

# The Future of Acute Medicine

Mark Holland





# On the Agenda

Contracts

**Workforce**

Pensions

Older People Patients

Technology

Loss of team structure

**CASH**

Jeremy Hunt?

**A&E**

Out-of-Hours

7 Day Working



# Case

- Monday 1<sup>st</sup> August 1988
- PRHO in Crawley
- On-call
  - No Induction
- 76-year old woman
  - Abdominal pain
- Transferred by me to Redhill Hospital
- **THAT WAS WRONG!**

# Case

- **WRONG**
  - Care
  - System
  - Processes
  - Culture
  - Attitude

# Eternal Winter 2014 – 2017+

- Care
- System
- Processes
- Culture
- Attitude

# Landmarks

- Early 1990s
- 1999
- 2004
- 2007
- 2009
- 2012
- 2016

Acute Medicine is defined as that 'part of general internal medicine (GIM) concerned with the immediate and early specialist management of adult patients suffering from a wide range of medical conditions who present to, or from within, hospitals, requiring urgent or emergency care' [1].

Acute Medicine differs from other medical specialties as it is not based around a body system, disease or patient characteristic, such as age.

A rich description of the specialty can be found in the Royal College of Physicians of London web resource Medical Care [2].

1. Royal College of Physicians. Acute medical care. The right person, in the right setting – first time. Report of the Acute Medicine Task Force. London: RCP, 2007. Available at <http://shop.rcplondon.ac.uk/products/acute-medical-care-the-right-person-in-the-right-setting-firsttime?variant=6297968773>
2. Royal College of Physicians. Medical Care. London RCP, 2016. Available at <http://www.rcpmedicalcare.org.uk/designing-services/specialties/acute-internal-medicine>





# Acute Medical Unit core values and ideology

- Competent clinician
- Senior clinician early in the admission
- Acute medical unit (AMU)
- Multiprofessional **teams**
- Training and Education
- Research
- Audit

# Acute medical care

The right person,  
in the right setting – first time

Report of the Acute Medicine Task Force

October 2007



Royal College  
of Physicians  
Setting higher medical standards



# Future

# What Works?

# Acute Medical Unit

- Bernard Silke et al:
  - Mortality
  - LoS
  - Readmissions

# Acute Medical Unit variation

- Model
  - Acuity of bed provision
- Implementation
  - Ambulatory care
  - Short stay
- Scope
  - Closed or open
  - Frailty

# SAMBA 2016 – heterogeneity

Of the 103 AMUs submitting data describing their unit and service:

- 35 have frailty units of which 10/35 are co-located within the AMU
- 16 units reported a separate take run by Geriatricians
- The selection of patients for a separate take for older people was needs-related in 7 units and age related in 9 units (range 65 to 80 years)
- 8 AMUs were co-located with Acute Surgical Units (ASUs)
- Only one unit had both a frailty unit and ASU co-located with AMU
- Ambulatory emergency care (AEC) units were in 79 hospitals
- 45 AEC units were separate from the AMU
- AEC units had a median of 8 trolleys (interquartile range 4 to 12) and 3 clinic rooms.

# NICE

## Emergency and acute medical care in over 16s: service delivery and organisation

<a href="#">1 - Introduction</a>	<a href="#">11 - Social care extended access</a>	<a href="#">21 - Standardised criteria for hospital admission</a>	<a href="#">31 - Enhanced inpatient access to physiotherapy and occupational therapy</a>
<a href="#">2 - Non-emergency telephone access and call handlers</a>	<a href="#">12 - Alternatives to hospital care</a>	<a href="#">22 - 7-day diagnostic radiology</a>	<a href="#">32 - Structured patient handovers</a>
<a href="#">3 - Paramedics with enhanced competencies</a>	<a href="#">13 - Community rehabilitation</a>	<a href="#">23 - Liaison psychiatry</a>	<a href="#">33 - Integrated patient information systems</a>
<a href="#">4 - Paramedic remote support</a>	<a href="#">14 - Community palliative care</a>	<a href="#">24 - Assessment through acute medical units</a>	<a href="#">34 - Standardised systems of care for intra- and inter-hospital transfers</a>
<a href="#">5 - GP extended hours</a>	<a href="#">15 - Advance care planning</a>	<a href="#">25 - Admission through elderly care assessment units</a>	<a href="#">35 - Discharge planning</a>
<a href="#">6 - GP-led home visits</a>	<a href="#">16 - Emergency department opening hours</a>	<a href="#">26 - Frequency of consultant review</a>	<a href="#">36 - Standardised discharge criteria</a>
<a href="#">7 - GP access to laboratory investigations</a>	<a href="#">17 - GPs within or on the same site as emergency departments</a>	<a href="#">27 - Critical care outreach teams</a>	<a href="#">37 - Post-discharge early follow-up clinics</a>
<a href="#">8 - GP access to radiology</a>	<a href="#">18 - Minor injury unit, urgent care centre or walk-in centre</a>	<a href="#">28 - Structured ward rounds</a>	<a href="#">38 - Integrated care</a>
<a href="#">9 - Community nursing</a>	<a href="#">19 - Early versus late consultant review</a>	<a href="#">29 - Multidisciplinary team meetings</a>	<a href="#">39 - Bed occupancy</a>
<a href="#">10 - Community-based pharmacists</a>	<a href="#">20 - Physician extenders</a>	<a href="#">30 - Pharmacist support</a>	<a href="#">40 - Escalation measures</a>



# The Bigger Picture

- STP
  - Sustainability and Transformation Plans
  - Funding gap
  - Reduction in A&E attendance
  - **Laudable, yes**      **Realistic?**
- GIRFT – Get it Right First Time
  - Double edged sword of standards
- NHSI
- NICE
- Smaller Hospitals

# Acute Medical Units

- Standards
- UK
  - West Midlands and SAM
  - London
  - Keough
  - Carter

# SAMBA 16

Time zero was taken as the time of admission to hospital (via the Emergency Department (ED), AMU, or other ports of entry) for Clinical Quality Indicators 1 and 2:

- Clinical Quality Indicator 1
  - Defined compliance as early warning score within 30 minutes of arrival in hospital
- Clinical Quality Indicator 2
  - The time to a competent medical decision maker was measured from the time of admission to the time of the first medical contact in the ED or AMU by either a doctor based in the ED or a doctor from the medical on-call team
- Clinical Quality Indicator 3
  - The time for consultant review was calculated from the time of referral from ED or from the time of admission to AMU for direct admissions.

