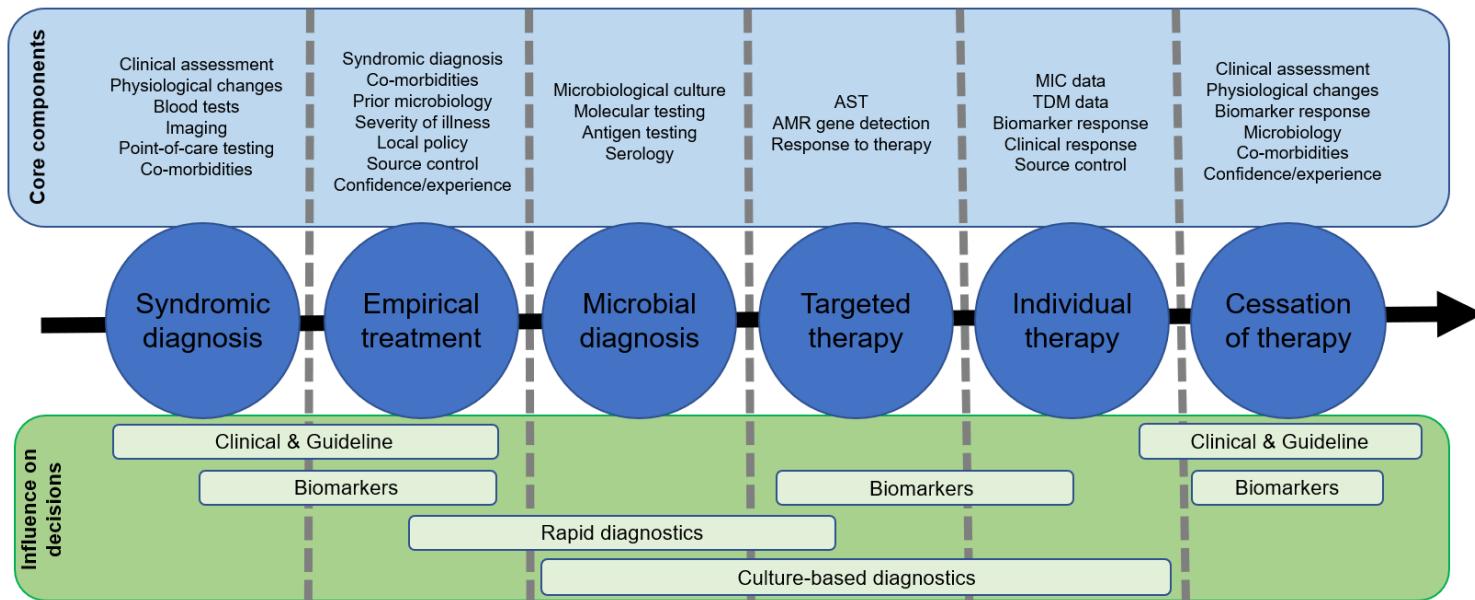


Artificial intelligence and real-time monitoring to support optimised antimicrobial use

