Minimising Cancellations and Maximising Patient Safety in Cardiac Surgery

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13th September 2108

Aim

- **The aim is to analyse all the reasons for cancellations of cardiac operations and to decrease avoidable “on the day” cancellations by 15% by March 2019.**

ITV REPORT 22 September 2015 at 7:00am

Cardiff hospital rated in top thre cardiac centres in UK



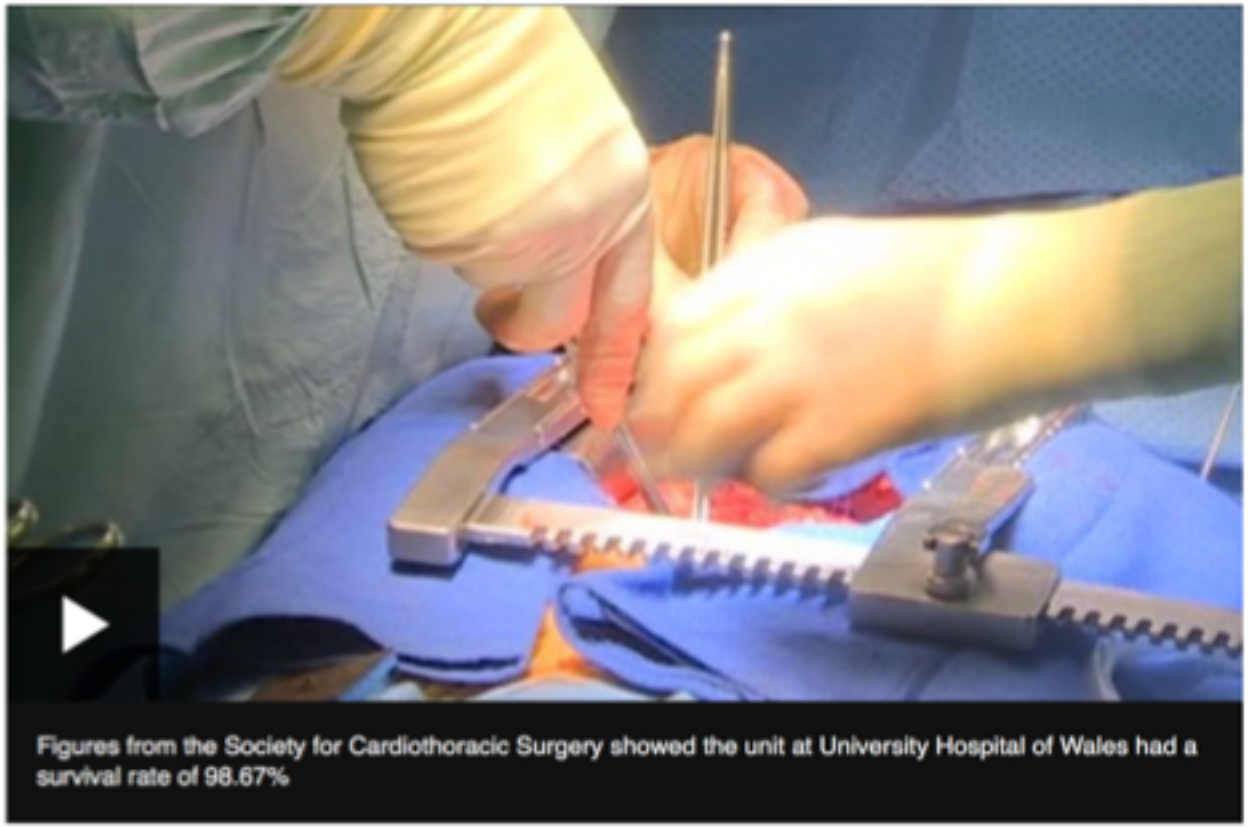
Wales' biggest hospital has been named one of the best places in the UK for heart surg

University Hospital of Wales in Cardiff, also known as The Heath, has been given the ac by the Royal College of Surgeons.

Two surgeons at the hospital have also been placed in the top ten of cardiac surgeons UK.

Cardiac unit rated among top three in UK for surgery

22 September 2015 Share



Figures from the Society for Cardiothoracic Surgery showed the unit at University Hospital of Wales had a survival rate of 98.67%

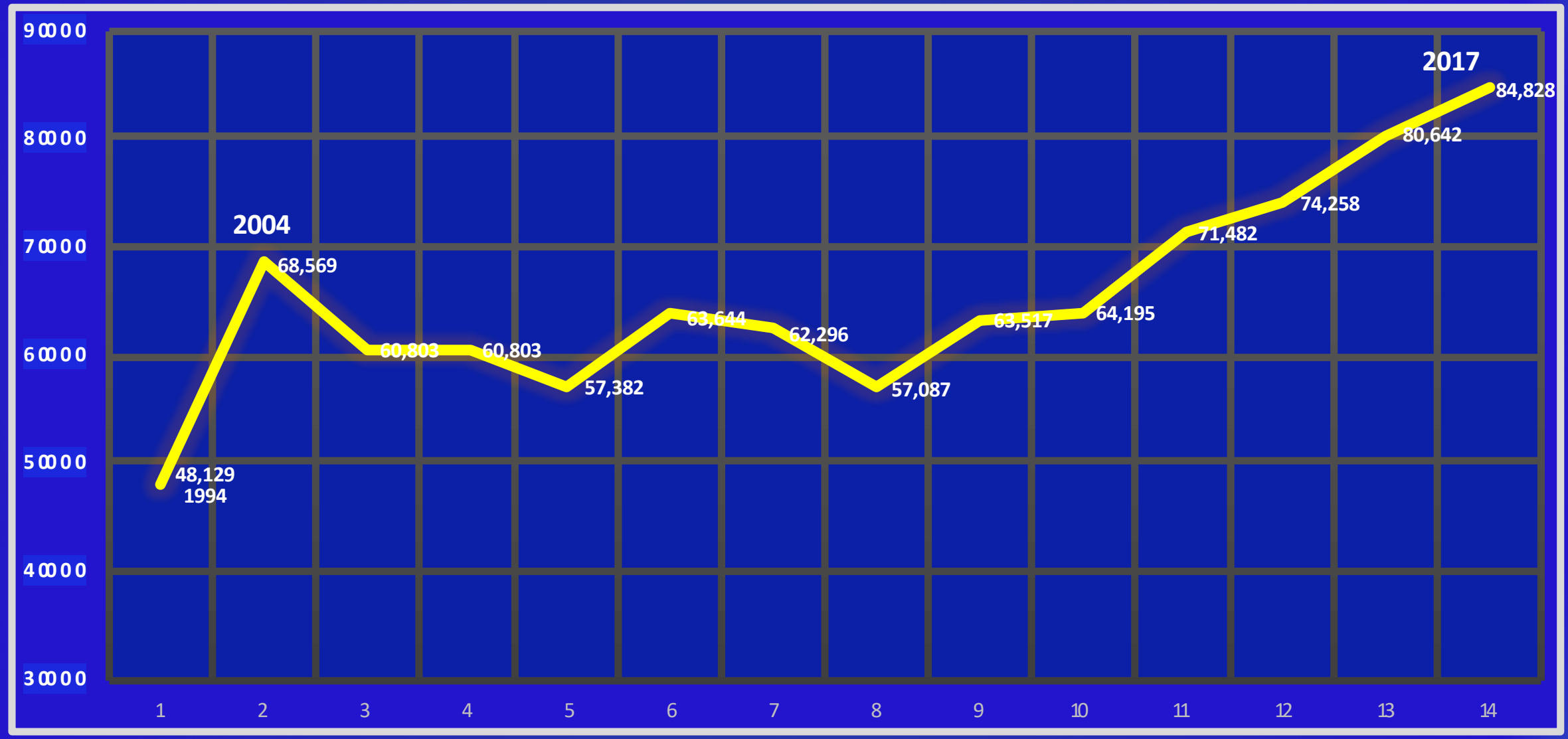
A cardiac unit in a Cardiff hospital has been rated among the best in the UK for surgery survival rates.

