ADAPTIVE HEALTH INTELLIGENCE

EVIDENCE IN ACTION

Urinary tract infections (UTI) in children: building a causal model-based decision support tool for diagnosis with domain knowledge and prospective data

Acknowledgements

Yue Wu

Steven Mascaro

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Chris Blyth

Nick Larkins

Tim Robertson

Phoebe Williams

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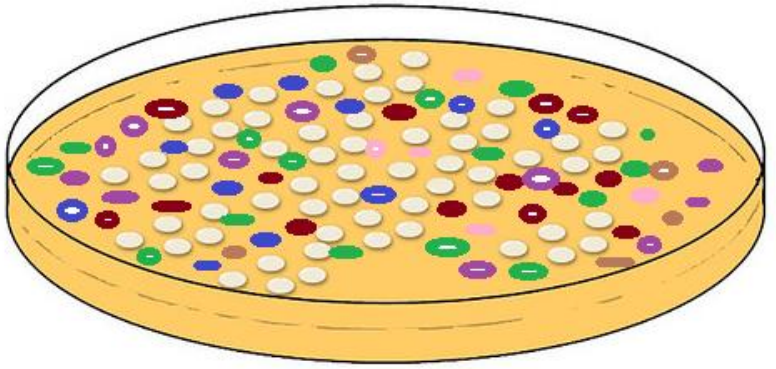
EVIDENCE IN ACTION

UTI Infections in Kids

The clinical problem



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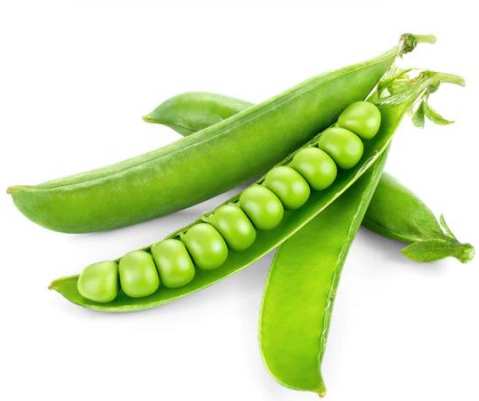
Need for Clinical Data

Development and prospective evaluation of a dynamic antibiogram to guide empiric antibiotic treatment of urinary tract infections in children



The PEA Study

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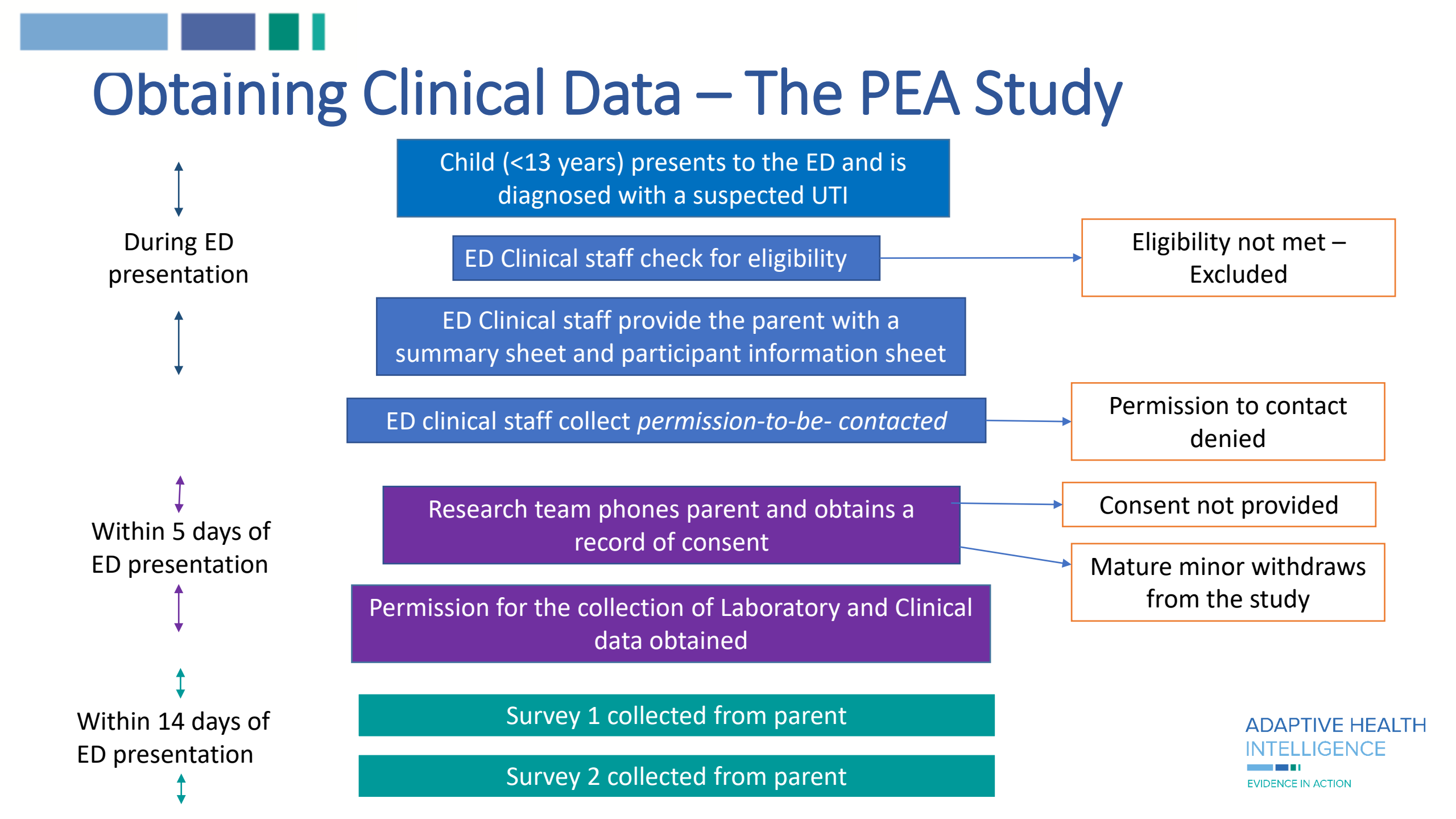
Obtaining Clinical Data – The PEA Study



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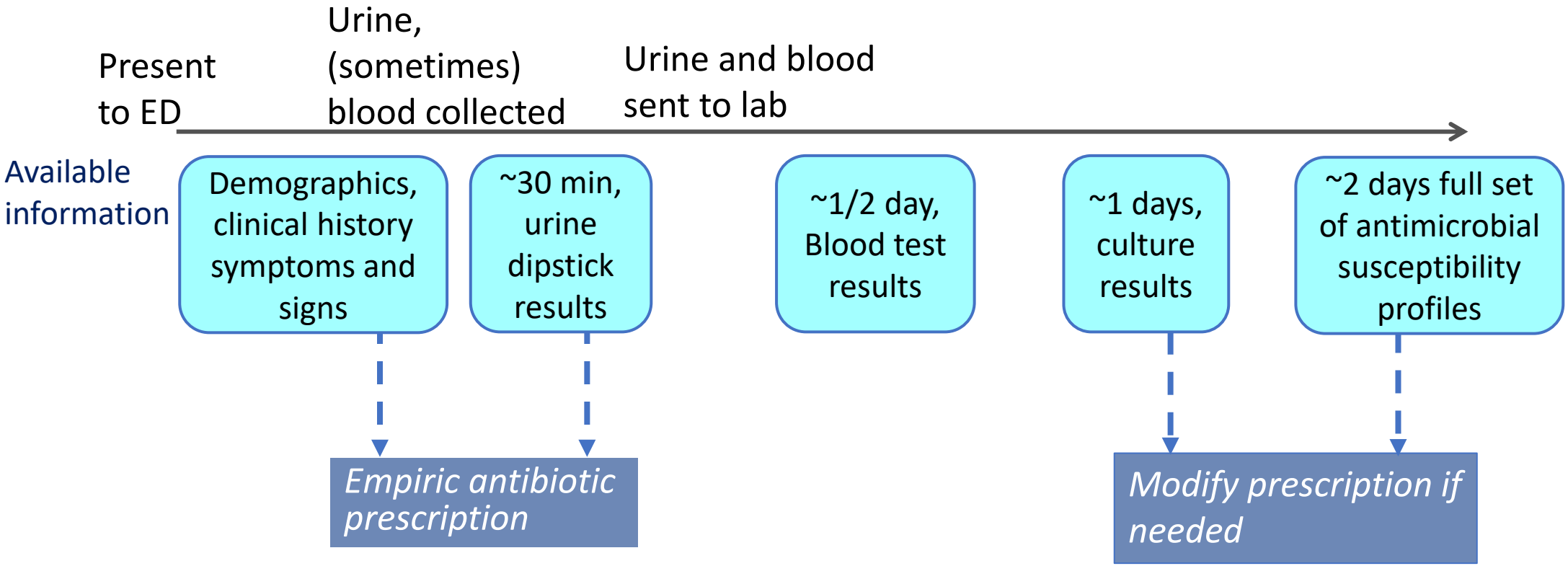
UTI clinical pathway



