GETTING IT RIGHT FIRST TIME

Intensive and Critical Care Review

UNIVERSITY HOSPITALS BRISTOL NHS FOUNDATION TRUST

Report dated: June 2018

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GETTING IT RIGHT FIRST TIME

1 Introduction

1.1 Getting It Right First Time

Following the successful completion of a quality improvement pilot in orthopaedics entitled Getting It Right First Time (GIRFT), the Department of Health has commissioned a programme that will use similar methodology to look at a number of additional clinical areas in order to support the NHS in delivering productivity and efficiency improvements across England. Lord Carter is leading this agenda, with The National Director of Clinical Quality & Efficiency, Prof Tim Briggs leading key components of the programme. The ambition is to identify areas of good practice to share across the NHS as well as to identify unwanted variation in clinical practice and/or divergence from good, evidence-based care.

The GIRFT methodology has two main components:

- Clinical leadership of change, where national clinical leaders engage in peer-to-peer discussions with clinicians and hospital managers. The expectation is that this process will enable a clinical team to reflect on the delivery of its services - what is good and what is poor - with a view to encouraging service-improvement.
- The provision of a benchmarking data package, produced by the GIRFT team, which includes a wide range of relevant information about the clinical department and its performance. It is important to recognise that the data pack is not used to 'performance-manage' the unit but is expected to provide fresh insights into the way the department functions through the use of comparative data. The information will form a foundation for the peer-to-peer discussions.

It is expected that more than 200 individual units will be visited, so that a national picture will emerge that shows the extent to which services differ from unit to unit and that indicates which models of care provide the best outcomes.

The work will culminate in the publication of a final report which will include a set of national recommendations, aimed at improving quality of care and reducing expenditure on areas such as complications, litigation, procurement and treatments which lack an appropriate evidence-base. This work will also support the development of the Model Hospital, which will provide Trusts with bench-marking information against which they can compare their own efficiency and productivity, specialty by specialty. This data will lie alongside existing quality indicators and standards.

1.2 Intensive and Critical Care

The Intensive and Critical Care Getting It Right First Time (GIRFT) project is led by Anna Batchelor.

Dr Batchelor is an anaesthetist and intensivist in Newcastle. Her anaesthetic interests included patients for endocrine, gastro-intestinal and burns, and reconstructive surgery until GIRFT displaced anaesthesia from her job plan. She is a Past President of the Intensive Care Society (2005 to 2007), and Past Dean of the Faculty of Intensive Care Medicine (2013-2016). She was a member of the Council of the Royal College of Anaesthetists (2008-2018). She led the production of the first Curriculum for training in ICM as a single specialty and the Framework and Curriculum for Advanced Critical Care Practitioners.

Intensive care medicine, is at the heart of the acute hospital providing not only support to both emergency and elective surgery but also every medical specialty. Any hospital with a front door admitting acutely unwell patients needs a critical care facility integrated into the whole hospital service.

1.3 Overview of metrics used in this report

1.3.1 Metrics selected for this report

We have selected metrics for this report that demonstrate key aspects of overall quality of critical care services. We have attempted to select a broad collection of metrics that are likely to provide insight into the way your critical care service functions. It has to be recognised that each metric is not necessarily going to be useful as a quality indicator when considered in isolation, but it is anticipated that the aggregation of the information from the full range of metrics will build up a clear picture of a service's strengths and weaknesses.

This report is not expected to exist on its own. Its main purpose is to support the peer-to-peer discussions between the GIRFT clinical lead and your clinical and management teams. This is why there is very little text - the metrics should be used to stimulate discussion, not provide answers.

Some metrics relate to the Trust as a whole, some to hospitals within the Trust and some to individual critical care units.

1.3.2 Providers position and scoring for each metric

In this GIRFT report, we have included the overall value for England and the Provider's position for all metrics where this is relevant. The value for England is the overall mean or percentage, unless otherwise indicated. The position is a straight forward system where 1 is the lowest value and 143 is the highest value (if all Trusts are included in the metric). The **position does not indicate performance** - i.e. a position of 1 does not indicate either poorest or best performance - it is purely an indication of position within the Providers included in the metric.

Because the position alone does not indicate performance, we have also included a scoring chart for some relevant metrics. The scoring used in this chart is as follows:

- Dark red diamond is the poorest performing 10% of Providers
- Light red diamond is the lowest quartile (excluding the lowest 10%)
- Amber diamond is the middle 50% of Providers
- Light green diamond is the highest quartile (excluding the highest 10%)
- Dark green diamond is the highest 10% of Providers

Some metrics, e.g. volumes of activity, cannot be scored using this approach. However, it is still helpful to establish the Provider's relative position compared to other Providers. The scoring chart for these metrics is as follows:

- Dark blue diamond is the highest or lowest 10% of Providers
- Light blue diamond is the highest or lowest quartile (excluding the highest/lowest 10%)
- Grey diamond is the middle 50% of Providers.

2 Trust metrics

2.1 Size of Trust

Metric	Source and year	Trust	England	Position	Score (%) 0-10|10-25|25-75|75-90|90-100
Admissions					
Total admissions per annum	HES 2017	137,675	108,105	35 of 143	
Non-elective admissions per annum	HES 2017	62,047	53,697	46 of 143	
Elective admissions per annum	HES 2017	75,628	54,408	30 of 143	
Staff					
Number of staff in Trust (FTE)	NHS Digital Dec 2017	7,786	5,224	20 of 142	
Number of doctors (FTE)	NHS Digital Dec 2017	1,135	668	18 of 142	
Number of critical care consultants	GIRFT Questionnaire 2018				
Number of qualified nurses on unit	GIRFT Questionnaire 2018				
Number of nurses in outreach team	GIRFT Questionnaire 2018				
Number of doctors per 1,000 admissions	NHS Digital Mar 2017	8.24	6.26	20 of 142	

2.2 Trust beds

Metric	Source and year	Trust	England	Position	Score (%) 0-10|10-25|25-75|75-90|90-100
General and Acute beds					
Number of General and Acute beds	NHS England Oct-Dec 2017	738	677	55 of 142	
Number of General and Acute beds per doctor (beds per FTE)	Numerator: NHS England Oct-Dec 2017 Denominator: NHS Digital Dec 2017	0.65	1.01	136 of 142	
Number of General and Acute beds per 1000 hospital admissions	Numerator: NHS England Oct-Dec 2017 Denominator: HES 2017	5.36	6.35	121 of 142	
Critical Care Beds					
Number of critical care beds per 100 hospital admissions	GIRFT Questionnaire 2018				
Number of critical care beds - Level 3	GIRFT Questionnaire 2018				
Number of critical care beds - Level 2	GIRFT Questionnaire 2018				
Number of critical care beds - Other	GIRFT Questionnaire 2018				
Number of admissions	CMP 2016-2017	1,231	977	56 of 142	
Number of occupied bed days - Level 3	CMP 2016-2017	2,903	2,244	49 of 142	
Number of occupied bed days - Level 2	CMP 2016-2017	4,595	2,764	32 of 142	
Number of occupied bed days - Other	CMP 2016-2017	5	402	133 of 142	

2.3 Trust costs

Metric	Source and year	Trust	England	Position	Score (%) 0-10|10-25|25-75|75-90|90-100
Total operating income (£million)	Final accounts Apr 2016-Mar 2017	638.8	424.0	23 of 142	
Total workforce costs (£million)	Final accounts Apr 2016-Mar 2017	368.1	258.3	22 of 142	
Total workforce costs (% of total operating costs)	Final accounts Apr 2016-Mar 2017	59.4%	60.2%	98 of 142	
Cost of permanent staff (% of workforce costs)	Final Accounts Apr 2016-Mar2017	90.8%	89.5%	65 of 142	
Cost of agency staff (% of workforce costs)	Final Accounts Apr 2016-Mar2017	3.1%	6.3%	125 of 142	
Surplus or deficit * (£million)	Final accounts Apr 2016-Mar 2017	7.5	N/A	18 of 142	
Surplus or deficit (% of operating income)	Final accounts Apr 2016-Mar 2017	1.17%	-3.30%	31 of 142	

* Positive figures reflect surplus. Negative figures reflect defecit.

2.4 Trust staff

Metric	Source and year	Trust	England	Position	Score (%) 0-10|10-25|25-75|75-90|90-100
Total number of CC staff	GIRFT Questionnaire 2018				
Consultants	GIRFT Questionnaire 2018				
Advanced Critical Care Practitioners	GIRFT Questionnaire 2018				
Nursing staff	GIRFT Questionnaire 2018				
Health Care Assistants	GIRFT Questionnaire 2018				
Psychologists	GIRFT Questionnaire 2018				
Physiotherapists	GIRFT Questionnaire 2018				
Pharmacists	GIRFT Questionnaire 2018				
Dieticians	GIRFT Questionnaire 2018				
Outreach team	GIRFT Questionnaire 2018				
Consultants per bed	GIRFT Questionnaire 2018				
Advanced Critical Care Practitioners per bed	GIRFT Questionnaire 2018				
Nursing staff per bed	GIRFT Questionnaire 2018				
Health Care Assistants per bed	GIRFT Questionnaire 2018				
Psychologists per bed	GIRFT Questionnaire 2018				
Physiotherapists per bed	GIRFT Questionnaire 2018				
Pharmacists per bed	GIRFT Questionnaire 2018				
Dieticians per bed	GIRFT Questionnaire 2018				
Nurse:patient ratio	GIRFT Questionnaire 2018				
Trainees, fellows, other medical staff on day shift	GIRFT Questionnaire 2018				
Trainees, fellows, other medical staff on night shift	GIRFT Questionnaire 2018				

NHS Staff Survey

Metric	Source and year	Trust	England	Position	Score (%) 0-10|10-25|25-75|75-90|90-100
Staff survey (whole Trust)					
Staff survey response rate (%)	NHS Staff Surveys Jan-Dec 2017	42.89%	44.08% **	78 of 141	
Recommend Trust as place to work	NHS Staff Surveys Jan-Dec 2017	3.95 *	3.76 **	30 of 141	
Staff motivation	NHS Staff Surveys Jan-Dec 2017	3.87 *	3.92 **	113 of 141	
Overall engagement	NHS Staff Surveys Jan-Dec 2017	3.85 *	3.80 **	47 of 141	
Staff sickness					
Trust staff sickness	NHS Digital Nov 2017	4.12%	4.04%	61 of 141	
Critical care staff sickness	GIRFT Questionnaire 2018				
Critical care nursing staff turnover rate	GIRFT Questionnaire 2018				

* Staff survey ratings: 1 = Strongly disagree, 5 = Strongly agree

** England values are the median across all Trusts.

2.5 Trust quality indicators

Metric	Source and year	Trust
Care Quality Commission (whole Trust)		
Caring	CQC 02/03/2017	Good
Effective	CQC 02/03/2017	Outstanding
Responsive	CQC 02/03/2017	Requires improvement
Safe	CQC 02/03/2017	Good
Well-led	CQC 02/03/2017	Outstanding
Overall	CQC 02/03/2017	Outstanding

Metric	Source and year	Trust	England	Position	Score (%) 0-10|10-25|25-75|75-90|90-100
Trust level mortality index (whole Trust)					
Standardised Hospital Mortality Index	NHS Digital July 2016-Jun 2017	0.98	1.00	91 of 134	
Safety Thermometer (critical care)					
Patients with pressure ulcers (level 3 & 4)	NHS Safety Thermometer Dec 2016-Dec 2017	0.00%	0.37%	55 of 130	
Patients with new pulmonary embolism	NHS Safety Thermometer Dec 2016-Dec 2017	1.00%	0.41%	19 of 130	
Patients with new deep vein thrombosis	NHS Safety Thermometer Dec 2016-Dec 2017	1.00%	0.36%	16 of 130	
Patients with new urinary tract infection	NHS Safety Thermometer Dec 2016-Dec 2017	0.00%	0.42%	67 of 130	
Participation in research (critical care)					
Number of research studies recruited to	NIHR				
Number of patients recruited to research studies	NIHR				

2.6 Patient experience

Metric	Source and year	Trust	England	Position	Score (%) 0-10|10-25|25-75|75-90|90-100
Length of stay and delayed transfer of care (whole Trust)					
Average length of hospital stay (days)	HES 2017	2.2	2.4	108 of 143	
Delayed transfers of care (% of total bed days)	NHS England Mar 2017-Feb 2018	3.82%	3.78%	66 of 143	
Patient experience (whole trust)					
Inpatient survey score *	CQC 2016	8.57	8.10	9 of 142	
Friends and Family Test response rate (%)	NHS England Feb 2017-Jan 2018	35.40%	24.49%	26 of 142	
Friends and Family Test (% recommending Trust)	NHS England Feb 2017-Jan 2018	97.65%	95.63%	25 of 142	
Written complaints response rate (%) **	NHS England Feb 2017-Jan 2018	52.59%	53.82%	95 of 142	
Written complaints upheld per episode of care **	NHS England Feb 2017-Jan 2018	0.27%	0.26%	56 of 142	

* A higher value indicates that patients experience better care ** A record of written complaints is submitted by all NHS provider organisations on a quarterly basis. This is a statutory national statistics data collection. This dataset includes information on whether the complaint was upheld after internal investigation. It is recognised that a high value for a Provider may indicate good recording practice or a ”non-defensive” approach to responding to complaints as much as to poor clinical practice.

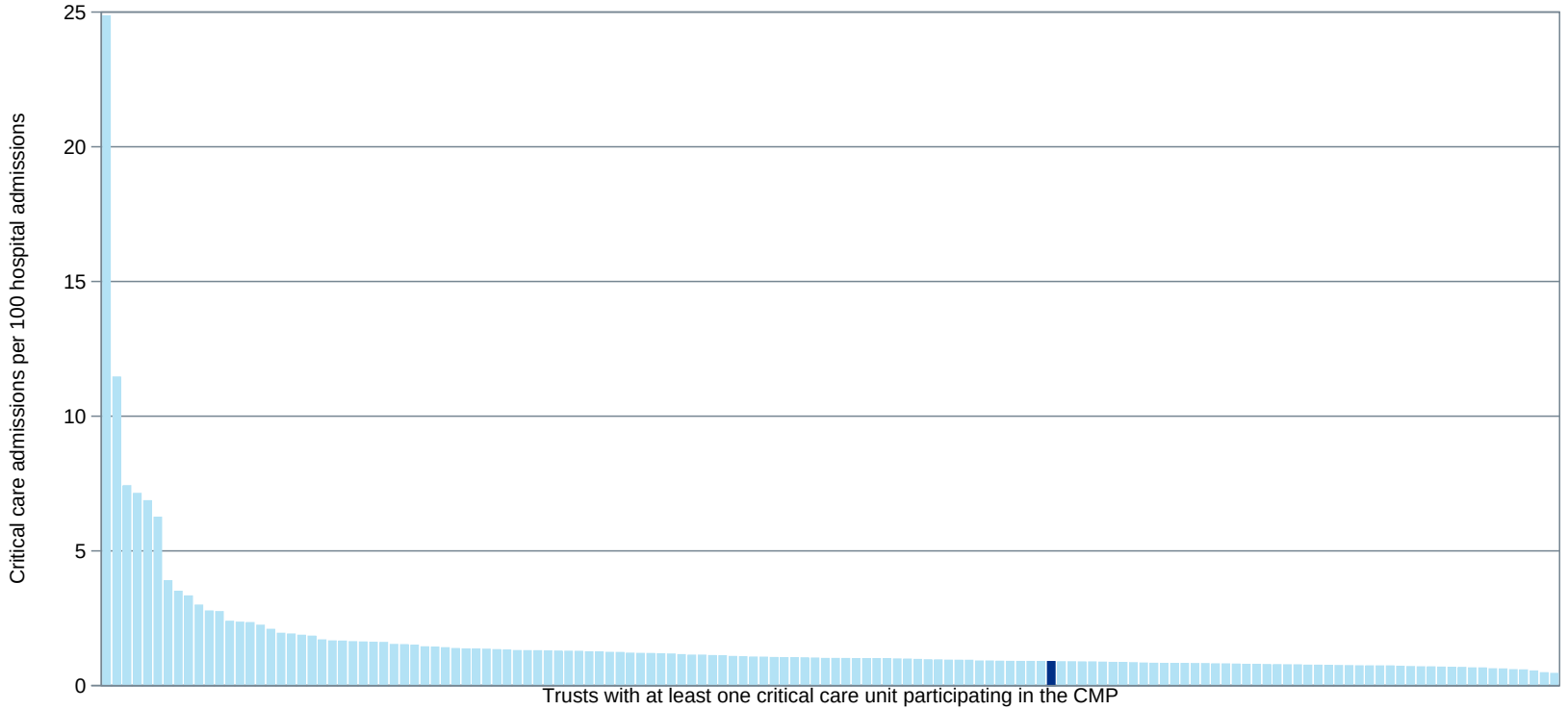
Metric	Source and year	Trust	England	Position	Score (%) 0-10|10-25|25-75|75-90|90-100
Readmissions to hospital following critical care episode (whole trust)					
Within 30 days	HES 2016-2017	11.74%	10.05%	39 of 139	
Within 90 days	HES 2016-2017	26.69%	25.77%	66 of 139	
Within 1 year	HES 2016-2017	73.84%	75.77%	112 of 139	
Patient safety incident reporting (whole trust)					
Number of incidents per month	NHS Improvement Mar 2017-Feb 2018	1,237	876	25 of 143	
Degree of harm (% low or moderate harm)	NHS Improvement Mar 2017-Feb 2018	21.77%	22.14%	74 of 143	
Degree of harm (% severe harm or death)	NHS Improvement Mar 2017-Feb 2018	0.35%	0.39%	73 of 143	
Median days between incident and report	NHS Improvement Mar 2017-Feb2018	16.33	20.95	79 of 143	

3 Trust metrics - Critical care indicators

3.1 Critical care unit admissions (overall)

Reported critical care unit admissions* per 100 hospital admissions

Source: Numerator: CMP 2016-2017, Denominator: HES 2016-2017



Only admissions to critical care units participating in the CMP are included in the numerator.

Reported critical care unit admissions* per 100 hospital admissions in patient subgroups

Metric	Source and year	Trust	England	Position	Score (%) 0-10|10-25|25-75|75-90|90-100
COPD	Numerator: CMP 2014-2017 Denominator: HES 2014-2017	3.0	5.1	97 of 139	
Haematological malignancy	Numerator: CMP 2014-2017 Denominator: HES 2014-2017	4.9	5.4	71 of 142	
Any malignancy	Numerator: CMP 2014-2017 Denominator: HES 2014-2017	5.7	4.7	36 of 142	
Diabetic ketoacidosis	Numerator: CMP 2014-2017 Denominator: HES 2014-2017	27.8	41.9	108 of 134	
Alcoholic liver disease	Numerator: CMP 2014-2017 Denominator: HES 2014-2017	6.0	5.7	50 of 141	

* Only admissions to critical care units participating in the CMP are included in the numerator.

