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Evaluation of an inpatient medical withdrawal program in rural Ontario: a 1-year prospective study

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Introduction: We present a 1-year program evaluation of the Medical Withdrawal Support Service (MWSS) provided at the Sioux Lookout Meno Ya Win Health Centre. The centre's service area includes 4 rural municipalities and 28 First Nations communities. The program involves inpatient detoxification for opioid dependence with the use of buprenorphine–naloxone.
Methods: Data were collected from preadmission interviews (i.e., medical history, substance use history, previous counselling, social history, previous addiction treatment and screening tools used during the interview); discharge forms (i.e., length of stay, maximum dose of prescribed buprenorphine–naloxone and client goals); and postdischarge interviews.
Results: Overall, 81% of the clients successfully completed the program. Two weeks after discharge, 48% of clients reported continued abstinence. At 3-month follow-up, 32% were abstinent, and at 6 months, 30% were abstinent.
Conclusion: The MWSS shows positive outcomes for many clients, their families and communities. Clients returned to work and school, became more engaged in healthy meal preparation and exercise, spent more time with family and were more involved as leaders in their communities.

Introduction : Nous présentons l'évaluation d'un programme d'un an offert par les Medical Withdrawal Support Services (MWSS) au Centre de santé Sioux Lookout Meno Ya Win. La zone desservie par le Centre englobe 4 municipalités rurales et 28 communautés des Premières Nations. Il s'agit d'un programme de désintoxication au moyen de buprénorphine–naloxone offert en établissement à des patients qui souffrent d'une dépendance aux opiacés.
Méthodes : Des données ont été recueillies à partir d'entrevues précédant l'admission (incluant antécédents médicaux, antécédents de toxicomanie, thérapies antérieures, histoire sociale, traitements antérieurs contre les dépendances et outils de dépistage appliqués en cours d'entrevue), des sommaires d'hospitalisation (c.-à-d., durée du séjour, dose maximum de buprénorphine–naloxone prescrite et objectifs du client) et d'entrevues consécutives au congé.
Résultats : Dans l'ensemble, 81 % des clients ont terminé le programme avec succès. Deux semaines après leur congé, 48 % des clients disaient être demeurés abstinents. Au suivi de 3 mois, 32 % étaient encore abstinents et après 6 mois, 30 % l'étaient toujours.
Conclusion : Les MWSS donnent des résultats positifs pour de nombreux clients, leurs familles et les communautés. Les clients sont retournés au travail ou à l'école, ont adopté de meilleures habitudes en ce qui concerne la préparation de repas santé et la pratique d'exercice, ont passé plus de temps en famille et ont davantage agi comme leaders dans leur communauté.

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INTRODUCTION

This article presents the findings of a 1-year inpatient program evaluation of the Medical Withdrawal Support Service (MWSS) provided at the Sioux Lookout Meno Ya Win Health Centre in Ontario. The centre's service area includes 4 municipalities and 28 First Nations communities, most of which are accessible only by air, with the farthest more than 700 km away.[1] In 2014, opiate use was epidemic, with some remote First Nations communities documenting an age-adjusted adult rate of over 40%.[2]

The MWSS is an inpatient adult program held in a 5-bed secure unit. The service offers medical management for withdrawal from substance use, primarily opiates and alcohol. Admission is voluntary, and clients are referred by health service providers or by self-referral. An exclusion criteria is pregnancy, with addiction services for pregnant clients provided through the prenatal program of the Sioux Lookout Meno Ya Win Health Centre.[3]

Program design and evaluation are responsive to current practices for addiction treatment that recognize addiction as more than the severity of symptoms, but also as an experience that has repercussions on quality of daily life.[4] There is a combination of psychoeducational groups and skills groups held throughout the day, including meal preparation, budgeting, stress management, sexual health, relapse-prevention strategies, daily exercise and beadwork. The unit is smoke-free, and clients are offered nicotine replacement therapy and counselling for smoking cessation.

Focus of research

We focused on withdrawal from opiates, including symptom management (e.g., clonidine) and/or use of sublingual buprenorphine–naloxone, a substitution medication that combines buprenorphine, a partial opioid agonist, and naltrexone, an opioid antagonist.[5] Because of the limited availability of outpatient maintenance programs using buprenorphine–naloxone in the remote First Nations communities and restrictions on the number of people who can be admitted to the 5-bed inpatient service, most inpatients were tapered off buprenorphine–naloxone before discharge.

