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USPHS Combined Category Newsletter

The Combined US Public Health Service Professional Advisory Committees Newsletter

PAC Chairs' corner

My Fellow PHS Officers,

I have the honor to serve as the 2015 chair of the PAC Chairs Group, or simply PAC Chairs. The PAC Chairs is chartered by the Office of the Surgeon General and composed of the current chair from each PAC. The PAC Chairs provides a platform for discussion and interaction between the categories to support and advise each other and the CPO Board on pressing issues facing PHS officers.

So what issues have the PAC Chairs been working on? Here are some highlights…

Fundraising- Many PACs and other groups engage in selling PHS pride items to officers and use those proceeds toward esprit-de-corps events at conferences or other gatherings. While this is an important aspect of our serving together, there are important rules governing the use of official property to sell or received goods. The PAC Chairs are working with the CPO Board and DCCPR to develop a workable process and advise PACs accordingly.

Social Media- Similar to the fundraising issue, there are rules that cover appropriate use of social media for official purposes. Some PACs have explored the benefits of communicating and engaging with each other and the public through social media. The PAC Chairs wants all PACs to be engaged and guide them through the rules that may limit certain activities.

Website Migration- Some PAC websites have converted and others will be converting soon to HHS-based servers. This process will bring these sites into compliance and more uniformity with other PHS sites. PAC Chairs is assisting the Division of Systems Integration with coordination and communication of these activities.

Your PAC chair is your representative to this extraordinary group and offers an avenue to have issues important to you and your fellow officers heard. If you have a topic you would like the PAC Chairs to consider, contact your PAC chair and let them know your thoughts.

Together we will make this a better Corps and, ultimately, in the words of VADM Murthy, build the great American community. As you read through the exceptional work performed by our officers throughout this newsletter, see if you can find the ways this great American community is taking shape.

-CDR Nathan Epling

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Train like an Admiral

Interview by CDR Juliette Touré; Pharmacy Category
Photos by CDR Kun Shen; Pharmacy Category

RADM Randall J.F. Gardner, the current Chief Engineer Officer of the USPHS, has always considered himself a "doer," not a spectator in life. Throughout his childhood, he ran track, played team sports, and spent a lot of time outdoors doing seasonal sports. He had to give up some of these activities during engineering school and as he progressed in his PHS career, which began in the Junior Commissioned Officer Student Training and Extern Program (COSTEP) at the Food and Drug Administration. He recalled that when his kids were becoming more physically active around the age of 8 or 9, he realized he needed to "step up his game," not just to keep up with them but to also encourage them not to be spectators in life. In a recent interview, RADM Gardner shared some of his personal views on health and how he overcame challenges in making these lifestyle changes.

When your kids were about 8 or 9, what lifestyle changes did you make? How did you start?

Since I was a runner in high school, I thought I would be able to pick it back up again. It was harder than expected. People have said it takes 3 to 4 weeks to see results, but for me, it was a longer journey. I was always an active person.

I didn't have to do much to be fit when I was younger. As I get older, it takes more effort to be fit. I began by increasing the amount of time at the gym, incorporating three 1-hour sessions per week. It did not make a difference. I realized I needed to look at my diet because exercise alone was not enough and because of my family history of high cholesterol and blood pressure. I began to shift from walking to running. It took about a month to jog non-stop. I also tried working out at different times of the day and found that I do best when my workout is done early in the day. It was discouraging at times because I did not improve as quickly as I would have liked or perhaps expected to, but I appreciate being challenged.

Over the course of 2 years, I was able to lose and maintain a weight 40 pounds less than at my heaviest. Another motivator was when others started to notice the change in me. I wasn't doing it for that reason, but recognition and even questions were helpful. Before losing the weight, people would say I had an "athletic build." I would wonder if it was a compliment and started to buy into that idea. I thought the BMI [Body Mass Index] was wrong, and I was just built that way. When you accept where you are – it makes it harder to do anything to change. Once I started losing weight and exercising more regularly, I realized that it was possible to reach my goals and more, including changing my BMI. I couldn't believe how many inches (36 down to 32) I could lose in my waist.

How do you view "staying healthy"?

I view "staying healthy" as a life journey, making a commit to being active and maintaining a good diet, seven days per week. I stay active by doing things I enjoy like biking, fishing, skiing, and archery. As I get older, competing against others is no longer as strong of a motivator. When I was training and aspiring to be an Olympic-level runner in high school, winning was more important and crucial. Now, I prefer to do things I enjoy and choose activities based on the social environment. For example, I like to go on long hikes (like the Appalachian Trail) and go sport fishing, which are both fun and physically challenging.

When I feel physically healthy, I am also more productive and, overall, a happier person. From a physical and mental aspect, I'm able to respond more effectively to challenging and stressful situations.

What activities do you like to do?

My activities depend on the season. I enjoy being outdoors, observing nature and people. I like walking and hiking all year round. Although most people see biking as a sport, I see it as an activity that I have done since I was a kid. I ride about 5-10 miles at a time on local bike trails, like Rock Creek Park. I also ride with my son's Boy Scout troop. My son is picking up on biking – we've done the C&O Canal, Gettysburg Battlefield, and would like to ride the Antietam Civil War Trail.

In the colder seasons, I enjoy skiing and hunting. I also use the gym at work and fully support officers doing the same. The elliptical is good for reducing impact on the knees and hips. It's also a good calorie burner. During the warmer seasons, sport fishing is fun and requires teamwork. It's a great family activity – the optimal number is 6 to help with gear and manning rough waters. We enjoy going to Virginia Beach to game fish for marlin and tuna. Fly fishing is also great. There is more to it than most know. When wading streams, you need to be alert, visualize things, and learn and practice the motions to cast a fly properly.

It's great that you share a lot of your hobbies with your kids. Are there lifestyle habits that you hope your kids will adopt?

Many of the activities I enjoy now are ones that I learned as a kid. I hope to reinforce in my children to try new things, to learn which activities they do and do not enjoy. I have also taught my kids certain hobbies so that they can decide whether they want to pursue them in the future.

