

The Inspiring Journey of Quality Improvement in a Rural CAH

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Samaritan North Lincoln Hospital



Inspiring Journey of Quality Improvement in a Rural CAH

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Samaritan
Health Services



Inspiring Journey of Quality Improvement in a Rural CAH

Disclosure
None Financial

**Samaritan
North
Lincoln
Hospital**



Samaritan
Health Services

Definition

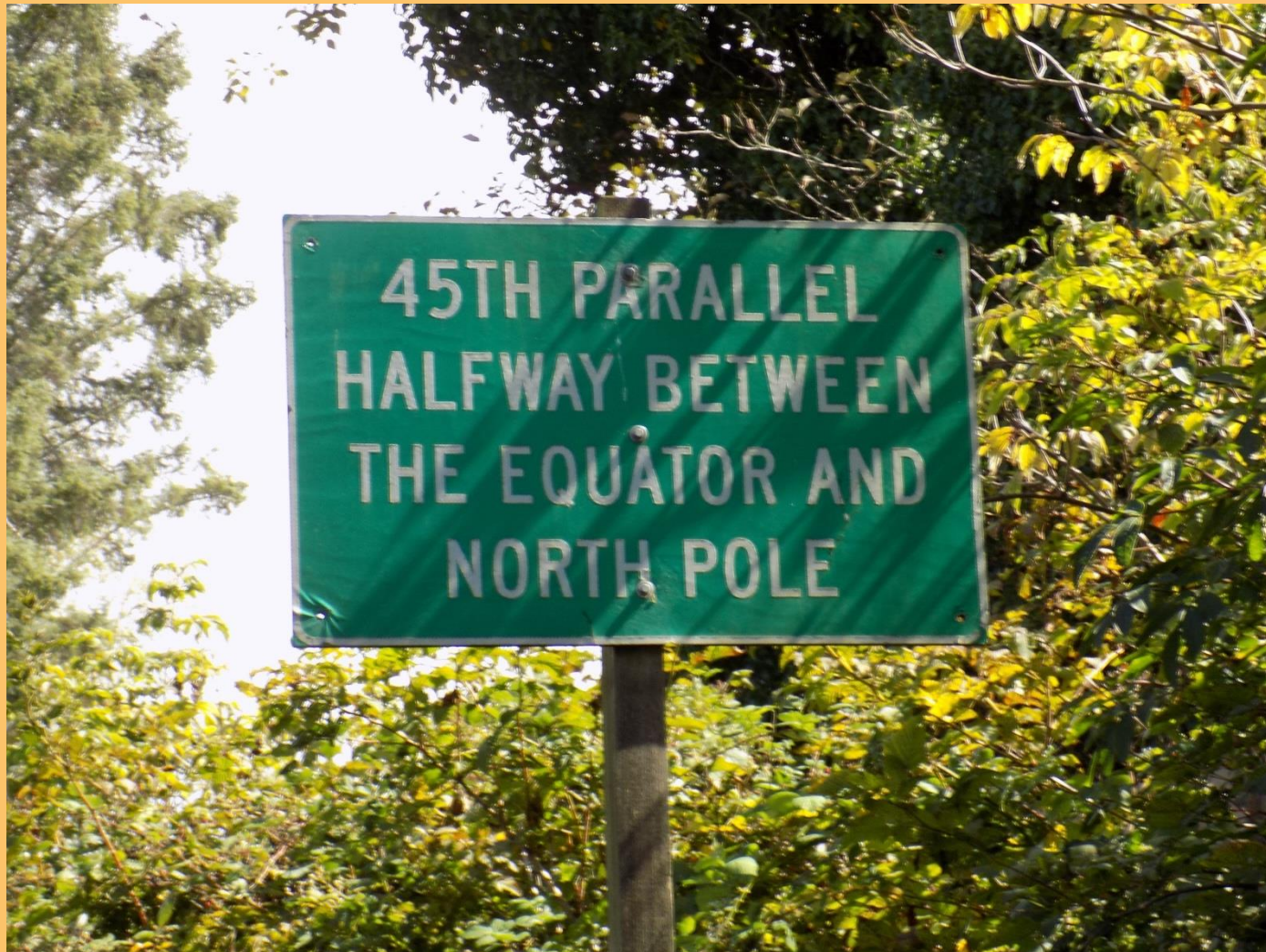
\ kwa-le-te \im-pruv-ment

Systematic, continuous process use and healthcare and other feels to make services safer, more effective, efficient, and patient centered.

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Inspiring Journey of Quality Improvement in a Rural CAH

- + Show our work
- + Share our results
- + Discuss our process of improvement
- + Collaboration benefits (NSQIP and Others)

Inspiring Journey of Quality Improvement in a Rural CAH

- Unconscious Unawareness
- Conscious Unawareness
- Conscious Awareness
- Unconscious Awareness

Inspiring Journey of Quality Improvement in a Rural CAH

Level of improvement

Stage 1: Compliance & Awareness

Stage 2: Organized Programs & Protocols

Stage 3: Continuous improvement

Stage 4: High reliability and excellence (HRO)

Inspiring Journey of Quality Improvement in a Rural CAH

1. Look into the Problem
2. Look for Patterns
3. Speak up
4. Form Team
5. Root cause analysis

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Level of evidence:

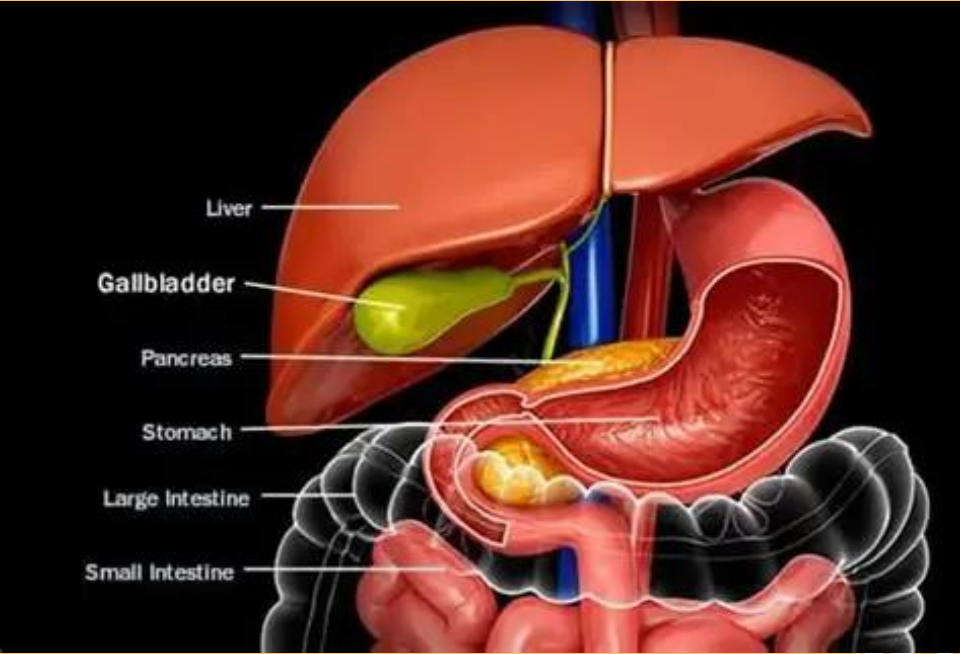
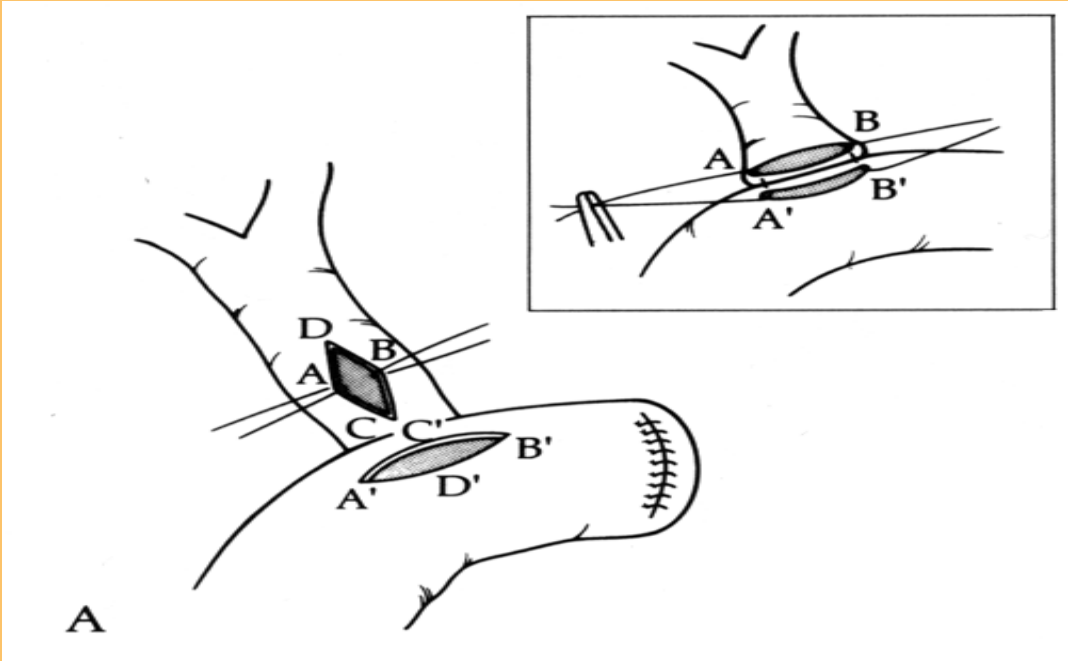
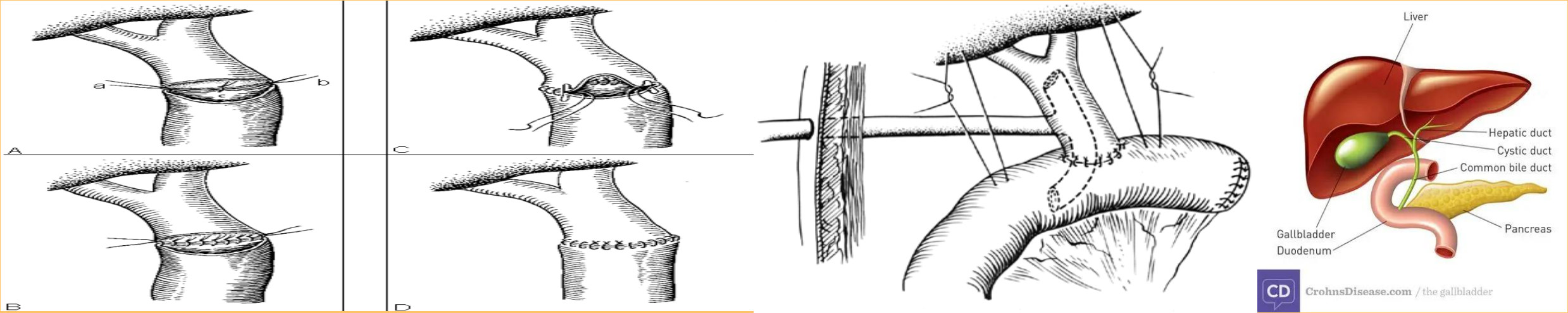
- Level IA At least 2 RCT Homogenous, high
- Level IB RCT some limitations, moderate
- Level IC RCT with serious limitation, average
- Level IIA Well designed \pm RCT, retrospective or prospective weak recommendation
- Level IIB Moderate quality and weak recommendation
- Level IIC Weak quality not recommended RCT, randomized controlled trials
- Level III Case series, multiple
- Level IV Cases series, poor quality
- Level V Expert opinion

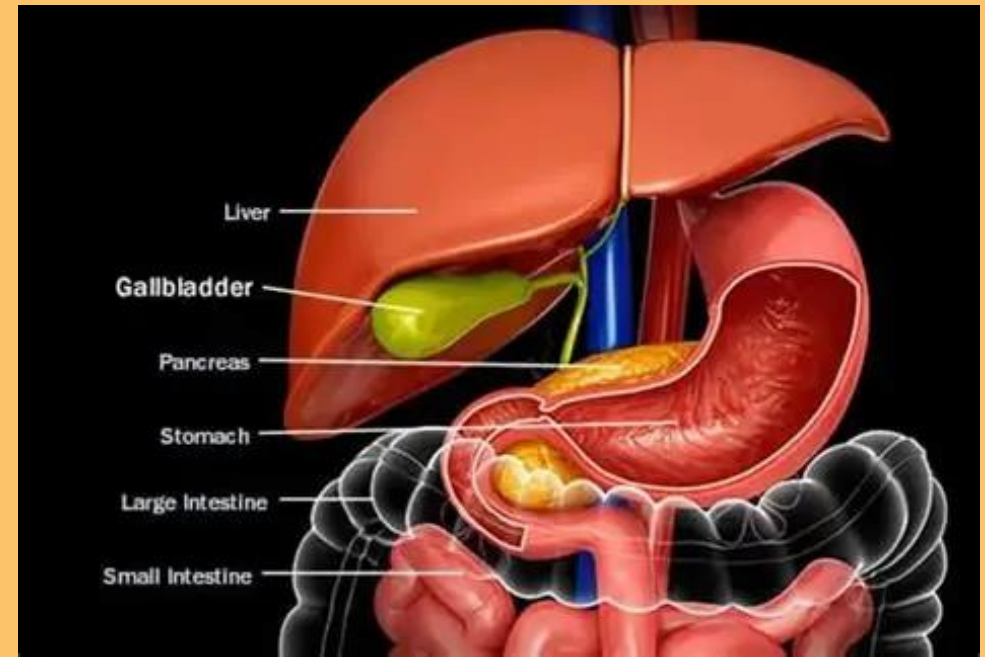
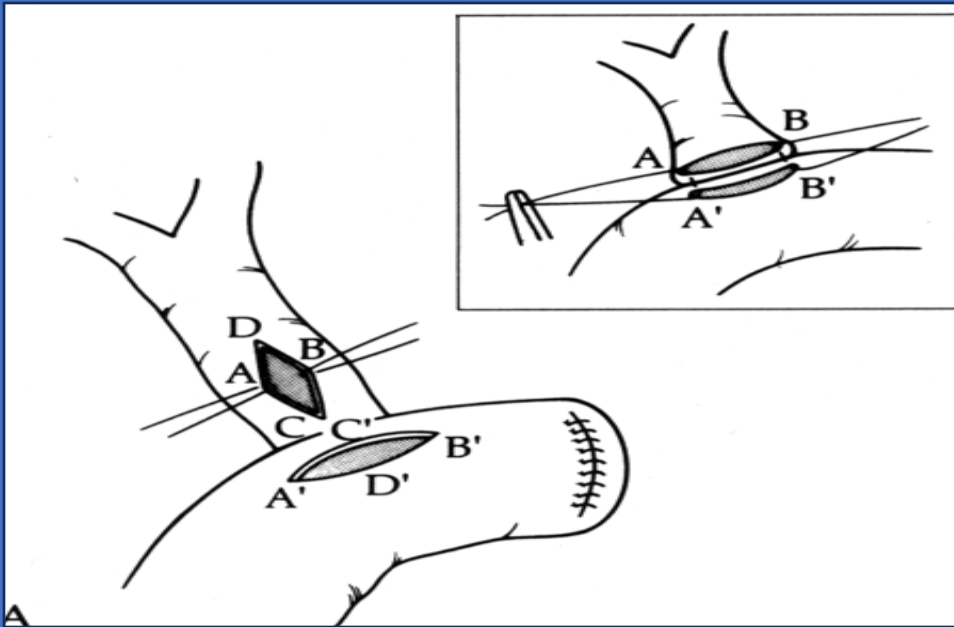
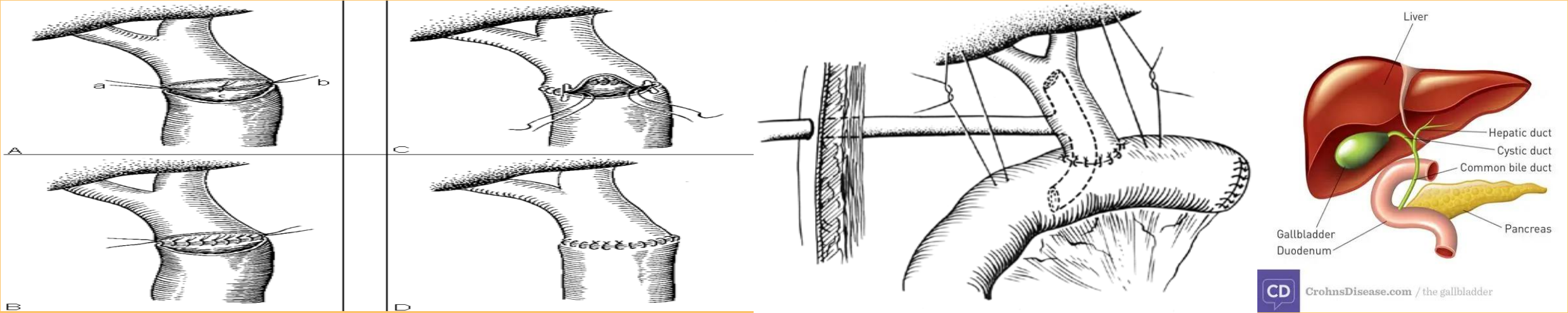
Subgroup (Number of Trials)	Effect Size (95% CI)	Q Test (<i>P</i>)	Egger Test (<i>P</i>)
Blinded with an ITT (<i>n</i> = 9)	0.12 (−0.01 to 0.25)	$\chi^2 = 17$ (0.03)	0.01 (0.62)
Blinded without an ITT (<i>n</i> = 9)	0.54 (0.23–0.84)	$\chi^2 = 5.91$ (0.66)	0.00 (0.93)
Unblinded with an ITT (<i>n</i> = 2) ^a	1.07 (0.50–1.64)	—	—
Unblinded without an ITT (<i>n</i> = 53)	1.05 (0.83–1.27)	$\chi^2 = 191$ (<0.01)	0.00 (0.91)
CI indicates confidence interval; ITT, intention-to-treat analysis.			
^a Q and Egger tests are not performed because of the small number of trials.			



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A QUALITY PROGRAM
of the AMERICAN COLLEGE
OF SURGEONS

**American College of Surgeons
National Surgical Quality Improvement Program**

Semiannual Report, July 2024

Dates of Surgery: January 1, 2023 – December 31, 2023
Samaritan North Lincoln Hospital



Program Overview

- ACS NSQIP is a data-driven, risk-adjusted, outcomes-based program to measure and improve the quality of surgical care.
- Benefits of participation include:
 - Identifying quality improvement targets
 - Improving patient care and outcomes
 - Decreasing institutional healthcare costs

History of the ACS NSQIP

- Originated in the Veterans Health Administration and has been operational since 1991
- In 2001, ACS received funding to implement a NSQIP pilot program in private sector hospitals.
- In 2004, ACS expanded the program to additional private sector hospitals.
- In 2011, the ACS launched different NSQIP participation options tailored to hospital needs.
- The 2017 ACS NSQIP Conference is renamed the ACS Quality and Safety Conference and includes the ACS NSQIP Pediatric, MBSAQIP and College Geriatric, Cancer, and Trauma Programs.

