

Wounds on Wheels: Implementing a Specialized Wound Clinic within an Established Syringe Exchange Program in Baltimore, Maryland

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People who inject drugs (PWID) experience a high incidence of abscesses and chronic wounds. However, many PWID delay seeking care for their wounds. In 2012, the Baltimore Needle Exchange Program (BNEP) in Baltimore, Maryland, partnered with the Johns Hopkins Wound Healing Center to establish a mobile BNEP Wound Clinic. This clinic provided specialized wound care for BNEP patients. In sixteen months, the clinic treated 78 unique patients during 172 visits overall. On average, each visit cost the program \$146.45, which was substantially less than clinic-based treatment. This program demonstrates that specialized wound care can be effectively provided through mobile outreach. A community-based service delivery approach might serve as a model for local health departments looking to improve the health of PWID. (*Am J Public Health*. 2014;104:2057–2059. doi:10.2105/AJPH.2014.302111)

city and provides clean needles and injection tools to PWID. BNEP also offers overdose prevention training, immunizations, and reproductive health services. These programs have been shown to have lower costs and be successful in providing care to marginalized populations.^{10,11}

BACKGROUND AND PROGRAM DESIGN

INJECTION-RELATED WOUNDS, including abscesses and chronic ulcers, are major causes of morbidity for people who inject drugs (PWID).¹ Previous studies describe wound prevalence in the PWID population to be between 29% and 36%² and prevalence of injection-related skin infection history to be between 55% and 68%.^{3,4} Left untreated, injection-related wounds may lead to more severe complications such as sepsis, gangrene, or endocarditis.¹ Additionally, chronic wounds are costly to the health care system. Venous leg ulcers, a common cause of chronic wounds among PWID, have an average monthly treatment cost of \$4095.⁵

Compared with non–drug-using populations, PWID have disproportionately high rates of emergency department utilization and are less likely to receive care for their medical conditions.⁶ Health clinics using harm-reduction models appear cost-effective and can improve health outcomes by minimizing barriers to care.^{7,8} Additionally, syringe exchange programs often refer PWID to a variety of health services.⁸

The Baltimore, Maryland, metropolitan area has an estimated 40 000 PWID.⁹ Since 1994, the Baltimore City Health Department has operated the Baltimore Needle Exchange Program (BNEP) out of converted recreational vehicles (RVs). BNEP travels to fixed sites across the

Since the BNEP's inception, staff reported high rates of abscesses and other chronic wounds. Clients were given basic wound-care kits and advised to seek medical care, but high rates of wounds persisted. To address this need, the BNEP partnered with infectious disease physicians from the Johns Hopkins Wound Healing Center to open a mobile wound clinic on BNEP RVs. It was hypothesized that by placing a specialized wound clinic within an established community program, barriers such as costs, transportation, and stigma could be overcome, and patients could receive high-quality wound care.

The Wound Clinic began operations in May 2012, and services were available to any BNEP

TABLE 1—Demographic Characteristics of Wound Clinic Patients (n = 78): Baltimore, MD, May 2012–August 2013

Characteristics	Patients, No. (%)
Sex	
Male	40 (51.3)
Female	38 (48.7)
Age, y	
18–24	3 (3.7)
25–34	16 (19.8)
35–44	26 (32.1)
45–54	14 (21.0)
55–64	18 (22.2)
> 65	1 (1.2)
Race/ethnicity	
Black	30 (40.7)
White	43 (53.1)

TABLE 2—Visit Characteristics at the Wound Clinic: Baltimore, MD, May 2012–August 2013

	Visits, No. (%)
All visits	172 (100)
Primary reason for visit	
Acute wound or abscess	52 (30.2)
Chronic wound	116 (67.4)
Other concerns ^a	4 (2.3)
Visits during which antibiotics were prescribed	38 (22.1)

^aDefined as an open area on the skin present for 2 months or longer.

^bIncluding hematoma, ganglion cyst, and early venous wounds.

client experiencing acute or chronic wounds. A physician volunteer with expertise in wounds provided medical care, while BNEP staff managed supplies, outreach, and logistical support.

