



Newsletter



U.S. PUBLIC HEALTH SERVICE

Winter 2018

Inside this Edition

- PAC's Chair Corner1
- Dental PAC2
- Dietitian PAC4
- Engineer PAC.....7
- EHO PAC10
- HSO PAC12
- Nurse PAC.....15
- Pharmacist PAC17
- Physician PAC18
- Scientist PAC20
- Therapist PAC.....24
- Veterinarian PAC.....27
- Multi-PAC RIST Event29
- PAC Chairs31

PAC's Chair Corner

By LCDR Rodney Waite, Chair of the PAC Chair Group

Welcome to 2018's Fall/Winter edition of the Combined Category Newsletter! All summer, while the trees were gracing many of us with their greenery, you, our Officers, have been working hard in our various Agencies, on diverse deployments, and in our communities to advance public health. "Work hard, play hard" is one of my favorite mantras when balancing life, especially during more intensive periods of effort.

Agency work, deployments, community engagement, and fitness are common themes in this newsletter, given their importance in achieving public health. I encourage you to take 15 minutes to fully engage with the Officers and stories here. As mentioned last issue, this newsletter was designed to increase awareness of "all the wonderful things the categories do". Now, perhaps more than ever, it is important to continue to highlight our impact as a Commissioned Corps, and nothing may do that more than these types of stories. The PAC Chairs Group understands that despite our separate backgrounds, education, and skillsets, we are one Commissioned Corps, united in our Mission. So, while our individual efforts are somewhat dictated by profession, Agency, and billet, we are not bound by just these restraints, since we can also "work hard" in community engagement and "play hard" in our fitness. Regardless, we are all always working towards an overarching goal: to improve the health and safety of the nation. These stories exemplify this, which is why this newsletter has been forthcoming for more than five years.

Regardless of your "day job", the service exemplified by the Officers in these stories should energize your work and play. I hope you are motivated whenever you read narratives that happen to echo your own USPHS endeavors, while learning from those which are different. Additionally, I hope this newsletter enables us all to become better public health storytellers, within our Agencies, in the community, and in our fitness. Perhaps the mantra should be "work hard, play hard, share widely"? So, continue to "Step it Up!" and, who knows, maybe you too will be in a future public health article?

LCDR Rodney Waite, 2018 PAC Chairs Group Chair

Dental Professional Advisory Committee

Remote Area Medical (RAM) Deployment, Durant, Oklahoma

Contributed by: LCDR Thuc Ngo

I was fortunate and blessed to be able to obtain permission from my local authority to deploy and participate in the Remote Area Medical (RAM) mission held on June 2-3, 2018, at Southeastern Oklahoma State University in Durant, OK. This was an official Corps deployment and was held in the Bloomer Sullivan Gymnasium and Arena on the university campus. The school, using student dormitories, provided housing and meals were provided by volunteer organizations during the event. All Officers involved in this event volunteered their own personal time and self-funded their travels to serve on this deployment.



Pictured above, RADM Orsega addressing and offering words of encouragement to USPHS Officers at the RAM event

Led by Team Commander of RDF-4, CAPT Brandon Taylor, 127 USPHS Commissioned Corps Officers served at this event. Besides Dental, many other categories participated including: Dietician, Engineering, HSO, Nursing, Pharmacy, Physician, Scientist, and Therapist. Officers worked with RAM volunteers to provide care to 566 patients who came from 4 different states over the two day clinic period. Of these 566 patients, 362 received dental care, 193 received medical care, 299 received vision evaluations, and some received more than one service. Dental care included 172 tooth extractions, 96 fillings, and 103 cleanings. The on-site mobile lab created 362 pairs of eyeglasses. Over the two-day event, an estimated \$297,734 worth of free medical care was provided to 566 patients.

In addition to medical, vision and dental services, 270 gently worn and clean shoes were donated by RDF-4 Members to the Shoe Pantry. The pantry was set up near exit points, giving every patient and/or family member an opportunity to browse and choose shoes prior to leaving the building. 248 pairs of shoes were given to patients with the remaining being donated to a community service organization.

Led by CAPT Bob Smith (ret.), a group of 21 USPHS dentists, including RADM Makrides, Dental Chief Professional Officer; CDR Daniel Barcomb, DePAC Chair; and CDR Kevin Zimmerman, DePAC Vice Chair; who each worked seamlessly with all the other categories and RAM volunteers to provide outstanding patient care. I was in awe seeing the cooperation and teamwork displayed by everyone there. There were physicians, nurses, pharmacists assisting dentists, and every

Dietitian Professional Advisory Committee

A Plant-Based Diet: Something to Consider for Our Health and the Environment

Contributed by: LCDR Kelly Ratteree

Interest in the concept of plant-based eating has been growing across the United States.¹ While preventative health benefits of consuming plant-derived foods have been widely recognized, there is a growing body of literature supporting therapeutic benefits of plant-based eating.² As researchers continue to focus on strategies for promoting environmental sustainability, it is becoming increasingly clear that current dietary intake habits in our country are not sustainable.³⁻⁴ Evidence suggests a widespread shift toward more plant-based eating could be an impactful intervention for improving environmental health.³⁻⁴ The synergy of evidence by which plant-based eating can significantly improve our health and longevity, as well as that of the environment, is striking and should not be overlooked.²⁻⁴

When discussing plant-based eating, it is necessary to define the criteria utilized to characterize the diet, as the term is used to describe eating patterns along a broad spectrum. At the liberal end of the spectrum is a plant-based omnivorous diet, which prioritizes a greater proportion of plant-derived foods but still includes moderate amounts of animal products. On the stringent end of the spectrum is strict veganism, which excludes all foods containing animal-derived ingredients. Between these two extremes are varying levels of vegetarianism. A vegetarian may eat only plant-based foods but still include dairy (lacto-vegetarian), eggs (ovo-vegetarian), seafood (pesco-vegetarian) or any combination of the three (lacto-ovo-pesco-vegetarian). Further, terms such as reductarian, flexitarian, semi-vegetarian, and others are frequently used to describe similar dietary patterns.⁵ For the purposes of this paper, the term 'plant-based' will be utilized to describe a diet which prioritizes plant-based foods but may still include animal-derived foods in moderation.



Preventative health benefits of consuming a plant-based diet have been widely recognized, including decreased risk of overweight and obesity, cardiovascular disease, hyperlipidemia, hypertension, diabetes and cancer.² There is a growing body of research supporting use of a plant-based diet for therapeutic applications as well.² Weight loss, reversing atherosclerosis, lowering cholesterol, decreasing blood pressure, reducing body fat, improving glycemic control and insulin sensitivity, and reducing inflammatory markers are among the therapeutic uses for which the diet has been successfully applied.^{2,6} Existing studies suggest any shift toward plant-based eating, compared with a baseline omnivorous diet, is beneficial and the degree of benefit increases with the degree of plant-based eating.¹⁰

One hesitation people often express related to adoption of a vegetarian or vegan diet is concern for nutrient inadequacy. Evidence shows when well-planned, it is fully possible to meet 100% of nutrient needs while excluding animal products from the diet.² Protein is one nutrient people fear will be consumed inadequately without meat in the diet. However, vegetarian and vegan diets actually meet or exceed recommended intakes and this is true across the lifecycle and for athletes.¹¹ The key is to consume a variety of plant-based protein sources, including seeds, nuts, beans, tofu and other soy products, lentils and legumes, to ensure exposure to the full spectrum of amino acids.

Dietitian Professional Advisory Committee

Another nutrient in question with plant-based eating is omega-3 fatty acids. Alpha-linolenic acid (ALA) intake is similar between vegetarian and vegan versus omnivorous diets.¹² However, eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) intakes are lower in vegetarians and absent in vegans which is reflected in blood and tissue levels.¹² The clinical relevance of this is unknown, as ALA is endogenously converted to EPA and DHA. By optimizing intake of ALA, it may be possible to increase endogenous production of EPA and DHA enough to compensate. Dietary sources include seeds (flax, chia, canola, and hemp), walnuts, and their oils.²

Contrary to popular concern, iron consumption is the same or higher in vegetarian and vegan diets.¹³ A difference is observed in iron stores themselves, which is likely due to lower bioavailability of non-heme iron from plant foods compared to heme iron in animal sources.¹⁴ Non-heme iron absorption is dependent on iron status and dietary enhancers and inhibitors.² The body has capacity to adapt and absorb non-heme iron more efficiently overtime following adoption of a plant-based diet.¹⁵ Iron absorption enhancers include citrus fruits and juice, potatoes, dark green leafy vegetables, and melons.¹⁶

Zinc intake is similar or somewhat lower in vegetarians and vegans compared with those following an omnivorous diet, as are serum concentrations, but they all remain within the normal range.¹¹ Adequate zinc intake can be achieved by including plant-based sources, such as soy products, legumes, grains, seeds and nuts. Similarly, inclusion of plant-based iodine sources can prevent deficiency, including iodized salt and sea vegetables.²



Calcium and vitamin D are predominantly consumed through dairy products. Intake in vegan diets varies widely depending on whether fortified foods are consumed and the extent of sun exposure as it pertains to vitamin D status. Bioavailability of calcium from plant-based foods is lower secondary to their content of oxalates, phytates and fiber, which decrease calcium absorption.² The key is regular consumption of plant-based calcium sources, such as fortified plant milk, juices, cereals and breads, calcium-set tofu, white beans, almonds, tahini, figs, oranges and kale, as well as vitamin D-containing margarines, eggs, and UV-irradiated mushrooms.

