

Topic: Offloading “Odious” Work

From  SAS® to 

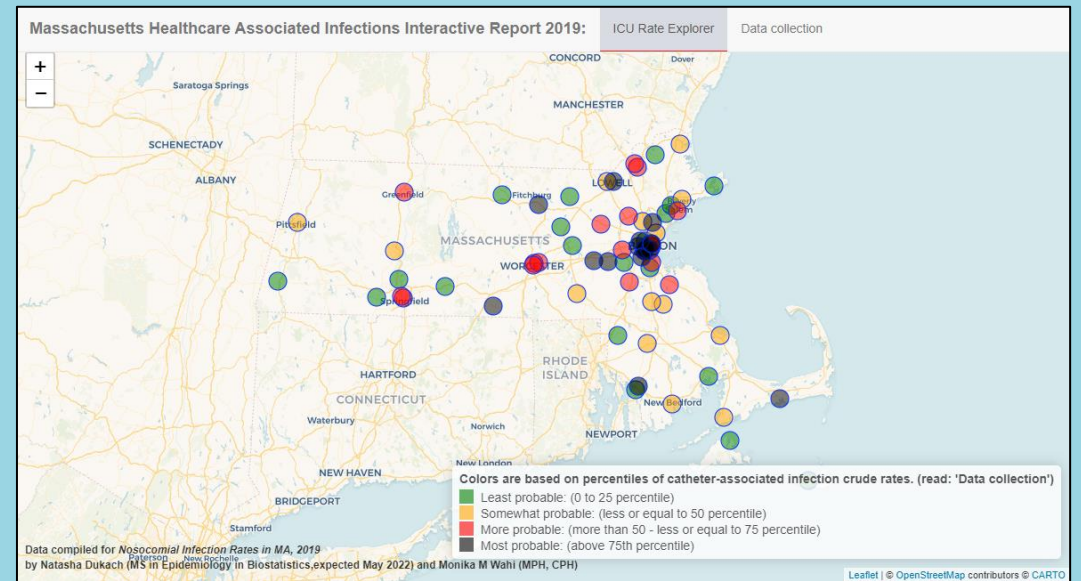
Case Studies in  SAS® Integration



Welcome to the Case Study!

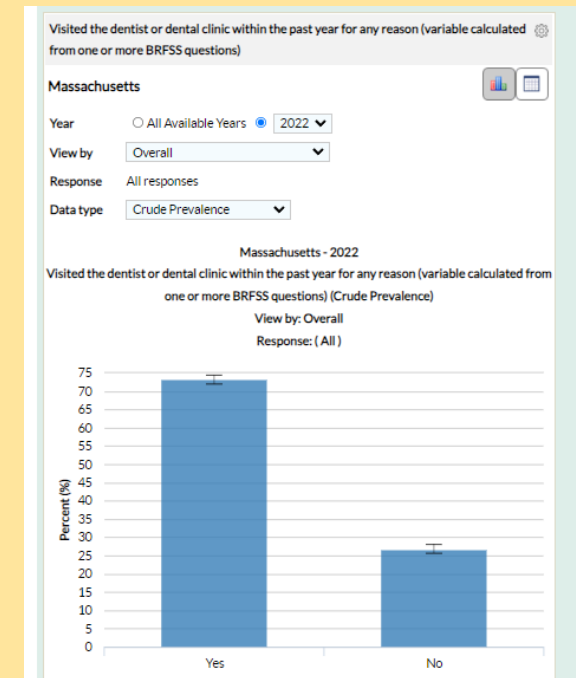
Today's Lecture

- SAS is being used for dashboards – but is that really a good idea?
- SAS is a great product – but probably not for dashboards.
- R is open source, and has a integrated development environment that is optimized for building dashboards
- How do we handle SAS's I/O limitations in online dashboarding?



R dashboard example

SAS dashboard example





SAS Graphics Suck – and I/O Doesn't Help

- **My opinion:** SAS is not a good program to use for building dashboards. Period.
- **Reason #1:** In SAS, you really have to carefully optimize data handling for I/O, or things go “too slow to be useful”. That doesn't lend itself well to interaction on the internet with users.
- **Reason #2:** SAS's graphics have always sucked. We stopped complaining after alternatives were available (e.g., charts in Excel). Why go back?