# SAMBA 2016 – CQI scores

**Table 3    Attainment of Clinical Quality Indicators 1, 2 and 3**

## **Clinical Quality Indicator 1**

- All patients admitted to the AMU should have an early warning score (EWS) measured upon arrival on the AMU  
2461 (59%) of patients had their first EWS within 30 minutes of hospital arrival

## **Clinical Quality Indicator 2**

- All patients should be seen by a competent clinical decision maker within four hours of arrival on the AMU  
2695 (65%) of patients received this standard

## **Clinical Quality Indicator 3**

- All patients should be reviewed by the admitting consultant physician or an appropriate specialty consultant physician within 14 hours of arrival on the AMU (8 hours if arrival was between 08:00 and 18:00)  
2799 (68%) of patients had this review

## **Composite end-point for Quality Indicators 1,2 and 3**

1249 (30%) of patients met all three of the above SAM quality standards

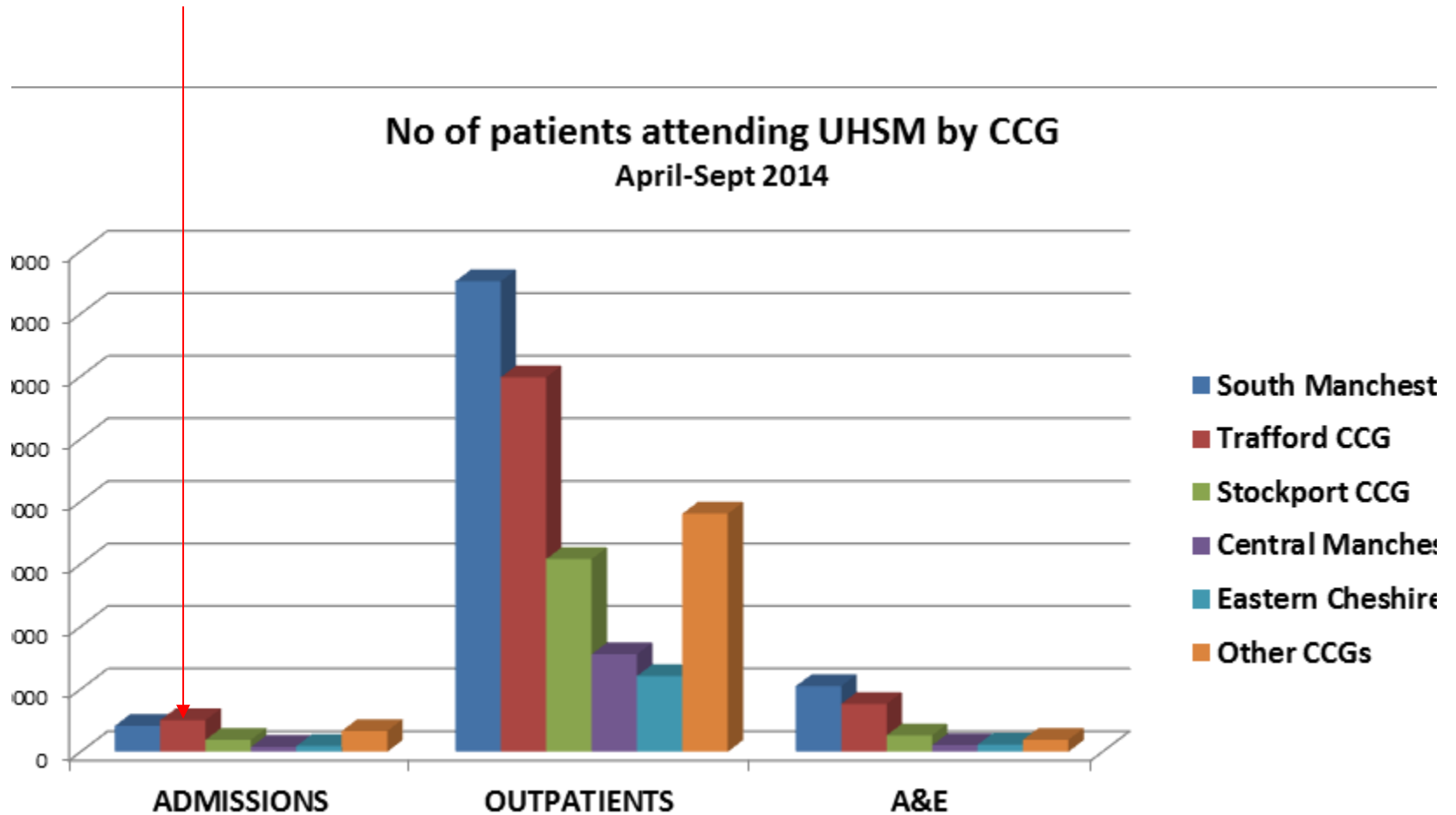
# Things can only get better

	2014	2015	2016 complete	2016 incomplete
Clinical Quality Indicator 1	84	73	69	59
Clinical Quality Indicator 2	81	87	69	65
Clinical Quality Indicator 3	72	78	81	68
Clinical Quality Indicator 1,2 & 3	56	52	41	30

