NHS Improvement

Improving Processes for a Digitalised Hospital

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It worth knowing that the UK Health System is world leading

Commonwealth Fund National Scorecard

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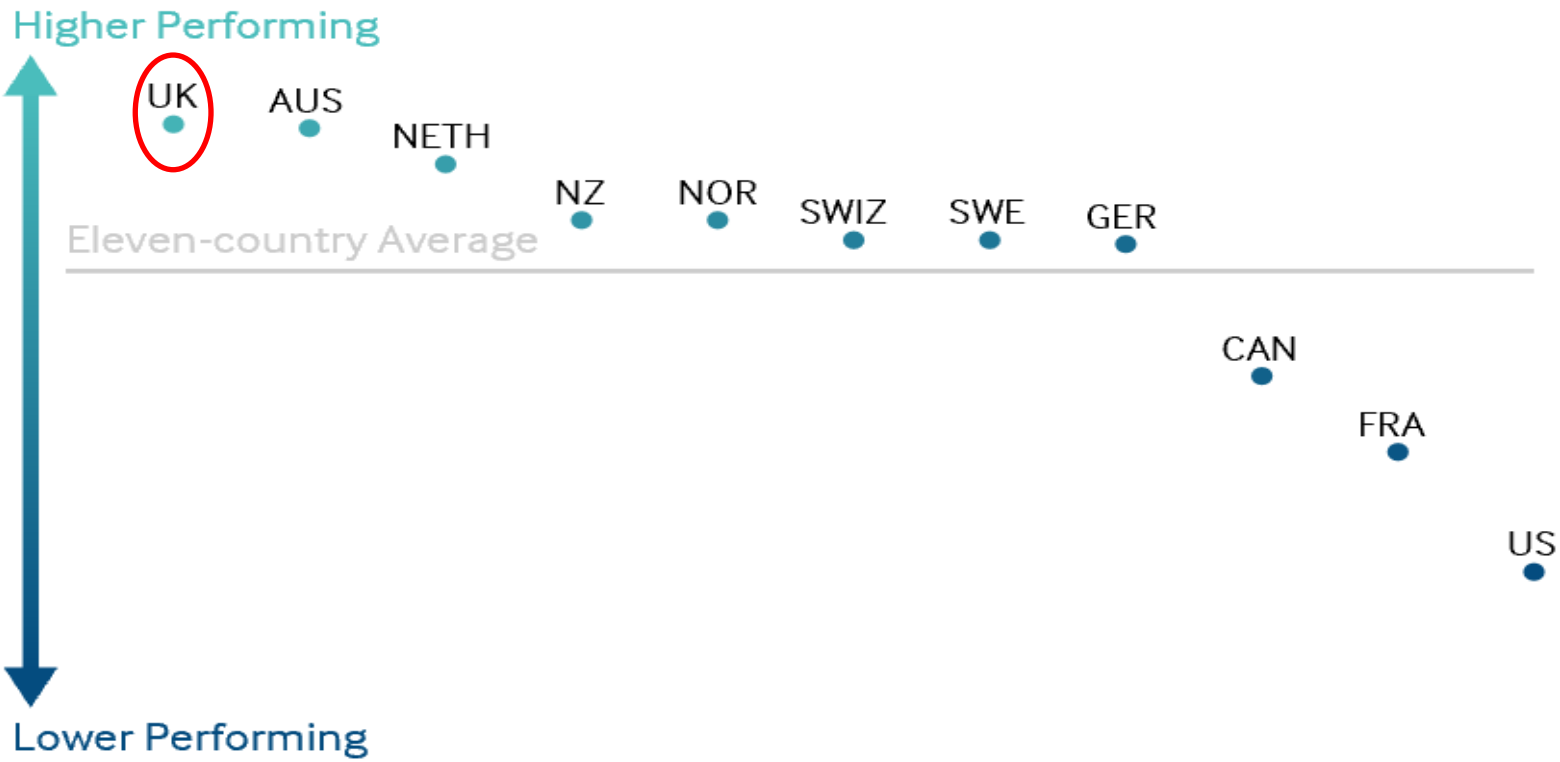
Exhibit 3. Health System Performance Scores

Overall | Care Process | Access | Administrative Efficiency | Equity | Health Outcomes



Note: See How This Study Was Conducted for a description of how the performance scores are calculated.

Source: Commonwealth Fund analysis.

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However there are areas that we still need to improve

Mortality is still higher than other countries

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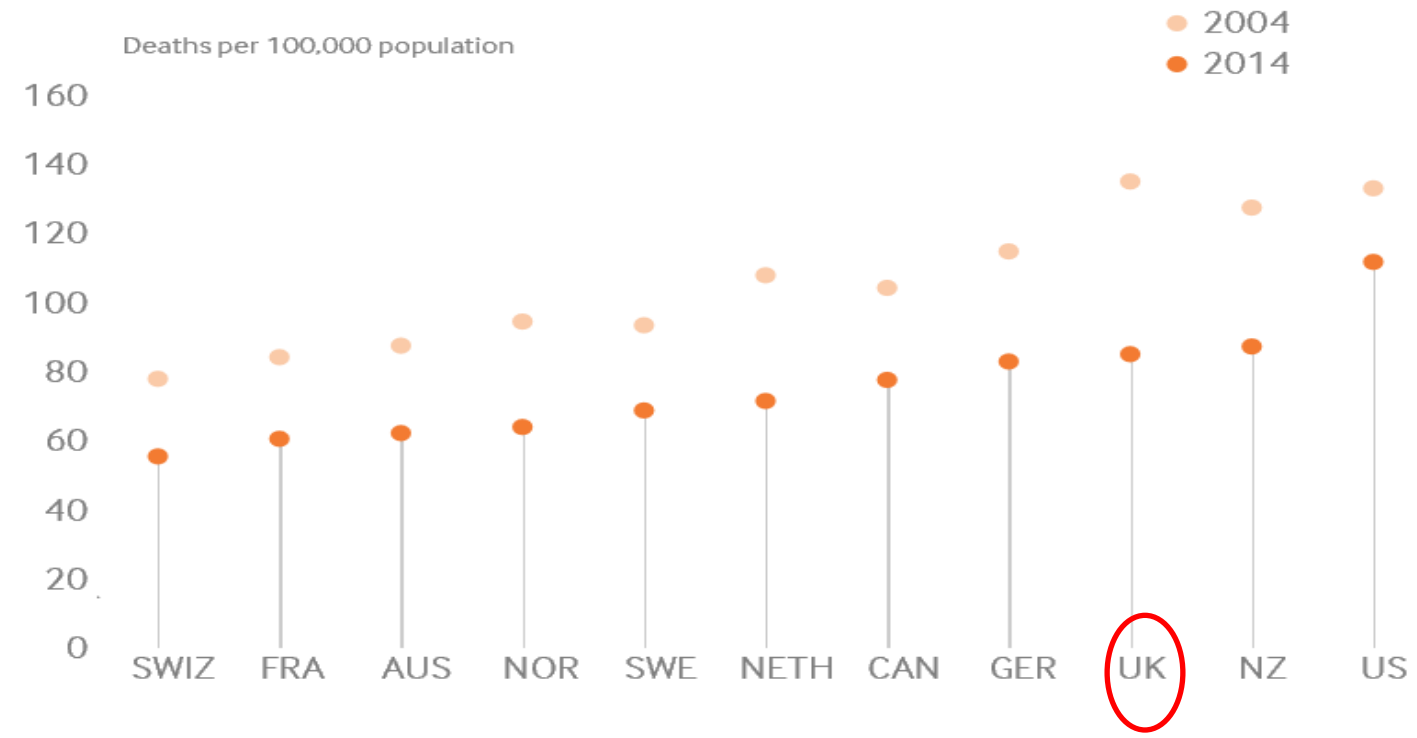
Exhibit 4. Mortality Amenable to Health Care, 2004 and 2014