Building a Better Dashboard Using Base SAS Software

By Kurt Paul Lafler, Roger
Muller, and Joshua M.
Horstman

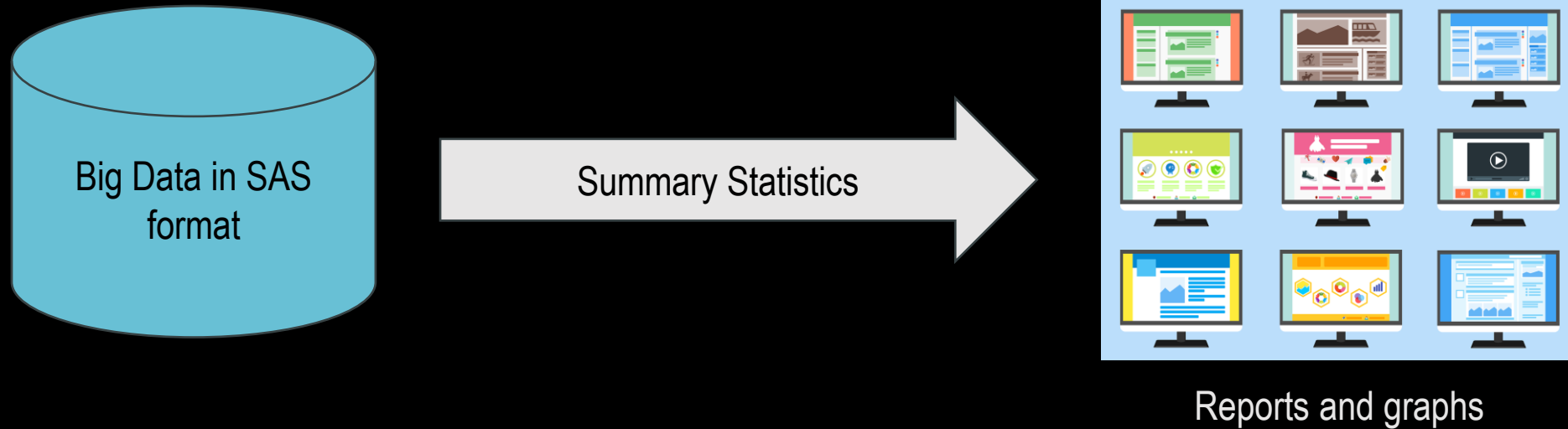
<https://buff.ly/3q4l7XX>

Github code used in
demonstration:

<https://buff.ly/48L39KM>



What Actually Happens

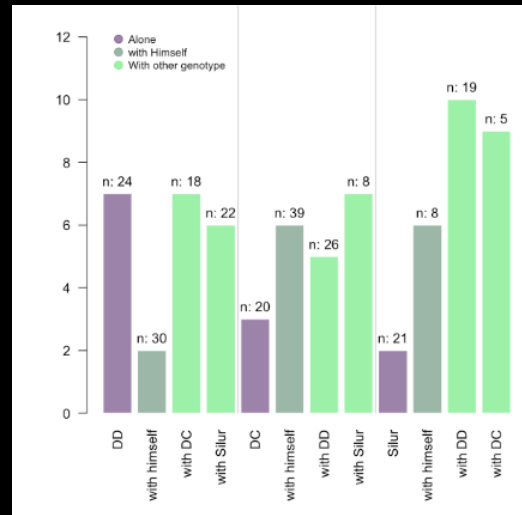


- SAS is the engine that needs to create the summary statistics.
- But in what environment does the graphing take place?
- Is it a dashboard? Is it online?
- Is it a printed report? Is it like a slide for display?

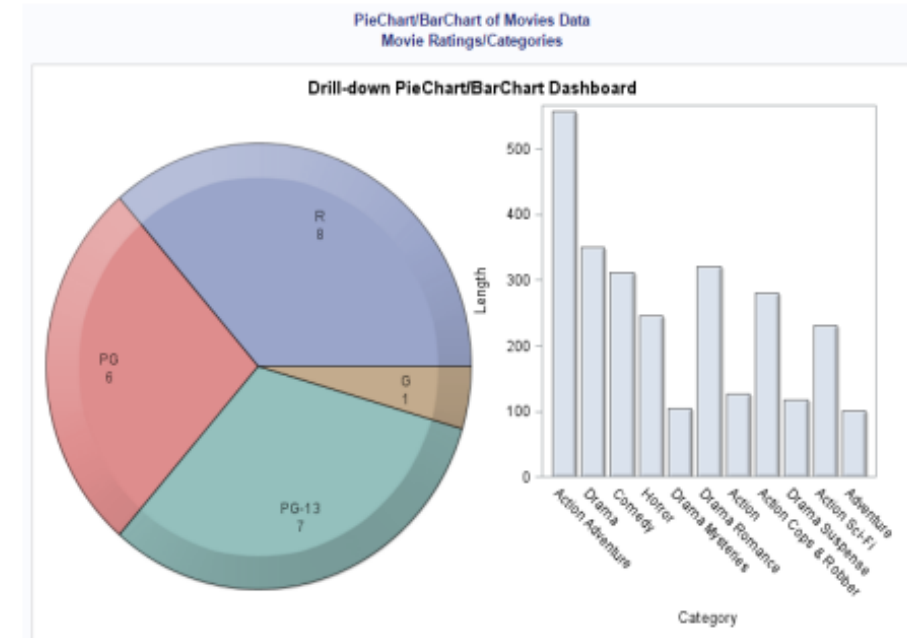


SAS Dashboard Displays are Terrible

- Graphics on right are from the White Paper
- Compare this to a screen shots below from <https://r-graph-gallery.com/>