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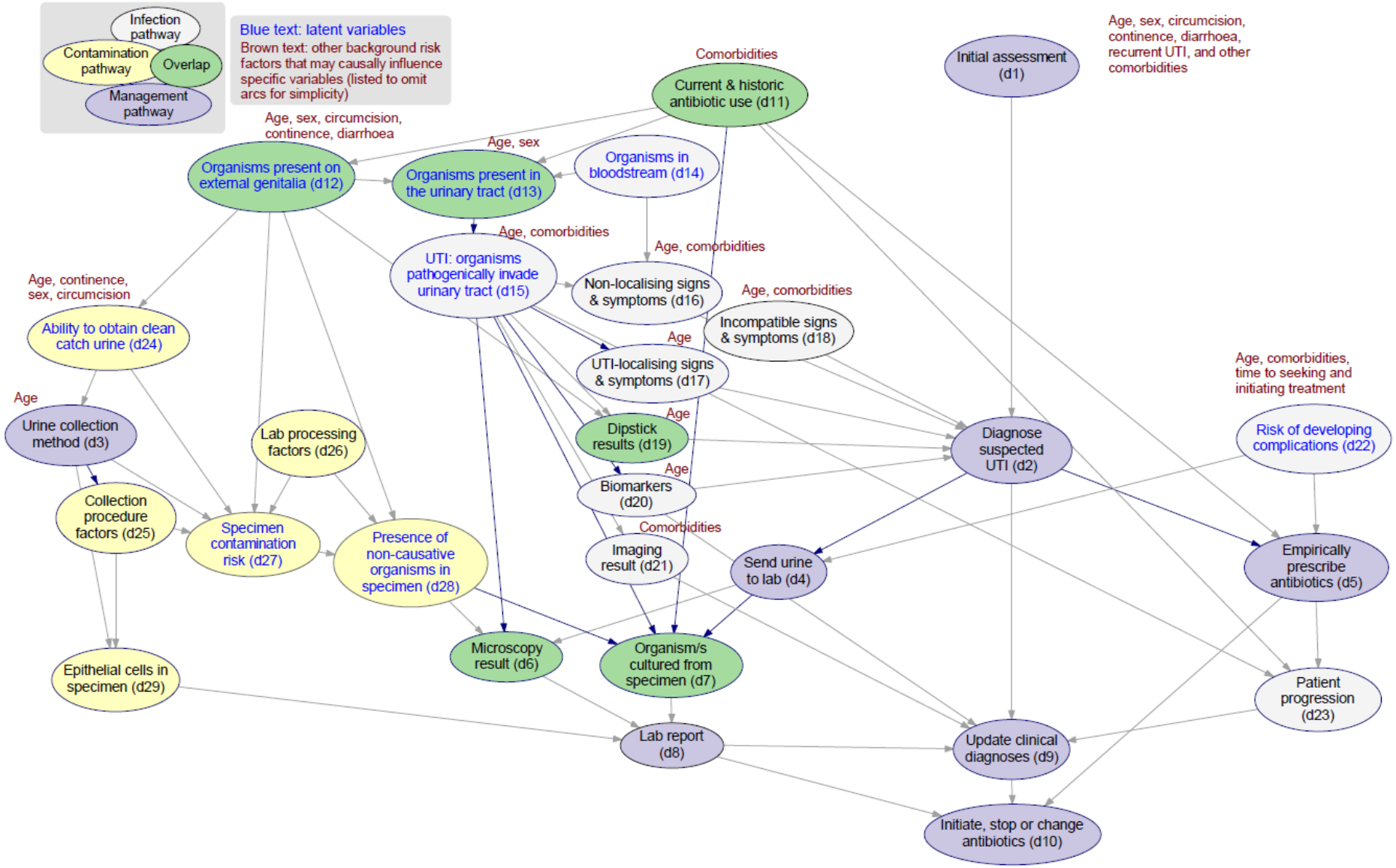
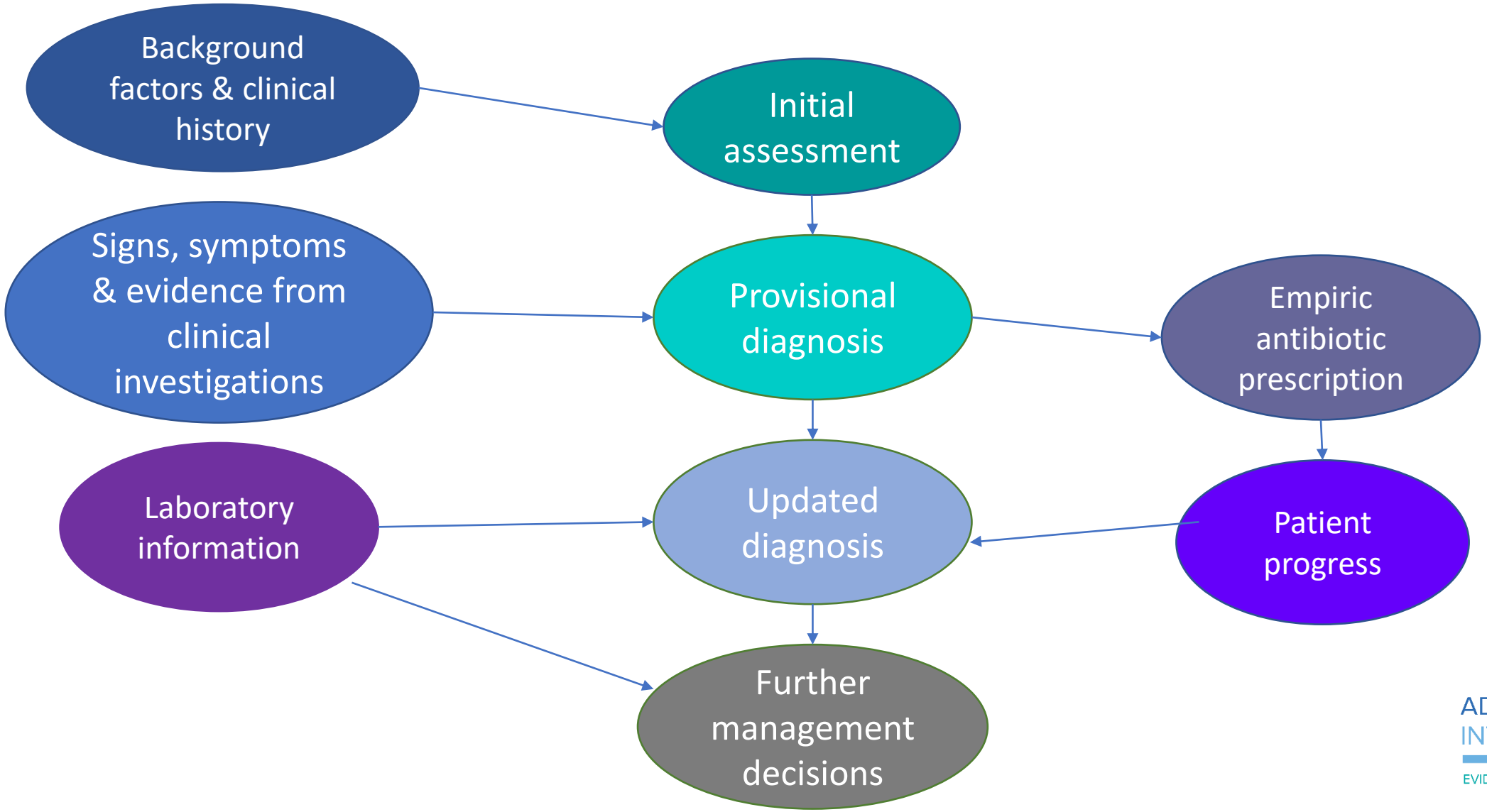
Building a solution

