

Green Pharmacy Program

Helping Communities Safely Dispose of Unused Medicines

On June 1st, 2007, Teleosis Institute launched the Green Pharmacy Program, a pilot program in Northern California--offering free and environmentally safe disposal of unused and expired medications. As of June 1, 2008, Teleosis has collected over **2000 pounds** of unwanted pharmaceuticals. Green Pharmacy is unique in that all returned medicines are documented through the *Unused & Expired Medicine Registry*, a program developed by the Community Medical Foundation for Patient Safety in Texas. The purpose of collecting data on unused medicine is to: 1) identify which pharmaceuticals are most often unused or over-prescribed; 2) identify which medicines are most commonly disposed of; 3) quantify the monetary value of wasted medicines; 4) estimate environmental impact of pharmaceuticals. The Teleosis Institute will publish the *Green Pharmacy Final Report* in the fall of 2008 which will be presented to pharmaceutical researchers, manufacturers, and governmental organizations to build support for take-back programs nationwide. Our pilot program will close on June 1, 2008. However, our commitment to collect unused medicines and compile data will continue with financial contributions.

Preliminary Data Report

Reflects data on medicines collected between June 1, 2007 and December 31, 2007

Total Amount of Drugs Returned

690	Pounds of returned drugs
101,359	Estimated number of returned pills, capsules, and tablets
71.21%	Returned medicines in pill, capsule or tablet form
28.79%	Liquids, powders, gels, aerosols, or suppositories

Percentage of Medications Wasted*

52.12%	Over-the-counter and Prescription medications
44.86%	Prescription drugs only

*Does not include liquids, powders, gels, aerosols

Total Value (US) of Drugs Returned

\$159,778	Total Wholesale Value
\$228,254 - \$399,445	Total Retail Value* (TRV)

*TRV is estimated between 30-60% more than total wholesale value

Marketing Status of Returned Medicines

60.43%	Prescription
39.14%	Over-the-counter

Percentage of Controlled Substances*

2.15%	
-------	--

*Controlled substances were rejected

Origin of Medicines

56.31%	Pharmacy
23.32%	Doctor's office
4.64%	Hospital or clinic



Reason for Medicine Return

72.84%	Expired/outdated
16.53%	Patient died/moved away
2.55%	Patient didn't want to take it

Top 10 Therapeutic Agents Returned

1) CNS agents (central nervous system)	22.62%
2) Nutritional products	14.29%
3) Psychotherapeutic agents	12.51%
4) Gastrointestinal agents	8.99%
5) Cardiovascular agents	8.77%
6) Respiratory agents	6.00%
7) Anti-infectives	6.00%
8) Alternative medicines	5.69%
9) Hormones	4.60%
10) Immunologic agents	2.85%

Top 10 Brand Name/Generic Drugs Returned

1) Acetaminophen	CNS agents
2) Aspirin	CNS agents
3) Tylenol	CNS agents
4) Vitamin E	Nutritional product
5) Prednisone	Hormone
6) Ibuprophen	CNS agents
7) Warfarin	Coagulation modifier
8) Topamax	CNS agents
9) Etodolac	CNS agents
10) Gabapentin	CNS agents

The Green Pharmacy Program

The Teleosis Institute's Green Pharmacy Program is helping communities safely dispose of expired medicines. The program is the first of its kind to incorporate models of product stewardship and personal health in relation to pharmaceutical waste management. The Green Pharmacy Program provides the education and opportunity for everyone who produces, sells, prescribes, consumes, or discards medicines to participate in the solution. We are providing an environmentally positive alternative to throwing unwanted drug waste down the drain, toilet, or the trash, at no cost to the public. All returned medicines are documented through the *Unused & Expired Medicine Registry*, developed by the Community Medical Foundation for Patient Safety in Texas as part of a national research project. If successful, the Green Pharmacy Program has the potential to be replicated nationally.

The purpose of Green Pharmacy pilot program is to:

- ☞ Reduce pharmaceutical pollution,
- ☞ Provide environmentally safe disposal options for unwanted/expired medicines,
- ☞ Assess the quantity and value of household pharmaceutical waste in the Bay Area,
- ☞ Gain an understanding of types of medicines most commonly left unused and why,
- ☞ Engage all sectors involved in the production, distribution, sales and consumption of medicines in environmentally preferable practices,
- ☞ Develop the tools and educational material required to reproduce the program nationwide,
- ☞ Enhance participants' understanding of the value of supporting the health of our environment,
- ☞ Foster a model health that uses personal wellness strategies in minimizing pharmaceutical waste.

