



ORIGINAL RESEARCH

Outreach specialists' use of video consultations in rural Victoria: a cross-sectional survey

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PUBLISHED

29 March 2019 Volume 19 Issue 1

HISTORY

RECEIVED: 3 August 2017

REVISED: 28 November 2018

ACCEPTED: 5 December 2018

CITATION

O'Sullivan B, Rann H, McGrail M. Outreach specialists' use of video consultations in rural Victoria: a cross-sectional survey. Rural and Remote Health 2019; 19: 4544. <https://doi.org/10.22605/RRH4544>

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ABSTRACT:

Introduction: In Australia, about one in five medical specialist doctors travel away from their main practice to provide regular outreach services in rural communities. A consistent policy question is whether video consultations (VC) are used as part of rural outreach service provision and the degree to which they partly or wholly substitute outreach visits. This study aimed to explore how commonly specialists providing rural outreach services also use VC to provide clinical service at the outreach site, the aspects of outreach clinical services they consider suitable for VC delivery, whether VC use reduces outreach travel frequency and, if used, has the potential to improve the sustainability of outreach.

Methods: The study involved 390 specialists in Victoria being invited to participate in an online survey between December 2016 and March 2017. Invited specialists were those travelling to provide rural outreach services in areas of need, already subsidised by the Australian government's outreach policy. Analysis included basic frequency counts and proportions and Pearson χ^2 tests for associations. Qualitative free text responses were analysed and grouped thematically.

Results: Of 65 respondents, who were travelling to provide rural outreach services on average 11 times per year, 57% (95% confidence interval (CI) 44–69%) used VC to provide aspects of

clinical services to the outreach site. They used VC for a median of 12 sessions per year, mainly for one patient per session. VC was used for non-complicated health care, to support rural GPs, undertake clinical reviews or see urgent new patients expediently. Key restrictions were the inability to conduct physical examinations and complex assessments. VC reduced the frequency of outreach travel for 50% of those using it (95%CI 29–63%) although 43% (95%CI 27–61%) reported that providing outreach clinical services via VC took more time than providing face-to-face consultations. Use was not associated with increased intention to continue rural outreach services for 5 or more years (56% v 62%; $p=0.70$)

Conclusion: More than half of specialist doctors complemented their rural outreach services with VC. However, VC was used infrequently, mainly for one patient per session, for restricted clinical scenarios. Although VC use reduced outreach travel frequency for half of providers, 43% responded that VC takes more time than face-to-face clinical service provision. In conclusion, VC is a potentially useful adjunct to outreach service models, but it is unlikely to replace the utility of face-to-face rural specialist services, particularly for complex care, and may not influence outreach service sustainability in the manner in which it is currently used.

Keywords:

Australia, access, health service, medical specialist, sustained outreach, telehealth, video consultation.

FULL ARTICLE:

Introduction

The need for improved access to local specialist services for rural communities is well established as a significant issue in Australia¹. Although the national specialist workforce is growing, it is also diversifying, and increasing subspecialties are based in metropolitan areas¹. Only 15% of specialists nationally work rurally, compared with over 30% of Australia's population, with access diminishing from 162.1 full-time equivalent specialists per 100 000 population in major cities to 82.7, 61.5 and 34.2 in inner regional, outer regional and remote areas respectively².

Innovative health service models such as outreach visits and real-time video consultations (VC) are important for increasing access to timely specialist care for rural communities. These models have the potential to supplement the range of local specialty services available in larger regional centres and support rural generalists based in many small, more remote towns^{3–6}. However, there is limited research about outreach and telehealth models being used together. Such information would inform service design efficiency.

Rural outreach service models are relatively common in Australia (used by one in five Australian specialists)⁷. But outreach typically involves metropolitan-based specialists travelling an average of 262 km to inner regional locations and 954 km to outer regional or remote locations and rural-based specialists travelling an average of 106 km to inner regional locations and 318 km to outer regional

or remote locations⁸. With such distances traversed, it is relevant to understand whether outreach specialists also use VC.

An important service efficiency question is whether VC can partly or wholly substitute rural outreach services and thereby reduce outreach travel demands. This may be relevant for sustaining more outreach services, particularly among groups that find this more challenging, including female and privately based specialists⁹. Some economic models compare telehealth and outreach, when in reality they may be more commonly used in combination¹⁰. Substitutability of outreach with VC is likely to be complex and to rely on specialist perspectives about whether VC is a suitable medium for clinical outreach services, using VC for these services and their use being substantial enough to reduce outreach travel frequency.

There is a range of telehealth research about the barriers to and enablers of use but this research has not been specific enough to its application for clinical services by specialist doctors, as real-time VC and in rural services models^{11–15}.

Specialists already visiting rural areas to provide outreach services are an ideal group for which to explore VC usage and potential enablers. Their familiarity with rural communities, health service infrastructure and the practical aspects of rural service delivery means that they can provide pragmatic information about VC use and specific factors that would increase use.