Figures from the Society for Cardiothoracic Surgery showed the unit at University Hospital of Wales (UHW) had a survival rate of 98.67%.

Background

- Cancellations of operations is a universal problem.
- Acceptable rate is deemed to be around 10% (cancellation rate audit).
- Due to multi-factorial reasons, at UHW 30-35% of the heart operations are cancelled annually.
- No data is available or published in Wales (small audits).

NHS England: Cancelled operations



NHS England-QMCO data collection,9th August 2018, Time Series of Cancelled operations

BBC

Surgeons wait for answers on deaths before heart surgery

26 February 2014

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Wales: number of people waiting more than a year for surgery up 400%

Labour-led Welsh government under fire after Royal College of Surgeons reveals number in year to March was 3,605, up from 699 in 2013

Over 90,000 operations were cancelled in 2017-2018 in Wales.

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Welsh NHS patients still waiting longer than in England

By Nick Servini
Political editor, Wales

19 January 2017

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6:04PM, FRI 26 JUL 2013 CALLS FOR WELSH NHS INQUIRY

Calls for inquiry after 12 die waiting for cardiac surgery

Last updated Wed 31 Jul 2013

Health • Welsh Government • Welsh NHS

Recommend 0 Tweet +1

The man in charge of Wales' biggest hospital has revealed that 12 people have died over the last 15 months while waiting for cardiac surgery. The Royal College of Surgeons says that South Wales is the only part of the UK where patients are dying in such circumstances.

That's just one issue in a devastating review by the College at the University Hospital of Wales in Cardiff.

Tonight the minister in charge of the Welsh health service said he was "very concerned" at the findings, and one Welsh Labour MP - whose own husband died at the hospital - is demanding an inquiry and the resignation of the people who run it.



6 September 2013 Last updated at 19:32

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Patients 'dying' in surgery wait, claims Powys GP

Patients are dying waiting for heart surgery, according to a leading doctor who has spoken out about delays at Wales' leading cardiac centres.

Powys GP Dr James Wrench, who leads the South Wales Cardiac Network, said those who need operations are supposed to be treated within 26 weeks.

But he said some cannot wait that long and are going private while others are being treated in England instead.



Dr James Wrench says patients need faster treatment for cardiac issues

Related Stories

BBC NEWS

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Friday, 3 May, 2002, 11:55 GMT 12:55 UK

Heart patients 'die' on waiting lists



Heart workers are still eager to see new investment

Hospital patients are dying as they wait longer than ever for heart disease to be diagnosed by specialists, leading cardiac surgeons are warning.

On friday, the Welsh Cardiac Group spoke out of its fear that Wales is falling further behind England - where there has been massive investment to increase staff and build new facilities - in the care it can offer patients with

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Patients 'die waiting', doctor claims

Lives are being lost because waiting lists for heart problems are getting longer and the service in Wales is out-dated, a cardiologist has claimed.



Concerned about delays : Dr Penny

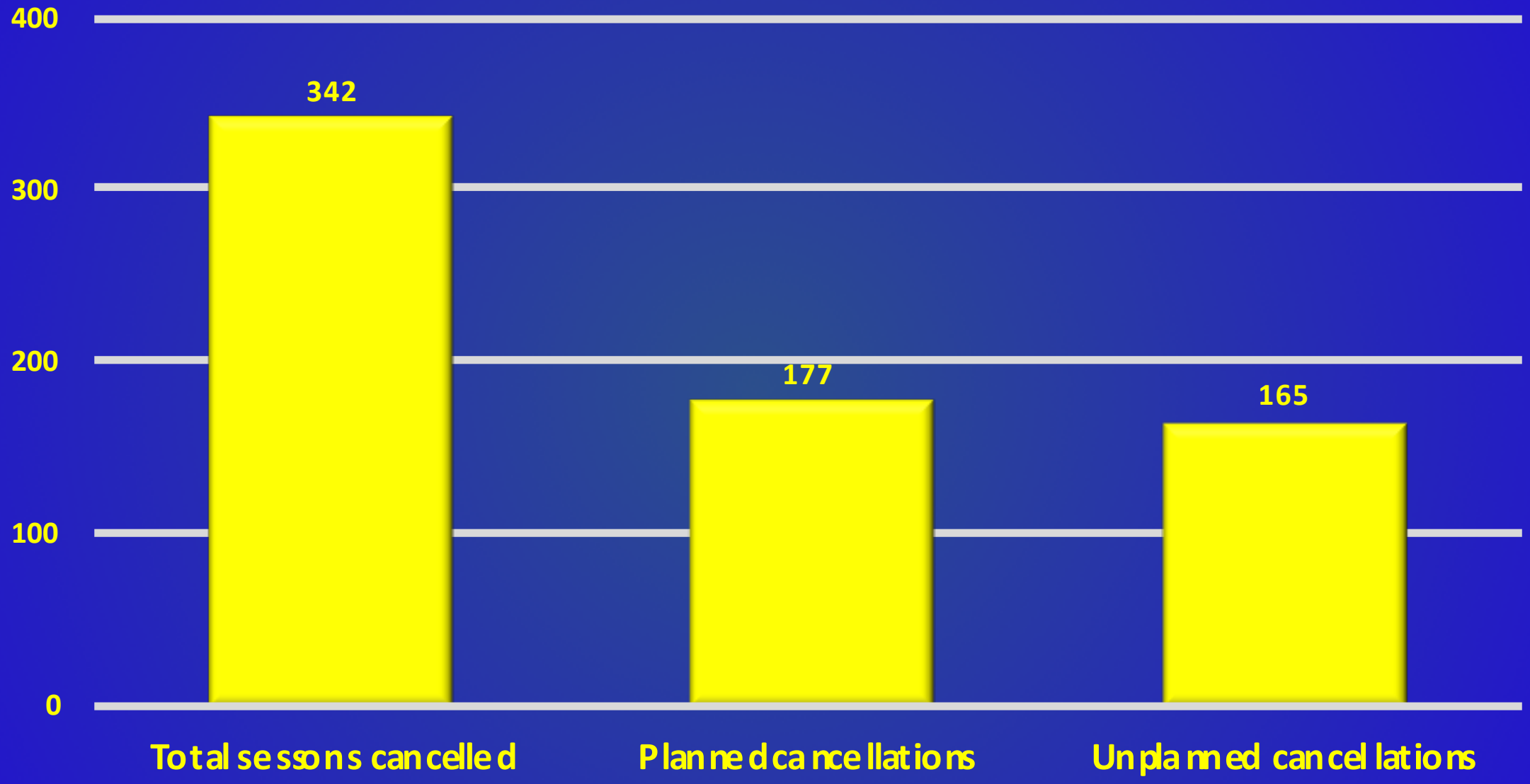
A British Cardiac Society working group is to look at claims that Wales is lagging behind England.

A leading Welsh cardiologist, who will represent Wales on that group, has told BBC Wales his waiting lists are increasing.

Project presentation.

