



**SPECIAL LEGISLATIVE COMMISSION
TO STUDY PUBLIC HEALTH THREATS FROM
PHARMACEUTICAL HUMAN WASTE
CONTAMINATION IN THE WATER SUPPLY**

September 2013

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**Special Legislative Commission to Study Public Health
Threats from Pharmaceutical Human Waste Contamination
in the Water Supply**

Membership

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EXECUTIVE SUMMARY

A 2002 study by the United States Geological Survey (USGS)¹ conducted across 30 states found that 80 percent of the water streams they sampled had measurable concentrations of commonly-used prescription and nonprescription drugs, steroids, and reproductive hormones. Other drugs, particularly cytotoxic agents used in the treatment of cancers (such as chemotherapy), are carcinogenic and remain active and dangerous long after leaving the human body through waste products (sampling for cytotoxic agents is generally rare and no federal agency has a standardized methodology to test for such agents). Evidence was presented that, in some instances, over 90 percent of certain drugs fails to be absorbed by the human body and is excreted through waste into waters.

Subsequent to the USGS study, the Associated Press² released a three-part series of reports that found pharmaceuticals and personal care products in the drinking water of 24 U.S. metropolitan areas serving approximately 41 million Americans (note: Rhode Island supplies were not included in this study). In response to concerns about the potential presence of such chemicals in Rhode Island's water supply, on June 12, 2012 the Rhode Island Senate passed Senate Resolution 357 (SB2640SubA) creating the Special Legislative Commission to Study Public Health Threats from Pharmaceutical Human Waste Contamination in the Water Supply. The purpose of the Commission was to undertake a comprehensive study and provide recommendations regarding potential public health threats from pharmaceutical, medical, and human waste contamination in the public water supply. The Commission was charged with reporting its findings and recommendations to the Senate no later than March 5, 2013. Consistent with the finding that more study and work on the matter is needed, this document represents an interim report of the Commission.

Over a series of three hearings held in as many months, the Commission heard from a diverse group of stakeholders including: experts within the fields of medicine, pharmaceutical safety, and environmental quality; representatives of the pharmaceutical manufacturing industry; representatives from the Rhode Island Departments of Health and Environmental Management; and public testimony from parties concerned with the collection of unused pharmaceuticals and the diversion of pharmaceutical human waste from the water supply. The Commission's interim findings, agreed to by all members, are as follows:

¹ <http://toxics.usgs.gov/pubs/FS-027-02/>

² http://hosted.ap.org/specials/interactives/pharmawater_site/index.html

- 1) Previous screenings have discovered trace amounts of pharmaceutical compounds in water sources across the nation. The amounts detected by these screenings are not of such a level as to be considered a hazard to human health. However, with the increasing use of medications, and without effective mitigation, there is the potential for greater concentrations in the future if preventive steps are not taken. In addition, no chemotherapeutic agents were included in such screenings;
- 2) While the detected amounts are not considered hazardous to human health, an ecological impact from pharmaceutical contamination has been detected among fish and other aquatic life. It is unknown whether these effects are caused by the compounds included in the screenings; or by those that were excluded such as chemotherapeutic agents; or by a combination of such factors;
- 3) The oversight of pharmaceuticals is complex with several overlapping jurisdictions across hospitals, manufacturers, and various federal, state, and municipal agencies;
- 4) More information may be necessary in order to determine the presence and extent of pharmaceutical contamination in Rhode Island's water supply; and
- 5) EPA-endorsed³ methods of proper disposal of unused medications are not widely known.

Additional findings were offered that did not have the full endorsement of all Commission members:

- 6) It is unclear whether conventional water and sewer treatment facilities are effective in destroying and/or neutralizing all pharmaceutical compounds and cytotoxic chemicals agents
- 7) Pharmaceutical human waste presents a unique challenge separate from improper disposal of unused pharmaceuticals.

