The Evolution of the Sepsis Bundles (2016–2026)

	2016	2021	2026
Antibiotic Timing	Rigidly within 1 hour for all severe sepsis.	1-hr vs. 3-hr stratified by shock and diagnostic certainty.	Stratified timings maintained + integration of prolonged beta-lactam infusions. ★
Fluid Resuscitation	Rigid 30 mL/kg for hypoperfusion.	30 mL/kg + Capillary refill validation.	30 mL/kg + Liberal/ Restrictive equivalence + Quality Improvement tracking. ★
Source Control	As soon as possible.	Rapid identification (Best Practice).	**Explicit target:** Ideally within 6 hours. ★
ICU Admission	Unspecified timing.	Admit within 6 hours.	**Reaffirmed:** Admit within 6 hours. ↻

Hour 0: Recognition and The System Response

Prehospital Screening

Suggest using a standard sepsis screening tool for acutely ill adults en route by ambulance.

Key detail: If anticipated time to hospital evaluation exceeds 60 minutes in hypotensive patients, consider prehospital antibiotics.

In-Hospital Screening Tools

Recommend NEWS, NEWS2, MEWS, or SIRS over qSOFA as a single screening tool.

> **Why it matters:** NEWS2 provides the greatest absolute test performance; qSOFA lacks the sensitivity required for isolated screening.

Code Sepsis Activation

Suggest using a code sepsis or sepsis huddle protocol.

Execution: Multidisciplinary bedside huddle to expedite diagnosis and treatment following a positive screen. Embed within a broader Quality Improvement (QI) programme.

Clinical Progress Bar

Recognition (Hour 0) | Hour 1 | Hour 3 | Hour 6

Hour 0: The Diagnostic Prerequisites

Blood Cultures

Action:

Collect as soon as possible, ideally before administering antimicrobial therapy.

The Caveat:

Must not delay the initiation of antimicrobial therapy, particularly in patients with hypotension.

Why it matters: Post-antimicrobial collection reduces culture sensitivity by up to 38%.

Serum Lactate

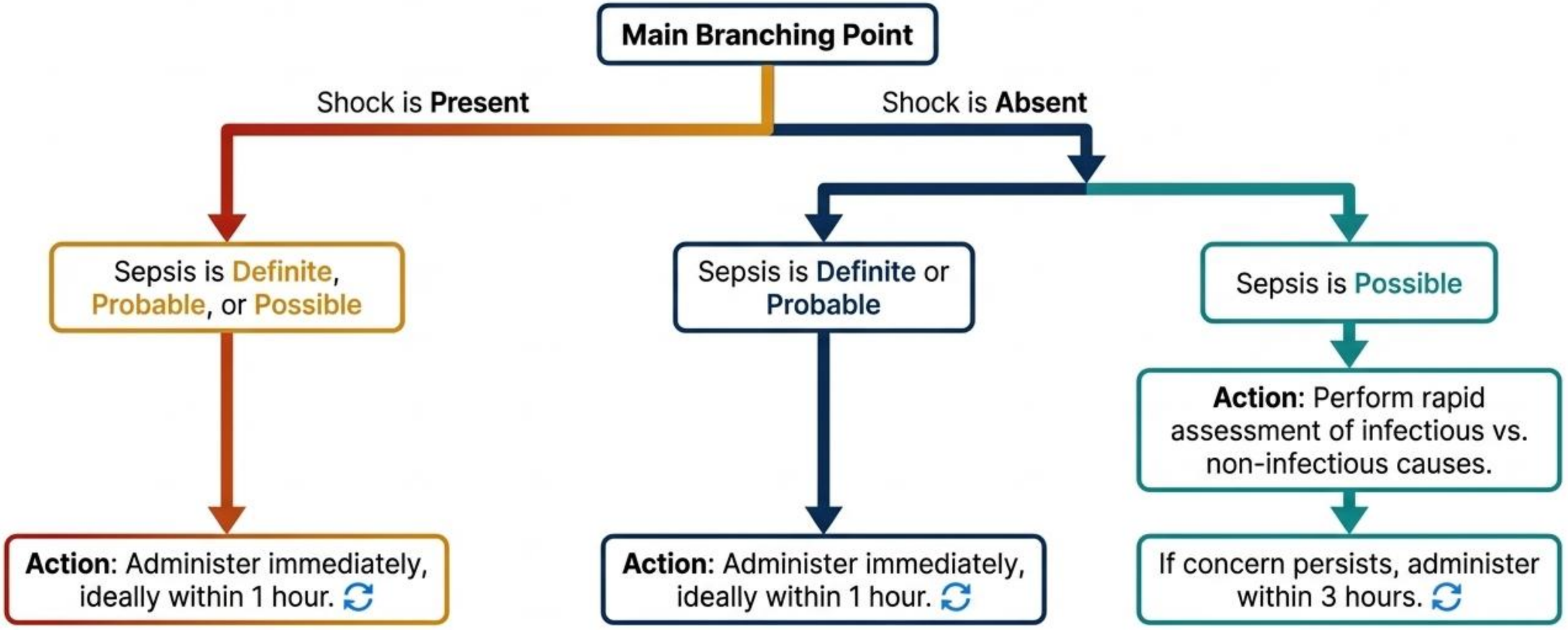
Action:

Measure blood lactate to identify sepsis-induced hypoperfusion.

