

Michigan Acute Care Surgery Collaborative

**Virtual, MI
November 5, 2020**

Agenda

- ◆ Welcome
- ◆ Updates
- ◆ Data
 - Reports
 - QI Ideas and Performance Index
- ◆ Data Platform
- ◆ Future Meeting(s)
 - 3 per year
 - November, March, June/July ?

Welcome

- ◆ Sparrow Hospital (Lansing)
 - Hugh Lindsey, MD
 - Karen Bennett, QI Manager
 - Ann Cutts, RN
 - Mary Fox, RN

Recruitment

◆ Potentials

- Henry Ford Detroit
- Borgess Hospital
- Detroit Receiving Hospital
- Metrohealth
- Mid-Michigan Midland

BCBSM

- ◆ Expansion
- ◆ SOW (pending w MTQIP)
 - 2 yrs
 - Coordinator – Kim Kramer, PA
 - Analytic Support
 - 3 Meetings/yr
 - ArborMetrix reporting

Overview of Data Capture

- ◆ Diseases

- Acute Appendicitis
- Acute Gallbladder disease
 - ◆ Cholecystitis
 - ◆ Choledocholithiasis/Cholangitis
 - ◆ Gallstone pancreatitis
- SBO
 - ◆ Hernia (if present)
- Emergent Exploratory Laparotomy

- ◆ All Qualtrics - May 2020

Data

Mark Hemmila, MD

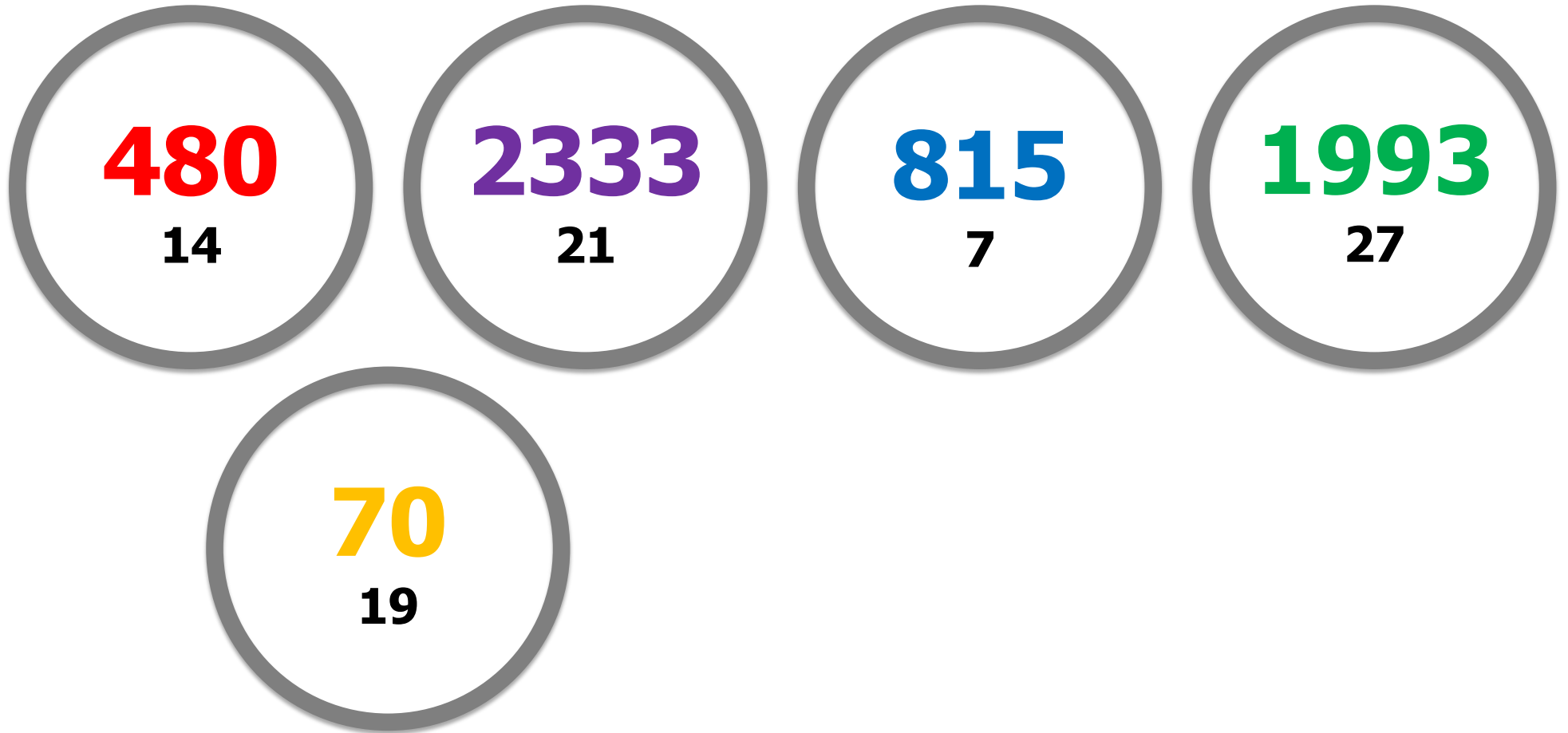
Reports

- ◆ Time frame
 - 7/1/2019 to 9/30/20
- ◆ Data Source
 - Qualtrics
 - Outcomes from 5/2020 onward
 - Outcomes may be artificially low
- ◆ Unblinded
- ◆ No risk adjustment yet

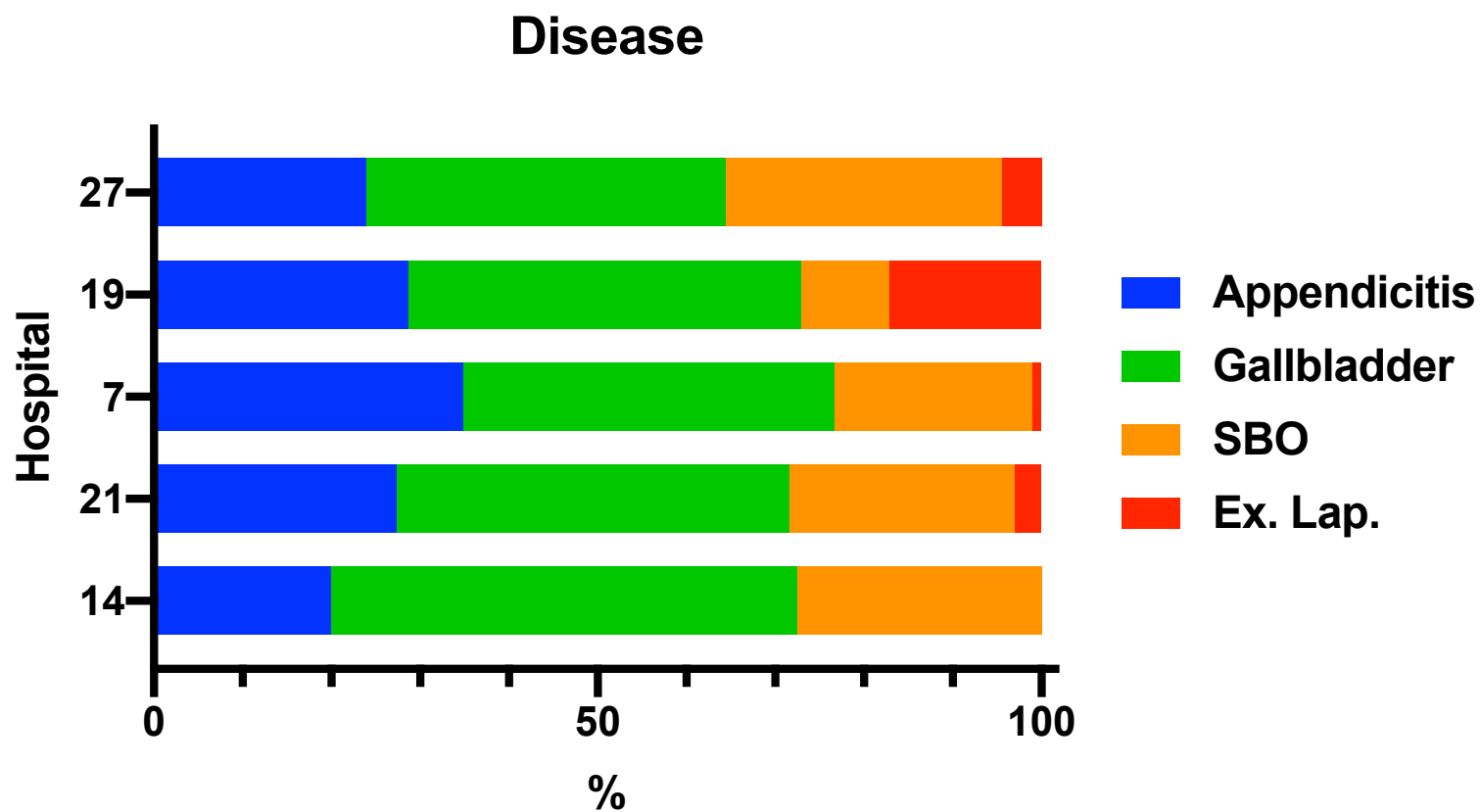
Reports

- ◆ Summary
- ◆ Acute Appendicitis
- ◆ Acute Gallbladder Disease
- ◆ Small Bowel Obstruction
 - Hernia if present
- ◆ Emergent Exploratory Laparotomy

