Increasing Safe Syringe Collection Sites in New York State

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SYNOPSIS

This article describes expansion of options for safe syringe collection in New York State (NYS) in conjunction with efforts to enhance and expand access to hypodermic needles and syringes. Together with activities to educate the public and providers about the dangers of improperly disposed of syringes, the goals were to (1) develop community-based collection sites for individuals to safely dispose of used syringes and (2) improve accessibility of existing health-care facility-based collection sites. During the period of 2002 to 2006, 79 community-based collection sites were created. These sites collected an estimated 2.6 million used syringes during 2006. Significant increases in availability and use of health-care facility-based collection sites was also documented. Efforts to promote safe disposal in NYS are ongoing, informed by these findings.

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The dangers of improperly disposed of hypodermic needles and syringes (hereafter “syringes”) used outside health-care settings include the risks of injury due to accidental needlesticks and of transmission of blood-borne infections, including hepatitis B and C, and human immunodeficiency virus (HIV).¹⁻⁴ In the U.S., an estimated 3 billion syringes are used annually for self-administration of medications and illicit drugs.⁵⁻⁷ Reports of community-based safe disposal initiatives began to appear in the literature in the 1990s.⁸⁻¹² Most initiatives were believed to remove only a “small proportion of all syringes used outside health-care facilities.”¹³ Barriers to safe disposal initiatives have included resource constraints, legal requirements, lack of leadership, and the need for organized efforts at the community level.¹⁴⁻¹⁷ In 2002, several local initiatives were highlighted as examples to help advance practice.¹⁸⁻²⁴

Since 1992, New York State Department of Health (NYSDOH)-approved syringe exchange programs (SEPs), now numbering 17 with 46 sites, have accepted used syringes for safe disposal.²⁵ SEPs in NYS exchange approximately 3 million syringes annually, removing used ones from circulation. Beginning in 1993, hospitals and nursing homes in NYS were required by law to accept used syringes from individuals in the community.²⁶ Many health-care facility-based collection sites had limited days and hours of operation and some sites were located inconveniently or were difficult to locate (e.g., improper signage, lack of staff awareness).

In conjunction with the advent of nonprescription syringe sales in NYS in 2001, known as the Expanded Syringe Access Demonstration Program (ESAP), the NYSDOH dedicated renewed attention to safe disposal.²⁷⁻²⁹ The NYSDOH AIDS Institute implemented ESAP, in collaboration with public and private partners, including pharmacists, diabetes educators, community-based organizations (CBOs), the NYS Department of Environmental Conservation, and others. Steps were taken to promote an environment that encouraged creation of conveniently located community-based collection sites and improvement of access to the existing health-care facility-based collection sites.³⁰⁻³³

CREATION OF COMMUNITY-BASED COLLECTION SITES

Since 2001, NYSDOH has offered technical assistance, distributed educational materials, and created Web-based resources to foster development of community-based collection sites.^{30,32,34,35} To expand syringe collection by pharmacies, “Guidelines for Pharmacies Interested in Accepting Sharps for Safe Disposal”

offered advice on navigation of legal and regulatory requirements pertaining to the collection of used syringes³⁶ and an application form was created to facilitate NYSDOH approval of community-based collection sites.³⁷ NYSDOH has also provided personal sharps containers and syringe collection drop boxes for local use (Figure 1).

With modest financial support from the NYSDOH AIDS Institute, Community-Based Syringe Access and Safe Disposal Demonstration Projects have provided education, promoted the safe collection and proper disposal of used syringes, and engaged local partners in identifying potential community-based collection sites, including appropriate placement of syringe collection drop boxes (Figure 1). In addition to CBOs, health centers/clinics, housing authorities, and land-fill/transfer stations, the Demonstration Projects and local partners recruited pharmacies as easily accessible collection sites. Stericycle, an international corporation that collects and disposes of medical waste, has provided pickup and disposal services for numerous community-based collection sites.

