Writing up Research: Abstracts and Manuscripts

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Abstracts

- Follow directions – word count, font, etc.
- Table/figure may reduce allowed word count
- Pick an accurate title – must reflect main theme (i.e. specific aim) of abstract
- Clarity – avoid uncommon abbreviations
- Simplicity – discuss main results
  - too many analyses becomes confusing
  - Consider more than one abstract

Abstracts

- Write abstract long before deadline
  - -revise multiple times before submission
  - -involve colleagues in writing and editing
- Statistics
  - - Should be addressed *before* study begins
  - - Get results early; contemplate additional analyses

Submission

- Pick a category very carefully
  - look at previous year's abstracts to determine fit.
  - e.g. I do a study on treatment of bleeding peptic ulcers due to NSAID's.

Esophageal, Gastric and Duodenal Disorders

Subcategories:

Barrett's Esophagus: Diagnosis and Management

Barrett's Esophagus: Pathogenesis

Barrett's-Related Esophageal Adenocarcinoma

Clinical Acid-Peptic (Non-GERD) and Other Gastroduodenal Disorders

Dyspepsia

EGD: Gastroduodenal Neuroendocrine Secretion: Neural, Hormonal, Intracellular and Molecular Regulation of Gastrin, Histamine, Somatostatin and Other Peptides

EGD: Gastroduodenal Exocrine Secretion: Neural, Hormonal, Intracellular and Molecular Regulation of Acid, Pepsinogen, Bicarbonate, Mucus and Other

EGD: Mucosal Defense: Pre-Epithelial, Epithelial and Post-Epithelial

EGD: Mucosal Injury, Repair and Healing

EGD: NSAIDs: Clinical Studies: Epidemiology, Diagnosis and Management

EGD: NSAIDs: Mechanisms of Injury and Repair

Endoscopic Detection of Premalignant Lesions in the UGI Tract

GERD: Diagnostic Testing

GERD: Pathogenesis

GERD: Pharmacological Treatment

GERD: Complications and Extra-Esophageal Presentations

GERD: Surgical, Intraluminal and Non-Pharmacologic Treatment

Helicobacter pylori: Diagnosis

Helicobacter pylori: Treatment and Antimicrobial Resistance

Helicobacter pylori: Pathogenesis: Bacterial Factors

Helicobacter pylori: Pathogenesis: Gastric Epithelial Responses and Carcinogenesis

Helicobacter pylori: Pathogenesis: Immune Responses and Vaccines

Eosinophilic Esophagitis and Gastroenteritis

Non-Reflux Esophageal Disorders

Non-Variceal UGI Bleeding

Authors and Speakers

- Author order
  - senior responsible faculty member is final author.
  - First author – most responsible for completing, organizing work.
  - Carefully choose speaker – consider background, language skills.

DDW

2009

ABSTRACT FINAL ID: T1053;

TITLE: GERD Prevalence: A Population-Based Survey of an African American Community

AUTHORS (FIRST NAME, LAST NAME): Jitha Rai[1], Vishwas Vanar[1], Charles A. Bongiorno[1], Mayur Parepally[1], Arashdeep Poonia[1], Joel Richter[1], Frank K. Friedenberg[1]

ABSTRACT BODY: Background: The prevalence of GERD is increasing in Western Societies. Changes in diet, the decline in prevalence of H. pylori, and the obesity epidemic are thought to be major contributors. Prior studies have primarily examined Caucasian subjects with respect to GERD prevalence and risk factors. We sought to study the prevalence and risk factors for GERD in a primarily African American (AA) population.

Methods: During the summer of 2008, adults entering or passing by a retail pharmacy near Temple Hospital were eligible to participate. Included subjects were self-selected and produced identification verifying their age and residence within the hospital's zip code. A researcher assisted subjects as necessary to read and interpret questions. The bilingual survey queried demographic information, lifestyle habits, medical history, medications, frequency and severity of GERD symptoms, and diet. Subjects underwent measurement of BMI and waist-to-hip ratio (WHR). GERD was defined as ≥ 2 days per week of heartburn, regurgitation, antacid treatment for heartburn, or an impact on QOL ⊡ 3 on a 1-5 scale.

Results: 413 subjects were interviewed; 60.3% ♀, 88.5% AA. Most participants graduated high school (80.2 %), had health insurance (74.9 %), drank alcohol ≥ 1 time per week (51.5%), and were current or former smokers (58.2%). The prevalence of GERD was 36.6%. Older age (45.6 ± 16.6 vs. 42.1 ± 17.3 years; P=0.05) and larger waist circumference (38.7 ± 6.2 vs. 36.8 ± 6.8 in; P=0.002), but not WHR were associated with GERD. There was a significant association between GERD and increasing BMI quartile even after adjusting for age and gender (OR=2.01, 95% CI 1.13-3.61; P= 0.02). Additionally, weight gained since age 18 was associated with prevalent GERD (OR=2.16,95% CI 1.09-4.28; P=0.03). There was no association between GERD and gender, smoking, or alcohol status. There was no relationship between dietary servings per week of meat, vegetables, sweets, soda, coffee, or tea and the presence of GERD. There was no relationship between dining out and GERD, however the frequency of eating "fast food" was inversely associated with GERD (P=0.014). This was due to the strong inverse relationship between "fast food" consumption and age (P<0.001). In regression analysis, waist circumference (OR=1.05, 95% CI 1.01-1.10; P=0.04) but not BMI or age was associated with GERD.

Conclusions: In this cross-sectional study of primarily AA subjects, waist circumference was the strongest risk factor for GERD. This finding has been seen in non-AA populations and is likely due to raised intragastric pressure. Adverse lifestyle and dietary practices were not associated with GERD.