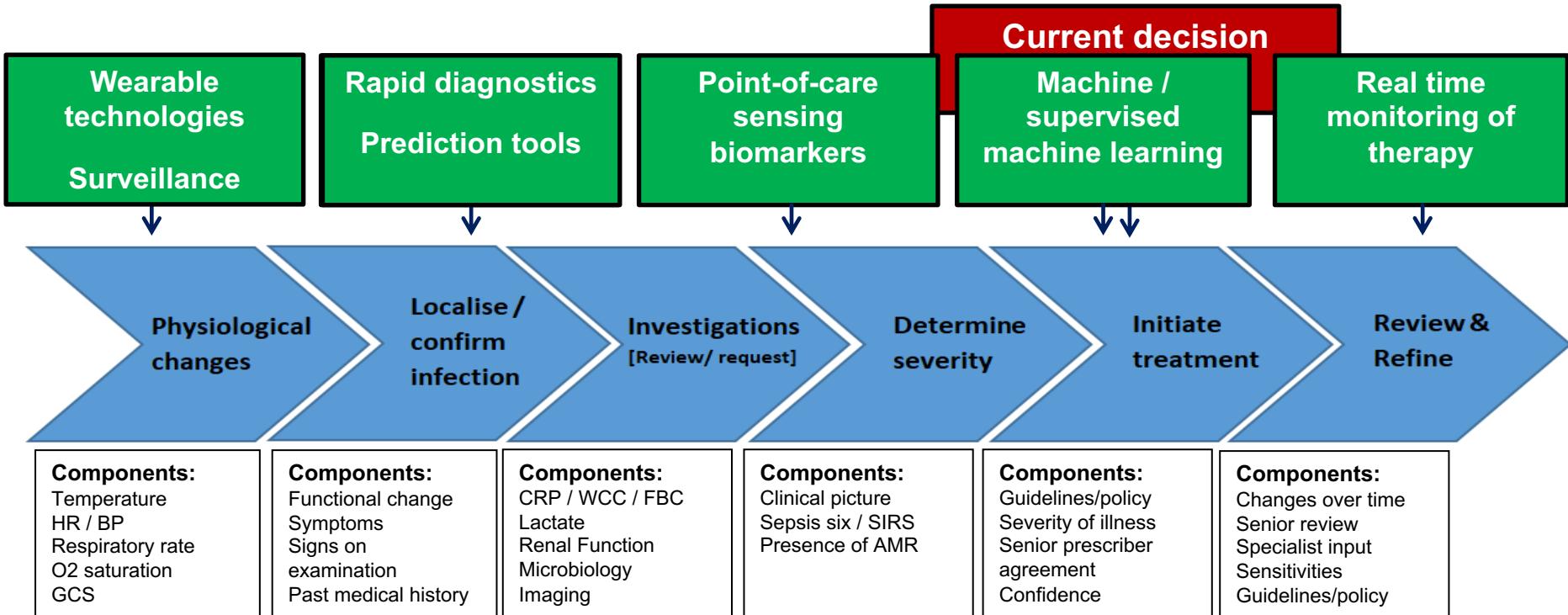
CAMO-UK Research Meeting
21/06/2023

Dr Timothy Miles Rawson, BSc (hons), MBBS, MRCP (UK), PDME, DTM&H, PhD
Health Protection Research Unit for Healthcare Associated Infections and Antimicrobial Resistance
Centre for Antimicrobial Optimisation, Imperial College London

Antimicrobial decision making



Individual decision making



Integrated decision support systems

Imperial College London

Data

Diagnostics
Surveillance
Individual level
Population level



Intelligent platforms

Machine learning
Co-design
End-user engagement
Flexible
Integrated



enhanced, personalized and integrated care
for infection management at point of care

Augmented decision making

Risk prediction
Antibiotic selection
Dose optimisation
Forecasting
Communication aides