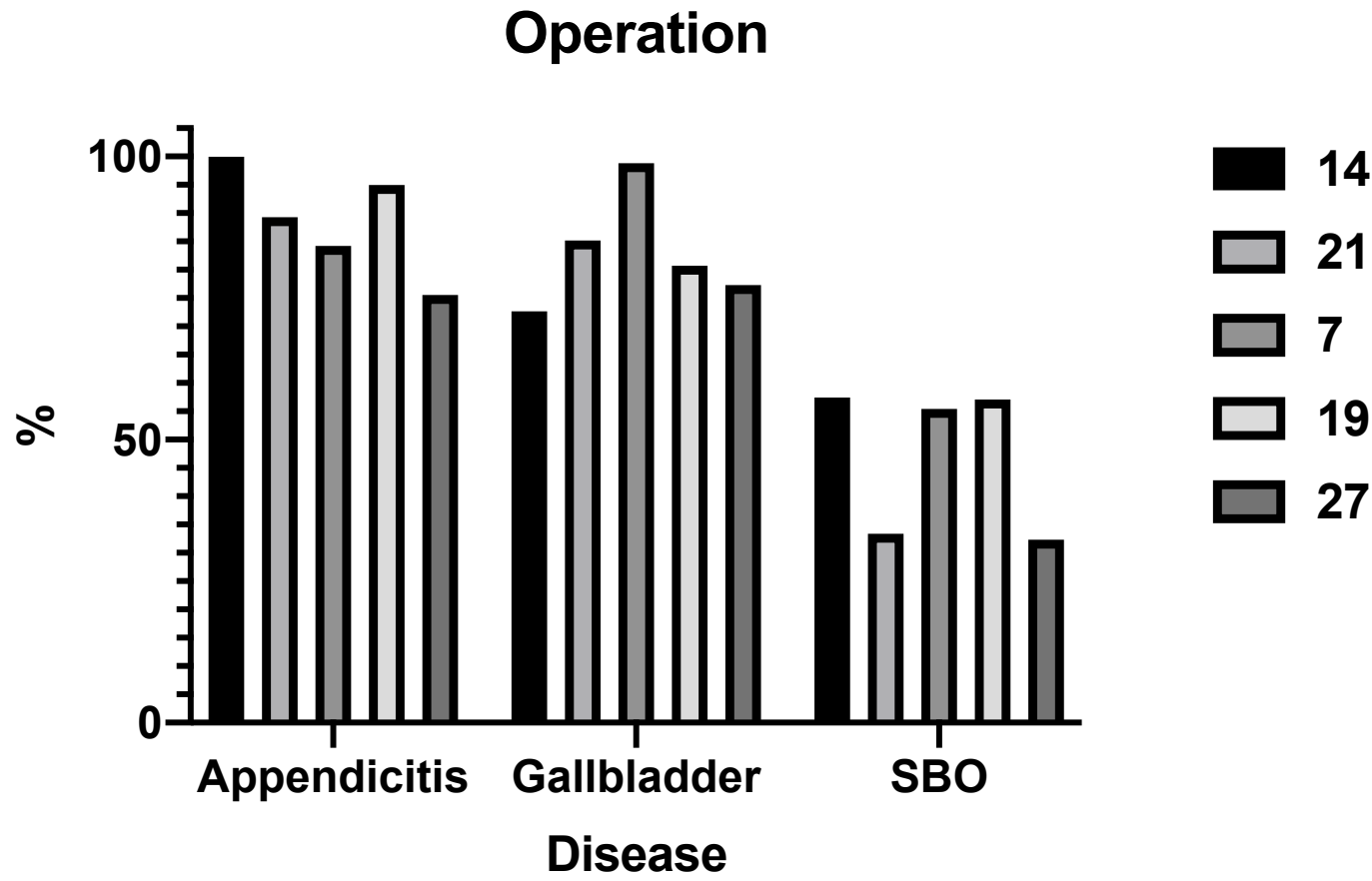
Total Patients = 5,691



Total Patients = 5,691

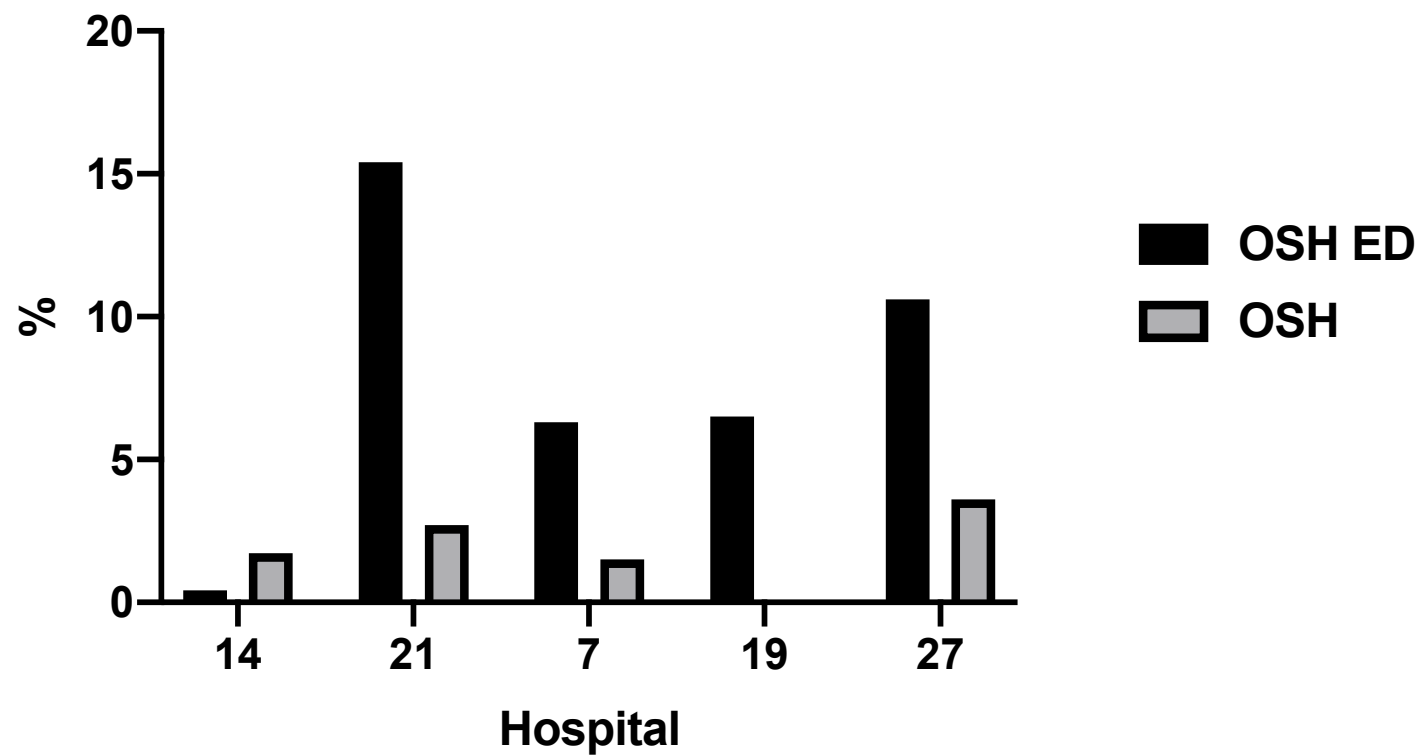


Operative Intervention

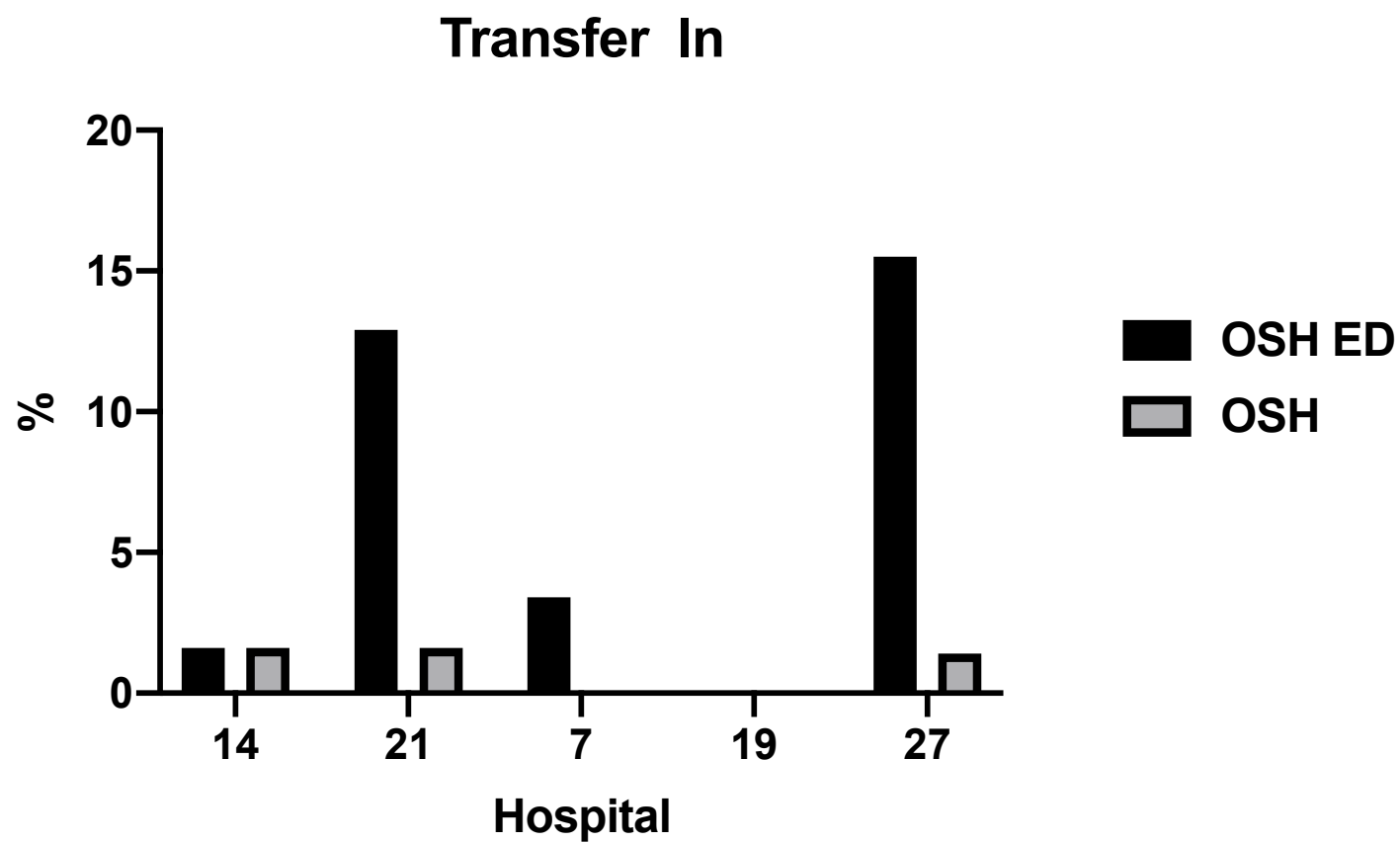


Gallbladder

Transfer In

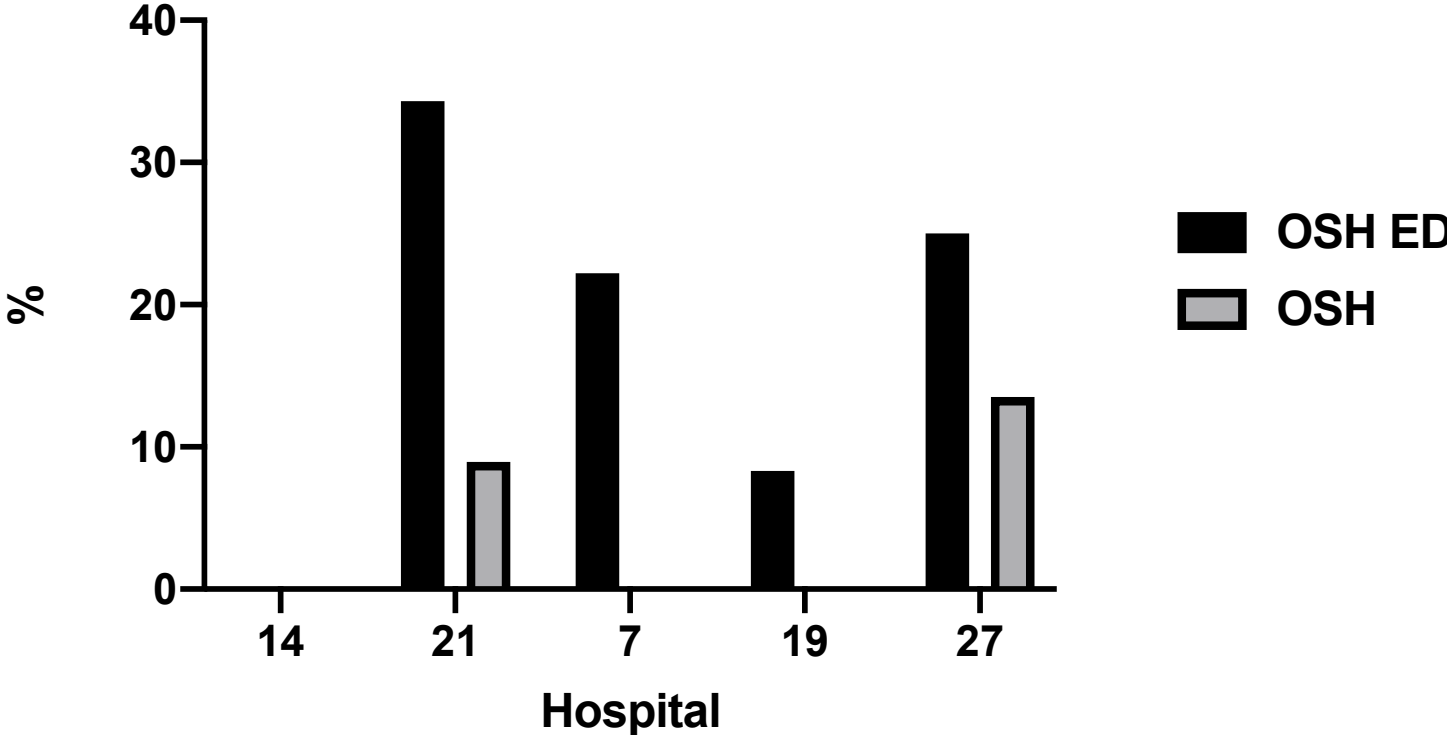


SBO



Emergent Exploratory Laparotomy

Transfer In

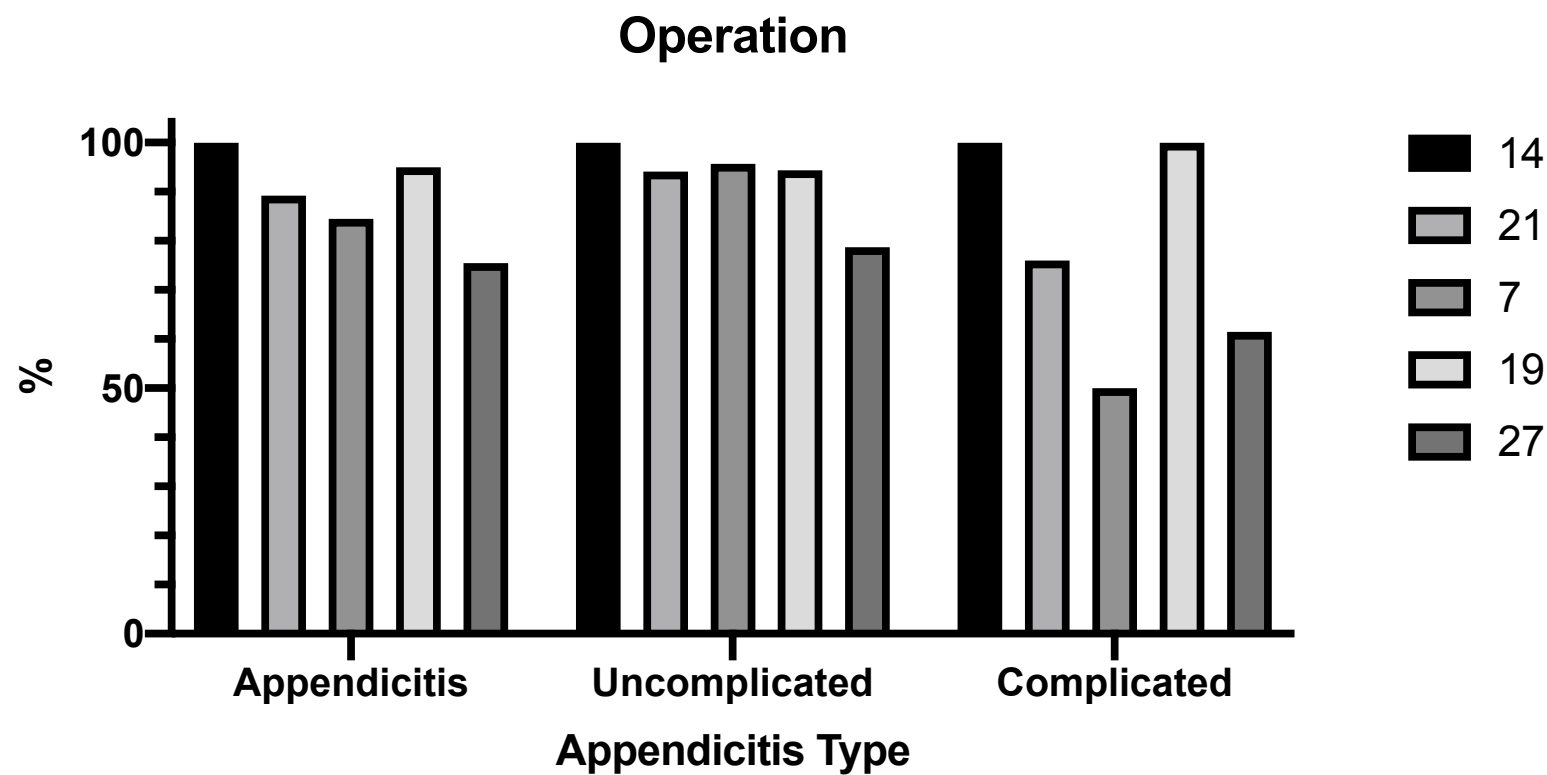


CPT – Operation, 15 most frequent

	N	%
47562, Laparoscopic cholecystectomy	1456	25.6
44970, Laparoscopic appendectomy	1013	17.8
44120, Resection of small intestine	171	3.0
44005, Freeing of bowel adhesion	133	2.3
47563, Lap cholecystectomy w IOC	113	2.0
47600, Open cholecystectomy	102	1.8
44160, Partial colectomy w TI	51	0.9
44143, Partial colectomy w colostomy	49	0.9
44140, Partial colectomy w anast	47	0.8
49561, Repair ventral/inc hernia	44	0.8
43840, Gastrorrhaphy, Graham patch	40	0.7
44950, Open appendectomy	31	0.5
49000, Exploration of abdomen	31	0.5
49587, Repair umbilical hernia	25	0.4
44050, Reduction volvulus, intussusception	24	0.4
All other	2361	41.5

Questions

Acute Appendicitis



Acute Appendicitis

- ◆ AAST Grade
- ◆ Type
 - Uncomplicated 78%
 - Complicated 22%
- ◆ Perforation - 27%
 - Operation - 71%
 - Operation > 65 yo - 68%
- ◆ CT Scan - 96% of patients
- ◆ USN - 13% of patients
- ◆ Pathology Result
 - 96.1% positive for appendicitis

