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SEVERE SEPSIS AND SEPTIC SHOCK

CLINICAL AUDIT 2016/17

National Results

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Contents

- This presentation shows how EDs are performing against the audit standards.

- For further information please see the national report at www.rcem.ac.uk/audits.

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Audit objectives

1. To benchmark current performance in EDs against the standards
2. To allow comparison nationally and between peers
3. To identify areas in need of improvement
4. To compare against previous performance in 2011/12 and 2013/14

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Standards

Standard	Standard type
1. Respiratory Rate, Oxygen Saturations (SaO_2), Supplemental Oxygen Requirement, Temperature, Blood Pressure, Heart Rate, Level of Consciousness (AVPU or GCS) and Capillary Blood Glucose recorded on arrival	**Fundamental**
2. Review by a senior (ST4+ or equivalent) ED medic or involvement of Critical Care medic (including the outreach team or equivalent) before leaving the ED	**Developmental**
3. O_2 was initiated to maintain SaO_2>94% (unless there is a documented reason not to):	
a. 50% within one hour of arrival	**Aspirational**
b. 100% within four hours of arrival	**Developmental**
4. Serum Lactate measured within four hours of arrival	
a. 50% within one hour of arrival	**Aspirational**
b. 100% within four hours of arrival	**Developmental**

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Standards

Standard	Standard type
5. Blood Cultures obtained	
a. 50% within one hour of arrival	**Aspirational**
b. 100% within four hours of arrival	**Developmental**
6. Fluids – first intravenous crystalloid fluid bolus (up to 30mL/kg) given:	
a. 75% within one hour of arrival	**Developmental**
b. 100% within four hours of arrival	**Fundamental**
7. Antibiotics administered:	
a. 50% within one hour of arrival	**Developmental**
b. 100% within four hours of arrival	**Fundamental**
8. Urine Output measurement/ Fluid Balance Chart instituted within four hours of arrival	**Developmental**

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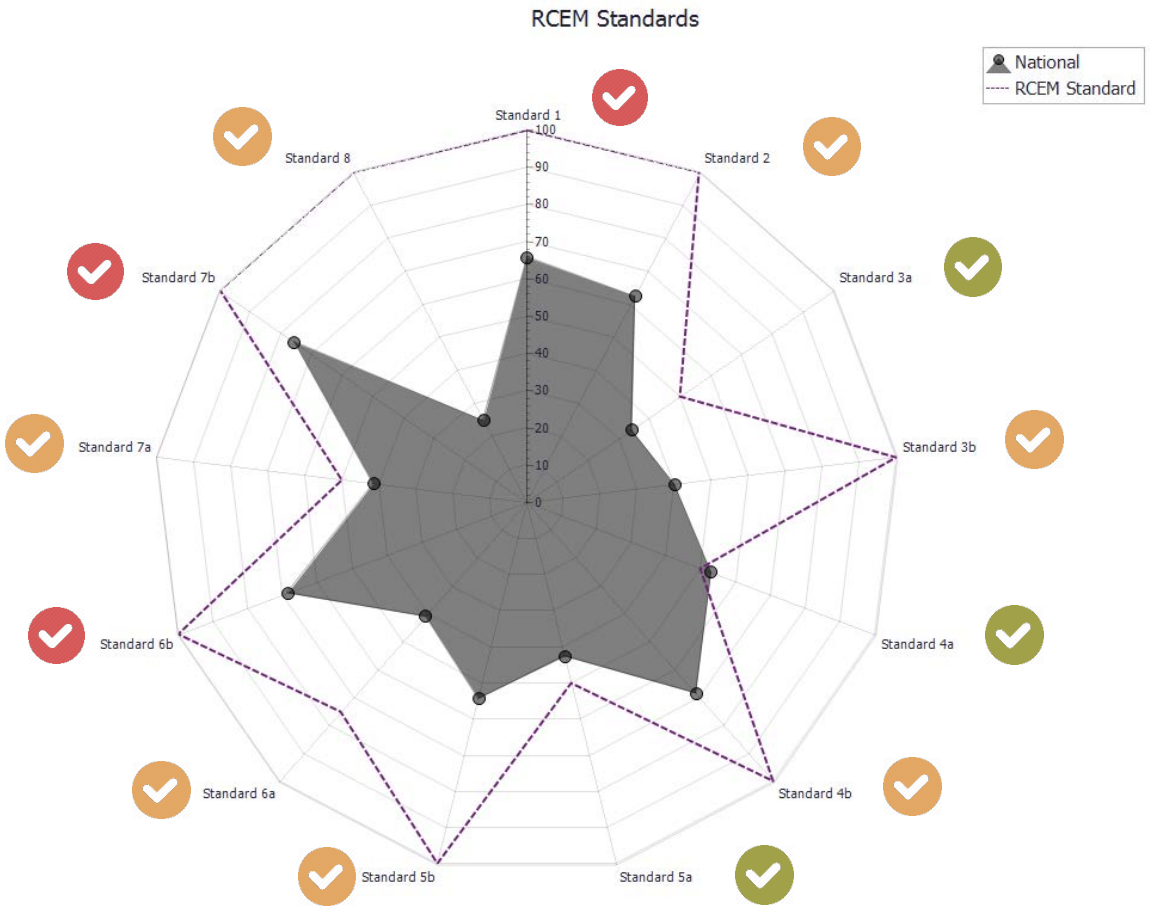
Executive summary



- This graph shows the median national performance against standards for this audit
- ↑ Higher scores (e.g. 100%) indicate higher compliance with the standards and better performance.