Some activities, like archery, can be harder to pick up as an adult or without someone else introducing you to the sport. For example, I learned bow-hunting as an adult. I was invited by colleagues to give it a try. I picked up a catalog and ordered a bow based roughly on my own dimensions. It was the worst thing I could have done – the bow I ordered wasn't what I needed. I spent a season reading and trying to make it work. I enjoyed shooting the bow but could not progress, so I went to a pro shop for help. I spent a few hours with a staff member, who gave me a few pointers that made a huge

difference. I still wasn't as successful as I wanted to be, so when I got promoted, I decided to treat myself to a new bow. I went to the pro shop again for advice. They outfitted me with the right bow (finally!). On my first trip out, my first 3 shots were at bull's eyes range at 20 yards. Since then, I've kept working at it and now help others. If you are looking to start a new activity, you might have a better learning experience and save yourself time and grief if you find someone who wants to share his/her passion with you. #1 tip for archery – don't buy a bow until you have talked to knowledgeable people first.

One thing I'm happy about is that my kids understand that fitness is a life journey. My parents didn't really reinforce that or understand how it improves the quality of life. I was raised physically active, but our diet was pretty horrible. There are cultural and ethnic differences in perceptions of health, but we must all adapt. Why wait until the doctor tells you have diabetes and instead take steps to prevent it?

Have you ever had a serious injury? And if so, how did you get back in shape?

I got a fracture about 15 years ago, when I was putting my boat away for the winter. I had to sit through the winter, gained weight, which made it harder to be active and prepare for the APFT. It was a physical setback, and I realized that I needed to make some lifestyle changes. When I was beginning to get back into shape, the fracture got re-aggravated. The doctor said nothing could be done, so I continued to work at it slowly. Each person's body responds differently, therefore, I recommend not pushing yourself to failure or "empty," and to listen to your body. Eventually my body healed itself and the fracture is only a distant memory.

Have you had get a medical waiver for the APFT?

No, I've had rotator cuff tears but have never requested a medical waiver. I was able to complete the tests despite injuries, but I don't encourage people to do that. Officers should not jeopardize their health for the requirement. I discussed my goals for health with my physician and find ways to live with my injuries through physical therapy for now, but we may have to discuss other options eventually. It helps to have a brother who is an orthopedist.

Because of my injuries, at times, I've strived to meet the minimum requirements for the APFT, and at other times, I've strived to see how far I can go. Shoulders are my limiting factor. Doing the APFT is also a condition of service and can be a challenge for some people, but there are ways to get help. I believe as officers, that we should try to do our best in everything that we do. The APFT is yet an opportunity to do our best and work to improve.

Through the years, there have been many initiatives to encourage officers to be more active. I've always thought that was a great idea and encourage people to be healthy and active for their own purpose. I think that healthy people feel good, and you can do your job better when you feel good.

Anything you'd like to say to PHS officers on fitness?

I applaud people who achieve high levels of fitness, but I think it is just as great an accomplishment for those individuals who don't achieve the same levels but have tried their best. There are a lot people who are in the middle. They are equally good officers, no less important to the Corps.

When I look at the history of our Corps, I sometimes feel that we are searching for an identity, but for me, our identity is already there. Our physical attributes aren't going to redefine us as a Corps.

What defines us are our missions, public health training and experience, the pride of our service, and the unique qualifications we bring to the challenges of improving public health.

Engineer Category Awards Breakfast

Contributed by LT Matthew Hunt; Engineer PAC

The United States Public Health Service (USPHS) Engineer Professional Advisory Committee (PAC) celebrated National Engineers Week by recognizing several outstanding engineers at its annual breakfast and awards ceremony on Thursday, February 26, 2015, at the National Institutes of Health (NIH) Cloister Building in Bethesda, Maryland. CDR Jill Hammond, 2015 EPAC Chair, served as Mistress of Ceremony. RADM Randall J.F. Gardner, Chief Engineer, provided opening remarks and graciously spoke about the accomplishments of engineers in improving public health. He also encouraged both junior and senior officers to continue our efforts to improve the engineering profession. RADM Gardner read a letter by the Surgeon General, VADM Vivek H. Murthy, highlighting the many contributions of PHS engineers in accomplishing our mission of protecting, promoting and advancing the health and safety of our Nation.

LT Shane Deckert and LTJG Michael Simpson briefly spoke about their experiences deploying to Liberia with the first PHS team for the USPHS Ebola Response. LT Deckert and LTJG Simpson will both present during Engineer Category Day at the upcoming USPHS Scientific and Training Symposium in Atlanta, GA on May 19, 2015.

2015 Engineer Category Annual Breakfast and Awards Ceremony at NIH

LCDR Leo Gumapas presented on the Prevention through Active Community Engagement (PACE) program. LCDR Gumapas and LT John Pesce formed the PACE program and utilized the 2012 National Prevention Strategy, with the goal to provide actionable health information to empower individuals in promoting healthy living. The partnership also offers PHS officers an opportunity to provide community outreach to schools both locally and nationally. The program has grown over the last few years, with a widespread, talented network of PHS officers educating and motivating children to develop life-long healthy habits. LCDR Gumapas challenged engineers to get involved with PACE, as they are always seeking new ideas and volunteers. LCDR Gumapas also thanked our sponsor, the District of Columbia Commissioned Officer Association (DC COA) and encouraged officers to join and participate with COA and its events.

CDR Hammond introduced the keynote speaker, RADM Gary Hartz (Ret.), Director of the Office of Environmental Health and Engineering (OEHE) at the Indian Health Service (IHS) in Rockville, MD. RADM Hartz's keynote address emphasized important qualities of great leadership. He referenced Colin Powell's book "*It Worked for Me: In Life and Leadership"*, describing his13 rules of leadership. RADM Hartz also shared candid leadership examples from his career experience, beginning as an IHS field engineer to his current position as Director of OEHE and encouraged PHS and civilian engineers to continue to lead by example.

