

Michigan Acute Care Surgery Collaborative

Virtual, MI

September 16, 2021

Agenda

- ◆ Welcome
- ◆ Updates
- ◆ Mark Hemmila
 - Reports
- ◆ Julia Kelm/John Scott
 - Patient Reported Outcome Measures
- ◆ Jill Jakubus
 - Opioids



Agenda

- ◆ Break
- ◆ Kim Kramer
 - New data elements
 - Data validation
- ◆ Mark Hemmila
 - CQI Index
 - Wrap up



Future Meetings

- ◆ 3 per year
 - ◆ Thursday December 9, 2021
 - ◆ Wednesday April 27, 2022
 - ◆ Thursday September 15, 2022
 - ◆ Thursday December 8, 2022
-
- ◆ Let us know if you see big problems and I apologize for today

Welcome

- ◆ Borgess Medical Center (Kalamazoo)
 - Stephanie Markle, MD, Surgeon
 - Sally Ossewaarde, Program Manager
 - Rebecca Fear, Data Abstractor
 - Barbara Mulder, Quality Administrator
- ◆ Mercy Health St. Mary's (Grand Rapids)
 - Wayne Vander Kolk , MD, Surgeon
 - Sherri Veurink-Balicki, Program Manager
 - Angela Parham, Data Abstractor

Welcome

- ◆ McLaren Macomb (Mt. Clemens)
 - Carl Pesta, MD, Surgeon
 - Marleen Nowakowski, Program Manager
 - Brooke Jamison, Data Abstractor

Welcome

- ◆ Shauna Di Pasquo – Data Quality Specialist
 - MTQIP
 - MACS

Recruitment

- ◆ Potentials

- Henry Ford Detroit
- Mid-Michigan Midland

BCBSM 2021 and 2022

◆ SOW Deliverables

- 3 Meetings/yr
- ArborMetrix reporting - In progress and slow
- Data validation program - 2022
- Performance Index – 2022
 - Participation 2022
 - 2 metrics 2023

Data

Mark Hemmila, MD

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 pull August 27, 2021

Reports

- ◆ Time frame
 - 7/1/2019 to 8/27/2021
- ◆ Data Source
 - Qualtrics
 - Outcomes from May 2020 onward
 - Outcomes may be artificially low
- ◆ Unblinded
- ◆ No risk adjustment yet (December)
- ◆ Some n's will not match up (can be in more than one disease)

Reports

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

- ◆ Ask questions

Reports

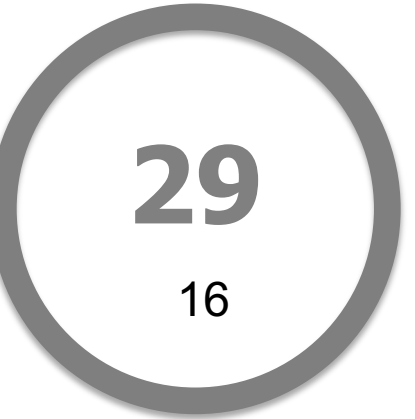
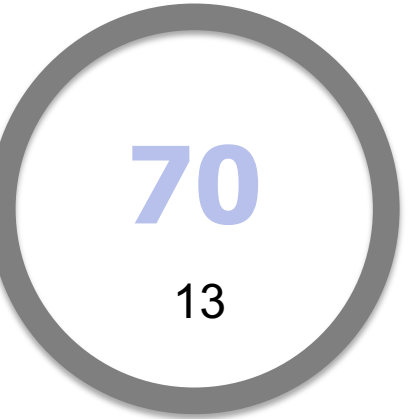
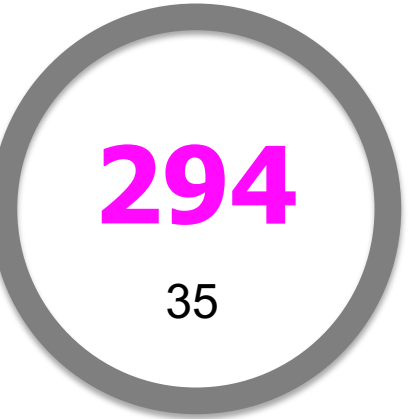
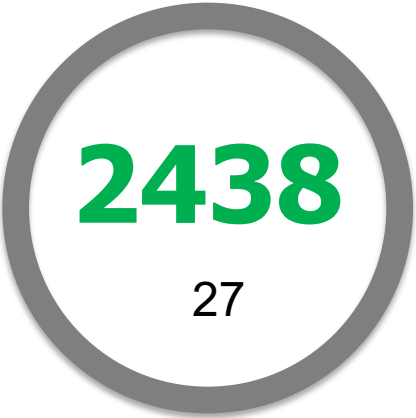
◆ Index

- Primary disease for which admitted
- No days post-discharge restriction yet
- Mortality and complications are collapsed down into the index admission
 - ◆ Joey Gall – admit and cholecystectomy, discharge home
 - ◆ Joey Gall – readmit for cystic duct stump leak
 - ◆ Joey Gall – readmit for c.diff colitis
- Joey Gall - readmit Y, cystic duct stump leak Y, and c.diff colitis Y

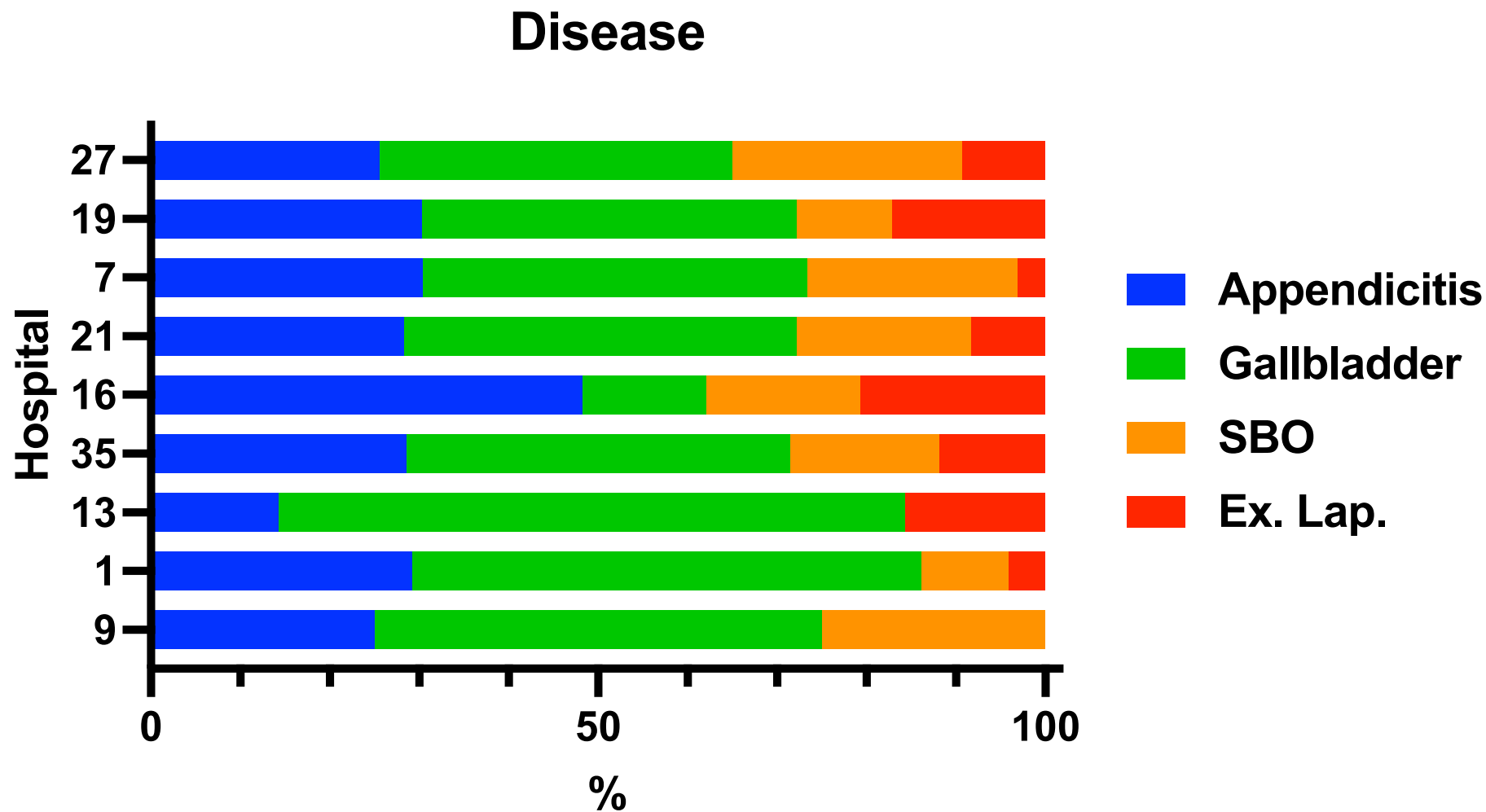
Reports

- ◆ Patients can cross over and be in two diseases
 - ◆ Joey Gall – admit and cholecystectomy, discharge home
 - ◆ Joey Gall – readmit for cystic duct stump leak
 - ◆ Joey Gall – readmit for SBO
- Joey Gall – Gall bladder index, readmit Y, cystic duct sump leak Y
- Joey Gall – SBO index

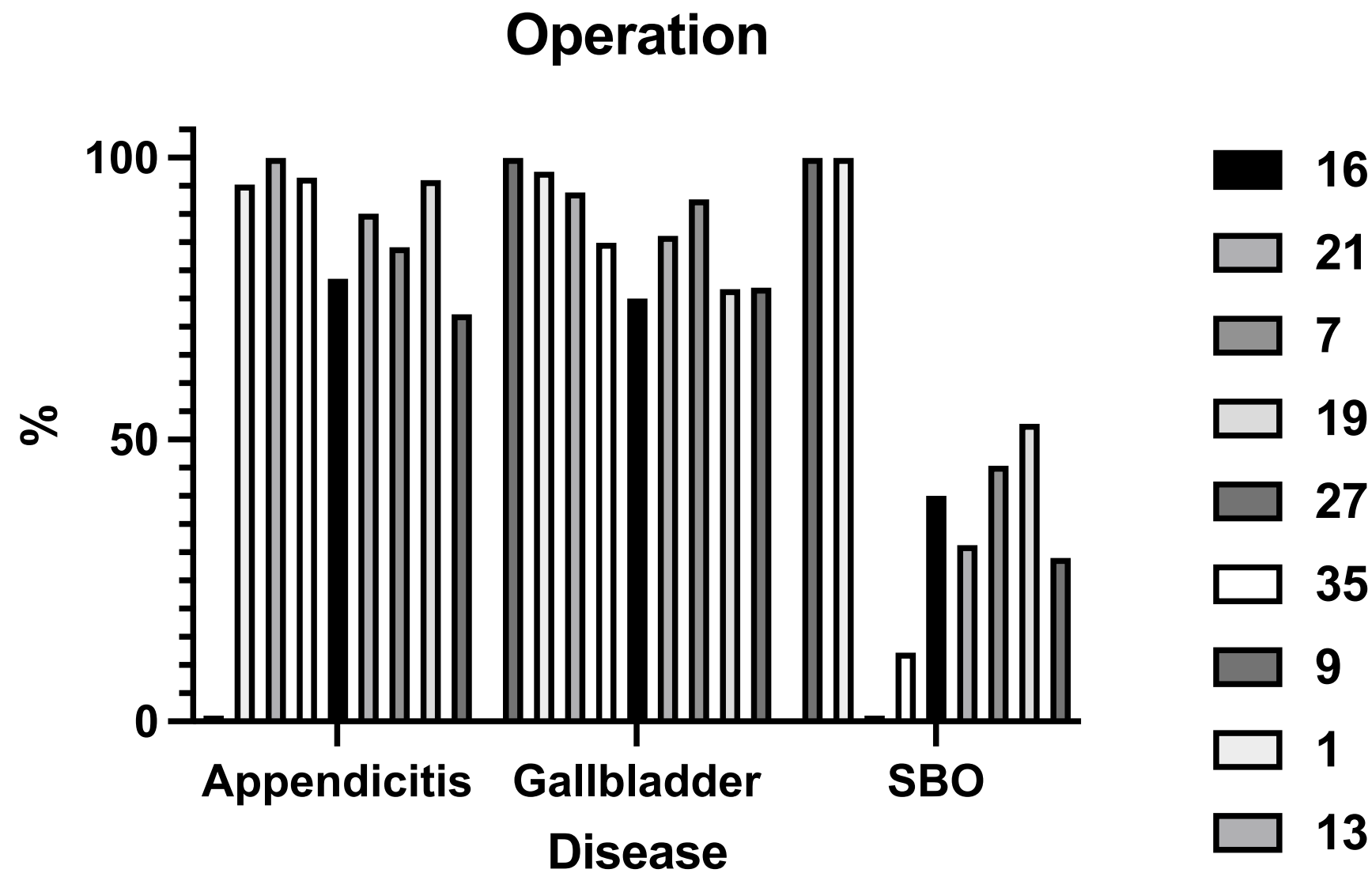
Index Patient Records = 9,447 Total = 10,724



