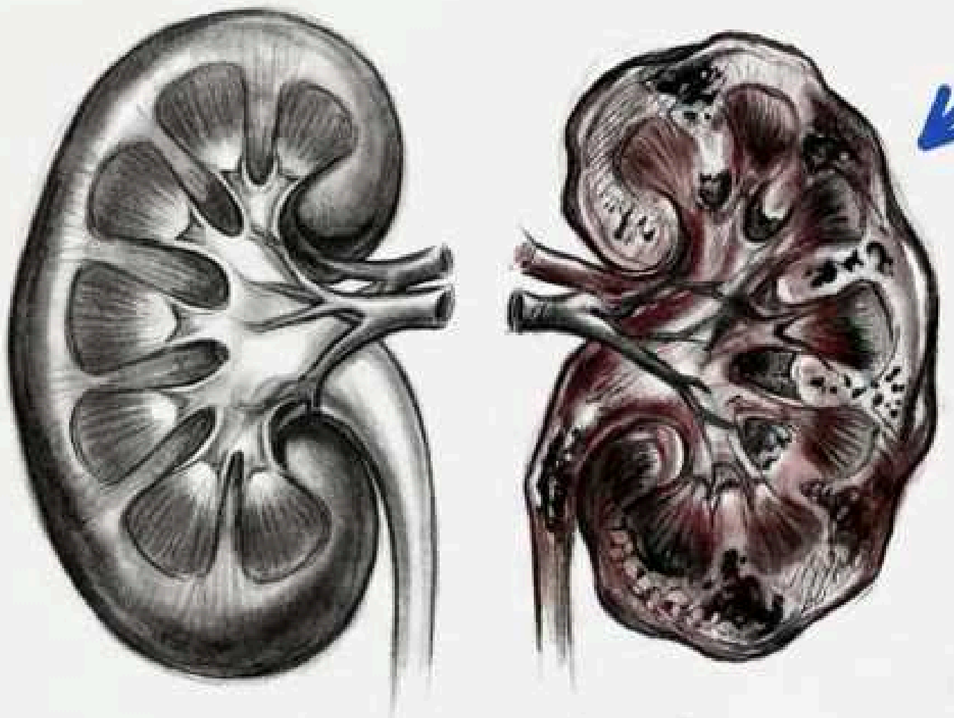
Defining Sepsis:
The 2016 International Consensus

¶ 3.1

Infection + Dysregulated Host Response = Sepsis

Dysfunction



Sepsis ≠ just an infection. It is an infection that harms organs.

Global Impact:
Causes millions of deaths worldwide each year and remains a leading cause of hospital mortality.

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Early Recognition & Warning Signs