In response to these interim findings, the Task Force unanimously recommended the following:

- 1) That the General Assembly provide funding for a public information campaign about the safe disposal of pharmaceutical waste in home and healthcare settings;
- 2) That the General Assembly review 'pharmaceutical take back' programs currently operating in the state and consider an expansion in size and scope;
- 3) That pharmacies operating in the state of Rhode Island be required to share information about local 'pharmaceutical take back' programs with customers at the point of sale;

³ <http://water.epa.gov/scitech/wastetech/guide/upload/unuseddraft.pdf>

Some Commission members also recommended the following, however, there was *not* a consensus amongst the full Commission on these recommendations:

- 4) That the Department of Health be authorized, and provided sufficient resources, to determine which pharmaceutical contaminants, if any, present an immediate and likely hazard to public health;
- 5) That the Department of Health develop procedures to periodically test, at a frequency determined by the department, for those contaminants which present a likely hazard to public health and for which analytical methods exist;
- 6) That State Departments assess the risk to the state's water supply and to public health posed by contaminated human waste and, based on that assessment, recommend options for preventing such waste from entry into public and private water systems.

FINDINGS

- Unanimous Findings

Finding #1: Previous screenings have discovered trace amounts of pharmaceutical compounds in water sources across the nation. The amounts detected by these screenings are not of such a level as to be considered a hazard to human health. However, with the increasing use of medications, and without effective mitigation, there is the potential for greater concentrations in the future if preventive steps are not taken. In addition, no chemotherapeutic agents were included in such screenings

For a wide range of health and wellness reasons, Americans are consuming prescription and non-prescription drugs at an increasing rate.⁴ The human body absorbs some of this medicine, but the rest of it passes through and is flushed down the toilet. In addition, pharmaceuticals are being directly introduced into the water supply through a number of other methods, such as “crushing and flushing” of unused medications. Although wastewater is treated before it is discharged into reservoirs, rivers or lakes; and drinking water is again treated at drinking water treatment plants before being piped to consumers; most treatments do not remove all drug residue.

In studies conducted by the USGS, the federal Environmental Protection Agency, and local water authorities across the country, pharmaceuticals have been found in drinking water at extremely low concentrations (parts per billion and/or parts per trillion). Their presence in drinking water has not been proven harmful to humans; however, it is important to remember, as stated by an expert who testified before the Legislative Commission, that the “absence of evidence does not equal the evidence of absence”⁵ and that long-term exposure, even to extremely low levels, is a legitimate health concern. Further, the list of compounds tested for in these studies was not exhaustive and did not include potentially hazardous agents such as cytotoxic chemotherapeutic compounds. Lastly, as the US population, particularly those in the ‘baby-boom’ generation, continues to age we can anticipate that the prescribing, use, and environmental introduction of pharmaceuticals will only increase, amplifying the importance of the issue.

Finding #2 While the detected amounts are not considered hazardous to human health, an ecological impact from pharmaceutical contamination has been detected among fish and other aquatic life. It is unknown whether these effects are caused by the compounds included in the screenings; are caused by those that were excluded such as chemotherapeutic agents; or are caused by a combination of such factors

Ecologically, the presence of trace pharmaceutical chemicals in the water supply is believed to have a greater impact on wildlife than human health. Unlike the intermittent exposure that humans experience through drinking water; aquatic wildlife face continuous exposure and are thus more vulnerable to the effects of pharmaceutical contamination. For example, the aforementioned USGS study reported a high incidence of ‘intersex’ fish in a watershed with a concentration of detected pharmaceutical contaminants associated with the feminization of male

⁴ <http://www.ncbi.nlm.nih.gov/pubmed/15506586>

⁵ October 17, 2012. Testimony before the Special Legislative Commission to Study Public Health Threats from Pharmaceutical Human Waste Contamination in the Water Supply. Marcella Remer Thompson, PhD, MS, CSP, RN, COHN-S, FAAOHN

fish and disruption of endocrine systems in female fish.⁶ While further research is necessary, and the bodies of water studied were not located in Rhode Island, the potential ecological impact, and potential impact on the broader food chain, merit increased attention and resources for study.

Finding #3 The oversight of pharmaceuticals is complex with several overlapping jurisdictions across hospitals, manufacturers, and various federal, state, and local agencies

The Commission learned through expert testimony⁷ that one of the more complicating matters in addressing the issue of pharmaceutical contamination in the water supply is that the jurisdiction and responsibility for the handling of pharmaceuticals falls among a complex and wide range of authorities depending on where in the life span of the drug the authority is located.