Reported critical care unit admissions* per 100 hospital admissions by age and gender

Metric	Source and year	Trust	England	Position	Score (%) 0-10|10-25|25-75|75-90|90-100
Age <60 years	Numerator: CMP 2014-2017 Denominator: HES 2014-2017	0.9	1.2	77 of 142	
Age 60-79 years	Numerator: CMP 2014-2017 Denominator: HES 2014-2017	1.6	1.9	70 of 142	
Age 80+ years	Numerator: CMP 2014-2017 Denominator: HES 2014-2017	0.9	1.3	98 of 142	
Females	Numerator: CMP 2014-2017 Denominator: HES 2014-2017	0.8	1.3	121 of 142	
Males	Numerator: CMP 2014-2017 Denominator: HES 2014-2017	1.0	1.3	71 of 142	

* Only admissions to critical care units participating in the CMP are included in the numerator.

Reported critical care unit admissions* per 100 hospital admissions by Index of Multiple Deprivation

Metric	Source and year	Trust	England	Position	Score (%) 0-10|10-25|25-75|75-90|90-100
Quintile 1	Numerator: CMP 2014-2017 Denominator: HES 2014-2017				
Quintile 2	Numerator: CMP 2014-2017 Denominator: HES 2014-2017				
Quintile 3	Numerator: CMP 2014-2017 Denominator: HES 2014-2017				
Quintile 4	Numerator: CMP 2014-2017 Denominator: HES 2014-2017				
Quintile 5	Numerator: CMP 2014-2017 Denominator: HES 2014-2017				

* Only admissions to critical care units participating in the CMP are included in the numerator.

4 Bristol Royal Infirmary - Individual hospital indicators

4.1 CQC rating for critical care

Metric	Source and year	Hospital
Care Quality Commission (critical care)		
Caring	CQC 18/01/2017	Good
Effective	CQC 18/01/2017	Good
Responsive	CQC 18/01/2017	Requires improvement
Safe	CQC 18/01/2017	Good
Well-led	CQC 18/01/2017	Good
Overall	CQC 18/01/2017	Good

4.2 National Emergency Laparotomy Audit

Metric	Source and year	Hospital	England	Position	Score (%) 0-10|10-25|25-75|75-90|90-100
Number of NELA records:	NELA audit Dec 2016-Nov 2017	168			
Proportion of patients with an unplanned critical care admission from the ward <7 days after their index laparotomy	NELA audit Dec 2016-Nov 2017	1.8	3.2	127 of 163	
Proportion of patients transferred directly to a critical care unit from theatre by post-operative P-POSSUM mortality risk					
≤5%	NELA audit Dec 2016-Nov 2017	68.2	69.2	79 of 147	
5-10%	NELA audit Dec 2016-Nov 2017	83.5	81.8	74 of 162	
>10%	NELA audit Dec 2016-Nov 2017	88.4	89.1	85 of 159	

5 Bristol Heart Institute, Cardiac Intensive Care Unit - Individual critical care unit indicators

Individual critical care unit indicators only available for units participating in the CMP between April 2016 and March 2017. Bristol Heart Institute, Cardiac Intensive Care Unit joined the CMP from 1 July 2017.

6 Bristol Royal Infirmary, Intensive Therapy/High Dependency Unit - Individual critical care unit indicators

6.1 Critical care unit admissions by Level of care

Reported number of critical care unit admissions by Level of care

Metric	Source and year	Unit	England	Position	Score (%) 0-10|10-25|25-75|75-90|90-100
Number of critical care unit admissions	CMP 2016-2017	1,231	739	42 of 227	
Level 3	CMP 2016-2017	611	329	39 of 227	
Level 2	CMP 2016-2017	620	379	44 of 227	
Level 1/0	CMP 2016-2017	0	1	120 of 227	

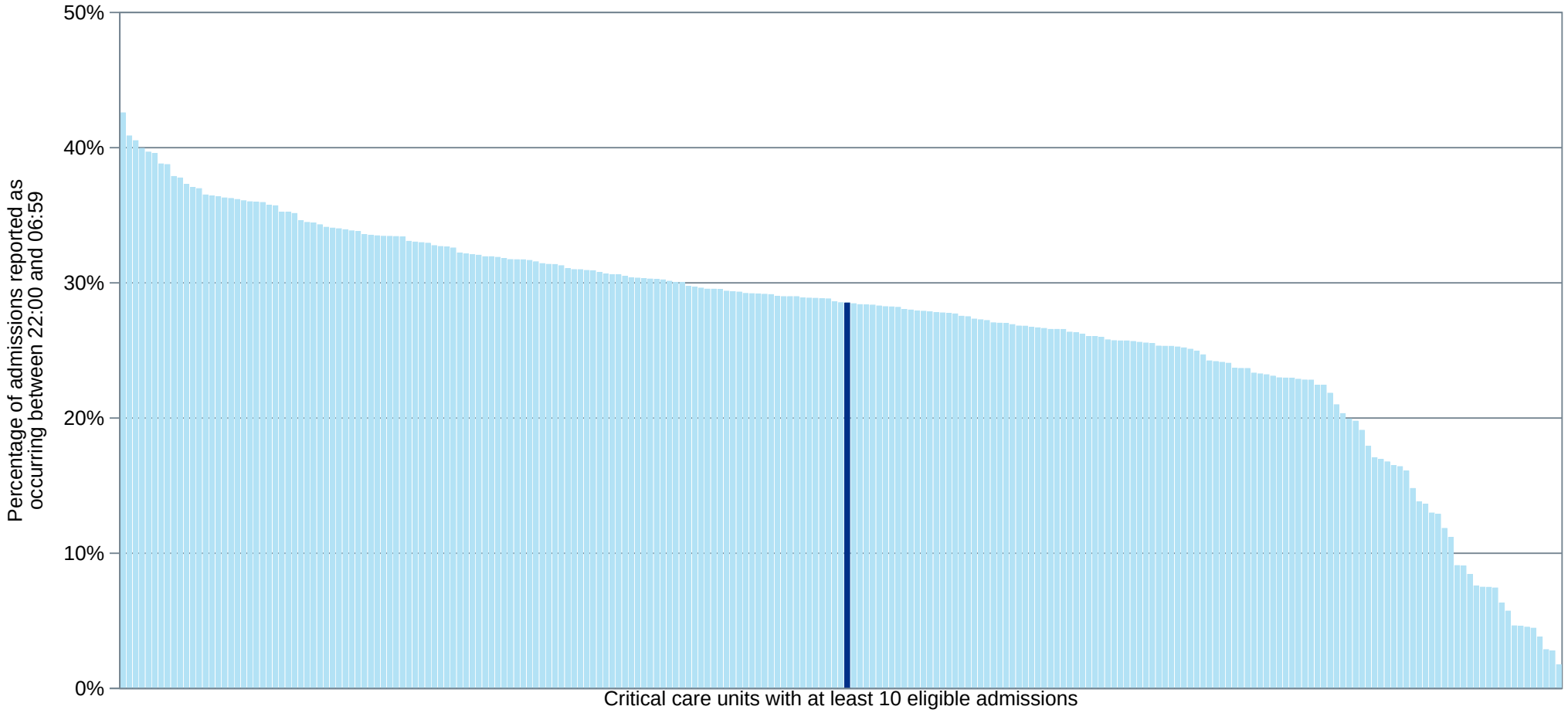
Reported number of critical care unit bed days by Level of care

Metric	Source and year	Unit	England	Position	Score (%) 0-10|10-25|25-75|75-90|90-100
Number of critical care unit bed days	CMP 2016-2017	7,503	3,925	30 of 227	
Level 3	CMP 2016-2017	2,903	1,688	51 of 227	
Level 2	CMP 2016-2017	4,595	1,860	21 of 227	
Level 1/0	CMP 2016-2017	5	219	203 of 227	

6.2 Timing of admission

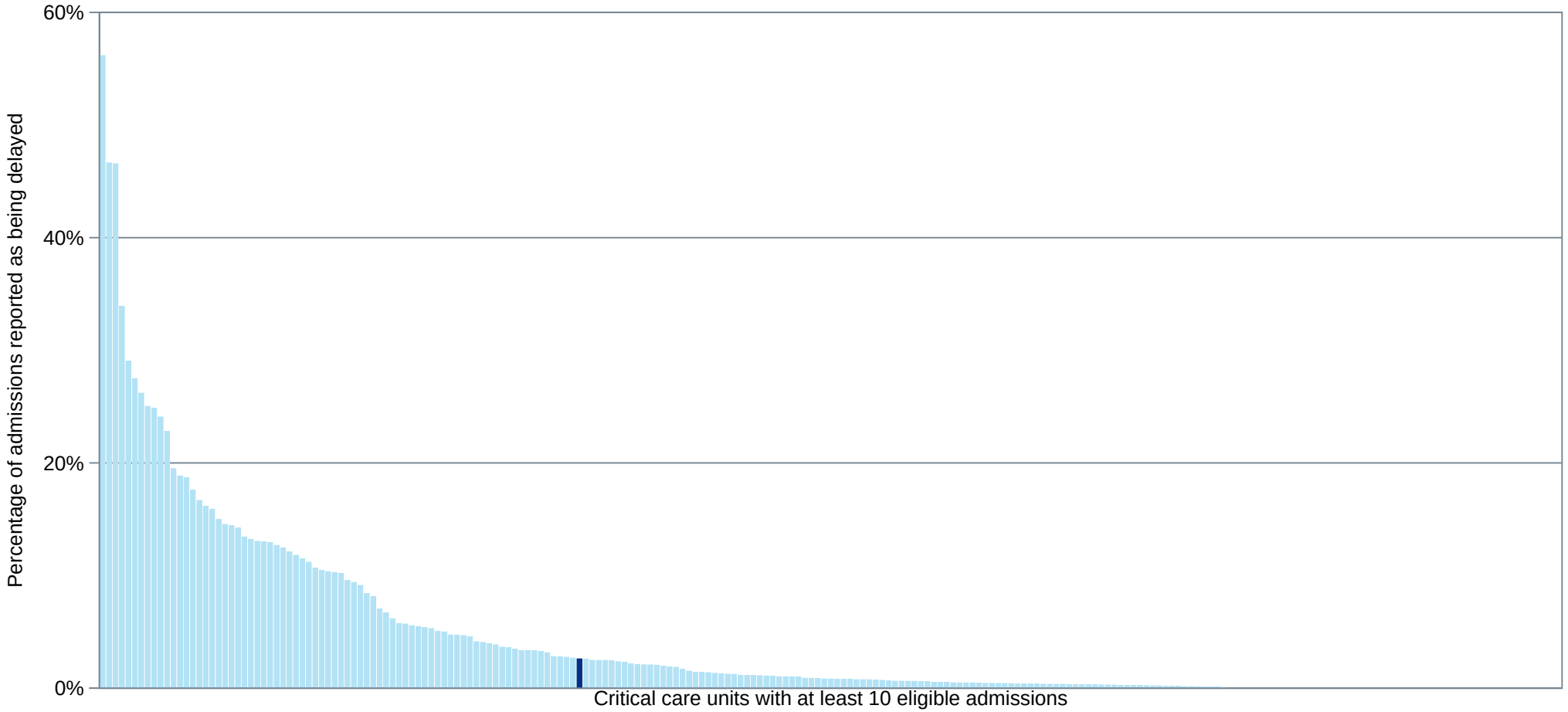
Percentage of admissions reported as occurring between 22:00 and 06:59

Source: CMP 2016-2017



Percentage of admissions reported as being delayed

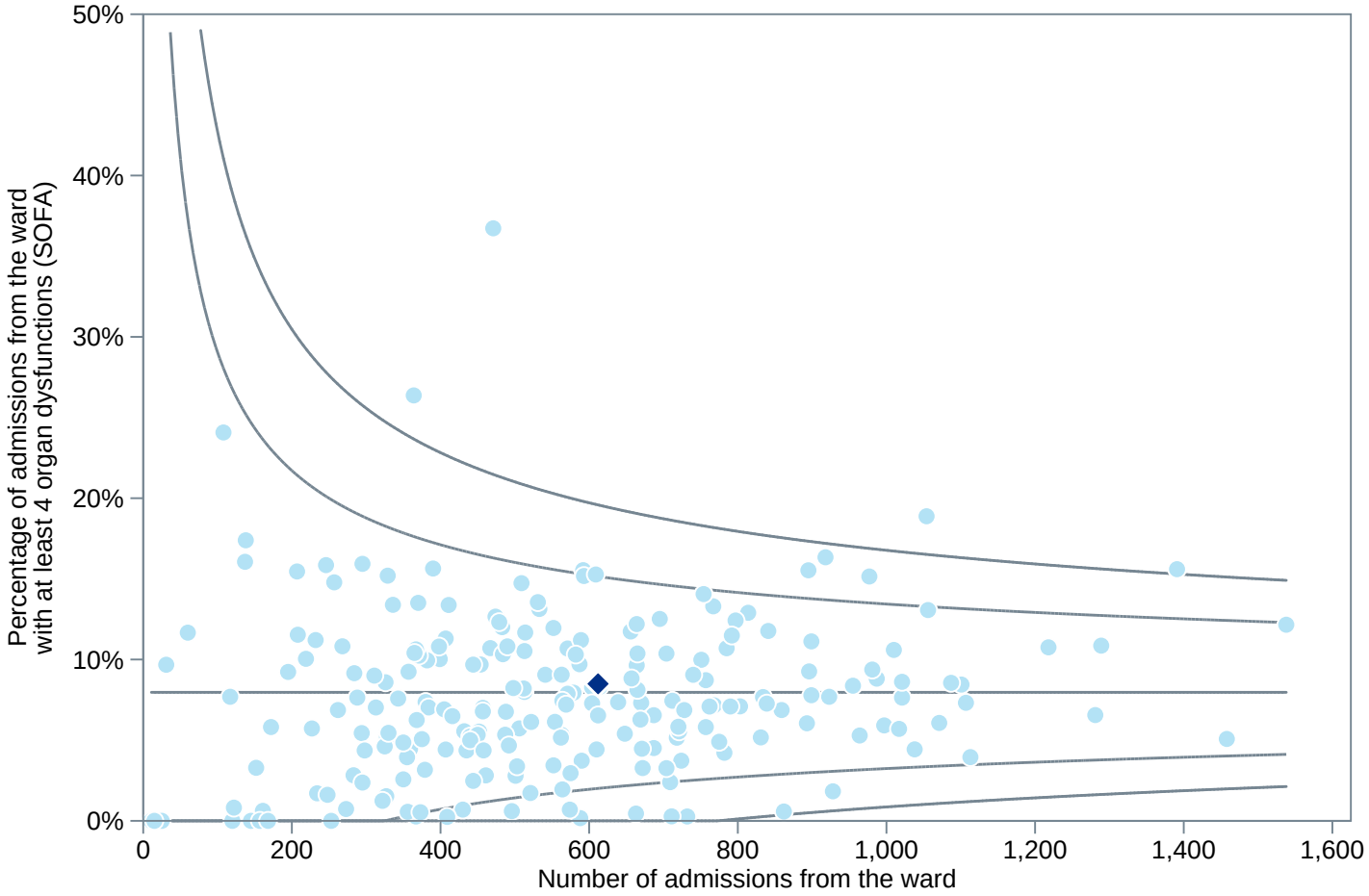
Source: CMP 2016-2017



6.3 Recognition of critical illness

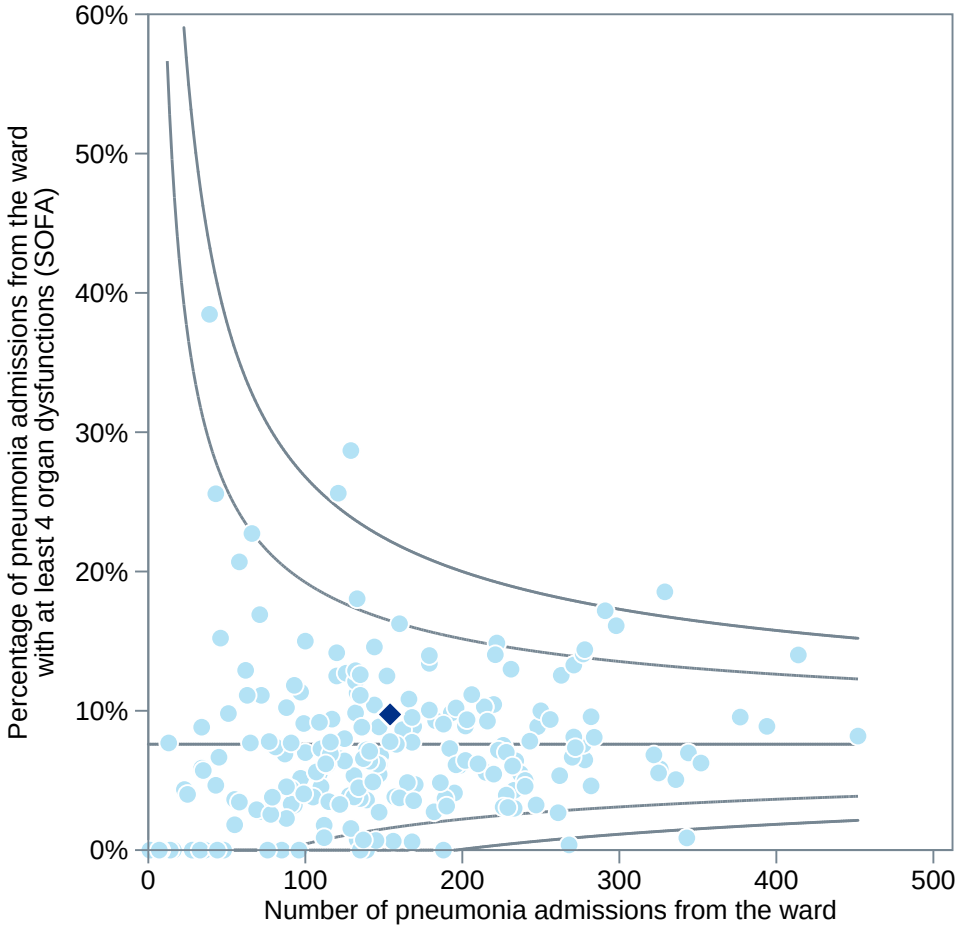
Percentage of admissions from the ward with at least 4 organ dysfunctions (SOFA)