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Poster Presentation

- Same principles apply
  - Follow directions
  - Clarity
  - Simplicity
- Make it attractive
  - Choose color combinations carefully
  - Make figures simple and attractive
  - Visibility: make font large enough to read from 4 to 6 feet.

Poster Presentation

- Use figures and tables to summarize data to avoid crammed text
- Using photomicrographs, results from gels, etc. encouraged (*if they add meaning*)

GERD Prevalence: A Population-Based Survey of an African American Community

Jitha Rai MD, Vishwas Vanar MD, Charles Bongiorno MD, Mayur Parepally BS, Arashdeep Poonia BS,
Joel Richter MD, Frank K Friedenberg MD, MS (Epi)
Digestive Disease Center, Temple University School of Medicine, Philadelphia PA

Background

- The prevalence of GERD is increasing in Western Societies.

- Prior studies have identified the decline in prevalence of *H.pylori*, changes in diet, and the obesity epidemic as major contributors to GERD.

- Most studies have examined primarily Caucasian patient populations. There has been few studies investigating the risk factors for GERD in African Americans.

Aim

To identify the prevalence and risk factors of GERD in a primarily African American population.

Methods

- Convenience sample: Adult subjects were selected based on their residence within the hospital's zip code.

- Interviewed at a local pharmacy

- Subjects participated in a bilingual survey that queried demographic information, lifestyle habits, medical history, medications, frequency and severity of GERD symptoms.

- Participants underwent measurements of BMI and waist-to-hip ratio (WHR). GERD was defined as ≥ 2 days per week of heartburn, regurgitation, or medication treatment for heartburn.

Results

- 413 subjects were interviewed; 60.3% ♀, 88.5% AA. Most graduated high school (80.2 %), had health insurance (74.9 %), drank alcohol ≥ 1 time per week (51.5%), and were current or former smokers (58.2%).

- The prevalence of GERD was 36.6%. Older age (45.6 ± 16.6 vs. 42.1 ± 17.3 years; P=0.05) and larger waist circumference (38.7 ± 6.2 vs. 36.8 ± 6.8 in; P=0.002), but not WHR were associated with GERD.

- GERD was associated with increasing BMI quartile even after adjusting for age and gender (OR=2.01, 95% CI 1.13-3.61; P= 0.02). Additionally, weight gained since age 18 was associated with prevalent GERD (OR=2.16,95% CI 1.09-4.28; P=0.03).

- In regression analysis, only waist circumference (OR=1.05, 95% CI 1.01-1.10; P=0.04) but not WHR, BMI, or age was associated with GERD.

- There was no association between GERD and gender, smoking, alcohol status, dietary servings per week of meat, vegetables, sweets, soda, coffee, or tea.

Relationship Between Waist Circumference and GERD Prevalence
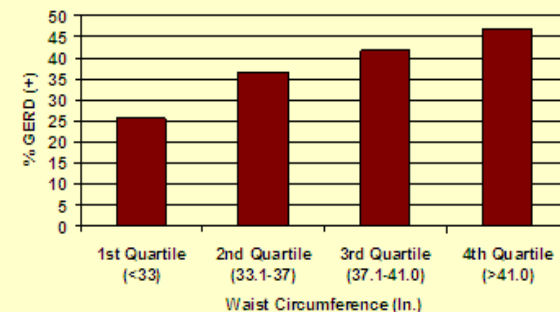
Conclusions

- In this cross-sectional study of primarily AA subjects, waist circumference was the strongest risk factor for GERD. It was a stronger risk than BMI or Waist:Hip Ratio. A 5% increased risk for GERD was seen with each inch increase in waist circumference.

- This finding has been seen in non-AA populations and is likely due to raised intragastric pressure.

- Adverse lifestyle and dietary practices were not associated with GERD in our study.

Principles of Manuscript Preparation

Manuscript Preparation

- Introduction – should be done before experiment started
  - Briefly summarize most relevant background literature on topic
  - Discuss rationale as to why this study is necessary
    - e.g. point out shortcomings of previous studies
  - Final sentence: "Our purpose was to…."

Manuscript Preparation Methods Section

- Population/material studied
  - Inclusion/exclusion requirements
- Techniques/interventions applied
- Statistical section - planned inferential statistical analysis
- Sample size/Power calculation - clearly state 1^0 endpoint, reference literature calculation based on, assume dropouts.

Manuscript Preparation

- Results
  - Start with descriptive statistics – population characteristics usually highlighted in Table 1.
  - Second paragraph highlights important inferential statistical findings
    - For complex data use figures and tables (avoid redundancy)
  - Use subheadings liberally if possible – easier for reader to focus for additional sets of important findings

Table 1. Characteristics of 200 in-patients diagnosed with first episode of *Clostridium difficile* infection stratified by complication status

