

## Plenary Session II (cont.)

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### MEASURING THE VALUE OF A CLINICAL PRACTICE GUIDELINE FOR CHILDREN WITH PERFORATED APPENDICITIS

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#### **Purpose:**

Value-based surgical care (outcomes/cost) is frequently discussed, but rarely measured. Our goal was to prospectively measure patient-centered outcomes and hospital costs associated with the treatment of children with perforated appendicitis directed by a clinical practice guideline (CPG) compared to treatment by surgeon preference. A secondary goal was to compare cost analyses using hospital accounting system data versus data available in the Pediatric Health Information System (PHIS).

#### **Methods:**

An evidence-based CPG directed care of 122 children with perforated appendicitis over an 18-month period at a tertiary-referral children's hospital. Demographic data, presenting characteristics, treatments utilized, and outcomes were prospectively measured. The same data were collected for all children with perforated appendicitis in the 30 months prior to CPG implementation (n=191). Clinical outcomes and financial metrics were compared between the two cohorts. PHIS financial data were obtained and compared to the hospital cost accounting data. Categorical outcomes were compared using chi-square analysis and continuous variables with t-tests;  $p < 0.05$  was considered significant.

#### **Results:**

Major morbidities, resource utilization, and financial outcomes using hospital cost accounting data were all improved with CPG-directed care (table). PHIS financial data demonstrated a 29% reduction in overall hospital costs (\$5573/patient,  $p < 0.0001$ ) in the CPG cohort.

#### **Conclusions:**

An evidence-based clinical practice guideline increases the value of surgical care for children with perforated appendicitis (improves outcomes *and* lowers costs). Hospital cost accounting data are difficult to acquire, but allows assessment of hospital margin. PHIS financial data provide similar findings as the hospital cost accounting system regarding hospital costs and are easier to obtain.



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<b>Outcomes of a Clinical Practice Guideline for Perforated Appendicitis (*p&lt;0.05)</b>		
	Usual Practice (n = 191)	CPG-driven Practice (n = 122)
Length of hospital stay	5.1 days	4.6 days*
Post-op intra-abdominal abscess	24%	9.8%*
Unplanned readmission	16.2%	11.5%
PICC or other CVL	30.4%	2.5%*
Revenue (Average/patient)	\$16,950	\$15,598
Direct hospital costs	\$9,914	\$6,240*
Contribution margin	\$7,036	\$9,358
Total costs	\$16,487	\$10,978*
Net income (profit)	\$464	\$4,620*