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Summary of national findings

	RCEM Standard	National Results				
		2016/17 (13129 cases)			2013/14	2011/12
		Lower quartile	Median	Upper quartile	Median	Median
STANDARD 1: Respiratory Rate, Oxygen Saturations (SaO_2), Supplemental Oxygen Requirement, Temperature, Blood Pressure, Heart Rate, Level of Consciousness (AVPU or GCS) and Capillary Blood Glucose recorded on arrival	**100%**	50%	69%	91%	-	-
STANDARD 2: Review by a senior (ST4+ or equivalent) ED medic or involvement of Critical Care medic (including the outreach team or equivalent) before leaving the ED	**100%**	52%	65%	76%	-	-

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Summary of national findings

	RCEM Standard	National Results				
		2016/17 (13129 cases)			2013/14	2011/12
		LQ	M	UQ	M	M
STANDARD 3: O2 was initiated to maintain SaO2>94% (unless there is a documented reason not to)						
STANDARD 3a: 50% within one hour of arrival	**50%**	10%	30%	59%	29%	33%
STANDARD 3b: 100% within four hours of arrival	**100%**	11%	39%	68%	-	-
STANDARD 4: Serum Lactate measured within four hours of arrival						
STANDARD 4a: 50% within one hour of arrival	**50%**	37%	60%	72%	49%	47%
STANDARD 4b: 100% within four hours of arrival	**100%**	60%	77%	89%	-	-

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Summary of national findings

	RCEM Standard	National Results				
		2016/17 (13129 cases)			2013/14	2011/12
		LQ	M	UQ	M	M
STANDARD 5: Blood Cultures obtained						
STANDARD 5a: 50% within one hour of arrival	**50%**	25%	45%	62%	40%	32%
STANDARD 5b: 100% within four hours of arrival	**100%**	36%	59%	79%	-	-
STANDARD 6: Fluids – first intravenous crystalloid fluid bolus (up to 30mL/kg) given:						
STANDARD 6a: 75% within one hour of arrival	**75%**	25%	43%	57%	40%	40%
STANDARD 6b: 100% within four hours of arrival	**100%**	59%	78%	89%	-	-

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Summary of national findings

	RCEM Standard	National Results				
		2016/17 (13129 cases)			2013/14	2011/12
		LQ	M	UQ	M	M
STANDARD 7: Antibiotics administered:						
STANDARD 7a: 50% within one hour of arrival	**50%**	28%	44%	58%	32%	27%
STANDARD 7b: 100% within four hours of arrival	**100%**	70%	83%	91%	-	-
STANDARD 8: Urine Output measurement/ Fluid Balance Chart instituted within four hours of arrival	**100%**	6%	18%	38%	-	-

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Organisational audit and casemix

- How do patients attending EDs compare nationally?
- What organisational features do ED's have?
- This section helps you understand more about the case mix and demographics of the patients.

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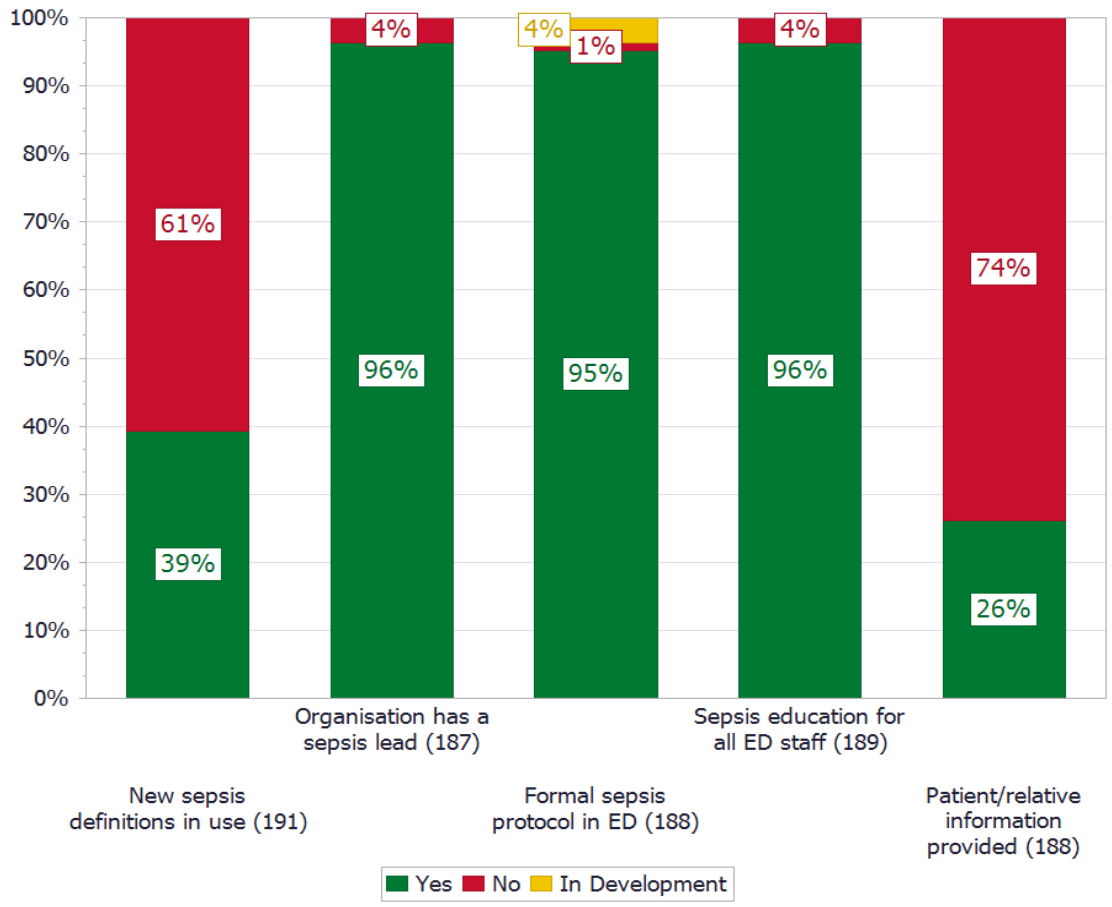
Organisational audit