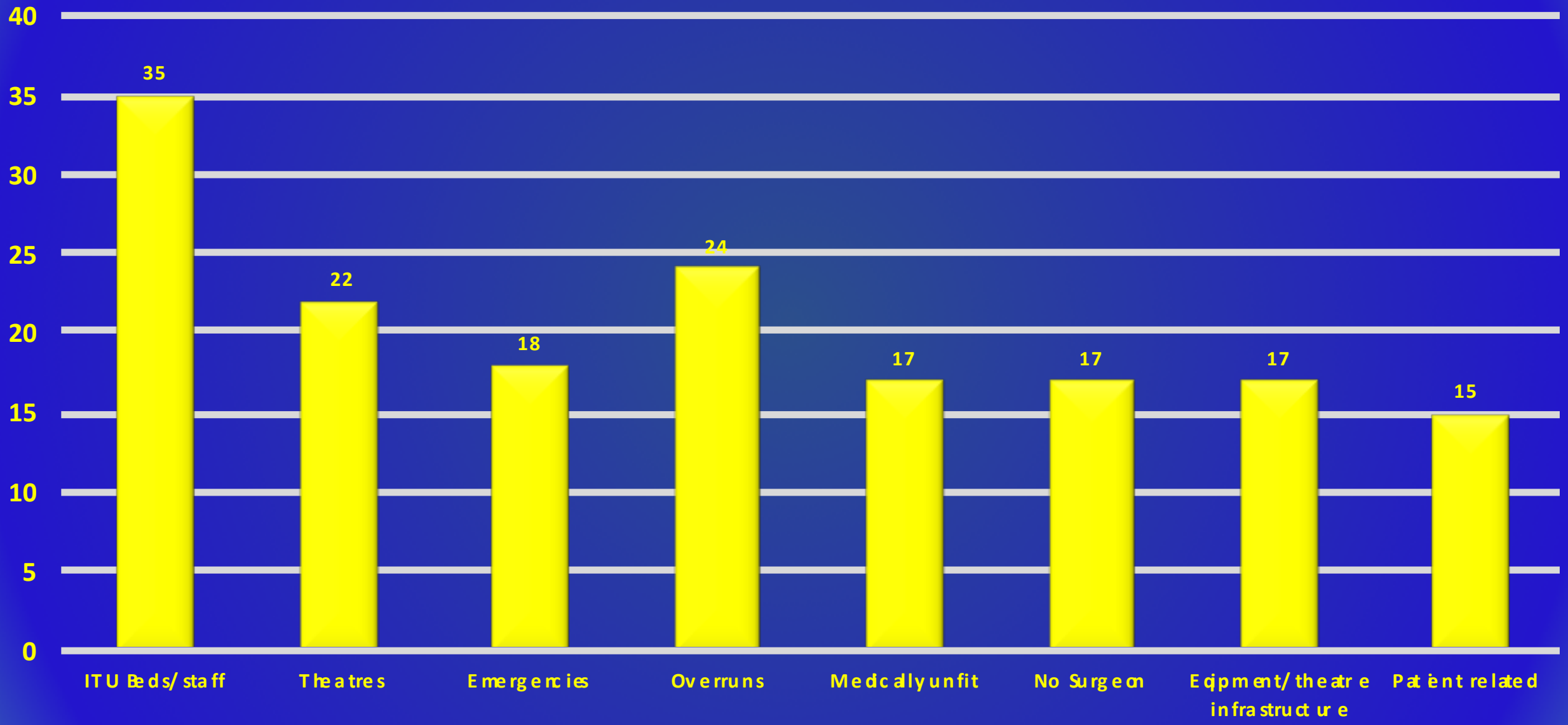
- Background
- Methodology
- Teams & traits
- Baseline data for FY 2017-18
- Interventions
- Study data
- Application of models and analysis
- Financial, political, environmental and social impact
- Difficulties, reflections & obstacles
- Recommendations and future plans
- Conclusions

Cardiac Surgery at UHW FY 2017-18

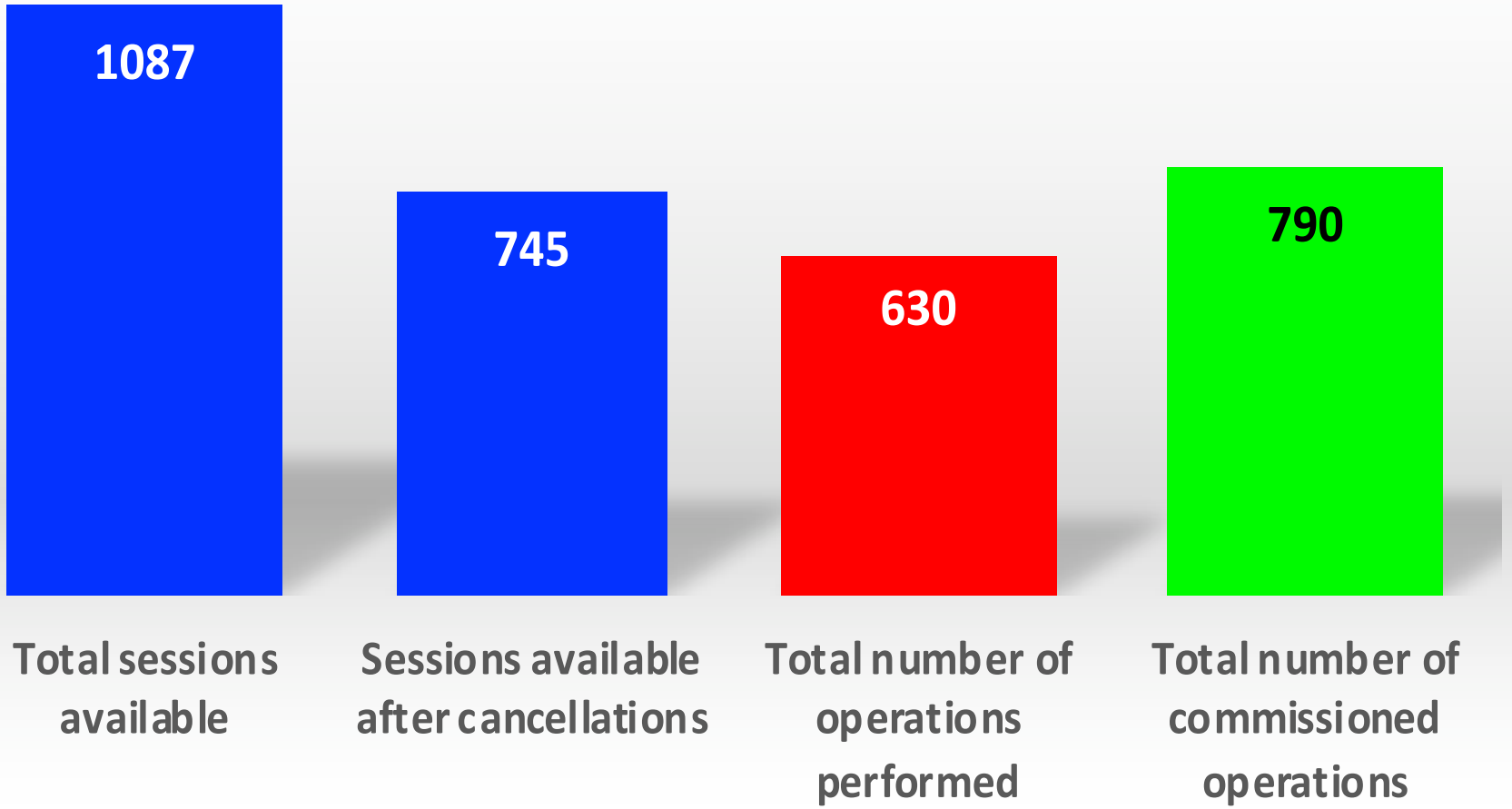


Baseline Analysis

“Day of Surgery" cancellations 2017-18.