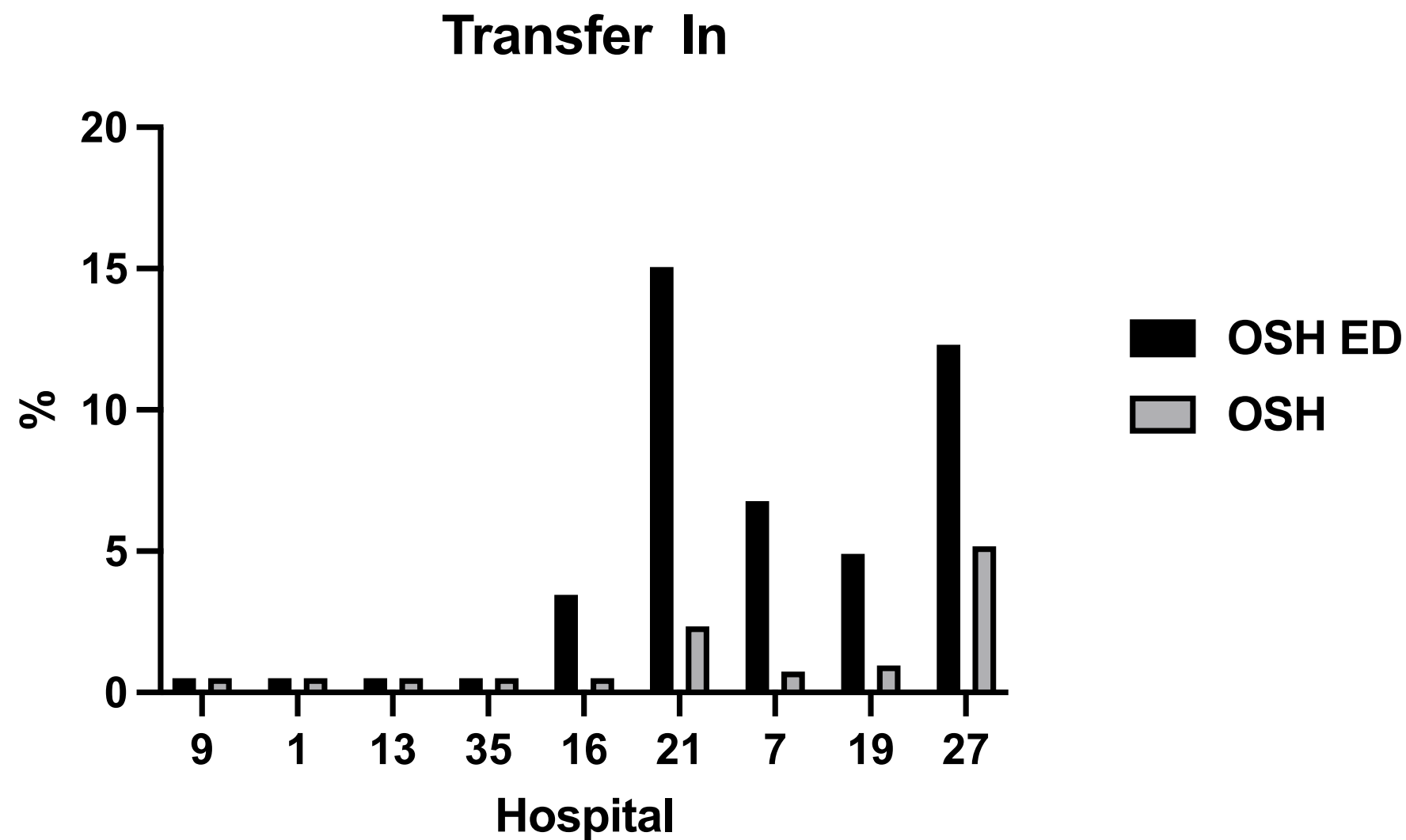
Total Patients = 9,447



Operative Intervention

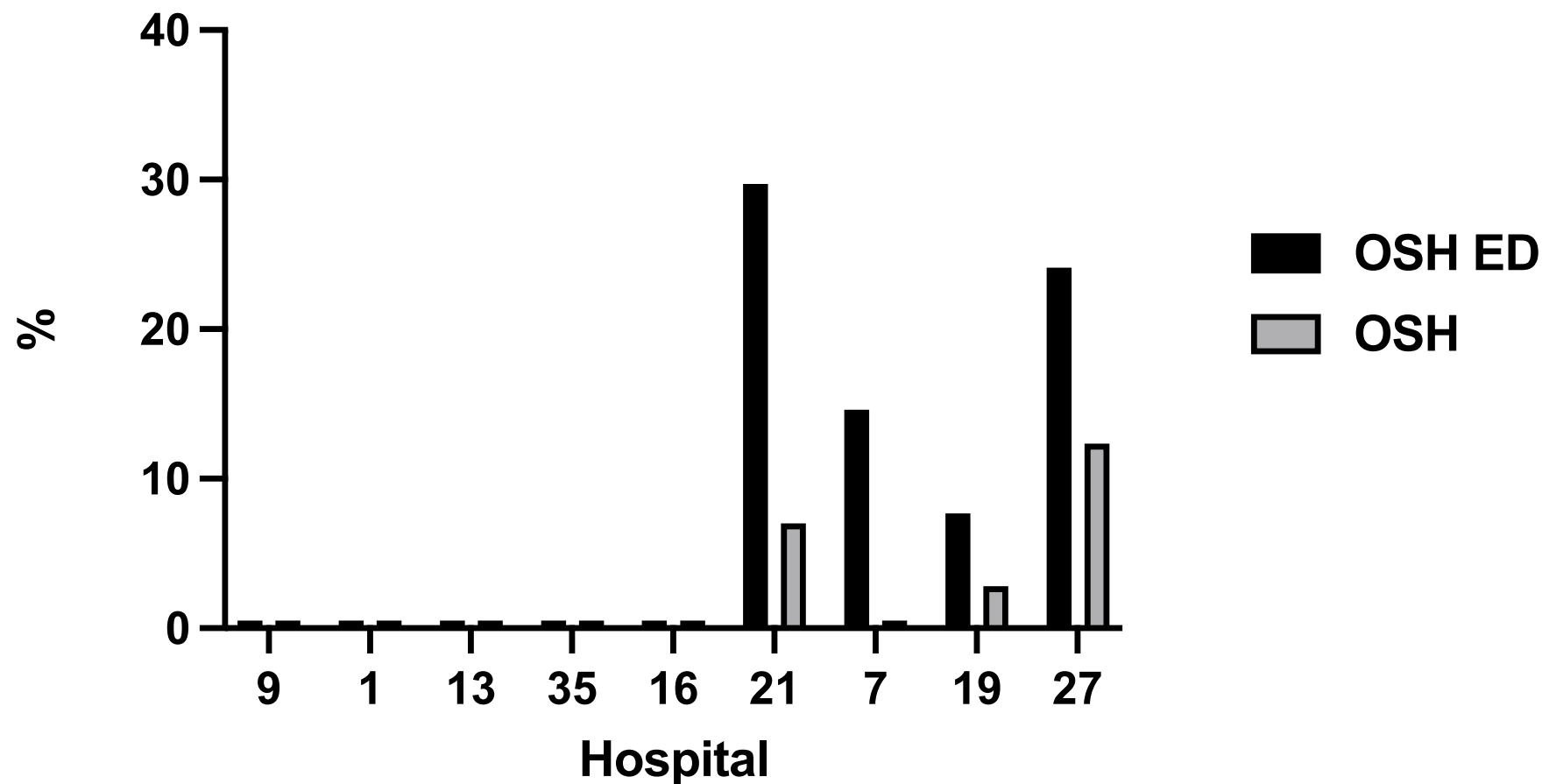


All



Emergent Exploratory Laparotomy

Transfer In



CPT – Operation, 15 most frequent

	N	%
47562, Laparoscopic cholecystectomy	2586	27.4
44970, Laparoscopic appendectomy	1951	20.7
47563, Lap cholecystectomy w IOC	307	3.2
44120, Resection of small intestine	293	3.1
44005, Freeing of bowel adhesion	209	2.2
47600, Open cholecystectomy	156	1.7
44143, Partial colectomy w colostomy	105	1.1
43840, Gastorrhaphy, Graham patch	90	1.0
44160, Partial colectomy with TI	88	0.9
49000, Exploration of abdomen	87	0.9
44140, Partial colectomy w anast	81	0.9
49561, Repair ventral/inc hernia	74	0.8
44950, Open appendectomy	54	0.6
49587, Repair umbilical hernia	54	0.6
44050, Reduction volvulus	45	0.5
All other	3267	34.6

Outcomes

	N	%
Any Complication	1523	16.1
Incisional SSI	91	1.0
Organ space SSI	150	1.6
Sepsis or severe sepsis	281	3.0
Anastomotic leak	26	0.3
Wound disruption	30	0.3
Enterocutaneous fistula	12	0.1
Ileus	176	1.9
C. difficile colitis	46	0.5
VTE	66	0.7
Pneumonia	99	1.0
Cardiac arrest	42	0.4
Post-discharge ED visit	566	6.0
Readmission	1100	11.6
Mortality	323	3.4