- This was the first time that organisational data were analysed. Almost all EDs have a sepsis lead, a sepsis protocol and provide sepsis education. This is a great achievement and shows how responsive we are as a specialty to the many recommendations for improved organisation that have come from national reports. Patient information should be the next focus, as currently few EDs provide it.

- The new (Sepsis-3) definitions were published in early 2016 and less than half of EDs have started to use them.

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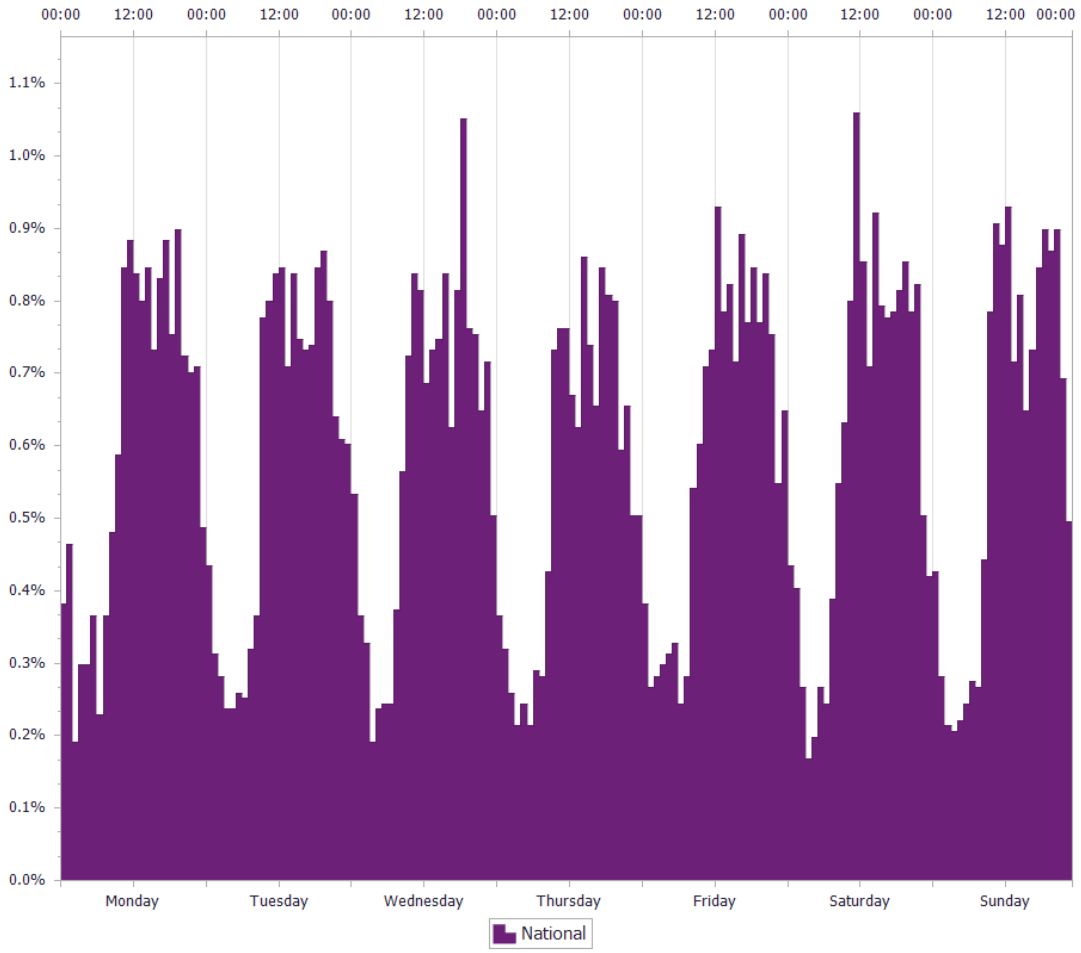
Patient arrival



Sample: all patients

The time and day of presentation appears to follows a normal pattern of ED attendances during the day, with no reduction over the weekend and increased attendance on Mondays and Tuesdays.

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Audit results

- How did EDs perform against the standards?
- This section helps you understand more about how EDs performed nationally.

