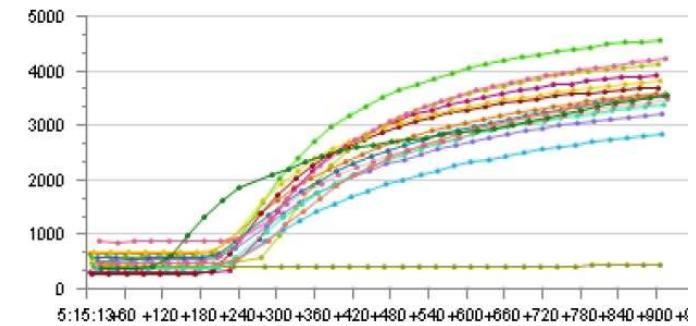


Advancing diagnostics: Point-Of-Need molecular diagnostics for urogenital schistosomiasis (*S. haematobium* infection)

Bonnie Webster

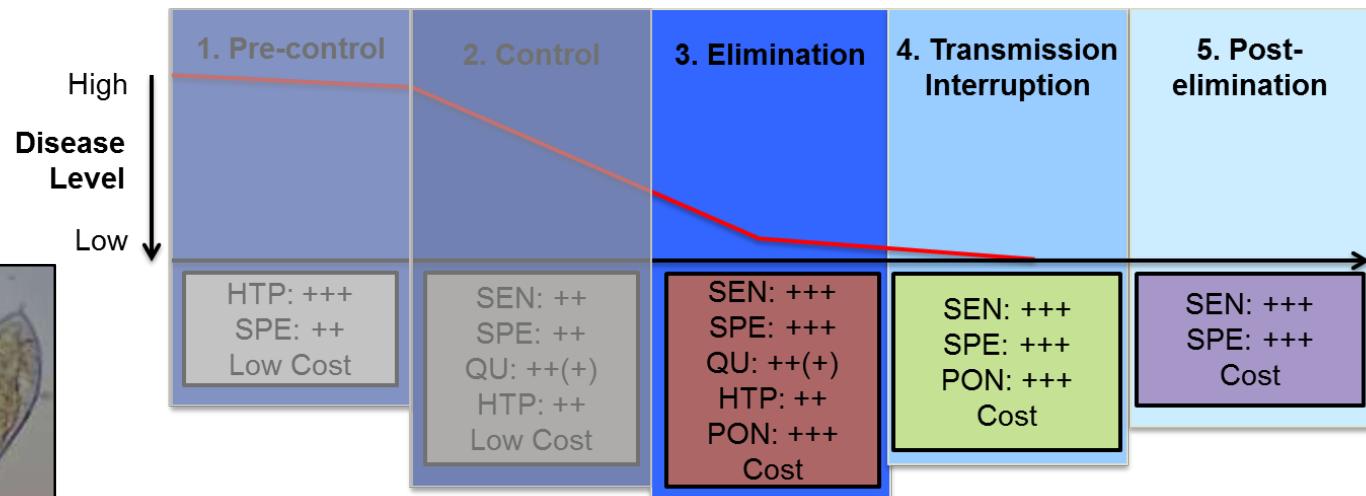
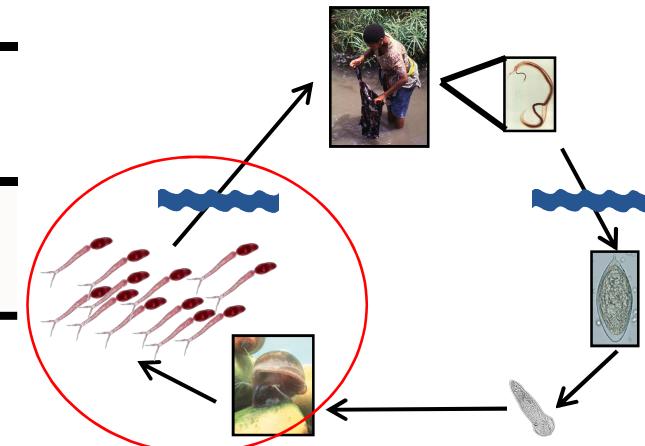


