Top 10 Pearls for Writing an Abstract

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Disclosures

- I do not have a degree in English, journalism, or any other field related to writing

- There is no one right way to write an abstract

Why an Abstract?

- To summarize your manuscript
  - Abstract is a teaser
    - Meant to draw interest of the editor
  - But, must be able to stand alone
    - Many people will read only the abstract
- To get accepted to a conference
  - All you are judged on is your abstract, so make it count!

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10. Pick your conference

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Conference	Date	Deadline
AAP	Fall	April
AHA	November	June
PCICS	December	August
SCCM	February	August
CHOP Cardiology	February	November
ACC	March	October
ISHLT	April	October
SCAI	May	December
Heart Rhythm	May	December
PAS	May	December
ASE	June	February
PICS	September	April
SEPCS	September	July

10. Pick your conference

- Based on the conference, review the abstract guidelines
  - Word count? Character count?
  - Tables?
  - Figures?
  - Organization of the abstract?

10. Pick your conference

- NOT Ok to present work at 2 large conferences
  - Do not submit to 2 large conferences at same time
- OK to present at smaller conferences
- If necessary, can ask a journal editor to hold publication until conference (or better yet, to time the publication date with the conference)

9. Pick your section/focus area

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- Not always an option
- Typically straightforward
- If multiple possibilities, choose strategically
  - Surgery
  - Epi
  - Adult congenital

8. Young Investigator Competition?

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- ALWAYS choose this if it's an option
- Manuscript also needed?
- Different submission date?

7. Understand the Review Process

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- Panel of reviewers
- Typically grade on key elements
  - Make sure you can check all the boxes!
- Reviewers typically review 30-50 abstracts
  - Need to stand out!

6. Title

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- Grab the reviewer's attention
- Ask a question?
- State a controversy? (especially if findings contrary to earlier published articles)
- Big dataset? Multi-center study? Mention it!

6. Title

- Transcatheter vs. Surgical Closure of Atrial Septal Defects in Children: A Value Comparison
- Newborn screening for critical congenital heart disease: is it time to change the algorithm?
- Association of Congenital Heart Disease with Autism: A Case-Control Study
- Pediatric Cardiology Evaluation of Chest Pain – Are We Meeting Pediatricians' Expectations?
- Long-term Transplant-free Survival for Arterial Switch Versus Atrial Switch in Treatment of Transposition of the Great Arteries. A Study from the Pediatric Cardiac Care Consortium

5. Introduction/Background

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- 2-3 sentences, max!
- 1st sentence or 2: Very brief intro of broad problem
- Final sentence: purpose/objective/aim
- If room, add hypothesis

Background: Secundum atrial septal defects (ASDs) are common congenital heart defects with both transcatheter and surgical treatment options. While both options have been shown to have excellent results in children, the relative value of the two procedures is unknown. The purpose of this study was to determine whether a transcatheter procedure vs. surgery offered a better value proposition for the closure of ASDs.

The most commonly used algorithm for newborn screening for critical congenital heart disease (CCHD) is the one endorsed by the American Academy of Pediatrics (AAP). However, the impact and feasibility of this algorithm has been questioned. The objectives of this study were to 1) determine the impact of newborn CCHD screening in a large, tertiary care birth hospital using the AAP algorithm and 2) model what the impact may be under an alternative algorithm.

BACKGROUND: There has long been an association between congenital heart disease (CHD) and general neurodevelopmental delays. However, the association between CHD and Autism spectrum disorders (AuSD) is less well understood. Prior studies to assess an association have been limited by small sample size and questionnaire recall.

OBJECTIVE: Using administrative data from the Military Health System, we sought to quantify the association between CHD and AuSD, as well as to identify specific CHD lesions with higher odds of developing AuSD.

4. Methods

4. Methods

- Start with type of study
  - Retrospective cohort study
  - Case control
  - Descriptive

- Include broad details
  - Inclusion/exclusion criteria
  - Years of the study
  - Location of the study

4. Methods

- Include broad type of statistics
  - If room, list confounders (or hide in table/graph?)
- Use active voice unless specifically directed otherwise
- Don't need to include IRB

Methods: Using data from the Pediatric Hospital Information System for 2004-2012, we compared the value of transcatheter vs. surgical ASD closure in children aged 0-17 years, with value being defined as outcomes relative to costs. Our outcomes of interest were in-hospital mortality, length of stay, and rates of infection. Total charges for procedure-related encounters were converted to costs using hospital cost-to-charge ratios, and all costs were adjusted for inflation to reflect 2014 dollars. Continuous variables were analyzed using Student's T-test or non-parametric equivalent for non-normal data and Chi Square or Fisher's Exact test for categorical variables. To account for non-normal distribution and variance inequality of cost across procedures we used the Kolmogorov-Smirnov test for equality.