This study aimed to explore how frequently specialist doctors providing rural outreach services use VC for clinical service provision at the outreach site, the clinical services they consider suitable for VC, and whether VC use reduces outreach travel frequency with the potential to improve the sustainability of outreach work. Further, among non-VC users who consider there are some outreach clinical services that would be suitable for VC delivery, the study aimed to identify interventions that would facilitate their uptake of VC for these services.

Methods

This study involved an online cross-sectional survey, sent via an email link to all 390 Victorian specialist doctors already subsidised by an Australian Government outreach policy to travel to provide regular outreach services in rural communities where service gaps had been identified¹⁶. All such specialists were working in priority rural health areas. Subsidies covered their direct outreach-related costs of travel and travel time. It did not provide funding for VC and specialists were informed that the study was unrelated to any incentives for VC service uptake.

The survey was developed through extensive iteration between researchers and the outreach program manager and staff of the Rural Workforce Agency of Victoria (RWAV) over a 3-month period (September–November 2016). It focused on addressing the project aims and included clear and concise questions amenable to an online format. It was piloted with five clinicians involved in rural service delivery to check for content and face validity.

The final survey included 10 questions about current use of VC to the outreach site, the aspects of outreach clinical services suitable to provide via VC, whether VC use reduced how often specialists travelled to the outreach site, factors that would increase non-users' uptake of VC for clinical outreach services they perceive as suitable to deliver via VC and whether specialists intended to continue their rural outreach service. All questions had categorical responses except questions about areas of clinical outreach services applicable to VC, which had an open text response to enable wide exploration of potential applications. Factors that could potentially facilitate use of VC by non-users included things amenable to policy interventions: funding for service coordination, funding for room hire, funding for time and 'other (please specify)'.

The survey was circulated to individual specialists' email addresses (typically used by RWAV for contacting contracted outreach providers), via a hyperlink using an in-house Checkbox Survey Software – initially in December 2016, with two email reminders in February and April 2017. Completed surveys were returned to RWAV and linked to outreach service data held by RWAV (containing information about the location of main practice, town visiting, specialist type, frequency of outreach visits). The final de-identified dataset was provided to Monash University for analysis, including geocoding locations using the Modified Monash Model rurality classification¹⁷.

Analyses involved basic frequency counts and proportions with 95% confidence intervals (CI), as well as Pearson χ^2 tests for

associations. Qualitative free text responses were analysed and grouped thematically.

Ethics approval

This study had ethics approval from Monash University (2017-1005-8063).

Results

Of 390 specialists, 69 responded (18%), which is comparable to the response rate of related specialist workforce surveys¹¹. Four respondents were excluded – three visited only metropolitan locations and one was not a medical specialist – leaving 65, with minimal missing data. Respondents included a range of specialists, mainly paediatricians ($n=18$), cardiologists ($n=9$), obstetrician and gynaecologists ($n=7$), nephrologists ($n=5$), urologists ($n=5$) and rheumatologists ($n=4$), consistent with the government's outreach priority areas. Respondents were evenly spread between metropolitan (51%, $n=32$) and rural practice bases (29% ($n=18$) large regions of >50 000 population; 21% ($n=13$) small regions and rural towns of <50 000 population). Most were travelling to provide outreach to towns of populations less than 15 000 (75%, $n=49$) with a median of 11 visits per year (range 2–45).

Overall 37 clinicians (57%; 95%CI 44–69%) were currently using VC to support aspects of their rural outreach clinical services. VC use was just as likely if specialists visited smaller towns of less than 15 000 population compared with larger rural towns of at least 15 000 population (70% v 82%; $p=0.27$), and was not statistically related to whether the specialist's main practice was in a metropolitan (50%) or rural (61%) location ($p=0.37$).

Specialists used VC for a median of 12 sessions per year, and most commonly ($n=14$) reported seeing one patient per session (range 1–100). Half (50%; 95%CI 29–63%) reported that VC use did not reduce how often they needed to travel for outreach services, while 43% (95%CI 27–61%) reported VC took more time than conducting outreach face-to-face consultations.

Most VC users reported the VC quality was medium (62%, $n=23$) or high (27%, $n=10$) for the purpose they were using it, with few (11%, $n=4$) rating it low. Of those who said quality was medium or low, seven (including surgeons, paediatricians, rheumatologists and nephrologists) said quality was only acceptable for non-physical procedures or non-complex consultations. This included being suitable for surgical follow-ups but not for observing complex behaviour or exploring widespread pain. Eleven mentioned issues with insufficient internet bandwidth, poor stability and low quality of the connection at rural sites. This included poor picture quality and issues with internet and lag in or unreliable transmission. A lack of appropriate support services at rural sites was also mentioned, while one specialist concluded VC was not as good as face to face consultations, and adds little more than phone consultations, which are just as efficient but not rebatable on Medicare.

