



Pharmaceutical Annual Report

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Submitted to: The Director of Waste Management
Environmental Quality Branch
Ministry of Environment
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1. Executive Summary

The 2007 year was our strongest year in advertising and promotion of the B.C. *Medications Return Program*. In its approved Stewardship Plan, PCPSA identified targets and several strategies to promote and educate the public on safe disposal of unused and expired medications. This annual report provides details on activities to reach these targets.

- **Collection Points:** PCPSA worked with the B.C. College of Pharmacists and the B.C. Pharmacy Association to advertise and promote the *Medications Return Program* to recently licensed locations and to pharmacists. In 2007, we were able to maintain a participation rate of over 93% with accessibility and convenient access to over 915 community pharmacies.
- **Public Awareness:** PCPSA contracted a research firm to present a report on behaviour and attitudes regarding the disposal of medications in British Columbia. Results shows that 21% of people already dispose of medications at pharmacies, 31% are already aware that pharmacies will accept medications for disposal and 85% are willing to use pharmacy disposal programs in the future. The challenges will be to increase overall awareness and ensure that British Columbian consumers are motivated to make the effort to dispose of medications through community pharmacies.
- **Quantity Collected:** PCPSA collected 23,875 kilograms of medications in 2007.
- **Promotion:** In the past year alone the program participated in 5 health awareness or waste management events, information on the *Medications Return Program* was published as part of two Annual Recycling Calendars (one Regional District (RD) and a municipality); and current information on *Medications Return Program* is available on 10 (ten) RD's websites.

The presence of pharmaceuticals in our water systems is sounding environmental warning bells. While some believe that the current state of the science does not warrant collection, we believe that take back programs are necessary to reduce pharmaceuticals entering the environment and to protect against unsafe storage that can result in poisonings, overdoses, thefts and diversions. This program will continue to focus on unused and expired medications from households and continue to offer multiple solutions to reflect local/regional differences. As our human population continues to grow and age, the presence of pharmaceuticals may continue to increase in treated waste-water. While it is neither feasible nor desirable to force the public to stop using pharmaceutical drugs, it is important to investigate substances that cause the greatest concern and assess methods to remove or reduce the amount of these entering the environment.

This report will be posted on the medications return website once approved at www.medicationsreturn.ca

2. Program Outline

Purpose:

The Post-Consumer Pharmaceuticals Stewardship Association (PCPSA) is the Industry Funding Organization (IFO) created to manage safe disposal of unused or expired medications returned

from the public. PCPSA is formed under the Society Act (BC) and registered nationally as a not for profit association. The association's role is to act as a steward for environmental waste management programs of post-consumer pharmaceutical and self-care health products. This program provides the pharmaceutical and self-care health products industry with a collective means of adhering to the requirements of the British Columbia *Recycling Regulation*.

Governance Structure:

Brand-owner: (i) a person who manufactures a pharmaceutical product and sells, offers for sale or distributes a pharmaceutical product in British Columbia under its own brand, or;
(ii) a person who is not the manufacturer of a pharmaceutical product but is the owner or licensee of a trademark under which the pharmaceutical product is sold or distributed in British Columbia, whether or not they own the Drug Identification Number.

Board of Directors: The affairs of the Association are managed by a board of directors (maximum of twelve (12)). The board of directors shall be comprised of at least one (1) representative from each of the sectors. All nominees for the board of directors shall declare with which sector he or she is affiliated. No one member and its affiliates may have more than one (1) representative on the board of directors.

Members: Brand-owner of pharmaceuticals and self-care health products industries are members of the association.

