



# **NORMAL TEST, URGENT TEST & REJECTION IN MICROBIOLOGY**

**PRESENTATION BY**

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# WHAT MICROBIOLOGICAL TESTS ARE FOR?

01

TO HELP FIND THE CAUSE OF  
THE DISEASE

02

applied to cases diagnosed  
with an infectious disease

03

help improve the  
effectiveness of treatment

04

help patient to  
recover quickly



# MICROBIOLOGICAL CAUSES OF INFECTION

- 01 bacteria (termasuk:  
mycobacteria, chlamydia,  
mycoplasma, rickettsiae
- 02 viruses
- 03 fungi
- 04 parasites
- 05 endogenous or  
exogenous
- 06 together with history, physical  
exam, radiographic, lab studies
- 07 **MICROBIOLOGICAL TESTS**



# SPECIMEN SELECTION, COLLECTION & PROCESSING

- 01 Selection- tepat & cukup: for complete Micro ex.
- 02 min contamination - disinfect, aspirate, quantitative
- 03 special attention to OT sample- if granuloma - send for TB
- 04 send sample BEFORE the administration of antibiotic



# NORMAL TEST IN MICROBIOLOGY : TIMELINE

- 01 Direct Examination
- 02 Culture & Sensitivity (C & S)
- 03 Microbial Identification





01

**DIRECT  
EXAMINATION  
(RAPID) - WITHIN 2  
HOURS**

## MICROSCOPY (FEME):

- 01 GIEMSA – BFMP
- 02 GRAM STAIN – CSF, TISSUE,  
STERILE BODY FLUIDS
- 03 AFB – SPUTUM
- 04 WET MOUNT – KOH
- 05 ELISA
- 06 INDIA INK
- 07 LATEX AGGLUTINATION –  
ROTA VIRUS
- 08 GENE EXPERT

### 15 Minute GRAM STAIN technique

**Step 1.** Use an air dried or heat fixed slide. Flood the slide with crystal violet and sit for 30 seconds. Then wash the side or back of the slide briefly with tap water.

**Step 2.** Flood the slide with Lugol's iodine and sit for 30 seconds. Then wash the side or back of the slide briefly with tap water.

**Step 3.** Remove excess water from slide and flood with decolouriser, until excess colour is removed. Then wash the side or back of the slide with tap water.

**Step 4.** Flood the slide with safranin and sit for 30 seconds. Then wash the side or back of the slide with tap water. Apply a cover slip to the wet slide for immediate viewing, or apply immersion oil to a dry slide.



02

C & S  
(CULTURE &  
SENSITIVITY)

D1

isolating and culturing microorganism either in artificial media or in a living host

D2

cultures are incubated at 35 to 37 C depending upon requirements (anaerobic/aerobic)

D3

duration of incubation - overnite (24 hours to 6-8 weeks)



03

# IDENTIFICATION

01

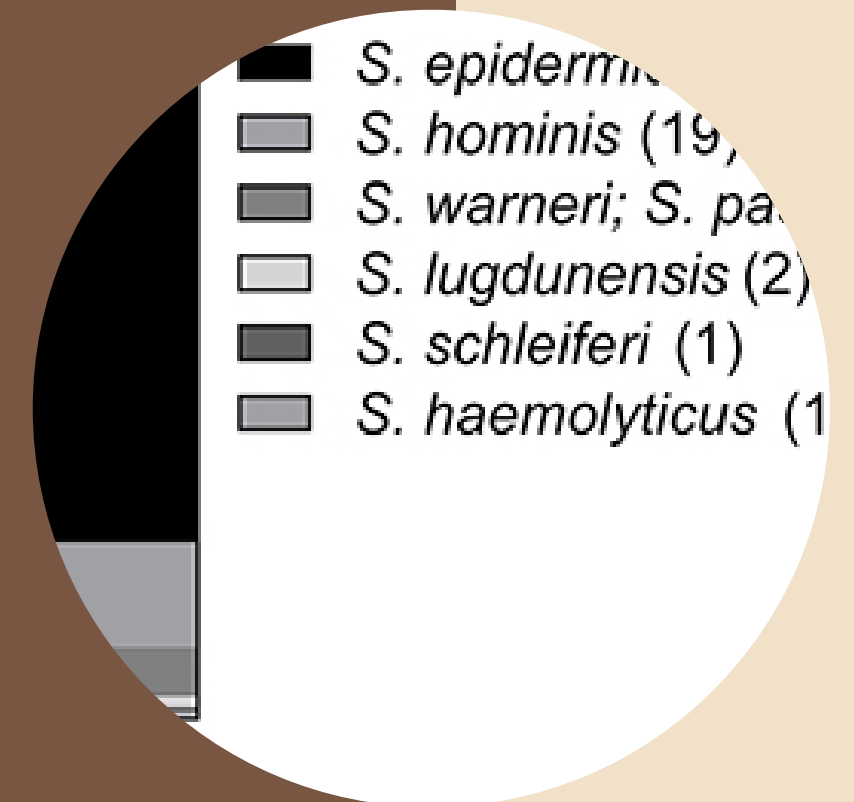
preliminary – gram stain ,  
colony morphology