Andrew Rosser
Penny Rostron
Kate Poulton
Rebecca Barksby



Available Diagnostics for *S. haematobium*

Diagnostic	Detection	SEN	SPE	PON	Cost
Microscopy	Eggs	✓	✓✓✓	✓✓✓	✓✓
Reagent strip	Blood	✓	✗	✓✓✓	✗
Elisa	Antigen	✓✓	✗	✓✓	✓✓
CAA	Antigen	✓✓✓	✓✓	✓✓(✓)	✓✓
Molecular	qPCR	✓✓✓	✓✓✓	✗	✗
	LAMP	✓✓✓	✓✓	✓✓	

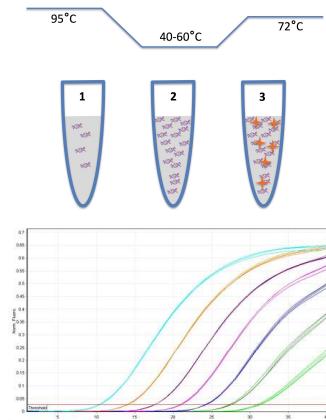


Sensitive (SEN), Specific (SPE), Quantitative (QU), High-Through-Put (HTP), Point-Of-Need (PON)

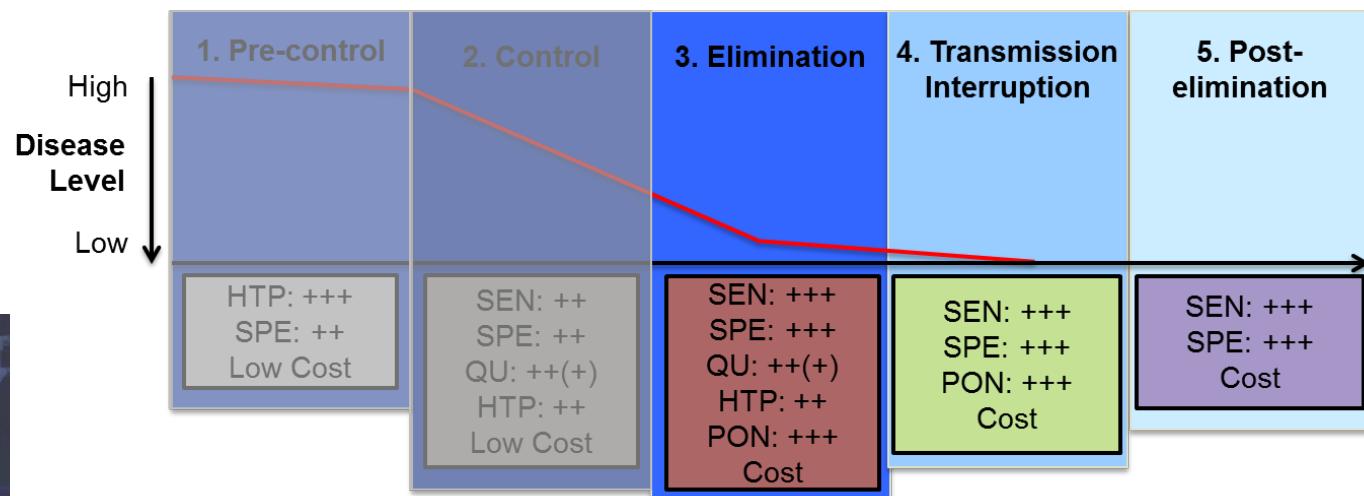
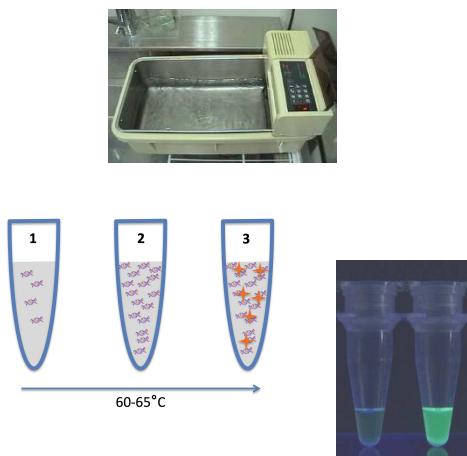
Available Diagnostics for *S. haematobium*

