



McGovern  
Medical School

# Delivering an effective scientific presentation

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# Disclosures

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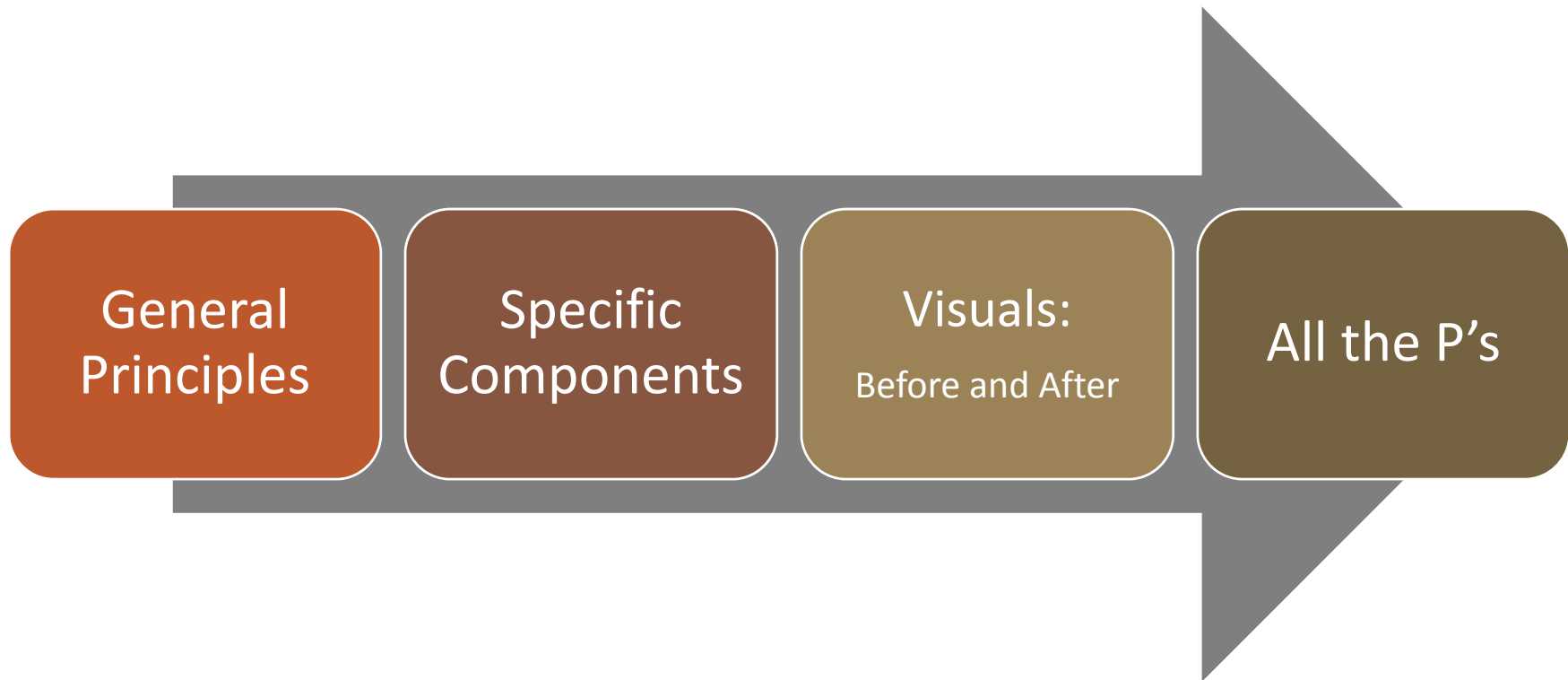
None relevant to this talk

## Sources:

- **Prior StrokeNet presentations** by *Dawn Kleindorfer, MD and Enrique Leira, MD MS*
- **Book:** Knaflic, C. N. (2015). *Storytelling with data: A data visualization guide for business professionals*. John Wiley & Sons.
- **Book:** Reynolds, G. (2014). *Presentation Zen Design: A Simple Visual Approach to Presenting in Today's World*. Pearson Education.
- Personal professional presentations

# I would be talking about

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thoughtful or effective

# Features of a ~~Good~~ Presentation

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Engage the **audience**

- Understand and empathize

Central **message**

- Test and re-test

Simple **delivery**

- Cohesive, Logically flowing:  
Storytelling

Capitalize on **visuals**

- Deliberate and cautious

**Respect**

- Time, rules and ethics

# Audience

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Fairly **predictable** for a typical scientific presentation

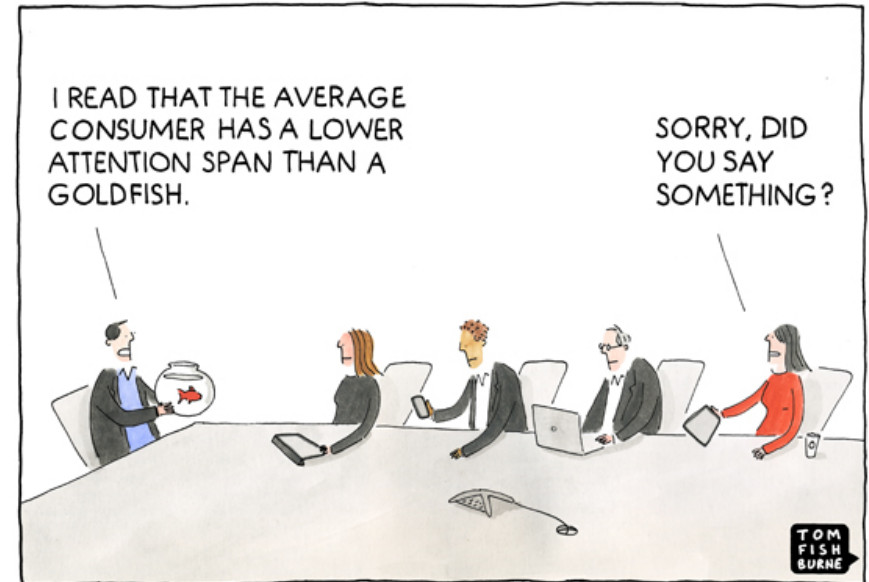
- Subtle differences
- Special situations

Who's the **subject matter expert** in the room?

- SWOT Analysis: Threat → Opportunity

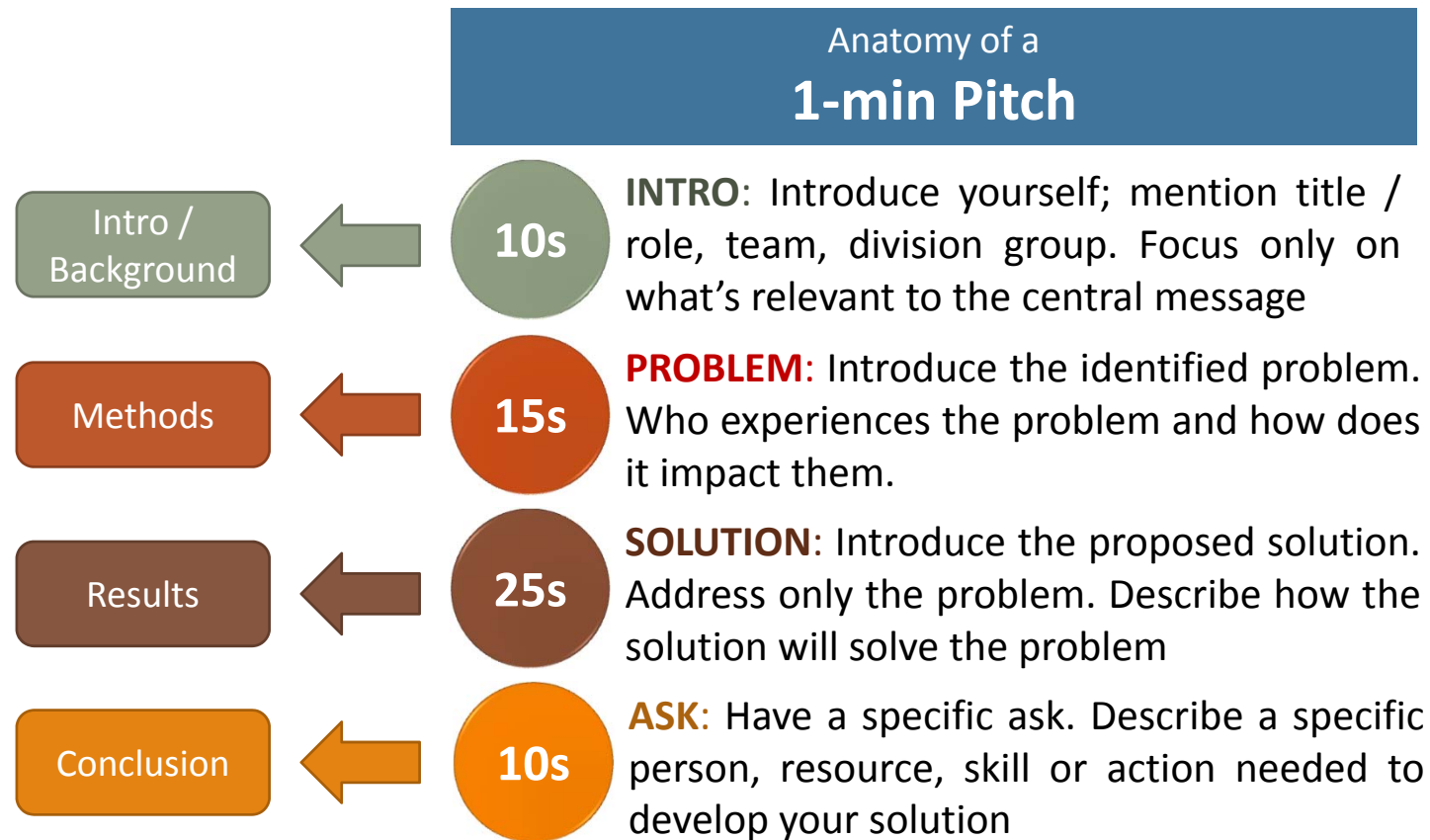
## Empathy

- ISC 2019: 1600 presentations ≈ 30 hours
- Attendee state of mind: Competing Interests
- Dwindling attention span