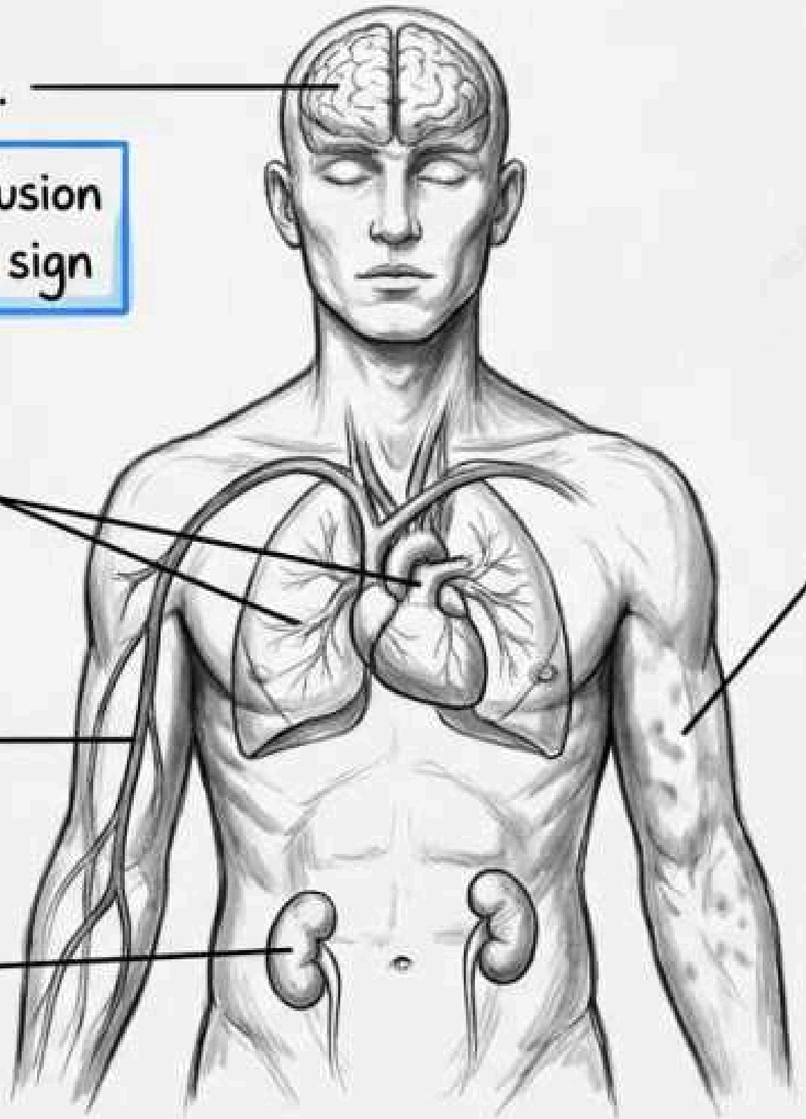
New confusion.

Crucial in older adults: Confusion or a fall may be the **ONLY** sign

↑ Heart Rate (Fast),
↑ Breathing Rate (Fast).

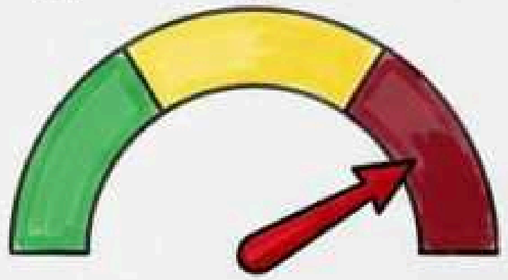
↓ Blood Pressure (Low).

↓ Urine output (Reduced).



Mottled appearance, Fever, or Low Temperature.

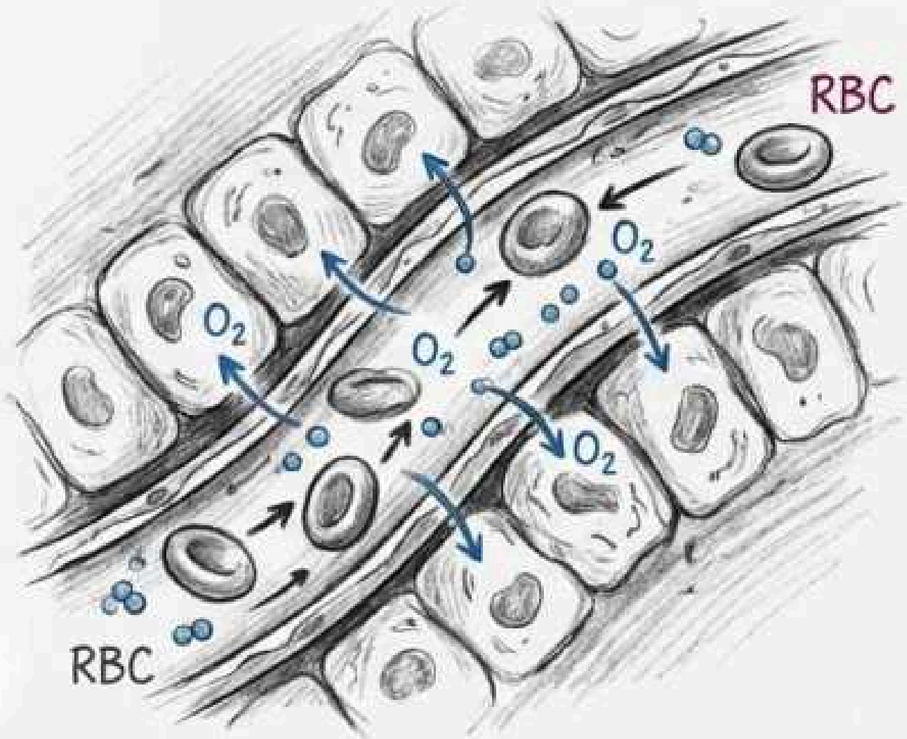
Early Warning Score (EWS)



Delay = Exponential ↑ in Mortality.