Methadone versus buprenorphine–naloxone

The challenges associated with the medical monitoring of substitution pharmaceuticals preclude the use of methadone in our setting. Methadone is not considered feasible because it has a long half-life, a lengthy tapering period and a long duration of withdrawal effects, and it is not available for posttreatment maintenance in remote communities. Buprenorphine–naloxone as a substitution therapy is found to have higher retention rates than methadone for substitution programs.[6] This may be related to buprenorphine (its opioid agonist component) having a more immediate effect (20–30 min) on relief of withdrawal symptoms.[6] Buprenorphine–naloxone is also gaining acceptance in outpatient settings, including unsupervised "home starts" in several primary care settings in the United States, with narcotic abstinence rates up to 50%.[7–11]

OxyContin use

In 2012, OxyContin was delisted in Ontario and replaced by OxyNEO for pharmaceutical purposes.[12] Within the Sioux Lookout region, OxyContin 80 mg pills were frequently purchased with costs shared among a collective of people, and generally the pills were quartered. At the time of delisting, the cost of a quarter tablet (20 mg) skyrocketed from $80 to $250. Individuals who were using OxyContin, therefore, tended to use relatively small doses but at a high financial cost that resulted in selling all personal items and exchanging sex for drugs. Throughout 2012, OxyContin remained the primary substance being abused in our region, despite being delisted, followed by morphine. This study evaluates the outcomes of the first year of operation of the MWSS to treat this epidemic of opioid dependence.

METHODS

This program evaluation includes clients whose admission dates were between Jan. 1, 2012, and Dec. 1, 2012, the program's first year of operation. The program evaluation was designed prospectively. Qualitative data collection was integrated into therapeutic activities, and was performed by program staff, primarily nurses, occupational therapists and counsellors.

There were 3 primary sources of data. Before admission, an extensive initial intake interview was conducted, predominantly by telephone. Data collected included a medical history, substance use history, current substance use, previous counselling, social history, previous addiction treatment and screening tools used during the interview. Medical examinations and histories were performed on admission.

The second stage of data collection occurred at discharge. Staff completed a discharge form, recording information such as length of stay and maximum dose of prescribed buprenorphine–naloxone. Clients were also requested to write their personal goals for discharge. Clients were encouraged to consider goals beyond substance use and include other changes they wanted to achieve or maintain.

The third stage of data collection involved follow-up telephone interviews after discharge, at 2 weeks, 3 months and 6 months. These follow-up interviews, in the 91 available clients, included data about substance use after discharge, subsequent counselling or addictions services, subjective evaluation of the MWSS program and client evaluation of progress on the goals they identified for themselves at discharge.

All clients were included in the data analysis (intention-to-treat analysis).

RESULTS

In 2012, there were 112 admissions, which included 109 clients in total (72 women and 37 men). The age of the clients ranged from 18 to 70 years.

There was a fairly high amount of polydrug use (i.e., marijuana and cocaine in addition to oxycodone); however, in most cases there was one substance of importance for management of withdrawal. Of the 109 clients, 5 were admitted for substitution from methadone to buprenorphine–naloxone (3 women and 2 men aged 24–42 yr), 1 of whom was still injecting oxycodone daily at the time of admission; 16 for alcohol withdrawal (11 women and 5 men aged 18–70 yr); and 88 for withdrawal from unprescribed opiate use (i.e., oxycodone, morphine, hydromorphone, oxycodone–acetaminophen and/or codeine) (57 women and 31 men aged 18–44 yr). Of the 88 clients who used illicit opiates (including 1 client taking illicit methadone), 69 (78%) administered by injection. Twenty-eight (32%) clients reported snorting, and 6 (7%) reported smoking the crushed pills.

The length of stay ranged from 1 to 29 days, with a mean of 12 days. Length of stay was determined according to client tolerance for tapering and experience of severity of withdrawal symptoms.

Successful completion of the program for alcohol was defined as 7 days' admission or completion of medically facilitated withdrawal plus 3 days free of medications for withdrawal management. Successful completion of opiate withdrawal included tapering off buprenorphine–naloxone completely or to an established maintenance dose, plus 3 days without a medication for withdrawal management. Using these definitions, 91 of the 112 admissions (81%) were successfully completed. Successful completion was achieved in 13 of 16 admissions (81%) for alcohol withdrawal, 3 of 5 admissions (60%) for methadone and 75 of 92 admissions (82%) for opiates.

Eighty clients were prescribed buprenorphine–naloxone as inpatients. Doses ranged from 4 mg to 22 mg, and the dose did not correlate with the amount of illicit opiates used by the clients before admission. The maximum doses of buprenorphine–naloxone are shown in Figure 1. Twenty-seven people were discharged on a maintenance dose of buprenorphine–naloxone, with doses ranging from 4 mg to 22 mg. The mode and median maintenance dose at the time of discharge was 8 mg.