Acute Appendicitis

CT Result	Ultrasound Result			Total
	Positive	Negative	Equivocal	
Positive	32 27.83	34 29.57	49 42.61	115 100.00
Negative	1 33.33	1 33.33	1 33.33	3 100.00
Equivocal	0 0.00	4 30.77	9 69.23	13 100.00
Total	33 25.19	39 29.77	59 45.04	131 100.00

USN Sensitivity = $32/(32+83) = 28\%$ USN Specificity = $15/(15+1) = 94\%$

Positive USN may be helpful, negative USN useless

Acute Appendicitis - Medical Management

- ◆ IV Abx Mean 3.1, Median 3 days
- ◆ po Home Abx Mean 9.6, Median 10 days
- ◆ Subsequent appendectomy
 - Emergent 7 patients, 4%
 - Interval 2 patients, 1%

Acute Appendicitis - Times

- ◆ Hospital LOS
 - Overall: Mean 53, Median 27 hrs
 - Operation: Mean 47, Median 24 hrs
 - No operation: Mean 88, Median 65 hrs
- ◆ Time to operation
 - Mean 12.6 hrs
 - Median 8.3 hrs

Acute Appendicitis – Outcomes*

	N	%
Any Complication	59	4.7
Incisional SSI	4	0.3
Organ space SSI	6	0.5
Sepsis	7	0.6
Post-discharge ED visit	30	2.4
Readmission	25	2.0
Mortality	1	0.1

Questions

Emergent Exp. Laparotomy

◆ 139 Patients since May

◆ Point of Entry

- Home: 7%
- ED: 55%
- OSH ED Transfer: 27%
- OSH Transfer: 9%

	N	%
Perforation	40	28.8
Colon	24	17.3
Small bowel	1	0.7
Stomach/Duodenum	15	10.8
Obstruction	69	49.6
Hernia	31	22.3
Malignancy	11	7.9
Other (Volvuluous, Intussusception)	27	19.4
Ischemia	10	7.2
Other	19	13.7

NEWS2 Score

- ◆ National Early Warning Score
 - Royal College of Physicians
 - England NHS
 - December 2017 update → NEWS2
- ◆ Why? NEWS was founded on the premise that
 - (i) early detection,
 - (ii) timeliness and,
 - (iii) competency of the clinical response comprise a triad of determinants of clinical outcome in people with acute illness.

NEWS2 Score

- ◆ National Emergency Laparotomy Audit (NELA)

- Use NEWS2 for detection
- RR, O2, Temp, SBP, HR, Consciousness

- ◆ Score

- Range 0-20
- Clinical Risk for Deterioration
 - ◆ Low: 0-4 8.6%
 - ◆ Medium: 5-6 71.2%
 - ◆ High: ≥ 7 20.1%

news2_class	Discharge Status		Total
	Alive	Dead	
High	20 71.43	8 28.57	28 100.00
Low	95 95.96	4 4.04	99 100.00
Med	9 75.00	3 25.00	12 100.00
Total	124 89.21	15 10.79	139 100.00

Operation

- ◆ Ostomy - 23%
 - Colostomy = 14.4%
 - Ileostomy = 8.6%
- ◆ Associated hernia repair - 21%
- ◆ Anastomosis
 - None: 60%
 - Stapled: 36%
 - Hand Sewn: 4%

Emergency Ex. Lap – Outcomes

	N	%
Any Complication	76	54.7
Incisional SSI	9	6.5
Organ space SSI	16	11.5
Sepsis	23	16.5
Post-discharge ED visit	19	13.7
Readmission within 30 days	11	7.9
Mortality	15	10.8

Care Bundle - ELPQuic

- ◆ Identification
- ◆ Timely consult (Surgeon)
- ◆ Timely antibiotics
- ◆ Prompt diagnosis (CT scan)
- ◆ Goal directed resuscitation
- ◆ Early operation (6 hrs from decision to operate)
- ◆ ICU care

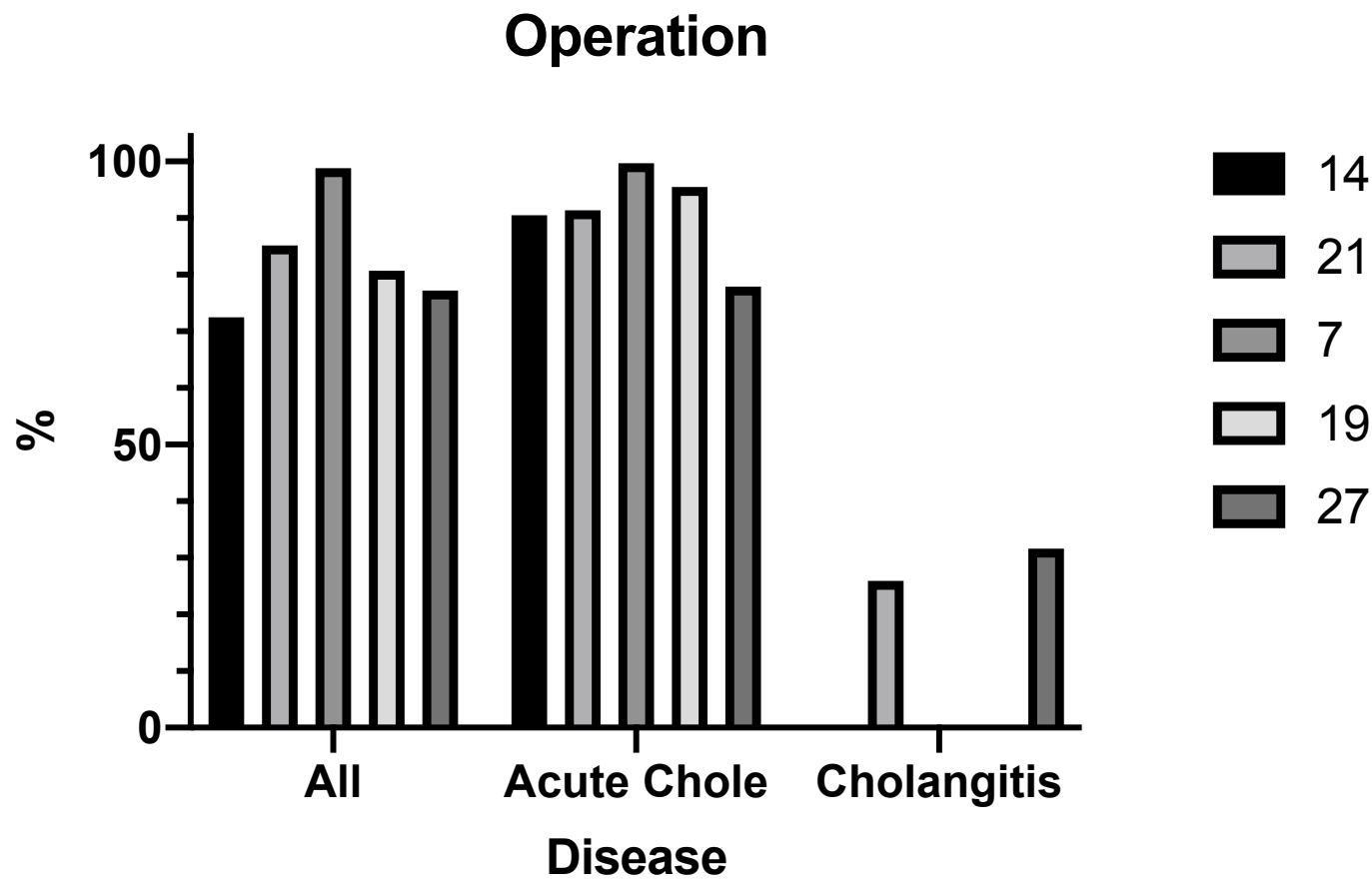
Questions

Gallbladder

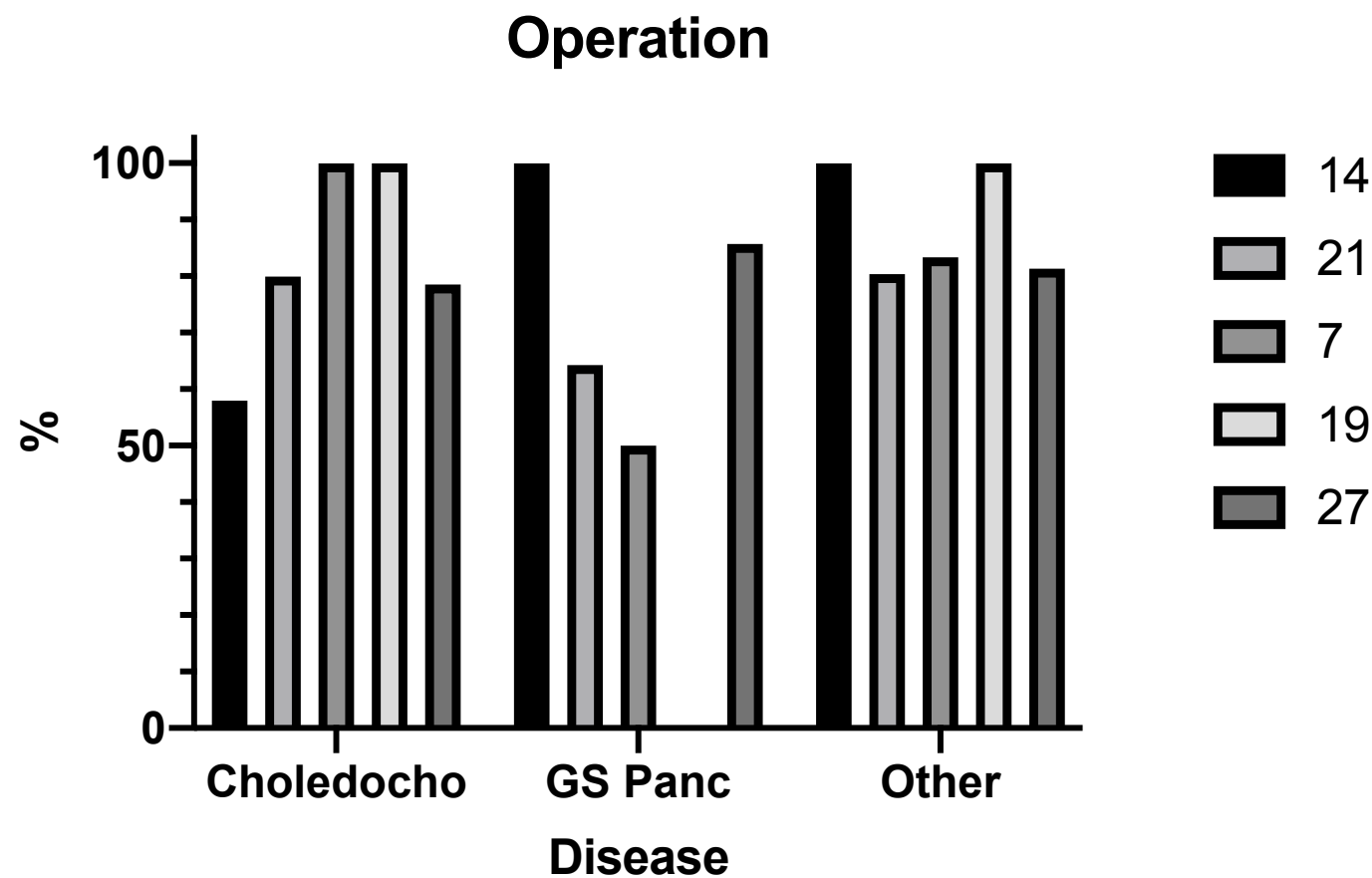
	N	%
Acute cholecystitis	1479	73.2
Symptomatic cholelithiasis	98	4.9
Cholangitis	46	2.3
Choledocholithiasis	431	21.3
Gallstone pancreatitis	160	7.9
Other	27	1.3