Sort Best to Worst by 2014 rate

Sort by most improved

Source: European Observatory on Health Systems and Policies (2017). Trends in amenable mortality for selected countries, 2004 and 2014. Data for 2014 in all countries except Canada (2011), France (2013), the Netherlands (2013), New Zealand (2012), Switzerland (2013), and the U.K. (2013). Amenable mortality causes based on Nolte and McKee (2004). Mortality and population data derived from WHO mortality files (Sept. 2016); population data for Canada and the U.S. derived from the Human Mortality Database. Age-specific rates standardized to the European Standard Population (2013).

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We need to improve outcomes in emergency & elective care

Performance against the 4-hour ED standard has declined in recent years

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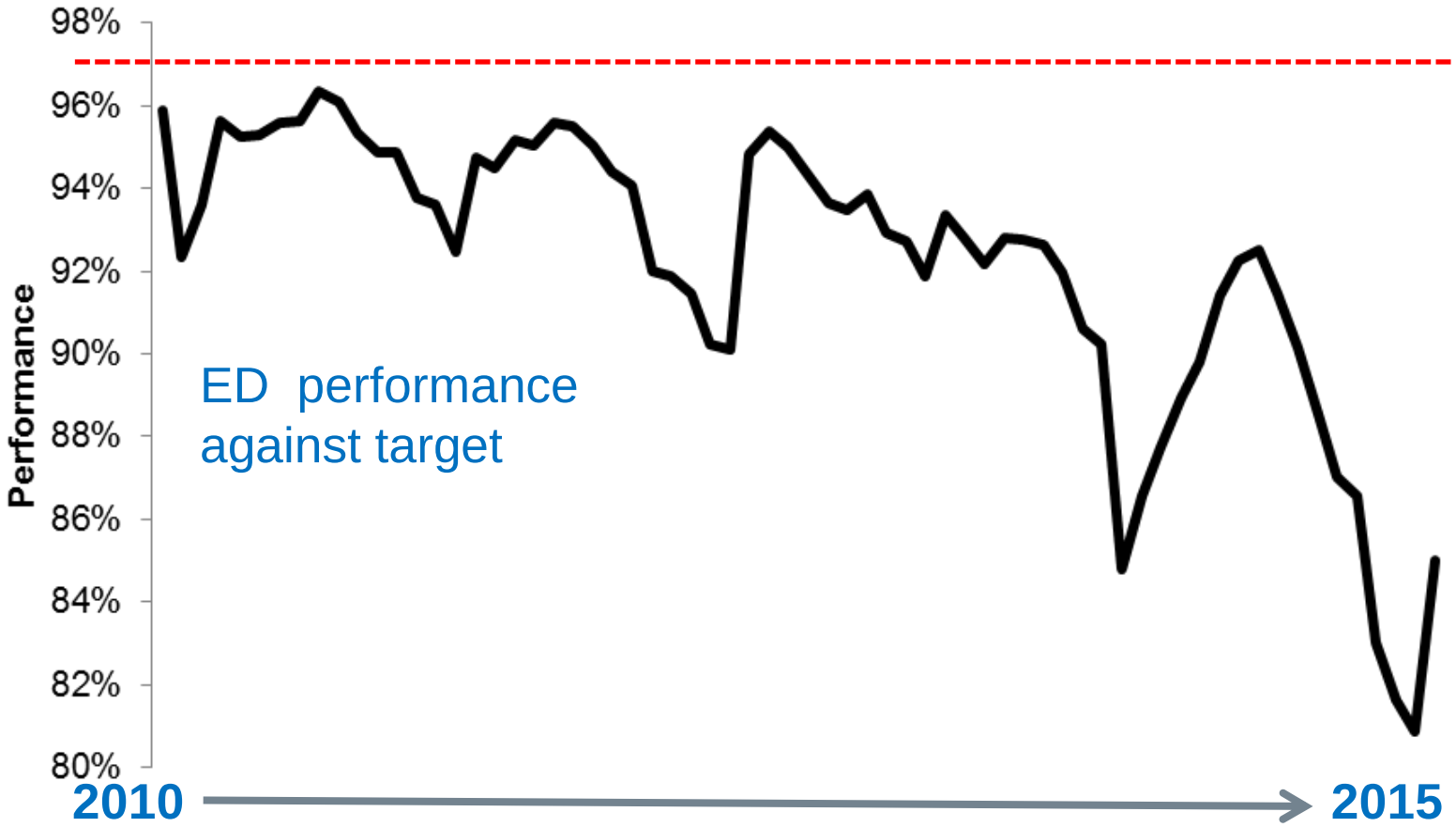

Does 4-hour performance really matter all that much?