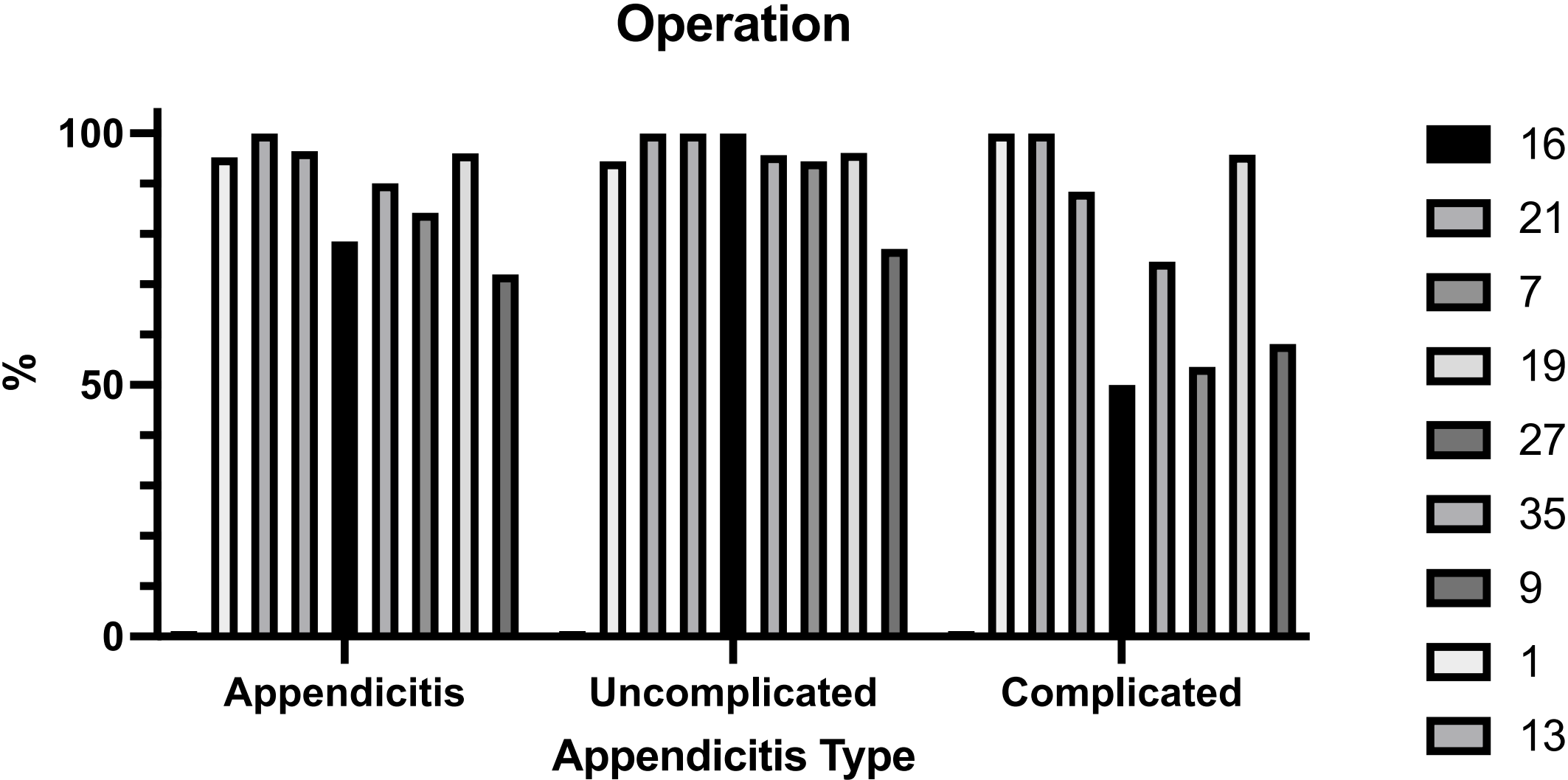
Comorbid Conditions



Height (cm)		
Mean ± Standard deviation	169.2	±10.7
Median (25th — 75th percentiles)	167.6	(162.6-177.8)
Weight (kg)		
Mean ± Standard deviation	86.4	±24.7
Median (25th — 75th percentiles)	83.2	(69.8-99.6)
BMI		
Mean ± Standard deviation	30.2	±8.3
Median (25th — 75th percentiles)	29	(24.5-34.2)
Ascites	104	1.0
CHF within 30 days	79	0.7
COPD (severe)	279	2.6
Covid-19 (confirmed positive)	127	1.2
Current cancer/malignancy	432	4.0
Diabetes mellitus		
Insulin	381	3.6
Non-insulin	474	4.4
Dialysis within 2 weeks	105	1.0
Disseminated cancer	190	1.8
Hypertension	2328	21.7
Functional health status (Dependent)	305	2.8
Personal history of DVT/PE	500	4.7
Preoperative sepsis		
Severe sepsis/septic shock	512	4.8
Sepsis	877	8.2
Sleep apnea	1277	11.9
Solid organ transplant	32	0.3
Steroid/Immunosuppressive medicatio	374	3.5
Tobacco within 1 year - cigarette	921	8.6
Ventilator dependent within 48 hours	110	1.0

Questions

Acute Appendicitis



Acute Appendicitis

- ◆ AAST Grade – 2,074 patients

- ◆ Type

 - Uncomplicated 76%

 - Complicated 24%

- ◆ Perforation - 28%

 - Operation - 72%

- ◆ CT Scan - 97% of patients

- ◆ USN - 12% of patients

- ◆ Pathology Result

 - 95.5% positive for appendicitis

	N	%
1, Acutely inflamed appendix, intact	1438	68.9
2, Gangrenous appendix, intact	177	8.5
3, Perforated appendix with local contamination	246	11.8
4, Perforated appendix with phlegmon or abscess	98	4.7
5, Perforated appendix with generalized peritonitis	75	3.6
NA	40	1.9

Acute Appendicitis

- ◆ IR procedure Index = 4.2% (Drain 81%, Aspiration 14%)
- ◆ Lap vs Open
 - Open 2.8%, 29 patients at 27, 59 total
 - Laparoscopic 94%
 - Lap to open 2.4%

Acute Appendicitis - Medical Management

- ◆ Medical management = 13.5%
- ◆ 13/351 failed and got operation index = 3.7%
- ◆ 76/351 failed and got operation in 12 mo = 21.7
- ◆ IV Abx Mean 3.2, Median 3 days
- ◆ po Home Abx Mean 9.4, Median 10 days

Acute Appendicitis - Times

- ◆ Hospital LOS
 - Overall: Mean 54, Median 26 hrs
 - Operation: Mean 45, Median 24 hrs
 - No operation: Mean 119, Median 65 hrs
 - ◆ Uncomplicated: Mean 64, Median 49 hrs (Medical)
 - ◆ Complicated: Mean 164, Median 78 hrs (Perforated)
- ◆ Time to operation
 - Mean 13.3 hrs
 - Median 8.6 hrs

Acute Appendicitis – Index with Readmission

- ◆ IR procedure = 5.3% (138 pts)
- ◆ Drain 80%, Aspiration 14.5%
- ◆ Outcomes
 - Readmission = 7.5% (181 pts)
 - Any complication = 11.5% (278 pts)
 - Incisional SSI = 0.7% (18 pts)
 - Organ space SSI = 1.7% (41 pts)
 - Sepsis = 1.2% (28 pts)
 - Post-discharge ED visit = 6.0% (144 pts)
 - Mortality = 0.3% (7 pts)

Questions

Questions

Who gets an operation? Who is offered non-op?

Readmission and/or post-discharge ED visits

Compare Uncomplicated operation to Complicated operation

Emergent Exp. Laparotomy = 769 patients

	N	%
Perforation	215	28.0
Colon	143	18.6
Small bowel	4	0.5
Stomach/Duodenum	68	8.8
Obstruction	307	39.9
Hernia	97	12.6
Malignancy	23	3.0
Other (Volvuluous, Intussusception)	187	24.3
Ischemia	62	8.1
Other	78	10.1

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 12.5%
 - ◆ Medium: 5-6 63.1%
 - ◆ High: ≥ 7 24.4%

news2_class	Discharge Status		Total
	Alive	Dead	
High	131 69.68	57 30.32	188 100.00
Low	461 95.05	24 4.95	485 100.00
Med	75 78.13	21 21.88	96 100.00
Total	667 86.74	102 13.26	769 100.00

NEWS2 Score

High

center	Discharge Status		Total
	Alive	Dead	
1	0 0.00	1 100.00	1 100.00
13	4 66.67	2 33.33	6 100.00
35	6 100.00	0 0.00	6 100.00
16	2 100.00	0 0.00	2 100.00
21	54 69.23	24 30.77	78 100.00
7	7 77.78	2 22.22	9 100.00
19	23 71.88	9 28.13	32 100.00
27	35 64.81	19 35.19	54 100.00
Total	131 69.68	57 30.32	188 100.00

Medium

center	Discharge Status		Total
	Alive	Dead	
35	5 83.33	1 16.67	6 100.00
16	1 100.00	0 0.00	1 100.00
21	36 85.71	6 14.29	42 100.00
7	6 75.00	2 25.00	8 100.00
19	12 75.00	4 25.00	16 100.00
27	15 65.22	8 34.78	23 100.00
Total	75 78.13	21 21.88	96 100.00

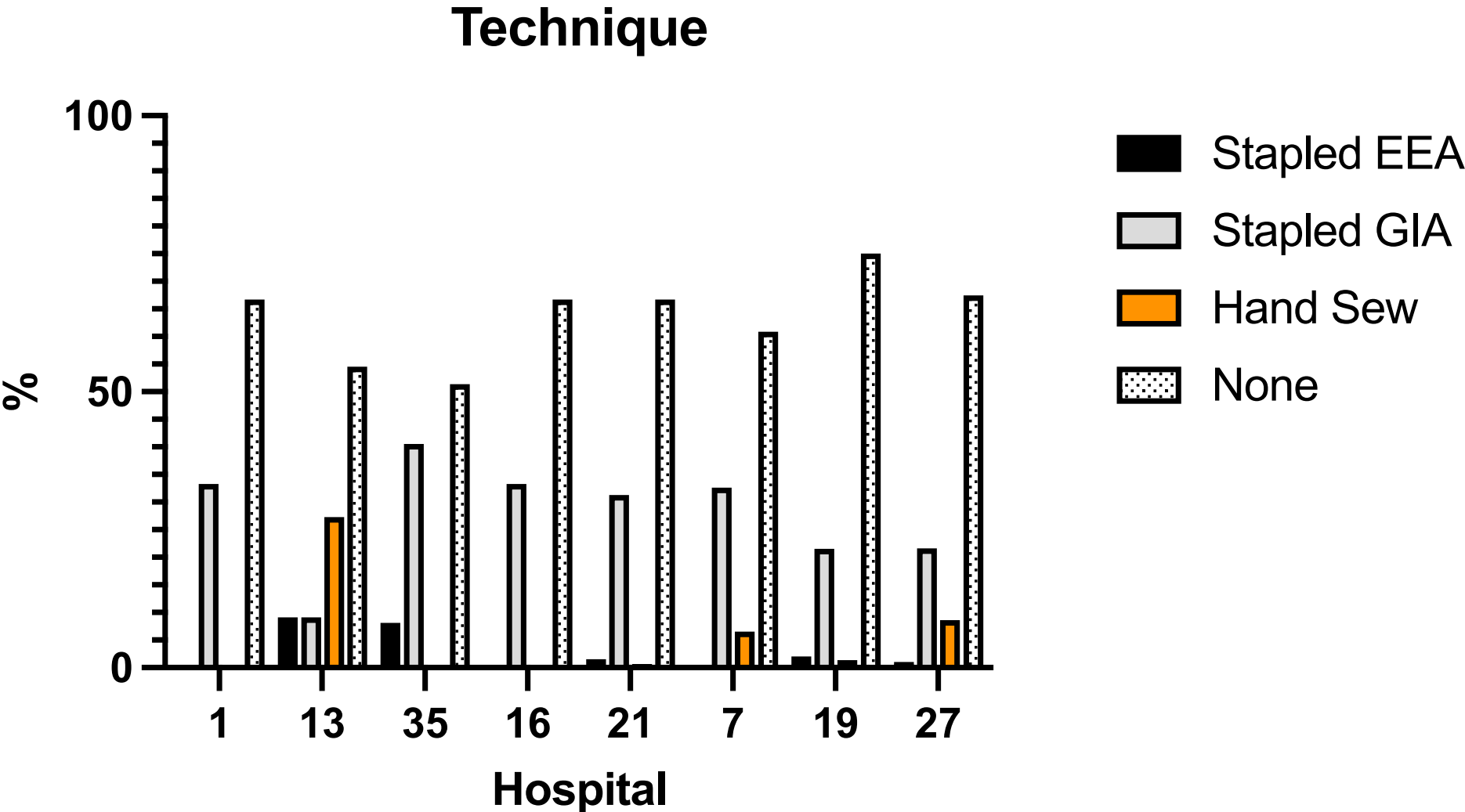
Low

center	Discharge Status		Total
	Alive	Dead	
1	2 100.00	0 0.00	2 100.00
13	5 100.00	0 0.00	5 100.00
35	25 100.00	0 0.00	25 100.00
16	3 100.00	0 0.00	3 100.00
21	206 95.37	10 4.63	216 100.00
7	28 96.55	1 3.45	29 100.00
19	90 93.75	6 6.25	96 100.00
27	102 93.58	7 6.42	109 100.00
Total	461 95.05	24 4.95	485 100.00

Operation

- ◆ Ostomy - 29%
 - Colostomy = 16.6%
 - Ileostomy = 11.3%
- ◆ Associated hernia repair - 15%
- ◆ Anastomosis
 - None: 67%
 - Stapled: 29%
 - Hand Sewn: 3.4%

Bowel Anastomosis Technique



Bowel Anastomosis Technique

Bowel Anastomosis Technique	anas_leak		Total
	0	1	
Stapled with an EEA (	15	0	15
	100.00	0.00	100.00
Stapled with an EEA (	1	0	1
	100.00	0.00	100.00
Stapled with a GIA st	207	11	218
	94.95	5.05	100.00
Hand-sutured through	26	2	28
	92.86	7.14	100.00
No anastomosis was pe	535	4	539
	99.26	0.74	100.00
Total	784	17	801
	97.88	2.12	100.00

Bowel Anastomosis Technique	ec_fistula		Total
	0	1	
Stapled with an EEA (	15	0	15
	100.00	0.00	100.00
Stapled with an EEA (	1	0	1
	100.00	0.00	100.00
Stapled with a GIA st	217	1	218
	99.54	0.46	100.00
Hand-sutured through	27	1	28
	96.43	3.57	100.00
No anastomosis was pe	535	4	539
	99.26	0.74	100.00
Total	795	6	801
	99.25	0.75	100.00

Emergency Ex. Lap – Outcomes

	N	%
Any Complication	443	57.6
Incisional SSI	39	5.1
Organ space SSI	85	11.1
Sepsis or severe sepsis	142	18.5
Anastomotic leak	18	2.3
Wound disruption	15	2.0
Enterocutaneous fistula	6	0.8
Ileus	87	11.3
C. difficile colitis	19	2.5
VTE	23	3.0
Pneumonia	54	7.0
Cardiac arrest	28	3.6
Post-discharge ED visit	104	13.5
Readmission	138	17.9
Mortality	121	15.7

ELPQuIC 2

This pathway should be started for ALL patients presenting with acute abdominal conditions that may need unscheduled surgery.