2015 Engineer Category Awardees with RADM Gardner (From Left to Right):
RADM Gardner, CDR Engelstad, CDR Windt, CDR Simms, Dr. Pan, and Mr. Hertz.

RADM Gardner and CDR Hammond presented this year's awards to the following recipients:

CDR David Allen Engelstad, PE	PHS Engineer of the Year and NPS Engineer of the Year
CDR Joshua D. Simms	FDA Engineer of the Year (Commissioned Corps)
Steven Hertz, PE	FDA Engineer of the Year (Civil Service)
Christopher S. Pan, PhD, CPE	CDC Engineer of the Year
CDR Shari Windt, PE	IHS Engineer of the Year

CDR Engelstad was also a top ten finalist in the Federal Engineer of the Year (FEYA) Award sponsored by the National Society of Professional Engineers. The 2015 FEYA Ceremony was held later that day at the National Press Club in Washington, DC.

The Awards Breakfast was made possible in part by the generous support of the District of Columbia Commissioned Officer Association (DC COA). Links to additional photographs and videos from the event will be available soon on the EPAC, http://www.usphsengineers.org/index.php/photos-videos and DC COA, http://www.dccoa.org websites.

Rocky Mountain Spotted Fever in Arizona

Contributed by CDR Stephen R. Piontkowski; Environmental Health PAC

A USPHS Environmental Health Officer places long-lasting tick collars on dogs as an effective RMSF prevention measure [tick control] in an Arizona American Indian community.

Rocky Mountain spotted fever (RMSF) is a severe and fatal tickborne bacterial disease that is preventable and treatable. Locally acquired human cases were first identified in Arizona in 2003 and since then the illness has disproportionally affected American Indian communities (over 160 times the U.S. average) spawning response and prevention efforts led by USPHS officers from several categories. Veterinarians, physicians, nurses, and environmental health Commissioned Corps officers made substantial contributions related to: disease etiology; patient treatment; prevention; asset management; and capacity building of local public health infrastructure (Table 1). The health disparity of RMSF among Arizona American Indians is enhanced by several unique factors:

- Novel tick vector (brown dog tick) not associated with U.S. cases prior to 2003
- High (70-85%) free-roaming dog population
- Seasonality of human cases peaks differently than elsewhere in the U.S. and cases occur year-round
- Non-specific and variable human case presentation (e.g. younger, less fever and rash compared to U.S.)
- Varying local capacity to provide services and competing priorities

Table 1.

Professional Category	Contributions by Commissioned Corps officers to Rocky Mountain spotted fever work in Arizona, 2003-2015				
	Prevention	Disease Etiology	Patient Treatment	Asset Management	Capacity Building
Veterinarian	•	•	•	•	•
Physician	•	•	•		•
Nurse	•		•		
Environmental Health	•	•	•	•	•

The expanding epidemic established eastern Arizona as a region with one of the highest RMSF incidence and case fatality rates in the U.S., and strongly challenged our historic understanding of RMSF transmission cycles, geographic distribution, and epidemiology. From this experience we learned that a reduced incidence of RMSF will require sustained:

- Employment of effective tick and animal control measures
- Education of care providers, local leaders, and the public
- Early treatment of suspect patients of ALL AGES with Doxycycline
- Nurturing of partnerships

A USPHS Veterinarian draws blood from a dog in an Arizona American Indian community as part of a canine serosurvey to determine the prevalence of Rickettsia rickettsii in the dog population which helps determine the local risk of RMSF.

It remains essential for the collaboration of USPHS Commissioned Officers to serve in alliance with the affected populations to ensure the prevention, and effective treatment, of autochthonous RMSF cases among Arizona American Indian communities.

Special thanks to: CAPT Jennifer McQuiston and CDR Sherry Burrer, Veterinarian Category; CAPT Marc Traeger, Physician Category; CAPT Kelly Eagle, Nurse Category; and LTJG Kendra Vieira, Environmental Health Category, for contributing to this article.

USPHS Commissioned Officers from several professional categories collaborated and led multidisciplinary teams representing tribal, state, and federal partners in response to, and in the prevention of, RMSF in Arizona American Indian communities since 2003.

Community Based Educational Intervention Programs in Rural Settings

Contributed by LT Selena Bobula and CDR Jeff Lawrence; Therapist PAC

The Pinon Health Center is an isolated hardship site on the Navajo Nation. The physical therapists there serve as professional consultants for all musculoskeletal and neurological related rehabilitation issues. Aside from their regular clinical duties they have started two community educational intervention programs:

HIGH SCHOOL STUDENT ATHELETE CONCUSSION TASK FORCE

In 2013 the Pinon Health Center High School Student Athlete Concussion Task Force was formed by LT Selena Bobula, PT, DPT, NCS, Ms. Leah Atkinson, NP, and the local High School's Athletic Director.

Knowledge Gap: Historically, youth concussions have not been reported and about 3 referrals would be placed to Physical Therapy (PT) annually, primarily concerning headaches and neck pain.

Session Description: School and provider education was heavily promoted at the local high school and health care facility during the 2013-2014 academic year. A baseline concussion screening protocol was established by PT and conducted at the school. Screening included the SCAT3 or ChildSCAT3, Dynamic Visual Acuity, Convergence, and the full BESS Tests, and took fifteen to twenty minutes per student.

One PT blocked four hours a week over fifteen weeks, removing her from clinic. Baseline screens were performed on 112 student athletes (66 males and 46 females) through coordination with the Athletic Director. Screens were entered into the student's electronic health record for future reference.

Outcome: Initially eleven students reported a history of head injuries, 7 were referred and treated for sport-related concussions during the 2013-14 school year. Baseline concussion screening protocol, has more than doubled referrals to PT for concussion management. The reported number of head injuries remains low. Our population also reported more baseline symptoms than published norms, an average of 5.63 +/-5.45 symptoms of a 21 item list per student at a severity of 9.35 +/- 11.03 when a severity of 7 is commonly used as a return to sport cut-off. This data helped providers and PT adjust expectations when known pre-existing complaints existed. By January 2015 over 400 screens were conducted and by February 2015 the team transitioned to the computerized concussion screening known as the "ImPACT Test" for improved screening. Even without the computer screening, low cost and informative baseline concussion screens can be implemented in the rural setting. Baseline screening may be a catalyst in education for community members and providers to maximize evidence-based practice in any setting.