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Lower 4-hour performance correlates with higher mortality & longer stays

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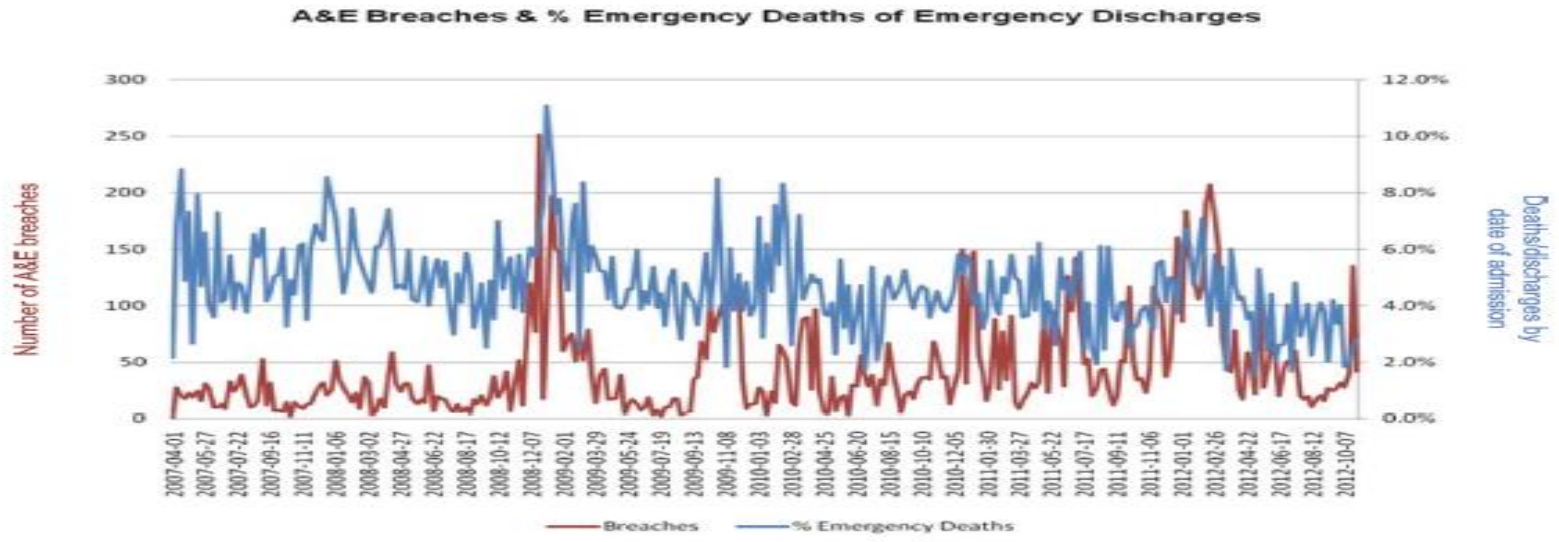
Figure WK8: Correlation between A&E performance and mortality rate for adult emergency patients*



* These data were subjected to Statistical Process Control methods (Paper accepted by the *International Journal of Healthcare Quality and Assurance* in November 2012 and now in press: "Does process flow make a difference to mortality and cost? An observational study").

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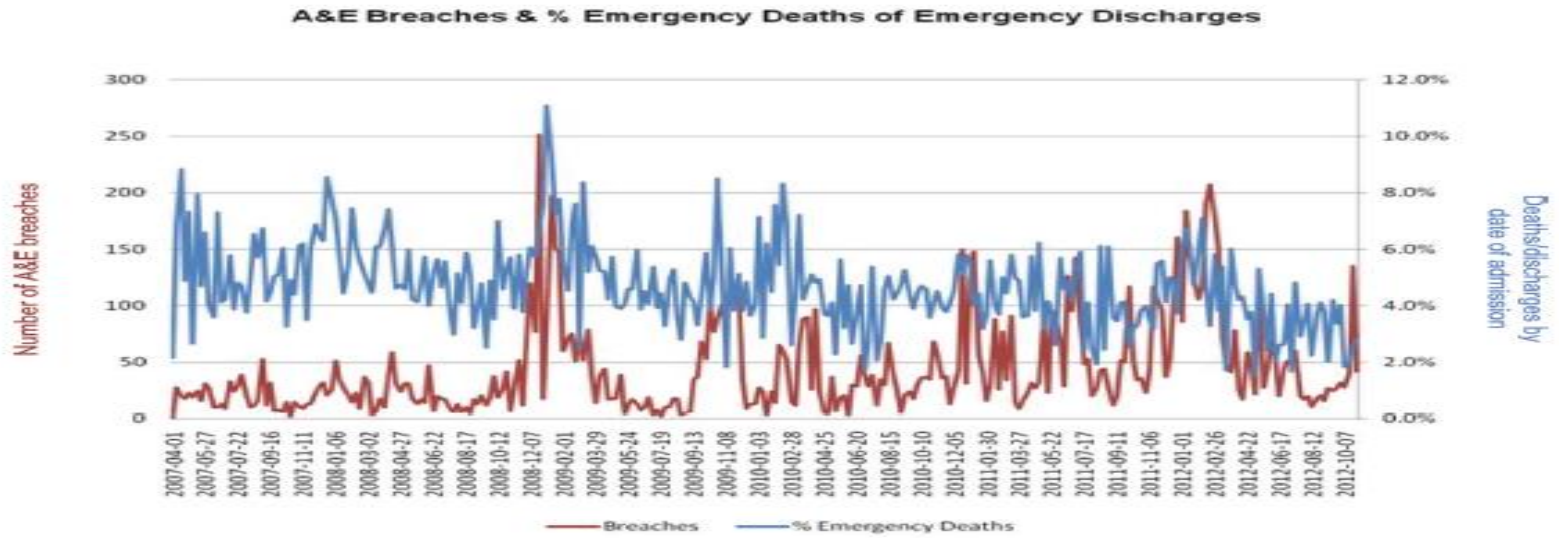

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Patients waiting over 12 hours for a bed have a 2.4 day increase in their hospital length of stay.

