

Small Tweaks for Surgical Peaks

The Queensland Children's Hospital Surgical Site Infection Bundle

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Disclosures

- None



Agenda

Impact of wound infections

National Surgical Quality Improvement Program

Queensland Children's Hospital Bundle

Changes to Health Systems

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Changes to Health Systems



Harper

has bowel surgery



Does
Harper
have a problem?

Uncertainty = Stress



Improvement



Transparency



Patient Safety



Clinician Leadership



Innovation

We want to know

Rate of occurrence

Impact

Costs

Effort

We know

~~Rate of occurrence~~

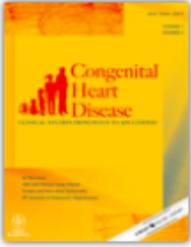
~~Impact~~

~~Costs~~

~~Effort~~

> Congenit Heart Dis. 2010 Jul-Aug;5(4):339-42. doi: 10.1111/j.1747-0803.2010.00433.x.

Deciding without data

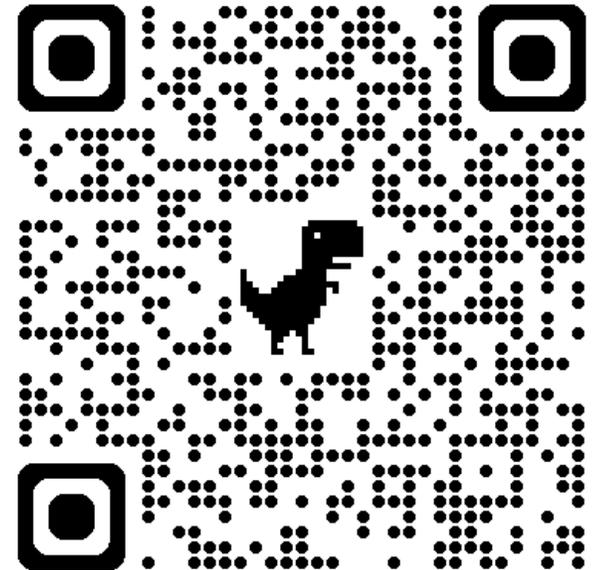


Jeffrey R Darst ¹, Jane W Newburger, Stephen Resch, Rahul H Rathod, James E Lock

Affiliations + expand

PMID: 20653700 PMCID: [PMC4283550](#) DOI: [10.1111/j.1747-0803.2010.00433.x](#)

< 3% medical decisions
are based on a specific study



Review

> J Clin Epidemiol. 2020 Oct;126:154-159. doi: 10.1016/j.jclinepi.2020.08.005.

Epub 2020 Sep 2.

The quality of evidence for medical interventions does not improve or worsen: a metaepidemiological study of Cochrane reviews

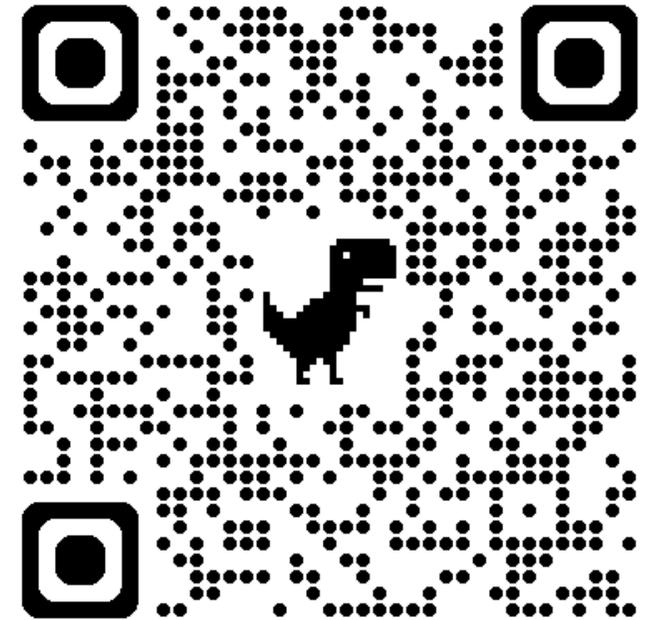


Jeremy Howick ¹, Despina Koletsi ², Nikolaos Pandis ³, Padhraig S Fleming ⁴,
Martin Loef ⁵, Harald Walach ⁶, Stefan Schmidt ⁷, John P A Ioannidis ⁸

Affiliations + expand

PMID: 32890636 DOI: [10.1016/j.jclinepi.2020.08.005](https://doi.org/10.1016/j.jclinepi.2020.08.005)

No improvement in quality after 15 year update



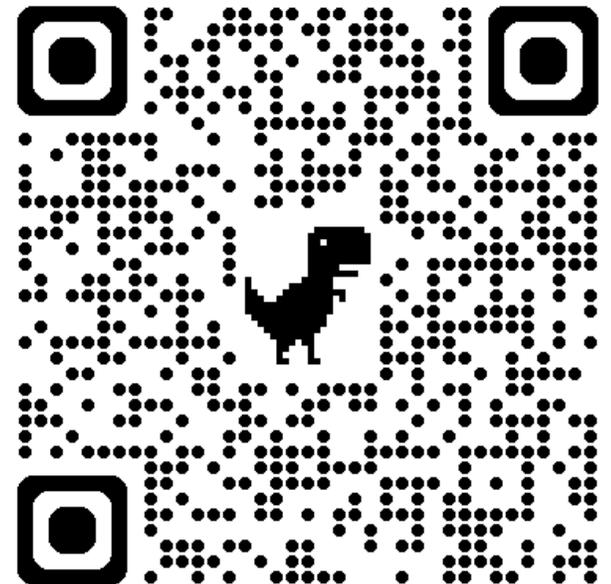
> JAMA. 2023 Apr 25;329(16):1333-1336. doi: 10.1001/jama.2023.4387.