Lastly, vitamin B-12 is notably not a component of plant foods. As a result, fortified foods and supplements are required for vegans and for some vegetarians. Vitamin B-12 fortified foods include some milk alternatives, bars, cereals, and nutritional yeast. In summary, nutrient adequacy can be achieved through awareness and careful diet planning. While priority should be given to whole foods over refined and processed foods, regular inclusion of fortified foods, supplements, and plant-based sources of the above nutrients, allow for a complete diet without the consumption of animal-derived foods.

Another barrier people identify when considering a healthier diet is cost. While the current food supply does not incentivize healthy eating,⁹⁻¹⁰ evidence suggests a healthful diet can be achieved even while working within the same food budget.⁷⁻⁸ Plant-based foods are among those pinpointed to offer the strongest return on investment for improving diet and health. Specifically, spending more on nuts, soy, beans, and whole grains; and less on red and processed meats and high-fat dairy is demonstrated to be most influential for a cost-efficient way to improve diet quality.⁷

Dietitian Professional Advisory Committee

Broadening the scope to consider the environment, plant-based diets use fewer natural resources, including water and fossil fuel, and produce less environmental damage.³ Animal agriculture is associated with land degradation, air and water pollution, loss of biodiversity, and has been linked with global warming.³⁻⁴ Meat production contributes significantly to emissions of carbon dioxide, methane and nitrous oxide.³⁻⁴ Additionally, antibiotic use in animal farms has generated antibiotic-resistant bacteria, a well-documented public health problem. This synergy of benefits of plant-based eating for optimal health and the environment is striking and should be considered when working with patients and policy alike.⁴



In conclusion, a carefully planned plant-based diet is not only nutritionally adequate and affordable, but also offers both therapeutic and preventative health benefits. A population-wide shift toward plant-based eating would be more sustainable environmentally. Registered Dietitians are optimally qualified to help people adopt a plant-based diet. Commissioned Corps Officers are uniquely positioned to align individual counseling, policy and public health messages with these facts, while simultaneously setting a positive example with our own dietary habits.

References:

1. Corrin T, Papadopoulos A (2016) Understanding the attitudes and perceptions of vegetarian and plant-based diets to shape future health promotion programs. *Appetite* 109:40-47.
2. Melina V, Craig W, Levin S (2016) Position of the academy of nutrition and dietetics: Vegetarian diets. *J Acad Nutr Diet* **116**:1970-1980.
3. Pimentel D, Pimentel M (2003) Sustainability of meat-based and plant-based diets and the environment. *Am J Clin Nutr* 78(suppl):660S-3S.
4. Gephart J, Davis K, Emery K, Leach A, Galloway J, Pace M (2016) The environmental cost of subsistence: Optimizing diets to minimize footprints. *Science of the Total Environment* **553**:120-127.
5. Dwyer J (1990) Convergence of plant-rich and plant-only diets. *Am J Clin Nutr* 70(suppl):620S-2S.
6. Barnard N, Levin S, Yokoyama Y (2015) A Systematic Review and Meta-Analysis of Changes in Body Weight in Clinical Trials of Vegetarian Diets. *J Acad Nutr Diet* **115**:954-969.
7. Bernstein A, Bloom D, Franz M, Willet W (2010) Relation of food cost to healthfulness of diet among US women. *Am J Clin Nutr* **92**:1197-203.
8. Nansel T, Lipsky L, Eisenberg M, Liu A, Mehta S, Laffel L (2016) Can Families Eat Better Without Spending More? Improving Diet Quality Does Not Increase Diet Cost in a Randomized Clinical Trial among Youth with Type 1 Diabetes and Their Parents. *J Acad Nutr Diet* **116**:1752-1759.
9. Rao M, Afshin A, Singh G, Mozaffarian D (2013) Do healthier foods and diet patterns cost more than less healthy options? A systematic review and meta-analysis. *BMJ Open* **3**:e004277.
10. Rehm C, Monsivais P, Drewnowski A (2015) Relation between diet cost and Healthy Eating Index 2010 scores among adults in the United States 2007-2010. *Preventive Medicine* **73**:70-75.
11. Mangels R, Messina V, Messina M (2011) *The Dietitian's Guide to Vegetarian Diets*. 3rd ed. Sudbury, MA: Jones and Bartlett.
12. Sanders T (2009) DHA status of vegetarians. *Prostaglandins Leukot Essent Fatty Acids* 81(2-3):137-141.
13. Van Dokkum W (1992) Significance of iron bioavailability for iron recommendations. *Biol Trace Elem Res* 35(1):1-11.
14. Rizzo N, Jaceldo-Siegl K, Sabate J, Fraser G (2013) Nutrient profiles of vegetarian and nonvegetarian dietary patterns. *J Acad Nutr Diet*. 113(12):1610-1619.
15. Hunt J, Roughead Z (2000) Adaptation of iron absorption in men consuming diets with high or low iron bioavailability. *Am J Clin Nutr* 71(1):94-102.
16. The Academy of Nutrition and Dietetics (2018) Iron Deficiency Anemia Nutrition Therapy. *Nutrition Care Manual*.

Engineer Professional Advisory Committee

Puerto Rico Medical Facilities – Long Term Recovery Ops

Contributed by: CDR Kris Neset, CDR Tanya Davis, CAPT David Mazonra, and CDR Michael Termont

Introduction

Puerto Rico's critical infrastructure was in ruins after Hurricane Irma skirted the island on September 7th, 2017, and then Hurricane Maria made a direct hit on the island on September 20th, 2017. Maria left Puerto Rico's 3.7 million residents without electricity - making headlines across the country (FEMA, 2018). Critical health infrastructure in Puerto Rico was in a stressed state before Hurricane Maria's 155 sustained mph winds (Category 4) and heavy rains hit Puerto Rico. As public health engineers, we are involved daily with cost estimating, planning, design, construction, and operation and maintenance for a variety of infrastructure including water, wastewater, solid waste, roads, electrical utilities, and health care facilities. We had the necessary knowledge, experience, and skill set to assist the Puerto Rico Department of Health (PRDOH).

Mission & Questions

On March 22, the first USPHS Engineer Team of 4 engineers was deployed to assist with the Hurricane Maria Health and Social Services (HSS) Sector Recovery Support Function (RSF). The engineer team was detailed to the Puerto Rico Department of Health to assist with development of Category E (Buildings and Equipment) detailed permanent cost estimates. The mission conveyed by CAPT Miguel Cruz was clear: develop detailed cost estimates for the replacement or repair of 58 PRDOH critical health facilities by May 18, 2018. A list was provided to the Team that rank ordered facilities into priorities 1-9, 1 being the highest. However, questions remained:

1. What information was required for the FEMA PA program?
2. What cost basis was going to be used?
3. How were buildings going to be assessed?

These questions are answered below.

Background & Solutions

1. At the time of the 2017 Hurricane Season, FEMA was working on a revised delivery model for the Public Assistance (PA) Grant Program (FEMA, 2018). FEMA leadership expedited launch of a new PA delivery model on September 12, 2017; however, it was soon determined that Puerto Rico did not have the capacity to implement this approach and on October 30, 2017, the Commonwealth of Puerto Rico elected to use alternative procedures for all PA funding for permanent work (FEMA, 2018). On the ground, there was discussion that Public Assistance Alternative Procedures would be used but there were no alternative procedure guidelines to follow when engineers were first deployed in late March. As a result, the teams utilized the FEMA Public Assistance Program and Policy Guide to develop a PRDOH approved report format, specifically merging the Indian Health Service Preliminary Engineering Report template with the US Army Corps of Engineers Temporary Repair Report template. The engineering report included detailed cost estimates to restore facilities to their pre-disaster design (function and capacity). In addition, numerous on-site pictures were added to each report to document the issues and justify the repair or replacement costs.
2. Step two was to determine a cost basis. Upon arrival to FEMA's JFO (Joint Field Office) it was noted that FEMA's transportation sector was using RS Means estimating software. FEMA HSS RSF (Health & Social Service Recovery Support Function) would be doing the FEMA cost estimates for the same PRDOH facilities as our engineer team. They were still working on temporary work and had not yet started permanent work; however, they had indicated that they would be using RS Means once they started permanent cost estimates. RS Means data is one of North America's leading suppliers of construction cost estimating information and includes a comprehensive database of construction costs. The data also includes costs for Puerto Rico, specifically the locality of the capital city of San Juan.

Engineer Professional Advisory Committee

3. Step three was to determine how facilities would be assessed. It was quickly determined that two teams of two engineers would be most effective and could alternate work in the field to do assessments one day and report writing work back at the office the next day. It was not always possible to be accompanied by a PRDOH representative. Having a Spanish-speaking team member was helpful; however, it was not necessary. Teams would meet onsite and take notes, measurements, pictures, and determine what work had already been done (or in some cases was pending) for Temporary Repair work that was being wrapped up. One challenge teams faced was how to determine what impacts were pre-hurricane, and which impacts were attributable to Hurricane Maria; some facilities had maintenance issues, were being utilized beyond their original design intent, and/or were beyond their design life prior to the hurricane. Cost estimates were based on what was apparent from site visits, and input from PRDOH on the condition of facilities before impacts from Maria. However, in some situations it was noted in the PER that addressing pre-existing issues was necessary to mitigate the impacts from future storms or hurricanes.

