

Get Smart Know When Antibiotics Work Pennsylvania

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Council of State and Territorial Epidemiologists Annual Conference

Tuesday, June 21, 2016: 2:00 PM-3:30 PM

Kahtnu 1 (Dena'ina Convention Center)



Without **urgent, coordinated action by many stakeholders**, the world is headed for a post-antibiotic era, in which common infections and minor injuries which have been treatable for decades can once again kill. ~ Keiji Fukuda, WHO, 2014



Keiji Fukuda,
Source: WHO

Get Smart: Know When Antibiotics Work - Pennsylvania

Outline

- State perspective on the threat of antimicrobial resistance
- Rationale for a collaborative approach
- Get Smart Program—initiatives
 - Pediatric
 - Pharmacy
 - Communication
- Conclusions



Source: Pa. Publications

State perspective on the threat of antimicrobial resistance

- The state's role in public health began in late 1800s¹⁻²
 - Dreadful epidemics
- Pa. DOH mandates include
 - prevention/control of infectious disease
 - Antibiotics: 20th century revolution
 - Resistance is a thriller movie



Source: William Birch, from
The City of Philadelphia, 180



Anne Sheafe Miller: first patient to be
treated in the US with penicillin
Source: Eric Otman Columbia
University

1. Pa. State Archives. Department of Health records
2. Harvard University. Contagion: Historical View of Diseases and Epidemics: digital library

State perspective on the threat of antimicrobial resistance (cont'd)

- Consequences of overuse and misuse of antibiotics
 - Exacerbates emergence of resistant-bacteria³ as well as increases risk of certain infections
 - Increased risk of *Clostridium difficile*⁴
 - Drug adverse events ~140,000 ED visits annually⁵



Adverse Reaction to Amoxicillin

Source: www.healthtap.com



VRSA infected wound;
Source: K. Julian, 2012

3. Adolf W. Karchmer Clin Infect Dis. 2004;39:S142-S150
4. Lessa FC, Mu Y, Bamberg WM, et al. N Engl J Med 2015;372:825-834
5. Shehab N, Patel PR, Srinivasan A, Budnitz DS. Clin Infect Dis. 2008; 47:735-43

Drug resistant genes spread fast!



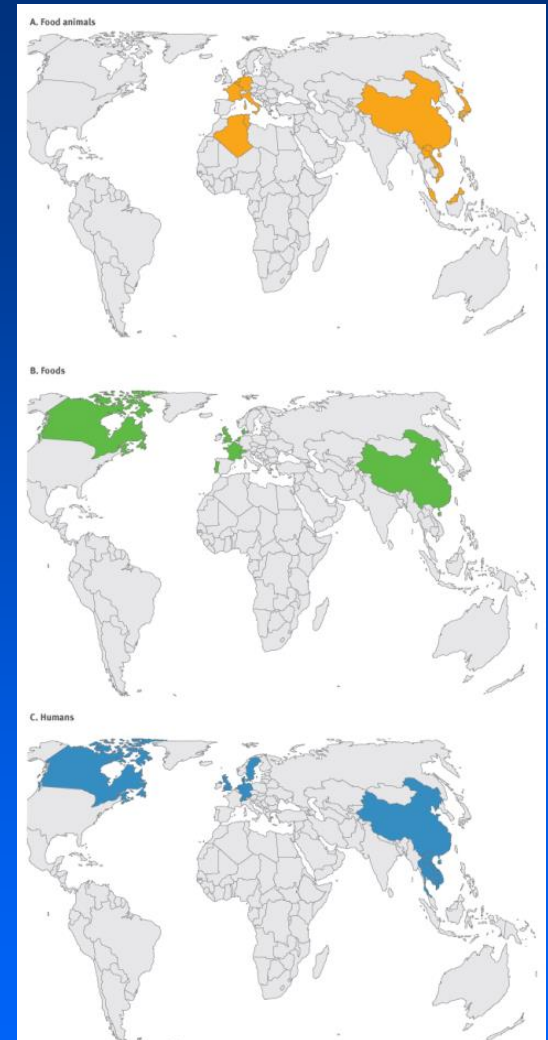
Colistin-resistant *E. Coli* infection ; female 46 yrs old Pa. patient in 2016

The recent discovery of a plasmid-borne colistin resistance gene, *mcr-1*, heralds the emergence of truly pan-drug resistant bacteria⁶.