It Takes an Average of 17 Years for Evidence to Change Practice—the Burgeoning Field of Implementation Science Seeks to Speed Things Up



Rita Rubin

PMID: 37018006 DOI: 10.1001/jama.2023.4387



Research → practice
1 in 5 evidence-based
interventions → routine practice

Decision making

1 in 10 medical treatments is backed by high quality evidence

Hospital morbidity / mortality audits
do not improve care

We can predict and prevent adverse outcomes

DATA AND REGISTRIES

ACS National Surgical Quality Improvement Program (NSQIP)



NSQIP Participant Portal
For managing hospital info
and registry access >



ACS NSQIP Registry
Enter clinical data and
access NSQIP data reports >



SCR Training and Testing
Become your hospital's
Surgical Clinical Reviewer >

Capture real information from patients



Risk adjusted analysis for a **predicted outcome**

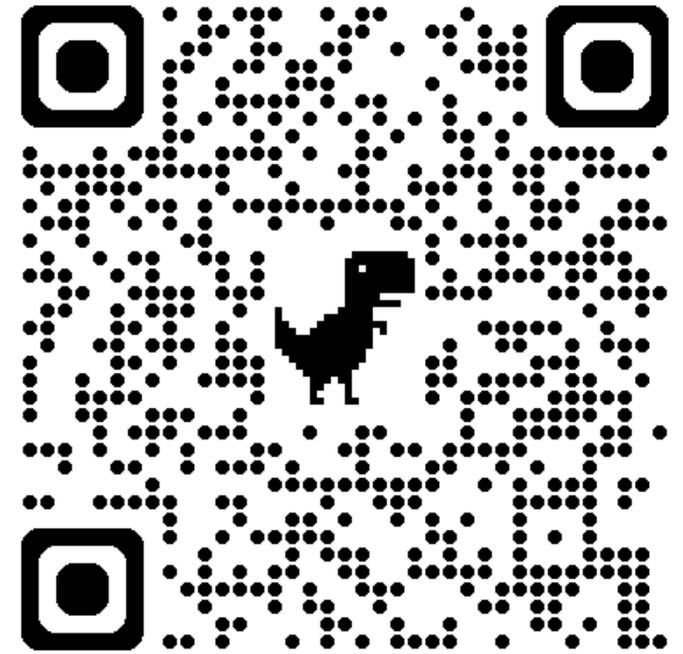


Benchmark with peers



Network to make **collaborative improvements**

What's Your Risk?



Surgical
Risk Calculator

Home

About

FAQ

ACS Website

ACS NSQIP Website

Enter Patient and Surgical Information

 Procedure

Clear

What's Your Risk?

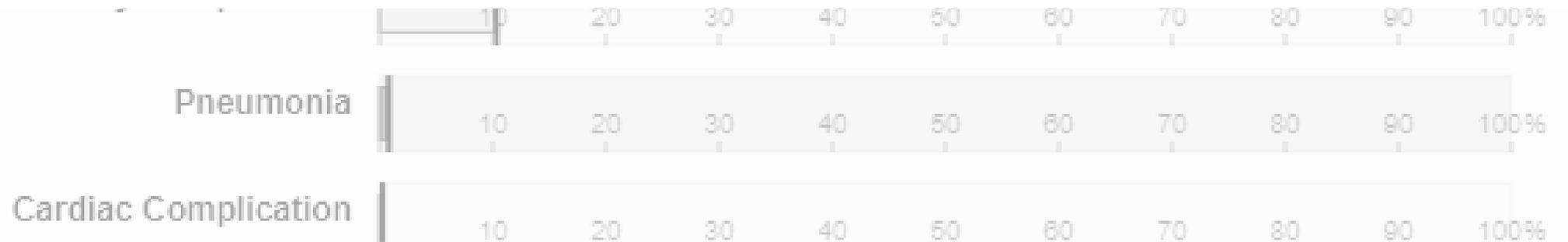
Procedure: 44950 - Appendectomy;
Risk Factors: Emergent, Mild systemic disease, HTN, Class1 Obese

Note: Your Risk has been rounded to one decimal point.

Outcomes 

Predicted Length of Hospital Stay: 2.5 days

 **Other Appropriate Potential Surgical Options Are Available and Should Be Discussed**



What's Your Risk?

Procedure: 44950 - Appendectomy;

Risk Factors: Emergent, Mild systemic disease, HTN, Class1 Obese

Note: Your Risk has been rounded to one decimal point.

Outcomes

Serious Complication



Any Complication



Pneumonia



Cardiac Complication

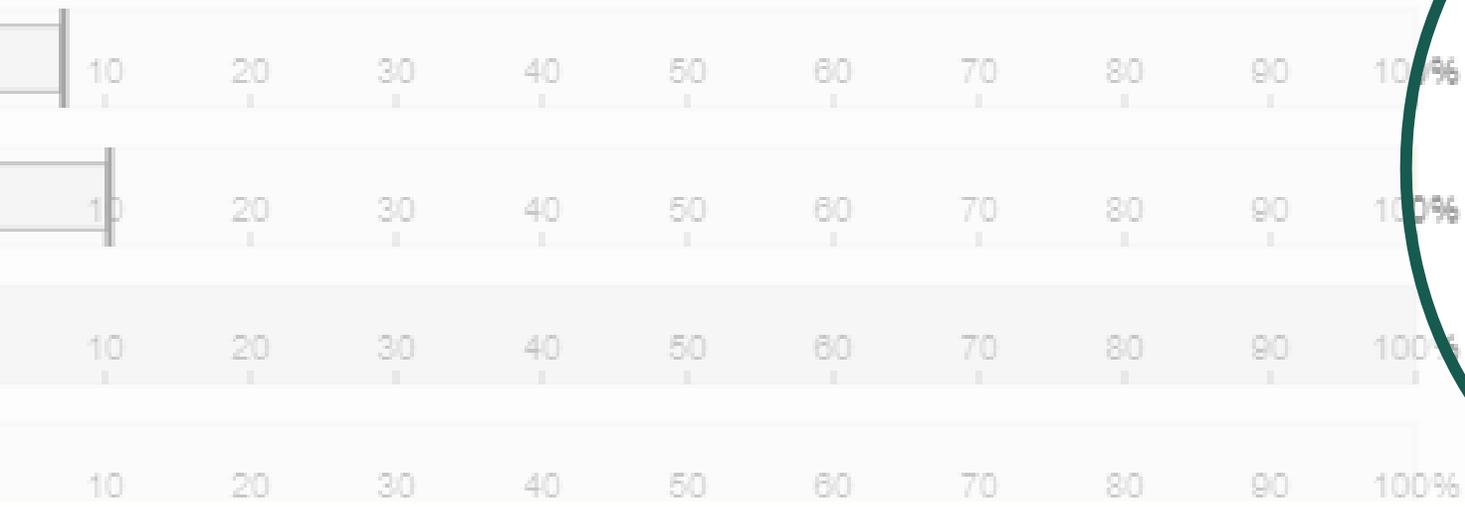


What's Your Risk?

my;
emic disease, HTN, Class1 Obese

Change Patient Risk Factors

Note: Your Risk has been rounded to one decimal point.



