

## Searching for Best Practices in Rural and Remote Care

What service models are effective in delivering mental health, substance use, HIV and sexual health care in rural and remote communities in Canada and other high-income countries?

### Key Messages

- Rural and remote populations in Canada are socially, culturally, economically and demographically different from their urban counterparts. As a result, service models developed for urban settings may be less effective in rural communities and may have to be adapted to local contexts.
- In rural and remote areas, major barriers to health care delivery include: geographic isolation and distance to services; difficulties retaining health care professionals; and a lack of evidence-based research on health care service and delivery.
- Information and communication technologies (i.e. telehealth, tele-psychiatry, tele-mental health services and video conferencing) are promising ways to treat mental health and substance use issues in rural communities.
- HIV care models that bring a diverse range of health care professionals (e.g. HIV specialists, social workers, case managers) into rural health settings improve access to care.

### Background

Between 19 and 30 percent of Canadians live in rural areas (1).

Rural and remote areas are socially, culturally, economically and demographically different from their urban counterparts. For example, rural communities have higher proportions of children, teens and seniors than working-age individuals, as well as greater proportions of Indigenous people (2). Compared to their urban counterparts, rural Canadians have lower levels of formal education and higher rates of unemployment – social trends that often lead young adults to move to larger urban centres (2).

### What do we mean by “rural” and “remote”?

In peer-reviewed health services literature, the terms “rural” and “remote” are not always defined the same way. In Canada, rurality is often defined by an area’s distance from an urban zone and its population density.

The availability of health care services has historically been limited in rural areas, and people living in rural communities face substantially greater barriers to care than those in urban areas (3), including:

- **Distance.** Health care services are often dispersed. As a result, individuals who require services often travel long distances to seek care (4;5).
- **Financial stress.** Costs associated with accessing care – including lost work time and transportation costs – are higher (4).
- **Shortage of health care professionals.** Because of the challenging working conditions – long hours, few colleagues to share the workload, few opportunities for continuing education, and lack of opportunities for their spouses and children – turnover rates of physicians, nurses and other specialized health care professionals are high in many rural and remote areas (4;5).
- **Stigma, privacy and confidentiality.** In small tight-knit communities, perceived stigma and discrimination associated with mental illness, substance use and HIV can cause people to stay silent. They may not talk about their condition or share concerns with others, and they may avoid treatment (2).

The ability to provide high quality care in rural and remote areas is affected by the lack of rigorous, evidence-based research on health care service and

delivery in these settings. Most interventions, services and models of care are developed in urban centres and may not translate directly into rural settings (4;6;7).

## What We Found

### **Communication Technologies Can Overcome Distance**

Communication technologies that use telephone lines or the Internet to deliver services – such as “telehealth,” “tele-psychiatry,” “tele-mental health services” or “video conferencing” – can link people in rural areas to mental health and addictions services. Examples of tele-services include:

- **Videoconferencing**, which allows providers to reliably assess, diagnose, and treat many mental health or substance use problems at a distance (8;9).
- **Automated therapy programs** delivered by phone or videoconferencing applications (e.g. Skype) and Interactive web-based applications (7;8;10-12).
- **Web-based interventions** to enhance abstinence and self-awareness in individuals with substance use problems (8).
- **Professional development** for providers in remote areas, through online seminars and links to specialist mentors for case-by-base support (5;10-12).

Both clients and care providers find these technologies beneficial. Advantages for service users are shorter travel time, lower travel costs, less family separation and fewer missed appointments (4). For people in addictions treatment, Telehealth also produces higher completion rates while increasing convenience and perceived confidentiality or privacy (8). Similarly, those accessing psychiatric care benefit from being able to stay in their communities for family and social support (6;13).

Examples of specific interventions that used communication technologies to improve health outcomes in rural areas include the following:

- In a longitudinal study, eight patients from a rural primary health care clinic with significant depression were enrolled in **an eight-week telephone-administered Cognitive Behavioural Therapy intervention** (4;14). Intervention participants showed significant improvements in diagnostic status and reductions in depressive symptoms, with no adverse effects on participant safety (4;14).
- In a randomized controlled trial, **a 12-week, four session Motivational Enhancement Therapy** (MET) intervention for substance abuse was successfully delivered via videoconferencing to people in rural areas with a history of involvement in the criminal justice system (15).
- Two Australian **web-based mental health programs** – MoodGYM (automated cognitive therapy) and BluePages Depression Information (an interactive website delivering information about anxiety and depression) – have been evaluated (16). Both programs were effective in reducing people's symptoms of depression and anxiety – however, the researchers noted that Internet applications should be tailored for rural residents.

Rural communities seem receptive to tele-mental health services. In one study among First Nations people in Ontario, 47% of participants were willing to use such services, 32% were not and 21% were undecided (12). In their view, the main disadvantages were a lack of human contact and cultural appropriateness, both integral in First Nations healing.