6. McGann P, et al. Antimicrob Agents Chemother. 2016. pii: AAC.01103

7. Skov RL, Monnet DL.

Euro Surveill. 2016;21 doi: 10.2807/1560-791



Rapid spread of colistin resistance gene⁷

Rationale for a Collaborative Approach

- Multifaceted pediatric interventions can reduce Abx use
 - Statewide campaign in WI compared with MN (control) 1998-2003 had limited impact ⁸
 - Community-wide interventions in Knox County TN- 1997-1998
 - Abx prescription rate: - Decrease was 11%⁹
 - 16-community trial in MA- 1998-2003
 - Greater in Medicaid-insured children and for broad spectrum antibiotics (BSA) agents¹⁰

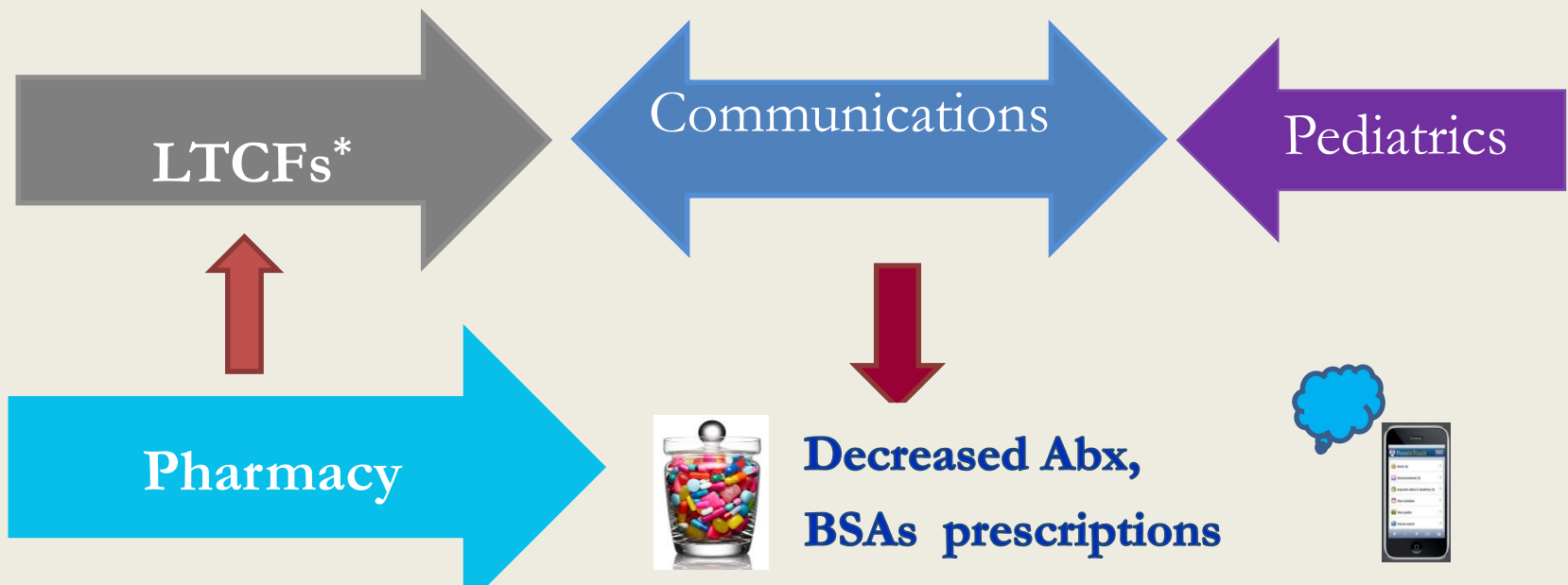


8. Belongia EA, et al. Emerg Infect Dis. 2005;11:912-20

9. Perz JF et al. JAMA. 2002;287:3103-9

10. Finkelstein JA, et al. Pediatrics. 2008;121:e15-23.

Get Smart Program Initiatives



Pa. Get Smart Initiatives –2016

* Long Term Care Facilities

Get Smart Program Initiatives: Objectives

- Promote guidelines for antimicrobial stewardship
- Estimate antibiotic prescriptions
- Decrease consumer demand for unnecessary antibiotics
- Increase preventive measures (vaccination, hygiene, and infection control)