# Medicine is Changing

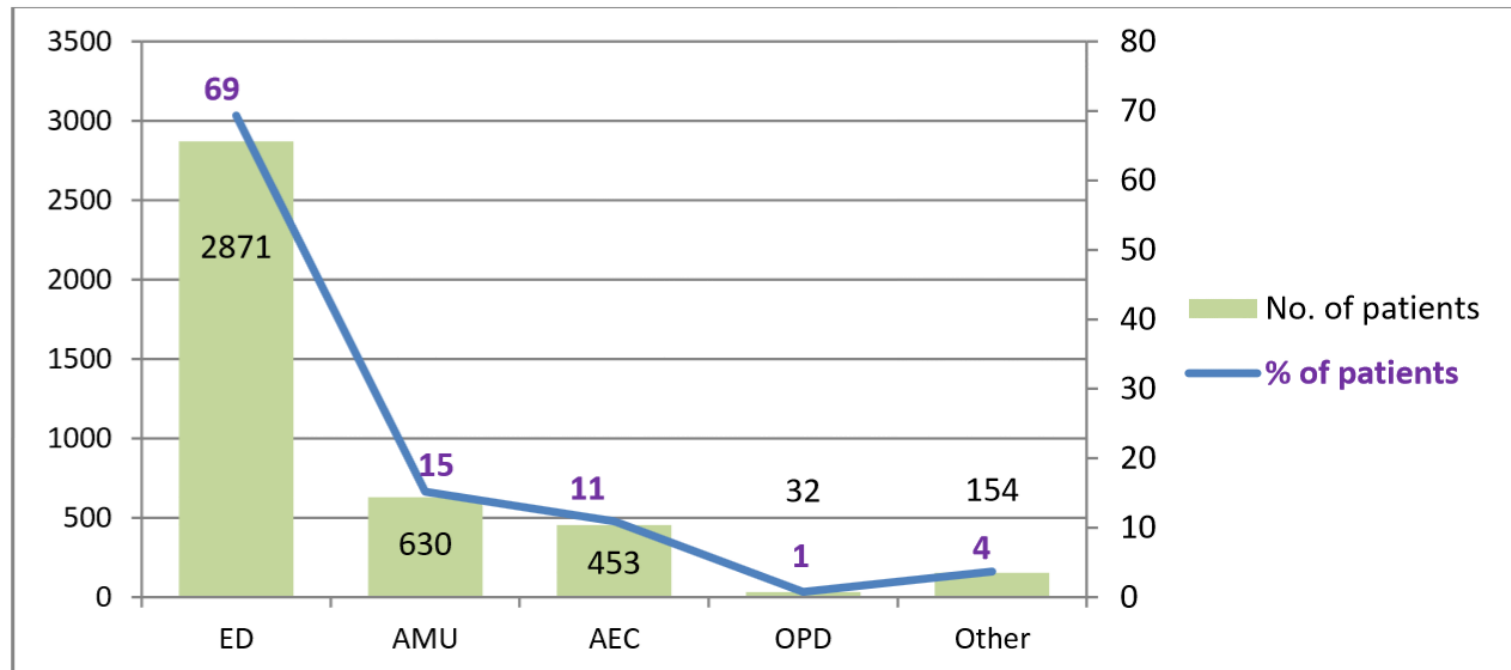


# UHSM – Activity by CCG



# SAMBA 2016 – route of admission

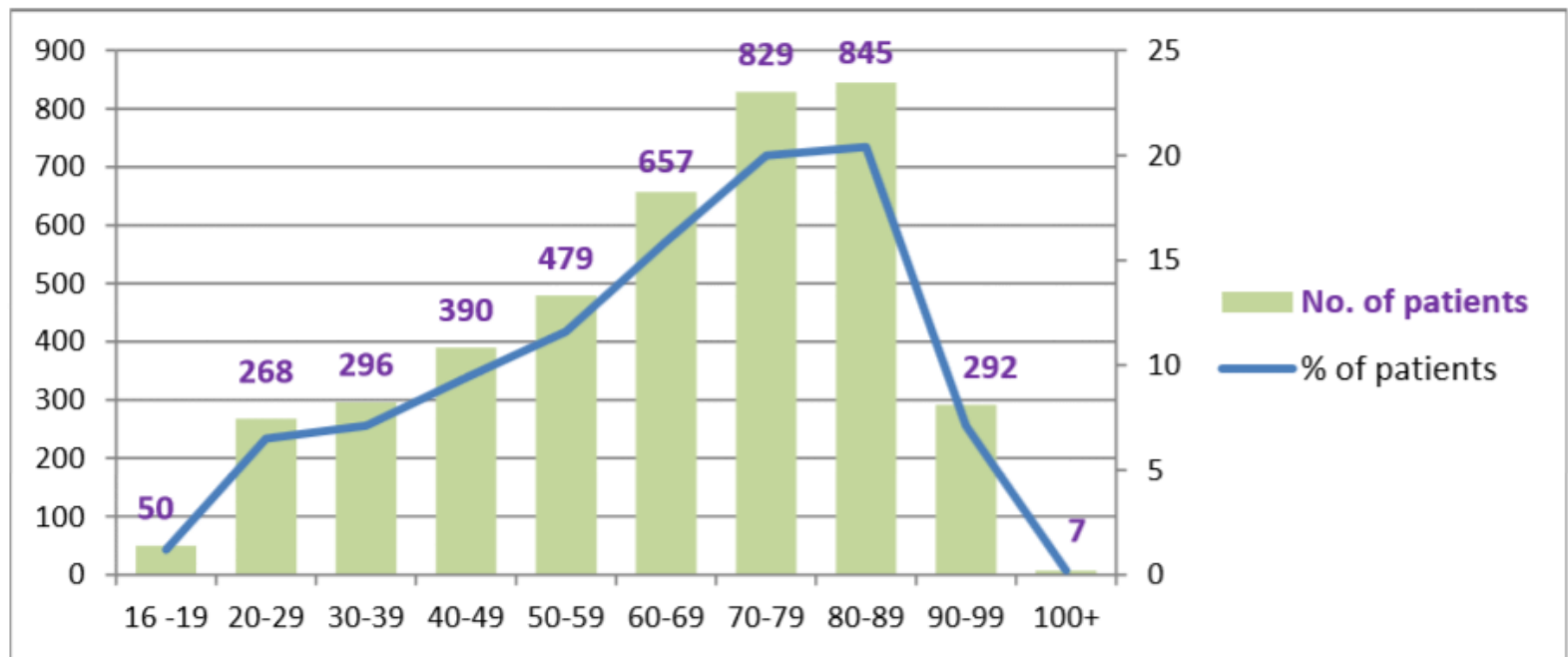
Figure 5 Route of admission





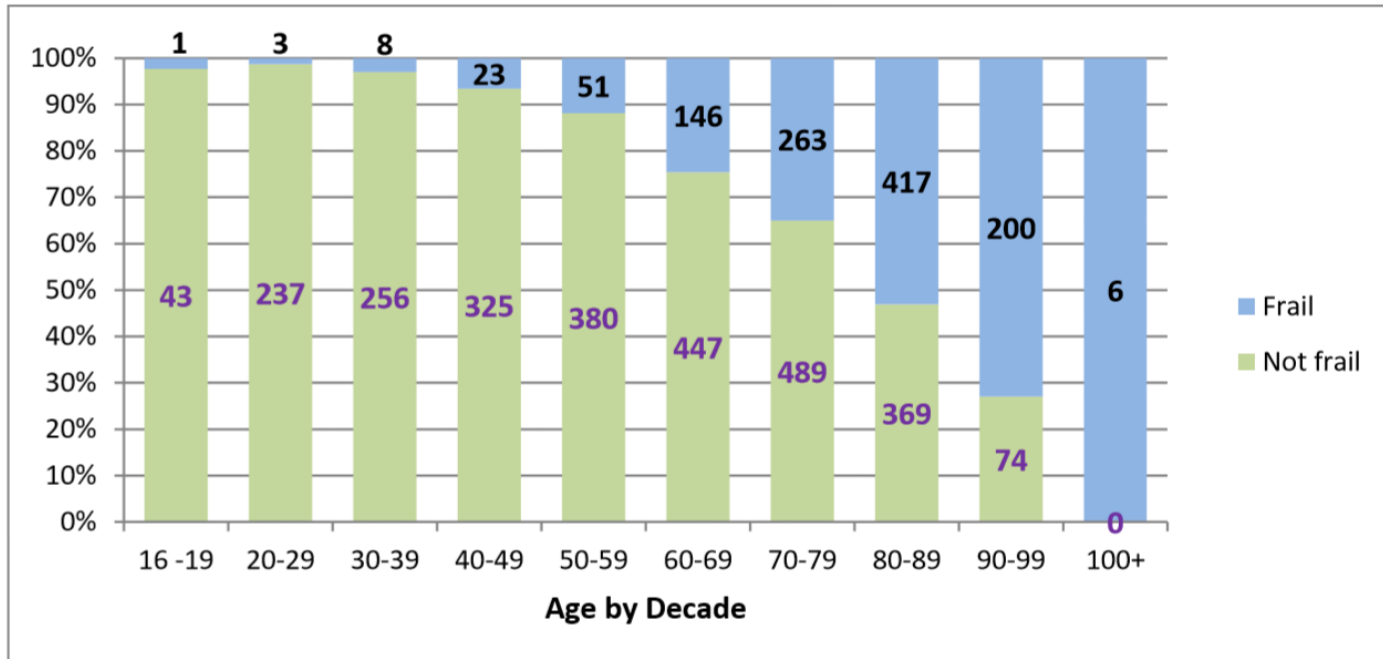
# SAMBA 2016 – age

Figure 4 Age distribution of 4140 patients



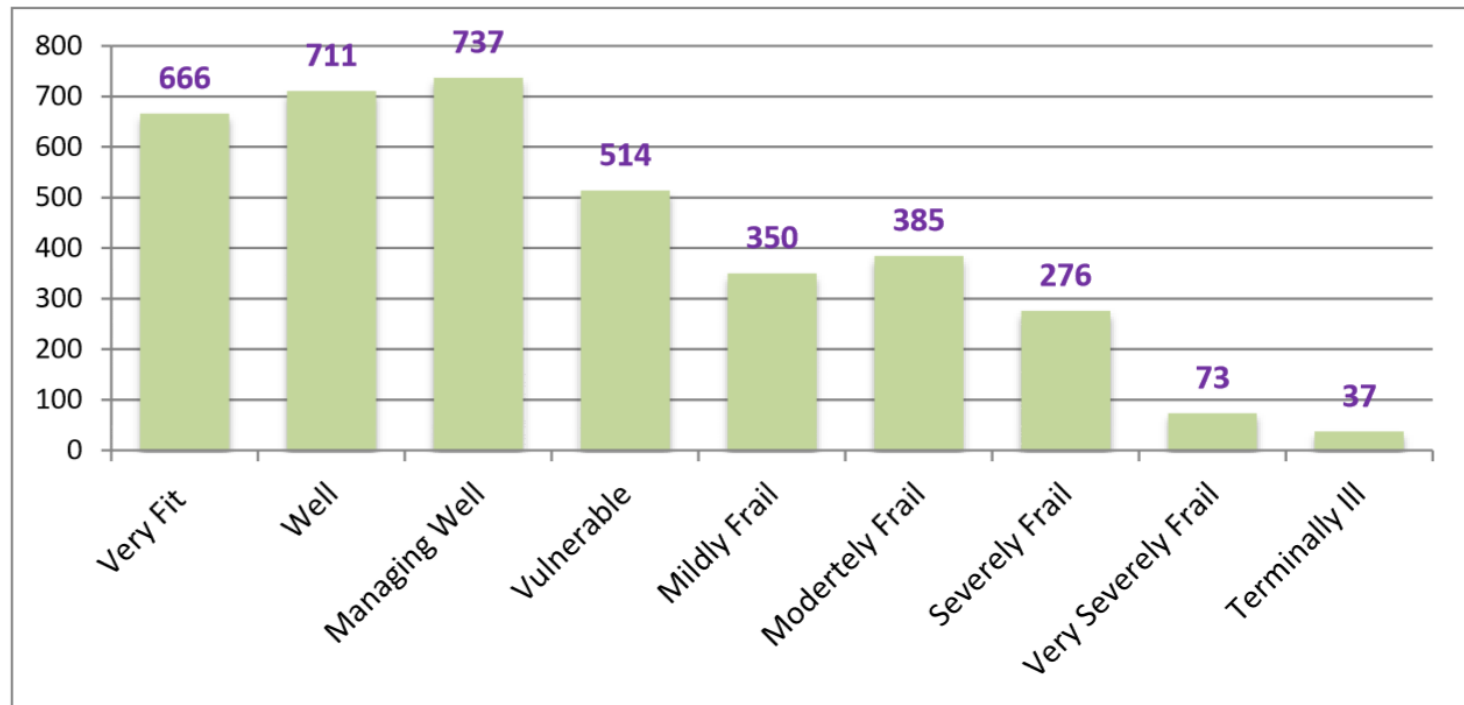
# SAMBA 2016 – frailty

Figure 7 The percentage of patients with frailty by age



# SAMBA 2016 – frailty

Figure 8 Distribution of frailty based on the Clinical Frailty Scale



# SEPSIS

IS A RARE BUT SERIOUS COMPLICATION  
OF AN INFECTION

**If your child has any of these symptoms  
you should take immediate action:**

- ♦ Looks mottled, bluish or pale
- ♦ Is very lethargic or difficult to wake
- ♦ Feels abnormally cold to touch
- ♦ Is breathing very fast
- ♦ Has a rash that does not fade when you press it
- ♦ Has a fit or convulsion

Acting quickly could save your child's life. If your child has any of these symptoms, don't be afraid to go to **A&E immediately** or call 999.

For more information visit [nhs.uk/sepsis](https://nhs.uk/sepsis)  
or [sepsistrust.org](https://sepsistrust.org)



The UK Sepsis Trust is a registered charity (England and Wales) 1145243. Company registration number 0444999. Sepsis Campaign Ltd, company number 02445110, reg. number 1047002.

