

Sepsis in General Practice

Dr Mark Garfield
Consultant in Intensive Care Medicine
Trust Sepsis Lead, IHT



The Ipswich Hospital 
NHS Trust

Our Passion, Your Care.

Objectives

- Define Sepsis and Septic Shock
- Recognise the importance of sepsis as a cause of death and morbidity
- Understand why sepsis is so topical at present
- Recognise and manage sepsis in adults, children and vulnerable groups



Sepsis vs Infection

- The body's response to infection becomes dysregulated and life threatening
- It can be caused by any organism but commonly by bacteria.
- Involves both pro and anti-inflammatory responses
- Major modifications to cardiovascular, neuronal, hormonal and metabolic pathways.



Sepsis vs Septic shock

- Septic shock is the presence of sepsis but accompanied with low blood pressure despite therapies
- Presence of septic shock carries much higher mortality and is a time-critical medical emergency
- 7.6% increase in mortality for every hour antibiotics are delayed¹.

Kumar A, Roberts D, Wood KE, et al.

Duration of hypotension before initiation of effective antimicrobial therapy is the critical determinant of survival in human septic shock. *Critical care medicine* 2006; **34(6)**: 1589-96.



Epidemiology of Sepsis

- 123,000 Adult cases annually
- 36,800 Deaths
- ~20,000 Paediatric cases
- Estimated 10,000 deaths may be preventable?
- 70% community derived



~37,000 deaths in England a year

More deaths than
Bowel,
Breast and Prostate
cancer combined

Pneumonia and Urinary
Tract top causes.

- Football crowd
image removed



Hospital strategies

- Early identification
- Early implementation of the Sepsis Six
 - Titrate oxygen to saturation of 94%
 - Administer broad spectrum iv antibiotics
 - Start fluid resuscitation and measure urine output
 - Measure lactate
 - Take blood cultures
 - Senior review
- Performance monitored as to how many patients receive antibiotics within 1 hour



CQUIN for Sepsis

- Systematic screening for sepsis of appropriate patients where sepsis is identified to provide timely and appropriate treatment and review
- % of patients screened for sepsis in ED and admissions
- % of sepsis patients who received abx within 60mins

Hospitals receive extra money 0.25% of annual contract value



How often am I going to see a case?

- 360 million General Practice Consultations per annum
 - 123,000 cases of sepsis.
 - 86,000 from community
 - Half make their own way to hospital ?
(ambulance, 111)
 - 43,000 seen by GPs out of 360 million GP contacts
- Needle in a haystack image removed



Features to recognising sepsis

- Relevance of Physiology and Early Warning Scores
- NICE Guidance and International Definitions of Sepsis
- Tests for sepsis?



International Sepsis Definition

- Sepsis : Life threatening organ dysfunction caused by a dysregulated host response to infection
- Septic Shock : The above with low blood pressure despite fluid replacement / inotropes



Mervyn Singer

Principal author International Guidelines

- GPs have it toughest.
- Half of ICU patients have an infection and diagnosing it at my ICU door isn't hard.
- Most GP patients won't have sepsis
- You can't spot those who will develop sepsis easily



You kind of know a sick person when you see one?

- Image of sick man in bed removed



Why do we know they are sick?

- How do you pick them up at an earlier stage or fine tune your radar to pick them up?
- What are we reacting to when we use our sixth sense?



Physiological changes we can spot

- Respiratory rate
- Pale, Perishing cold, low BP/perfusion
- Altered cognition
- Tachycardia
- Oximetry
- Fever



NEWS Score vs qSOFA

- The Sepsis Trust is keen to see NEWS used in primary care?
- International Definitions used predictive values of various physiological variables across and recommended qSOFA
- So what is the difference and does it matter?



NEWS

National Early Warning Score (NEWS)*

PHYSIOLOGICAL PARAMETERS	3	2	1	0	1	2	3
Respiration Rate	≤8		9 - 11	12 - 20		21 - 24	≥25
Oxygen Saturations	≤91	92 - 93	94 - 95	≥96			
Any Supplemental Oxygen		Yes		No			
Temperature	≤35.0		35.1 - 36.0	36.1 - 38.0	38.1 - 39.0	≥39.1	
Systolic BP	≤90	91 - 100	101 - 110	111 - 219			≥220
Heart Rate	≤40		41 - 50	51 - 90	91 - 110	111 - 130	≥131
Level of Consciousness				A			V, P, or U

*The NEWS initiative flowed from the Royal College of Physicians' NEWS Development and Implementation Group (NEWSDIG) report, and was jointly developed and funded in collaboration with the Royal College of Physicians, Royal College of Nursing, National Outreach Forum and NHS Training for Innovation

Please see next page for explanatory text about this chart.



© Royal College of Physicians 2012



The Ipswich Hospital 
NHS Trust

Our Passion, Your Care.

qSOFA

Score One for each of the following

- Respiratory Rate ≥ 22 bpm
 - Altered cognition
 - Systolic BP ≤ 100 mmHg
-
- Two or more, in the presence of life threatening infection= Sepsis



NEWS vs qSOFA

National Early Warning Score (NEWS)*

PHYSIOLOGICAL PARAMETERS	3	2	1	0	1	2	3
Respiration Rate	≤8		9 - 11	12 - 20		21 - 24	≥25
Oxygen Saturations	≤91	92 - 93	94 - 95	≥96			
Any Supplemental Oxygen		Yes		No			
Temperature	≤35.0		35.1 - 36.0	36.1 - 38.0	38.1 - 39.0	≥39.1	
Systolic BP	≤90	91 - 100	101 - 110	111 - 219			≥220
Heart Rate	≤40		41 - 50	51 - 90	91 - 110	111 - 130	≥131
Level of Consciousness				A			V, P, or U

*The NEWS initiative flowed from the Royal College of Physicians' NEWS Development and Implementation Group (NEWSDIG) report, and was jointly developed and funded in collaboration with the Royal College of Physicians, Royal College of Nursing, National Outreach Forum and NHS Training for Innovation

Please see next page for explanatory text about this chart.



© Royal College of Physicians 2012



The Ipswich Hospital 
NHS Trust

Our Passion, Your Care.

What does it mean for GPs

qSOFA positive = NEWS of 4-5

Neither have any validation in General Practice

- NEWS possibly better at picking up sepsis

Churpek MM, Snyder A, Han X, et al. qSOFA, SIRS, and Early Warning Scores for Detecting Clinical Deterioration in Infected Patients Outside the ICU. *Am J Respir Crit Care Med* 2016



NICE Guidance

- Tries to cover children's physiology with similar metrics.
- Predictive value is less clear but includes softer signs?
 - Reduced urine production
 - Mottled skin /Non-blanching rash
 - Seizures
 - Decreased social interaction (cues)
 - Parental carer concern



What should I do?

- Make a conscious effort to assess and record physiology
- Calculate NEWS on all patients who I intend to admit irrespective of diagnosis
- Pay particular attention to altered breathing or mentation.
- NEWS is a support to decision making and an aid to communication



- Any questions?

