



# Antibiotic prescribing decisions in intensive care: A qualitative study

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## BACKGROUND

Antimicrobial resistance (AMR) is a key issue in intensive care units (ICUs), where antibiotics are widely prescribed, but there is little research examining how antibiotic decisions are made in ICUs. This study is part of the INHALE trial, which investigates the impact of molecular diagnostics on prescribing for hospital-acquired pneumonias (HAP) in ICUs. We explore how prescriber perceptions and contextual factors (i.e., social and environmental characteristics) influence ICU prescribers' antibiotic decisions, before the introduction of molecular tests.

## METHODS

We conducted 4 focus groups and 34 semi-structured interviews with ICU staff involved in antibiotic prescribing (Table 1). Participants were recruited from 4 UK hospitals: 1 district general, 1 tertiary referral, 1 children's, and 1 private. Clinical vignettes depicting realistic HAP patients guided interview discussions. Data were analysed using inductive thematic analysis.<sup>1</sup>

Table 1. Participants' roles

Focus groups	Vignette-based interviews
1 ICU early career trainee	7 ICU early career trainees
5 ICU middle grade trainees	16 ICU middle grade trainees
8 ICU consultants	11 ICU consultants
7 ICU pharmacists	
2 Microbiologists	
1 Infectious diseases consultant	
1 Health psychologist	
1 Nurse	

## RESULTS

### PRESCRIBER PERCEPTIONS

#### Necessity of antibiotics

"[Patient] has already gone on meropenem. So, it might be that it was keeping [an infection] at bay." (P57, Middle grade trainee, Hospital 3)

"One of the questions that I was grilled on in the Coroners' Court [...] was why are we stopping antibiotics?" (P28, Consultant, Hospital 1)

"you're brave [with antibiotics] until you're burnt and then you stop being brave." (P48, Consultant, Hospital 1)



#### Concerns about antibiotics

"I just focus on [my] patient. I don't think, what's the impact of starting this or that antibiotic on the whole ecology of the unit?" (P1, Consultant, Hospital 3)

"I'd want them to have antibiotics. Despite the fact that there is this theoretical risk of resistance." (P36, Consultant, Hospital 2)

"it's not guaranteed that the antibiotic resistances to the bacteria in the population at large will be changed at all." (P43, Consultant, Hospital 1)

### CONTEXTUAL FACTORS

"out of hours [...] your primary aim is to do something which is safest for the patient [...] [Which] is to give them the broadest spectrum you can." (P15, Middle grade trainee, Hospital 3)

"we're fighting off external pressure to change - to either crank up or put two antibiotics or start them inappropriately." (P29, Consultant, Hospital 4)

"we're really tightly controlled here for antibiotics." (P20, Early career trainee, Hospital 4)

"we give out much stronger antibiotics like sweetsies." (P35, Middle grade trainee, Hospital 2)

- Prescriber perceptions promoted starting or continuing empirical antibiotics in the face of uncertainty. These perceptions were based on the personal judgement of the need to prescribe outweighing concerns about antibiotics, including AMR. These concerns were often seen as secondary to the immediate needs of their patient.
- Prescribers discussed striving to be "brave" in their prescribing (i.e., withholding or stopping potentially unnecessary antibiotics); however, this aim was counter-balanced by previous experiences of negative consequences (i.e., being "burnt").
- Antibiotic prescribing was seen as context dependent. Thus, decisions during 'working hours'; those with input from 'antimicrobial stewards', and/or following certain local norms were viewed as more likely to be appropriate.

## CONCLUSIONS

When making prescribing decisions in uncertainty, prescribers' understandable fear of undertreating possible infection often directly conflicts with antimicrobial stewardship aspirations. Perceptions of the necessity of antibiotics appear to outweigh resistance-related concerns. Support from faster and more accurate diagnostics may promote objective early decision-making, e.g., for antibiotic change or de-escalation.

## REFERENCE

1. Braun V, Clarke V. Using thematic analysis in psychology. Qualitative research in psychology. 2006 Jan 1;3(2):77-101.

This study is funded by the National Institute for Health Research (NIHR) [Programme Grants for Applied Research (RP-PG-0514-20018)]. The views expressed are those of the authors and not necessarily those of the NIHR or the Department of Health and Social Care. INHALE Study Group: Authors and their affiliations as above and Bupa Cromwell Hospital, Great Ormond Street Hospital, Norfolk and Norwich University Hospitals NHS Foundation Trust, Norwich Clinical Trials Unit, University College London Hospitals NHS Trust, and co-applicants not named above.