Patient name: _____
NHS no: _____
Hospital no: _____
DOB: _____

1. Immediate assessment and resuscitation

- EWS within 30 minutes of admission
- MRCS grade surgical registrar review within 2 hours of referral (30 minutes if EWS > 3)
- Arterial lactate measurement to identify sick patients
- Early fluid resuscitation

2. Early antibiotics

- Within 1 hour of admission/referral if sepsis or suspected peritonitis/perforation

3. Rapid diagnosis and surgical plan

- Rapid CT scan - within 2 hours of request, verbal report within 1 hour
- Communication with consultant surgeon for within 1 hour of CT

4. Surgery within 6 hours of admission/referral for urgent/emergency cases

- Prioritise theatre – next available slot on CEPOD
- Consultant-led perioperative care

5. Clear management plan for 'expedited' cases, e.g. bowel obstruction

- CT scan within 12 hours to confirm diagnosis
- Regular review with consideration of lactate estimation if sepsis or possible ischaemic bowel
- 12 hourly consultant surgical review, 6 hourly MRCS registrar review if sepsis

6. Goal Directed Fluid therapy

- Stroke volume optimisation using cardiac output monitoring intra- and postoperatively

7. Postoperative ICU for patients with predicted mortality >5%

- ICU admission for all patients with P-POSSUM predicted mortality $\geq 5\%$
- ICU admission for patients with P-POSSUM < 5% at discretion of perioperative team

P-POSSUM scores can be calculated from the tab for each patient on Plato, or using the 'Surgical risk' app on a smart phone

Emergency Laparotomy Pathway Version 2
Approved by: Surgery and Critical Care Governance Groups
Approved by Health Records Documentation Approval Group: Jan 2014
Review date: June 2015

Health Records:
Clinical Notes
UID: _____

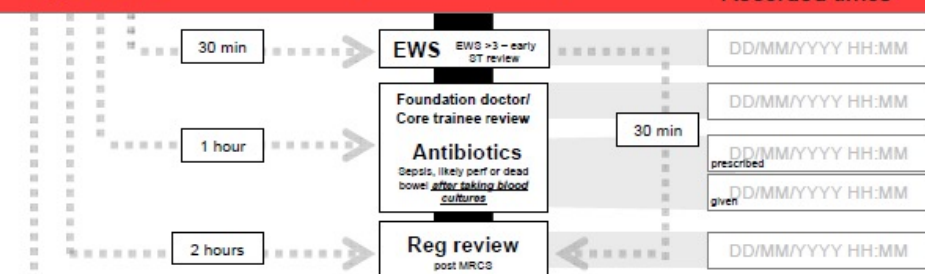
Admission / Referral

Patient name: _____
NHS no: _____
Hospital no: _____
DOB: _____

Target times

DD/MM/YY HH-MM

Recorded times

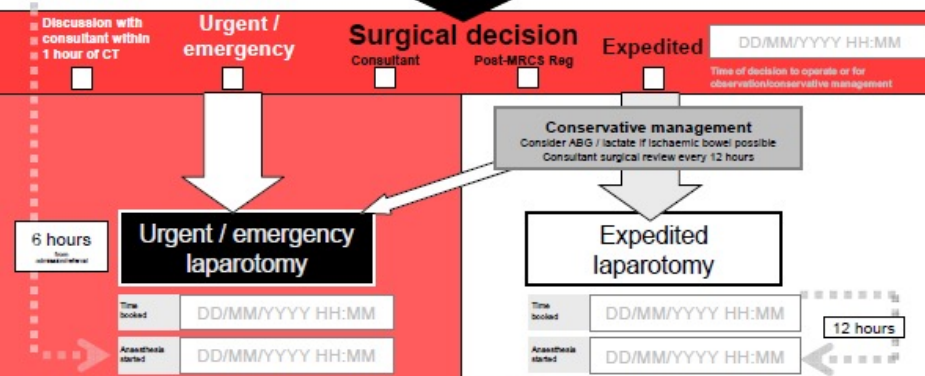
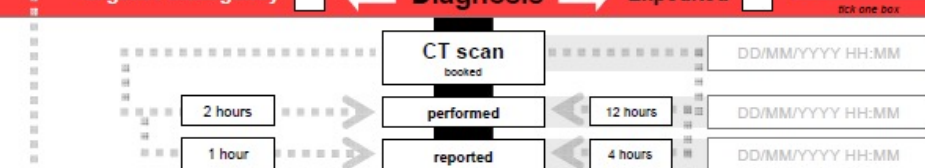


Urgent / emergency ☐

Diagnosis

Expedited ☐

Arterial lactate.....mmol/l
tick one box



Management in theatre

Grade of most senior anaesthetist: _____
 Grade of most senior surgeon: _____
 Goal directed fluid therapy: Yes ☐ No ☐

Calculated P-POSSUM mortality: _____ %
 Use physiological values immediately prior to anaesthesia and surgical findings

Antibiotics administered prior to theatre ☐
 Antibiotics administered in theatre ☐
 DD/MM/YYYY HH-MM

Destination from theatre

A P-POSSUM score should be calculated from the tab for each patient on Plato, or using the 'Surgical risk' app on a smart phone

Calculated P-POSSUM mortality $\geq 5\%$ - Refer to ICU
 Calculated P-POSSUM mortality < 5% - Consider ward management but refer to ICU at discretion of anaesthetist or surgeon

Emergency Laparotomy Pathway Version 2
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Review date: June 2015

Health Records:
Clinical Notes
UID: _____

Care Bundle - Time to OR

center	N	p50	p25	p75	mean	sd
1	3	22.2	2.6	39.5	21.43333	18.46194
13	11	6.866667	4.033333	41.63334	33.68182	63.37946
35	36	17.83333	6.333333	48.51667	44.90741	67.64273
16	6	14.23333	7.066667	20.13333	21.84445	25.07088
21	332	7.333333	4.6	30.51667	47.53755	145.9771
7	45	7.766667	5.533333	12.13333	18.31704	29.465
19	140	28.05	7.366667	75.56667	142.1336	766.4564
27	186	19.68333	8.033334	70.13333	72.80574	125.6903
Total	759	11.23333	5.8	51.06667	68.81401	350.1779

Care Bundle - Time to Antibiotic

center	N	p50	p25	p75	mean	sd
1	3	2.533333	.6666667	18.23333	7.144445	9.648508
13	11	2.8	1.866667	21.2	11.84242	17.4213
35	6	4.233333	2.4	7.566667	29.59444	62.51714
16	4	12	4.25	130.3333	67.29167	116.7166
21	288	5.35	3.033333	20.26667	41.79919	151.4448
7	40	3.783333	1.85	7.6	8.668333	14.08416
19	45	23.63333	3.6	149.8	152.577	379.3839
27	149	7.533333	3.9	22.36667	46.92148	108.663
Total	546	5.65	3	23.1	49.15861	167.6708

Questions

Readmission and/or post-discharge ED visits

Evaluation and OR pathway

Gallbladder

	N	%
Acute cholecystitis	2939	78.3
Symptomatic cholelithiasis	127	3.4
Cholangitis	93	2.5
Choledocholithiasis	805	21.5
Gallstone pancreatitis	332	8.8
Other	64	1.7

Can be in more than one diagnosis group

Gallbladder – Outcomes

	N	%
Any Complication	493	13.1
Incisional SSI	21	0.6
Organ space SSI	16	0.4
Sepsis	61	1.6
Post-discharge ED visit	211	5.6
Readmission	334	8.9
Mortality	47	1.3
Cystic duct stump leak	15	0.4
Retained CBD stone	43	1.1
CBD injury	8	0.2

Questions

SBO

- ◆ Point of Entry
 - ED= 80%
 - OSH ED = 13%
 - OSH = 2.1%
- ◆ Cause
 - Adhesive = 86%
 - Other = 13% (Other 10%, Malignancy, Crohn, Vascular)
- ◆ Operative
 - All = 35%

SBO

◆ Operative

- All = 35%
- Adhesive = 32%
- Malignant = 55%
- Crohn = 29%
- Vascular = 91%
- Other = 57%

SBO - Adhesive

- ◆ Prior SBO = 36% (568/1582)
 - Operation = 19% (109/568)
 - Number prior SBO admissions
 - ◆ 1 = 31%
 - ◆ 2 = 12%
 - ◆ Multiple = 46%
- ◆ Gastrografin challenge = 38%
 - Positive to colon = 79%
 - Negative to colon = 18%

SBO - Gastrografin

◆ Prior SBO

center	Gastrografin Challenge		Total
	Yes	No	
35	17 80.95	4 19.05	21 100.00
16	1 33.33	2 66.67	3 100.00
14	0 0.00	9 100.00	9 100.00
21	114 52.78	102 47.22	216 100.00
7	8 6.30	119 93.70	127 100.00
19	12 52.17	11 47.83	23 100.00
27	64 37.87	105 62.13	169 100.00
Total	216 38.03	352 61.97	568 100.00

center	Gastrografin Result			Total
	Positive	Negative	Other	
35	17 100.00	0 0.00	0 0.00	17 100.00
16	1 100.00	0 0.00	0 0.00	1 100.00
21	86 75.44	26 22.81	2 1.75	114 100.00
7	5 62.50	3 37.50	0 0.00	8 100.00
19	9 75.00	0 0.00	3 25.00	12 100.00
27	53 82.81	10 15.63	1 1.56	64 100.00
Total	171 79.17	39 18.06	6 2.78	216 100.00

center	operation		Total
	0	1	
21	17 60.71	11 39.29	28 100.00
7	1 33.33	2 66.67	3 100.00
19	1 33.33	2 66.67	3 100.00
27	7 63.64	4 36.36	11 100.00
Total	26 57.78	19 42.22	45 100.00

SBO - Adhesive

- ◆ No Prior SBO = 64% (1013/1847)
 - Operation = 62% (623/1013)
- ◆ Gastrografin challenge = 37%
 - Positive to colon = 75%
 - Negative to colon = 22%

No Prior SBO - Gastrografin

center	Gastrografin Challenge		Total
	Yes	No	
9	0 0.00	1 100.00	1 100.00
1	0 0.00	7 100.00	7 100.00
35	20 74.07	7 25.93	27 100.00
16	2 66.67	1 33.33	3 100.00
14	1 1.67	59 98.33	60 100.00
21	219 48.24	235 51.76	454 100.00
7	12 8.05	137 91.95	149 100.00
19	18 33.33	36 66.67	54 100.00
27	105 40.54	154 59.46	259 100.00
Total	377 37.18	637 62.82	1,014 100.00

Prior SBO - Gastrografin

center	Gastrografin Challenge		Total
	Yes	No	
35	17 80.95	4 19.05	21 100.00
16	1 33.33	2 66.67	3 100.00
14	0 0.00	9 100.00	9 100.00
21	114 52.78	102 47.22	216 100.00
7	8 6.30	119 93.70	127 100.00
19	12 52.17	11 47.83	23 100.00
27	64 37.87	105 62.13	169 100.00
Total	216 38.03	352 61.97	568 100.00

