Frequent users of the Royal Flying Doctor Service primary clinic and aeromedical services in remote New South Wales: a quality study

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ABSTRACT

Objective: To examine activity patterns of the Royal Flying Doctor Service of Australia (RFDS) in far western New South Wales and to determine whether frequent use of RFDS services, particularly emergency evacuations, is a useful indicator of patients who may benefit from care planning and review.

Design, setting and participants: We conducted a retrospective audit of the RFDS South Eastern Section's Broken Hill patient database. Patients with a residential address in the study area who had accessed at least one RFDS medical service between 1 July 2000 and 30 June 2005 were included in the study.

Main outcome measures: Number of evacuations, clinic consultations and remote consultations; clinic usage by frequent evacuees; number of primary diagnoses recorded for frequent evacuees; number of frequent users who might benefit from multidisciplinary care or specialist shared care.

Results: Between July 2000 and June 2005, the number of residents requiring evacuation or remote consultations declined by 26% and 19%, respectively, and the number of residents accessing clinics declined by 6%. (Over the same period, the population of the study area fell by about 24%.) Of the 78 patients who were identified as frequent users of the evacuation service (≥ 3 evacuations/year), 34 had three or more primary diagnoses recorded; 15 were infrequent or non-users of the clinics (≤ 3 attendances/year); 53 may have benefited from multidisciplinary care, and 41 from specialist shared care.

Conclusions: Simple, practical clinical review systems can help health care organisations in rural and remote communities to achieve better outcomes by identifying patients who may benefit from planned care.

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There are several different models of general practice in Australia, and one interesting variant is the Royal Flying Doctor Service of Australia (RFDS), a community-based not-for-profit organisation. The South Eastern Section is one of four operational sections of the RFDS Australia-wide, and the Broken Hill base is this section's corporate headquarters.[1] It employs a core clinical workforce consisting of general practitioners and flight nurses, as well as child and family nurses, women's health practitioners and mental health workers.[2] They run primary care clinics, conduct remote telephone consultations, respond to medical emergencies and manage aeromedical evacuations. The Section works cooperatively with state-based health services and the local community-controlled Aboriginal Health Service to provide a wide range of primary health care and specialist services to remote communities and smaller settlements in far western New South Wales and associated cross-border regions in Queensland and South Australia.

The question of how the RFDS might evaluate the quality of its clinical care has been the subject of a review by the South Eastern Section.

One method for examining quality is to study frequent attenders at a clinic or service. This approach has been applied in both general practice and emergency department settings.[3-7] We hypothesised that such patients may have conditions that were not well managed and may benefit from a care planning or review process. Our aim was to determine whether frequent use of services, particularly evacuations, could serve as a flag to identify patients whose care should be reviewed.

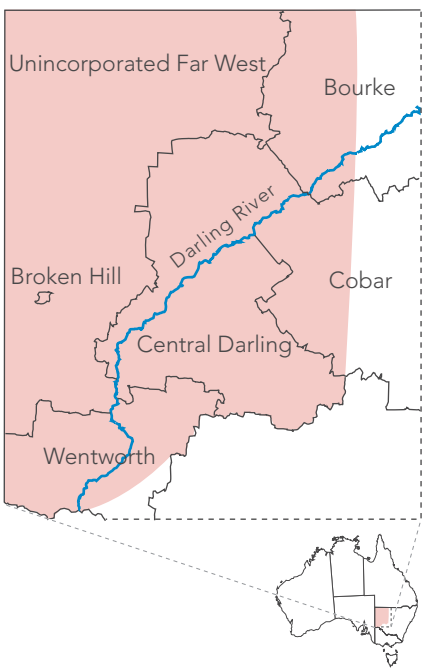
We report on the usage patterns of RFDS services in remote NSW, the characteristics of patients who are frequent users of clinic and aeromedical services, and the implications for delivery of quality clinical care.