Examples of Demonstration Projects include those led by Centro Civico of Amsterdam, Inc. and by the Erie County Department of Health (ECDOH). Both engaged local partners (e.g., pharmacies, government agencies, CBOs, diabetes educators) in community-wide efforts. Centro Civico’s Project Needle Smart coalition serves four counties. Project Needle Smart has provided one-on-one education on proper disposal; supported a multimedia campaign including radio, newspaper, and billboard advertising, as well as the use

Figure 1. Characteristics of freestanding syringe collection drop boxes

- Measure 53 inches tall and 20 inches wide.
- Can be anchored to the ground to prevent being knocked over or removed.
- Have a drop chute, similar to that of a mailbox, for depositing syringes.
- Include a removable container into which syringes are funneled after being deposited.
- Have a double-locked, secure entry door at the base of the unit.
- May only be opened and maintained by trained and authorized personnel.
- Enable individuals to self-deposit syringes anonymously.
- Provide an option for days and hours when staff are not available.
- Minimize risks to staff associated with handling personal sharps containers (which are puncture resistant, but not puncture proof).

of a mascot named Freddy the Frog; distributed personal sharps containers; and placed syringe collection drop boxes in six independent pharmacies, two chain pharmacies, two CBOs, and a diabetes center. John Tagliaferri, a pharmacist and owner of Tag's Pharmacy in Amsterdam, New York, accepted the first syringe collection drop box placed in NYS. He said, "I know it's a needed project. The demand is there."³⁸

ECDOH's Needle Point project covers eight counties. Needle Point placed syringe collection drop boxes at two hospitals, six CBOs, a diabetes center, three municipal housing authority sites, a county health clinic, a landfill, three transfer stations, and in 11 K-Mart pharmacies. K-Mart pharmacist Brian Kimpel said, "We feel that Needle Point will help to improve quality-of-life issues both in the home and in the community."³⁹ Promotion includes Needle Point brochures, palm cards, billboards, newsletters, and distribution of personal sharps containers to collection sites, diabetes educators, schools, and other interested organizations.

IMPROVEMENT OF HEALTH-CARE FACILITY-BASED COLLECTION SITES

In 2002, NYSDOH contacted hospitals, nursing homes, and their membership organizations (i.e., Greater New York Hospital Association [GNYHA]) by mail and telephone to emphasize the need to fully implement syringe collection as a community service. GNYHA sent letters to chief executive officers reiterating the legal requirement to accept and dispose of used syringes and provided recommendations to enhance collection sites' effectiveness. NYSDOH mailed a technical assistance packet that included guidelines for hospital collection sites, what to include in policies and procedures, and sample promotional materials (e.g., fliers, news releases) to all hospitals in November 2002. In December 2002, NYSDOH provided a briefing for GNYHA members from New York City (NYC) and surrounding counties. The briefing identified syringe disposal as a public health issue, provided an overview of NYS syringe collection requirements, and highlighted the use of syringe collection drop boxes to enhance public access.

A statewide directory of health-care facility-based collection sites and community-based collection sites was made available on the NYSDOH website to facilitate public access.⁴⁰ Monitoring of the website has shown consistently high use by the public. For example, a recent report of Web hits indicated that the directory was accessed more than 4,000 times in July 2007.

AIDS Institute staff sought to (1) quantify and mea-

sure the impact of the community-based collection sites and (2) assess changes in accessibility of health-care facility-based collection sites. These initiatives and the findings are described in this article.

METHODS

Data collection from community-based collection sites

Each community-based collection site is required to submit a monthly report to NYSDOH indicating the number of pounds of syringes and other sharps collected. These data are entered into a Microsoft® Excel® spreadsheet, which is used to generate totals for each site. Due to incomplete reporting, a method for extrapolating from reported data to derive an estimate of total pounds collected during 2006 was developed. The method relied upon the use of a Microsoft Excel spreadsheet and the following criteria: (1) for sites that provided seven or more monthly reports in 2006, individual site data for 2006 were used to calculate a monthly mean that was applied to that site for the full year; (2) if the total number of reports in 2006 was less than seven, but there were six or more reports submitted between 2002 and 2006, all available data from 2002 to 2006 for that site were used to calculate a monthly mean that was applied to missing 2006 data; and (3) if the total number of reports submitted from 2002 to 2006 was less than six, the means for all sites derived under criteria 1 and 2 were used to fill in missing site data for 2006. To estimate the number of syringes collected, a measuring scale was used to calculate the number of syringes in a pound.

Among the 79 collection sites, 11 (13.9%) met the first criterion, 20 (25.3%) met the second criterion, and 48 (60.7%) submitted fewer than six monthly reports throughout the study period (criterion 3).