HIGH SCHOOL BASIC FIRST AID CLASSES

Since 2013 CDR Jeff Lawrence has teamed with the High School Junior Army R.O.T.C. program to teach practical First Aid Education.

Knowledge Gap/Community Need: Approximately 14,733 miles of roads cover the Navajo Nation and of that, 77%, or 11,353 miles are unpaved and at times impassable. The premise is to instruct the students in basic first aid for emergency and non-emergency situations, in remote areas where medical transportation is at times several hours away.

Program Description: (5) classroom & (3) Triage Days covering (9) topics:
Lesson 1: The Need for First Aid & Your Response.
Lesson 2: The First Life Saving Steps, CPR, Assessment, Treatment for Shock.
Lesson 3: Controlling Bleeding & Wounds.
Lesson 4: Immobilizing Fractures, Strains, Bruises.
Lesson 5: Burns.
Lesson 6: Poisons.
Lesson 7: Hot & Cold Weather Injuries.
Lesson 8: Bites, Stings, Plant Hazards.
Lesson 9: Patient Transport Carries.

Outcome: 400+ students have attended this training. Students are later placed on teams and rotate leadership rolls during triage lanes. In addition to providing practical first aid knowledge, application and teamwork, this has also helped spark an interest in some of the students to pursue further education in the Health Sciences.

Ways to Keep Your Family Safe in the Kitchen

Contributed by CDR Deirdra Holloway, CDR Elaine Little, LCDR Rachael Lopez, and LT Kelly Verdin; Dietitian PAC

As we try to keep our families and food supply safe we can be inundated with different messages about ways to handle food. Here are some important tips regarding evidence-based recommendations for food safety:

Meat: Raw meat, poultry, and fish may contain harmful pathogens on the surface and in the drippings. Here is what you need to know to prevent contamination to other foods and surface areas.

1. There could be bacteria on meat so I should rinse it before I cook it, right?

   No! Rinsing meats in your sink increases risk for the juices and bacteria to splash onto surrounding countertops and contaminate other foods. It is best to place meat directly into the pan or dish you plan to cook it in. As long as you cook meat to the appropriate internal temperature, any bacteria that had been on the meat will be killed. Go to http://www.foodsafety.gov/keep/charts/mintemp.html for a chart with recommended internal cooking temperatures for meats, poultry and fish.

2. Is there any special place in my refrigerator that I should be using to store meat?

   It is important to store raw meat, poultry and fish in sealed containers or bags to prevent the juices from leaking onto other ready-to-eat foods. It also is a good idea to place these foods below other items that they could contaminate, such as fresh fruits and vegetables. These steps will help to keep other foods from becoming contaminated with bacteria from the raw meat. These same rules apply to your grocery cart!

LT Kelly Verdin coordinated a group of officers to volunteer at So Others Might Eat (SOME) in Washington, DC through the JOAG National Prevention Strategy Subcommittee. LT Kelly Verdin, LT Mavis Darkwah, LT Teisha Robertson, LCDR Luz Rivera, LT Sadhna Khatri, LT Julie Neshiewat, and LCDR Ashleigh Hussey (left to right) gather for a photo after serving hot meals to the homeless.

Fruits and vegetables: These foods are an important part of a healthy diet, but they can become contaminated by harmful bacteria in dirt or soil or by coming into contact with other foods such as raw meat, poultry or fish.

1. When should I wash produce?

   To prevent food borne illness, fruits and vegetables should be washed very thoroughly with running water immediately before eating, cutting, or cooking. Washing just before using will extend the shelf-life of the produce and prevent mold or bacteria growth from damp surfaces.

2. I am not eating the outside of the fruit or vegetable; do I still need to wash it?

   Even fruits and vegetables with non-edible peels, such as melons, must be washed before cut-

ting, because the knife will transfer dirt and/or bacteria directly into the edible part of the fruit.

3. What should I use to wash my produce?

Use running water to wash all produce. Produce with tough peels or outer layers can be scrubbed with a clean produce brush. Do not wash fruits and vegetables with detergent or soap. These products are not approved by the U.S. Food and Drug Administration (FDA) for use on foods. They can be absorbed into the produce and can be harmful if ingested.

LT Kelly Verdin and LT Mavis Darkwah (left to right) wash dishes as part of the SOME volunteer opportunity.

LT Julie Neshiewat, LCDR Luz Rivera, and LT Sadhna Khatri (left to right) assist with serving meals to the homeless at SOME in Washington, DC.

Reusable Grocery Bags: Reusable grocery bags are reusable, but we need to be mindful of cross-contamination that can cause a foodborne illness. Following these three simple steps can keep us all safer.

The simple solution:
1. Use designated bags for non-food items, cleaning products, perishables, produce, and meats.
2. Wash these bags routinely. Machine or hand washing reduces bacteria on bags by more than 99.9%. Be sure to allow them to dry thoroughly.
3. Do not store in a hot vehicle, as higher temperatures can cause germs like Salmonella bacteria to grow faster.

In March 2013, the MaCorr Market Research Survey reported that 39% of the consumers surveyed have switched to reusable bags. News articles have increased reporting on the potential cross-contamination of foodborne pathogens and reusable bags.

In 2011, the University of Arizona randomly tested 84 consumer's reusable bags for food borne pathogens and discovered 50% of the bags were contaminated. This is a potential source for foodborne illness according to the study. This study also revealed only 3% of those interviewed routinely washed and sanitized their bags.

Kitchen Sponges: According to the new survey conducted by the Academy of Nutrition and Dietetics and the ConAgra Foods Foundation, dishcloths (64%) and sponges (47%) are the cleaning tools of choice for

most households. It is important to remember that sponges and cloths can absorb harmful pathogens, especially when you are wiping up spills and liquids on your countertops. Bacteria and germs can spread rapidly in your kitchen and onto food, putting you and your family at risk for food poisoning.