	Complication* n = 32 mean (s.d.)	No complication n = 168 mean (s.d.)	95% Confidence interval of difference	P Value
Age (year)	68.8 (12.9)	65.9 (17.2)	−9.2–3.4	0.37
Creatinine increase (%)†	106.7 (132.9)	27.4 (70.2)	30.3–128.2	0.002
Temperature (°F)	99.5 (2.2)	99.4 (1.9)	−0.82–0.65	0.82
WBC ($10^3/\mu L$)	27.3 (19.9)	16.7 (9.6)	3.3–17.9	0.006
Albumin (g/dL)	2.1 (0.7)	2.3 (1.5)	−0.33–0.75	0.45
ALT (U/L)	51.7 (50.6)	34.0 (38.0)	−36.8–1.5	0.07
Total bilirubin (mg/dL)	0.92 (0.53)	0.83 (0.76)	−0.37–0.19	0.54
Haemoglobin (gm/dL)	10.9 (2.0)	10.2 (1.8)	0.1–1.5	0.02
Body mass index (kg/m^2)	29.5 (9.4)	26.7 (10.3)	−6.9–1.2	0.17
	n (%)	n (%)	Risk estimate (95% CI)	P Value
Gender				0.98
Female	18 (15.9)	95 (84.1)		
Male	14 (16.1)	73 (83.9)	1.01 (0.47–2.17)	
Race				0.83
White	11 (18.5)	48 (81.4)		
Black	17 (17.0)	83 (83.0)		
Hispanic	3 (11.5)	23 (88.5)		
Immune status				0.36
Immunosuppressed (−)	10 (13.0)	67 (87)		
Immunosuppressed (+)	22 (17.9)	101 (82.1)	1.46 (0.65–3.28)	
Pseudomembranes				0.053
No	0 (0)	4 (100)		
Yes	11 (52.4)	10 (47.6)	2.1 (1.0–3.3)	
Severe CT findings				0.003
No	2 (5.0)	38 (95.0)		
Yes	12 (30.0)	28 (70.0)	8.1 (1.7–39.3)	

Gujja D, Friedenberg FK. Aliment Pharmacol Ther 29, 635–642.

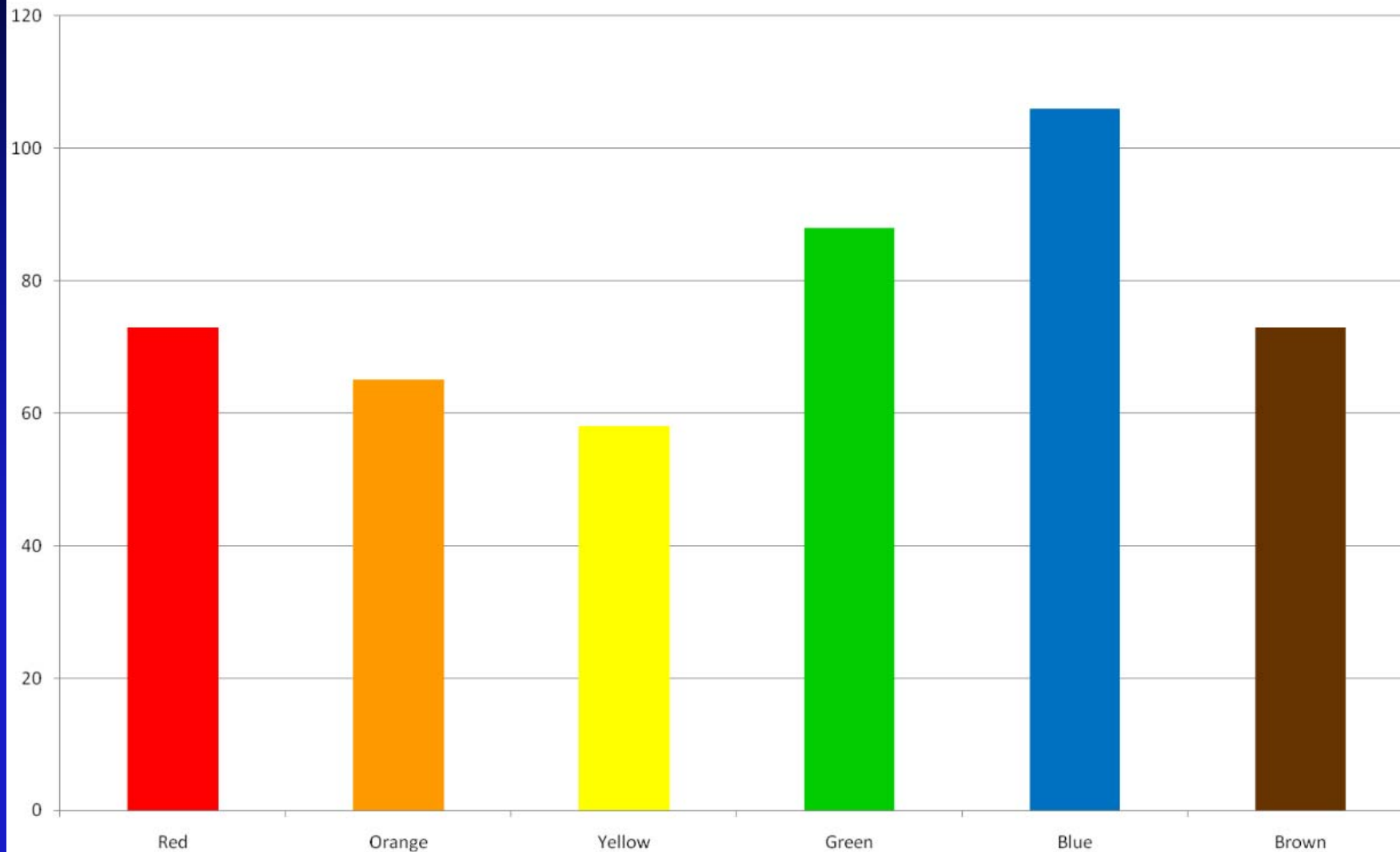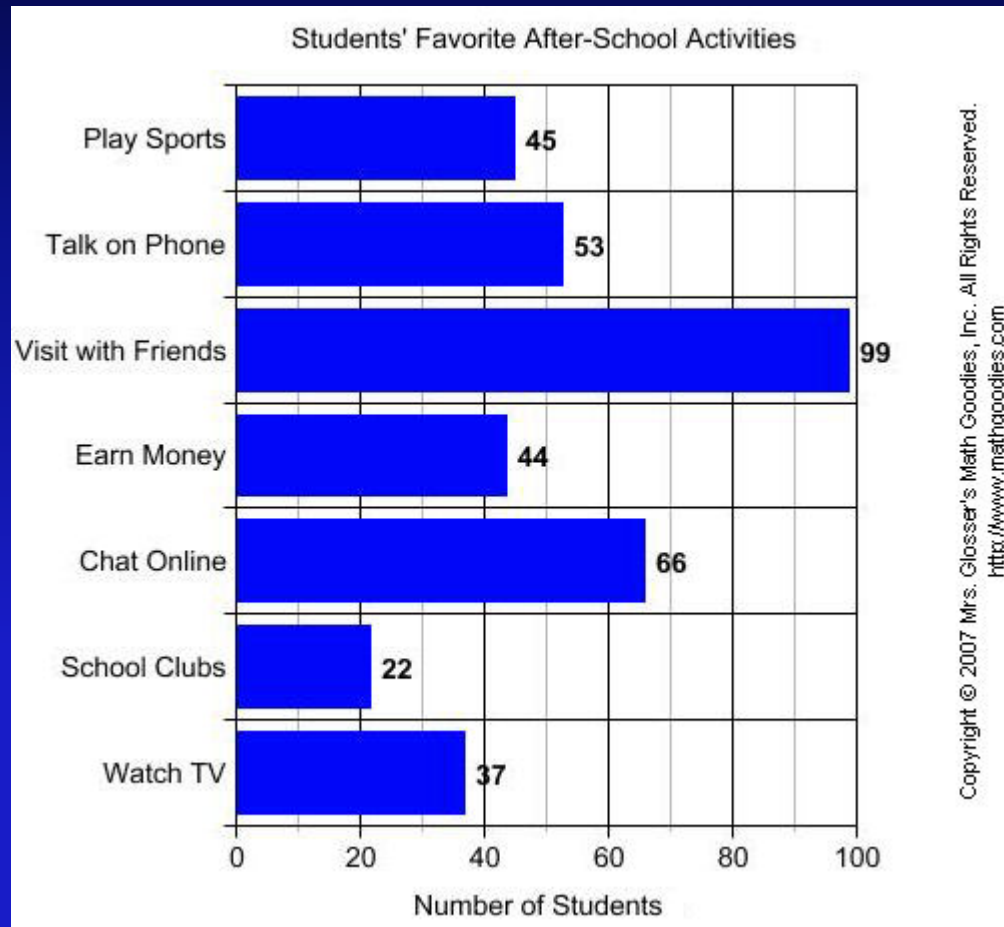# Sample Methods to Display Results