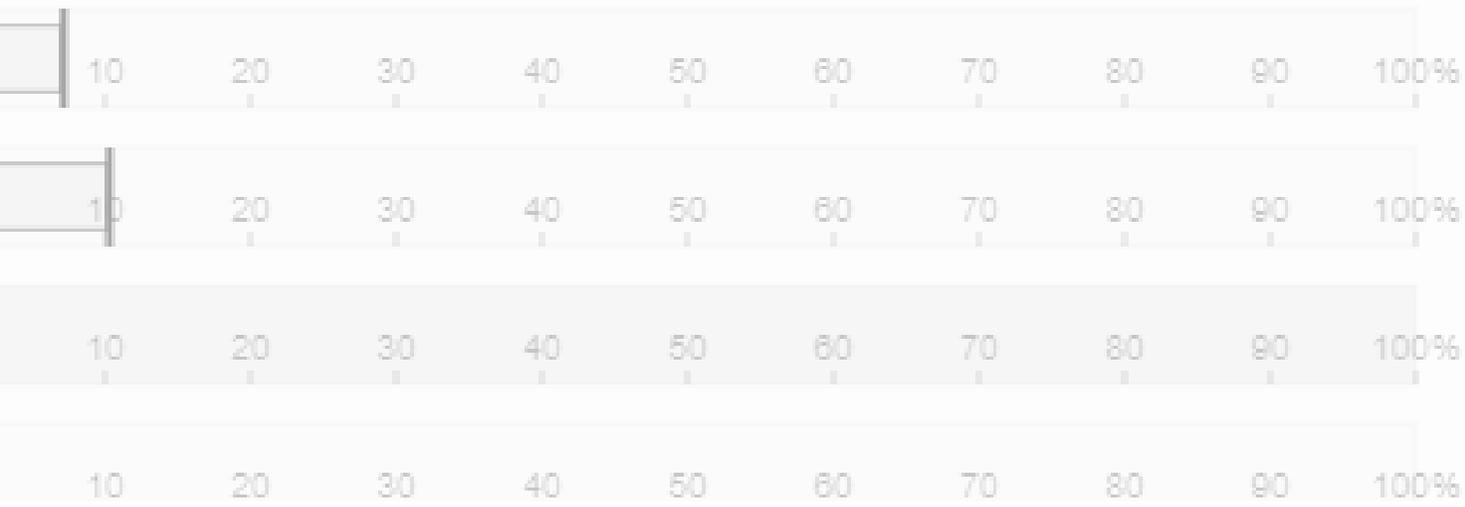
Your Risk	Average Risk	Chance of Outcome
7.0%	7.2%	Average
10.2%	10.3%	Average
0.6%	0.8%	Below Average
0.2%	0.3%	Average

What's Your Risk?

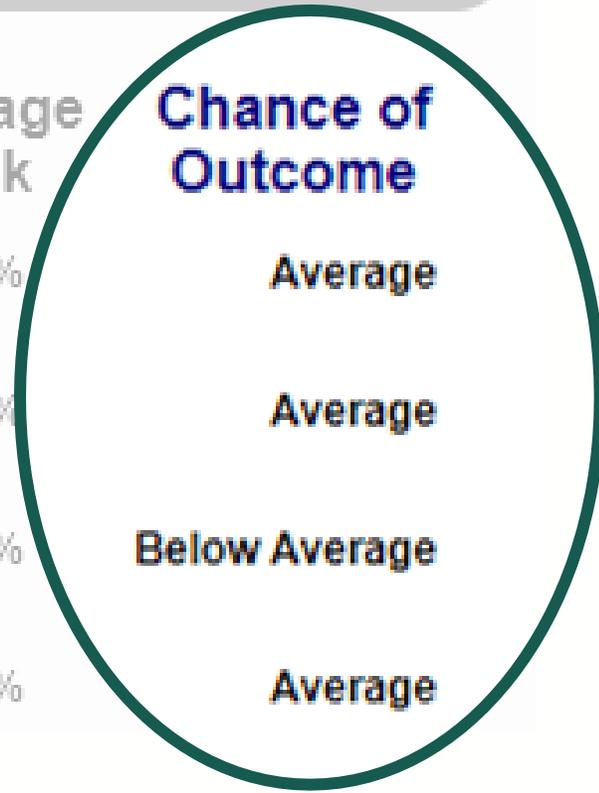
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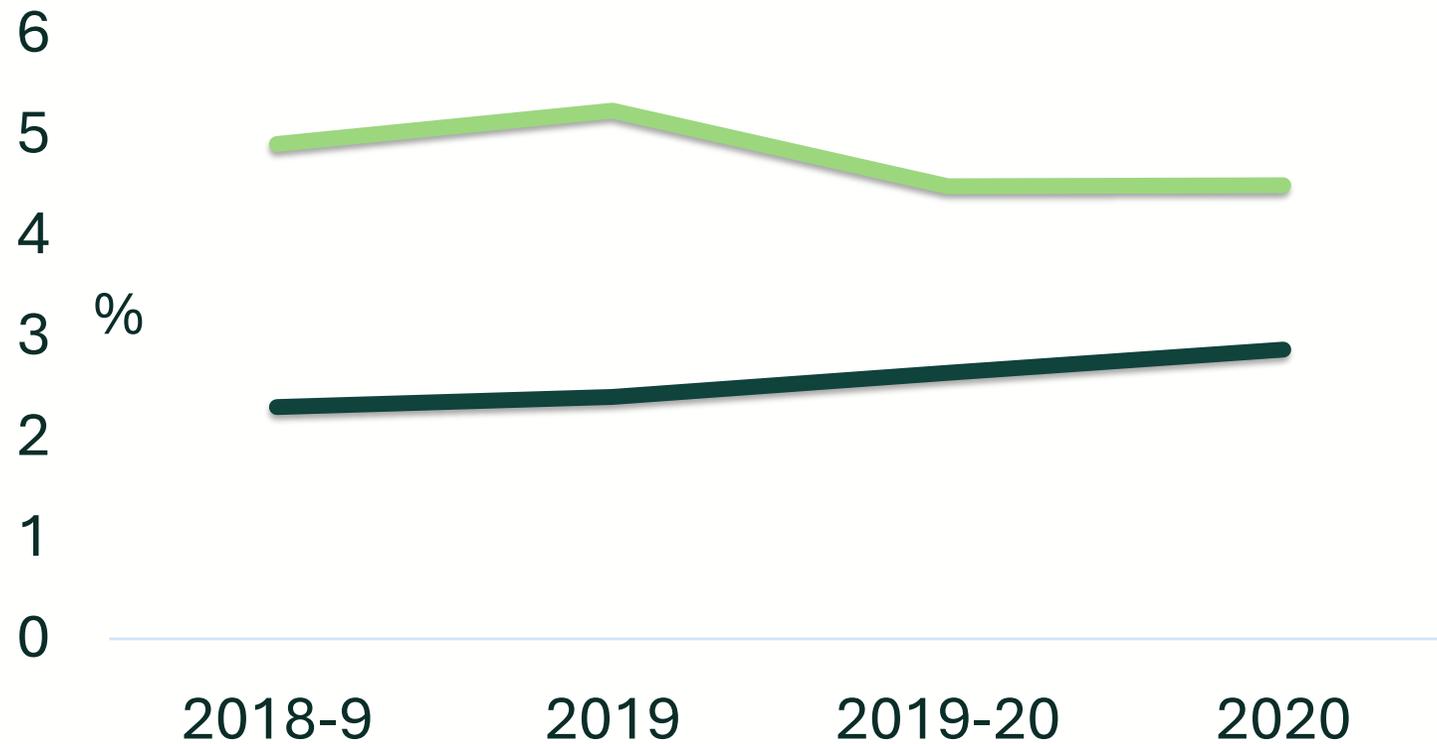


