

# CRITICAL CARE CAPACITY PLANNING

**Dr Oluremi Odejinmi**

**Divisional Director**

**Anaesthetics**

**Dr Tomas Jovaisa**

**Critical Care Specialty Lead**



TAKING **PRIDE** IN OUR CARE

Barking, Havering and  
Redbridge University Hospitals **NHS**  
NHS Trust

# Background

- By 2014 it became obvious, that General Critical Care required urgent increase in capacity
- Most months bed occupancy rates exceed 100%
- Service was unable to provide timely and responsive care to our patients and impacted on all co-linked services
- The very first line of 2015 CQC report on Critical Care refers to capacity issue

## Critical care

Requires improvement

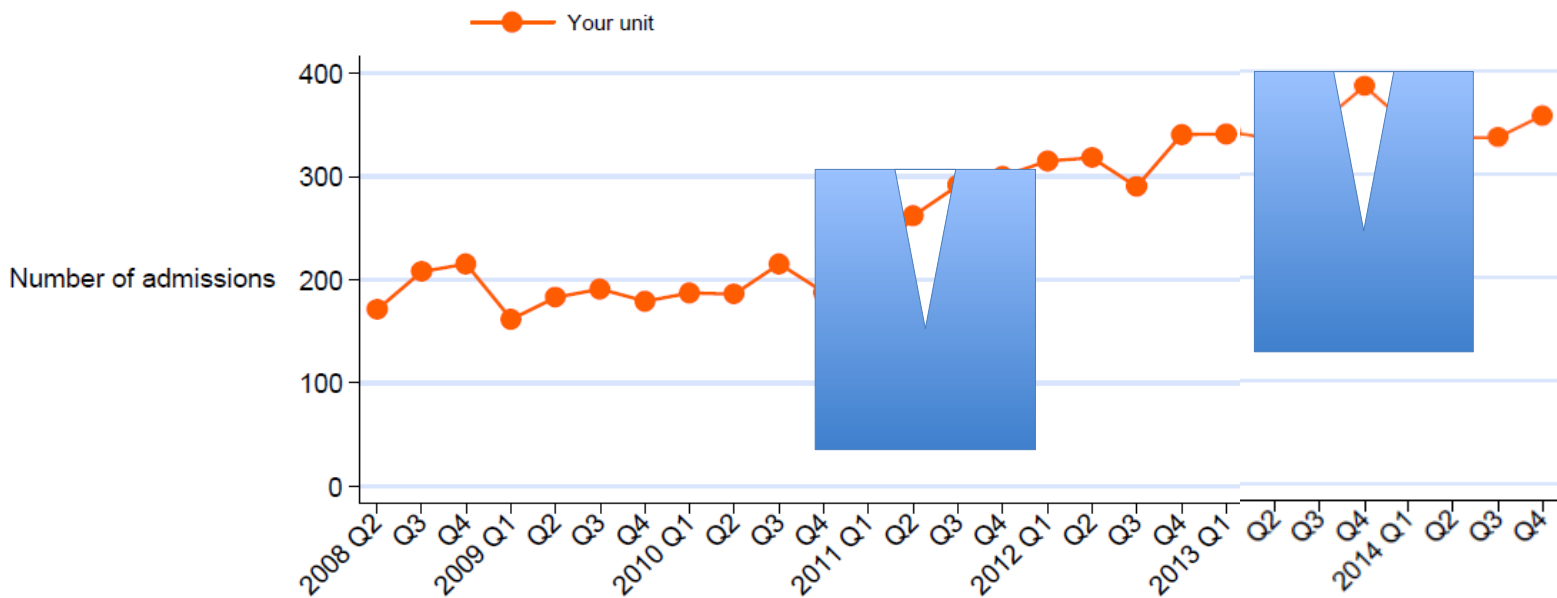


There were insufficient critical care beds available for the population served by the trust in comparison with other London Trusts. Despite four



# GROWING DEMAND

- Number of admissions nearly tripled since QH opened
  - Oldchurch ICU just over 100 admissions per quarter
  - 2006-2011 Queens Critical Care 14 beds
  - Additional 6 beds opened in 2011
  - Up to 6 beds used in recovery in winter 2013-2014
  - 4 temporary beds used on CCU from Feb 2015



# REASONS

- Reactive capacity increase instead of prospective planning
  - Capacity increased only at breaking points
  - Ceiling effect on admission numbers
- Inadequate capacity since QH opened
  - DoH data: 7 adult CC beds per 100,000 population in London
  - Intensive Care Society and Faculty of ICM analysis trends predict increasing demand every year
    - 7% Level 2 beds
    - 3% level 3 beds
    - This reflects general dichotomy trend in healthcare – mild conditions to be treated in community, but more intensive 24/7 management of major to severe conditions

