

## Board of Directors (In Public)

### Item 2.5

**Subject:** Mortality Improvement Plan  
**Date of Meeting:** 5<sup>th</sup> March 2019  
**Prepared by:** Dr Mark Jackson, Director of Research & Innovation and Dr Raph Perry, Medical Director  
**Presented by:** Dr Mark Jackson, Director of Research & Innovation  
**Purpose of Report:** For Approval

BAF Ref	Impact on BAF
1.1	This plan supports the commitment to continuous improvement of mortality in our Divisions

#### 1. Executive Summary

The Trust has a stated commitment to continuous improvement.

As part of this commitment, the Trust has refreshed its mortality improvement plans and taken the opportunity to commit to improving mortality within each Division in accord with differentially set targets derived from previous mortality performance.

Mortality rates will be monitored as part of the review of Divisional performance at the Operational Board.

#### 2. Background

It is well accepted that patient acuity and overall case mix is worsening year on year as the patients we treat are increasingly complex and developments in service mean the Trust is able to increasingly offer patients some form of intervention where perhaps in the past medical therapy was the only option. In this setting, mortality would be expected to rise without ongoing improvement.

Continuous improvement is one of the values of the Trust; each and every member of staff, clinical team, Department, Service line and Division should be actively seeking out opportunities to improve, even in the absence of a clear stimulus to do so. This should be true for mortality also.

#### 3. Method

Each clinical division has been engaged in the development of this mortality improvement plan.

We have:

Reviewed our previous mortality experience and set targets for improvement that are Division specific and realistic

Reviewed our previous mortality improvement efforts and identified further work as necessary

Used the learning from recent mortality alerts and published external reports to guide the selection of areas for improvement

Engaged with colleagues – our clinical experts in the field – to identify additional opportunities for improvement

### **3. The Plan**

#### Target Setting

Appendix 1 presents the Trusts overall mortality performance for the last three years. It is stratified across a number of levels so that procedure, service line and divisional mortality rates are evident.

We have agreed the following mortality targets for the lifetime of this plan, subject to annual review:

Risk adjusted mortality ratios for those procedures where they can be measured will remain at unity or less (i.e. lower observed rates of mortality than expected). Presently, this applies to cardiac surgery and coronary intervention. We will implement new risk adjustment methods as and when they are adopted nationally.

Raw mortality rates will be Division specific with a target set of no worsening. In the setting of a deteriorating patient case mix (more complex patients), holding mortality steady is an improvement. Raw mortality will be presented monthly to demonstrate variation together with a six month rolling average to smooth out any monthly variation.

#### Work from the Previous Mortality Improvement Plan

Whilst the high risk MDT has been successfully implemented, there has been no formal audit of the benefits arising. This audit has now been completed and the results are reassuring. Resulting actions are being implemented. The education & training work stream has seen limited progress. All other areas have progressed satisfactorily.

A full review of the plan is included as appendix 2.

#### External Learning

The Trust has received two significant mortality alerts from Dr Foster in 2018:

1. Acute Myocardial Infarction – investigations demonstrated a significant shift in case mix as the reason for elevated mortality which subsequently settled.

2. CABG (Other) and Atherosclerosis – investigations demonstrated that the source of the excess mortality was isolated CABG (with pacemaker wires) and CABG with valves (combined procedures).

The Trust has received a GIRFT report for cardiothoracic surgery, and a report for cardiology is awaiting validation and action planning.

The Trust continues to participate in national audits where mortality is included as an outcome, e.g. ICNARC.

#### Action Plan

The latest mortality graphs are shown in Appendix 4.