Source: CMP 2014-2017



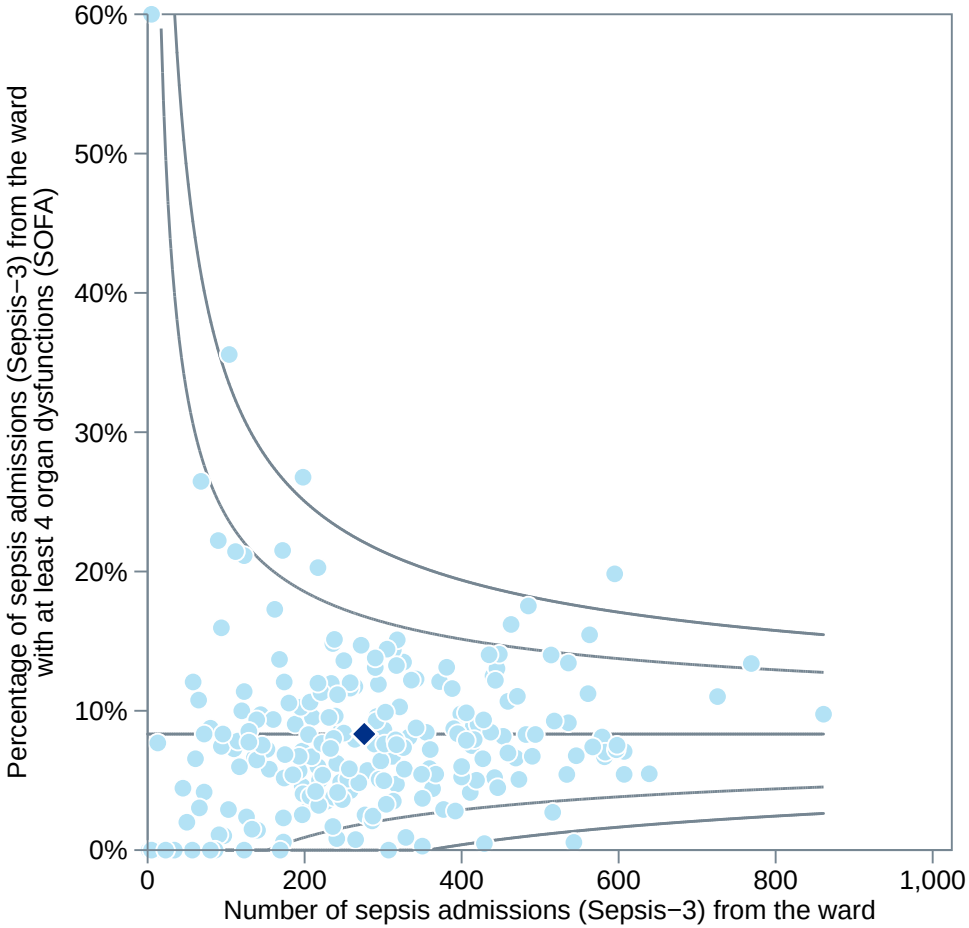
Percentage of pneumonia admissions from the ward with at least 4 organ dysfunctions (SOFA)

Source: CMP 2014-2017



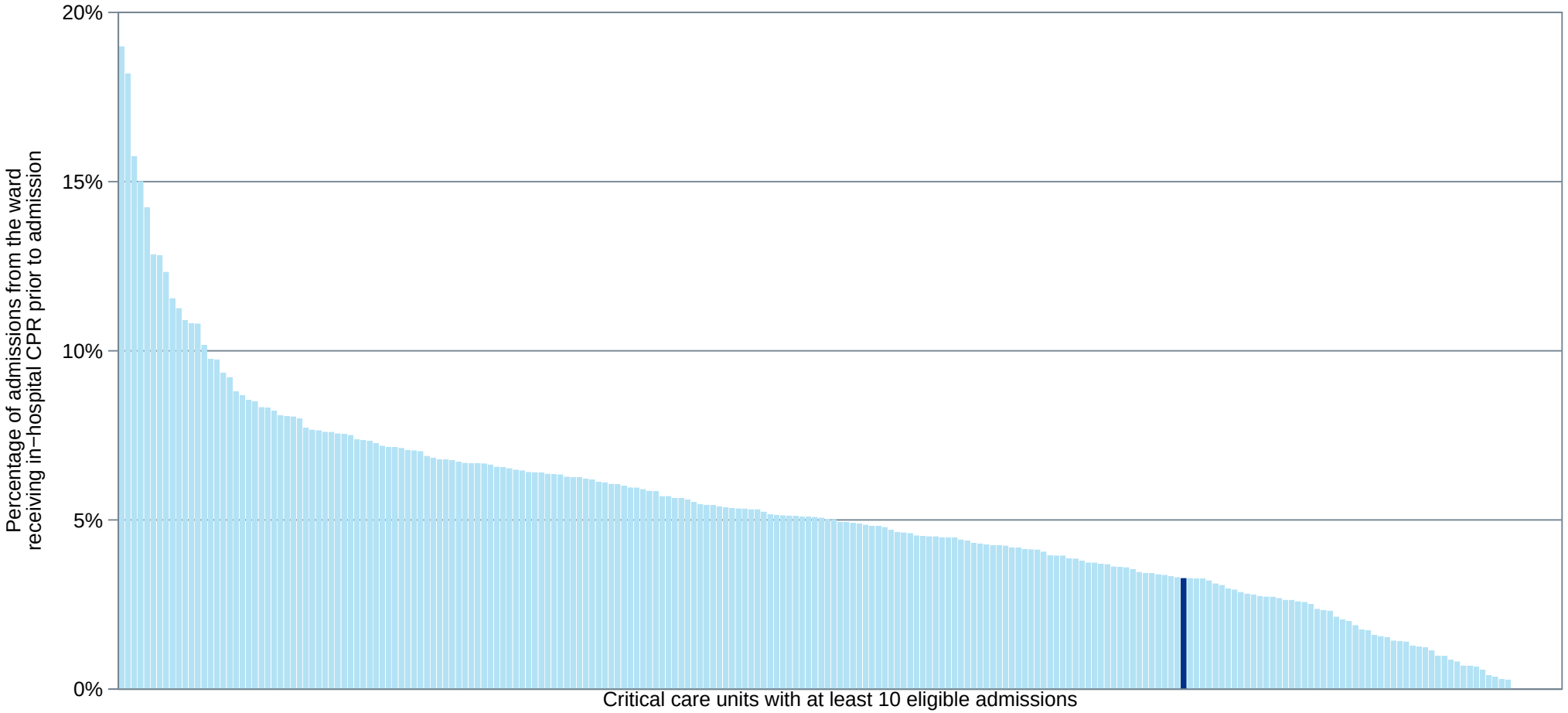
Percentage of sepsis admissions (Sepsis-3) from the ward with at least 4 organ dysfunctions (SOFA)

Source: CMP 2014-2017



Percentage of admissions from the ward receiving in-hospital CPR prior to admission

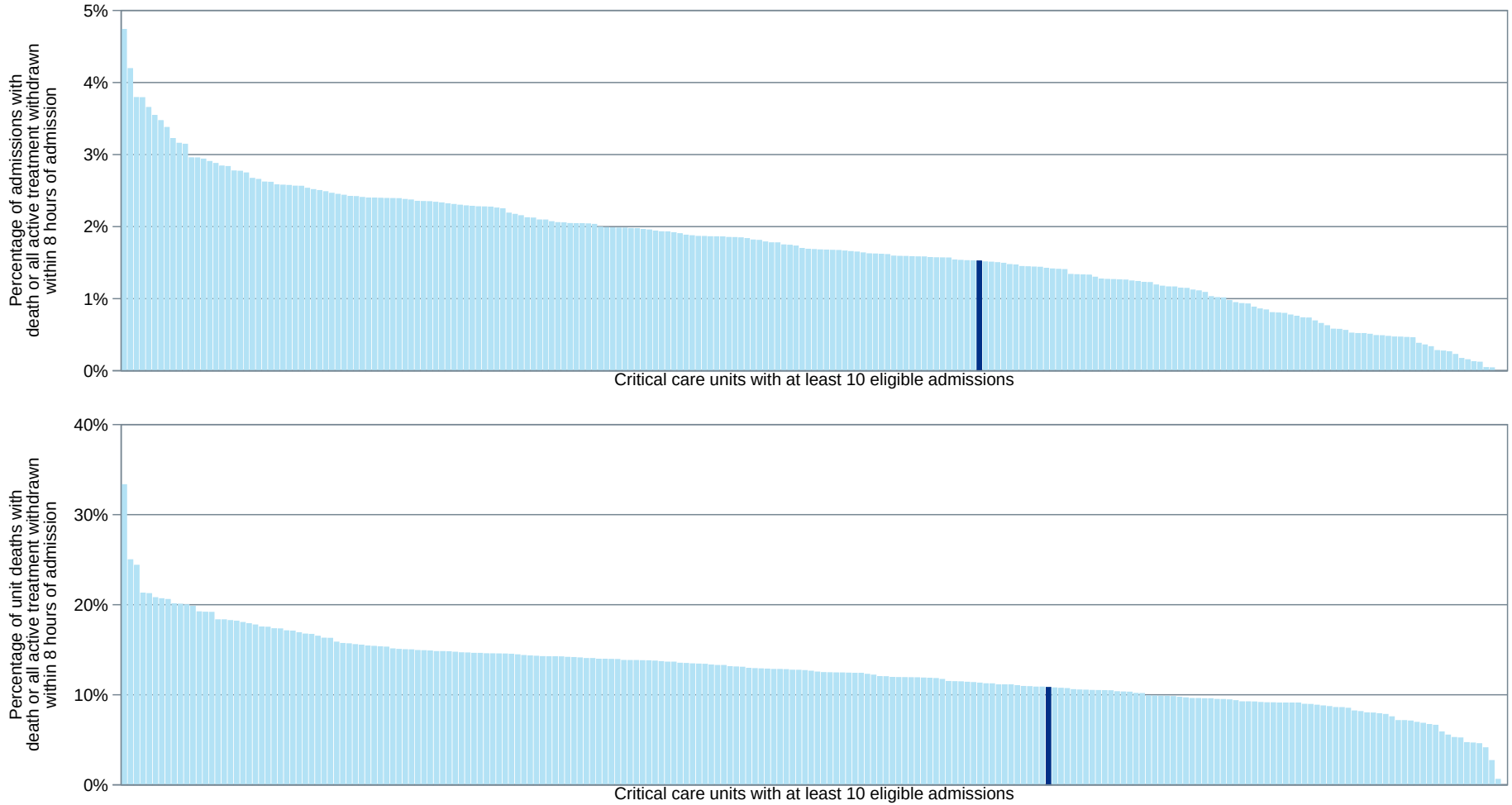
Source: CMP 2014-2017



6.4 Access to critical care

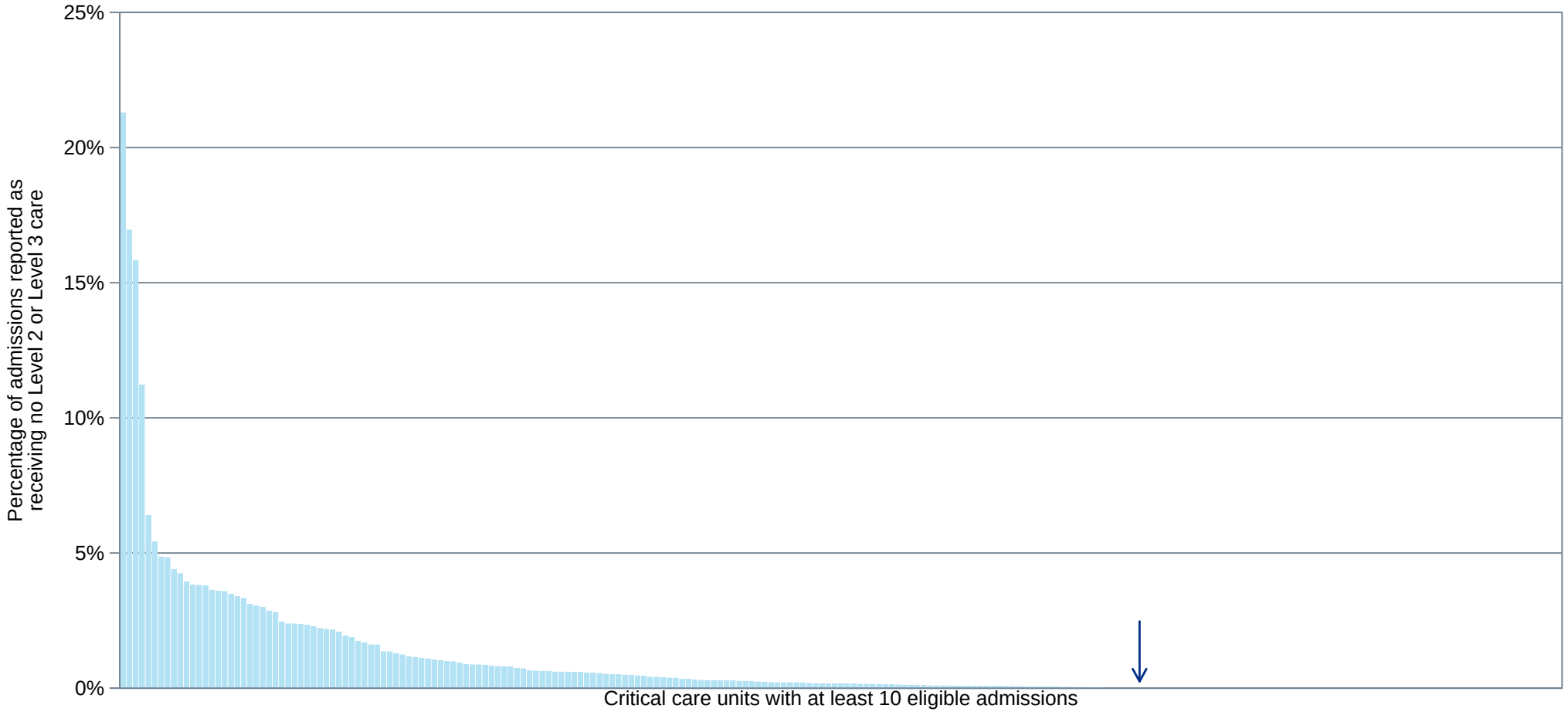
Percentage of admissions/unit deaths with death or all active treatment withdrawn within 8 hours of admission

Source: CMP 2014-2017



Percentage of admissions reported as receiving no Level 2 or Level 3 care

Source: CMP 2014-2017



Percentage of admissions with one or more severe conditions* (APACHE II) reported in the past medical history for patient subgroups

Metric	Source and year	Unit	England	Position	Score (%) 0-10|10-25|25-75|75-90|90-100
COPD	CMP 2014 - 2017	21.7	29.0	111 of 194	
Malignancy	CMP 2014 - 2017	39.8	39.8	109 of 207	
Diabetic ketoacidosis	CMP 2014 - 2017	4.0	6.4	111 of 188	
Alcoholic liver disease	CMP 2014 - 2017	61.1	66.7	83 of 151	
Pneumonia	CMP 2014 - 2017	27.9	23.0	45 of 203	
Sepsis (Sepsis-3)	CMP 2014 - 2017	22.0	20.6	65 of 206	
Acute kidney injury (KDIGO grade 1 or higher)	CMP 2014 - 2017	23.5	20.9	51 of 208	
Out-of-hospital cardiac arrest	CMP 2014 - 2017	8.1	10.7	116 of 179	
Elective/scheduled surgery for large bowel tumour	CMP 2014 - 2017	43.6	23.2	15 of 168	
Emergency/urgent surgery for bowel perforation	CMP 2014 - 2017	15.9	13.7	59 of 174	
Elective/scheduled neurosurgery	CMP 2014 - 2017				Not applicable
Emergency/urgent neurosurgery	CMP 2014 - 2017				Not applicable
Elective/scheduled cardiovascular surgery	CMP 2014 - 2017				Not applicable
Emergency/urgent cardiovascular surgery	CMP 2014 - 2017				Not applicable

* Any of the following, evident within the 6 months prior to admission: severe liver disease (biopsy proven cirrhosis, portal hypertension or hepatic encephalopathy), severe respiratory disease (shortness of breath with light activity due to pulmonary disease or home ventilation), very severe cardiovascular disease (fatigue, claudication, dyspnoea or angina at rest), end-stage renal disease, metastatic disease, haematological malignancy (acute or chronic), immunocompromise (chemotherapy, radiotherapy, daily high-dose steroid treatment, HIV/AIDS, or congenital or acquired immune deficiency state).

Percentage of admissions with reported dependency* prior to acute hospital admission for patient subgroups

Metric	Source and year	Unit	England	Position	Score (%) 0-10|10-25|25-75|75-90|90-100
COPD	CMP 2014 - 2017	47.8	49.6	96 of 194	
Haematological malignancy	CMP 2014 - 2017	20.2	28.9	134 of 189	
Malignancy	CMP 2014 - 2017	7.8	17.5	181 of 207	
Diabetic ketoacidosis	CMP 2014 - 2017	16.0	16.9	92 of 188	
Alcoholic liver disease	CMP 2014 - 2017	19.4	24.6	84 of 151	
Pneumonia	CMP 2014 - 2017	25.4	34.1	151 of 203	
Sepsis (Sepsis-3)	CMP 2014 - 2017	20.6	32.3	169 of 206	
Acute kidney injury (KDIGO grade 1 or higher)	CMP 2014 - 2017	16.9	28.2	171 of 208	
Out-of-hospital cardiac arrest	CMP 2014 - 2017	13.9	21.7	142 of 179	
Elective/scheduled surgery for large bowel tumour	CMP 2014 - 2017	4.3	14.4	147 of 168	
Emergency/urgent surgery for bowel perforation	CMP 2014 - 2017	15.9	20.7	111 of 174	
Elective/scheduled neurosurgery	CMP 2014 - 2017				**Not applicable**
Emergency/urgent neurosurgery	CMP 2014 - 2017				**Not applicable**
Elective/scheduled cardiovascular surgery	CMP 2014 - 2017				**Not applicable**
Emergency/urgent cardiovascular surgery	CMP 2014 - 2017				**Not applicable**

* Any requirement for assistance with daily activities (e.g. bathing, dressing, going to the toilet, moving in/out of bed/chair, eating) prior to the onset of the acute illness.