Bar Graphs

- May be vertical or horizontal
- Choose Y-axis <u>scale</u> carefully
- X –axis is a categorical variable (e.g. gender, race)
- Use a line graph when x-axis has ≥ 9 categories
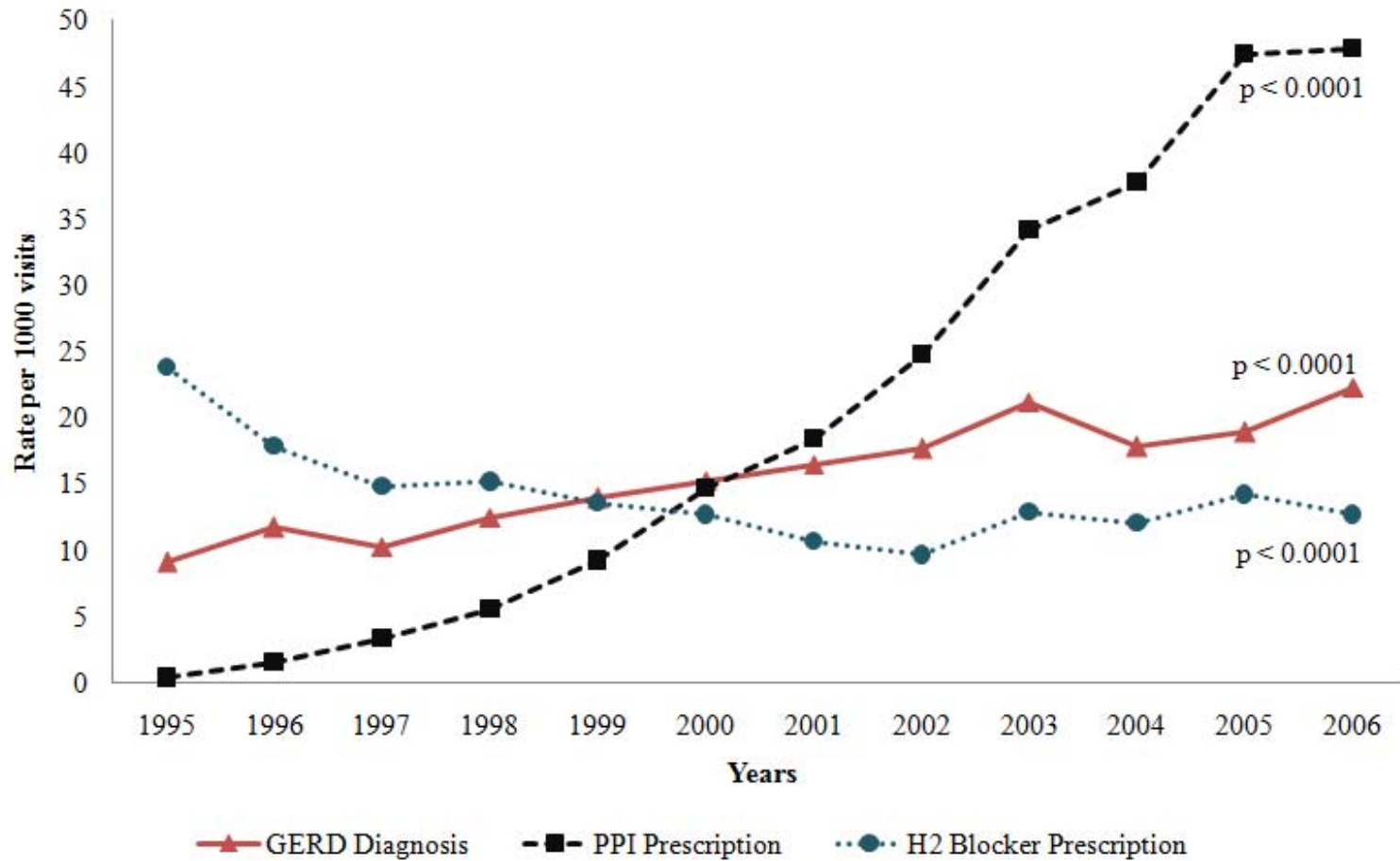
Vertical Bar Graph

