

SPRING / SUMMER 2017 | WWW.NORTHWESTPUBLICHEALTH.ORG

Northwest PUBLIC HEALTH

THE MAGAZINE OF THE UNIVERSITY OF WASHINGTON SCHOOL OF PUBLIC HEALTH

**What does population
health look like?**

Envisioning healthy people
in sustainable communities

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FROM THE DEAN

POPULATION HEALTH AT THE UW: ADAPTING WHAT WE DO TO IMPROVE LIVES EVERYWHERE

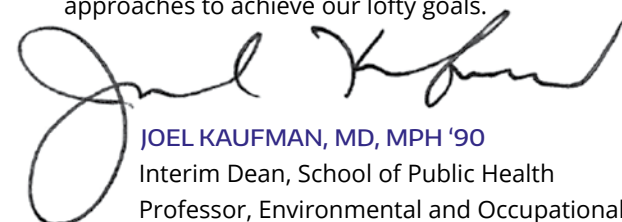
At the University of Washington School of Public Health, we envision a world where everyone—regardless of birthplace, race or ethnicity, income or educational background—can live healthy and productive lives. To achieve this lofty goal, we focus on monitoring and improving the health of whole populations, not just on individual care.

We are proud of our nearly 50-year history of education, research, and service to advance these efforts, yet we remain committed to improving and adapting our work as the field evolves. To do this, we are exploring ways to better recruit and retain students, staff, and faculty from diverse backgrounds. We are revising our curricula to better train public health leaders in addressing the root causes of health disparities, understanding systems, and including community stakeholders. We are improving our practicum experiences to help students better apply what they learn in class and build real-world skills. We have also added a School-wide competency around recognizing inequities, racism, power, and privilege, and their roles in health. These changes will help us better serve the communities in which we work, improving the health of whole populations around the world.

There is an urgent need for more cross-discipline collaborations across health and other fields to address our society's most complex problems. That is why we are excited about the UW's new Population Health Initiative, an effort to map a long-range vision for advancing health in the Northwest and around the world. Announced last year by UW President Ana Mari Cauce, it seeks to develop a shared vision over the next quarter century that addresses human health, environmental resilience, and social and economic equity. Through regional and international partnerships, it will build on the transformative work underway at this University by further developing, implementing, and disseminating knowledge.

Importantly, the Initiative also prioritizes our School's goals of educating new public health leaders; delivering effective interventions with greater speed, efficiency, and quality (what we call implementation science); creating evidence-based planning tools; and reducing health disparities.

We are enthusiastic about this unprecedented interest in population health and our own School's efforts to support the work. We hope this issue sparks your interest in population health too, as you read about the remarkable professionals adapting and adopting new approaches to achieve our lofty goals.


JOEL KAUFMAN, MD, MPH '90
Interim Dean, School of Public Health
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*In this issue of **Northwest Public Health**, you will read inspiring stories such as Jürgen Unützer's Collaborative Care model to help treat depression in the rural Northwest, a profile on Bryan Weiner about implementation science, and a student capstone project that helped inform decision-making around safe consumption sites in King County, Washington.*

contents

FEATURES

- 04 **WHAT WORKS TO TREAT DEPRESSION?**
Implementing Collaborative Care in the Rural Northwest.
- 06 **COMMUNITIES, CONNECTION, AND CANNABIS**
Using art to tell the whole story behind homeless LGBTQ youth and marijuana use.
- 12 **HOPE AND HEALING: TRAINING A WORKFORCE TO BETTER SUPPORT HEALTH**
The Community Health Services Division of Public Health - Seattle & King County is making systems changes to better promote healing among the populations it serves.
- 20 **NO SAFE THRESHOLD: UNDERSTANDING AND PREVENTING CHILDHOOD LEAD EXPOSURE**
The UW Northwest Pediatric Environmental Health Specialty Unit trains and educates clinicians, public health officials, and families to prevent childhood exposure to lead and other contaminants.

PERSPECTIVES

- 02 **SPEAKING UP FOR POPULATION HEALTH**
Editorial
- 08 **GATEWAY TO SUPPORT: A HARM REDUCTION APPROACH TO OPIOID ADDICTION**
Student Perspective
- 14 **REVIVING OUR PUBLIC HEALTH SYSTEM FROM CRITICAL CONDITION**
Opinion
- 16 **CLOSE UP: BRYAN WEINER**
Faculty Perspective
- 23 **CLOSE UP: ERIC KING**
Student Perspective

BRIEFINGS

- 10 **REGIONAL ROUNDUP**
- 18 **UW SCHOOL OF PUBLIC HEALTH: MAKING A DIFFERENCE**
- 22 **A 25-YEAR VISION**
- 24 **POPULATION DOSE**



Speaking Up for Population Health

BY BETTY BEKEMEIER

Not long ago, a former student asked me to speak at a city council meeting in support of a transgender health clinic in danger of closing.

I often teach classes and give presentations, but providing official testimony can be intimidating. With encouragement and help from my student, I put my testimony on record one evening, along with more than 100 other Seattle residents speaking on a variety of local concerns.

I later learned from my student that an influential council member remembered the health clinic issue because the student had brought “that nursing professor.” He voted to keep the clinic open. The experience reminded me of the vast, unrealized power we public health professionals and academics can harness by using our voices. Opportunities like these can be daunting, but they also energize and inspire. They invariably strengthen my sense of commitment to speak up, be uncomfortable, and use my power to improve the health of whole populations.

A similar sense of anxiety and uncertainty is stirring among public health professionals as we face uncertainty in federal funding and a shift in priorities under a new administration. This recent move to redefine government’s role in shaping health occurs during a time when our field is still grappling with rapidly changing and widely varying definitions of health, prevention, and equity—and our roles in operationalizing these fundamental concepts. Most notably, this includes how the

health-related sectors of our economy are re-examining their relationships to one another and considering how we can collaboratively improve our health care delivery and prevention systems by ensuring population health improvement. A prime example of this is hospitals partnering with local health departments to conduct community health assessments.

For some in public health, these new entities speaking “our language” causes concern, as new people “move into our territory.” Others worry this focus on population health improvement is temporary—that it won’t last if our national health reform strategies of recent years become radically altered. I acknowledge these concerns, but I challenge us to view this new interest from others as an opportunity, not a threat.

Yes, the concept of population health, or monitoring the health outcomes of groups of individuals, is a core tenet and specialty of public health practice, but we aren’t the only ones who could or should be doing this. In fact, the nation, and indeed the world, needs many voices talking about how to advance the health of entire groups. More sectors using a population-focused approach could help create new funding streams, build broader support for our issues across the political spectrum, foster better integration of innovative ideas, and accelerate the uptake of research into practice.

