

Mobile health: An update on BC projects that use WelTel to enhance patient care

In 2014 it is expected that the number of cellphone subscriptions will outnumber the world's population of 7 billion people.¹ The use of mobile communication technology such as cellphones and tablets to support the delivery of health services (mHealth) is an innovative approach to improving health care access and quality. British Columbia has one of the highest proportions of cellphone users in Canada,² giving the province enormous potential to use mHealth in its communities to enhance health care support.

By testing and implementing the WelTel mobile health program, the BC Centre for Disease Control (BCCDC) and the Oak Tree Clinic at the BC Women's Hospital and Health Centre are establishing themselves as mHealth leaders in BC. WelTel, which involves sending weekly interactive text messages to check in on patients, was initially found to be effective in a randomized controlled trial among HIV-positive individuals in Kenya.³ Participants who received the intervention over a 1-year period had significantly improved medication adherence and viral suppression compared to those who received standard care only. WelTel has since been piloted among populations with HIV and latent tuberculosis in BC. Further research is underway to understand the intervention's effectiveness in improving latent tuberculosis medication completion and in providing support to Aboriginal youth and high-risk HIV patients.

A pilot study at the Oak Tree Clinic examined health care provider and

patient acceptability of the WelTel service and whether the intervention would be feasible in a Canadian HIV clinic setting. Qualitative interviews revealed that the WelTel intervention was valued by both health care providers and patients as a consistent and easy-to-use method to maintain communication. The intervention helped patients access support services,

WelTel involves sending weekly interactive text messages to check in on patients.

report side effects, and make appointments. Health care providers appreciated regular contact with patients and the opportunity to deal with problems in a timely manner. In this setting, WelTel was valued less for its ability to transmit information and more because it provided psychosocial support and access to health care. The clinic is currently enrolling 100 high-risk HIV-positive individuals to assess whether the intervention can improve clinical outcomes.

A second pilot study involving a clinic survey and subsequent text-messaging intervention at the BCCDC investigated the feasibility

of adopting the WelTel service for use in latent tuberculosis infection (LTBI) treatment and care.⁴ The clinic survey indicated that patients were highly receptive to receiving text-message communications from the clinic, while the 12-week intervention study demonstrated high user and health care provider acceptability. Patients valued the intervention as a reminder to take their medication and because it enabled them to report side effects promptly. Clinicians found the increased communication with patients beneficial, particularly because it enabled them to detect adverse events quickly. An RCT is underway to determine whether the WelTel intervention improves LTBI treatment completion (ClinicalTrials.gov:NCT01549457).

WelTel is also being evaluated within the CIHR-funded Cedar Project, a cohort study exploring vulnerability among young Aboriginal people who use illicit drugs in Vancouver, Prince George, and Chase. Cedar Project investigators are examining the impact of the WelTel intervention on HIV treatment and service utilization among young, transient Aboriginal people living with and at risk for HIV. This study will enroll 150 participants this year.

Ultimately BC's WelTel programs are empowering patients with a simple way to engage with their health care providers, enabling them to stay connected for better health and wellness.⁵

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Erratum: The BC Centre for Disease Control would like to correct an error in the article, "Food insecurity: A public health issue for BC" (*BCMj* 2014;56:29,46). The first sentence of the third paragraph should read: "Food insecurity leads to poor health through a complex network of factors."

This article is the opinion of the BC Centre for Disease Control and has not been peer reviewed by the BCMJ Editorial Board.

risks with individuals who are on sensitive medications, conduct random UDS to ensure patients are taking the prescribed drugs, and conduct pill counts. Issues such as patients missing medications repeatedly, asking for increased doses often, declining to give UDS for a variety of reasons, changing their pharmacy repeatedly, obtaining medications from different prescribers, asking for carries, and regularly visiting emergency rooms are considered red flags that should prompt special attention.

