Clinical utilisation of rapid Accelerate Pheno™ platform in complex patient groups and its potential effect on antimicrobial stewardship

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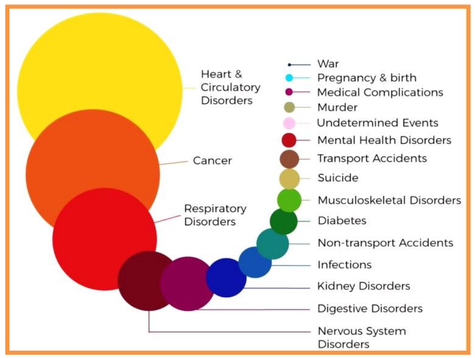
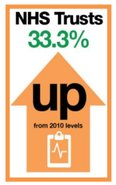
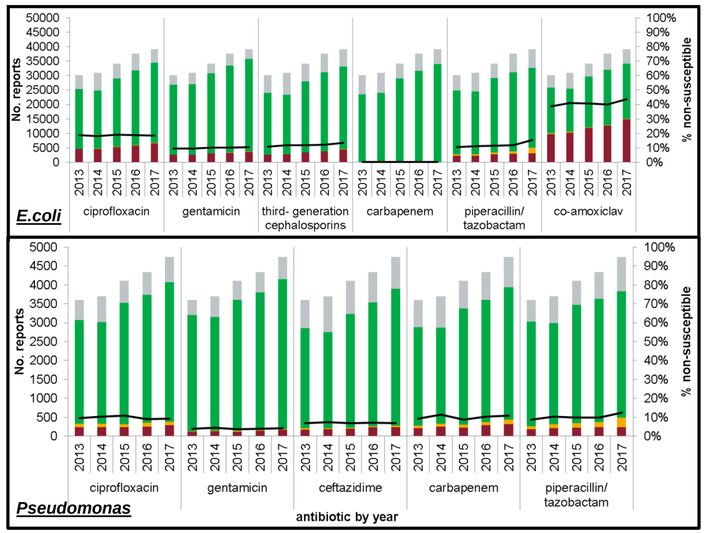
Leading cause of death and antimicrobial prescribing:-





Trend in antibiotic resistance in gram -ve:-



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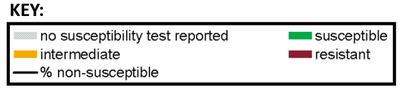
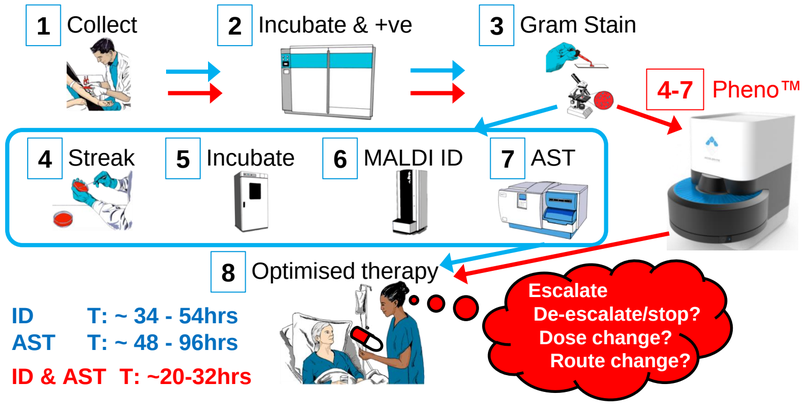
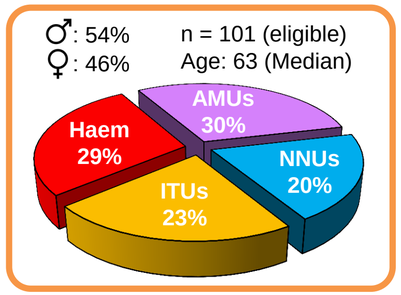
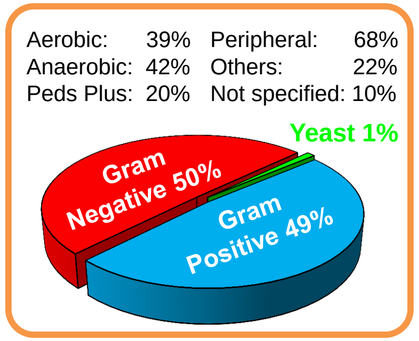