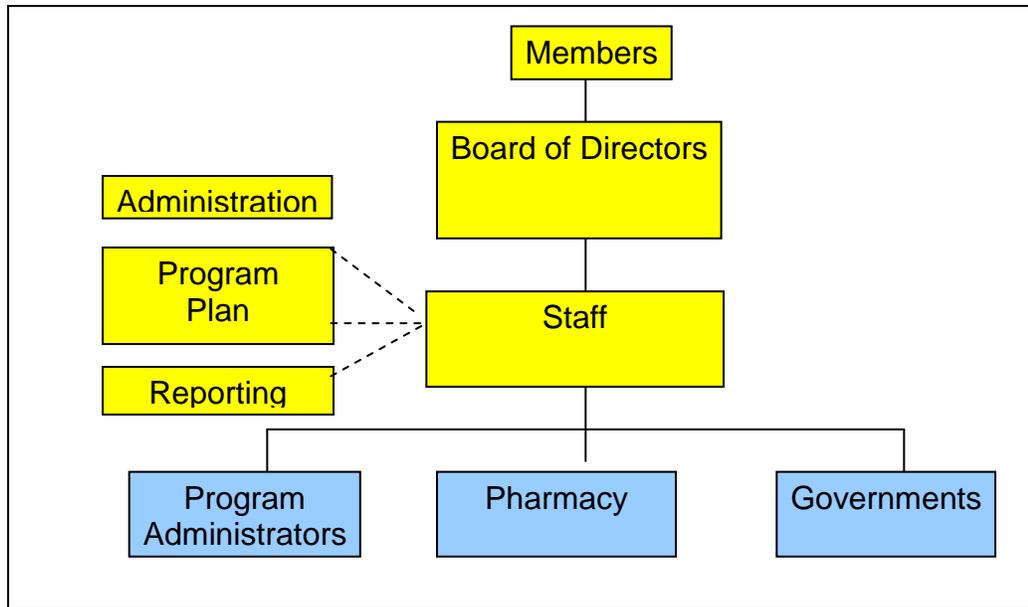
Pharmacy: Community pharmacies that are registered in the program to collect unused and expired medications from the public.

Program Administrator: The business who is contracted to manage the *Medications Return Program* in British Columbia.

Program Plan: The Pharmaceutical Stewardship Plan approved by the Ministry.

Government: All three level of government in Canada

Staff: Individuals employed by the association.



Product Category:

The pharmaceutical product category consists of all unused or expired drugs, as defined in the Food and Drugs Act (Health Canada),

- ✓ including prescription and nonprescription pharmaceuticals in dosage form,
- ✓ Including natural health products (NPH) as defined in the *Natural Health Products Regulation* (Health Canada),
- ✓ excluding disinfectants, sanitizers with disinfectant claims,
- ✓ excluding veterinary products,
- ✓ excluding topical or skin care products, and
- ✓ limited to household quantities of pharmaceutical products.

Collection System:

The collection sites for the *Medications Return Program* are community pharmacies. Pharmacies offer a logical and convenient system for the public to return unused or expired medications. They offer easy access to those with special needs and varying degrees of personal mobility. Many of these pharmacies are open extended hours, offering a convenient place for consumer disposal year-round. Pharmacist participation is voluntary. We work with the B.C. Pharmacist Association and the B.C. College of Pharmacists to advertise and promote the program to their members.

The pharmacy is legally responsible for the safekeeping of the *Medications Return Program* container and its contents while on their premises. The containers must be handled and stored properly to ensure that they are not subject to spilling, loss or theft. Once the container is full, the pharmacist contacts the Program Administrator who arranges for pick up and replacement of containers within 7 days.

All containers returned from a pharmacy are tracked by weight, pickup date, location and stored in a secure location until a shipment is accumulated for safe destruction through a licensed incineration facility.

Environmental Assessment:

Expired medications do not represent a serious threat to public health. Medications returned under this program do not meet the criteria for toxicity as defined under the Transportation of Dangerous Goods Regulations and do not require special handling. Chronic toxicity refers to adverse effects that manifest over a period of time. While they may develop after a single exposure, adverse effects may also be caused by repeated or prolonged exposure to a toxic substance under conditions that do not produce that effect from a single exposure. Persistence, bio-accumulation and toxicity are universally recognized criteria for protection of the environment from adverse chemical contamination. Substance will be categorized to progress to a Screening Level Assessment if it is: inherently toxic **and** either persistent **or** bioaccumulative.