Among others, federal agencies with oversight over the handling and use of pharmaceuticals include: the Food and Drug Administration (FDA), the Drug Enforcement Agency (DEA), the Department of Energy (DOE- for cytotoxic and other radioactive pharmaceuticals), the Environmental Protection Agency (EPA), the Department of Health and Human Services, and the Centers for Medicare & Medicaid Services (CMS- as it pertains to pharmaceutical reimbursement policies). On the state level, jurisdiction falls across the state Department of Health, the Department of Environmental Management, the Narragansett Bay Commission, and, for pharmaceutical waste that makes it to the state landfill, the Resource Recovery Corporation, among others.

These afore-mentioned state and federal agencies are in addition to the countless manufacturers, distributors, healthcare providers, and healthcare facilities who have jurisdiction over the drugs they develop or administer. The Commission found that, while there are several initiatives that the state can take to prevent pharmaceutical contamination in Rhode Island, a truly comprehensive solution to this issue requires the cooperation of all partners- federal, state, and private/non-profit.

Finding #4 More information may be necessary to determine the presence and extent of pharmaceutical contamination in Rhode Island's water supply

The afore-mentioned USGS study and Associated Press analysis, while extensive, did not include bodies of water in Rhode Island. Similar studies conducted in nearby Massachusetts by the Massachusetts Water Resources Authority (MWRA)⁸ found no traces of pharmaceuticals in the water MWRA delivers (note that this study did not include cytotoxic agents). The federal Environmental Protection Agency does not mandate nor require any testing for pharmaceutical compounds and has not set safety limits for drugs in water. In testimony before the Commission, the Rhode Island Department of Health stated that the department, in the absence of federal requirements, and like agencies in many other states, does not currently test for the pharmaceutical compounds and other agents in the state's water supply. The Commission finds that more information is necessary to determine the presence and extent of pharmaceutical contaminants in Rhode Island's water supply, particularly cytotoxic chemotherapeutic compounds. However, while not disagreeing that more information is necessary to determine the

⁶ <http://www.fws.gov/chesapeakebay/pdf/endocrine.pdf>

⁷ December 5, 2012. Testimony before the Special Legislative Commission to Study Public Health Threats from Pharmaceutical Human Waste Contamination in the Water Supply. June Swallow PE, Chief, Office of Drinking Water Quality

⁸ <http://www.mwra.state.ma.us/04water/html/pharmaceuticals.htm>

extent of potential pharmaceutical contamination in Rhode Island, the Department of Health reiterates that with the existence of robust national programs to determine which contaminants, if any, pose a threat to public health, and with the absence of any finding that pharmaceutical contamination has approached levels nearing a threat to public health, the immediate need to test the presence and extent of pharmaceutical contamination was not demonstrated.

Finding #5 EPA-endorsed^{9, 10} methods of proper disposal of unused pharmaceuticals are not widely known

Unused pharmaceuticals are either dispensed prescriptions that patients do not use and/or medications that have expired. The term "unused pharmaceuticals" does *not* include excreted pharmaceutical waste. Pharmaceuticals may be 'unused' for a number of reasons, including a condition that is no longer presenting or is improving, confusing instructions, change in dosage, adverse reaction, a doctor's order to discontinue, or patient death, among others. An additional source of unused pharmaceuticals within healthcare settings is *residue* in used and partially-used dispensers, containers, and devices. For many years, the common disposal practice within many households, and at many health care facilities, was to "crush and flush" unused pharmaceuticals down the toilet or drain. A recent study by Brown University found that only 3.49% of Rhode Island residents surveyed have ever received information by a health professional (doctor, nurse or pharmacist) on how to dispose of their unused medication. This same study found that 60% of residents dispose of unused pharmaceuticals by flushing them or dumping them in the sink at least part of the time. 12.8% reported keeping the medicines after they are not needed.¹¹ The Food and Drug Administration continues to recommend flushing of certain medications as a 'last resort' following other methods profiled below¹² however, the EPA discourages such action.

The EPA has issued guidelines regarding how to dispose of medicines properly. Likewise, the Rhode Island Departments of Health and Environmental Management have shared information about these methods. However, many on the Commission were not aware of these guidelines and believed that the EPA-recommended methods of disposal were not sufficiently publicized and should be more widely disseminated.