Program Overview (Continued)

- Includes general and vascular surgery cases as well as subspecialties and targeted procedures
- Program uses clinical data, not administrative data
- Outcomes assessed at 30 days after index surgery (inpatient or outpatient)
- Highly standardized and validated data definitions
- SCR training/certification and hospital audits insure data quality
- Advanced data analytics provide risk adjustment and smoothing (reliability adjustment for small sample sizes)
- Provides data-driven tools for clinical decision making

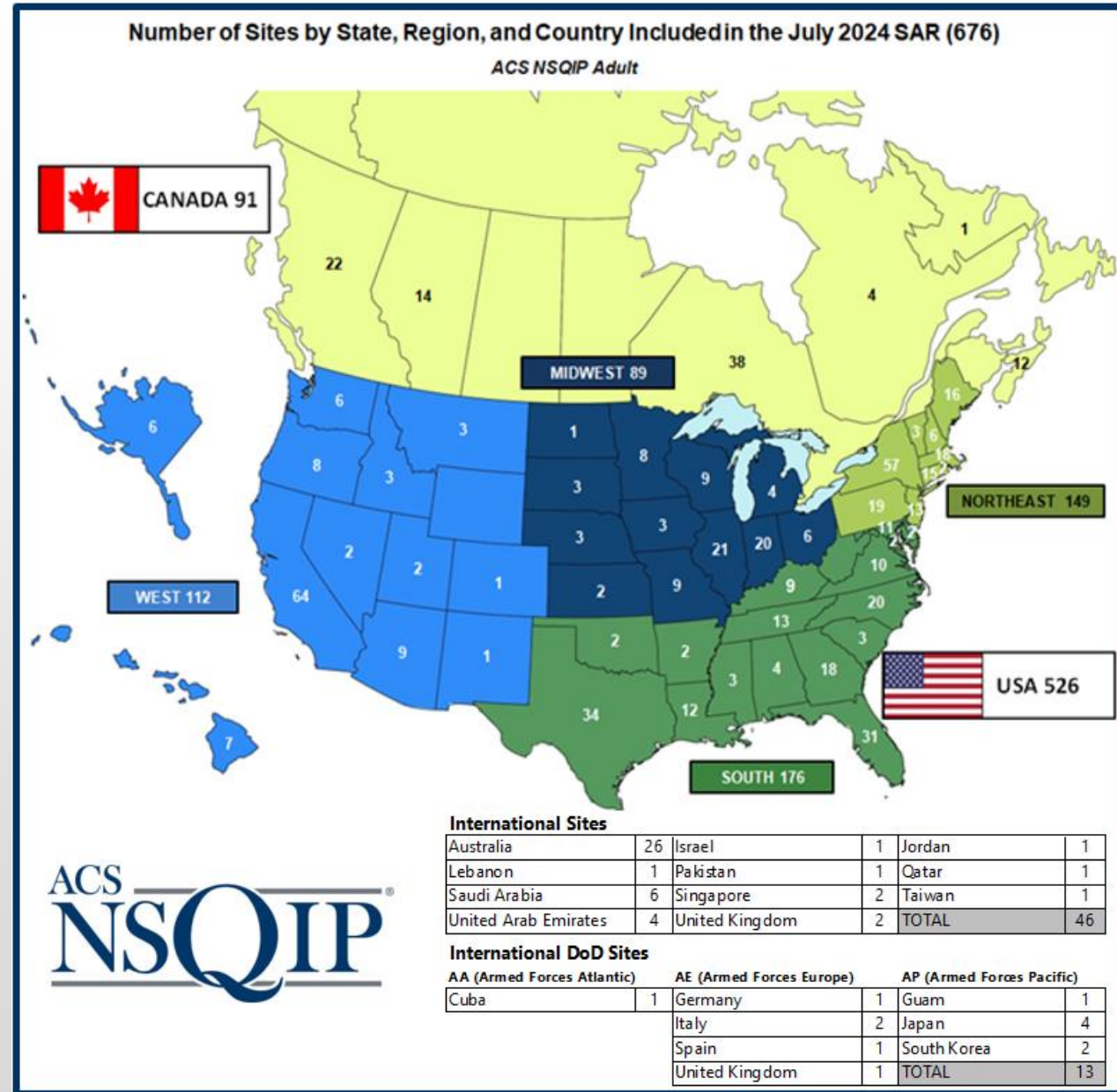
Program Overview (Continued)

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Additional Program Benefits

- Risk-adjusted reports benchmark hospitals and collaboratives to national data
- Real time “On-demand” risk adjustment and heat maps to identify problem areas
- National conferences and collaborative meetings to assist in reviewing and interpreting results
- Best practices tools, including evidence-based guidelines and case studies developed by leading U.S. surgeons
- Data validation and audits to ensure compliance to data standards

Participating Hospitals



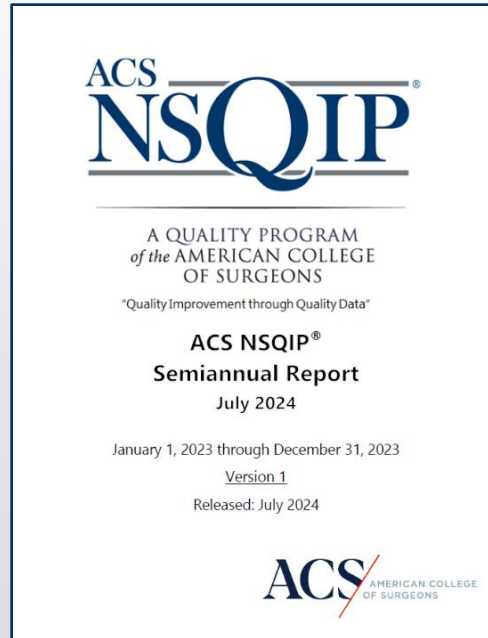
Number of Cases and Sites Included in the SAR Over Time

During the report period of January 1, 2023 – December 31, 2023, 676 sites submitted data for inclusion in this Semiannual Report.

SAR Release	Cases	Sites	SAR Release	Cases	Sites
July 2006	33,390	37	January 2016	820,736	588
January 2007	64,153	69	July 2016	894,165	615
July 2007	118,008	121	January 2017	957,499	664
January 2008	173,411	143	July 2017	999,597	680
July 2008	211,407	173	January 2018	1,029,502	704
January 2009	247,622	189	July 2018	1,028,484	708
July 2009	271,368	203	January 2019	1,021,483	715
January 2010	300,575	227	July 2019	1,020,313	722
July 2010	336,190	237	January 2020	1,044,028	718
January 2011	341,833	243	July 2020	1,076,258	719
July 2011	363,431	258	January 2021	985,760	717
January 2012	398,906	289	July 2021	902,789	706
July 2012	443,861	316	January 2022	946,437	691
January 2013	503,402	358	July 2022	983,660	685
July 2013	543,885	374	January 2023	1,005,884	706
January 2014	596,272	407	July 2023	1,011,738	702
July 2014	657,718	445	January 2024	1,004,395	689
January 2015	700,721	470	July 2024	994,332	676
July 2015	750,937	531			

Quality Improvement Process

1. Hospitals abstract data.
2. Data are analyzed by ACS NSQIP.
- 3. Data are reported back to hospitals (The SAR).**



4. Hospitals act on their data.
5. Hospitals monitor interventions with data.

ACS NSQIP Case Selection

Systematic Sampling Process

- 8-day cycle eliminates bias due to day of week as associated with surgeon operative schedules
- Cases are selected based on the inclusion/exclusion criteria of the hospital's selected participation option

Inclusion/Exclusion Criteria

- Inclusion based on CPT[®] codes of major cases and is updated annually
- Exclusion criteria:
 - Under age 18
 - Trauma and Transplant
 - ASA class 6

Data Collection

Preoperative data

- Demographics
- Clinical laboratory variables

Intraoperative data

- Surgical Profile
- Clinical variables and complications

Postoperative data

- 30-day outcomes (inpatient and outpatient)
- Complications and discharge variables

Custom fields

- Allows sites to create their own variables for internal tracking and evaluation

Data Available to Hospitals

Registry Reports

- Permits immediate evaluation on non-risk adjusted data and comparisons to similar types of hospitals
- Hospitals can download case details for selected cases
- Custom reports are available upon request

On-demand Benchmarking

- Risk-adjusted and smoothed rates and comparison to the average ACS NSQIP hospital
- Monitor performance changes over time
- Quality estimates for unique groups of patients

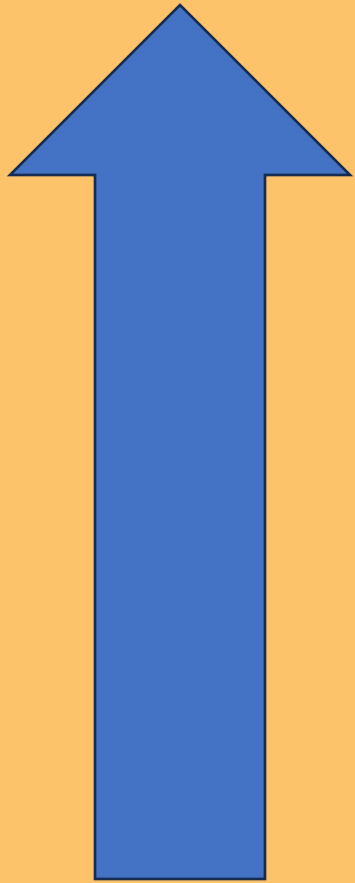
Semiannual Reports (SARs)

- Risk-adjusted and smoothed odds ratios and comparison to the average ACS NSQIP - modeled for a single data year using gold-standard methodology

Participant Use Files (PUFs)

- De-identified Research file contains all cases reported from 2005 to date

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Summate that data
Program to Graphs

ACS system

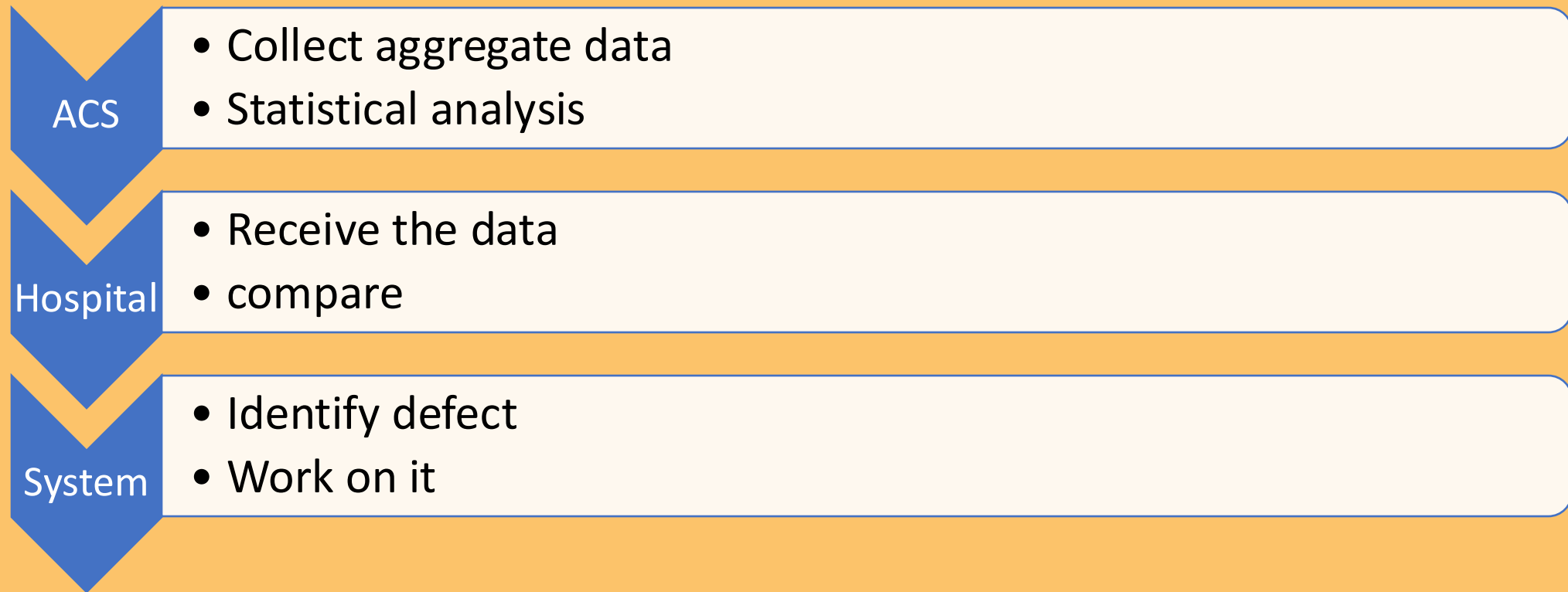
Gather information
Load data

ACS

Targeted Procedures
Variables and Occurrences

Hospital

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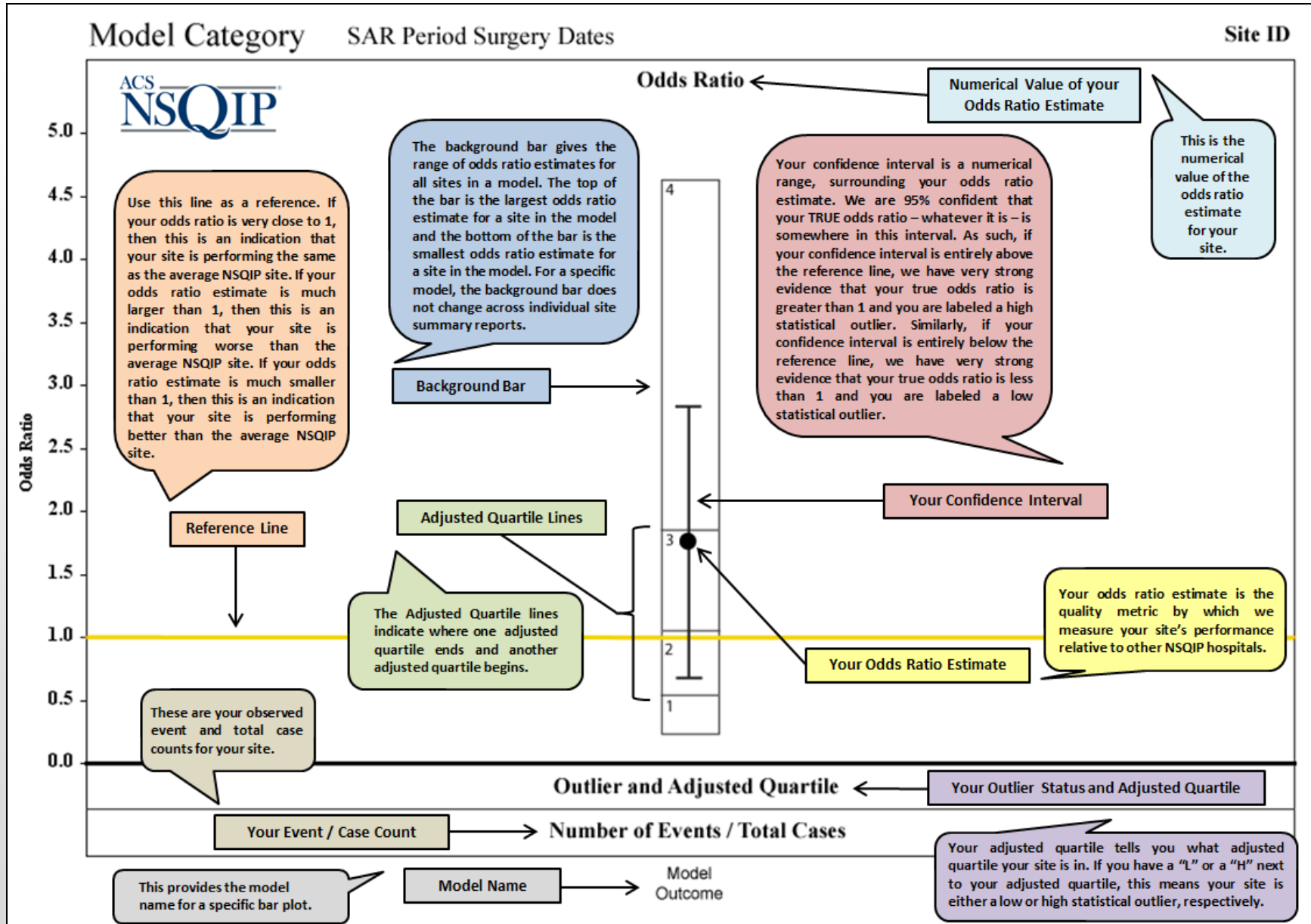
Interpretation of Results

- “Exemplary” is assigned if the hospital is a low statistical outlier or is in the 1st quartile of adjusted OR percentiles.
- “Needs Improvement” is assigned if the hospital is a high statistical outlier or is in the 4th quartile of adjusted OR percentiles.
- “As Expected” is assigned if the hospital is neither a statistical outlier nor in the 1st or 4th OR quartile.
- Complete explanations of statistical methods and how results should be interpreted are in the SAR and available on the NSQIP Resource Portal.

NOTE FROM THE JULY 2023 SAR: Model presentation – renaming and reordering

To improve clarity and logic, a significant number of models were renamed and / or reordered beginning with the July 2023 SAR. For a detailed description of this, please see the Important Changes section of the July 2023 ACS NSQIP Semiannual Report document (Pages 10 and 11).