A common focus area was roof damage, door and window repair/replacement, drainage concerns, A/C and HVAC damage, and mold abatement. However, each health facility located throughout Puerto Rico was unique and posed its own challenges and opportunities for permanent improvements.



Conclusion

USPHS Engineers developed cost estimates and reports for 58 PRDOH critical health care facilities. The total cost to repair and replace these critical health care facilities was an estimated \$200 million dollars. While replacement was only recommended for 8 of the 58 facilities, replacement costs are high compared to repairs, which were primarily related to HVAC and roof damage.

This mission was in the wheelhouse for USPHS Engineers as we are problem solvers, detailed orientated by nature, and have the necessary project management skills to work with a variety of key players to move the mission forward. The rotation of three engineer teams along with the steady guidance and leadership of CAPT Miguel Cruz (who is in Puerto Rico long-term and whose local knowledge was extremely valuable), allowed us to complete the mission by the May 18th, 2018 deadline of 58 facilities assessed with permanent cost estimates and documentation that followed the FEMA PA guidelines.

Engineer Professional Advisory Committee



Big Picture & Future Missions

The role of Engineers in major disasters in all phases deserves careful thought by those in leadership positions. Our role can make the difference in expediting the recovery of critical systems by providing methods for damage assessments and technical expertise. USPHS Engineers contributed to prompt actions to restore public health and medical services. Engineers have proven to be a key resource in disaster recovery and can be utilized in a variety of ways (more than just Logistics). Perhaps we need to look outside the box and have Engineer RDF assessment teams that are on call during hurricane season and are set up with the necessary tools to conduct this work (e.g. measurement devices, software, PPE, field gear, etc.). USPHS Engineers expect future similar disaster recovery missions in a variety of locations.

Team Lead	CAPT Miguel Cruz	Team 2	CDR James Kohler
Team 1	CAPT David Mazorra	Team 2	LCDR Deborah Cox
Team 1	CDR Tanya Davis	Team 3	CDR Sean Bush
Team 1	CDR Kris Neset	Team 3	CDR Christen Glime
Team 1	CDR Michael Termont	Team 3	CDR Steven Scherling
Team 2	CAPT Kelly Hudson	Team 3	LCDR Julia Kane
Team 2	CDR Gregory Ault		

Rotation of three teams of four Engineers per team with CAPT Miguel Cruz long term Team Lead.

Environmental Health Officer Professional Advisory Committee

The Story Behind the New EHO Category Coin

Contributed by: LCDR Chris Fletcher, LCDR James Gooch, and LCDR Jonathan Blonk

In 2016, in order to increase esprit de corps among Environmental Health Officers (EHO), the EHOPAC held a design contest which resulted in the issuance of a new EHO Category Challenge Coin. The EHOPAC wanted to share the story with other categories by interviewing the coin's designers- LCDR Chris Fletcher and LCDR James Gooch- to understand the vision behind the design.

What was the inspiration behind creating a new Environmental Health Officer coin?

"When we set out to create a new coin design for submission to the PAC, our objective was to create a modern upgrade to the original EHO coin. We wanted an updated design with more detail, more appeal, and more "cool" factor – all of which would make EHOs proud to carry it around in their pocket and to give away and trade with others."

What design elements were factors for the new coin?

"Our first approach was to evaluate all the best elements of design. We laid out all the coins we had or knew of, and started to identify our favorite features. We looked at size, weight, durability, style, and meaning. In terms of size and weight, we decided the coin should be a bit larger and heavier than most coins. This was mainly to accommodate a more intricate design for both sides, but also to reflect the strength and integrity of the EHO category to other uniformed services."



Pictured above, the front side of the original EHO Coin (left) compared to the front side of the new EHO coin (right).

Besides making the coin more substantial, what other improvements did you end up making?

"From a durability standpoint, we chose to seal the coin in epoxy to hopefully encourage Officers to carry the coin more often without wearing off paint and scratching the surface. Style-wise, we picked the waffled edge to give the coin a little more interest and frame the design elements."

Tell us about the design elements on the Environmental Health Officer side of the coin.

"We approached the design to compliment the broad and diverse aspects of service that EHOs provide to the Commissioned Corps. The symbols represent just a handful of predominate environmental health disciplines that are standard assignments for EHOs. The symbols represent (clockwise from the top) Radiation, Food Safety, Natural Disasters, Homes, Vectors, and Water. The Earth in the middle is representative of the environmental drivers of disease that are foundation to the core elements of environmental health. The Earth also symbolized the global response capabilities of EHOs and Commissioned Corps. The cellular-geometric design was also chosen to aesthetically highlight these symbols, but it also alludes to the biological basis of environmental health."

Environmental Health Officer Professional Advisory Committee

“For the EHO side of the coin, we also changed the date from 1944 to 1943 which is an interesting point. Officially, the Sanitarian Category was started in 1944 - however, Louis J. Ogden and Robert D. Murrill were called to active duty as Assistant Sanitariums in February of 1943, and later that same year CAPT John Eason was also commissioned.”



Pictured above, minting details of the front and back of the new EHO Coin.

And on the other side you chose to include the Commissioned Corps logo?

“One of the very first design pieces that came to mind was the insignia. We found that the majority of USPHS coins used the U.S. Public Health Service insignia. While the USPHS insignia is appropriate, it is actually much broader than our Commissioned Corps – referring to many of the agencies within only the Department of Health and Human Services. We are the Commissioned Corps of the United States Public Health Service, not Officers of the USPHS. It is a subtle difference yet too often overlooked.”

Were there any design components which you wanted to include but were unable to?

“When we submitted the design, we also included inscriptions on the coin’s edge with initials for each federal agency where EHOs are assigned. We felt this was particularly important because many EHOs are assigned to agencies outside of the Department of Health and Human Services, such as DOD and DOJ. Ultimately, engraving the agencies around the edge of the coin was determined to be cost prohibitive. We also originally proposed that the six symbols on the coin be crowd sourced by surveying EHOs to determine the top six environmental health disciplines to feature. Ultimately logistics and timing made this unattainable. Perhaps a future iteration could add these features.”

How successful has the new design been?

“We feel it has been a great success. Since the new coin launched in 2016 nearly 400 coins have been minted and distributed! Many officers, inside and outside of the EHO Category, have reported that it is their favorite coin, and not just because it glows in the dark.”

Health Services Officer Advisory Committee

The HSPAC Advanced Readiness Program

Contributed by: LCDR Nicole Bell

As the Commissioned Corps continues to reinforce its commitment to today's regional, national, and global public health challenges, the Health Services Category is piloting a program to provide our Officers with a higher level of readiness.

The HSPAC Readiness Subcommittee was tasked with developing a program to provide training beyond what is required at the basic readiness level, and in 2016, the Advanced Readiness Program was born. In conjunction with each Professional Advisory Group's (PAG) Technical Readiness Subcommittee, the Readiness Subcommittee has developed a two-year program to increase Officers' readiness and deployment knowledge. The Advanced Readiness Program has three components: 1) Enhanced, 2) Technical, and 3) Field Readiness.

The Enhanced readiness component consists of training that applies to any Officer, regardless of discipline. The training typically covers management, leadership, and communications. The Technical readiness component is discipline specific. Training consists of increased practical clinical hours and/or additional discipline-specific courses related to the Officer's qualifying degree. A minimum of 25 hours of Enhanced and Technical Readiness coursework are required during each year of the program. The Field Readiness component requires the Officer to have been awarded the Field Medical Readiness Badge (FMRB). Completion of program requirements are documented on an interactive Excel tracker that provides an inventory of available courses. Throughout the year, the HSPAC Readiness Subcommittee also hosts trainings and webinars that meet the requirements for the Advanced Readiness Program.



Figure showing advanced readiness components

The Enhanced readiness component consists of training that applies to any Officer, regardless of discipline. The training typically covers management, leadership, and communications. The Technical readiness component is discipline specific. Training consists of increased practical clinical hours and/or additional discipline-specific courses related to the Officer's qualifying degree. A minimum of 25 hours of Enhanced and Technical Readiness coursework are required during each year of the program. The Field Readiness component requires the Officer to have been awarded the Field Medical Readiness Badge (FMRB). Completion of program requirements are documented on an interactive Excel tracker that provides an inventory of available courses. Throughout the year, the HSPAC Readiness Subcommittee also hosts trainings and webinars that meet the requirements for the Advanced Readiness Program.

Prerequisites of the program include basic readiness, field readiness, and no current or pending adverse actions. A certificate of completion will be provided to those who fulfill all requirements of the Advanced Readiness Program. The program is not a requirement by the HSPAC or the Commissioned Corps; however, the HS Chief Professional Officer encourages all eligible HSOs to participate.

On March 1, 2018, enrollment into Phase 1 of the pilot Advanced Readiness Program was launched for the Physician Assistant (PAPAG) and Public Health (PHPAG) PAGs. Officers who applied and submitted documentation of their prerequisites via email were verified and notified of their acceptance into the program. Thirty-four (34) Officers officially started the program on April 1, 2018; 11 PAPAG Officers and 23 PHPAG Officers. The HSPAC Readiness Subcommittee's Advanced Readiness Team worked with enrolled Officers to identify challenges and improve processes of the program. Phase 2 of the Pilot began on May 25, 2018 with the same PAPAG and the PHPAG. As of June 18, 2018, 8 new Officers (3 PAPAG and 5 PHPAG) have been accepted into the program. At this time, only PAPAG and PHPAG are eligible for enrollment into the program. Future plans for the program include opening enrollment to four new PAGs (two clinical and two non-clinical). Look out for the announcement!