Mean ICNARC Physiology Score from the first 24 hours following admission for patient subgroups

Metric	Source and year	Unit	England	Position	Score (%) 0-10|10-25|25-75|75-90|90-100
COPD	CMP 2014 - 2017	18.1	18.0	119 of 194	
Haematological malignancy	CMP 2014 - 2017	20.6	20.4	90 of 189	
Malignancy	CMP 2014 - 2017	12.6	12.9	143 of 207	
Diabetic ketoacidosis admissions	CMP 2014 - 2017	19.3	17.2	51 of 188	
Alcoholic liver disease	CMP 2014 - 2017	25.5	23.1	38 of 151	
Pneumonia	CMP 2014 - 2017	21.3	20.3	66 of 203	
Sepsis (Sepsis-3)	CMP 2014 - 2017	19.7	20.1	121 of 206	
Acute kidney injury (KDIGO grade 1 or higher)	CMP 2014 - 2017	20.7	19.3	73 of 208	
Out-of-hospital cardiac arrest	CMP 2014 - 2017	28.9	26.3	30 of 179	
Elective/scheduled surgery for large bowel tumour	CMP 2014 - 2017	10.5	9.8	69 of 168	
Emergency/urgent surgery for bowel perforation	CMP 2014 - 2017	14.1	17.8	161 of 174	
Elective/scheduled neurosurgery	CMP 2014 - 2017				Not applicable
Emergency/urgent neurosurgery	CMP 2014 - 2017				Not applicable
Elective/scheduled cardiovascular surgery	CMP 2014 - 2017				Not applicable
Emergency/urgent cardiovascular surgery	CMP 2014 - 2017				Not applicable

6.5 Unit-acquired infections

Reported number of unit-acquired infections* per 1000 patient days among patients staying at least 48 hours

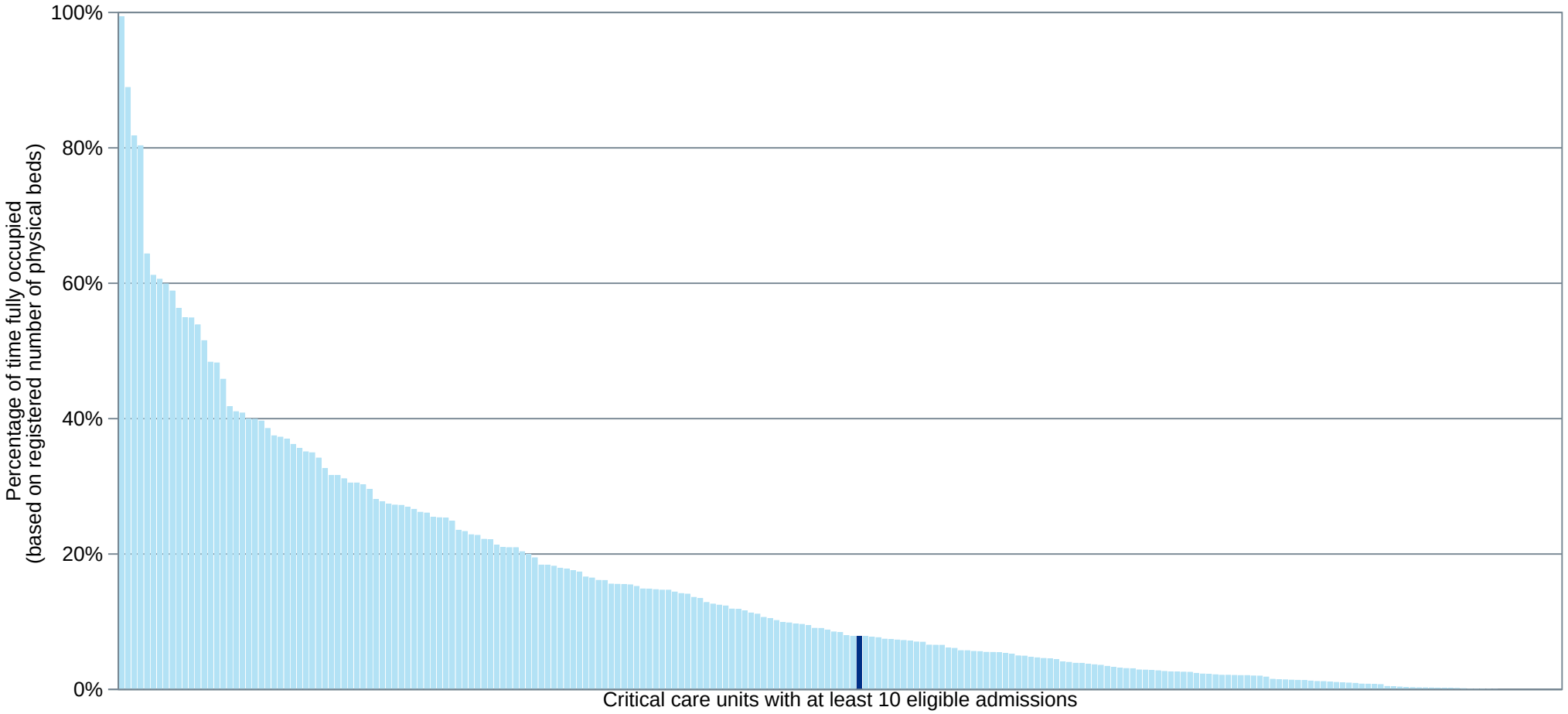
Metric	Source and year	Unit	England	Position	Score (%) 0-10|10-25|25-75|75-90|90-100
Bloodstream infections	CMP 2014 - 2017	3.0	1.6	29 of 227	
MRSA	CMP 2014 - 2017	0.2	0.3	111 of 227	
C difficile	CMP 2014 - 2017	0.2	0.3	123 of 227	
VRE	CMP 2014 - 2017	0.2	0.6	112 of 227	

* Organisms cultured from any sample taken more than 48 hours after admission to the critical care unit and while the patient remains in the critical care unit.

6.6 Occupancy

Percentage of time fully occupied (based on registered number of physical beds)

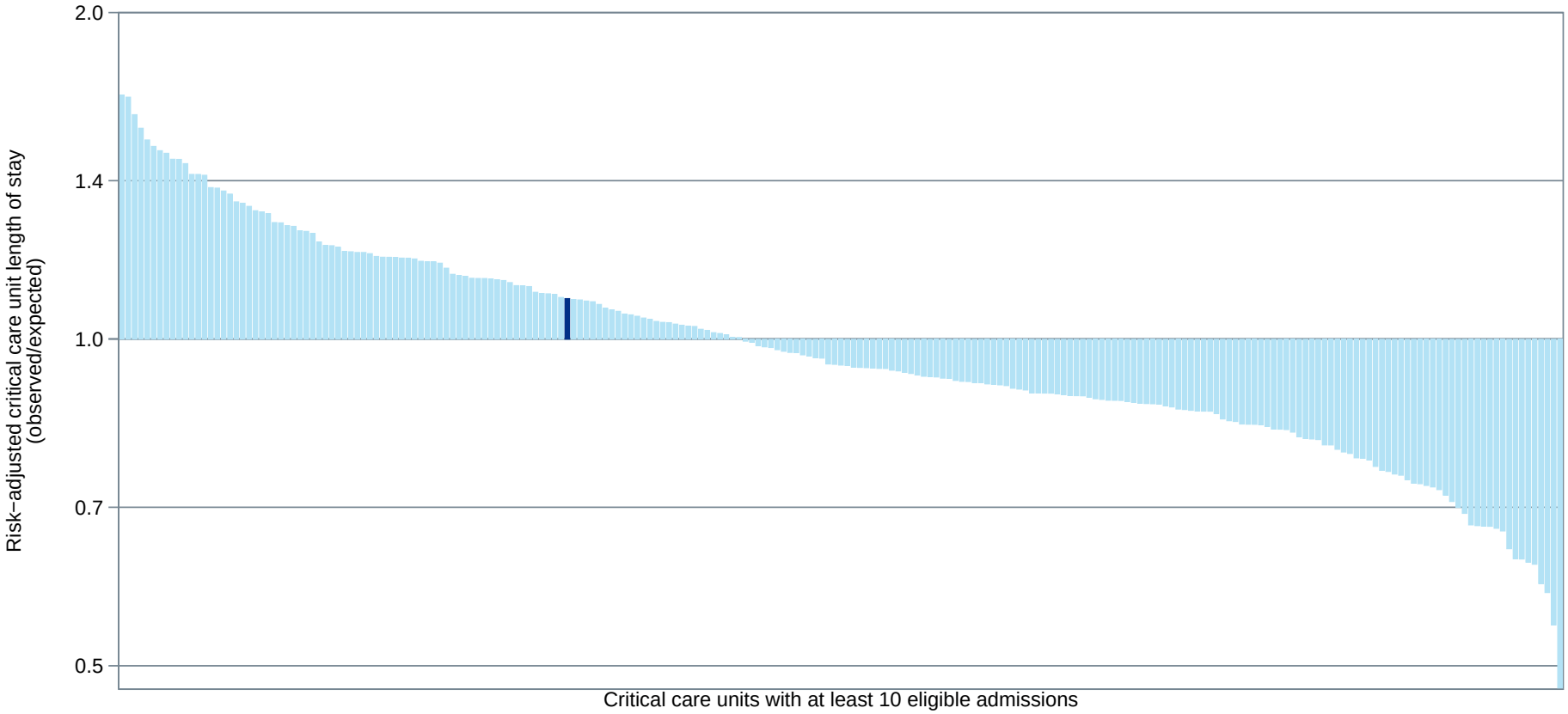
Source: CMP 2016-2017



6.7 Length of stay

Risk-adjusted length of stay for critical care unit survivors (observed/expected)*

Source: CMP 2016-2017



* Expected length of stay from a linear regression model fitted to all critical care unit survivors admitted to critical care units participating in the CMP, adjusted for age, sex, severe conditions in the past medical history, prior dependency, CPR within 24 hours prior to admission, location prior to admission, ICNARC Physiology Score, body system of primary reason for admission and diagnostic groups.

Risk-adjusted length of stay for critical care unit survivors (observed/expected) for patient subgroups

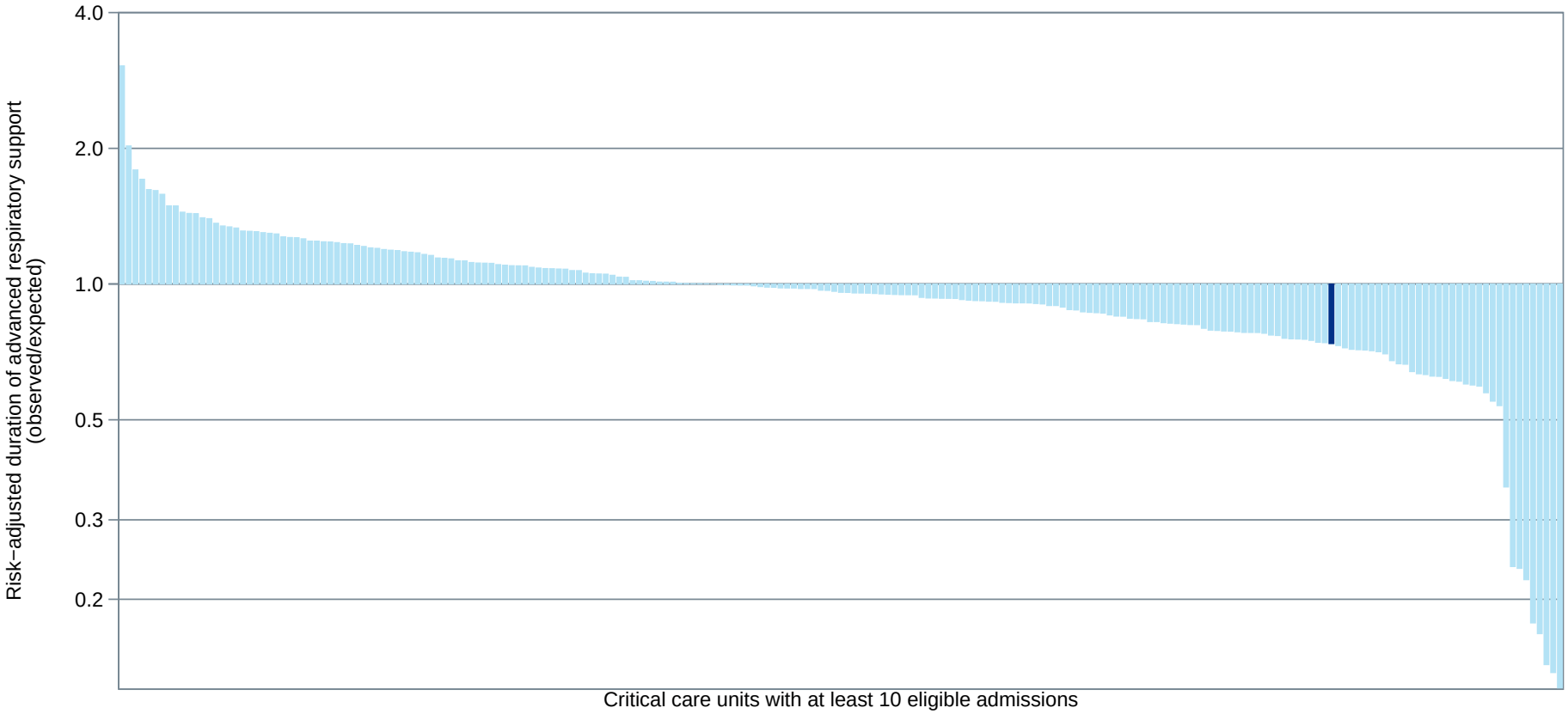
Metric	Source and year	Unit	England	Position	Score (%) 0-10|10-25|25-75|75-90|90-100
COPD	CMP 2014 - 2017	0.97	1.01	98 of 190	
Haematological malignancy	CMP 2014 - 2017	1.17	1.00	41 of 172	
Malignancy	CMP 2014 - 2017	1.14	1.01	47 of 207	
Diabetic ketoacidosis	CMP 2014 - 2017	0.98	1.00	89 of 186	
Alcoholic liver disease	CMP 2014 - 2017	1.05	1.01	40 of 96	
Pneumonia	CMP 2014 - 2017	1.24	1.01	34 of 203	
Sepsis (Sepsis-3)	CMP 2014 - 2017	1.15	1.00	50 of 206	
Acute kidney injury (KDIGO grade 1 or higher)	CMP 2014 - 2017	1.09	1.00	61 of 208	
Out-of-hospital cardiac arrest	CMP 2014 - 2017	0.77	1.00	118 of 167	
Elective/scheduled surgery for large bowel tumour	CMP 2014 - 2017	1.01	1.00	64 of 167	
Emergency/urgent surgery for bowel perforation	CMP 2014 - 2017	1.08	1.00	73 of 173	
Elective/scheduled neurosurgery	CMP 2014 - 2017				**Not applicable**
Emergency/urgent neurosurgery	CMP 2014 - 2017				**Not applicable**
Elective/scheduled cardiovascular surgery	CMP 2014 - 2017				**Not applicable**
Emergency/urgent cardiovascular surgery	CMP 2014 - 2017				**Not applicable**

* Expected length of stay from a linear regression model fitted to all critical care unit survivors admitted to critical care units participating in the CMP, adjusted for age, sex, severe conditions in the past medical history, prior dependency, CPR within 24 hours prior to admission, location prior to admission, ICNARC Physiology Score, body system of primary reason for admission and diagnostic groups.

6.8 Organ support

Risk-adjusted duration of advanced respiratory support for critical care unit survivors (observed/expected)

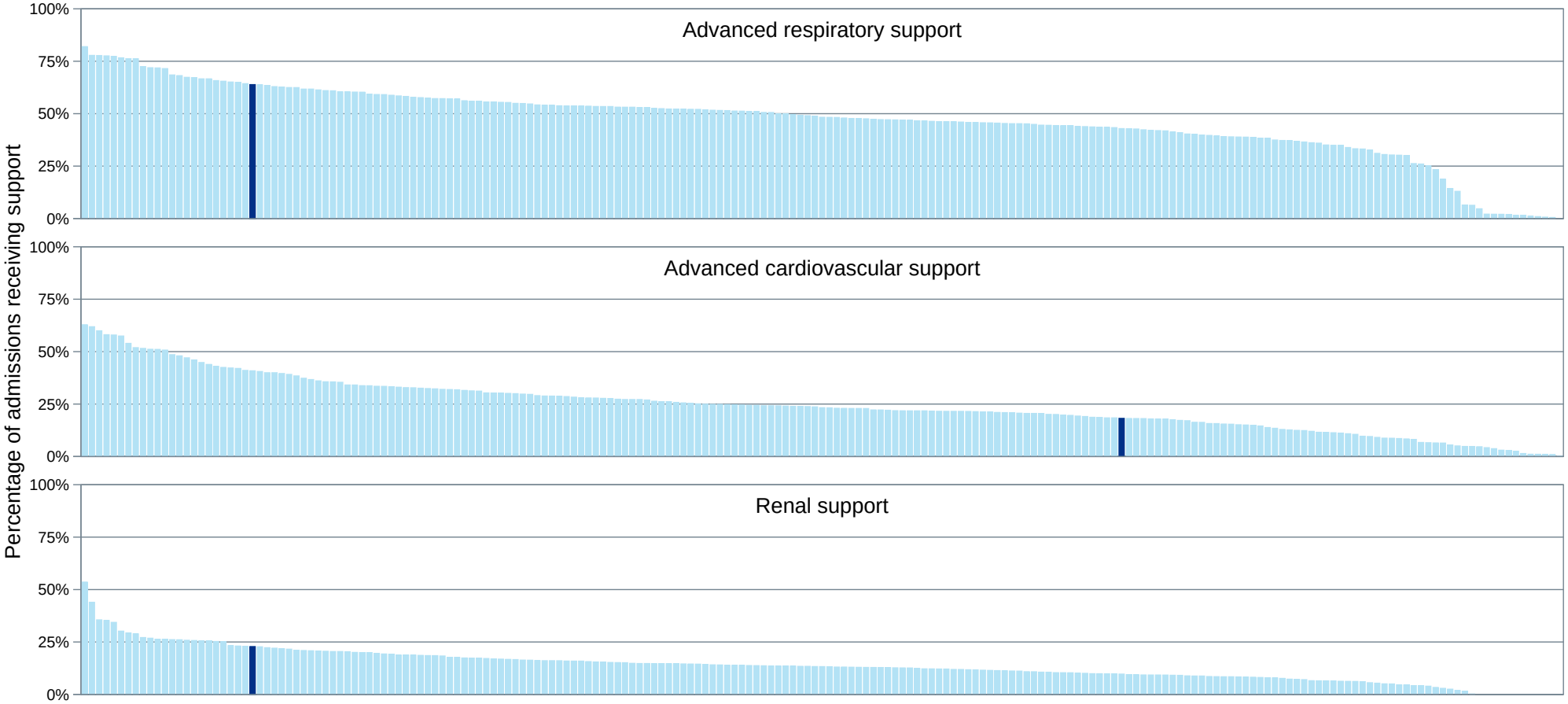
Source: CMP 2016-2017



* Expected duration of advanced repiratory support from a linear regression model fitted to all critical care unit survivors admitted to critical care units participating in the CMP, adjusted for age, sex, severe conditions in the past medical history, prior dependency, CPR within 24 hours prior to admission, location prior to admission, ICNARC Physiology Score, body system of primary reason for admission and diagnostic groups.

