

For the Health of It

Clark County Health Department

April 1, 2023

VOLUME 6
ISSUE 2

NOTABLE NEWS

HOOSIER PUBLIC HEALTH SCHOLARS AWARD

The Clark County Health Department is pleased to announce that two current employees have been selected for the Hoosier Public Health Scholars Award. This scholarship is available to attend The Indiana University School of Public Health Bloomington and is a fully funded scholarship to pursue an online graduate education in Public Health. Scholarship recipients receive full tuition and fee coverage for the Graduate Certificate in Public Health (Online), MPH in Public Health Administration (Online) or the MPH in Epidemiology (Online). They also receive a laptop to facilitate completion of coursework.

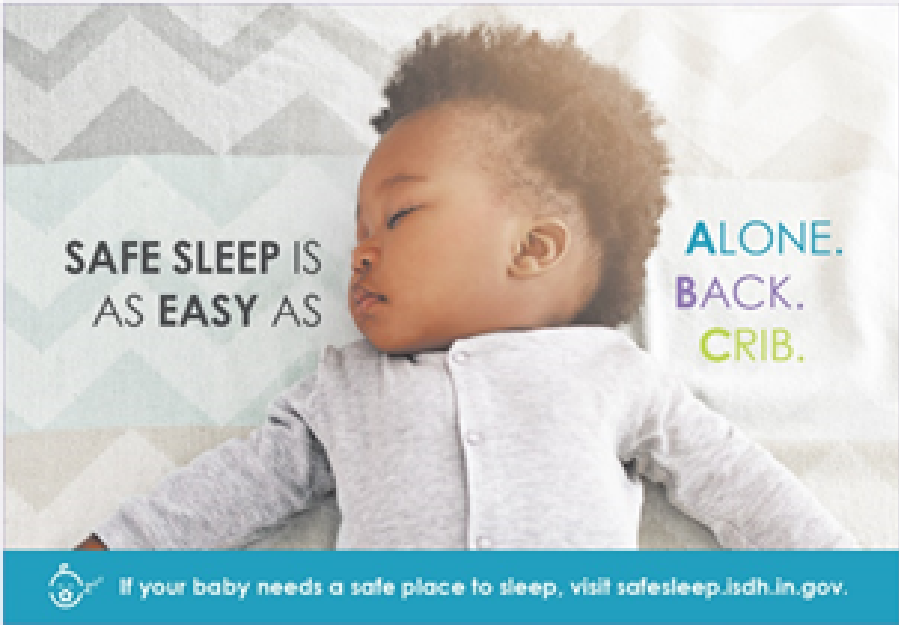
Requirements for eligibility include being an Indiana resident, being employed in the Public Health workforce in Indiana, hold an undergraduate degree and have earned at least a 2.8 GPA. We would like to congratulate Ashleigh Smith, Environmental Health Specialist and Johanna (Jo) Polk, Emergency Preparedness Coordinator, on receiving these Scholarship offers. Ashleigh intends to pursue her MPH in Public Health Administration and Jo intends to pursue her MPH in Epidemiology.

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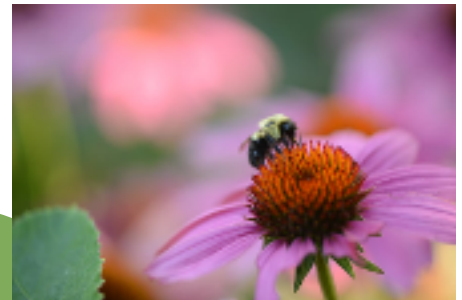
INDIANA UNIVERSITY
SCHOOL OF PUBLIC HEALTH
Bloomington



In cooperation with Clark Memorial Health and the Community Action Team, we are holding a free drive thru baby shower for anyone

expecting a new addition!

Goodies and door prizes available. You can also get a free car seat check!



It's time to plant! This year, think about the importance of planting NATIVE.

FREE Safe Sleep Program & Adult/Child/Infant CPR Certification

CPR Certification is through the American Safety & Health Institute (ASHI).

Adult/Child/Infant CPR paired with the Safe Sleep Program is a no-brainer for all parents, grandparents, aunts, uncles, nieces, nephews, cousins, friends and ANY caregiver who may have the responsibility of caring for a baby or child.

CCHD offers this course every other month and you must pre-register. Call Mike Ross at 812-282-7521 EXT 232 for info.