In order to keep sponges safe, here are some good tips to follow:

1. Wash clean sponges daily in the dish washer or microwave a damp sponge for one minute to kill 99% of bacteria. Replace sponges frequently and store in a dry location. Less porous dishcloths should be laundered and washed in hot water and dried in the dryer.
2. Replace your sponge regularly, and if it starts to smell dispose of it immediately.
3. Store sponges in a dry area and wring out your sponge after each use, making it free of food particles.
4. Use paper towel or disinfectant wipes to clean up meat or poultry juices.
5. Use paper towel or disinfectant wipes to clean countertops, instead of sponges.

References:
Meat: http://www.foodsafety.gov/keep/basics/clean/index.html
Fruits and Vegetables: http://www.foodsafety.gov/keep/types/fruits/tipsfreshprodsafety.html
Reusable bags: http://www.foodsafety.gov/blog/reusable_bags.html
http://uanews.org/story/reusable-grocery-bags-contaminated-e-coli-other-bacteria
http://technews.tmcnet.com/news/2013/03/19/7000845.htm
Sponges: http://homefoodsafety.org/safety-tips

Pharmacy Based Tobacco Cessation Program at Phoenix Indian Medical Center

Contributed by LCDR Jing Li, LCDR Holly Van Lew, and CDR Megan Wohr; Pharmacy PAC

Tobacco use costs the US over $289 billion each year in medical care and productivity . Tobacco use is the number one preventable cause of illness and death among American Indians/Native Alaskans (AI/ANs). AI/ANs have the highest rate of adult cigarette use, 26% in comparison with approximately 18% of other ethnic groups across the United States according to the Centers for Disease Control (CDC)'s MMWR 2013. The success rate of tobacco cessation is extremely low, only 7%, when a person tries to quit on his/her own. However, research has shown with intensive tobacco cessation intervention, counseling, and pharmacotherapy, success rates may increase by up to 30%. An evidence-based, multi-faceted, tobacco cessation program culturally tailored to AI/AN's, has the potential to significantly reduce the burden of tobacco-related disease in a population with extraordinarily high rates of health disparities.

At Phoenix Indian Medical Center (PIMC), we use evidenced-based intensive interventions to help patients through the tobacco cessation process. Patients are provided opportunities for educational group sessions, intensive 30 minute private counseling sessions, and pharmacotherapy techniques, such as… . The Center also offers complementary/alternative medicine (CAM), such as ear acupuncture. Patients are followed in person and by phone to monitor progress, adjust therapy and provide support. The program also collaborates with Arizona Smoker's Hotline (ASHLine) to offer patients additional counseling and support and assistance 24/7.

The PIMC Tobacco Cessation Clinic was established in 2001 by CDR Megan Wohr, who later became the Indian Health Service (IHS) National Tobacco Control Specialist with the Tobacco Task Force through the IHS Division of Epidemiology and Disease Prevention. Since implementation of the program, the clinic has flourished under the multifaceted approach used consistently throughout the years. The PIMC Pharmacy Based Tobacco Cessation Program has shown cessation rates that exceed the national average of 23%; attaining a quit rate of 34% in 2013, and a preliminary quit rate of 48% in 2014.

Indian Health Service Trip to the Village of Koyukuk, Alaska

Contributed by CDR Stella Wisner; DePAC

I'm writing to tell you about one aspect of my new job at the Indian Health Service clinic in Fairbanks, Alaska. I transferred from the Coast Guard to the Indian Health Service just last August. Much of my day here in Fairbanks is spent providing dental care exclusively for the Native American population. In addition to traditional care at the clinic, I have been assigned seven trips this fiscal year to provide onsite care in remote villages. There are no dentists in these villages. It would be prohibitively expensive for them to come to us routinely, so we go to them. The twelve dentists in our clinic will serve 25 villages over the course of the year, making a total of 76 week-long trips. Three hygienists will serve nearly all of these same villages and make a total of 28 trips.

Two dental assistants in the single engine plane.

My very first trip was to the village of Koyukuk from Monday December 1st to Friday December 5th. Koyukuk is a small village with a population of about 95 people with 42 households, 24 of which are families. The city is not accessible by roads. The residents are primarily Koyukon Athabscans with a subsistence lifestyle. Some of them work at outside jobs, such as teachers, health aides, tribal council members, custodians, power and water maintenance workers, oil field workers, public safety officers, and others. However, many depend on hunting and fishing for nutrition and cultural practices.

On Monday, my two assistants and I flew on small planes from Fairbanks to Koyukuk. Reaching Koyukuk required two legs for a flying time of two and a half hours. The first leg was on a 9-seat single engine plane, and the second leg was on a 16-seat twin engine plane. The flights were smooth and uneventful, and the surrounding wild and rugged Alaskan scenery was very beautiful. Usually, there is only one dental assistant to accompany each dentist per trip. However, since one of my two assistants was a trainee, I was very fortunate to have the extra help for my first trip. There were very few passengers on our flights as most of the space and weight were taken up by our luggage and our heavy equipment.

A new health clinic is currently being built in Koyukuk. For now, there is absolutely no dental equipment or supplies there, so we brought all the equipment needed to set up a dental clinic. That would include a portable air compressor, dental chairs, field units for handpieces and suction, x-ray equipment, ultrasonic cleaner, sterilizer, dental charts for everyone in the village, abundant supplies and instruments for restorations, extractions, even pulpectomies. If needed, we were prepared to start root canal therapies for those who were willing to travel to Fairbanks at their own expense to have that, as well as other advanced care, completed. Infection control is crucial, and we perform spore tests on the sterilizers on every trip.

Repairing the portable dental chair,

There are no hotels or restaurants in Koyukuk, so we brought cots, sleeping bags, and food. We packed enough food to last not only for the week but for the occasional times when our flights home might be delayed, mostly due to weather. For this trip, we worked and stayed in an elementary school classroom. The school is one of two places in Koyukuk that have running water. The other place with running water is the washeteria. The residents use the washeteria for laundry, showers, and fetching water to take to their houses for washing and cooking.