Additional perspectives from health care and other sectors can also generate new data to do this work on larger scales and in

KEY ELEMENTS OF POPULATION HEALTH

- Focus on the health of populations
- Address the determinants of health and their interactions
- Base decisions on evidence
- Increase upstream investments
- Apply multiple interventions and strategies
- Collaborate across sectors and levels
- Employ mechanisms for public involvement
- Demonstrate accountability for health outcomes

Source: Public Health Agency of Canada



more ways. One example of this is computer scientists and mathematicians working with public health partners to analyze “big data” to track outbreaks or help visualize the numbers, better integrating real-time data into population health planning and advocacy.

As we do more work with new partners, we will need to document and evaluate our efforts. The evidence about how to most effectively improve the health of populations and achieve health equity has been thankfully increasing, but we need more of it, and we need it soon. We need evidence to provide guidance for how to effectively build more prevention into our health systems, how to “do” population health, and how to address the underlying causes of health disparities such as poverty and racism.

The stories and perspectives in this issue of *Northwest Public Health* add to the evidence about population health improvement, highlight how our partners in practice and academia are applying new strategies, and give inspiring examples of what is possible for this work.

As we move forward in uncertain times, I urge each of us to view this new interest in population health from new partners as a valuable opportunity. Let’s welcome others into the big tent of population health practice and speak up about how it can be done. ■



UW researchers, rural clinics, and funders adapted and implemented a collaborative, evidence-based approach to mental health care. It's working—and spreading.

Photo by the John A. Hartford Foundation.

WHAT WORKS TO TREAT DEPRESSION?

BY DEBORAH GARDNER

IMPLEMENTING COLLABORATIVE CARE IN THE RURAL NORTHWEST.

Depression, anxiety, and related symptoms cause more disability worldwide than any other illness. Patients and providers find effective treatment elusive. In rural areas lacking mental health specialists, successful treatment means collaborating with primary care, adapting evidence, and adjusting approaches until something works, according to UW researchers and rural health clinics.

Intersecting socioeconomic determinants, inequities, and strengths affect mental health across the rural Northwest. Geography and economic downturns contribute to social isolation. Wyoming, Montana, Idaho, and Alaska have four of the nation's six highest suicide rates. Recruiting mental health professionals in rural areas is difficult. Healthcare may require driving hundreds of miles. Parking a vehicle by a psychiatrist's office can feel stigmatizing in small communities.

Access isn't the only problem. Depression is hard to treat. "When people understand how little evidence there is for most of what is delivered for mental health care, they're shocked," said Diane Powers, MA, Implementation Specialist at the UW Advancing Integrated Mental Health Solutions (AIMS) Center.

Jürgen Unützer, MD, MPH, MA, AIMS Center Director, Professor and Chair in the Department of Psychiatry and Behavioral Sciences, and Adjunct Professor in the departments of Global Health and Health Services, sought to learn what treatments work and how to make them available. That approach—researching, applying, adapting, and refining ways to carry out evidence-based interventions—is the core of implementation science.

A psychiatric clinician, Unützer adopted a population-health approach in the 1990s when studying at UW for an MPH. He later led the nation's largest-scale depression

treatment trial, finding one approach twice as effective as others: collaborative care.

The AIMS Center defines collaborative care as patient-centered, population-based, evidence-based, accountable care that measures outcomes and adjusts treatments until patients improve. To reduce stigma and reach more people, it embeds mental health care in primary care. Primary care doctors, psychiatric consultants, care managers, and patients work together. The model is adaptable, such as using telemedicine in rural areas.

To Unützer, it's essential to use research, not just publish it. "As a researcher, that was very satisfying, but as a public health person it wasn't very satisfying. You get more grants if you get more publications, but you're not getting more people well."

Implementing collaborative care is easier with coaching. Trial-and-error adaptation is difficult and time-consuming. "Translating research into real-world practice is way harder than anyone imagines until they've done it," said Powers. Unützer agreed, "As a researcher, my main lesson was that we probably underestimate all those real-world things you have to navigate."

AIMS received John A. Hartford Foundation support to help eight rural clinics with underserved populations or provider shortages to implement collaborative care. Hartford administered and matched a federal Social Innovation Fund grant, and required clinics to match funds. With the AIMS Center coaching, the clinics met annually, tracked progress each month, compared challenges and results, and adapted accordingly.

For Montana's Bighorn Valley Health Center, adaptability was crucial. The clinic borders the Crow reservation—60 percent of patients are tribal members—serving a frontier region with a population density of 2.5 per square mile. Residents face high poverty, depression, and anxiety, with life expectancies 12–15 years younger than statewide. "The health disparities and opportunity to do something about them are both equally great," said Earl Sutherland, PhD, Clinic Director.

By adjusting approaches collaboratively until something works, the way in which the AIMS Center supports the clinics parallels principles of collaborative care. "It is both liberating and scary when clinics realize there is not one recipe," said Powers. The clinic's first approach—with two care managers—wasn't working. AIMS staff visited and helped evaluate, role-playing the patient process until the clinic determined what worked. "It's amazing to have that kind of absolute support and willingness to tailor resources to whatever it takes to succeed," said Sutherland.

A new approach with a single therapist-care manager helped the clinic support people who came in—and some who didn't. "By treating and educating one person, you're increasing the health care of that whole family, because there are so many people in one household—a lot of different generations," said Lacey Alexander, MSW, Clinic Care Manager. Building on a strength, the care was culturally appropriate for tribal members. "Patients are already ahead of the game because it makes sense to them that you treat the whole person," said Alexander.

"With health care disparities, it's hard to tell if it's the chicken or the egg," added Alexander. One patient faced alcoholism, diabetes, depression, anxiety, and suicidal thoughts. Addressing diabetes helped her get regular mental health care when she came for blood tests. "That's an example of how it comes together as an integrated mental health system," said Alexander.

Collaborative care is growing, reaching 50,000 patients in Washington State in 2016. Unützer's testimonies have helped enable insurance coverage. The clinics share the model through primary care associations and health-center networks. These changes affirm collaborative care's population-health focus. "Clinicians think numerators; public health thinks about denominators. When you can think about both, you can really do population-based health care," said Unützer. ■



Montana's Bighorn Valley Health Center (BVHC) board members. Pictured from L to R: Bighorn Valley Health Center (BVHC) board members Luella Brien and Cari McCleary; US Senator Jon Tester of Montana; Bighorn County Commissioner Sidney Fitzpatrick; BVHC Medical Director Earl Sutherland (front); BVHC CEO David Mark, MD; and board members Carlene Old Elk and Alma McCormick.

Photo by the John A. Hartford Foundation.



