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

**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 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.

<table>
<thead>
<tr>
<th>Clinic</th>
<th>Waste Reduction Option</th>
<th>Pharmaceutical Waste Reduced Annually</th>
<th>Annual Cost Savings (retail value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cook</td>
<td>Implement voucher and sample program</td>
<td>22 lbs</td>
<td>$2,786 (16,004)</td>
</tr>
<tr>
<td>Bigfork</td>
<td>Implement voucher and sample program</td>
<td>unknown</td>
<td>$1,806 (13,252)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>22 lbs</td>
<td><strong>$4,592 (29,256)</strong></td>
</tr>
</tbody>
</table>
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.

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.