Newborn CCHD screening results were collected on term infants born at a large tertiary birth hospital in Atlanta, GA between January 1, 2013 through December 31, 2016 using the AAP algorithm. Infants with a prenatal diagnosis of CCHD and infants transferred to the NICU prior to screening were excluded from screening. Infants without sufficient pulse oximetry data (n=39) were excluded from the analysis. Clinical records were reviewed at the birth hospital and the sole pediatric cardiac surgery center in the area to identify true negatives, true positives, false negatives, and false positives. A simulation study was then performed to model how the results would have differed if the algorithm had been modified to have only one repeat pulse oximetry test instead of two.

DESIGN/METHOD: We performed a 1:3 case-control study with children born and enrolled in the US Military Health system between October 2000 and September 2013. Cases with AuSD were matched with unaffected controls on the basis of date of birth, sex, and enrolment timeframe. *International Classification of Diseases, Ninth Revision, Clinical Modification* (ICD-9-CM) diagnostic codes for each child were obtained and reviewed for CHD codes and associated procedures. CHDs were further subdivided according to developmental categories. Conditional logistic regression determined ORs and 95% CIs for comparative associations.

3. Results

3. Results

- Start with overall numbers
- Get to the key results quickly
  - Don't (and usually can't) report ALL results
- If allowed, use graphs/tables!!!!
  - EASY way for you to stand out

Table. Stratified Cox Proportional Hazards Ratios for 1-Year Mortality in Infants Born With Critical Congenital Heart Defects:* Atlanta, Georgia, 1979-2005

Variable	Referent Group	Hazard Ratio†	95% Confidence Interval	P-Value
Born 1979-1993	Born 1994-2005	2.65	2.11-3.32	<0.0001
Diagnosed at >1 day old	Diagnosed at ≤1 day old	0.54	0.42-0.69	<0.0001
Maternal age ≥30	Maternal age <30	0.77	0.62-0.97	0.0238
Birth weight <2500g	Birth weight ≥2500g	1.73	1.34-2.24	<0.0001

*Critical Congenital Heart Defects include 7 primary targets (hypoplastic left heart syndrome, pulmonary atresia, tetralogy of Fallot, total anomalous pulmonary venous return, transposition of the great arteries, tricuspid atresia, truncus arteriosus) and 5 secondary targets (coarctation of the aorta, doublet outlet right ventricle, Ebstein's anomaly, interrupted aortic arch, single ventricle) of screening.

†Each hazard ratio is adjusted for the other variables in the table. The model is stratified on socioeconomic status because it violated the proportional hazards assumption.

Table 1

Characteristics	**Autism SD (n=8,760)** n, (%)	**Control (n=26,280)** n, (%)	**p-value**
Congenital Heart Disease	885 (10.1%)	1,463 (5.6%)	**<0.001**
Genetic Syndrome	411 (4.7%)	178 (0.7%)	**<0.001**
Prematurity	1,171 (13.4%)	2,302 (8.8%)	**<0.001**
Gestational diabetes	1,062 (12.1%)	2,916 (11.1%)	**0.009**
Maternal age, years (IQR)	28.0 (24.3 – 32.3)	29.1 (25.5 – 33.2)	**<0.001**