Dr. Levine reading “Katie Caught a Cold” to children at a child care center in State College, Pa. November 17, 2015

Pediatric Initiative

Pediatric settings

- Pediatric clinics Abx stewardship
 - Promote Get Smart guidelines
 - Provider-based feedback on Abxs and BSAs
 - Reduce parental expectations for Abxs
- Collaborations
 - Penn State Hershey Pediatrics
 - Children's Hospital of Pittsburgh
- Focus
 - Childcare facilities
 - ~7907 facilities
 - ~242,324 children in childcare facilities ¹¹

Rx Name: _____ Date: ____/____/____

GET SMART
Know When Antibiotic Work

Diagnosis:

Cold Middle ear fluid (Otitis Media with Effusion, OME)
 Cough Viral sore throat
 Flu Other: _____

You have been diagnosed with an illness caused by a virus. Antibiotics do not cure viral infections. If given when not needed, antibiotics can be harmful. The treatments prescribed below will help you feel better while your body's own defenses are fighting the virus.

General instructions:

Drink extra water and juice.
 Use a cool mist vaporizer or saline nasal spray to relieve congestion.
 For sore throats, use ice chips or sore throat spray; lozenges for older children and adults.

Specific medicines:

Fever or aches:
 Ear pain:

Use medicines according to the package instructions or as directed by your healthcare provider. Stop the medication when the symptoms get better.

Follow up:

If not improved in _____ days, if new symptoms occur, or if you have other concerns, please call or return to the office for a recheck.
 Other: _____

Signed: _____

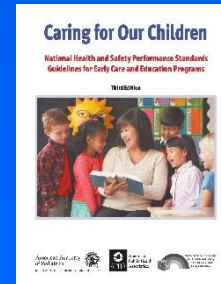
For More Information call 1-800-CDC-INFO or visit www.cdc.gov/getsmart



Pediatric Initiative (cont'd)

Example of activities

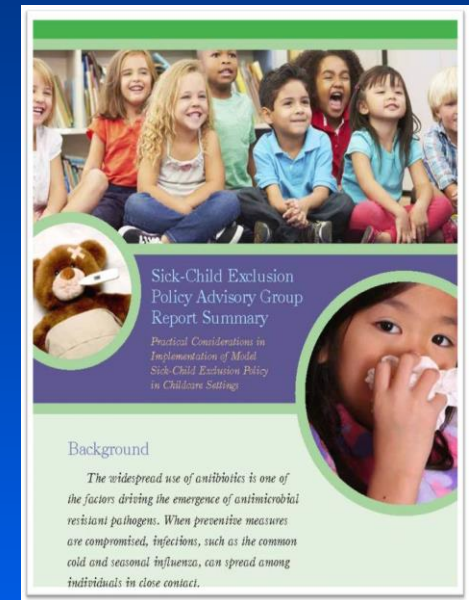
- Develop practical guidance for implementation of model sick-child exclusion policies
 - Advisory group of pediatricians, childcare directors, Keystone STARS, regulators and public health
 - Identify sources of confusion
 - Suggest actions based on experience
 - Review mandated exclusions in light of current science



Pediatric Initiative (cont'd)

Example of outcomes

- Pre-intervention study in 2007
 - Main finding and editorial suggested the need to promote model policies ¹²⁻¹³
- *Sick-Child Exclusion Policy Advisory Group (Practical Considerations)* in 2014
 - Children ≥ 6 months with fever without behavior change do not need exclusion



12. M'ikanatha et al. Infect Control Hosp Epidemiol. 2010;31:408-11.

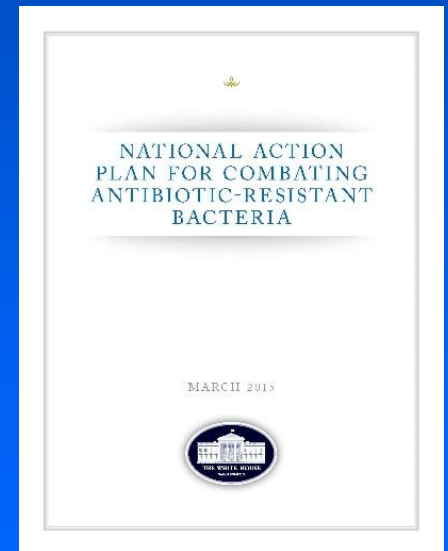
13. Kotch JB, Weber DJ. Infect Control Hosp Epidemiol. 2010;31:412-3.