# Workforce

- 2.8 doctors / 1000 population
- 1500 new medical students per year
  - 2.83 doctors / 1000 population
- More doctors is not a solution

# More Cash?

- Spend every penny on social care

The Department of Health dismissed Holland's fears about possible patient deaths, accused him of exaggerating the problems in the NHS and stressed that hospitals are facing an unprecedented and growing demand for care.

**"This is patent nonsense,** and does a disservice to our hospitals and staff coping well under huge pressure. Seeing 111,000 more people in A&E in under four hours last month, treating more patients for cancer than ever before and slashing the number of people who have to wait more than a year for treatment," said a spokesman.

10 March 2016

NHS

## NHS hospitals now so overwhelmed patients could die, says top doctor

The warning from doctors in acute care comes after the NHS admits it missed almost all key targets in January - its worst-ever set of figures

Denis Campbell Health  
policy editor

Thursday 10 March 2016 20.03 GMT



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Skills for  
Health

Healthcare  
Workforce  
Development

NHS hospitals... X + ...

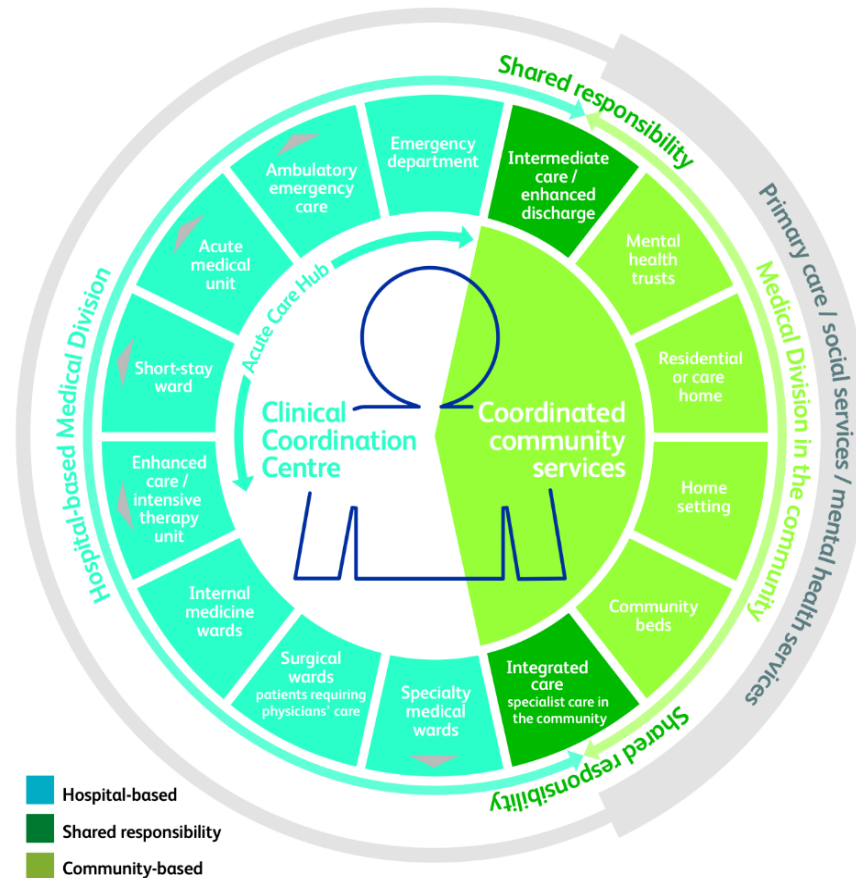


www.theguardian.com/society/2016/mar/10/nhs-hospitals-overwhelmed-patients-could-die-top-doctor