The EPA disposal guidelines reflect a number of health, environmental, and public safety priorities. Proper disposal of unused medications prevents the accidental ingestion by children and pets; deters misuse and abuse by teenagers and adults; avoids health problems from accidentally taking the wrong medicine, too much of the same medicine, or a medicine that is too old to work well; and keeps medicines from entering streams and rivers when poured down the drain or flushed down the toilet.¹³ The EPA's first suggested disposal method is to drop off unused medications at 'Drug Take Back' programs throughout the state. The office of the Rhode Island Attorney General operates such a program and has collected more than 5,300 pounds of unused prescription drugs since 2010.¹⁴ In addition, legislation passed by the General Assembly

⁹ <http://water.epa.gov/scitech/wastetech/guide/upload/unuseddraft.pdf>

¹⁰ <http://water.epa.gov/scitech/swguidance/ppcp/upload/ppcpflyer.pdf>

¹¹ Pharmaceutical Pollution Prevention: An Examination of Medication Disposal Systems in Washington, Maine, New York, the San Francisco Bay Area and Rhode Island, M.A. Thesis by Deanna Dottai Talerico, Brown University, 2012

¹² <http://www.fda.gov/drugs/resourcesforyou/consumers/buyingusingmedicinesafely/ensuringsafeuseofmedicine/safe-disposalofmedicines/ucm186187.htm#MEDICINES>

¹³ <http://water.epa.gov/scitech/swguidance/ppcp/upload/ppcpflyer.pdf>

¹⁴ <http://www.riag.ri.gov/takeback/index.php>

in 2012¹⁵ authorizes cities and towns to locate secure containers at municipal police stations for the collection of unused pharmaceuticals.

The second method suggested by the EPA involves: (1) removing the drugs from their original container; (2) mixing drugs with an undesirable substances such as used coffee grounds or cat litter; (3) pouring the mixture into a sealed container such as a sealable plastic bag or an empty margarine tub; (4) concealing or removing all personal information on the original container (such as Rx number, name, and/or address); and (5) placing the sealed mixture and empty container in the trash. This method, described for the commission by a representative of the Pharmaceutical Research and Manufacturers of America (PhRMA),¹⁶ was not widely known amongst the Commission members and many believed that the location and availability of drug take back programs, and the proper method of home disposal of unused pharmaceuticals, should be more widely communicated and shared among the public.

- **Disputed Findings**

Finding #6 It is unclear whether conventional water and sewer treatment facilities are effective in destroying and/or neutralizing all pharmaceutical compounds and cytotoxic chemicals agents

Conventional filtration and treatment methods for the water supply were not designed for the removal or prevention of pharmaceutical compounds and cytotoxic agents, and while some methods¹⁷ may prove more adept at removing specific drugs (such as analgesics and anti-inflammatory drugs, lipid regulators, antibiotics) than others; almost none are effective at neutralizing cytotoxic agents, such those drugs used in chemotherapy, which remain active long after leaving the human body. The Rhode Island Department of Health noted, however, that treatment plants are nevertheless prepared and equipped (or can be modified so) to address water supply contamination of any type- if that contamination is demonstrated to reach a level of concern to public health. As pharmaceutical contamination has not been documented as reaching such a level, the Department, and the Office of the Attorney General, believes that this finding may be presumptuous.

It is important to note that Rhode Island is one of only a few states that prohibit sewer plants from allowing treated water — a chief source of pharmaceutical contamination — from entering any waterway that feeds into a public water drinking supply.¹⁸ For this reason, the risk of pharmaceutical contaminant introduction through this means is significantly lower in Rhode Island than in some jurisdictions. It is worth noting, however, that this prohibition does not address sewer plant discharges to recreational waters.¹⁹

¹⁵ <http://webserver.rilin.state.ri.us/BillText/BillText12/SenateText12/S2635.pdf>

¹⁶ November 14, 2012. Testimony before the Special Legislative Commission to Study Public Health Threats from Pharmaceutical Human Waste Contamination in the Water Supply. “Update on Pharmaceuticals in the Environment” Marjorie Powell

¹⁷ <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1805043/>

¹⁸ October 17, 2012. Testimony before the Special Legislative Commission to Study Public Health Threats from Pharmaceutical Human Waste Contamination in the Water Supply. Marcella Remer Thompson, PhD, MS, CSP