#### *Surgery*

<b>Action</b>	<b>Responsible Officer/s</b>	<b>By When</b>
Renewed focus on auditing and monitoring morbidity	AMD Surgery Clinical Audit Lead	Ongoing
Review of all mortalities for the period of Dr. Fosters alert	AMD Surgery	March 2019
Implement learning from this review focusing on themes and incidences of 'Failure to Rescue'	AMD Surgery	2019-2020
Review and implement further learning from Independent External Mortality Review at SGUH commissioned by NHSI (LHCH surgeon is a member of the panel)	AMD Surgery	After review completed
Enhance the mortality review process and Learning from Deaths to facilitate pattern recognition and themes	Medical Director AMD Surgery	Ongoing
Audit of high risk MDT (see appendix 3 for terms of reference)	Director of Research & Innovation, Medical Director, AMD Surgery	March 2019
Appropriate case selection via High Risk MDT	AMDs / Clinical Leads	Ongoing
Anaesthetic review of appropriate patients via High Risk MDT	AMDs / Clinical Leads	Ongoing
Consider guidance for two surgeon operations in very high risk cases	AMD Surgery	2019-2020
Review Performance Management Policy for Cardiac Surgery	AMD Surgery	Dec 2018
Work with cardiology to improve care of patients with temporary pacemakers	AMDs Surgery and Medicine	March 2019

Work with Intensivists to focus on potential 'inappropriate discharges' from critical care and ensure appropriate handover to Outreach team	AMDs Surgery and Clinical Services Critical Care Clinical Lead	Ongoing
Commence use of TTFM in suitable situations for evaluating coronary bypass grafts	AMD Surgery Clinical Lead Cardiac Surgery	March 2019
Availability of bespoke Epi-aortic US probe for evaluating ascending aorta in appropriate cases (part of stroke reduction strategy)	AMD Surgery Clinical Lead Cardiac Surgery	March 2019
Develop Endocarditis pathway and establish Endocarditis MDT for the STP and the region	AMD Surgery Clinical Leads	June 2019
Review scope for further standardization of practices in perioperative and postoperative care	AMD Clinical Leads	Ongoing

### *Interventions*

Action	Responsible Officer/s	By When
Service line to agree/review baseline testing on arrival; differential testing in sicker patients	Interventional Cardiology Leads (Dr Velavan & Dr Appleby) will convene a team of Cardiologists (internal & referring) to develop guidance in these areas and ensure the recommendations are incorporated into existing protocols	April 2019
Early involvement of anaesthesia in sick patients		
Ensure PPCI procedure is the most appropriate way forward		
Continue divisional work on acute kidney injury		
Incorporate learning from MACCE and MRG reviews into protocols		
Ensure documented discussion of community DNAR		

### *Critical Care*

Action	Responsible Officer/s	By When
<i>Staffing</i>		
Aim for 24/7 ACCP cover - Currently covering 12 hour dayshifts 7 days a week	Clinical Lead Critical Care / Critical Care Manager	September 2020
24/7 Core medical trainee tier - due to start	Clinical Lead Critical Care	September

		2019
Increase nursing staff with critical care qualification to > 50%	Critical Care Manager	February 2020
Improve therapy workforce to be able to deliver respiratory and rehabilitation input 7 days a week	Lead Respiratory Physiotherapist / Head of Operations Clinical Services	September 2020
Pharmacy - Attending morning handover POCCU ward round to reduce drug errors of patients being transferred to the wards	Chief Pharmacist	January 2019
<i>Processes</i>		
Target temperature management protocol to ensure consistent care	Clinical Lead Critical Care	January 2019
Improve compliance with sepsis bundle	Consultant Intensivist (OAR) / Head of Operations Clinical Services	September 2019
Restart monitoring of central line infection data	Critical Care Manager	December 2018
Improve shared learning from critical incidents	Critical Care Manager	September 2019
Improve compliance renal bundle. All cardiac patients now being screened for AKI	Consultant Intensivist (OAR)	September 2019
<i>Ventilation times</i>		
Low tidal volume policy as per ideal body weight.	Clinical Lead Critical Care / Critical Care Manager	September 2019
Audit and improve extubation times following routine surgery.	Clinical Lead Critical Care / Critical Care Manager	September 2019
Nurse led weaning program and education	Clinical Lead Critical Care / Critical Care Manager	February 2020

#### 4. Conclusion

This plan provides a series of practical initiatives that will improve our mortality.