Diagnostic	Detection	SEN	SPE	PON	Cost
Microscopy	Eggs	✓	✓✓✓	✓✓✓	✓✓
Reagent strip	Blood	✓	✗	✓✓✓	✗
Elisa	Antigen	✓✓	✗	✓✓	
CAA	Antigen	✓✓✓	✓✓	✓✓(✓)	✓✓
Molecular	qPCR	DNA	✓✓✓	✓✓✓	✗
	LAMP	DNA	✓✓✓	✓✓	✓✓

qPCR

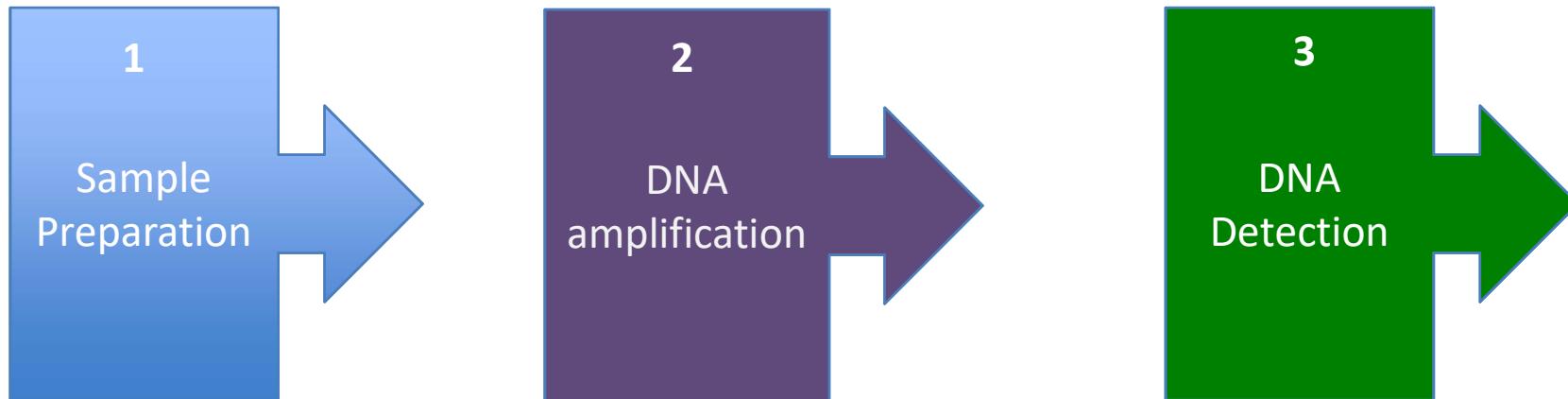


LAMP

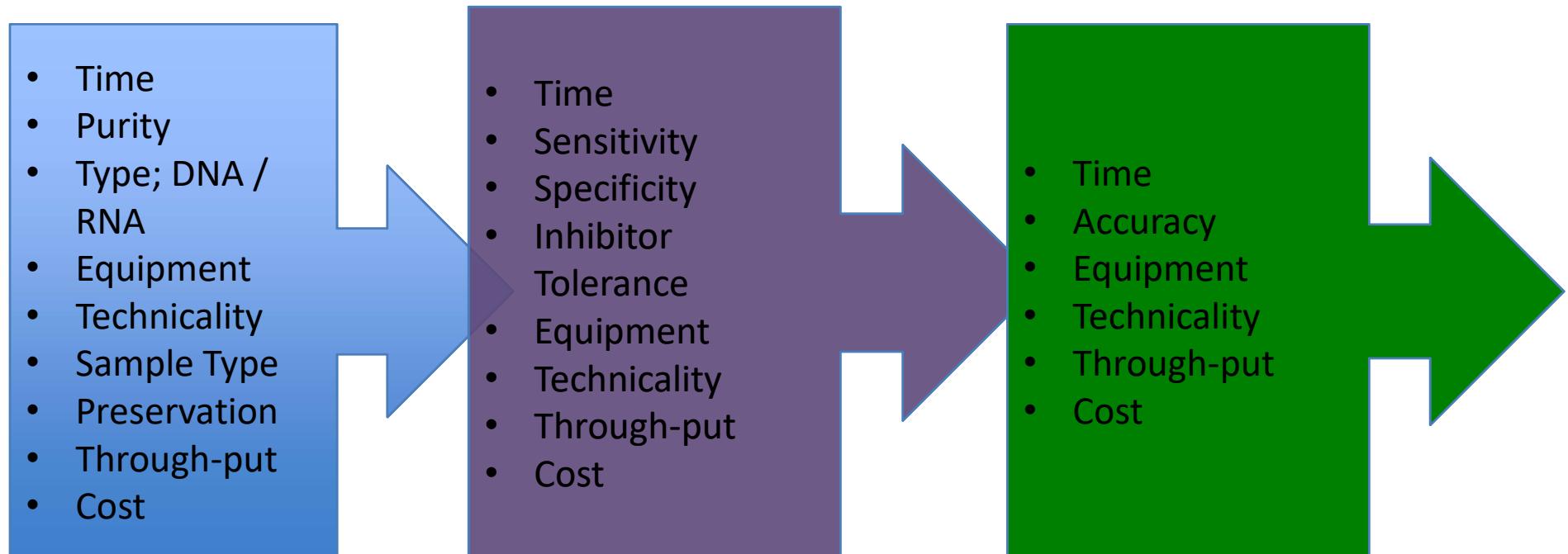


Sensitive (SEN), Specific (SPE), Quantitative (QU), High-Through-Put (HTP), Point-Of-Need (PON)