No Prior SBO - Gastrografen

center	Gastrografen Result			Total
	Positive	Negative	Other	
35	19 95.00	1 5.00	0 0.00	20 100.00
16	1 50.00	1 50.00	0 0.00	2 100.00
14	0 0.00	1 100.00	0 0.00	1 100.00
21	165 75.34	51 23.29	3 1.37	219 100.00
7	9 75.00	3 25.00	0 0.00	12 100.00
19	8 44.44	2 11.11	8 44.44	18 100.00
27	82 78.10	22 20.95	1 0.95	105 100.00
Total	284 75.33	81 21.49	12 3.18	377 100.00

18

center	operation		Total
	0	1	
35	0 0.00	1 100.00	1 100.00
16	0 0.00	1 100.00	1 100.00
14	1 100.00	0 0.00	1 100.00
21	25 46.30	29 53.70	54 100.00
7	1 33.33	2 66.67	3 100.00
19	7 70.00	3 30.00	10 100.00
27	9 39.13	14 60.87	23 100.00
Total	43 46.24	50 53.76	93 100.00

42

Gastrogratin All

Negative to Colon

center	operation		Total
	0	1	
35	0 0.00	1 100.00	1 100.00
16	0 0.00	1 100.00	1 100.00
14	1 100.00	0 0.00	1 100.00
21	45 50.00	45 50.00	90 100.00
7	3 42.86	4 57.14	7 100.00
19	11 61.11	7 38.89	18 100.00
27	16 43.24	21 56.76	37 100.00
Total	76 49.03	79 50.97	155 100.00

Positive to Colon

center	operation		Total
	0	1	
35	35 97.22	1 2.78	36 100.00
16	1 50.00	1 50.00	2 100.00
21	249 95.40	12 4.60	261 100.00
7	15 100.00	0 0.00	15 100.00
19	14 73.68	5 26.32	19 100.00
27	139 94.56	8 5.44	147 100.00
Total	453 94.38	27 5.63	480 100.00

SBO

- ◆ Prior Interventions = 81%
 - Open= 49%
 - Lap = 25%
 - Mesh = 12%
 - Radiation = 7%
 - Malignancy = 8%

SBO – CT Findings and Operative Intervention

	%
Ischemic/Dead Bowel	81
Swirl Sign	65
Pneumatosis	56
Free Fluid	43
Obstruction	33
Fecalization	21

SBO – Operative interventions

	N	%
Obstruction related to adhesion	282	43.4
Lysis of adhesion	369	56.8
Single band adhesion	112	17.2
Multiple band/dense adhesion	238	36.6
Bypass	1	0.2
Resection with anastomosis	209	32.2
Stoma	18	2.8
Anti-adhesion barrier	5	0.8
Obstruction	476	73.2
Ischemic/dead bowel	118	18.2
Inadvertent enterotomy	33	5.1
Negative exploration	9	1.4

SBO - Hernia

- ◆ Associated hernia requiring repair = 34%
 - Primary = 52%
 - Mesh = 47%
- ◆ Location
 - Ventral/incisional 21%
 - No Midline Component 26%
 - Umbilical 32%
 - Inguinal 9%
- ◆ Hernia size, mean
 - Width 1.6 ± 3.2 cm
 - Length 2.1 ± 4.4 cm

SBO – Outcomes

	N	%
Any Complication	288	15.6
Incisional SSI	12	0.6
Organ space SSI	9	0.5
Sepsis or severe sepsis	34	1.8
Anastomotic leak	5	0.3
Wound disruption	6	0.3
Enterocutaneous fistula	3	0.2
Ileus	45	2.4
C. difficile colitis	5	0.3
VTE	18	1.0
Pneumonia	17	0.9
Cardiac arrest	1	0.1
Post-discharge ED visit	100	5.4
Readmission	372	20.1
Mortality	74	4.0

SBO – Readmssion

- ◆ Readmit all = 20.1%
- ◆ Non-operative = 1121 pts
 - Readmit = 17.8%
- ◆ Operative = 726 pts
 - Readmit = 23.7%

Questions

Use of Gastrografin study

Readmission and/or post-discharge ED visits

CQI Index and Future Directions

Mark Hemmila MD

QI Homework

- ◆ Key Literature
 - e.g. CODA trial
 - Suggest articles
- ◆ Data modifications
 - 2022
 - 2023
- ◆ Speakers/Topics
 - EGS Course
 - Gall Bladder, SBO/Hernia, Abdominal Catastrophe

CQI Index

- ◆ 2022
 - Attendance
 - Data Submission
 - Validation visit ?
- ◆ 2023
 - 2 Metrics

Appendix III. Hospital P4P Performance Index Measure Weighting

CQI Performance/Participation Weighting Schedule for Newly Established CQIs		
Year	Performance	Participation
1	0%	100%
2	20%	80%
3	30%	70%
4	45%	55%
5	60%	40%
6	70%	30%

CQI Performance/Participation Weighting Schedule for Newly Participating Sites in Established CQIs		
Year	Performance	Participation
1	0%	100%
2	20%	80%
3	70%(or aligned with most established cohort's performance)	30%

QI Homework

- ◆ Ex. Lap
 - Resuscitation
 - Pathway
 - Appropriateness
- ◆ Gall Bladder
 - C-tube
 - Ablation, stone extraction, cystic duct stent
- ◆ Appendectomy
 - Appendicolith
 - Who gets an operation

QI Homework

- ◆ SBO

- Gastrografin

- ◆ All

- Readmit
 - ED visits

Future Meeting Topics

- ◆ Gallbladder operative insights
- ◆ Non-operative Gallbladder interventions
 - Cystic duct stent
 - IR Chole tube and gallstone extraction
 - Gallbladder ablation
- ◆ Hernia repair
- ◆ Advanced endoscopy
- ◆ Speakers



Patient-Reported Outcomes

Julia Kelm



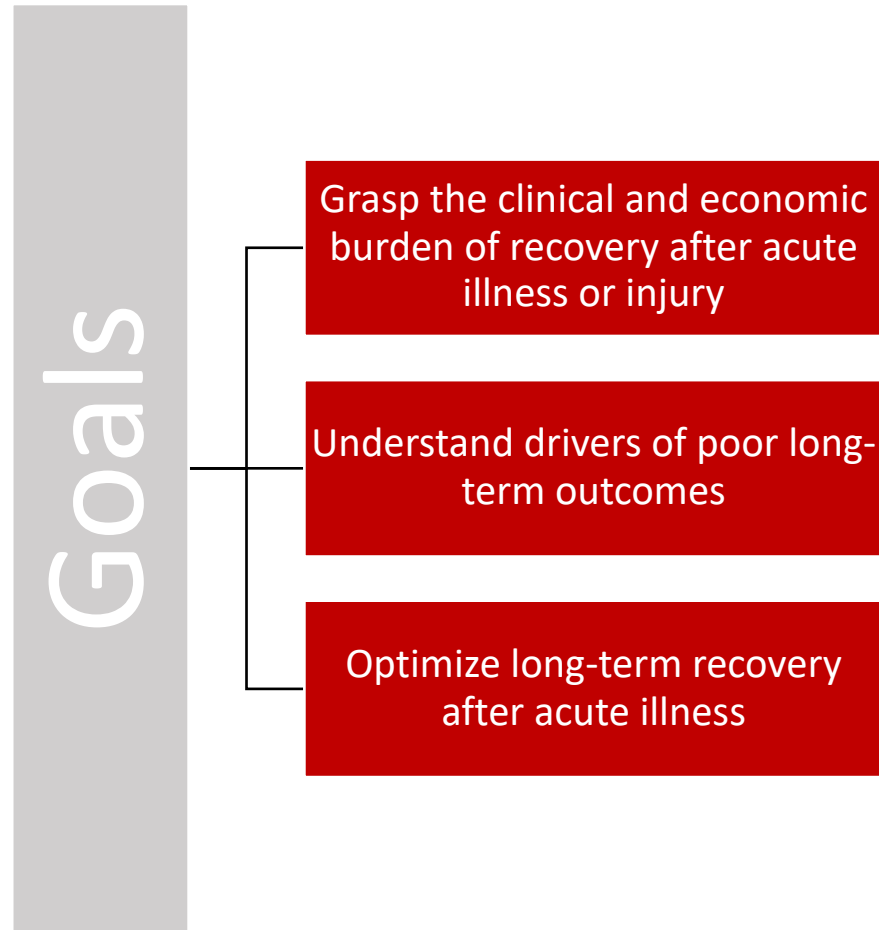
Definitions

Financial Toxicity: the negative impact of the cost of healthcare on patients

- inability to pay medical or nonmedical bills, delaying care due to inability to pay

OOP (out of pocket payment): amount of money paid directly from patient for hospitalization or any other medical costs associated with injury, treatment, or recovery

Concept



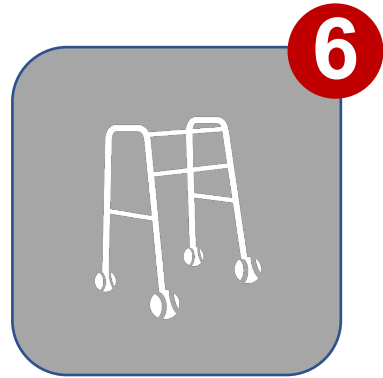
Project Expansion to MACS

- Implement Emergency General Surgery surveys into patient recruitment
- Modification to capture EGS patients
 - Gallbladder, Appendix, Small Bowel, Ex Lap
- Collaboration to contribute to knowledge on clinical and economic outcomes after acute illness or injury

Protocol



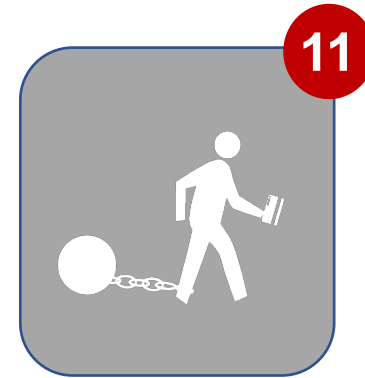
**Hospital
Review**



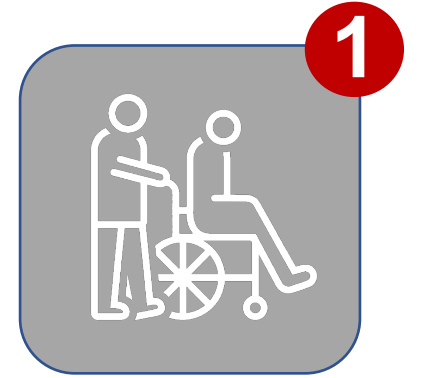
EQ-5D-5L



Opioid



Economic



**Caregiver
Burden**



Hello !

You are about to begin the survey from the **Michigan Trauma Quality Improvement Program (MTQIP)**. This survey is meant solely to improve patient care and long term recovery for those who experience traumatic injury.

All information collected will remain private, secure, and anonymous.

If you are willing to participate, kindly press the next button below to begin.

Previous

Next

Michigan Trauma Quality Improvement Program | MTQIP



Using any number from 0 to 10, where 0 is the worst hospital possible and 10 is the best hospital possible, what number would you use to rate this hospital **during your stay?**

0 1 2 3 4 5 6 7 8 9 10

Hospital Rating



Would you recommend this hospital to your friends and family?

Definitely yes

Probably yes

Probably no

Definitely no

Have you had problems paying or were unable to pay any medical bills related to your injury?

This includes bills, debt, payments, for doctors, dentists, hospitals, therapists, medication, equipment, nursing home or home care.

Yes

No

Prefer not to answer

Do you currently have any medical bills that are being paid off over time?

This could include medical bills being paid off with a credit card, through personal loans, or bill paying arrangements with hospitals or other providers.

Yes

No

Prefer not to answer

Did you take any opioid pain medication at any time in the year before your traumatic injury?

Yes

No

Prefer not to answer

Did you have a prescription for a narcotic/opioid-based pain medication when you were discharged from the hospital? This could be in the form of pills, a patch, liquid, etc.

