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Antimicrobial stewardship in regional and remote hospitals: the seeds for sustainability

JL Bishop[1,2,3], TR Schulz[1,4], DCM Kong[1,2,3,5], KL Buising[1,2,4]
[1]National Centre for Antimicrobial Stewardship, [2]University of Melbourne, [3]Ballarat Health Services, [4]Royal Melbourne Hospital, [5]Monash University

Background

Antimicrobial stewardship (AMS) incorporates any actions that promote the effective use of antimicrobials to optimise clinical outcomes for patients, while minimising unintended effects including antimicrobial resistance. Antimicrobial resistance has been recognised locally and globally as an urgent health priority.[1-3]

Barriers to the delivery of AMS programs in Australian regional and remote hospitals (rural hospitals) have been described, including lack of on-site infectious diseases expertise, limited pharmacy resources and difficulty recruiting staff.[4, 5]

Since 2013, all hospitals in Australia have been required to have an AMS program that meets the National Safety and Quality Health Service (NSQHS) accreditation requirements.[6] Despite this, little is known about the sustainability of AMS programs in rural hospitals.

Aim

To explore the sustainability of AMS programs in rural hospitals in Australia.

Method

Purposive and snowball sampling were utilised to recruit clinical champions or lead AMS clinicians who have knowledge and/or experience with at least one rural hospital's AMS program that has been sustained for greater than two years. The AMS programs described must be in hospitals with an Australian Standard Geography Standard Remoteness Area group of inner regional, outer regional, remote or very remote. Recruitment was until saturation of themes. Semi-structured interviews were conducted, audio-taped, transcribed verbatim and analysed using the Framework Method.

Results

Fifteen key informant interviews were conducted (Table 1). The features of sustained AMS programs in Australian rural hospitals were identified and classified into three themes: affordability, acceptability and adaptability[7] (Table 2).

Table 1 **Profession and principal state of practice of the participants (n=15)**

	No. of participants
Profession	
Pharmacist	5
Infectious diseases physician	4
Dual trained infectious diseases physician & microbiologist	2
Infection control consultant	2
Microbiologist	1
General practitioner	1
Principal practice location (state)	
New South Wales	3
Queensland	3
Victoria	3
Northern Territory	2
South Australia	2
Tasmania	1
Western Australia	1

Table 2 **Key themes and selected quotes for sustainability of AMS programs in rural hospitals**

Affordability	
Lack of investment	*There's been a distinct lack of investment in AMS. I've been pushing at district level for a long time for resourcing but, you know, with innumerable gaps analysis and reviews and so on, just doesn't get up (Dual trained infectious diseases physician & microbiologist-K6)*
Acceptability	
Hospital executive support	*We've had strong support from medical executive, and without that, it would have been a lot harder to have implemented everything and get funding (Pharmacist-K2)*
Accreditation	*Accreditation had really helped with that. That gets the executives' interests. If they think they're going to fail accreditation because of AMS, that will then encourage them to put resources into our area (Pharmacist-K9)*
Independence of prescribers	*The reluctance by some practitioners to have actual restrictions programs in place. So, you know, all of that discussion around loss of individual autonomy and the right to prescribe. And that's probably been harder to negotiate when you're an external person coming in to try and influence things. I think that's been harder to achieve than it has in metropolitan hospitals (Infectious Diseases Physician-K4)*
Adaptability	
Adopting technology	*I think it's four clinics a year and two days each clinic. And that, from a resource point of view, is extremely demanding on our service even though it doesn't sound very much. But taking someone out for two days of the week to do a clinic in [town name] isn't a very good use of time and so we have looked at telehealth options. (Infectious Diseases Physician-K5)*
Embracing scope creep	*The doctors in regional and remote… there's no line between hospital and community there. They are all the same, everyone does community based clinics and hospital care as well. So, trying to draw a line around what this program is has really been difficult and in the end, we've kind of given up largely we'll provide antibiotic advice, essentially regardless of the setting of the patient or public, private, outpatient, inpatient and that sort of thing. (Infectious Diseases Physician-K4)*
Redefining traditional roles	*We found that really, infection control nurses, particularly are a key group and also, often the long term corporate memory and stability in rural and remote hospitals… not the doctors and pharmacists, and so they've become really key to it all. I think linking infection control and antimicrobial stewardship in rural and remote hospitals is really important because I think that's probably actually the main way of gaining sustainability and long-term programs, essentially (Infectious Diseases Physician-K4)*

Discussion

Investment in AMS programs in rural hospitals was described as lacking. Where funding was available, it was acknowledged as a major factor in the program's sustainability. Delivering a cost-effective AMS program in a rural hospital can be difficult. This is further compounded by the absence of validated information on staffing requirements for AMS programs in rural hospitals. Acceptability was challenged by a culture of independence in rural hospitals and required ongoing investment by the 'outsider' clinician over time to build trust and improved knowledge of the local context so that recommendations and advice were context specific. There were many examples of adaptable AMS programs including those using telehealth and those integrating across hospital and primary care services.

Conclusion

Rural hospitals need to continue to enhance the affordability and acceptability of their AMS programs to ensure sustainability. Affordability is improved where there are collaborative arrangements (such as network or area-wide arrangements). Research is required to develop cost effective AMS models for rural hospitals with appropriate staffing ratios. AMS programs have shown great adaptability to address some of the challenges of practice in a rural community.

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Presenter

Jaclyn Bishop is a pharmacist with experience spanning acute health, education, government and consultancy. She is undertaking a PhD with the National Centre for Antimicrobial Stewardship (NCAS) and Melbourne University, which is focused on the challenges faced by regional and remote hospitals in implementing and sustaining antimicrobial stewardship (AMS) programs. Since commencing her PhD, she has published a narrative review titled 'Meeting the challenge for effective antimicrobial stewardship programs in regional, rural and remote hospitals—what can we learn from the published literature?' She has also presented at national conferences on novel qualitative research undertaken on the topic.