

Categorical Data Analysis
Final Project
Due Monday August 17th, 9AM

1. Read the article by Garner and colleagues.
2. In response to the findings of that study, Dr. Garner's research team revised the interactive computerized order set with decision support (ICOS-DS) software to address identified issues. The follow-up study was designed to facilitate comparisons in error rates between the original and revised ICOS-DS systems. Sixty mock neonatal intensive care unit (NICU) patients with varying indications for antibiotic treatment were created based on clinical and demographic characteristics representative of real MUSC NICU patients. Each mock patient was randomly assigned to two (out of a total of twelve) prescribers – one prescriber generating two (or more) antibiotic orders using the original software and the other prescriber generating two (or more) orders using the revised software. Each prescriber was assigned ten mock patients – five using the original software and five using the revised software.

The table below describes the variables in the data set project2 (.csv or .sas7bdat) which is available on the class website. The primary questions of interest for this study are the following:

- Among patients with renal dysfunction, are there differences in individual error types (prescribing or potential) comparing the revised to the original ICOS-DS systems?
- Among all patients, are there differences in individual error types (prescribing or potential) comparing the revised to the original ICOS-DS systems?
- Are there differences in prescribing and potential errors based on the prescriber's training level (NNP versus physician, defined as either a first or second year resident), overall and comparing the revised to the original ICOS-DS systems?
- Are there differences in prescribing and potential errors based on patient factors, overall and comparing the revised to the original ICOS-DS systems?

Conduct an appropriate data analysis to address the stated research objectives. Write a report in the form of a paper with introduction, materials and methods, results and discussion sections. The paper may not exceed 8 pages in length, must be double spaced, and use 11 or 12 point font. You will be evaluated using the grading rubric provided on the class website, and are encouraged to evaluate articles in various clinical journals to assess appropriate style and expected content.

Variable name	Variable label	Values
OrderID	Order ID	1 – 60
Program	Computer program version	1 = original 2 = revised
Training_Level	Prescriber's training level	0 = Neonatal nurse practitioner 1 = First year resident 2 = Second year resident
PtWt	Patient Weight (g)	
GestAge	Gestational Age (weeks)	
PtAge	Postnatal Age (days)	
Renal_Dys	Renal dysfunction patient	1 = Yes 0 = No
SCr	Serum Creatinine level	
Presc_Error	Order with at least one prescribing error	1 = Yes 0 = No
NPresc_Error	Number of prescribing errors	0, 1, 2, ...
Pot_Error	Order with at least one potential error	1 = Yes 0 = No
NPot_Error	Number of potential errors	0, 1, 2, ...