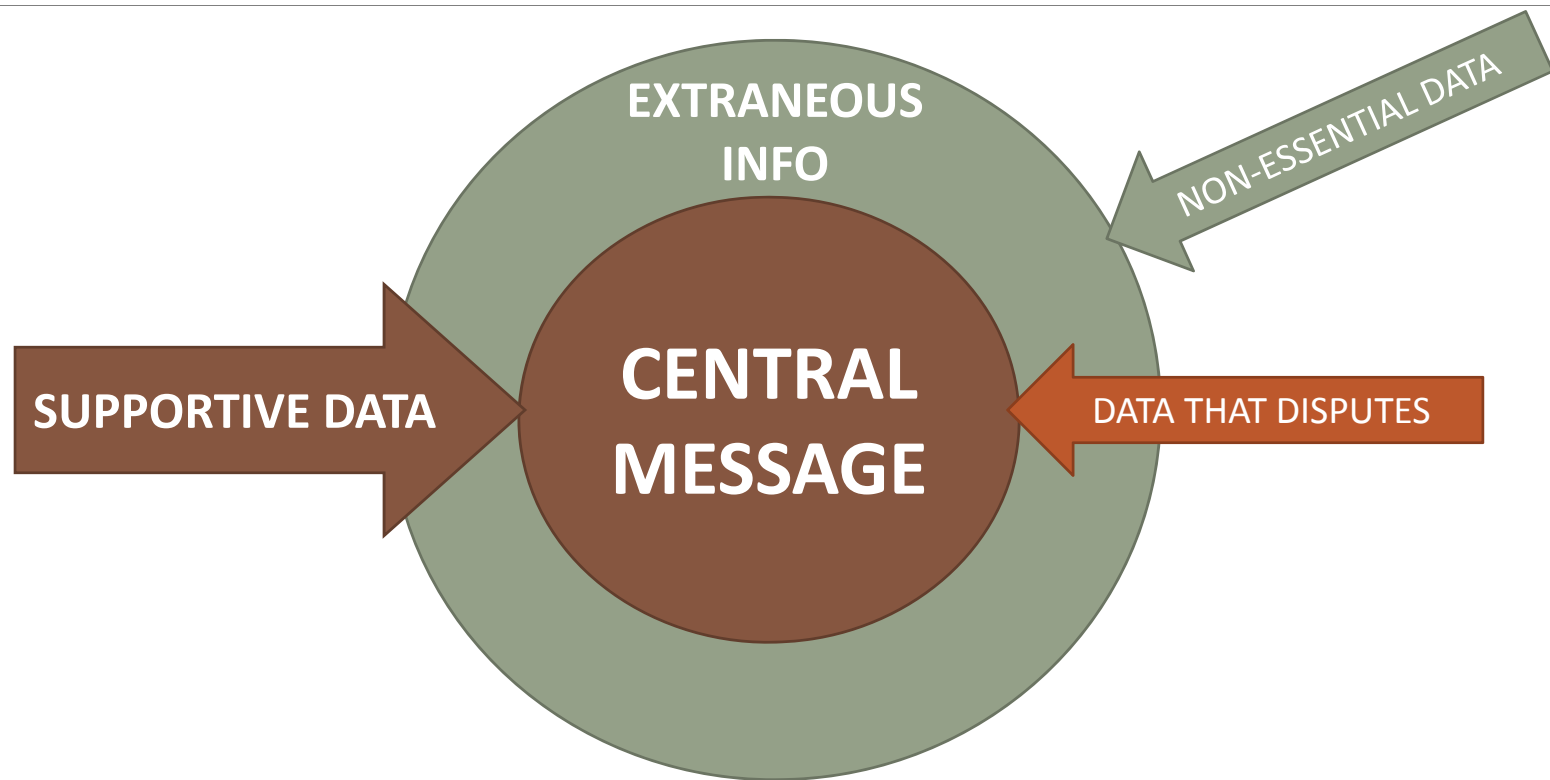
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# Central Message



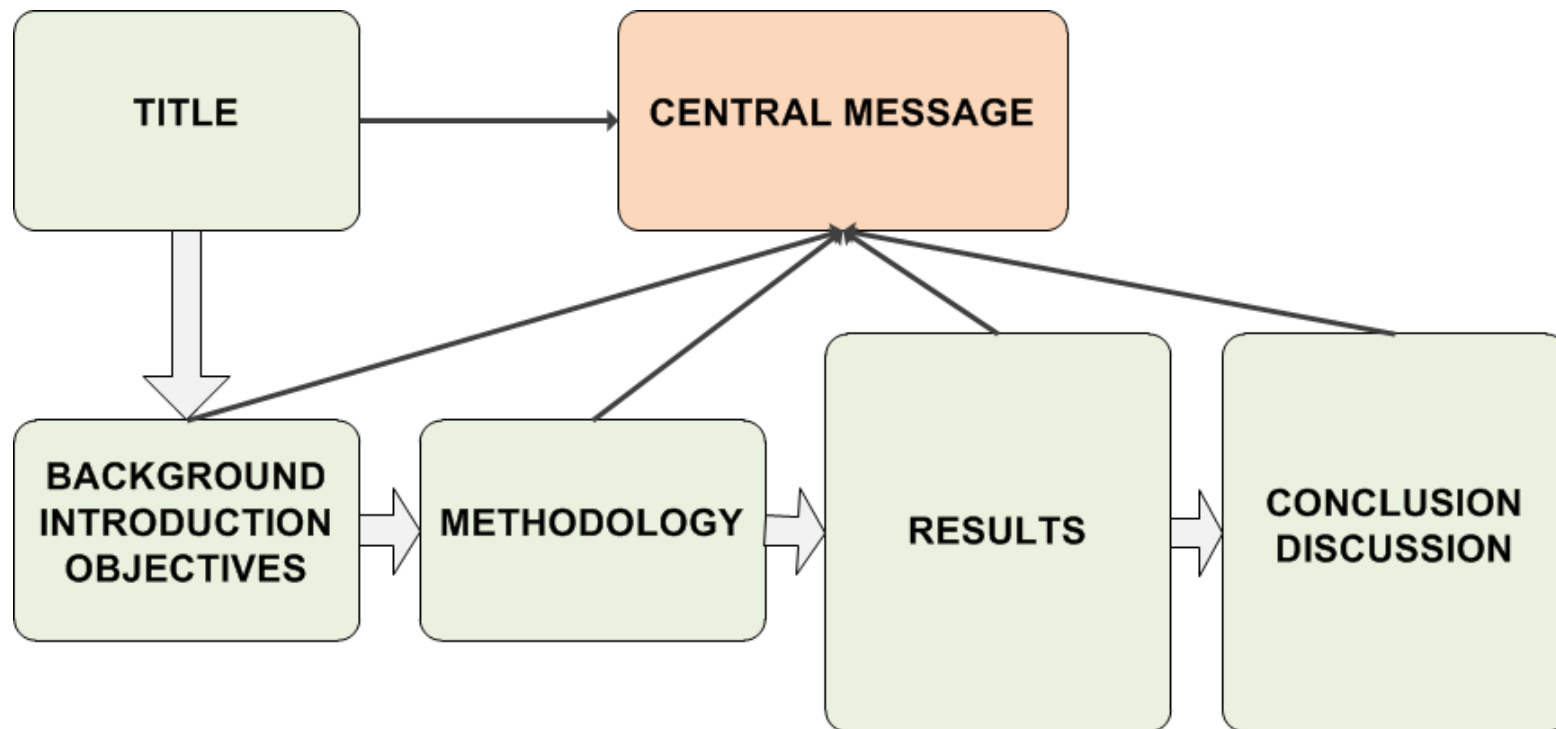
# Central Message

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# The Ideal Framework: Streamlined Delivery