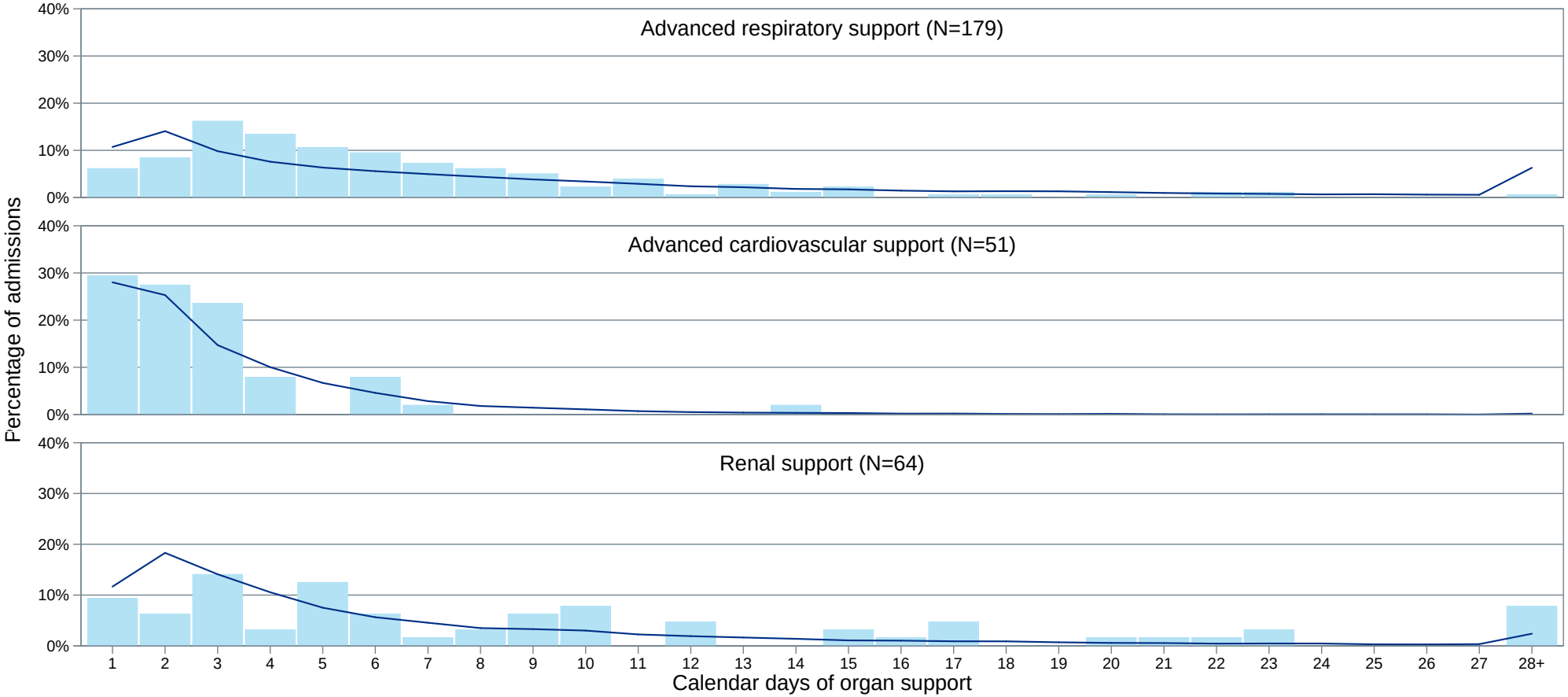
Percentage of pneumonia admissions receiving organ support

Source: CMP 2014-2017



Distribution of duration of organ support for pneumonia admissions

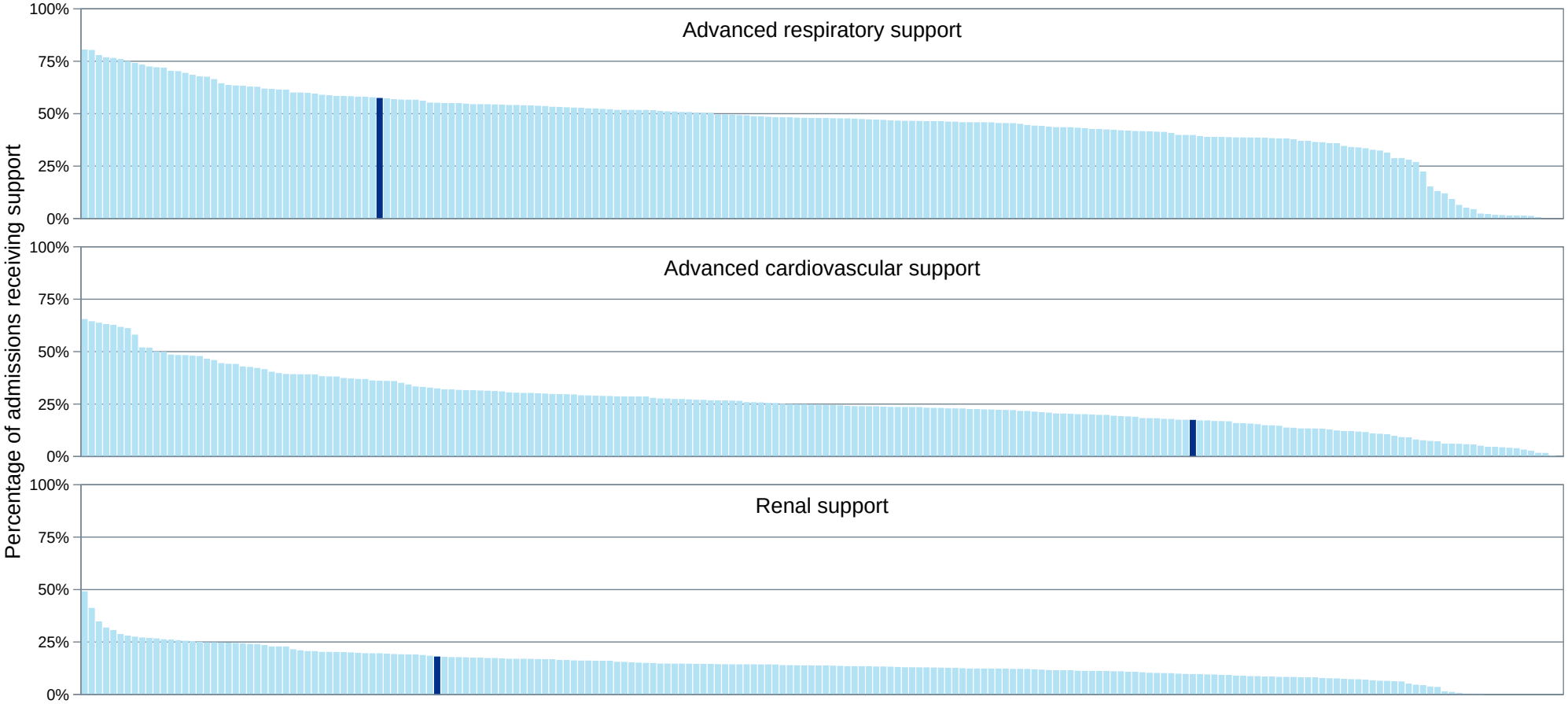
Source: CMP 2014-2017



* Figures for this unit represented by bars. England average shown by line.

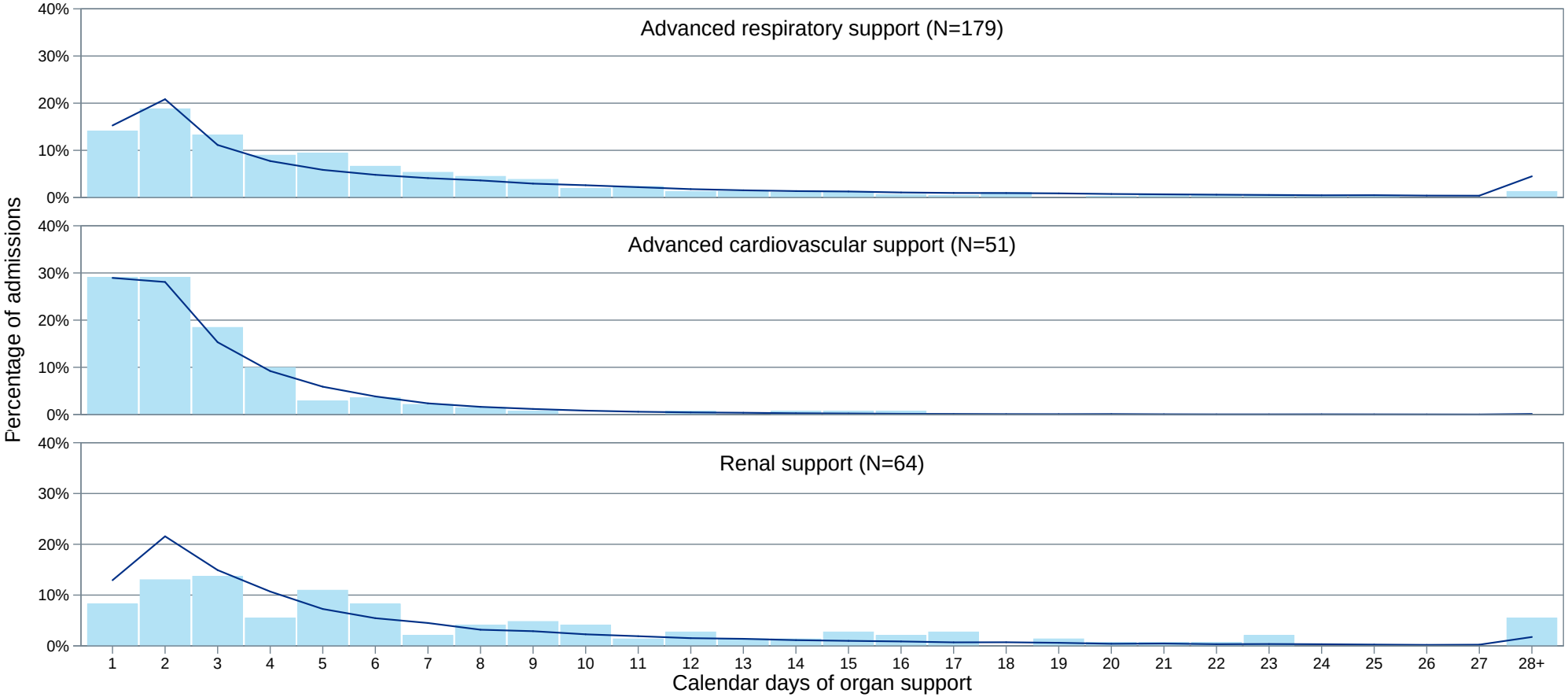
Percentage of sepsis admissions (Sepsis-3) receiving organ support

Source: CMP 2014-2017



Distribution of duration of organ support for sepsis admissions (Sepsis-3)

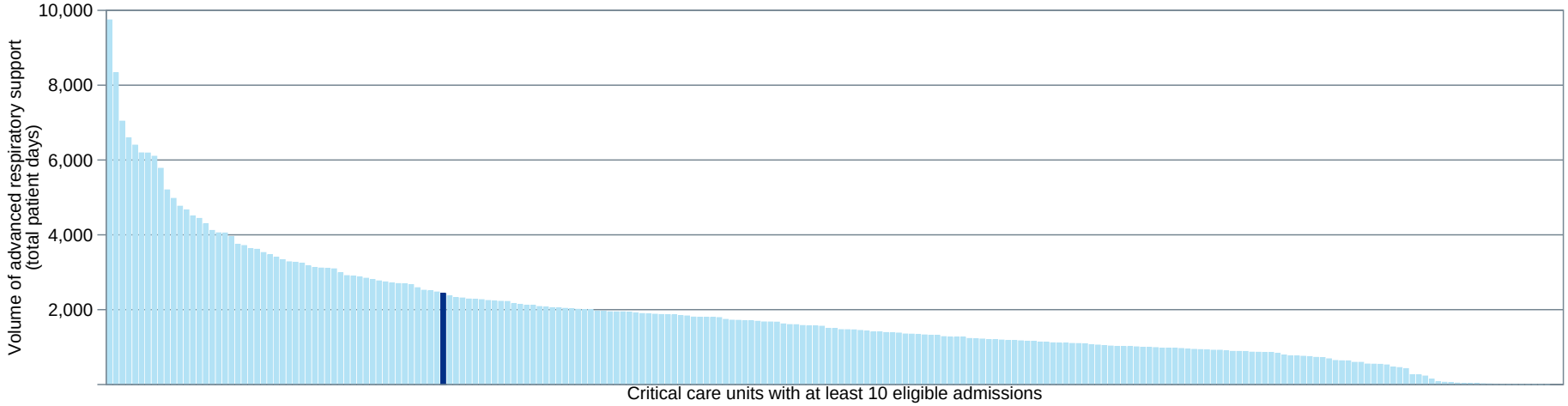
Source: CMP 2014-2017

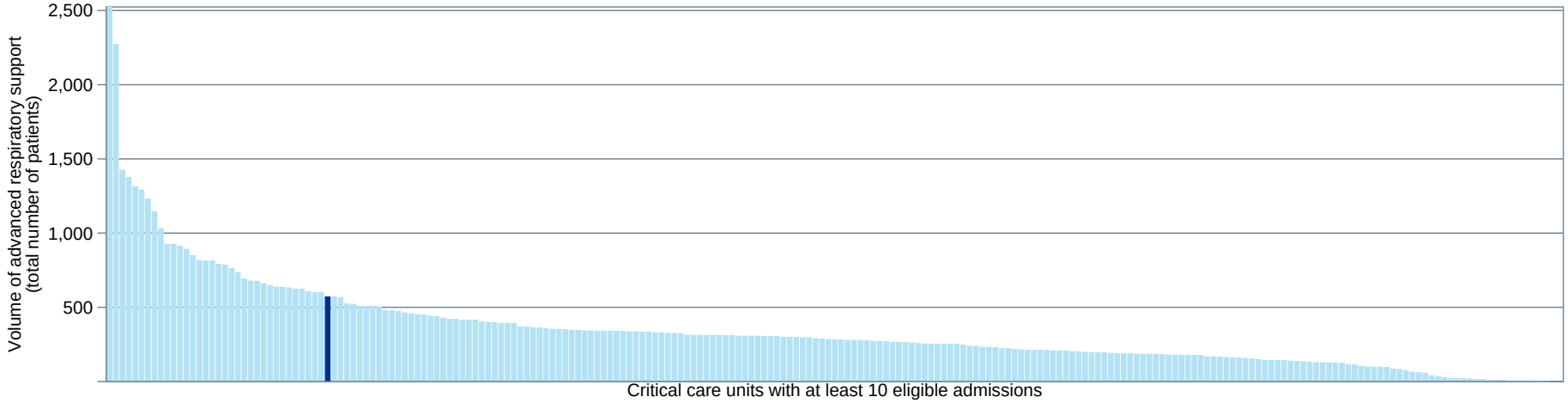


* Figures for this unit represented by bars. England average shown by line.

Volume of advanced respiratory support for total patient days/total number of patients