Therefore under the Canadian Environmental Protection Act and Regulations there are two principal "gates" for a consumer chemical product to pass with respect to environmental toxicity:

- The Domestic Substances List (DSL), and
- The New Substances Notification (NSN) Regulations

This process is described by Environment Canada at:

<http://www.ec.gc.ca/cceb1/ese/eng/pilpro.htm> and
http://www.ec.gc.ca/cceb1/ese/eng/cat_scr.htm

Fee Structure:

Members are contributing for their sector based on a sample of collected returns conducted in 2005. PCPSA invoices brand-owners of affected products once a year. The contributions are based on prescriptions dispensed (brand-name and generic) and/or percentage of sales of affected self-care health products. Rates are set yearly by the Board of Directors in relations to projected costs.

There are no fees to the public for returning medications to pharmacies. In addition, there is no fee charged to pharmacies to participate in this program. The *Medications Return Program* is fully funded by the industry.

3. Educational Materials and Strategies

- ❖ *to ensure citizens of British Columbia are informed of the Program and are provided with current information regarding the availability of a system for the collection of unused and expired medications.*

Publicity:

In February/March 2007, a flyer promoting safe disposal of unused drugs was developed by the Vancouver Coastal Health Authority with the assistance of the British Columbia Pharmacy Association. “No Drugs Down the Drain” was distributed to the Vancouver Coastal Health Authority network in the lower mainland, North Shore, Richmond, Squamish and to BCPHA’s membership; distribution 10,000 copies (Appendix 3a).

At the Vancouver Landfill Open House some promotional magnets (500) were produced and handed to participants along with our posters and brochures (Appendix 3b).

To assist stakeholders in understanding the program, three separate sets of Q & A were developed targeting the public, the pharmacist or the brand-owner. These are available on PCPSA’s website (Appendix 3c).

PCPSA has contracted with the Recycling Council of British Columbia’s “recycling hotline” service. The RCBC Hotline is open during normal business hours, accessible to the public by a toll free telephone number (1-800-667-4321). RCBC hotline operators provide the public with a convenient “one stop” contact to obtain information on environmentally responsible disposal of medications and any other recycling questions. Approximately 120 calls regarding medication disposal were made in 2007 to the recycling hot line, representing less than 1% of their total calls.

PCPSA launched an e-bulletin (bi-annual) for participating community pharmacy managers and staff to introduce tips on the program and any special initiatives promoting the *Medications Return Program* taking place in the province. The first copy was mailed with a registration and request forms for brochures and posters. We received 150 registrations and 75 requests for additional posters and/or brochures (Appendix 3d).

Print Media:

In March, articles promoting the *Medications Return Program* were released on the Newswire English Press for community newspapers. Seven extracts promoting safe disposal of medications are documented (Appendix 3e).

PCPSA was able to promote the *Medications Return Program* in the annual calendar published by two regional districts and municipalities informing residents about municipal services (Appendix 3f).

Websites:

The *Medications Return Program* website was updated in 2007. Within the site is a searchable database of pharmacy and explanation of products accepted by the program. As we continue to build our membership base, we contacted regional districts and ask for their assistance in advertising the *Medications Return Program* by providing a link to our website. Ten (10) regional districts are currently offering this link.

Brochures/Posters:

The program administrator has posters and brochures that can quickly be supplied to participating pharmacies, special events or other partners such as Regional District Environmental Service offices and municipalities. The brochure provides directions on what is accepted and not accepted; how to return unused or expired medications and where to go in an easy to follow fashion. Posters and brochures help develop and promote awareness of the *Medications Return Program* (Appendix 3g).

PCPSA participated in 5 health awareness or environmental events to communicate the availability of the *Medications Return Program* to the public.

PCPSA distributed brochures and posters to eight Regional Districts or Municipalities (transfer stations, offices or display areas).

Ambassador Program:

During the summer of 2007, PCPSA struck a partnership with British Columbia Used Oil Management Association with the BC Used Oil Ambassador Program. Two ambassadors were promoting the PCPSA *Medications Return Program* through distribution of collateral materials to government officials during meetings as well as to the general public at community events. In total, 10 municipalities were informed on the B.C. *Medications Return Program* during the summer.

4. Collection System Information

The collection sites for the *Medications Return Program* are community pharmacies. Community pharmacies currently participating in the program can be easily located by the public on the association's website at www.medicationsreturn.ca or by phoning RCBC hotline services.