For additional information or to apply to the program, please contact the Advanced Readiness Team at advancedreadiness.hspac@gmail.com or your PAG's Technical Readiness Subcommittee Chair.

Author contact e-mail: Nicole.bell@fda.hhs.gov

Health Services Officer Advisory Committee

that you wear your PHS uniform at your duty station every day, fulfill all readiness standards, or met your category's continuing education requirements. Because all of these are conditions of service, they will not distinguish you from other PHS Officers up for promotion.

Use the active voice when talking about yourself. If you directed something, write "the Officer directed the project" instead of "the project was directed by the Officer". Use strong verbs, such as direct, lead, coordinate, implement, manage, and strengthen. Avoid unclear verbs like "leverage"?



Do not "bury the lead" meaning if you have a one of a kind accomplishment, especially a recently achieved one, put it front and center, and repeat it in multiple documents. Specifically, put it at the beginning of a paragraph, or at the top of a page (or do both). Limit jargon; make sure your board members can clearly understand the type of work you do on a daily basis. Remember that your board members, while in your category, may be doing very different work than you are. Your reviewers should be able to quickly and clearly understand whether you primarily work as a clinician, an epidemiologist, a health educator, an informatics specialist, etc.

Recommendations for your CV

Think of a CV as not just a list of your qualifications and accomplishments, but also as a writing sample. Follow the CV format for your category, as you do not want to stand out by being one of only a few PHS Officers up for promotion who did not follow instructions provided. For the rest of your CV, incorporate anything you consider to be very important on the first page (or cover page if your category's CV requires it). Again, think of a promotion board member having to read your CV, Officer Statement (OS), Rating Officers Statement (ROS), Commissioned Officers' Effectiveness Report (COER), and Promotion Information Report (PIR) within a very short period of time.

In all documents, write to the edge of the truth, but do not falsify or exaggerate. If you not only implemented a new program or process, but recognized the need for it in the first place, say so clearly without equivocation. Because promotions often come down to slim margins, a better-written file can give you an advantage.



Nurse Professional Advisory Committee

75th Anniversary of USPHS Nursing

Contributed by: CDR Heather Skelton, N-PAC Chair FY18 and CDR Tiffany Moore, N-PAC Chair FY19

The Nursing Professional Advisory Committee (N-PAC) is excited to sponsor the 75th anniversary celebration of the USPHS nursing in 2019. Details regarding this event will be shared as they become available. We look forward to Officers, families, and friends in all categories coming out to help us celebrate this illustrious anniversary.

This momentous anniversary is to highlight the United States Public Health nursing and to celebrate the nursing profession in its entirety; nursing, which is considered one of the most honest and ethical profession (<https://nurse.org/articles/gallup-ethical-standards-poll-nurses-rank-highest>). Despite this notable distinction (which most nurses, USPHS, and otherwise are very proud to readily share), the nursing profession is often plagued with a shortage. In October 2010, the Institute of Medicine released *The Future of Nursing*, this report detailed the need to increase the number of baccalaureate-prepared nurses in the workforce to 80% and double the number of nurses with doctoral degrees to meet the growing demand. The current nursing workforce easily misses the mark of these recommendations with only 55% of registered nurses prepared at the baccalaureate or graduate degree level. *The American Journal of Medical Quality* echoed the concerns of the nursing supply not meeting current and future demand with its 2012 report *United States Registered Nurse Workforce Report Card and Shortage Forecast* which predicted a shortfall of nurses lasting until the year 2030 (<http://www.aacnnursing.org/News-Information/Fact-Sheets/Nursing-Shortage>).

The nursing shortage is not new however, it historically has burdened the United States over the years and World War II era was no exception. The United States government's solution to deal with the shortage during World War II led to the formation of the US Cadet Nurse Corps Program where nursing in the Commissioned Corps of the United States Public Health Service today has its roots.

In June of 1943, the United States Congress passed the Bolton Act, which supported the emergence of the US Cadet Nurse Corps to fulfill the need for nurses at home and abroad during World War II. As one of its main responsibilities, the United States Public Health Service supervised the Cadet Nurse Corps Program, which lasted until 1948.

The US Cadet Nurse Corps Program was open to women between the ages of 17 and 35 who graduated from accredited high schools. Considering the historical timeframe, the program was progressive, and it did not discriminate based on race, color, or creed. Any woman who wished to participate had to be a current student or matriculate at a state nursing school that was accredited by the respective state's credentialing body, which included affiliation to a hospital endorsed by the American College of Surgeons. Of the 1,300 nursing schools at the time, 1,125 schools participated in the program. To participate in the program, these schools were required to condense their nursing curriculum from the traditional 36 months to 30 months and provide students with four clinical rotations: medical, surgical, obstetrics, and pediatrics. The government subsidized the students and provided tuition, books, uniforms, and stipends. In return, these women, once graduated, donned a USPHS uniform and were assigned by the federal government to serve military, civilian, or government hospitals. Upon graduation, they also pledged their intention to serve their country by reciting the following:

At this moment of my induction into the United States Cadet Nurse Corps of the United States Public Health Service, I am solemnly aware of the obligations I assume toward my country and toward my chosen profession; I will follow faithfully the teachings of my instructors and the guidance of the physicians with whom I work; I will hold in trust the finest traditions of nursing and the spirit of the Corps; I will keep my body strong, my mind alert, and my heart steadfast; I will be kind, tolerant, and understanding; Above all, I will dedicate myself now and forever to the triumph of life over death; As a Cadet nurse, I pledge to my country my service in essential nursing for the duration of the war. (<https://www.rochesterregional.org/about/history/rochester-medical-museum-and-archives/digital-exhibits/us-cadet-nurse-corps>).

Among those who took this pledge was the grandmother of N-PAC Chair FY 19, CDR Tiffany Moore.

Thank you all for allowing me to share my grandmother's story. My grandmother, Marjorie May Evans-Griffith (1926-

Nurse Professional Advisory Committee

1998), was so special to me. As a young girl, I wanted to grow up and be just like her. I remember her being progressive for her time, but also traditional in many aspects. She cooked the best southern food, made beautiful clothing and quilts, worked in her garden, and drank afternoon tea from the fanciest glasses passed down from previous generations.

I always knew I wanted to be a nurse. It was always in my blood as my great-grandmother, grandmother, and mother were all nurses. My grandmother would tell me she was trained to be a nurse during World War II, but it was about all she would say to me. She worked until my grandfather returned from the war and raised three boys. She was such a strong and supportive woman. She encouraged me to get good grades, so I could go to college and achieve my dream. She continued to inspire me up until her death in 1998 while I was in college working on my nursing degree. In 2002, I graduated with my nursing degree and it was only after I went to work for the Indian Health Service that I learned about “the best kept secret,” and commissioned into the Commissioned Corps of the USPHS in 2004. A few years after I commissioned during a visit home my father asked if I wanted to sort through some of my grandmother’s pictures and files. Of course, I wanted to find out more information about the woman I admired, so I dug in. As I was looking through box after box of information, I came across the photo below. When I realized what I had found, my heart was full, and my eyes filled with tears. I recognized the symbol on her hat in the picture. My grandmother was not just trained as a nurse in the war; she had trained as a US Cadet Nurse! I was speechless. Seeing her photo made me proud. I realized I was a part of a family legacy. Although I am still searching for more historical information on my grandmother, I am truly honored and humble that I am now serving in the USPHS generations later.



Pictured above, Marjorie May Evans-Griffith

Being a nurse in the Commissioned Corp has been a blessing in my life, and I have truly grown as a nurse and an Officer. I also grew as a leader with all the life-changing experiences that being a Commissioned Corps nurse brings. Today I am proud to share my story with other nurses, and hopefully, I can inspire a future generation of nurses as my grandmother did for me as she served with a humble heart. I am excited about this next year as I serve as the N-PAC Chair, and I feel lucky that it is during our 75th year. My vision for the N-PAC this year is to help all PHS nurses to **RISE!!-- Ready, Inspire, Share, and Energize.**

We will work to enhance partnerships and education to support readiness, conditions of service, and skill sustainment (**Ready**). As many PHS Officers work together to achieve our goals to meet the conditions of service standards, we will share our experiences and rally together. We can then inspire others outside of PHS to get healthy and fit (**Inspire**). We will work to expand the N-PACs role in the Federal PHS Nurse Strategic Plan; for we can educate and inspire healthy changes in our communities based on the Office of the Surgeon Generals Priorities (**Share**). Finally, we will strengthen the leadership team of the N-PAC (subcommittee chairs and voting members) through shared governance, improving communication, and team work to drive positive change into the future (**Energize**).

Reflecting on the pledge the Cadet Nurse Corp took, one line really stands true today still, “I will hold in trust the finest traditions of nursing and the spirit of the Corps; I will keep my body strong, my mind alert, and my heart steadfast”. It is amazing to think that over the 75 years that have passed since the Bolton Act was signed, that the Cadet Nurse Corps provided the stepping stones for the largest USPHS Commissioned Corps category. The Nursing Professional Advisory Committee looks forward to honoring the past, celebrating the present, and embracing the future!