Mortality improvement may be real, (i.e. a decrease) or apparent (holding mortality steady in the setting of a worsening case mix).

Division specific targets have been set which will be reflected in relevant dashboards.

## **5. Recommendations**

The Board of Directors are asked to approve this plan.

## Appendix 1

This table includes all patients. Where patients did not receive treatment, they are included by intended management, determined on admission.

In-hospital mortality	January 2016 to December 2018	January 2018 to December 2018
<b>Overall</b>	1.4% (576 / 40571)	1.5% (197 / 13339)
<b>Directorate</b>		
Medicine	1.0% (302 / 29183)	1.2% (110 / 9552)
Surgery	2.4% (274 / 11388)	2.3% (87 / 3787)
<b>Service line</b>		
<b>Medicine</b>		
ACHD	0% (0 / 74)	0% (0 / 74)
Cystic Fibrosis	0.5% (6 / 1116)	0.5% (2 / 400)
EPS	0.2% (8 / 4510)	0.5% (6 / 1156)
Interventions	1.5% (265 / 18012)	1.5% (96 / 6521)
Pacing	0.3% (10 / 3085)	0% (0 / 637)
Respiratory Medicine	0.5% (13 / 2386)	0.8% (6 / 764)
<b>Surgery</b>		
ACHD	0% (0 / 6)	0% (0 / 6)
Aortic & PV	5.5% (33 / 604)	4.4% (10 / 228)
Cardiac Surgery	2.7% (184 / 6724)	2.7% (60 / 2248)
Main		
Oral Surgery	0% (0 / 121)	0% (0 / 30)
Thoracic Surgery	1.4% (57 / 3933)	1.3% (17 / 1275)

## Appendix 2

Update on progress with the previous mortality improvement plan

Strategy Component	Lead(s)	Progress
<b>Reliability</b> <ul style="list-style-type: none"> <li>Standard operating procedures for all conditions</li> <li>Same Day Admission</li> <li>Failure modes effects analysis</li> <li>Enhanced recovery</li> </ul>	Modi, Mills	Anaesthetic pre-operative assessment and same day admission has commenced in both cardiac and thoracic surgery. Enhanced recovery programme currently on hold.
<b>Organisational Learning</b> <ul style="list-style-type: none"> <li>Process review</li> <li>Use of RACI</li> <li>Effective communication of improvements</li> </ul>	Perry	Complete. Two stage review process established. Recently revised to comply with national directives. Complete. Integrated into revised mortality review policy. Complete. Need stressed and accountabilities defined in revised mortality review policy.
<b>Patient Safety</b> <ul style="list-style-type: none"> <li>Walk rounds to check improvements</li> <li>Quality Improvement Training</li> </ul>	Jackson	In progress. Walk rounds superseded by presentation of organisational learning and assurance audits at Operational Board as part of organisational learning agenda Complete. Service improvement team established and methodology in place. LiA currently being implemented supplemented by Quality Improvement showcases.
<b>Digital Healthcare</b> <ul style="list-style-type: none"> <li>Interoperability</li> <li>EPR as quality improvement tool</li> <li>NICOR integration</li> </ul>	Velu	In progress. Community EPR project implemented. Trust engaged in City wide interoperability project which will see universal read access to core information for all patients, irrespective of treating facility. In progress. Numerous examples of feedback driving improvement, e.g. sepsis, VTE. In progress. EP, devices and Cardiac Surgery completed. Heart failure, thoracic surgery and intervention in pipeline.
<b>Decision Making</b> <ul style="list-style-type: none"> <li>Introduce high risk MDT</li> <li>Change expectation of referred patients</li> <li>Shared decision making</li> <li>Better patient selection</li> </ul>	Mills, Appleby	High risk MDT in place. Needs audit of implementation and benefits Will include comprehensive frailty assessments and information from face to face patient consultations. Basic frailty assessment now in EPR Shared decision making model to be used, date to be determined Implementation of these actions will result in better patient selection



