Clinical Microbiology

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1. Introduction

- Clinical microbiology applies microbiology to diagnose, treat, and prevent infectious diseases in patients.
- It links the laboratory to clinical care, guiding therapy and infection control.

2. Specimen Collection and Handling

- **Quality specimens:** collected aseptically from the right site at the right time, ideally before antibiotics.
- Correct labelling, transport, and storage preserve organisms and prevent contamination.

3. Laboratory Methods

- **Microscopy and staining:** Gram stain and wet mounts give rapid clues to the organism.
- **Culture:** growing the microbe on selective and enriched media to isolate and identify it.
- **Identification:** biochemical tests and molecular methods confirm species.

4. Antimicrobial Susceptibility Testing

- Tests such as disk diffusion show which antibiotics inhibit the organism.
- Results guide effective treatment and detect resistance like MRSA.

5. Role in Patient Care

- Confirms the cause of infection and supports targeted therapy.
- Supports surveillance and infection prevention in hospitals.

6. Summary

- Clinical microbiology uses proper specimens, microscopy, culture, and susceptibility testing to diagnose infection and direct rational antimicrobial use.