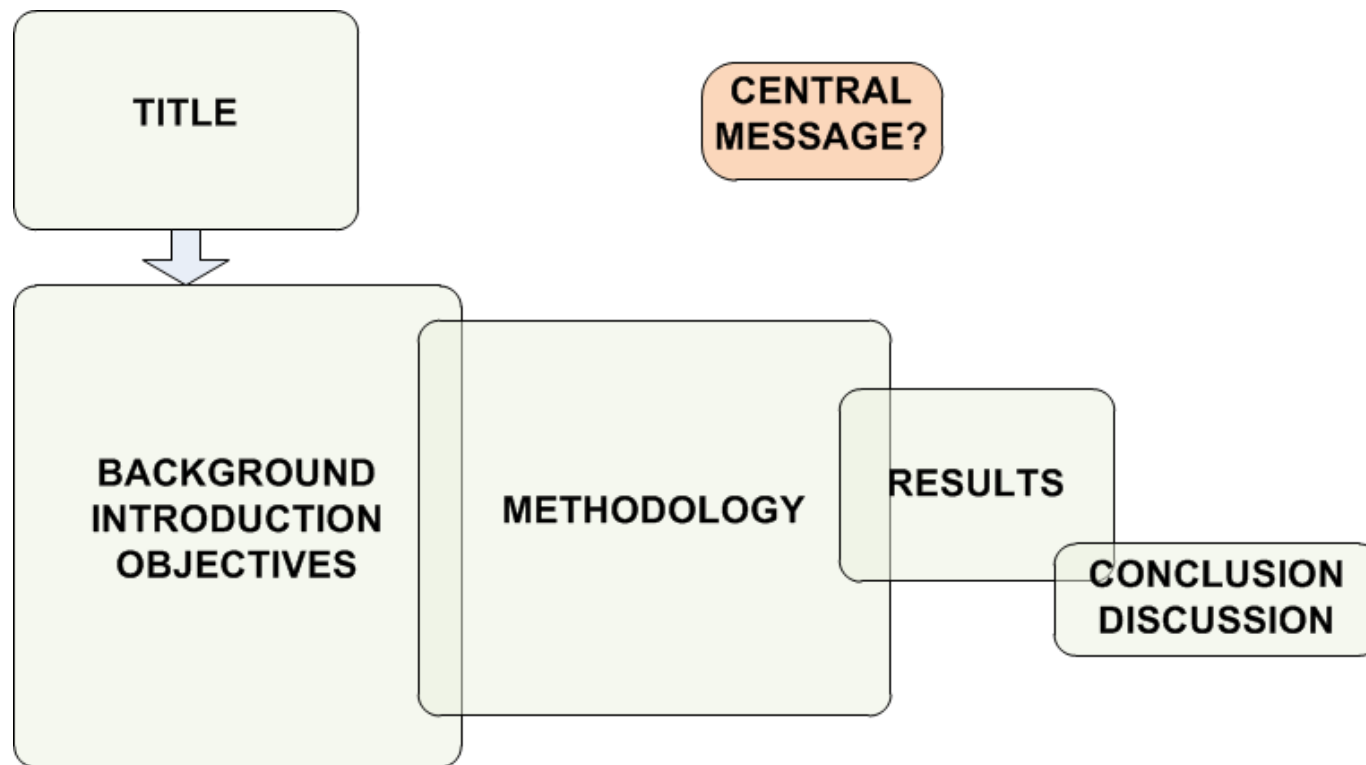
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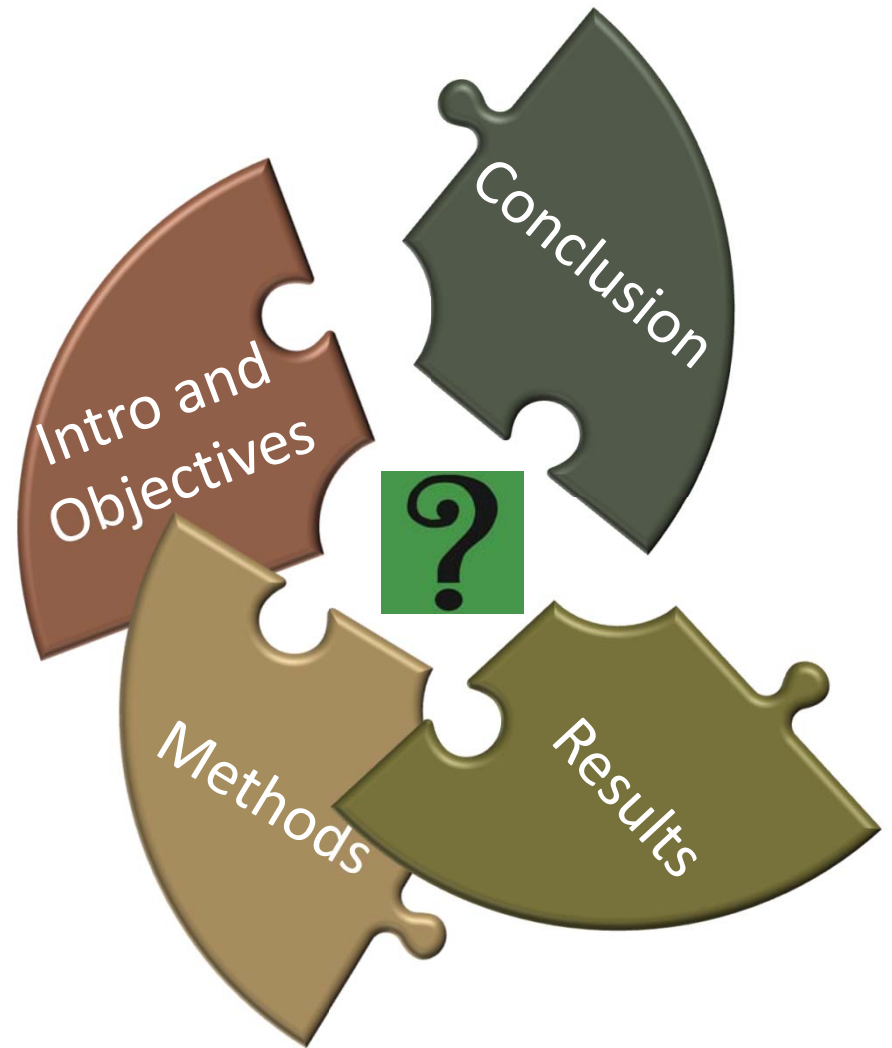


# Mixed Message

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# Cohesion



# Title: Spend time on it

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Influences **reviewers and graders**

## **Audience**

- Selects
- Predisposes

Disseminated by **search engines**

Some people **only read the title**

# Which Title Do You Prefer?

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**A** Impact of a stroke trial network on recruiting rates: a before and after study

**B** Is a stroke trial network associated with improved recruitment rates?

**C** A stroke trial network improves recruitment rates

# Title Types

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**A**

Impact of a stroke trial network on recruiting rates: a before and after study

DESCRIPTIVE

**B**

Is a stroke trial network associated with improved recruitment rates?

QUESTION TYPE

**C**

A stroke trial network improves recruitment rates

DECLARATIVE

# Choosing the Right Title

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## **Descriptive type**

- Boring (unless novel methods or RCT)

## **Question type**

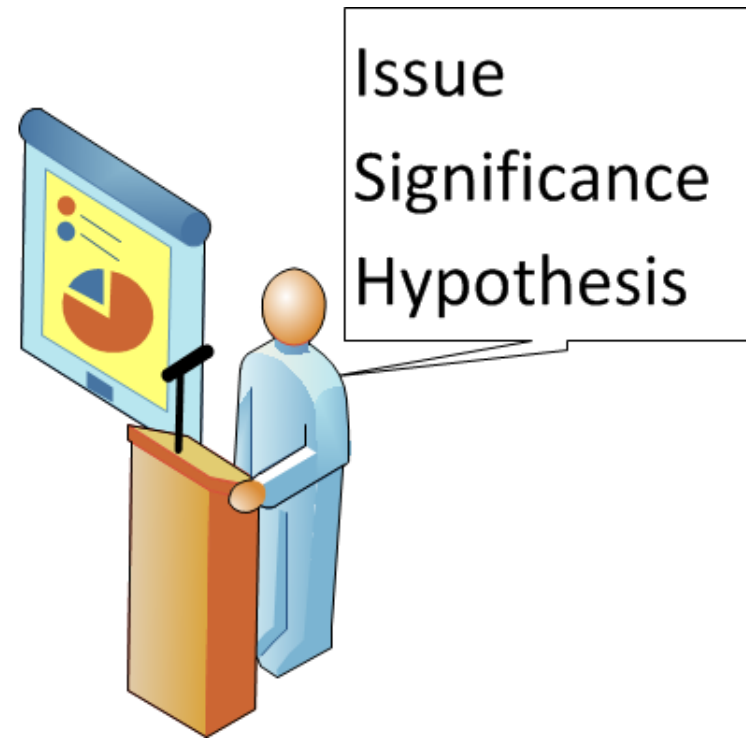
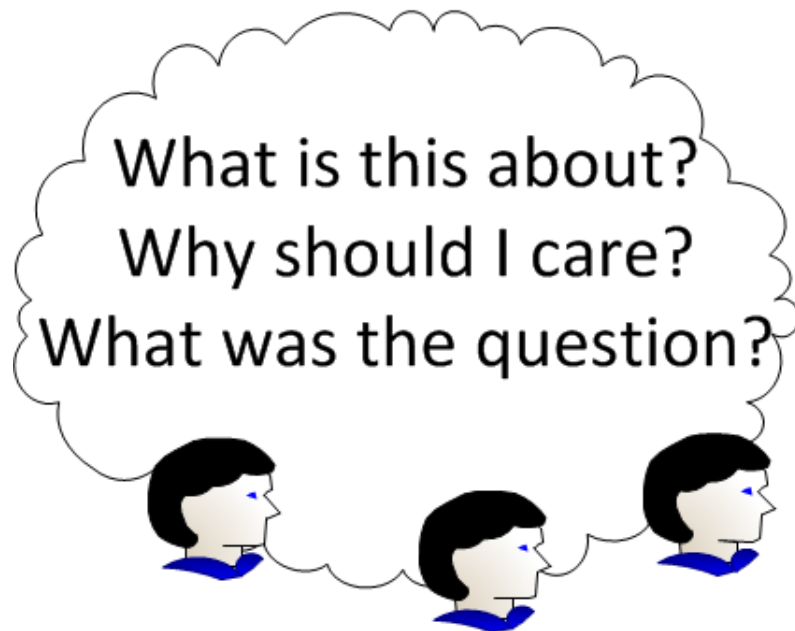
- Too much suspense

## **Declarative type**

- Usually works best (get to the point)
- Caution

# Background

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# Background: Usual Pitfalls

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Too **long**

Too much **background**

- Stroke is the leading cause of ....

Fails to succinctly convey a **problem statement**

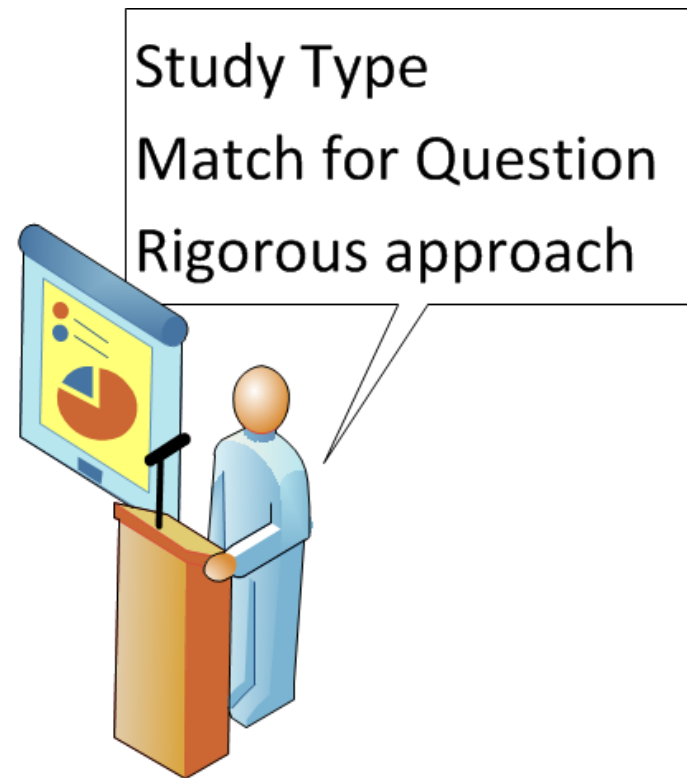
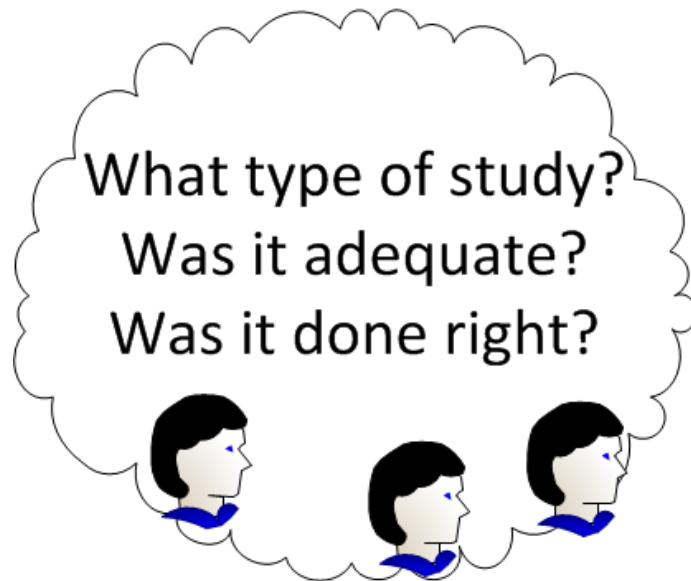
Fails to **briefly highlight** what is already known