Expert DAG



Expert DAG – Management Pathway



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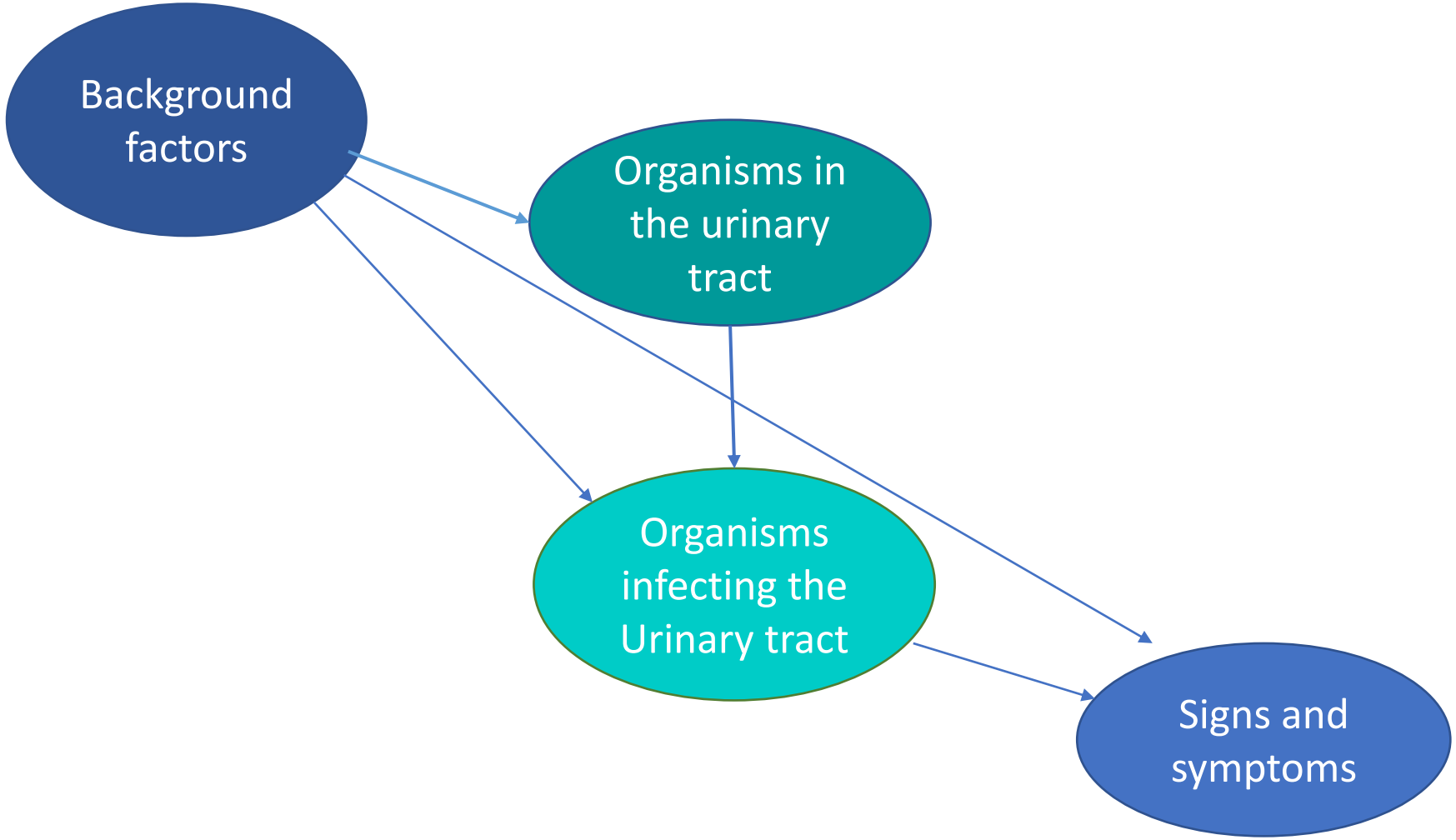
Expert DAG – Infection Pathway



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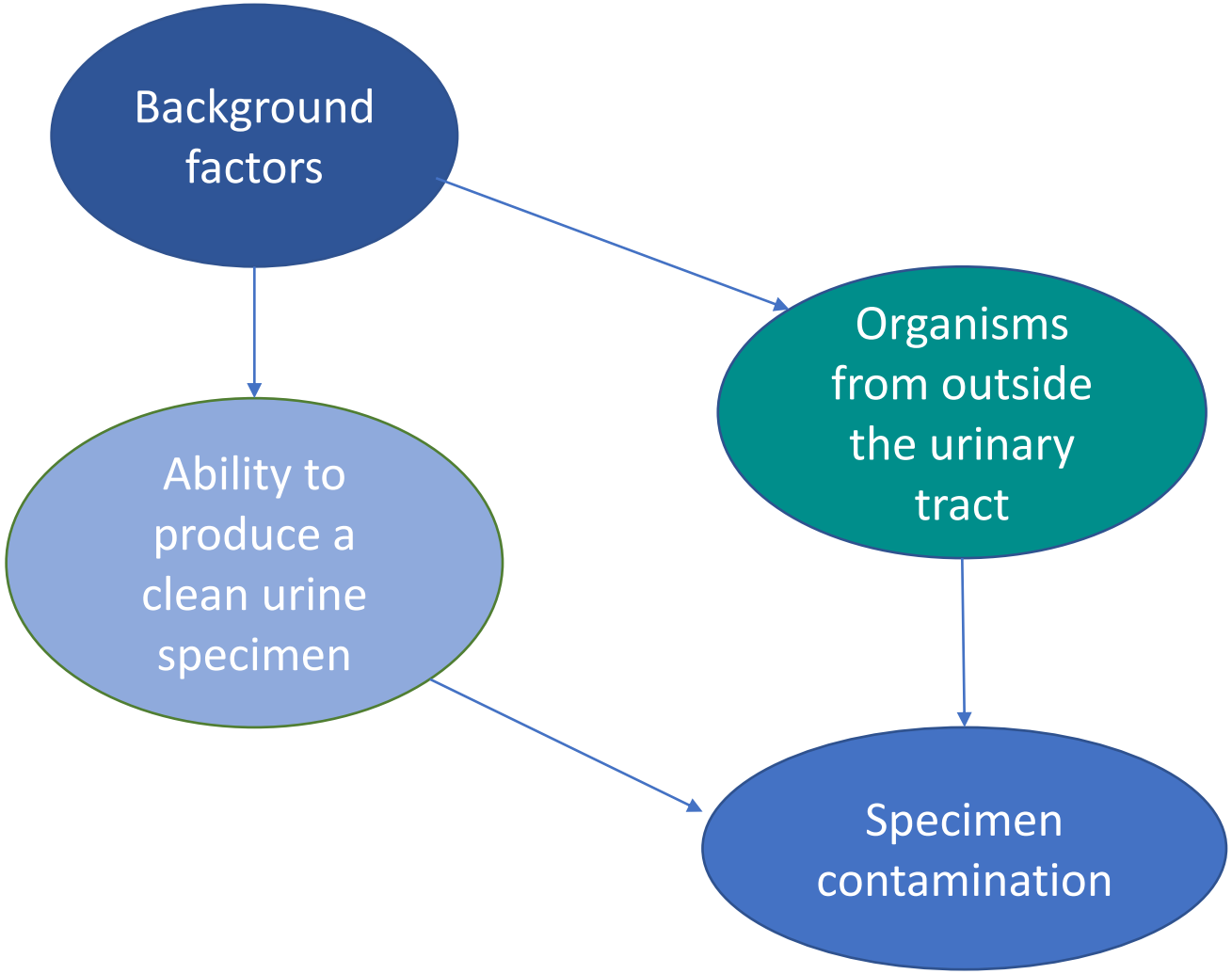
Expert DAG – Contamination Pathway