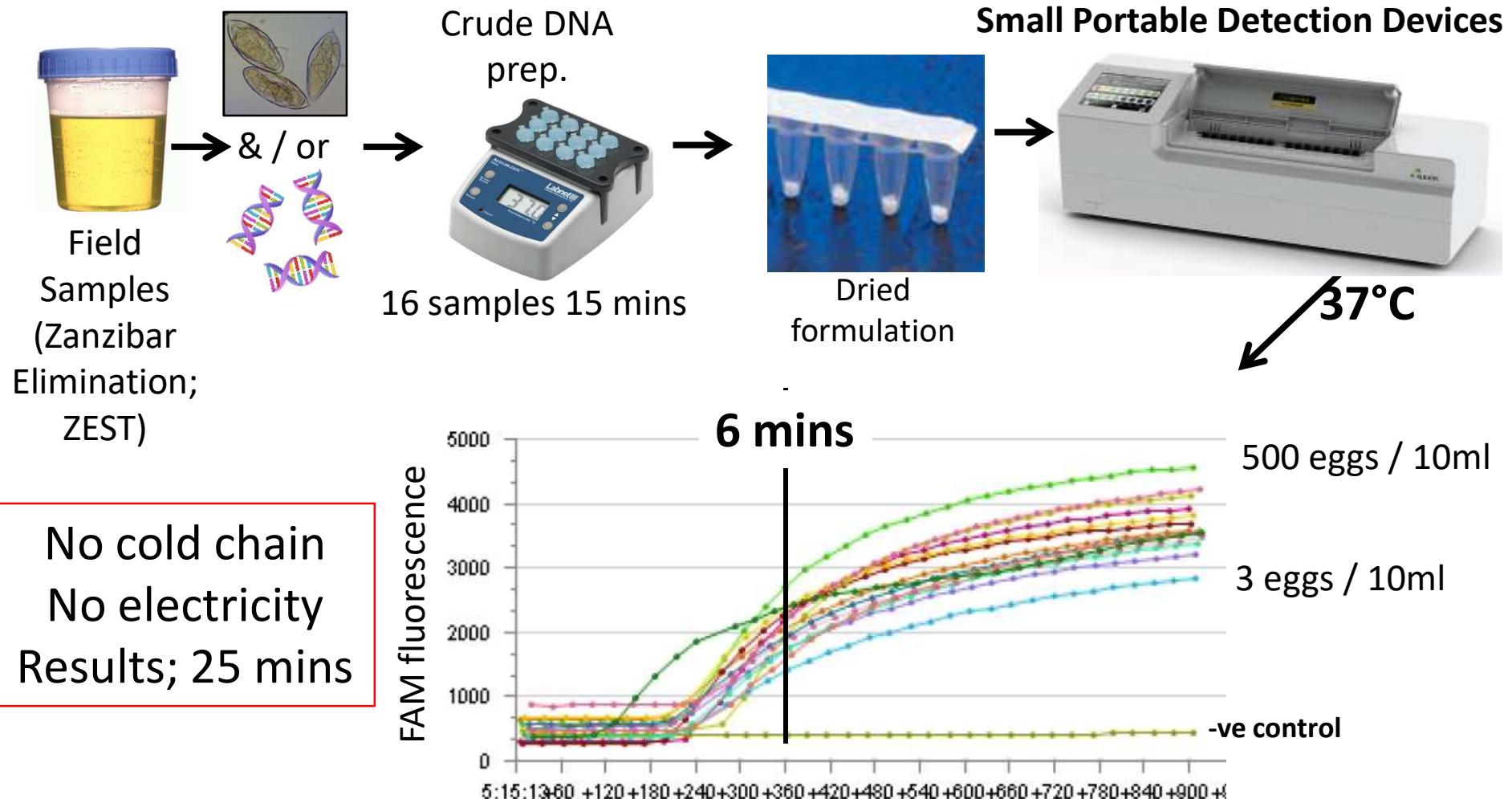
3 stages in a molecular diagnostic procedure