2007/2008 Year-end Goals

The Teleosis Institute established 12 take-back sites and hosted 4 single-day take-back events in the San Francisco Bay Area. During 2007 we developed relationships with hospitals, veterinarian clinics, medical and dental offices, pharmacies, governmental agencies, and non-profit organizations to increase awareness and set-up operational take-back sites. At each site, potentially 18 gallons of unwanted pharmaceuticals (24 pounds) are collected an average of eight times a year. This 12 site program is projected to divert a minimum of 2000 pounds of unwanted pharmaceutical waste from the environment annually.

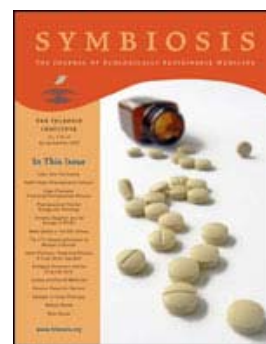
Future Goals

Our goal is ZERO pharmaceutical waste in our environment! The development of a medicine take-back program is simply the first step in a comprehensive approach to sustainable medicine. We strive to create a product stewardship model in which all the participants in the product lifecycle—manufacturers, prescribers, retailers, consumers, and disposers—share the responsibility for reducing the environmental impacts of pharmaceuticals. Our ultimate goal is sustainable medicine through sustaining self. We want to encourage health providers and clients to focus on healthy lifestyle and prevention to ensure their well-being through regular wellness practices. We believe personal wellness strategies are the most environmentally positive method of health care.

2007 Program Accomplishments

Educational Materials:

- **Green Pharmacy: Pharmaceutical Pollution Prevention**
Issue 4.2 of *Symbiosis: The Journal of Ecologically Sustainable Medicine*
- **Greener Pharmacy: Proper Medicine Disposal Protects Environment**
by Joel Kreisberg, DC, *Integrative Medicine Journal*, August 2007
- **Drugs In Our Water**
An educational brochure for consumers and health professionals (available in Mandarin and Spanish)
- **Green Pharmacy Program**
A brochure with take-back locations and safe disposal procedure



Media:

- ☞ Poster – “Return Unused Medicines” (graphic designer, Betsy Joyce).
- ☞ 3 Press releases and 6 articles – visit www.teleosis.org/press-room.php

Current Locations:

- ☞ **Pharmaca Integrative Pharmacy**, 3 locations: Berkeley, Oakland, Monterey, www.pharmaca.com
- ☞ **Teleosis Institute Office**, 1521B Fifth Street, Berkeley, www.teleosis.org
- ☞ **Transcendentist**, 3030 Ashby Avenue Suite 101, Berkeley, www.transcendentist.com
- ☞ **Chimes Pharmacy**, 3210 College Avenue, Berkeley, www.chimespharmacy.com
- ☞ **Elephant Pharmacy**, 4 locations: Los Altos, Walnut Creek, Berkeley, San Rafael, www.elephantpharm.com
- ☞ **Health First! Pharmacy**, 9070 Windsor Road, Windsor, www.healthfirstpharmacy.net
- ☞ **VCA Albany Animal Hospital**, 1550 Solano Avenue, Albany, www.vcaalbany.com
- ☞ **Coastal Health Alliance**, 2 locations: Bolinas, Point Reyes Station, www.coastalhealth.net
- ☞ **United Pharmacy**, 2929 Telegraph Ave, Berkeley, www.consultwithdrpam.com
- ☞ **Green Dentistry**, 360 Post St. #704, San Francisco, www.sfgreendentist.com

Planned Locations by May 2008:

- ☞ **Kaiser Permanent Pharmacy**, Location to be determined
- ☞ **Pharmaca Integrative Pharmacy**, Locations to be determined

Community Take-Back Events in 2007:

- ☞ **Green Home EXPO** – collected 106 pounds of medications and 54.5 grams of mercury
- ☞ **Kehilla Synagogue and High Holydays** – collected 38 pounds of medications
- ☞ **Keep Our Water Clean, Pharmaceutical Take-Back at Whole Foods** – collected 33 pounds of medications
- ☞ **Sonoma Safe Medicine Disposal Symposium** – collected 20 pounds of medicines

Advisory Board

- Forrest Batz, PharmD – *Assistant Clinical Professor, School of Pharmacy, University of California, SF*
- Athena Honore – *Policy Associate, Save The Bay, Oakland, CA*
- Calista Hunter, MD – *Supervising Physician, Green Pharmacy Program*
- Jen Jackson – *Pollution Prevention, East Bay Municipal Utility District, Oakland, CA.*
- Ilene Ruhoy, MD – *PhD Candidate, Environmental Studies, University of Nevada*
- Robert Turner – *Environmental Health Specialist, Marin County Environmental Health Services*
- Rick Vasquez – *Owner of Integrated Waste Control, LLC, Hayward, CA*

Green Pharmacy Program Supporters

The Green Pharmacy model of product stewardship and healthy living engages every sector of the health care industry in the safe management of pharmaceutical waste. We would like to recognize the following supporters, who have helped us to significantly reduce pharmaceutical pollution while raising awareness about the value of our personal and environment health.