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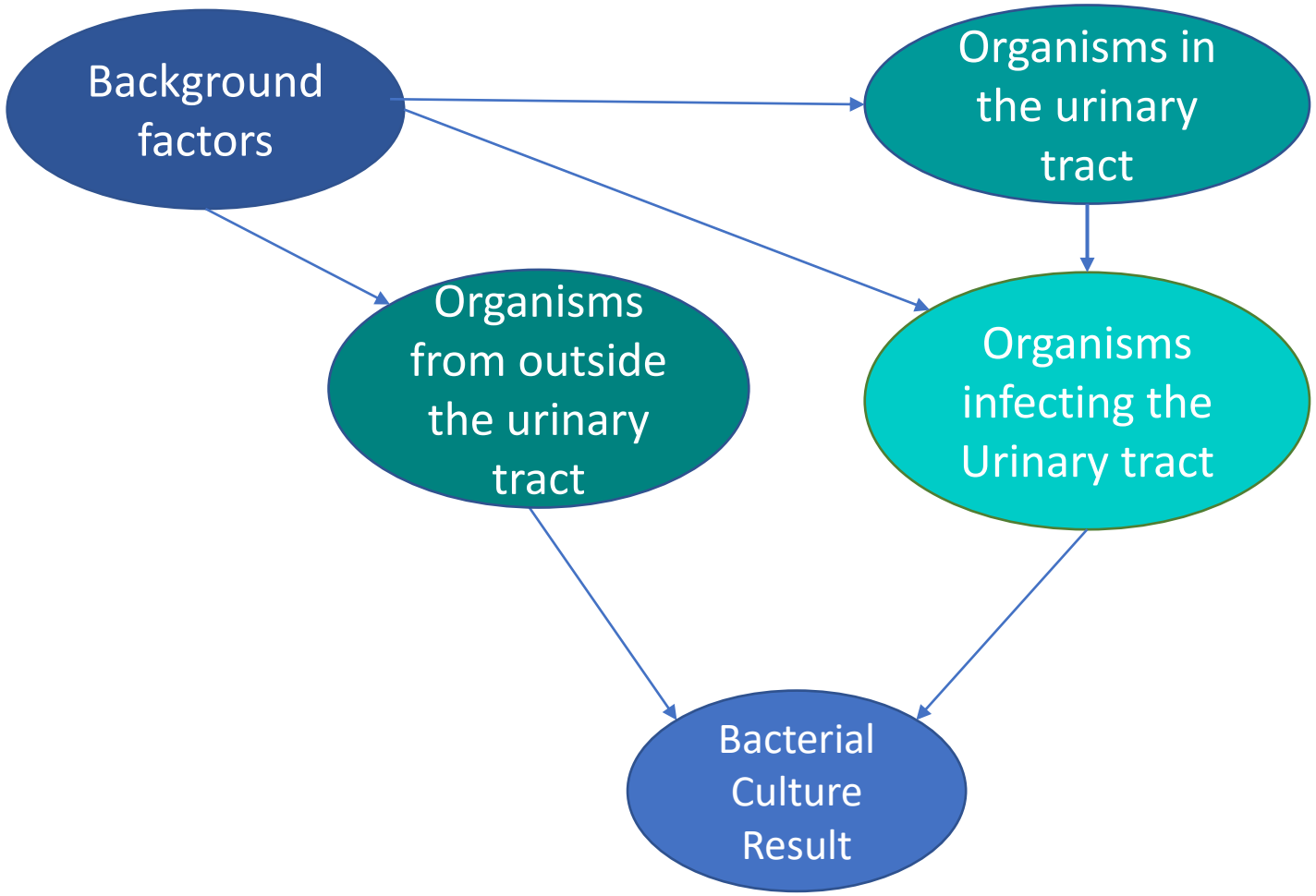
Expert DAG – Convergence of Pathways



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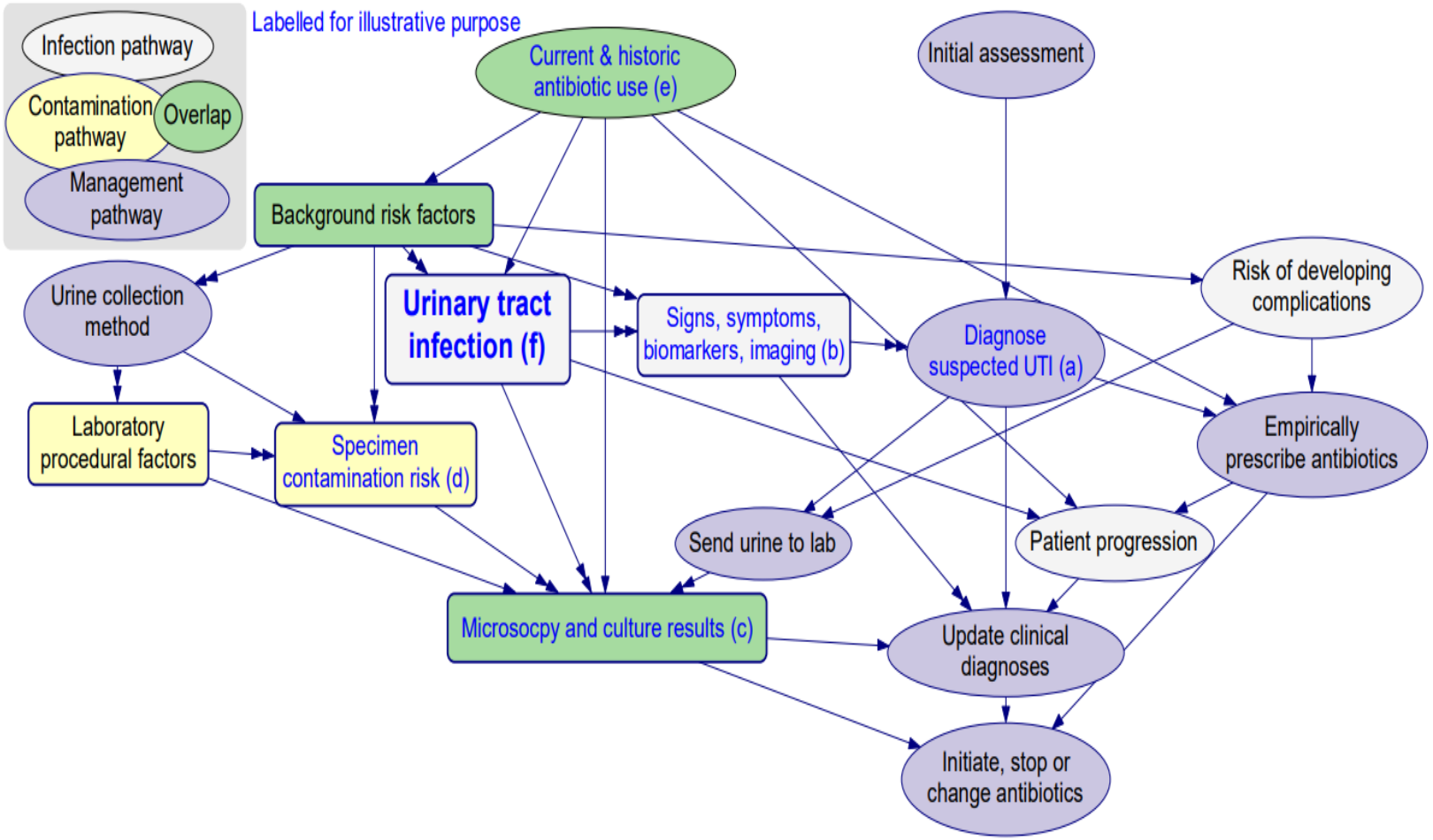
Developing the solution