Can be in more than one diagnosis group

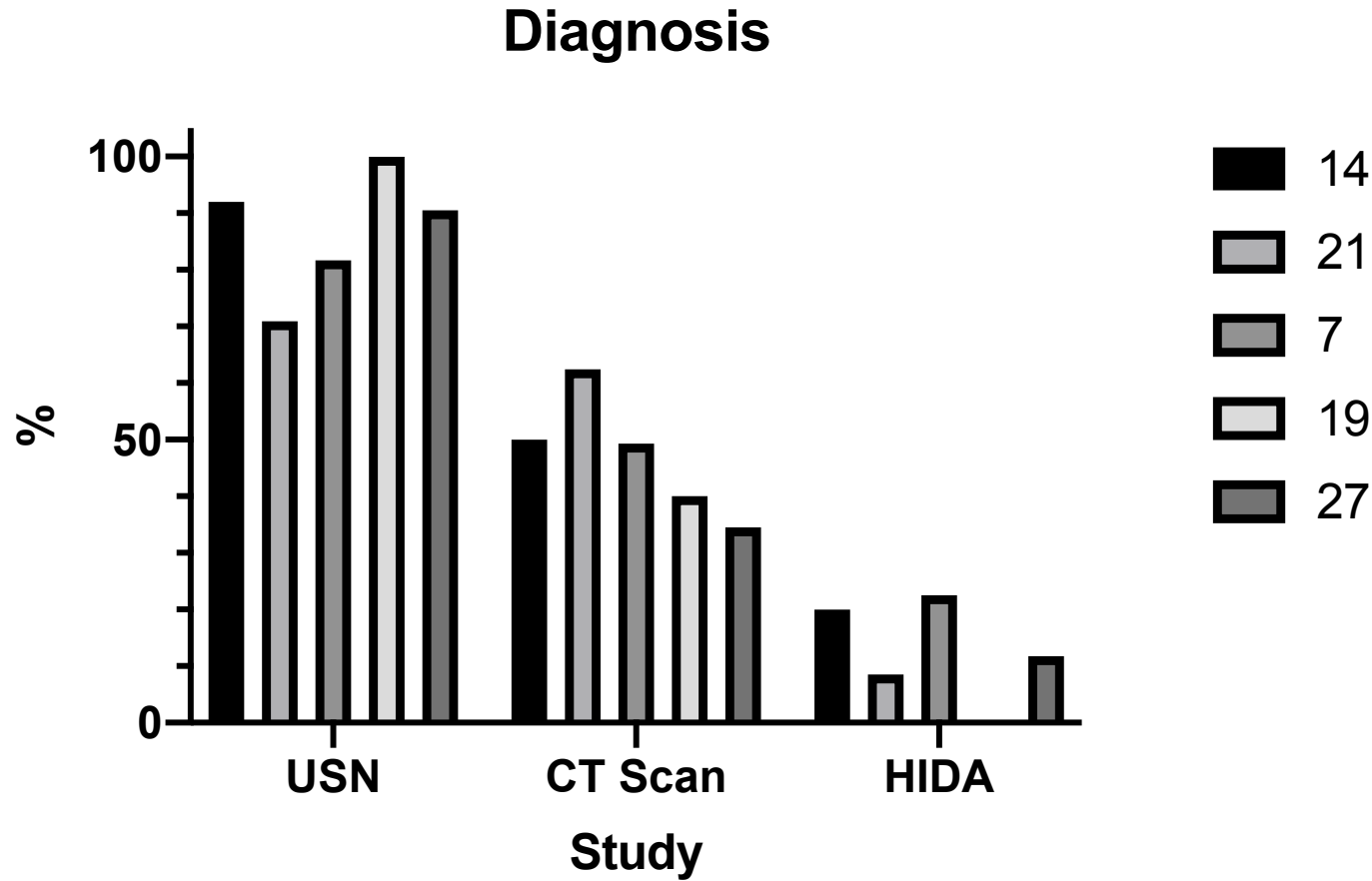
Gallbladder - Operation



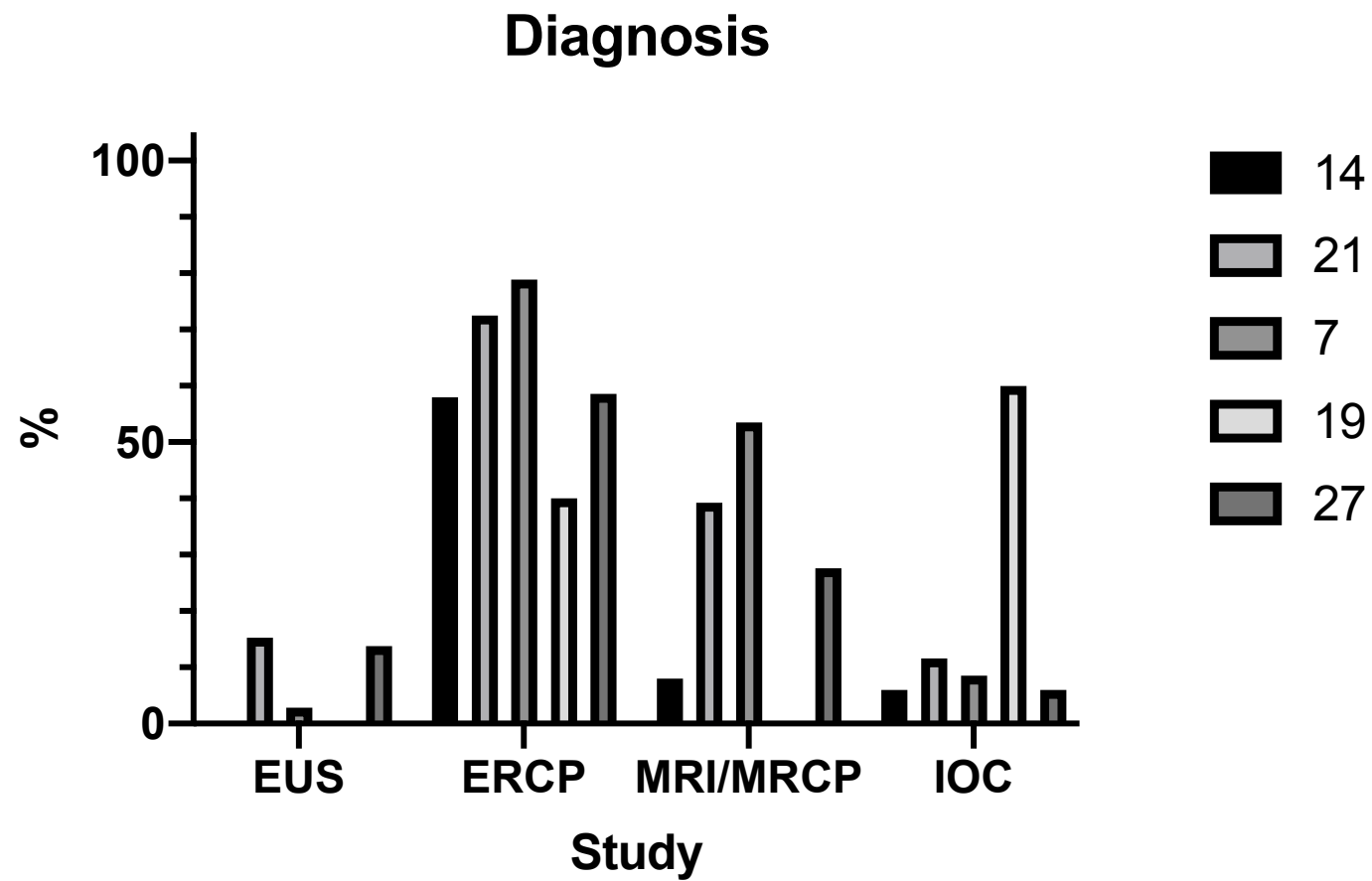
Gallbladder - Operation



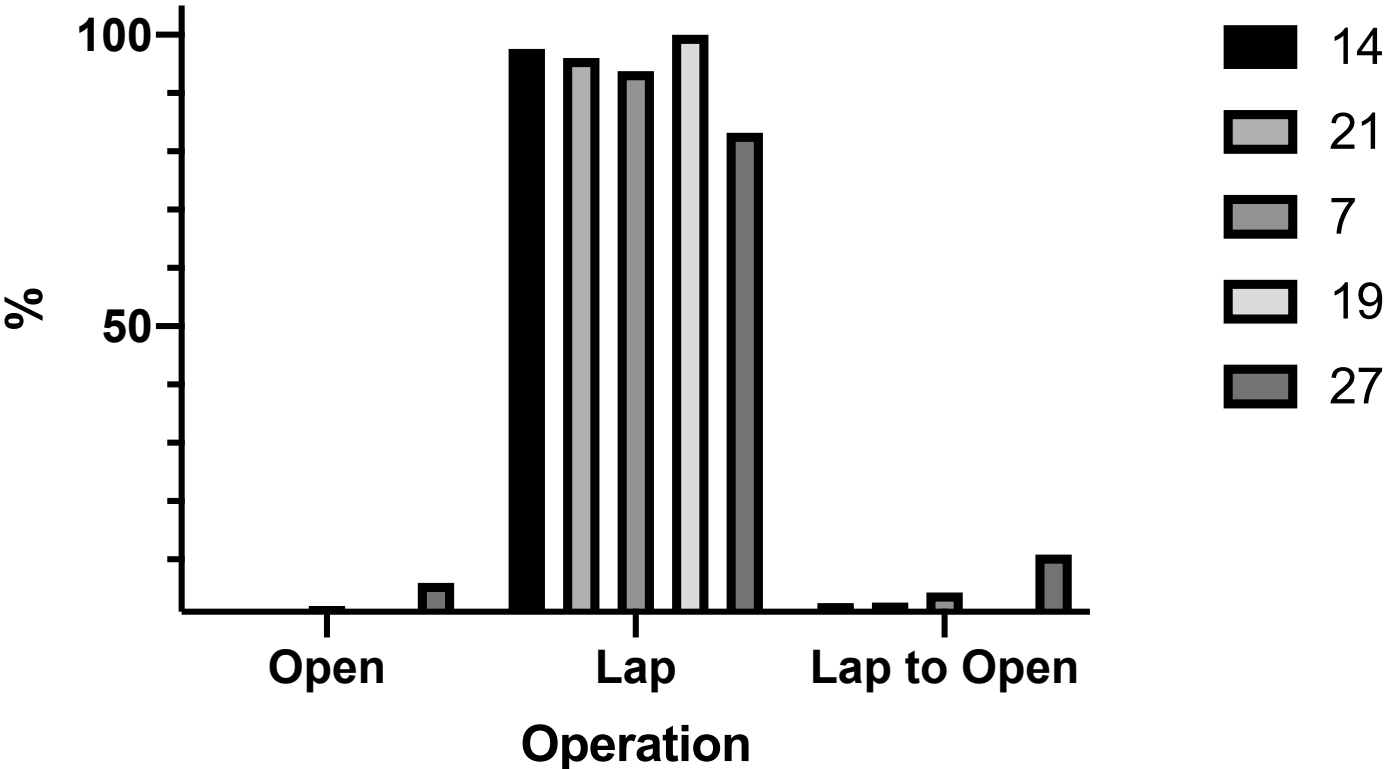
Choledocholithiasis



Choledocholithiasis



Lap vs. Open



Cholecystostomy Tube (Non-op)

center	IR Procedure					Total
	Drain	Embolizat	PTC	Cholecyst	Paracente	
21	5 11.36	0 0.00	2 4.55	28 63.64	2 4.55	44 100.00
19	1 25.00	0 0.00	0 0.00	2 50.00	1 25.00	4 100.00
27	2 4.65	1 2.33	1 2.33	36 83.72	1 2.33	43 100.00
Total	8 8.79	1 1.10	3 3.30	66 72.53	4 4.40	91 100.00

60

63

Gallbladder – Outcomes

	N	%
Any Complication	71	3.5
Incisional SSI	2	0.1
Organ space SSI	4	0.2
Sepsis	8	0.4
Post-discharge ED visit	29	1.4
Readmission within 30 days	86	4.3
Mortality	16	0.8
Cystic duct stump leak	2	0.1
Retained CBD stone	5	0.2
CBD injury	2	0.1

Questions

SBO

- ◆ Transfer In
 - OSH ED = 11%
 - OSH = 2.6%
- ◆ Cause
 - Adhesive = 83%
 - Other = 17% (Malignancy, Crohn, Vascular)
- ◆ Operative
 - All = 39%
 - Adhesive = 34%

SBO - Gastrografen

◆ Prior SBO

center	Gastrografen Challenge		Total
	Yes	No	
14	0 0.00	15 100.00	15 100.00
21	87 40.28	129 59.72	216 100.00
7	1 1.33	74 98.67	75 100.00
19	0 0.00	2 100.00	2 100.00
27	66 41.51	93 58.49	159 100.00
Total	154 32.98	313 67.02	467 100.00

center	Gastrografen Result			Total
	Positive	Negative	Other	
21	68 78.16	16 18.39	3 3.45	87 100.00
7	0 0.00	1 100.00	0 0.00	1 100.00
27	55 83.33	10 15.15	1 1.52	66 100.00
Total	123 79.87	27 17.53	4 2.60	154 100.00

center	operation		Total
	0	1	
21	10 52.63	9 47.37	19 100.00
7	0 0.00	1 100.00	1 100.00
27	6 54.55	5 45.45	11 100.00
Total	16 51.61	15 48.39	31 100.00

SBO - Gastrografin

◆ No Prior SBO

center	Gastrografin Challenge		Total
	Yes	No	
14	1 0.96	103 99.04	104 100.00
21	139 41.74	194 58.26	333 100.00
7	3 3.00	97 97.00	100 100.00
19	1 20.00	4 80.00	5 100.00
27	78 38.42	125 61.58	203 100.00
Total	222 29.80	523 70.20	745 100.00

