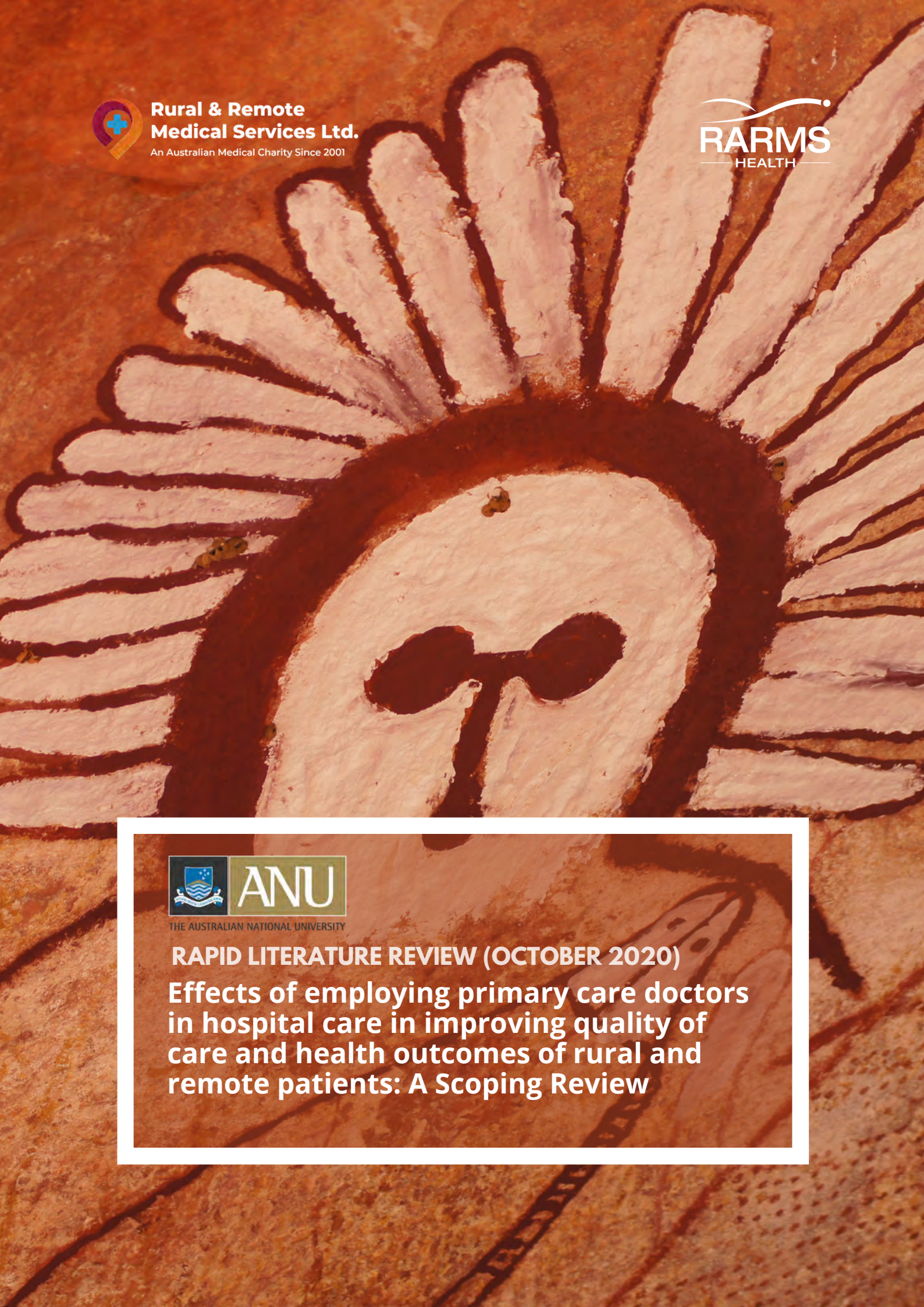
Rural & Remote
Medical Services Ltd.
An Australian Medical Charity Since 2001
RARMS
HEALTH
ANU
THE AUSTRALIAN NATIONAL UNIVERSITY
RAPID LITERATURE REVIEW (OCTOBER 2020)
Effects of employing primary care doctors in hospital care in improving quality of care and health outcomes of rural and remote patients: A Scoping Review

ABOUT RARMS

Rural and Remote Medical Services Ltd was established as a not-for-profit charity in 2001 by a group of passionate rural GPs and the NSW Rural Doctors Network NSW (RDN).