Substance use after discharge

Because 3 clients were readmitted to the MWSS, there were 91 admissions for opiate use; these are reported as discrete events ("individuals") in the remainder of this section. A total of 72 individuals (79%) were contacted for follow-up interviews; participants were not available for interviews at all time points. At 2 weeks after discharge, 66 (73%) individuals were interviewed; at 3 months, 49 (54%) were interviewed; and at 6 months, 33 (36%) were interviewed.

A summary of substance use after discharge is provided in Table 1. Opiate use was classified as no opiate use, lapse, reduced use or relapse. Reduced use was considered important from a harm-reduction

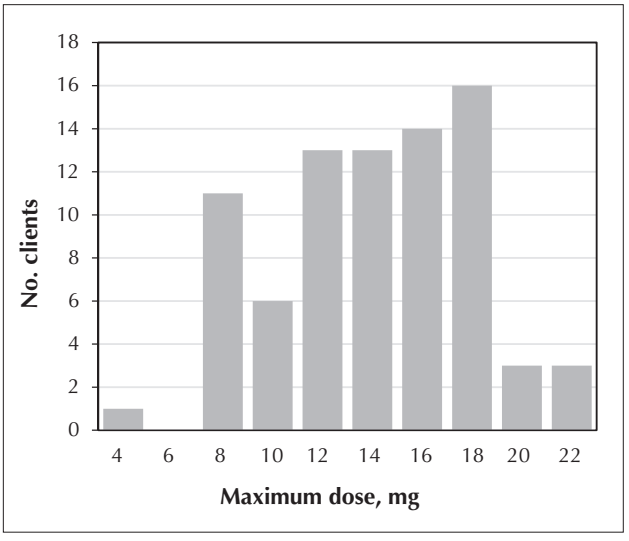


Fig. 1. Maximum prescribed doses of buprenorphine–naloxone.

perspective, because clients' risks for physical harm, financial instability and impact on performance in daily activities would be decreased. There was insufficient data for a comparative analysis; however, it was observed that a lapse or reduced use did not necessarily predict a relapse.

Overall, 97% of clients contacted at the 2-week interview said that they would recommend the program to others, or already had. The other 3% (2 clients) were not sure, with one of them clarifying that it was hard to be away from home.

When asked about what was helpful to achieve goals after discharge, clients described the importance of "keeping busy" and spending time with people who are supportive of their goals (Box 1). The following are examples of client responses:

- "Keep busy. Keep self away from friends. Right now, trying to keep myself healthy and clean and keep my life together. I'm with people who support me. I don't lie or hide the truth. Focus on future goals."
- "Positive attitude; more to life than drugs; seeing a whole new world."

Clients reported becoming more involved in community events, going fishing, doing yoga, walking, journalling, beadwork, attending pow wows, and caring for children or grandchildren as examples of healthy activities. Some clients spoke about needing to move from their home community to support goals of abstinence. Where available, community-based maintenance programs using buprenorphine–naloxone were also beneficial to many

Asked about the challenges of achieving goals, clients explained that some friends and family members were not supportive, it was difficult to find work and there was a lack of opportunities to receive counselling.

DISCUSSION

In this program evaluation, we found that the MWSS has high success rates. Success is measured in several ways, including successful completion of the program, abstinence, a reduction in substance use, a change in the administration route (e.g., from intravenous to snorting) and achievement of individual goals. One of the factors that might be associated with outcomes is the quality of therapeutic engagement during the program, facilitated by a safe, respectful alliance between the health providers and clients.[13]

Comparatively, retention rates vary broadly in other programs described in the literature. One short-term residential medical withdrawal program in Ohio reported that 26% of their clients were discharged against medical advice over a 15-month period.[14] Another US study involving 644 people who attended short-term inpatient withdrawal services to establish buprenorphine or methadone maintenance doses reported retention rates of 83% and an average length of stay of 4 days.[6] We found that the MWSS had relatively high retention rates with a longer mean length of stay (12 d) and with most clients being tapered off buprenorphine–naloxone. One of the reasons that rates of successful completion were high may be Health Canada's Non-Insured Health Benefits Program for First Nations and Inuit people, which will fund travel for medical appointments. If a client is discharged "against medical advice," he or she must pay for the return flight out of pocket

Many clients who continued to abstain from opiates at 3 months and 6 months after discharge were administered buprenorphine–naloxone at community-based treatment programs. However, a considerable number of clients who were discharged without

Table 1: Reported opiate use after discharge, *n* = 91

	No. (%) of clients				
Length of time after discharge	Reported opiate use	Lapse*	Reduced use†	Relapse‡	No follow-up
2 wk	42 (46)	9 (10)	7 (8)	8 (9)	21 (23)
3 mo	29 (32)	5 (5)	6 (7)	9 (10)	42 (46)
6 mo	27 (30)	NA	3 (3)	3 (3)	58 (64)

NA = not applicable.
*Opiate use once or twice after discharge.
†A return to opiate use at a quantity ≤ 25% of opiate use at intake, which in some cases involved less frequent weekly use.
‡A return to substance use at a quantity and frequency similar to intake or ≥ 25% of the intake dose and frequency.

maintenance medication successfully abstained from opiate use. In fact, even clients who did not successfully complete the program according to the define criteria were able to maintain abstinence and achieve the goals that they had set on discharge.

