The Hidden Impact of Variation: System-Level Disparities in Acute Biliary Care

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Background

Acute biliary disease is extremely common

Identifying variations → optimize care

Multiple factors lead to variation in management and outcomes

Methods

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Retrospective cohort study – **3 Hospitals**
H1: Academic center H2/H3: Community

Acute biliary disease diagnoses:

BC: Biliary Colic
AC: Acute Cholecystitis
Cholangitis
SCD: Suspected Choledocholithiasis
CCD: Confirmed Choledocholithiasis
GSP: Gallstone Pancreatitis

"Direct-to-Surgery" Classification

- SCD, CCD, or GSP pts without pre-op duct clearance with MRCP or ERCP

1˚ **Outcome** = Index cholecystectomy

Results

N = 779 patients

Most common dx = AC

65% Female
Median Age: 56 years

	Hospital 1 (n = 574)	Hospital 2 (n = 123)	Hospital 3 (n = 82)	P Value
Initial Dx – no. (%)				
BC	163 (28.4)	21 (17.1)	9 (11)	**<0.001**
AC	299 (52.1)	91 (74.0)	67 (81.7)	**<0.001**
SCD	118 (20.6)	21 (17.1)	11 (13.4)	0.25
CCD	74 (12.9)	5 (4.1)	0	**<0.001**
GSP	83 (14.5)	12 (9.8)	7 (8.5)	0.16
Cholangitis	15 (2.6)	1 (0.8)	0	0.17

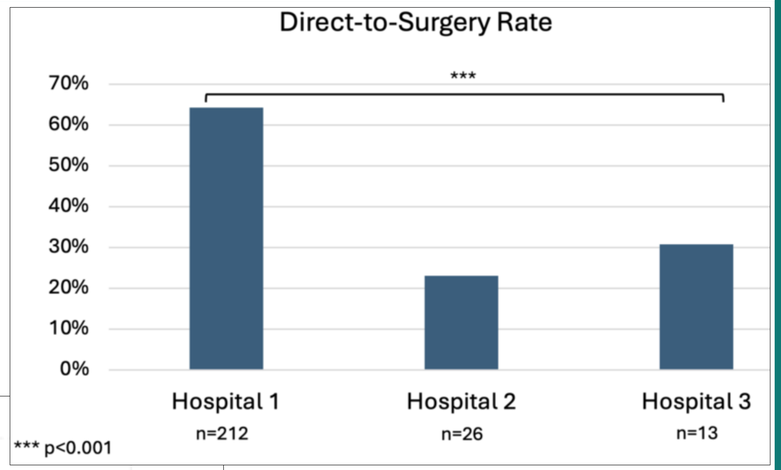
Index Cholecystectomy Rate = No difference
H1: 78% H2: 72% H3: 87%

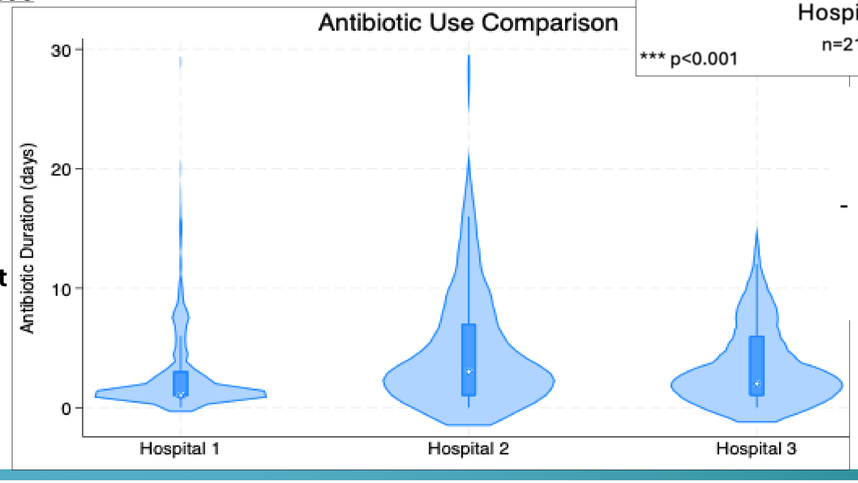
Cholecystostomy Tube Use
H1: 15% **H2: 31% H3: 27%**

OR Drain Placement
H1: 4% **H2: 14% H3: 19%**

Antibiotic Duration **significantly different**
- H1 shortest, more uniform
- H2 + H3 wider range, longer courses

→ No difference in SSI rates between hospitals





"Direct-to-Surgery" rates **significantly different**

- Only H1 performed performed laparoscopic common bile duct explorations
→ 81% successful clearance

↓

"Direct-to-Surgery" pts = **shorter** LOS

Median 3 vs. 4 days (p<0.001)

Discussion

- Management of acute biliary disease varied substantially across hospitals within the same system.
- These differences highlight opportunities for shared learning, standardization, and quality improvement initiatives to optimize patient care and resource utilization across all hospitals.