What's Your Risk?

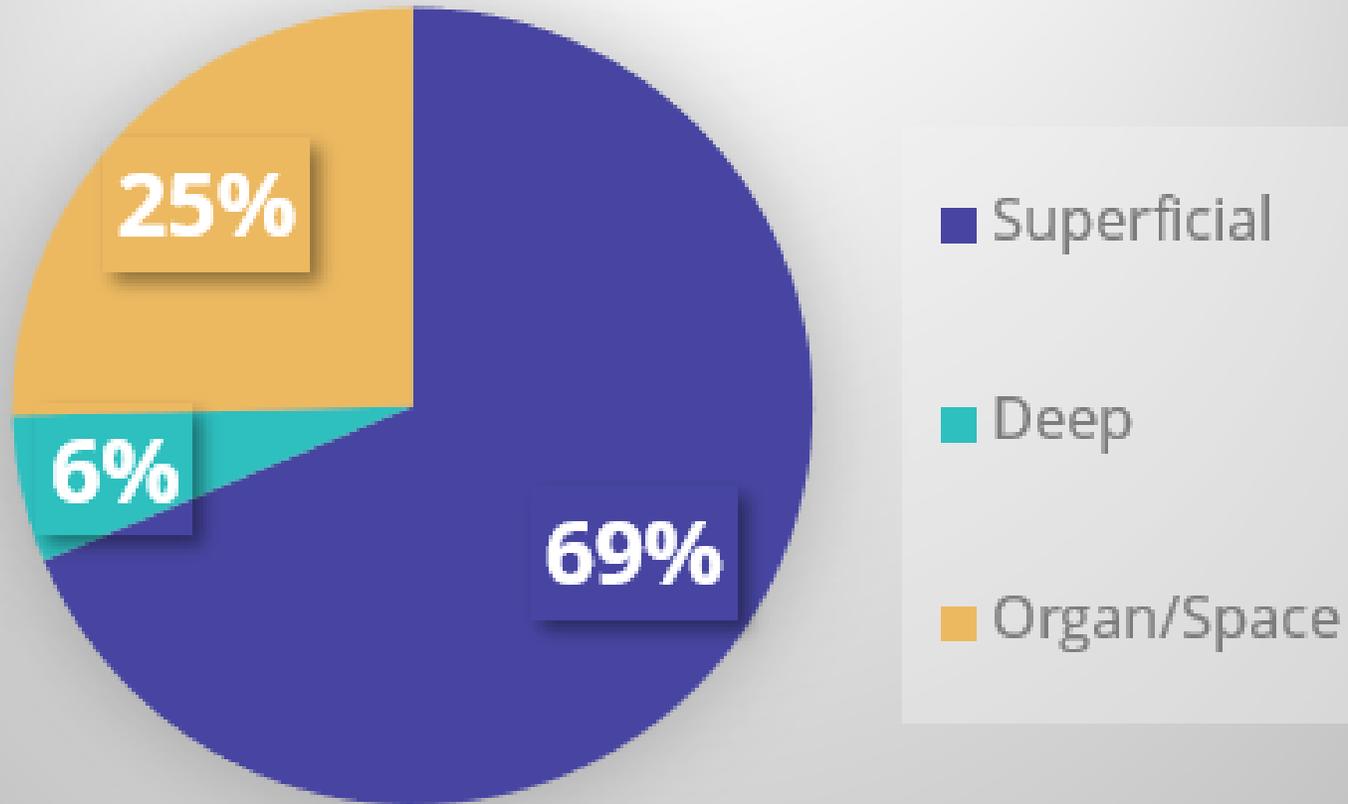




Surgical Site Infection Rate Was **TWICE** Than Expected

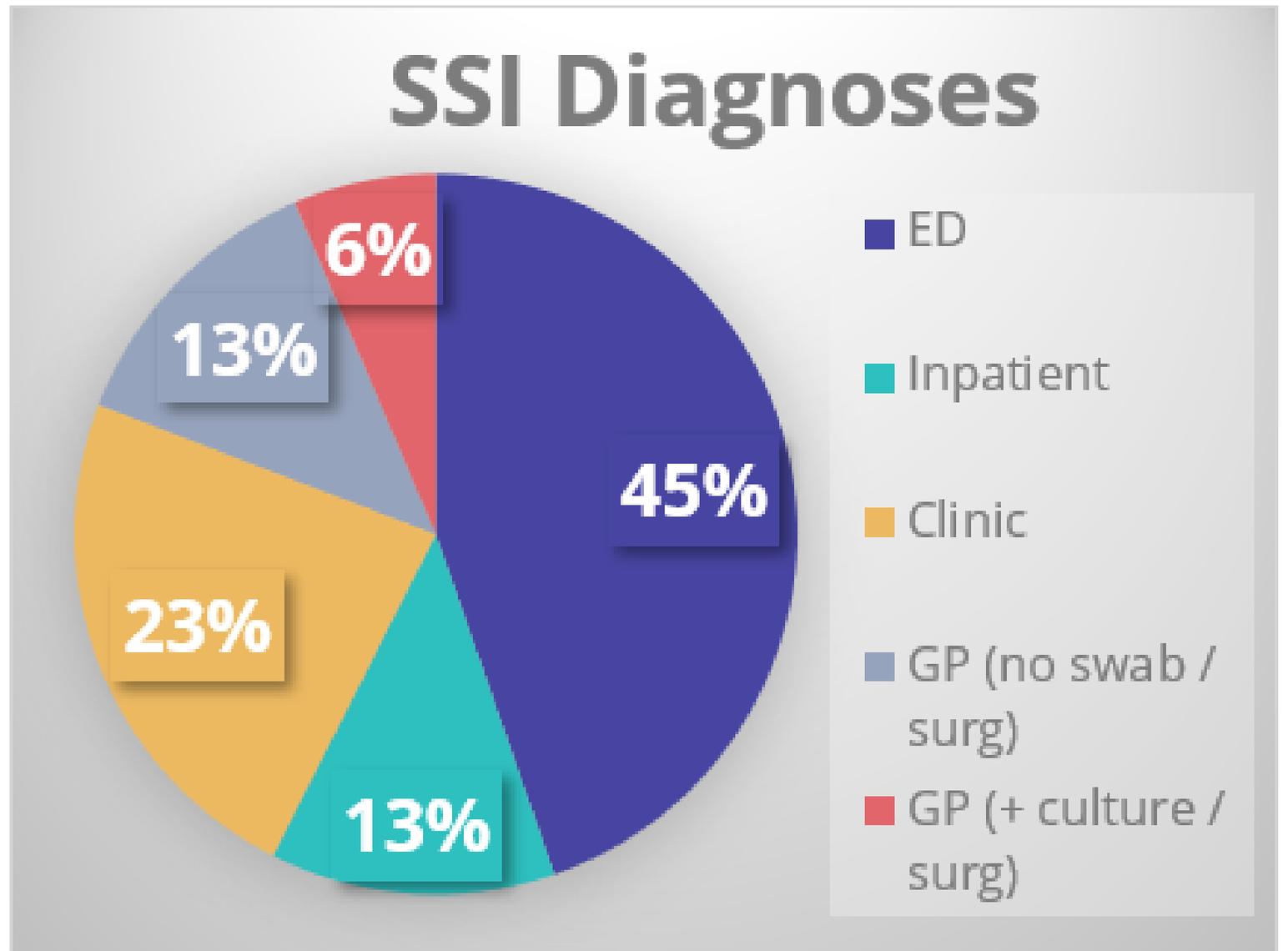


SSI Classification



Most were superficial infections

Most were diagnosed in an Emergency Department



Our Goal from 2022

We will achieve a 50% reduction in our current SSI rate over the next 2 years.



Surgical Antibiotic Prophylaxis



Pre-op Preparation & Bathing



Prep Choice & Application Method

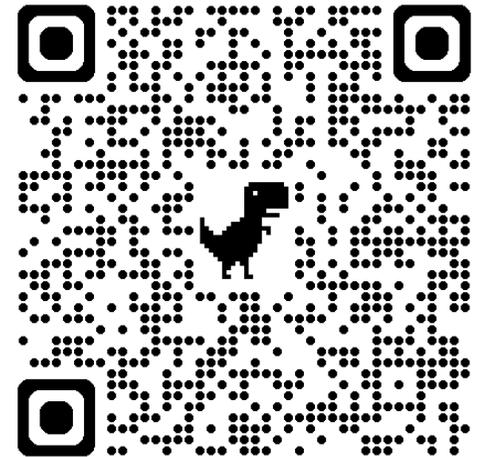


Anti-Microbial Sutures



Post-operative Education

Bundles Make A Big Difference



We improved **Surgical Antimicrobial Prophylaxis**

Recording information well

Chose the correct antibiotic (70% to 91%)