What colours came in our packets of M&M's Milk Chocolate?
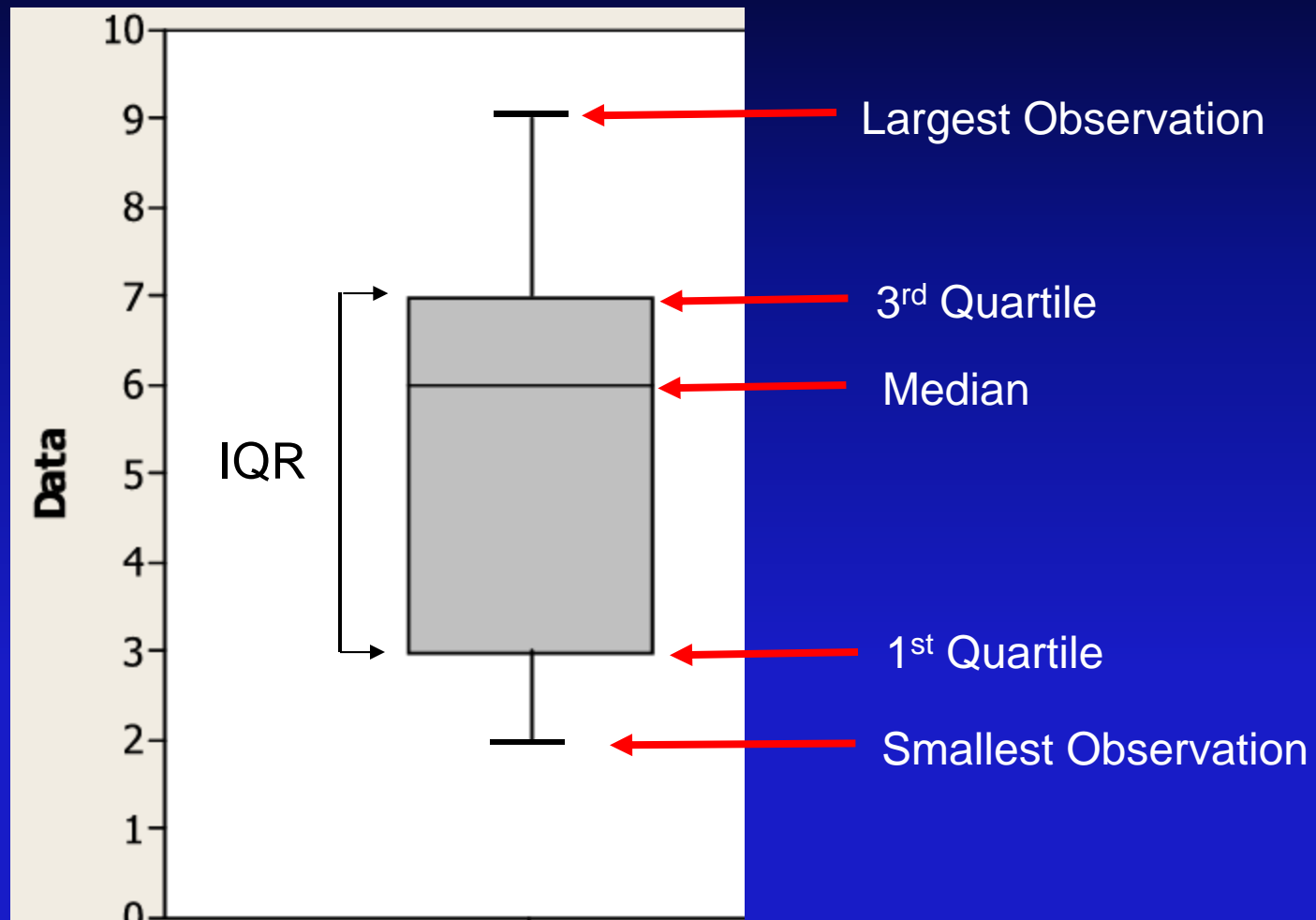
Horizontal Bar Graph

Line Graph

Friedenberg FK, et al. Trends in Gastroesophageal Reflux Disease as Measured by the National Ambulatory Medical Care Survey. Dig Dis Sci. 2010 Jul;55(7):1911-7