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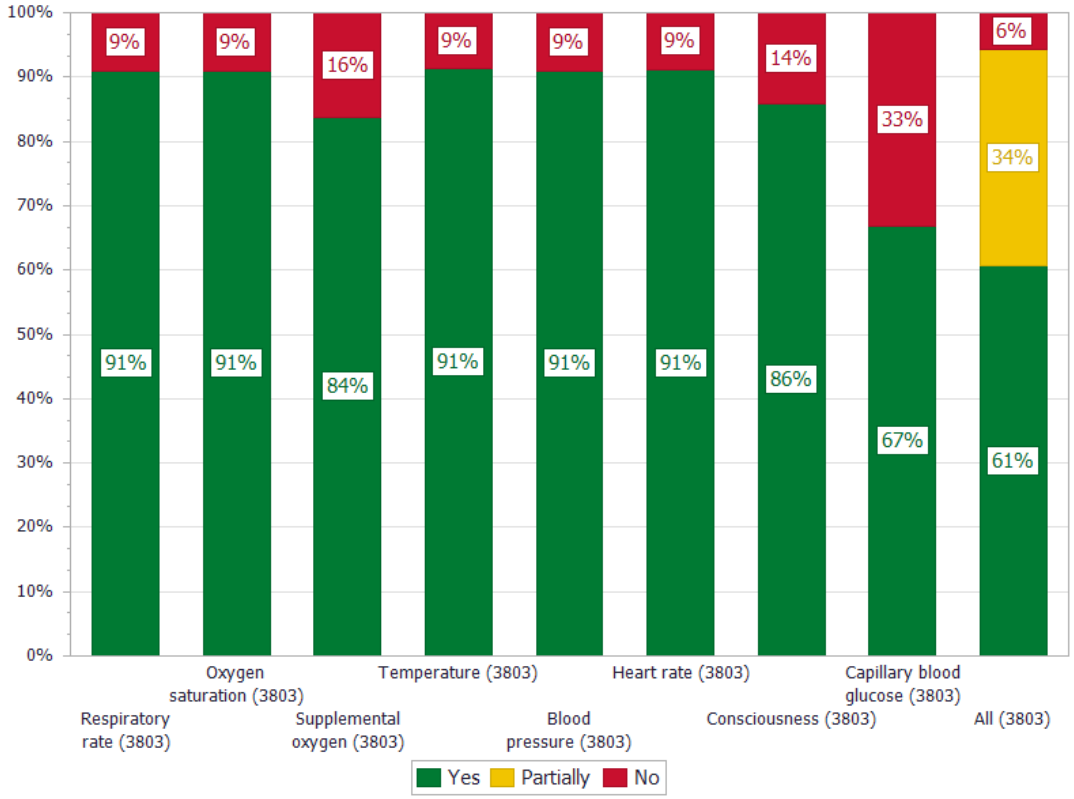
Audit results – vital sign monitoring



STANDARD 1: Respiratory Rate, Oxygen Saturations (SaO2), Supplemental Oxygen Requirement, Temperature, Blood Pressure, Heart Rate, Level of Consciousness (AVPU or GCS) and Capillary Blood Glucose recorded on arrival

Sample: all patients

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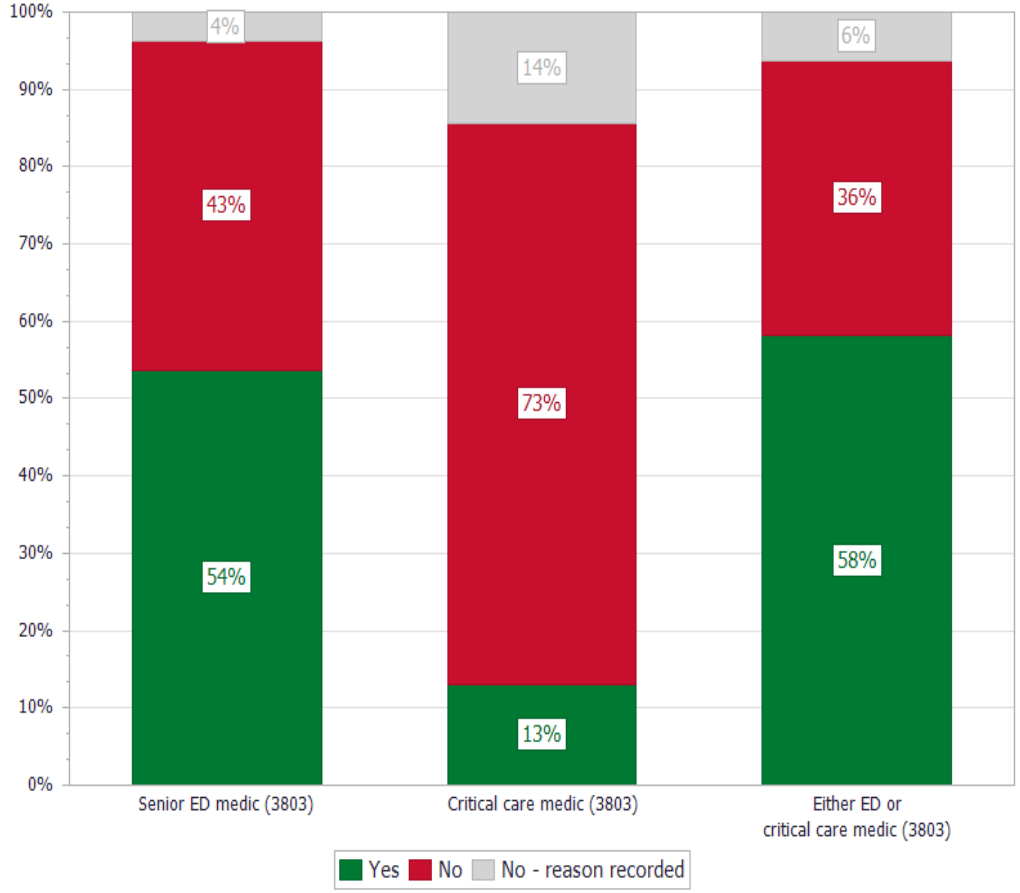
Audit results – Senior clinician involved in care