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Septic Shock: The Most Severe Form



MAP < Target

↳ Blood pressure remains low despite intravenous fluid resuscitation.

$DO_2 = CO \times CaO_2$

↳ Reflects fundamentally poor oxygen delivery to tissues.



Lactic Acid ($C_3H_6O_3$)

Carries a high mortality rate → Requires immediate Intensive Care Unit (ICU) admission.

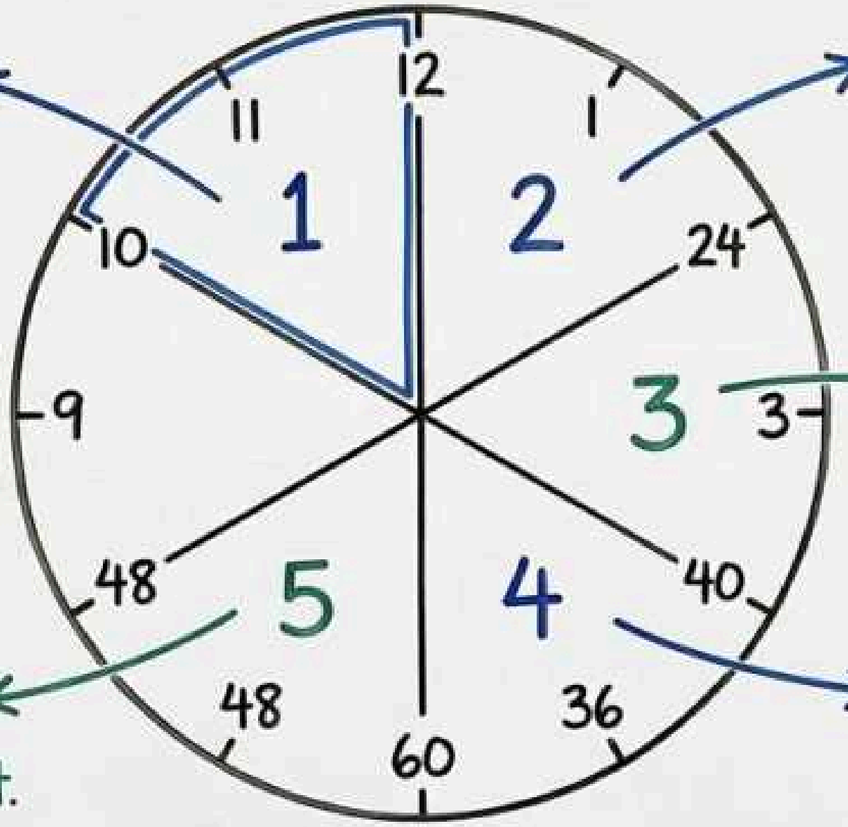
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The Golden First Hour of Treatment

¶ 3.4

Take Blood Cultures

Must be done **BEFORE** antibiotics, provided it causes no delay.



Give Antibiotics

Prompt administration of broad-spectrum antibiotics.

Measure Lactate

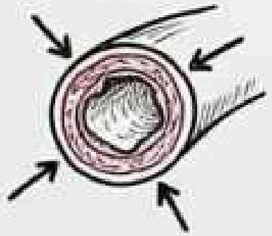
Baseline biochemical marker.

IV Fluids

Administer if blood pressure is low or lactate is high.

Monitor Urine Output

Continuous renal assessment.



If fluids are not enough → use Vasopressors to raise blood pressure.

