



Essential Tips for Microbiology Sampling

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Lab manager



16th & 17th April 2025



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Objectives

- 1- General consideration for sample collection.**
- 2- Important questions before collecting a specimen.**
- 3- Collection of different samples from different sites.**
- 4- Samples transportation.**
- 5- Rejection criteria**



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General consideration for proper sample collection

- Accuracy of lab tests results depend mainly on the quality of received samples.
- Improper sample collection, transport or used media will affect the results' accuracy.
- Samples must be collected before antimicrobial agents administration.
- Sample collection should be with minimum contamination from indigenous flora to ensure test specificity.



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General consideration for proper sample collection

- All samples should be collected under complete aseptic conditions (regarding tubes, containers, swabs, ...). Also the source and/or specific site correctly .
- specimen container labeling with the patient's name and identification number, date and time of collection and your initials.
- Collect an adequate amount of specimen. Inadequate amounts of specimen may yield false-negative results.
- Every laboratory should provide proper guidelines for collection of samples



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Important questions before collecting a specimen

- What is the Nature of infection, e.g., bacterial, viral, mycological or parasitological ?
- What tests are your priority ?
- When to collect the specimen ?
- How to collect the specimen ?
- Am I choosing the correct container ?



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Request form

- Name:
- Gender:
- Time and Date:
- Referred physician:
- Investigation needed:
- C/O:
- Age:
- Hospital No:
- Urgent / Routine:
- Type of specimen:
- Provisional diagnosis:



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Sample collection

- **Blood**
- **Urine**
- **Stool**
- **Rectal swab**
- **Sputum**
- **Mycology samples**
- **Wound swabs**



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Blood samples

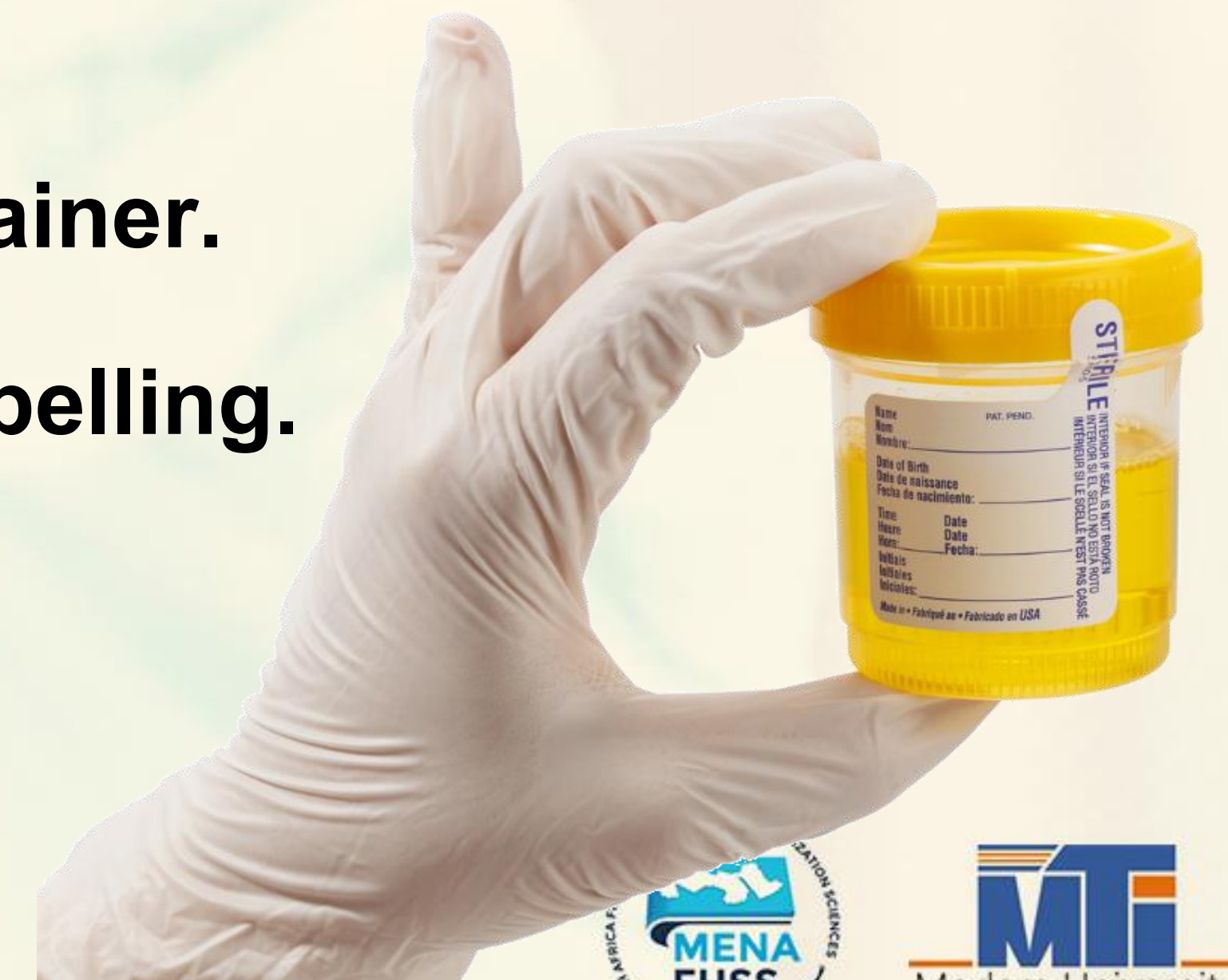
- Take proper precaution (PPE)
- Palpate vein
- Apply disinfectant
- Use sterile needle and syringe
- Collect 5-10 ml blood for two sets of culture each (in children collect 2-5 ml)
- Infuse in the bottle.
- Proper sample mixing.