SAR Bar Plot Overview

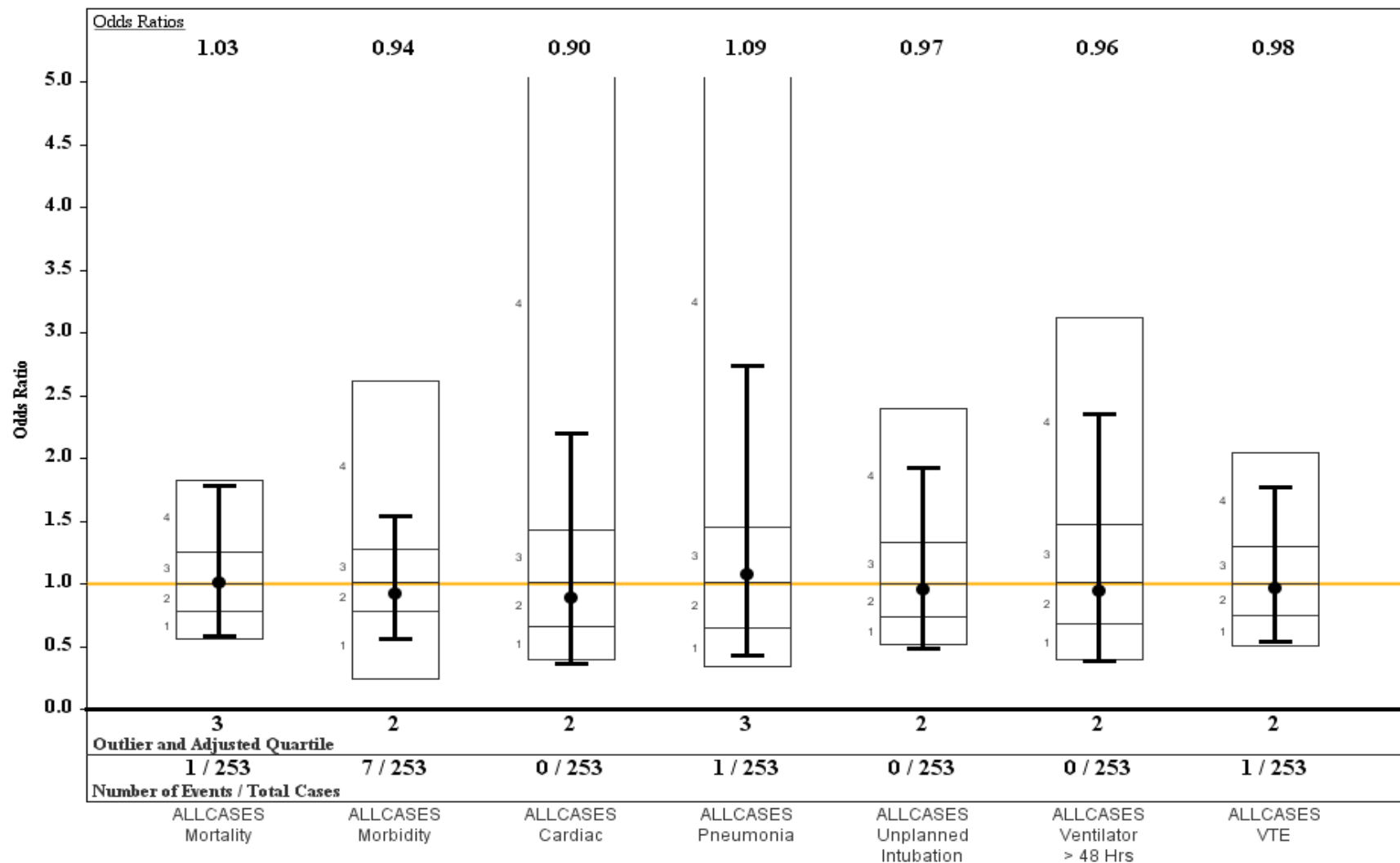


All Cases

All Cases

01/01/23 - 12/31/23

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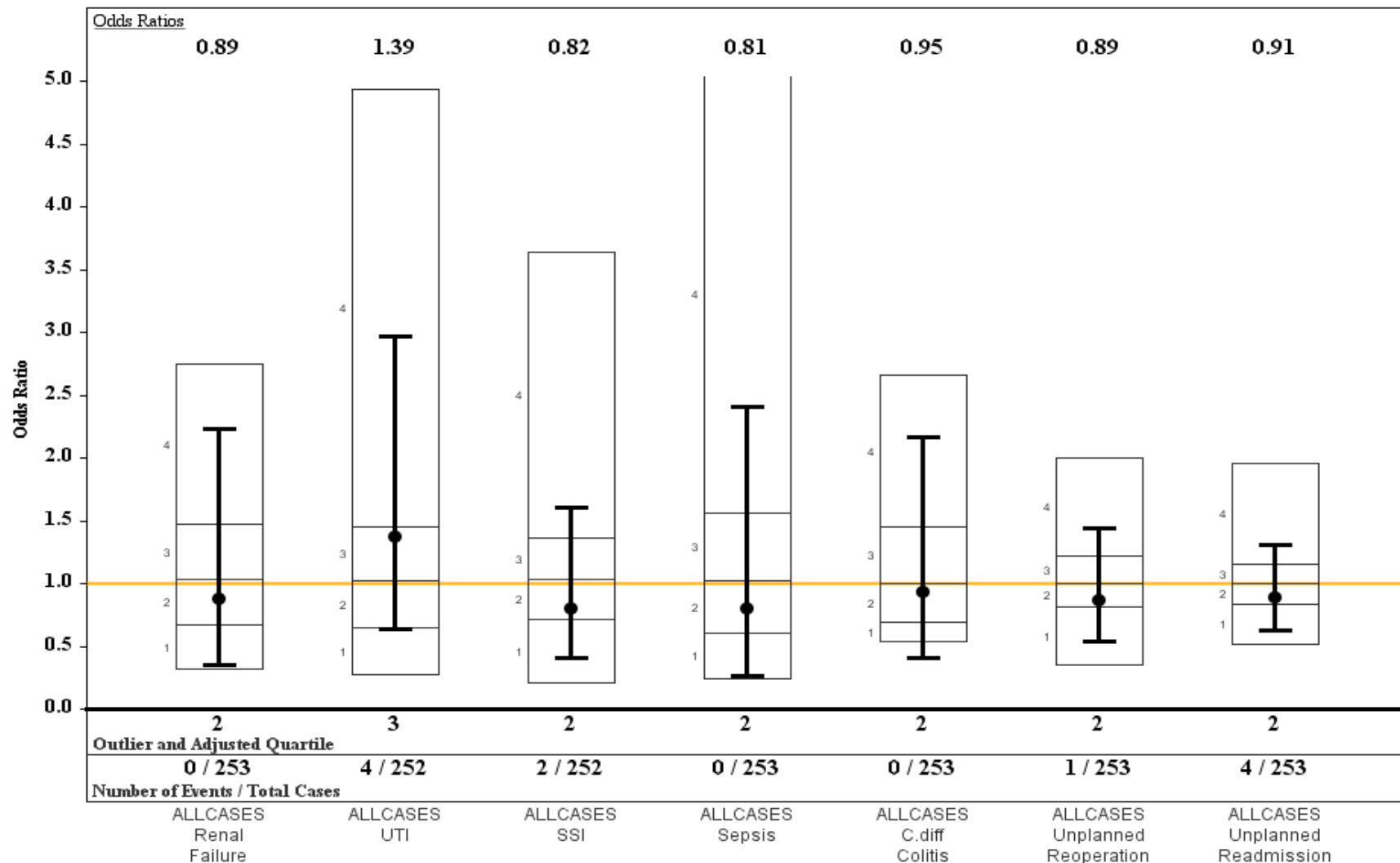


All Cases

All Cases

01/01/23 - 12/31/23

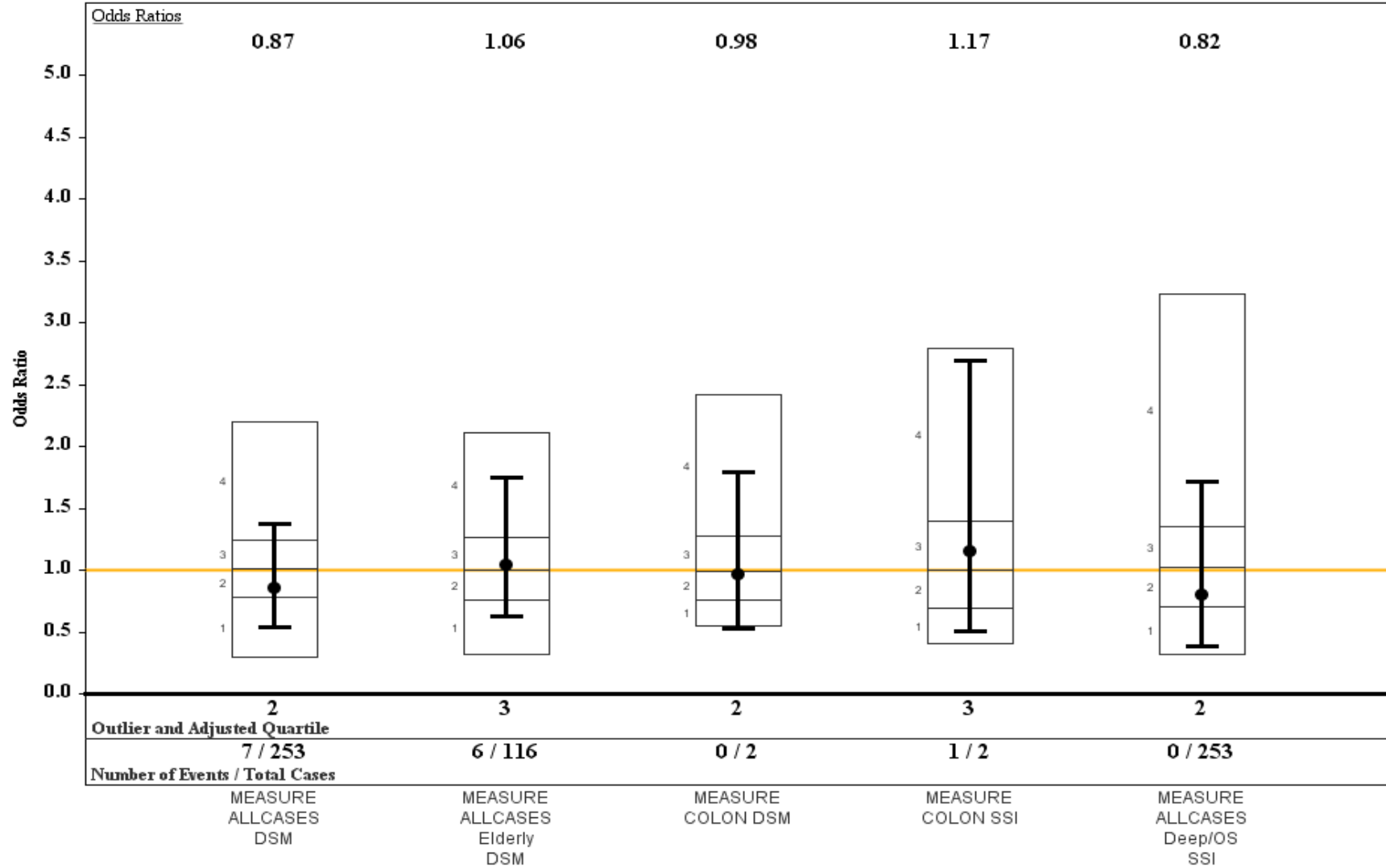
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Measure

Measure 01/01/23 - 12/31/23

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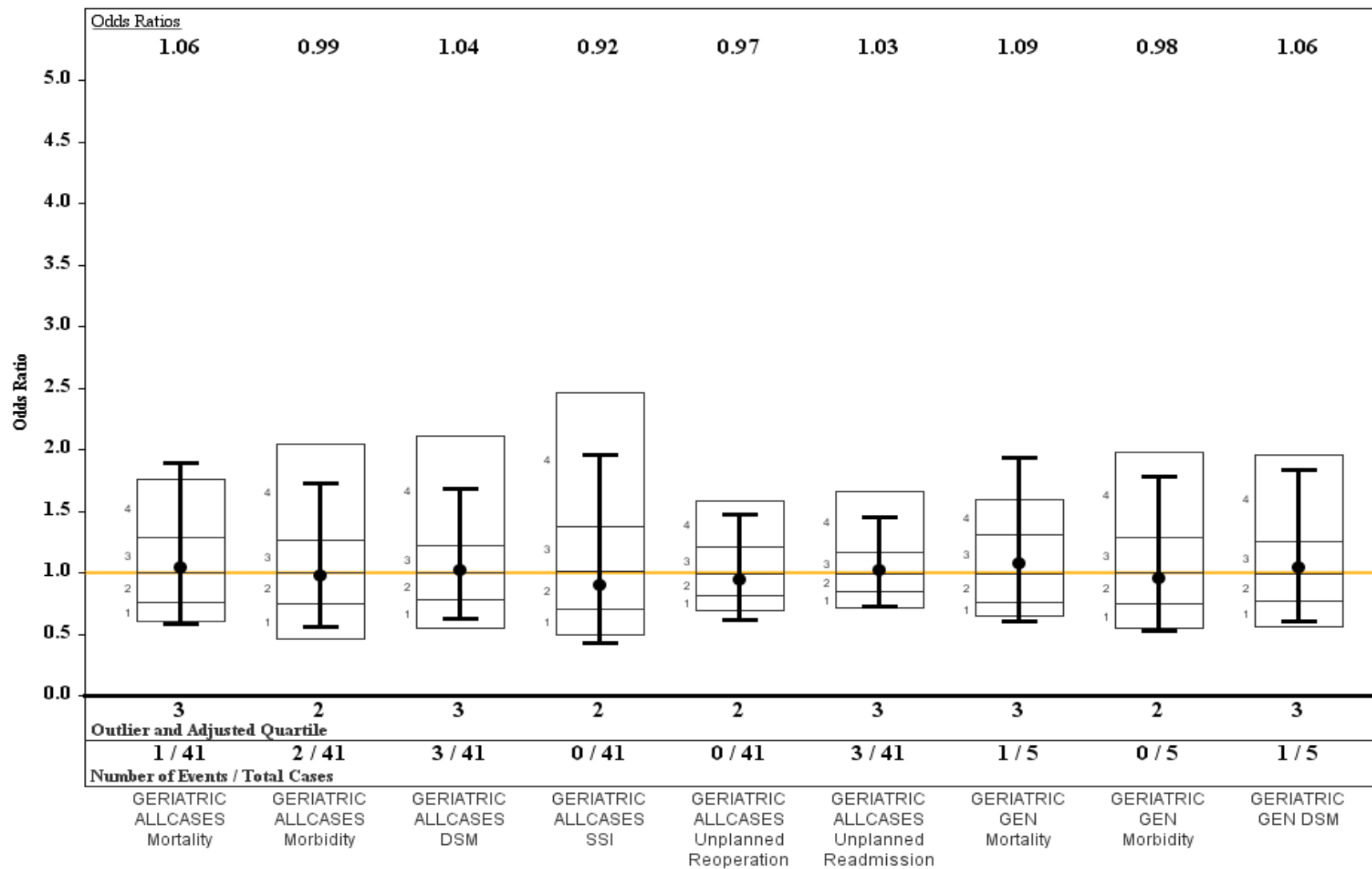


Geriatric

Geriatric

01/01/23 - 12/31/23

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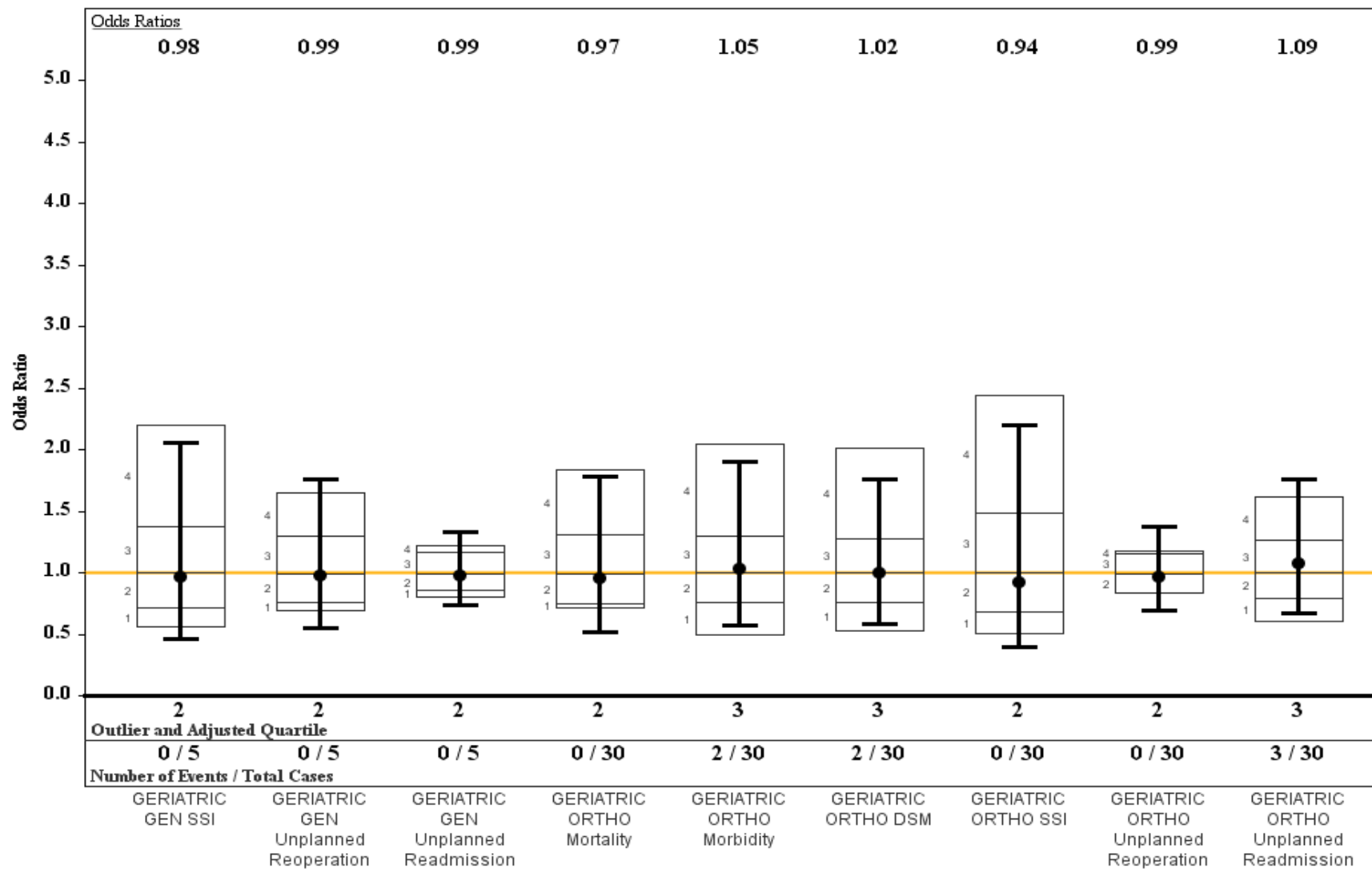


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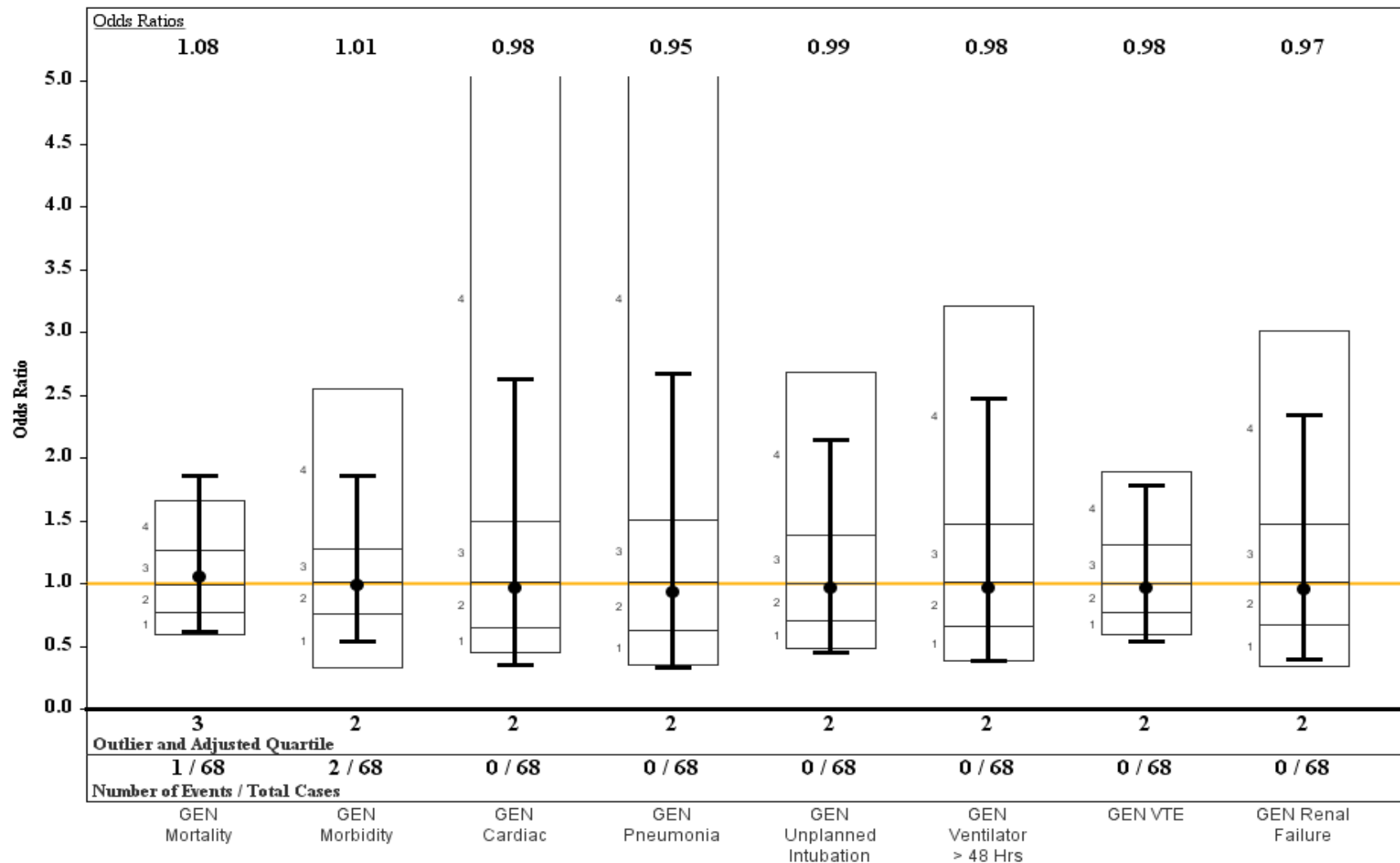