Read

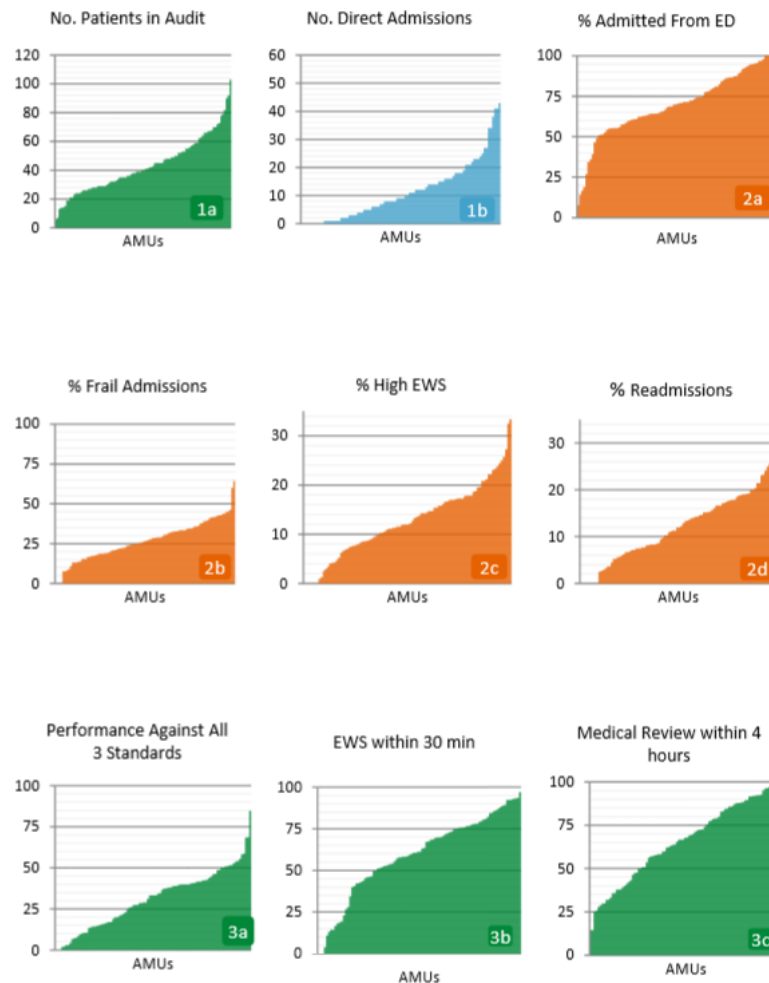


# Future Hospital

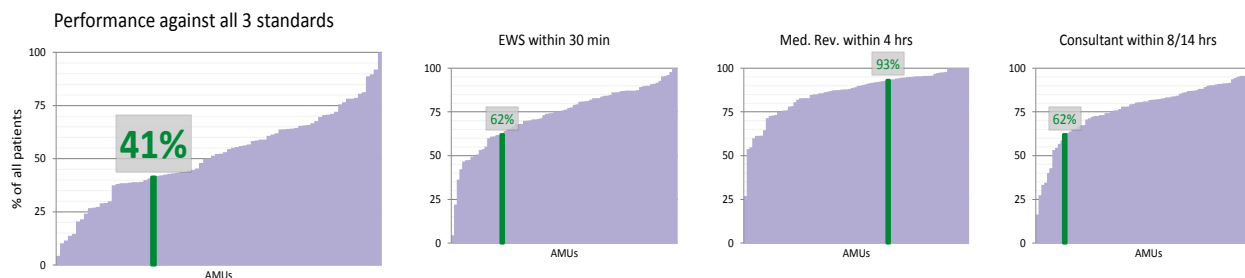
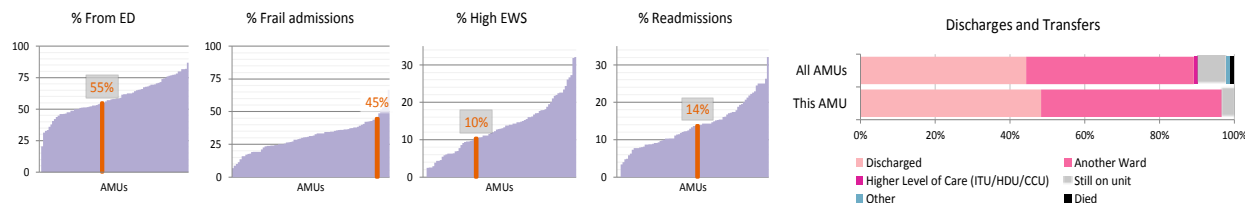