¹⁹ December 5, 2012. Testimony before the Special Legislative Commission to Study Public Health Threats from Pharmaceutical Human Waste Contamination in the Water Supply. Theresa L. O’keefe, Ph.D

Beyond sewer and water treatment facilities, an additional concern relates to *onsite* wastewater treatment systems (septic systems). In a septic system, solids collect in the septic tank or cesspool (removed by pumping) and the liquid effluent infiltrates into the soil and into the groundwater of the property. Approximately 150,000 Rhode Island households, or roughly one-third (1/3) of the state's population, use some form of onsite septic system.²⁰ These systems are neither designed nor intended to remove pharmaceutical contaminants or cytotoxic agents, and run the risk of immediately contaminating groundwater and adjacent water bodies.

Approximately one-half of these households utilizing an onsite septic system also depend on an onsite well for their drinking water supply. Testing of these private drinking water wells is the responsibility of the homeowner. While data for pharmaceuticals in surface water is scarce, it is nearly non-existent for groundwater. In the case of cytotoxic agents, to the Commission's knowledge, no aquifers in the world have ever been sampled. Therefore the existence and persistence of such chemicals in the groundwater is unknown.

Finding #7 Pharmaceutical human waste presents a unique challenge separate from improper disposal of unused pharmaceuticals

Unlike the improper disposal of unused pharmaceuticals, which can be prevented, in part, through a relatively minor change in consumer behavior, pharmaceutical contamination through human waste such as urine and/or feces presents a unique set of challenges that require a more complex and case-sensitive solution.

Such concerns are amplified when considering chemotherapy or other cytotoxic drugs as these drugs may pose hazards to human health. There are ample safety procedures and precautions that must be taken during the transport and administration of these drugs, and organizations such as the Occupational Safety and Health Administration (OSHA),²¹ and others, have required strict safety guidelines to protect healthcare workers from exposure. Likewise, to protect the health and wellbeing of family and loved ones, as a minimum, the American Cancer Society recommends that patients that have recently completed chemotherapy treatments flush toilets twice after they use it to make sure all human waste is removed from their dwelling.²²

The aforementioned safeguards and precautions are a means to avoid direct exposure and protect human health. However, as the prevalence and persistence of these cytotoxic compounds, especially in groundwater, is largely unknown, the risks are also unknown. Further study is needed to calculate the risk associated with cytotoxic agents when they are excreted through human waste.

Some members disagreed with this finding, and argued that sufficient data was not submitted to support such a specific concern as it relates to the broader issue of pharmaceutical contamination.

²⁰ <http://www.dem.ri.gov/pubs/regs/regs/water/isdsbook.pdf>

²¹ <http://www.osha.gov/ooc/drug-letter.pdf>

²² <http://www.cancer.org/treatment/treatmentsandsideeffects/treatmenttypes/chemotherapy/understandingchemotherapyguideforpatientsandfamilies/understanding-chemotherapy-chemo-safety-for-those-around-me>

RECOMMENDATIONS

- **Unanimous Recommendations**

Recommendation: That the General Assembly provide funding for a public information campaign about the safe disposal of pharmaceutical waste in home and healthcare settings

While comprehensive testing will dictate whether a larger and more extensive approach is necessary; there are methods already available for the disposal of pharmaceuticals which, while not completely effective, nevertheless help prevent pharmaceutical waste from entering the water supply. Dispelling the ‘crush and flush’ method of pharmaceutical disposal, and making sure households are fully aware of ‘drug take back’ opportunities or, in their absence, the proper method of disposing of unused drugs in the trash, is a low-cost approach that could help prevent the introduction of pharmaceuticals into the environment.

As mentioned in finding #5, the details of EPA-recommended disposal of unused drugs, particularly the mixing of crushed meds with undesirable substances such as coffee grounds or cat litter, does not appear to be widely known throughout the state. Funding for a Department of Health-run public information campaign about proper disposal methods would not only better inform households about these methods, but would also help draw public attention to the broader issue of pharmaceutical contamination. To facilitate this information campaign, the Commission recommends that the General Assembly require all pharmacies, doctor and veterinary offices to post a notice on the proper disposal of unused medicines similar to that required by the State of New York.²³

