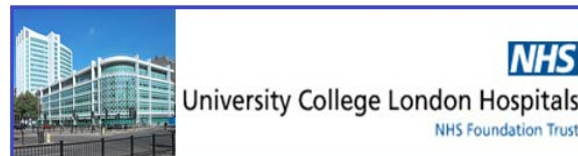


Novel diagnostic strategies for urinary tract infection in hospital

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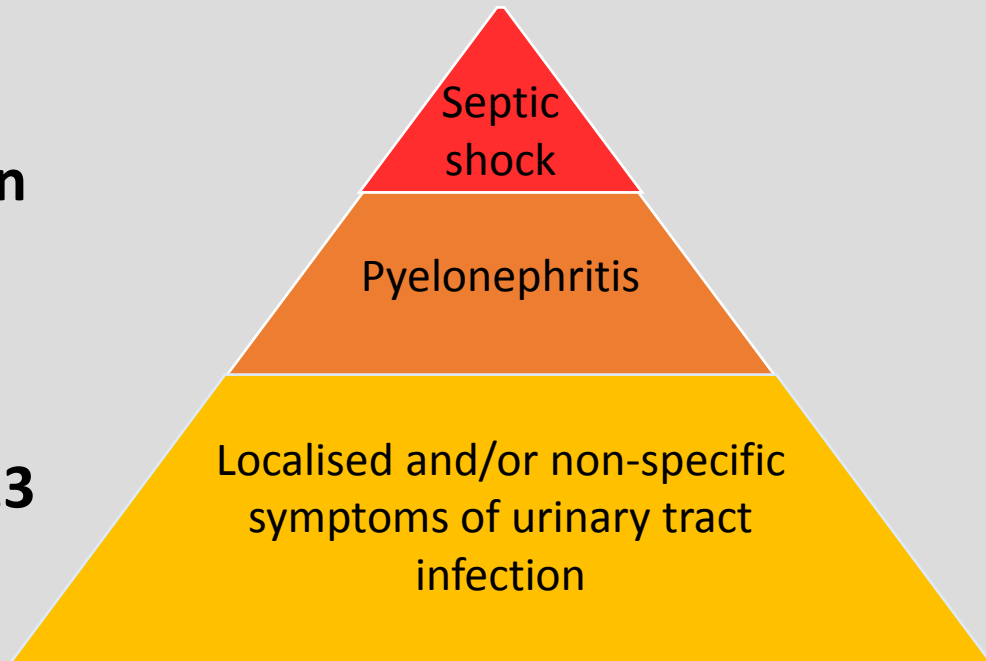


Inappropriate antibiotic prescribing has a major impact in hospital

- Drug-resistant infection, vulnerable patients
- High frequency (broad spectrum) prescribing

**Urinary tract infection
(UTI) syndromes**

**22% Emergency
admissions in 2012/13**



The epidemiology of UTI syndromes in hospital

Dataset	Prescribing	Resistance	Individual-level	Scale
Hospital Episode Statistics	N	N	Y	Y
Electronic health records	Y	Y	Y	Y
Surveys eg ECDC	Y	Y	N	Y
Local studies	Y	Y	Y	N
Hospital Prescribing Audit (HPA)	Y	N	Y	Y

Phenotyping patients with suspected UTI syndromes

Clinical codes (ICD-10)

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graph TD; A[Clinical codes (ICD-10)] --> B[Microbiology  
Biomarkers (vital signs, CRP, WCC, PCT)]; B --> C[Symptoms]; C --> D[Host gene signature];
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Microbiology

Biomarkers (vital signs, CRP, WCC, PCT)

Symptoms

Host gene signature

Conclusions

- Integration of clinical data + omics is a potential strategy to identify patients for early antibiotic cessation
- Clinical trials would be required to test this approach
- Developing a test is only part of the problem.....