

# European Respiratory Society Annual Congress 2013

**Abstract Number:** 2482

**Publication Number:** 5044

**Abstract Group:** 10.1. Respiratory Infections

**Keyword 1:** Infections **Keyword 2:** Pneumonia **Keyword 3:** E-health

**Title:** Impact of an electronic decision support tool on outcomes for emergency department patients with pneumonia

Dr. Barbara 2030 Jones barbara.jones@hsc.utah.edu MD <sup>1,4</sup>, Jason 27730 Jones jason.jones3@imail.org <sup>2</sup>, Greg 27764 Stoddard greg.stoddard@hsc.utah.edu <sup>3</sup>, Caroline 27766 Vines caroline.vines@imail.org <sup>5</sup>, Al 27767 Jephson al.jephson@imail.org <sup>4</sup>, Jeffrey 27768 Ferraro jeff.ferraro@imail.org <sup>6</sup>, Herman 27774 Post herman.post@imail.org <sup>6</sup>, Ben 27775 Briggs ben.briggs@imail.org <sup>4</sup>, Paula 27776 Griffith paula.griffith@hsc.utah.edu <sup>7</sup>, Naresh 27782 Kumar naresh.kumar@imail.org <sup>4</sup>, Todd 27783 Allen todd.allen@imail.org <sup>5</sup>, Peter 27784 Haug peter.haug@imail.org <sup>6</sup> and Nathan 27789 Dean nathan.dean@imail.org <sup>1,4</sup>. <sup>1</sup> Pulmonary and Critical Care, University of Utah and Intermountain Health, Salt Lake City, UT, United States, 84105 ; <sup>2</sup> Medical Informatics, Kaiser Permanente, Pasadena, CA, United States ; <sup>3</sup> Department of Biostatistics, University of Utah, Salt Lake City, UT, United States ; <sup>4</sup> Pulmonary & Critical Care Medicine, Intermountain Medical Center, Salt Lake City, UT, United States ; <sup>5</sup> Emergency Medicine, Intermountain Medical Center, Salt Lake City, UT, United States ; <sup>6</sup> Homer Warner Center for Bioinformatics, Intermountain Medical Center, Murray, UT, United States and <sup>7</sup> School of Medicine, University of Utah, Salt Lake City, UT, United States .

**Body:** INTRODUCTION: To improve pneumonia care, we developed a real-time electronic decision support tool that provides severity assessment and management recommendations in the Emergency Department (ED). We compared pre- and post-implementation outcomes of 4 hospital EDs where the tool was implemented versus 3 usual care hospitals with only paper guideline forms. METHODS: We included all ED patients in seven Intermountain-affiliated hospitals in urban Utah, USA, with ICD-9 codes plus radiographic evidence of pneumonia for two study periods: pre-implementation (Dec 1 2009 – Nov 30 2010, N=2394) and post-implementation (Dec 1 2011-Nov 30 2012, N=2583). We measured rates of over-diagnosis (patients with pneumonia diagnoses but negative chest radiography), hospital admission rates, guideline-concordant triage, length of hospital stay, inpatient mortality, and secondary hospitalization rates. We adjusted outcomes for severity using the previously validated “eCURB” mortality predictor. RESULTS: Median age was 59 years, with an admission rate of 61% and 30-day mortality rate of 5.9%. Implementation of the tool was associated with a significant increase in guideline-concordant hospitalizations (81% to 85%, p=0.02) and a reduction in severity-adjusted inpatient mortality (Odds Ratio 0.55, p=.02) that were not observed in the usual care group. There was no significant difference in rates of over-diagnosis, hospital admission, guideline-concordant outpatient triage, length of stay, or secondary hospitalization. DISCUSSION: Implementation of a real-time electronic decision support tool was associated with an increase in recommendation-concordant triage and a reduction in inpatient mortality.