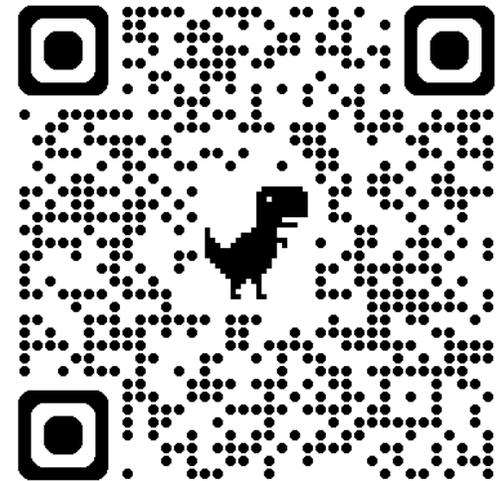
Better timing of first and second dose

Added benefit

Teamed with pharmacy, infectious
disease teams and anaesthetics

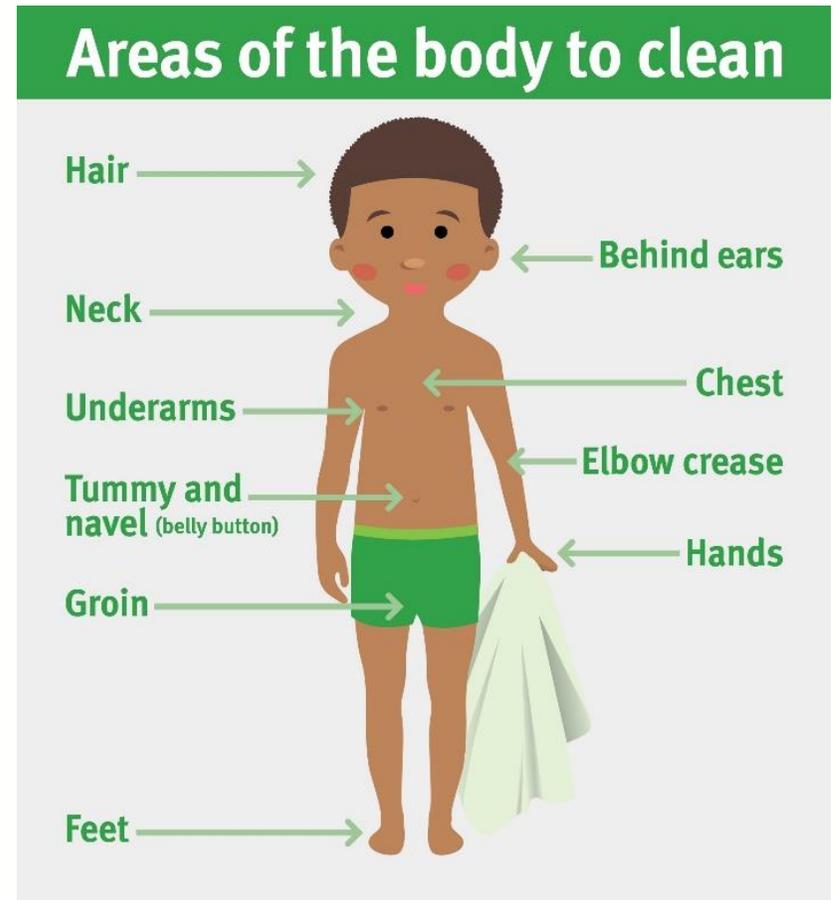
Improved Pre-Operative Information

- Scripted phone call
- SMS with link to co-designed website
- 75% engaged
- 4 minute view time



Children Were Better Prepared

- Clean
- Hospital clothes
- No more shoes



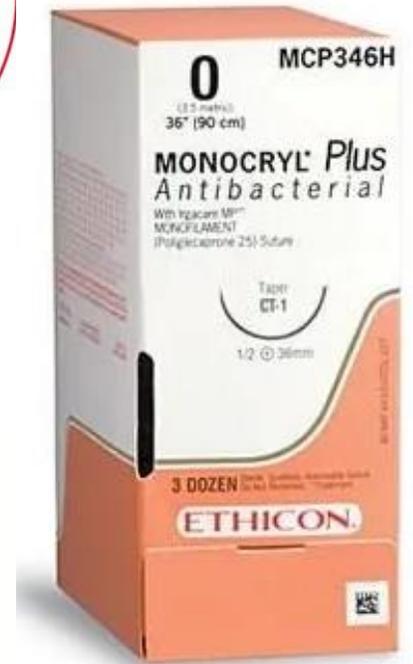
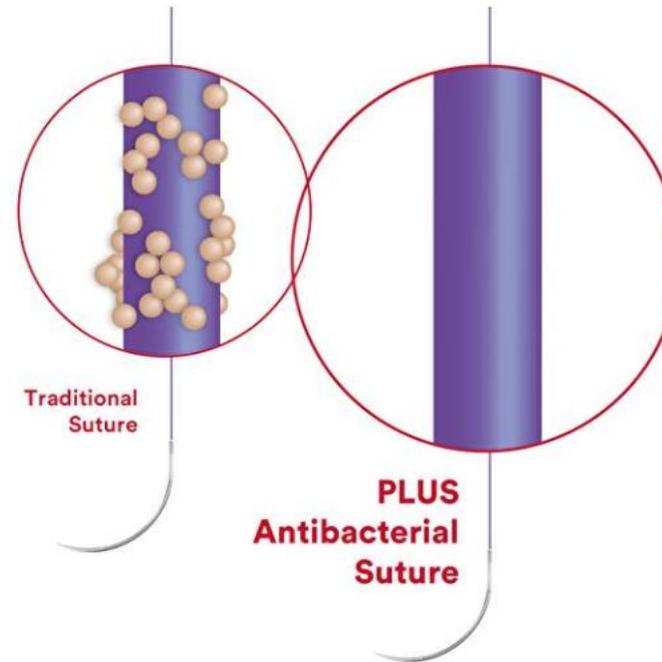
Skin preparation

- Chlorhexidine 2% with Alcohol 70%
- Education
 - **Drying time**
 - Wound classification
 - Application methods



Antimicrobial sutures

- Ethicon Plus
- Triclosan-coated sutures
- Minimal cost to upgrade
- 12 Meta-analyses, 28 RCT