In addition to individual households, health care facilities such as hospitals and nursing homes are a critical focus for outreach and prevention efforts. Through licensure, certification, and regulatory authority, the Department of Health oversees countless healthcare professionals and facilities in Rhode Island. Presently, this does not include oversight of pharmaceutical waste disposal practices. Considering the volume of medications stored, prescribed, and potentially left unused in these facilities, ensuring that disposal practices are not contributing to the contamination of the water supply is vital. To that end, the Department should require that healthcare facilities develop a pharmaceutical waste disposal policy that is consistent with EPA and/or FDA disposal guidelines (many may have such a policy already) and provide a copy of said to the Department every four years, beginning January 1, 2014. Furthermore, the Department should be provided resources to educate and encourage providers regarding *appropriate prescribing*. Appropriate prescribing improves patient health and outcomes, and lowers health care costs. The accurate and appropriate prescribing of drugs reduces the likelihood of ‘leftovers’ and reduces the amount of pharmaceuticals potentially introduced into the environment.

Lastly, the Commission suggested an assessment of the cost and feasibility of disposing unneeded or unused medications at the Rhode Island Resource Recovery Corporation’s Eco Depot. Currently the Eco Depot handles household hazardous waste with the exception of pharmaceuticals.

²³ 2009 NY Drug Management and Disposal Act; <http://www.dec.ny.gov/chemical/45083.html>

Recommendation: That the General Assembly review ‘pharmaceutical take back’ programs currently operating in the state and consider an expansion in size and scope

The federal ‘Secure and Responsible Drug Disposal Act of 2010’²⁴ allows patients who lawfully obtain controlled substances to transfer them to a government or private entity for disposal. Subsequent to the act’s passage, the office of the Rhode Island Attorney General began to operate a ‘Drug Take Back’ program to collect unused prescription drugs. In 2012, the General Assembly passed legislation authorizing cities and towns to place secure containers at municipal police stations for the collection of unused pharmaceuticals. As of September 2012, forty²⁵ locations have been set up across Rhode Island to take back unused drugs.

The success of the Attorney General’s program, and the number of take back locations that have been established throughout the state, represents significant progress that can be built upon. With a focus on making the returning of unused drugs as simple and convenient as possible, the General Assembly should request a review of these programs and a description of any barriers to expansion and to greater integration into the community. Newly proposed regulations from the Drug Enforcement Agency may create additional opportunities to allow other options for institutions to destroy controlled substances without introducing them to wastewaters.

It merits noting that no cytotoxic chemotherapy pharmaceuticals can be included in such Take Back programs. These agents must be handled in line with OSHA safety regulations.

Recommendation: That pharmacies operating in the state of Rhode Island be required to share information about local ‘pharmaceutical take back’ programs with customers at the point of sale

With some limited exceptions, Rhode Island pharmacists are prohibited by state regulation from accepting returned medications once they are dispensed.²⁶ Some pharmacies, particularly those that are part of national chains, participate in national or regional pharmaceutical take-back or recycling programs.²⁷ No pharmacist, however, is allowed to accept controlled substances under any circumstance and, even with the afore-mentioned exemptions, many pharmacies fear the potential liabilities associated with taking back drugs and refuse to accept them.

Notwithstanding these concerns, the point of sale (or dispensation) remains the most convenient and direct way to reach customers and inform them about the ability to return unused medications. For this reason, the Commission recommends that the Rhode Island Attorney’s General office and the Department of Health work with in-state pharmacies on the creation of a location-specific pamphlet to be delivered to pharmaceutical customers upon check-out, informing them of the nearest state-approved drug drop-off location closest to that specific pharmacy. Pharmacies would not be asked to accept returned drugs, nor take on any responsibilities beyond simply sharing the pamphlet with customers at the counter. By reaching customers at the point of purchase and informing them of the most convenient location to dispose of unused medications, the state can increase the number of drugs received through the take back program (and thus diverted from the water supply) with relatively little resources.

²⁴ <http://thomas.loc.gov/cgi-bin/query/z?c111:S.3397>:

²⁵ <http://www.riag.ri.gov/documents/dropoffsites.pdf>

²⁶ <http://sos.ri.gov/documents/archives/regdocs/released/pdf/DOH/7058.pdf>

²⁷ <http://earth911.com/news/2011/08/17/all-cvs-stores-now-recycle-unwanted-meds/>

- **Disputed Recommendations**

Recommendation: That the Department of Health be authorized, and provided sufficient resources, to determine which pharmaceutical contaminants, if any, present an immediate and likely hazard to public health

Commission members suggested that the potential threats to public health posed by pharmaceutical contamination in the water supply, even if in the long term, merit increased monitoring and oversight of the water supply and a review of the extent of contamination in Rhode Island. To that end, these Commission members recommended that the Department of Health be authorized and given the necessary resources to determine which pharmaceutical contaminants potentially present in the water supply are the most likely hazards to public health.