General

General

01/01/23 - 12/31/23

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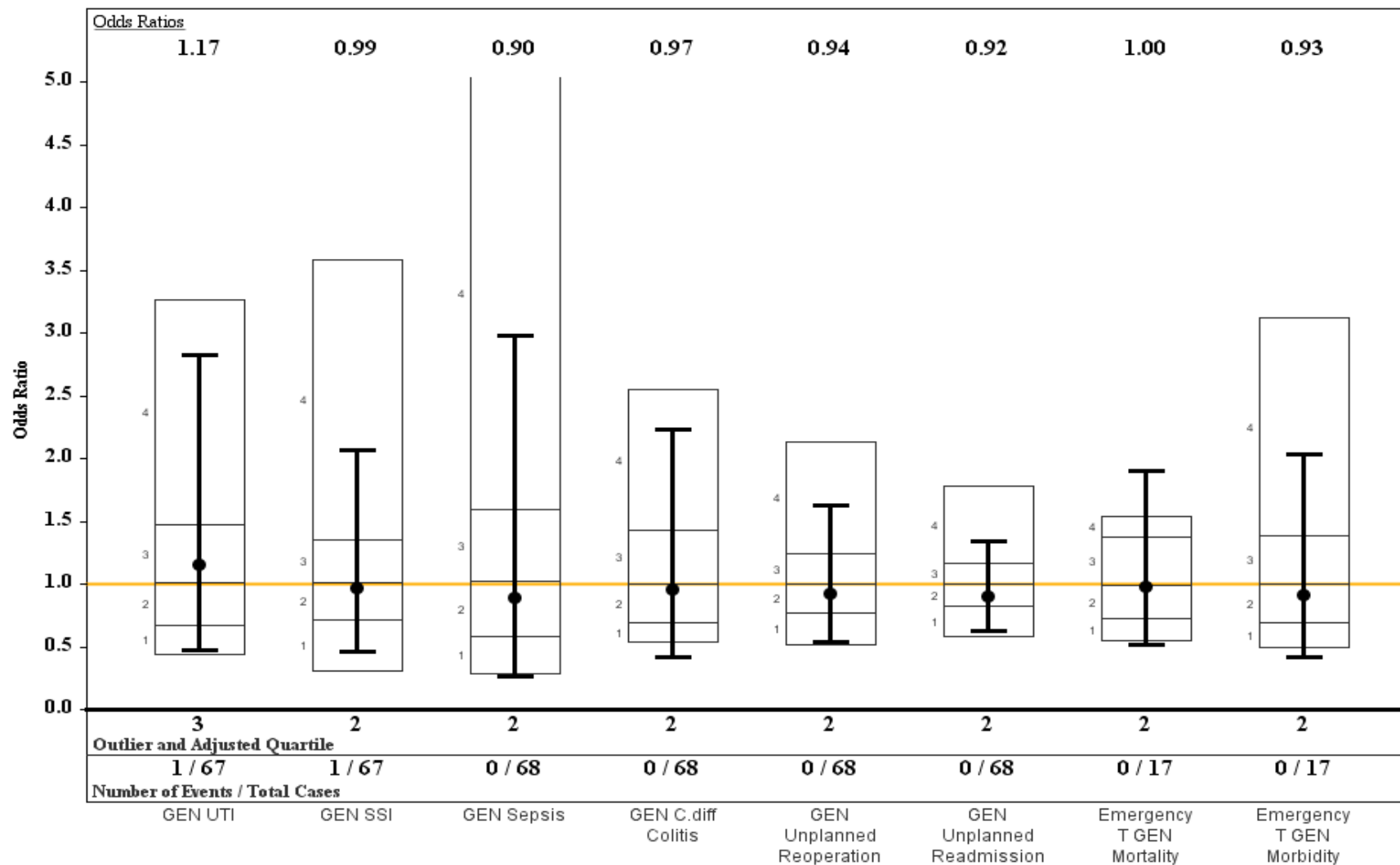


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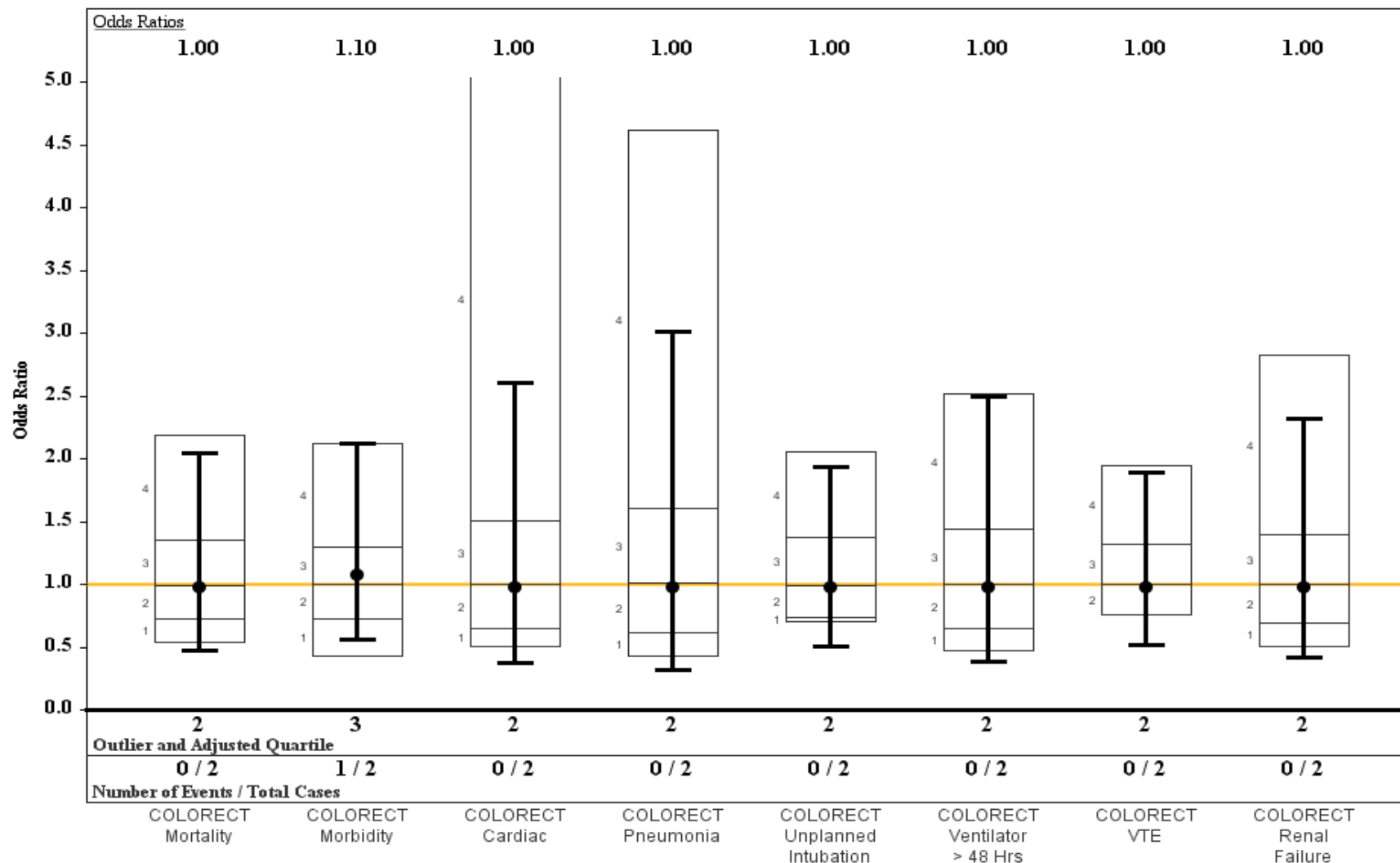


Colorectal

Colorectal

01/01/23 - 12/31/23

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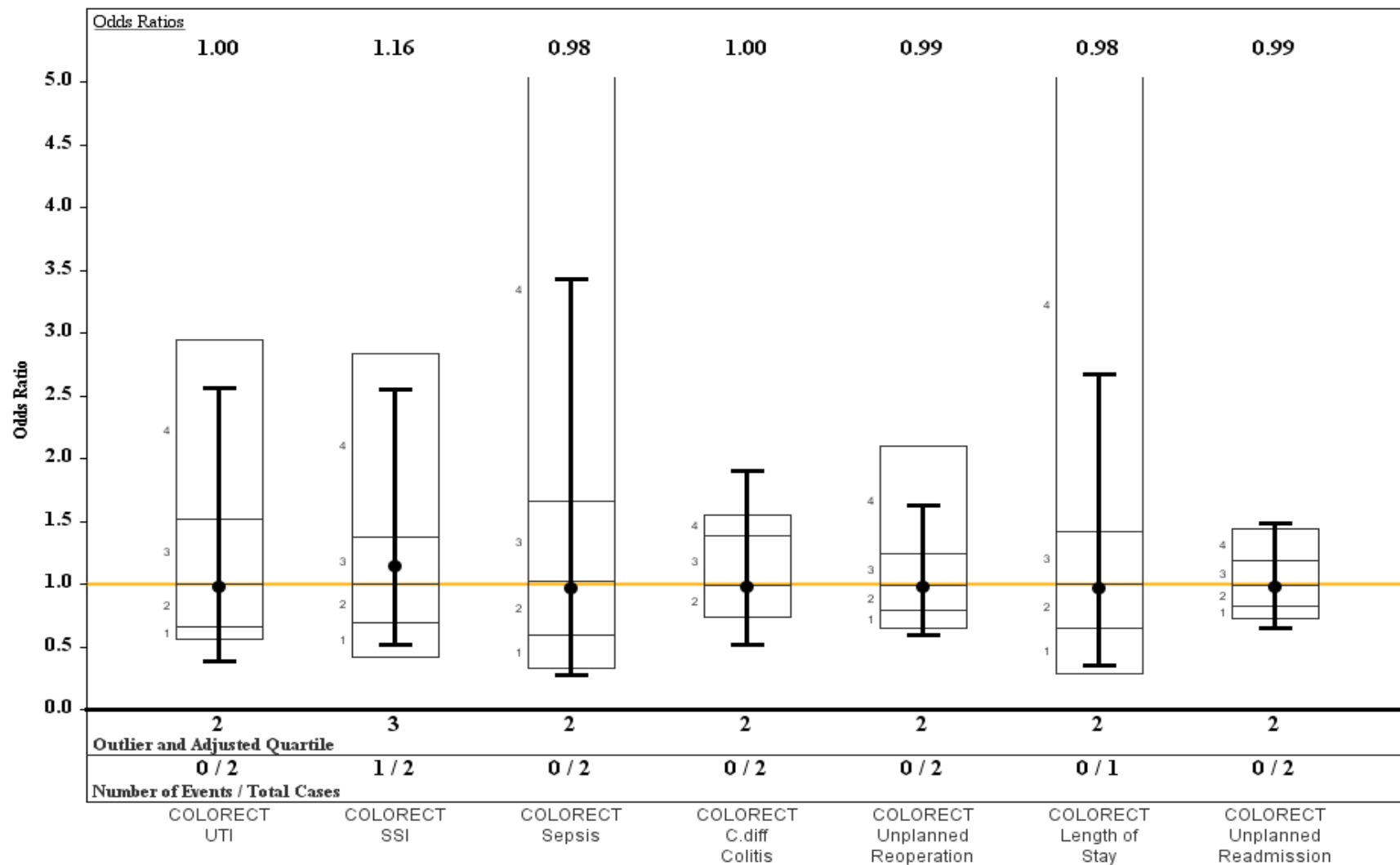


Colorectal

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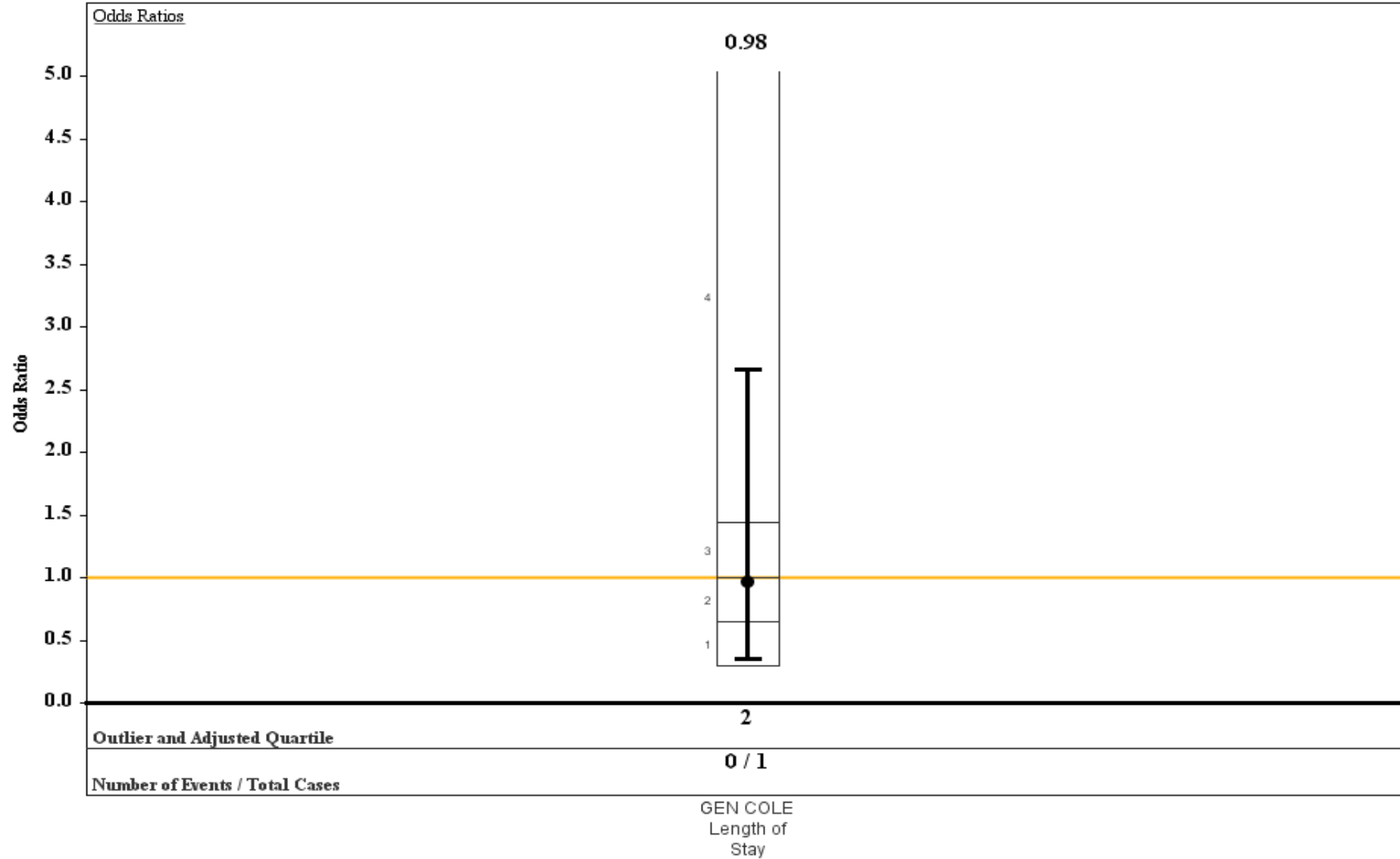


Targeted - General

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01/01/23 - 12/31/23

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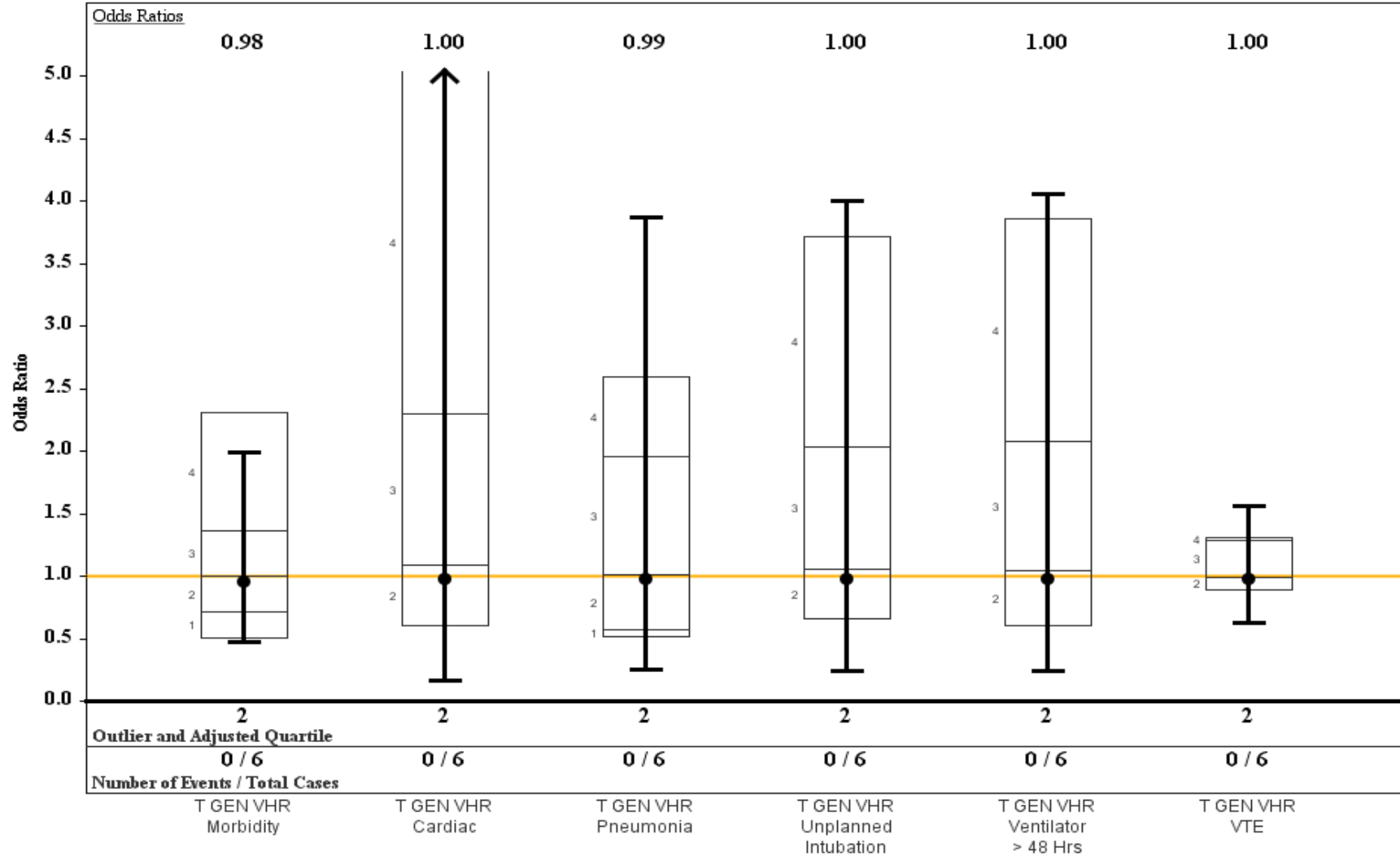