High occupancy strongly correlates with poor 4-hour performance

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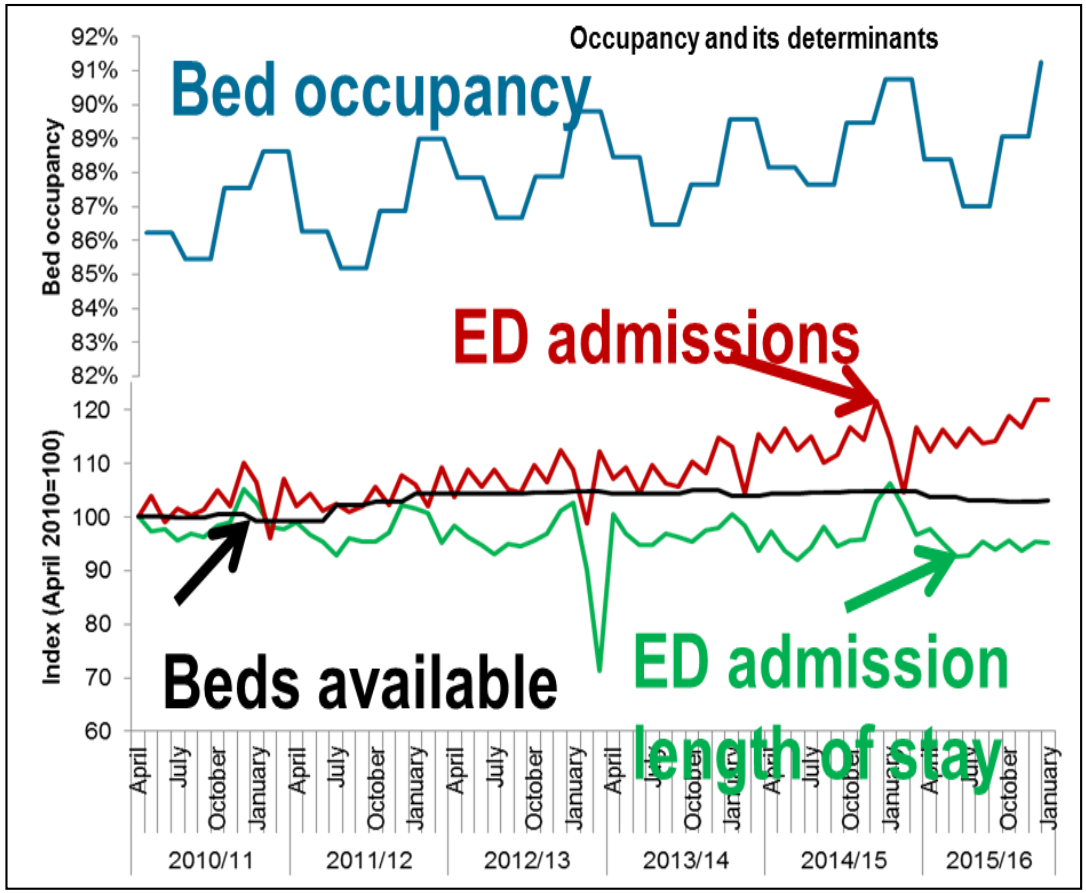

* ED departments appear to have coped well with processing higher attendances, which are not correlated with four-hour performance.

What about just adding more beds ?

The number of beds have reduced year on year now 50% less than 1987

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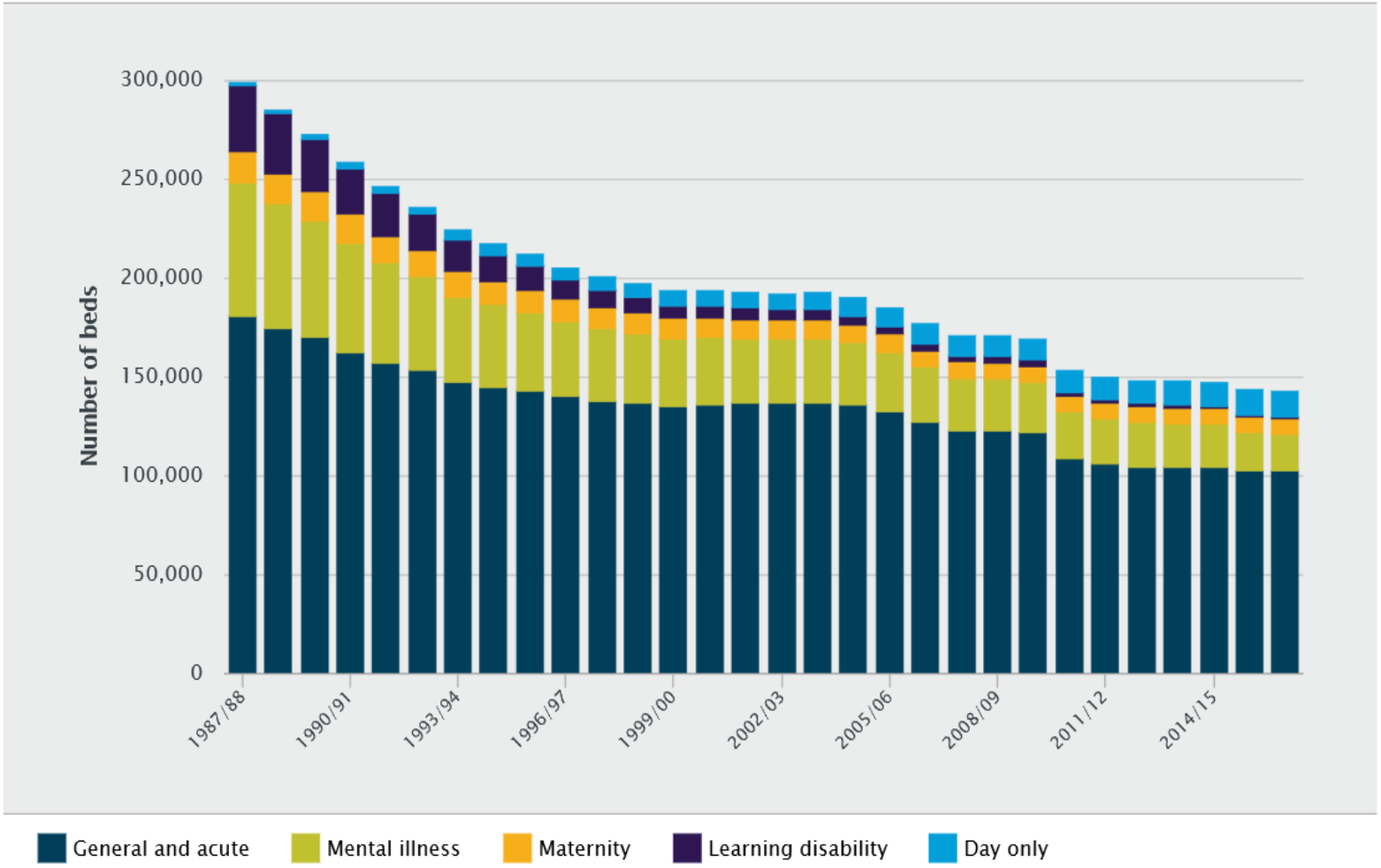
Figure 4: Average number of beds available by category, 1987/8–2016/17