Sponsors



Partners



Participants



Endorsements

- Mayor Tom Bates, City of Berkeley
- Berkeley Zero Waste Commission
- Northern California Recycling Association
- Californians Against Waste
- Health Care Without Harm

Support Green Pharmacy

Sponsors, partners, and participants are an integral and highly valued part of The Green Pharmacy Program. The success of Green Pharmacy relies on the support of corporate and community leaders, local pharmacies, health professionals, public and private organizations that are committed to protecting the environment from pharmaceutical pollution. There are many ways to support Green Pharmacy – become a sponsor, a partner, or a participating take-back site.

Why Support Green Pharmacy?

- ☞ Reduce pharmaceutical pollution and landfill waste
- ☞ Protect personal and environmental health
- ☞ Be an environmental leader in your community
- ☞ Contribute to research about the impact of unused medicines
- ☞ Educate clients and staff about current environmental issues
- ☞ Network with concerned businesses and residents
- ☞ Promote ecological and individual health in your community

Green Pharmacy Sponsor

As a Sponsor, you or your organization will directly fund the safe disposal of medicine. Our Green Pharmacy Program depends on the generosity of individuals and institutions to expand and grow. You can contribute to the operation of one or several take-back sites. Please see our Green Pharmacy Program Sponsorship Levels guide for more information and a list of benefits that our Sponsors receive. We welcome any contribution towards Green pharmacy. Pledge to reduce pharmaceutical pollution in your community, today!

Green Pharmacy Partner

If your organization is dedicated to promoting product stewardship, safe medicine disposal, healthy living, or environmental justice, please consider partnering with the Teleosis Institute. Our Partners provide a network through which we can all discuss issues relating to the stewardship of pharmaceuticals and personal care products. Through regular communication and information sharing, we may mutually benefit. We hope that our Partnerships create valuable insights on how to safely manage pharmaceutical waste.

Green Pharmacy Participant

Take-back sites accept unused medicines, collect data, and promote Green Pharmacy in their communities. The Teleosis Institute will supply all necessary materials for the development of a successful take-back site:

- ☞ Staff training
- ☞ Consumer education materials
- ☞ Registry sheets to track drug disposal
- ☞ List of controlled substances
- ☞ Program Participant poster
- ☞ Pharmaceutical waste collection bin

Join us and become part of the solution!

If you would like to support the Teleosis Institute's Green Pharmacy Program in any way, please contact us. We look forward to hearing from you and developing a mutually beneficial relationship. The Teleosis Institute is a 501(c) non-profit organization (our federal tax ID is 94-3400328). Contributions are tax deductible.

For more information about Green Pharmacy or any other program at Teleosis, visit our website www.teleosis.org or contact: Evin Guy at (510) 558-7285 or evin@teleosis.org.



TELEOSIS INSTITUTE

Our Mission

The Teleosis Institute is devoted to developing effective, sustainable health care provided by professionals who serve as environmental health stewards.

Our Vision

Teleosis is dedicated to reducing health care's footprint while broadening its ecological vision. We believe in a health care system that conserves natural resources, promotes personal wellness, and begins with precaution. At the forefront of this sustainable medical system are health providers who take an active role in greening health care through example, education and advocacy.

Together We Can Create A Sustainable Future

In 2008, we hope you will join the movement for Green Pharmacy. We ask for your financial support in promoting a vision of sustainable medicine that advocates for environmental stewardship in the health care community. Your past support and encouragement are greatly appreciated.

Please consider:

- ☞ Giving generously in support of the growth of our new programs and services
- ☞ Sharing the Teleosis vision of Green Health Care with your community
- ☞ Participating in safe medicine disposal through the Green Pharmacy take-back program and events
- ☞ Forwarding our materials (e-newsletters, journal or brochures) to family and friends
- ☞ Participating in the Leadership in Green Health Care course on sustainable medicine or encouraging your health care provider to do so
- ☞ Encouraging friends and colleagues to become members of Teleosis
- ☞ Sharing with us your thoughts and feedback about our programs and services.