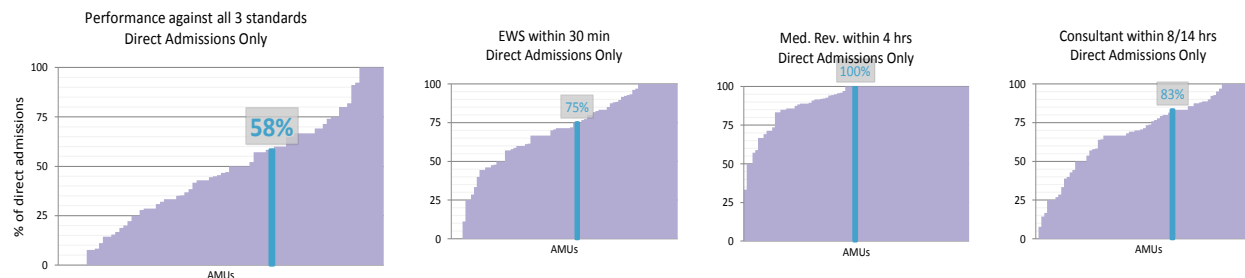
# SAMBA 2016 – unit report

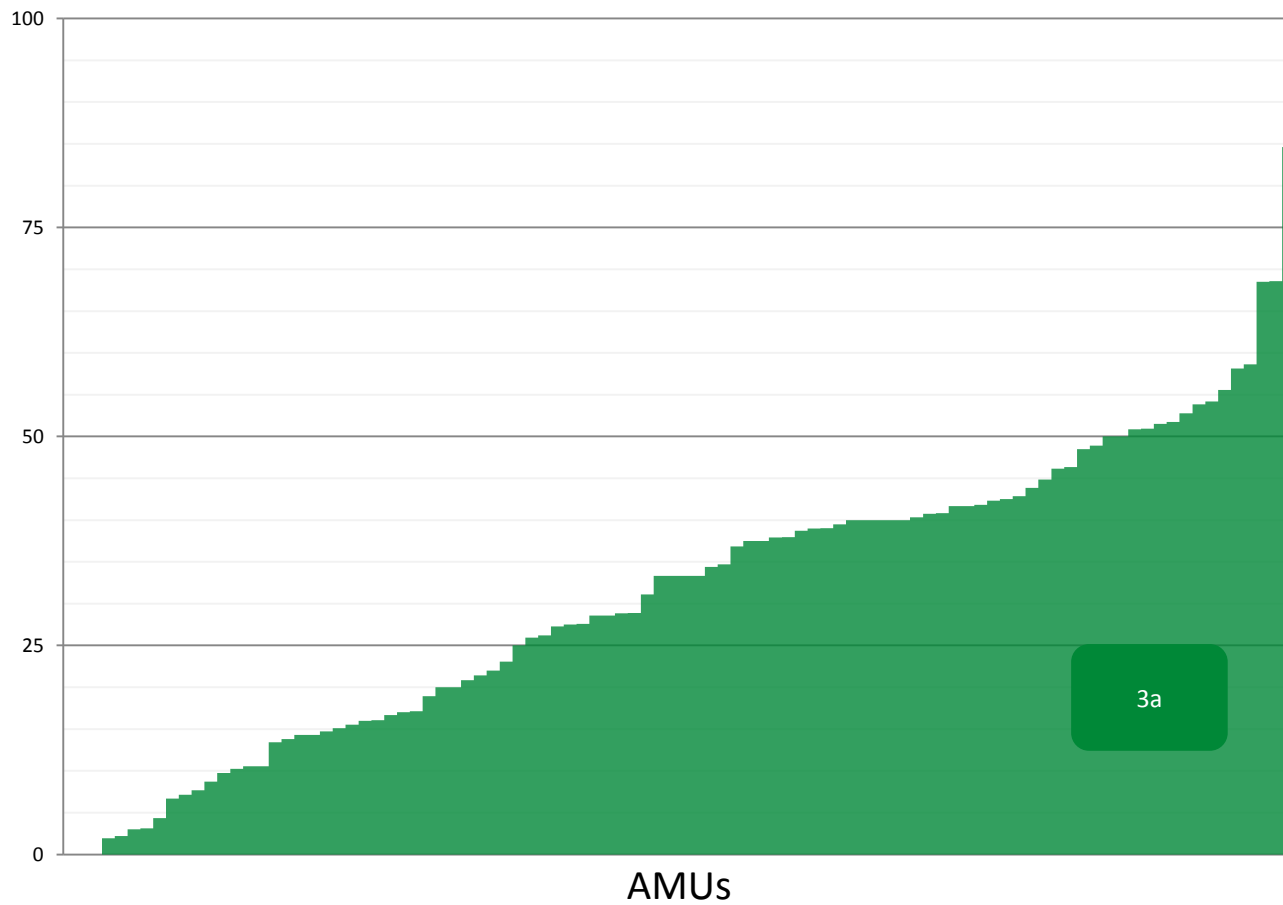


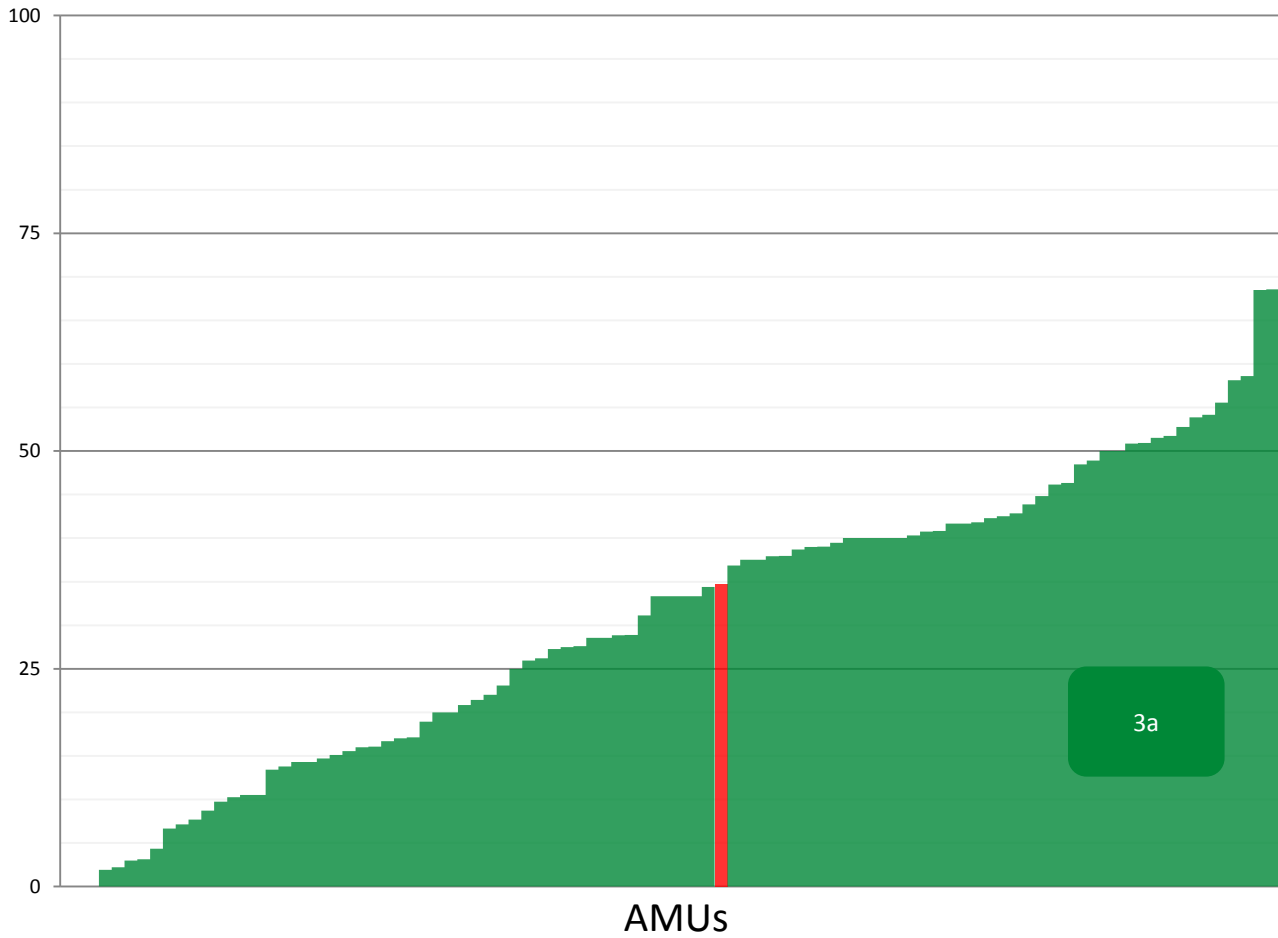
# SAMBA 2016 – unit report



These charts show this AMU's performance compared to the other AMUs that participated in SAMBA 15.







# Generalism

# Who

- Young adults and teenagers
- Mental health
- Older people
- Specialties
  - Neurology
  - Renal
- **Generalism**
  - Sepsis

# I Get Confused.....

- We used to have
  - Infections
  - Dehydration
- Now
  - Sepsis
  - Acute kidney injury

# I Get Confused.....

“Older patients [admitted to AMU] have cefuroxime and saline deficiency”

Anonymous 2005



# Sepsis and Internal Medicine

## A baseline audit of acute medical patients

S Clark<sup>†</sup>, A Fairburn<sup>†</sup>, M Dyson<sup>†</sup>, H Maddock<sup>†</sup> and M Holland<sup>††</sup>

<sup>†</sup>Department of Critical Care / <sup>††</sup>Medical Assessment Unit Wythenshawe Hospital, South Manchester University Hospitals NHS Trust

### Audit Objectives

- Quantify the prevalence of infection on the Medical Assessment Unit (MAU)
- Quantify the prevalence of sepsis on the MAU
- Compare the management of septic patients against the Severe Sepsis 6-hour resuscitation bundle<sup>1</sup>

### Introduction

Mortality from sepsis is preventable.<sup>2</sup> Our perception was that many patients presenting to our MAU have an acute infective illness, however, prior to this audit we were unaware of the prevalence of infection or sepsis.

### Method

Wythenshawe Hospital is a large teaching hospital with 695 beds. The MAU has 28 beds for the assessment and initial management of all newly admitted acute medical patients.

In March 2006, eleven weekday cohorts of MAU patients were audited using a specifically designed and piloted audit tool. Targets outlined in the Severe Sepsis 6-hour resuscitation bundle were the benchmark for good practice.