During our stay, there were at least four power outages, affecting phone service and heat, but none lasting more than 10 minutes each nor during operative procedures. There were four incidents of loss of water pressure that were somewhat inconvenient for us but did not affect patient treatment. However, we didn't have water for showers one morning, and that's where baby wipes came in handy. Although the temperatures were unusually warm, with highs in the 20's and lows in the teens, we had a snow storm on the evening of the 2nd, severe enough to cut off long distance telephone service until the next morning. We were not able to contact our loved ones back home during that time. We had no internet service during our stay, though one of the teachers offered the use of student computers to access the internet if needed. We did not take advantage of the offer as we were kept very busy with our workload.

Out of a population of 95 people, we saw almost 30 adults and 20 kids in four days of clinical work, putting in over 10 hours per day. We pulled the children out of the classrooms for their appointments during school hours and focused on doing exams, sealants, and applying fluoride varnishes. We will make return trips to make sure all the planned work is completed. Conscientiously keeping track of their needs and following-up has led to a significant decrease in the children's decay rates over time. The adults were seen during non-school hours and during lunch time for exams and emergency treatment. Our patients were very happy to have us there and accommodated us in any way they could.

In my 15 years in the PHS, these village trips were the closest to the work I grew to love during dental school. As a dental student at Loma Linda University, I would regularly travel along with a cadre of medical and dental students to provide care on weekends to the residents of impoverished Mexican border towns. These trips were arranged by my mentor, Loma Linda oral surgery clinical professor and director of the student missionary program, the late Dr. Jerome Jablonski, who was also a former PHS dental officer. Interestingly, when he was first commissioned in 1963, he was supposed to be detailed to the Coast Guard in Alaska but wound up instead with the IHS in the Dakotas. I believe it was his experience as a PHS officer in the IHS that equipped him with the necessary skills to manage the mission trips program that ultimately influenced my own career path towards the IHS.

Dr. Jerome Jablonski USPHS(ret) and CDR Stella Wisner.

The Immigration and Customs Enforcement (ICE) Artesia Family Residential Facility (AFRC)

Contributed by LT Kristina M. Snyder; Pharmacy PAC

The Immigration and Customs Enforcement (ICE) Artesia Family Residential Facility (AFRC) in Artesia, New Mexico was developed and opened in June 2014 in response to an influx of undocumented women traveling with children apprehended at the Southwest border. The site primarily operates with ICE Health Service Corps (IHSC), as well as? USPHS Commissioned Corps officers on temporary duty assignment (TDY) rotations from two weeks to one month. Pharmacy services are provided via a remote filling pharmacist located in Taylor, TX. I served a TDY rotation at the facility to establish pharmacy operations in conjunction with the remote pharmacist.

Upon arrival, one of the initial tasks that required attention was the method of medication administration. One of the continuing challenges of the residential facility is that each medication must be prescribed as Nurse administered or Pill Line which is directly observed therapy (DOT). No medications were allowed to be dispensed as self-administered, or "Keep on person" (KOP). With this mandate in place, the time required to administer medications was daunting.

My initial attempt to minimize the volume of doses given per prescription was educating prescribers to write for as little numbers of day supply as appropriate (a max of 30 days for non-maintenance medications). Another effort initiated was asking providers to order medications "as needed" whenever possible.
This included medications that patients may require around the clock such as allergy, GERD, or pain medications. The benefit of writing prescriptions as needed was so patients could choose when they did not want a dose, without requiring refusal documentation.

Another initial task was organization and supply of pharmaceuticals. With no dedicated on site pharmacy personnel to manage the pharmaceuticals stock, AFRC medical staff found it difficult to assess what medications were available and maintain an adequate supply. The first endeavor I undertook was to perform an inventory of all medications. Space was a constant challenge at AFRC, whose main medical clinic was located in a trailer at the Federal Law Enforcement Training Center (FLETC). I was able to reorganize the medications, which had been stored in several locations, according to use, thereby improving accessibility to pertinent staff. To address the issues of supply and demand, I developed an inventory list with PAR levels of all stocked medication. The system was then developed for an AFRC staff member to review the PAR levels weekly, maintain a vigilant watch of stock, and re-order in a timely and consistent manner.

During this period of not having a full-time pharmacist on staff, there was a need to provide resources to providers who are unfamiliar with pediatric dosing. With the assistance of fellow pharmacists in IHSC, we developed a weight-based pediatric dosing guide for the most commonly prescribed medications at the facility. This guide provided a quick, easy and accurate dosing reference, ensuring providers are selecting the available medications. Identifying a need for continued pharmacist support, a telephone pharmacist consultant program was developed. After identifying seven interested pharmacists within IHSC, I developed a scheduleof on call pharmacists for the facility, rotating every seven to ten days. With this system in place, providers and nursing staff could utilize the clinical expertise of pharmacists in our agency while providing cost savings and reducing the chance of medication dosing errors.

My TDY to AFRC proved to be an invaluable experience I will not forget. This assignment exemplifies the uniqueness of being a Commissioned Corps pharmacist, by providing ingenuity and resourcefulness in areas outside of our typical, daily operations.

Where Does the Lab Fit In?
Defining Our Role in Public Health Events

Contributed by LCDR Jennifer Tate; Health Services Officer PAC

Laboratory's Role on Native American Reservations

Common characteristics of a Native American Reservation are:

- ◊ Generally in remote locations where access to quality health care and resources are limited.
- ◊ May be in rural areas. Many located in some of the poorest counties in the United States[1].
- ◊ The Bureau of Indian Affairs and Indian Health Service are the 2 main government agencies that the tribes deal with.