RARMS works in some the most socio-economically disadvantaged communities in Australia, and more than 26 percent of our patients are from Indigenous backgrounds. For 20 years, RARMS has ensured that 22,000 rural, remote and Indigenous Australians have local access to appropriate and affordable health and medical care delivered by doctors, nurses and health staff who live and work in their towns.

RARMS' role is to help communities to develop their skills and capabilities to understand the drivers of health outcomes and their own health needs, work with communities to engage with and address the social determinants of health, translate research and knowledge from successful programs to improve rural and remote health services delivery, build and operate community owned sustainable local health services and help communities to recruit permanent GPs, nurses and health staff to their town.

RARMS RURAL & REMOTE HEALTH ACTION RESEARCH AGENDA

There is a substantial body of research to demonstrate the important role of GP-led integrated primary health and hospital care in preventing illness, reducing the onset of chronic disease, reducing unnecessary hospitalisation, increasing Years of Life and reducing the cost of healthcare in rural, remote and Indigenous communities. The RARMS Rural and Remote Health Action Research Agenda is informed by, and extends on, the key features of sustainable rural integrated health systems identified by Wakerman* et al.

Our aim is to work with our communities and leading universities and research organisations to identify and address opportunities and barriers to sustainable rural health services with a focus on how we can improve access to high quality care in rural and remote communitiesincorporating data analytics, Telehealth and remote medicine.

* Wakerman, et al "Features of effective primary health care models in rural and remote Australia: a case-study analysis" Med J Aust 2009; 191 (2): 88-91. || doi: 10.5694/j.1326-5377.2009.tb02700.x at https://www.mja.com.au/journal/2009/191/2/features-effective-primary-health-care-models-rural-and-remote-australia-case

FURTHER INFORMATION

For further information on RARMS and the Action Research Agenda please go to:

https://www.ruralandremotehealth.org.au/research

ACKNOWLEDGMENT OF COUNTRY

We live and work on the lands of the First Australians. We pay our respects to Elders past, present and emerging.

GAMILARAAY

Dhayn ngiyani winangaylanha NSWga ganunga-waanda yanaylanha, dhaymaarr ganugu-waanda nhama ngarrangarranmaldanhi

WIRADJURI

Ngiyani Yindyamali Aboriginal Mayiny Murrubandhda Mayinny galangga NSW Ngangaagi

ENGLISH

We respect Aboriginal peoples as the First Peoples and custodians of NSW.

Effects of employing primary care doctors in hospital care in improving quality of care and health outcomes of rural and remote patients: a scoping review

Rural Clinical School, The ANU Medical School (October 2020)

RESEARCH QUESTION

Does employing primary care doctors in hospital care improve the quality of care and health outcomes of rural and remote patients?

OBJECTIVES

1. To identify effects of employing primary care doctors in hospital care in improving the quality of care and health outcomes of rural and remote patients
2. To describe the roles of primary care doctors in hospital care in improving quality of care for rural and remote communities

METHODS

Data Sources and Search Strategy

A broad search strategy was employed to locate wide-ranging research that addresses the roles of primary care doctors (e.g. general practitioners or family physicians or family doctors or generalist) in hospital care and its effects for improving quality of care and health outcomes of rural and remote communities. Peer-reviewed articles were systematically searched in three major journal databases: SCOPUS, PUBMED and WEB OF SCIENCE (WoS). The selection of these databases was informed by the need to be comprehensive and by the research topic, which had a multidisciplinary focus.