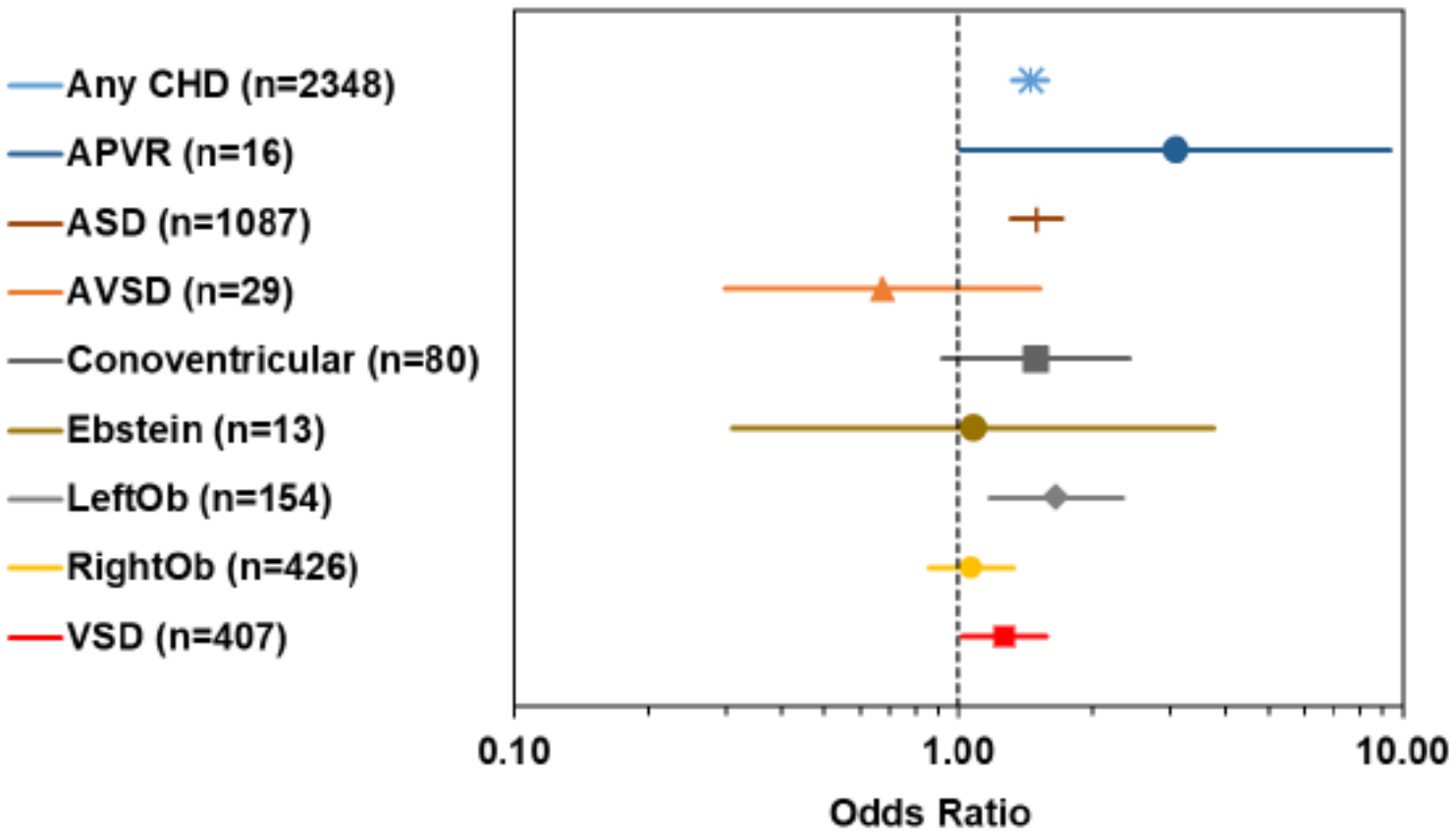

Figure 1. Odds Ratios for AuSD with associated CHD categorical diagnosis adjusted for genetic syndrome, prematurity, maternal gestational diabetes, and maternal age at delivery. CHD (Congenital Heart Disease), APRV (Anomalous Pulmonary Venous Return), ASD (Atrial Septal Defect), AVSD (Atrio-Ventricular Septal Defect/Atrio-ventricular Canal Defect), Conoventricular defect (including Tetralogy of Fallot, truncus arteriosus, AP Window), Ebstein (Ebstein malformation), LeftOb (left heart obstruction including hypoplastic left heart syndrome, mitral stenosis, aortic stenosis, and coarctation of the aorta), RightOb (right heart obstruction including tricuspid atresia, pulmonary atresia, pulmonary stenosis not including Tetralogy of Fallot), VSD (Ventricular septal defect)

2. Conclusions

2. Conclusions

- Summarize your key point
  - This MUST answer/address your key question/objective
  - Don't just restate your results
- Conclusion MUST be supported by results shown
  - If not in your results, don't comment
- Add at least one other sentence
  - Implications of your findings? (best option)
  - Compare to other findings?
  - Further research needed? (super weak option)

Conclusions: Both transcatheter procedures and surgeries had excellent mortality, but transcatheter procedures had lower lengths of stay and rates of infection, resulting in lower overall costs. For children who are eligible, transcatheter closure of an ASD may provide better value, at least in the short term.

CCHD screening using pulse oximetry may not detect many new cases of CCHD in a tertiary care setting, but it can detect other important causes of hypoxemia. Modifying the CCHD screening algorithm to have only one repeat pulse oximetry test instead of two may help detect other significant disease without a substantial increase in the false positive rate. Further efforts to improve the sensitivity of screening are warranted.

CONCLUSIONS: Children with CHD are at increased odds of developing AuSD. Specific lesions at risk include atrial septal defect, left heart obstructive lesions, ventricular septal defects, and anomalous pulmonary venous return. Our findings will be useful for counseling parents and caretakers of children with CHD.

1. Dealing with Rejection

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- If you followed the tips above, do not be dismayed
- Remember that there is ALWAYS some randomness and subjectivity to the reviews
- Improve data and figures, if possible
- Resubmit somewhere else!
  - We have had 2 fellows rejected from AHA who then won young investigator awards at ACC

Key Points

- Be clear
- Be focused
- Be interesting
- Be memorable


THIS IS MY
HUMAN
DINOSAUR