Photo by Elizabeth Milburn, Rusty Sprocket Images.



COMMUNITIES, CONNECTION, AND CANNABIS

BY BARBARA ROSE

USING ART TO TELL THE WHOLE STORY BEHIND HOMELESS LGBTQ YOUTH AND MARIJUANA USE.

As more states legalize recreational marijuana, public health professionals around the region are grappling with how to address its use among young people. The issue is important to prevention specialists because drug use during these years can impede critical brain development and lead to higher addiction rates later in life. But what if conventional messages about brain science and staying sharp don't resonate with the populations at greatest risk?

The Washington State Department of Health and their community partners are at the forefront of efforts to use targeted messaging and community building to share meaningful health and safety information with young people. Their work allows community-based organizations to communicate crucial information about at risk populations and their marijuana use back to the Department of Health, filling in important data gaps.

"We have a mission to look at communities with the most disparities," said Kristen Haley, Media and Priority Population Consultant for the Marijuana Prevention and Education Program at the Washington State Department of Health. "With limited funds, we focus on targeted interventions with priority populations."

One of these priority groups is homeless LGBTQ youth, who are at higher risk for not only marijuana misuse, but the negative effects of many other health and social issues too. A key partner in reaching this group is Gay City, a Seattle-based organization that operates in four areas—health, resources, arts, and community.

"These areas are all interrelated," said Gay City Director Fred Swanson. "This is a reflection of our organizational values and the needs in our community."

The interrelated nature of Gay City's work was important to the Department of Health, which, in the absence of much scientific research, models some of their marijuana prevention and intervention strategies on previous alcohol and tobacco work. This is particularly true of the prevention frameworks that explore the personal reasons and experiences that prompt people to start and continue using.

Getting to the heart of why people use drugs, including the role of community connectedness, is a specialty of Gay City. Over the years, they have assisted in tobacco cessation initiatives, educated others about party drugs and HIV risk, and organized sober events to help reduce social isolation among LGBTQ people in recovery. "One of the key protective factors for use—that either helps people if they're using or prevents them from starting—is a supportive environment," said Swanson.

To address marijuana use among 14- to 19-year-olds, Gay City staff drew on their understanding of intersectionality, community, and the power of art to develop poetry and spoken word workshops in various homeless youth drop-in centers around Seattle. Teaching Artist Ebo Barton leads the groups by facilitating discussions then suggesting writing prompts to help participants explore their reasons for using. Barton explains, "I have a plan, but sometimes they go deep into family life or lack of family. I find that just sitting there and listening is sometimes all they want for that couple of hours. It proves the theory that our arts director came up with that the opposite of addiction is not sobriety, it's connection."

Considering the scant amount of data on marijuana use among homeless LGBTQ youth, the spoken word project also allows Gay City

to collect information on what drugs are being used and what's triggering use, and give feedback to the Department of Health for better prevention planning. "They're using all kinds of substances. With marijuana, they're using it as medication and as currency," said Barton.

Another key observation Gay City staff made is that traditional mass media campaigns rarely resonate with these youth. However, they are intrigued by the social justice issues around marijuana legalization—like which groups are arrested more than others, which neighborhoods have more stores, and who has disposable income to open a store when banks don't offer loans.

"Most of our youth are really interested in these issues," said Swanson. "Poverty is their life. Marginalization is their life. If they can take a step back and look at the system they're in and play a different role, it is really powerful."

In the coming months, Gay City staff will partner with the Department of Health again to apply some of this feedback to a new media project that has young people creating digital stories about marijuana using a social justice framework. In a continuous cycle of information sharing, the stories will provide more evidence for the state's future prevention strategies, and may be used to help other organizations working with youth.

"Through our arts programs, we try to provide a mechanism for the more marginalized folks, even those within our own community, to have a voice and have an opportunity to tell their stories," said Swanson. ■

GATEWAY TO SUPPORT:

A Harm Reduction Approach to Opioid Use and Addiction

BY LAURA J. HAAS

Dan Otter, a graduate student at the UW School of Public Health, worked with the King County Heroin and Prescription Opioid Addiction Task Force to make recommendations for implementing two supervised consumption sites in King County, Washington.

As in many communities across the nation, the spike in addiction and fatal overdoses from heroin and prescription opioids has reached crisis levels in King County, Washington. In 2015, 211 individuals died from heroin and prescription opioid overdose in King County alone.

To combat the epidemic, local officials endorsed recommendations made by the King County Heroin and Prescription Opioid Addiction Task Force, which included the implementation of two supervised consumption sites. Dan Otter, a graduate student in the UW School of Public Health worked with the Task Force to help inform these recommendations. He researched the best practices of supervised consumption sites in cities abroad for his student capstone project. While these sites would be the first to be established in the US, some cities abroad have been implementing harm reduction strategies through supervised consumption sites for over 30 years.

Harm reduction recognizes that people do and will use drugs. The pragmatic public health response is to limit the harms associated with drug use. This includes services like needle exchanges, medication assisted treatment, and Narcan distribution. Supervised consumption sites offer people who would otherwise engage in high-risk behaviors, such as injecting outdoors, a safer alternative.

“Prevention and treatment are only part of the answer; we also need harm reduction interventions,” said Otter. The reality is that there’s a population of drug users who are not ready or able to seek treatment. Behavior change is a process. “Supervised consumption sites can reduce drug-related harms to individuals and the community. They also serve as a gateway to support services for our most vulnerable and marginalized community members.”

Factors such as homelessness, mental health issues, unemployment, trauma, and violence can not only be the impetus for drug use and addiction, but they can also cause people to become disconnected from mainstream social and health services. Furthermore, stigma and lack of trust in the health care system can create additional barriers for those seeking help.

For his student capstone project, Otter evaluated the harm reduction principles of supervised consumption sites operating in cities abroad. Otter used a stipend from the Northwest Public Health Training Center, housed at the Northwest Center for Public Health Practice, to write up his field research findings once he returned to Seattle.

While abroad, Otter visited ten sites in six different European cities, and identified the best practices that could be applied to the King County sites. He observed daily operations and interviewed staff and managers on the successes and challenges of these sites.

Otter learned that sites are typically staffed by both social workers and nurses. While some sites had staff trained only in CPR, others had

the ability to administer Narcan, a lifesaving drug that reverses the effects of an opiate overdose. “Overdose response protocols varied depending on the site’s needs and local context. Regardless of protocol, nobody has ever died in one of these facilities. Most of the time people just need oxygen. But you need someone there who is able to intervene,” said Otter.