A combination of key terms and/or phrases were used to ascertain the highest number of relevant results. Free text terms were used, as MeSH terms were found to yield limited relevant results. Key words were grouped according to key concepts of: primary care doctors, hospital care, rurality, quality of care and health outcomes. We limited the search to publications in English from 1990. We employed the following search strategy:

Key Concept	Key Word/Phrase
Primary Care Doctor	general practice OR general practitioner OR GP OR primary care OR family doctor OR family physician OR visiting medical officer OR generalist
AND	
Hospital Care	hospital care OR secondary care OR emergency care OR emergency unit OR emergency department OR hospital ward OR palliative care
AND	
Rurality	rural OR remote OR regional
AND	
Quality of care and health outcomes	Quality OR safety OR outcomes OR effectiveness OR satisfaction OR efficacy OR morbidity OR mortality OR hospitalisation

Selection Processes

A two-tiered approach was taken by the reviewers to select studies for inclusion in the review. Firstly, Reviewer 1 independently reviewed the titles and abstracts of all studies. Samples of titles and abstracts were screened by three other reviewers to check for consistency. Secondly, the full texts of all relevant studies were reviewed to determine their eligibility for the scoping review based on the inclusion and exclusion criteria. All full-texts were independently reviewed by Reviewer 1.

Inclusion criteria:

1. Types of studies: all designs including qualitative, quantitative, mixed-methods, clinical audit, reviews article, intervention studies or evaluation studies;
2. Locations: involve rural or remote or regional locations, or comparison between urban/metropolitan and rural/remote locations;
3. Topic/focus: studies examining the roles of primary care doctors who also work in hospital/secondary care (e.g. emergency department or inpatient care/hospital wards)

Exclusion criteria:

1. Papers not published in English;
2. Theses/dissertations, book review, commentary, letters to editor, conference abstract and proceeding papers

RESULTS: RAPID ANALYSIS

Literature Search

The database search yielded 920 documents published since 1990 (duplicates removed). Following the titles screening we retained 126 documents. Abstracts of these documents were reviewed and we retained only 33 documents for further screening.

The full texts of these 33 articles were reviewed and only 12 articles met our inclusion and exclusion criteria. Most studies were excluded due to (1) describing roles of primary care professionals in improving quality of care and health outcomes, but they were not involved in providing care in local hospitals; (2) describing roles of specialist visiting officer in improving access and quality of care to rural patients; and (3) dealing with urban or metropolitan settings only.

Study Characteristics

A total of 12 studies were included in the scoping review and their characteristics are summarised below:

- **Geographical distributions:** Studies examining effects of employing primary care doctors were conducted in Australia (5 studies), Canada (3 studies), New Zealand (one study), USA (one study), Nepal (one study) and multiple countries (one study).
- **Publication year:** Studies were published between 2003 and 2018, of which 6 studies were published after 2010.
- **Collaboration:** Academic institutions in collaboration with health care facilities drove about half of the identified studies.
- **Rurality:** Most of the identified studies were conducted in rural and remote areas only (6 studies), while the rest included regional areas or comparison to urban areas.

Effects of employing primary care doctors in hospital care

All of the identified studies identified various positive outcomes by employing or locating primary care doctors in emergency departments or inpatient care in local hospitals. These outcomes are summarised below:

Positive Effects

Improved Clinical Outcomes for Patients	• No effects on overall mortality rates • Reducing maternal mortality and stillbirth
Improved Quality of Care	• Reduced total length of stay for admitted adult patients • Reduced total adult patients admissions • No significant differences between GP-led or specialist-led EDs in time from onset of symptoms to presentation, door to needle time, thrombolysis related complications or subsequent access to PCI or CABG • Total skin lesions being excised overall both for malignant and benign, and improvements in the complete excision rates for all lesions and malignant cases • Reduced waiting times (for skin cancer treatment and colonoscopy)Increased utilisation of health pathways (for skin cancer treatment) • Providing comprehensive care (for CRC patients) including improving access to chemotherapy in local hospitals • GP-led AMI management in ED overall quality score is high (e.g. for procedural, treatment and inpatient care) • GPO of smaller communities also work as consultants to their colleagues for inpatients with cancer and admitting physicians for their own family practice patients or cancer patients without admitting FPs
Improved Access to Care	• Reduced inter-hospital transfers, referrals and aeromedical evacuations • Improved service delivery of acute and emergency care and preventing the ED from closure • Improved referral back to GPs from specialist and outpatient hospital services for follow-up management • Expanding surgical and obstetric services for rural communities • GP-surgeon play an integral role in the provision of emergency and elective surgical services in rural communities • Communities with solo GP-surgeon; 47% of women were able to deliver locally compared to 15% able to deliver locally in the 3 years after the program closed, and this increased to 78% in communities with 2 or more GP-surgeons • The chance of seeing by an emergency specialist decreased by 5-fold as rurality increases, while the likelihood of seeing by FP increases by 7-folds - indicating the critical role of FP to emergency care in rural hospitals
Potential Cost Savings	• 3 Non-RCT involving 11,203 patients, 16 GPs and 52 EPS (emergency physician specialist) – all with low quality, GPs used fewer healthcare resources than EPS (fewer blood tests, fewer X-Rays, fewer admission to hospital, fewer referral to specialists, but one study found prescriptions and referral to specialists are higher among GPs than EPS • Marginal cost saving from locating GPs into EDs
Improved satisfaction of both patients and providers	• Increased patient dying in local hospitals with corresponding decrease in death at the referral hospitals resulting in more people pass-away closer to their community • Community appreciation of continuing operation of ED supported by primary care doctors, and improved satisfaction of communities • A friendship and township component of providing care (e.g. for CRC patients)