Patients were said to have acute infection if one or more of the following criteria were present:

- Documented admission diagnosis of infection
- WCC >10000 or <4000
- Raised CRP
- Fever >38°C or Hypothermia <36°C
- Antibiotics prescribed on or since admission

The notes were scrutinized for evidence of antibiotic administration and the taking of blood cultures with relevant timings.

The systemic inflammatory response syndrome (SIRS) criteria and blood pressure were markers of physiological status.<sup>3</sup>

### Sepsis 6-hour Bundle

- Serum lactate
- Blood cultures obtained prior to antibiotic administration
- Broad-spectrum antibiotics administered within three hours from time of presentation for A&E admissions and one hour for non-A&E admissions
- In the event of hypotension and/or lactate >4mmol/L (20mg/dL):
  - Deliver an initial minimum of 20ml/kg of crystalloid (or colloid equivalent)
  - Give vasopressors for hypotension not responding to initial fluid resuscitation to maintain mean arterial pressure (MAP) >65mmHg
- In the event of persistent arterial hypotension despite volume resuscitation (septic shock) and/or initial lactate >4mmol/L (20mg/dL):
  - Achieve central venous pressure (CVP) of >8mmHg
  - Achieve central venous oxygen saturation (ScvO<sub>2</sub>) of >70% (achieving a mixed venous oxygen saturation (SvO<sub>2</sub>) of 65% is an acceptable alternative)

### SIRS

A clinical response arising from a non-specific insult, with two or more of the following:

- Temperature >38°C or <36°C
- HR >90beats/min
- RR >20breaths/min
- WCC >10000 or <4000

NO INFECTION (n=100)

INFECTION PRESENT (n=102)

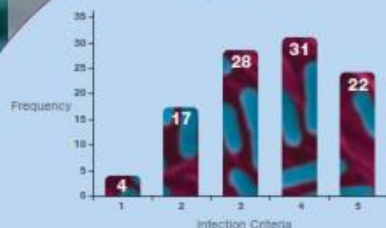
PATIENTS ASSESSED (n=202)

Median age - 71 years (IQR 53 - 82)

	Documented Antibiotic Administration	Time to Antibiotic (Median/IQR)	Documented Blood Culture Taken	Time to Blood Culture (Median/IQR)
All infected patients	72/102 (71%)	3 hrs 32 min 0 hrs 22 min - 6 hrs 58min	45/102 (44%)	1 hr 42 min 50 min - 2hrs 54 min
Septic Patients	55/99 (73%)	3 hrs 14 min 2 hrs 2 min - 5 hrs 44 min	33/99 (46%)	1 hr 14 min 50 min - 2hrs 47 min

Table 1

Graph 1



### Results 1

202 patients were audited of which, 102 (51%) patients had evidence of an acute infection (Fig. 1).

- ~ 83/102 (81%) had a documented admission diagnosis of infection
- ~ 81/102 (79%) had three or more of the inclusion criteria (Graph 1)

89/102 (88%) patients with evidence of acute infection also had two or more SIRS criteria and therefore by definition, sepsis.<sup>3</sup>

Heart rate >90 beats/min was the most common SIRS criteria (Graph 2).

The documented use of antibiotics and taking of blood cultures is shown in Table 1.

### Results 2

Five patients had a systolic BP <90mmHg (Severe Sepsis).

In septic patients with documented antibiotic administration times, only 21/99 (42%) received antibiotics within three hours of admission.

21/69 (30%) patients with sepsis were administered antibiotics without a blood culture documented in the medical notes.

In 3/69 (4%) patients with sepsis, blood cultures were taken after first antibiotic.

Lactate was measured in only one patient with sepsis. In patients with MAP <65mmHg (n=8) fluid was initially run at 20ml/kg in only one septic patient.

Urine output was only properly recorded in two septic patients.

One patient had a central venous catheter but central venous pressure was not measured. ScvO<sub>2</sub> was not recorded at any point.

### Conclusion

- The data support our perception that infections are common in patients admitted to the MAU
- It shows that these patients are predominantly elderly with significant physiological instability

• The documented timing of antibiotic administration and taking of blood cultures was inadequate in a significant number of patients

• We also identified great inadequacy in our adherence to the other standards of care outlined in the 6-hour care bundle

### Recommendations

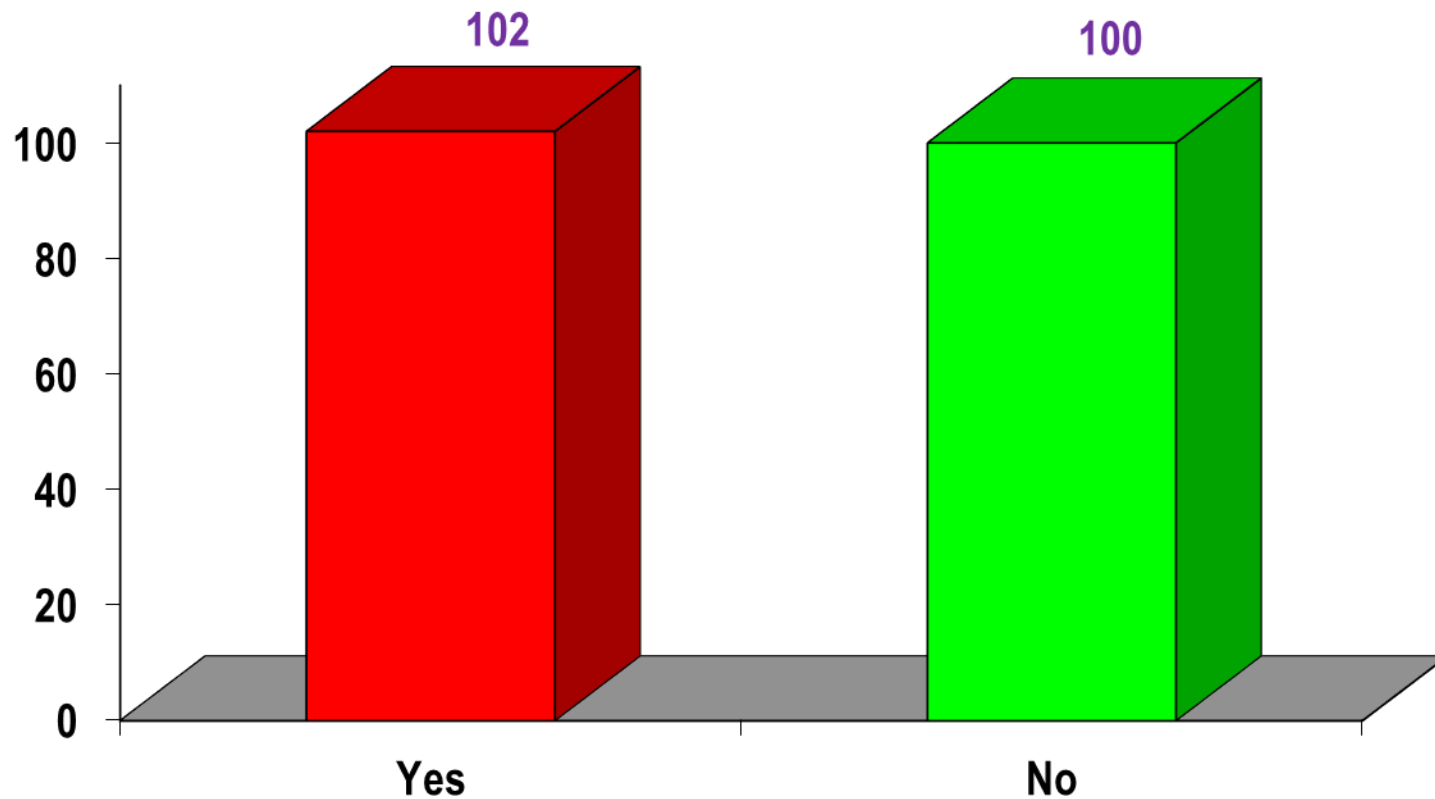
- Antibiotics should be given at the time an infection is diagnosed, usually the Emergency Department for acute medical patients
- Implement the Surviving Sepsis Campaign 6-hour resuscitation bundle to promote a systematic approach to the management of acute medical patients with infection and physiological instability
- Implement a programme of practice education for medical and nursing staff, reinforcing Surviving Sepsis guidelines
- Re-audit practice