STANDARD 2: Review by a senior (ST4+ or equivalent) ED medic or involvement of Critical Care medic (including the outreach team or equivalent) before leaving the ED

Sample: all patients

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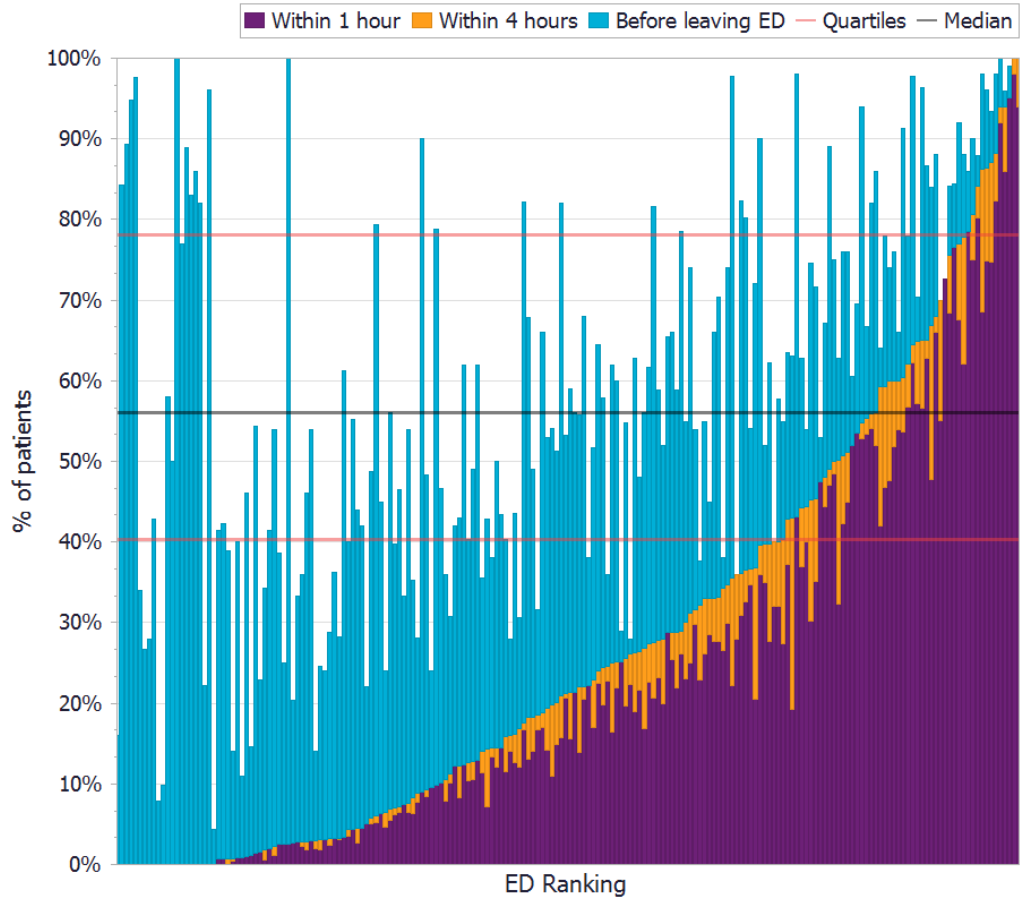
Was oxygen initiated to maintain SaO2>94%?



O2 was initiated to maintain SaO2>94% (unless there is a documented reason not to)

STANDARD 3a: 50% within 1 hour of arrival

STANDARD 3b: 100% within 4 hours of arrival

Sample: all patients excluding Q7 = 'no – reasons recorded'

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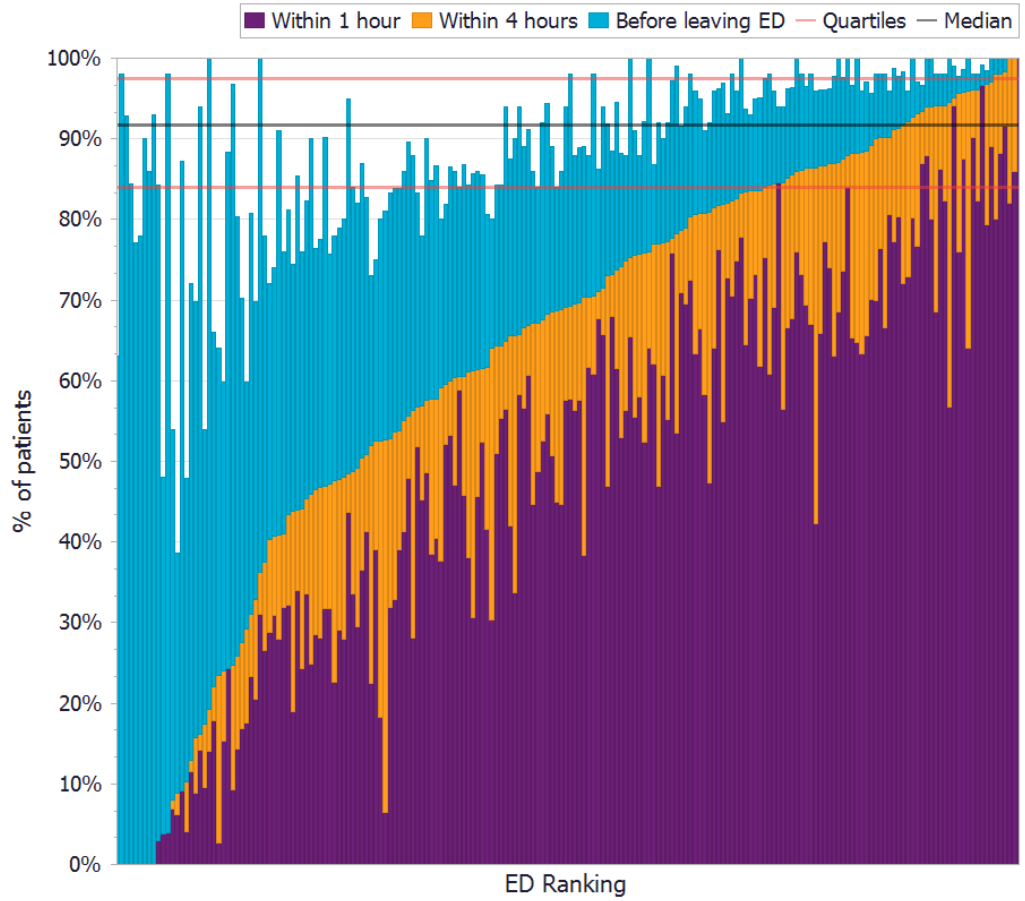
Was serum lactate measurement obtained prior to leaving the ED?