02

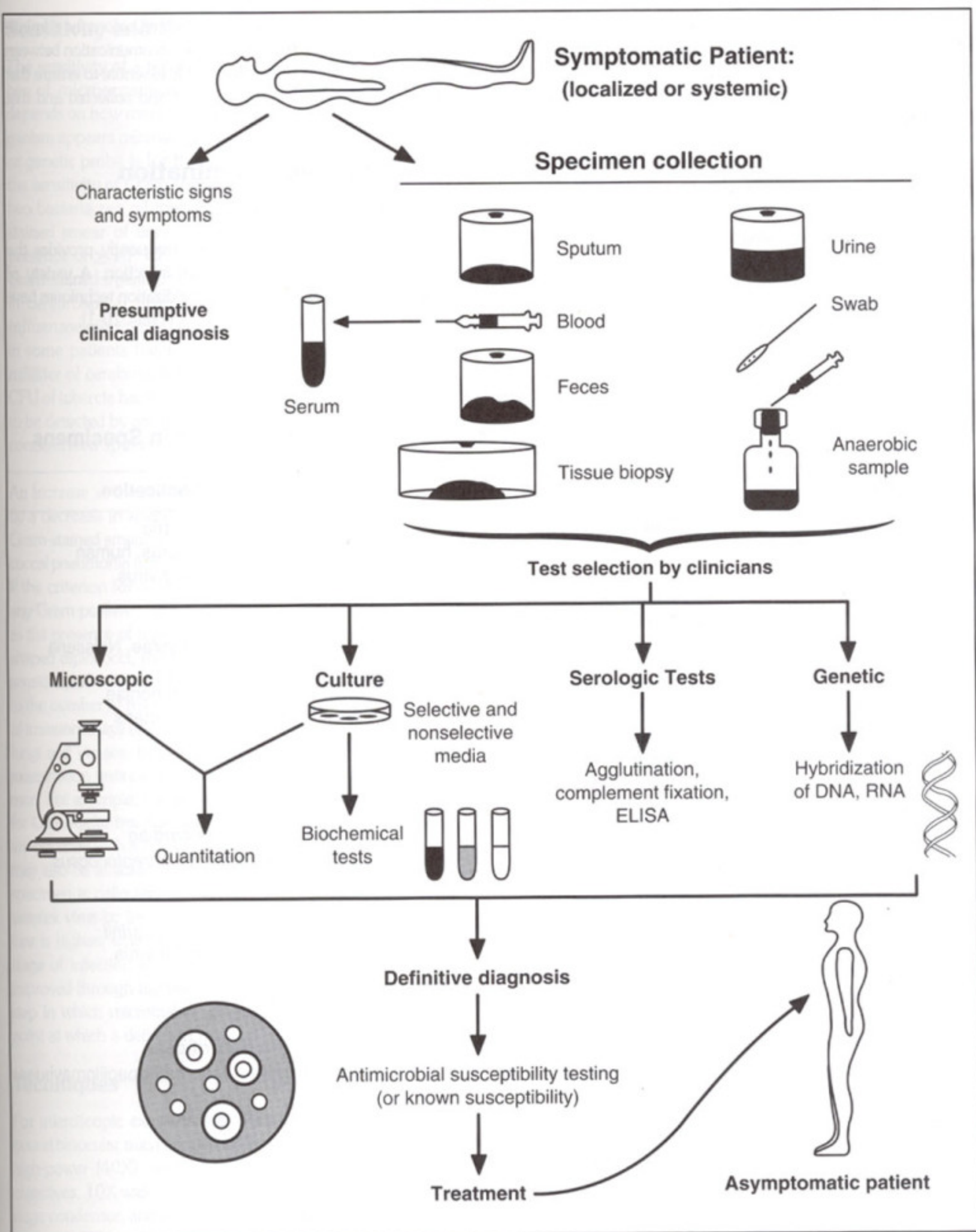
confirmation – name of  
bacteria at species level

