Why create a

MEDICINE TAKEBACK PROGRAM

in your community?

MEDICINE IN THE HOME

Organizing a medicine collection event or program is a great way for communities to help ensure that unwanted medication is disposed of properly. But how can program providers and municipalities be sure that a take-back program is a benefit to the community and worth the money spent? A Purdue University study recently found that the estimated societal benefits of establishing a medicine take-back program outweigh the costs.[1]

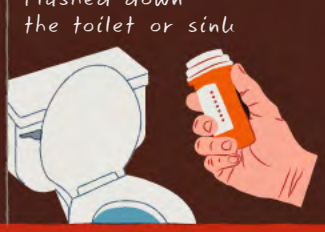
REASONS FOR UNWANTED MEDICINE

- **33%** Stopped taking medicine
- **32%** Medicine expired
- **25%** Prescription changed

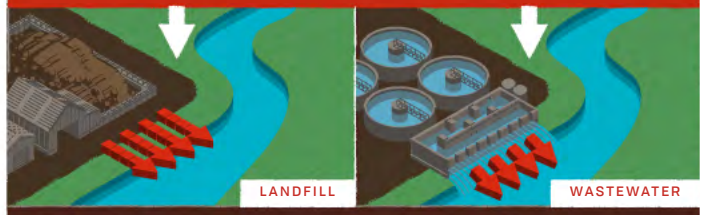
IMPROPER DISPOSAL*

44% Discarded in the trash

29% Flushed down the toilet or sink



ENVIRONMENTAL PATHWAYS



Studies across the U.S. have found pharmaceutical compounds in rivers, lakes, streams, groundwater, and drinking water.[3,4,5]

RETENTION**

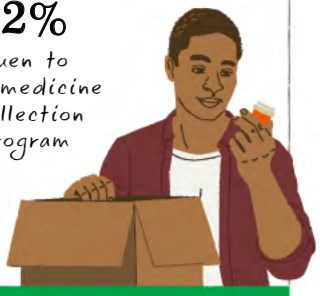
32% Not disposed of

HUMAN PATHWAYS

Unwanted medicines may be abused, misused, or accidentally ingested.

MEDICINE TAKE-BACK

22% Taken to a medicine collection program



COLLECTION

SAFE DISPOSAL

ENVIRONMENTAL IMPACTS

REPRODUCTION AND DEVELOPMENT

The accumulation of pharmaceuticals in the environment is a growing concern and has been linked to delayed development,[6] altered reproduction,[7] and changes to feeding behavior[8] in wildlife.

DRINKING WATER

Although no negative impacts have been documented,[9] extremely low levels of pharmaceuticals have been found in drinking water.[10]

PUBLIC HEALTH ISSUES

ACCIDENTAL POISONING

In 2015, an estimated 58,000 children under the age of five were treated for accidental poisoning from prescription medications.[11]

Human prescription medications are regularly the leading cause of pet poisonings.[12]

DRUG OVERDOSE

Drug overdose death rates have increased five-fold since 1980, becoming the leading cause of accidental deaths in 29 states.[13] Young adults can be especially impacted: 24 percent of teenagers have misused or abused prescriptions at least once.[14]

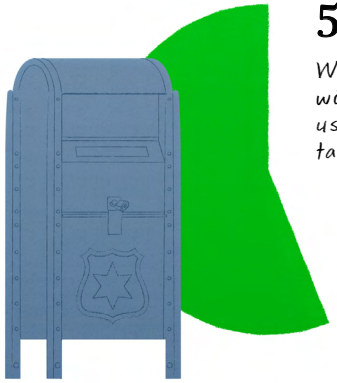
*Percentages are based on the 68% of people who disposed of unwanted medicines in the past.
**Percentage is based on the 61% of people who had unwanted medicines in their homes.

BENEFITS VS COSTS

The costs of drug take-back programs vary by their type, size, and scope. Expenses may include advertising, secure drop boxes, supplies, warehousing of medicines prior to disposal, transportation to a disposal facility, medicine destruction, and personnel time. It can be difficult to navigate the complex regulations for drug take-back programs, and many programs require law enforcement or pharmacy involvement. The least expensive type of medicine collection program is a series of single-day events since permanent collection programs have ongoing costs for administration, transport, and disposal of the medications. Using volunteer time to staff events and securing grant funding to support these programs can help ease the financial burden.