However, other Commission members argued that no national data or information was presented to the Commission indicating that pharmaceutical contaminants are present at dangerous levels in any US treated drinking water supplies. Further, they argue, no information was presented suggesting that Rhode Island's water supply is more vulnerable than others to contamination. Given the existence of robust national programs to test for, and establish the risk of, potential drinking water contaminants, and in absence of evidence indicating an immediate public health risk from such contaminants, members of the Commission, including the Department of Health and the Office of the Attorney General, suggested that it is unnecessary to duplicate such testing programs in Rhode Island.

Recommendation: That the Department of Health develop procedures to periodically test, at a frequency determined by the department, for those contaminants which present a likely hazard to public health and for which analytical methods exist

The options for removal, prevention, and mitigation of pharmaceutical contaminants in the water supply vary widely in terms of cost and complexity. As established in the previous recommendation, some Commission members believed that, with national testing procedures in place, and in the absence of sufficient evidence that pharmaceutical contaminants present an immediate public health threat, that calling for any testing and/or mitigation programs in the state of Rhode Island is costly and premature.

As mentioned in finding #5, while several studies have been completed nationally and regionally establishing the presence of pharmaceutical contaminants in the water supply, such studies have not yet been completed by the Rhode Island Office of Drinking Water Quality²⁸.

The Office nevertheless fulfills its obligations under the federal Safe Drinking Water Act (SDWA). The SDWA requires the federal EPA to regulate contaminants which can adversely affect public health and are known to be present in public drinking water supplies. There is an extensive process by which the EPA decides which contaminants are regulated, or which may require regulation in the future. Currently, the EPA has not found that pharmaceutical contaminants represent a public health threat and does not require public water systems to test for them.

²⁸ <http://www.health.ri.gov/drinkingwaterquality/>

A 2008 study of the Providence Water Supply found negligible traces of some of the most common pharmaceutical contaminants, and other relevant studies are underway.²⁹ A representative from the Office of Drinking Water Quality within the Department of Health testified that the Office had the technical expertise for expanded testing, but currently lacked the resources necessary to do so on a regular basis.³⁰ They estimated an upfront cost of \$200,000 for the proper equipment plus a per-sample cost of roughly \$400.

Recommendation: That State Departments assess the risk to the state’s water supply and to public health posed by contaminated human waste and recommend options for preventing such waste from entry into public and private water systems

As stated, several members of the Commission, including the Department of Health and the Office of the Attorney General, emphasized that no evidence was offered to the Commission indicating an immediate public health threat from any pharmaceutical contaminants and human waste and that any new testing requirement is unwarranted. Others contend that sufficient information was shared with the Commission to merit consideration of additional action.

Those who supported additional action suggested that the state, after establishing the specific risks to public health posed by pharmaceutical-contaminated human waste, explore options for the prevention and/or mitigation of such waste from the water supply. Options for consideration should include, but not be limited to:

- A review of current protocols followed by physicians, pharmacists, or other health care professionals authorized to prescribe and/or administer chemotherapy treatments concerning provision of written notice to patients regarding the proper handling of excreted human waste
- A limited pilot program within one or more Rhode Island health care settings of collection methods whereby patients can safely contain potentially hazardous excreted bodily wastes, including method(s) that provide effective disposal while minimizing the hardships for the patients and their families.

²⁹ December 5, 2012. Testimony before the Special Legislative Commission to Study Public Health Threats from Pharmaceutical Human Waste Contamination in the Water Supply. June Swallow PE, Chief, Office of Drinking Water Quality

³⁰ Ibid.

