

**WOAH-BioPrevail meeting
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Advances in point of care testing for animal pathogens

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Point-of-care testing (POCT)

- **In some settings, timely submission, processing and lab testing of samples is not feasible, delaying critical response activities**
 - **Field diagnostic tests (point-of-care/need, pen-side) are available for many EADs that enable decision making and rapid response to outbreaks and for controlling spread of disease in these situations**
 - **Implementation of POCTs in regional laboratories or field stations can also represent an effective means of readily establishing diagnostic capacity at the point of need**
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Point-of-care testing



Outbreak investigation
Surveillance (farm, wildlife)
Quarantine stations
Live animal markets, abattoir
Commercial farm biosecurity

Types of tests available

- Several diagnostic platforms are available commercially

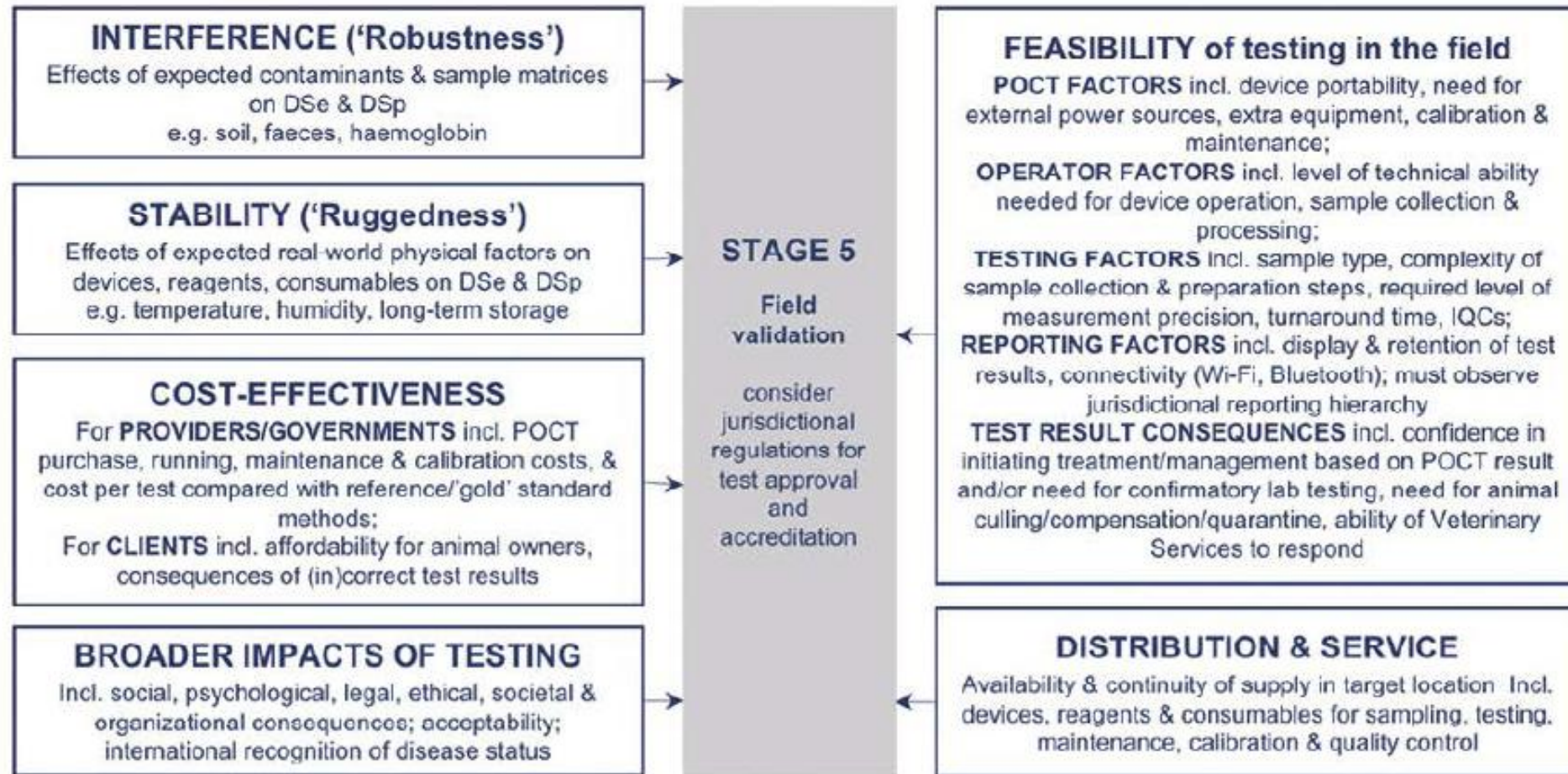
Simple to use
Inexpensive
Low training
Lower Se/Sp
e.g. RATs



More complex to use
Expensive
High training needs
Higher Se/Sp
e.g. PCR/LAMP



Proposed POCT validation pathway



What to Choose?

- **Influenced by many factors**, e.g. sample type to be tested, application (sensitivity requirements), cost, ease of use, training requirements
 - **Simple rapid tests** may be appropriate for certain situations, such as resource-poor or remote settings, used at the herd level for low Se tests
 - More **advanced molecular platforms** may be the test of choice in settings where costs are not a major factor, application is sustainable, and operators can be confidently trained to required competency
 - For some countries, **a combination of tests may be employed** depending on the application, setting and available resources
 - *Important to ensure test of choice has been validated!*
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Using POCTs (current advice...)

- For **negative** test results where there is a strong suspicion of aetiology, further animals should be sampled and tested
 - **Backup samples** submitted to a central or reference laboratory for confirmation
 - **Operators trained and authorised** to perform the test (e.g. gov animal health officers, paravets, authorised farm workers)
 - Integrate POCT into laboratory **quality assurance** and **reporting** frameworks
 - **Appropriate use, reporting** e.g. according to national/jurisdictional policies
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Examples: POCT for virus detection

Disease	Target Animal	Purpose	Sample type	Pathogen load	POCT options
African swine fever	Domestic pig	Outbreak investigation	Whole blood	High (virulent)	Rapid Antigen or Molecular
	Wild boar	Passive surveillance	Bone marrow	Low, degraded antigen	Molecular
Hendra virus	Horses	Disease Exclusion	Nasal swabs	Low	Molecular
Avian influenza	Poultry	HPAI outbreak investigation	Swabs	High	Rapid Antigen or Molecular
	Wild birds	Environmental surveillance	Faecal swabs	Low	Molecular

Thank you !



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<https://www.csiro.au/en/about/facilities-collections/acdp>