# REASONS

- Genuine increase in demand
  - mortality risk of our case mix remains largely unchanged
  - Complexity is in-line or above national average

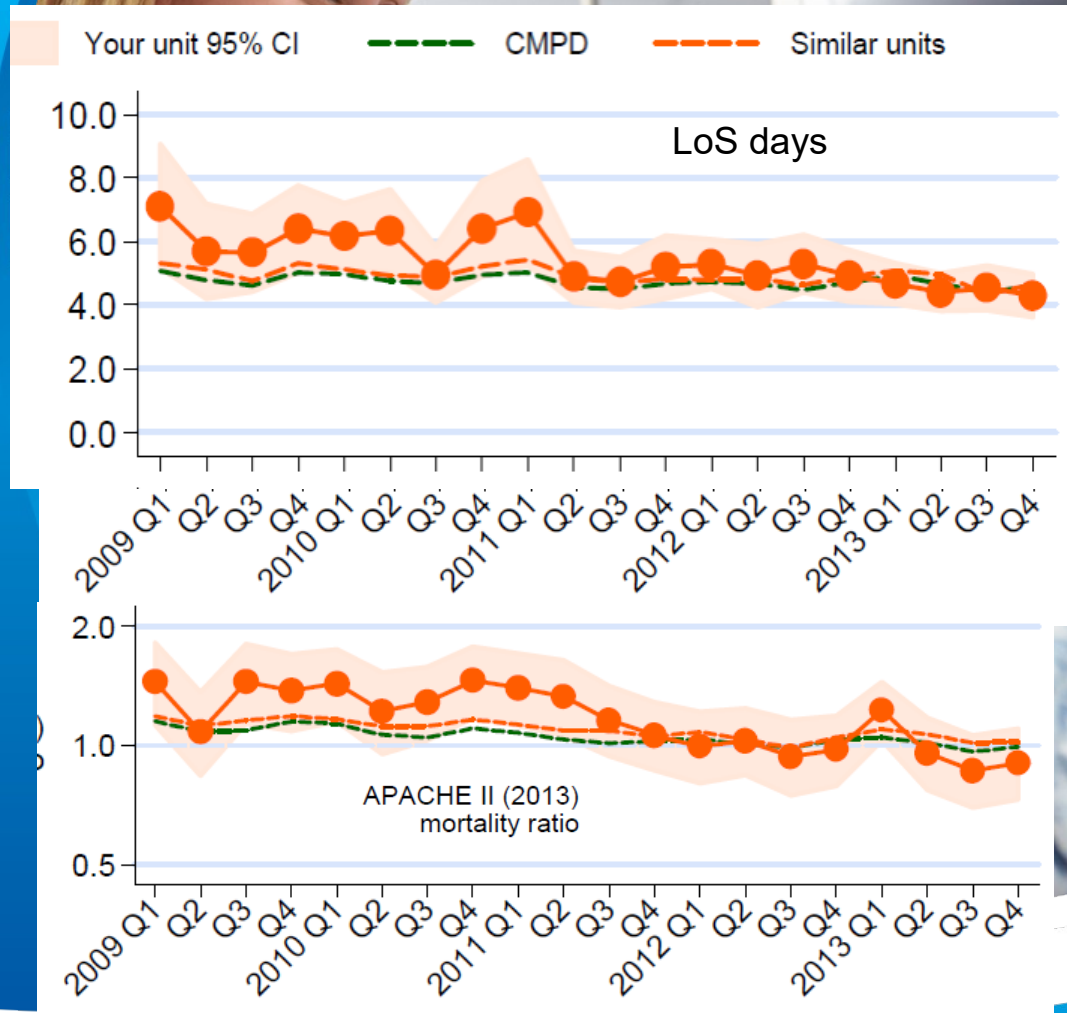


	Your unit	Similar units	All units
Severity scores, mean (SD)			
ICNARC Physiology Score	17.1 (9.1)	17.0 (8.8)	15.6 (8.7)
APACHE II Acute Physiology Score	12.0 (6.0)	11.8 (5.9)	10.6 (5.6)
APACHE II Score	17.1 (7.4)	16.0 (6.8)	14.9 (6.5)
ICNARC <sub>H-2015</sub> model predicted risk of acute hospital mortality (%), median (IQR)	12.7 (3.2, 36.1)	9.7 (2.4, 29.4)	6.5 (1.9, 23.4)