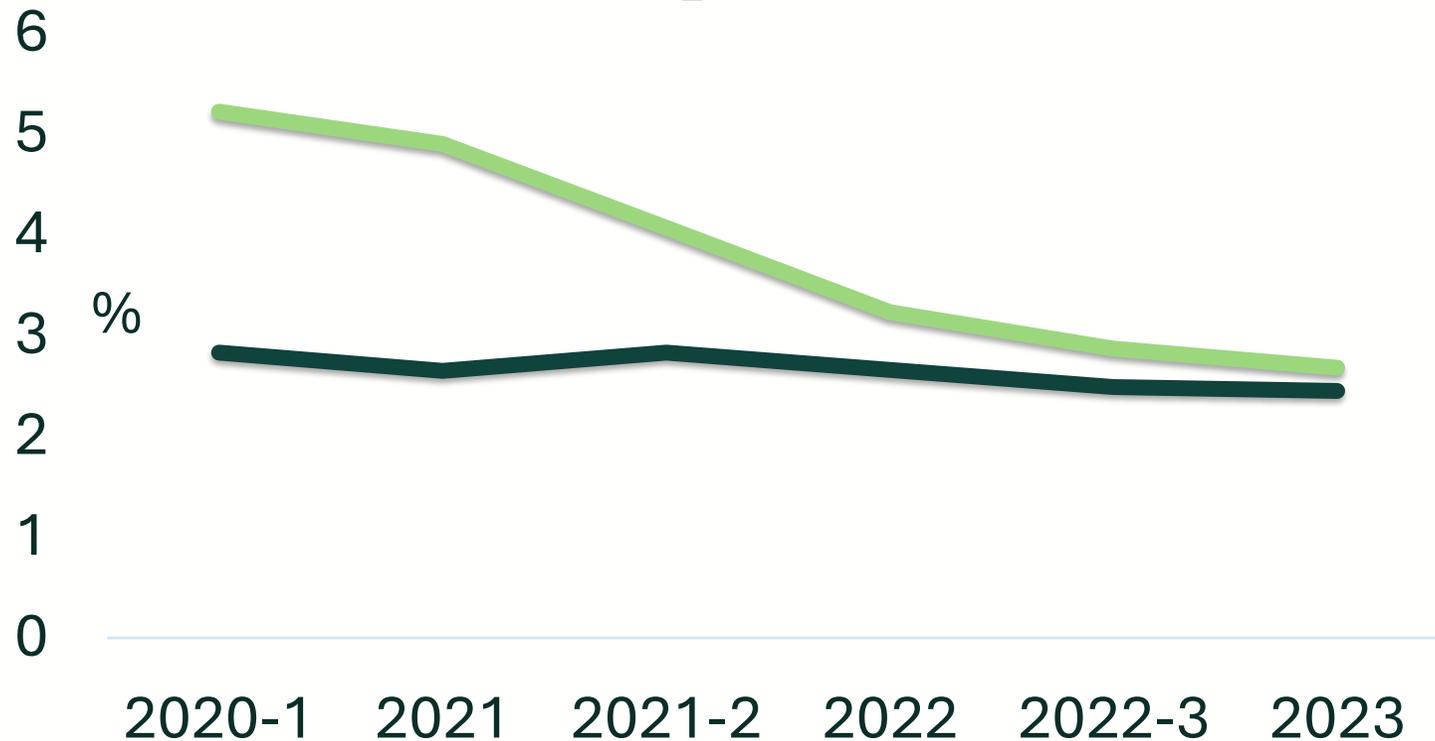


Post-operative information

- SMS with link
- 95% engaged
- 6-minute view time



Surgical Site Infection Rate Is Now As Expected



Results at QCH

Surgical site infection ↓ 50%

Readmissions ↓ 40%

Reoperations ↓ 47%

Results at QCH

Surgical site infection ↓ 50%

Readmissions ↓ 40%

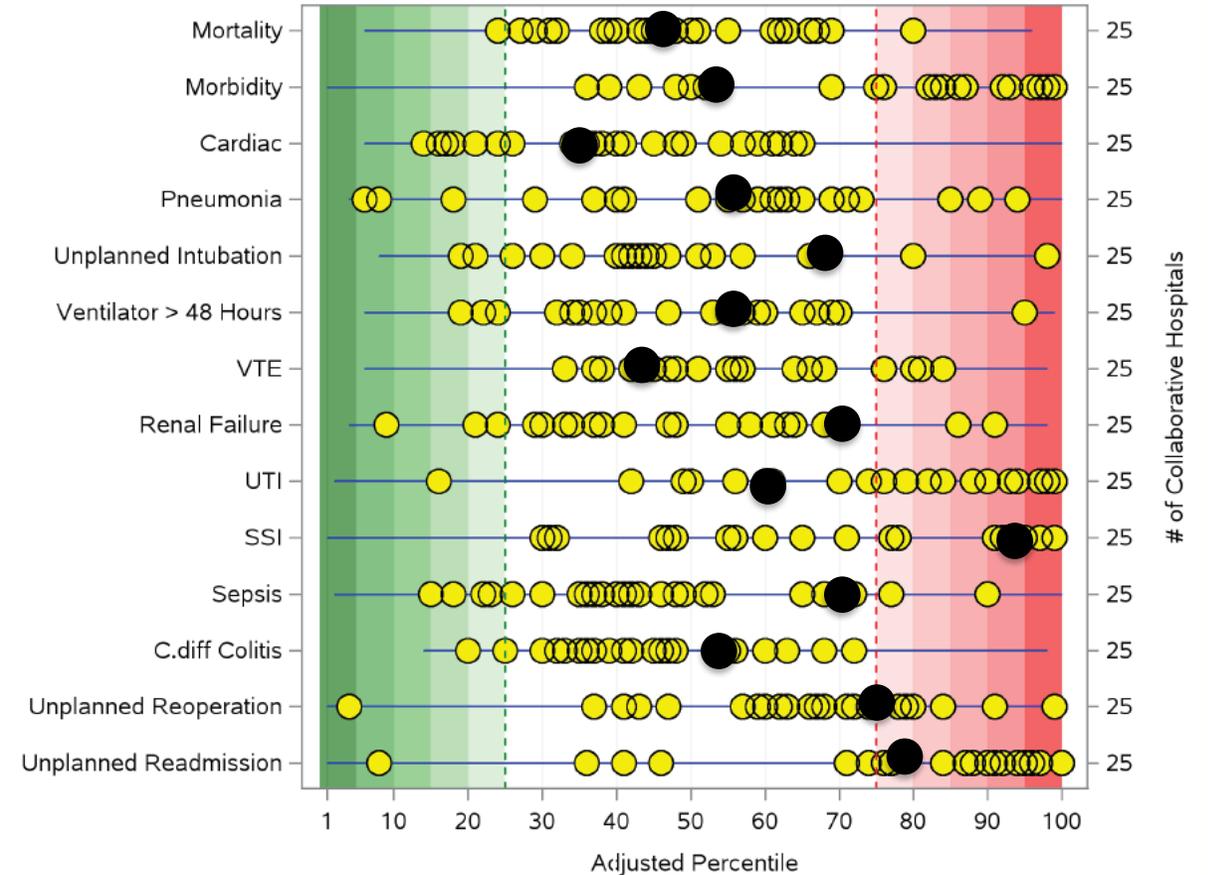
Reoperations ↓ 47%

Highlights

- Small changes lead to big improvements
- Doing the small stuff **well**
- **Paying attention**