03

antibiotic  
susceptibility test







**DAY 1**

Patient – sick – collect specimen – arrive at the micro lab – perform GRAM STAIN

GRAM POSITI COCCI IN CLUSTERS

**DAY 2**

Incubate sample – culture – colony morphology – tunggu ID

PRELIMINARY – CONS MR

**DAY 3**

confirm dah- COAGULASE NEGATIVE STAPHYLOCOCCI , RESISTANT TO METHICILLIN

**URGENT**

# LIST OF **PRIORITY** (URGENT) TEST IN MMP UNIT



## 1. Infective screening due to Needle stick injury(NSI)

	Health care worker	Patient
Test requested	HIV Ag/Ab	HIV Ag/Ab
	Hepatitis B Ag	Hepatitis B Ag
	Hepatitis B Ab	-
	Hepatitis C Ab	Hepatitis C Ab

## 2. Infective screening due to Urgent Hemodialysis

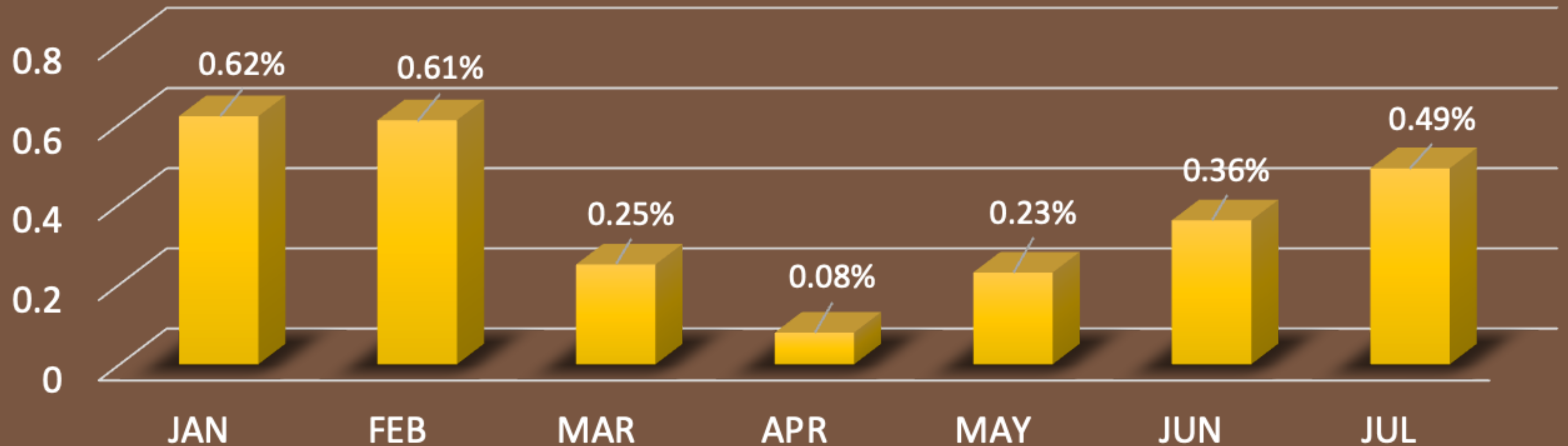
Test requested	HIV Ag/Ab
	Hepatitis B Ag
	Hepatitis B Ab
	Hepatitis C Ab