Bayesian Network Model

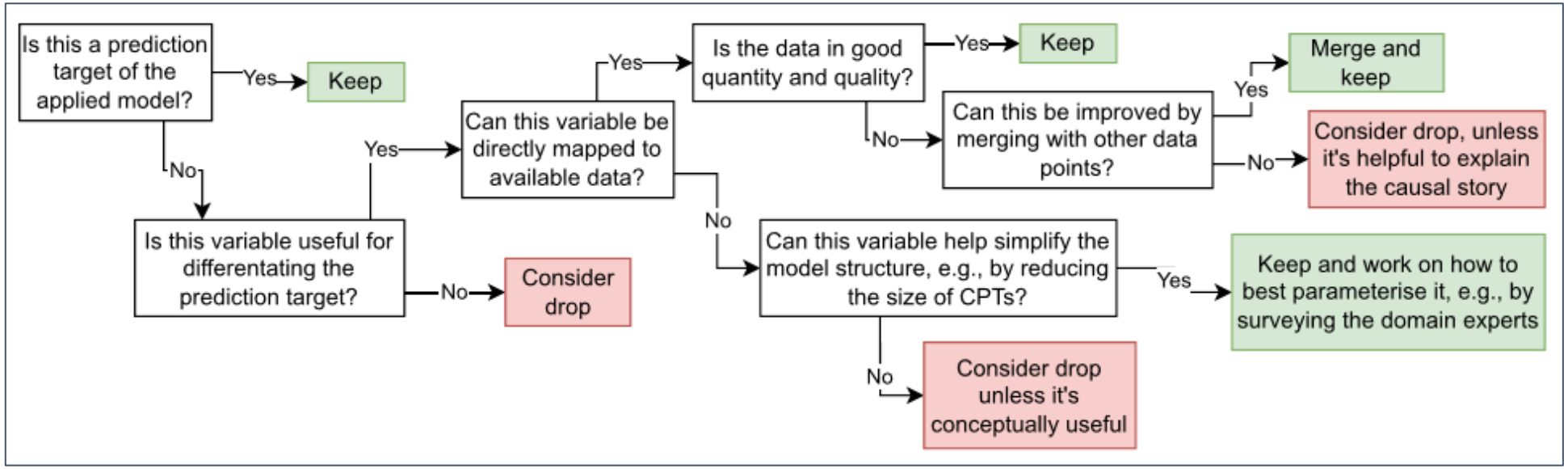


ADAPTIVE HEALTH INTELLIGENCE

EVIDENCE IN ACTION

Developing the solution

Bayesian Network Model

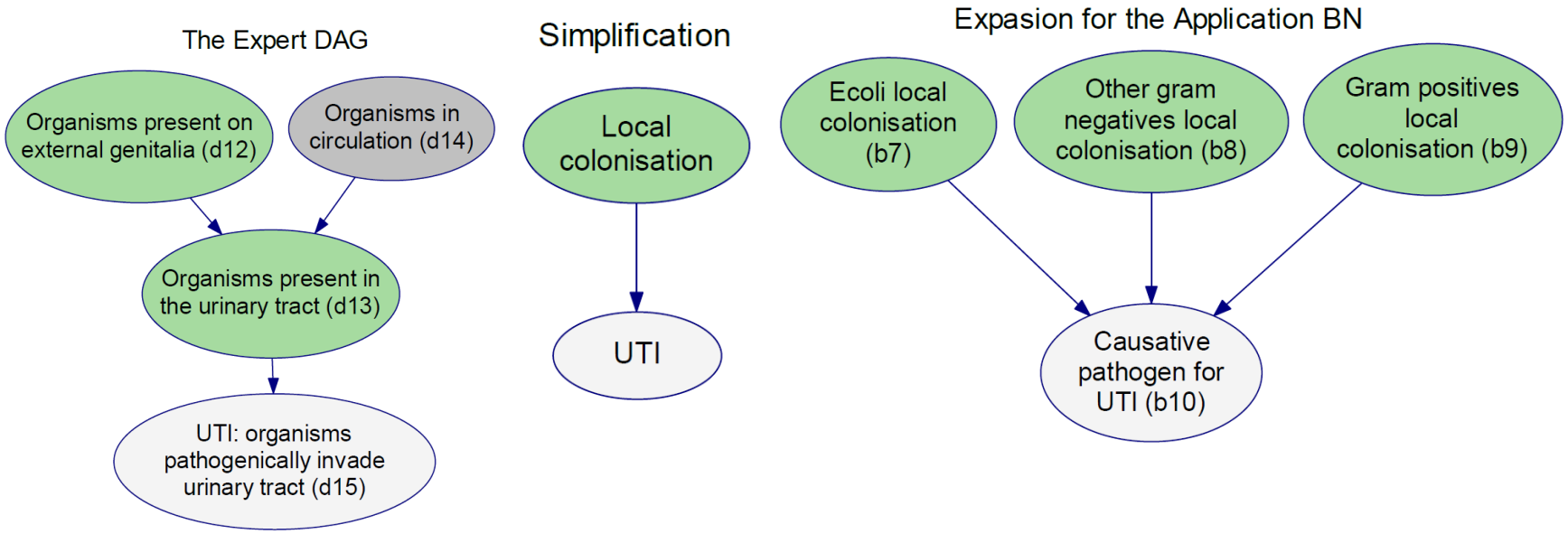


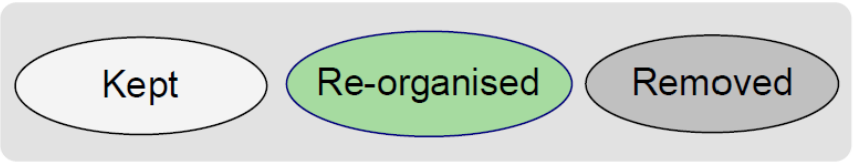
ADAPTIVE HEALTH INTELLIGENCE

EVIDENCE IN ACTION

Developing the solution

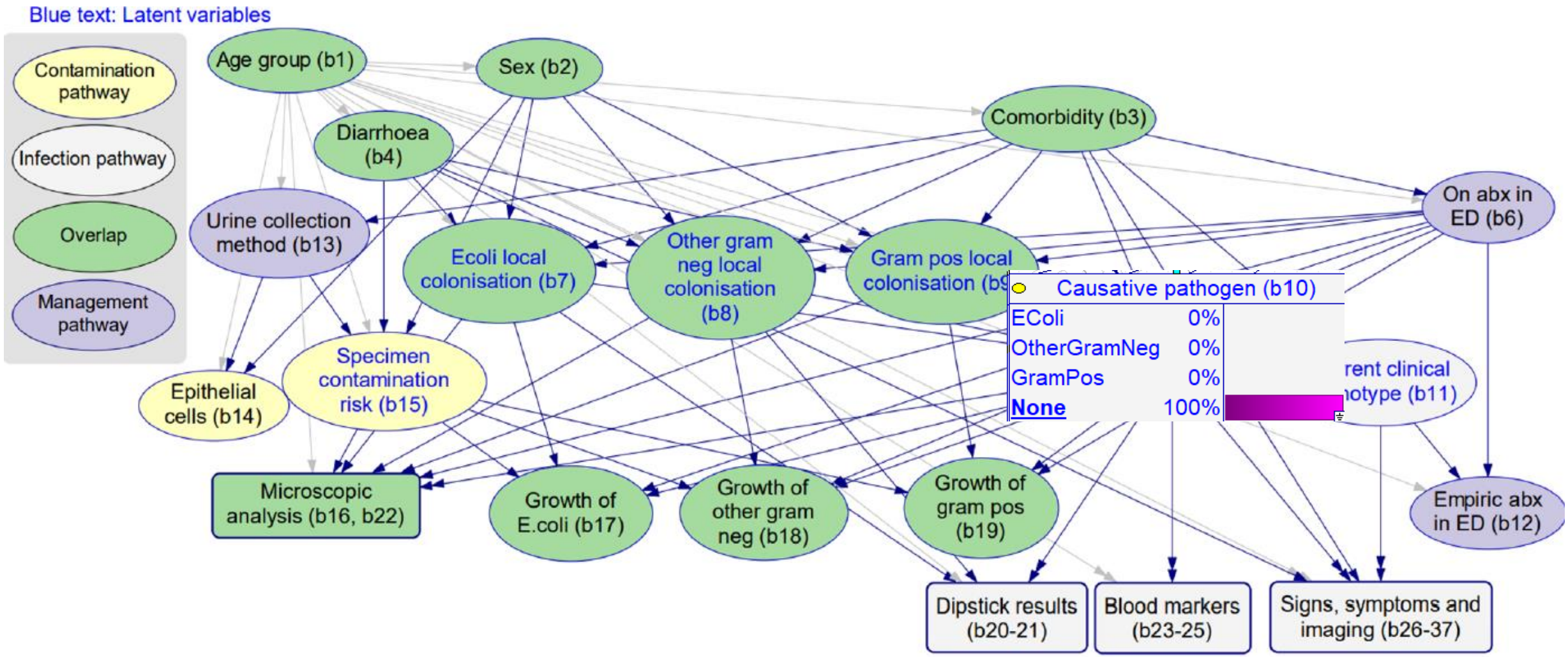
Bayesian Network Model



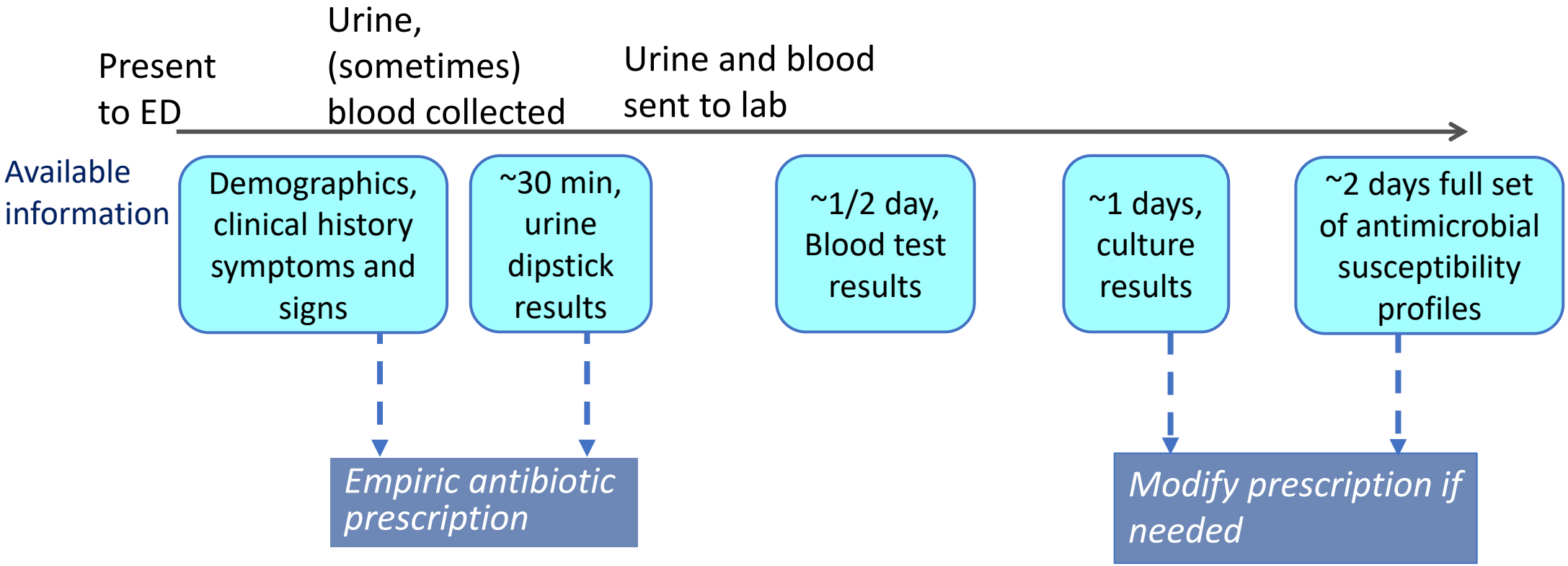


ADAPTIVE HEALTH INTELLIGENCE
EVIDENCE IN ACTION

Developing the solution



UTI clinical pathway