Fails to convey **specific objectives / hypotheses**



# Methodology

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# Methods: Be explicit

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## Concealed Methods

We identified all the patients diagnosed with Moya-Moya in our prevention clinic from 1996-2013 and compared it with patients seen in that same period...

We consented patients with intracerebral hemorrhage during hospitalization and followed them up for 12 months post hospitalization .....

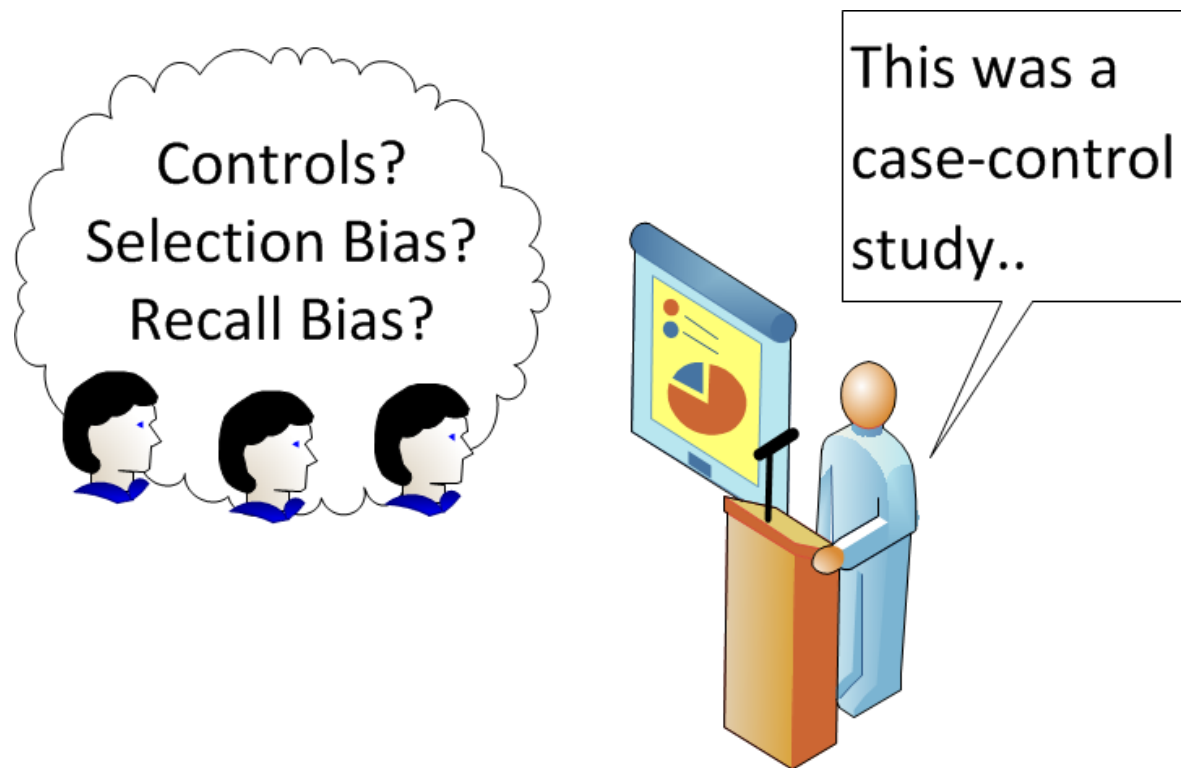
## Declarative

This was a case-control study...

Our study was a longitudinal cohort of intracerebral hemorrhage patients...

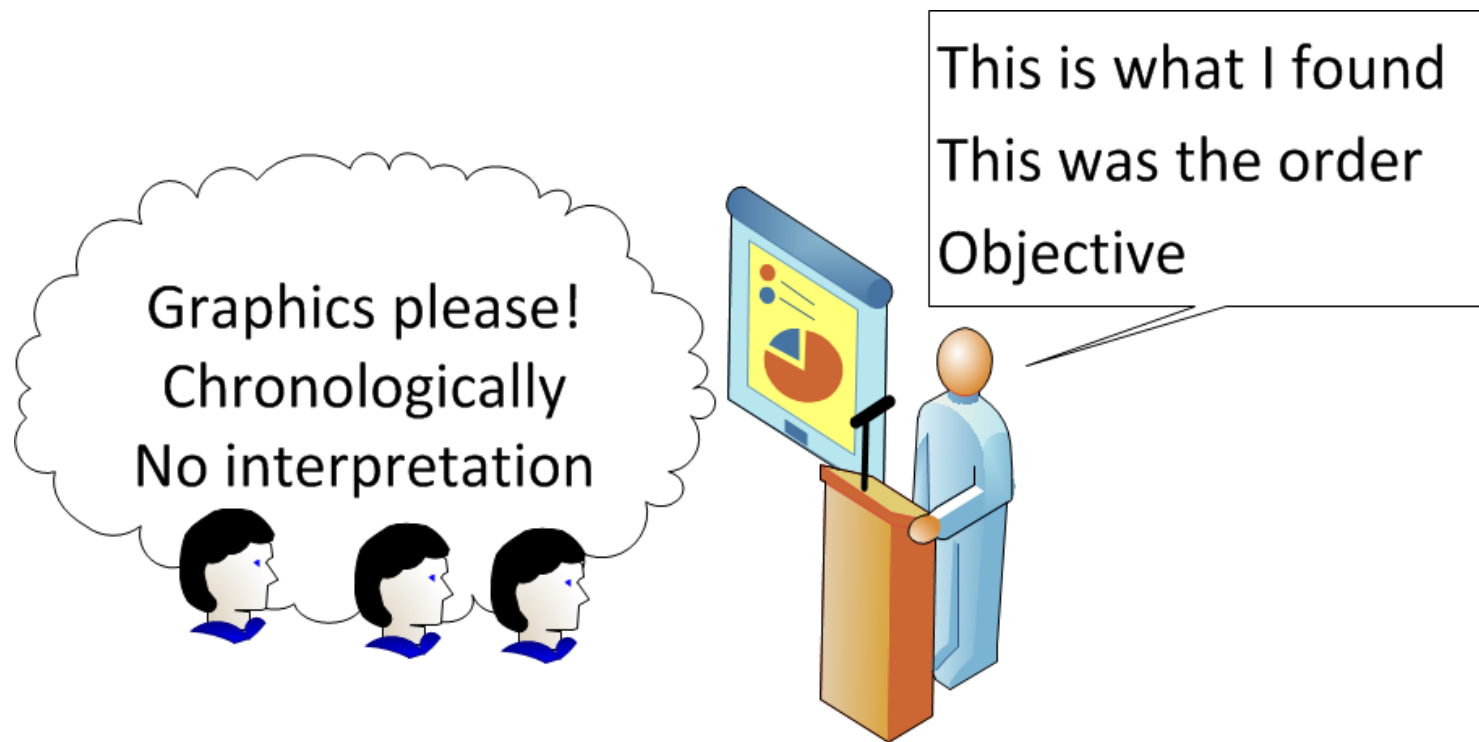
# Methods: Predispose Audience

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# Results

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# Results: Pitfalls

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**Interpretation** and opinion

Ineffective **Graphics**

Extra **long tables** with too small a font

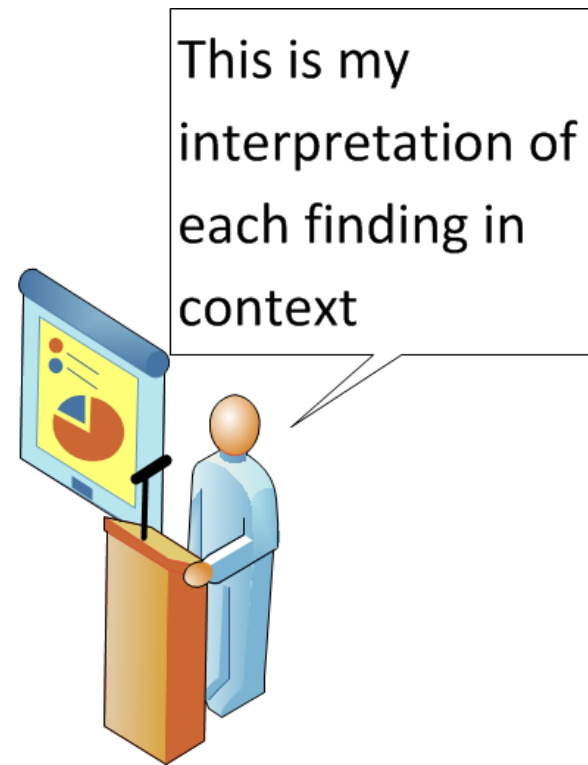
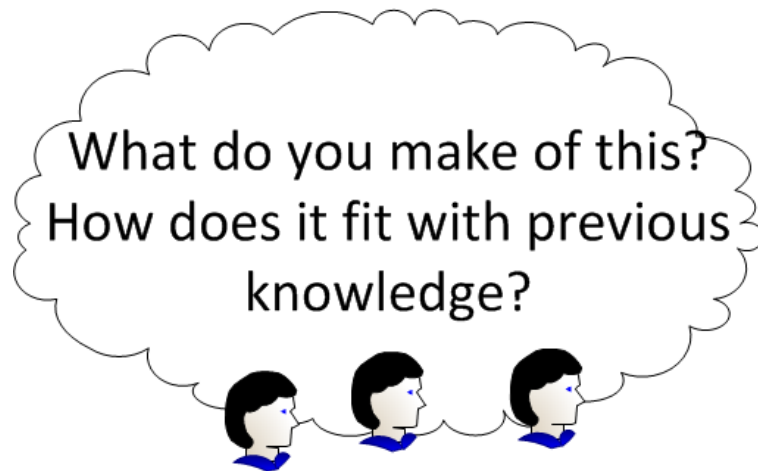
- “I know this is a busy slide....”

