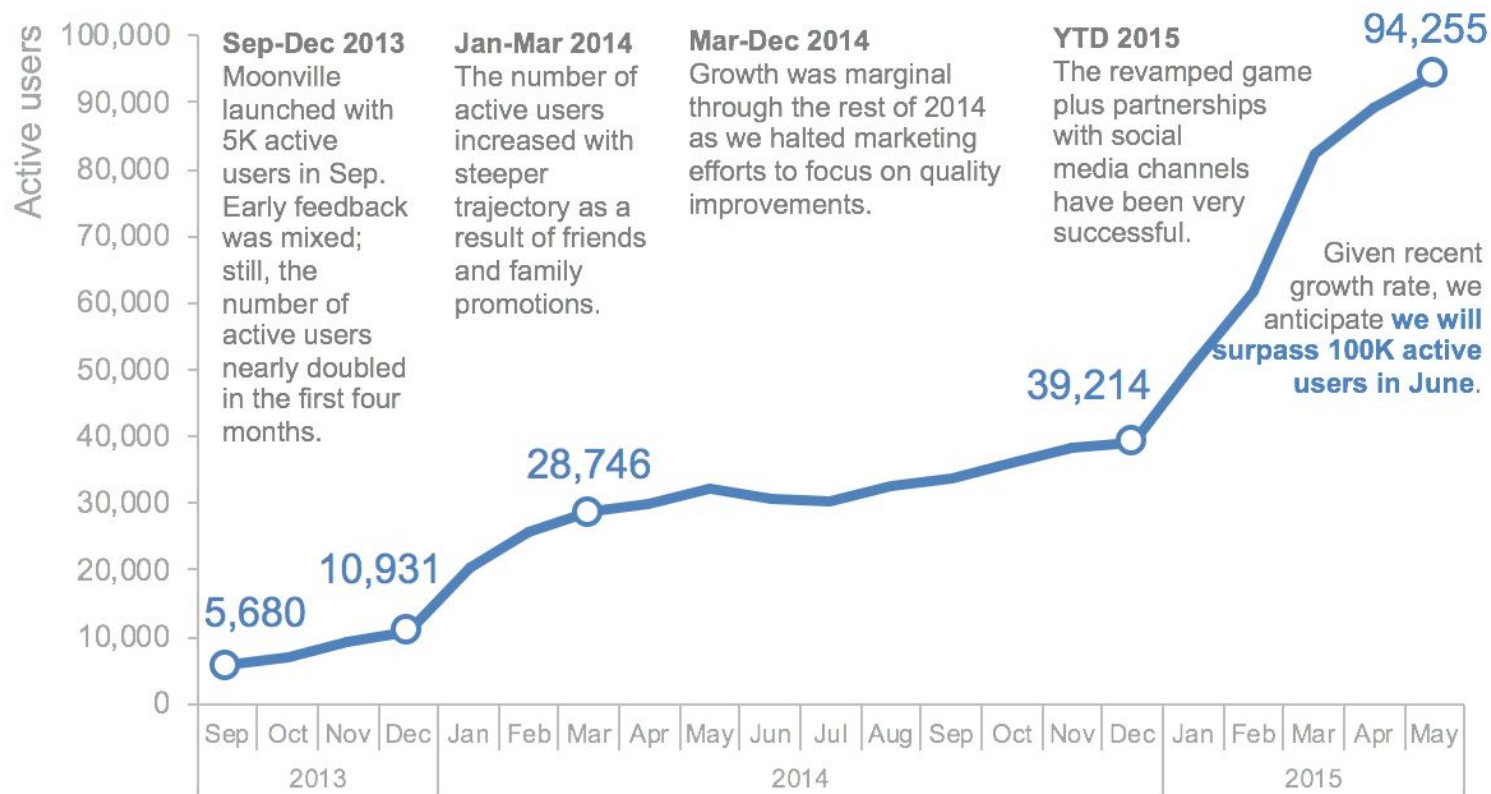
Data source: ABC Report. For purpose of analysis "active user" is defined as the number of unique users in the past 30 days.