Negative Consequences

Workload of ED	• Increase in patients presenting to emergency department, but reduced in total adult patients admissions • Poor documentation of history and physical examination • High demand in emergency care and increased roles of GPs as both primary and secondary care providers potentially create more psychological burden for rural/remote GPs

Proposed roles of employing primary care doctors in hospital care

Locating or employing primary care doctors (e.g. GPs or FPs or generalist) in emergency or inpatient care of local hospitals might reduce disparities of healthcare access for rural and remote communities, especially for surgical, chronic conditions and obstetric services. Expanding these services to rural and remote patients will contribute to ensuring continuity of care received by rural communities.

These act as a stabilising factor on delivery of acute care, emergency medicine and maternity care. Where GPs closely worked with specialists, quality of primary care services can be improved through upskilling of the GPs skills, confidence and competence (for skin cancer management). The active role of GPs as both primary care provider and secondary care provider can potentially reduce inter-hospital transfer, enhance follow-up after hospitalisation and reduce hospital admissions. In addition, GPs in rural hospitals often rotate in hospital wards, which allows better or complete information in ensuring continuity of care.

From the patient or community perspectives, involvement of GPs in performing specific treatments such as chemotherapy for cancer treatment in local hospitals can reduce the burden of travelling and limit disruption to patient's lives. A strong GP and patient relationships as a result of continuity of care and community contact can lead also to greater personal and social understanding which contribute to better health outcomes and satisfaction. GPs in their role as primary care provider gain more detailed information about the social situation of their patients, allowing GPs to provide greater social or cultural sensitivity to their patients. Local knowledge and social understanding were then brought to hospital care to allow culturally and socially acceptable services to be provided to the patients. GPs serve as a natural bridge between the community primary care practice and the hospital, thus improve collaboration of primary care into secondary care systems. They bring advanced clinical skills with an integrative and patient-centred approach, which are valuable in the provision of multidisciplinary care to improve outcomes, quality and satisfaction of patients.

Although the evidence around cost-effectiveness is scarce, existing studies flag potential marginal cost savings by locating GPs in emergency departments of local hospitals. For specific conditions such as AMI or STEMI management, no significant differences in terms of patient outcomes were reported. This indicates that GPs in emergency departments of local hospitals can adequately manage acute and life-threatening conditions. For example, GP-led EDs offers a substantial time benefit to provide thrombolysis treatment to improve patient prognosis and survival. Additionally, the quality of referrals might improve by locating GPs at ED leading to freed-up clinical capacity of tertiary hospitals to treat more serious conditions.

DONATE

167,374

Number of primary care consultations with rural, remote and Indigenous patients in 2019/20.

21,003

Number of hospital ED services provided by RARMS Doctors in 2018/19.

7.4

The average number of Medicare services received by RARMS remote patients (compared to a national average of 4.9)

-65.0%

Reduction in the number of low acuity presentations to local EDs resulting from increased access to primary care.

244

Number of doctors, nurses and staff engaged with RARMS.

$2.85M

Charitable reserves for investment in continuity of medical workforce in rural and remote communities.