center	Gastrografin Result			Total
	Positive	Negative	Other	
14	0 0.00	1 100.00	0 0.00	1 100.00
21	97 69.78	39 28.06	3 2.16	139 100.00
7	2 66.67	1 33.33	0 0.00	3 100.00
19	1 100.00	0 0.00	0 0.00	1 100.00
27	60 76.92	16 20.51	2 2.56	78 100.00
Total	160 72.07	57 25.68	5 2.25	222 100.00

center	operation		Total
	0	1	
14	1 100.00	0 0.00	1 100.00
21	16 38.10	26 61.90	42 100.00
7	1 100.00	0 0.00	1 100.00
27	6 33.33	12 66.67	18 100.00
Total	24 38.71	38 61.29	62 100.00

SBO

- ◆ Prior Interventions = 81%
 - Open= 49%
 - Lap = 27%
 - Mesh = 12%
- ◆ Operation
 - Some of the # and % are off
- ◆ Associated hernia requiring repair = 34%
 - Primary = 51%
 - Mesh = 45%

Questions

Homework

- ◆ Key Literature
 - e.g. CODA trial
- ◆ Data modifications
 - Fecalith
- ◆ Areas to consider
 - Goals of care
 - Appropriate to operate
- ◆ Targets for QI and CQI index

Program Manager Data Update Analytic Updates

Jill Jakubus, PA-C



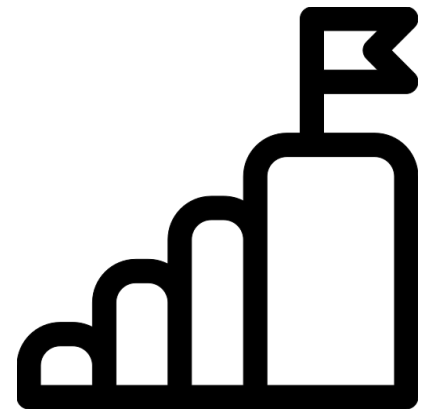
Topics

Dictionary change suggestions

Qualtrics change timing

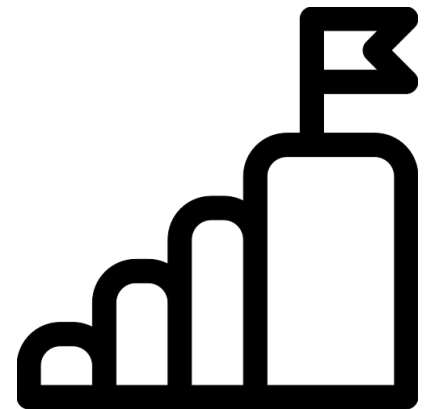
Qualtrics configuration

Qualtrics analytics



Topics

- **Dictionary change suggestions**
Qualtrics change timing
Qualtrics configuration
Qualtrics analytics

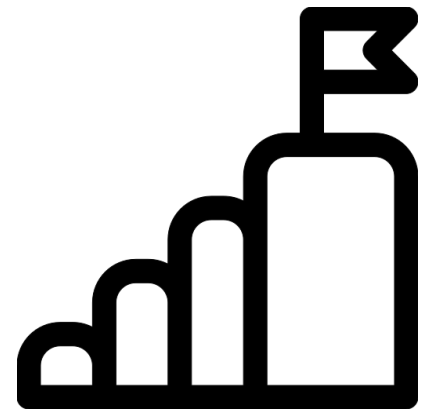




Demo

Topics

- ✓ **Dictionary change suggestions**
- **Qualtrics change timing**
Qualtrics configuration
Qualtrics analytics




Change Timing



Annual

**Why can't we
make changes
more frequently?**

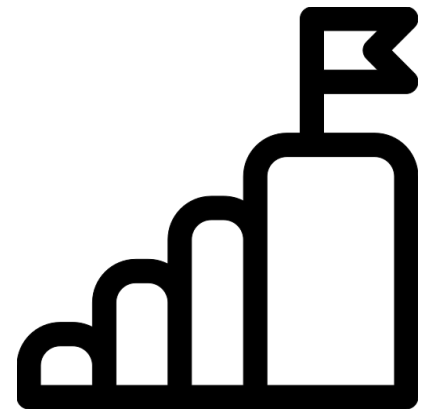


The image features a large, textured question mark in the center, rendered in a light, grainy style against a dark, textured background. To the right of the question mark, there are several geometric shapes: a dark hexagon, a white-outlined hexagon, and a white-outlined chevron-like shape. The text 'Why can't I have a customized data entry platform?' is written in a bold, white, sans-serif font in the lower-left corner.