One limitation to the use of phone and Internet interventions is the lack of wireless infrastructure in some remote areas. Many areas in rural Canada have weak broadband connections (11) or face issues connecting to services (13;17).

### **Communication Technologies and HIV**

We also found a few studies that explored the impact of telephone-administered therapy sessions on mental health and sexual risk behaviours of people living with HIV. While not all the studies occurred in a rural setting, all reported improved health outcomes for

people living with HIV.

- A pilot randomized trial among 79 rural Americans living with HIV demonstrated the efficacy of **brief telephone-delivered interpersonal psychotherapy** sessions. Based on pre- and post- intervention surveys that measured depressive symptoms and social support, the intervention group experienced lower levels of psychiatric distress than the control group that received standard community mental health services. About one-third of participants reported fewer depressive and psychiatric symptoms from pre- to post-intervention (18).
- Another pilot randomized controlled clinical trial compared two brief **telephone-administered interventions to reduce sexual risk behaviours** among rural individuals living with HIV (19). Seventy-nine people reporting unprotected sex acts in the last two months were randomized into a two-session, motivational interviewing plus skills-building intervention, or a two-session skills-building only control intervention. At two month follow-up, individuals who received motivational interviewing reported being more motivated to reduce risk and increases in protected vaginal and oral sex.
- A randomized controlled trial among 100 adults living with HIV aged 45 years or older tested the effectiveness of **a telephone-delivered motivational interview targeting sexual risk behaviours, depression and anxiety** (20). Patients were randomized into one-session motivational interviewing, four-session motivational interviewing or standard care. At six-month follow-up, compared to controls, participants who received the one- and four-session motivational interviews reported less depression and anxiety. There were no differences between the one- and four-session interventions. A secondary analysis found that those who received the four-session intervention and experienced milder forms of depression reported fewer sexual risk behaviours (21).

### **Self-help Materials Supplement Care**

In Newfoundland, the Book Prescription Scheme helps meet the mental health care needs of a rural community (22). To supplement services provided by mental health professionals, the library carries self-help materials – books, audios and videos – that individuals work through independently on their own time. Over a 14-month period, 59% of the materials available were checked-out by health professionals, community members and library staff.

### **Mobile Interdisciplinary Teams Improve HIV Outcomes**

Specialized care for people living with HIV is limited in rural areas. People who lack access to HIV services and do not receive consistent ongoing care have poorer health outcomes, including lower CD4 cell counts and faster disease progression (3). People living with HIV in rural areas may also lack social support and experience more stress (23;24).

Two US jurisdictions have developed ways of bringing care to people rather than people to care:

- The Vermont Model **brings HIV specialists to rural clinics, which reduces patients' travel time**. A social worker was hired to work as a case manager and provide clinic patients with psychosocial support and referrals to other services. To reduce concerns about patient confidentiality and privacy, clinics were integrated within the existing hospital infrastructure. To raise awareness and knowledge of community services, clinics coordinated interactions between patients, community services and regional AIDS service organizations. Rural patients treated through this model had similar health outcomes as urban patients in terms of viral load suppression, CD4 cell counts and mortality (3).
- The Health Services Clinic, funded by the United States Health Resources and Services Administration, **integrates substance use treatment into routine HIV care**. The clinic uses a mobile van to visit homebound patients or patients who cannot access transportation, provides free medication to patients and makes it easier to

get walk-in and same-day care appointments. To reduce stigma and discrimination, the model established a peer buddy system in which peer workers contact patients daily to provide support and remind them to take their medication. The model also offers case management for mental health concerns, substance use treatment and outpatient referrals to specialized counselors (3).

## What We Did

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We searched Medline for articles using a combination of text and MeSH terms in the title or abstract for (rural) AND [((mental health) OR (depression) OR (anxiety)) OR ((substance abuse) OR (drug users) OR (harm reduction)) OR ((HIV) OR (sexually transmitted diseases) OR (sexual health))]. Google searches on rural health care delivery in Canada were also conducted. In addition, references for included studies were reviewed. All searches were limited to articles published in English since 2005. Articles were selected to reflect the agenda of this meeting.

## FACTORS THAT MAY IMPACT LOCAL APPLICABILITY

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The lack of consistent definition of the terms “rural” and “remote” across the literature may impact applicability of the present review's findings. While rural communities in Canada may experience common barriers to health care service delivery on a macro-level, it is important to note that, given the vast differences in rural communities, each setting requires approaches and models of care that are specifically adapted to local needs. Additional factors that may influence local applicability include limited and low-quality studies in peer-reviewed literature as well as lack of current government reports on rural populations.