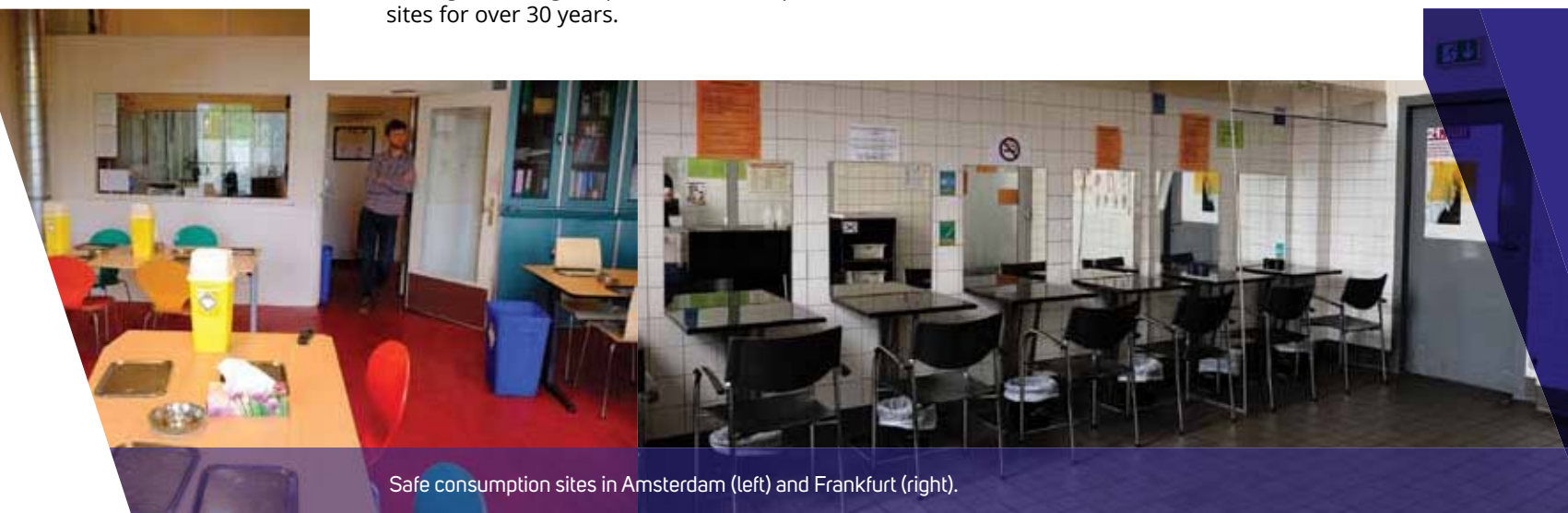
One of the more surprising approaches Otter discovered is that promoting the smoking of drugs rather than injecting them is a widely practiced harm reduction intervention. “While providing a hygienic space for injecting is critical, it is also important to provide a space for smoking, as injecting drugs puts you at greater risk for infectious disease and overdose,” said Otter.

But perhaps the biggest takeaway for Otter was that consumption sites offer support where none often exists. “In addition to promoting survival and health, these sites have the potential to engage people, build relationships, connect them with needed services, and most importantly create a sense of community and acceptance. These sites are as much a social service as they are a health service,” said Otter.

This key finding was one of the driving factors behind the Task Force using the term Community Health Engagement Locations, rather than supervised consumption sites. The research evidence that Otter gathered ultimately supported the policies and program implementation of the two King County sites. He also wrote an online FAQ for the locations.

Working as a research consultant for the Task Force was a unique hands-on learning experience for Otter. “Visiting consumption sites and participating on the Task Force allowed me to build connections with some of the leading voices in the public health and harm reduction fields. It’s rewarding to know that my work as a student has helped Washington State pave the way on evidence-based harm reduction interventions.” ■

Dan Otter in Berlin, Germany, standing next to a syringe-dispensing vending machine, one of many innovative harm reduction interventions he observed in Europe.



Safe consumption sites in Amsterdam (left) and Frankfurt (right).

WHAT IS A SUPERVISED CONSUMPTION SITE?

A safe and hygienic space to consume drugs under the supervision of a health care professional trained in overdose response. These sites also provide access to addiction treatment, medical and behavioral health services, and social services.

REGIONAL ROUNDUP



ALASKA

STATE-TRIBAL PARTNERSHIP FOR A STATEWIDE HEALTH IMPROVEMENT PLAN

Healthy Alaskans 2020, Alaska’s State Health Improvement Plan, was developed to reduce inequities and improve the health and well-being of all Alaskans. The framework, which is based on the latest scientific evidence and input of Alaskans from communities across the state, identifies Alaska’s top 25 health priorities and sets target improvement goals for each priority to be reached by 2020.

Led by the Alaska Department of Health and Social Services and the Alaska Native Tribal Health Consortium, this unique State-Tribal partnership brings together two primary providers of statewide public health with shared and overlapping service jurisdictions. Healthy Alaskans 2020 supports population health initiatives throughout the state by maximizing resources, aligning efforts, improving access to services, and facilitating cross-sector collaboration.



IDAHO

HEALTH AND FINANCIAL IMPACTS OF CLIMATE CHANGE

Students in the Master of Public Health program at Idaho State University are working with the Southeastern Idaho Public Health District on the potential health and financial impacts of climate change on the region and recommended mitigation efforts. Using public data, recent graduate Tai Crawford developed a report on the impacts of increasing temperatures on vector-borne diseases and wildland fire smoke.

As temperatures increase, sagebrush, the primary habitat of ticks, will decrease, resulting in a reduction in the incidence of Rocky Mountain spotted fever. In contrast, hotter, drier conditions have led to more wildland fires. Since smoke can trigger asthma, it is expected that emergency room admissions and associated health care costs will rise. Crawford’s report has led to an interdisciplinary, multi-state effort to explore the impact of climate change on the Northwest region.



MONTANA

USING TELEMEDICINE TO INCREASE HEALTH CARE ACCESS

In Southwest Montana, time and costs associated with traveling long distances and through seasonally treacherous conditions can increase barriers to health care. To increase access throughout its service area, Bozeman Health is developing a telehealth program that connects patients to specialty services from their home or local health care facility. Bozeman Health uses a platform that is web-based, HIPPA compliant, and functional in low-bandwidth environments found in rural areas throughout the region.

The program’s initial efforts focus on specialty services that complement the outreach of physicians. Diabetes, wound care, and cardiology services are currently available for telemedicine appointments. Bozeman Health is also working with regional partners to offer a connection between clinics for visits that require clinical assistance on the patient’s end, and to ensure coordination between specialty care and the primary care provider where the patient lives.