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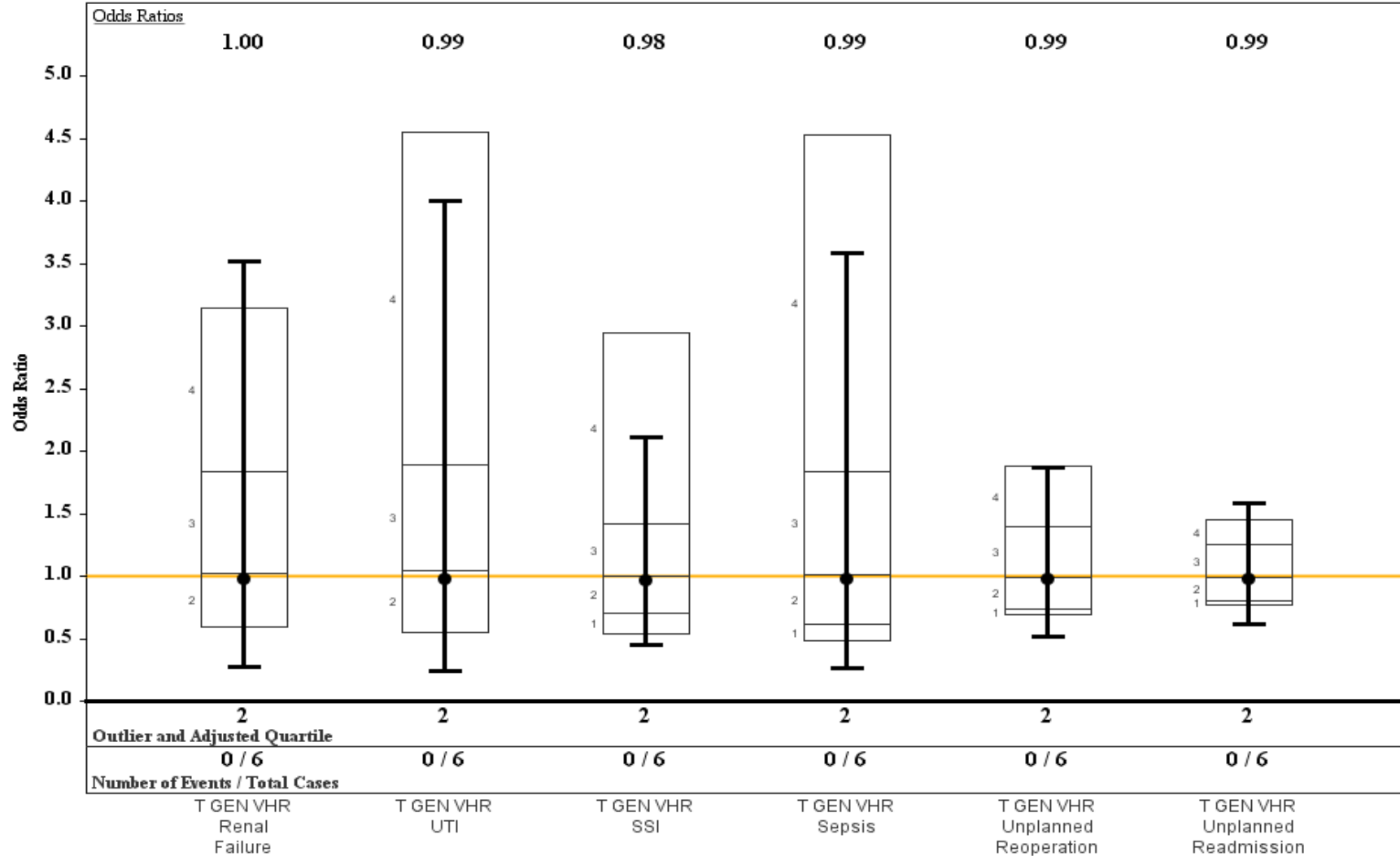


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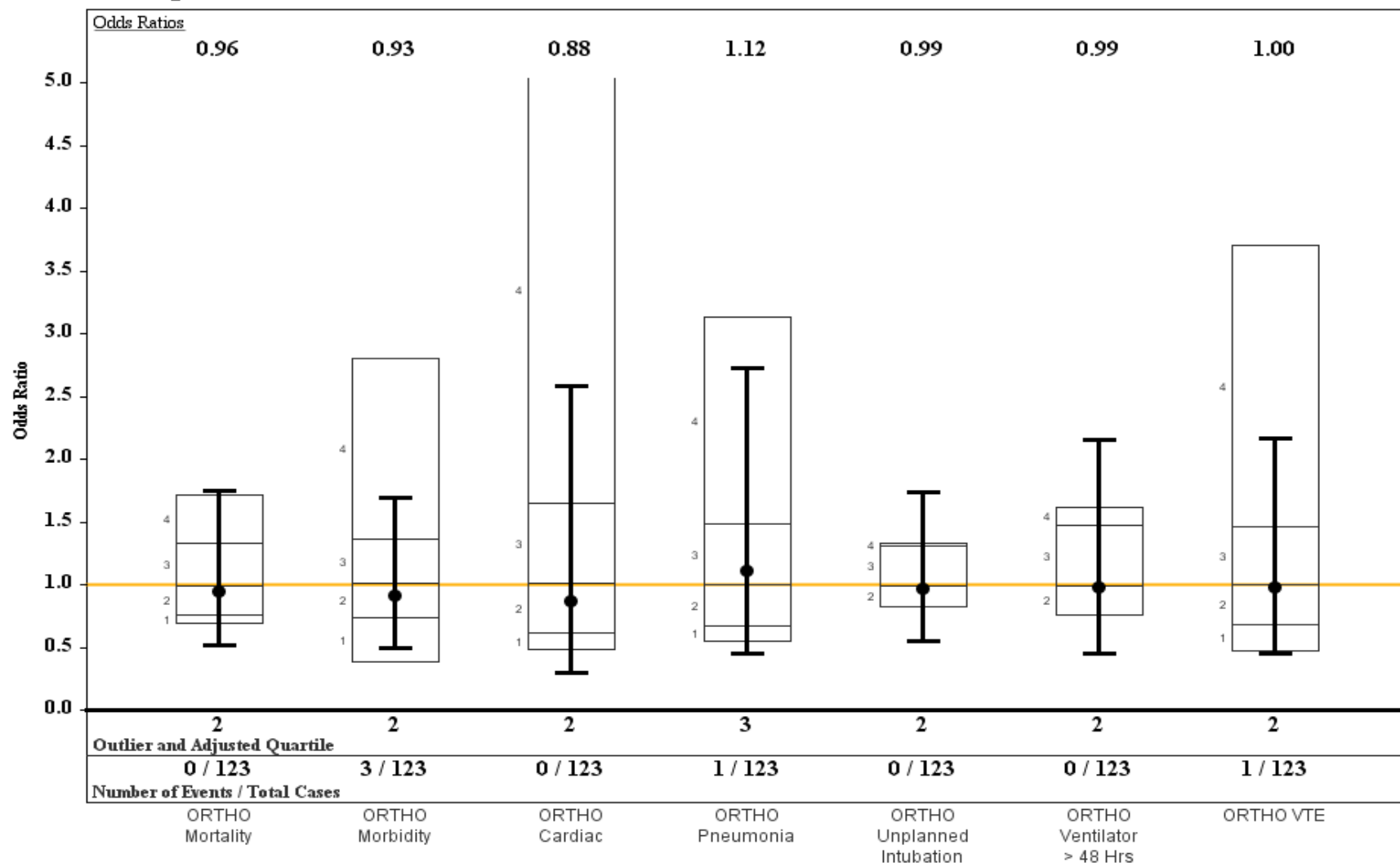


Orthopedic

Orthopedic

01/01/23 - 12/31/23

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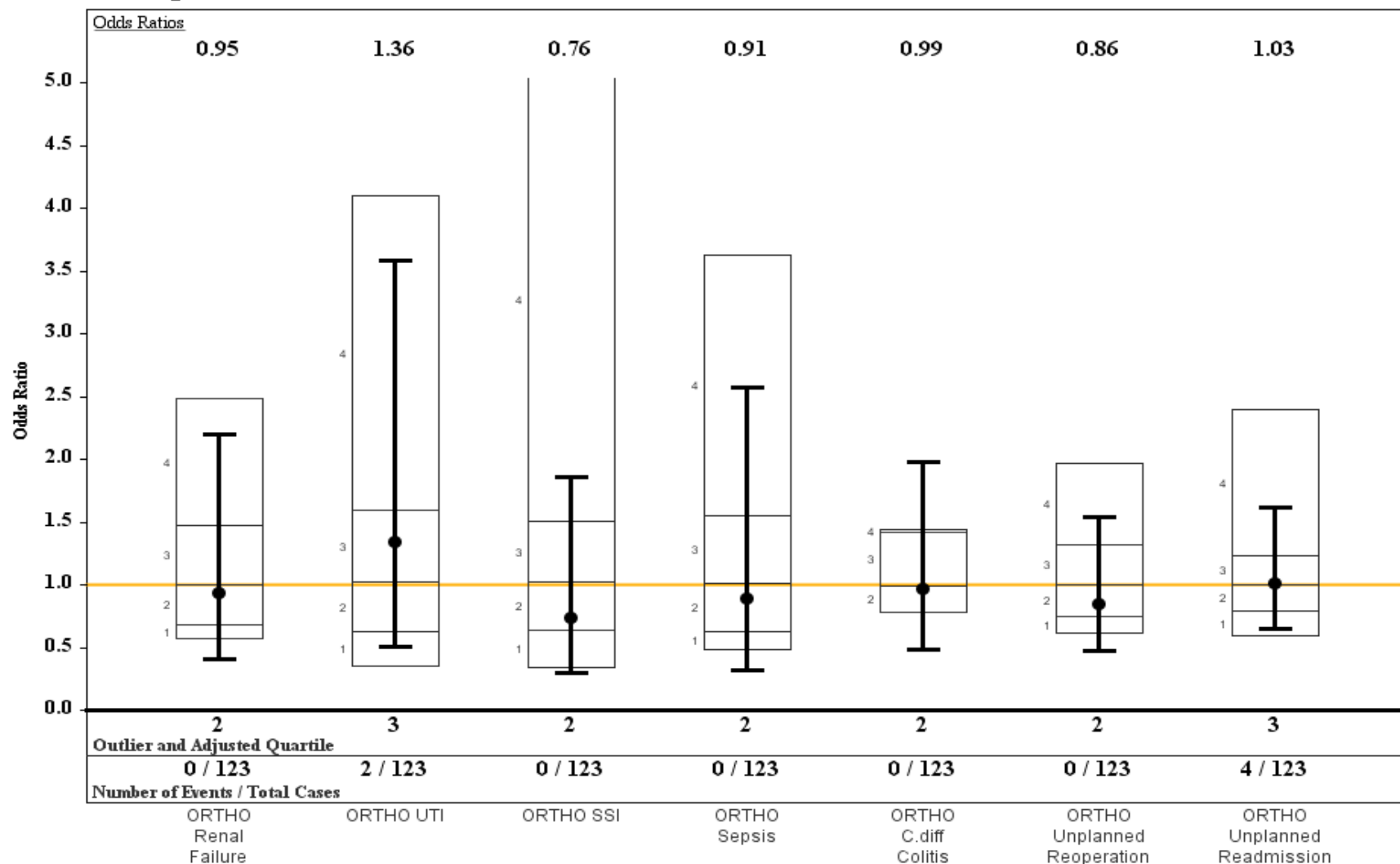


Orthopedic

Orthopedic

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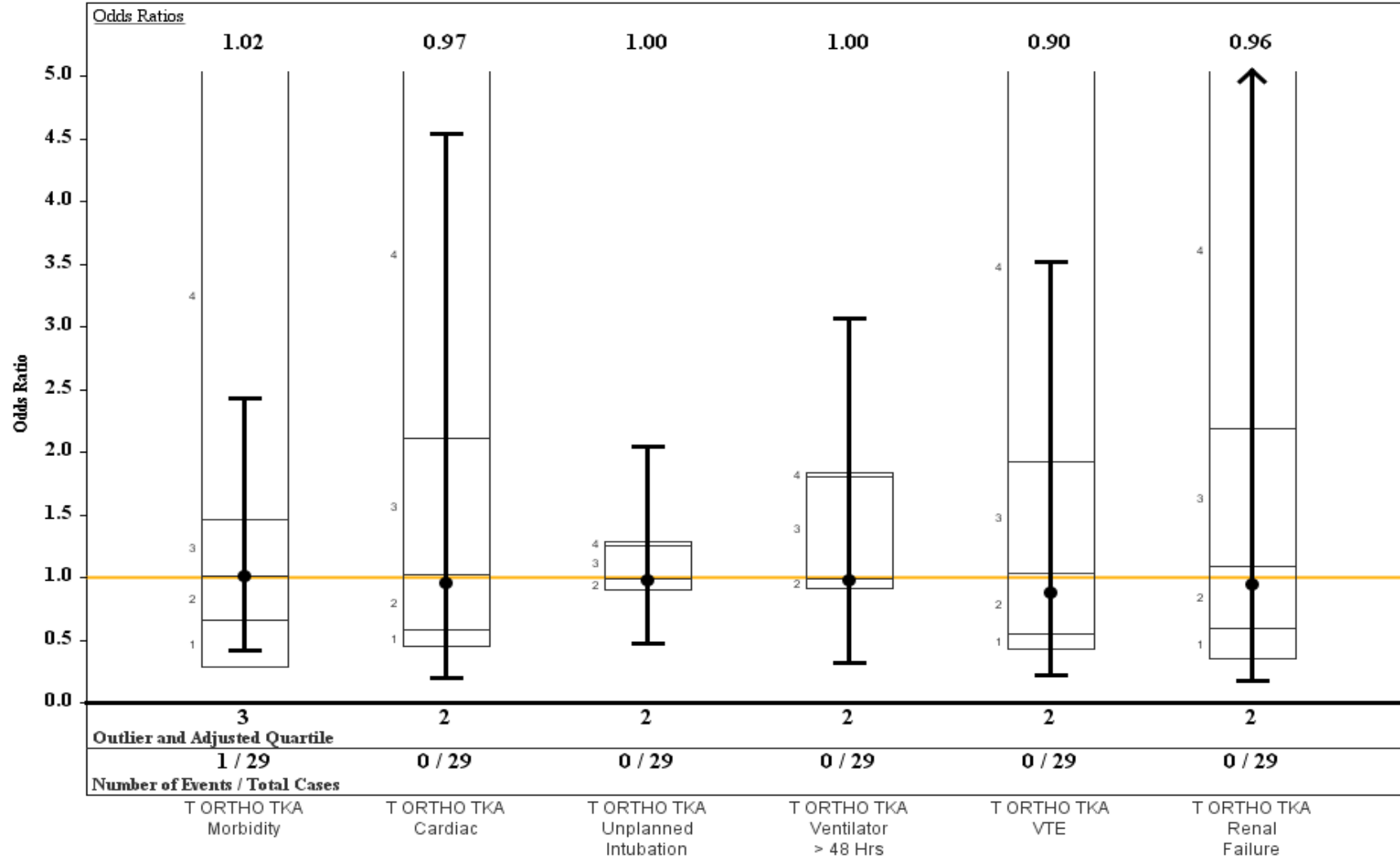


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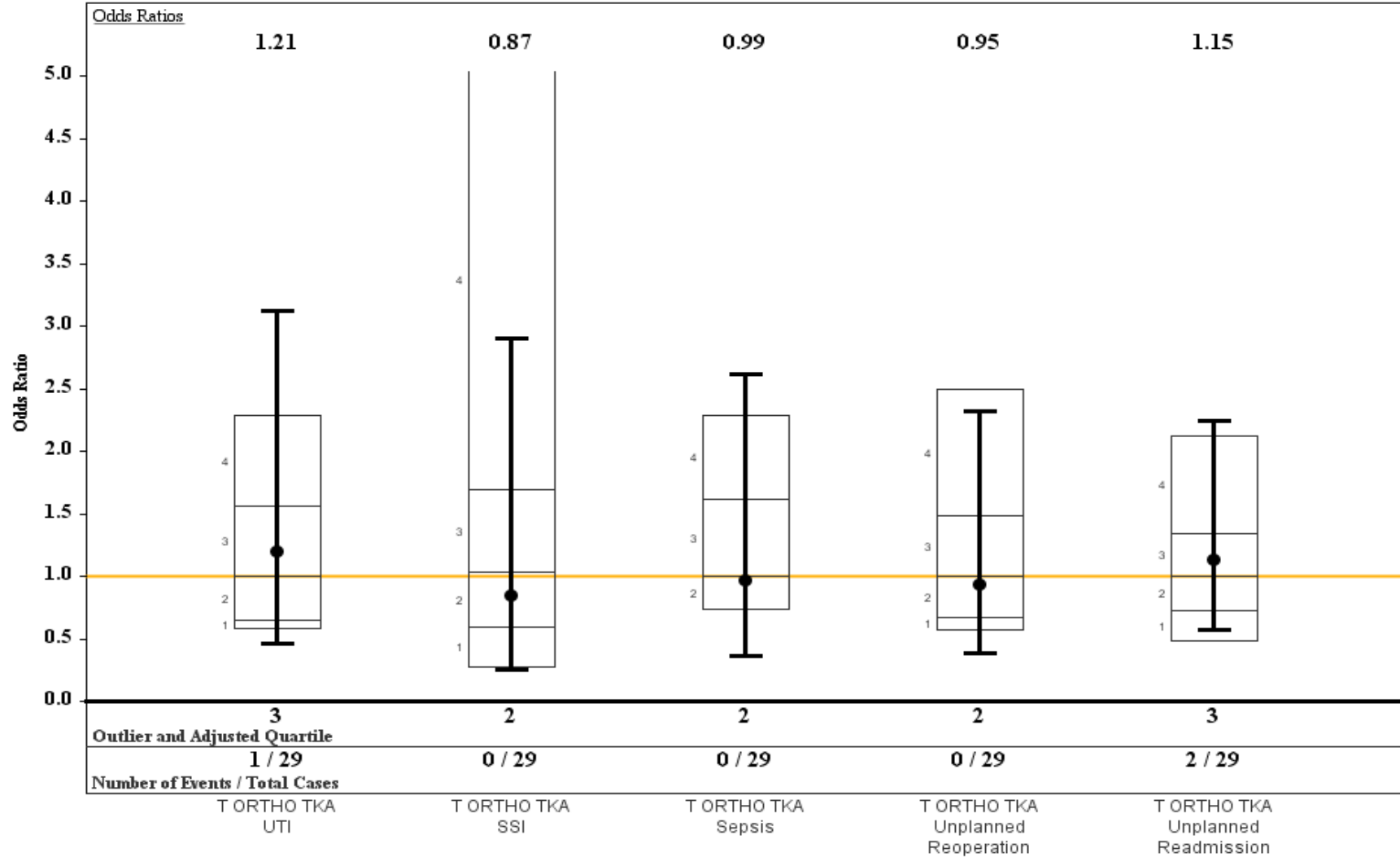