## Authors

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## Reference List

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- (1) Bollman, R. D. and Clemenson, H. A. Structure and change in Canada's rural demography: an update to 2006. Statistics Canada; 2008. Report No.: 7.
- (2) Canadian Institute for Health Information. How healthy are rural Canadians? An assessment of their health status and health determinants. 2006.
- (3) Pellowski JA. Barriers to care for rural people living with HIV: a review of domestic research and health care models. *Journal of the Association of Nurses in AIDS Care* 2013;24(5):422-37.
- (4) Ryan-Nicholls KD, Haggarty JM. Collaborative mental health in rural and isolated Canada: stakeholder feedback. *Journal of Psychosocial Nursing & Mental Health Services* 2007;45(12):37-45.
- (5) Haggarty JM, Ryan-Nicholls KD, Jarva JA. Mental health collaborative care: a synopsis of the Rural and Isolated Toolkit. *Rural & Remote Health* 2010;10(3):1314-Sep.
- (6) Cheng C, Dewa CS, Langill G, Fata M, Loong D. Rural and remote early psychosis intervention services: the Gordian knot of early intervention. *Early intervention in psychiatry* 2014;8(4):396-405.
- (7) Rudnick A, Copen J. Rural or Remote Psychiatric Rehabilitation (rPSR). *Psychiatric Services* 2013;64(5):495.
- (8) Benavides-Vaello S, Strode A, Sheeran BC. Using technology in the delivery of mental health and substance abuse treatment in rural communities: a review. *Journal of Behavioral Health Services and Research* 2013;40(1):111-20.
- (9) Mohr DC, Vella L, Hart S, Heckman T, Simon G. The effect of telephone-administered psychotherapy on symptoms of depression and attrition: A meta-analysis. *Clinical Psychology* 2008;15(3):243-53.
- (10) Conn DK, Madan R, Lam J, Patterson T, Skirten S. Program evaluation of a telepsychiatry service for older adults connecting a university-affiliated geriatric center to a rural psychogeriatric outreach service in Northwest Ontario, Canada.

- International Psychogeriatrics 2013;25(11):1795-800.
- (11) Gibson K, O'Donnell S, Coulson H, Kakepetum-Schultz T. Mental health professionals' perspectives of telemental health with remote and rural First Nations communities. *Journal of Telemedicine & Telecare* 2011;17(5):263-7.
- (12) Gibson KL, Coulson H, Miles R, Kakekakekung C, Daniels E, O'Donnell S. Conversations on telemental health: listening to remote and rural First Nations communities. [Review]. *Rural & Remote Health* 2011;11(2):1656.
- (13) Volpe T, Boydell KM, Pignatiello A. Mental health services for Nunavut children and youth: evaluating a telepsychiatry pilot project. *Rural & Remote Health* 2014;14(2):2673.
- (14) Mohr MC, Hart SL, Marmar C. Telephone administered cognitive-behavioral therapy for the treatment of depression in a rural primary care clinic. *Cognitive Therapy and Research* 2006;30(1):29-37.
- (15) Staton-Tindall M, Wahler E, Webster JM, Godlaski T, Freeman R, Leukefeld C. Telemedicine-based alcohol services for rural offenders. *Psychological Services* 2012;9(3):298-309.
- (16) Griffiths KM, Christensen H. Internet-based mental health programs: a powerful tool in the rural medical kit. *Australian Journal of Rural Health* 2007;15(2):81-7.
- (17) Srivastava A, Kahan M, Jiwa A. Prescription opioid use and misuse: piloting an educational strategy for rural primary care physicians. *Canadian Family Physician* 2012;58(4):e210-e216.
- (18) Ransom D, Heckman TG, Anderson T, Garske J, Holroyd K, Basta T. Telephone-delivered, interpersonal psychotherapy for HIV-infected rural persons with depression: a pilot trial. *Psychiatric Services* 2008;59(8):871-7.
- (19) Cosio D, Heckman TG, Anderson T, Heckman BD, Garske J, McCarthy J. Telephone-administered motivational interviewing to reduce risky sexual behavior in HIV-infected rural persons: a pilot randomized clinical trial. *Sexually Transmitted Diseases* 2010;37(3):140-6.
- (20) Lovejoy TI. Telephone-delivered motivational interviewing targeting sexual risk behavior reduces depression, anxiety, and stress in HIV-positive older adults. *Annals of Behavioral Medicine* 2012;44(3):416-21.
- (21) Lovejoy TI, Heckman TG. Depression moderates treatment efficacy of an HIV secondary-prevention intervention for HIV-positive late middle-age and older adults. *Behavioral Medicine* 2014;40(3):124-33.
- (22) Church E, Cornish P, Callanan T, Bethune C. Integrating self-help materials into mental health practice. *Canadian Family Physician* 2008;54(10):1413-7.
- (23) Vyavaharkar M, Moneyham L, Corwin S, Tavakoli A, Saunders R, Annang L. HIV-disclosure, social support, and depression among HIV-infected African American women living in the rural southeastern United States. *AIDS Education and Prevention* 2011;23(1):78-90.
- (24) Heckman TG, Somlai AM, Kalichman SC, Franzoi SL, Kelly JA. Psychosocial differences between urban and rural people living with HIV/AIDS. *Journal of Rural Health* 1998;14(2):138-45.