Serum Lactate measured within four hours of arrival

- **STANDARD 4a**: 50% within 1 hour of arrival
- **STANDARD 4b**: 100% within 4 hours of arrival

Sample: all patients excluding Q8 = 'no – reasons recorded'

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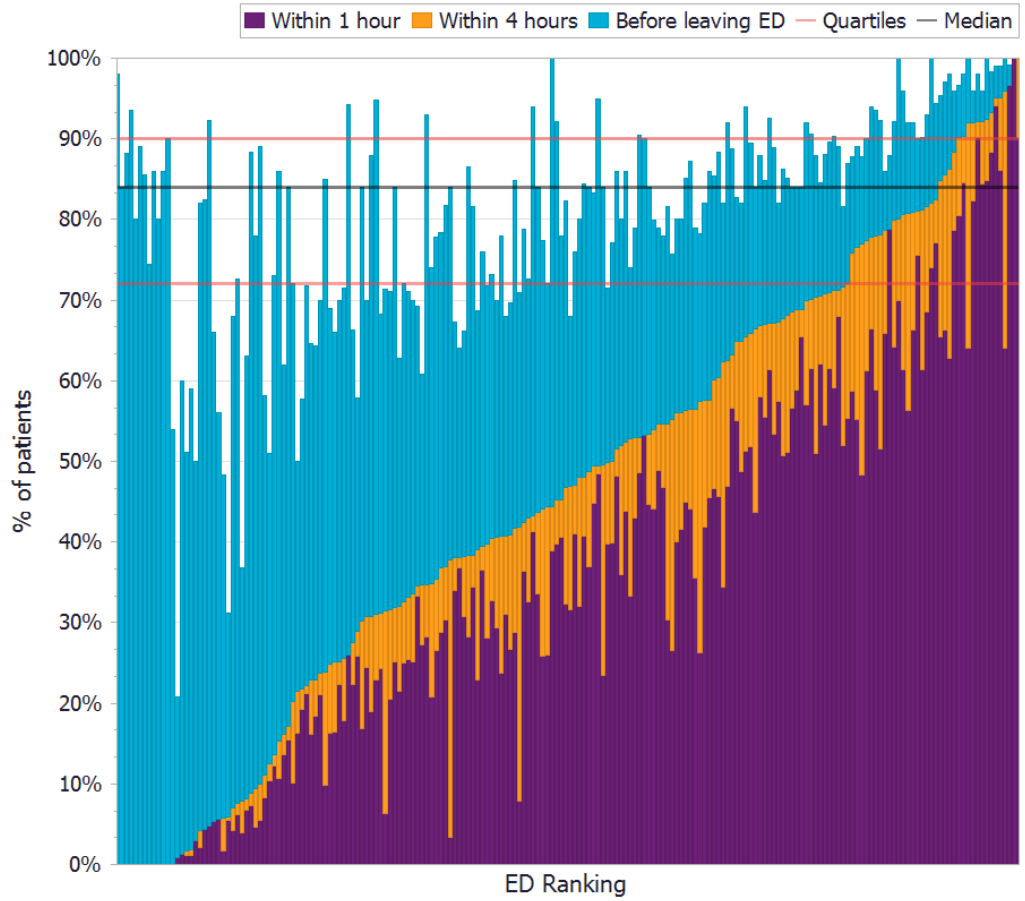
Were blood cultures obtained prior to leaving the ED?



