

## POC Testing



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- “Point-of-care testing (POCT) is defined as medical testing at or near the site of patient care. The driving notion behind POCT is to bring the test conveniently and immediately to the patient. This increases the likelihood that the patient, physician, and care team will receive the results quicker, which allows for immediate clinical management decisions to be made.” [Wikipedia]

## What is POC testing?

“Point-of-care testing (POCT) refers to any testing conducted outside a lab, in a hospital, in a clinic or by a health care organization providing ambulatory care. This includes testing performed at sites outside the traditional lab dedicated to medical biology, near where care is delivered to the client. Point-of-care test results may lead to a change in the care of the client. POCT ranges between three levels of complexity, from simple procedures such as glucose testing, moderate-complexity procedures (including provider performed microscopy procedures), or high-complexity procedures such as influenza testing.” [Accreditation Canada]

## What is POC testing?

“Historically, laboratory testing has been performed in a central laboratory by laboratorians.... POCT is performed close to or at the patient's location-and often by nonlaboratorians. This is clearly a different model from the historic central laboratory.” [Thomas Dilts, BD Lab Notes]

## What is POC testing?

- “POCT can be defined as the provision of a test when the result will be used to make a decision and to take appropriate action, which will lead to an improved health outcome... the key objective of POCT is to produce a result more quickly.”

[Price, St John & Hicks. Point-of-care testing. AACCC, 2004]

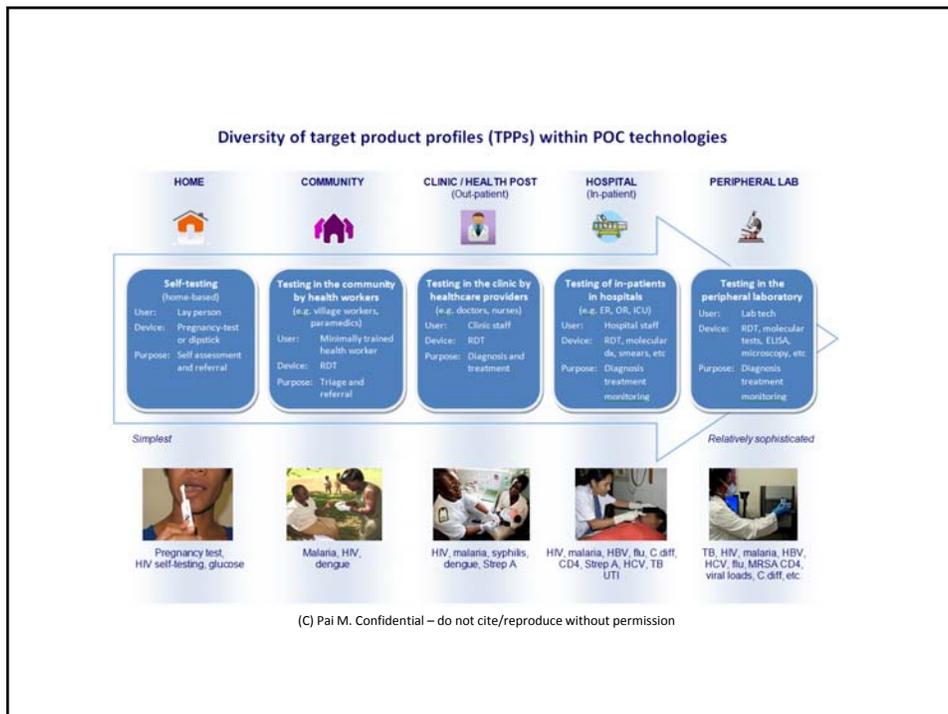
## What are the most critical elements of POCT?

- Rapid turn-around of results, so that it can impact clinical management (e.g. triage, referral, further work-up, treatment decisions, decision to discharge, etc.)
- “Rapid” can be a range – from within seconds, to minutes to a few hours (“while the patient waits”).
  - At the least, results “on the same day” can still help disposal of clients with a clear plan.
- Convenience to patients and care providers mainly derives from the fact that the diagnostic process is completed “in the same clinical encounter” and clients/patients do not have to come back for testing or go far away for testing.

## POCT requires much more than just a rapid test

- Tests, by themselves, cannot be called POC or not.
- It is how the tests are deployed or implemented that makes them POC tests.
  - One could implement a RDT or dipstick in a reference lab, and that is not POC testing.
  - On the other hand, one could implement a molecular test in a clinic and successfully allow POC usage.
- So, there are no POC tests, only POC testing.
- Systems for rapid reporting of test results to care providers are as important as the test itself.
  - If systems for reporting the results are not in place, then POC testing programs are unlikely to succeed.

POCT is a catch-all phrase which covers a variety of settings, users, and products



## ICT is rapidly expanding the reach of POCT

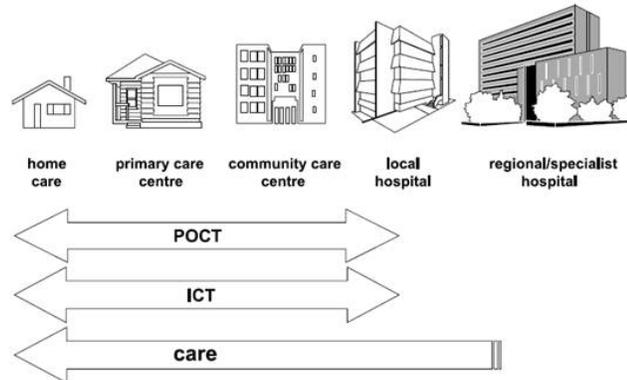


FIGURE 1. Vision of high proportion of care in the future facilitated by POCT and ICTs.

Price C. Point of Care 2011

## Does POCT have to be done close to patients where the clinical contact happens?

- Preferable but not required, so long as the testing occurs at a place that is close enough to where the clinical contact happens, and a system is in place for rapid reporting of results.
- For example, testing at a lab attached to hospital can still allow for POCT.

### Does POCT have to be done outside of labs?

- Preferable but not absolutely required.
- Labs attached to clinics or hospitals can still allow for POCT. Satellite labs can also be set up within ER, OR, ICU, wards, etc.
- Some types of POC tests should be done only by laboratorians in labs.

### Does the POC test need to be an instrument-free dipstick or RDT?

- Widely used ASSURED criteria for rapid tests by WHO:
  - A = affordable
  - S = sensitive
  - S = specific
  - U = user friendly (simple to perform in a few steps with minimal training)
  - R = robust and rapid (results available in less than 30 minutes)
  - E = equipment free
  - D = deliverable to those who need the test
- No, the type of device does not define a POC test. POC tests can range from simplest dipsticks to sophisticated automated molecular tests or portable analysers and imaging systems.
- The same lateral flow assay or RDT, for example, could be used across all TPPs (from self-testing, all the way to labs).
- So, the device does not immediately identify the TPP, although some types of devices will immediately rule out some TPPs or users (e.g. ELISA cannot be done by lower level health workers or even doctors).

### Do POC tests need to be done by non-laboratory staff?

- No, not necessarily.
- The same device (e.g. lateral flow assay or RDT), could be performed by several people across the TPPs – from untrained people, to community health workers, to nurses, to doctors and lab techs.
- So, the actual user does not immediately identify the TPP, although targetting the end-user helps narrow down the type of product needed (e.g. lay person or lower level health worker necessarily means the simplest type of device).

### Does the POC test need to be cheap?

- Desirable, but not required and may not be possible with some technologies.

Do POC test need to be multiplexed, to detect more than one condition?

- Desirable, but not required and may not be possible with some technologies.

What are the biggest barriers for POCT?