

Intern develops customized solution for addressing pharmaceutical sample waste at two clinics

After determining the amount of pharmaceutical waste resulting from expired sample medications, two clinics within the Cook Area Health Services network worked with a MnTAP intern to implement a solution that reduced the amount of waste generated.

Company Description

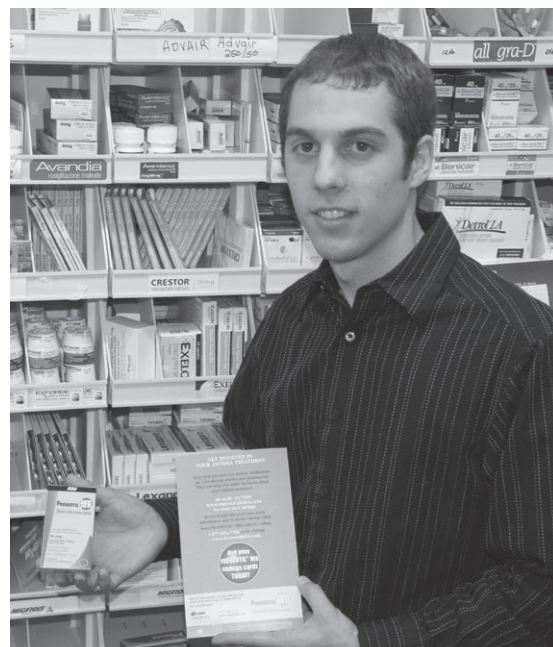
Cook Area Health Services (CAHS) is comprised of five small clinics serving communities in Northern Minnesota. Two of those clinics, Cook and Bigfork, recently worked with a MnTAP intern on pharmaceutical waste reduction.

Process Description

CAHS generates both hazardous and non-hazardous pharmaceutical waste leading to increased management and disposal costs, environmental pollution, and potential public health impacts. The waste is generated from expired, unused, or contaminated medications, products, drugs, and vaccines. The most prominent source of pharmaceutical waste at CAHS is from expired sample medications.

Sample pharmaceuticals are often supplied to clinics, including CAHS, by pharmaceutical representatives. Physicians then offer the samples to patients as a free trial. The clinic staff members attempt to maintain log books to document sample inventory, usage, expiration, and recalls. However, the logs are not always accurate; some representatives are unaware of the log book and physicians rarely have time to record each sample they distribute.

The samples supplied to CAHS by pharmaceutical companies often go unused and expire. Once a month, a member of the CAHS staff sorts each



The MnTAP intern at two CAHS clinics identified a solution to pharmaceutical waste caused by expired sample medications.

of the roughly 100 different types of samples to find those that expired. All of the expired samples must then be documented and properly disposed of. When samples become waste, state and federal regulations may require they be disposed of as hazardous waste.

Incentives for Change

Pharmaceutical compounds have been identified in surface waters worldwide and are emerging as problematic environmental contaminants. Pharmaceuticals are designed to elicit metabolic, hormonal, or other changes in small doses in humans and animals; as such, amounts as small as a few micrograms or milligrams can be harmful to sensitive wildlife. Source reduction and proper disposal of unused pharmaceuticals are needed to minimize environmental and public health impacts.

Benefits Overview

Clinic	Waste Reduction Option	Pharmaceutical Waste Reduced Annually	Annual Cost Savings (retail value)
Cook	Implement voucher and sample program	22 lbs	\$2,786 (\$16,004)
Bigfork	Implement voucher and sample program	unknown	\$1,806 (\$13,252)
Total		22lbs	\$4,592 (\$29,256)

To determine the amount of waste being generated and disposed of, CAHS evaluated their pharmaceutical waste management procedures and associated costs, which revealed a need for change. CAHS wanted to manage pharmaceutical waste properly, but believed it was cost-prohibitive. Sample medication waste was recognized as one of the largest hazardous waste streams at CAHS. The facility asked a MnTAP intern to revise the current sample medication system and minimize the waste.

Sample Waste Reduction Project

This project addressed unused physicians' sample medications at two of the CAHS clinics. The Cook Clinic, a small clinic with 3,840 patient visits annually, generates 748 waste sample units per year, costing as much as \$3,439 in waste management and disposal costs. The wasted samples have a retail potential of \$16,004 per year. The Bigfork Clinic annually wastes 310 sample units per year costing \$2,459 in disposal fees and having a potential retail value of \$13,252.

Solution

The intern researched potential solutions to reduce the amount of waste generated by pharmaceutical samples. A sample/voucher option was recommended as the best possible solution to the pharmaceutical waste issue at CAHS.

The sample/voucher option utilizes both samples and vouchers to help reduce the amount of expired pharmaceuticals at the two clinics. Both clinics will retain a limited supply of samples for certain pharmaceuticals. For other medications, manufacturers provide physicians with vouchers that can be passed on to patients for redemption at pharmacies. The retail pharmacy fills the trial dose prescription provided with the voucher. The pharmacy is then reimbursed by the pharmaceutical manufacturer. By limiting the amount of sample medications kept on hand at the clinic, much of the sample waste was eliminated.

To determine which pharmaceuticals would be kept as samples, the MnTAP intern developed a "top ten" list, which is based on usage rates at the two clinics as well as the opinions of physicians.

CAHS protocols were updated as part of the waste reduction project and address the implementation of the sample/voucher option. Medications on the "top ten" list will still be provided to customers as samples; all other medications are replaced by the vouchers. Changes to the list must be approved and all samples are subject to review by the medical director and chief operating officer, this will help to limit waste production and the associated disposal costs.

The ten samples chosen by the CAHS nurses and physicians as of July 27, 2007 are:

- Advair
- Celebrex
- Crestor
- Lexapro
- Nexium
- Prevacid
- Protonix
- Rozerem
- Viagra
- Zyrtec*

** may be replaced by Effexor XR during seasonal changes if approved*

Additional options were researched. However, options such as reverse distribution do not offer the benefits of source reduction, require additional labor sorting fees, and may not be permitted under hazardous waste regulations. Therefore, the sample/voucher option was presented to CAHS as the best solution for the two clinics.

Results and Benefits

As a result of the project, CAHS implemented a sample/voucher option for reduction of sample waste reducing 23 pounds of pharmaceutical waste and saving almost \$6,000 annually.



For More Information

MnTAP has a variety of technical assistance services available to help Minnesota businesses implement industry-tailored solutions that maximize resource efficiency, prevent pollution, increase energy efficiency, and reduce costs. Our information resources are available online at <mntap.umn.edu>. Please call MnTAP at 612.624.1300 or 800.247.0015 for personal assistance or more information about MnTAP's Intern Program.