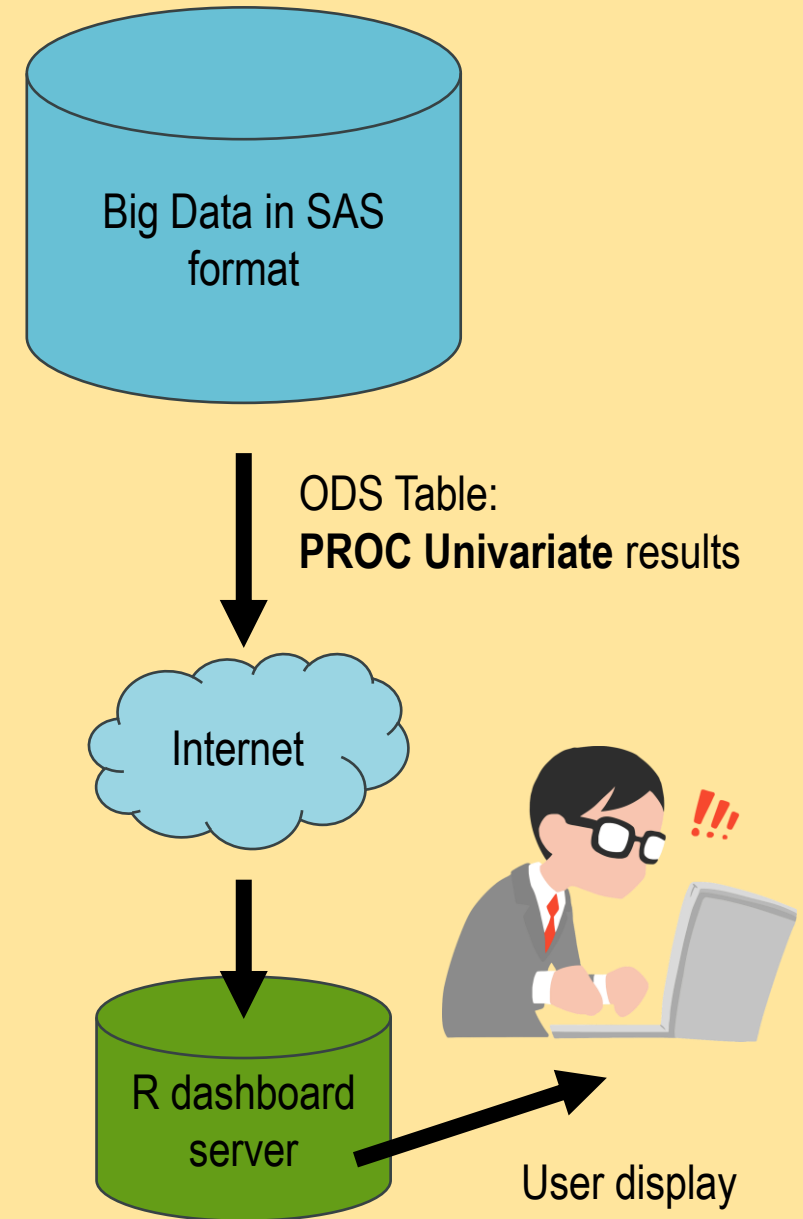
5. Drill-down Dashboard – Pie / Bar Chart Dashboard