## 3. Blood film for Malaria Parasite (BFMP)

## 4. Cerebral spinal fluid (CSF) Microscopy (CSF C&S)

# Rejection rate JAN-JULY 2023

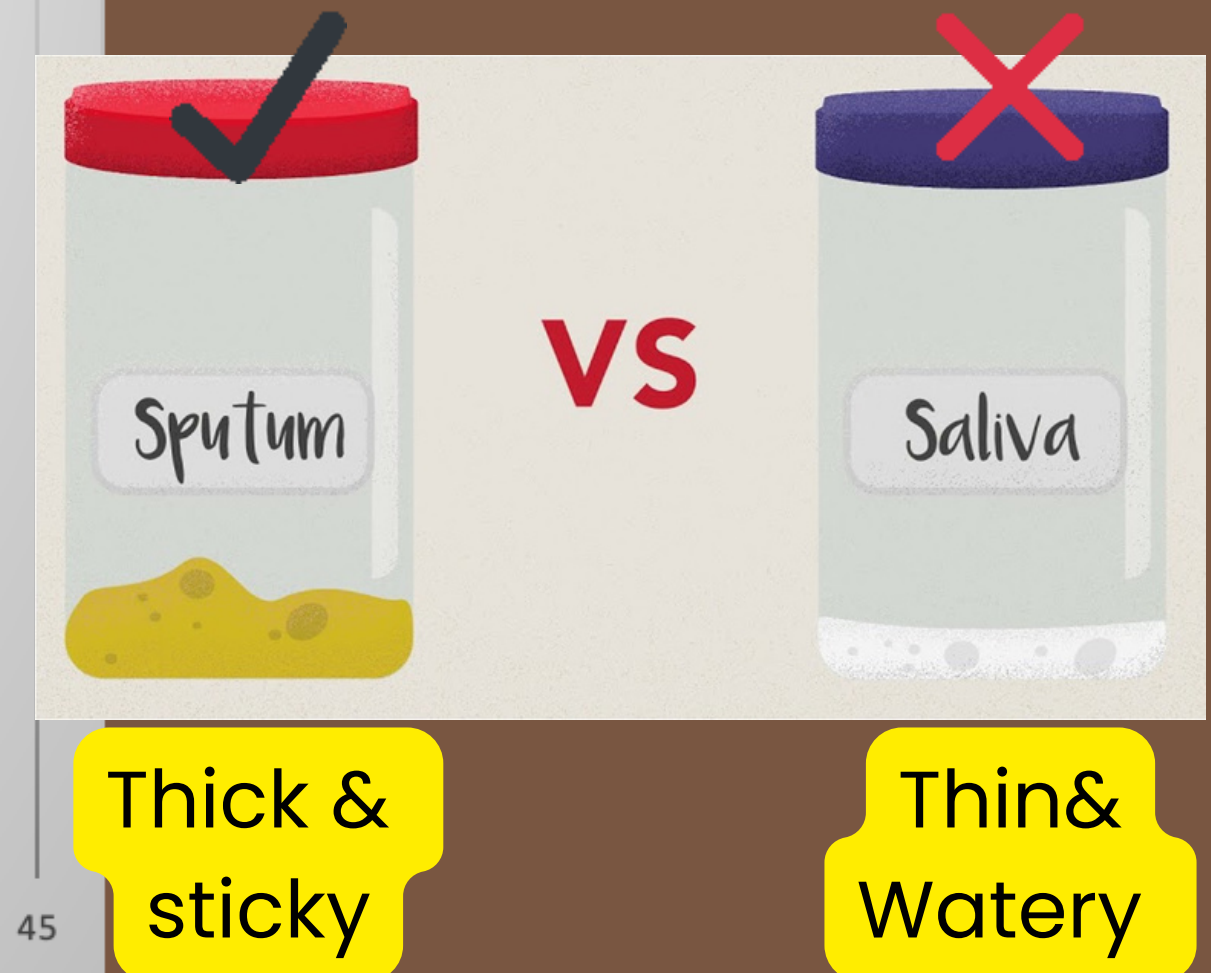
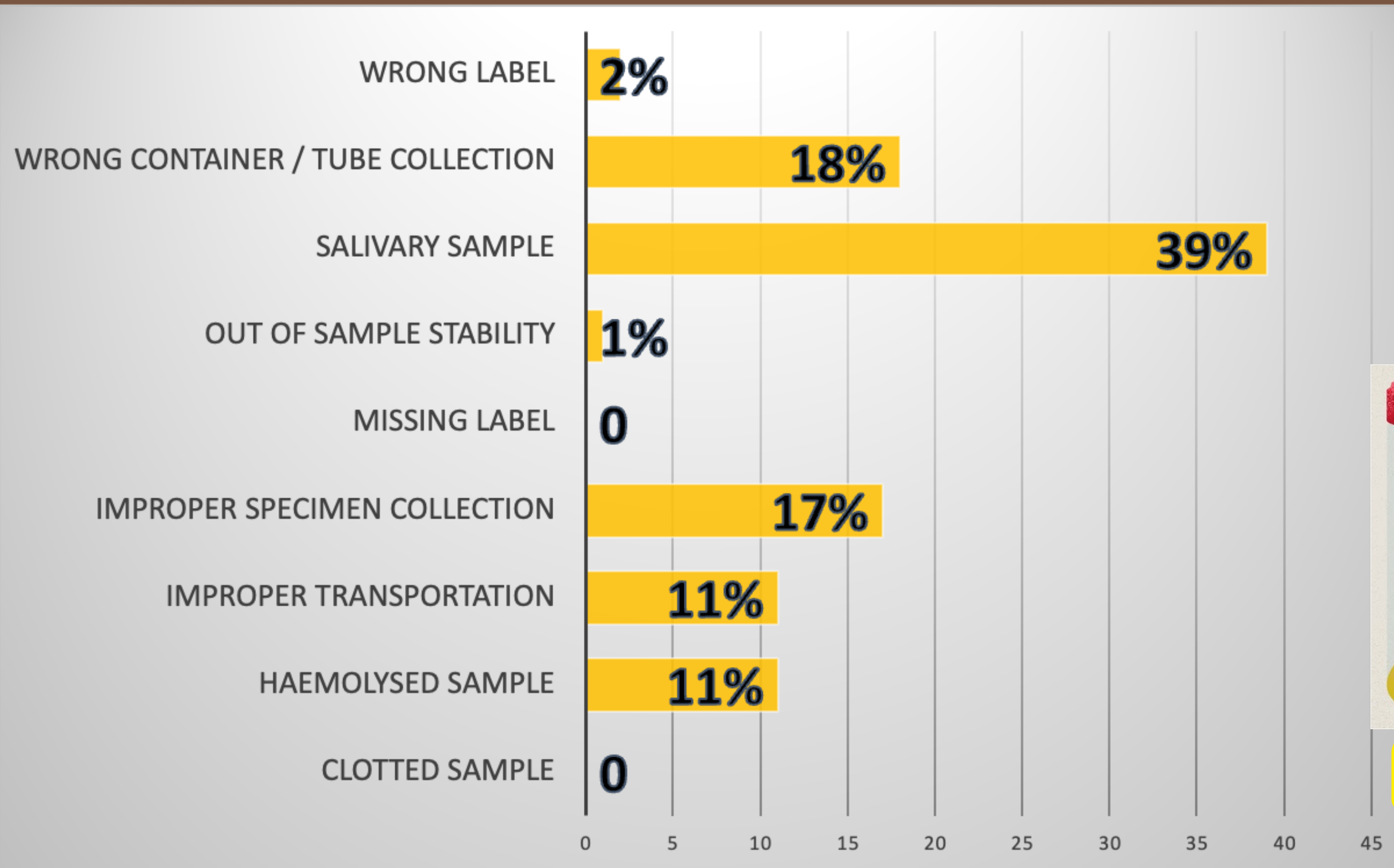
REJECTION RATE (%)