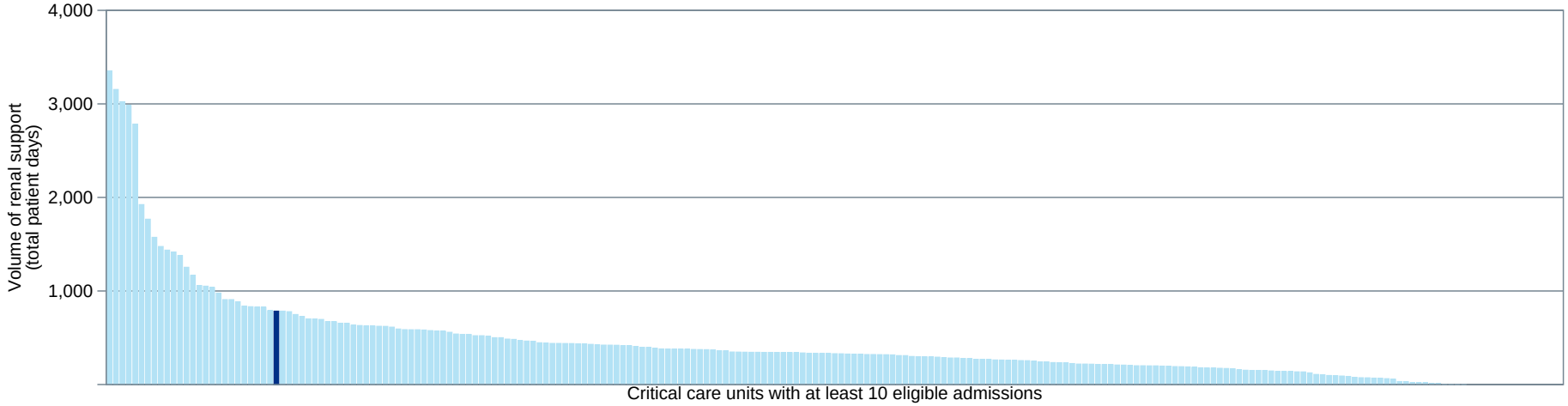
Source: CMP 2016-2017

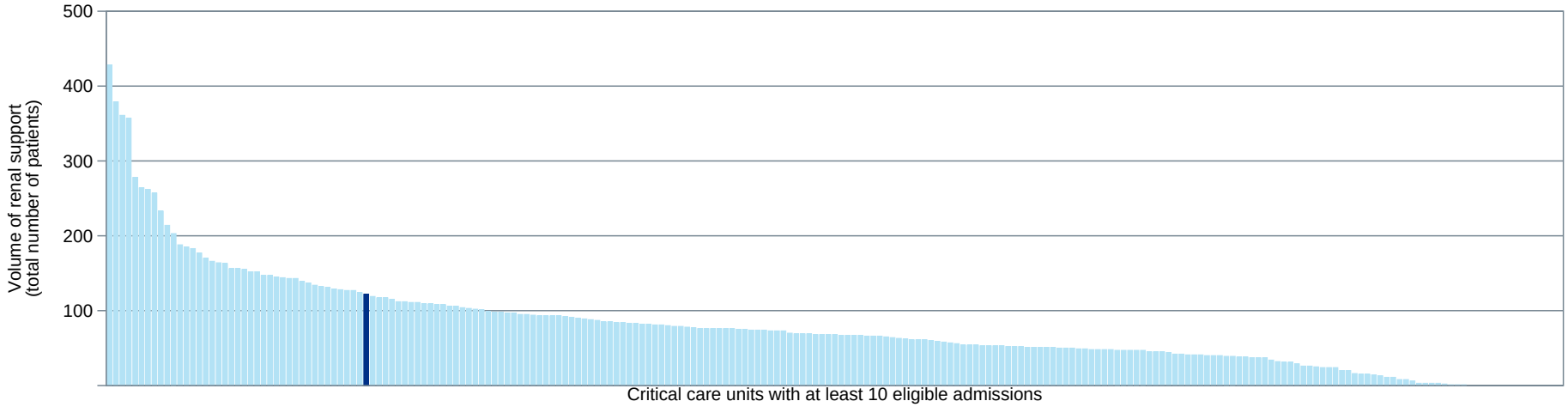




Volume of renal support for total patient days/total number of patients

Source: CMP 2016-2017

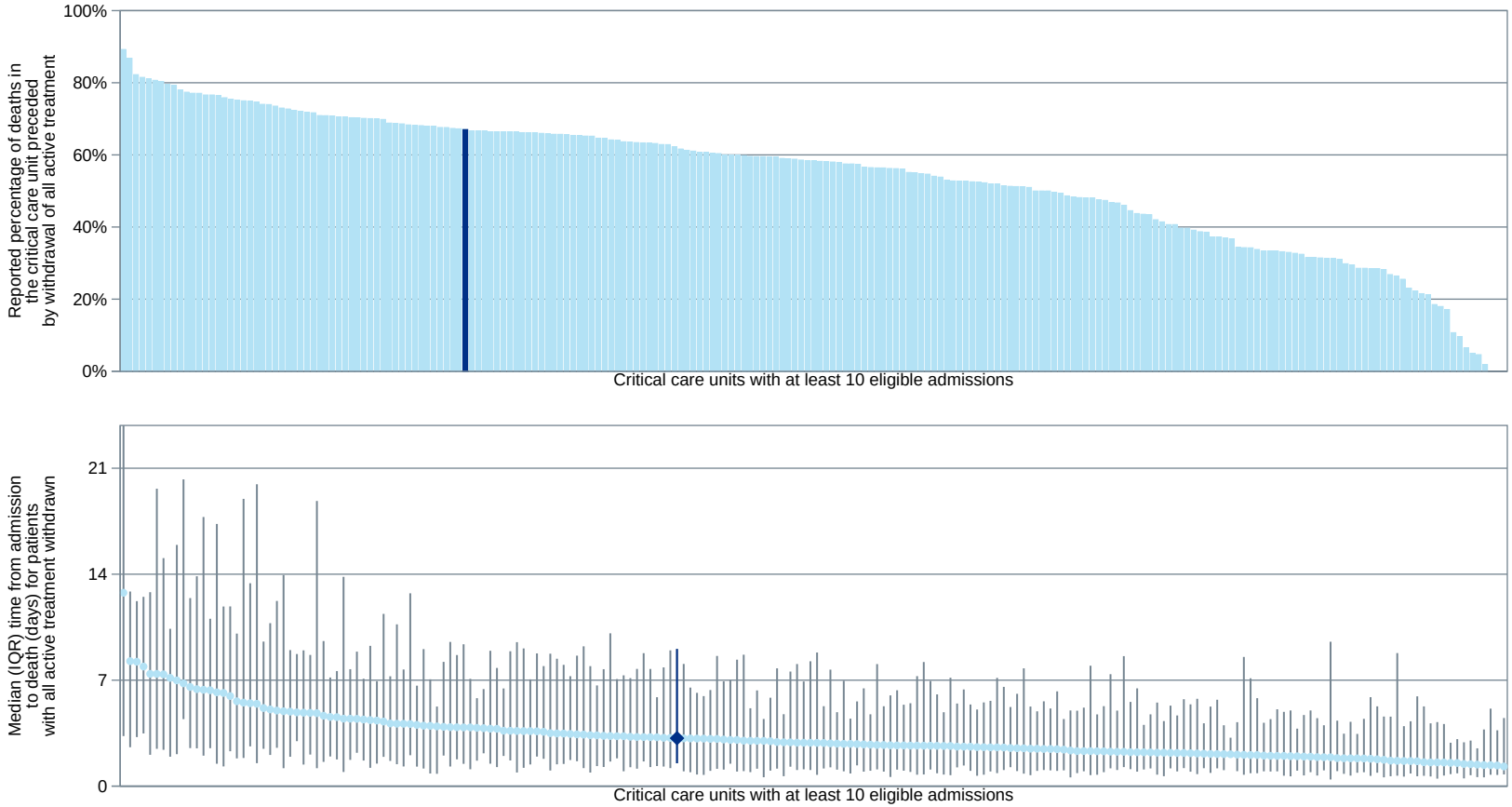




6.9 End of life care

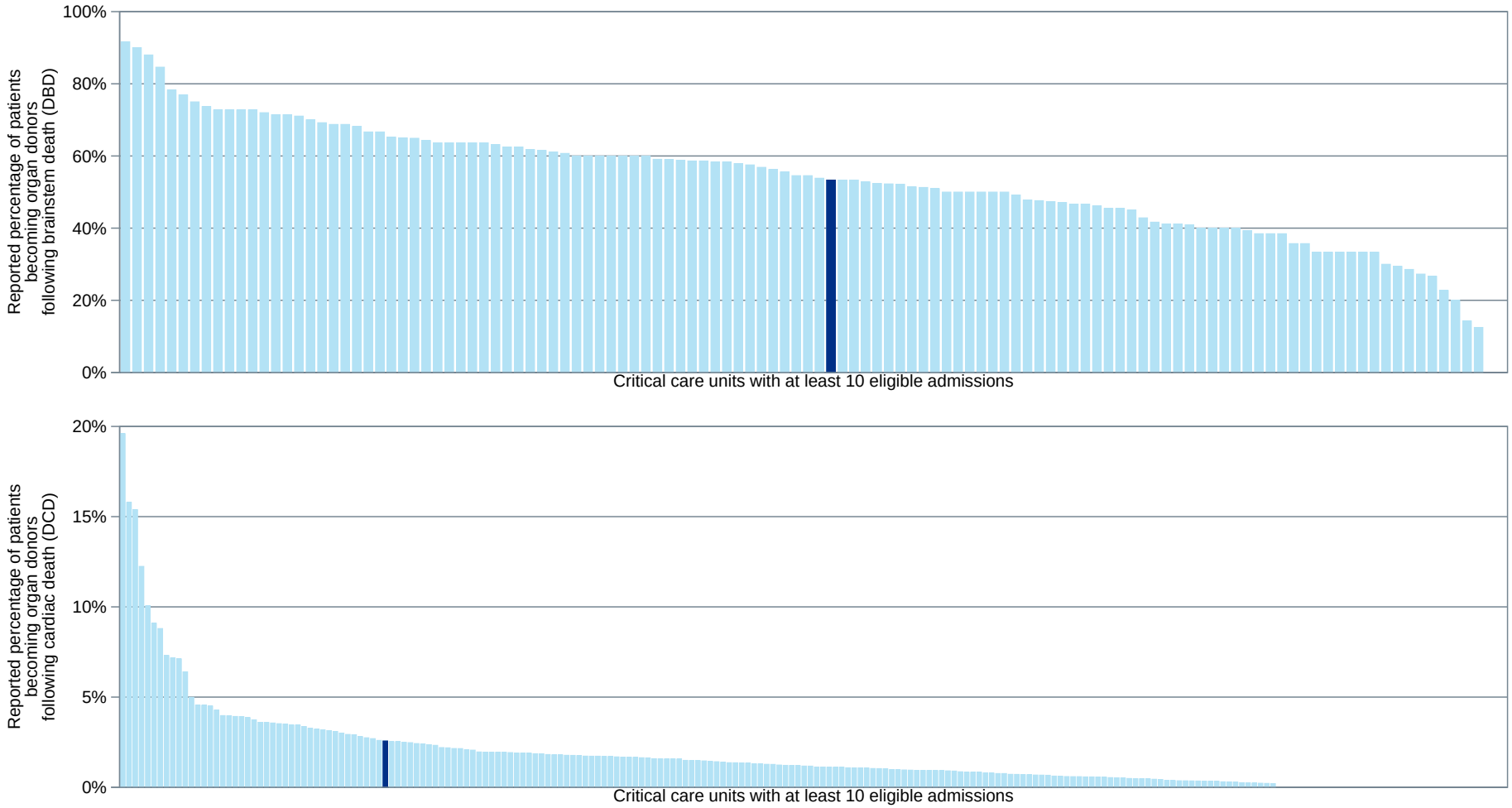
Reported percentage of deaths and median (IQR) time from admission to death (days) for deaths in the critical care unit preceded by withdrawal of all active treatment

Source: CMP 2016-2017



Reported percentage of patients becoming organ donors following brainstem death (DBD)/cardiac death (DCD)

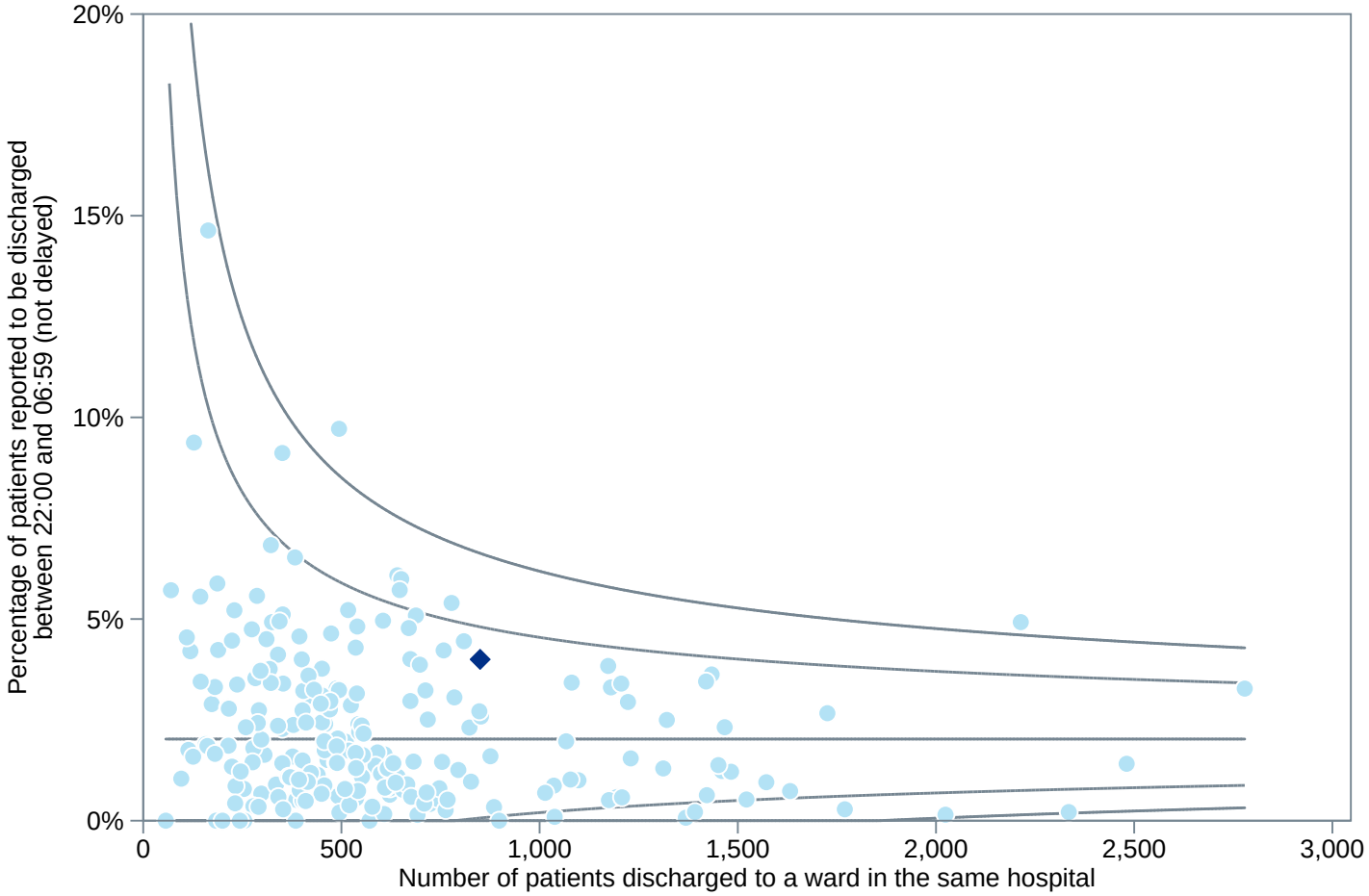
Source: CMP 2014-2017



6.10 Discharge from the critical care unit

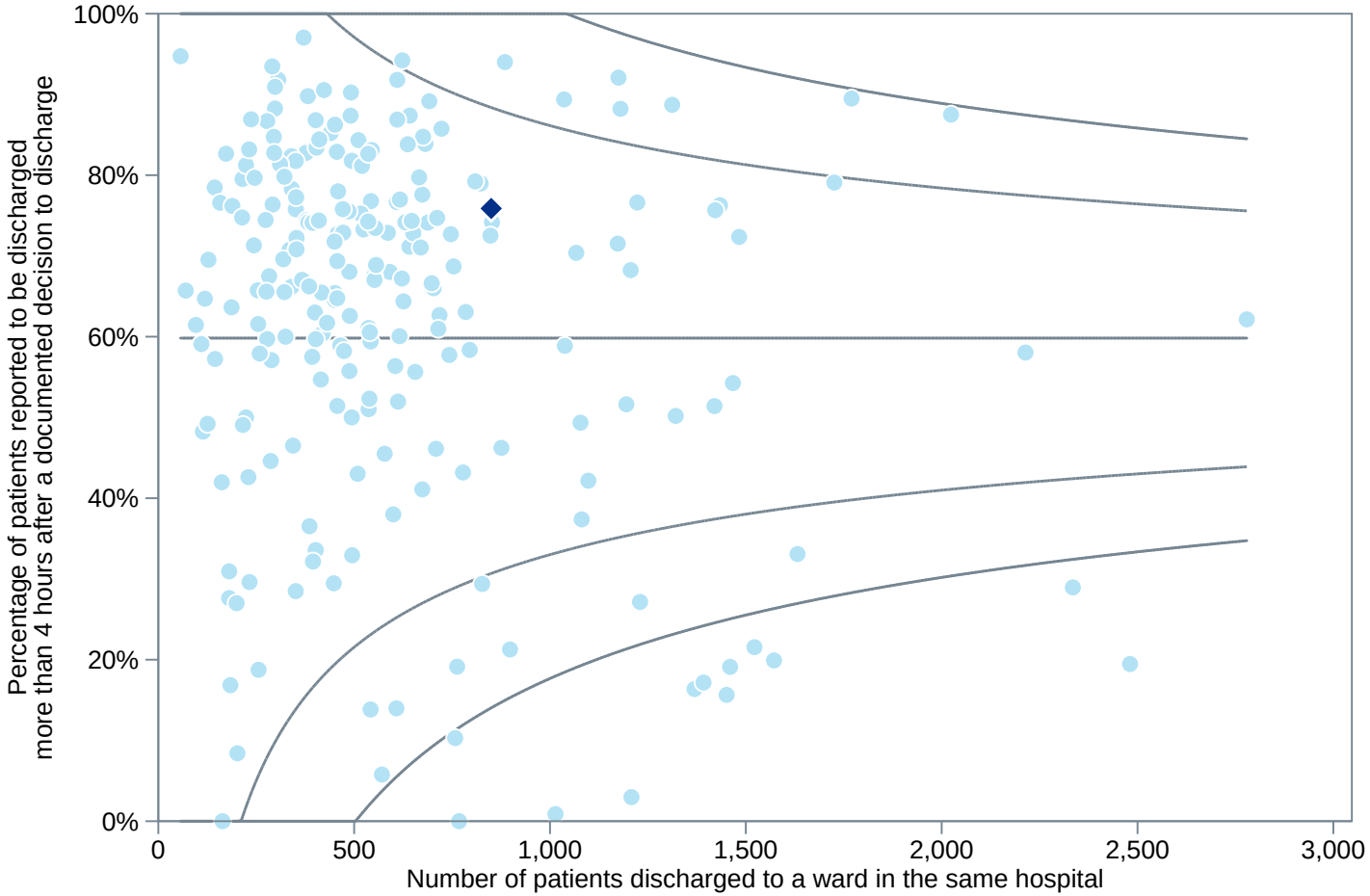
Percentage of patients reported to be discharged between 22:00 and 06:59 (not delayed) to a ward in the same hospital

Source: CMP 2016-2017



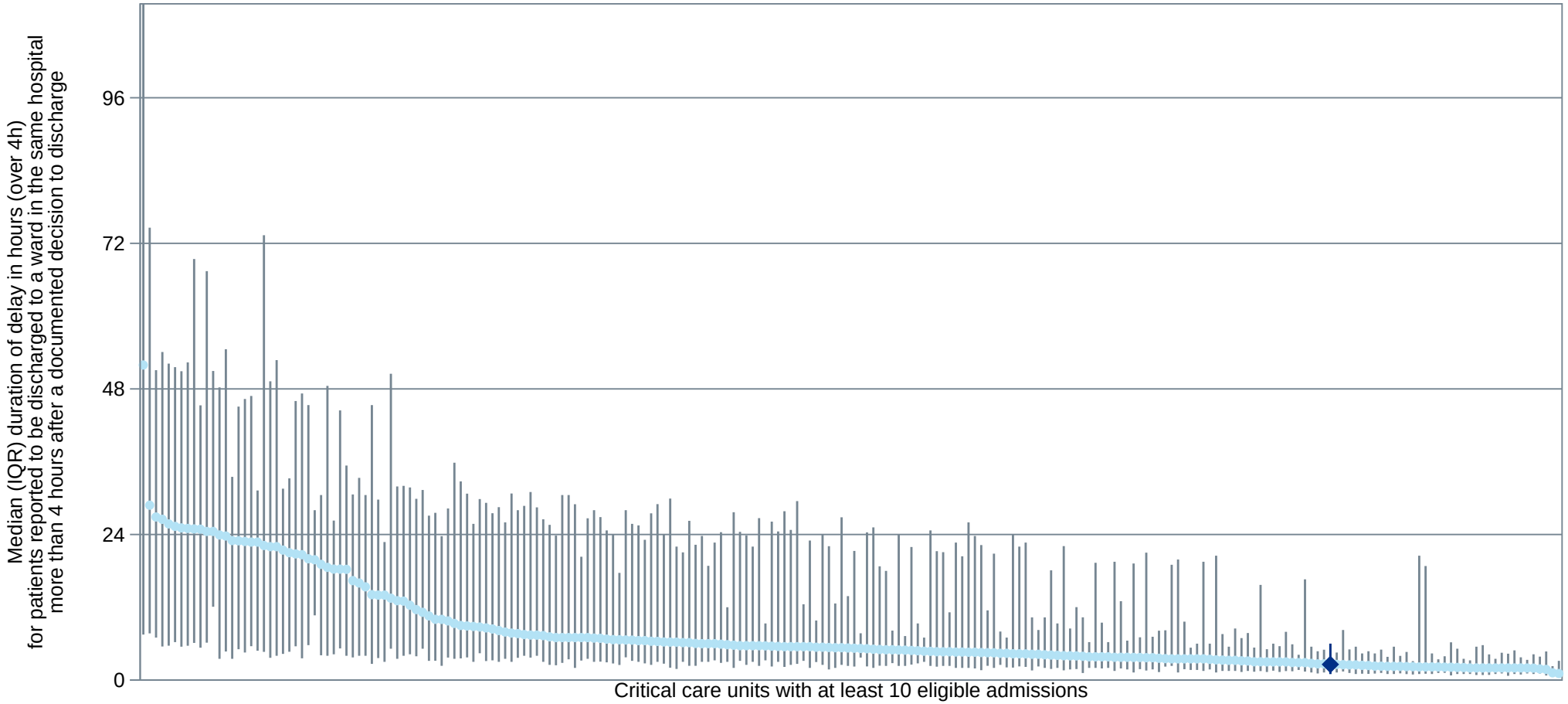
Percentage of patients reported to be discharged to a ward in the same hospital more than 4 hours after a documented decision to discharge