**Redundancy:** Text and Graphic

Introducing **results outside of the central message**

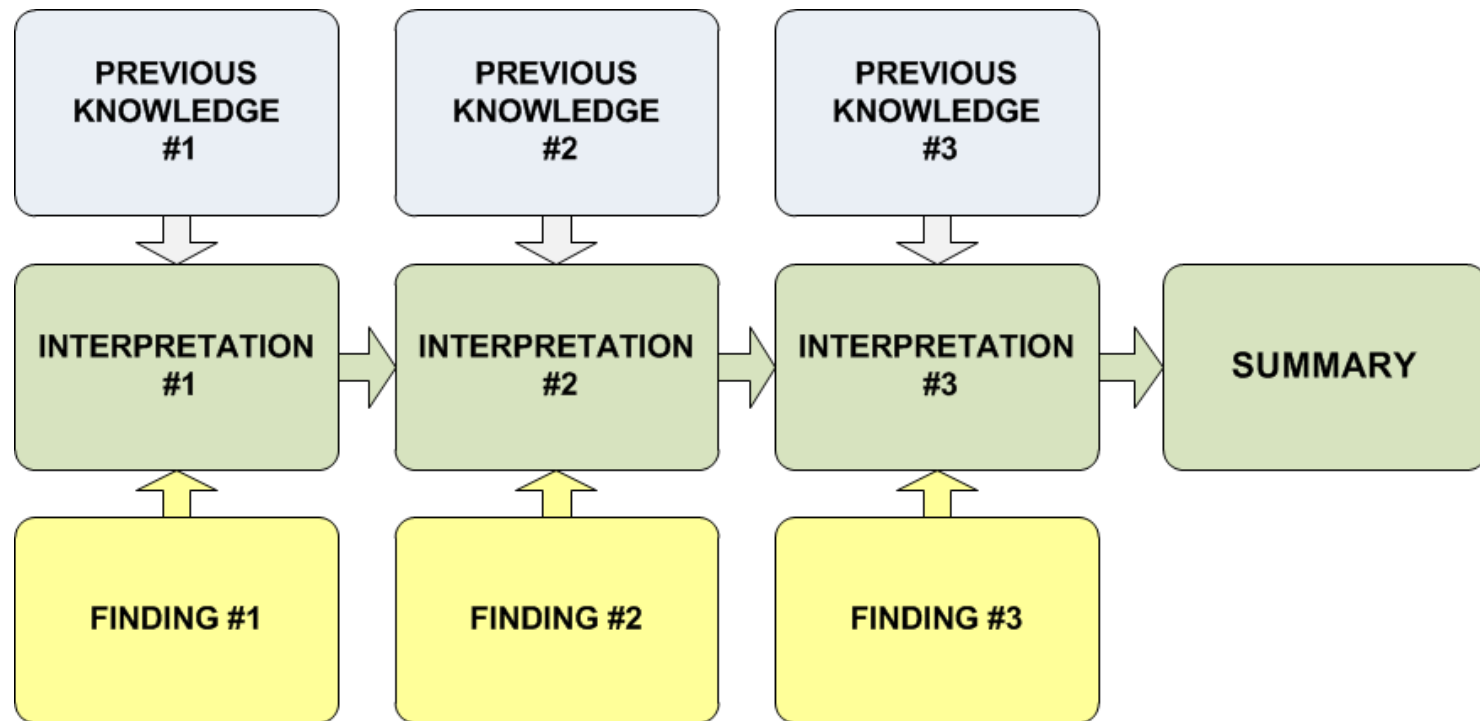
# Conclusion

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# Conclusion: Flow and Cohesion

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# Conclusion: Pitfalls

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Too little **Interpretation**

- Skipping results and not providing interpretation

Does not interpret the results in **context**

Introduce **new results**

**Disorganized** flow

**Overextending** conclusions

“More research is needed....”



# Visuals

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**Absolutely necessary** in a presentation

**Stock** visuals

- MS Excel & other statistical software

**Bad visuals** are everywhere

- Overcrowding
- Inappropriate choice of visuals
- Too much or too little color
- Inadequately explained or communicated

**Less is more**

- Zen Presentation

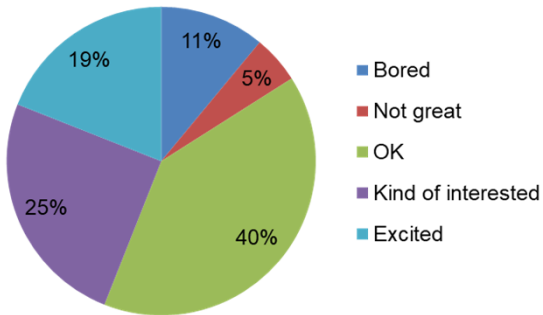
# Less Is More

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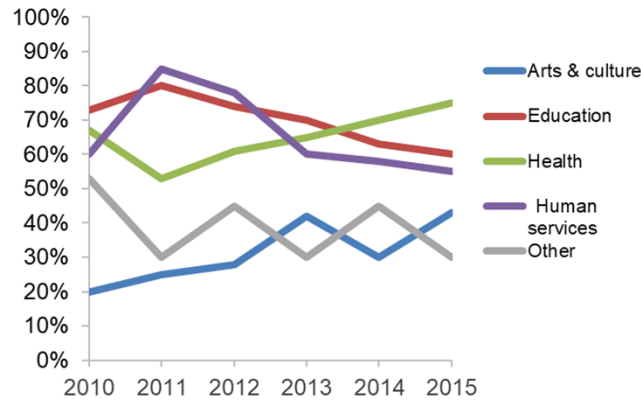
STORYTELLING WITH DATA