61%

Had unwanted medicine in the past 24 months



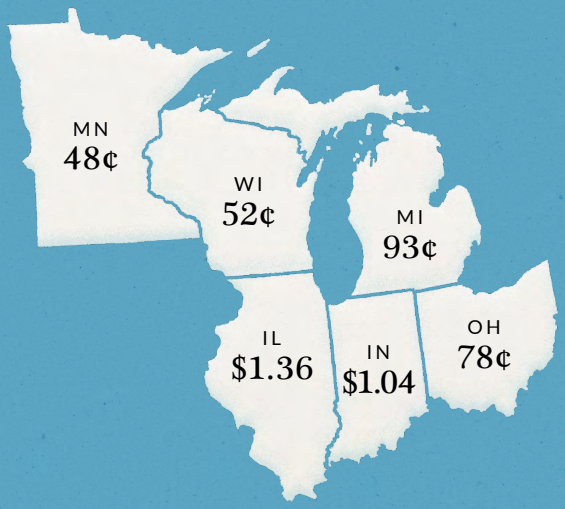
56%

Would be willing to use a medicine takeback program

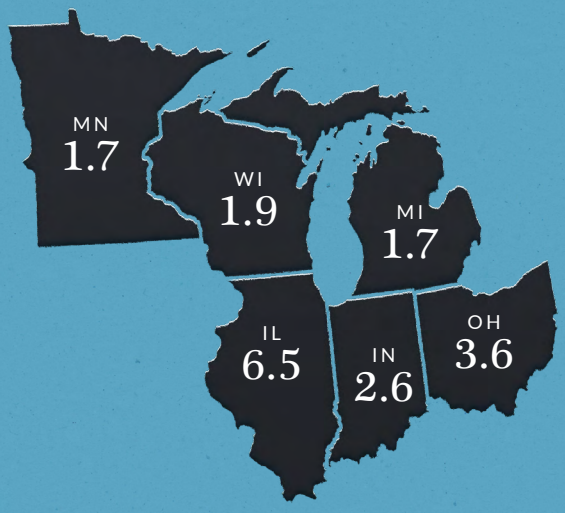
COMMUNITY VALUE OF TAKE-BACK PROGRAMS

Several states, counties, and municipalities across the nation—including many in the Great Lakes region[a]—have started pharmaceutical take-back programs. These programs, often sponsored by local law enforcement or pharmacies, provide secure collection and destruction of unwanted medicine in compliance with the U.S. Environmental Protection Administration and U.S. Drug Enforcement Administration (DEA) regulations. Since 2007, Illinois-Indiana Sea Grant (IISG) has helped set up more than 70 new take-back programs in Illinois, Indiana, Michigan, and Wisconsin, including more than 54 permanent take-back sites, ensuring the responsible destruction of over 100 tons of unwanted medicine.

AVERAGE ESTIMATED VALUE (PER VISIT) OF PROPERLY DISPOSING OF UNWANTED MEDICINE



TOTAL ESTIMATED VALUE OF MEDICINE COLLECTION PROGRAMS TO EACH STATE ($MILLION USD)



TO LEARN MORE

As the public becomes more aware about the environmental and societal risks of improperly disposing of medications, it is very likely the number of programs across the region will grow. IISG has grants available to help defray the cost of DEA-approved drop boxes for permanent programs or expenses from single-day collection events and can provide guidance regarding DEA regulations.

Visit www.unwantedmeds.org to find your local take-back program and download resources, including information about how to properly dispose of unwanted medicine and how to start a medicine take-back program in your community.

For questions or more information, please contact Sarah Zack, IISG pollution prevention specialist at szack@illinois.edu or 217-300-4076.

Illinois-Indiana Sea Grant, based at Purdue University and the University of Illinois at Urbana Champaign, provides statewide research, outreach, and education addressing the challenges facing our water resources and coastal residents. Illinois-Indiana Sea Grant is supported by the National Oceanic and Atmospheric Administration's National Sea Grant Office, U.S. Department of Commerce, and by Purdue University and University of Illinois at Urbana-Champaign as provided through state funding. www.iiseagrant.org

Written by Sarah Zack and Irene Miles (Illinois-Indiana Sea Grant and University of Illinois at Urbana-Champaign) and Sofia Vielma Délano and Kwamena Quagrainie (Purdue University). Designed and illustrated by Joel Davenport (Illinois-Indiana Sea Grant and University of Illinois at Urbana-Champaign).

[1] Vielma Délano, S. K. 2016. An economic assessment of household unwanted medicine disposal programs (Master's Thesis). Available at: http://docs.lib.purdue.edu/dissertations/AAI10181162/.

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[10] Webb, S., T. Ternes, M. Gibert, K. Olejniczak. 2003. Indirect human exposure to pharmaceuticals via drinking water. Toxicology Letters. 142:157-167.

[11] Data obtained from the Consumer Product Safety Commission's National Electronic Injury Surveillance System. Yearly data is available at: https://www.cpsc.gov/Research--Statistics/NEISS-Injury-Data.

[12] American Society for the Prevention of Cruelty to Animals Animal Poison Control Center. 2017. Top Pet Toxins of 2016. Available at: https://www.aspca.org/news/announcing-top-pet-toxins-2016.

[13] National Center for Health Statistics. 2014. Health, United States, 2013: With Special Feature on Prescription Drugs. U.S. Department of Health and Human Services Publication No. 2014-1232. Hyattsville, MD.

[14] Partnership for Drug Free Kids. 2014. 2013 Partnership Attitude Tracking Study. Available at: http://www.drugfree.org/newsroom/pats-2013-full-report-key-findings.

[a] The Great Lakes Region refers to Indiana, Illinois, Ohio, Michigan, Wisconsin, and Minnesota. The total benefit of medicine collection programs to the Great Lakes region was estimated by multiplying the reported value per visit by one person per household by the number of households. It is considered a conservative estimate because it is likely that some people that use medicine take-back programs are disposing of more than one prescription from more than one person in their household.