Upcoming class dates include:

Tuesday April 4

Tuesday June 13

Tuesday August 8

Tuesday October 10

Tuesday December 12

Pre-register at clarkhealth.net

more info:

<https://nanps.org/native-plant-societies/>

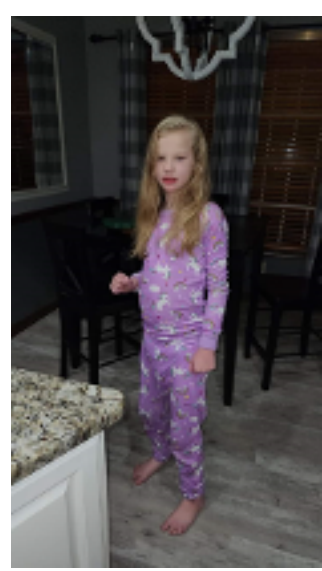
<https://www.audubon.org/content/why-native-plants-matter>

SYNGAP1

I'd like to introduce you to my niece, Emma Mae. Emma is 10 years old and like other children her age, wants to play and laugh and go to school. However, Emma is one of 1,164 people diagnosed around the world with a rare disease called SynGap 1.



SynGap 1 syndrome is a monogenetic developmental and epileptic encephalopathy that affects the central nervous system. Symptoms include intellectual disability, epilepsy, autism, sensory processing deficits, hypotonia and unstable gait. SynGap 1 is considered a spectrum disorder since patients are not affected exactly the same way or with the same severity. There is currently no cure or specific treatment for the conditions that causes SynGap1.



At the age of 18 months, Emma was behind on milestones and her seizures began. At the age of 7 Emma's seizures became difficult to control with medication and her neurologist ordered more specific genetic testing. Emma was diagnosed with SynGap 1. Emma functions at about a two-year old level and this presents a high level of safety issues for her. Emma requires 24/7 constant care and needs occupational, speech and behavioral therapies.

Because Syngap1 is such a rare disease, very little government funding is invested in research. The SynGap Research Fund (SRF) is the largest non-governmental funder of SynGap research. The founders cover all operational cost allowing 100% of donations to go to research.

There are 2 important dates for SynGap research. February 28 this rare disease day where we bring awareness to SynGap 1, and April 29th, which is the "Sprint for SynGap" run/walk to help raise money for SynGap 1 research.

Emma's family and friends participate in this event each year and will again have #TeamEmmaMae to help raise money. If you would like to help here are many ways to do so: Join Team Emma Mae and help raise funds by sharing this link on your social media page:

<https://secure.givelively.org//donate/syngap-research-fund-incorporated/sprint4syngap-2023/peggy-pierce-1>

Purchase a T-shirt for the event at this link:

https://www.bonfire.com/2023-teamemmamae-sprint4syngap/?utm_source=copy_link&utm_medium=campaign_page_share&utm_campaign=2023-teamemmamae-sprint4syngap&utm_content=default

Help spread awareness of SynGap 1 by sharing information on Rare Disease Day, February 28th, throughout March and April to help promote Sprint for SynGap. SynGap 1 awareness colors are Blue, Green and Purple. Blue for Autism, Green for Intellectual Disability and Purple for Epilepsy. (Don't worry, I won't ask you to dye your hair purple for awareness like I did.)

Emma has a smile that will light up a room and is a joy to be around! Emma is a ray of sunshine for me and I would love to help give her the gifts that other children her age have!

Thank you,
Jo Polk



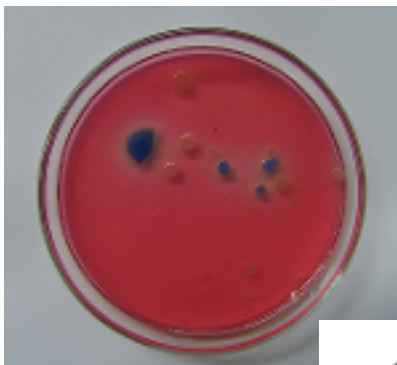
ONE HEALTH: ANIMALS, PEOPLE, AND THEIR ENVIRONMENT: ANTIBIOTIC RESISTANCE

Are you as guilty as I am? Just leaving those last few pills in the bottle because you feel better? I mean, it's just a couple of pills...who cares??