# Bad visuals are everywhere

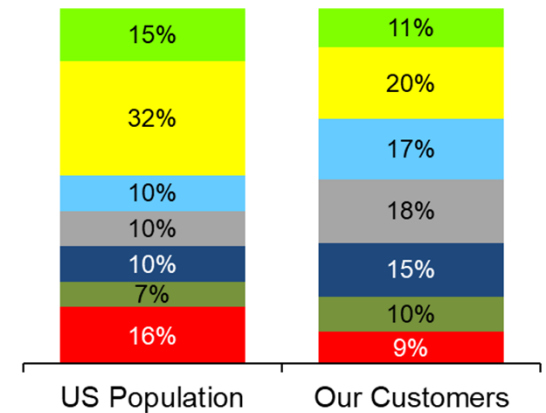
Survey Results



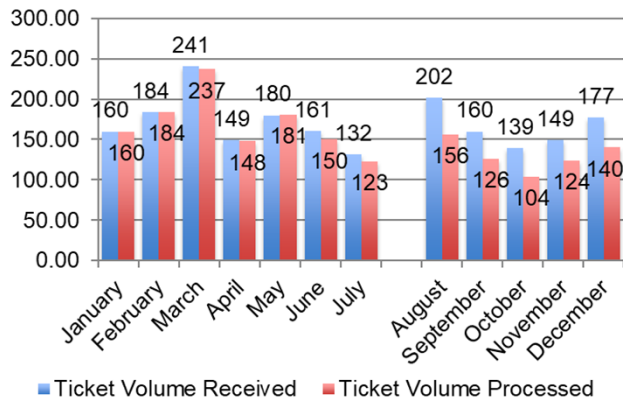
Non Profit Support



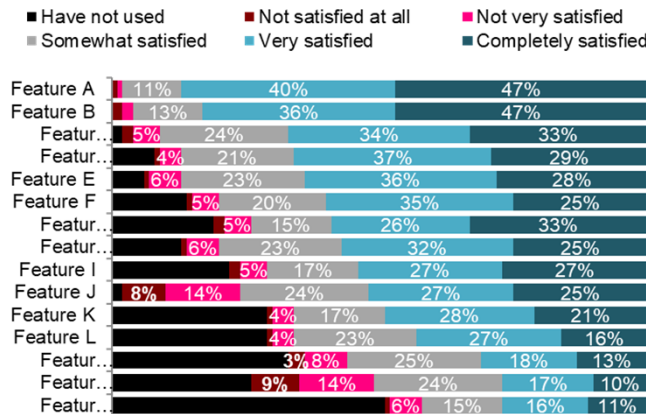
Our Customers



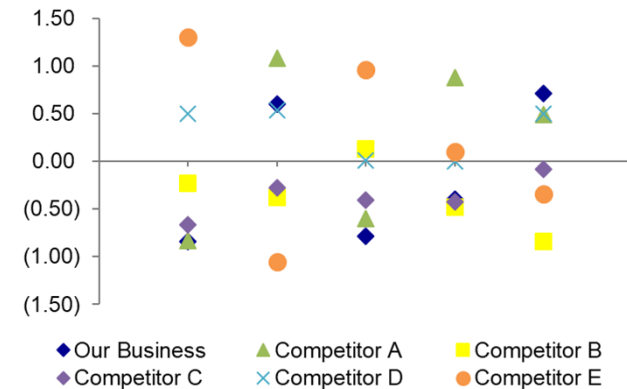
Ticket Trend



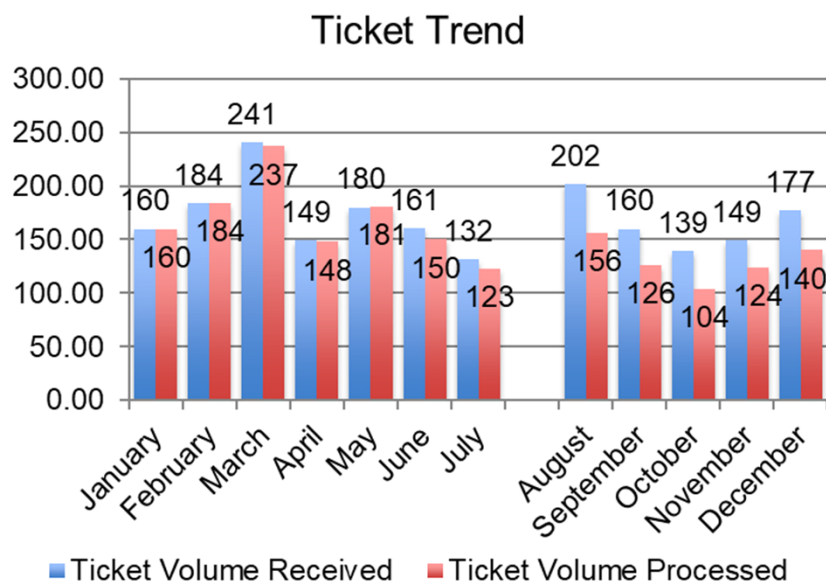
User Satisfaction



Weighted Performance Index

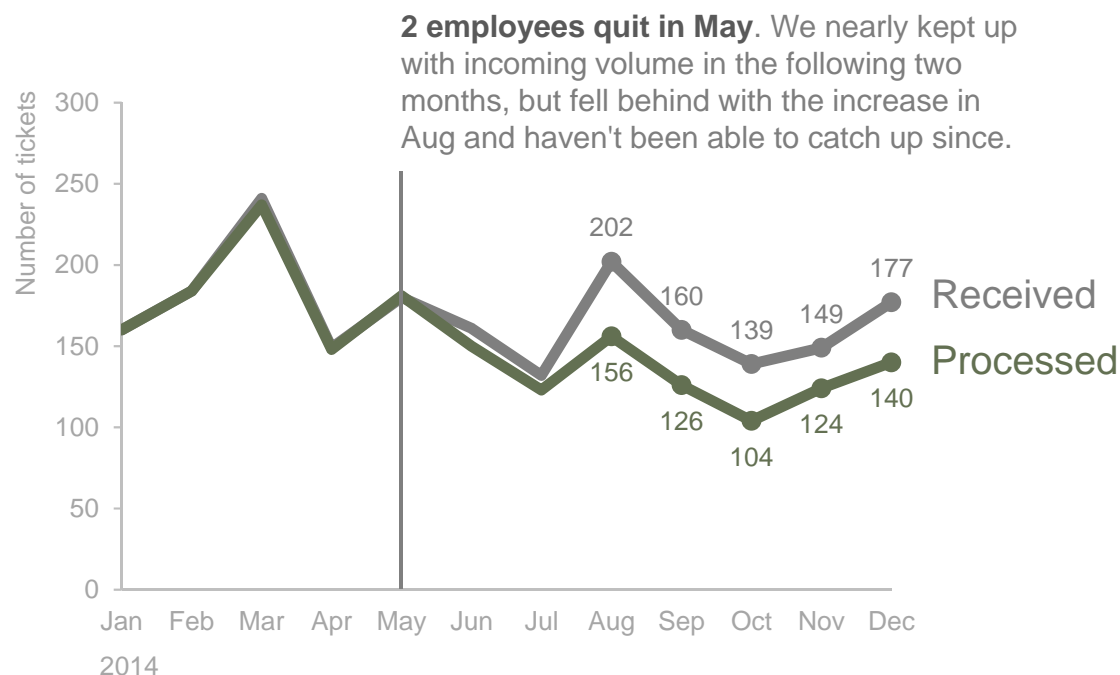


# Storytelling With Data



## Please approve the hire of 2 FTE

to backfill those who quit in the past year

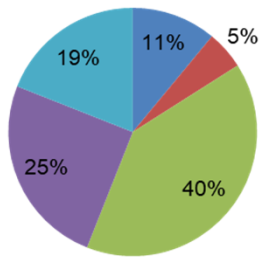


*Knaflig, C. N. (2015). Storytelling with data: A data visualization guide for business professionals. John Wiley & Sons.*

# “Pie charts are evil”

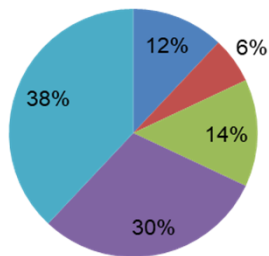
PRE: How do you feel about doing science?

■ Bored ■ Not great ■ OK ■ Kind of interested ■ Excited



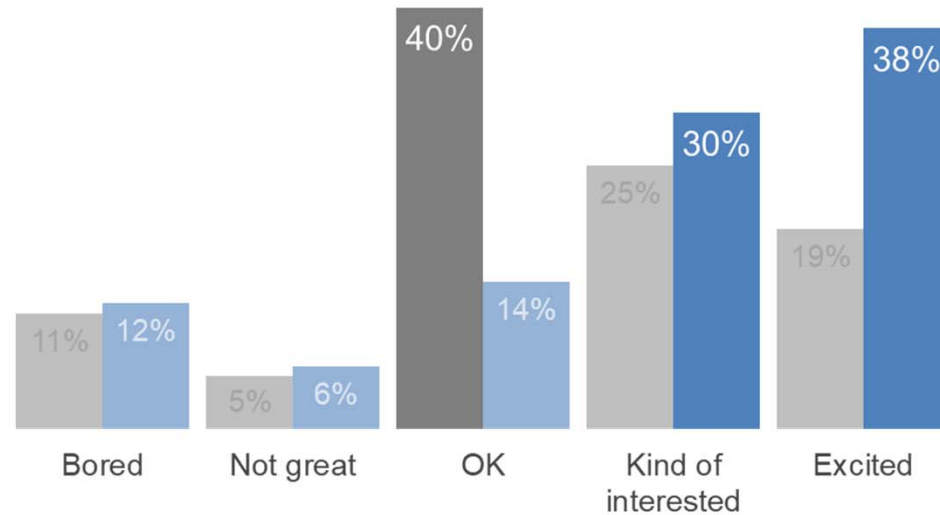
POST: How do you feel about doing science?

■ Bored ■ Not great ■ OK ■ Kind of interested ■ Excited



## Pilot program was a success

BEFORE program, the majority of children felt just *OK* about science



AFTER program, more children were *Kind of interested* & *Excited* about science.

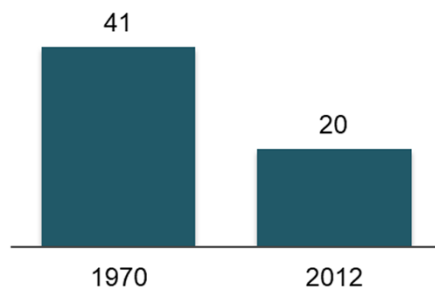
Based on survey of 100 students conducted before and after pilot program (100% response rate on both surveys).

*Knafllic, C. N. (2015). Storytelling with data: A data visualization guide for business professionals. John Wiley & Sons.*

# Less is more

## Children with a "Traditional" Stay-at-Home Mother

*% of children with a married stay-at-home mother with a working husband*



Note: Based on children younger than 18. Their mothers are categorized based on employment status in 1970 and 2012.

Source: Pew Research Center analysis of March Current Population Surveys Integrated Public Use Microdata Series (IPUMS-CPS), 1971 and 2013

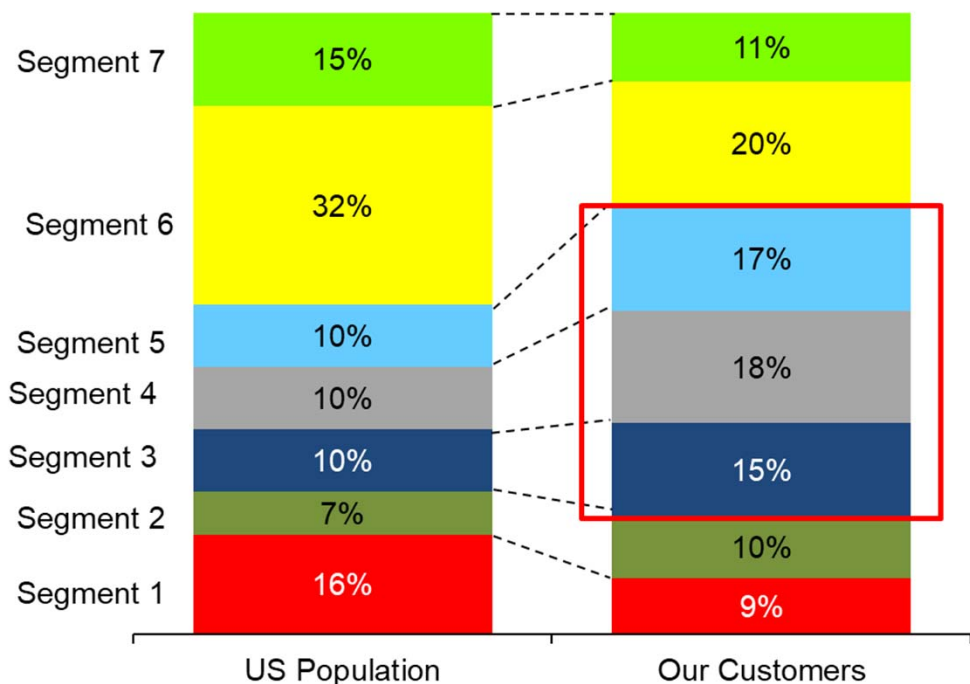
# 20%

of children had a **traditional stay-at-home mom** in 2012, compared to 41% in 1970