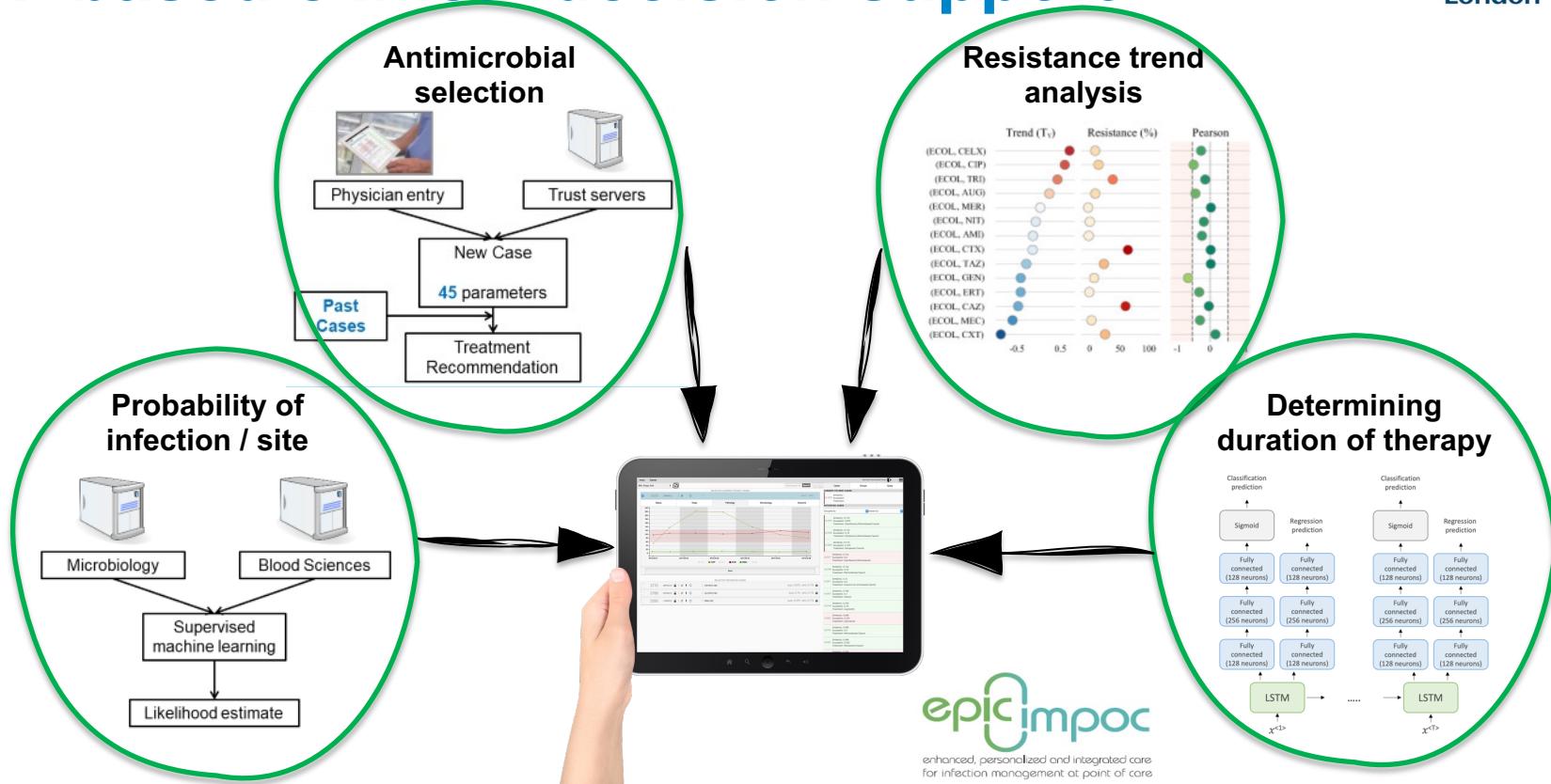
Optimised therapy

Individualisation
Precision
Adaptive

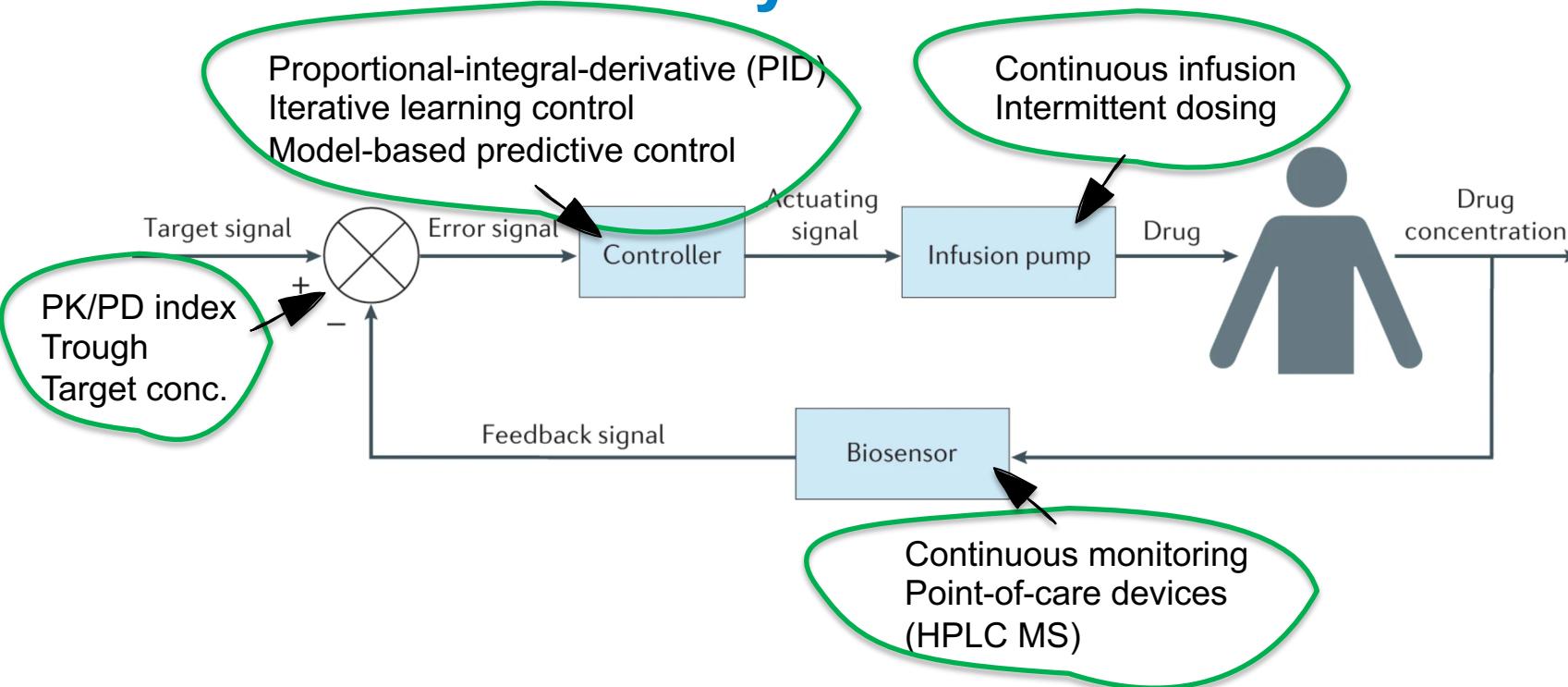


AI-based clinical decision support

Imperial College London



Closed-loop control of antimicrobial delivery

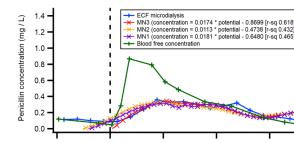


Can technology support antimicrobial optimisation?

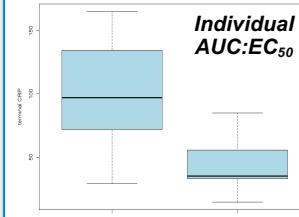
Intelligent decision support