### References

- Surviving Sepsis Bundle (online). Available from: <http://www.augustinehospital.com/Portals/0/SSB/SSB%20Bundle.pdf> (accessed 05 December 2006)
- Delinger EP, Carlet JM, Masau H, et al. Surviving Sepsis Campaign: Guidelines for Management of Severe Sepsis and Septic Shock. Clin Care Med 2002; 22: 528-33
- Benjamin College of Clinical Physicians/College of Clinical Medicine Conference. Definitions for sepsis and multiple organ failure, and guidelines for the use of intensive therapies in sepsis. Crit Care Med 1992; 20: 864-72

Acknowledgements: Dr Peter Bowness

# Prevalence of Infection n=202



# An audit into the use of antibiotics on the acute medical unit, are they used effectively?

Jack Crispin

Year 4 Medical Student

412 patients

203 on antibiotics

# Case 54 year old male

- Weight loss
- Clubbed
- More recently fever
- Massive CK
  - Troponin I raised
- ECG
  - Widespread ST changes
- CT TAP
  - NAD

# Case 54 year old male

- Blood cultures
  - Strep. Spp
- ECHO
  - No AV valve
- No murmur
- Did have empirical antibiotics

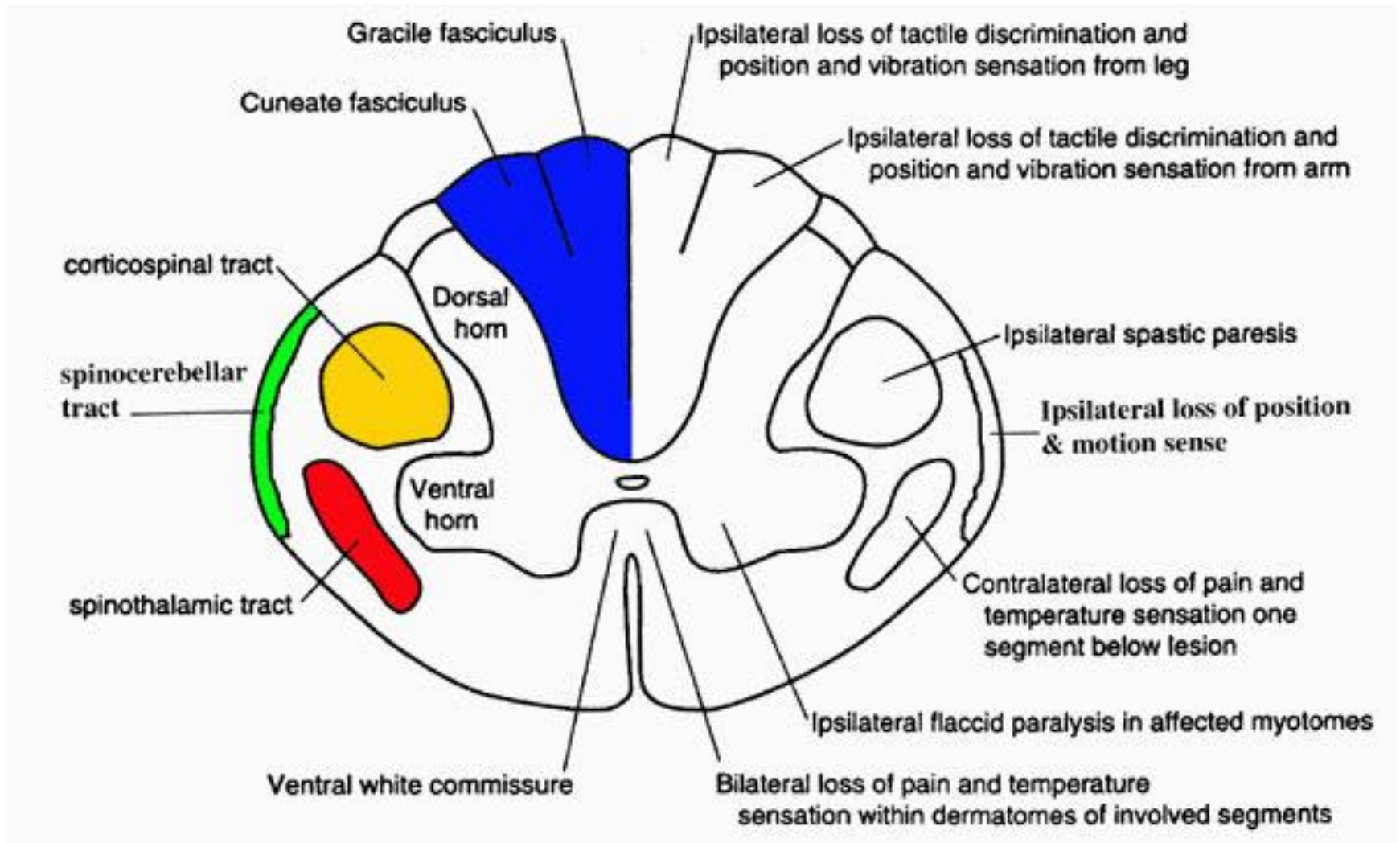
## Case 41 year old female

- Sudden severe back pain
- CRP 150
- MR spine
  - NAD
- Need urinary catheter
- CT abdo and pelvis
  - Non-specific stranding in RIF

# Case 41 year old female

- MR pelvis
  - Iliacus infection
- NEWS 0-1
- CRP 400
- CK normal
- No fever

# Case 30 year old female





# Closing Statements



- Multiprofessional workforce
- Prioritise work
  - Patient demand
- Value training
- More beds
  - Patient demand
- New paradigm
  - Hospitalists
- IT
  - Blackpool

# Double Bind

- A Zen master says to his pupils
  - "If you say this stick is real, I will beat you. If you say this stick is not real, I will beat you. If you say nothing, I will beat you."
  - One pupil walked up to the teacher, grabbed the stick, and broke it.

Online. Psychology Today. Marilyn Wedge. Suffer the Children The Double Binds of Everyday Life  
<https://www.psychologytoday.com/blog/suffer-the-children/201110/the-double-binds-everyday-life>



# Past and Future

- The National Health service and the Welfare State have come to be used as interchangeable terms, and in the mouths of some people as terms of reproach.
- Why this is so it is not difficult to understand, if you view everything from the angle of a strictly individualistic competitive society.
- A free health service is pure Socialism and as such it is opposed to the hedonism of capitalist society.

— *Aneurin Bevan*

# Brands

- SAMBA
- Take**AIM**
- **FAMUS**
- Acute Medicine Awareness Day
- SAM-berising
- SAMily



The International Convention Centre (ICC), Birmingham  
**11 - 12 September 2017**



 sambirmingham