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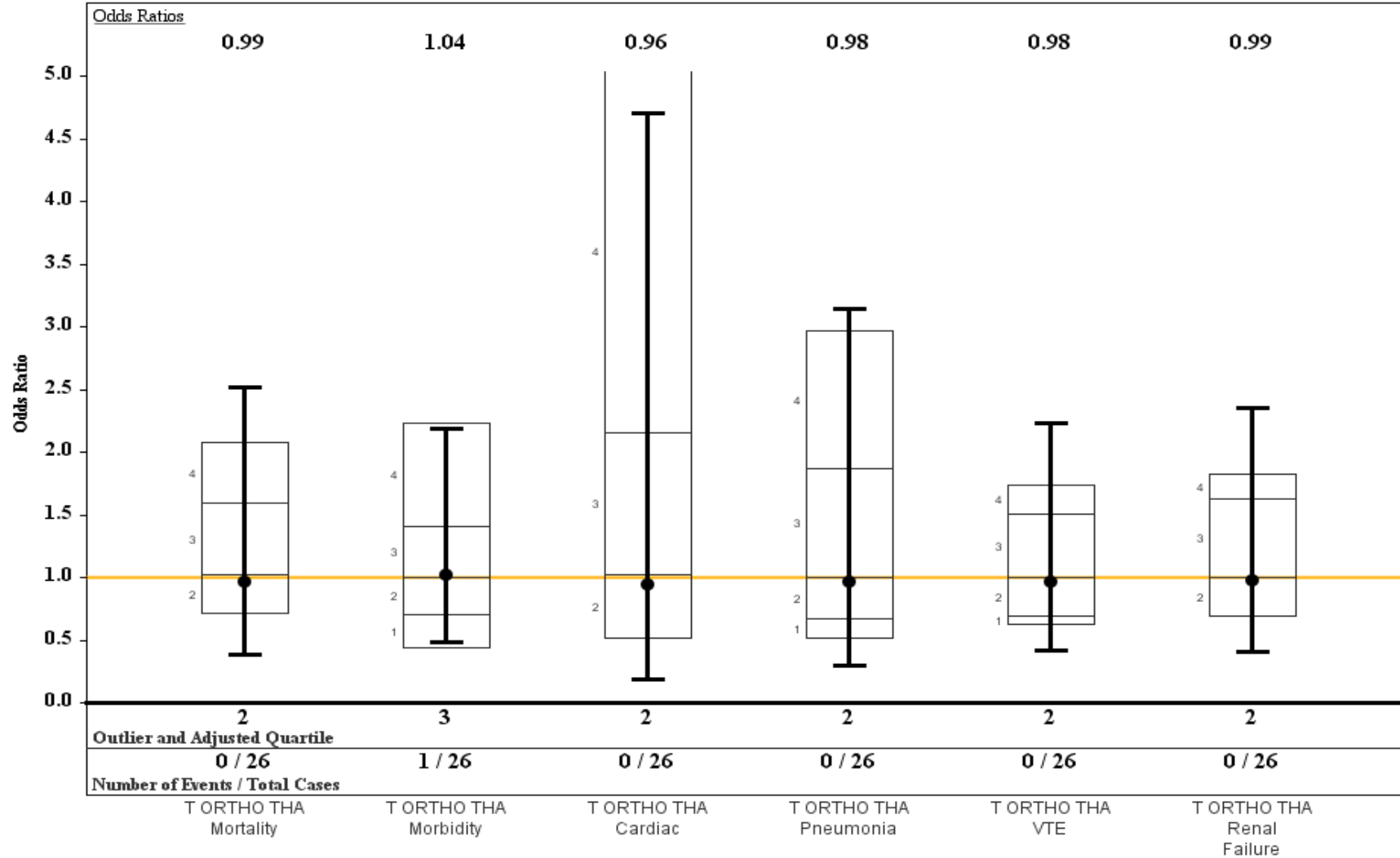


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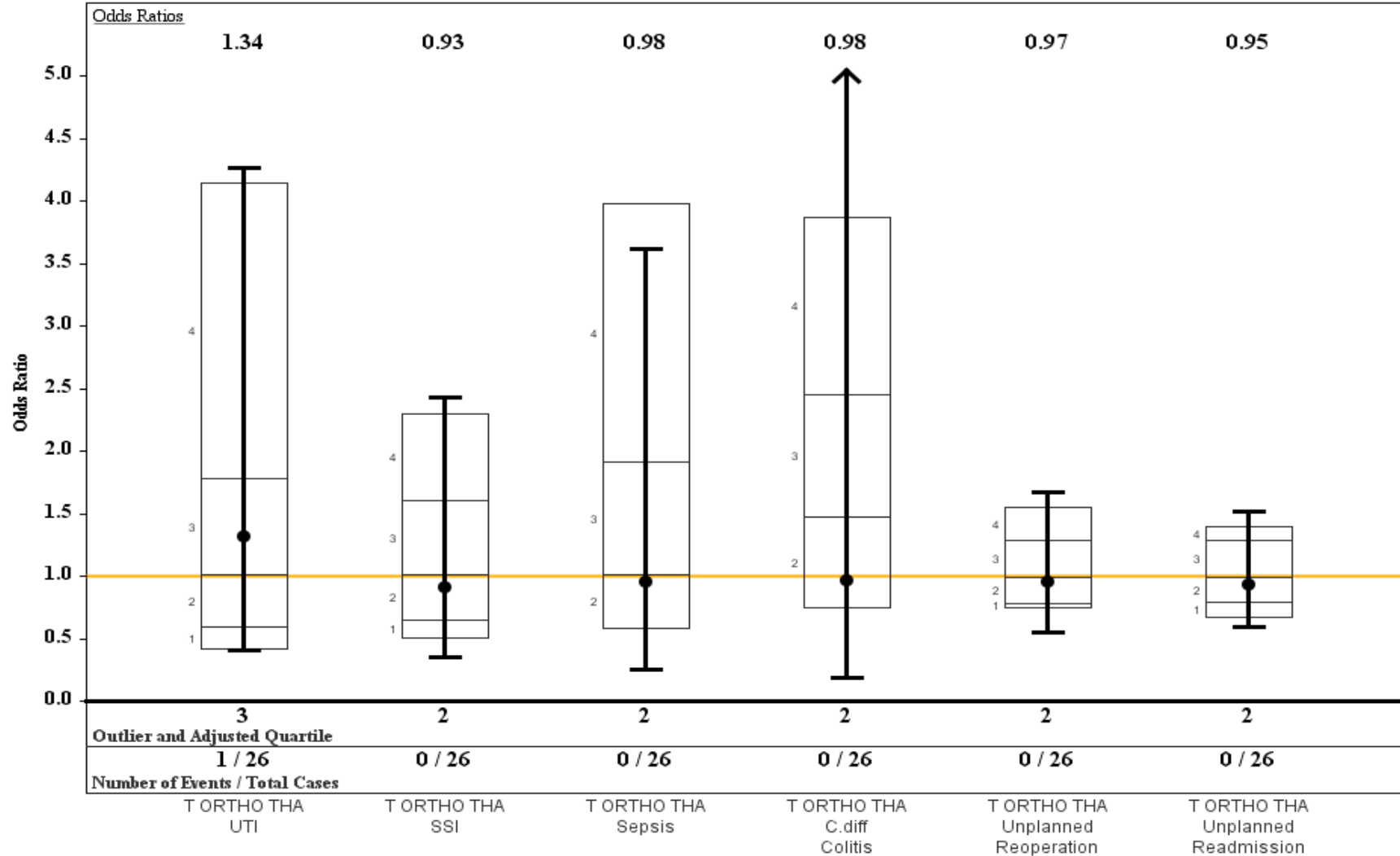


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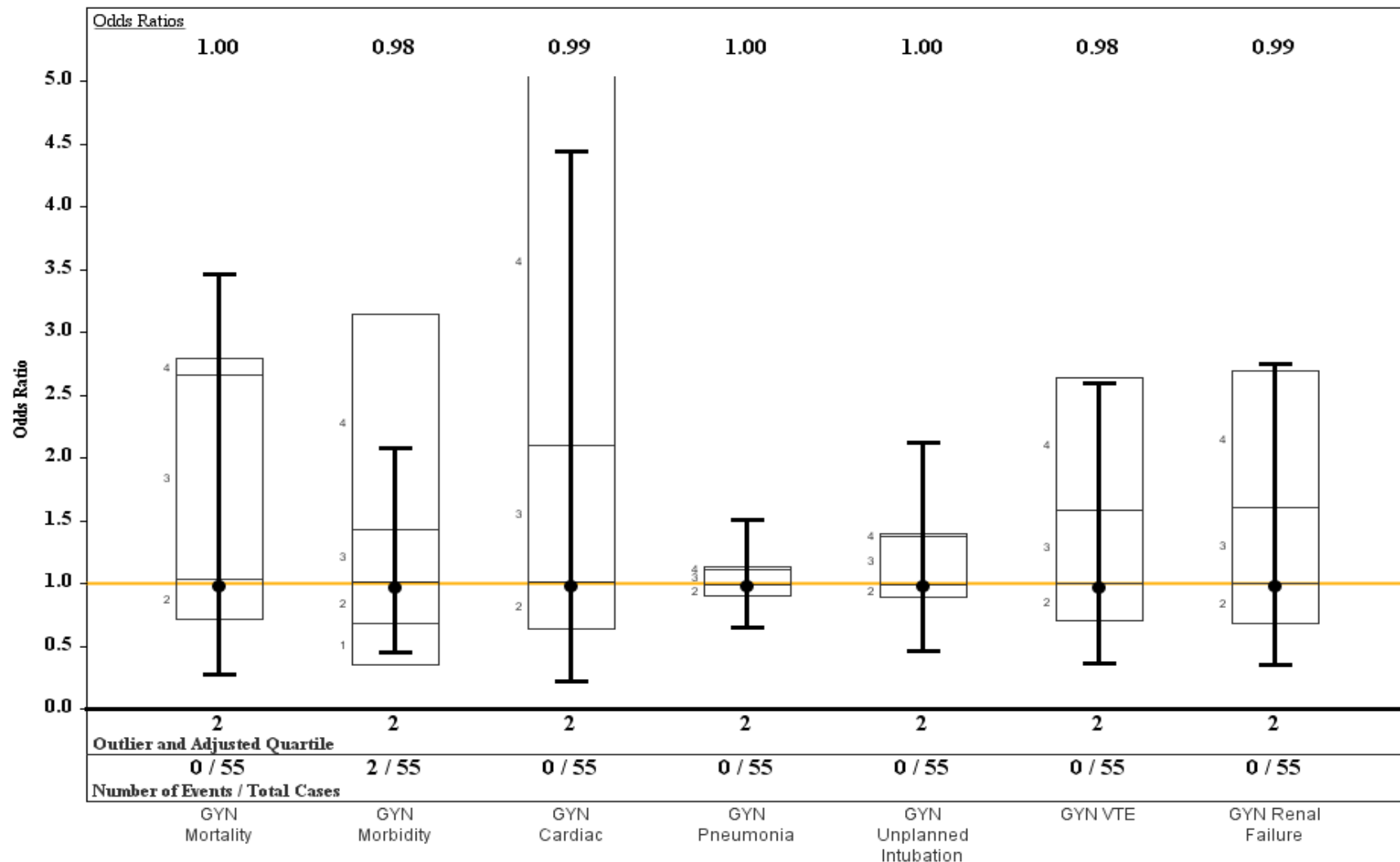


Gynecology

Gynecology

01/01/23 - 12/31/23

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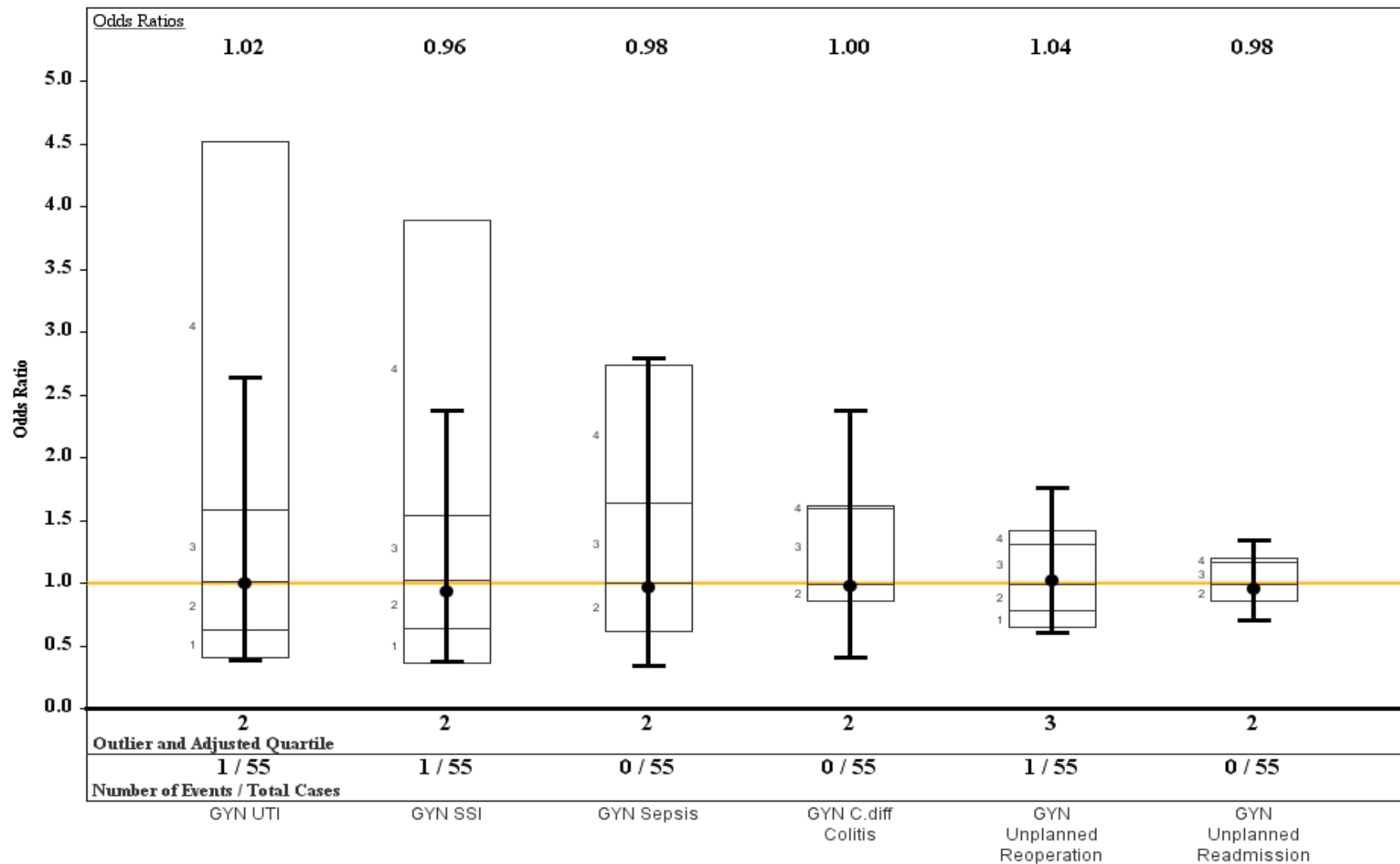


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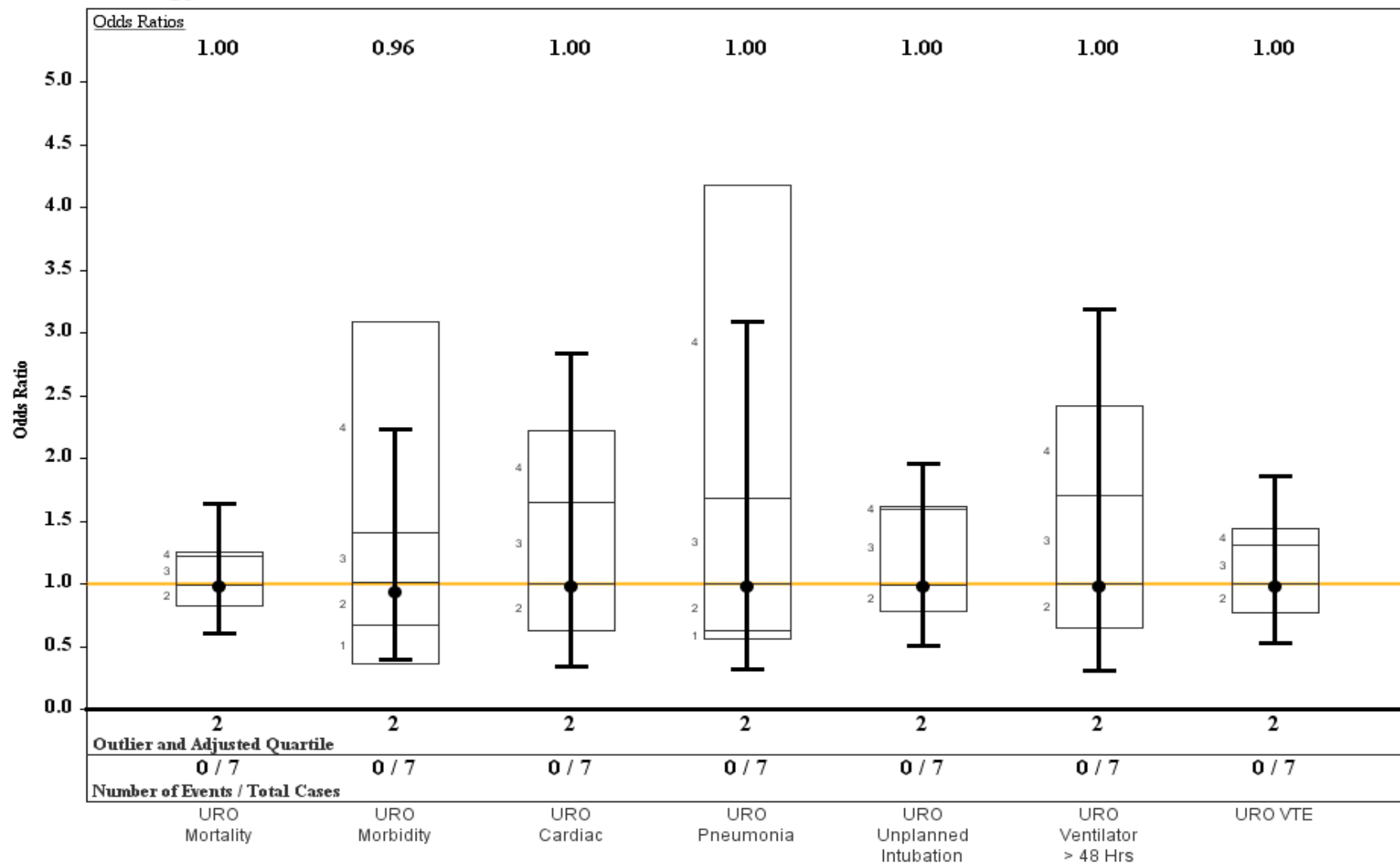


Urology

Urology

01/01/23 - 12/31/23

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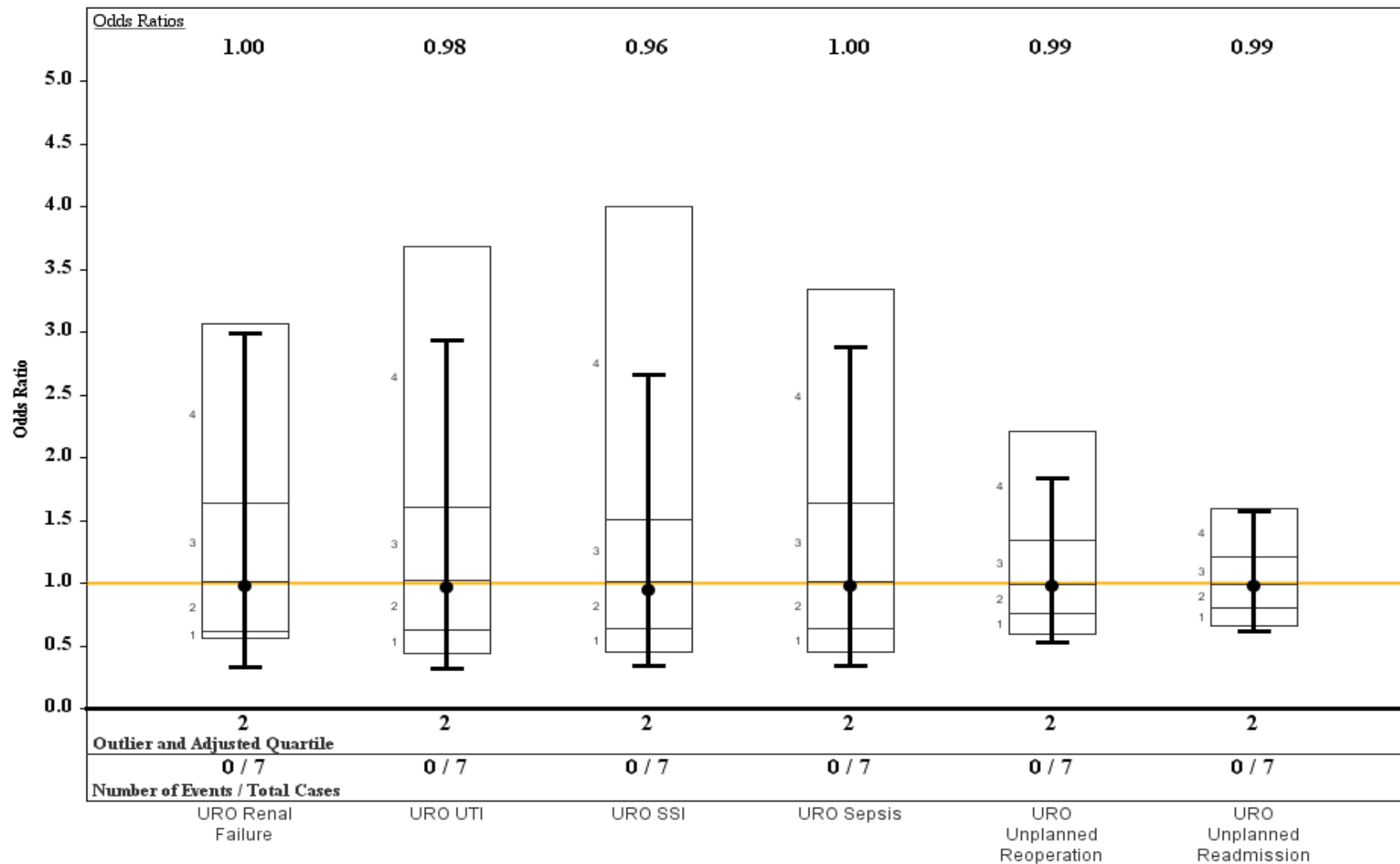


