

RISK FACTORS ASSOCIATED WITH ANTIMICROBIAL RESISTANT ORGANISM CARRIAGE
IN RESIDENTS OF RESIDENTIAL AGED CARE FACILITIES: A SYSTEMATIC REVIEW

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Declaration

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Dedication

This work is dedicated to my family:

In particular, to my partner Karen, without whom I would not have been able to complete this work. I will be forever grateful for her endless love, support and encouragement.

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I hope one day I will be an inspiration to them to pursue lifelong learning.

Abstract

Aim

The thesis reports the outcomes of a systematic review conducted to identify the risk factors associated with antimicrobial resistant organism (ARO) carriage in residents of residential aged care facilities (RACF).

Background

The World Health Organization (WHO) recognises antimicrobial resistance as a critical world health issue and acknowledges that with the reduction in the development of new antibiotics there is an urgent need to take action to slow the spread of antimicrobial resistant organisms (AROs).

Residential Aged Care Facilities (RACFs) aim to provide nursing and personal care to the elderly who can no longer remain in their own home; in an environment that is safe and home-like. AROs are commonly found in aged care settings. A resident who is infected or colonised with an ARO may be a temporary or longer-term carrier of an ARO, and may act as a reservoir for the organism and a potential source of transmission to others. A risk-management approach is required in order to implement effective infection prevention strategies for dealing with residents with AROs. All facilities need to be able to identify the risks in their own context and select the appropriate course of action; however, little is known about the risk factors for ARO acquisition in this population.

Method

A comprehensive literature search was conducted of Medline, Cumulative Index to Nursing and Allied Health Literature (CINHAL), Embase and Cochrane databases for quantitative studies that

examined the risk factors for carriage of AROs in residents of RACFs. All risk factors associated with carriage of any antibiotic resistant organism in the target population were considered in this review. The review followed the Johanna Briggs Institute (JBI) methodology for conducting systematic reviews of quantitative studies.

Results

This review considered 32 quantitative studies that met the inclusion criteria and identified risk factors associated with ARO carriage in residents of residential aged care facilities. In all, over seventy potential risk factors were examined in the included studies. Data extracted from these studies were analysed with Comprehensive Meta Analysis (CMA) software. As a result of the meta-analysis a total of 10 statistically significant risk factors that influence the colonisation or infection of residents of RACFs with AROs were identified;

- Comorbidities
- Immobility
- Dependency
- Wounds
- Incontinence
- History of an ARO
- Male Sex
- Invasive devices
- Previous antibiotic therapy
- Hospitalisation

The results will be presented in detail in the thesis.

Conclusions

Of the 10 risk factors identified not all were generalisable to the population as a whole; however some were, and this generalisability will be discussed further in the thesis. This information will inform risk identification and mitigation protocols for use in this setting. It may potentially lead to the development of a reliable risk assessment tool that staff can use to identify those residents most at risk. This review has provided an evidence base on which to build a planned approach to risk management and the implementation of transmission prevention strategies to prevent AROs in residents of RACFs.