Pharmacist Professional Advisory Committee

USPHS Combating the Opioid Crisis

Contributed by: LT Kodilichi Echeozo

“The opioid crisis affects everybody... if it has not affected you personally, I am sure that it has affected someone that you know,” said Scott Pendleton, a recovering addict and Peer Recovery Specialist with the Baltimore County Department of Health. On July 19, 2018, Scott shared his story of opioid addiction at the Pikesville-Owings Mills Rotary Club Opioid Prevention and Overdose Training event. Nearly 100 people were in attendance. The room was filled with numerous USPHS Officers in uniform and civilians ready for training. A few distinguished guests, including Rear Admiral Schweitzer, Congressman Dutch Ruppersberger, Mr. Bart Kennedy (representing Senator Van Hollen) and Ms. Heather Campbell (representing Senator Ben Cardin) were present.

CAPT Nina Mezu-Nwaba organized this training by partnering with the Baltimore County Department of Health and the Pikesville-Owings Mills Rotary Club. “One preventable death is one too many,” she said. “The National Institutes of Health reports that 115 people die every day from opioid overdose and the Maryland Department of Health states that the number of opioid-related deaths from 2015 to 2017 has more than doubled. By the end of the training, we would have equipped nearly one hundred people with the tools needed to reduce the mortality associated with opioid use.” Opioid dependency and long-term use can start within a few days of initial exposure.¹ In the opening remarks, Congressman Ruppersberger talked about a star student who had a sports injury and started on narcotics. His injury resolved, but he never stopped taking the medication. His parents did not know. His grades began a downward spiral, and delinquent behavior ensued. Fortunately, he received successful treatment and started on a road to recovery.



Pictured above (L to R): RADM Pamela Schweitzer (retired) , Congressman Dutch Ruppersberger and CAPT Nina Mezu-Nwaba

Recognizing the physical signs and symptoms of overdose is necessary for a timely response. During the training, the instructor mentioned that individuals are at a greater risk for an opioid overdose if they have overdosed before. Loud snoring or gurgling noises, unresponsiveness, blue lips or fingertips, unconsciousness, and slow or shallow breathing are all indicators of an opioid overdose. If someone is experiencing an opioid overdose, try to rouse and stimulate them using a sternal rub, call 911, and then give naloxone, which is used to reverse opioid overdose. If the first dose of naloxone does not work, try again in 1 to 3 minutes. The effects of naloxone will only last for 30-90 minutes. Therefore, it is crucial to get emergency medical help for someone experiencing an overdose.

“Naloxone is the most effective way to treat an opioid overdose. It saves lives; everybody’s life is worth saving,” said Scott. After the training, participants received a wallet-sized certificate of completion valid for two years as well as two doses of nasal naloxone. If we are ever faced with an opioid overdose situation, we are now equipped to respond.

References:

¹ Shah A, Hayes CJ, Martin BC. Characteristics of Initial Prescription Episodes and Likelihood of Long-Term Opioid Use — United States, 2006–2015. *MMWR Morb Mortal Wkly Rep* 2017;66:265–269. DOI: <http://dx.doi.org/10.15585/mmwr.mm6610a1>

Physician Professional Advisory Committee

Recognizing Emerging Public Health Leaders and Increasing USPHS Visibility

Contributed by: CDR Marie de Perio and CDR Jeneita Bell

The Physician PAC (PPAC) launched the USPHS Excellence in Public Health Award Program in 2012 to recognize medical students who demonstrate dedication to the USPHS core values of leadership, service, integrity, and excellence and increase awareness of the USPHS and its mission. In 2012, the PPAC, through the Medical Student Awards Strike Team, began by honoring 10 medical students with the Award for Excellence in Public Health. Subsequently, our team, now under the Recruitment Sub-Committee, has been sending invitations to all 179 US medical schools to solicit medical student nominations.

In 2018, we presented Awards for Excellence in Public Health to medical students at 88 medical schools, covering all 10 HHS regions in the country. This represented an increase from 78 schools in 2017. The impressive public health contributions of awardees ranged from directing and coordinating clinical services for underserved populations, advocating for human rights and health justice, designing health curriculums for disadvantaged communities, and addressing healthcare disparities through research. Here is the link to one of our favorite media stories: <https://meded.ucsf.edu/news/ucsf-medical-student-honored-prestigious-us-public-health-service-award>.



Pictured above, CAPT Sunenshine presenting the award at the A.T Still College of Osteopathic Medicine (photo credit: Mark Skalny)

Commissioned Corps Officers presented the award in-person to winning students at 62 (70%) medical schools across the country. Our national level award winner was Regina Royan from the University of Michigan Medical School. Dr. Royan was recognized for her passion and dedication to public health and her work in improving the health of her local community in Detroit, Michigan by defining planning for city demolition, safeguards against lead, dust, and asbestos, and neighborhood stabilization.

We had fantastic participation from fellow Commissioned Corps Officers. A total of 93 Commissioned Corps Officers, including 60 Medical Officers, assisted in our program this year with roles ranging from Regional Coordinator, Nomination Reviewer, Award Presenter, and School Point of Contact.

Physician Professional Advisory Committee



Pictured above, (left) CAPT Greg Raczniak presenting the award at the University of Chicago Pritzker School of Medicine; (right) CDR Harry Ko presenting the award at the Oakland University William Beaumont College of Medicine.

We are confident that the in-person presentation from a Uniformed Officer is meaningful to both the medical student and the entire school. Many had not heard of the USPHS Commissioned Corps until they received correspondence from our program. Therefore, we believe that this program is significantly raising the visibility of the USPHS Commissioned Corps among medical students, faculty, and the general public.



Pictured above, LCDR Bhavini Murthy and LCDR Neil Murthy presenting the award at Baylor College of Medicine

We give special thanks to RADM David Goldman and CAPT Brian Lewis for supporting this program. We also recognize the leadership of our Regional Coordinators: CDR Kevin Clarke, CDR Molly Evans, CDR Andrew Geller, CDR Sara Luckhaupt, CDR Rachel Smith, CDR Art Wendell, LCDR Joy Hsu, LCDR David Jackson, LCDR George Pourakis, and LCDR Kim Smith.

We look forward to starting the 2019 program back up in the fall. If any of our fellow Medical Officers are interested in participating, please contact CDR Marie de Perio at mdeperio@cdc.gov or CDR Jeneita Bell at jbelle2@cdc.gov.

Scientist Professional Advisory Committee

USPHS Commissioned Corps Officers Pay Respects to CDR Timothy Cunningham

Contributed by: LCDR Marcienne Wright, LCDR Zewditu Demissie, CDR Kamil Barbour, CDR Deborah Dee, LCDR NaTasha Hollis, and LCDR Erika Odom



Pictured above, CDR Timothy Cunningham

**The following tribute to CDR Timothy Cunningham reflects the personal thoughts of the listed contributing authors.*

On Saturday, April 21, 2018, more than 100 USPHS Commissioned Corps Officers joined hundreds of other friends and family members gathered in Atlanta, Georgia, to honor CDR Timothy Cunningham at the Celebration of Life Service held in his memory. Several senior leaders from the Centers for Disease Control and Prevention (CDC) and the USPHS attended. CAPT Holly Williams, as Officer in Charge, led several Officers in a funeral honor guard to receive CDR Cunningham's casket into the chapel.

CDR Cunningham's parents, COL (ret.) Terrell and Mrs. Tia-Juana Cunningham, graciously invited Officers to attend the private burial service on Monday, April 23, 2018, to join the family as they paid their last respects. RADM Wanda Barfield, as the senior presiding USPHS Commissioned Corps Officer, led formal military funeral honors and presented the United States flag to the Cunningham family.

Community Service

Scientist Officer LCDR Erika Odom, 2017–2018 President of the Atlanta Commissioned Officers Association (ACOA), described CDR Cunningham as an impeccable scientist, fierce leader, and an Officer of excellence, who demonstrated an intense dedication to family, community, and the USPHS Commissioned Corps. He served with ACOA as a volunteer with the USO, the Atlanta Community Food Bank, St. Francis Table Soup Kitchen, and the United Methodist Children's Home. From 2016–2017, CDR Cunningham also served as ACOA President. His impact on the greater Atlanta community was extensive, including his service in the esteemed leadership development and community education program, Leadership Atlanta. He was recognized in 2017 by the Atlanta Business Chronicle as one of the "40 Under 40" rising stars.

SciPAC Mentorship

CDR Cunningham mentored many junior Scientist Officers throughout his career. LCDR Marcienne Wright, his formal SciPAC mentee, noted that CDR Cunningham's mentorship, both formal and informal, strengthened several Officers' promotion packages. CDR Cunningham's guidance improved Officer core competencies, as detailed in the Scientist Category benchmarks, and facilitated effective presentation of these core competencies by his mentees to USPHS Commissioned Corps promotion boards.

SciPAC Service

As Co-Chair of the SciPAC Visibility Subcommittee, CDR Cunningham led the Atlanta Social Team in organizing several social events for Scientist Officers in Atlanta, including SciPAC Trivia Nights at Mellow Mushroom and Atlanta BeltLine Walks. CDR Cunningham also co-developed the SciPAC Science and Practice Seminar Series. He regularly represented SciPAC at annual USPHS Scientific and Training Symposia.

Pictured left, CDR Cunningham and VADM Jerome Adams, 20th Surgeon General of the United States, at the 2017 American Public Health Association Annual Meeting.