Urine samples

- **For females:**
 - **Rinse area with soap and water then clean it with sterile gauze piece**
 - **Take mid stream clean catch urine**
- **Collect the sample in a wide, sterile, leak proof container.**
- **Transport it directly to the laboratory after proper labelling.**
- **If the transport will be delayed, preserve it at 4-6c.**





Urine samples

For males

- **Wash hands and retract before collecting sample .**
- **Rinse area with soap and water then clean it with sterile gauze piece**
- **Take mid stream clean catch urine**
- **If it is not possible to obtain urine, suprapubic aspiration or catheterization may be used.**
- **Catheterized urine should not be used ideally because of urethral bacteria.**



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Stool samples

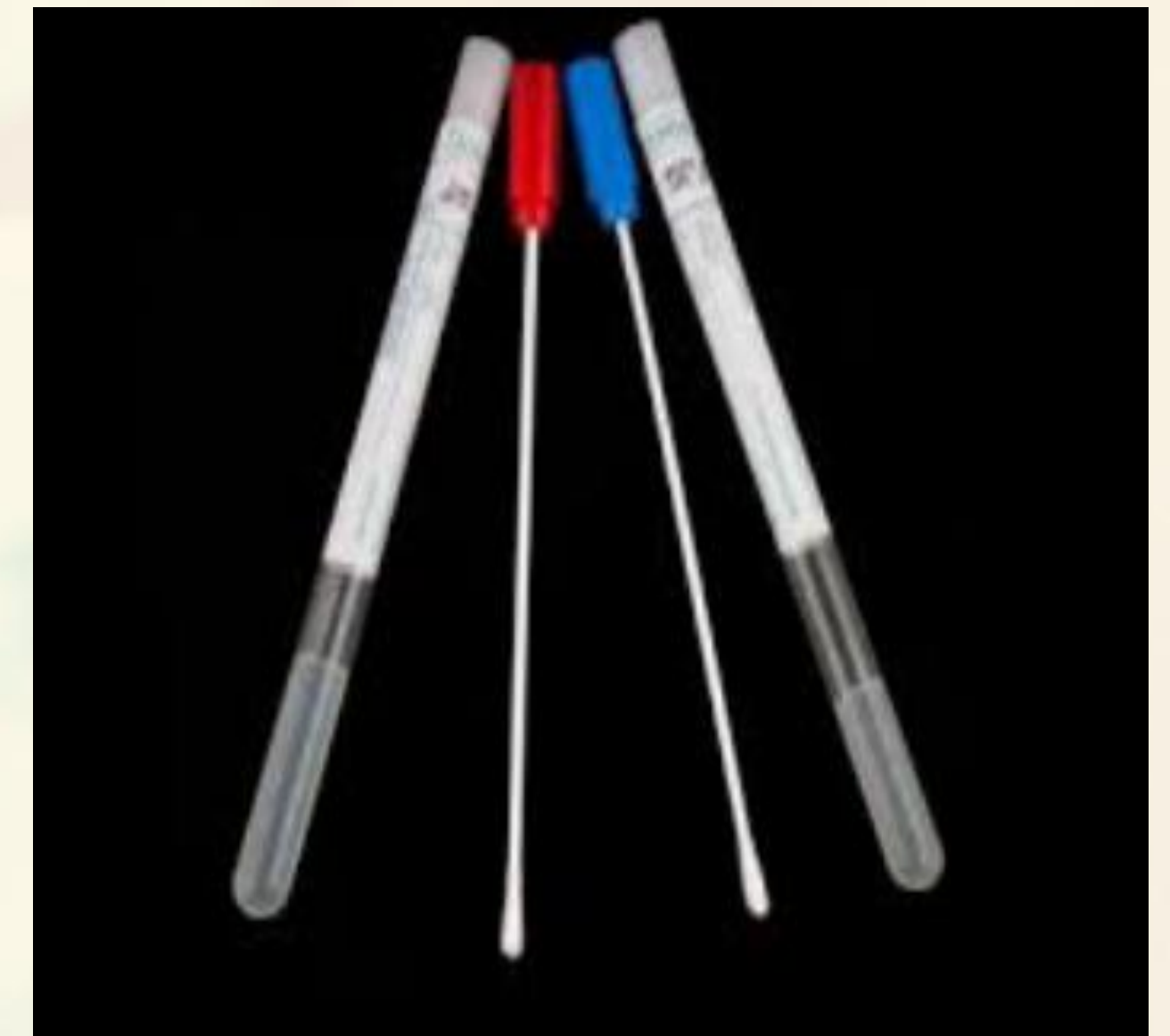
- Samples should be collected in wide mouth, clean, sterile, leak proof containers.
- Rinse area with soap and water then clean it with sterile gauze piece
- Minimum 5 gm are needed if solid stool and 2 ml if liquid stool.
- Avoid contamination with urine.
- If not possible to collect it as in children, elderly, debilitated patients » collect rectal swab.
- Do not refrigerate stool.
- If transportation will be delayed, preserve it into 10% formalin or buffered glycerol saline.





Rectal swab

- Apply a sterile swab in the anal canal.
- Rotate it for 10 seconds
- Avoid contact with skin
- Seal it directly into swab container to prevent contamination
- Transport immediately to lab , if not possible, preserve it at 4-6 degree centigrade





Sputum samples

- **Wide container of 50-100 ml capacity.**
- **Before taking the sample, ask the patient to gargle with normal saline and to take deep breath.**
- **Saliva or liquid should be avoided.**
- **For M.TB:**
 - **two samples are collected » on spot and 2nd sample at next day morning**
 - **Morning sample is more reliable because of colonization of bacteria in LRT at night**
- **Samples should be collected before antibiotic treatment has started.**



Samples Transportation

- **Stool, CSF, and sputum should be transported at room temperature, not refrigerated.**
- **Urine , swabs, skin samples, water, and food samples are transported ASAP at room temp, but if it is not possible, preserve them in the refrigerator.**



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Rejection Criteria

- **Leaking/broken container.**
- **Insufficient amount.**
- **Improper labelling.**
- **More time lag between collection and transport.**
- **Improper transporting media.**
- **Improper transporting temperature.**
- **Hemolyzed sample.**



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THANK YOU