Many program evaluations for addiction treatment programs included only the clients who successfully completed the program and were available for follow-up, thereby inflating abstinence rates for comparison with intentention-to-treat methods. The MWSS had success rates comparable to other program evaluations that included numerous exclusion criteria for data analysis. When comparing program outcomes, the MWSS rates of abstinence, lapse, and relapse include all clients (including those who left against medical advice and those lost to follow-up) and are similar to the fi ding of other programs after exclusion criteria for research have been applied.[14] Few rural comparators exist. A 2007 evaluation involving 604 clients enrolled in treatment programs in rural Kentucky found beneficial effects from short-term detoxification with buprenorphine–naloxone, measured as a substantial drop in criminal activity and increased employment at 6-month follow-up.[15]

According to Waldorf and colleagues,[16] "what keeps many heavy users from falling into the abyss of abuse, and what helps pull back those who do fall, is precisely this *stake in conventional life*. Jobs, family, friends — the ingredients of a normal identity." The clients interviewed for our study echo this in their descriptions of goal attainment that highlight the need to restructure daily routine. Clients returned to work and school, became more engaged in healthy meal preparation and exercise, spent more time with family and were more involved as leaders in their communities. Certainly, medications that manage withdrawal symptoms and cravings can play an important role in supporting abstinence. However, the goals that clients achieved extended beyond abstinence toward the creation of a better life for themselves and their families.

An important success of the MWSS is the positive feedback from clients about the program and the staff. Many clients experience stigma and negative judgment from health professionals, which results in avoiding requesting help when it is needed. Although not all clients achieved their goals or remained abstinent from substance use, they continue to call the unit for ongoing support when needed and have developed trusting relationships with health professionals. A positive experience with the MWSS may act to increase the likelihood that clients will access support in the future when they decide to make changes.

The need for clients to leave their community and family for a lengthy period with restricted contact is a deterrent for many people to attend distant, longer term residential programs. The MWWS, therefore, provides an essential and effective service because of its short duration. There is a parallel, ongoing need to support more community-based services, continuity of counselling before and after addiction intervention, outpatient buprenorphine–naloxone programs and family-based treatment programs in home communities.[5,17] These approaches would offer health care to far more people, reduce the financial burden of relying on inpatient services and potentially serve a preventative role. Community-based case management can support goals, such as securing employment, coordinating mental health counselling and access to other health services, and prevent relapse.[18] Inpatient withdrawal programs are recognized as particularly effective for individuals who have a short history of substance use before progression to injection, which reflects the recent experience in our region [2,19]

Box 1: Sources of support after discharge

Physical

Internal

- Exercise
- Good sleep

External

- Staying away from people who use
- Moved communities
- Methadone/buprenorphine–naloxone
- Counselling
- Elders

Emotional

- "My kids"
- "Seeing my wife and kids happy"
- "Talking to someone I trust"
- Being positive
- "My kids are coming to me and hugging me more. I used to say 'don't hug me.' Now I hug back and don't feel tense or annoyed."

Mental

- Keeping busy
- Working
- Writing music
- Self-awareness
- Following a schedule
- Knowing that help is available

Spiritual

- Taking things a day at a time
- Praying
- Traditional practices (e.g., sweat lodges)

Limitations

Data collection was performed as a component of the health providers' role of assessment and information gathering. This shared duty had the advantage of making data collection feasible and sustainable; however, it posed a limitation to the rigour of data collection because therapeutic rapport was prioritized over collection of research data. A second limitation to the interpretation of the program outcomes may be the therapeutic nature of the follow-up interview, which had value that altered clients' perspective. Third, contacting clients after discharge was a challenge. Many clients reported that having a cellphone was a risk for relapse, so they disconnected their service; some clients moved; and others were attending a residential treatment program at the time of follow-up. Clients who relapsed may have chosen not to respond to follow-up telephone calls. Although simple telephone follow-up is not ideal, it was used because it was cost-effective and was used in many other primary care addiction programs described in the literature.

CONCLUSION

Hospital-based withdrawal and stabilization on buprenorphine–naloxone are relatively costly. However, given the context — a paucity of alternative services available that have comparable effectiveness — this approach is warranted. The MWSS provides an opportunity to address substance use that is not otherwise available to the residents in northwestern Ontario, and the program had positive outcomes for many clients, as well as for their families and communities.

Competing interests: None declared.

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