Scientist Professional Advisory Committee



Pictured above, USPHS Commissioned Corps funeral honor guard at the Celebration of Life Service, and private burial service (Officers who served as honor guard or at the private burial service,, by rank/last name): RADM Wanda Barfield (senior presiding USPHS Commissioned Corps Officer); CAPTs Holly Williams (Officer in Charge), Robin Hunter-Buskey, Mehran Massoudi, Alan Peterson, Jennifer Williams, Mildred Williams-Johnson, Marcella Law; CDRs Alexander Crosby, Francisca Abanyie, Indira Wallace Harris, David Huang, Eva McLanahan, Paula Washington, Shauna Mettee Zarecki, Kamil Barbour, LaMar Henderson; LCDRs Jamar Barnes, Jason Dailey, Folasade Kembi, Colleen Scott, Joanna Gaines, NaTasha Hollis, Asha Ivey-Stevenson, Shane Jack, Alaine Knipes, Jennifer Lind, Iman Martin, Rashid Njai, Erika Odom, Ekwutosi Okoroh, Katrina Sloan, Marcienne Wright; LTs Francis Annor, Tanesha Tutt.

Leadership in Epidemiology

In his most recent position, CDR Cunningham served as team lead for the CDC State Chronic Disease Assignee Program. In that role, he supervised and mentored CDC employees assigned to several state health departments, and served as technical monitor for the CDC National Mentoring Program in Applied Chronic Disease Epidemiology. His mentorship helped chronic disease epidemiologists improve their skills, so that state health departments could improve their abilities to address chronic disease health disparities. CDR Cunningham's last major publication, Vital Signs: Racial Disparities in Age-Specific Mortality Among Blacks or African Americans — United States, 1999–2015 (MMWR May 5, 2017 / 66(17);444–456. DOI: <http://dx.doi.org/10.15585/mmwr.mm6617e1>), was highlighted by the New York Times and NPR, among other major media outlets. He was a prolific author with over 30 peer reviewed first- and co- authored studies published to date.

CDR Cunningham's Legacy

COL and Mrs. Cunningham expressed their appreciation to USPHS Commissioned Corps Officers following the services with this note: "Thank you for everything you all have done to make Tim's memorial service beautiful and special in every way. We were very pleased." They have also instituted two charitable donation opportunities to honor CDR Cunningham's legacy:

Morehouse College
Office of Institutional Advancement
www.giving.morehouse.edu
Memo: Timothy Cunningham, '04



The Commander Timothy J. Cunningham,
ScD, MPH, Endowment for Homeless Ministry
Atlanta First United Methodist Church
www.atlantafirstumc.org/give



CAPT John Eckert, Chief Scientist Officer, stated that CDR Cunningham was a model PHS Scientist Officer, who embodied the mission of the USPHS Commissioned Corps to protect, promote, and advance the health and safety of our nation. CDR Cunningham truly represented Scientist Officers and our service with pride and distinction. In 2017, he was the only Scientist Officer across all ranks to earn the highly competitive Exceptional Proficiency Promotion. This achievement is a testament to his focus and determination to succeed as a Commissioned Corps Officer, and serve as a model to many. At the Celebration of Life Service, we were reminded by one of the speakers to tell our loved ones often how much they are valued and loved. It is clear from the overwhelming outpouring of support in the past months that CDR Cunningham is deeply valued, loved, and missed.

Pictured left, COL (ret.) Terrell and Mrs. Tia-Juana Cunningham, CDR Cunningham's parents.

Scientist Professional Advisory Committee

Select High-Impact Publications by Scientist Officers in 2017

Contributed by: LT Teresa Wang, LT Shayne Gallaway, LT Francis Annor, CAPT Fuyuen Yip, LCDR Alaine Knipes, LT Jessica Tomov, LCDR Angela Thompson-Paul, LCDR Shondelle Wilson-Frederick, LCDR Jean Ko, CDR David Huang, CDR Kamil Barbour

BACKGROUND: Publishing impactful research to fill important knowledge gaps is one of the many ways Scientist Officers regularly contribute to the missions of agencies to which USPHS Commissioned Corps Officers are assigned. Earlier this year, the SciPAC Visibility Subcommittee’s Manuscript Highlights Team collaborated with the Science Subcommittee’s Bibliography Team to standardize a systematic web-based search for Scientist Officer publications from 2017.

RESULTS: A total of 496 publications (e.g., peer-reviewed articles or other examples of primary research) were identified across 151 Scientist Officers, regardless of the level of authorship. Publications spanned an eclectic range of public health topics (Figure).

METHODS: Manuscript Highlights Team members were each assigned a list of 30 to 40 Scientists (total N=330). Members conducted standardized searches using at least two platforms (PubMed, Google Scholar, and/or Scopus).



Pictured above, a Word Cloud illustrating the top 250 terms captured from 496 publication titles, as authored by Scientist Officers in 2017. Font sizes are weighted to word frequency. Can you find “USPHS”?

Below is a subset of publications from 2017 for which Scientist Officers served as the lead or senior author, as evaluated by the Manuscript Highlights team for their novelty, impact, and contribution to the field. These works provide a brief glimpse into how the Scientist Category is at the forefront of conducting and disseminating research of regional, national, and international public health importance.



The Lancet: [Estimates of Global Seasonal Influenza-Associated Respiratory Mortality: a Modeling Study](#), CDR Angela Danielle Iuliano, Epidemiologist, CDC

Lead author CDR Iuliano and global health partners from 47 countries found that between 291,000 and 646,000 people die from seasonal flu-linked respiratory illnesses each year. CDR Iuliano emphasized, “This work adds to a growing global understanding of the burden of influenza and populations at highest risk [...] It builds the evidence base for influenza vaccination programs in other countries.”

Scientist Professional Advisory Committee



The Journal of the American Medical Association (JAMA): [Acute Zika Virus Infection as a Risk Factor for Guillain-Barré Syndrome in Puerto Rico](#), CDR Tyler Sharp, Biological Scientist, CDC

Senior author CDR Sharp and colleagues found that acute Zika virus infection, confirmed by molecular diagnostic testing, was a risk factor for developing Guillain-Barré syndrome (GBS). The authors stated, “During Zika virus outbreaks, clinical suspicion should be elevated to improve GBS patient prognosis through prompt diagnosis and treatment.”



JAMA Pediatrics: [Secondhand Exposure to Electronic Cigarette Aerosol among U.S. Youths](#), LT Teresa Wang, Epidemiologist, CDC

LT Wang et al. estimated that about 6.5 million middle and high school students (1 in 4) were exposed to secondhand aerosol from electronic cigarettes in public places in 2015. “To protect youth from both secondhand smoke and secondhand aerosol, smoke-free policies can be modernized to include e-cigarettes,” said LT Wang.



American Journal of Preventive Medicine: [Economic Insecurity and Intimate Partner and Sexual Violence Victimization](#), CDR Matt Breiding, Behavioral Scientist, CDC

CDR Breiding and colleagues found that women and men who experienced recent economic insecurity were more likely to have experienced intimate partner violence (IPV) and sexual violence (SV) victimization. “Both IPV and SV are preventable,” noted CDR Breiding; prevention strategies that improve economic security and stability for families may help reduce the risk of IPV and SV.



The Journal of Nervous and Mental Disease: [Can Anger Be Helpful?: Soldier Perceptions of the Utility of Anger](#), CDR Robin Toblin, Clinical Psychologist, Walter Reed Army Institute of Research, Department of Defense

CDR Toblin and colleagues examined the perception that anger was helpful in performing occupationally related duties among a survey of 627 active-duty soldiers after their deployment to Afghanistan. Lessons from this study have been incorporated into current leadership military training for new soldiers. CDR Toblin noted, “There are implications for soldiers, leaders, and clinicians, and more work is needed to convey these findings to a broader audience and share best practices for coping with anger.”

Therapist Professional Advisory Committee

PACE Officers at University of Maryland's 20th Annual Maryland Day

Contributed by: LT Zavera Brandon and LT Theresa Yu

Each year, the University of Maryland at College Park welcomes thousands of visitors to celebrate learning and discovery. The event offers free family-friendly exhibits, presentations, and demonstrations throughout the entire campus. This year was the 20th annual celebration and the fifth year that PACE (Prevention through Active Community Engagement) has participated in this wonderful community event. The mission of PACE is to engage the community through education to create a healthier nation. LCDR Leshin and 13 Officers interacted with approximately 600 visitors at the USPHS Commissioned Corps booth this year.



Pictured above, LTs Theresa Yu (left) and Zavera Brandon (right) at the USPHS booth

As newly commissioned junior Officers, this event gave us an excellent opportunity to use our expertise to provide education to hundreds of people. We met other Officers from different agencies and categories and learned how Officers are making contributions at community events such as Maryland Day. We were able to engage with adults as well as children while providing them with information on the opioid epidemic, fitness, healthy eating, and nutrition.



Pictured above, (left) LT Zavera Brandon speaking to visitors about healthy eating; (middle) the Plank challenge; (right) some of the close to 600 visitors this year at the Maryland Day event that the USPHS booth attracted.

The booth had age appropriate games, stickers, and coloring worksheets which attracted young children to get involved in health promotion. Older children had the opportunity to participate in exercise challenges with Officers, such as timed planks and maximum number of squats in 30 seconds, which was exciting for everyone involved (with Officers occasionally losing to some very active kids). Teens and adults were interested in the opioid information and received an abundant amount of education on the opioid epidemic and preventing opioid overdose. In collaboration with the Drug Enforcement Administration (DEA), a DEA educator discussed the importance of keeping naloxone on hand, which is one of the U.S. Surgeon General's initiatives. This year's event was a huge success. We are looking forward to next year's event and future events with PACE.