Some public health issues that can be encountered on Native American Reservations include: substance abuse, domestic violence, tuberculosis and other communicable disease outbreaks, alcoholism, and motor vehicle accidents. One may ask, "How does the lab fit into some of these public health issues?" Although medical technologists are not counselors, they are great listeners. One of the most important steps in the care of patients on the reservation is understanding the significance of their spiritual health. Phlebotomists, or in many cases medical technologists performing phlebotomy, are one of the first people the patient sees. Simply lending an ear can help many patients. Additionally, while drawing blood, lab personnel are able to explain the ordered tests in greater detail to the patients, if required. Lab personnel provide expertise on the testing performed and can communicate in "plain English" to the patients the type of testing ordered and what each test is looking for.

A recent example of the laboratory's role on Native American reservation was illustrated during the 2013 increased cases of positive tuberculosis patients. Many Native American Reservations are in rural, remote areas. Overcrowding, lack of medical knowledge, and limited access to health care are some of the challenges Native Americans face. Most likely due to these issues, my most recent public health encounter is with a tuberculosis outbreak on the reservation where I work and in some of the surrounding communities. So, where does the laboratory fit into a TB outbreak? Public health nursing staff, physicians, and the health department are already involved. The outbreak produced necessary safety discussions amongst the staff in the clinic. Discussions were brought up to the "policy makers" about the risks posed to lab personnel during the blood collection process and the processing of sputum samples in lab that does not have a biological safety cabinet (BSC). As a result of these discussions, a biological safety cabinet is now installed in the laboratory at my duty station on the Yakama Indian reservation. As a part of contact precautions, everyone in the clinic is now fit tested. After safety, the major role the clinical lab played in this TB event was the pre-analytical and post analytical stages. In the beginning of the outbreak, since the lab had not been properly fit tested and the BSC was not installed, lab personnel could not open up the collection canisters to verify proper labelling, collection, and packaging of the samples to be sent to the state public health department. Needless to say, many samples were rejected, thus delaying diagnosis and treatment. Upon the sample rejections, I hosted an in-service to the clinical and public health nursing staff detailing the proper collection of the sputum samples, labeling, and packaging the samples. The outcomes of the in-service eliminated the numbers of rejected samples and produced faster turnaround times for results. Laboratory personnel played a critical role in the post analytical stage of the tuberculosis outbreaks as well. Medical technologists were available to interpret laboratory results and answer any questions about the testing performed in relation to the patient's care. Additionally, laboratory workers were responsible for tracking cases processed through the laboratory from the time the sample is received to sending it to the state health department, to resulting and getting reports to the physicians and PHNs.

Disaster Events and the Laboratory

In the early 1990's medical technologists were commissioned into the USPHS. Now that medical technologists are in the same service as nurses, psychologists, pharmacists, physicians, and other disciplines, where do we fit in when we are called to deploy? Before questions are answered about where do laboratory personnel fit in during disaster missions, let's focus on the skills and talents garnered by the profession. Medical technologists at a minimum have Bachelor's of Science degrees, many have advanced degrees (MPH, MHA, MS, PhD), pay close attention to detail, are very thorough (especially Blood Bankers and Microbiologists), and have knowledge that spans over multiple disciplines (Hematology, Chemistry, Microbiology, Molecular, Blood Banking, and more). One of the more useful skills a medical technologist can offer when on deployments is the attention to detail. Whether in an administrative role or out in the field administering first aid, a medical technologist is trained to be thorough, as our careers and existence depend on it. Because of diverse trainings, medical technologists have the ability to plug into any lab in the country. When medical technologists are sent to a disaster area and need to provide hospital care, they are versatile in that minimal training is needed to fully operate in virtually any medical laboratory. They have the skills to work alongside veterinarians and entomologists and identify/confirm various zoonotic diseases such as: Q-fever, Hantaa Virus, anthrax, and Rift Valley Fever[2] and the knowledge to aid in active disease surveillance.
In a disaster zone, point of care testing (POCT) equipment and other portable lab testing devices maybe necessary. Medical technologists are very resourceful in using portable devices, such as the iStat, when delivering patient care in disaster zone. They have the knowledge and skills to train other health care professionals on the proper usage of such POC devices, thus delivering quality care even in the midst of the aftermath of a hurricane. For example, in the American Journal of Clinical Pathology, Kost et al suggested that POCT machines and testing strips should be stock piled and ready for use[3]. In the wake of Hurricane Katrina, some deaths were related to hypo- and hyperglycemic patients that did not have their glucose meters.

Closing Thoughts

Being a medical laboratory scientist is a very broad career field. Professionals in this category are trained to do anything and everything lab-related. This is a very technical, specialized, and at times mentally draining profession. However, everyone should be PROUD of their work. The work goes far beyond the test tube in a mediocre basement laboratory. Medical laboratory scientists are essential in diagnosing, surveillance, education (domestically and internationally), and in research and discovery. This cadre of officers has the ability to adapt to any lab-related situation. Whether you are working on an IHS reservation one day and then called to go to Afghanistan the next day, we are always ready and gladly accept the challenge. I am honored and proud to be a medical laboratory scientist!