Yes

No

Prefer not to answer

Previous

Next

MTQIP PRO Current Criteria

- **Age ≥ 18 years**
- **Inclusion criteria**
 - **ISS ≥ 15**
 - **Fracture**
 - **Humerus, radius, femur, tibia, pelvis, 2+ ribs**
 - **Trauma Operation**
 - **Intubation**
- **Exclusion criteria**
 - **ISS ≤ 7**

49

Responses

Data Collection Flow

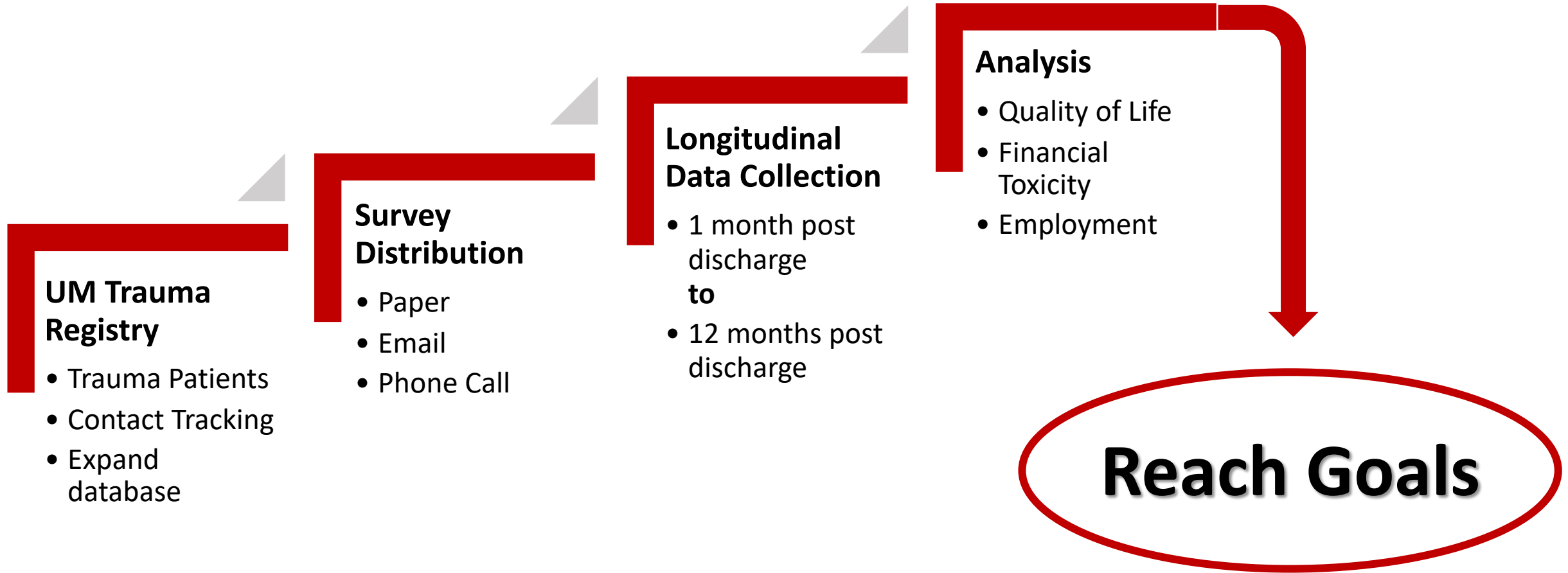
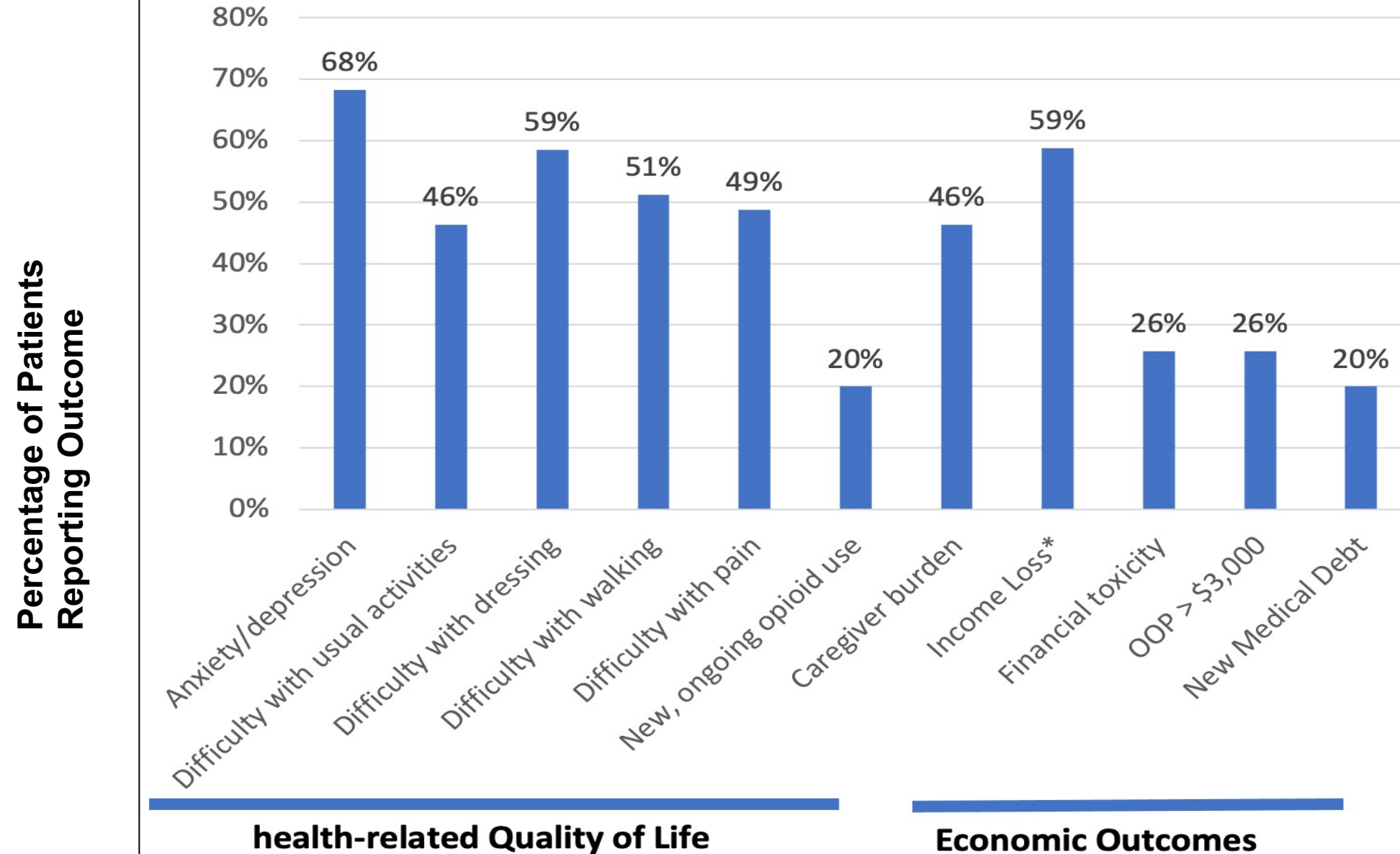


Table. Patient-reported outcomes 1 month after discharge for traumatic injury



*Income loss only reported for those employed at time of injury

Clinical and Economic Patient-Reported Outcomes

Important Findings

Data Collection: 02/01/2021 – 07/19/2021

**80% report
difficulty in ≥ 1
domain of
health-related
quality of life**

**100% of
employed
patients unable
to return to work**

**1-in-3 report
financial toxicity**

Going Forward

Maintain

Maintain steady contact with patients post-discharge while expanding eligible patient population

- Aim for each patient to complete 4 surveys over a year
- Explore the drivers of poor long-term outcomes



Obtain

Obtain robust collection of PROs after acute illness or injury
Pilot expansion into MACS



Inform

Inform improved healthcare policy and optimize long-term recovery of patients

Thank you!



Opioid Quality Improvement Initiatives & 2022 MACS Opioid Reporting

Jill Jakubus, PA-C, MHSA

M·ACS

Pop Quiz



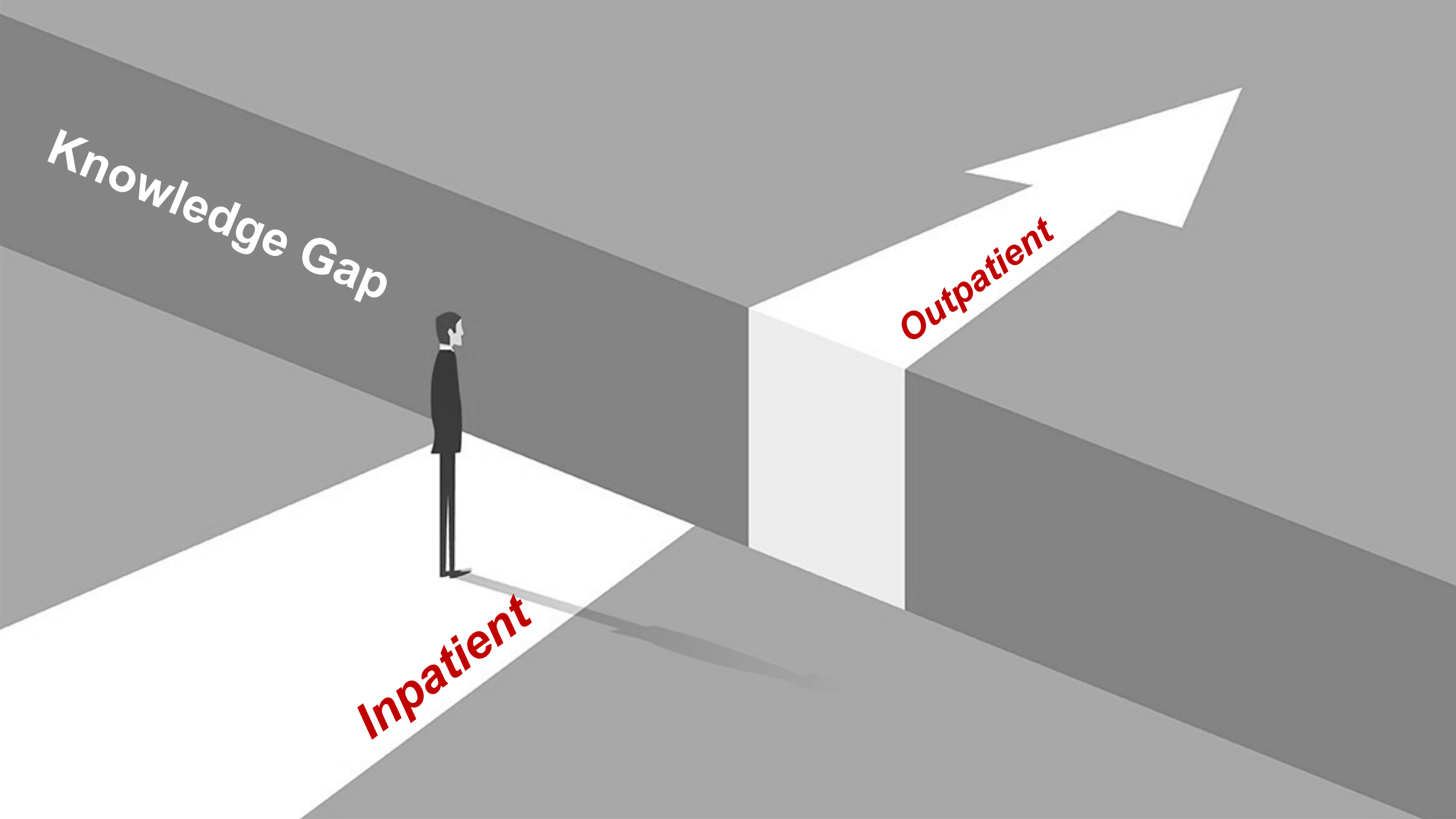
Q

How many tablets of pain medication does an opioid-naive patient need at discharge after an **open cholecystectomy**?

How many tablets of pain medication does an opioid-naive patient need at discharge after a **major or minor hernia repair**?



Q



Knowledge Gap

Outpatient

Inpatient

Takeaways from our research on opioid prescribing after surgery

1



Becoming a new chronic opioid user is the most common post-surgical complication

2



Prescribing often far exceeds pain management needs

3



Prescription size is the strongest predictor of how much opioid a person will use

Ways to reduce risk associated with opioid prescribing after surgery

1



Prescribing Recommendations

Implementing evidence-based, operation-specific opioid prescribing recommendations can help to eliminate overprescribing.