OREGON

RAISING WAGES, IMPROVING HEALTH

Income is an important determinant of health. People who earn more money tend to live longer, healthier lives. Hundreds of thousands of Oregonians struggle to make ends meet with low-wage jobs, and it takes a toll on their health. Oregon’s new statewide minimum wage law will boost incomes for over 600,000 jobs, impacting approximately one-third of the jobs in Oregon. The wage increase will make workers and their families more financially secure, as well as reduce income inequality and the gender wage gap since most low-wage workers are women.

“With a sizable wage increase affecting so many people, I think it’s reasonable to conclude this measure will add more than a million years to the lives of Oregonians,” said Daniel Morris, Research Director for Raise the Wage Oregon.



WASHINGTON

GLOBAL TO LOCAL’S CONNECTION DESK

South King County, Washington, is home to more than 70 distinct linguistic groups, including newly arrived immigrants, refugees seeking asylum, second-generation immigrants, and longtime residents. Many experience communication and language translation barriers, and issues with cultural competency, when it comes to accessing services such as housing, transportation, employment, and health care. Global to Local’s referral service program called the Connection Desk helps to bridge social and health services, and is located in the lobby of a health clinic and multi-service space. Referrals can be made in person or by phone, making clinical visits more efficient as physicians can spend their visits on direct health issues. And the majority of social services based 13 miles away in Seattle are made more accessible.

Staffed by university student volunteers, who speak a variety of languages, the Connection Desk has provided more than 8,000 resource referrals.



WYOMING

IMPROVING HPV INITIATION RATES

The Wyoming Department of Health (WDH) employs ongoing quality improvement and performance management strategies at the agency and division levels to make timely, data-informed decisions related to program performance.

The WDH Public Health Division’s Immunization Unit identified the state’s human papillomavirus (HPV) series initiation rate as an area needing improvement. By focusing on communication, outreach, and education, Wyoming increased the HPV series initiation rate among 13-17 year olds by 21 percent between 2013 and 2016. Wyoming’s rates were publicly presented, providers were educated on strategies to improve rates, and Assessment Feedback Incentive and Exchange visits had a stronger focus on HPV. The Immunization Unit will continue to improve immunization rates in Wyoming by using successfully proven data and strategies.

HOPE AND HEALING: TRAINING A WORKFORCE TO BETTER SUPPORT HEALTH

BY BARBARA ROSE

THE COMMUNITY HEALTH SERVICES DIVISION OF PUBLIC HEALTH – SEATTLE & KING COUNTY IS MAKING SYSTEMS CHANGES TO BETTER PROMOTE HEALING AMONG THE POPULATIONS IT SERVES.

Every day the more than 600-member staff of the Community Health Services Division at Public Health – Seattle & King County serve thousands of clients through a range of medical and family support services. Their 11 centers and administrative offices are spread throughout the large, ethnically diverse county—the size of Delaware—and offer an important lifeline to low-income families, immigrants, and other groups marginalized from the mainstream health system.

“Our role is to provide and ensure access to quality care for the county’s most vulnerable residents,” said School-based Partnerships Manager Sarah Wilhelm, (MPH, ‘06).

The work is inspiring but taxing for both staff and clients, who have complex mental and physical health needs often stemming from things like violence and poverty. Wilhelm and some of her colleagues began recognizing the impacts of these traumatic social factors on clients’ health and the resulting burnout it produced among staff, and they vowed to make a change. Instead of client-based interventions, which emphasize individual behavior change, they would focus on systems changes across their whole division to improve care for all the populations they serve.

Over the past few decades, service providers around the country have been uniting around research associating early exposure to certain trauma, also known as Adverse Childhood Experiences (ACEs), to poor health in adults. To better address the impacts of these traumas on client health, some people recommend screening for ACEs, but Wilhelm and her team took a different approach.

Recognizing there were a variety of initiatives focused on ACEs emerging within the division, as well as a range of views on how best to incorporate this new research into programs, Parent and Child Health program staff convened an internal workgroup in 2013, the “ACEs Collaborative.” One of the first issues the group tackled was screening. “There was quite a debate internally about whether screening was actually the best standard of practice,” said Wilhelm. “It didn’t quite work for us because we view trauma as much broader than the 10 ACEs developed for a research study.” Ultimately, the division decided not to universally screen clients, and the Collaborative continued strategizing ways to better integrate research and other emerging evidence into their activities.

The Collaborative began by embedding 10 principles of trauma-informed care into their workgroup culture, encouraging service providers to recognize trauma’s impact on health and to offer services that support healing, not re-traumatization. They began their meetings with self-care activities and emphasized concepts like approaching others with empathy and recognizing that healing happens in relationships.

“Our first principle, ‘Understand trauma and its impact,’ is the foundation, and the others kind of flow from that,” said Wilhelm. “However, many of them are interrelated. For example, you have to approach people with empathy to build a relationship.” The group also anchored its work around the concept of cultural humility.



Barbara Huffman, RN, treating a client inside King County’s Mobile Medical Van.

PRINCIPLES OF TRAUMA-INFORMED CARE

“In order to provide trauma-informed practice to a diverse clientele and staff, you need to understand how historical and present-day oppression can be experienced as trauma and can complicate the experience of ACEs,” she said.

Collaborative members then developed goals for expanding the trauma-informed practices outside their workgroup and into the entire division. To build buy-in, they presented their ideas to managers and directors, emphasizing that the culture shift would lead to better service delivery and improved staff interactions. Upon their recommendations, division leaders adopted a trauma-informed priority into their work plan and began tracking their progress.

“In some ways, wanting to do this was easy for our leaders because the county has strong missions and values around equity and social justice,” said Wilhelm. “It helps when all divisions can look to that shared framework.”

The next step was training. With help from a public health student, the Collaborative surveyed staff and found wide variability in knowledge of trauma-informed principles and the skills needed to implement them. Staff also wanted training targeted to their specific job roles. “There is no one-size-fits-all training plan for a workforce this large and diverse,” said Wilhelm. “We want to give each clinic the freedom to customize a plan based on their needs.”

Moving forward, the Collaborative is working with division leadership to secure resources for disseminating training materials throughout the division. They are also looking for ways to evaluate their work. A likely next step is to roll out

- Understand trauma and its impact
- Do no harm
- Approach others with empathy and compassion
- Promote safety and resilience
- Ensure cultural humility
- Support peoples’ control, choice, and autonomy
- Share power and governance
- Integrate care
- Healing happens in relationships
- Recovery is possible and risk factors are modifiable

Source: Adapted by the ACEs Collaborative from the Trauma-Informed Organizational Toolkit of the National Center on Family Homelessness.

baseline training about the impacts of trauma on health to get everyone operating at the same level.