Source: NHS England 2017a

UK 8th of 32 for hospital £spend (OECD 2017)

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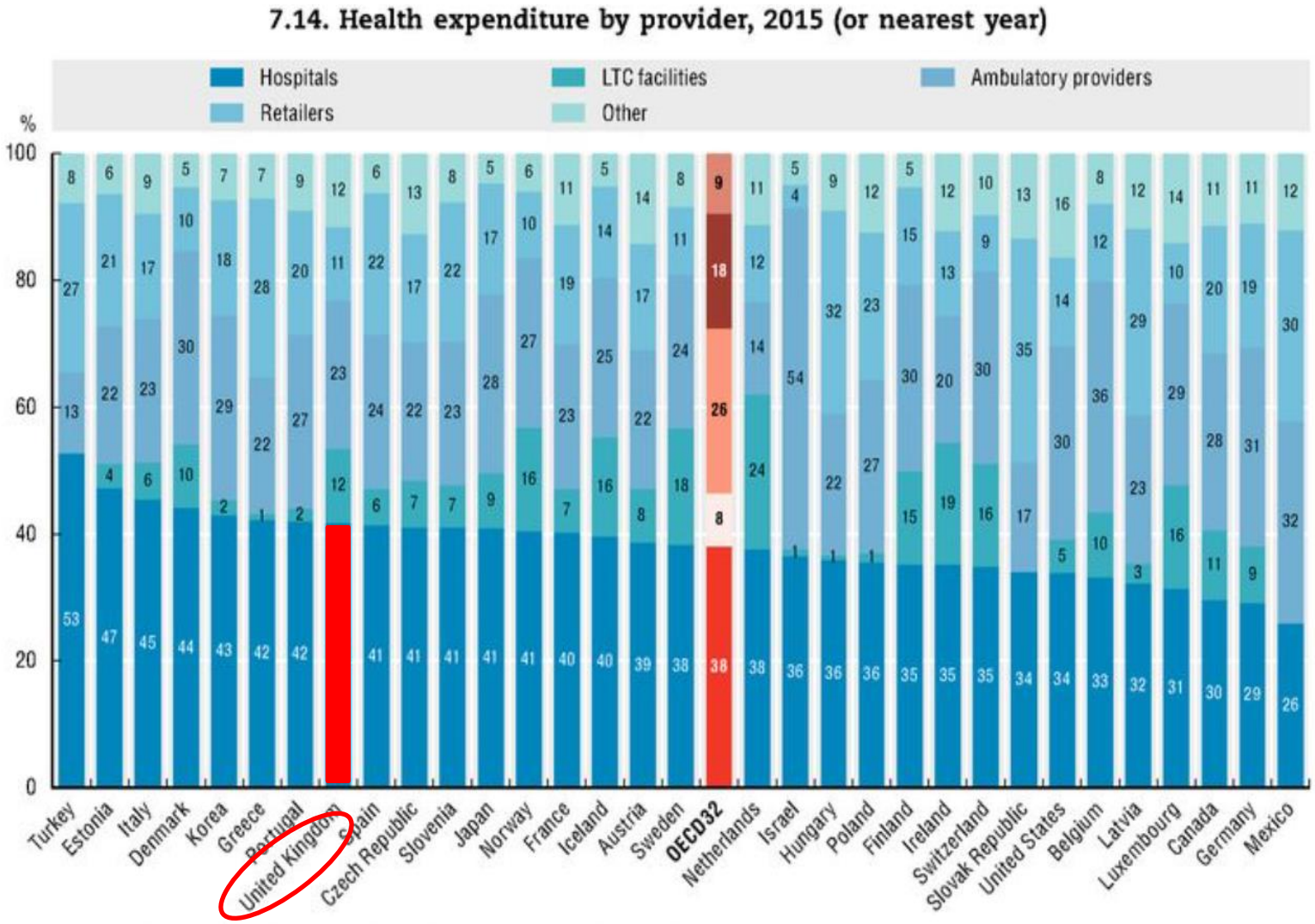

Beds /1000 pop in line with Canada, Denmark, NZ and US. (90% of OECD reducing beds)

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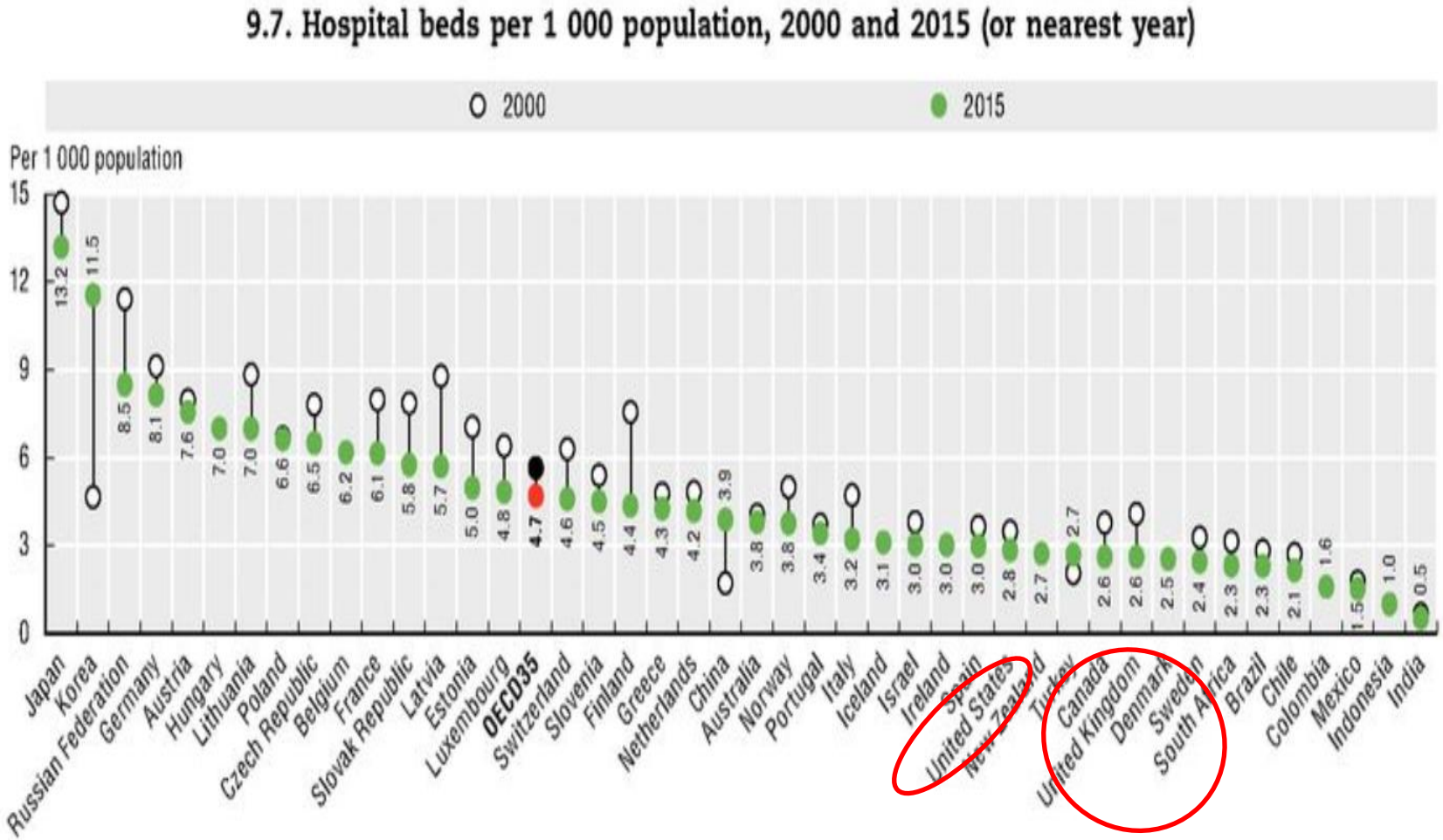