Working to reduce harm

Unfortunately, a national database of prescription medications does not exist. Recent findings emphasize the importance of such a resource and its role in the prevention of prescription medication abuse and potential overdose and death. Monitoring physicians' prescribing practices through regular audits could be an important component of reducing harm related to prescription medications. In fact, 20% of prescribers in the United States prescribe 80% of prescription painkillers.⁶ Introducing new approaches through CME courses, developing guidelines, incorporating shared client care, and monitoring prescriptions can go a long way toward improving the quality of pain control while ensuring safe prescribing practices among clinicians.⁷

The US CDC recommends that prescription drug monitoring programs focus their resources on two areas: first on patients at highest risk in terms of prescription painkiller dosage, numbers of controlled substance prescriptions, and numbers of prescribers; and second on prescribers who clearly deviate from accepted medical practice in terms of prescription painkiller dosage, numbers of prescriptions for controlled substances, and proportion of doctor-shoppers among their patients.⁸ **BCMJ**

Red flags: Patient behavior that should prompt special attention

- Missing medications repeatedly.
- Asking for increased doses often.
- Declining to give UDS for a variety of reasons.
- Changing their pharmacy repeatedly.
- Obtaining medications from different prescribers.
- Asking for carries.
- Regularly visiting emergency rooms.

References

1. Statistics Canada. Age-standardized mortality rates by selected causes, by sex (both sexes). Accessed 15 August 2013. www40.statcan.gc.ca/l01/cst01/health/30a-eng.htm.
2. Centers for Disease Control and Prevention. Vital signs: Overdoses of prescription opioid pain relievers—United States, 1999–2008. *MMWR Morb Mortal Wkly Rep* 2011;60:1487-1492.
3. Centre for Addiction and Mental Health. Drug use among Ontario students 1977–2011. Accessed August 2013. www.camh.ca/en/research/news_and_publications/ontario-student-drug-use-and-health-survey/Documents/2011%20OSDUHS%20Docs/2011OSDUHS_Highlights_DrugUseReport.pdf.
4. Health Canada. Canadian alcohol and drug use monitoring survey 2008. Accessed August 2013. <http://data.library.utoronto.ca/datapub/codebooks/cstdli/cadums/2008/cadums-technical-guide-2008-final-eng.pdf>.
5. Substance Abuse and Mental Health Services Administration. Results from the 2010 national survey on drug use and health: Summary of national findings. Accessed 27 January 2014. <http://oas.samhsa.gov/NSDUH/2k10NSDUH/2k10Results.htm#2.16>.
6. Dhalla IA, Mamdani MM, Sivilotti ML, et al. Prescribing of opioid analgesics and related mortality before and after the introduction of long-acting oxycodone. *CMAJ* 2009;181:891-896.
7. Gourlay DL, Heit HA, Almahrezi A. Universal precautions in pain medicine: A rational approach to the treatment of chronic pain. *Pain Med* 2005;6:107-112.
8. Centers for Disease Control and Prevention. Policy impact: Prescription Painkiller Overdoses: What's the issue? Accessed 26 August 2013. www.cdc.gov/homeandrecreationalafety/rxbrief.

Suggested reading

Furlan, AD, Reardon, R, Weppler, C. Opioids for chronic noncancer pain: A new Canadian practice guideline. *CMAJ* 2010; 182:923-930.

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References

1. BBC. Mobiles "to outnumber people next year," says UN agency. Last modified 9 May 2013. www.bbc.co.uk/news/technology-22464368.
2. Statistics Canada. Residential telephone service survey. Last modified December 2010. www.statcan.gc.ca/daily-quotidien/110405/dq110405a-eng.htm.
3. Lester RT, Ritvo P, Mills EJ, et al. Effects of a mobile phone short message service on antiretroviral treatment adherence in Kenya (WeTel Kenya1): A randomised trial. *Lancet* 2010;376(9755):1838-1845.
4. van der Kop ML, Memetovic J, Smillie K, et al. Use of the WeTel mobile health intervention at a tuberculosis clinic in British Columbia: A pilot study. *J Mobile Tech Med* 2013;2:7-14.
5. Lester RT. Ask, don't tell—mobile phones to improve HIV care. *N Engl J Med* 2013; 369:1867-1868.