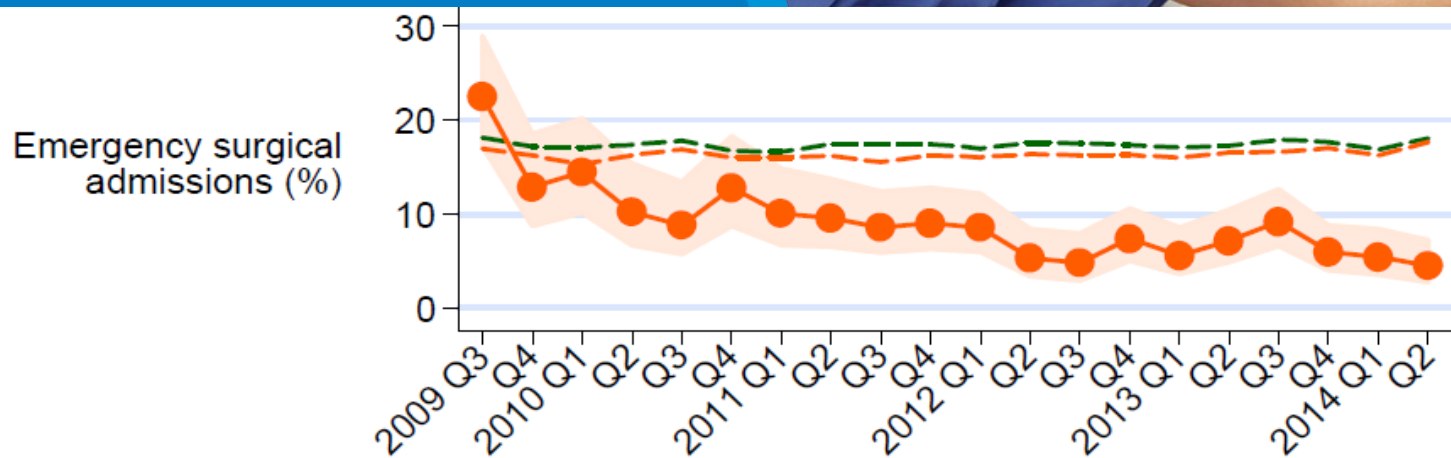
# COULD WE BE MORE EFFICIENT?

- Over 5 years we have significantly reduced GCC length of stay.
- We have significantly improved mortality rates over 5 year period



# Effect on Emergency Surgical Pathway

- True extent of capacity deficit has been masked by restricting GCC access to elective, emergency surgical and other groups of patients.
- Nationally 18% of GCC admissions are emergency surgical patients, ours has artificially reduced from >21% in 2009 to as little as 4.5% in 2014
- Only 1 in 2 emergency laparotomies are admitted to GCC, this group of patients has one of the highest mortality rates in surgery (15-25%). 100% admission rates are expected. Major national initiatives to improve outcomes in this group
- Only 16% of #NOF patients were admitted to GCC



# Effect on Elective Surgical Pathway

- Elective patients affected by limited resource
  - 46% of surgical patients with ASA grade 4 (138 of 300) had no access to GCC
  - Only 11% (36 of 317) patients aged 86 and above were admitted to GCC postoperatively (excludes day-case and overnight stay)
  - 55 cancelled major elective operations in 2nd quarter 2015
    - Impact on care and outcomes as cancellations include 2 WW cancer cases
    - Severe impact on patient satisfaction
    - Poor theatre utilisation due to cancellations on the day and delays of several hours while waiting for confirmation of bed availability