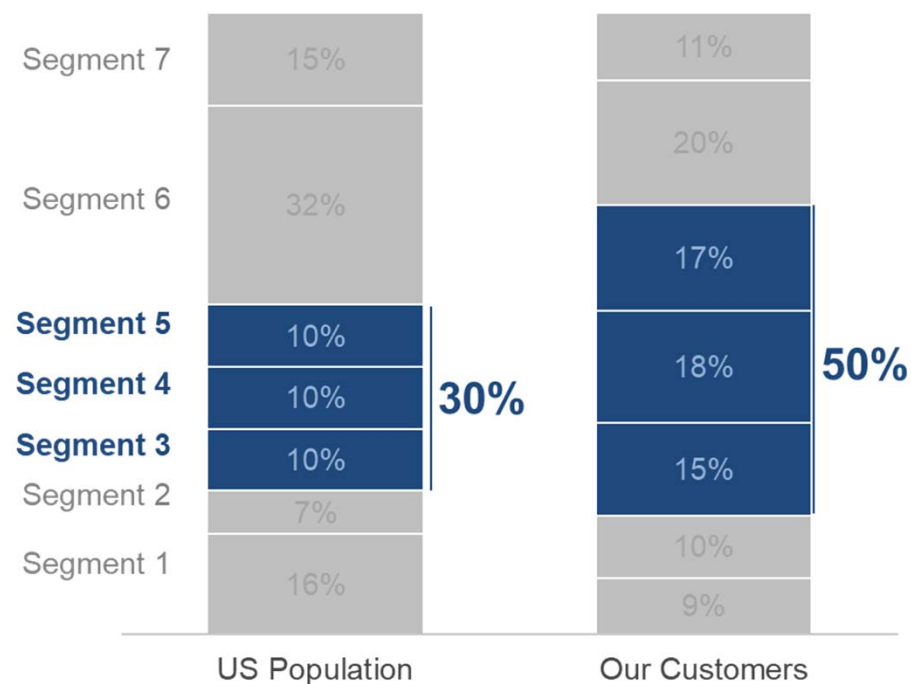
*Knaflic, C. N. (2015). Storytelling with data: A data visualization guide for business professionals. John Wiley & Sons.*

# Color overload: Remember Central Message?

Distribution by customer segment



Distribution by customer segment



*Knaflitz, C. N. (2015). Storytelling with data: A data visualization guide for business professionals. John Wiley & Sons.*

# Burden of Boring Bulleted Lists

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STORYTELLING WITH DATA



# LHC Initiatives at UTHealth

01

## Establish an Administrative Structure

Establish an administrative structure to promote interventional and observational studies in LHC. Identify leaders in rigorous QI and CER research and establish an LHC advisory board



02

## Develop consultation service

To help design, conduct, analyze, and / or disseminate QI and CER studies to promote the use of therapies proven to be beneficial, identify and address ineffective or harmful therapies (implementation and de-implementation)



03

## Novel Design for Interventional Research

To conduct model demonstration projects promoting novel interventional studies in LHC such as n-of-1 clinical trials



04

## IRB Assistance and Review of QI and CER

Facilitate prompt, appropriate, and helpful IRB assistance and review for minimal risk QI and CER and advance the methods of seeking patients engagement and community consent



# Methodology

## Database

- National Inpatient Sample (NIS)
- All ages, payers and uninsured
- 90% US Hospitalizations
- 48 US States
- 2006 - 2011

## Case Definitions

- Primary discharge diagnosis based on standard ICD-9 codes for IS, ICH, SAH

## Rehabilitation Discharge (Outcome)

- All patients who were discharged or transferred to an in-patient rehabilitation facility, including distinct rehabilitation units of acute care hospitals



## Population

- Adult (>18) Stroke Patients
- Ischemic and Hemorrhagic Stroke (ICH and SAH)
- Non-traumatic Brain Hemorrhage

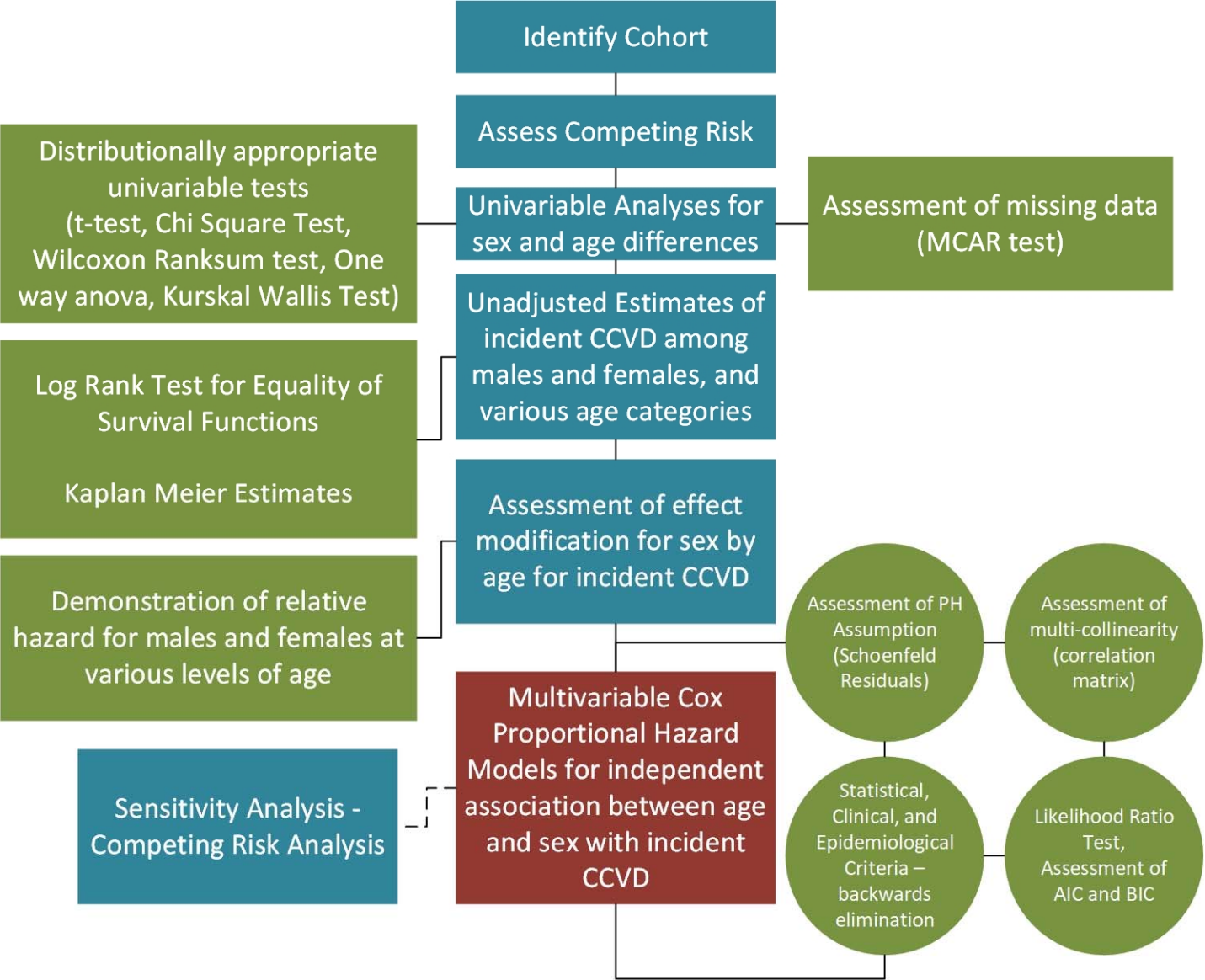
## Teaching Hospitals (Exposure)

- AMA-approved residency program, and member of the Council of Teaching Hospitals or ratio of full-time equivalent interns and residents to beds of 0.25 or higher

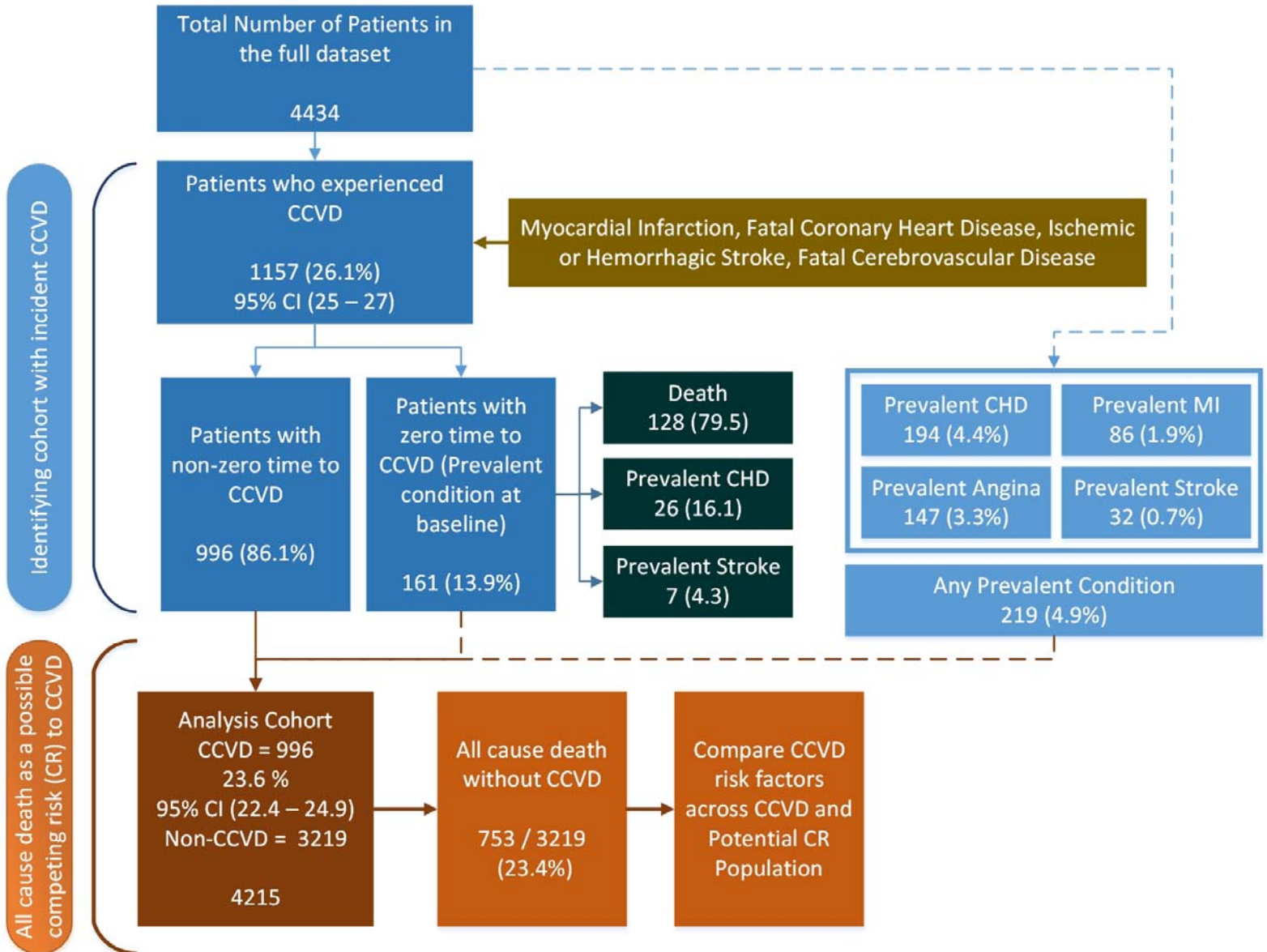
## Analysis

- Survey design methods / weights to present national estimates
- Survey design logistic regression methods and report Odds Ratios (OR) and 95 % Confidence Intervals (CI)

