

**262 Length of Stay and Charges Are Increased in Patients with Digitally Detected Third Heart Sounds** *Alan B Storrow, Sean P Collins, W Frank Peacock, Christopher J Lindsell; University of Cincinnati: Cincinnati, OH, Cleveland Clinic Foundation: Cleveland, OH*

**Background:** The presence of a third heart sound (S3) is highly specific for the diagnosis of acute decompensated heart failure (ADHF), although its relationship to measures of resource use remains unreported. **Objectives:** We hypothesized that emergency department (ED) patients with an S3 would have increased ED length of stay and, when admitted, inpatient length of stay, as well as increased charges. **Methods:** We enrolled a convenience sample of 439 adults presenting to 4 urban EDs with suspected ADHF between September 2003 and June 2004. The Audicor system, a validated digital device that detects heart sounds, was used to determine the presence or absence of an S3. Crude measures of resource use, including ED and inpatient lengths of stay, as well as inpatient, pharmacy, ED, and laboratory charges were compared using a Mann-Whitney U test. Categorical data were compared using chi-square. **Results:** Of 315 patients with complete data on length of stay charges, 168 (53.3%) were female and mean age was  $61 \pm 13$  years. While those patients with an S3 did not have a longer ED stay than those without (5.9 hours versus 5.6 hours,  $p = 0.56$ ), they did have a significantly increased inpatient stay (2 days versus 4 days,  $p = 0.05$ ). Total charges were greater for those with an S3 (median \$7,848, range \$2,976 to \$16,871) than those without (median \$5,654, range \$1980 to \$12,245) ( $p = 0.044$ ). ED, pharmacy, and laboratory charges were all significantly increased in patients with an S3. While inpatient charges were increased in patients with an S3 (\$4,156 versus \$2,358), this was not significant ( $p = 0.16$ ). **Conclusions:** Length of stay and charges are increased in ED patients with suspected ADHF and digitally detected third heart sounds, compared to those without a third heart sound. Such data are valuable for the management of patients with possible heart failure by identifying those requiring increased resources.

**2005 SAEM ANNUAL MEETING ABSTRACT**

Storrow AB, Collins SP, Peacock WF, Lindsell CJ. Length of stay and charges are increased in patients with digitally detected third heart sounds [abstract]. *Acad Emerg Med.* 2005;12(5):96. Abstract 262.