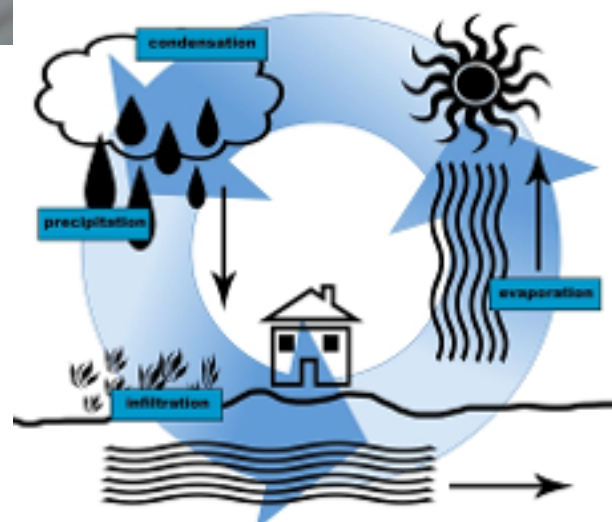
30 % of antibiotics prescribed in the U.S. are unnecessary
-CDC

2 million people in The U.S. become ill with resistant infections each year

They Do --->



Antibiotic resistance is a growing One Health problem, representing a danger to human, animal, and environmental health. Antibiotic resistance can stem from failure to complete medication treatments, overprescribing of antibiotics by health professionals, or self medication, which can all allow some stronger bacteria to survive. It also may stem from overuse of antibiotics in our food supply, wastewater plant discharges of antibiotics into our waterways, increase in climate temperatures, and rising human population densities, among many other complex reasons.

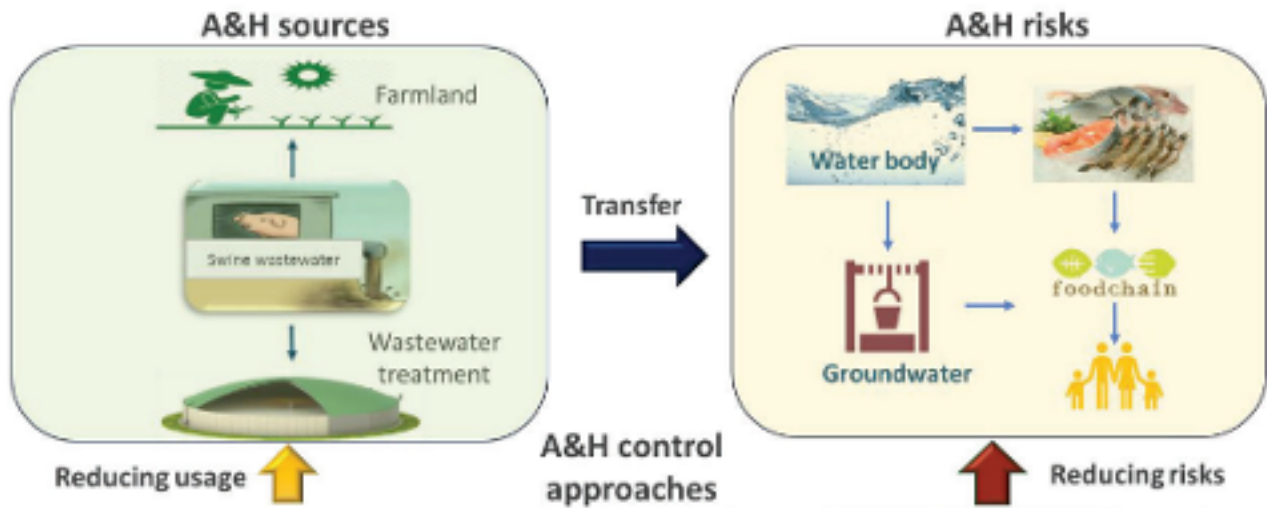


The One Health Approach looks at the relationship between animals, people, and the environment. What do these all have in common? Water! Water is life. And, all water is connected! So, what happens when antibiotics end up in our water supply? Is that even possible?

The answer is yes-what goes into the system must come out. Anywhere from 30-90% of antibiotics taken by a human are excreted by the body, with similar numbers found in other animals. So whether it is down the toilet or in a field, ultimately, antibiotics end up in our environment and water supply.

Ben et al. (2020) found that "A total of 58 antibiotics were detected in the filtered tap water, and 45 and 36 antibiotics were detected in the Chinese and foreign brands of bottled water, respectively."

