Sepsis Screening Pathway

(ALWAYS USE CLINICAL JUDGEMENT)

There are separate sepsis criteria for maternity patients and children

RECOGNISE SEPSIS • ENHANCE SURVIVAL

ADULT IN-PATIENTS

Complete this form and apply if the National Early Warning Score (NEWS) is ≥ 4 (5 on supplementary O_2) and infection is suspected

Doctor to review *within 30 mins* (use ISBAR)

Clinical Suspicion of INFECTION **Site**

AND 2 or more Systemic Inflammatory Response Syndrome (SIRS) criteria

- Respiratory rate > 20 (bpm)
- Heart rate > 90 (bpm)
- WCC < 4 or > 12 x 10^9/L
- Temperature <36 or >38.3 (ºC)
- Acutely altered mental status
- Bedside glucose >7.7mmol/L *(in the absence of diabetes mellitus)*

OR Unwell and at risk of Neutropenia*

OR In at risk group for severe sepsis*

***Note:** Some groups of patients, such as older people or immuno-compromised may not meet these SIRS criteria, even though infection is suspected and they are very unwell. When this occurs check lactate, blood pressure, organ dysfunction criteria and C-reactive protein (CRP) before out ruling sepsis.

NO Following a history and examination, and in the absence of clinical signs, sepsis is not diagnosed.

YES. THIS IS SEPSIS Time Zero: **Sepsis Six Regimen to be completed *within 1 hour***

Has a decision been documented NOT to escalate care? **NO** proceed **YES** do not proceed

TAKE 3 **SEPSIS SIX – complete *within 1 hour*** **GIVE 3**

- **BLOOD CULTURES:** Take blood cultures before giving antimicrobials (if no significant delay i.e. >45 minutes) and other cultures as per examination.
- **BLOODS:** Check point of care lactate & full blood count. Other tests and investigations as per history and examination. Consider source control.
- **URINE OUTPUT:** Assess urine output and consider urinary catheterisation for accurate measurement in severe sepsis/septic shock.
- **OXYGEN:** Titrate O_2 to saturations of 94 -98% or 88-92% in chronic lung disease. **N/A**
- **FLUIDS:** Start IV fluid resuscitation if evidence of hypovolaemia. 500ml bolus of isotonic crystalloid over 15mins & give up to 30ml/kg, reassessing for signs of hypovolaemia, normovolaemia, or fluid overload. **N/A**
- **ANTIMICROBIALS:** Give IV antimicrobials according to the site of infection and following local antimicrobial guidelines.

Type: Dose: Time given:

Laboratory tests should be requested as EMERGENCY aiming to have results available and *reviewed within 1 hour*

Look for signs of new **organ dysfunction:**

- Systolic BP < 90 or Mean Arterial Pressure (MAP) < 65 or Systolic BP more than 40 below patient's normal
- New need for oxygen to achieve saturation > 90%
- Lactate > 2 mmol/L (following administration of fluid bolus)
- Urine output < 0.5ml/kg for 2 hours – despite adequate fluid resuscitation
- Acutely altered mental status
- Glucose > 7.7 mmol/L *(in the absence of diabetes)*
- Creatinine > 177 micromol/L
- Bilirubin > 70 micromol/L
- INR > 1.5 or aPTT > 60s
- Platelets < 100 x 10^9/L

Any new organ dysfunction due to infection: THIS IS SEVERE SEPSIS
Inform Registrar or Consultant immediately.
Reassess frequently in 1st hour.
Consider other investigations and management +/- source control if patient does not respond to initial therapy as evidenced by haemodynamic stabilisation then improvement.

Look for signs of **septic shock**

(following administration of fluid bolus of up to 2L)

- Lactate > 4 mmol/L
- Hypotensive (Systolic BP < 90 or MAP < 65)

If either present: THIS IS SEPTIC SHOCK
Critical care consult required

- Consultant referral
- Consider transfer to a higher level of care
- Critical care consult requested

A critical care consult may be requested at any point during this assessment, but is required for patients with Septic Shock. In a hospital with no critical care unit, a critical care consult should be made and transfer to a higher level of care, if appropriate, following the consult.

Pathway Modification

All Pathway modifications need to be agreed by the Hospital's Sepsis Steering Committee and be in line with the National Clinical Guideline.

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Feidhmeannacht na Seirbhíse Sláinte
Health Service Executive

Tús Áite do Shábháilteacht Othar
Patient Safety First

Hospital Name:

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Document Number during this Admission

Patient Name:
Date of Birth:
Healthcare Record No:
Addressograph

NATIONAL EARLY WARNING SCORE ADULT PATIENT OBSERVATION CHART

Escalation Protocol Flow Chart

Total Score	Minimum Observation Frequency	ALERT	RESPONSE
1	12 Hourly	Nurse in charge	Nurse in charge to review if new score1
2	6 Hourly	Nurse in charge	Nurse in charge to review
3	4 Hourly	Nurse in charge & Team/On-call SHO	1. SHO to review within 1 hour
4-6	1 Hourly	Nurse in charge & Team/On-call SHO	1. SHO to review within½ hour 2. Screen for Sepsis 3. If no response to treatment within 1 hour contact Registrar 4. Consider continuous patient monitoring 5. Consider transfer to higher level of care
≥ 7	½ Hourly	Nurse in charge & Team/On-Call Registrar Inform Team/On-Call Consultant	1. Registrar to review immediately 2. Continuous patient monitoring recommended 3. Plan to transfer to higher level of care 4. Activate Emergency Response System (ERS) *(as appropriate to hospital model)*
Note: Single Score triggers			
Score of 2 HR ≤ 40 (Bradycardia)	½ Hourly	Nurse in charge & Team/On-call SHO	1. SHO to review immediately
*Score of 3 in any single parameter	½ Hourly or as indicated by patient's condition	Nurse in charge & Team/On-call SHO	1. SHO to review immediately 2. If no response to treatment or still concerned contact Registrar 3. Consider activating ERS

*In certain circumstances a score of 3 in a single parameter may not require ½ hourly observations i.e. some patients on O_2.