Source: OECD Health Statistics 2017.

DTOC pressure means occupancy now regularly over 95%

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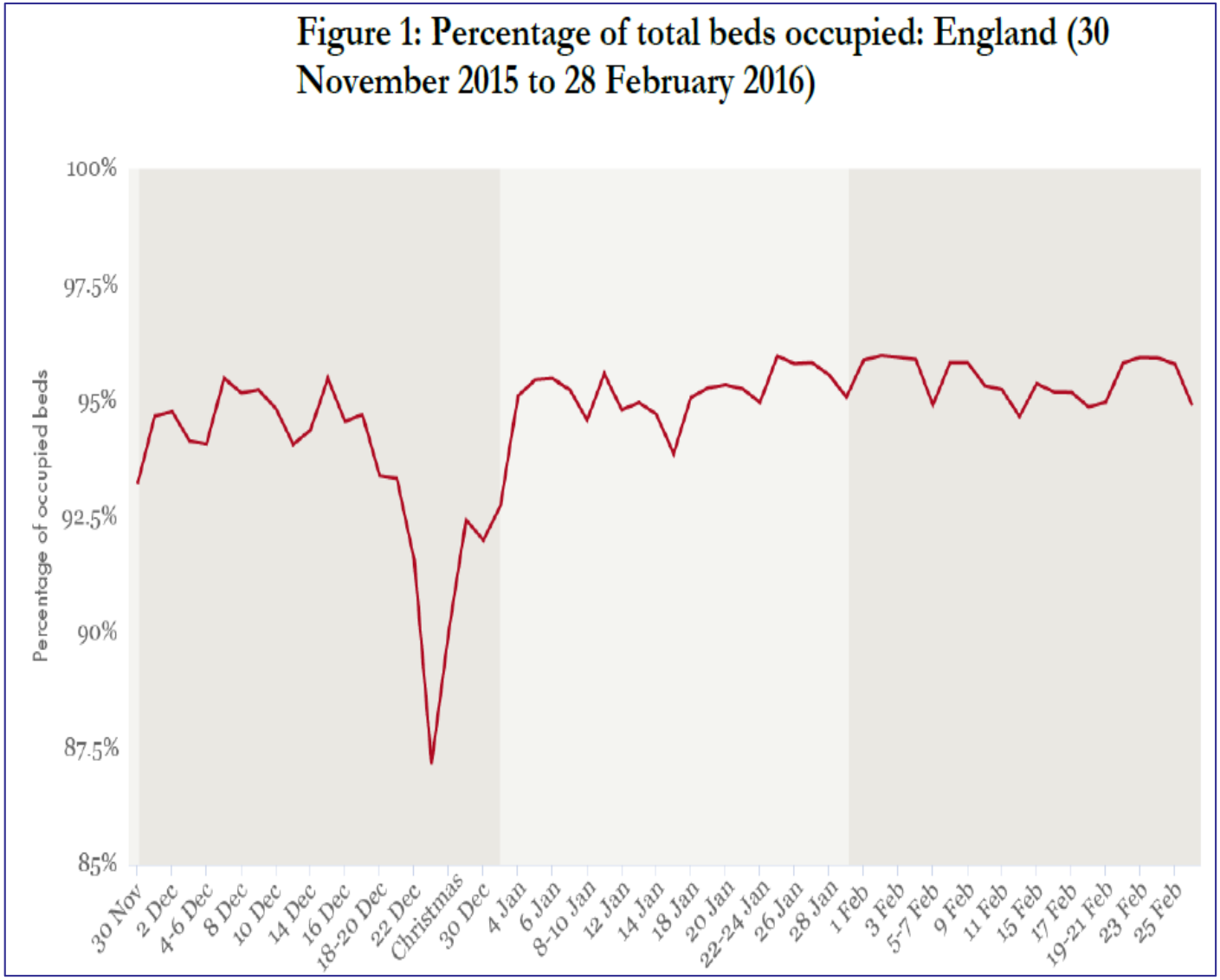

Opened an additional 4,500 beds during winter (Kings Fund 2017)