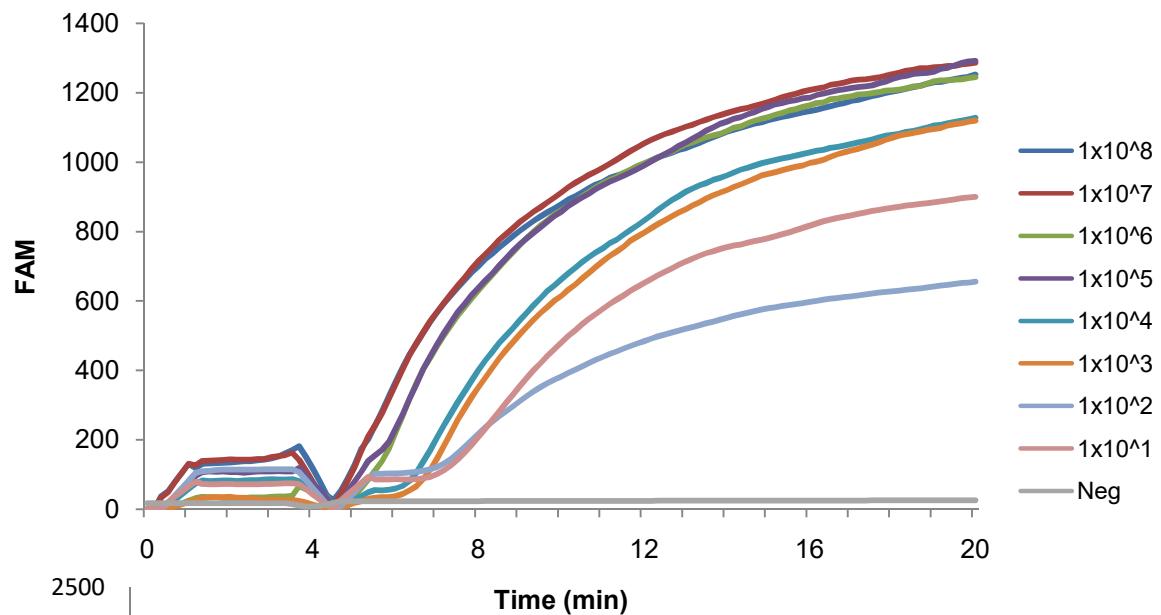
What you need to consider at each stage, **particularly for PON use**:



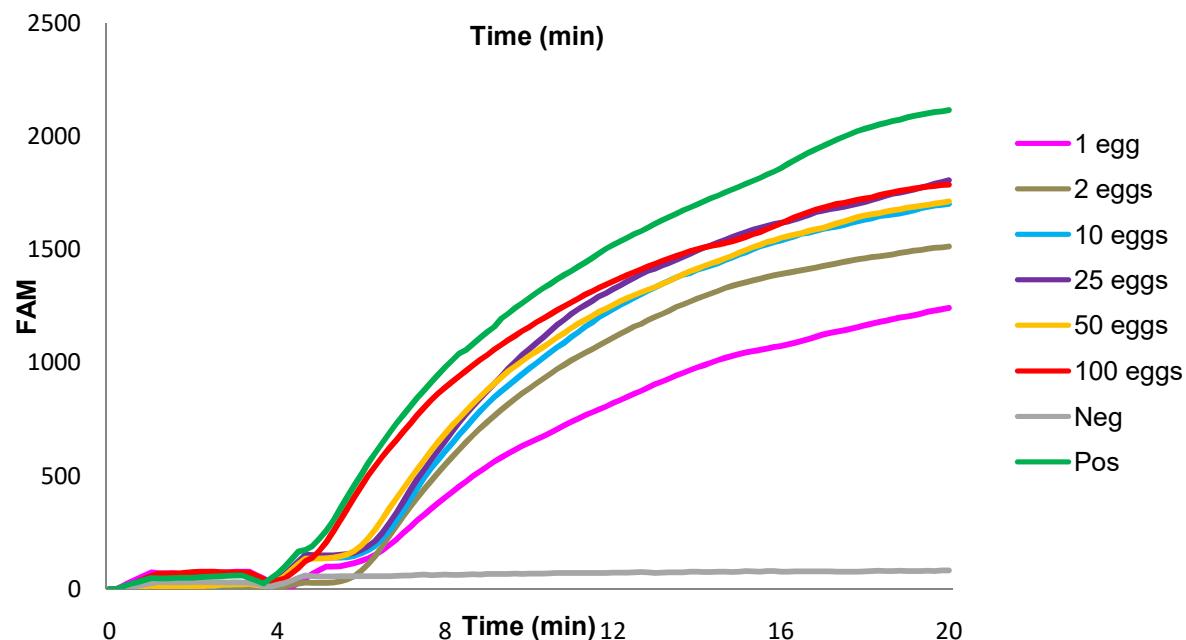
Isothermal *S. haematobium* Recombinase DNA-Polymerase Amplification (RPA)