METHODS

We conducted a retrospective audit of the RFDS South Eastern Section's Broken Hill patient database. The study population consisted of residents of remote communities in far western NSW served by the Broken Hill RFDS base, who had accessed at least one RFDS medical service (evacuation to a hospital, clinic consultation or remote consultation) between 1 July 2000 and 30 June 2005. The area served by the Broken Hill RFDS base includes all of the Central Darling Shire, all of the Unincorporated Far West region, and parts of the Bourke, Cobar and Wentworth shires (Box 1). We excluded residents of the city of Broken Hill and visitors to the region because the RFDS is not responsible for providing their primary health care. The resident population of the study area was determined from the 2001 and 2006 censuses (Box 2).[8,9]

Data extracted from the patient database were the patient's unique identifier, age, sex, postcode of residence, date of consultation, service type (evacuation, clinic consultation or remote consultation) and diagnosis (International Classification of Primary Care [ICPC] code for diagnoses made in the clinic or remote consultation setting, and International Classification of Diseases, 10th revi-

1 Geographic region of the study population (shaded), showing relevant local government areas



2 Population data for the study area,* by local government area

Local government area	2001 census data	2006 census data	Change (%)
Central Darling (all)	2385	1937	–18.8
Unincorporated Far West (all)	1607	1122	–30.2
Bourke (part)	622	389	–37.5
Cobar (part)	97	63	–35.1
Wentworth (part)	621	552	–11.1
Total	*5332*	*4063*	*–23.8*

* Population within New South Wales served by the Broken Hill base of the Royal Flying Doctor Service South Eastern Section. ◆

sion [ICD-10] code for diagnoses of patients evacuated to a hospital).

The frequency of evacuations for a patient in each 12-month period (July to June) was grouped as once (one evacuation), twice (two evacuations) or frequent (three or more evacuations).

The frequency of patients accessing the clinic service in each 12-month period (July to June) was classified as low usage (1–3 consultations), medium usage (4–12 consultations) or high usage (13 or more consultations).

RESULTS

Between 2001 and 2006, the estimated resident population decreased by 24% (Box 2). The number of residents requiring evacuation or remote consultations between July 2000 and June 2005 declined by 26% and 19%, respectively, whereas the number of residents accessing clinics remained relatively stable, declining by only 6% (Box 3).

Data on frequent users of the evacuation service and the number of times they presented for clinic consultations are shown in Box 4. Of the 78 patients who required frequent evacuation, four did not attend clinics at all, a further 11 attended 1–3 times, and almost a third (23/78) attended 13 or more clinics during the year. No patient was recorded as a frequent user of evacuation services in more than one 12-month cycle. The maximum number of evacuations required by a patient was seven, and the maximum number of clinics attended by a frequent evacuee was 34.

Almost half the patients who were evacuated three or more times (34/78) were identified as having three or more primary diagnoses, and the majority of these were identified as having conditions that could benefit from multidisciplinary primary care (53/78), specialist shared care (41/78), or both (Box 5). Some patients with two or more primary diagnoses required multidisciplinary care for one condition and shared care for another.

The top five clinic diagnostic categories (ICPC system) for the 23 patients who attended 13 or more clinics and were evacuated three or more times were circulatory (13), endocrine, metabolic/nutritional (9), psychological (5), respiratory (5) and digestive (4). The top five evacuation diagnostic categories (ICD-10 system) for this group were circulatory (12), genitourinary (4), respiratory (4), neoplasms (3), and mental/behavioural, injury and nervous (2 each, in equal fifth place).

DISCUSSION

In spite of a fall in the population served during the period of the study, demand for the RFDS remained strong, albeit with an unexplained dip in evacuations in 2004–05. The decline in clinic attendances was largely caused by a reduction in attendances per patient rather than a substantial reduction in the number of patients seen.

The majority of patients who were frequently evacuated had chronic health conditions and might benefit from living closer to secondary or tertiary health care. However, by choice or circumstance, they are living in isolated settings. Given the relative lack of specialist and subspecialist services in rural and remote Australia,[10,11] the RFDS is an important provider of primary health care to the local population. Other factors such as lower income levels, poorer socioeconomic conditions, a higher proportion of Indigenous people and the fact that men in rural communities are less likely than their metropolitan counterparts to use preventive health services compound these issues.[12]

Most patients requiring frequent evacuation had two or more primary diagnoses and conditions that would normally require multidisciplinary or specialist shared care, and some required both. This suggests that those who require frequent evacuation may have unmet health needs, poorly managed chronic diseases of the sort usually managed in general practice, or comorbid conditions that may benefit from shared care between generalist and specialist providers or multidisciplinary teams.