<b>Education &amp; Training</b> <ul style="list-style-type: none"> <li>• Job plan review for protected learning</li> <li>• Educate referral base</li> <li>• Simulation training</li> <li>• Training opportunities</li> </ul>	Modi	Open evening events diarised for 19/20
<b>Communication</b> <ul style="list-style-type: none"> <li>• Video consultation</li> <li>• eReferral</li> <li>• Enhanced internal comms through EPR</li> </ul>	Jackson	<p>In progress. Video consultation resource audit complete. No local ownership or revenue funding for ongoing support and management of video conferencing equipment. Investment needed to realise benefits</p> <p>Complete. System embedded and data quality of referrals good.</p> <p>In progress. Plans to restructure content being implemented. Introduction of timeline from v16.3.</p>

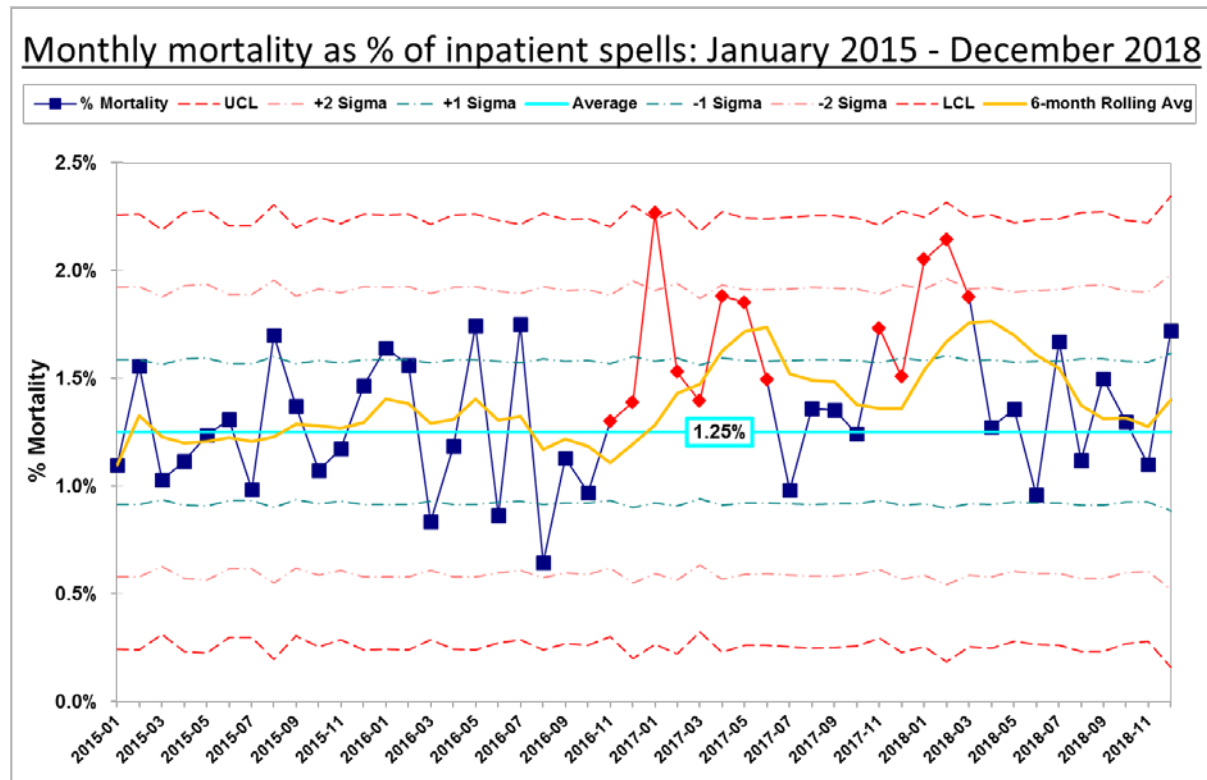
## Appendix 3

### Terms of Reference for the Audit of the High Risk MDT

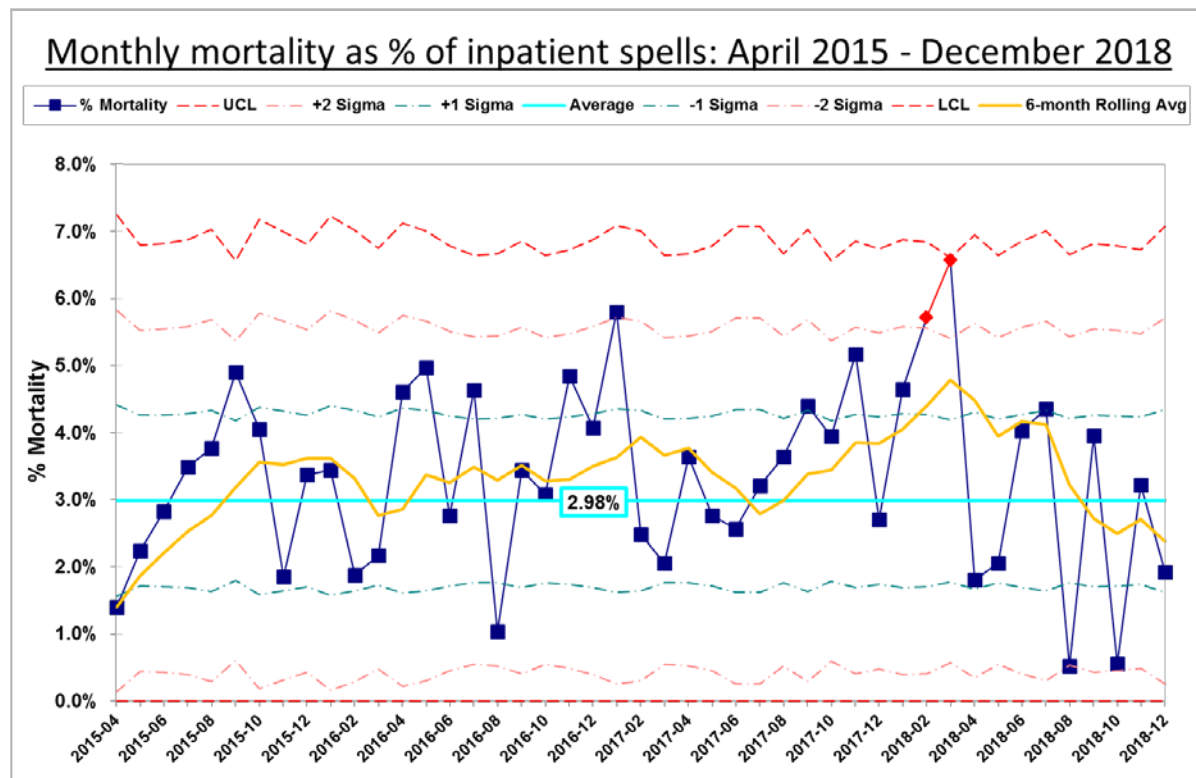
<b>Purpose of the HRMDT</b>	<b>Audit Question</b>	<b>Audit Measure</b>
Comprehensive review of all high risk urgent and elective cases	Which cases are being presented, and which are not? Do all Consultants bring cases?	Audit of deaths against HRMDT presentations Audit of high Dr Foster / EuroSCORE / NWQIP patients against HRMDT presentations Audit of presenters
Forum for discussion of potentially difficult cases	Do all of the specialties that should be present actually attend?	Audit of attendance against terms of reference
Consensus decision making regarding which treatment is in the patients best interests	How frequently does the treatment originally referred for change?	Audit of conversion of patients between specialties Audit of final outcome in patients who switch
Reduce specialty specific and overall mortality & morbidity	What has been the impact of the HRMDT on: Mortality Morbidity Resource use Discharge Readmissions (to any hospital)	Audit of monthly mortality using statistical process control Audit of (avoidance of) foreseeable major morbidity Audit of actual LOS against anticipated Audit frequency of patient returning home Audit of readmissions against Trust average

