The Attitudes and Beliefs of Australian Emergency Department Clinicians on Antimicrobial Stewardship in the Emergency Department

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Background

Antibiotic resistance is a global public health issue.[1] Antibiotics are the second most common therapeutic class prescribed in the Emergency Department (ED).[2] ED clinicians influence both inpatient and community settings.[3] Up to 50% of antimicrobial courses prescribed in hospital are inappropriate.[2] A paucity of literature exists exploring ED clinicians' perceptions of Antimicrobial Stewardship (AMS) in the ED, with current literature focused on the American healthcare setting.[6,7,8]

Results

Twenty-two clinicians (8 doctors, 8 nurses, 6 pharmacists) from seven institutions participated. Participants were aware and concerned about antimicrobial resistance. Concern was raised of increasing resistance in Australia and need for AMS strategies. Clinicians were divided as to whether antimicrobials are prescribed appropriately and judiciously in the ED, with many perceiving prescribing to be inappropriate. Prior knowledge of the term 'Antimicrobial Stewardship' was demonstrated by doctors and pharmacists, with relative lack of awareness by nurses.

Four main themes were identified as both barriers and facilitators to AMS in the ED: **healthcare provider, resources, organisational and cultural.**

HEALTHCARE PROVIDER

Barriers

Uncertainty of Diagnosis

Concern patient's condition may be worse than clinical data suggests influenced decision to prescribe broader spectrum agents

'…I guess sometimes you get a feeling about a patient, that they're sicker than how they're presenting, than how their raw statistics are presenting…then I may increase [the antimicrobial spectrum]' P6 (Dr, 5 yrs exp)

Previous Experience

ED doctors intend to follow institutional guidelines, however hindered by time pressures, high staff turnover and uncertainty of diagnosis

'We're working in such a hectic environment…a lot of the time we just need to go by our previous experience' P4 (Dr, 9 mths exp)

Inter-Professional issues

Junior ED doctors/nurses perceived inability to challenge ED consultant, senior prescriber and inpatient teams. ED clinicians perceived inpatient teams broadened prescriptions, potentially inappropriately

'the inpatient sort of pressure…I wouldn't go against what they said unless I thought it was a safety issue as opposed to a resistance issue' P3 (Dr, 3-4 yrs exp)

Knowledge-Related

Lack of continual education regarding antimicrobials and resistance, particularly nursing participants

'Lack of education…things change…it's difficult to be up-to-date with everything' P9 (Nurse, 4 yrs exp)

Lack of feedback regarding global and individual prescribing practices and patient outcomes

'…maybe the lack of feedback as well as knowing what you did before – did it work…' P3 (Dr, 3-4 yrs exp)

Education deficits were cited by all professions. Nurses felt doctor's inexperience contributed to untimely antimicrobial administration.

Over Prescription and Inappropriate Broad Spectrum Use

Doctors/pharmacists perceived over-prescription in context of uncertainty of diagnosis and clinical severity

'it's easier to…prescribe very broad spectrum antibiotics rather than prescribing something that's a narrower coverage particularly in the more unwell or the elderly…' P8 (Dr, 20 yrs exp)

Doctors believed inappropriate broad spectrum use occurred mainly in the setting of wound management

'I probably am not using an evidence base particularly well [for] contaminated wounds' P5 (Dr, 20 yrs exp)

Facilitators

Knowledge Related

All professions highlighted an overwhelming need for education, training and feedback to empower clinicians to intervene and promote advocacy from within. Patient outcomes associated with individual prescribing practices believed to be important, albeit logistically challenging

'I learn a lot from what ends up happening to them, seeing if what I did was ideal or not' P1 (Dr, 5 yrs exp)

Clinician Advocacy

All professions cited need for senior ED clinician antimicrobial champion

' you need really to have the senior medical people leading by example' P5 (Dr, 20 yrs exp)
'you need a clinician champion, I don't think that this can just come from pharmacy' P17 (Pharm, 7-8 yrs exp)

Improved Communication

Nurses highlighted inter-professional communication to improve timely administration, and more effective dialogue between ED/inpatient teams.

RESOURCE

Barriers

Time Pressures

Doctors lack time to consult guidelines and consider resistance patterns due to competing interests. Also absence of timely diagnostics.