Despite taking several years to make such big changes, Wilhelm and her colleagues are pleased with the progress. They are also proud that system-level changes within the largest division at the health department were driven by staff. “We’re just program managers, front line people, and nurses, but we drove the process. If we can do it, anyone can.” ■

Reviving Our Public Health System From Critical Condition

BY JOHN WIESMAN AND LILLIAN SHIRLEY

If public health in Oregon and Washington were a patient, it would have a severe case of anemia from chronic bleeding and require multiple blood transfusions.



For years now, public health in our states has seen diminishing resources and increasing demand for services. To be blunt, our public health systems are in critical condition. We lack the necessary capacity for responding to disease outbreaks like whooping cough, environmental emergencies like wildfires, and the prevention of risk factors for chronic diseases like diabetes and tobacco addiction. At the same time, we continue to see alarming disparities in life expectancies based on socioeconomic status, race/ethnicity, and geography, which we could be addressing with evidence-based strategies. We must revive our public health systems and restore our ability to ensure that all Washingtonians and Oregonians have an equal opportunity to live a healthy life.



PAVING THE WAY

To address this problem, both states have taken on significant systems work to define core public health services—called Foundational Public Health Services (FPHS)—that should be available in every community, and modernize the ways in

which these services are delivered. Oregon and Washington, along with a select group of other states, are paving the way in developing concepts and frameworks for modernizing public health as part of a strategic initiative coordinated through the Public Health National Center for Innovation. This work builds on the Public Health Leadership Forum's efforts to further define a minimum package of public health services based on a recommendation from the 2012 Institute of Medicine report, *For the Public's Health: Investing in a Healthier Future*. It allows for customization based on a state's public health structure and political environment to get to the same goal.

WASHINGTON IN ACTION

Over the past five years, leaders from around the state have come together to create a new vision for the governmental public health services in Washington. The plan for modernizing the public health system is organized around guiding principles that emphasize funding core services through dedicated, predictable revenues; delivering

these services with maximum efficiency and effectiveness; building programs that are evidence-based; and monitoring our performance.

The Governor's 2017–2019 budget contained an initial investment of \$23.9 million for public health to help restore key functions that have already been lost, improve public health's ability to respond to the threat of communicable diseases, and continue the modernization of the public health system. The budget is currently being considered by the Legislature and a final budget is expected by July 1, 2017.

The Department of Health has also proposed legislation that defines core public health programs and capabilities; directs public health to expand delivery of shared services for epidemiology assessment and communicable disease through demonstration projects; and requires a public health improvement plan by October 1, 2018, that will contain all of the components needed to fully implement the vision for modernizing the public health system.

OREGON IN ACTION

In January 2016, the Oregon Health Authority, Public Health Division (OHA-PHD) launched a statewide assessment to determine how FPHS are being implemented by state and local health departments. The assessment found that over a third of Oregonians have limited or minimal access to core public health programs, a serious impediment to achieving our mission of reducing health disparities.

Following the Public Health Modernization assessment, OHA-PHD, along with its partners, identified strategies to move the state toward sustainable implementation of FPHS. Three objectives are summarized in Oregon's Statewide Public Health

Modernization Plan: improve the public health system's capacity to implement FPHS; align with health, early learning, and other partners for collective impact; and adopt shared metrics and performance accountability.

Recognizing the need to change how public health does its work, Oregon is already implementing these strategies. In order to improve how the system addresses health equity, OHA-PHD launched a cross-agency Health Equity Committee designed to guide implementation of the required activities in Oregon's Public Health Modernization Manual.

Oregon recently launched its Healthy Places Framework, which aligns chronic disease prevention and environmental health policy initiatives around where Oregonians live, work, play, and learn through cross-sector partnerships with state and local government agencies.

Finally, the End HIV Oregon initiative sets forward a bold goal to end HIV transmission in Oregon through improved HIV testing, utilization of pre-exposure prophylaxis, and access to treatment services. End HIV Oregon leverages partnerships across the health system and nonprofit organizations to achieve this common goal.

MOVING FORWARD

As the saying goes, "An ounce of prevention is worth a pound of cure." In this case, investing in foundational public health and prevention systems is an effective way to improve health. Join us in modernizing our public health system and building capacity to address critical public health needs. Together we can transform from an anemic public health system to one that is healthy and thriving. ■

ABOUT THE AUTHORS: John Wiesman, DrPH, MPH, is the Secretary of Health at the Washington State Department of Health. Lillian Shirley, MPH, MPA, is the Public Health Director at the State of Oregon Health Authority.



Close Up: **BRYAN WEINER**

Bryan Weiner is a Professor in the Departments of Global Health and Health Services at the UW School of Public Health. He shares his perspective on the role of implementation science on population health.

Q TELL US ABOUT YOUR RESEARCH.

For nearly 20 years, I have examined how health care organizations adopt, implement, and sustain innovative and evidence-based practices. We now call this implementation science. Over the course of my career, I have studied a wide range of innovative practices, including quality improvement, patient safety, electronic health records, chronic disease management, and integrated service delivery models. I have also explored how health care providers can effectively deliver evidence-based preventive services and treatment for cancer, diabetes, and cardiovascular disease.

To date, my research has focused on health care in the United States. Having recently joined the UW Department of Global Health, I am excited to expand my research to include global health.

Q HOW WOULD YOU DESCRIBE IMPLEMENTATION SCIENCE?

Implementation science is the study of methods for integrating evidence-based programs and practices into clinical and community settings. It asks and answers the question, “how can we get ‘what works’ to the people who need it,” so they can experience the benefits from the research studies that evaluate what works in the first place.

Q WHY IS IMPLEMENTATION SCIENCE IMPORTANT FOR IMPROVING POPULATION HEALTH?

If we can close what is called the “know-do” gap, we could significantly reduce the burden of disease worldwide. We have a growing body of evidence about what works in public health, health care delivery, and clinical practice. At the same time, we have ample evidence that people are not receiving proven preventive services and treatment.

The key question in combatting the many common diseases is not “what should we do,” but rather “how do we do it” effectively, efficiently, and equitably. For example, the Joint United Nations Program on HIV/AIDS (UNAIDS) set an ambitious target that by 2020, 90 percent of people living with HIV know their HIV status, 90 percent of people who know their HIV-positive status are accessing treatment, and 90 percent of people on treatment have suppressed viral loads.

When it comes to HIV testing and treatment, we know what works. The challenge is how to get “what works” to people who need it with greater speed, efficiency, quality, and sufficient coverage to reach these ambitious targets. Implementation science can point the way forward.

Q WHAT ROLE DO YOU FORESEE THE UW AND SPH PLAYING IN THE FIELD OF IMPLEMENTATION SCIENCE?