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Source Identification and Control

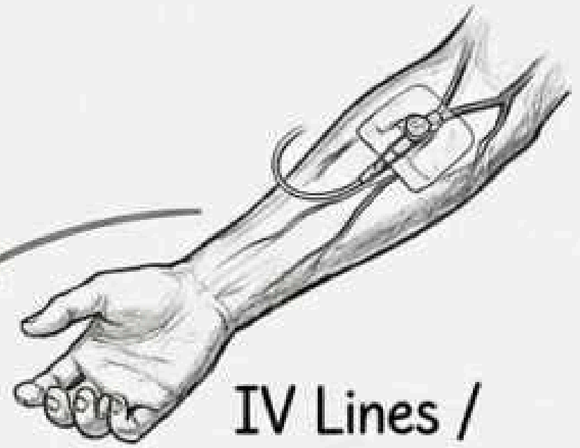
¶ 3.5



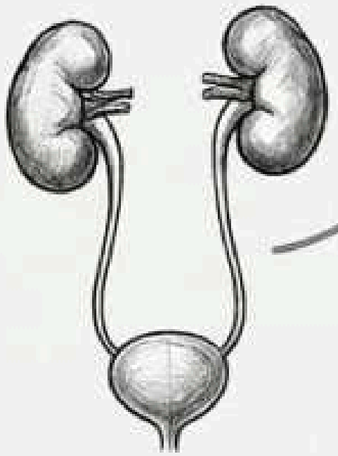
Pulmonary

Source Control: Antibiotics are not always enough.

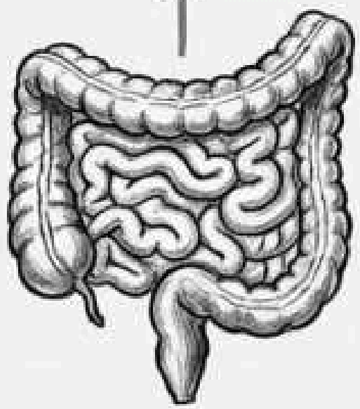
- Collections of pus (e.g., abscesses) → Usually need draining.
- Infected lines or devices → May need removing.



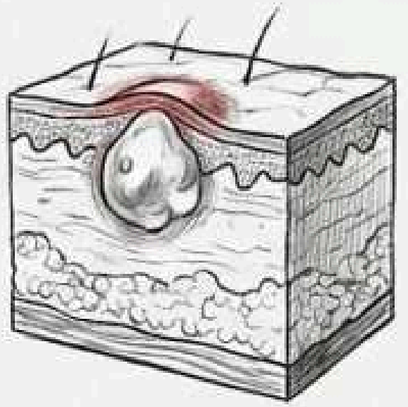
IV Lines / Medical Devices



Renal/Bladder



Gastrointestinal



Skin and Soft Tissues

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The UTI Paradox in Older Adults

UTIs are very common (especially in women and older people), BUT asymptomatic bacteriuria is also highly prevalent.



Older Patient + New Confusion → Positive Urine Test

Are there specific urinary symptoms?

No symptoms

Do NOT assume UTI. Treating does not help and increases antibiotic resistance.

Symptoms present

Treat for UTI.

CRITICAL: Do not stop the search for other causes of confusion.

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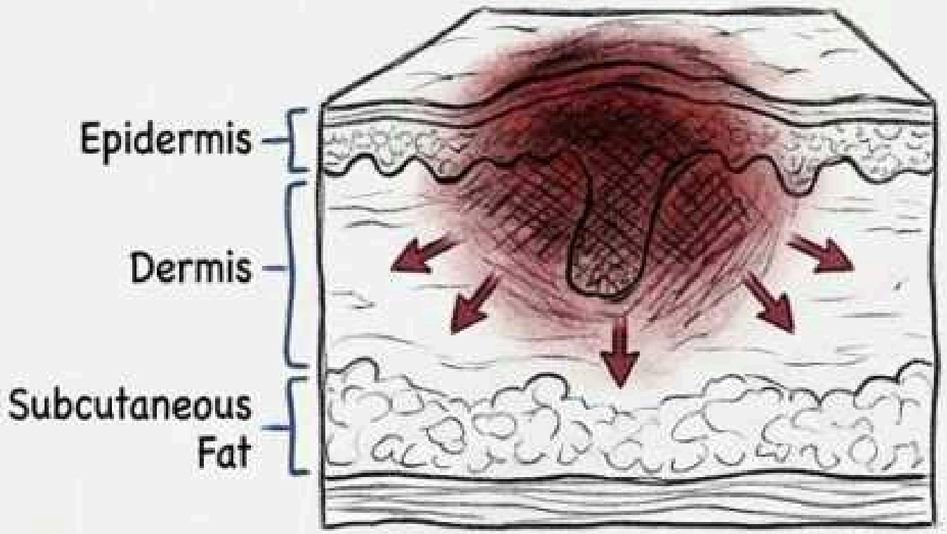
¶ 3.7