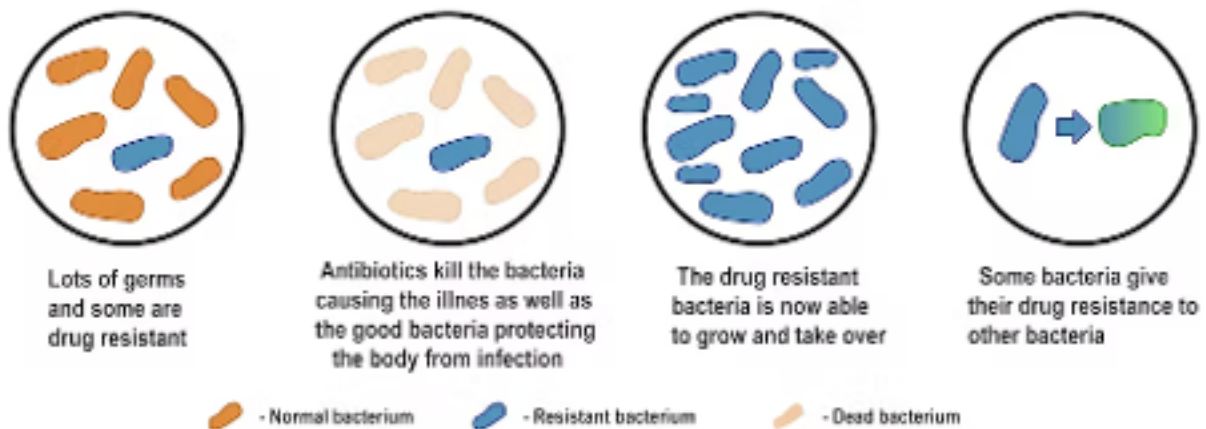
Cheng et al (2020) looked at studies of antibiotics and hormones in nearby water from pig farm runoff and discharge areas. They discussed high levels and treatment options as well as future concerns and consequences of overuse of antibiotics in this particular food industry. (Great article, check it out!)



Antibiotics in the water supply will continually put selective evolutionary pressure on the microbes currently present in the environment. This may further increase antibiotic resistance. Current wastewater treatment plants are not designed to mitigate levels of antibiotics. This leads to antibiotics, and therefore, resistant bacteria entering our general and drinking water supplies, affecting....well...everything!

Currently there are no standards for antibiotics found in drinking water, which is leading to unknown exposure levels.

HOW ANTIBIOTIC RESISTANCE HAPPENS



A 2023 study by Hanna et al. found "Antibiotic residues were ubiquitous, and residual concentrations of some antibiotics exceeded the thresholds for the development of resistance in various proportions of exposure in various aquatic environments, including surface water, groundwater, wastewater, and wastewater treatment plants. Wastewater and wastewater treatment plants appeared to serve as the main sources for the development of antibiotic resistance in these regions. The relative effect of various contributions of antibiotic contamination in the waterways, such as hospitals, municipals, livestock, and pharmaceutical manufacturing sources, was determined for each antibiotic."

Antibiotics are widely prescribed from human and non-human animals and their continued presence can and will affect the antimicrobial resistance of specific bacteria ([Jendrzejewska and Karwowska 2018](#)).

So, what can we do?

The CDC says:

- Prevent infections in the first place
- Improve antibiotic and anti-fungal use to slow the development of resistance
- Stop the spread of resistance when it does develop

We can also:

- Reduce the use of antibiotics. Remember, they won't work for viral infections like the cold or flu!
- Take each dose of an antibiotic prescribed to you, and don't share!
- Reduce the use of antibiotics in the food industry
- Continued focus on international issues-we are a connected world now.
- Reduce the use of antibiotics in veterinary practices, including improve diagnostics
- Improve wastewater treatment technology
- Develop standards for antibiotics in drinking water, forcing companies to evolve and better their technologies
- Continued funding for development of new treatments to combat antibiotic resistant organisms

Remember: people, animals, and the environment will forever be connected.

<https://www.sciencedirect.com/science/article/pii/S0160412022006341>

<https://www.cdc.gov/drugresistance/actions-to-fight.html>

Hanna, Nada, Ashok J. Tamhankar, and Cecilia Stålsby Lundborg. "Antibiotic concentrations and antibiotic resistance in aquatic environments of the WHO Western Pacific and South-East Asia regions: a systematic review and probabilistic environmental hazard assessment." *The Lancet Planetary Health* 7.1 (2023): e45-e54.