The UW is already leading the field of implementation science both domestically and globally. We have a critical mass of researchers in SPH, across campus, and around town engaged in cutting-edge implementation science. The UW is distinctive, if not unique, in that it is strong in both domestic and global implementation science. Other universities are strong in one or the other, but few are strong in both like the UW.

The role I foresee the UW and SPH playing includes enhancing and supporting the work already being done on campus that may not be identified as implementation science, increasing the visibility and expanding the reach of the field, and strengthening connections and collaborations domestically and within global health so that we can accomplish even more.

Q HOW CAN IMPLEMENTATION SCIENCE BENEFIT LOCAL COMMUNITIES AS WELL AS GLOBAL HEALTH EFFORTS?

Scientists in this field have to work closely with health care organizations and community-based organizations to develop knowledge about how evidence-based programs and practices improve people’s health. These organizations are our partners. By working with our partners to adopt, implement, and sustain proven programs and practices, we can then observe and evaluate those efforts, and generate knowledge about how to do so more effectively and efficiently. Implementation science is very much a learning-by-doing field. Local communities benefit from both the doing and the learning.

Q WHY SHOULD STUDENTS CARE ABOUT IMPLEMENTATION SCIENCE? WHAT SKILLS SHOULD THEY HAVE TO BE EFFECTIVE IMPLEMENTATION SCIENTISTS?

Public health students share a passion for improving population health, and implementation science is a means for doing so because it is a knowledge-application versus a knowledge-generating field. Implementation science employs a wide range of research methods including stakeholder and policy analysis, economics, evaluation, social marketing, mathematical modeling, ethnographic inquiry, and intervention testing. Students should have strong quantitative or qualitative research skills, preferably both.

Implementation science is also a team science. Students should have the interpersonal skills to work effectively in teams. Finally, implementation science involves collaboration with health professionals, managers, and community members. Cultural competence and professionalism are also important.

UW SCHOOL OF PUBLIC HEALTH: MAKING A DIFFERENCE

Researchers at the University of Washington School of Public Health are tackling our most pressing health issues to improve population health. Here is a sampling of the School's local, national, and global impact. For a comprehensive list of stories, visit: sph.washington.edu/news/archive.asp



DIVERSITY NEEDED IN HUMAN GENOME STUDIES

People of African, Latino or indigenous ancestry are underrepresented in many major genome studies, according to a study by Alice Popejoy, PhD candidate in the Institute of Public Health Genetics, and Stephanie Fullerton, Adjunct Associate Professor in the Department of Epidemiology. Researchers suggest that the lack of inclusion in genomics research could have repercussions in clinical medicine. Their analysis found that minority groups make up less than 4 percent of the 35 million samples from 2,511 studies in the Genome-Wide Association Study Catalog. Without a broader representation of human populations, Popejoy and Fullerton believe that insights into common traits and diseases could be missed or misinterpreted.



LINK BETWEEN AIR POLLUTION AND CARDIOVASCULAR DISEASE MORE PRONOUNCED AMONG DISADVANTAGED

Air pollution has routinely been linked to increased risk of cardiovascular disease, but some groups are more affected than others, according to a study led by Department of Epidemiology alumna Gloria Chi. The study suggests that socioeconomic risk exposures—both individual- and neighborhood-level measures—may interact to increase susceptibility to air pollution. Using data from the Women's Health Initiative Observational Study, the researchers examined socioeconomic status indicators for 93,676 women and geocoded their home addresses to determine average fine particulate matter concentration. Annual mailed questionnaires collected updates on health outcomes. The findings show significant associations between air pollution exposure and cardiovascular disease risk among the most disadvantaged neighborhoods. Co-authors include Anjum Hajat and Joel Kaufman from the UW School of Public Health.



PREDICTING THE RISK OF ZIKA OUTBREAKS

A novel computer model developed by Cory Morin, Acting Assistant Professor in the Department of Global Health, and his colleagues from the National Center for Atmospheric Research in Boulder, Colorado, can assess the climate-mediated risk of Zika outbreaks and other mosquito-borne diseases. Called DyMSim (Dynamic Mosquito Simulation Model), the model integrates data on weather, mosquito biology, and human demographics to simulate mosquito population and virus transmission dynamics. A paper published in PLOS by the team in March 2016 estimated Zika virus risk for 50 US cities. Model output of mosquito seasonality were used, along with travel patterns from countries on the CDC Zika travel advisory, to map spatial and temporal risk of Zika in the southern US where the principal mosquito vector, *Aedes aegypti*, resides. Maps from their study were used during a White House press conference to help inform the public on Zika prevention and response efforts.



CLEANER BUSES, HEALTHIER CHILDREN

A joint study by the UW Department of Environmental and Occupational Health Sciences and the University of Michigan found that cleaner bus fuels and technologies could translate to 14 million fewer absences from school per year among the nation's 25 million children who ride the bus to school. Basing their work on the federal mandate to reduce diesel emissions, researchers measured the individual impact on children and found improved health and less absenteeism, especially among asthmatic children. A change to ultra low sulfur diesel fuel reduced a marker for inflammation in the lungs by 16 percent over the whole group, and 20-31 percent among children with asthma, depending on the severity of their disease.



DELIVERING DEPRESSION CARE TO DIVERSE ELDERLY COMMUNITIES

For over a decade, the Health Promotion Research Center (HPRC) in the Department of Health Services has worked with CoMotion and other University of Washington organizations to train more than 800 people from 70 community-based organizations to implement the Program to Encourage Active and Rewarding Lives (PEARLS). The program, which helps elderly populations learn problem-solving and behavioral activation skills to manage depression, continues to expand its reach by engaging underserved elderly communities. HPRC collaborates with Area Agencies on Aging, senior centers, and other community-based organizations that serve racial/ethnic minorities, the LGBTQ community, persons living with multiple chronic conditions, and older military veterans, veteran spouses and widows/widowers to deliver PEARLS throughout Washington and Oregon. HPRC is excited about a new partnership with the UW Latino Center for Health to evaluate PEARLS implementation among Spanish-speaking elder Latinos.



Photo by Cade Martin, CDC.

NO SAFE THRESHOLD: UNDERSTANDING AND PREVENTING CHILDHOOD LEAD EXPOSURE

BY DEBORAH GARDNER

THE UW NORTHWEST PEDIATRIC ENVIRONMENTAL HEALTH SPECIALTY UNIT EDUCATES CLINICIANS, PUBLIC HEALTH OFFICIALS, AND FAMILIES TO PREVENT CHILDHOOD EXPOSURE TO LEAD AND OTHER CONTAMINANTS.

Reducing childhood lead poisoning is one of the last half-century's largest public health achievements. However, eliminating its presence in children's environments remains difficult. Education and research can help, according to an evidence-based UW children's environmental health training and consultation team.