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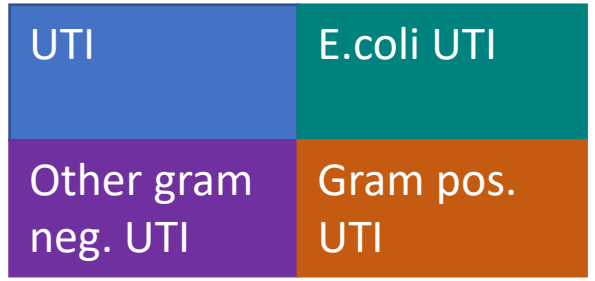
EVIDENCE IN ACTION

Clinical scenario

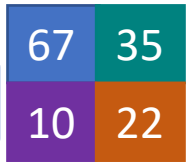


Initial observations

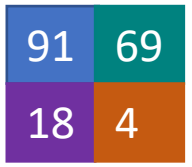
5- month old boy, fever, irritable, on abx prior to ED

Dipstick test

Nitrites not detected



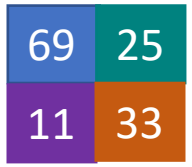
Nitrites detected



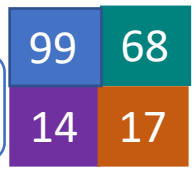
Blood test

CRP not done

CRP 10



CRP 80



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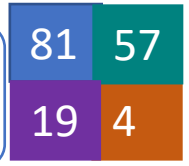
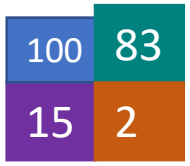