With the growing development of antibiotic resistance, it is imperative that we no longer take the availability of effective antibiotics for granted. As a nation, we must respond to this growing problem, and our response needs to be multifactorial and multidisciplinary.

~ Thomas Frieden, 2010



Thomas R. Frieden
Source: Wikipedia

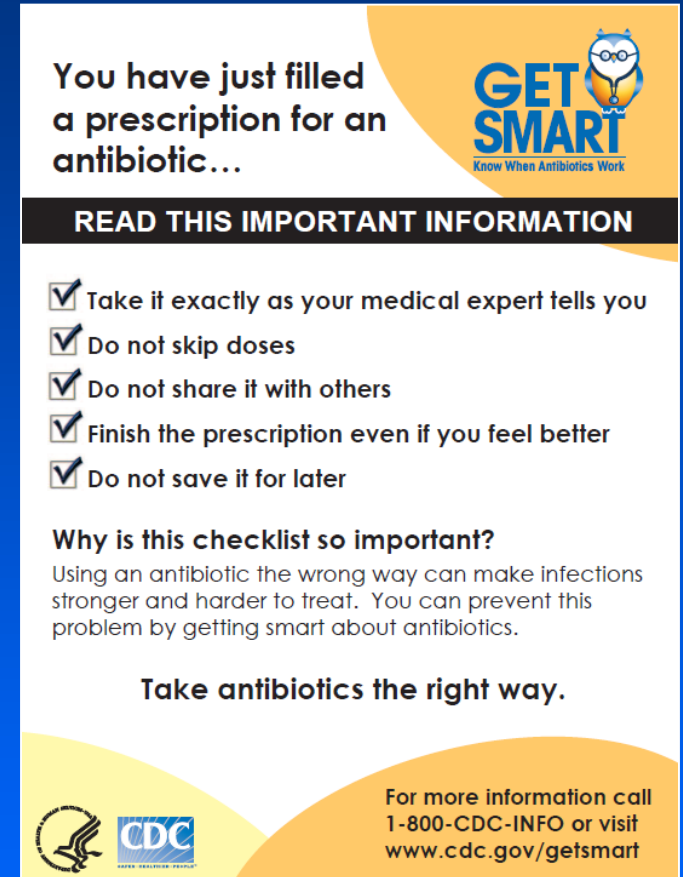


March 2015

Get Smart Pharmacy Initiative

Objectives

- Engage pharmacy faculty and students in antimicrobial stewardship
 - Outreach in community pharmacies
 - Support preventive measures (hand hygiene and vaccination)
- Research on antibiotic prescribing trends
- Collaborator: University of Pittsburgh School of Pharmacy



You have just filled a prescription for an antibiotic...

GET SMART
Know When Antibiotics Work


READ THIS IMPORTANT INFORMATION

- ✓ Take it exactly as your medical expert tells you
- ✓ Do not skip doses
- ✓ Do not share it with others
- ✓ Finish the prescription even if you feel better
- ✓ Do not save it for later

Why is this checklist so important?
Using an antibiotic the wrong way can make infections stronger and harder to treat. You can prevent this problem by getting smart about antibiotics.

Take antibiotics the right way.

For more information call 1-800-CDC-INFO or visit www.cdc.gov/getsmart



Get Smart Pharmacy Initiative (cont'd)

Examples of activities

- Annual Get Smart workshop
 - Get Smart CDC and State perspective, since 2003
 - Online course “Community Pharmacists Tip the Scales”¹⁴
 - ~110 students outreach in ~75 com. pharmacies in Allegheny county each year
 - Over 2000 encounters since 2013
- Community outreach
 - ◆ Abx quiz, feedback and Get Smart brochures

ANTIBIOTIC QUIZ

- 1.) Antibiotics fight infections caused by**
 - a. Viruses
 - b. Bacteria
 - c. Viruses and Bacteria
- 2.) Bacteria are germs that cause colds and flu.**
 - a. True
 - b. False
- 3.) Which of these illnesses should be treated with antibiotics?**
 - a. Runny Nose
 - b. The Flu
 - c. Cold
 - d. Strep Throat
- 4.) Bacteria that cause infections can become resistant to antibiotics.**
 - a. True
 - b. False
- 5.) I can prevent antibiotic-resistant infections when I:**