'What are the barriers? I guess time – because we don't have time' P3 (Dr, 3-4 yrs exp)

Nurses/pharmacists highlighted repeated doses being delayed, missed or inappropriate with respect to diagnostics due to time pressures

Staffing

Insufficient staff resources contributes to workload and time pressures

Lack of access to expert opinion

Lack of reliable access to infectious diseases experts, AMS teams or ED pharmacists

'Sometimes the guidelines maybe don't always fit in a clinical situation, and maybe having someone to talk to about it would be nice' P3 (Doctor, 3-4 yrs exp)
'I guess more stewardship, like someone there to guide us in terms of giving what sort of antibiotics' P13 (Nurse, 8 yrs exp)
'Organisationally if it was easier to get a hold of the ID registrar that would help…if you wanted to talk it through' P17 (Pharm, 8yrs exp)

Aim

To explore the attitudes and beliefs of Australian Emergency Department (ED) clinicians towards antimicrobial stewardship in the ED.

RESOURCE

Facilitators

AMS / Multidisciplinary Team

A need for stewardship and access to expert opinion

'I think more awareness of appropriate prescribing would be good, I know when I was working on the wards there was a team, a stewardship team that came around, I don't know how that would work in ED but I know it was really helpful on the wards, and it definitely made you think about your prescribing' P2 (Dr, 6 wks exp)

ED Pharmacist

ED Pharmacist presence within the ED to provide regular feedback on prescribing practices and antimicrobial order appropriateness

'I would really like…to actually have pharmacy presence within the ED' P8 (Dr, 20 yrs exp)

Staffing

Adequate staffing resources to allow time to consider antimicrobial prescribing choice and seek expert advice

'when they're in a department that's busy and they have other pressures then it falls down a list of priorities…relieving them of those other pressures so that they can provide good quality care is an important factor' P8 (Dr, 20 yrs exp)

ORGANISATIONAL

Barriers

System Problems

Diagnostic delays compelled clinicians to prescribe broader spectrum antimicrobials in the absence of culture results. Stock availability and access impacted prescribing decisions and timely administration.

'waiting for pathology like cultures and urine tests take some time to come back' P15 (Nurse, 15 yrs exp)

Access Issues

Nurses felt repeated dosing not well managed due to access pressures. Delays in inpatient team review also perceived an issue

'…patients that stay in ED for a long time and have those repeated doses of antibiotics…I don't think emergency nurses are very good at doing routine medications, compared to the ward' P9 (Nurse, 4 yrs exp)

Guidelines / Restriction

Lack of easy access to guidelines, inability of guidelines to capture clinical complexity, and perceived or real lack of restriction to antimicrobial prescription in the ED

'we have an AMS program which applies to everywhere but…our restricted antibiotics don't apply in the ED' P18 (Pharm, 4 yrs exp)

Facilitators

Guidelines / Prompters

Institutional consensus guidelines being readily available, easily accessible, up-to-date, indication-specific and non-conflicting.

'clear guidance…there's often the therapeutic guidelines and [institutional guidelines] which don't always entirely match up and so that can be confusing' P6 (Dr, 5 yrs exp)

'Well prompters, you know to keep it top of mind…there could even be prompter on the drug chart for instance…promoting to nurses their more active involvement.' P12 (Nurse, 8 yrs exp)

Stock Availability

Consistent with guidelines, increased visibility

CULTURAL

Barriers

Patient – Parent Expectations

Perceived pressure from patient/parent/carer to prescribe antimicrobials when not clinically indicated.

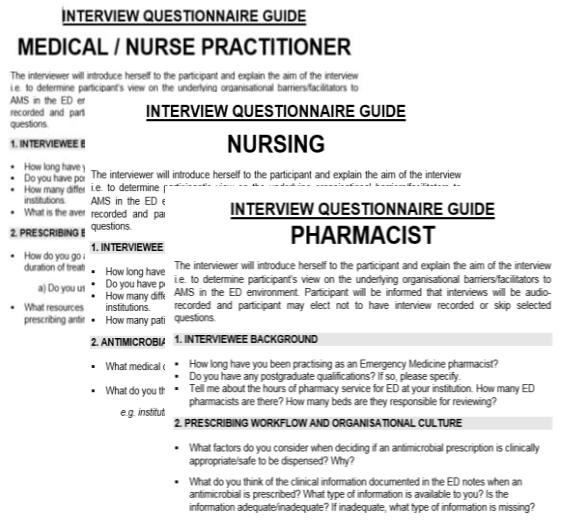
'you see it all the time really where parents are really trying to push an antibiotic…even to an extent in older people…you are susceptible to kind of giving into that pressure because we don't have time' P3 (Dr, 3-4 yrs exp)