At the end of the year, we had 913 registered pharmacies representing 93.4% of licensed community pharmacies in B.C. This represents a net change of 24 collection sites from 2006; 42 new locations, 10 closures and over 100 changes in ownership or pharmacy managers.

Since the participation of pharmacists is central to the success of this program, we track the rotation of managers or relocation of stores within the province. All recently opened pharmacies and pharmacies with a change in address and/or manager are contacted and receive information on the program in a timely fashion (Appendix 4)

We purchased amendments lists from the B.C. College of Pharmacists and rely on regular advertising with the BCPhA, the professional association for the pharmacist and pharmacy profession, to track changes on a regular basis (monthly).

To accommodate safe disposal practices, PCPSA agreed to provide take-back containers for unused or expired medications from the public, from a community hospital located in a remote area as well as 2 retirement/care facilities and one clinic.

2007 Planned Target Set in Approved Stewardship Plan		2007 Report on the Planned Target	
Collection Points: Target until 2011:		Maintain a pharmacy program participation rate of 90%.	
Performance measure: Report percentage of participating pharmacies yearly.		93.4%	
2007 planned strategies:			
1. Contact new licensed community pharmacies from amended list purchased from the B.C. College of Pharmacists on a monthly basis.		Opening, closures and managers changes provided with Appendix 4	
2. Contact existing pharmacies with ownership and/or manager changes on a quarterly basis.		Completed as planned	
3. Contact pharmacies with a significant change in collection pattern.		Completed as required	

5. Life Cycle Management

The Canadian Council of Ministers of the Environment in their Extended Producer Responsibility Product Evaluation Tool proposed several criteria to measure the impact of pharmaceutical waste on human and environment health.

Does the product or its components or by-products contain toxics or other substances that are hazardous to human health or to the environment?

Are the anticipated duration effects on human health or the environment likely to be significant?

Is this product a significant component to municipal waste stream?

Are there greenhouse gas emissions associated with this product?

Researchers have found some classes of drugs in the Canadian environment, primarily in surface water. However, the potential effects are considered to be very low.

The anticipated duration of the effects could be considered medium-term. There is scientific evidence that the risk to human is very low, however there are concerns about the effects of those low levels on aquatic life, therefore research on the chronic toxicity potential of

pharmaceuticals in the environment is important, but outside the scope of responsibilities of the *Medications Return Program*.

Pharmaceuticals products are not significant by volume or weight to the waste stream.

There are no significant changes in net greenhouse gas emissions with EPR programs.

Some stakeholders believe that the current state of the science does not warrant collection. It is questioned whether take backs have any real environmental and safety benefit. Take-back programs for pharmaceutical products have a limited impact on the environment, research data demonstrate that most drugs (80%) entering waterways are derived through normal use and excretion.

Pollution Prevention Hierarchy:

The pollution prevention hierarchy requirements outlined in the *Recycling Regulation* to reduce the environmental impact are not feasible for pharmaceutical products; consequently PCPSA disposes of the waste through incineration at government approved facilities.

6. Recovery Rate

While PCPSA agrees that recovery rate provides some means to measure program success; we are clearly very limited in reporting the recovery rate and any efforts taken to normalize the recovery rate due to the nature of the product. Medications may have a long period between purchase and return and prescriptions drugs dispensed should be fully consumed unless otherwise directed by a health professional. The PCPSA *Medications Return Program* collects medications; not the container used to market the product or vial used to dispense and identify the prescription. We recommend that containers be recycled.

In 2007, we started to compile collection in kilograms by RD's. The absolute collection per capita by Regional Districts is on Table 1 in Appendix 5. Table 2 is the absolute collection of medication in kilogram (mass recovered) on a quarterly basis. The average rate of returns for the province is 0.0054 kg, with highest return for Mount Waddington (0.0105) and the lowest rate for Skeena-Queen Charlotte (0.0019). It is important to note, that in 2008 we will be able to measure the impact of promoting the program (recycling calendars) and local events on collection rates.