The Case for Dashboarding SAS Data in R

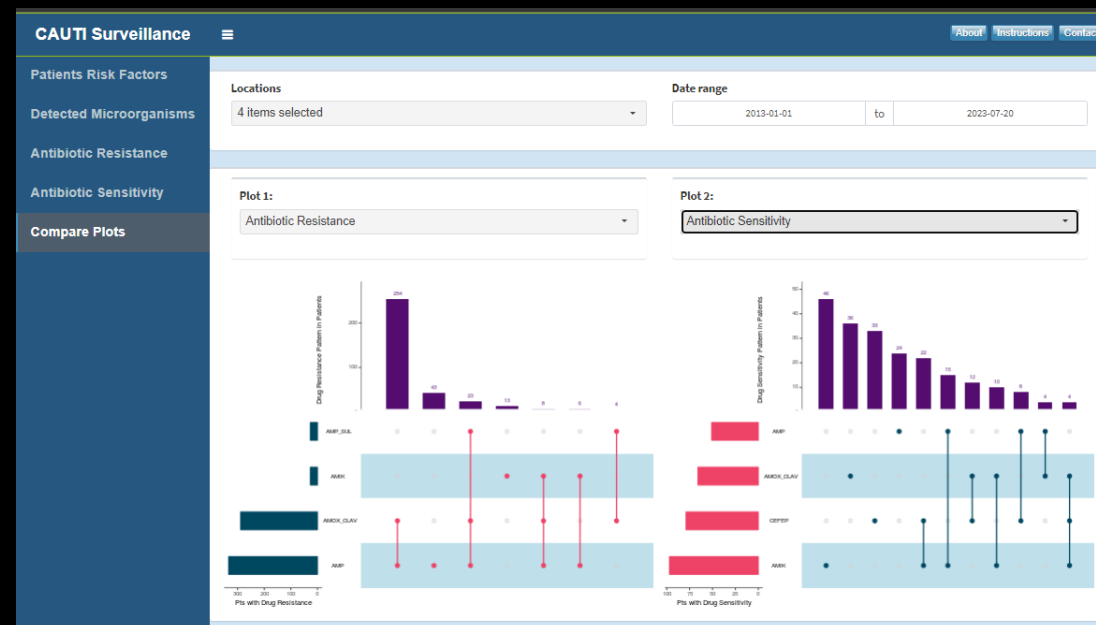
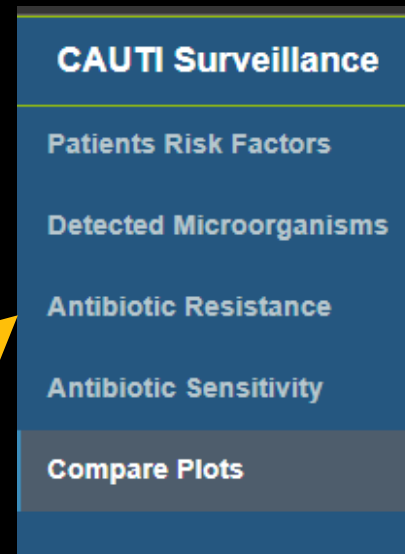
- SAS users often do not mind also adopting R (rather than Python)
- R has RStudio, which is an integrated development environment (IDE) for making dashboards
- Getting summary data from SAS and dashboarding it in R is the best pipeline





R Dashboard Example

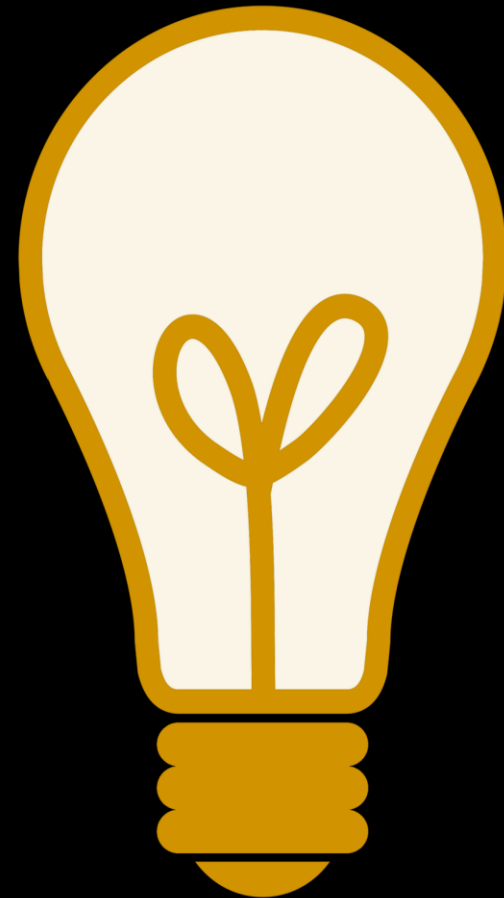
- Made by Natasha Dukach and myself:
<https://cauti.shinyapps.io/CAUTI-dashboard/>
- Visualizes data from fictitious CAUTI surveillance at a hospital system
- Intended use-case: System does quarterly updates of summary data





This Presentation was Actually **Not** About Dashboarding!

- It was about how you can offload “odious” tasks from SAS to other programs
- “odious” = the ODS, or output delivery system in SAS, has its limitations (mainly data structure).
- But R can easily decode and display all that in a dashboard.
- **Paradigm:** Is there a way we can 1) get other programs to do what SAS is not good at, and 2) find efficient ways of moving just the right data from SAS into the other program environment?





Questions?

Facilitator: Monika M.
Wahi, MPH, CPH

Email:
dethwench@gmail.com

Blog:
<https://dethwench.com/blog/>

LinkedIn:
<https://www.linkedin.com/in/dethwench/>

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