Therapist Professional Advisory Committee

Benefits of Progressive Resistance Exercise for Maintaining Lean Body Mass and Metabolism

Contributed by: CAPT Jeffrey Lawrence

Introduction:

Officers looking for methods to help meet or maintain the new height and weight standards might want to consider adding resistance training to their routines. It is well documented that aerobic exercises are very healthy for our body and are good ways to burn calories. However, aerobic exercises can also be catabolic, breaking down muscle tissue. Studies show that aerobic exercise, including high intensity aerobic exercise, results in muscular atrophy (a decrease in muscle)¹. Resistance training, used in conjunction with aerobic exercises and diet and lifestyle modifications, can help maintain overall health and fitness.

Body Muscle: How Much Do We Have and How Much Can We Lose?

As we age, our body goes through many physiological processes, including the inevitable loss of muscle. In turn, the loss of muscle mass decreases overall strength. Research has shown that a man who maintains the same healthy weight as he grows older still gains fat and loses muscle tissue and strength^{2,3,4}. Muscle loss translates to about a 2-4% reduction per decade in the body's basal metabolic rate (BMR), or the number of calories the body burns at rest. In general, without resistance training, the following occurs:

- Between **25–50 years old** = **10–15%** loss of muscle mass.
- Between **50–80 years old** = **30%** loss of muscle mass.
- Much of this loss in muscle mass is due to aging of the neuromuscular system and inactivity.

Body Muscle: How Does It Contribute to Burning Calories?

One pound of body fat contains 3,500 calories. To lose one pound of body fat, the body must burn 3,500 calories. Burning 3,500 calories takes work — a 140-pound marathoner expends about 110 calories per mile, or 2,882 calories to run 26.2 miles! Table 1 below summarizes the research.

Table 1: Summary of Research

Study	Strength Training Program	Training Frequency	Training Duration	Change in Tissues	Change in Resting Metabolism
Campbell et al. Tufts University	4 Exercises 3 Sets 8–12 Reps	3x/week	12 weeks	Muscle gain +3.1 lbs Fat Loss - 4.0 lbs	Increased +6.8% or 105 calories/day
Pratley et al. University of Maryland	14 Exercises 1–2 Sets 10–15 Reps	3x/week	16 weeks	Muscle gain +3.5 lbs Fat Loss - 4.2 lbs	Increased +7.7% or 120 calories/day

Body Muscle: How Can You Build More to Maintain a Healthy Weight? Boosting the body's resting metabolism 7–8% may not seem like a lot, but over time, this helps maintain current lean body weight and aides in weight loss, if needed. It also burns an additional 105–120 calories at rest per day — or as much as 3,150–3,600 additional calories burned per month — at rest!

So how can one counteract the slippery slope of weight gain and muscle loss? Unfortunately, we cannot totally reverse this process, but we can slow it down. And, progressive resistance strength training can help. It adds muscle mass through a process called hypertrophy, which increases the actual cross sectional area of the muscle, rather than the number of muscle fibers. When properly conducted, resistance training is actually anabolic and can be used to build or maintain muscle mass, increase or maintain bone density, and help with a myriad of other important health and lifestyle issues. A 2017 study showed resistance training programs involving more than one joint (Multi-Joint, or MJ) versus

Therapist Professional Advisory Committee

Single-Joint (SJ) appear to be more efficient in improving muscle strength and maximal oxygen consumption, but no differences were found for body composition between MJ and SJ programs.¹³



Pictured above, LT Sarah Lyrata demonstrates a multi-joint strengthening exercise.

The key to obtaining muscle hypertrophy with strength training is to use a resistance or weight that is equivalent to at least 60% of one repetition maximum (1RM). This translates to the maximum amount of weight you should lift one time safely. For example, if your 1RM is 100 pounds, then 60% of this would be 60 pounds. In addition, to attain muscle hypertrophy, one also has to consider how many times the resistance or weight is lifted. In general, one would normally set a goal of 6–12 repetitions of lifting 60% of his or her 1RM. If done properly, by the time you reach your last repetition, you really could not do one more repetition using proper form without help.¹⁴ The American College of Sports Medicine Position Stand entitled “Progression Models in Resistance Training for Healthy Adults” is an excellent reference for safe, optimal characteristics of strength specific programs. 15

Conclusion: Resistance training, when combined with other lifestyle modifications such as healthy eating and aerobic exercise, is especially effective in maintaining a healthy body weight. Moreover, it is accomplished easily through a simple progressive resistance program of only 20–30 minutes per workout, 2–3 times per week. So, even with a busy person’s weekly time constraints, it can be attainable.

References:

1. Kramer et. al 1995. Compatibility of high-intensity strength and endurance training on hormonal and skeletal muscle adaptations. *J Appl Phys* 78(3):976-989.
2. Keys A, Brozek J. Body fat in adult man. *Physiol Rev.* 1953 Jul;33(3):245–325.
3. Booth FW, Weeden SH, Tseng BS. 1994 Effect of aging on human skeletal muscle and motor function. *Med Sci Sports Exercise.* May;26(5):556-60.
4. Tseng BS, Marsh DR, Hamilton MT, Booth FW. 1995. Strength and aerobic training attenuate muscle wasting and improve resistance to the development of disability with aging. *J Gerontol A Biol Sci Med Sci.* Nov;50 SpecNo:113-9.

Veterinarian Professional Advisory Committee

Words of Wisdom- Followership

Contributed by: CAPT John Gibbins

The following comments were made at the 2018 USPHS Scientific and Training Symposium Pre-Conference Leadership Workshop 'Lead from where you are' as part of a CPO speaker panel. I attempted to approach the issue of leadership from a non-traditional direction; I hope you find this useful in your daily duties and career.

Officership is equal measures of leadership and followership. I would like to take a few minutes to talk about followership, which some consider the flip side of leadership. I was first introduced to the concept of followership during my 5 weeks of Commissioned Officer Training when I entered the United States Air Force nearly 21 years ago. Followership was also touched on during my additional Air Force professional military education. Over the years, I have maintained an interest in followership and have tried to live by the principles of being both a good leader, but perhaps more importantly, a good follower. The two should go hand in hand and complement each other.

As the old cowboy saying goes, "Sometimes when you're riding ahead of the herd, you need to turn around and make sure they're still there." Leaders and followers are necessary in all situations we deal with as Officers; one without the other is non-productive at best and can be dangerous at worst.

Although leadership often gets all the headlines and attention, followership is vital to the success of any organization. Dr. Robert Kelly, a best-selling author and consultant to many Fortune 500 businesses and governmental agencies, states successful followers contribute over 80% to the success of any project, while leaders, at best, contribute 20%

Followership is pretty straightforward. It is the ability to take direction well, get behind a process or program, be an effective part of a team, and deliver what is expected of you. Being a good follower may not be glamorous, but the facts are that within organizations everybody is both a leader and a follower, depending on the situation. Individuals often switch back and forth between roles several times in a single day, as everybody, no matter his or her position, has a boss and is a follower. The question is, are they good followers? A key to advancing to positions of greater leadership and responsibility should be to first demonstrate an ability to follow and work well with others in a group. Poor followership can result in bad morale, poor work habits, distractions from goals, lost opportunities, and poor performance, ultimately leading to an organization not being as effective as it could or should be.



Pictured above, CAPT John Gibbins, Chief Veterinarian

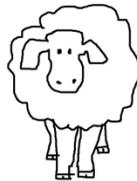
Good followers have a number of qualities; some examples include:

- **Judgement:** good followers are not sheep, meekly following the leader to slaughter (or the next work assignment). Sheep are uncritical, lacking in initiative and a sense of responsibility. Critical judgement skills are necessary to keep leaders on track when they are giving direction and orders. Good judgement comes with experience, and experience comes with learning from past mistakes, both your own as well as others.
- **Work Ethic:** good followers are diligent, motivated, committed, and devoted to organization goals, whether in daily tasks or deployment settings.

Veterinarian Professional Advisory Committee

- **Competence:** a sign of poor leadership is blaming followers for not having the skills needed to do a task assigned to them by the leader. Competence is necessary and opportunities to develop competence must be provided to followers. Followers in turn must take advantage of these opportunities to improve their professional competence.
- **Honesty:** good leaders are grateful for respectful, constructive, and honest feedback from followers who think the approach or direction that the leader is taking is seriously flawed and lacking. In my Air Force career, my more experienced but lower ranking enlisted and civilian staff saved me from bad decisions more than once as I was willing and open to their perspective and experience. I have also seen leaders who resented and rejected honest feedback from their subordinates and colleagues fail, and hope I also learned from seeing this.
- **Courage:** courage is closely related to honesty. It can take real courage to shares one's concerns about the direction a leader is taking or especially the personal attributes or behavior of the leader. . As Winston Churchill stated, "Success is not final, failure is not fatal: it is the courage to continue that counts."
- **Discretion:** discretion and good judgement go hand in hand. Being discreet, especially in regards to one's own actions or speech is crucial to the health of an organization. Good followers owe their organization and leaders discretion; being indiscreet in word or deed shows poor judgement and undermines your trustworthiness and value to the group. Trust, once lost, is a hard thing to earn back.
- **Loyalty:** loyalty is commitment to an organization's goals, objectives, and mission.
- **Ego Management:** good followers are team players with good interpersonal skills, who put the good of the mission and organization ahead of their personal desire for recognition, advancement, and rewards. In my experience, good things come to Officers who focus on the mission and let others recognize and take note of their efforts. Recognizing and rewarding this behavior is another trait of a good leader.