FY 2017-2018


1087
745
630
790
Total sessions available
Sessions available after cancellations
Total number of operations performed
Total number of commissioned operations

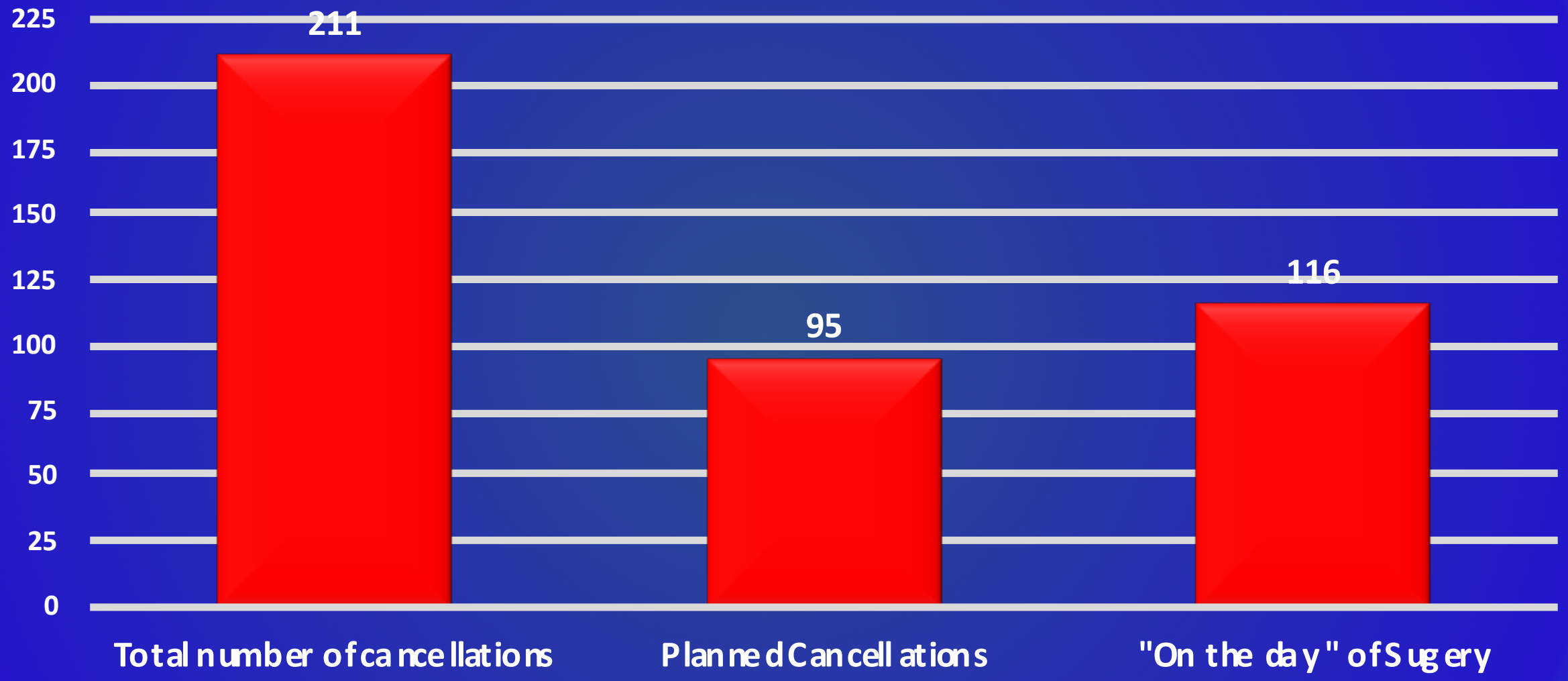
The Team

- **Nurse Case Managers in the Preassessment clinic**
- **Service Manager**
- **Surgical staff**
- **Consultant Colleagues within the Health Board**
- **Referring Health Boards.**

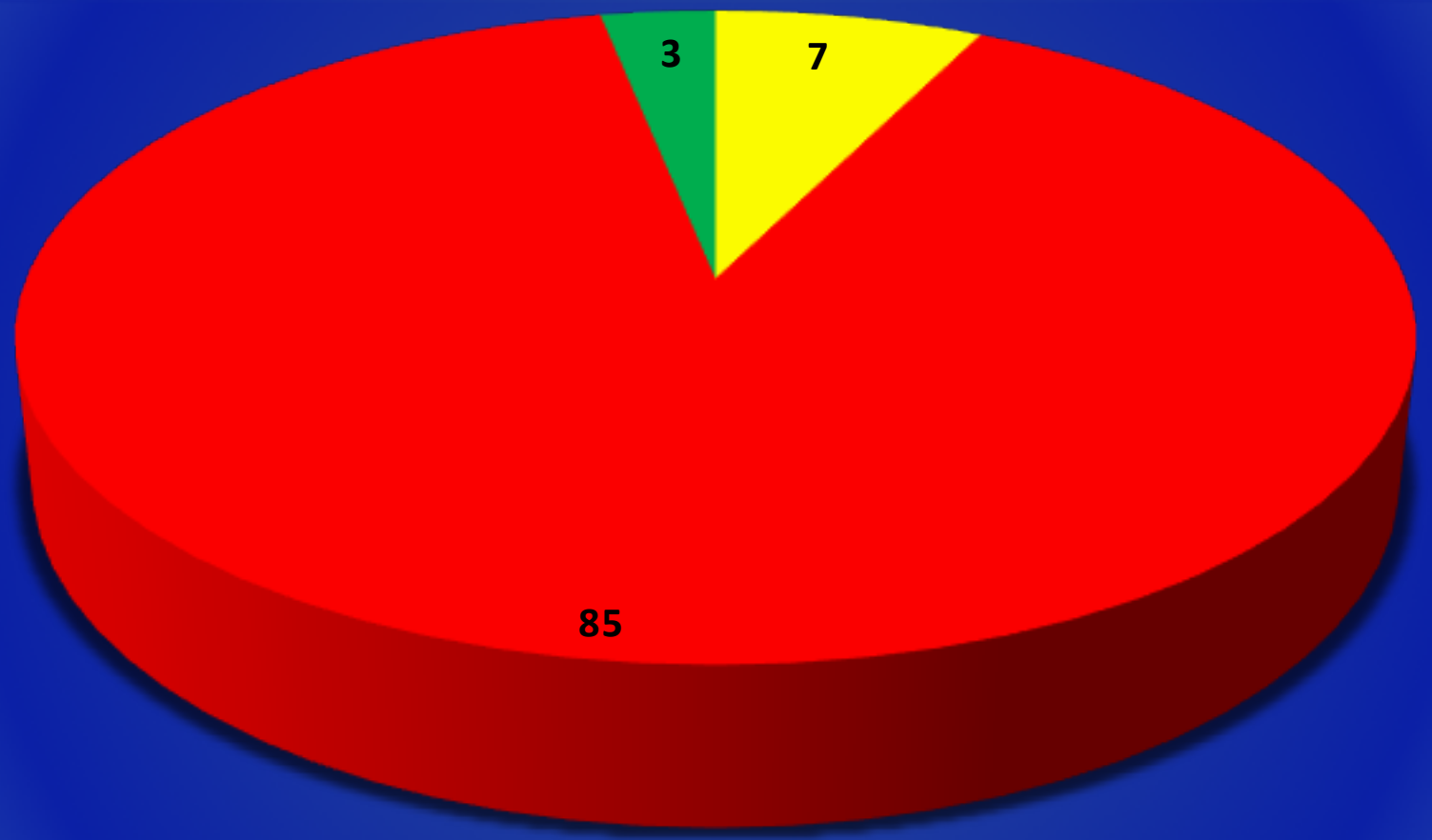
Engaged with staff & other Health Boards and centres in England