(BHRUT data centre; 6 months

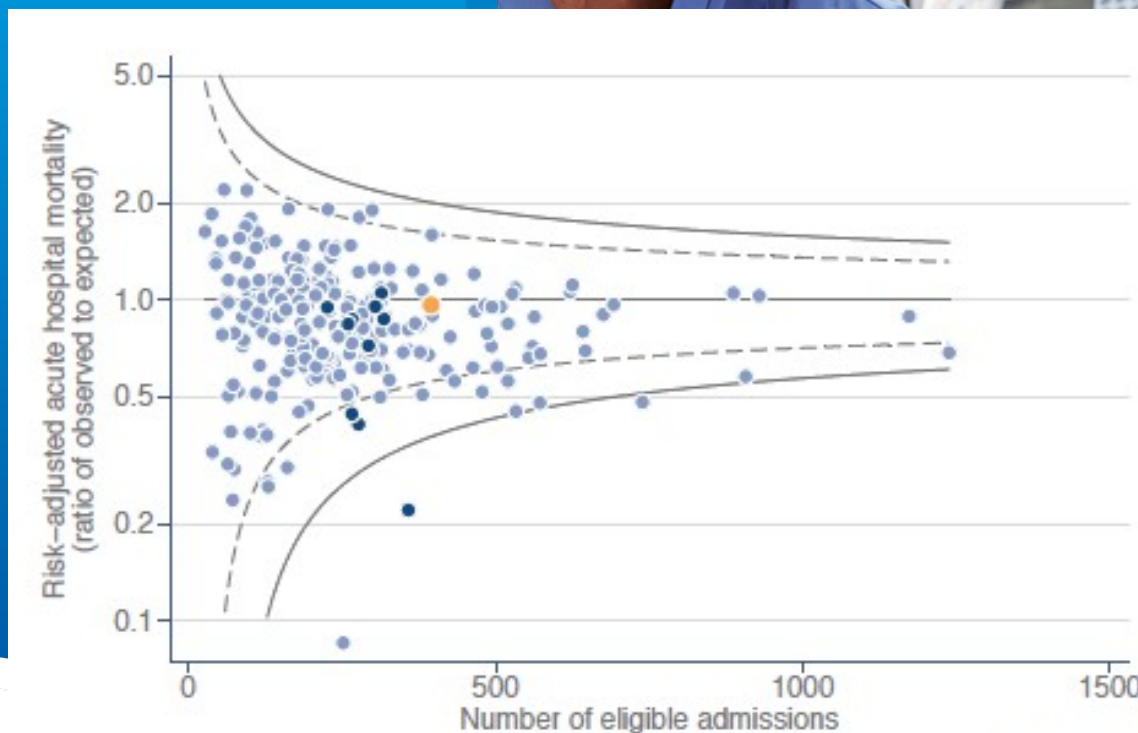
April-October 2014, Medway)





# HOW DO WE COMPARE?

- One of the busiest services in UK.
- Recent mortality in line with national average



© ICNARC 2017



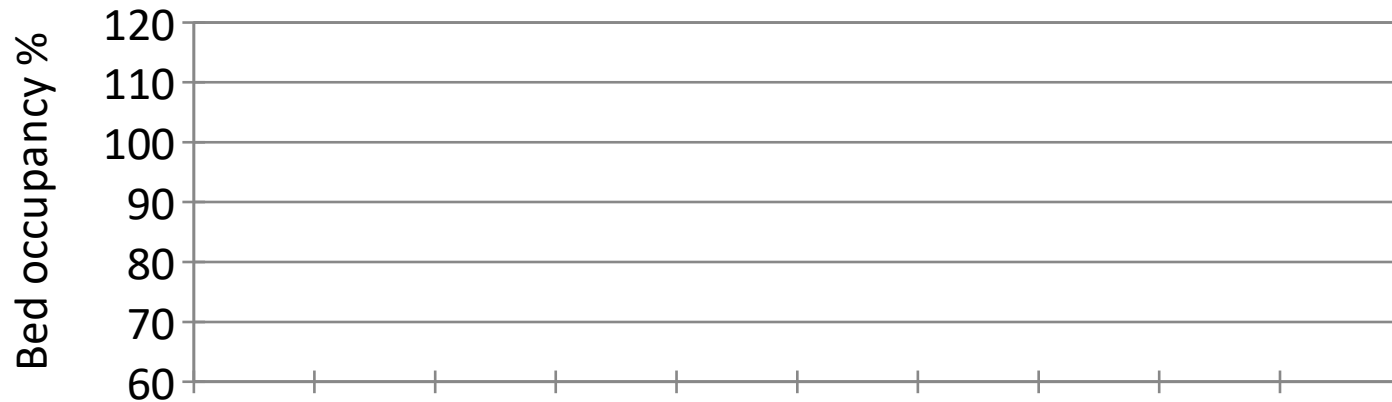
# Patient safety on SkyHDU

- » Extensive risk-assessment exercise prior to opening of the unit. 4 key elements
  - » PATIENTS. Admissions based on clinical risk stratification. This approach was further developed from our experience in CCU.
  - » STAFF. Dedicated medical and nursing team equivalent to that of stand alone ICU.
  - » EQUIPMENT. For example, no UPS on Sky. This was mitigated by utilising equipment with internal batteries.
  - » PROCESSES. clinical and safety procedures (photo: simulated fire evacuation drill)



# Results

- » 4 ring-fenced beds for elective surgery, therefore no cancellations of major elective surgery since SkyHDU opened (at Queens).
- » Major increase in post-operative emergency surgical admissions.
- » Reduction in bed occupancy rates (note: 2 ICU beds re-opened on the main unit in Nov 2016).



# WHERE DO WE NEED TO BE?

- Based on England average\* BHRUT should have over 50 critical care beds
- Our own statistical modelling supports this estimate

---

\* 7 ACC beds/100,000 population. ICS/FICM data January 2014





**Questions ?**