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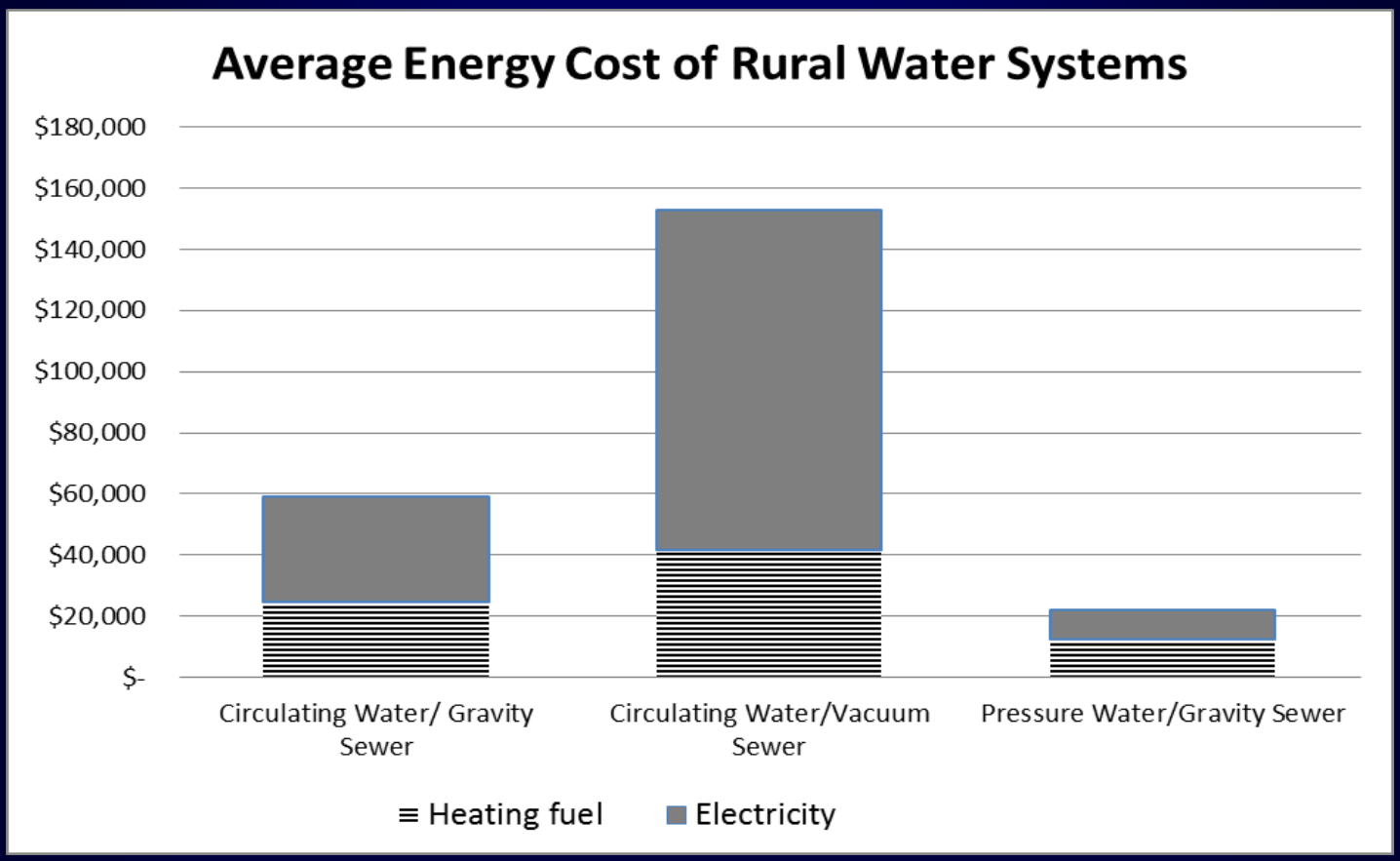
Lessons Learned: Vacuum Sewer Pumps

Contributed by CDR John Nichols & Christopher Mercer; Engineer PAC

Background:
The Alaska Rural Utility Collaborative (ARUC) is an Alaska Native Tribal Health Consortium (ANTHC) program to manage, operate, and maintain water/sewer systems in rural Alaska. The program has 27 member communities each with unique operational challenges and environmental threats. Long term system sustainability is a primary focus of ARUC; recognizing the critical overlap of energy efficiencies, the team has focused on implementing innovations, many of which are new to the region. Lessons learned while operating these 27 member community systems are then shared with Native Alaskan communities state wide.

Vacuum Sewer:
Vacuum sewer systems are typically used in communities that are flat, have permafrost and shifting soils where typical gravity sewer cannot function. Vacuum sewer systems act like giant wet/dry vacuums to suck sewage to a central collection tank, even if the shifting ground has changed the slope of the sewer pipes. Vacuum sewer systems have the highest energy usage of any type of water/sewer system, as seen in the chart below from ANTHC's Energy program. The very high electrical costs prompted ARUC to prioritize electrical efficiency in these communities.



Vacuum Sewer Pumps:
Suction in vacuum sewer systems is created by very large pumps. Most communities have two to four pumps ranging from 12 to 25 horsepower which use enormous amounts of electricity. Until very recently, rotary vane pumps were standard for vacuum sewer.

Rotary vane pumps are expensive, with installed prices of about $20,000 and $40,000 each for the 12 hp and 25 hp pumps, respectively. They are fairly energy efficient when in new condition, but have vulnerabilities, including very high maintenance cost and complexity, dramatically reduced efficiency if sewage gets sucked into the pump, and a history of starting fires when operated under certain conditions. One community has spent $70,000 over the last two years replacing rotary vane pumps destroyed by fire.

The Solution:
A new style of vacuum sewer pump, known as an 'oil less' pump became available for sewage use in 2012. This pump uses two heavy-duty rotating steel claws to generate vacuum. This eliminates the need for 8 exhaust oil filters and 5 gallons of oil, and is more easily recovered after control failures allow sewage to be sucked into the pump. Oil changes are reduced to changing an automobile style oil filter and one quart of oil every 20,000 hours, at a cost of $20! Compared to 5 gallons of oil, 9 filters and $1,000 every 500 hours with the rotary vane pump, this is a savings of approximately $4,000 per year, per pump, just in oil change costs.

ARUC installed the first of these new pumps in Alaska in 2013. After a fire destroyed a rotary vane pump in Chevak, ARUC installed an oil less pump and carefully tracked electrical data. Data shows this pump reduced total electrical costs by $17,775 over the last year.

The total annual savings by replacing the Chevak rotary vane pump with an oil less vacuum sewer pump:

Oil change costs:	$ 4,000
Total Electricity savings:	$17,775
Total Savings Annually	**$21,775**

ARUC is currently seeking funding to replace a total of 12 rotary vane pumps in six communities. Once installed, these pumps will result in operational savings of over $260,000 per year.

ARUC utility support engineer Michael Nabers (foreground) installing two oil less vacuum pumps in the community of Savoonga's sewer plant, with plant operator Cedric Toolie in 2014.