STATE OF RHODE ISLAND

IN GENERAL ASSEMBLY

JANUARY SESSION, A.D. 2012

SENATE RESOLUTION

CREATING A SPECIAL LEGISLATIVE COMMISSION TO STUDY PUBLIC HEALTH THREATS FROM PHARMACEUTICAL HUMAN WASTE CONTAMINATION IN THE WATER SUPPLY

Introduced By: Senators Tassoni, Doyle, Gallo, and Sosnowski

Date Introduced: March 01, 2012

Referred To: Senate Health & Human Services

WHEREAS, A 2002 study by the United States Geological Survey conducted across 30 states found that 80 percent of water streams sampled had measurable concentrations of prescription and nonprescription drugs, steroids, and reproductive hormones; and

WHEREAS, Many drugs, particularly cytotoxic agents used in the treatment of cancers such as chemotherapy, have no safe exposure limit, are carcinogenic, mutagenic, and teratogenic, and remain active and dangerous long after leaving the human body through waste; and

WHEREAS, In some instances, over 90 percent of a utilized drug fails to be absorbed by the human body and is excreted through waste into the water supply; and

WHEREAS, The federal Occupation Safety and Health Administration, the Environmental Protection Agency, and the Centers for Disease Control and Prevention have each publically expressed concern with the handling and/or disposal of pharmaceuticals, particularly cytotoxic agents; and

WHEREAS, Even with effective collection and treatment systems, medical waste incinerators are not capable of destroying cytotoxic chemicals and no methods are currently available to sewer treatment facilities to neutralize such chemicals; and

WHEREAS, Despite these limitations, effective methods of collecting, reducing, and neutralizing drugs, and rendering them safe for disposal, exist and should be fully explored and considered; now, therefore be it

RESOLVED, That a Special Legislative Commission be and the same hereby is created consisting of seven (7) members: three (3) of whom shall be members of the Senate, not more than two (2) of whom shall be from the same political party, to be appointed by the President of the Senate; one of whom shall be the Director of the Department of Health, or designee; one of whom shall be the Director of the Department of Environmental Management, or designee; one of whom shall be the Director of the Department of Human Services, or designee; and one of whom shall be the Rhode Island Attorney General, or designee.

In lieu of any appointment of a member of the legislature to a permanent advisory commission, a legislative study commission, or any commission created by a General Assembly resolution, the appointing authority may appoint a member of the general public to serve in lieu of a legislator, provided that the Majority Leader or the Minority Leader of the political party which is entitled to the appointment, consents to the member of the general public.

The purpose of said commission shall be to make a comprehensive study and provide recommendations regarding potential public health threats resulting from pharmaceutical, medical, and human waste contamination in the public water supply and appropriate collection methods to prevent such contamination. Said study shall include, but not be limited to:

(1) A comprehensive review of methods currently used in this state by consumers, health care providers, and others for disposing of unused pharmaceuticals so that they do not enter the wastewater system;

(2) A review of programs and systems developed in other local, state, and national jurisdictions for disposing of unused pharmaceuticals so that they do not enter the wastewater

system;

(3) Recommendations regarding the development of public education and outreach program concerning the proper disposal of unused medications, including but not limited to, the requirement that all physicians, pharmacists, or other health care professionals licensed in the state of Rhode Island and authorized to prescribe and/or administer chemotherapy treatment provide written notice to each patient undergoing such treatment as to the hazards posed to patients and their families in the residential setting of excreted human waste;

(4) Recommendations, if necessary, regarding statutory and/or regulatory changes to current processes concerning pharmaceutical and contamination of our water supply, including the development of sufficient collection methods whereby patients can safely collect and contain potentially hazardous excreted bodily wastes for a period of time to be defined by the licensed prescribing practitioner based on the relevant FDA label(s); and

(5) The potential costs of and recommendations regarding how to finance, such a program.

Forthwith upon passage of this resolution, the members of the commission shall meet at the call of the President of the Senate. Two co-chairs of the commission shall also be selected by the Senate President.

Vacancies in said commission shall be filled in like manner as the original appointment.

The membership of said commission shall receive no compensation for their services.

All departments and agencies of the state shall furnish such advice and information, documentary and otherwise, to said commission and its agents as is deemed necessary or desirable by the commission to facilitate the purposes of this resolution.

The Joint Committee on Legislative Services is hereby authorized and directed to provide suitable quarters for said commission; and be it further

RESOLVED, That the commission shall report its findings and recommendations to the Senate no later than March 5, 2013, and said commission shall expire on May 31, 2013.