Source: CDC



Josh Krise and Melanie Beers: Class of 2018 and Christine Murphy, DOH;

Source: NM

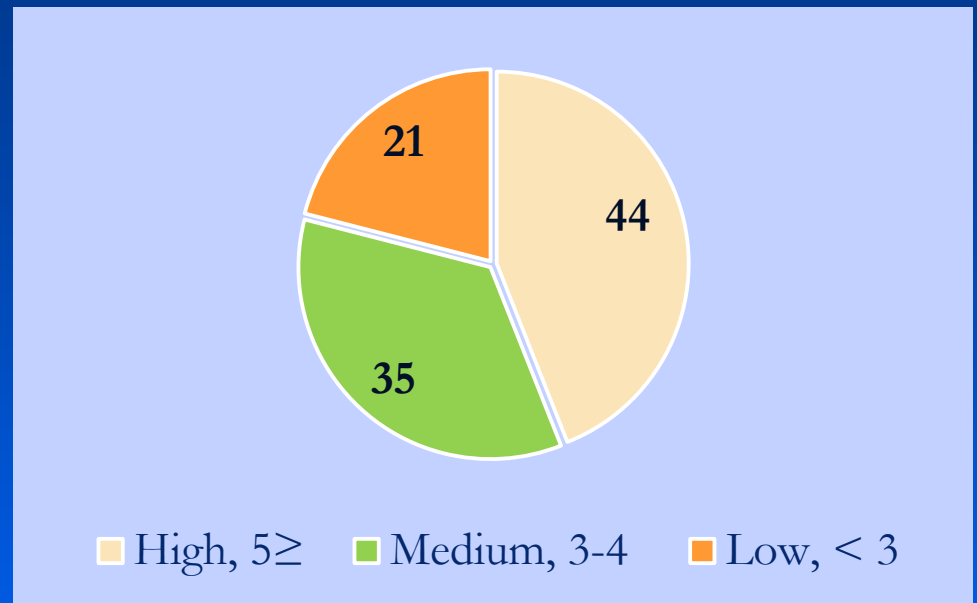
Get Smart Pharmacy Initiative (cont'd)

Example of outcomes

- Community outreach in 2015
 - 778 encounters, 57% females; majority 18-40 yrs old
 - 37% taken abx within past 6 months
 - 677 completed abx quiz



Source: CDC

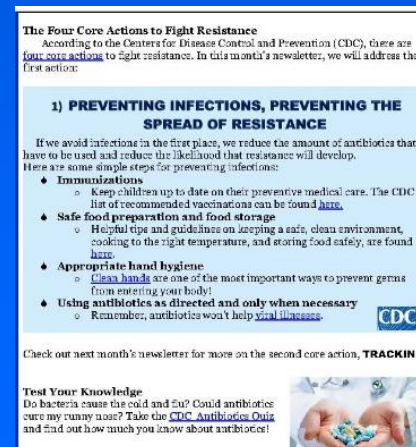


Percentage of pharmacy customers giving correct answers on antibiotic quiz (N=677), western Pa., 2015

Get Smart Communication Initiative

Objectives

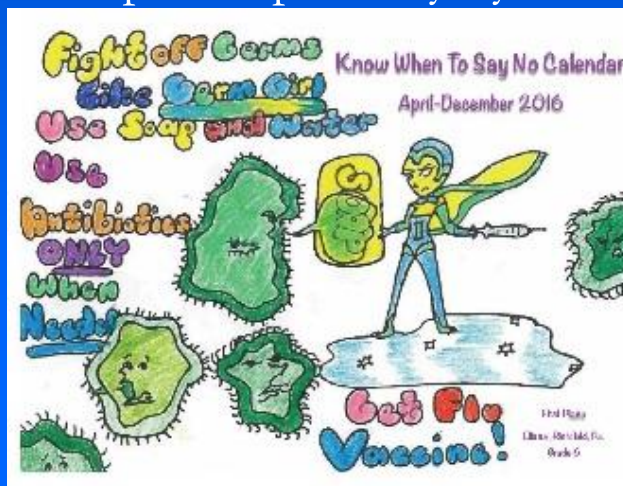
- Disseminate guidelines and training materials
 - Get Smart Web portal
 - Social media Facebook, Twitter, blogs..
 - Monthly newsletter
- Conduct behavioral research on drivers of abx use
- Coordinate Get Smart Week and One Health forums