Assessment of accessibility of health-care facility-based collection sites

In November 2001, a survey was mailed to the 930 health-care facilities in NYS required to operate syringe collection sites (251 hospitals and 679 nursing homes) to gather contact information, days and hours of operation, drop-off locations (e.g., environmental services, nursing, security, housekeeping, main entrance), and any facility requirements (e.g., packaging, labeling) for use in creating a statewide directory. Nonrespondents were contacted by telephone. A second survey was sent to 882 health-care facilities (232 hospitals and 650 nursing homes) in May 2004 to update the directory and to gather information on the extent to which policies changed in response to the implementation of ESAP.

Nonrespondents were sent up to three follow-up mailings. Data were entered using SPSS Data Entry 4.0⁴¹ and analyzed using SPSS.⁴²

RESULTS

As of January 2007, there were 1,023 syringe collection sites, of which 245 (23.9%) were hospitals, 653 (63.8%) were nursing homes, 46 (3.6%) were other health-care facilities, and the remaining 79 (7.7%) were community-based collection sites. There was at least one syringe collection site in all but one county and a high of 76 sites, of which 18 were community-based collection sites, in Erie County (home of a Demonstration Project) (Figure 2). Of the 62 counties in NYS, 37 counties (60%) had one to 10 collection sites, 13 (21%) counties had 11 to 20 collection sites, and 12 counties (19%) had more than 20 collection sites. Almost all counties with community-based collection sites were in counties that had Demonstration Projects.

Community-based collection sites

To date, more than 80 community-based collection sites (each in a different location) operated by 49 agencies or organizations have been implemented statewide, of which 79 were operational as of January 1, 2007 (Table). These sites are located in 20 NYS counties (Figure 2) and include clinics, CBOs, pharmacies, solid waste transfer stations, public housing authority complexes, and mobile vans. Although the collection sites vary in size and type, almost all of the sites utilize a syringe collection drop box to enhance access.

As of January 1, 2007, at least one monthly report of pounds of sharps collected had been submitted by 57 (72%) of the collection sites. Monthly reports documented a cumulative total of five and one-half tons (more than 12,000 pounds) of syringes and other sharps collected from 2002 to 2006. As discussed, some sites have not submitted reports and reporting of others was incomplete. Extrapolation from data reported by collection sites yielded an estimated 23,612 pounds

Figure 2. Number of syringe collection sites in New York State by county as of January 1, 2007 (n=1,023)

Table. Community-based syringe collection sites established in New York State, 2001–2006^a

Type of agency/organization	Number of agencies/organizations	Number of sites
Community-based organization	14	24
Community college	1	2
Health center	2	6
Hospital (enhanced) ^b	6	10
Housing authority	2	7
Landfill/transfer station	2	8
Pharmacy	22	22
Total	49	79

^aNot reflected are the previously established health-care facility-based collection sites, required by the New York State Public Health law since 1993, and 17 New York State Department of Health-approved syringe exchange programs collecting syringes at 46 sites.

^bHospitals' community-based collection sites are considered to be enhanced if the hospital has added a syringe collection drop box, a wall-mounted collection unit, or additional collection locations, either within the hospital or off-site (e.g., at an extension clinic or health center).

of syringes and other sharps collected during 2006. Approximately 4,000 pounds of the estimated 23,612 represents actual reported data, while the remainder represents estimated data for 2006. Each pound of weighed syringes contained approximately 131 syringes. Not accounting for the weight of sharps containers, 12,000 pounds collected would represent approximately 1,572,000 individual syringes. The estimated 23,612 pounds collected during 2006 suggests that as many as 2,693,172 syringes were collected that year.

Health-care facility-based collection sites

A total of 812 facilities (216 hospitals and 596 nursing homes) responded to the survey in 2001 and 645 facilities (141 hospitals and 504 nursing homes) responded in 2004 (response rates of 87% and 73%, respectively). Data presented in this article, from the 566 facilities completing the surveys in both years ($n=123$ hospitals, $n=443$ nursing homes), pertain to hours of operation and community use of the sites. Between 2001 and 2004, both hours of operation and community use increased significantly ($p<0.001$) (Figures 3 and 4; numbers of respondents in both figures differ depending on the number of facilities answering each question). Fewer than one-third of the sites were operating five to seven days per week and more than 30 hours per week in 2001. By 2004, almost half had expanded their hours to this amount. The percentage of collection sites being used by the public increased from less than half in 2001 to almost three-quarters of programs in 2004. Those included in the analysis ($n=566$) did not differ significantly from those not included (i.e., those not responding to either survey or those responding to just one survey) in terms of geographic distribution. However, there was a difference by facility type: Hospitals were less likely to be included in our analysis (48.6%) compared with nursing homes (65.3%).