- When communicating patients score inform relevant personnel if patient is charted for supplemental oxygen e.g. post-op.
- Document all communication and management plans at each escalation point in medical and nursing notes.
- Escalation protocol may be stepped down as appropriate and documented in management plan.

IMPORTANT:
1. If response is not carried out as above CNM/Nurse in charge must contact the Registrar or Consultant.
2. If you are concerned about a patient escalate care regardless of score.

Adapted from CJOR&U chart

National Early Warning Score (NEWS) Key

SCORE	3	2	1	0	1	2	3
Respiratory Rate (bpm)	≤ 8		9 - 11	12 - 20		21 - 24	≥ 25
SpO_2 (%)	≤ 91	92 - 93	94 - 95	≥ 96			
Inspired O_2 ($Fi O_2$)				Air			Any O_2
Systolic BP (mmHg)	≤ 90	91 - 100	101 - 110	111 - 249	≥ 250		
Heart Rate (BPM)		≤ 40	41 - 50	51 - 90	91 - 110	111 - 130	≥ 131
AVPU/CNS Response				Alert (A)			Voice (V), Pain (P), Unresponsive (U)
Temp (°C)	≤ 35.0		35.1 - 36.0	36.1 - 38.0	38.1 - 39.0	≥ 39.1	

Note: Where systolic blood pressure is ≥ 200mmHg, request Doctor to review.

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Early Warning Score System

0 | 1 | 2 | 3

Patient Name:
Date of Birth:
Healthcare Record No:
Addressograph

Consultant:

Ward:

Screen for Sepsis if NEWS ≥4 (5 on supplementary O_2) and infection suspected

Frequency of observations
Year _____
Date
Time

ABCDE Assessment

A B

RESPIRATORY DISTRESS

Consider:
- Airway
- Hypoxia
- Acidosis

Intervention:
- Immediate medical review
- ABCDE assessment
- Give Oxygen to target: 90% in COPD patients, 96% or more in all other patients
- Request CXR & ABG
- Airway Obstruction: activate Emergency Response System
- Respiratory Acidosis: Consider early non-invasive ventilation

Respiratory Rate (breaths per minute): ≥ 25 | 21-24 | 12-20 | 9-11 | ≤ 8
Respiration Score

SpO_2 %: ≥ 96 | 94-95 | 92-93 | ≤ 91
SpO_2 Score

F_iO_2: Room Air | % or L/min
F_iO_2 Score

C

HYPERTENSION

Consider:
- Pain
- Hypercapnia

Intervention:
- Immediate medical review
- 12-lead ECG

HYPOTENSION

Consider:
- Bleeding
- Myocardial Infarction
- Sepsis

Intervention:
- Immediate medical review
- Check BP manually
- 12-lead ECG
- If no heart failure, stat IV fluids - 500ml
- If no improvement after 20ml/kg: immediate review by doctor
- Systolic BP ≤ 90: consider activating ERS

Blood Pressure (mmHg): Systolic BP ≥ 200: Doctor to review
BP Score

TACHYCARDIA

Consider:
- Seagull Sign**
- Loss of conciousness
- Myocardial ischaemia on ECG
- Heart failure. If YES – consider activating ERS

Intervention:
- Immediate medical review
- ACLS Algorithm as appropriate

BRADYCARDIA

Consider:
- Electrolyte Disturbance
- Drug Side-effect
- Complete Heart Block

Intervention:
- Immediate medical review
- 12-lead ECG
- Telemetry
- Heart Rate ≤ 40: consider activating ERS
- Document irregular Heart Rate

Heart Rate (beats per minute): Heart Rate ≤ 40: Immediate medical review
Heart Rate Score

D

NEUROLOGICAL DETERIORATION

Consider:
- Hypoglycaemia
- Acute brain injury
- Pupil response

Intervention:
- Immediate medical review
- Capillary glucose
- Sudden fall in level of consciousness: consider activating ERS

AVPU: Alert (A) | Voice (V) | Pain (P) | Unresponsive (U)
AVPU Score

E

PYREXIA OR HYPOTHERMIA

Consider:
- Sepsis

Intervention:
- Immediate medical review
- C-Reactive protein
- Two or more Sepsis indicators present
- Commence SEPSIS SIX Regimen

Temperature (°C): 39.0 | 38.5 | 38.0 | 37.5 | 37.0 | 36.5 | 36.0 | 35.5 | 35.0 | 34.5
Temp Score

Total NEWS

Blood Glucose
Bowel Movement
Weight (kg)
Initials

Urine Output: If there are concerns about urine output (< 0.5 ml/kg/hr), contact Doctor for review