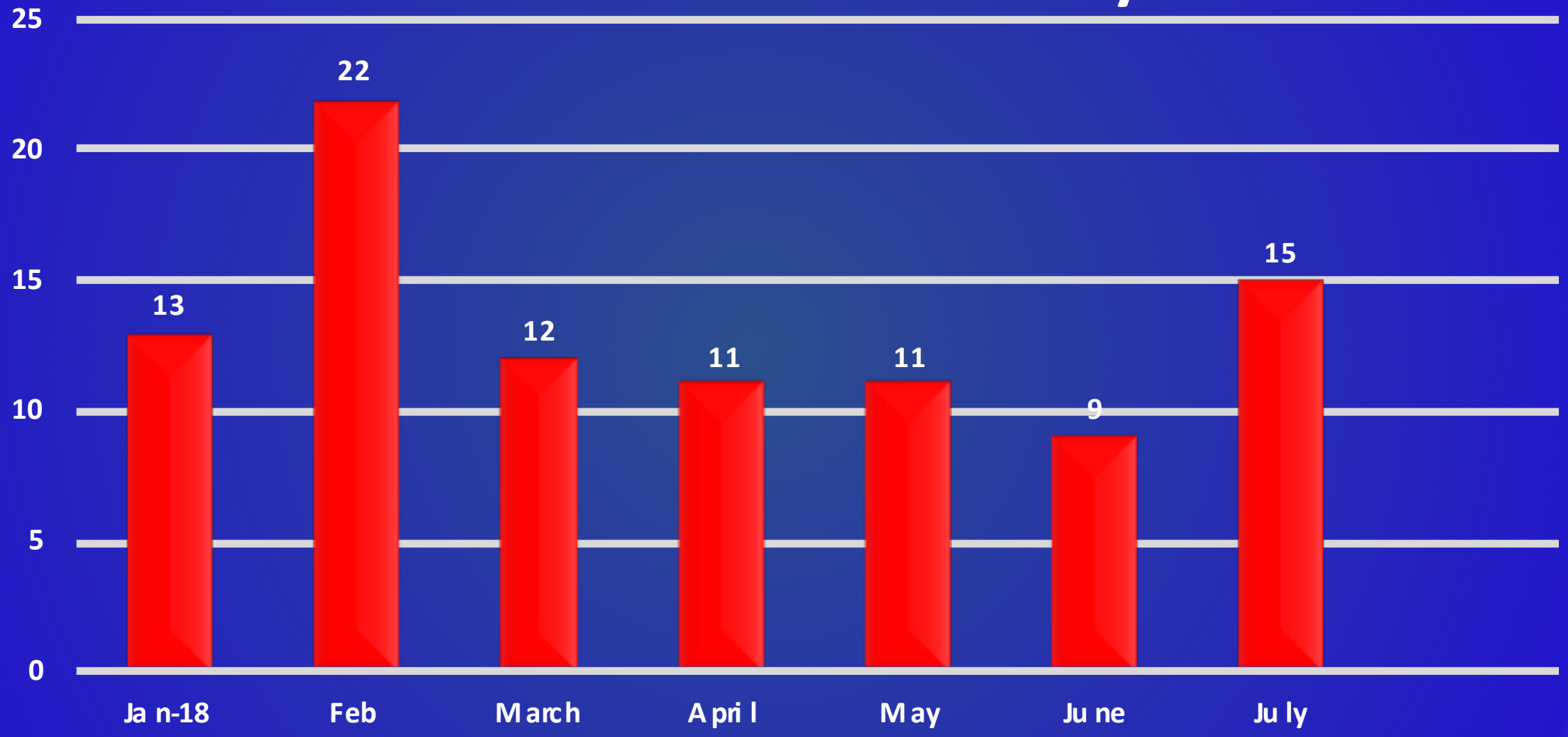
Cancellations Jan-July 2018



Planned Cancellations
Jan 2018-August 2018

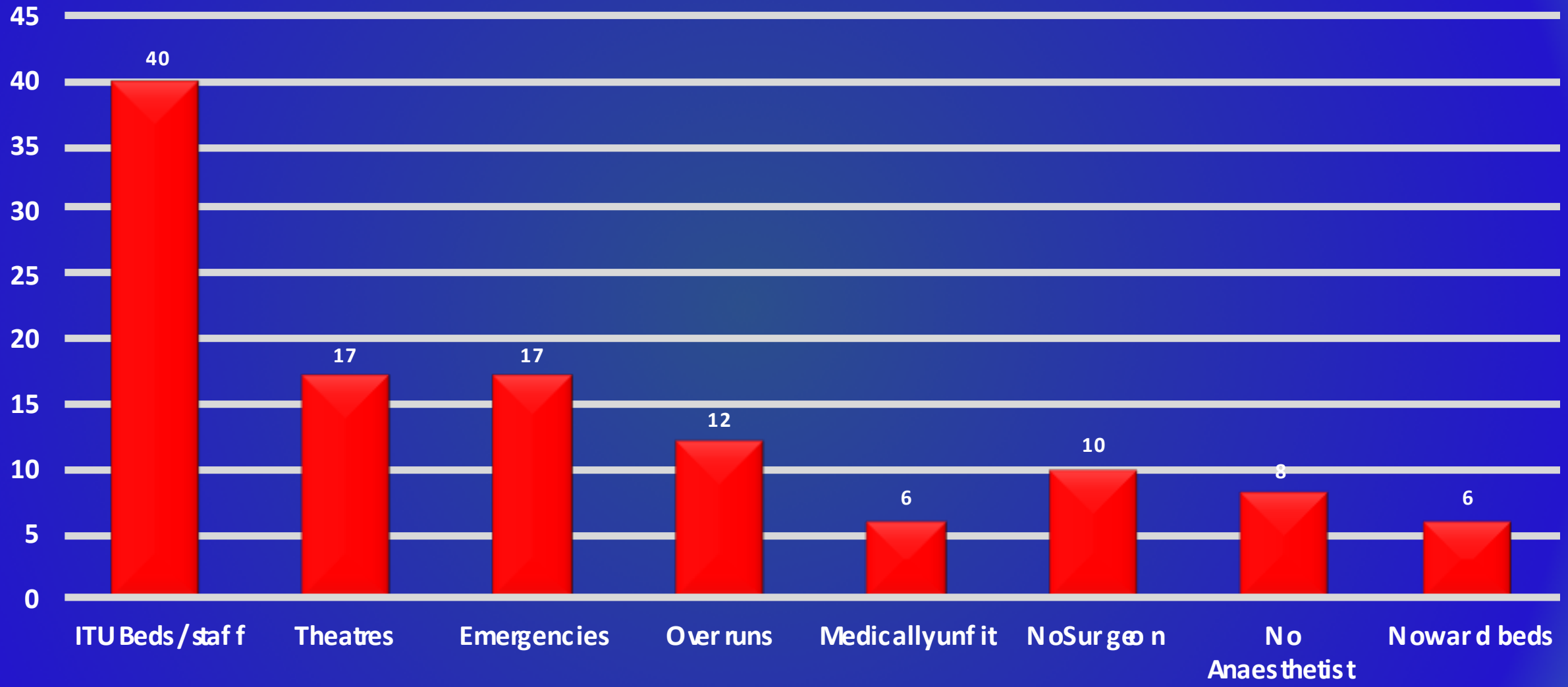