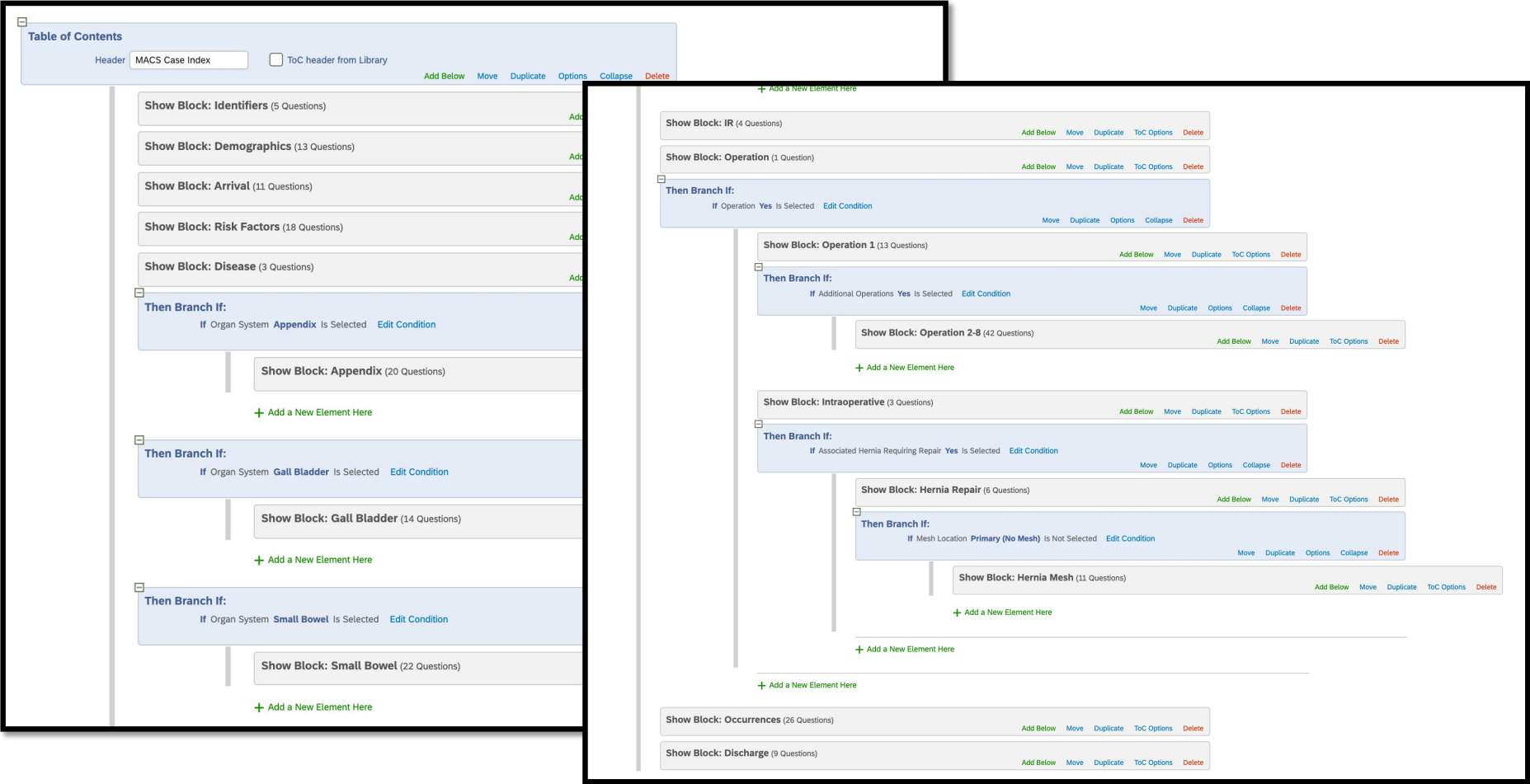
**Why can't I have a
customized data
entry platform?**

Topics

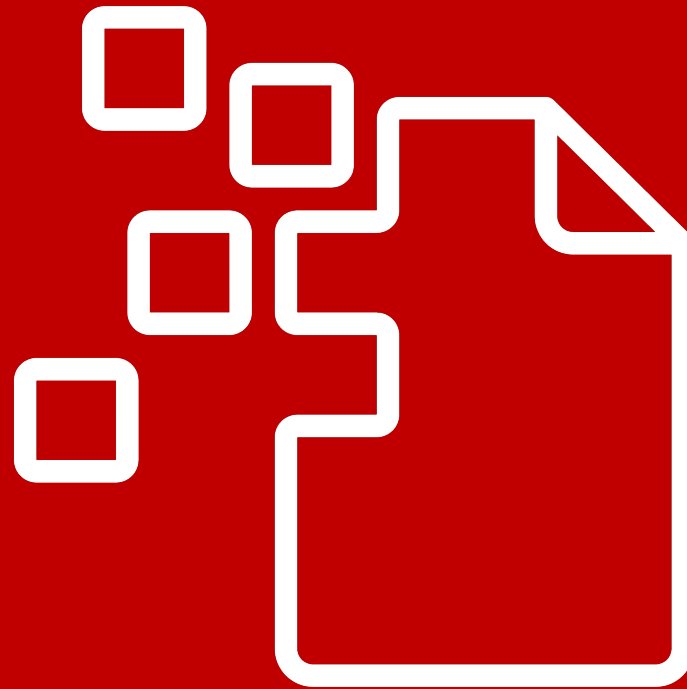
- ✓ **Dictionary change suggestions**
- ✓ **Qualtrics change timing**
- **Qualtrics configuration**
Qualtrics analytics