Blood cultures obtained

STANDARD 5a: 50% within 1 hour of arrival

STANDARD 5b: 100% within 4 hours of arrival

Sample: all patients excluding Q9 = 'no – reasons recorded'

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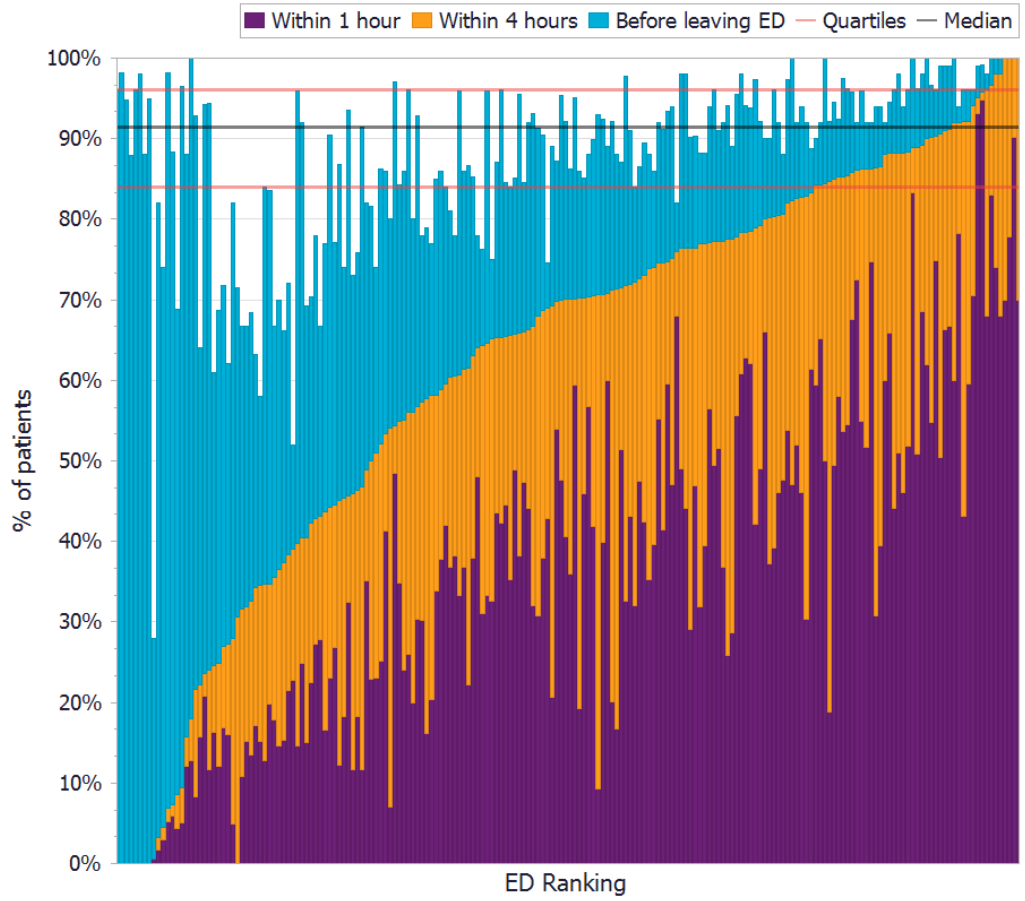
Was the first intravenous crystalloid fluid bolus (up to 30ml/kg) given in the ED?



Fluids – first intravenous crystalloid bolus (up to 30mL/kg) given

STANDARD 6a: 50% within 1 hour of arrival

STANDARD 6b: 100% within 4 hours of arrival

Sample: all patients excluding Q10 = 'no – reasons recorded'

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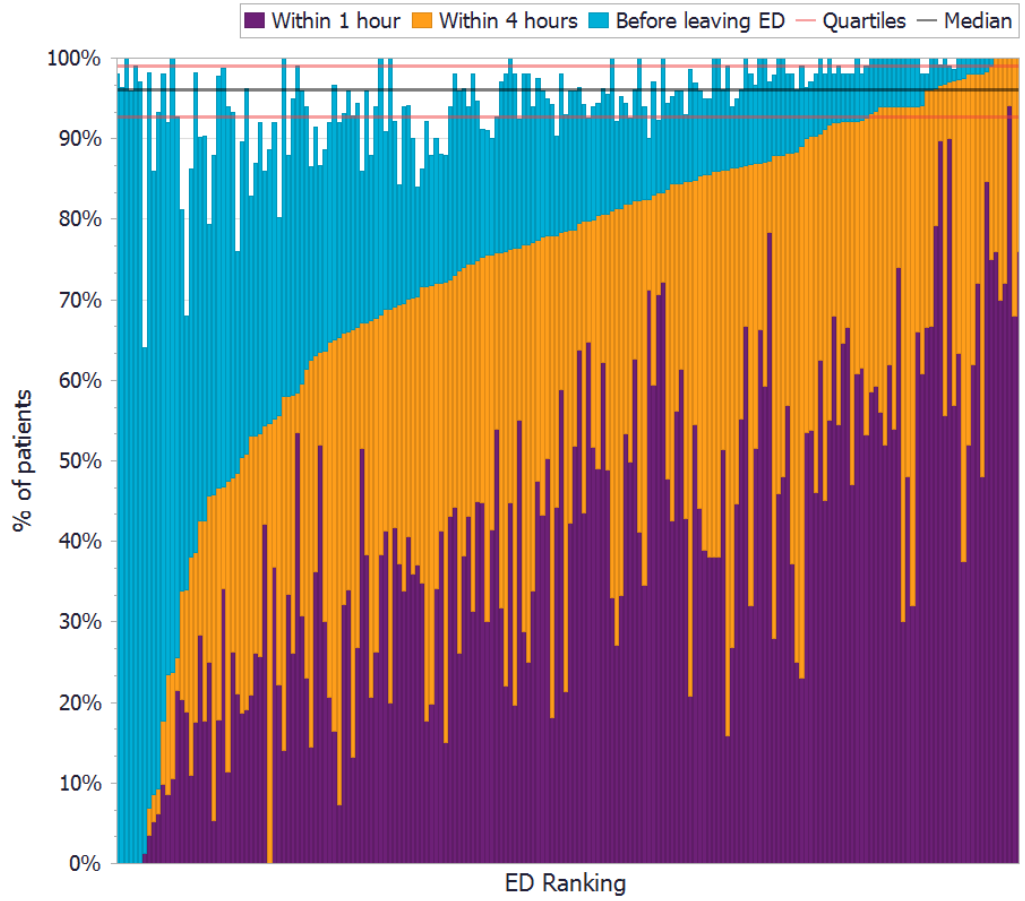
Were antibiotics administered in the ED?