Almost a fifth of patients requiring frequent evacuation were infrequent users or non-users of the clinics. The Royal Australian College of General Practitioners has suggested that one way to target patients requiring preventive health care is to proactively identify high-risk individuals who may be infrequent users of primary health care,[12] and one of the Australian coordinated care trials showed that the greatest benefit was experienced by patients who were not previously linked with services.[13]

If infrequent clinic users with poorly managed conditions are to receive the best quality care, the RFDS service model currently operating in far western NSW will need to be modified. Best-practice, comprehensive and

3 Usage pattern of services, by service type, July 2000 to June 2005*

Service type	2000–01	2001–02	2002–03	2003–04	2004–05	Change between 2001 and 2005 (%)
Evacuations	268 (354)	274 (345)	268 (336)	252 (340)	198 (256)	–26.1 (–27.7)
Clinic consultations	2787 (10829)	2756 (10526)	2724 (9943)	2654 (8830)	2612 (8903)	–6.3 (–17.8)
Remote consultations	1782 (3430)	1668 (3252)	1663 (3252)	1557 (2993)	1446 (2564)	–18.9 (–25.3)
Total	*3217† (14613)*	*3201† (14123)*	*3166† (13531)*	*3107† (12163)*	*3012† (11723)*	*–6.4 (–19.8)*

* Figures represent number of patients (number of encounters). † Some patients accessed more than one service type during the designated period. ◆

4 Clinic attendance pattern among frequent users of the evacuation service, July 2000 to June 2005*

Clinic attendances	2000–01	2001–02	2002–03	2003–04	2004–05	Total
0	0	0	1	2	1	4
1–3	4	1	3	0	3	11
4–12	11	6	5	11	7	40
⩾ 13	6	4	4	5	4	23
Total	*21*	*11*	*13*	*18*	*15*	*78*

* Figures represent number of patients requiring frequent evacuation (⩾ 3 evacuations per year). ◆

5 Number of primary diagnoses recorded for frequent users of the evacuation service, by number of clinic attendances, and potential need for multidisciplinary care or specialist shared care, July 2000 to June 2005*

Clinic attendances	One primary diagnosis	Two primary diagnoses	Three or more primary diagnoses	Needs multi-disciplinary care	Needs specialist shared care
0	2	1	1	1	3
1–3	3	5	3	7†	6†
4–12	10	16	14	27†	16†
⩾ 13	5	2	16	18†	16†
Total	*20*	*24*	*34*	*53†*	*41†*

* Figures represent number of patients requiring frequent evacuation (⩾ 3 evacuations per year).
† Some patients with more than one major diagnosis require both multidisciplinary care and shared care. ◆

continuous care implies that the RFDS should adopt care pathways and protocols that include multidisciplinary assessments by doctors, allied health staff and, where appropriate, medical specialists.[14] These assessments, supported by case conferences (if necessary), should lead to agreed care plans and multidisciplinary or shared care with clear responsibilities for implementing, monitoring and initiating timely reviews.

The evacuation of a patient should act as a trigger for a multidisciplinary assessment, which may lead to a care plan or shared care arrangement. The RFDS should also regularly review evacuations and patients with high clinic attendance to see if the most appropriate service is being provided to those patients, taking account of the difficulties imposed by location and personal circumstances.

RFDS patients may need to travel to regional centres or capital cities to access medical specialists, and waiting times for non-urgent appointments may be a problem. Travelling to attend a specialist appointment may incur costs such as lost earnings and may disrupt family or community responsibilities.

Problems of distance and low population density mean the RFDS will have to continue using a combination of approaches, including face-to-face consultations, phone calls and videoconferencing, to enable primary and secondary consultations, care planning and shared care for its patients in remote areas. The RFDS has already had to redefine its traditional role as a provider of bush clinics and emergency evacuations to encompass comprehensive primary health care based on a multidisciplinary workforce, strong partnerships with other providers and a strong population health perspective.

CONCLUSION

People living in remote communities generally have less access to health care and make less use of services. Further development of practical and manageable assessment, care planning, and multidisciplinary and specialist shared care delivery systems will help the RFDS to achieve better outcomes for patients. The frequency of service use, particularly emergency evacuation, is a simple tool for identifying patients who may benefit from assessment and review.

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COMPETING INTERESTS

None identified.

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