Boxplots

- Appropriate when displaying medians rather than means
- Spacing between the different parts of the box help indicate variance, skewness and identify outliers.
- 5 point summary: the smallest observation, lower quartile (Q1), median, upper quartile (Q3), and largest observation
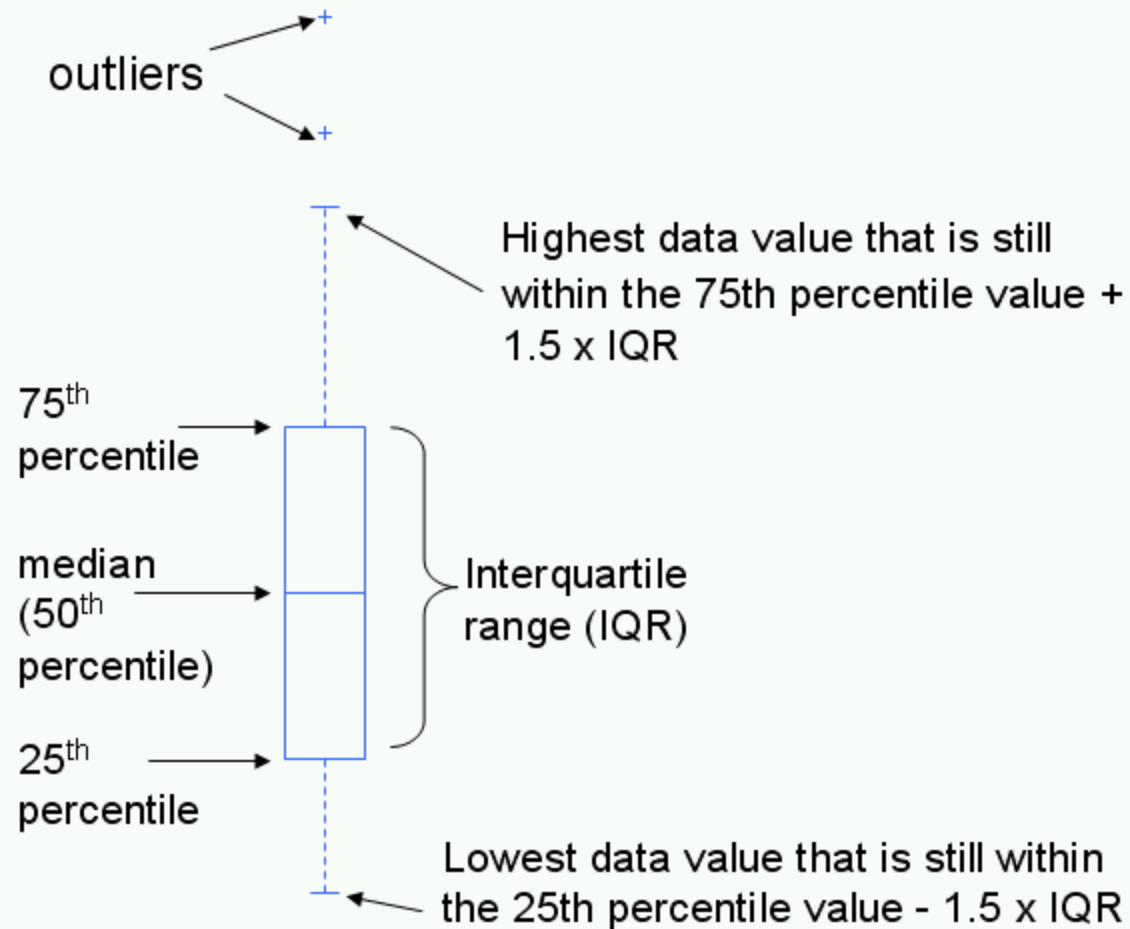- Can be horizontal or vertical
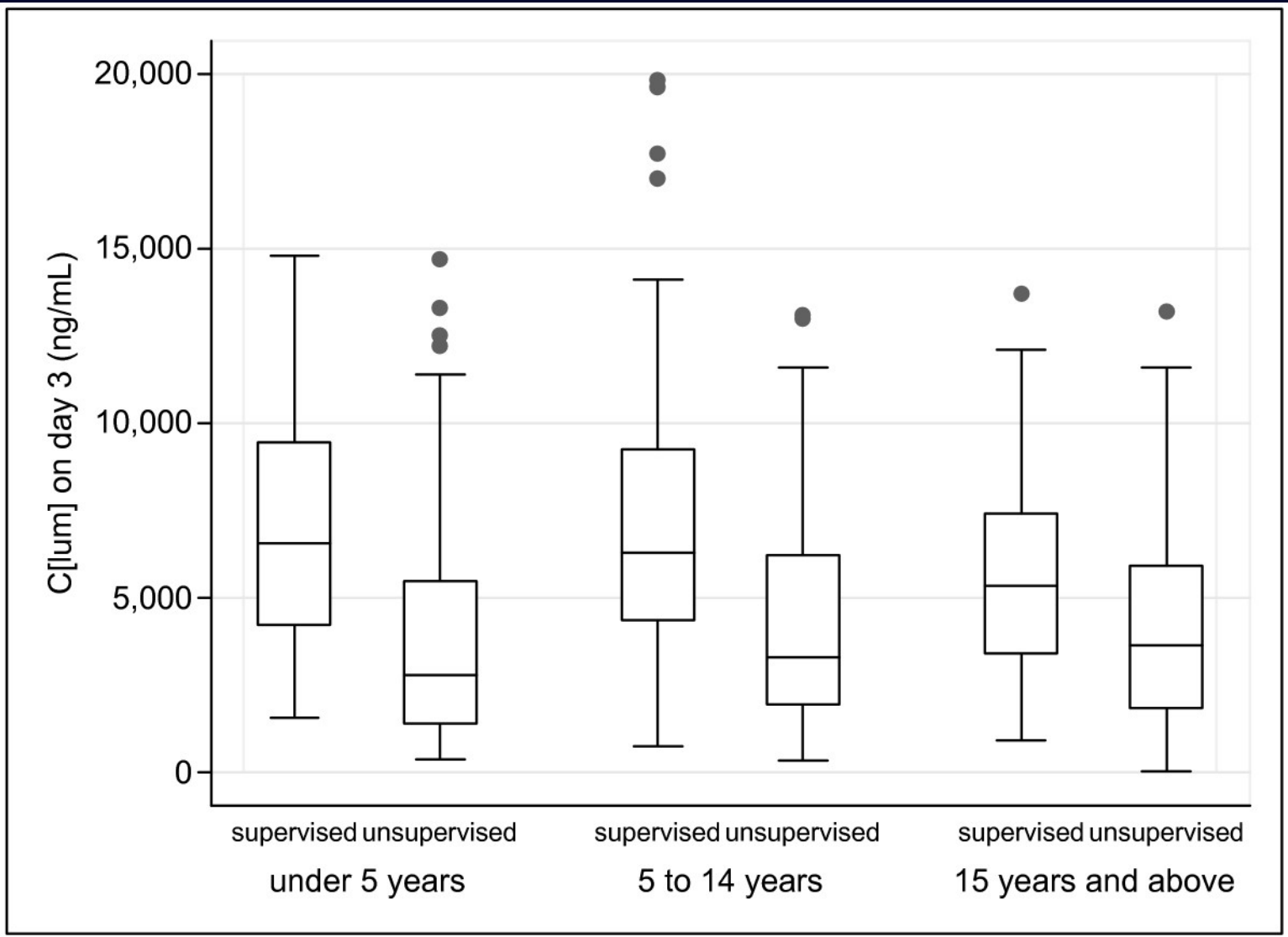
Boxplots ("Box and Whisker")
5-Point Data Summary