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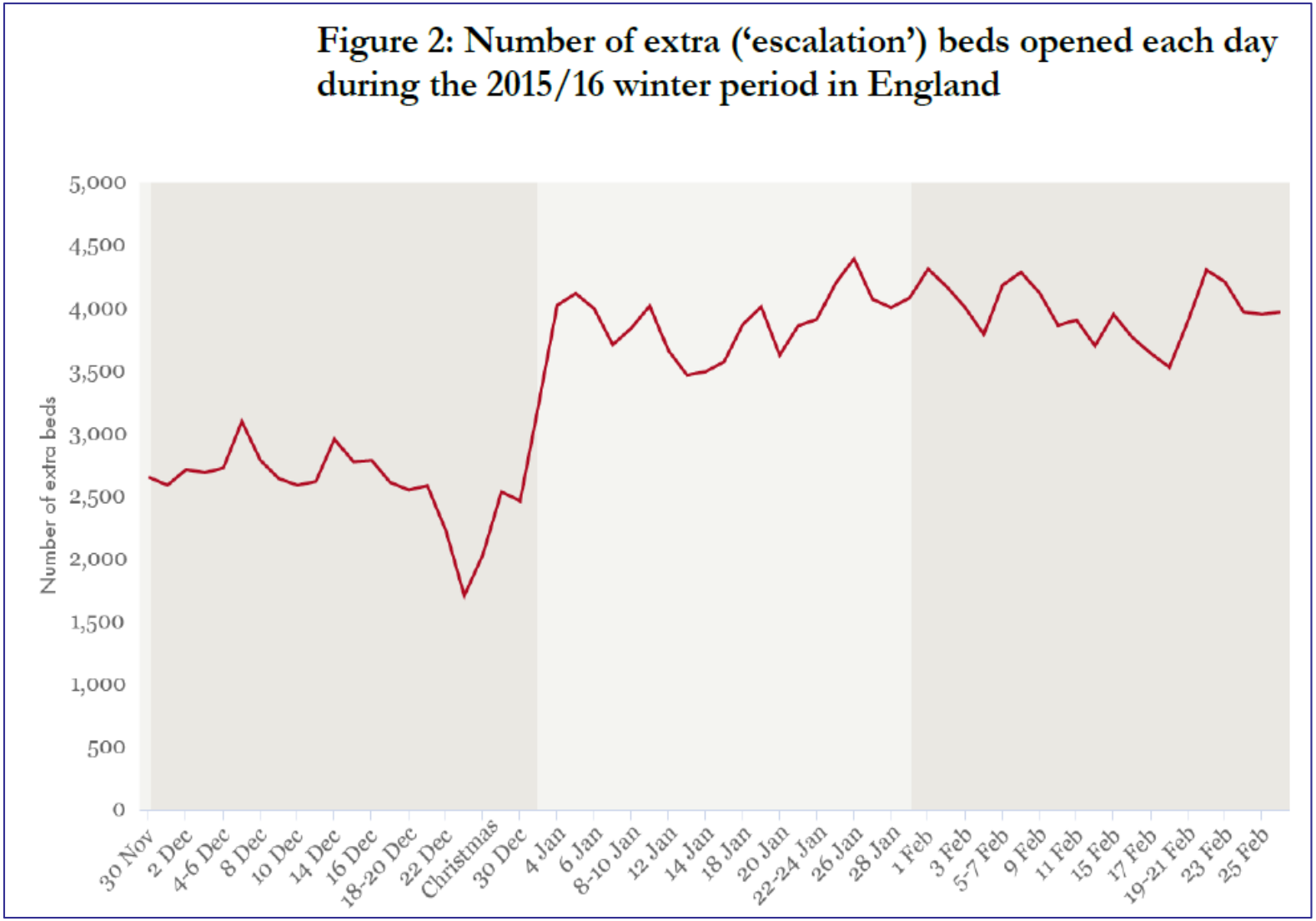

But what about improving flow

Amazon we expect tightly controlled flow

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Car manufacturing in the 1970's

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Manufacturing today – workflow systems

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Bed management – people not systems

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Workflow logistics manufacturing vs NHS

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4,718 cars in 24hrs

351,000 patients in 24hrs

NHS operational processes – its time to update

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What are patient flow systems – there are a few

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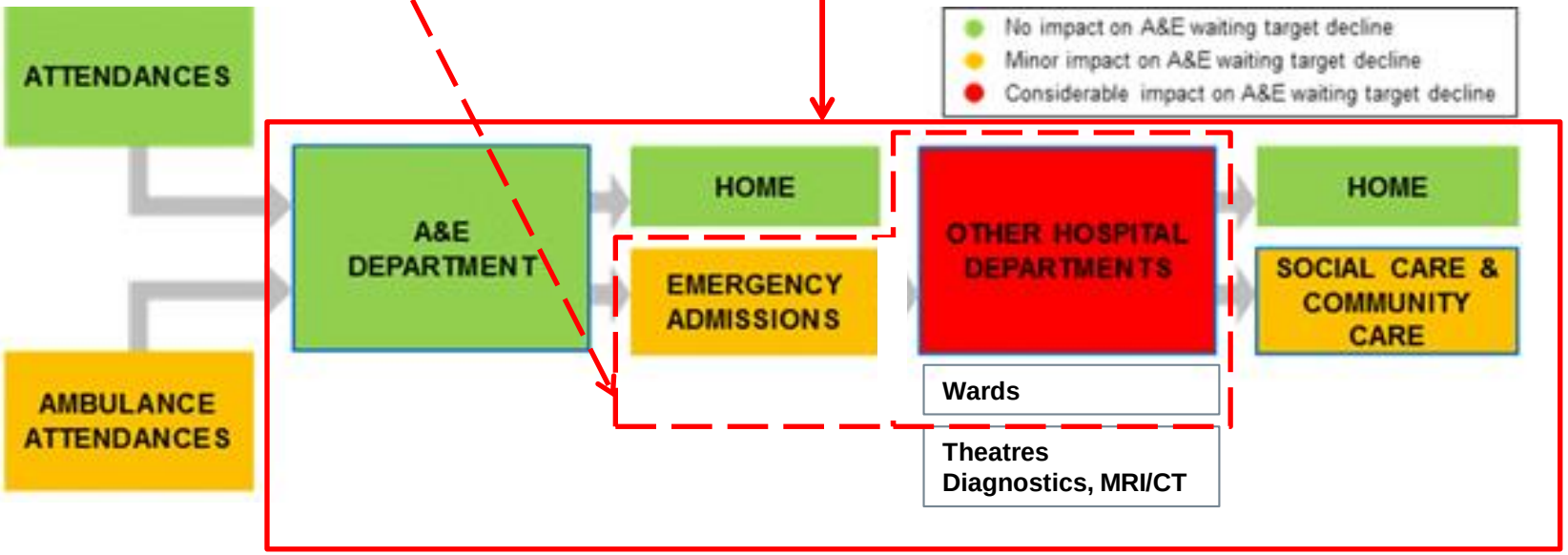
There are two broad approaches

Bed management systems

Patient workflow systems



Tracking every patient along their pathway

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Using a control center to oversee and intervene when a patient is off track