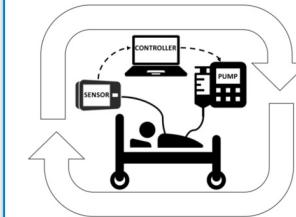
Real-time monitoring



In-vivo pharmacodynamics



Automated delivery

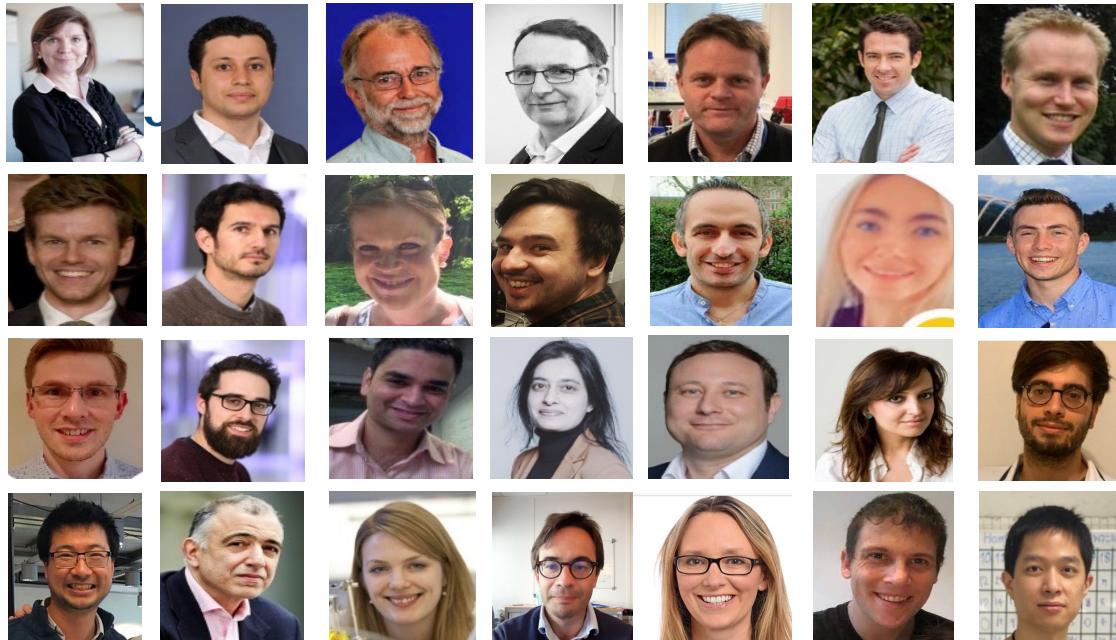


Integration with decision making



Future steps:

- Future proof technology.
- Regulatory & governance considerations for moving towards individualised therapy.
- Developed with understanding of human behaviour and adoption upon implementation.



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