Source: CMP 2016-2017



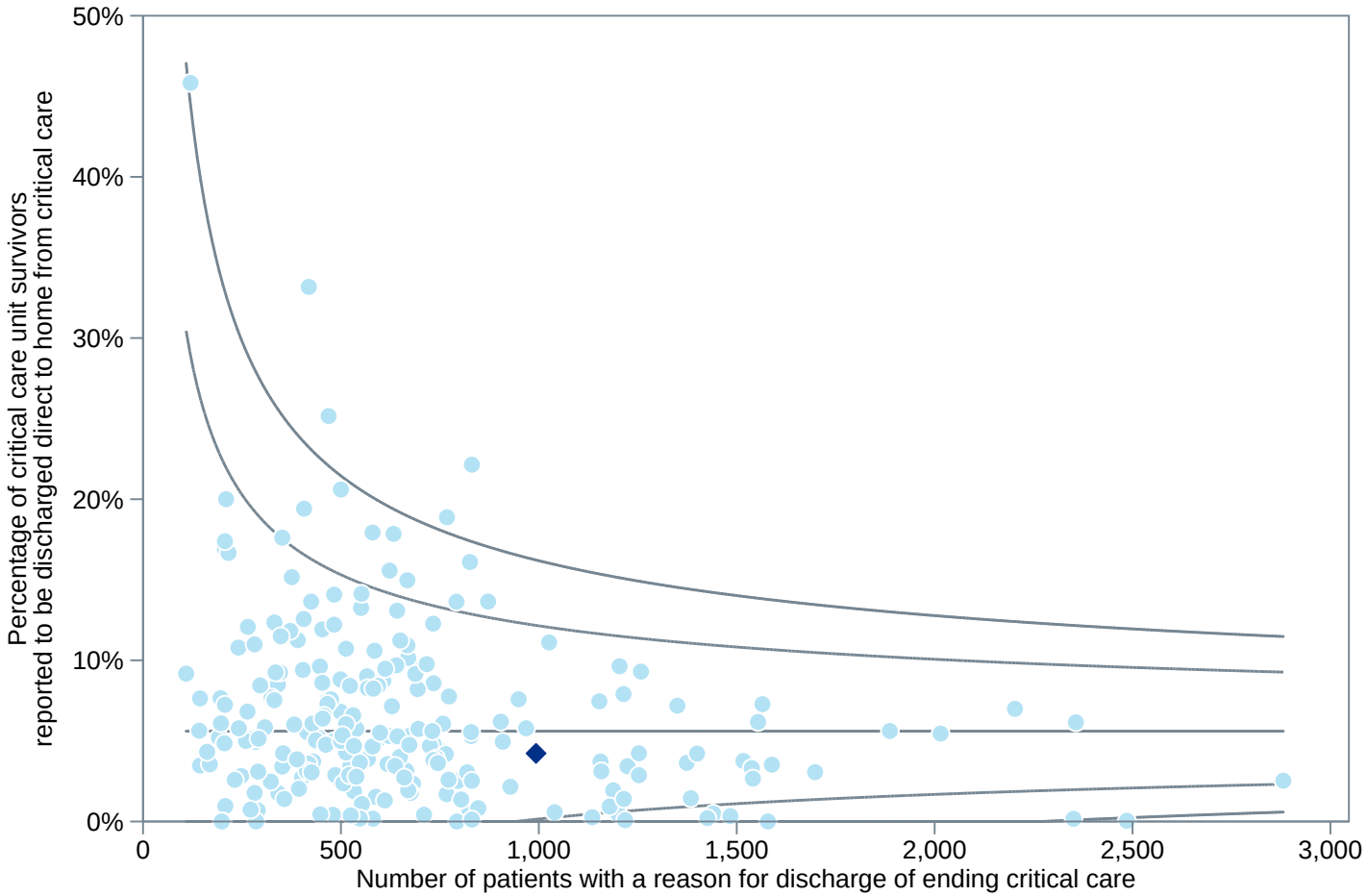
Median (IQR) duration of delay in days (over 4 hours) for patients reported to be discharged to a ward in the same hospital more than 4 hours after a documented decision to discharge

Source: CMP 2016-2017



Percentage of critical care unit survivors reported to be discharged direct to home from critical care

Source: CMP 2016-2017

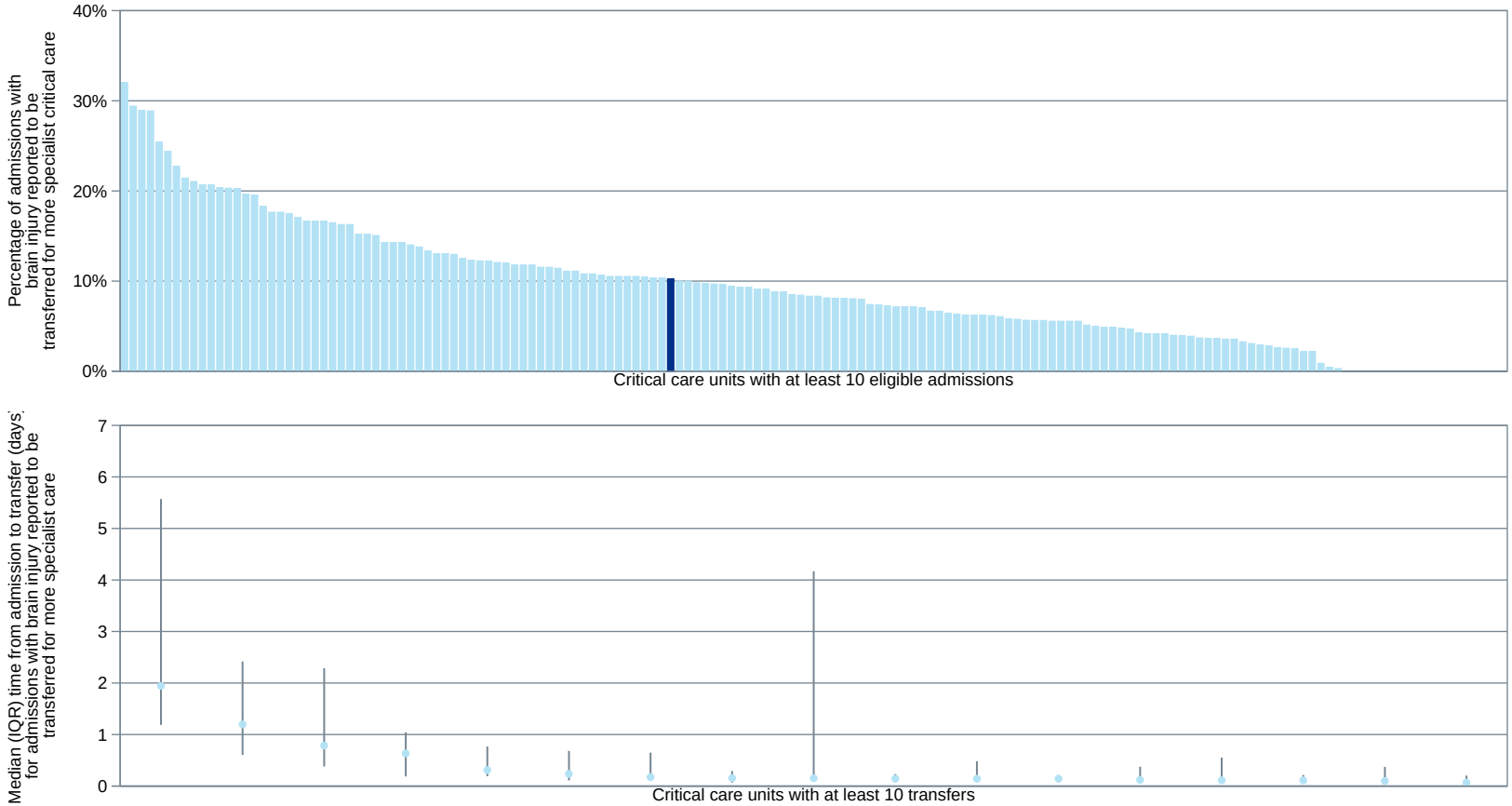


* ”Home” is defined as any non-hospital location

6.11 Critical care unit transfers

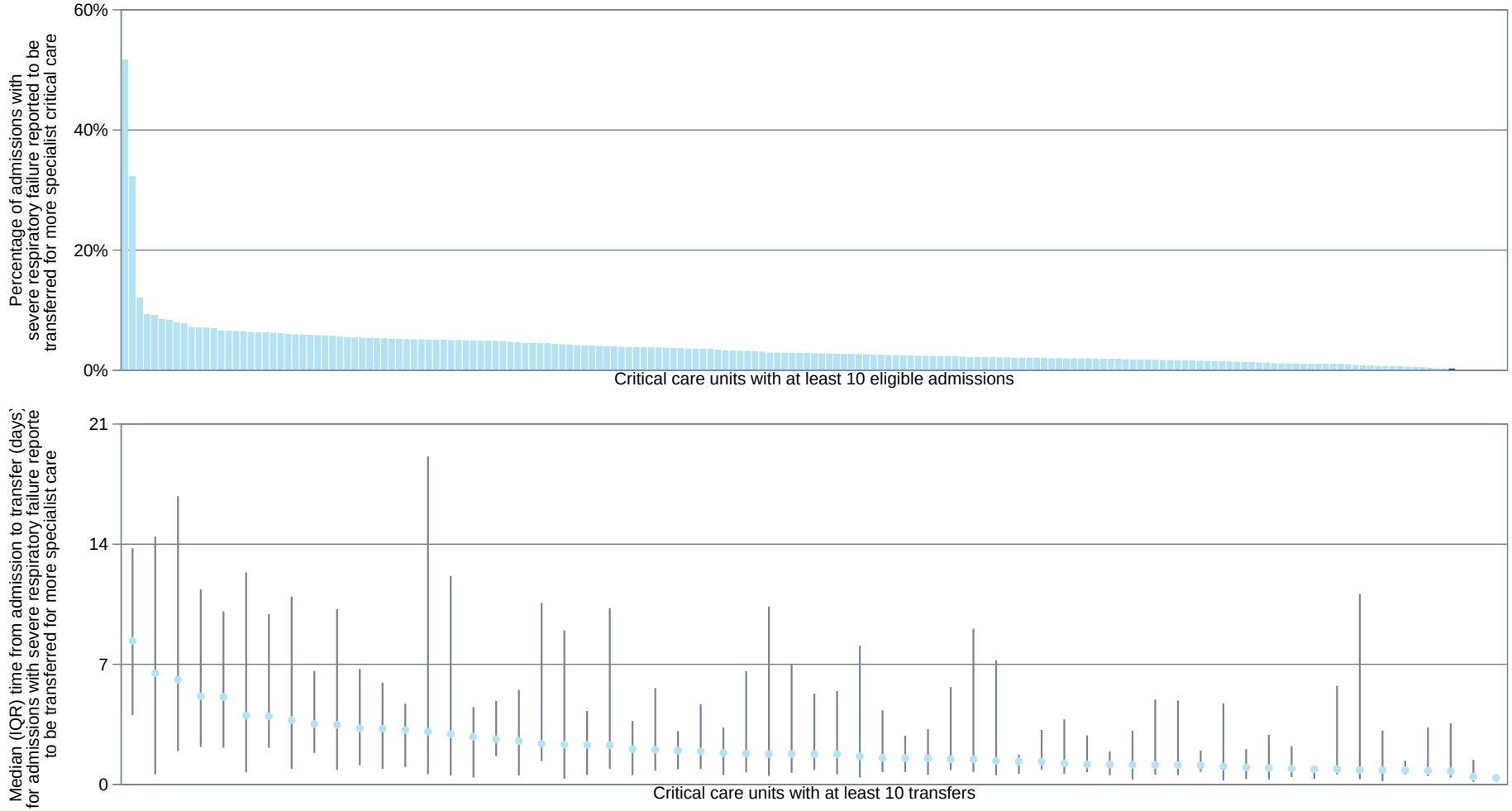
Percentage and median (IQR) time from admission to transfer (days) for admissions with brain injury reported to be transferred for more specialist critical care

Source: CMP 2014-2017



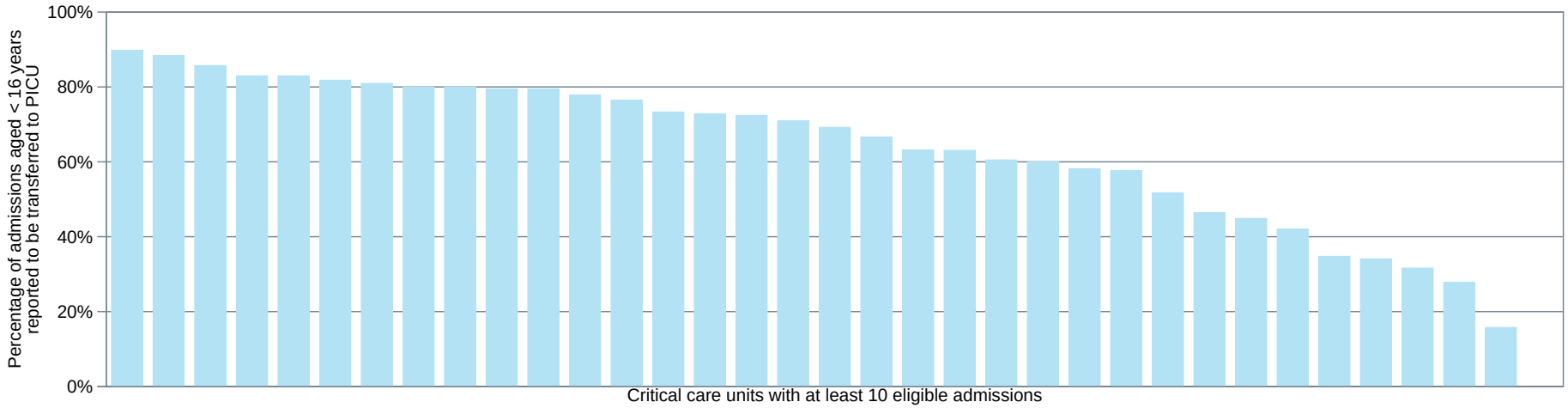
Percentage and median (IQR) time from admission to transfer (days) for admissions with severe respiratory failure reported to be transferred for more specialist critical care

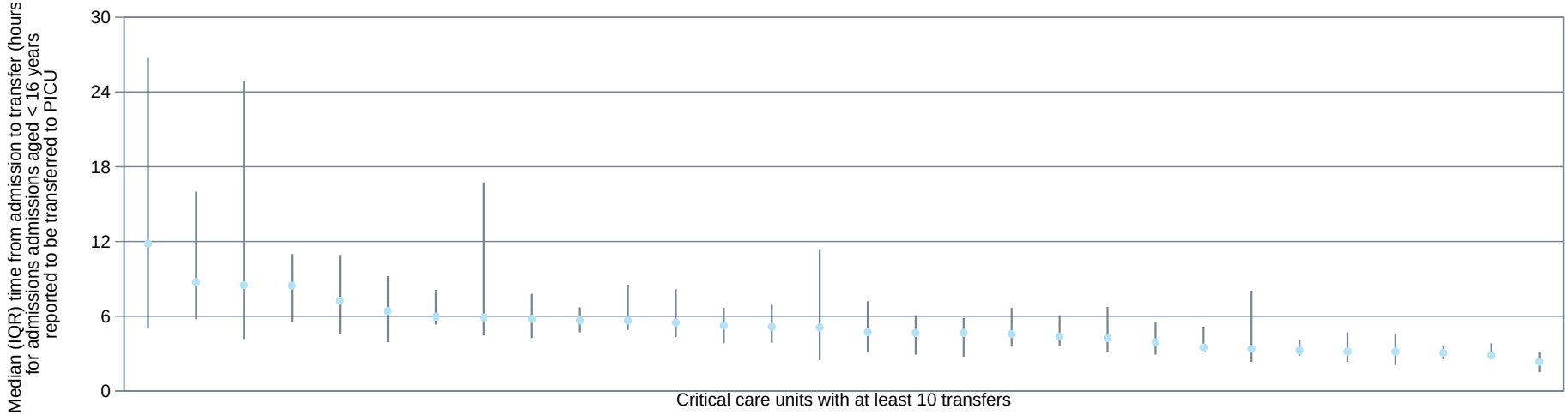
Source: CMP 2014-2017



Percentage and median (IQR) time from admission to transfer (hours) for admissions aged < 16 years reported to be transferred to PICU

Source: CMP 2014-2017

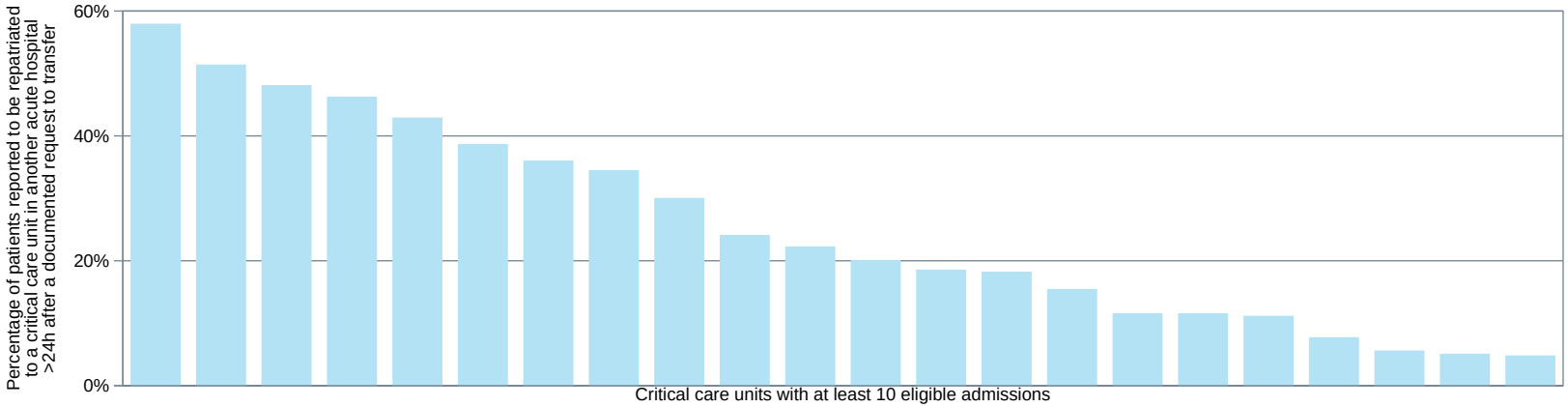


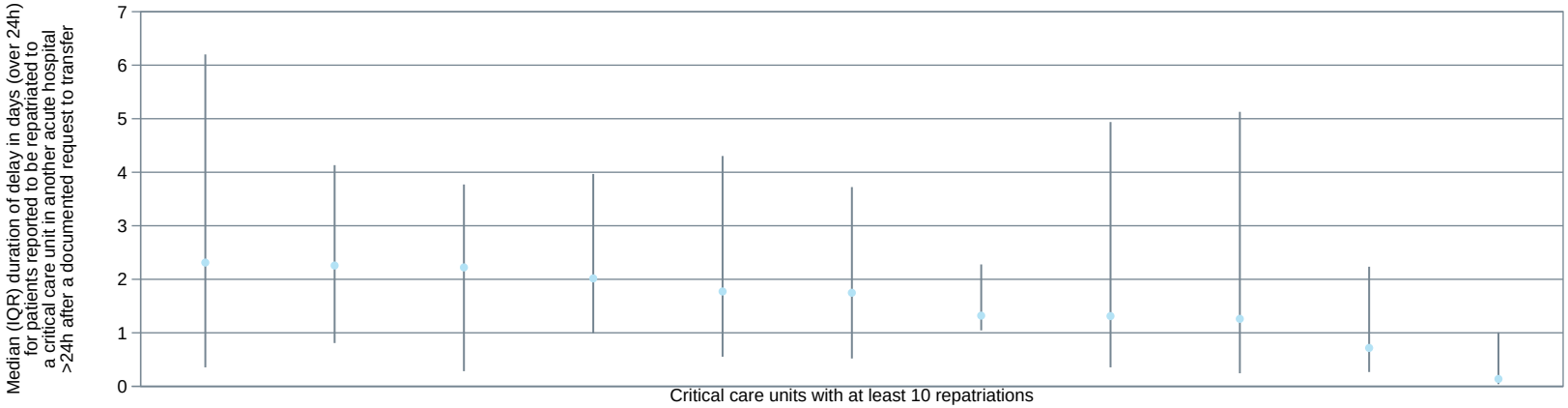


6.12 Repatriation from specialist critical care units

Percentage and median (IQR) duration of delay in days (over 24 hours) for patients reported to be repatriated to a critical care unit in another acute hospital more than 24 hours after a documented request to transfer