Planned Cancellations Jan - July 2018



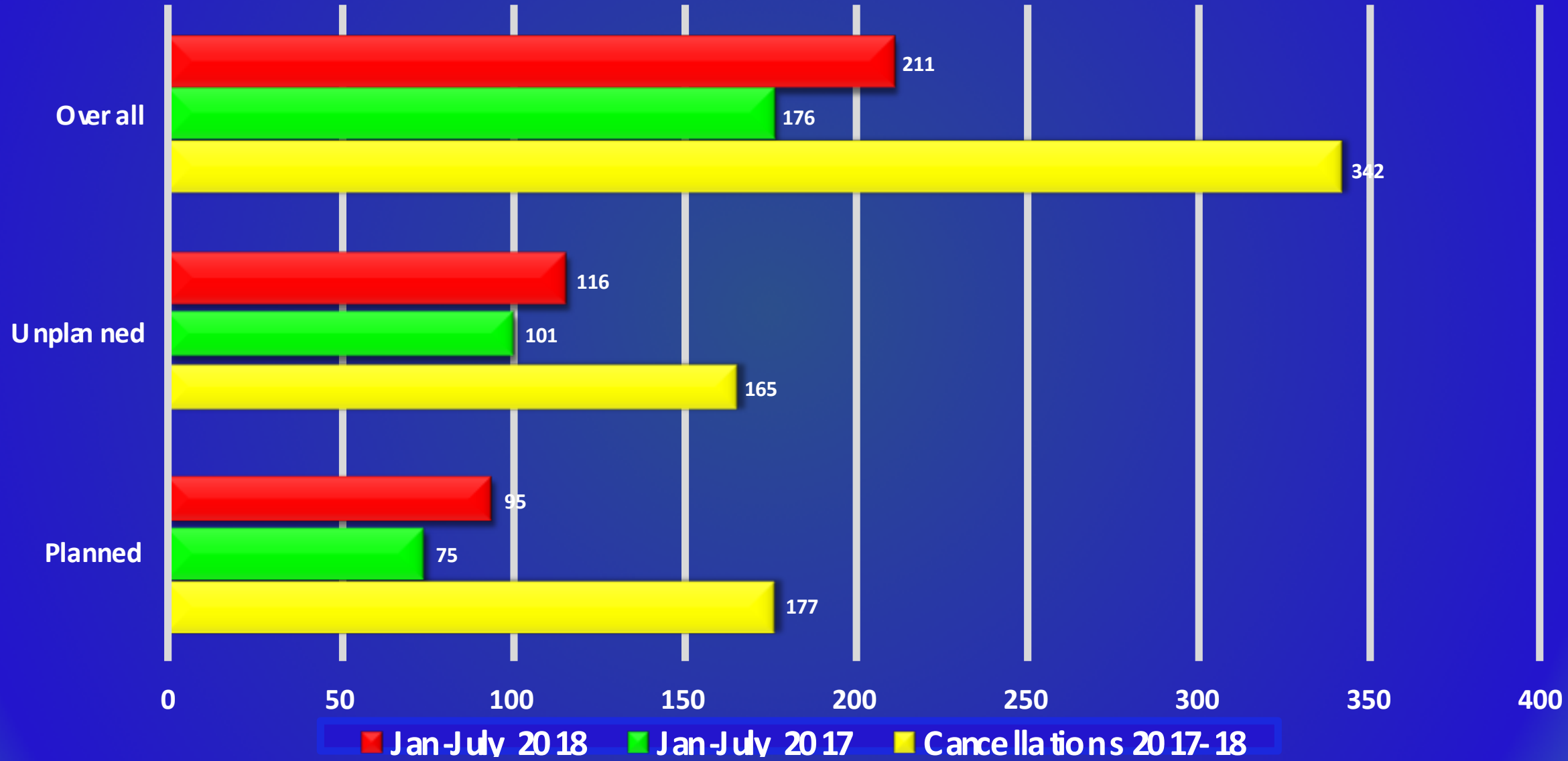
Average planned cancellations per month=13.5 sessions