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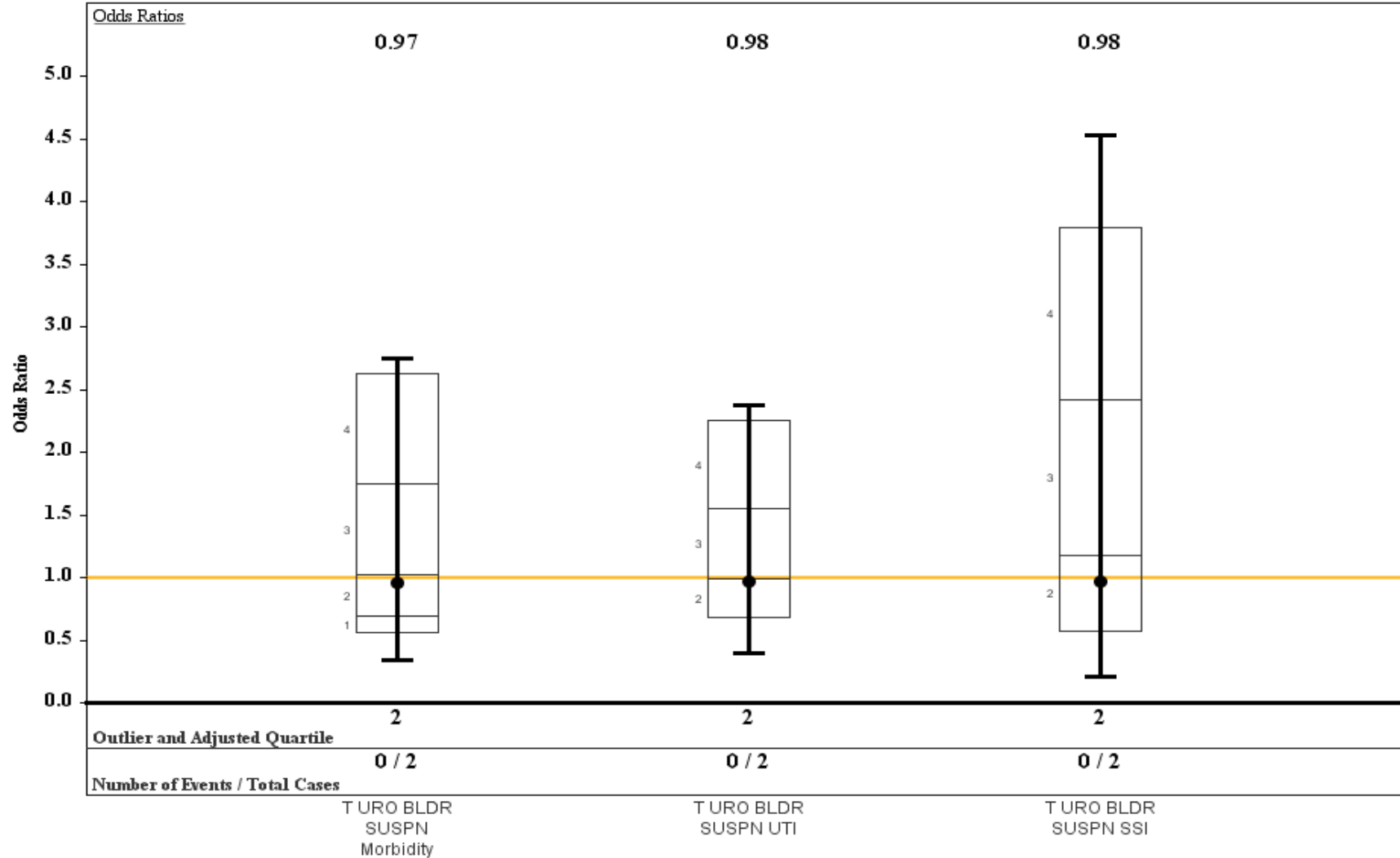


Targeted - Urology

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01/01/23 - 12/31/23

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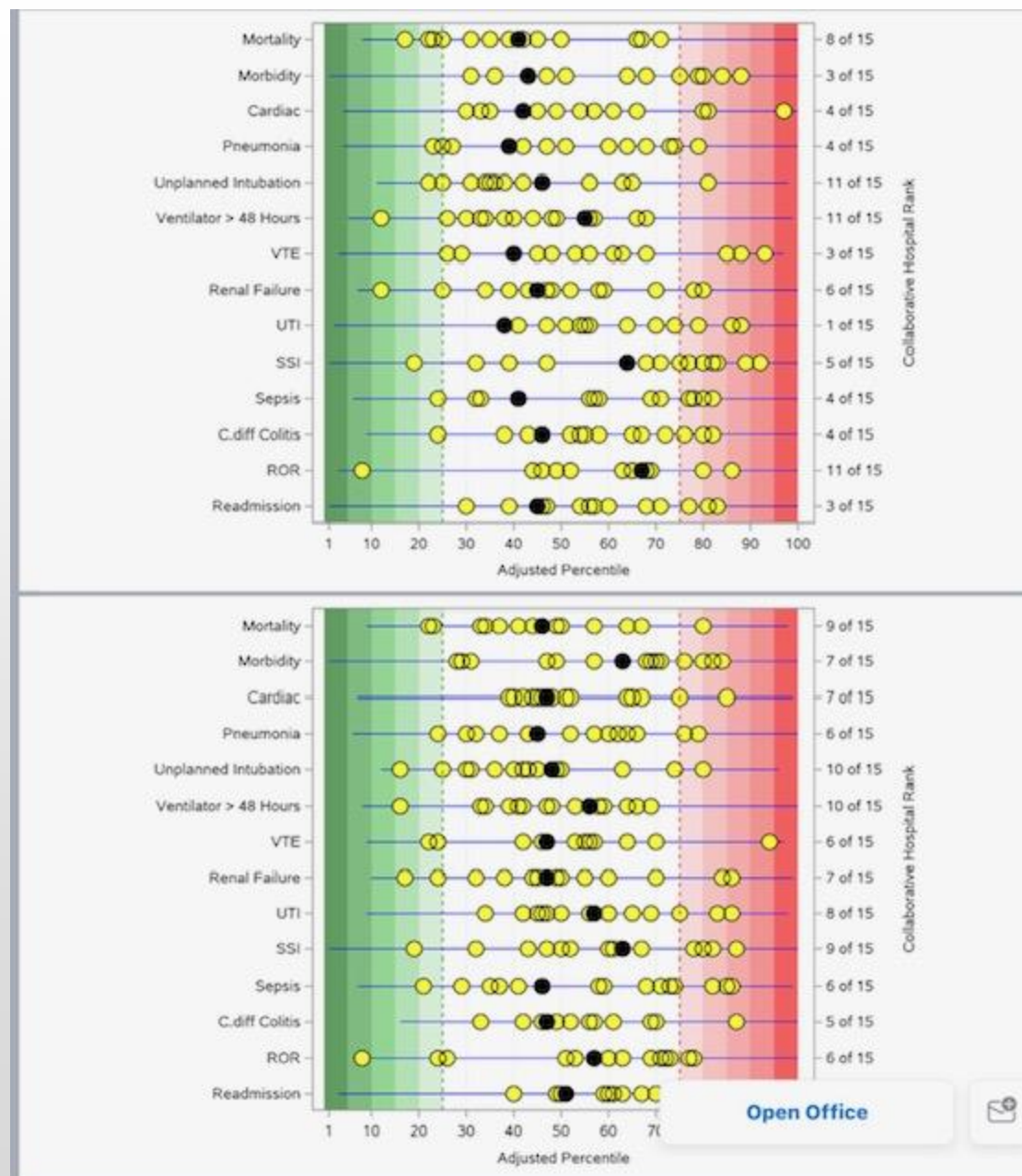
Utilizing Hospital Outcomes for Quality Improvement

- All hospitals have an opportunity to improve care.
 - Even hospitals with “Exemplary” or “As Expected” outcomes can benefit from quality improvement efforts.
- Quality improvement is a multi-disciplinary effort.
 - Collaboration with quality management, hospital administration, and clinical providers from all specialties promotes success.

Utilizing Hospital Outcomes for Quality Improvement

- Utilize resources available from the ACS NSQIP secure website
 - Best Practices Guidelines
 - Prevention of Postoperative Pulmonary Complications
 - Prevention of Catheter-Associated Urinary Tract Infections
 - Prevention and Treatment of Venous Thromboembolism
 - Prevention and Assessment of Intravascular Catheter-Related Bloodstream Infections
 - Prevention of Surgical Site Infections
 - Prevention of Ventilator-Associated Pneumonia
 - Quality Improvement Primers
 - Leading and Managing Organizational Change
 - Statistical Process Control Charts
 - Best Practices Case Studies
- Monitor the impact of quality improvement initiatives and disseminate those achievements.
 - All of health care benefits when best practices are identified and shared

A Quest for Quality in Critical Access Hospital; Lessons Learned



What is a SUR?

Standard Utilization Ratio

Based on the national aggregate NHSN data from 2015 forward

A SUR greater than 1.0 can indicate two things

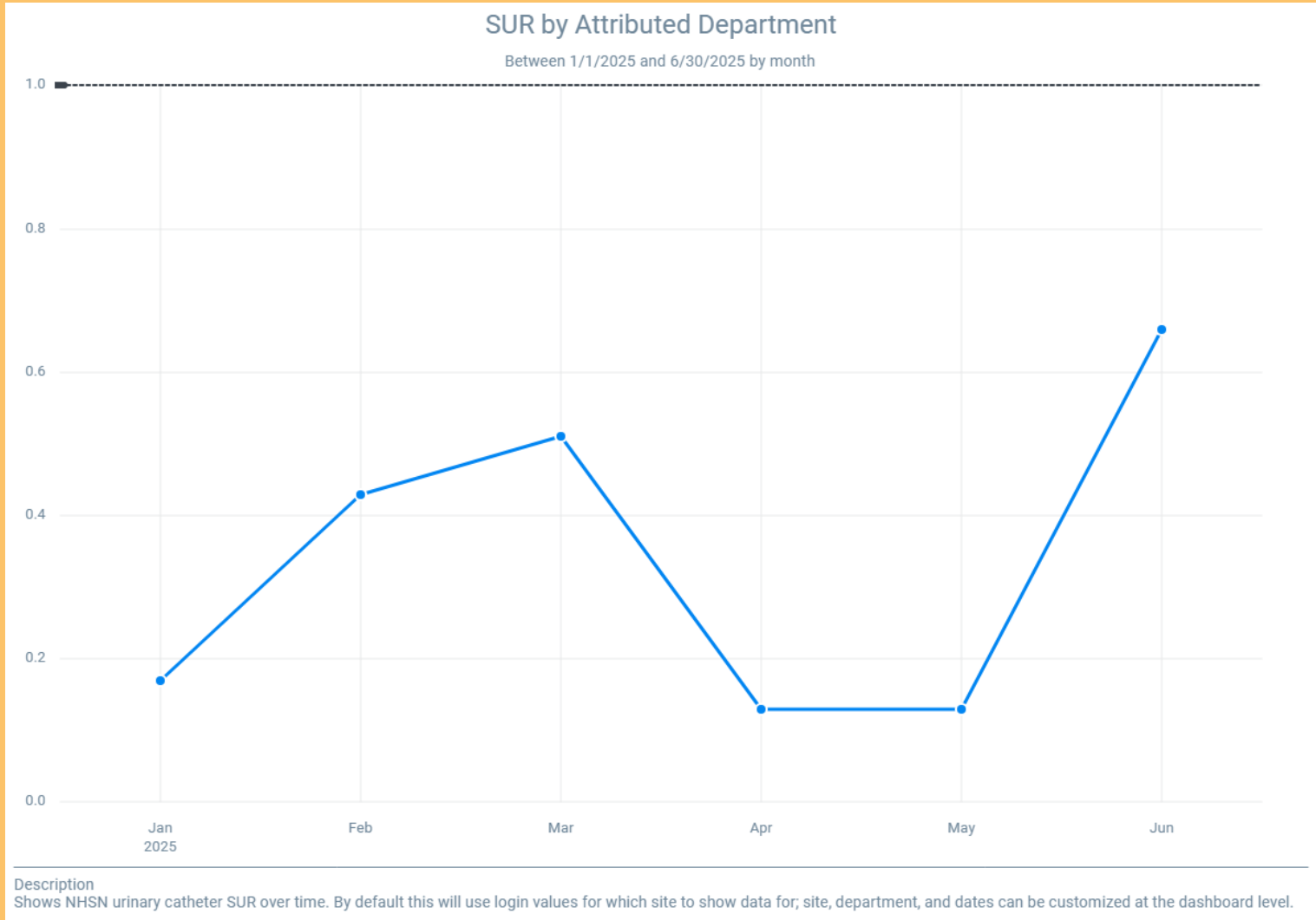
- We are at greater risk for infection
- We are exceeding the recommended use for device days

Slide adapted from Kristen Berholtz MBA, MLS (ASCP) CIC

Indwelling Catheter Device Days: Acute Care Unit.

The number of device days for 2024 H1 was 97, and the number of predicted days was 126. SUR = 0.77

The number of device days for 2024 H2 was 143, and the number of predicted days was 130. SUR = 1.1

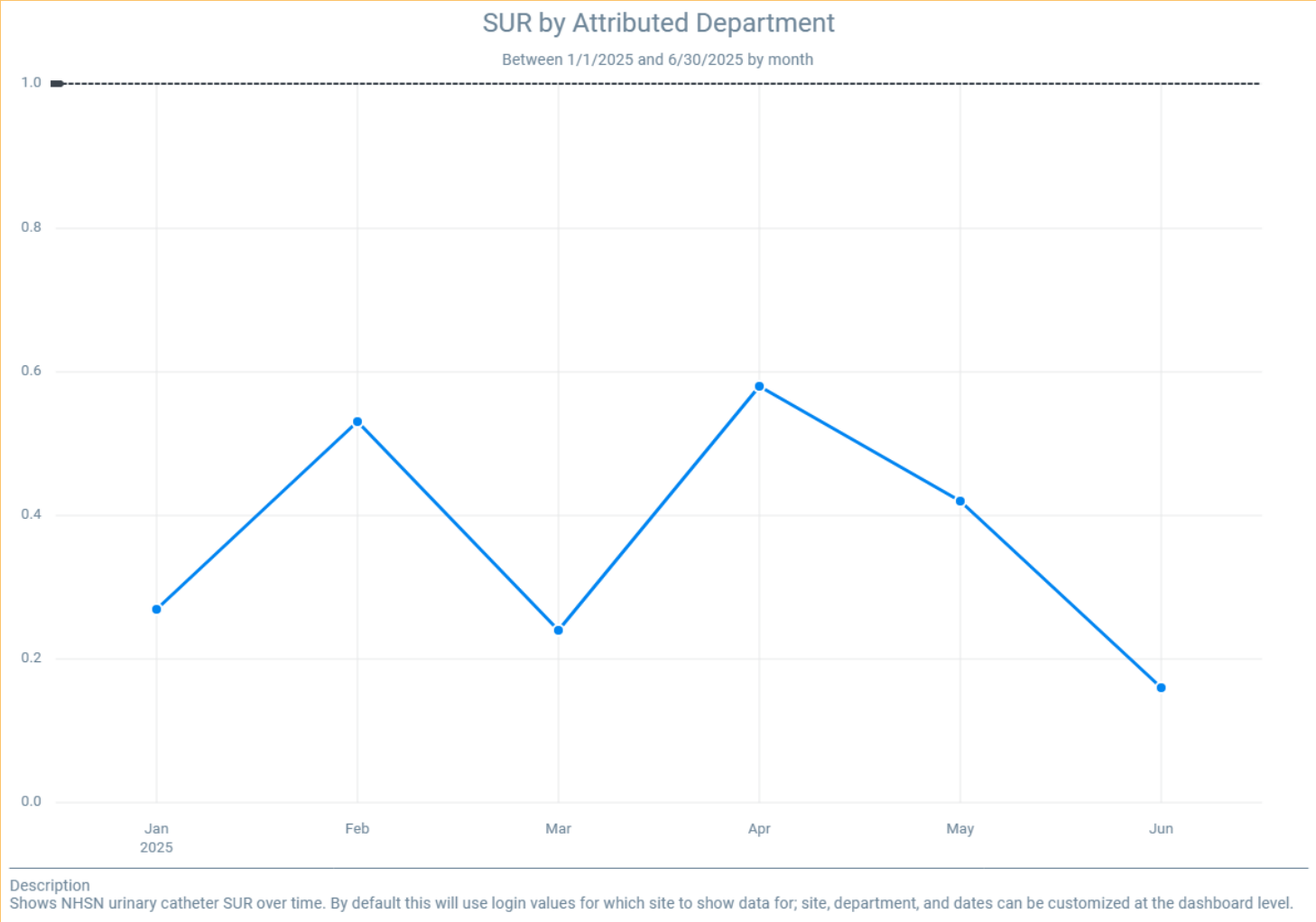


Year to Date SUR for 2025: 0.33
SUR for June: 0.66

Indwelling Catheter Device Days: Intensive Care Unit.