Method

- Semi-structured one-to-one interviews of 20 – 30 minutes duration were conducted with ED clinicians (doctors, nurse practitioners, nurses, pharmacists, administrators) in Australian public hospitals.
- Participants identified via purposive and snowball sampling. Literature and researcher experience used to develop the questionnaires.
- Interviews audio-recorded, transcribed and analysed using thematic analysis via the framework approach. Participant confidentiality and written informed consent obtained.
- Two researchers coded independently; one used QSR International's NVivo 10 software and the other coded manually. Emergent themes were identified and classified.

Data Analysis

- Data analysis of themes via framework approach[4,5]
- Emergent themes identified and classified to determine underlying attitudes and beliefs towards AMS in the ED.
- Two reviewers utilising two different methods minimised chance of bias.
- Professional audio transcription service (Wordism®) used


INTERVIEW QUESTIONNAIRE GUIDE

MEDICAL / NURSE PRACTITIONER

INTERVIEW QUESTIONNAIRE GUIDE

NURSING

INTERVIEW QUESTIONNAIRE GUIDE

PHARMACIST

The interviewer will introduce herself to the participant and explain the aim of the interview i.e. to determine participant's view on the underlying organisational barriers/facilitators to AMS in the ED environment. Participant will be informed that interviews will be audio-recorded and participant may elect not to have interview recorded or skip selected questions.

1. INTERVIEWEE BACKGROUND

- How long have you been practising as an Emergency Medicine pharmacist?
- Do you have any postgraduate qualifications? If so, please specify.
- Tell me about the hours of pharmacy service for ED at your institution. How many ED pharmacists are there? How many beds are they responsible for reviewing?

2. PRESCRIBING WORKFLOW AND ORGANISATIONAL CULTURE

- What factors do you consider when deciding if an antimicrobial prescription is clinically appropriate/safe to be dispensed? Why?
- What do you think of the clinical information documented in the ED notes when an antimicrobial is prescribed? What type of information is available to you? Is the information adequate/inadequate? If inadequate, what type of information is missing?

Conclusions

- Australian ED clinicians are aware of antimicrobial resistance. Many perceive injudicious use as problematic.
- Barriers were considerable and complex, and generally related to individual healthcare provider and resources.
- Facilitators focused on need for routine education and feedback, adequate staffing, comprehensive guidelines, senior medical clinician advocacy and multidisciplinary support.
- Future strategies should consider multidisciplinary AMS teams to support ED clinicians, and effective education and feedback strategies, underpinned by robust organisational guidelines and strong senior ED clinician advocacy.

Implications for practice

- First study to explore the attitudes and beliefs of Australian ED clinicians on AMS in the Australian ED setting.
- ED clinician perceptions of antimicrobial prescribing appropriateness similar to themes identified in the literature. Overprescribing is complex and influenced by numerous factors. Access to care outside the ED not as prominent compared to American setting.
- Australian ED clinicians are concerned about injudicious antimicrobial use in the ED, however lack insight into scope of the problem at an organisational level. There is acknowledgement of need for change despite the complex, multifactorial nature of the problem.
- Our study highlighted medical hierarchy and inter-professional tensions, particularly in relation to inpatient team influence on ED clinicians' prescribing practices. Lack of ownership of the issue needs to be addressed.
- An overwhelming need exists for regular targeted education and feedback on prescribing practices and patient outcomes, supported by senior ED clinician advocacy. Logistics of feedback was an acknowledged difficulty, with need for support external to the ED. Over-prescription in wound management is an area for review.
- Limitations include generalisability of results given Eastern Health focus and potential bias (selection, interviewer, interviewee, reviewers).

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