On the “Day of Surgery" cancellations Jan 2018-July 2018

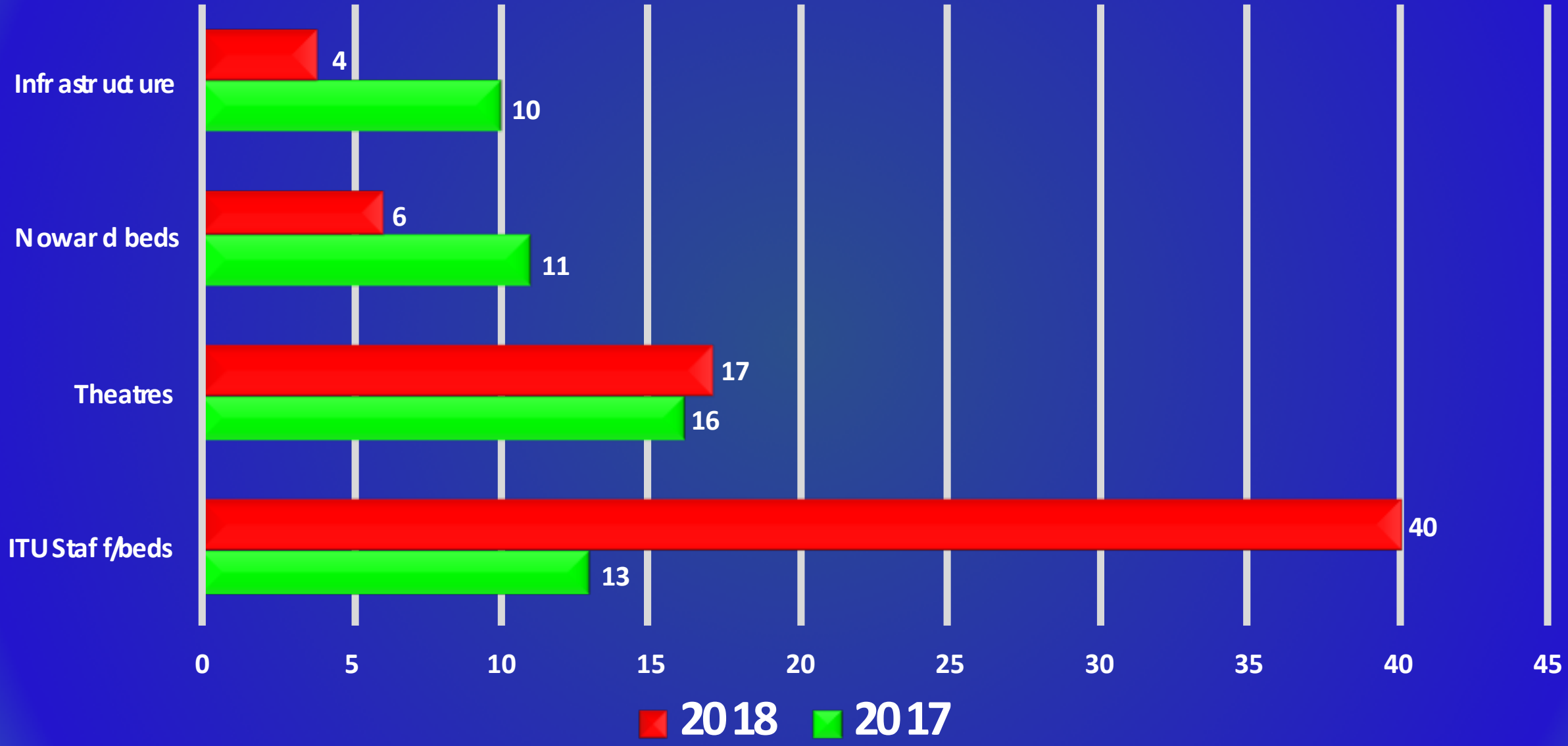


Unplanned Cancellations =116. Average unplanned cancellations per month=16.6

Planned vs on the "day of surgery" cancellations



Cancellations 2017 & 2018 Jan -July



Cancellations 2017& 2018 Jan-July



Models of Change

- **Six Sigma Model : DMAIC Definition**
  Methodology
  Analysis
  Improvement
  Control

An integrated problem solving approach to reduce waste and provide a high quality service.

- **Kotter's 8 Step Model**

- **Lewin's Model**

Change Management: Six Sigma

- Recognition of the problem: For change to be initiated, a sense of urgency is required within the Organization (Kotter step 1)

- **Definition:** The project aims to analyse all the reasons for cancellations of all heart operations and decrease the preventable “on the day of surgery” cancellation rate by 15% by March 2019.

Six Sigma : Measurement

- **Baseline data FY2017-18 to assess current performance**
- **Root causes identified**
- **Clinical and nonclinical causes**
- **Vast majority of cancellations due to Staffing, beds and infrastructure**

Six Sigma: Analysis

- Theatre staffing
- Intensive Care beds and staffing
- Emergencies
- Overruns
- Medically unfit patients
- Theatre infrastructure
- Lack of Surgeons & Anaesthetists
- Miscellaneous causes like outbreak of influenza etc

Analysis: Theatre Staffing

- Total of 102 cancellations (48.34%) between Jan-July 2018.

- Chronic shortage. 15.2 full time equivalent (FTE). During the study period we have had 8 FTE and 3 supernumerary staff.

- *Bevan Report 1989*
- Recommended merging the roles under a unified grade to introduce greater flexibility.

Analysis: Theatre infrastructure

- Extenuating circumstances:
  - Theatre X not in use since December 2016
  - Theatre XI closed Dec 2016 to Sept 2017.

- Equipment and infrastructure of the other theatres are not specific for requirements for cardiac operations.
- Late starts and cancellations as patients could not be overlapped safely.

Analysis: Lack of Critical Care Beds & Staff

- 8 critical care beds and 5 high dependency
- 40 cancellations (20%) in the study period
- Long term patients & lack of ward beds
- Patients are discharged home from high dependency care on Day 5 whilst awaiting ward beds
- Problem is completely masked by cancelled operations
- Cardiac Intensive Care staff are sent to General Intensive Care which occasionally resulted in cancellations

Analysis : Overruns

- Late starts due to lack of Porters, theatre equipment (ventilator malfunction, echo machines)
- Recent introduction of team briefing which delays knife to skin by 30mn at least.
- Overambitious lists
- Long gaps between cases due to lack of manpower and some existing practices

Analysis: Medically Unfit Patients

- Fever, vomiting & diarrhea, sore throat, prodromal symptoms of ‘flu, urinary infections, heart failure, MI and cardiac arrests 24 hrs prior to surgery (generally early hours AM)

- *Lack of cessation of drugs in inter hospital transfer patients.*

Analysis: Medically Unfit Patients

- *In the study period, following our focussed intervention there were no cancellations due to lack of cessation of drugs*
- *Overall, 33.3% decrease in cancellations due to unfit patients although the numbers are small.*

- Back up inpatient ready to fill the medically unfit slots.
- Improved theatre utilization

Analysis: Lack of Consultant Surgeons & Anaesthetists

- Unavailability of Surgeons and Anaesthetist due to leave and vacant posts
- Pre-existing commitments of the other Consultants.

Analysis: Lack of Ward Beds

- Dedicated Thoracic ward closed
- Cardiac & Thoracic patients housed on the one ward
- Scale of the problem masked by very high cancellation rate

Six Sigma: Improvement & Control

- **V. Improvement:** Pre-existing excellent practices
- Schedule templates available 4 months in advance.
- Improvements noted and communicated

- **VI. Control:** Need for sustained improvement & control changes
- Performance monitoring to check impact of impact of changes at the end of March 2019.

Financial impact of cancellations

- Heart operations commissioned at £17,000 approx. per case.
- Costs £13.14 per minute & is £8,672.40 to run theatres per day.
- 342 cancellations in the FY 2017-18 equates to £5.814 million.
- Commissioning policies NHSE vs NHS Wales