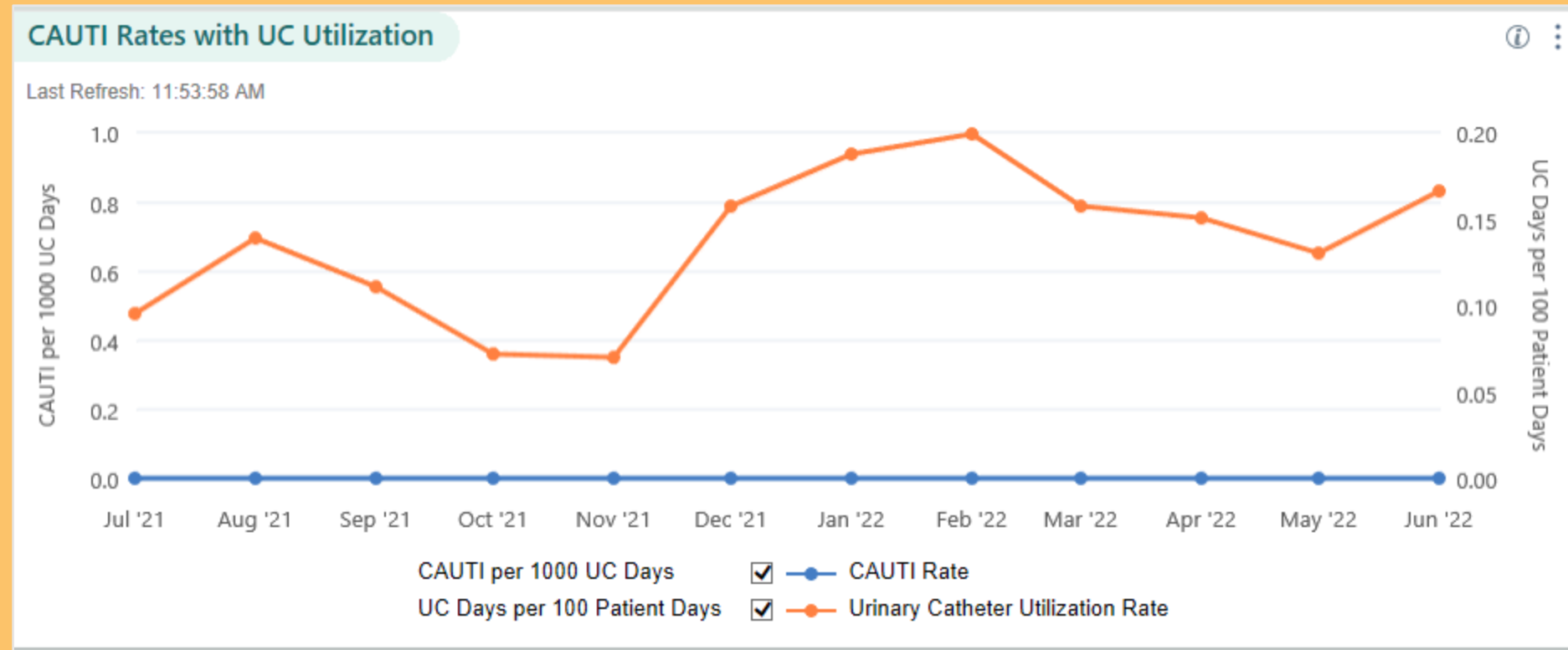
The number of device days for 2024 H1 was 100, and the number of predicted days was 179. SUR = 0.56

The number of device days for 2024 H2 was 93, and the number of predicted days was 184. SUR = 0.50

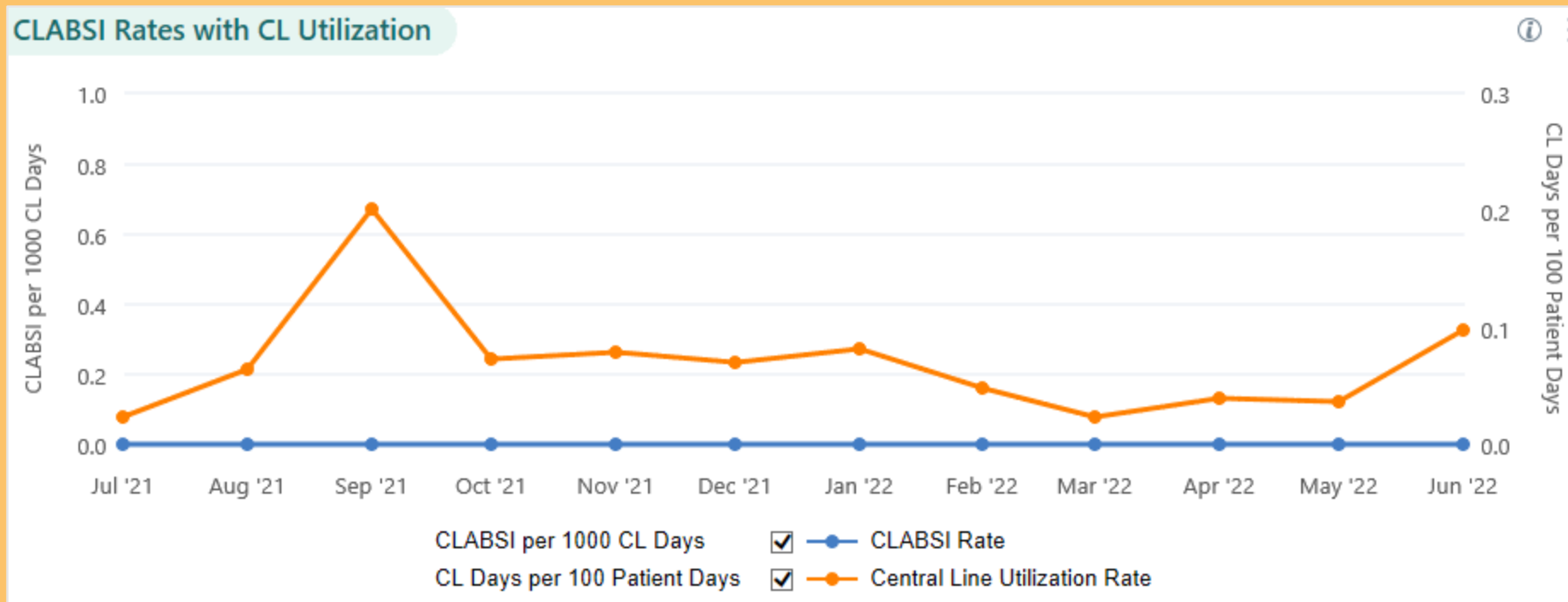


Year to Date SUR for 2025: 0.37
SUR for June: 0.16

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Infection Prevention Report Hospital Acquired Rates 2024

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Patient Days	324	275	269	264	254	264	282	296	272	281	275	313	3,369
Patient Admits (MDRO)	73	58	78	68	77	71	86	75	73	77	76	85	897
All NHSN Reportable Surgeries													
Colon	0	0	1	1	1	0	0	0	0	1	0	1	5
Total Knee	3	2	2	3	1	0	4	1	4	1	2	0	23
Total Hip	4	6	3	1	2	3	2	0	0	0	1	0	22
Hysterectomy	1	0	0	1	1	1	0	0	0	0	0	0	4
Surgical Infections *Infection was determined to be present at the time of surgery.													0

Slide adapted from Kristen Berholtz MBA, MLS (ASCP) CIC

Intensive Care Department													
Ventilator Days	0	0	1	3	0	3	8	2	5	0	0	0	22
Ventilator Associated Pneumonia N/A-Not included on our NHSN Reporting plan													
Central Line Catheter Days	16	4	0	17	4	2	2	0	7	0	2	6	60
Central Line Associated BSI													0
Urinary Catheter Days	18	14	14	37	6	11	23	5	25	13	8	19	193
Urinary Catheter Infections													0
Medical-Surgical Department													
Ventilator Days	0	0	0	0	0	0	0	0	0	0	0	0	0
Ventilator Associated Pneumonia N/A-Not included on our NHSN Reporting plan													
Central Line Catheter Days	0	0	6	0	0	3	8	9	0	1	14	13	54
Central Line Associated BSI													0
Urinary Catheter Days	25	17	5	30	4	16	30	14	19	36	27	17	240
Urinary Catheter Infections	1									1			2
Infection Rate for 2024													
Catheter Associated BSI	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Catheter Associated UTI Rate (2 infection/ 433 device days)	2.33%	0%	0%	0%	0%	0%	0%	0%	0%	2.04%	0%	0%	0.46%
Surgical Site Infection	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

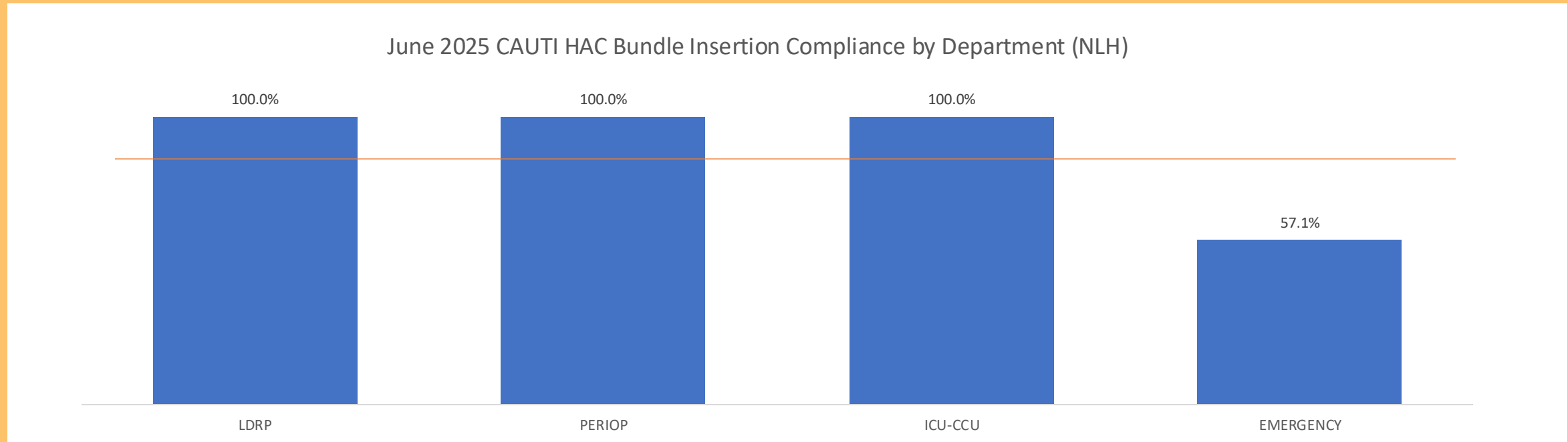
Month percent is calculated based on infections divided by device days*

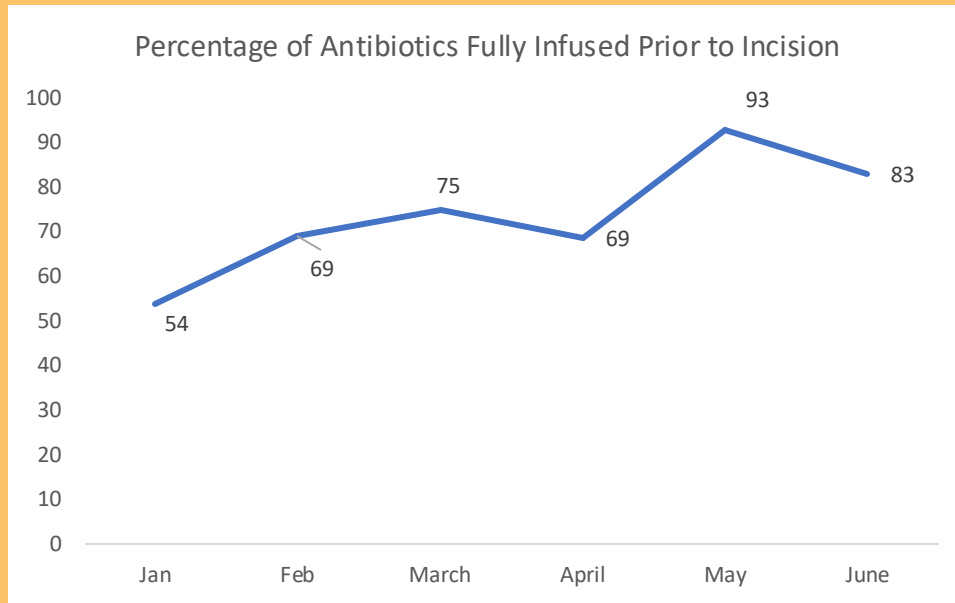
Slide adapted from Kristen Berholtz MBA, MLS (ASCP) CIC



Samaritan
Health Services

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Preferred Regimen: Cefazolin

Timing of Surgical Antibiotic Prophylaxis

1) Administration of antibiotics should begin within 1 hour prior to incision to maximize tissue concentration for all antibiotics except as noted below [3] .

1. In order to maximize tissue concentration, the full dose of antibiotics should be infused prior to the initial incision.

- a. Infusion time for IV piggyback antibiotics should be considered.

2. Fluoroquinolones, vancomycin, aminoglycosides, azithromycin, and fluconazole should begin within 1-2 hours prior to incision (due to the need for longer infusion times).

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Oregon

Providence St. Vincent Medical Center
(Portland)

OHSU Hospital and Clinics (Portland)

Legacy Good Samaritan Medical Center
(Portland)

Samaritan Albany General Hospital

Legacy Silverton Medical Center

Santiam Hospital (Stayton)

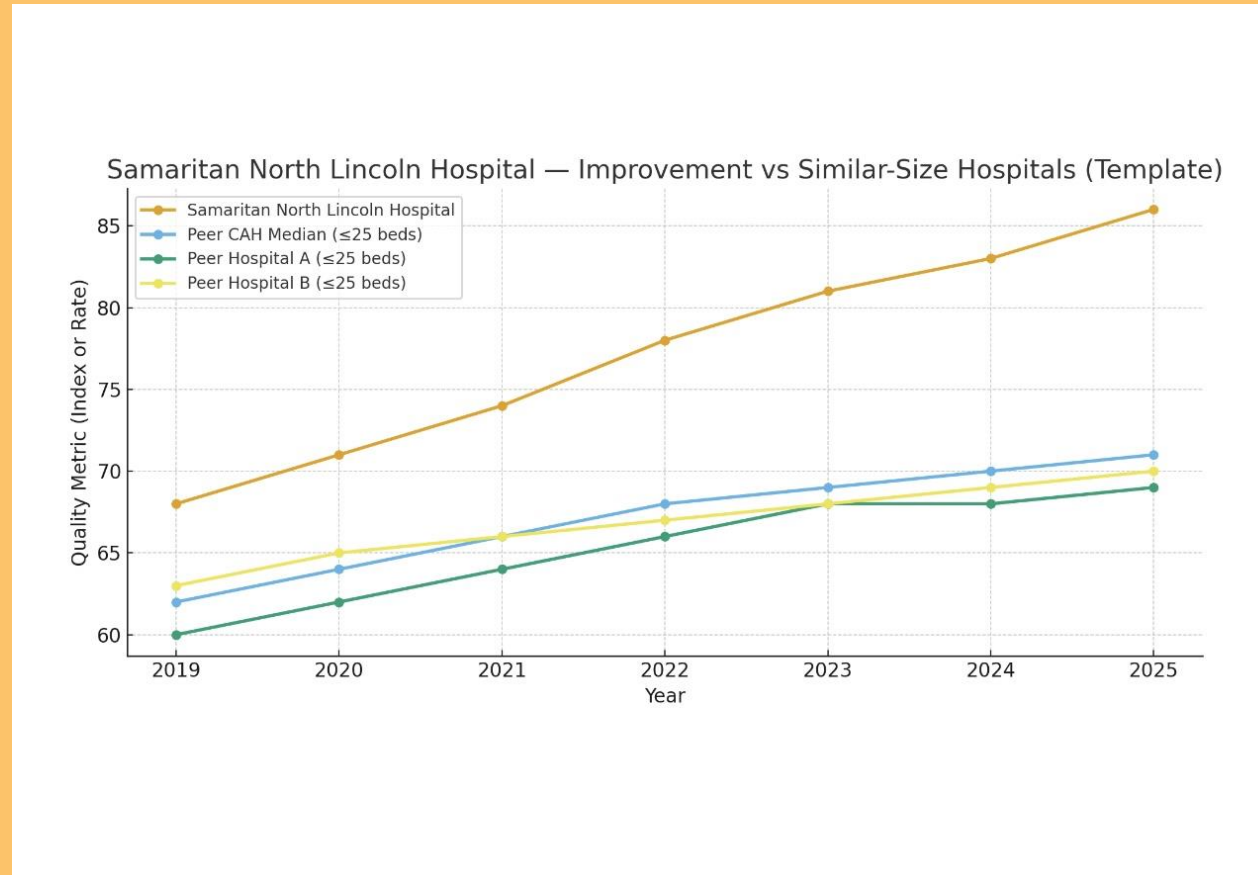
Providence Portland Medical Center

Samaritan North Lincoln Hospital (Lincoln City) *

Peace Harbor Medical Center (Florence)

Providence Hood River Memorial Hospital

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Data driven AI generated

2024-2025 Gold Award
OREGON ANTIMICROBIAL STEWARDSHIP
HONOR ROLL



In recognition for demonstrating
excellence in antimicrobial stewardship,
we present gold status to

**Samaritan North
Lincoln Hospital**

Your commitment to the appropriate use of antibiotics improves patient
care and prevents the spread of antimicrobial resistance.



200-454900a (03/2024)

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The Team

- **Kristen Berholtz MBA, MLS (ASCP) CIC Infection Prevention Program Manager**
- **Jessica Hubbard MPH, BSN, RN Director Quality Resource Coastal**
- **Theresa Via RN, MSN, CPHQ Director Quality Resources (Retired)**

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Future:

Simple Measures for Improved Surgical Outcomes

Tools

SBAR

Situation, Background, Assessment, Recommend

DMAIC

Define, Measure, Analyze, Improve, Control

OODA

Observe, Orient, Decide, Act

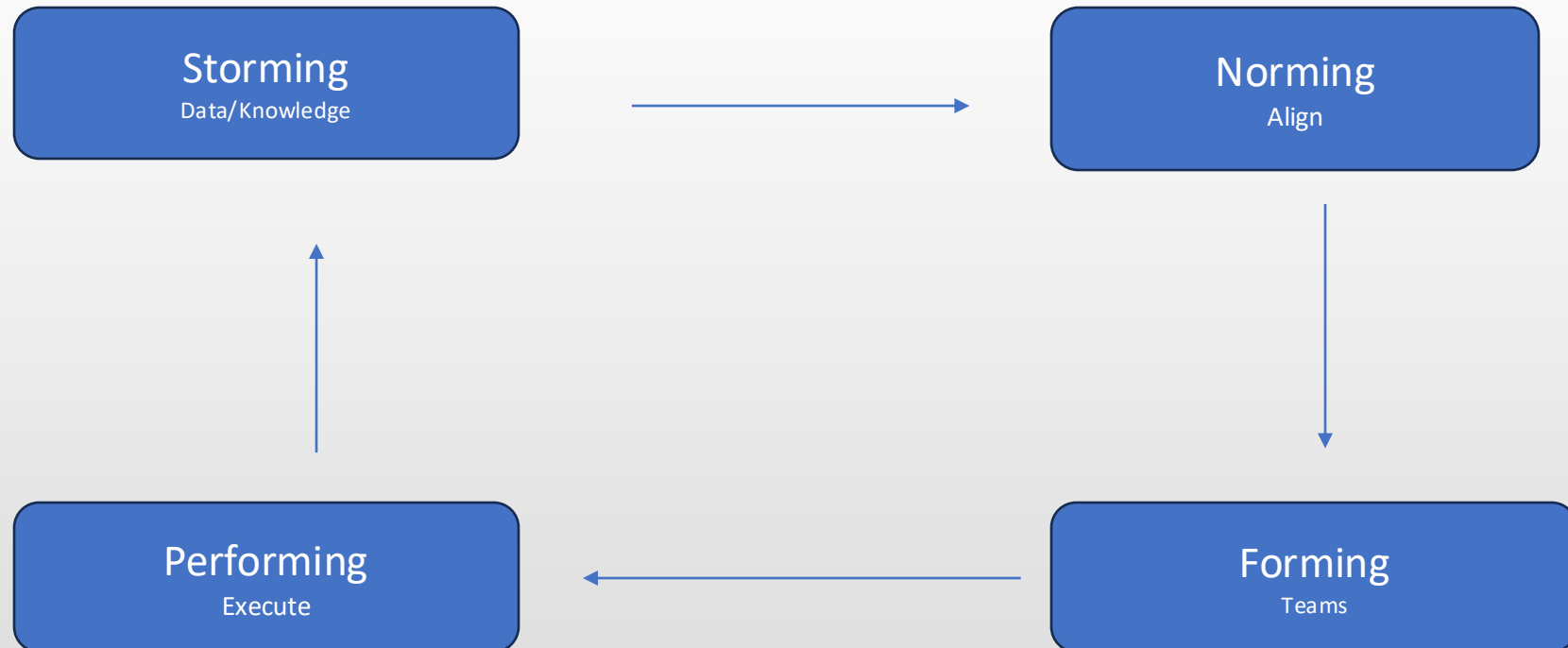
PESTEL

Political, Environmental, Social, Technological, Economic, Legal

AI

ChatGPT, DeepSeek, ETC

A quest for quality in a critical access hospital, lessons learned



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Summary

- **Initiate**
- **No Limit for Excellence.**
- **The Size of the Hospital is Not a Barrier.**
- **Systems are working on improvement, but it is still good to contribute.**

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Thank you!

Questions?