Source: CMP 2014-2017

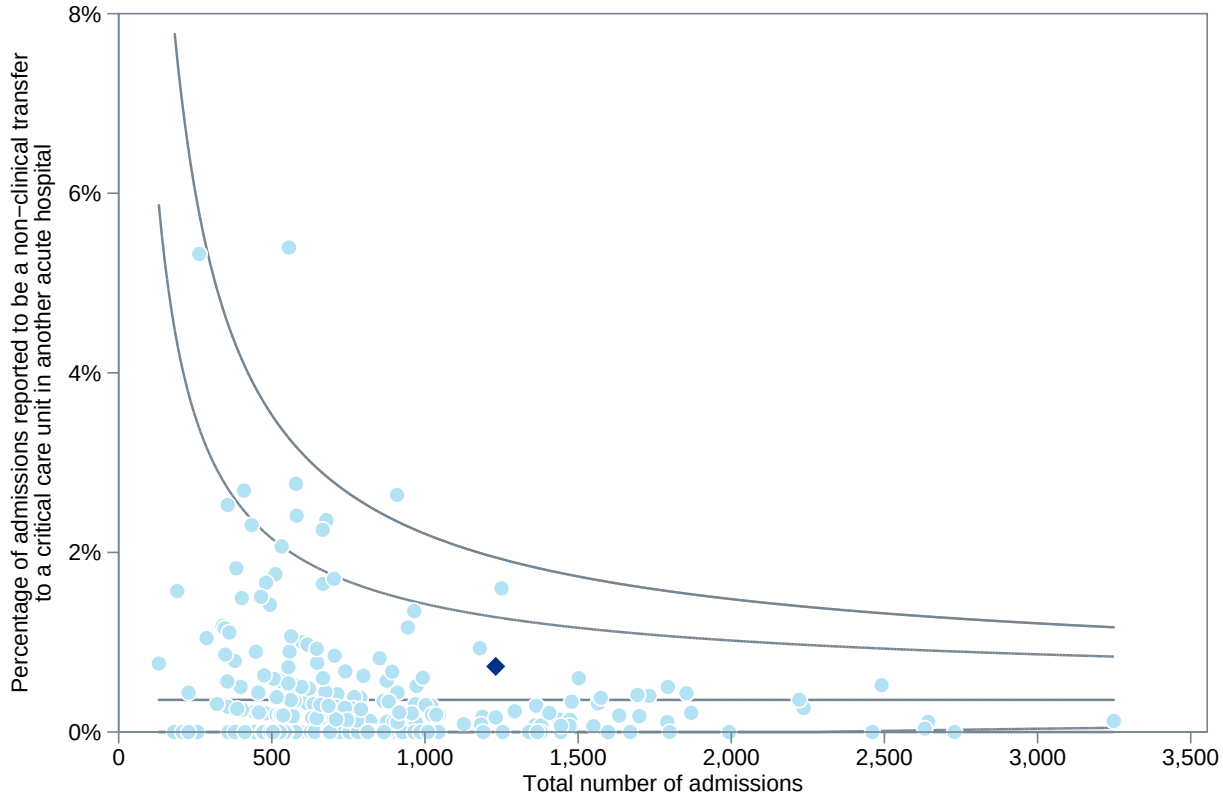




6.13 Outcome metrics

Percentage of admissions reported to be a non-clinical transfer* to a critical care unit in another acute hospital

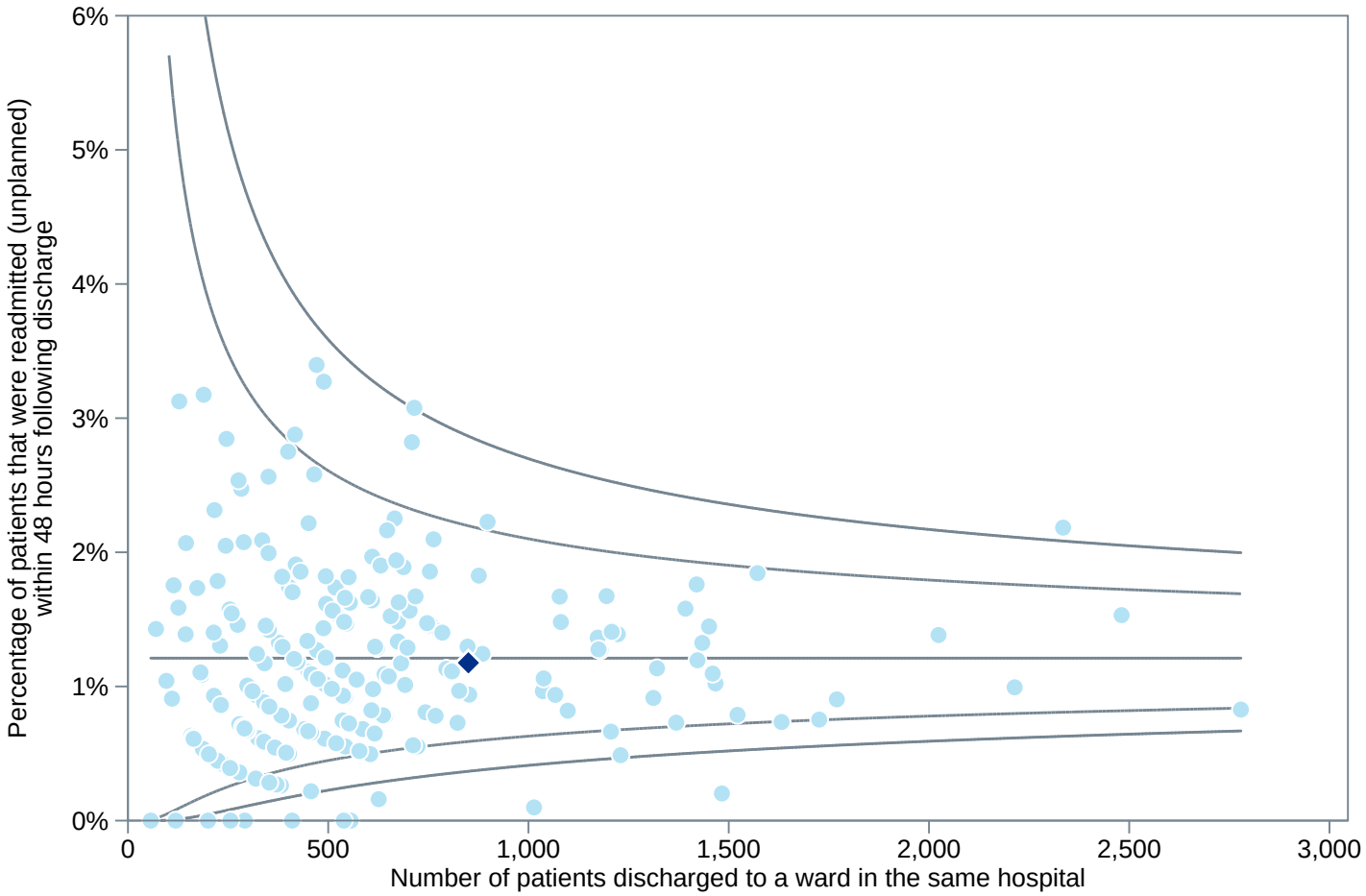
Source: CMP 2016-2017



* Transfer to a critical care unit in another acute hospital for ”comparable critical care” (i.e. receiving the same level of critical care and not for more specialised care or a repatriation).

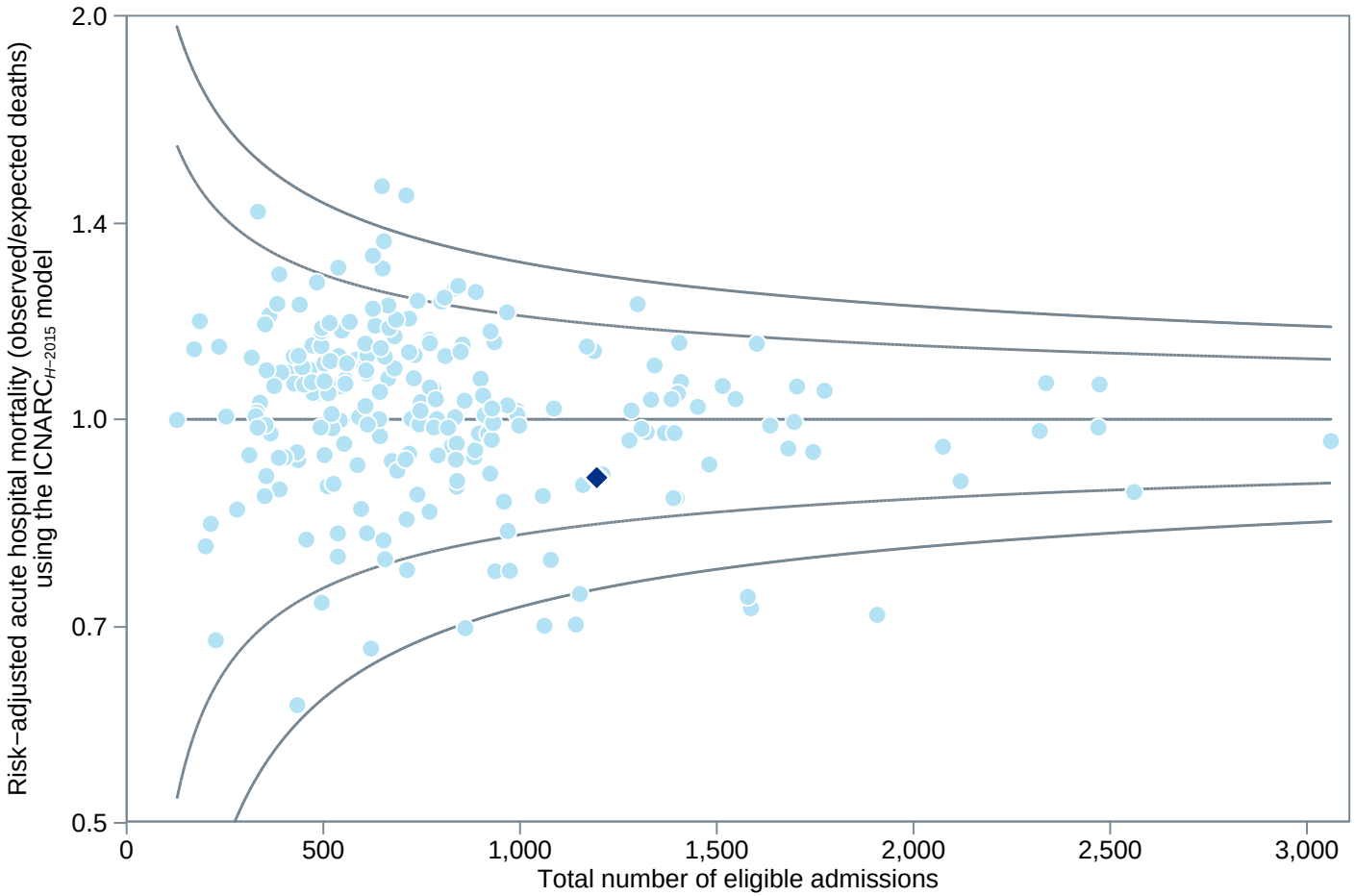
Percentage of admissions discharged to a ward in the same hospital that were readmitted (unplanned) within 48 hours

Source: CMP 2016-2017



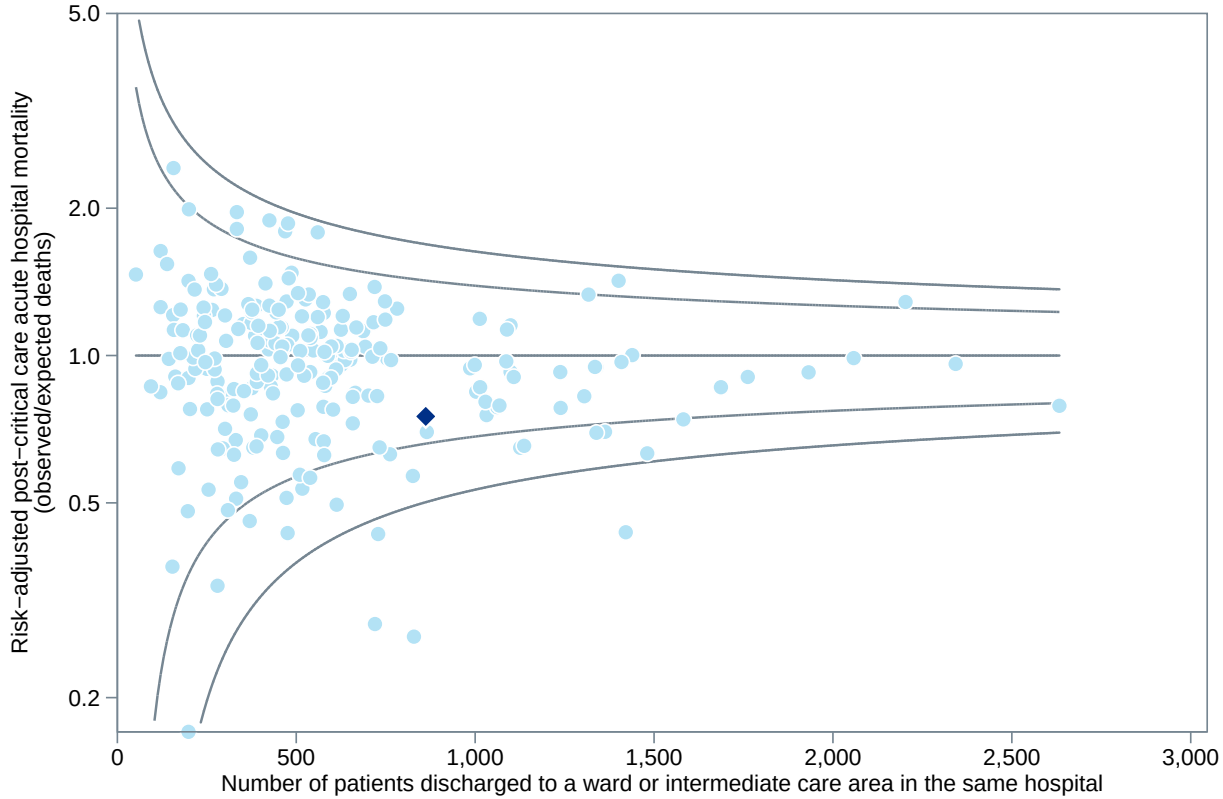
Risk-adjusted acute hospital mortality (observed/expected deaths) using the ICNARC $_{H\text{-}2015}$ model

Source: CMP 2016-2017



Risk-adjusted post-critical care acute hospital mortality (observed/expected deaths) for patients discharged alive to a ward or intermediate care area in the same hospital

Source: CMP 2016-2017



* Expected deaths from a logistic regression model fitted to all patients discharged from a critical care unit participating in the CMP to a ward or intermediate care area in the same hospital, adjusted for age, sex, severe conditions in the past medical history, prior dependency, CPR within 24 hours prior to admission, location prior to admission, ICNARC Physiology Score, body system of primary reason for admission and diagnostic groups.

7 Trust metrics - costs

Metric	Source and year	Trust	England	Position	Score (%) 0-10|10-25|25-75|75-90|90-100
Cost of critical care (£million)	Reference costs 2016-2017	21.7	13.2	25 of 142	
Expected cost of critical care (£million)	Reference costs 2016-2017	26.2	13.3	22 of 142	
Critical care expenditure vs expected	Reference costs 2016-2017	0.83	1.00	124 of 142	
Total pay (% of total critical care expenditure)	GIRFT Questionnaire 2018				
Locum spend - consultants	GIRFT Questionnaire 2018				
Locum spend - consultants (% of total pay)	GIRFT Questionnaire 2018				
Agency spend - nursing	GIRFT Questionnaire 2018				
Agency spend - nursing (% of total pay)	GIRFT Questionnaire 2018				
Locum spend - other medical	GIRFT Questionnaire 2018				
Locum spend - other medical (% of total pay)	GIRFT Questionnaire 2018				
Antibiotics spend (£ per patient day)	GIRFT Questionnaire 2018				
Drug expenditure (£ per patient day)	GIRFT Questionnaire 2018				
Blood units (£per patient day)	GIRFT Questionnaire 2018				

Critical care expenditure by HRG vs expected

Metric	Source and year	Actual	Expected	Ratio	Rank	Score (%) 0-10|10-25|25-75|75-90|90-100
Healthcare Resource Group						
Adult critical care 6 Organs supported (XC01Z)	Reference costs 2016-2017	2,309.3	1,777.4	1.30	15 of 49	
Adult critical care 5 Organs supported (XC02Z)	Reference costs 2016-2017	1,538.0	2,031.9	0.76	85 of 109	
Adult critical care 4 Organs supported (XC03Z)	Reference costs 2016-2017	1,457.6	1,781.2	0.82	114 of 137	
Adult critical care 3 Organs supported (XC04Z)	Reference costs 2016-2017	1,245.0	1,529.1	0.81	121 of 141	
Adult critical care 2 Organs supported (XC05Z)	Reference costs 2016-2017	875.3	1,240.8	0.71	133 of 142	
Adult critical care 1 Organs supported (XC06Z)	Reference costs 2016-2017	868.6	718.1	1.21	42 of 141	
Adult critical care 0 Organs supported (XC07Z)	Reference costs 2016-2017	N<10				Not applicable

* Actual and Expected are the actual an expected costs per bed-day (£) and Ratio is the ratio of actual to expected

8 Trust metrics - litigation

Metric	Source and year	Trust	England	Position	Score (%) 0-10|10-25|25-75|75-90|90-100
NHS Litigation Authority claims (critical care)					
Number of litigation claims	NHS Resolutions Apr 2012-Mar 2017	4	2	12 of 143	
Cost of litigation claims (£)	NHS Resolutions Apr 2012-Mar 2017	2,608,900	319,728	2 of 143	
Average cost of litigation claims (£)	NHS Resolutions Apr 2012-Mar 2017	652,225	191,302	8 of 95	
Cost of litigation claims (£ per admission)	NHS Resolutions Apr 2012-Mar 2017	421	47	4 of 142	

9 Acknowledgements

We would like to thank the organisations who make data publically available - NHS England (Friends and Family test, bed numbers, delayed transfers of care), NHS Digital (Complaints, Staff numbers, Safety Thermometer, SHMI, HRG Grouper), Royal College of Anaesthetists (National Emergency Laparotomy Audit), NHS Improvement (Incident reporting), Care Quality Commission (CQC ratings, inpatient survey), and the Department of Health (Reference Costs). We are grateful to ICNARC (Intensive Care National Audit and Research Centre), and in particular Professor Kathy Rowan and Professor David Harrison for providing us with data from ICNARC and for the creation of this datapack. We are grateful to NHS Digital for providing and agreeing that HES data can be used for the calculation of metrics in this report. We are required to include the following copyright statement: ”Copyright ©2015, 2016, 2017, 2018 re-used with the permission of NHS Digital. All right reserved.” We would like to thank Dr Tim Gould and Dr Manu Shankar-Hari for their expertise in helping to design this datapack.

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