7. Fee Information

- (i) No fee collected or charges for this product

8. Performance Targets

2007 Planned Target Set in Approved Stewardship Plan	2007 Report on the Planned Target
Public Awareness Target from 2007 to 2011:	50% increase in public awareness of the program compared to 2007 awareness.
Performance measure: Percentage of public awareness of the program	Completed a 2007 survey of 500 residents in February. The result was a baseline program awareness level of 31%. The results are considered accurate within $\pm 4.3\%$.
2007 planned strategies: 1. Establish a level for public awareness of programs. 2. Set performance targets for public awareness and behaviour.	Report of 2007 strategies: 1. Established a baseline of 31% public awareness of the program. 2. Based on the 2007 survey results, the following targets of 35% and 39% have been set for 2008 and 2009 and the corresponding strategies to meet these targets are: Promote program by advertising in two RD's recycling calendars, 5 RD's website, 6 special events and 5

<p>3. Work with RCBC to increase exposure through their website and other events.</p> <p>4. Promote program by advertising in two RD's recycling calendars, RD's website and 4 special events.</p> <p>5. As a result of above strategies, requests for additional information from newspapers were received by PCPSA and subsequent articles on the <i>Medications Return Program</i> appeared in 4 newspapers.</p> <p>6. Opportunity to reach additional RD's was available through BC Used Oil Ambassador Program. PCPSA decided to support this initiative during the summer of 2007.</p>	<p>newspapers.</p> <p>3. In working with RCBC, the program was promoted by providing brochures, posters, stewardship program plan and PCPSA's goals and mission.</p> <p>4. The program was advertised in Vancouver and Richmond recycling calendars.</p> <p>Ten RD's advertised a link to PCPSA's web site on their web page.</p> <p>The program was successfully promoted at five special events with estimated exposure of 10,500 in total.</p> <p>5. Articles promoting the <i>Medications Return Program</i> appeared in four publications:</p> <ul style="list-style-type: none"> ▪ Vancouver Sun, <i>No Drugs Down the Drain</i>, March 26, 2007, readership 481,900 ▪ Thrifty Foods, Fresh Magazine, <i>what's in your medicine cabinet</i>, spring 2007 distribution to 15 to 20 thousand ▪ Georgia Strait, community newspaper, Spring (distribution 31,000), phone interview with journalist Helena Brian ▪ Articles promoting the B.C. <i>Medications Return Program</i> were published in the British Columbia Pharmacy Association newsletter The TABLET (Feb/March, July/August and Dec/January 2008) reaching 2000 pharmacists, 700 pharmacies and 16 pharmaceutical companies. <p>6. PCPSA joined the BC Used Oil Ambassador Program to reach government officials in 10 RD's. These were Richmond, Chilliwack, Abbotsford, North Shore Recycling Program, Columbia Shuswap, Ridge Meadows Recycling Society, District of Mission, Cariboo and City of Williams Lake, Quesnel and Metro Vancouver.</p>
<p>Amendments to the plan's performance target/goal:</p>	<p>None at this time. The strategies developed for 2008 and 2009 should increase the current level of public awareness.</p>
<p>Confirming next year's strategies, projects/research</p>	<p>2008 strategies will concentrate on increase publicity with RD, collections sites and special events.</p>

Quantity Collected performance target 2007-2011	Maintain a minimum quantity collected of 14,000 kg.
Performance measure	
Report total quantity collected on a yearly basis with quarterly results by regional districts	Total collection for 2007 was 23,875 kg Regional district distribution in Table 2, Appendix 6
2007 planned strategies:	Report of 2007 strategies:
Promote program at special events	The program was promoted at five special events with estimated exposure of 10,500 in total. These events were held during April and November: Lion Gate Hospital Med Return Program – 2 days event (Nov 15-16) Hamilton Community Centre (Richmond) One day Collection, April 21 Mount Saint Joseph Hospital August 25, 2007 CRD outreach program (educational display at public events) Vancouver Landfill Open House June 2-3
Amendments to the plan's performance target/goal:	None at this time. The strategies in place for 2008 and 2009 should provide us with the expected outcome.
Confirming next year's strategies	2008 strategies will concentrate on increase publicity with RD, collections sites and special events.
Year 3 and 4	Continue to work with members and community pharmacies with special collection events and retailer publicity.
Year 5	To be developed based on public survey results in year 4.