Jendrzejewska, N.; Karwowska, E. The influence of antibiotics on wastewater treatment processes and the development of antibiotic-resistant bacteria. *Water Sci. Technol.* **2018**, *77*, 2320–2326.

Ben, Yujie, et al. "Efficient detection and assessment of human exposure to trace antibiotic residues in drinking water." *Water research* 175 (2020): 115699.

Cheng, Dongle, et al. "A critical review on antibiotics and hormones in swine wastewater: Water pollution problems and control approaches." *Journal of hazardous materials* 387 (2020): 121682.

MENTAL HEALTH: BRAINGAMES

WORDSEARCH

Q Q K C H T
 G R B B C V V Y B C X T
 A Z D O V N U Q Q P B N A U Z R X K
 S G T E T G T L E F X E M C G B R L
 U J T E E A S H T B S W U S H I L A L E
 V Q Z X Q W N E E I K C B Z O V B Z M O
 V W Y N K U K I L P V R L A I N N E R E P M
 D B U N N C L L D T A K I L T C N V H U T I
 N F N J I A I L E H R Y R T I V K O A K
 B B X F Y M O R T D Q N Y I C
 Q Q O X P B A Y R
 G K E V V D S D E R D Y E
 B W N Z V X N Y E E R Y B I S
 J L V N X N U Q Y O B V X R C H N Y X
 R D P L K S G A B X E G Y I L Y W Z Z R A
 B Q N X E S L J T C P D P O S A F V I Y C
 H I M S J D P K X I I C E E V G A U P Y F L Z
 L L A R I S S R V E V L Y Z E V N O E I U
 U E K A R O P R X F L E I Y B O N N D D A
 M R W K O J E P G Z H N F L Q I A P R
 M G A L W S Q W F E P A R J S K V
 B X G A Q Y G J C T I X I
 Y F U W R A K J N
 J W X
 D W T

NATIVE
 POLLINATOR
 INVASIVE
 CULTIVAR
 PERENNIAL
 ANNUAL
 SERVICEBERRY
 ELDERBERRY
 MILKWEED
 NINEBARK

BRAINTEASER

1) There is a word in the English language in which the first two letters signify a male, the first three letters signify a female, the first four signify a great man, and the whole word, a great woman. What is the word?

2) There are two ducks in front of a duck, two ducks behind a duck and a duck in the middle. How many ducks are there?

2) Three
1) Heroine

Antibiotic Resistance and Biofilm Infections in the NICUs and Methods to Combat It

by Maria Baltogianni, Vasileios Giapros, and Chrysoula Kosmeri

Abstract:

Neonatal sepsis is an important cause of neonatal morbidity and mortality. A significant proportion of bacteria causing neonatal sepsis is resistant to multiple antibiotics, not only to the usual empirical first-line regimens, but also to second- and third-line antibiotics in many neonatal intensive care units (NICUs). NICUs have unique antimicrobial stewardship goals. Apart from antimicrobial resistance, NICUs have to deal with another problem, namely biofilm infections, since neonates often have central and peripheral lines, tracheal tubes and other foreign bodies for a prolonged duration. The aim of this review is to describe traditional and novel ways to fight antibiotic-resistant bacteria and biofilm infections in NICUs. The topics discussed will include prevention and control of the spread of infection in NICUs, as well as the wise use of antimicrobial therapy and ways to fight biofilm infections.

<https://www.mdpi.com/2079-6382/12/2/352>

Baltogianni M, Giapros V, Kosmeri C. Antibiotic Resistance and Biofilm Infections in the NICUs and Methods to Combat It. *Antibiotics*. 2023; 12(2):352. <https://doi.org/10.3390/antibiotics12020352>

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Office Hours

Monday 8:30am - 4:30pm

Tuesday 8:30am - 4:30pm

Wednesday 8:30am - 4:30pm

Thursday 8:30am - 4:30pm

Friday 8:30am - 4:30pm

Saturday - CLOSED

Sunday - CLOSED

Administration/Vital Records/Environmental

812-282-7521

Public Health Nurse

812-283-2459

HIV/STD Program Office

812-288-2706

Public Health
Prevent. Promote. Protect.

Clark County Health Department