## Appendix 4

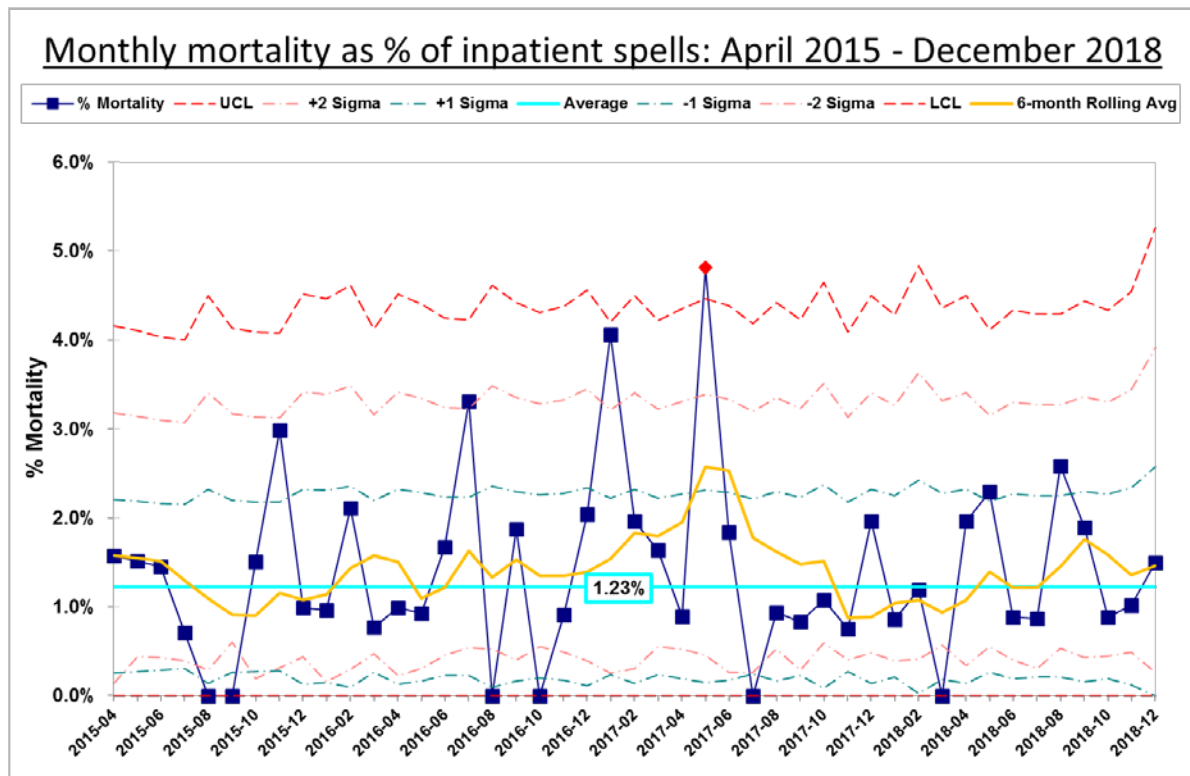
### Overall Trust



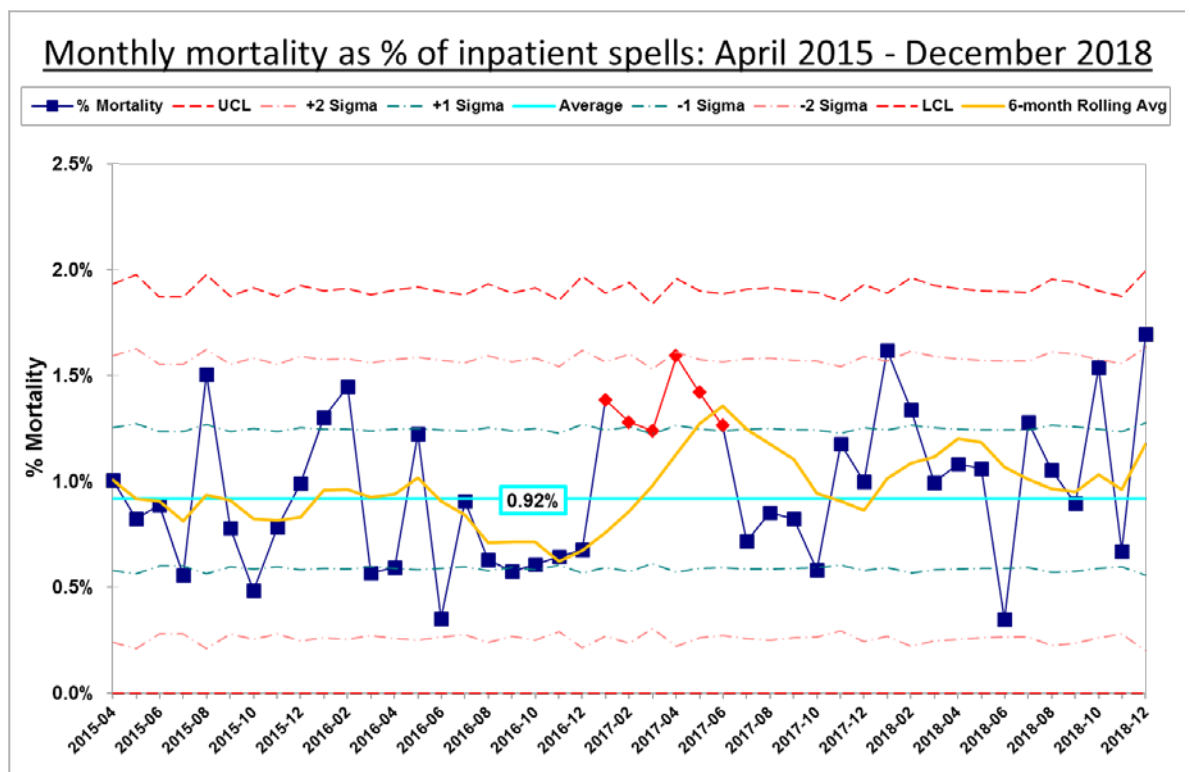
### Cardiac Surgery



## Thoracic Surgery

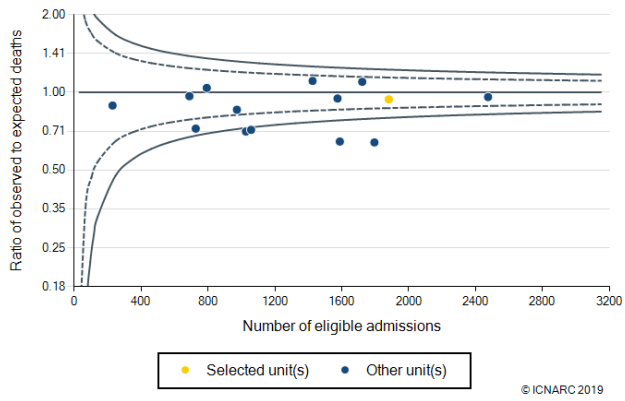


## Medicine



## Critical Care

Risk-adjusted acute hospital mortality



Risk-adjusted mortality - predicted risk < 20%