CRP 10

CRP 80



Not isolated

Isolated

Not isolated

Isolated

Not isolated

Isolated

Not isolated

Isolated

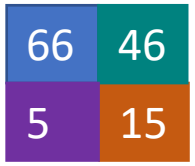
Not isolated

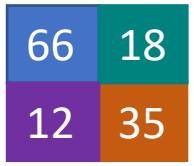
Isolated

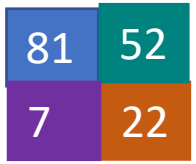
Not isolated

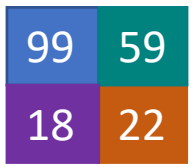
Isolated

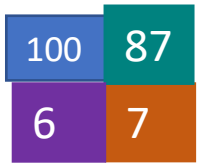
E.coli culture

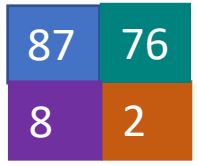


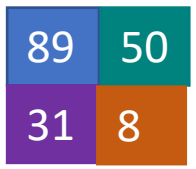


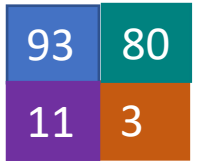


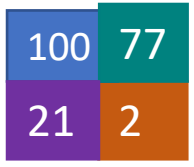


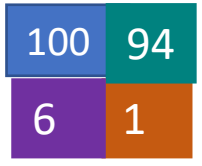