The Caveat:

Intermediate elevations (> 2 to < 4 mmol/L) are common, associated with increased mortality, and warrant fluid resuscitation consideration to prevent overt shock.

Hour 1: The Antibiotic Urgency Matrix



Why it matters: The urgency of antibiotics scales directly with the severity of illness (shock). Rapid assessment (within 3 hours) protects stable patients from unnecessary antimicrobial exposure.

Clinical Progress Bar

Recognition (Hour 0) | Hour 1 | Hour 3 | Hour 6

Hours 1–3: Fluid Mechanics and Targets

Fluid Choice

Suggest Balanced Crystalloids over 0.9% saline.

Exception: 0.9% saline is suggested for patients with traumatic brain injury.

Contraindications: Recommend against starches; suggest against gelatins.

Mean Arterial Pressure (MAP) Targets

Standard Target: Initial MAP target of >= 65 mm Hg.

Age-Adjusted Target: For adults aged >= 65 years, suggest an initial MAP range of 60–65 mm Hg.

Why it matters: Recognising that overly aggressive vasopressor targets in older adults may increase adverse events without a mortality benefit.

Clinical Progress Bar

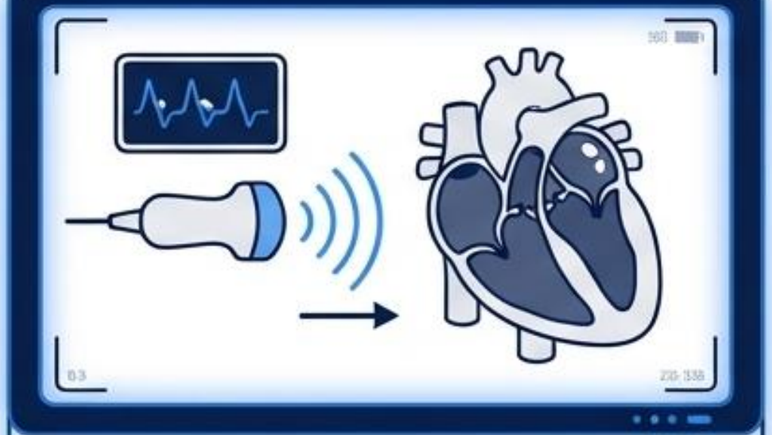
Recognition (Hour 0) | Hour 1 | **Hour 3** | Hour 6

Hour 3+: The Dynamic Reassessment Dashboard

The Mandate: Suggest using dynamic measures to guide fluid resuscitation over physical examination or static measures alone.

Capillary Refill Time (CRT)

Use CRT to guide resuscitation as an adjunct to other measures of perfusion. A rapid, zero-cost triage and monitoring tool.



Dynamic Stroke Volume

Assess response to a passive leg raise or a small fluid bolus using stroke volume (SV), stroke volume variation (SVV), or pulse pressure variation (PPV).

Serial Lactate

Use serial measurements to track tissue hypoxia recovery. Do not blindly continue fluids simply to force lactate normalisation.

Clinical Progress Bar

Recognition (Hour 0)	Hour 1	Hour 3	Hour 6

Hour 6: The Convergence Targets

Target 1: Source Control

The Goal: Early source control, ideally within 6 hours.

The Action: Rapidly evaluate for specific anatomical diagnoses requiring emergent intervention (e.g., intra-abdominal abscess, necrotising soft-tissue infection, infected device removal).

Prolonged medical stabilisation without source control in septic shock will likely fail.

Target 2: ICU Admission

The Goal: Admit patients requiring ICU level of care within 6 hours.

The Action: Transition from emergency/ward settings to definitive critical care environments to minimise boarding-related mortality and morbidity.

Audit Form Template: For calculation of compliance to Sepsis Bundle
Denominator = All patients who meet the criteria of NEWS-2 (including fever) on ED admission

Parameter	Compliance - YES / NO / NA
Blood cultures drawn before antibiotics	
Serum Lactate tested	
IV Antibiotics within 1 hour (SHOCK)	
IV Antibiotics within 3 hours	
Fluid bolus of 30ml/kg crystalloid within 3 hours	
MAP of >/+ 65 (60 in elderly) by 6 hours	
Source Control performed by 6 hours	
Admission in ICU ay 6 hours	

National Early Warning Score (NEWS) 2			
Pararmeter		**Value**	**Score**
Respiration rate (per minute)		21	2
Oxygen Saturation (%)	SpO2 Scale 1	93	2
Air or Oxygen		Patient on Air	0
Systolic Blood Pressure (mm Hg)		120	0
Pulse (per minute)		95	1
Consciousness		Alert	0
Temperature (°C)		38.5	1
		Total NEWS2 Score	**6**

Thank you