Get Smart Communication Initiative (cont'd)

Examples of activities

- Web portal 2012- present
 - Engaged target audience
 - Childcare directors, parents, teachers, and providers
- Kids' art competition, 2013-
 - Art competition engaged children and drove traffic to the website
 - Unexpected publicity by media



Poster session ID #5796



Get Smart Communication Initiative (cont'd)

Examples of activities and outcomes

■ Get Smart Week

- Governor's Proclamation 2015
 - First seminar at Penn State Nov 17
 - ~300 participants, Student Health Services

■ Get Smart Award Ceremony

- 18 award recipients Mar. 23, 2016
- 100 participants—parents, kids, legislators



Jeff Garber, Nov. 17



Lydia Glick- Penn State Student



Conclusions

- Collaborate in the process
 - Review experiences and consult with - stakeholders, CDC, other states, sites...
 - Identify mutual benefits
 - Involve collaborators from initial steps
- Maintain team spirit
 - Schedule pre-planned interactions
 - Set concrete objectives; yet be flexible
 - Ensure shared ownership and shared recognition



source:
bussiness2community.com

Know When To Say No Newsletter
By: Jennifer Shores, RN and Dawn Barnes, MD

Be a Superhero in the Sun!
Be a superhero in the sun! That means there are super powers you need to use to protect yourself from the sun! The sun's rays can be harmful, so focus on what you can do to protect your skin. Sunscreen is one of the most important things you can do to protect your skin. Sunscreen blocks UV rays that can cause skin damage. This damage can lead to skin cancer later in life.

Apply sunscreen to all skin areas, including the face, neck, and back. Use a broad-spectrum sunscreen with SPF 30 or greater and broad-spectrum coverage, which protects against both UVA and UVB rays. To truly protect your skin, reapply every 2 hours, or more often if you are sweating or swimming. Sunscreen should be reapplied every 2 hours, because it becomes less effective with time.

From here on out, remember always that as a superhero, you have to be prepared! The following tips would be helpful to have in your toolbox:

- Sunscreen, broad spectrum and SPF30+**
 - Don't forget to apply sunscreen to your neck and face!
 - Alcohol, especially vodka, can irritate and dry out your skin.
 - The more you drink, the more you sweat. If you are drinking, use a broad-spectrum sunscreen with SPF 30+ and reapply every 2 hours.
- Hydrate your skin**
 - Drink plenty of water to keep your skin hydrated.
 - Use a moisturizer to keep your skin hydrated. Apply it before you go to bed.
- Protect your skin**
 - Wear a hat to protect your face from the sun.
 - Use a long-sleeved shirt and long pants to protect your skin from the sun.

Most incidental bites and stings do not require the use of antibiotics. The redness and swelling that occurs following a bug bite or scrape is the result of your own body healing the skin. Although it may be uncomfortable and sometimes cause discomfort, skin irritation is a normal part of the healing process. Signs of a skin infection include increasing redness, pain, or swelling, and pus or discharge that is thick, foul-smelling, or green. If these occur, you should call your doctor.

Make a Healthy Day a Colorful Day with AHS!
By: Jennifer Shores, RN and Dawn Barnes, MD

Remember to Stay Healthy! Many of us cannot wait to enjoy the sunshine and get outside. However, what happens when the sun rises over your skin? A great way to protect your skin is to use sunscreen. Sunscreen is one of the most important things you can do to protect your skin from the sun's rays. Sunscreen blocks UV rays that can cause skin damage. This damage can lead to skin cancer later in life.



Nicole Hackman
Penn State Hershey
Medical Group

Paul Kocis
Get Smart Intern

Anne Dodds
Keystone STARS

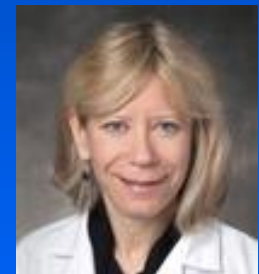
Rachel Smith
Penn State
CASHDF & CIDD

Kristin Sznajder
Penn State
Hershey PHS

Jennifer Han

Team means **T**ogether **E**veryone **A**chieves **M**ore!

~Author Unknown



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Public Health
Consultant

**“Alone we can do so little; together we
can do so much” – Helen Keller**