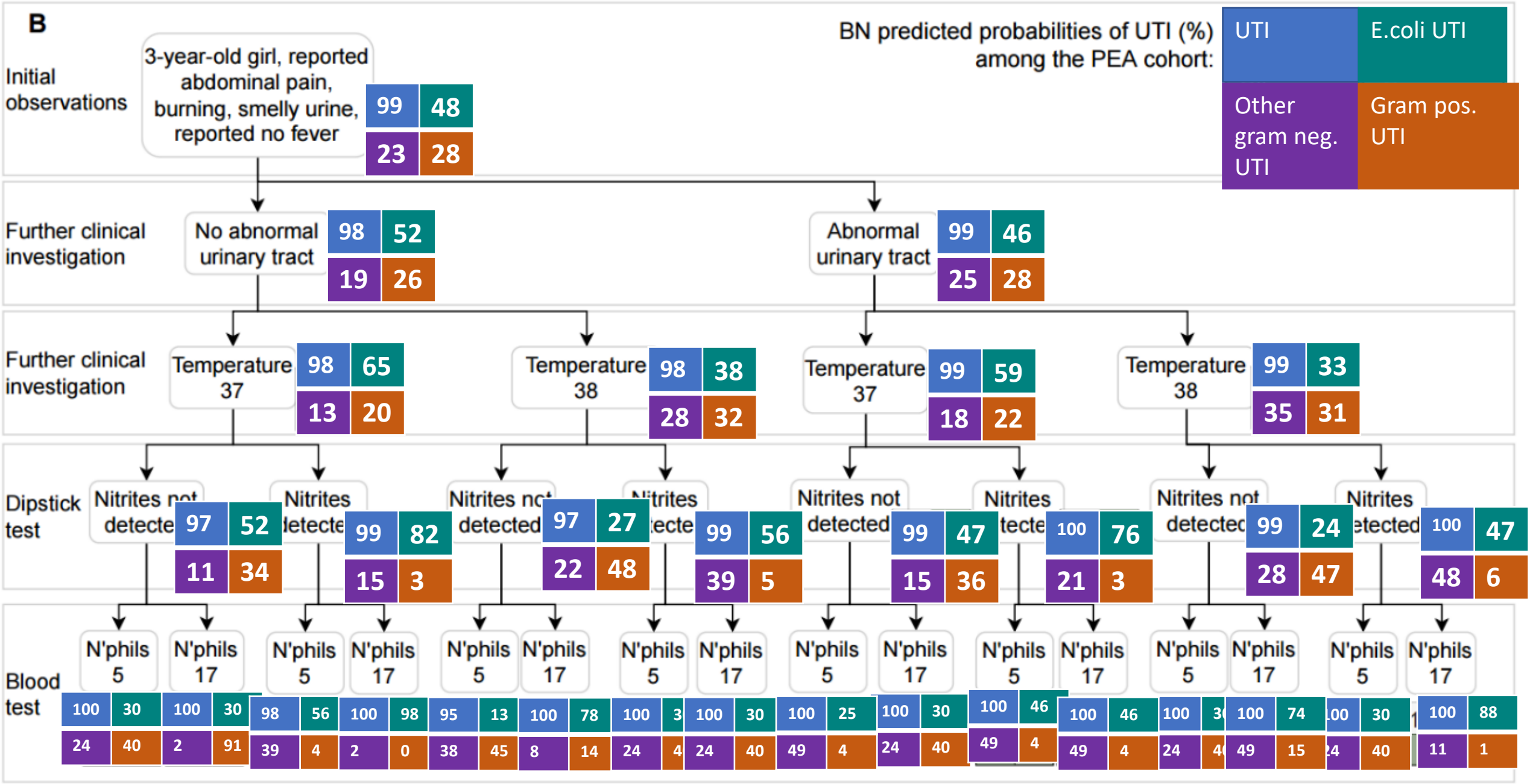




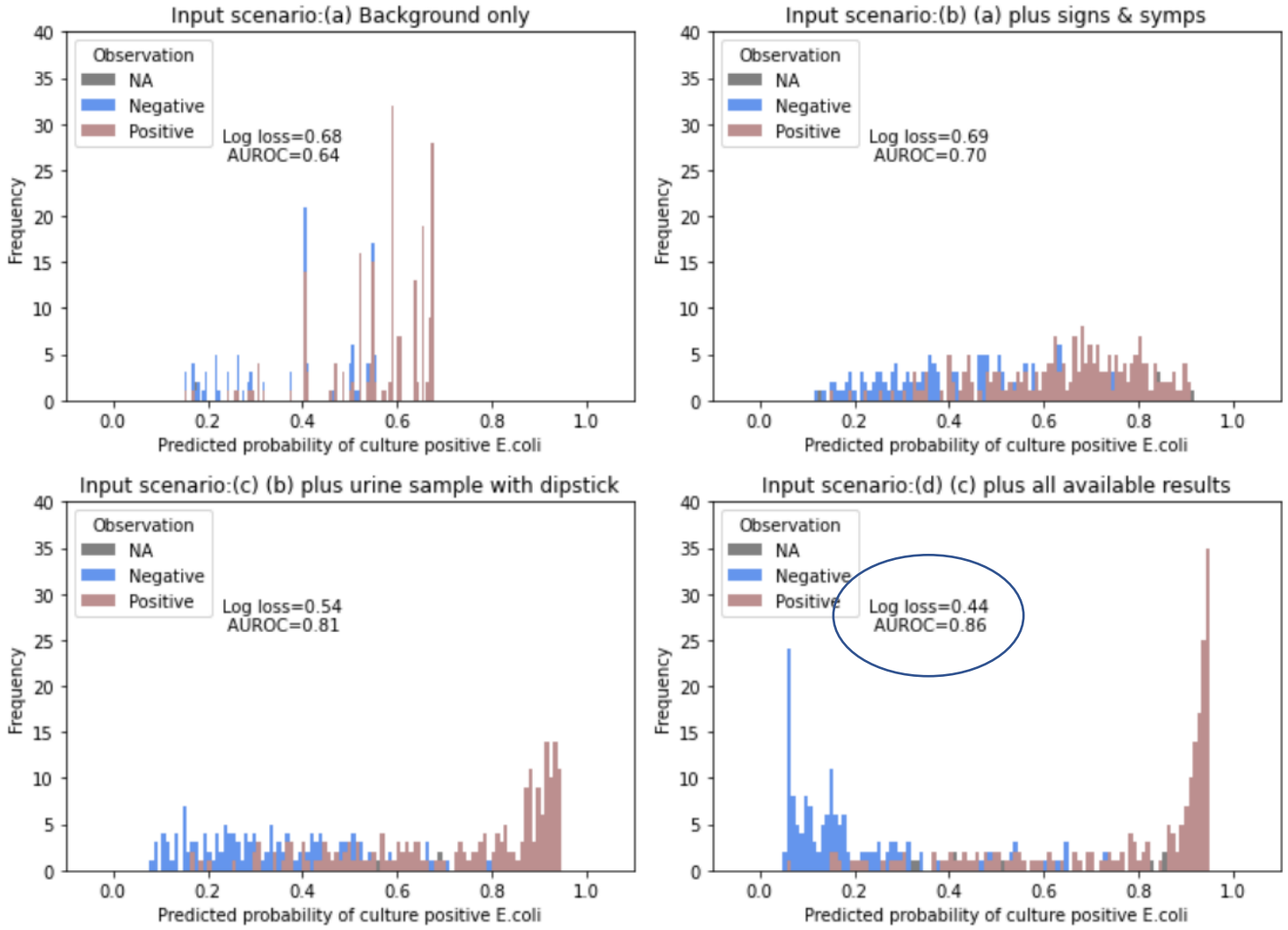




Clinical scenario



Model performance



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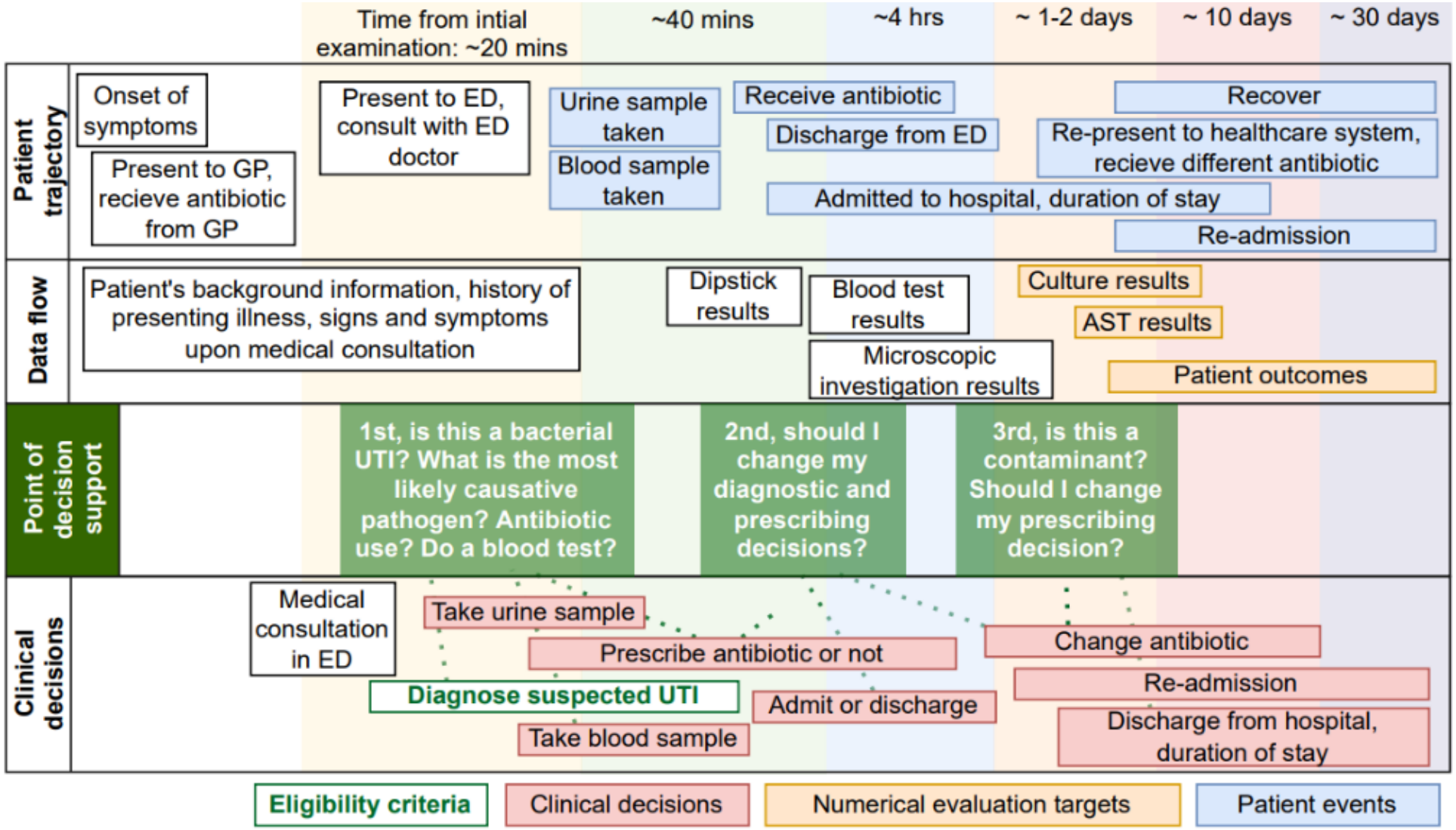
Implementation of a CDSS in clinical practice



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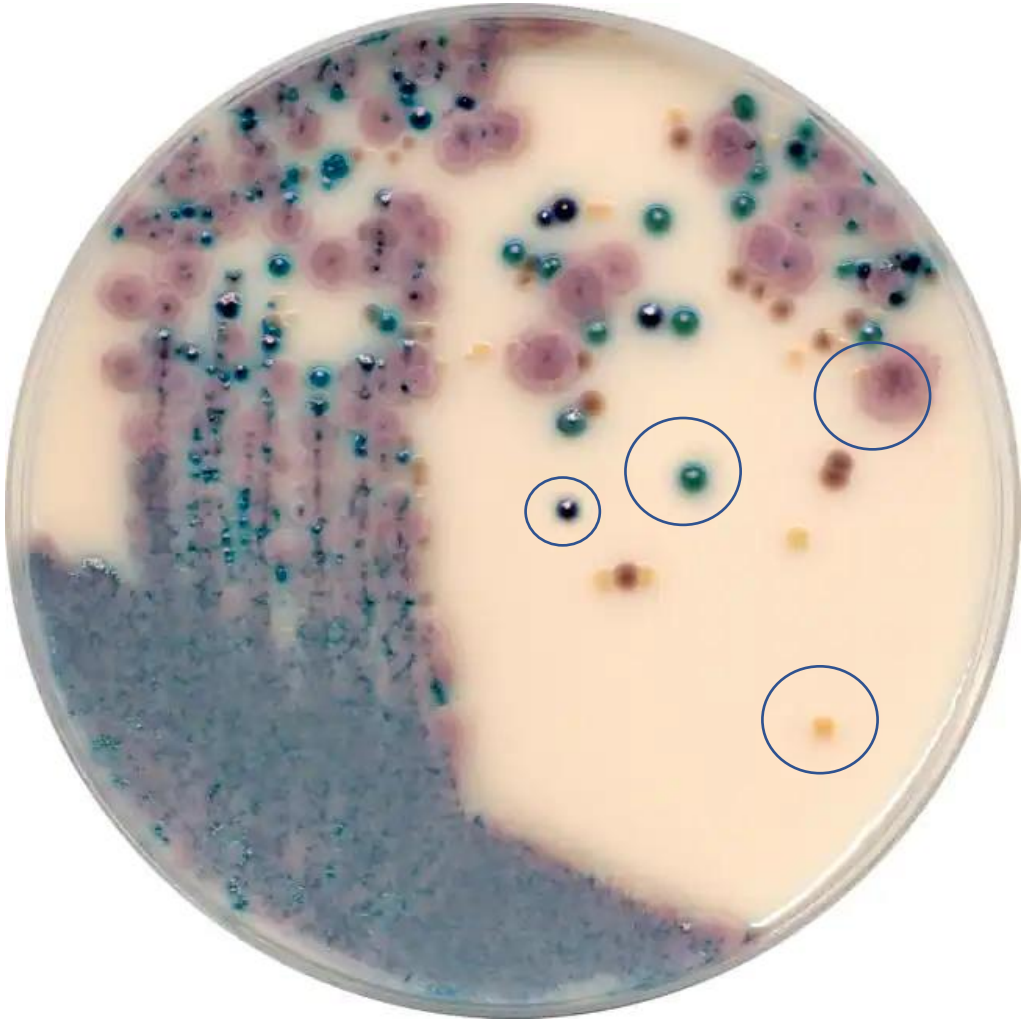
EVIDENCE IN ACTION

Implementation of a CDSS in clinical practice



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Questions?

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Jessica.ramsay@telethonkids.org.au

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