S. haematobium (RPA)



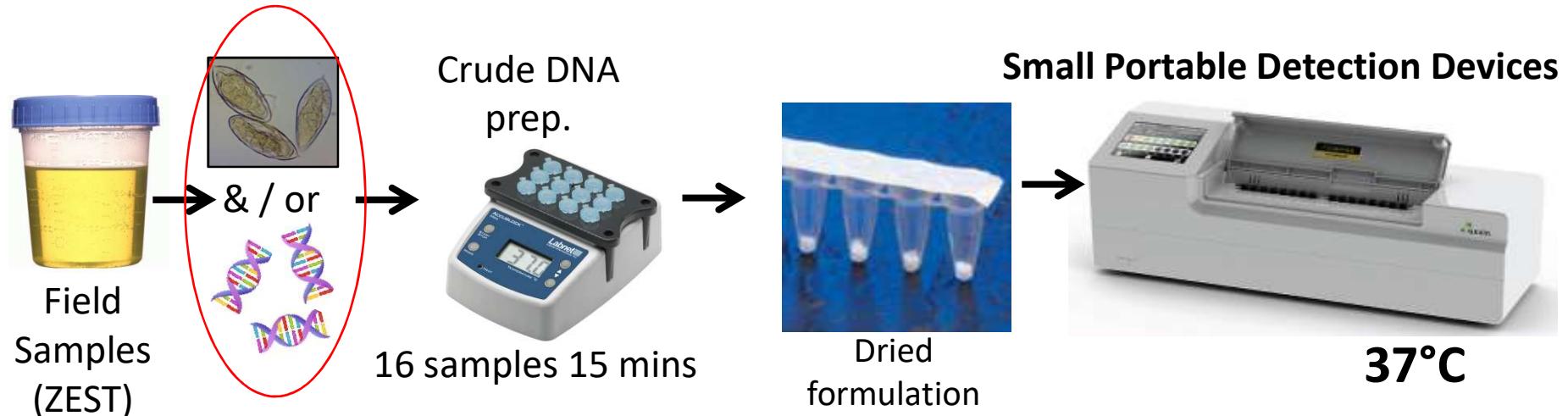
Copies of DNA



Spiked Urine
Samples

S. haematobium RPA

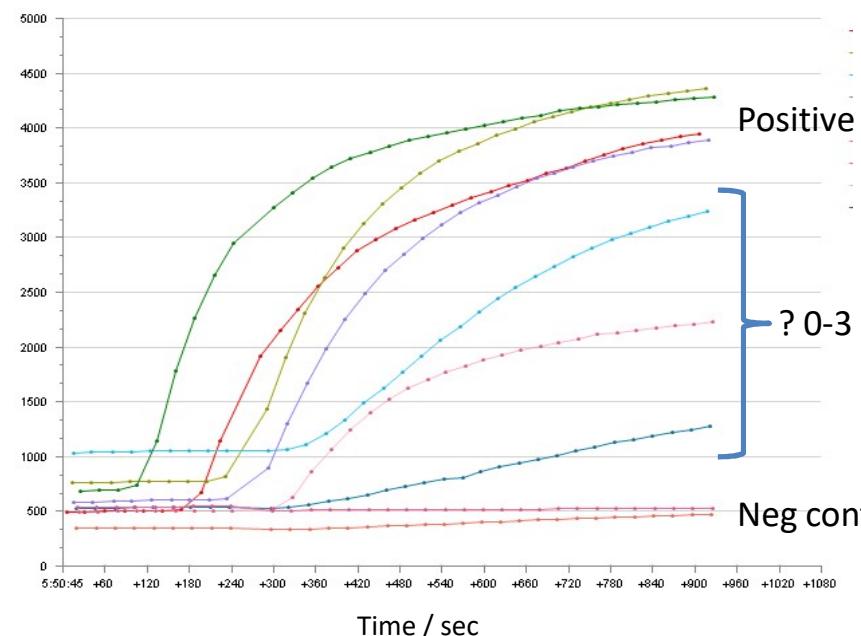
Simple, Fast and Portable



Great potential for PON testing- **test and treat**

Further evaluation on samples with low, inconsistent or egg –ve values; **this is the target group**

? Gold standard



Results are difficult to interpret at low egg counts and for egg negative samples

Colleagues, collaborators + students

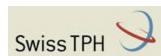
David Rollinson

Aidan Emery

Fiona Allan 

Tom Pennance

Steffi Knopp



Shaali Ame

Said Mohammed



Andrew Rosser

Penny Rostron

Kate Poulton

Rebecca Barksby



Govert van Dam

Paul Corstjens

Lisette van Lieshout



Matthew Forrest



Dr Ahmed Abd El Waheb



Thanks

Funders

THE ROYAL SOCIETY



LONDON
SCHOOL of
HYGIENE
& TROPICAL
MEDICINE



Zanzibar Elimination of
Schistosomiasis
Transmission (ZEST)



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