2



Transitions of Care

Improving care coordination between surgeons and primary care providers could lead to earlier identification of patients at risk for new chronic use.

3



Disposal

Having a variety of methods for patients to dispose of leftover opioids can decrease opportunities for diversion and misuse.

Literature



Association of Postoperative Opioid Prescription Size and Patient Satisfaction

Brian T Fry¹, Ryan A Howard, Vidhya Gunaseelan, Jay S Lee, Jennifer F Waljee, Michael J Englesbe, Joceline V Vu

Abstract

Objective: To evaluate the association between postoperative opioid prescription size and patient-reported satisfaction among surgical patients.

Summary background data: Opioids are overprescribed after surgery, which negatively impacts patient outcomes. The assumption that larger prescriptions increase patient satisfaction has been suggested as an important driver of excessive prescribing.

Methods: This prospective cohort study evaluated opioid-naïve adult patients undergoing laparoscopic cholecystectomy, laparoscopic appendectomy, and minor hernia repair between January 1 and May 31, 2018. The primary outcome was patient satisfaction on a postoperative survey. Satisfaction was measured on a scale of "not satisfied" (9-10) and "not highly satisfied" (1-8). The secondary outcome was opioid prescription at discharge from surgery.

Conclusions: In a large cohort of patients undergoing common surgical procedures, there was no association between opioid prescription size at discharge after surgery and patient satisfaction. This implies that surgeons can provide significantly smaller opioid prescriptions after surgery without negatively affecting patient satisfaction.

Literature

Preoperative Opioid Use is Independently Associated With Increased Costs and Worse Outcomes After Major Abdominal Surgery

David C Cron ¹, Michael J Englesbe, Christian J Bolton, Melvin T Joseph, Kristen L Carrier, Stephanie E Moser, Jennifer F Waljee, Paul E Hilliard, Sachin Kheterpal, Chad M Brummett

Affiliations + expand

PMID: 27429021 DOI: [10.1097/SLA.0000000000001901](https://doi.org/10.1097/SLA.0000000000001901)

Abstract

Objective: To explore the clinical and financial implications of preoperative opioid use in major abdominal surgery.

Background: Opioids are increasingly used to manage chronic pain, and chronic opioid users are challenging to care for perioperatively. Given the epidemic of opioid-related morbidity and mortality, it is critical to understand how preoperative opioid use impacts surgical outcomes.

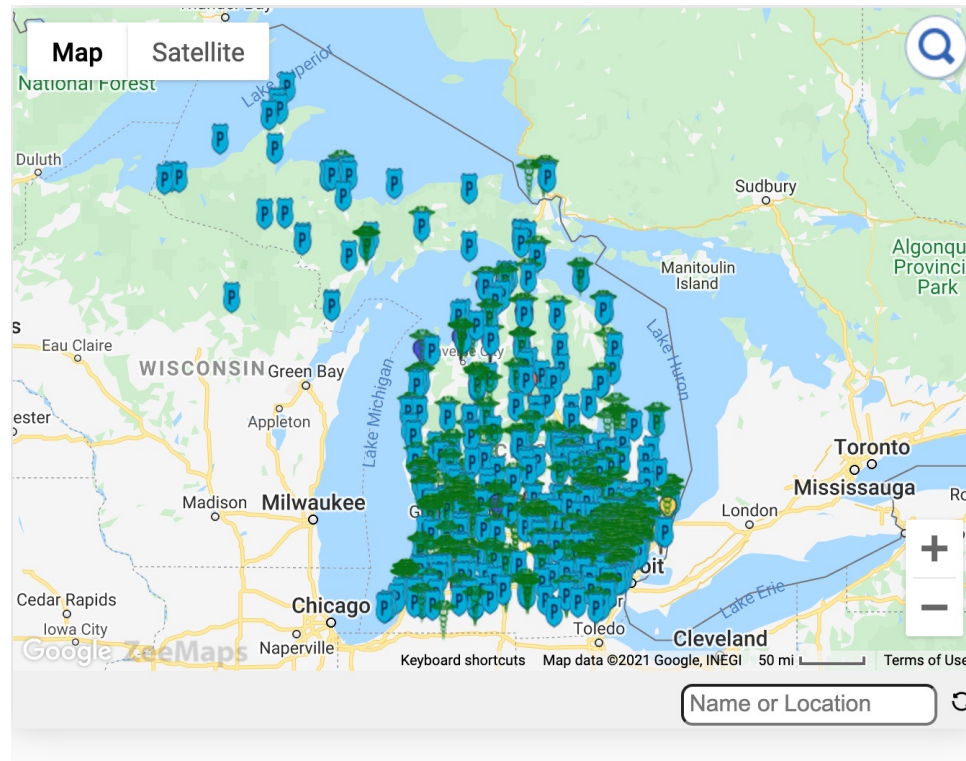
Methods: This was an analysis of nonemergent, abdominopelvic surgeries from 2008 to 2014 from a single center within the Michigan Surgical Quality Improvement Program. Preoperative opioid use (binary exposure variable) was defined as any opioid medication list of the preoperative evaluation. Primary outcomes included costs. Secondary outcomes included hospital length of stay, 30-day mortality, and 30-day readmission.

Conclusions: Opioid use is common before abdominopelvic surgery, and is independently associated with increased postoperative healthcare utilization and morbidity. Preoperative opioids represent a potentially modifiable risk factor and a novel target to improve quality and value of surgical care.



Tools

Disposal Map



<https://michigan-open.org/safe-opioid-disposal/disposal-map/>

Tools

Opioid Prescribing Recommendations

Colon and Rectal Surgery	Oxycodone 5mg tablets*
✓ Colectomy - Laparoscopic	0 - 10
✓ Colectomy - Open	0 - 15
✓ Ileostomy/Colostomy Creation, Re-siting, or Closure	0 - 15
✓ Small Bowel Resection or Enterolysis - Open	0 - 15

Tools

Opioid Prescribing Recommendations

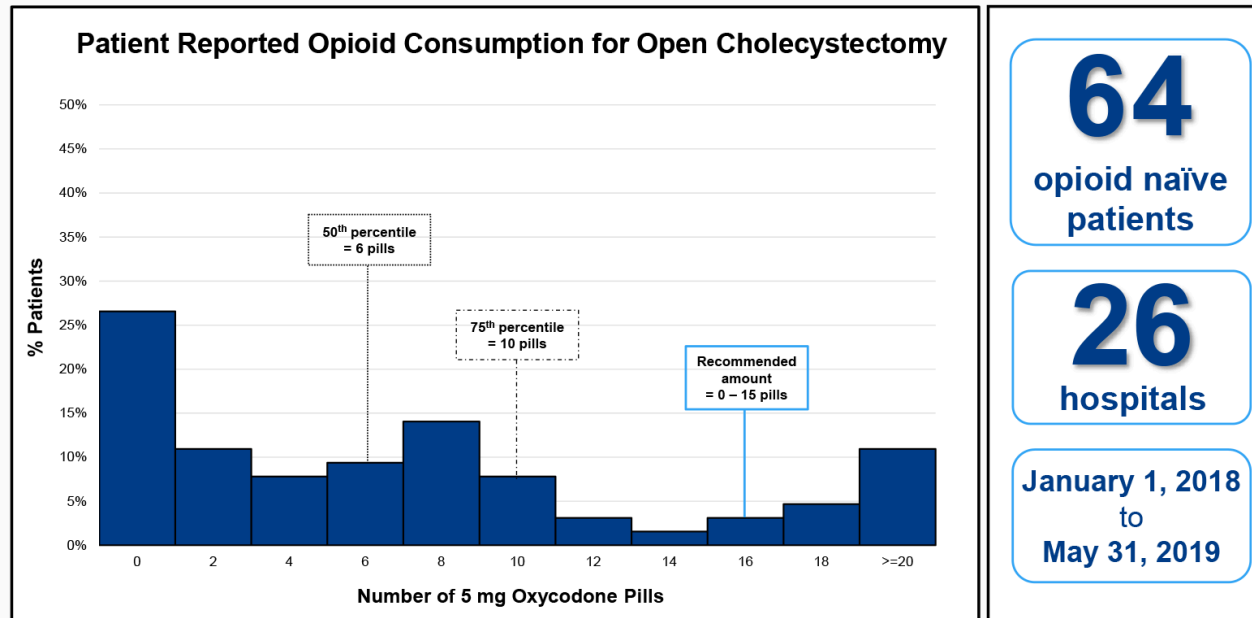
General Surgery	Oxycodone 5mg tablets*
✓ Appendectomy – Laparoscopic or Open	0 - 10
✓ Cholecystectomy - Laparoscopic	0 - 10
✓ Cholecystectomy - Open	0 - 15
✓ Hernia Repair – Minor or Major	0 - 10

Tools

Opioid Prescribing Recommendations

[^ Cholecystectomy - Open](#)

0 - 15



CQI Opioid Reporting



MACS Reporting Direction

Opoid Process Measures

Tablet Type 1	Strength	Units		Max Dose (Tabs)	Max Freq/Day	Quantity (Tabs)
Tablet Type 2	Strength	Units		Max Dose (Tabs)	Max Freq/Day	Quantity (Tabs)
Solution Type	Strength	Units	mL	Max Dose (mL)	Max Freq/Day	Quantity (mL)
Other Type	Strength	Units	Form	Max Dose (Product)	Max Freq/Day	Quantity (Product)

Discharge Opoid Prescription

MACS Reporting Direction

Opoid Process Measures

Tablet Type 1	Strength	Units		Max Dose (Tabs)	Max Freq/Day	Quantity (Tabs)
oxycodone	5	mg		2	8	35
Tablet Type 2	Strength	Units		Max Dose (Tabs)	Max Freq/Day	Quantity (Tabs)
Solution Type	Strength	Units	mL	Max Dose (mL)	Max Freq/Day	Quantity (mL)
Other Type	Strength	Units	Form	Max Dose (Product)	Max Freq/Day	Quantity (Product)

Discharge Opioid Prescription

MACS Reporting Direction

Opoid Process Measures

Tablet Type 1	Strength	Units		Max Dose (Tabs)	Max Freq/Day	Quantity (Tabs)
Tablet Type 2	Strength	Units		Max Dose (Tabs)	Max Freq/Day	Quantity (Tabs)
Solution Type	Strength	Units	mL	Max Dose (mL)	Max Freq/Day	Quantity (mL)
oxycodone	5	mg	5	10	6	100
Other Type	Strength	Units	Form	Max Dose (Product)	Max Freq/Day	Quantity (Product)

Discharge Opioid Prescription



Discussion



Thank You



Michigan Acute Care Surgery
September 2021 CQI Meeting

Dictionary Updates and Validation
Kim Kramer PA-C

Tab 3 – Arrival
Point of Entry

2021

Intent: To capture the location of the patient prior to being admitted to your hospital if needed for case mix adjustment.

Definition: To capture the location of the patient prior to being admitted to your hospital.

Variable Options:

- a. Home/Direct Admit (e.g. home, assisted living facility, group home, jail/prison).
Include patients who are directly admitted from a physician’s office or urgent care.
- b. Direct from Skilled Care (e.g. skilled nursing home, transitional care unit, sub-acute hospital, ventilator bed, long-term acute care facility)
Patients directly admitted from a skilled nursing facility.
- c. ED
Patient presents from home to your ED.
If the patient presents to an outside ED and then presents to your ED by private car without transfer paperwork/orders.
Patients who present from a skilled nursing facility to the ED.
- d. **Transfer from Outside Hospital ED**
If the patient presents to an outside ED and then presents to your ED or hospital by private car **with** transfer paperwork/orders.
- e. **Transfer from Outside Hospital** (e.g. inpatient at transferring hospital to inpatient at your hospital)
- f. **Transfer Other** (e.g. psychiatric unit, hospice unit, ambulatory surgery center directly to an inpatient bed)
- g. Emergency Department Only/Not Admitted
A patient who is never admitted and never has surgery.
- h. Other (e.g. Admit via OB/women’s triage, admit from inpatient rehab)

New Variable:
Transport Mode

2022

If “Yes” to **d, e, f** for point of entry:

Transport Mode

Intent: To capture the various ways that a patient is transported to your hospital.

Definition: Identify the mode of transport delivering the patient to your hospital.