Defining Q1 and Q3

$$LQ = \frac{35 + 37}{2} = 36 \qquad UQ = \frac{58 + 58}{2} = 58$$

(35, 35, 37, 40,) 43, (56, 58, 58, 60)

median
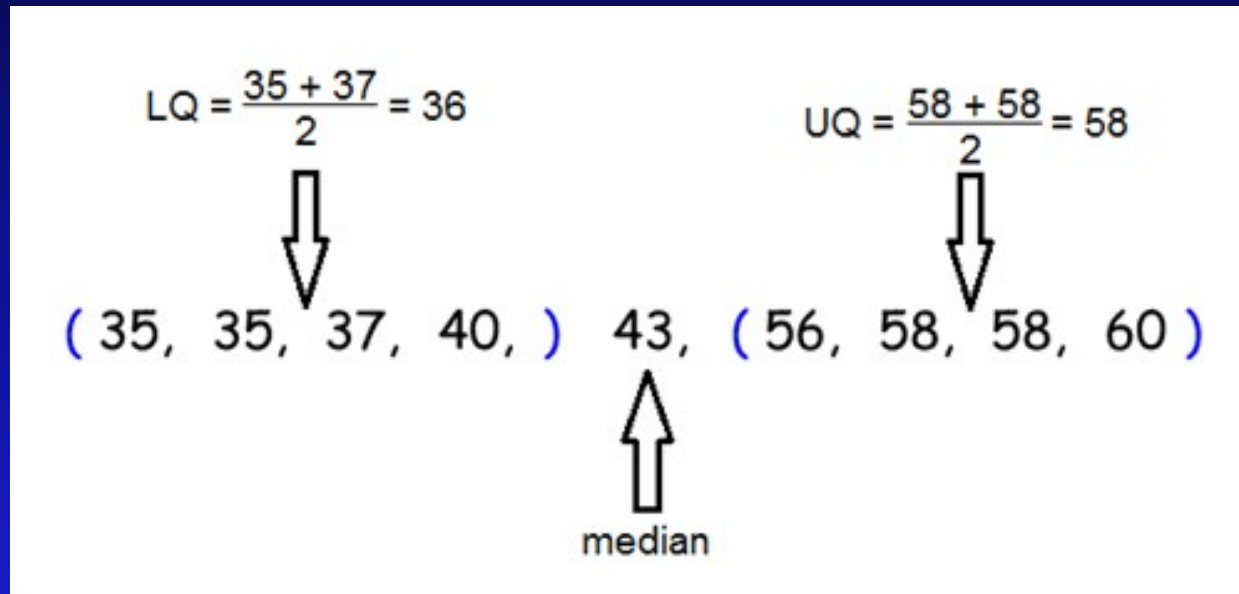
Extreme Outliers

Variable	Yes/No	Died/Colectomy (%)	Odds Ratio (95% CI)
Age ≥ 65	39/33	19 (48.7)	
Immunosuppression	12/60	9 (75.0)	
Male Gender	36/36	22 (61.1)	
Received VPR	24/48	12 (50.0)	
Severe Complicated CDI	40/32	29 (72.5)	
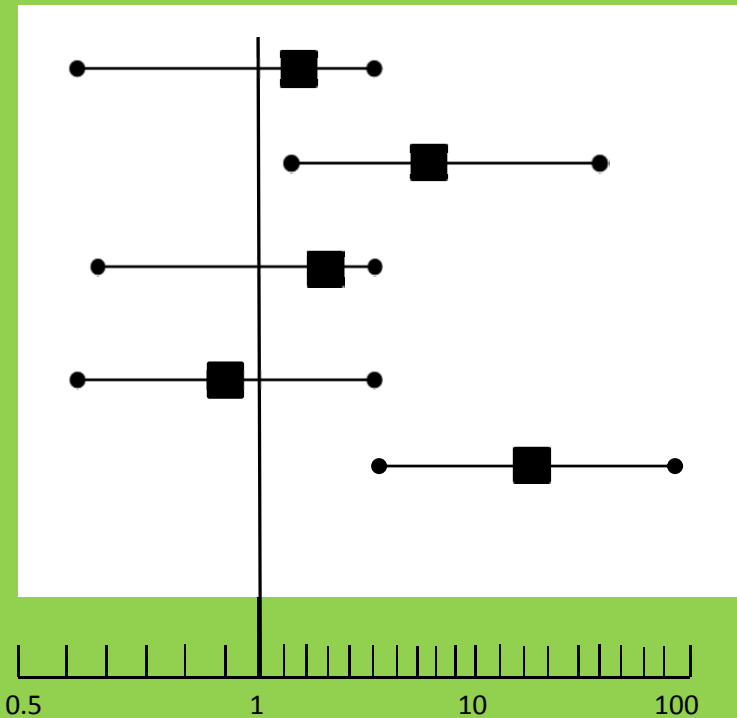
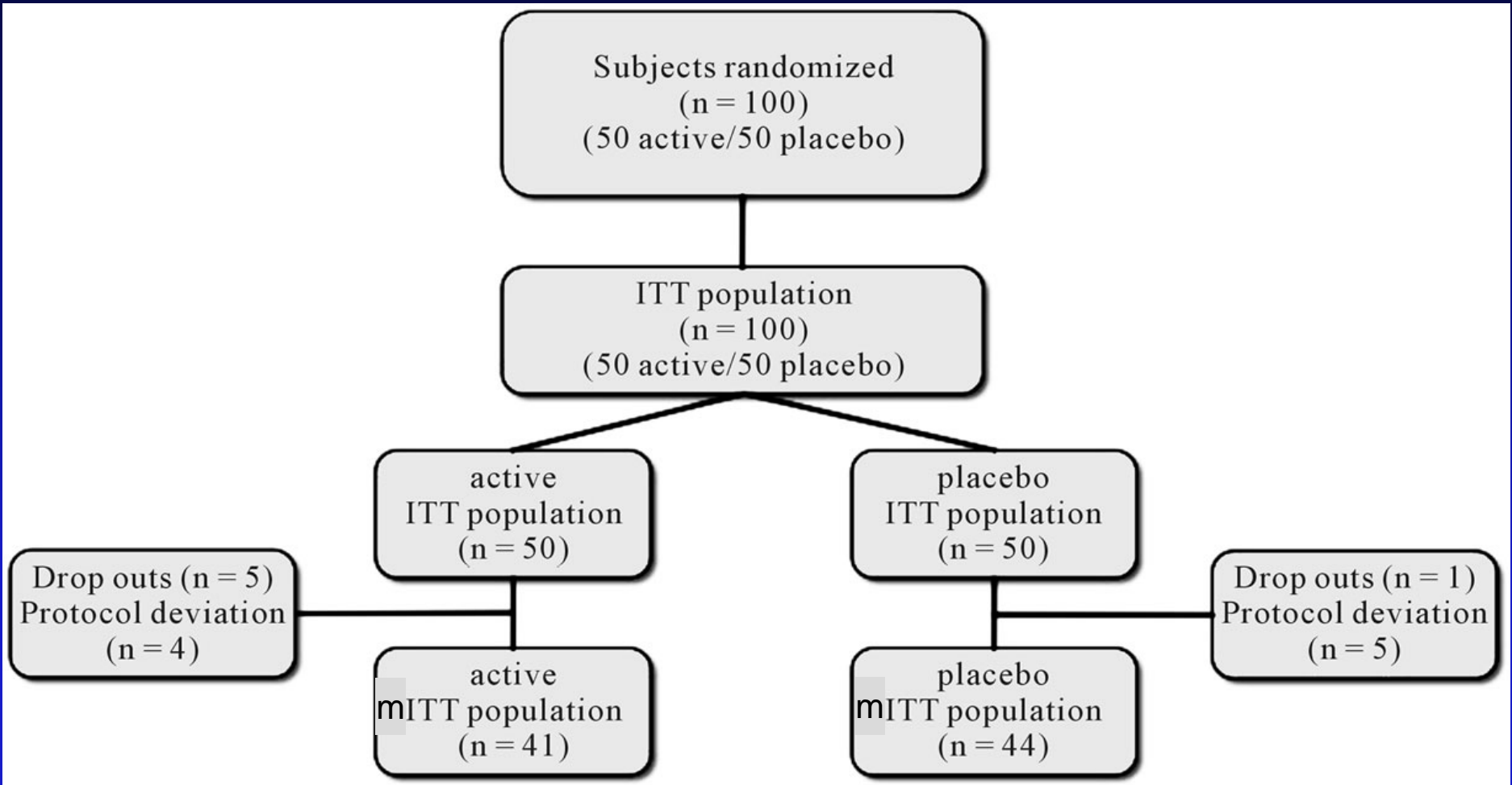Favors No Colectomy/Death   Favors Colectomy/Death

Manuscript Preparation

- Results
  - Finish with adverse events if relevant
  - Often see per protocol vs. modified ITT vs. ITT results explored

  PP – after randomization patient finished every step of study to conclusion

Intention to Treat

Manuscript Preparation

- Conclusions
  - 1st paragraph highlights main results
  - 1-2 paragraphs putting results in context of known data
  - Additional paragraphs to discuss unusual findings, thorough relevant lit review, potential study strengths and limitations, directions for future research
  - Final paragraph restates conclusions and mentions direction for future studies.

Abstract – goes first, do last

- Select key lines from introduction, methods, results, and conclusion
- Be mindful of word limits
- Other data needed (put on face page) will be: word count, potential conflicts, 4-6 key words, and funding source.

Selecting an Appropriate Journal

- Choose a journal that is appropriate based on the subject matter – read the table of contents
- Good place to start is location where the references were published
- Is manuscript appropriate for journals based on critical care, emergency medicine, pharmacology, etc.?
  - e.g. study on a new drug to stop variceal bleeding.
- Be realistic – examine journal impact factor
  IF = number of times journal cited/everything that could be sited
- You want a journal that is abstracted in pubmed!

Good Luck!