Potential Human Health Implications of Exposure to Pharmaceutical Contamination in Drinking Water

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Problem: Many pharmaceuticals and personal care products (PPCPs) are released into the environment and are being detected in drinking water supplies.

Why are we more aware of this issue now?
- Increased use of these products
- Improved detection methods
Types of PPCPs Detected in Drinking Water

- Pharmaceuticals
  - Antibiotics
  - Hormones
  - Antidepressants

- Personal Care Products
  - Antibacterial compounds
  - Cosmetics
  - Fragrances
Potential PPCP-Related Health Effects

- Increased antibiotic resistance
- Hormone mimicry (endocrine disruption)
- Carcinogenicity
Sensitive Populations Impacted

- Children
- Pregnant women
- Patients with particular diseases and medical treatments
World Health Organization (WHO) Conclusions

- There is limited information on occurrence of PPCPs in drinking water.
- In general, levels of PPCPs are present in drinking water at concentrations below therapeutic doses.
- The potential for human health risks from long-term exposure to mixtures of very low levels of PPCPs remains unclear.

Other drinking water issues (e.g., waterborne disease) are still very important and should continue to be addressed.

Human exposure to PPCPs through drinking water can be reduced through preventative measures.

Practical Next Steps

- Further biomonitoring should be conducted to better understand human exposures to PPCPs in Wisconsin drinking water.

- Implement or improve existing methods to:
  - Prevent waste pharmaceuticals from getting into water (Take-Back Programs/public education on proper drug disposal).
  - More effectively remove PPCPs in wastewater (wastewater treatment strategies).