KPI Rejection for MMP Unit

<1

# REJECTION CRITERIA





QUIZ  
TIME

1. Which of the following is correct regarding the **NORMAL** workflow for blood C & S which grows *Staphylococcus aureus*

	DAY 1	DAY 2	DAY 3	DAY 4	DAY 5
A.	Specimen collection	Specimen arrive at the lab	Preliminary result: Gram stain – Gram positive cocci in clusters	-- <i>Results:</i> <i>Staphylococcus aureus</i> sensitive to methicillin	-
B	Specimen collection	Specimen arrive at the lab	Preliminary result: Gram stain – Gram positive cocci in clusters	-- <i>Results:</i> <i>Staphylococcus aureus</i> sensitive to methicillin	Sensitivity to methicillin
C.	Specimen collection  Specimen arrive at the lab  Preliminary result: Gram stain – Gram positive cocci in cluster	? Staph aureus	-- <i>Results: Staphylococcus aureus</i> sensitive to methicillin	-	-
D.	Specimen collection  Specimen arrive at the lab	No growth	No growth	Gram stain shows Gram positive cocci in clusters	? Coagulase negative staph – awaiting sensitivity
E.	Specimen collection	Specimen arrive at the lab	Preliminary result: Gram stain – Gram positive cocci in cluster	? coagulase negative staph	CONS MR

2. Antara pilihan berikut, yang manakah merupakan ujian yang boleh di pohon **“PRIORITY” (URGENT)** di Unit MMP?

A	Blood C&S	NSI	BFMP	Urgent hemodialysis
B	CSF C&S	NSI	AFB	Urgent hemodialysis
C	CSF C&S	NSI	BFMP	Urgent hemodialysis
D	CSF C&S	NSI	PCR	Urgent hemodialysis