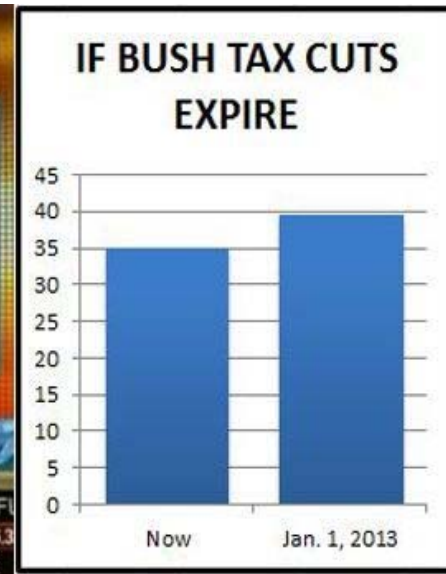
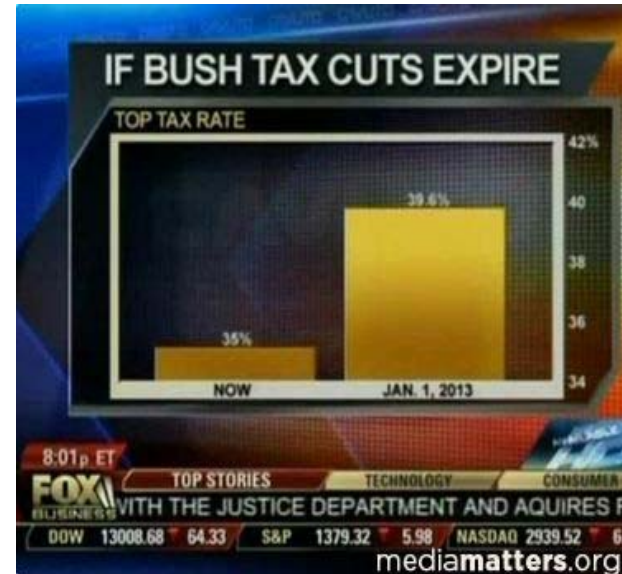
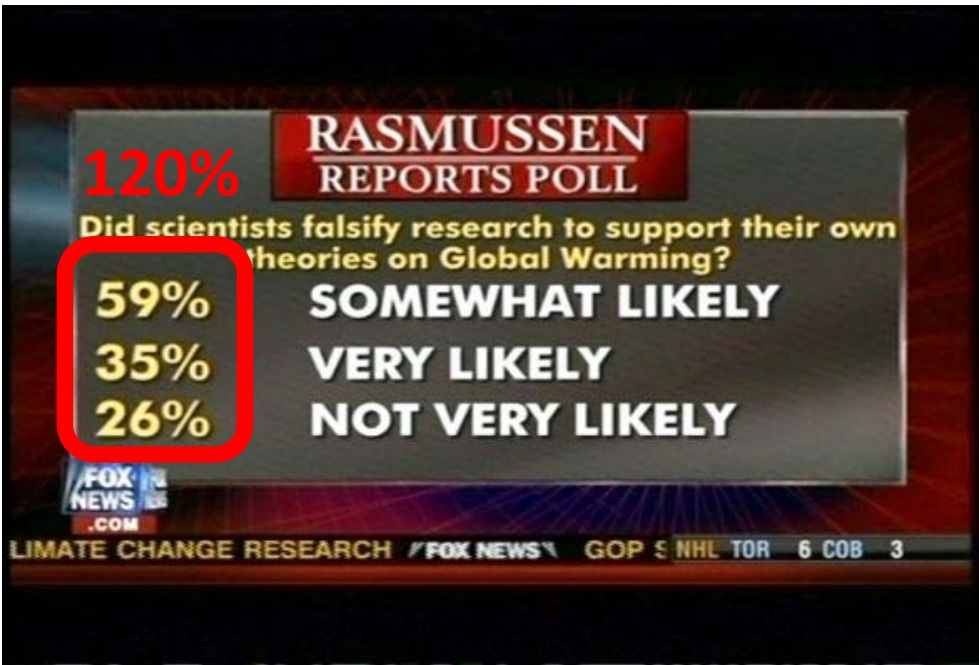
# Statistical Methods



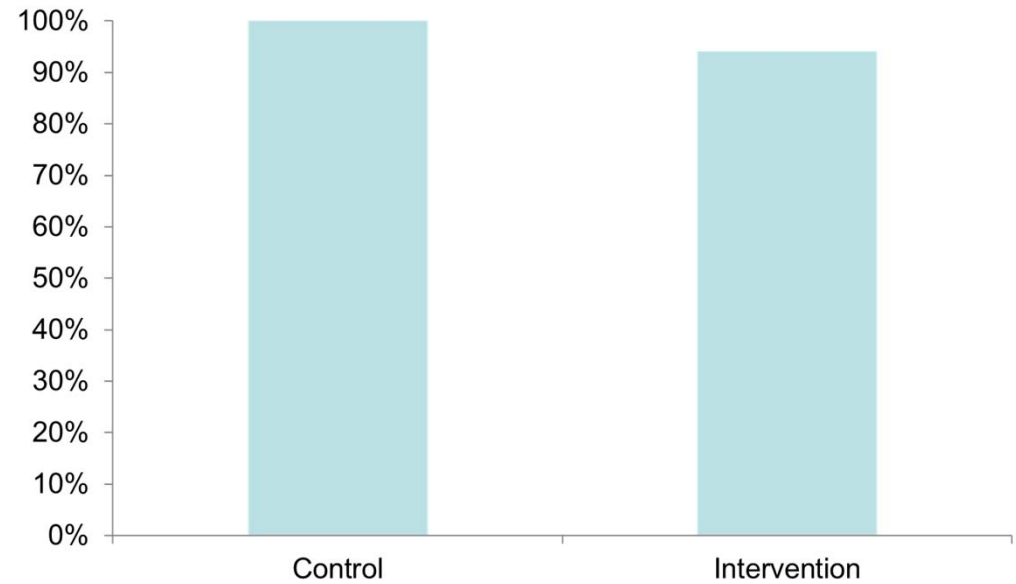
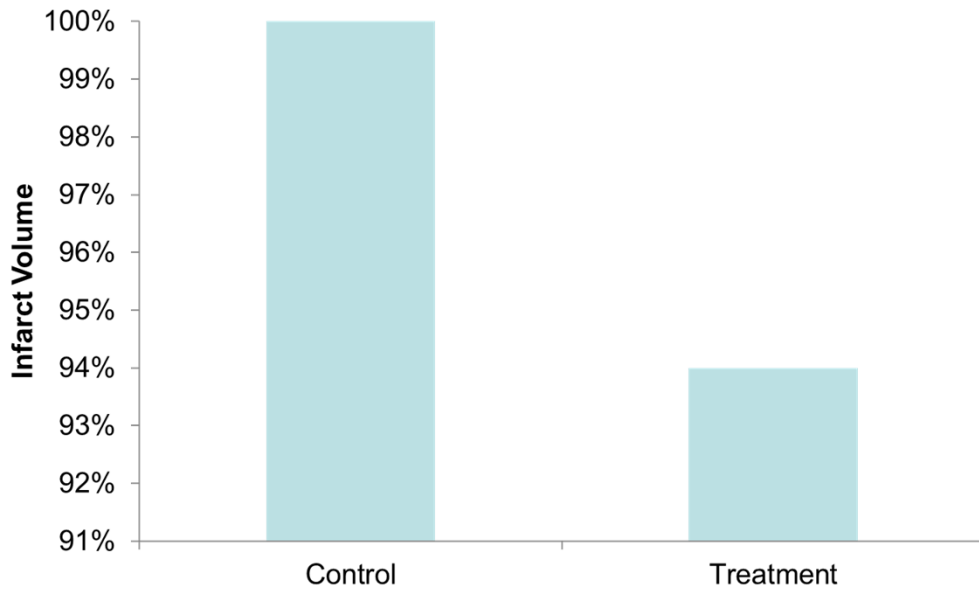
# Cohort Selection



# Ethical Data Representation



# Integrity: Adjusted Scale



# All the Pet P's of Presentations

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WE ALL KNOW THIS ALREADY!



# 6 P's to a 'Perfect' Presentation

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## **Personality**

- Your image and your academic brand: consider attire: dress up, posture: stand tall and open

## **Poise**

- Stay calm, balanced, graceful and smile | Questions

## **Polish**

- Polished outlook on self and on slides: attention to formatting and spell check

## **Preparation**

- Get to the room early | Speaker Ready Rooms | Introduce to Moderators | Multimedia use

## **Practice**

- Communicate with clarity, confidence and passion | Practice pitch and tone

## **Presentation**

- Most people start strong, **remember to finish strong**



# This concludes my presentation!

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**P**roper **P**rior **P**lanning and **P**reparation  
**P**revents **P**oor **P**erformance!