Differentiating Skin & Tissue Infections

Cellulitis

Depth: Infection of the skin and underlying tissue.

Clinical Signs: Spreading redness, warmth, and swelling (usually affects a leg).

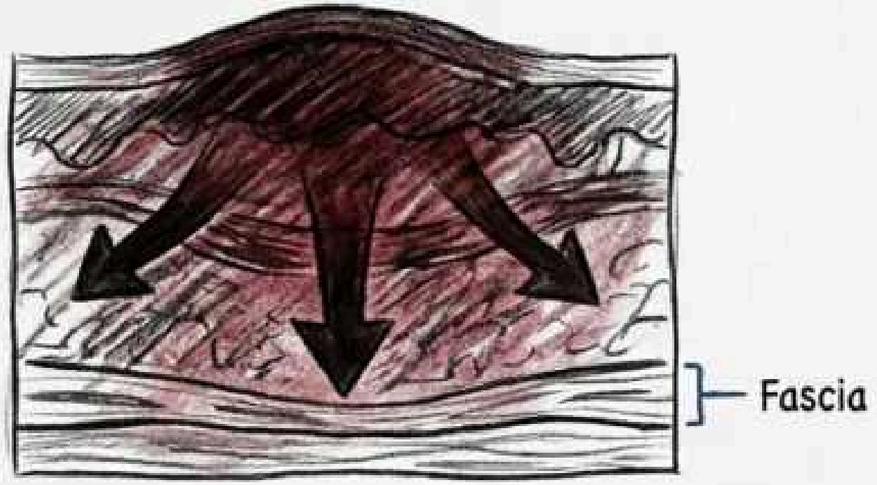


Necrotising Fasciitis

Depth: Rapidly spreading infection of deeper tissues.

Clinical Signs: Rare. Causes pain out of proportion to visible signs and rapid clinical deterioration.