Antibiotics administered

- **STANDARD 7a**: 50% within 1 hour of arrival
- **STANDARD 7b**: 100% within 4 hours of arrival

Sample: all patients excluding Q11 = 'no – reasons recorded'

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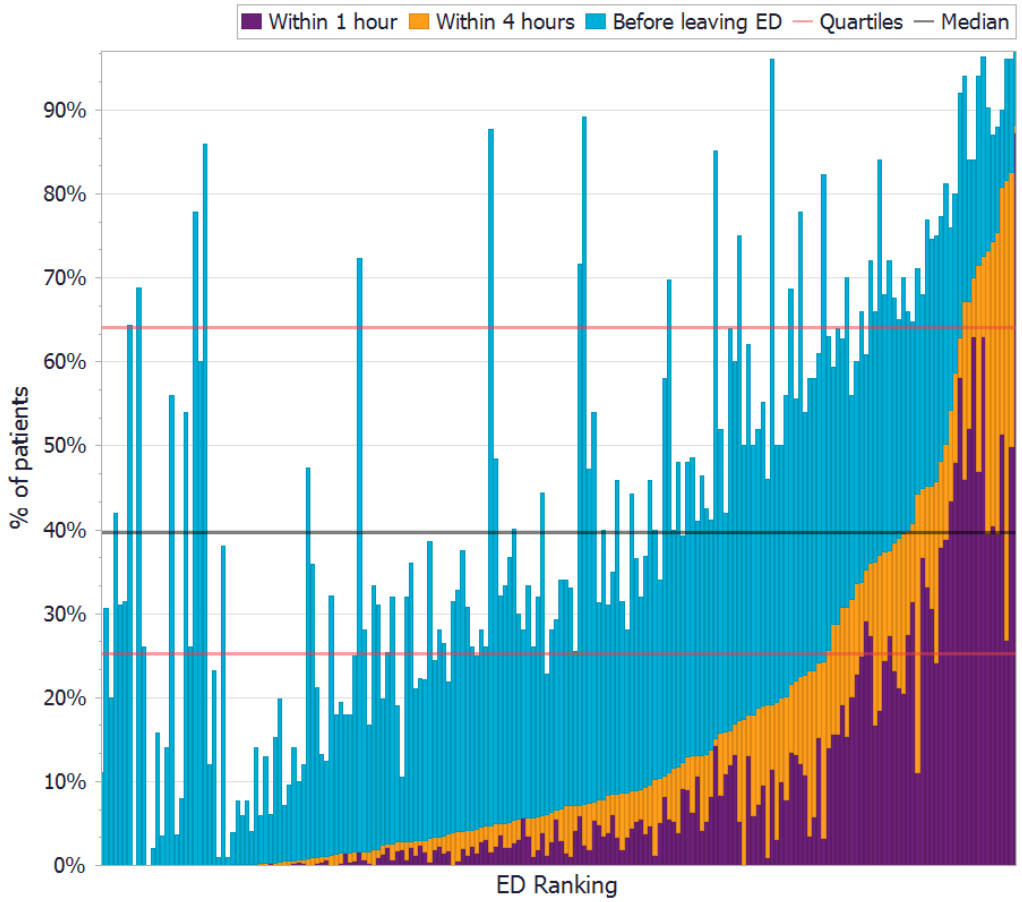
Was urine output measurement/ Fluid Balance Chart instituted prior to leaving the ED?



STANDARD 8a: Urine Output measurement/ Fluid Balance Chart instituted within four hours of arrival

Sample: all patients excluding Q12 = 'no – reasons recorded'

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Recommendations

1. All EDs should have a sepsis lead and a sepsis protocol
2. RCEM recommends that all sepsis leads consider the following:

a) Is everything being done to ensure that a full set of timely observations is performed on every patient?

b) Is there a more senior doctor available to review patients with sepsis 24/7?

c) Is oxygen considered part of the treatment for sepsis and how is this clearly documented?

d) Is lactate measurement possible and simple in your department?

e) Does your hospital give clear instructions on which antibiotics should be used?

f) Does your protocol encourage urine output monitoring, especially if the patient does not require a catheter?

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Recommendations

3. Early recognition of sepsis is critical to the clinical outcome. All patients with suspected sepsis and a NEWS of 3 should undergo immediate screening for sepsis.

4. Patient information should be provided to all patients, and/or relatives, admitted with sepsis.

5. Standardise pathways of care for patients fulfilling sepsis criteria to improve timely delivery of care and therefore outcomes.

6. Education and training around these for wider team for early recognition and instigation of optimal care.

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Next steps

- Read the full report at www.rcem.ac.uk/audits
- Action planning
- Rapid cycle quality improvement
- Contact other EDs for tips & solutions