Developments in Queensland

- 24 NSQIP sites in QLD
- 41 in Australia
- Access to Collaboratives

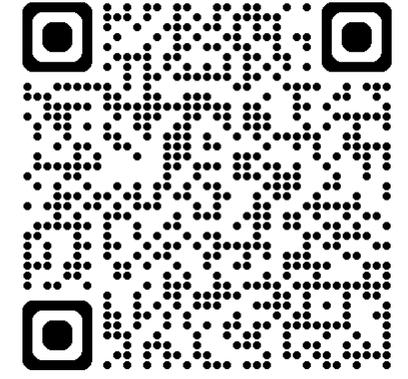


Make improvement easier

- State-wide clinical leads
- Resource hub for evidence, bundles
- Collaboration, not competition

Change The Health System

- 10% return to Emergency after surgical discharge
- Post-Operative Discharge Support Service
 - 9 sites
- Surgical Rapid Access Units
 - 4 sites



- Conference on 6 and 7 March 2025—Brisbane City Hall
- National Surgical Quality Improvement Program (NSQIP) collaborative on 5 March 2025—Herston

Keynote speakers



Dr Clifford Ko
American College of Surgeons Division of Research and Optimal Patient Care,



Professor Tim Briggs CBE
Chair of the NHS Get It Right First Time (GIRFT) programme

Chief surgical representatives

A panel of surgical representatives from across Australia and New Zealand will present and discuss local initiatives and opportunities for interjurisdictional collaboration. Attendance to date includes these representatives.



Doctor
Cath McDougall
(Queensland)



Professor
Ben Thomson
(Victoria)



Doctor
Kristin Bell
(Tasmania)



Professor
Neil Merrett
(New South Wales)



Doctor
Phil Worley
(South Australia)



Harper

can now receive the
best quality care

Acknowledgements

Queensland Children's Hospital

Brendan Hoad

Stuart Bade

Amanda Stahlhut

Clinical Excellence Queensland

Michael Zanco

Elizabeth Garrigan

Graeme Filippi

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NSQIP 2021 Data

[Click here for more information](#)

ENT

Neurosurgery

Orthopaedics

Plastics

PSUB

Total Surgical Cases

11K

NSQIP Cases Captured

1329

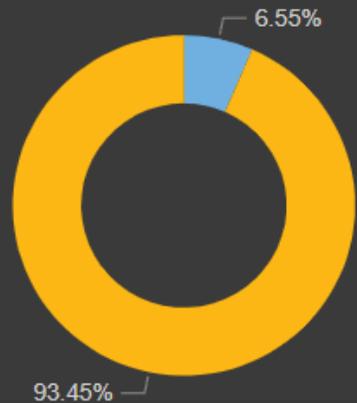
Postoperative Occurences

205

Average Length of Stay

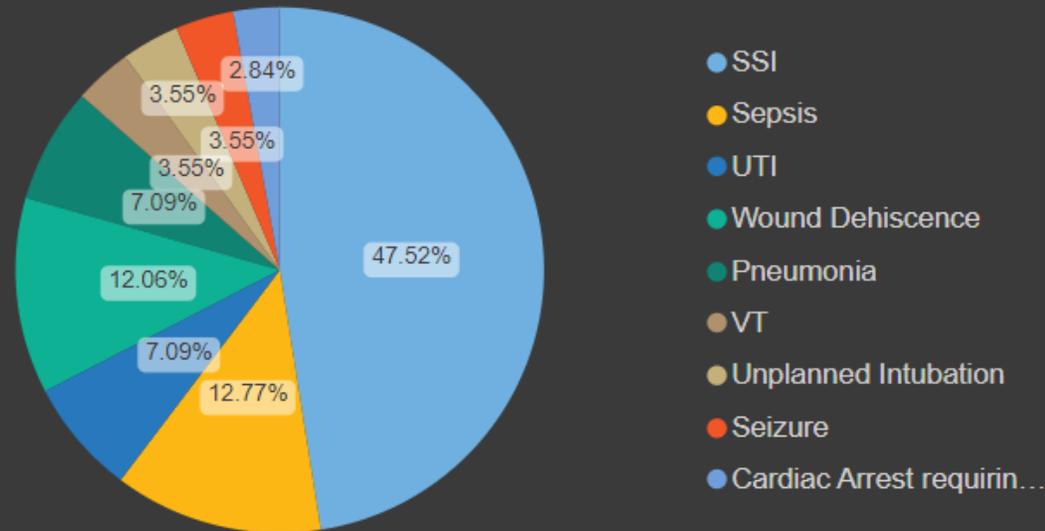
3.87

Readmission Rate



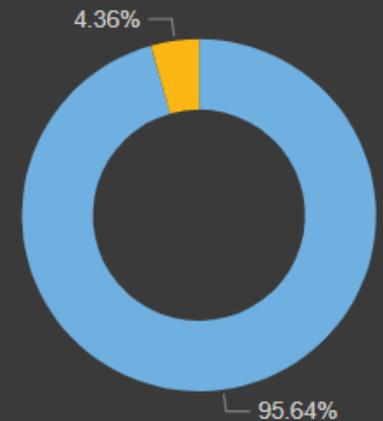
● Patient readmitted ● Patient not readmitted

Postoperative Occurences



- SSI
- Sepsis
- UTI
- Wound Dehiscence
- Pneumonia
- VT
- Unplanned Intubation
- Seizure
- Cardiac Arrest requiring...

RTOR Rate



● Patient did not RTOR ● Patient did RTOR