## **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

## Moonville: active users over time



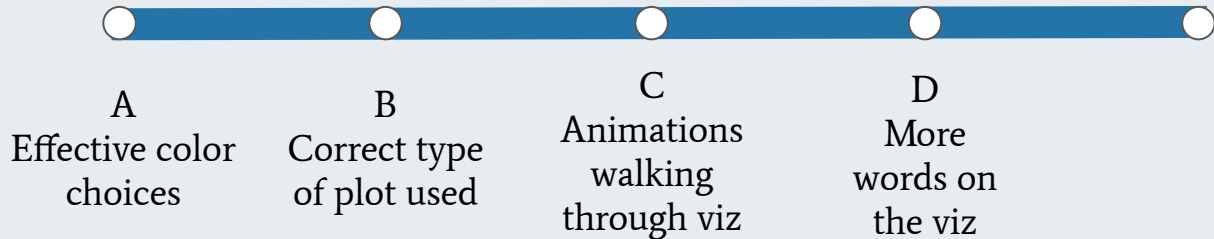
Data source: ABC Report. For purpose of analysis "active user" is defined as the number of unique users in the past 30 days.



# Reports vs. Presentations



What would you expect of a visualization in a report (but not on an oral presentation)?

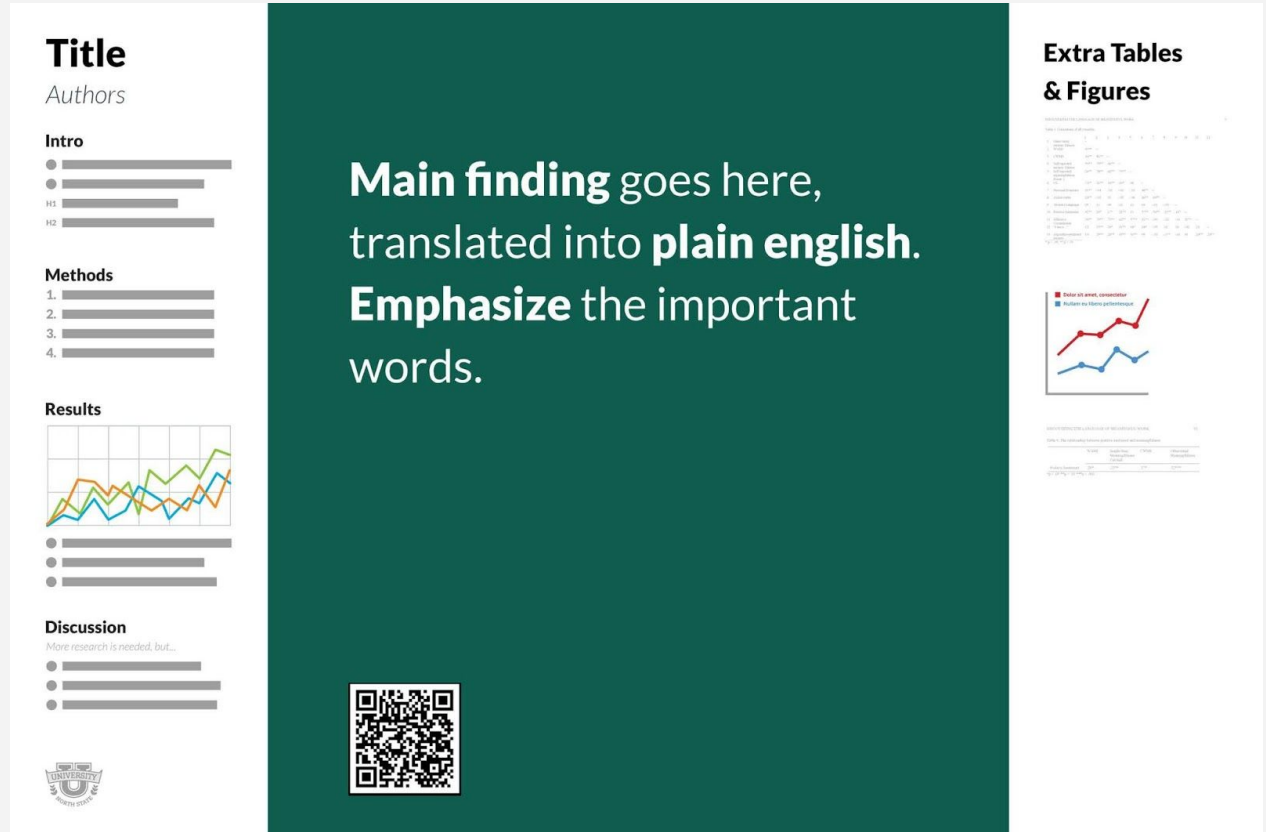


## Figures

- ☐ 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**.

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



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