Don't be a



As you move through your careers, I challenge you to look for ways to improve your agency, and the Commissioned Corps, by being a good and effective follower.

Acknowledgments: Lt. Col. Paul Scholl, USAF; Dr. Robert Kelly and his book, The Power of Followership

Professional Advisory Groups

National Capital RIST Support of the Independence Day Celebration

Contributed by: Regional Incident Support Team – National Capital Region

The 2018 National Independence Day Celebration took place at the National Mall in Washington, D.C. on July 4, 2018. The all-day event commenced with a parade down Constitution Avenue and concluded with a spectacular fireworks show displaying over the Washington Monument. Several events organized throughout the day required a great deal of behind the scenes planning and keen attention to detail. In support of the National Park Service and the United States Park Police, the U.S. Department of Health and Human Services, under the direction of the HHS Assistant Secretary for Preparedness and Response (ASPR), deployed United States Public Health Services (USPHS) Commissioned Corps Officers from the Regional Incident Support Team - National Capital Region (RIST-NCR) to provide incident response coordination support for this national special security event.

Two days prior to the event, RIST-NCR Officers reported to the Hubert H. Humphrey (HHS Headquarters) building to begin preparations. The Officers met with counterparts from ASPR to form the Incident Response Coordination Team (IRCT) for the event. The IRCT coordinated all deployed ESF-8 resources and included HHS full-time staff, ASPR's National Disaster Medical System intermittent staff, and USPHS Officers. RIST-NCR deployed eleven Officers who made up over twenty-five percent of the ICRT. The eleven Officers filled positions in planning, operations and administration/finance including leadership positions as the planning section chief and deputy safety Officer. RIST-NCR Officers also served as liaison Officers dispersed throughout the local command centers.



Pictured above, RIST-NCR Officers deployed for the 2018 National Independence Day Celebration. From left to right: LCDR Scott Steffen (Scientist), CDR James Cowher (Therapist), CDR Simleen Kaur (HSO), LCDR Diane Richardson (HSO), CDR Gerald Brozyna (HSO), LCDR Teisha Robertson (Pharmacy), CDR Karen Chaves (HSO), CDR Vicky Chan (Pharmacy), CDR Jonathan Kwan (HSO), LCDR Xinzhi Zhang (Scientist), and Team Commander CAPT Sally Hu (Scientist)

The celebration's opening parade included more than 2,000 participants with school bands from across the country, fife and drum corps, floats, military and specialty units, giant balloons, equestrian teams, drill teams, VIP's, national dignitaries, and other celebrity participants. The evening's "A Capital Fourth" concert included a wide range of genres including pop, country, classical, Motown, and gospel. Artists included groups such as the Beach Boys, Jimmy Buffet, and the Temptations to the National Symphony Orchestra as well as stars from Broadway and the popular TV show The Voice. By days end, more than 500,000 spectators visited the National Mall for this event.

In planning for the event, the National Park Service and the Park Police established five medical aid stations dispersed throughout the National Mall as well as a temporary station at the end of the parade route. Each medical aid station consisted of basic life support provided by volunteers and local partners as well as advanced life support provided by federal partners serving as Health and Medical Task Force teams. The federal partners making up the task forces include members from the National Disaster Medical System, Veterans Affairs, and USPHS Officers. Each task force included physicians, mid-level practitioners, nurses, and emergency medical technician paramedics. The IRCT coordinated support for the task forces and held additional teams in reserve as an operational asset to augment teams in the field. Additionally, the IRCT provided coordination support for a National Veterinary Response Team from the National Disaster Medical System to support the 20 canine and 25 equine law enforcement teams at the event.

Professional Advisory Groups

A major concern for this event was the large number of people in attendance and the extreme heat conditions. Temperatures were forecasted in the upper 90s with high humidity and the ever-present threat of severe thunderstorms. The weather would present a challenge for the anticipated 500,000 attendees as well as the several thousand first responders supporting the event. The basic life support providers provided initial triage for first aid and heat related illnesses, while the health and medical task forces responded to more advanced cases of heat-related illnesses in addition to completing preparations in case there was a major event or mass casualty incident.

At the IRCT, RIST-NCR Officers served in range of roles to successfully support the celebration. CDR Karen Chaves led the planning section as the planning section chief. CDR Chaves coordinated with the IRCT commander and IRCT command staff to finalize the incident action plan that distributed to all personnel as a plan of action for the event and the single reference source for contingency, safety and communication information. In the administration and finance section, CDRs Gerald Brozyna and LCDR Xinzhi Zhang served as the cost unit leaders responsible for collecting and analyzing all cost data, making cost projections and recommending cost-savings measures while LCDR Teisha Robertson functioned as the time unit leader responsible for tracking, collecting and analyzing all volunteers' time during the deployment.

In the operations section, CDR James Cowher served as a group supervisor providing direct support to health and medical task forces in the field and communicating information and resource needs to the IRCT. LCDR Scott Steffen Officer served as the deputy safety Officer, checking the well-being of personnel in the field. These Officers served important roles in monitoring each health and medical task force team in its respective medical assistance station where the heat index reached 109 degrees and assisted in a generator power outage at one station that worsened conditions and jeopardized refrigerated medical products. In addition to the challenge of standing up and supporting the task forces, a significant aspect of the event was situational awareness and coordinating activities with federal and local partners. These tasks would not be possible without the support of liaison Officers deployed to key locations in local command centers. With their local knowledge and established relationships, RIST-NCR Officers were relied upon to provide the majority of liaison Officers for this event.

CAPT Sally Hu, CDR Jonathan Kwan, CDR Vicky Chan, CDR Simleen Kaur, and LCDR Diane Richardson served as liaison Officers. These Officers were deployed to the Washington, D.C. Department of Health, the D.C Homeland Security, and Emergency Management Agency, where the Multi-Agency Command Center and the Unified Medical Command were located. Liaison Officers also facilitated situational awareness and coordination with stakeholder partners ranging from the National Park Service, United States Capital Police, and American Red Cross to the Metro Transit Police, the D.C. Fire Department, and the D.C. Department of Health. These Officers served a critical role for interagency coordination, tracking potential threats, monitoring vital local infrastructure, coordinating with local hospitals, and tracking patient movement.

The 2018 celebration concluded with no major adverse events or incidents. The IRCT effectively supported the teams in the field, maintained situational awareness across all operational domains, and was poised to respond should a major event or mass casualty incident occur. RIST-NCR provided invaluable support to the IRCT by providing well-trained Officers to augment IRCT staffing, serve critical leadership roles, and liaison with local partners highlighting the important role of USPHS Officers in our nation's response framework. RIST-NCR has been consistently relied upon to support local and national response efforts for both preplanned events, such as the National Independence Day celebration, as well as unplanned events. RIST-NCR has supported over 50 events since 2009.

RIST-NCR challenge coins are available to other response teams if they want a souvenir to document their deployment experience. Officers from the national capital region interested in serving on the team should contact the team commander, CAPT Sally Hu at sally.h.hu.mil@mail.mil for more information.

Pictured right, RIST-NCR team coin including U.S. Public Health Service 1798 Logo with crossed Anchor and Caduceus (front) and fireworks over the National Mall (back).



PROFESSIONAL ADVISORY CHAIRS BY CATEGORY

Dental Category:

PAC Chair:
CDR Kevin Zimmerman

Dietician Category:

PAC Chair:
LCDR Kristie Purdy

Engineer Category:

PAC Chair:
CDR Samuel Russell

Environmental Health Category (EHO):

PAC Chair:
CDR Michael Quinn

Health Services Category (HSO):

PAC Chair:
CDR Simleen Kaur

Nurse Category:

PAC Chair:
CDR Tiffany Moore

Pharmacist Category:

PAC Chair:
CDR Melinda McLawhorn

Physician Category:

PAC Co-Chairs:
CAPT John Iskander &
CDR JP Ahluwalia

Scientist Category:

PAC Chair:
CAPT Jennie Thomas

Therapist Category:

PAC Chair:
CDR Tracy Gualandi

Veterinarian Category:

PAC Chair:
CDR Christa Hale

THE PAC CHAIRS GROUP

Chair:
CDR Carlos Bell (Health Services Category)

PAC Chairs Group – Chair Ex-Officio:
LCDR Rodney Waite II (Pharmacy Category)

Executive Secretary:
CDR Molly Rutledge (Therapist Category)

Chief Professional Officer (CPO) Liaison:
CAPT John Gibbins
CAPT Suzan Gordon

LIAISONS

Organization	Name
Headquarters Liaison:	CDR Dorinda Lee
DSI Liaisons:	CDR Yang Wang, Mr. Ronald Pulivarti, & Ms. Saranya Rao
JOAG Liaisons:	LCDR Lindsay Hatch and LCDR Christopher Sheehan
ICAC Representative:	CDR Michael Rinaldi

COMBINED CATEGORY NEWSLETTER

Editing, Design, and Layout:

LCDR Jonathan Blonk (Environmental Health)
LT Laura Adams (Veterinary)
CDR Maria Said (Physician)
CDR Chris Vaught (Engineering)
CDR Jerome Lee (Pharmacy)

DISCLAIMER

Any opinions or thoughts presented in this newsletter are solely those of the author(s) and do not represent the U.S. Public Health Service (USPHS), United States Department of Health and Human Services (HHS), or any other government agency.