Variable Options:

- a. Ground Ambulance
- b. Helicopter Ambulance
- c. Fixed-wing Ambulance
- d. Private/Public Vehicle/Walk-in
- e. Police
- f. Other

Include: All

Exclude:

Note:

Tab 4 – Risk Factors

New Variable: Pregnancy

2022

Intent: To identify patients who are currently pregnant for preoperative risk stratification purposes.

Definition: The patient has one of the following documented:

- Current pregnancy documented in the H&P or progress notes.
- Positive pregnancy test documented preoperatively or on admission for non-operative patients.

Variable Options:

- a. Yes
- b. No

Include: All people determined to be genetic females at birth.

Exclude: All people determined to be genetic males at birth.

Note:

Tab 6 – Appendix

New Variable: STI Testing

2022

Intent: To capture the result of tests that were utilized to determine management options.

Definition: To identify patients who have a positive test result for a sexually transmitted infection (STI) performed to assess for pelvic inflammatory disease in the differential diagnosis of appendicitis.

The patient has had one of the following documented:

- Cultures from the genitalia.
- Blood or urine specimen sent to test for STI.

Variable Options:

- a. Negative (for STI)
- b. Positive (for STI)

Include: All appendicitis patients.

Exclude: N/A

Notes:

- Chlamydia and gonorrhea are the most common STI's causing PID.
- If testing for STI was not performed, select "Negative".

If Index or Readmission Disease = Gallbladder
New Procedures in IR Tab

IR Gallbladder Procedure

Variable Options:

- a. Cholecystostomy Tube Placement
 - b. Cholecystostomy Tube Exchange
 - c. Cholecystostomy Tube Removal
 - d. Gallbladder Ablation
 - e. Gallstone Extraction
 - f. PTC Tube Placement
- Ability to include date and time on up to 3 IR procedures, gallbladder specific options

If Index or Readmission Disease = Gallbladder
New Variable: ERCP Gallbladder Procedure

ERCP Gallbladder Procedure

Variable Options:

- a. Common Bile Duct Stent Placement
 - b. Cystic Duct Stent Placement
 - c. Gallstone or Sludge Removal
- Ability to include date and time on up to 3 procedures performed during ERCP

Tab 12 – Operation 1 150) Conversion

2021

Intent: To track the use of minimally invasive surgery and cases where a minimally invasive option had to be aborted during the procedure.

Definition: The approach used by the surgeon to perform the principle procedure.

Variable Options:

- a. Open – One or more incisions made to expose the underlying tissue/cavity and provide direct access for completion of the procedure.
- b. Laparoscopic – Procedure done through several small incisions and performed through the vision of the laparoscope.
- c. Laparoscopic to Open – A procedure that is started laparoscopic but due to operative findings (e.g. preexisting condition, iatrogenic injury, safety) must be converted to an open procedure.

Include: All patients who have a surgical procedure in the operating room or critical care unit.

Exclude: N/A

Notes:

2022

Intent: To track the use of minimally invasive surgery and cases where a minimally invasive option had to be aborted during the procedure.

Definition: The approach used by the surgeon to perform the principle procedure.

Variable Options:

- a. Open – One or more incisions made to expose the underlying tissue/cavity and provide direct access for completion of the procedure.
- b. Laparoscopic – Procedure done through several small incisions and performed through the vision of the laparoscope.
- c. Laparoscopic to Open – A procedure that is started laparoscopic but due to operative findings (e.g. preexisting condition, iatrogenic injury, safety) must be converted to an open procedure.
- d. Robotic Technique – The surgeon utilizes a robotic device for assistance during the case.
- e. Robotic Converted to Open – A procedure that is started using a robotic device but due to operative findings (e.g. preexisting condition, iatrogenic injury, safety) must be converted to an open procedure.

Include: All patients who have a surgical procedure in the operating room or critical care unit.

Exclude: N/A

Notes:

Tab 14 – Intraoperative

164) Bowel Anastomosis Technique

2021

Intent: To track the type of bowel anastomosis performed during the surgery for comparison of complication rates.

Definition: What type of anastomosis technique was documented for this patient.

Variable Options:

- a. Stapled with an EEA (or circular) stapler (end-to-end)
- b. Stapled with an EEA (or circular) stapler (side-to-end)
- c. Stapled with an EEA (or circular) stapler (with pouch or coloplasty created)
- d. Stapled with a GIA stapler (side-to-side) – “functional end to end”
- e. Hand-sutured through the abdomen
- f. Hand-sutured through the anus
- g. No anastomosis was performed

Include: All patients who have a surgical procedure in the operating room or critical care unit.

Exclude: Patients who do not have a surgical procedure.

2022

Intent: To track the type of bowel anastomosis performed during the surgery for comparison of complication rates.

Definition: What type of anastomosis technique was documented for this patient.

Variable Options:

- a. Stapled with an EEA (or circular) stapler (end-to-end)
- b. Stapled with an EEA (or circular) stapler (side-to-end)
- c. Stapled with an EEA (or circular) stapler (with pouch or coloplasty created)
- d. Stapled with a GIA stapler (side-to-side) – “functional end to end”
- e. Hand-sutured through the abdomen
- f. Hand-sutured through the anus
- g. Combination stapled with hand-sutured
- h. No anastomosis was performed

Include: All patients who have a surgical procedure in the operating room or critical care unit.

Exclude: Patients who do not have a surgical procedure.

Tab 11 – Operation 155) Operation (pertaining to SBO)

2021

Intent: To track select procedures performed during surgical management for small bowel obstruction.

Definition: Identify which of the variable options below occurred during surgery for small bowel obstruction.

Variable Options:

- a. Lysis of Adhesions
 - i. Yes
 - ii. No
- b. Bypass
 - i. Yes
 - ii. No
- c. Resection with Anastomosis
 - i. Yes
 - ii. No
- d. Resection with Stoma
 - i. Yes
 - ii. No
- e. Anti-Adhesion Barrier Use
 - i. Yes
 - ii. No
- f. Hernia Repair Primary
 - i. Yes
 - ii. No
- g. Hernia Repair Mesh
 - i. Yes
 - ii. No

Include: Patients who had surgical management of small bowel obstruction.

Exclude: N/A

Notes: Leave all fields checked “No” if surgery was not performed (medical management).

2022

Intent: To track select procedures performed during surgical management for small bowel obstruction.

Definition: Identify which of the variable options below occurred during surgery for small bowel obstruction.

Variable Options:

- a. Lysis of Adhesions
 - i. Yes
 - ii. No
- b. Bypass
 - i. Yes
 - ii. No
- c. Resection with Anastomosis
 - i. Yes
 - ii. No
- d. Resection with Stoma
 - i. Yes
 - ii. No
- e. Anti-Adhesion Barrier Use
 - i. Yes
 - ii. No
- f. Hernia Repair Primary
 - i. Yes
 - ii. No
- g. Hernia Repair Mesh
 - i. Yes
 - ii. No
- i. Milking the bowel
 - i. Yes
 - ii. No

Include: Patients who had surgical management of small bowel obstruction.

Exclude: N/A

Tab 11 – Operation 156) Operative Findings (pertaining to SBO)

2021

Intent: To track select surgeon findings during surgical management of small bowel obstruction.

Definition: Identify which of the variable options below were found during surgery for small bowel obstruction.

Variable Options:

- a. Negative Exploration
 - i. Yes
 - ii. No
- b. Single Band Adhesion
 - i. Yes
 - ii. No
- c. Multiple Band/Dense Adhesion
 - i. Yes
 - ii. No
- d. Obstruction
 - i. Yes
 - ii. No
- e. Ischemic/Dead Bowel
 - i. Yes
 - ii. No
- f. Inadvertent Enterotomy
 - i. Yes
 - ii. No
- g. Other
 - i. Yes
 - ii. No

Include: Patients who had surgical management of small bowel obstruction.

Exclude: N/A

Notes: Leave all fields checked “No” if surgery was not performed (medical management).

2022

Intent: To track select surgeon findings during surgical management of small bowel obstruction.

Definition: Identify which of the variable options below were found during surgery for small bowel obstruction.

Variable Options:

- a. Negative Exploration
 - i. Yes
 - ii. No
- b. Single Band Adhesion
 - i. Yes
 - ii. No
- c. Multiple Band/Dense Adhesion
 - i. Yes
 - ii. No
- d. Obstruction
 - i. Yes
 - ii. No
- e. Ischemic Bowel
 - i. Yes
 - ii. No
- f. Dead Bowel
 - i. Yes
 - ii. No
- g. Inadvertent Enterotomy
 - i. Yes
 - ii. No
- h. Other
 - i. Yes
 - ii. No

Include: Patients who had surgical management of small bowel obstruction.

Exclude: N/A

Tab 15 – Hernia

NEW Variable: Established Care

2022

Intent: To capture instances where the patient has established care with a general surgeon for their hernia, but the hernia repair has not occurred yet.

Definition: Identify if a patient had established care with a general surgeon for their hernia prior to this admission.

Variable Options:

- a. Yes
- b. No

Include: All patients who had surgery for a hernia repair.

Exclude: N/A

Notes:

- Examples of why patients may not be scheduled for an elective hernia repair include but are not limited to high BMI, current tobacco use, cardiac or pulmonary problems, immunosuppression, etc.

Time frame for this??

Tab 18 – Discharge
NEW Variable: Opioid Reporting

24 h / 3 = 8

oxyCODONE 5 mg tablet
Refills: 0
Commonly known as: ROXICODONE

5-10 mg, Oral, EVERY 3 TO 4 HOURS PRN,
You may also cut tablets in 1/2 and take less
Quantity: 35 tablet

Opioid Process Measures

Tablet Type 1	Strength	Units		Max Dose (Tabs)	Max Freq/Day	Quantity (Tabs)
oxycodone	5	mg		2	8	35
Tablet Type 2	Strength	Units		Max Dose (Tabs)	Max Freq/Day	Quantity (Tabs)
Solution Type	Strength	Units	mL	Max Dose (mL)	Max Freq/Day	Quantity (mL)
Other Type	Strength	Units	Form	Max Dose (Product)	Max Freq/Day	Quantity (Product)

CPT coding

- Feedback on hospital CPT coding accuracy
- ICD-10 PCS to CPT crosswalk
- CPT code resources
 - MSQC CPT code spreadsheet
 - *2021 Coders' Desk Reference for Procedures* (This book contains procedure descriptions in layman's terms). Author: Optum360° ISBN: 978-1-62254-624-4, List Price \$139.95

MACS Validation

- Starting January 2022
- Sign up survey will be sent out soon
- 12 months of data prior to validation
- Validators: Kim Kramer and Shauna Di Pasquo

Case Selection Algorithm

Two cases selected
from each disease
category

- General sort to select cases with:
- mortality
 - length of stay > 14 days and no occurrence listed

Non-selected cases after general sort

Disease specific sort to select cases with:

- Appendix:
 - Complicated appendix with no pre-op sepsis or severe sepsis.
 - Fecalith present on CT but no surgery to remove appendix performed.
 - Non-operative management of appendicitis, but no hospital IV antibiotics selected.
 - Any case with AAST score of 5.
- Gallbladder:
 - Any gallbladder case where cholecystectomy is performed and LOS > 10 days with no cholecystectomy specific occurrences (CBD injury, cystic duct leak, retained stone).
 - Any gallbladder case with retained stone or cystic duct leak occurrence but no secondary ERCP performed.
 - Any gallbladder case with AAST score of 3, 4, or 5.
- Small Bowel:
 - SBO related to adhesions, but no prior abdominal procedures performed.
 - Gastrografin challenge negative and no operation for SBO.
 - Gastrografin challenge positive and surgery for SBO performed.
 - Operative SBO case with LOS > 20 days and no ileus occurrence recorded.
- Exploratory Laparotomy:
 - Exploratory laparotomy with hypercapnic respiratory failure but no ICU admission.
 - Exploratory laparotomy with days on ventilator > 1 but no ICU admission.
 - Exploratory laparotomy with no antibiotics for intraabdominal sepsis given.
 - Any exploratory laparotomy case with anastomotic leak.
 - Any exploratory laparotomy with no pre-op abdominal x-ray or CT recorded.

Selected cases

MACS Website

VALIDATION 

[IT Letter](#)

[Remote Validation Process](#)

Questions



Thank you