Current SOC vs. Pheno™ workflow:-

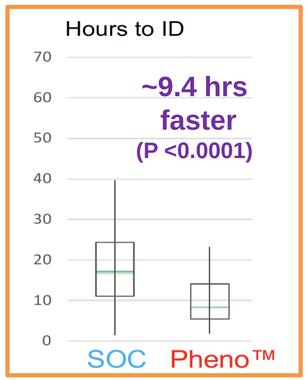


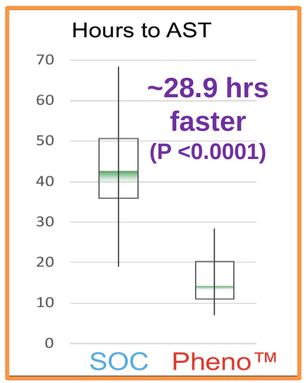
Demographics:-





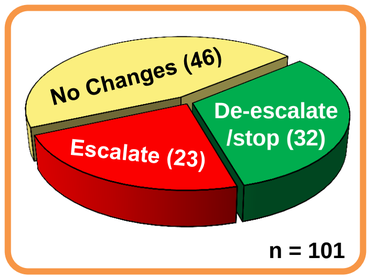
Hypothetical time savings:-



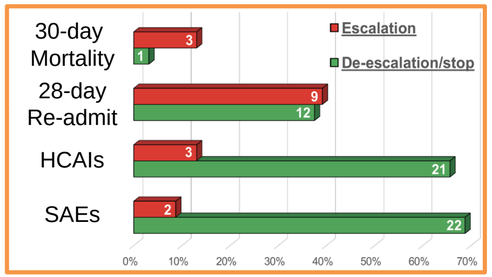


Potential actionable results:-

Patient care & outcome:



Patient safety:



Case study:- potential treatment escalation

DOB: 09 Feb 1945, Male 73yo
20th May - 13th Jun18 (LOS 24days)
PC: Febrile Neutropenia (40ºC)
MHx: AML on chemo, PICC in situ

Tx	WCC	CRP	Time point	Events
IV TAZ 4.5g TDS	2	5	20th May	Hospital Admission
↑ QDS			11th Jun 13:30	BC collected while in Haem
	0.1	312	11th Jun 14:55	BC received in Lab
			11th Jun 15:45	BC loaded in BacT/Alert
	0.1	260	12th Jun 06:29	BC flagged +ve
+ IV GEN 5mg/kg OD			12th Jun 14:58	SOC ID – *PAER* (8.48 hrs)
			13th Jun 09:30	Pt Deceased - *PAER* Septicaemia
	0.0	N/A	14th Jun 03:36	SOC AST - TAZ/ATM/CAZ/FEP/TIM resistance (45.12 hrs)

Pheno™ ID – *PAER* (3.47 hrs)
Pheno™ AST – TAZ/ATM/CAZ/MEM resistance (8.78 hrs)

Antimicrobials	SOC MIC	Pheno™ MIC	Agree
Ciprofloxacin	**≤0.25 <S>**	**≤0.25 <S>**	√
Gentamicin	**≤1 <S>**	**4 <S>**	√
Ceftazidime	≥64 <R>	≥64 <R>	√
Aztreonam	32 <R>	8 <I>	√
Meropenem	1 <S>	4 <I>	!
Tazocin	**≥128 <R>**	**128 <R>**	√

Summary:

- Pheno™ best deployed in vulnerable patient group to deliver timely antibiotics decisions
- Pheno™ can be implemented as part of the health economy

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University Hospitals Birmingham NHS
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