Promotion performance target 2007-2011	Publicity on the MRP in 14 regional districts or municipalities' websites with recycling sections. Indication of program in 13 recycling calendars.
Performance measure:	
Increase in awareness of program to dispose of medications.	Wrote to 28 regional districts contacts with copy of our brochure, posters and <i>Medications Return Program</i> logo with tag line.
2007 planned strategies	Report of 2007 strategies:
1. Develop promotional material and key messages for RD's websites.	Contact regional districts with promotional material and key messages for their websites. Follow up with e-mail Found 10 websites with information on <i>Medications Return Program</i> . Abbotsford, Central Kootanay, Comox-Strackcona, Cowichan Valley, Fraser-Fort George, Mission, North Shore Recycling Program, Chilliwack, North Okanagan and Okanagan-Similkameen.

2. Develop contact list for RD's	2. Attended RCBC AGM and meeting with GVRD Municipal Waste Reduction Coordinators. The office has a list of Municipal Waste Coordinators for RD's.
3. Contact 10 municipalities and 28 RD's to advertise the program in the garbage and municipal calendars.	3. Reference to the <i>Medications Return Program</i> on the front cover of the collection schedule for in Richmond, distribution to 188,100. Reference to the <i>Medications Return Program</i> on the front cover of the collection schedule for the City of Vancouver; distribution to 91,000 single- family homes
Amendments to the plan's performance target/goal:	None at this time. The strategies in place for 2008 and 2009 should provide us with the expected outcome.
Confirming next year's strategies	Follow up on advertising on RD/municipalities websites and annual calendars and contact another 5 municipalities.
Year 3	Follow up on advertising on RD/municipalities websites and annual calendars.
Year 4	Evaluate the outcome of our promotional program through a public survey.
Year 4-5	TBD

9. Survey

PCPSA hired a research firm to conduct a survey regarding public awareness of (and support for) medications return programs in British Columbia: The goals were to:

- Measure the incidence of medication disposal
- Determine current methods of disposal
- Examine public perceptions of disposal options
- Measure awareness (aided and unaided) of pharmacy disposal programs
- Gauge willingness to use pharmacy disposal programs
- Determine barriers to using pharmacy disposal programs
- Measure perceived motivations for pharmacy disposal programs

Between February 1 and 16 2007, 500 adult residents of British Columbia (18+) were interviewed by telephone. Households were chosen at random from across the province. The survey required seven minutes to complete.

- One-fifth of people already dispose of medications at pharmacies, and almost one-third are already aware that pharmacies will accept unneeded medications for disposal.
- Almost all residents are willing to use pharmacy disposal programs in the future.
- No major attitudinal or practical barriers exist to the use of these programs. Furthermore, attitudes are equally positive in all regions of the province.
- The disposal programs themselves are easily associated in the public mind with health and environmental protection.

- Eighty-four percent of households in British Columbia have medications in the home. This includes 28% of households who say they have medications which they “no longer need or may not use such as leftover prescription medication or medications that are past their expiry date.”
- Slightly more than one-third of households in British Columbia (39%) have disposed of medications in the last six months. The most common reported ways of disposing of medications are in the regular garbage (60%) or down a sink or toilet (19%) or returning them to a pharmacy (21%).
- If they need to dispose of medications in the future, many British Columbians say they would use the regular garbage (52%) or a sink or toilet (23%). However, 24% say they would return the drugs to a pharmacy.
- Asked to name any ‘specific places or facilities’ where they may dispose of medications, 64% of British Columbians can offer no response. Almost one-third (31%), however, explicitly mention pharmacies.
- Awareness that medications can be disposed of at a pharmacy jumps to 45% when the question is directly asked. Only 22% of British Columbians say that medications cannot be disposed of at a pharmacy, while 33% say they are not sure.
- The vast majority of British Columbians (85%) say they would be *likely* to return medications to a pharmacy in the future if that disposal option were available to them. This includes a majority (61%) who say they are *very likely* to use this service.
- No major barriers emerge when British Columbians are asked why they might not use pharmacy disposal services.
- Asked why they think pharmacies would want consumers to return medications for disposal, most British Columbians say it is to protect human health and the environment.

APPENDICIES