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In The News

[New light-activated nanoparticles kill over 90% of antibiotic-resistant bacteria- Science Alert](#)

[Antibiotic-Resistant Gonorrhea: A Growing Threat- Philly.com](#)

["Antibiotic Resistance" and "Share the Road" Signs Can Be Grossly Misinterpreted- Scientific America](#)

['Stop asking for antibiotics for coughs and colds, parents urged': Top doctors' plea as overuse fuels rise of drug-resistant superbugs- Daily Mail](#)

Winter Pathogens

Article By: David Hewitt, PhD

Photograph: Katherine Baillie, University of Pennsylvania

Although we are all aware that winter is a time of increased risk for many infectious diseases such as the flu, we may not be as aware that environmental reservoirs, such as soil or surface waters (e.g., streams, ponds), could harbor pathogens even in the coldest of seasons. Therefore, this risk of infection is present in the winter, just as it is in spring, summer and fall.

Disease outbreaks have been linked to contact with mud and water, including illness due to bacterial pathogens, such as *Campylobacter* and *E. coli* O157, and to viral pathogens, such as norovirus, leptospirosis and also other diseases— like parasitic Giardiasis. Although these outbreaks have occurred in the warmer seasons, risks are also present in the winter. An understanding of how microbial organisms are present in the environment lets us understand why this is the case.

While the transmission of pathogens (via humans and other animals) is generally pretty well known, the potential contact with sewage (especially in urban or suburban areas) may not be as well known.

In this context, a sewer is a structure underground to allow the movement of water and other materials that people traditionally think of as sewage (e.g., personal, household, commercial waste), as well as runoff from streets and other surfaces.

When it rains or when snow melts, water from the environment can become contaminated with waste from dogs, people and other sources. The water then seeps into the ground and the storm drains, contaminating the sewer system and soil with the pathogens listed above.

Many cities in the U.S., including in Pennsylvania, use “combined sewer systems.” In these systems, sanitary sewer systems (including waste from homes and businesses) are connected with storm sewer systems. When there is a great deal of water in the environment, designed overflows can occur, preventing the overload of sewers and wastewater treatment systems. This overflow is another source of contamination of soil with pathogens.

If you are out walking your dog or with your child after heavy precipitation, it is important to remember that you (or they) can come into contact with contaminated soil. Always make sure to wash your hands after playing with muddy pets and make sure that children are not putting anything in their mouths.

None of this is, of course, intended to prevent anyone from getting fresh air and exercise



Ask the Expert!

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Your questions will be featured in the upcoming newsletters with answers from our collaborators.


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outdoors, which is especially important after the richly nourishing holiday season. But it is intended to impart information needed for all of us to enjoy and benefit from the outdoors – healthily, happily and heartily.

Get Smart is on Social Media!



Get Smart PA is on Facebook and Twitter! These accounts are managed by Get Smart volunteers on a weekly basis. On Facebook, we highlight issues on bacteria, antibiotics, antibiotic resistance and viral illness in recent literature and news. Get Smart PA also creates posts or retweets updates on antibiotic resistance or illness on Twitter.

Our goal is to raise awareness about antibiotic resistance, as well as to improve the general health of people across Pennsylvania. In the past, we've discussed topics such as influenza vaccination, Lyme disease and World Get Smart Day. We hope that by educating people on these issues, we can help to lower the demand for antibiotics and slow the development of antibiotic resistance. Please feel free to "Like" us on [Facebook](#) and follow us on [Twitter](#) @GetSmartAbxPA!

Warm Welcome to Dr. Paul Kocis!



Dr. Paul T. Kocis, PharmD, RPh, CACP has been a clinical pharmacist at the Penn State Milton S. Hershey Medical Center Anticoagulation Clinic since 2003. After having completed the Graduate Certificate in Clinical Research at Penn State University, Dr. Kocis is currently enrolled in the Penn State Master of Public Health (MPH) Program in the biostatistics and epidemiology track. Last December, Dr. Kocis joined Get Smart team as an intern. He will focus on strengthening outreach to schools of pharmacy and professional societies, as well as the development of a new initiative in long-term care facilities.

Good-bye and Good Luck, Courtney!

Courtney Yealy, our previous Get Smart Coordinator, has recently accepted a position with Jefferson University Hospital as an infection control practitioner. Courtney will use surveillance to track healthcare-associated infections and help to provide clinical and hospital support staff with education on hand hygiene. We wish her the best of luck in her new role!



Looking ahead...

- Friday, Feb. 26- P2 Pharmacy Workshop at the University of Pittsburgh's School of Pharmacy
- Watch for announcement of the 2015 Get Smart Competition award ceremony in the February issue, as well as the date for launch of the 2016 competition by Pa. Department of Health Physician General Rachel Levine, MD.