⚠ **SURGICAL EMERGENCY.**

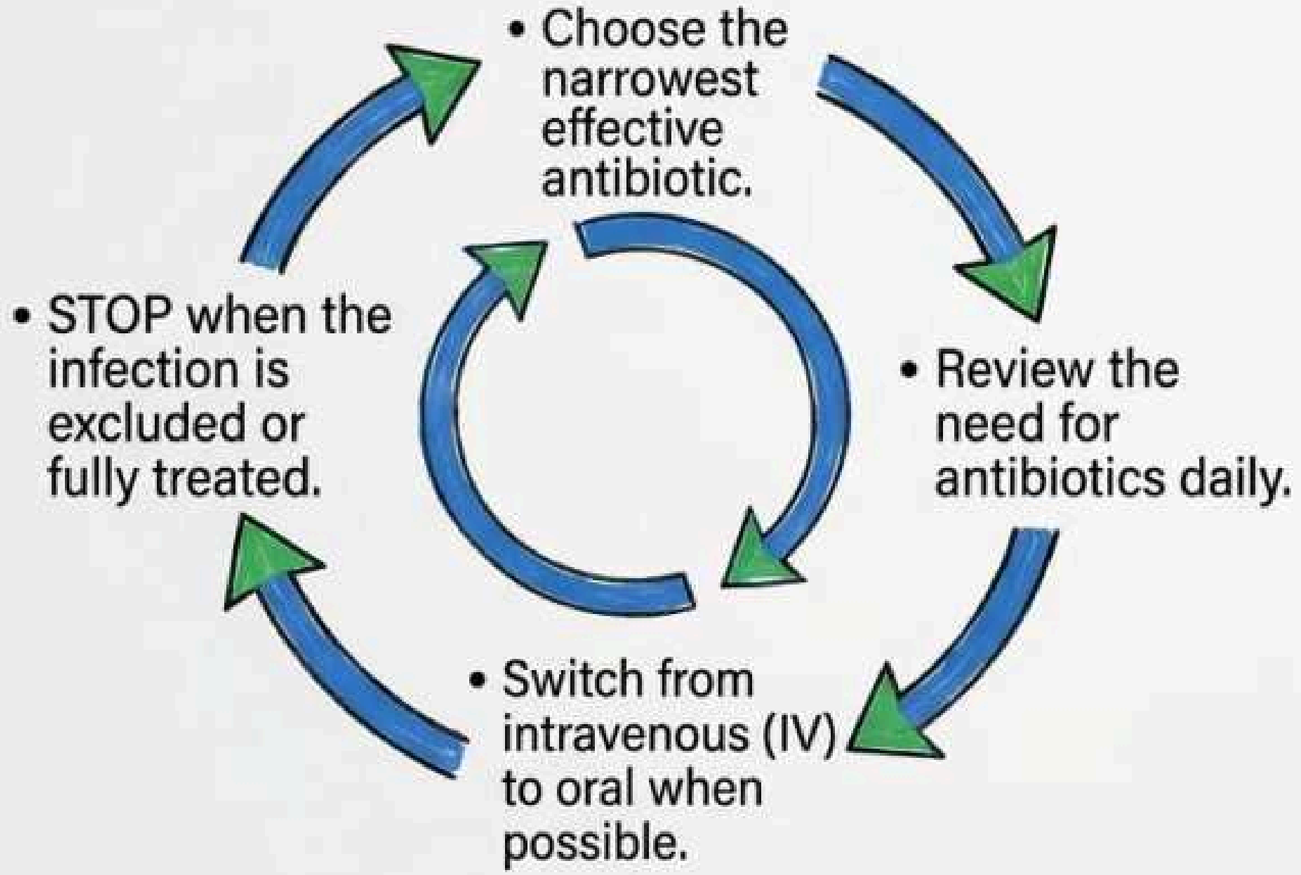


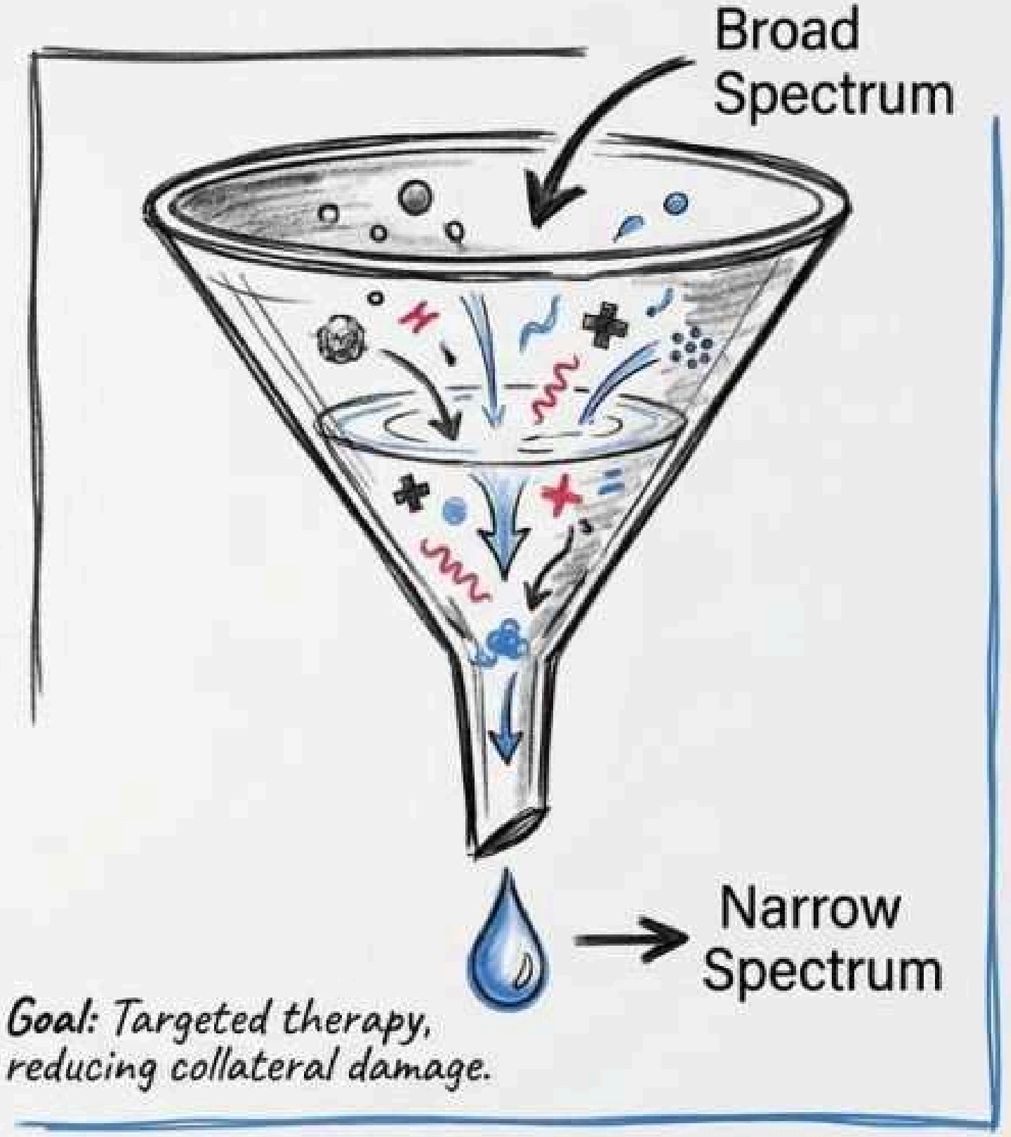
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Antibiotic Stewardship

¶ 3.8

Antimicrobial Resistance (AMR) - One of the greatest threats to modern medicine (as per Med 511 B).





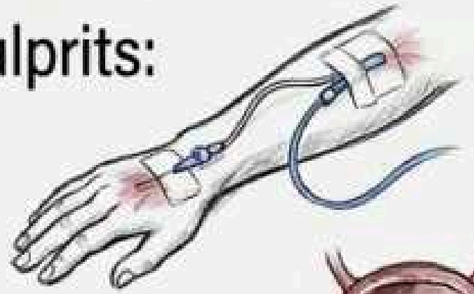
¶ 3.9

Healthcare-Associated Infections (HAIs)

Infections acquired in the hospital.

Common culprits:

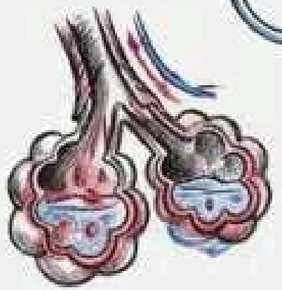
- IV Lines



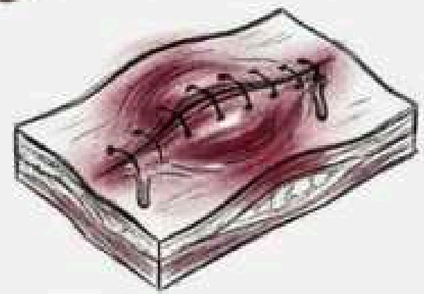
- Urinary Catheters



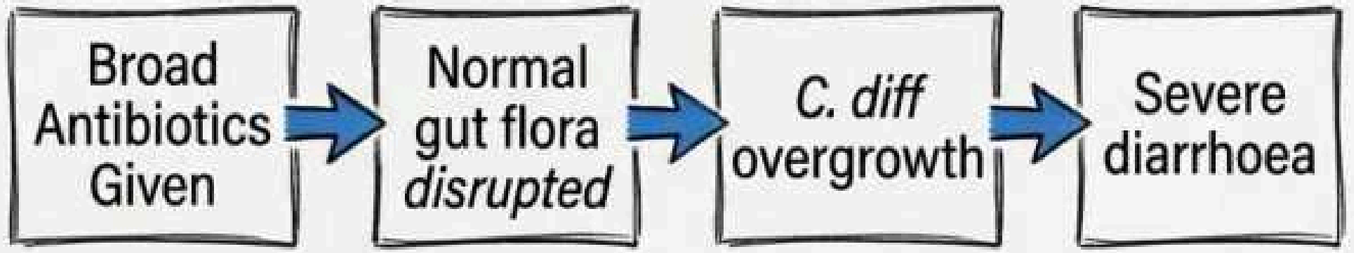
- Pneumonia



- Surgical Wound Infections



Pathology Deep Dive: *Clostridioides difficile*



Actionable Prevention: Remove IV lines and urinary **catheters** as soon as they are no longer needed to **prevent** many infections.

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¶ 3.10

Core Pillars of Infection Control

Vaccination: Protects both patients and staff (e.g., against influenza).

Hand Hygiene (Must be done between every patient; the single most important measure).



Isolation & Protective Equipment (PPE): Prevents physical spread.

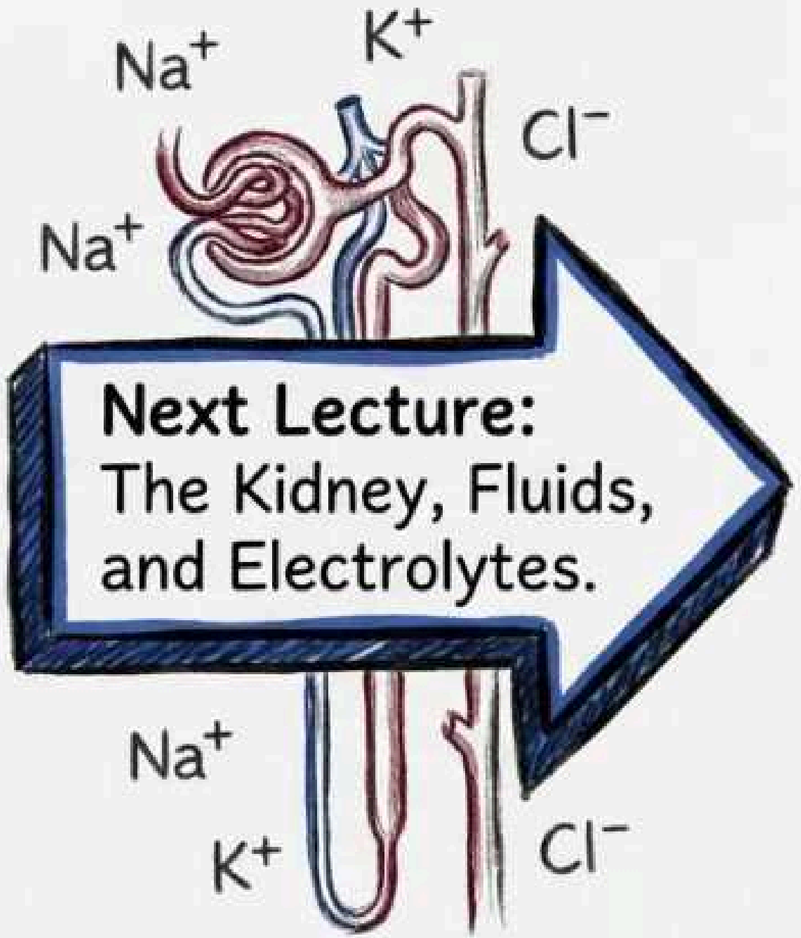
Environmental Cleaning: Prevents the spread of resistant organisms and hospital outbreaks.

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Lecture 3 Synthesis & Next Steps

¶ 3.11

Definition	Time
Sepsis = Infection + Organ Harm.	Early recognition + 1st Hour Treatment = Lives Saved.
Source	**Future**
Source control matters just as much as medication.	Wise antibiotic use (Stewardship) preserves efficacy for the future.



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