Of the 28 specialists not currently using VC, 64% ($n=18$; 95%CI 44–81%) reported it could support aspects of their clinical

outreach services. Suitable applications included using VC to provide simple follow-up consultations with stable patients, reviews of patients that would otherwise require long travel to appointments, discussing results, supporting GP queries and linking patients with tertiary centres, rather than physical examination. The key intervention that would facilitate use by this group was funding for service coordination (78%, $n=14$; 95%CI 52–94%) followed by funding for time (22%, $n=4$).

Eighty percent of outreach providers ($n=50$; 95%CI 65–86%) intended to continue providing outreach services for 5 or more years, which was not significantly associated with current VC usage (56% using VC v 62% not using; $p=0.70$).

Discussion

This is the first study exploring the use of VC by medical specialists undertaking rural outreach services. It suggests that, among specialists travelling to provide outreach services on average around once per month, more than half also used VC at an average rate of once per month. Other surveys about the use of telehealth by psychiatrists and rehabilitation specialists suggest similar prevalence of use (44%) and (66%), although the prevalence of use in the present study is more specific to the use of VC for relevant outreach clinical services to rural areas^{11,13}.

The evidence suggests that VC is a potentially useful adjunct to rural outreach clinical service models, but is unlikely to wholly substitute providing face-to-face rural outreach services. Although half of VC users reported it reduced their outreach travel frequency, specialists used VC for few patients per session, and VC-relevant services had restricted clinical scope. Other case study reports reinforce that face-to-face outreach clinics are important for complex cases requiring detailed discussions and physical assessments¹⁰.

The study also showed that outreach specialists using VC did not increase their intention to continue providing their current rural outreach service for 5 or more years. This suggests that other interventions may be needed rather than relying on VC as a way to reduce outreach-related travel and time demands. Over a third of users reported that VC took more time than face-to-face outreach services, which is also a potential deterrent to use and sustained use; however, the present study did not explore the potential travel time that was saved and quality that was improved, particularly for single clinical issues requiring timely attention or review. It is possible that more regular VC use for more patients could improve VC efficiency. Another study of specialist physicians in Denver suggested that 64% considered once monthly use of telehealth was too infrequent to make it a regular part of their normal practice¹⁸.

With regard to VC infrastructure, 73% found the quality low to medium, mainly relating to issues with reliability, speed and clarity, although the acceptability of quality factors for the specialist may be partially offset if rural and remote patients are highly satisfied with having VC-based service options. This interplay of patient- and doctor-related factors underpinning decisions to use VC was

not measured as part of this study. Technology infrastructure is undergoing strong national investment in Australia and it is relevant to monitor perceptions of VC quality and the potential impact on use.

Rural outreach providers not currently using VC noted a range of clinical outreach services for which VC delivery would be suitable, mainly non-physical consultations, reducing patient travel requirements and improving access to tertiary support. The key factor they said would help them use VC for these purposes was overwhelmingly service coordination. A previous survey identified that telehealth coordinators are important to get patients in the virtual room on time, administer appointment reminders, book appointments and test connections¹⁹. VC service coordination has the potential to reduce the overall time taken per VC, likely to be especially relevant for private specialists paid on a fee-for-service basis, and to more broadly support all specialists fitting VC around their normal roles. Service coordination for outreach visits is supported under the current national outreach policy but could potentially additionally support the use of VC within such services¹⁶.

Limitations of this study were that it was relatively small scale, cross-sectional and focused on one state. All outreach providers in the study were receiving subsidies, and this financial support may reinforce their interest in maintaining their travel to provide face-to-face outreach services over using VC services. However, the benefits of researching VC use amongst this group are that they are familiar with rural settings and rural community health issues, as well as potential local scope of practice. The range of specialties involved in the study makes the findings somewhat generalisable, but makes it difficult to extrapolate clear trends by specialist type. The study only provides an indication of current rate of use and the potential clinical applications of VC within outreach services, although this information is highly relevant for rural population health given the specialists in the study were all working in rural health priority areas. The cross-sectional observations could ideally be confirmed through longitudinal analysis and large-scale studies, with reduced risk of sample bias through increased response rates. Further, the nuance of understanding how to optimally integrate VC and balance it with outreach bears more in-depth analysis, amenable to focus groups or interviews.

Conclusion

This is the first study exploring the current and potential use of VC by medical specialists as part of rural outreach services. It shows that VC is used relatively commonly by rural outreach providers and is a useful service adjunct for many. More than half of the outreach specialists in the sample were using VC to provide particular aspects of their clinical outreach services, and for half of these specialists this reduced the frequency of travel to the outreach site. However, it was used infrequently, most commonly for one patient per session, for a limited range of clinical services, suggesting it may not fully replace the utility of face-to-face outreach services in the way that it is currently being used. Additionally, it may not improve outreach sustainability. The most

substantial factor to improve uptake of VC in areas of clinical relevance was service coordination.

Acknowledgement

This research was undertaken as a collaborative project between the Monash School of Rural Health and RWAV. RWAV is acknowledged for their in-kind support for data collection.

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