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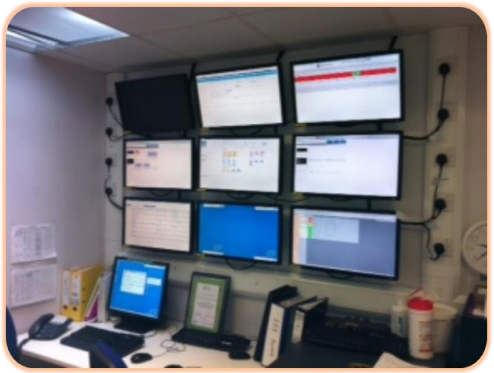
Luton & Dunstable – ExtraMed A&E = 98% in 4hrs



Reduce average length of stay	Increase A&E 4 Hour Target compliance	Reduce delayed transfer of care	Improve resource usage	Reduce paper and increase digitisation
Reduced by 0.6 days per ward	**Achieved 98.3% for Q1 2016**	**Reduced to 1.5% following joint discharge planning with social care**	**Saved 30 minutes per day per physio**	**Readmission rate reduced by 20% through integration with GP**
Derby Teaching Hospitals NHS Foundation Trust	Luton & Dunstable Hospital NHS Foundation Trust	Derby Teaching Hospitals NHS Foundation Trust	East Lancashire Hospitals NHS Trust	Derby Teaching Hospitals NHS Foundation Trust

The Royal Wolverhampton NHS Trust no additional winter beds needed

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NEW CROSS HOSPITAL WOLVERHAMPTON, UNITED KINGDOM

- More than 800 beds
- Over 600,000 patients annually

Reduction in LOS for medical patients by 10.8% since going live

No additional winter pressure beds in 2015/16, compared to 50 in the previous 8 years

Precision placement reduced medical outliers by 70%

Reduction of ED breaches due to lack of available bed capacity: from 53% to 13%

Lost bed time reduced from 220 mins to less than 35 minutes

On day theatre cancellations reduced by 70%

Benefits seen across 900 hospitals in US

Denmark mandated all Emergency hospitals to have a system

	Impact area	Impact
Access	↓ A&E 4 hours breaches	↓ 20-30%
	↓ On-day theatre cancellations	↓ 50-75%
	↓ Specialty Transfer denials	↓ 90%
Throughput	↓ ALOS	↓ 0.75- 2 days
	↓ Dead bed time	↓ 80-90%
	↓ ITU discharge delays of > 4 hours	↓ 75%
	↓ DTOCs	↓ 50%
Utilisation	↑ Theatre session utilisation	↑ 10 -30%
	↑ Equipment utilisation	↑ 15-25%
Safety	↓ Medical Outliers	↓ 30-50%
	↓ Hospital acquired pressure ulcers	↓ 15-50%
Productivity	↑ Improved staffing productivity through	
	• Demand and acuity driven staffing: right-sizing workforce	↑ 15-20%
	• Reduction in non-value add tasks	↑ 5-10%

[1] Evidenced through implementing in over 900 hospitals

Some use Real Time Location System – saves time, improves skill mix match

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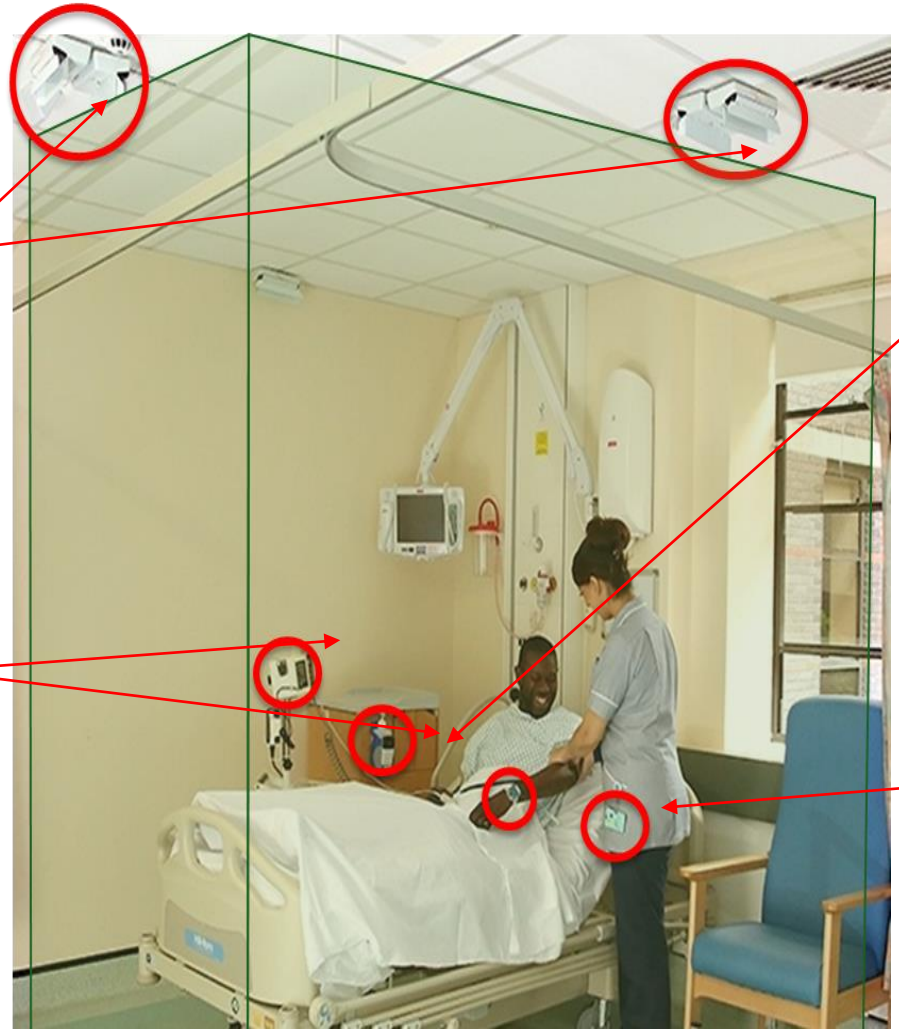

National pilots to share the insight

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The Royal Wolverhampton NHS Trust

Countess of Chester Hospital NHS Foundation Trust

Southend University Hospital NHS Foundation Trust

LUTON & DUNSTABLE UNIVERSITY HOSPITAL

Nottingham University Hospital NHS Trust

Derby Teaching Hospitals NHS Foundation Trust

NHS University College London Hospitals NHS Foundation Trust

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10% increase in relative bed capacity = 20, 500 bed hospitals

NHSI simplifying the procurement process

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Interested ?

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