

Challenge

The unprecedented conditions Public Health Institutions experience due to COVID-19 pandemic crisis have forced Hospital Laboratories to perform on a daily basis en enormous number of diagnostic tests using pipettes for the handling of the samples.

Correct measurement of sample volume depends on a combination of

- ❖ Pipette (*Calibration*)
- ❖ Operator (*Training - GLP*)

Incorrect handling by the operator



Operational status of the pipette non verified by Calibration

Diagnostic test result may not be reliable

TRACING THE INFECTION

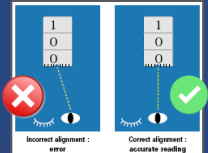
PROBABILITY OF FAULSE POSITIVE vs FAULSE NEGATIVE RESULTS

How can Metrology help?

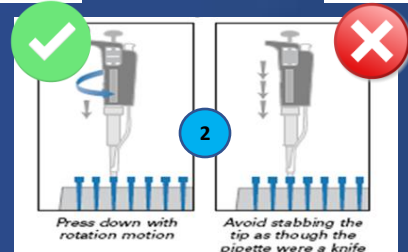
RECOMMENDATIONS

A. GOOD LABORATORY PRACTICE (GLP)

1. Set the volume correctly
2. Attach firmly the tip
3. Pre-wet the tip
4. Work at temperature equilibrium
5. Examine the tip before and after dispensing the sample
6. Use standard mode pipetting
7. Pause consistently after aspiration
8. Pull the pipette straight out
9. Immerse the tip to proper depth
10. Use correct pipette tip
11. Use consistent plunger pressure and speed



1



B. PIPETTE CALIBRATION

- Frequent calibration
- Accuracy verification
- Compliance with specifications
- Be aware of wear due to excessive use

Hospital Laboratories within COVID-19 crisis are forced to perform diagnostic tests under extraordinary, non-ideal conditions. The European National Metrology Institutes and EURAMET can assist them to identify errors in daily practices, raise awareness and develop best practices and methodologies to use in challenging conditions in order to ensure the reliability of the performed diagnostic tests.