As noted in the Table, six hospitals also now offer sharps collection in 10 convenient and easily accessible locations (e.g., main entrances, near outpatient pharmacies, in affiliated community clinics). These locations feature either syringe collection drop boxes or wall-mounted sharps collection units that permit individuals to self-deposit syringes, rather than rely on hospital staff to accept them.

Figure 3. Percentage of health-care facility-based collection sites open 5–7 days and >30 hours/week^a

^aDifferences between 2001 and 2004 significant at $p<0.001$

Figure 4. Percentage of health-care facility-based collection sites used by the public^a

^aDifferences between 2001 and 2004 significant at $p < 0.001$

DISCUSSION

NYSDOH, in collaboration with local, statewide, and national partners, fostered development of community-based collection sites responsive to community needs. An outcome of the active involvement and satisfactory experiences of K-Mart pharmacies in the western NY region was corporate-level support of additional collection sites at K-Mart pharmacies in other NYS regions. Community-based collection sites are well-used, with no adverse events reported (e.g., needles found near syringe collection drop boxes, needlestick injuries). At one point, unexpectedly high use of several syringe collection drop boxes required priority attention, including more frequent pickup than was originally planned and emergency procedures for handling situations in which syringe collection drop boxes become overly full. Perhaps most important, the collection sites provide alternatives that minimize the potential for syringes to end up on streets, in parks, or in the solid waste stream, where they may pose a risk to sanitation workers.

Estimating the volume of syringes collected has been a challenge. Given the large amount of missing data for the community-based collection sites, the estimated pounds of sharps collected in 2006 must be viewed with caution. As discussed, just 4,000 pounds of the

estimated 23,600 pounds of sharps was based on actual reported data, with the remainder being estimated from previous years or from group means. The actual amount of sharps being collected by these sites could be considerably higher or lower than our estimated figure. Local efforts developed by and relying upon individuals with other full-time responsibilities do not always lend themselves to data collection. More frequent follow-up, together with periodic feedback, may improve reporting. In addition, there may be more collection sites than those of which the NYSDOH is aware.

In addition to the successes experienced by the community-based collection sites, NYSDOH was encouraged by the 2004 survey results from health-care facility-based collection sites. The significant increase from 2001 to 2004 in hours of operation and community use of the sites points to a reduction in potential risk of needlestick injuries and transmission of bloodborne infections.

Safe disposal is important for a large segment of the population, including all people who self-inject: those with diabetes, those who self-administer illicit drugs, people who self-administer chemotherapy, people who use fertility treatments, people with multiple sclerosis or rheumatoid arthritis, and those using steroids. Safe disposal is also important for people who are treating

pets at home and for livestock farmers. Although not described in this article, efforts have been underway in NYS to learn more about the perception of syringe disposal by syringe users. This study is examining issues related to access and associated barriers.

Implementation of ESAP revealed a large, growing, and unmet need for convenient and easily accessible syringe disposal options and for broad-based outreach and education regarding safe disposal. This need existed before ESAP and extended beyond syringes obtained from ESAP-registered pharmacies or health-care providers to include syringes purchased with a prescription, provided by a home health aide, or obtained from other sources.

CONCLUSION

It has been proposed that, "the national goal should be no community syringes discarded in trash or the community in locations such as parks, buildings, or other public areas."¹⁵ From 2004 to 2005, the U.S. Environmental Protection Agency (EPA) launched a campaign to change community norms away from throwing used syringes in the trash.^{43,44} NYS' efforts are consistent with the EPA's guidance. The county-by-county inventory of sites can be used to prioritize areas for attention, including possible initiation of new Demonstration Projects. Continued efforts in NYS and elsewhere can lead to more collection sites and to a greater understanding of the importance of safe disposal.

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