The Wound Clinic operated twice a week at 2 BNEP shifts (Mondays 9:30–11:30 a.m. and Tuesdays 12:45–3:30 p.m.). The clinic was held in a custom-designed examination room on the RV that included an

examination table, a work counter, overhead shelves, and biohazard waste bins (see Appendix A, available as a supplement to the online version of this article at <http://www.ajph.org>).

The following treatments were performed at the BNEP Wound Clinic:

- Wound assessment;
- Wound cleaning;
- Incision and drainage of acute abscesses;

- Sharp debridement of chronic ulcers;
 - Compression treatment, including multilayered compression wraps;
 - Prescription and dispensing of antibiotics; and
 - Specialized wound dressing application and dispensing
- Basic and specialized wound dressings were used in the clinic and provided for home use. Oral antibiotics were kept on site and dispensed when deemed clinically appropriate by the supervising physician. Patients were asked to return within 1 week for follow-up. All patients were counseled on wound care to minimize skin-associated risk behaviors. Patients with severe chronic wounds who required advanced clinic-based treatment were referred to the Johns Hopkins Wound Healing Center or other local wound centers.

OUTCOMES

Demographics of all patients who received care in the BNEP Wound Clinic are shown in Table 1. There were roughly even numbers of African American and White patients. The mean age was 43.5 years (SD=11.18), and the median age was 43 years.

Table 2 shows reasons for visits over the first 16 months of the program. Seventy-eight unique patients were seen across 172 total visits. Of these visits, 116 were chronic wound visits and 52 addressed acute wounds or abscesses. Antibiotics were prescribed and dispensed on 38 occasions.

COSTS

Costs for the program include supplies and staff salaries.

Overhead costs were minimized because the clinic took place alongside current BNEP operations.

Total costs for the first 16 months of the program included wound care supplies (\$6854.37) and partial salary for 1 BNEP staff (\$18 333.00). These costs averaged to \$146.45 per visit. The authors obtained additional Medicare cost data from a local wound center for initial visits. These ranged between \$341 and \$742 per visit. The program relied on the services of a volunteer physician; therefore, actual costs of the BNEP Wound Clinic cannot be strictly compared with clinic costs.

EVALUATION

The BNEP Wound Clinic demonstrates that specialized wound clinics can be implemented successfully on mobile clinics within an established harm-reduction program. We suggest that these types of programs may be offered at a relatively low cost and can reach populations who otherwise might not receive care for their wounds.

The program was successful in providing care for clients who frequently rely on emergency departments for medical care. Among a population of chronic wound patients, ongoing, routine care is essential to achieve wound healing. To engage clients, the program relied on rapport already established by BNEP. The success of the program has led BNEP to consider expanding its health services for its population to including hepatitis C testing and linkage to care.

Costs were relatively low, given the high cost of specialized wound care, particularly for chronic wounds. Further research

is needed to determine the effect of these types of community-based programs on local emergency department admissions and hospitalizations.

Given the lack of space, staff was only able to see 1 patient at a time, which may have affected the number of patients. Another challenge was patient retention. Many patients did not have phones, which made it difficult to establish follow-up. Patients themselves faced numerous challenges in caring for their wounds because some did not have access to clean water or stable housing.

While many PWID-specific health programs address infectious diseases such as HIV and hepatitis C, a need exists for formalized wound care among this population. A growing body of evidence suggests that harm-reduction programs with established relationships with PWID are particularly suited to link their clients with such services. ■

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Contributors

N. Robinowitz was the main author on the article and constructed the first draft. M.E. Smith contributed to data collection and article editing. C. Serio-Chapman assisted with editing of the article and program implementation. P. Chaulk assisted with editing of the article and program implementation. K. Johnson contributed to data collection and article editing and served as the principle investigator of the study.

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Human Participant Protection

Approval to conduct research with human participants was given by the Johns Hopkins School of Medicine Institutional Review Board, with an authorization agreement with the Baltimore City Health Department.

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