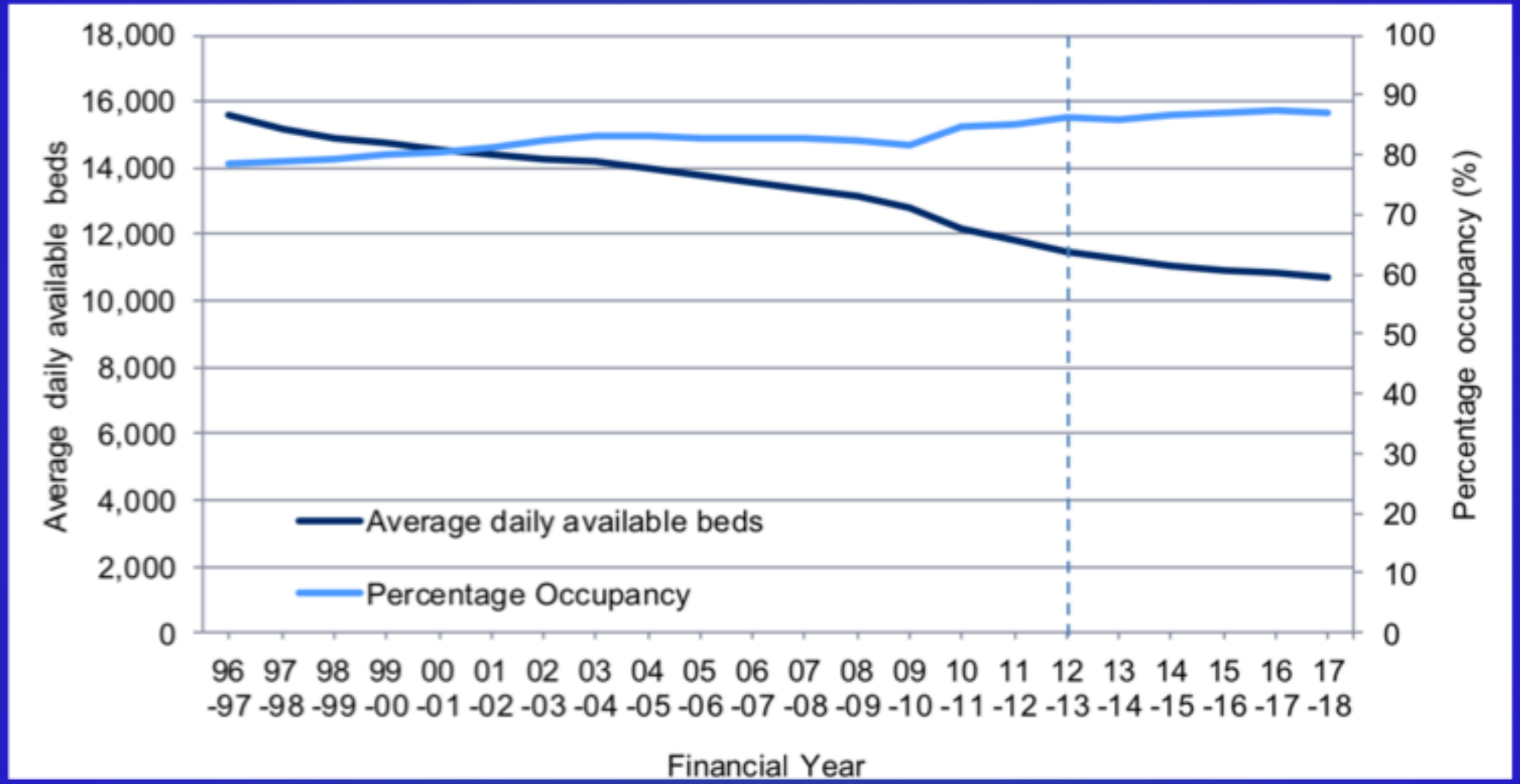
Social impact

- In Wales 153,792 people are >80yrs

  5% of the population (Office of National Statistics, 2016).
- Average life expectancy in Wales M=78.4 yrs and

  F=82.4 yrs.
- 10-12% of the patients undergoing heart surgery are >80 yrs

NHS Wales Beds



Overall decrease of 4,870 (31.3 per cent) from 15,582 beds to 10,712

Source: Statistics for Wales: NHS Beds in Wales, 2017-18

Environmental impact

- Hospital buildings and theatres on the “risk register”
- Cancellations directly due to theatre infrastructure, ventilation, operating equipment etc.
- Lack of a dedicated emergency cardiac operating theatre

Political impact

- Public perception: Shortage of health care professionals,
  - Cuts to NHS funding,
  - Inappropriate use of NHS services,
  -Growing and ageing population,
  -Overworked health care professionals puts pressure on the NHS to deliver the service

(*Welling's,2017 Ipsos MORI/BBC news poll)*

- Health is political as some social groups have greater access to health than others
- Social determinants are amenable to political interventions.

Of Thoughts & Traits…..





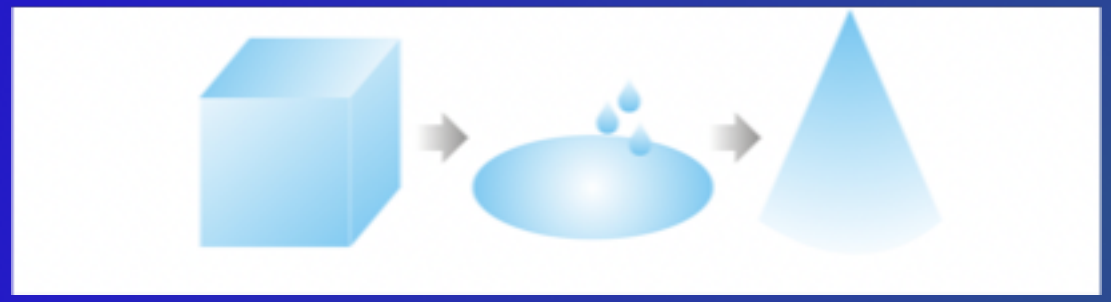
- **Belbin traits of a Specialist, Co-ordinator and a Completer-finisher.**
- **Visionary, affiliative and democratic approach has gained commitment from staff.**
- ***Urgency & conviction that "status quo" is not an option.***

Difficulties & Reflections

- Current state a crisis with compelling data
- One or two effective changes will lead to unstoppable success
- The final strategy to execute the vision needs enablers.
- Data will be shared with the Health Board.

Understanding Obstacles.

Lewin's Model



Unfreeze- Change- Refreeze

Change Management Tool Kit

Betsi Cadwaladr UHB

- Unfreeze: Weekend working stopped in 2016 as no improvements were noted during weekdays.
- Problem unmasked.
- Slow but certain acknowledgement in combination with pressure from external stakeholders has galvanised support

Obstacles to Change

- The Organizational structure: Staff in a Specialist team are managed by different Directorates.
- Priorities vary and this becomes “the weak link” to achieve goals.
- Failure to do so leads to sustained inefficiency despite a powerful drive for change by the vast majority of the staff.

Conclusions: Baseline analysis consolidated

- 58% of total planned & unplanned cancellations due to theatres.
- 10.2% Critical Care Capacity & staff (higher in study period)
- 7% due to overruns
- 5.2% due to emergencies
- 4.97% due to medically unfit patients
- 4.97% due to no Surgeon
- Rest were miscellaneous (outbreaks, weather, platelet availability, self discharge etc)

Conclusions

- Only small percentage within the immediate remit of clinicians.
- Due to Project measures, 33.3% improvement in “medically unfit” cancellations despite more unfit patients.
- About 10 cancellations avoided. 8.5% approx. overall gain.
- Small gain of £170,000 but huge for the patients benefitted.
- Although models were good for decoding, the “human factor” is not addressed
- Sensitivity is required to deal with longstanding people and processes resistant to change

Conclusions

- Change required at all levels
- Health Board & Welsh Govt: Theatre infrastructure, critical care & ward capacity. No “easy fix”.
- Recruitment and retention: Needs to be analysed in depth with remedial measures
- The rosters should be standardised nationally with guidelines to ensure that they are maximally efficient.
- Analysis will continue until March 2019.

Acknowledgements

- Medical Director & Clinical Director
- The Team and all my colleagues.
- Academi Wales

Parked Slides

Introduction

- One of the two tertiary referral centres in South Wales
- 800 commissioned heart operations per year.
- Outcomes published by National Institute for Cardiovascular Outcomes Research NICOR, London
- 4 Consultant Cardiac Surgeons with a fifth Locum who was in post for eight months between 2017-18
- 10 Consultant Anaesthetists supported by a vast group of staff in theatres, Perfusionists, Intensive Care and wards & Pre-assessment clinic staff manage the waiting lists of Surgeons & the Directorate.

Torjensen,I.,British Medical Journal 2018;362:K3767

this week

BURNOUT STUDY page 254 • **GP INCENTIVES** page 256 • **SCOTTISH PAY DEAL** page 258



One in seven surgeries cancelled on day

Ongoing pressure on NHS hospitals resulted in the cancellation of one in seven operations on the day they were due to take place in one week in March last year, [illegible]

half the cancellations. Clinical reasons accounted for a third.

Operations at hospitals with an emergency department were five times as [illegible]

More than 3700 operations in NHS hospitals were cancelled on the day they had been scheduled

Theatre Staffing

- Bevan Report 1989
- Recommended merging the roles under a unified grade to introduce greater flexibility.
- Scrub nurse and operating department practitioner roles within theatres have been merged to promote flexibility and provide short-notice cover.
- There is potential to do this with the Surgical Care Practitioners as well.

Step 1 Kotter's Model

- For change to be initiated, a sense of urgency is required within the Organization (Kotter step 1)
- Heightened urgency and a palpable awareness of serious adverse outcomes
- Organization: RTT and Key Performance Indicators
- Previous attempts have not produced sustained results.