Survey Flow



Data Corruption



Invalid Logic

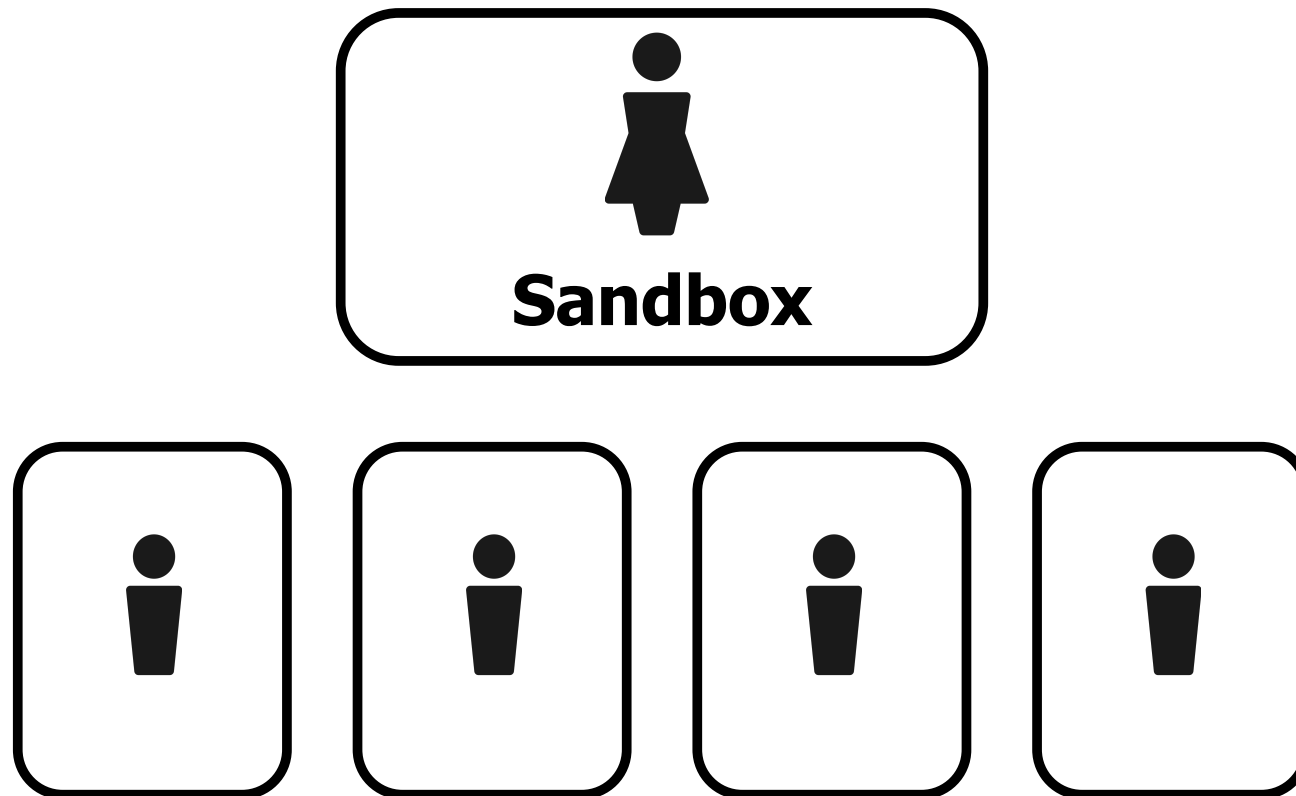
Stable Platform



Frequent Back Ups

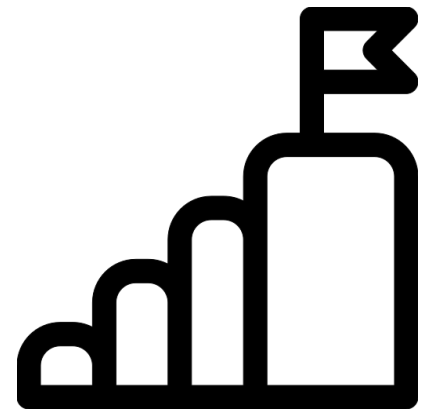
Logic Fidelity Protection

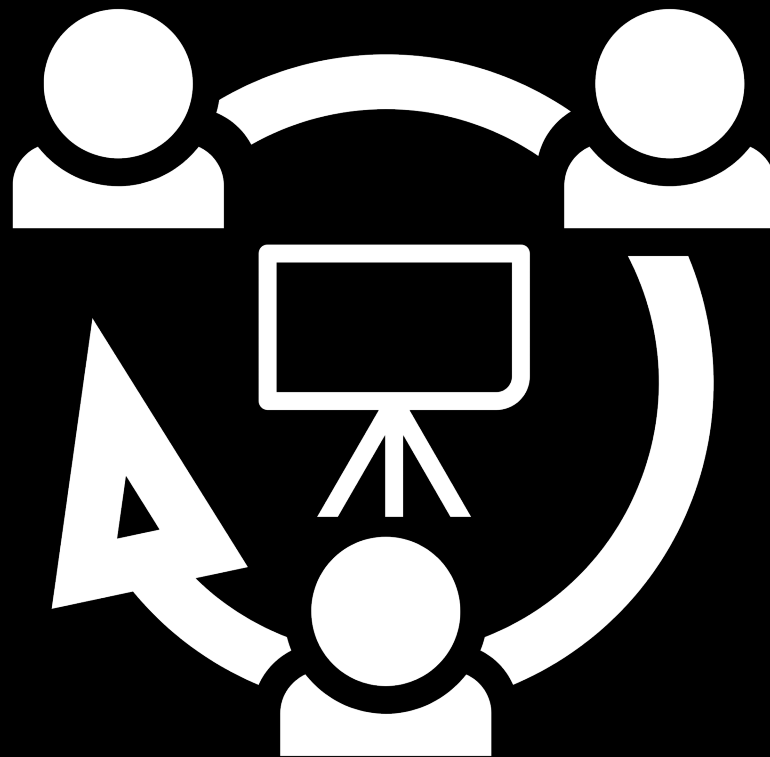
Parent > Child Structure



Topics

- ✓ **Dictionary change suggestions**
- ✓ **Qualtrics change timing**
- ✓ **Qualtrics configuration**
- **Qualtrics analytics**

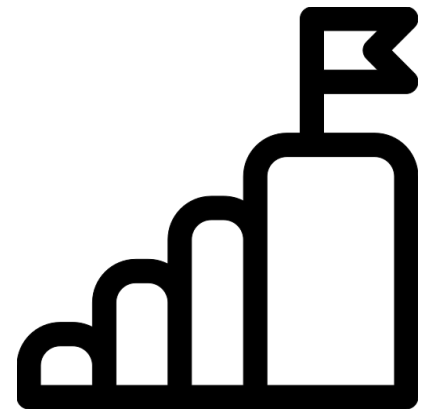




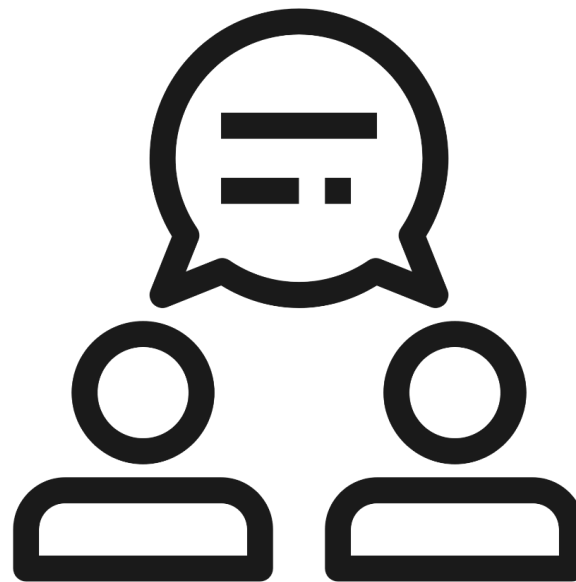
Demo

Summary

- **Dictionary change suggestions online**
- **Qualtrics change timing annually**
- **Qualtrics configuration survey flow**
- **Qualtrics analytics resources**



Discussion Opportunity



M•ACS

Michigan Acute Care Surgery
Collaborative Meeting
November 5, 2020

M.ACS

Data Variables

M•ACS

Ex-lap NEWS2 score variable time frame

- Currently a 6-hour time frame
- Options:
 - Lengthen the time before OR to 8-12 hours
 - Obtain the first or worst values
 - Values will improve with resuscitation


M•ACS

Readmissions

- Appy/Chole cases - 30-day post-op readmission window
- SBO/ex-lap cases - readmits and complications may span well past the 30-day point

M.ACS

Appendicitis

- Appendicitis CT findings  add fecalith?
- New appendicitis CT result options:
 - Negative
 - Positive
 - Positive (with fecalith)
 - Equivocal

M.ACS

Patient List

- 24hr hospital generated ED list
- Service/census lists
- MiChart clarity report
- Tableau admission/discharge list
- Coordination with resident/APP team on service

Tableau

Hospital Chart
Patient Calendar
Remind Me

UMHS Links
Master Daily Schedule

Quality Dashboards - Ambulatory
Quality Dashboards - Inpatient
Quality Dashboards - BCMA Compliance

9/2020 Hypertensive emergency;Hypertens
9/2020 AKI (acute kidney injury) (CMS/HCC

MiChart Tip Sheets
Clinical Home Page
UpToDate
Patient Education Clearinghouse
Lexicomp
Quality Dashboards
Coding Resources
IV Compatibility (Facts and Comparisons)
Nursing/Allied Health CPGs
ACS Protocols/Standing Orders/Guidelines
Scanner Volume / Reset
Medical Abbreviation Search
Patient Safety Report Form (Event)
Epic Earth

Length of Stay

Data reported through August 2020

Index Patient Class

- ☒ Inpatient
☐ Observation + Obs > 48 hrs
☐ OIB + Extended Recovery

Choose a Department First

SURGERY

Clinical Discharge Service

- ☐ (All)
☒ ACUTE CARE SURGERY
☐ SURG COLORECT
☐ SURG ENDO/MIN INVAS
☐ SURG ONCOL/HEPATO/PAN...
☒ SURGERY BURN
☒ SURGERY CRITICAL CARE
☐ SURGERY ORAL

Cancel

Apply

Teaching Discharge Service

- ☒ (All)
☒ SA1 (Surgery Acute Care Team 1)
☒ SA2 (Surgery Acute Care Team 2)
☒ SBUR (Surgery - Burn)
☒ SCC (Surgical Critical Care)

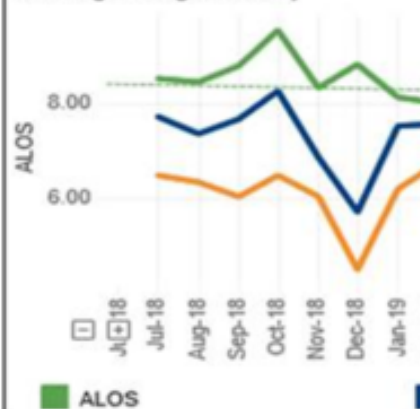
Cancel

Apply

Discharges (Cases)



Average Length of Stay



Observed and Expected In-Hospital

COVID19

M.ACS

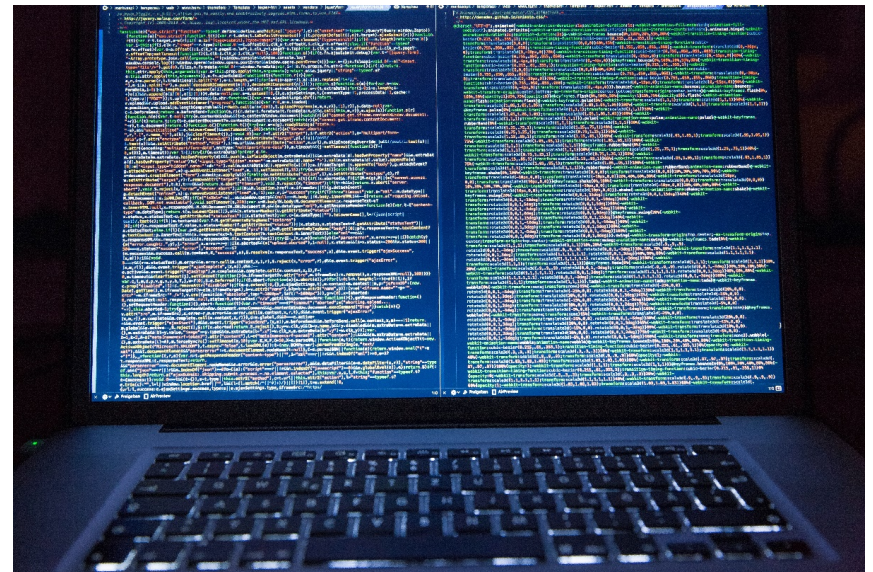


Lock out dates on cases
90 days post-discharge?

M.ACS

Qualtrics Updates

New hernia tab option:
femoral/inguinal with mesh



M.ACS

Possible future Qualtrics changes

- Moving SBO findings/procedures within the operations tab
- Logic changes will be made on a yearly basis.

M•ACS

Data Abtractor Education

- Data cleaning video
 - Orientation video #5 on MACS website
 - Instructional document
- Recommend cleaning data monthly



M•ACS

Thank you for your time.

Please send all questions to the
MACS program coordinator.

kikramer@med.umich.edu