

Aaron C. Miller

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Education

Ph.D. Pharmaceutical Socioeconomics, University of Iowa, August 2015

Dissertation Title: *Clostridium difficile* Infection as a Novel Marker for Hospital Quality, Efficiency and Other Factors Associated with Prolonged Inpatient Length of Stay

M.A. Economics, University of Iowa, May 2011

B.A. Economics, Creighton University, 2008.

Research Interests

Disease Surveillance, Epidemiologic Methods, Infectious Disease Modeling, Health Care Data Analytics, Data Mining, Health Economics

Professional Experience

University of Iowa

Postdoctoral Research Scholar: Department of Computer Science, July 2017 - present

Adjunct Assistant Professor: College of Pharmacy, August 2015 - present

Research Assistant: for Linnea Polgreen, Spring 2012 - Fall 2013, Summer 2014

Teaching Assistant: College of Pharmacy: CPS I & Social Aspects of Pharmacy Care, Spring 2014

Instructor: Health Economics, Fall 2012

Research Assistant: Iowa Electronic Health Markets (IEhM), Summer 2011

Teaching Assistant: Statistics for Strategy, Fall 2009 - Fall 2011

Teaching Assistant: Principles of Macroeconomics, Fall 2008, Spring 2009

Cornell College

Assistant Professor of Business Analytics: Department of Economics & Business - August 2015 - June 2017

Publications

Miller A.C., Polgreen L.A., Cavanaugh J.E and Polgreen P.M. (2016) "Hospital Clostridium difficile Infection Rates and Prediction of Length of Stay in Patients Without C. difficile Infection." *Infection Control and Hospital Epidemiology*. 37(4):404-10.

Miller A.C., Polgreen L.A., Cavanaugh J.E and Polgreen P.M. (2016) "Hospital Clostridium difficile infection (CDI) incidence as a risk factor for hospital-associated CDI." *American Journal of Infection Control*. 44(7):825-9.

Miller A.C., Polgreen L.A., Cavanaugh J.E, Hornick DB and Polgreen P.M. (2016) "Missed Opportunities to Diagnose Tuberculosis Are Common Among Hospitalized Patients and Patients Seen in Emergency Departments." *Open Forum Infectious Diseases*. 2(4):ofv171.

Miller A.C., Polgreen L.A. and Polgreen P.M. (2014) "Optimal Screening Strategies for Healthcare Associated Infections in a Multi-Institutional Setting." *PLoS Computational Biology*. 10(1):e1003407.

Working Papers

"Factors Associated with Delayed Diagnosis of HIV in Inpatient and Emergency Department Settings." with PM Polgreen, April 2017.

"The Chocolate Study: Diminishing Marginal Utility from Food in Obese vs. Healthy Individuals," with LA Polgreen, March 2017.

"Stubborn Treatment - Rational Persistence of Poor Treatment Choices.," with LA Polgreen, February 2014.

Research In Progress

"A Smart Phone Driven Thermometer Application for Real-Time Influenza Surveillance and Field-Level Epidemiological Research," in progress.

"Missed opportunities in the surveillance of IV-drug associated infections," in progress.

"Unsupervised Clustering to Identify Diagnostic Errors Associated with Infective Endocarditis" with PM Polgreen, in progress.

"Estimating the Effect of Clostridium difficile Infection on Hospital Length of Stay: How Much Does the Statistical Method Matter?" with LA Polgreen and PM Polgreen, in progress.

"Practical Limitations of Case-Control Matching when Estimating Average Treatment Effects" with LA Polgreen and PM Polgreen, in progress.

Presentations

"Diminishing Marginal Utility of Food Consumption for Healthy, Overweight and Obese Individuals," Oral Presentation, 6th Biennial Conference of the American Society of Health Economists, Philadelphia PA, June 2016.

"Tuberculosis Unseen - Missed Opportunities in Diagnosis," Oral Presentation, 2014 ISDS Conference, Philadelphia PA, December 2014

"Practical Limitations of Case-Control Exact Matching," Oral Presentation, 2014 Midwest Social and Administrative Pharmacy Conference, Purdue University, July 2014.

"Limitations of Case-Control Exact-Matching when Estimating Average Treatment Effects," Poster Presentation, The 5th Biennial Conference of ASHEcon, Los Angeles CA, June 2014.

"Estimating the Effect of Clostridium difficile Infection on Hospital Length of Stay: How Much Does the Statistical Method Matter?," Oral Presentation, IDWeek 2013, San Francisco CA, October 2013.

"Spontaneous Emergence of Generic Medication Aversion," Oral Presentation, The 4th Biennial Conference of ASHEcon, Minneapolis MN, June 2012.

"Spontaneous Emergence of Generic Medication Aversion," Oral Presentation, 2012 Midwest Social and Administrative Pharmacy Conference, University of Wisconsin-Madison, August 2012.

"Using Web Search Data to Measure Diffusion of Information after Changes in Pharmaceutical Knowledge," Poster Presentation, APhA Annual Meeting, New Orleans LA, March 2012

"Game Theoretic Surveillance Approaches to Hospital Associated Infections," Oral Presentation, 10th Annual ISDS Conference, Atlanta GA, November 2011

Courses Taught

Health Care Data Analytics

Analytics Case Seminar (Topics: Identifying Hospital Misdiagnoses (2016); Predicting Short-Term ED Revisits (2017))

Analytics I : Data Mining & Predictive Modelling

Data Visualization

Introduction to Analytics

Health Economics

Professional Affiliations

International Society for Disease Surveillance

American Society of Health Economists

Honors and Awards

Dissertation Fellowship, Fall 2014

Joseph Wiederholt Consortium for Research in Administrative Pharmacy Award, 2014 Midwest Social and Administrative Pharmacy Conference

UI Graduate Student Senate Travel Funds Award, Fall 2011

University of Iowa Scholarship for Graduate Studies, 2008-2015

Programming Skills

R, Python, MATLAB, Stata, SAS, \LaTeX

Last updated: September 1, 2017