Children in the Pacific Northwest are exposed to lead through a variety of sources, including old paint, dust, contaminated soil, solder in pipes, industrial air pollution, and unregulated imported products, including toys, cosmetics, pottery, or folk remedies. The places children live, learn, and play, such as older housing, backyards, or schools, can pose a risk. In 2016, high lead levels were found in the water supply of some neighborhoods in Tacoma, Washington. In Portland, Oregon, residents learned that Portland Public Schools' administrators had suppressed information about lead in school water.

There is no safe level of childhood lead exposure. Research shows that lead can permanently affect cognitive and behavioral development. "We have to take lead out of the environment of children and remove exposure, because current science suggests damage to the brain or other health effects is irreversible and effective treatments for modest-to-low levels of exposure don't exist," said Catherine Karr, a Professor in the Departments of Environmental and Occupational Health Sciences and Pediatrics. "We need to focus our efforts on primary prevention to improve population health."

Karr is also the Director of the University of Washington Northwest Pediatric Environmental Health Specialty Unit (PEHSU), which is part of a network of centers that respond to requests for training, referrals, evidence, fact sheets, and consultation about pediatric environmental health from Northwest clinicians, public health officials, and families. "There is an increasing amount of data on child health and environmental factors," said Karr. "But sometimes it sits in academic journals and doesn't efficiently get integrated into practice. Our network ensures that people on the front line of public health or clinics have up-to-date evidence-based information and can put it to use." Lead is one of PEHSU's most commonly requested topics.

Sometimes those requests are personal. Karr remembers a mother calling about a teenage son for whom blood tests revealed lead levels warranting immediate treatment and prevention of further exposure. "Finding the source of his exposure proved very difficult," recalled Karr. PEHSU and the health department worked together, examining potential sources and sampling water, soil, and paint. They detected nothing. Karr suggested using X-ray fluorescence, or XRF, a lead-detecting technology, to examine everything in the child's environment, even his clothes and bedding. "This is a great tool; you point it at something and get an immediate result," said Karr. They aimed at a sheepskin rug he'd slept with for years. The XRF lit up. It was a humbling reminder that some exposures are atypical and hard to identify—or prevent.

PEHSU addresses various and cumulative children's environmental health topics. The combined impact

of multiple exposures and social inequities leave some children disparately affected by environmental agents such as lead and cadmium. PEHSU addresses contaminant concerns in the context of a child's overall health status and environmental conditions.

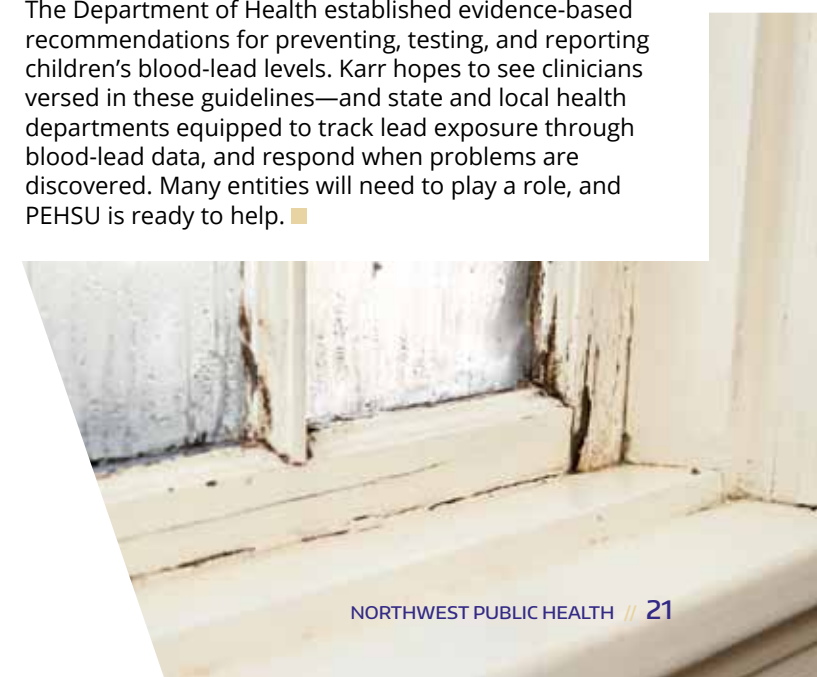
Paying attention to lead can help bring to light concerns about other toxicants. This happened in Portland's Multnomah County, where leaders sought PEHSU's help responding to concerns about cadmium and other pollutants—while simultaneously the city was in the news about lead in school water. Paul Lewis, MD, MPH, Multnomah County Health Officer, found PEHSU's support essential. "We leaned heavily on them as a regional resource," said Lewis.

Between February and June 2016, Multnomah worked with PEHSU to respond to heightened public concern about cadmium, arsenic, and air pollution. This reflects something PEHSU emphasizes about successful evidence-based practice: a single training or contact often isn't enough.

PEHSU kept doctors and the public informed, releasing clinician updates about air pollution and heavy metal exposure. "They provided critical guidance on how to navigate through this and offered information to families and to doctors," said Lewis. Karr presented to medical providers and collaborated with other advisers and toxicologists. "We were able to publish PEHSU's contact information in all of our communications so that if clinicians or families had concerns about their test results they could get expert individual-level consultation," said Lewis.

This shorter-term work contributed to systems change. Multnomah's attention to cadmium and lead prompted Oregon to implement Cleaner Air Oregon, an initiative to establish statewide health-based environmental standards.

Momentum on lead prevention continues. Healthy People 2020 seeks to reduce child blood lead levels. In Washington State, Governor Jay Inslee issued a 2016 directive to increase lead screening and reduce exposure. The Department of Health established evidence-based recommendations for preventing, testing, and reporting children's blood-lead levels. Karr hopes to see clinicians versed in these guidelines—and state and local health departments equipped to track lead exposure through blood-lead data, and respond when problems are discovered. Many entities will need to play a role, and PEHSU is ready to help. ■



A 25-YEAR VISION

HELPING ALL PEOPLE LIVE HEALTHIER AND MORE FULFILLING LIVES

The University of Washington's recent gift from the Bill & Melinda Gates Foundation has provided an unprecedented opportunity to support efforts toward improving population health outcomes.

As one of the largest donations the UW has ever received, the foundation's gift accelerates the UW's ambitious, 25-year vision for improving the world's health and well-being through its Population Health Initiative. The gift will fund the construction of a new facility that will house parts of the School of Public Health as well as other UW units and disciplines working in population health.

UW President Ana Mari Cauce described the \$210 million gift as "transformative" for the UW's Population Health Initiative, and said it "will create a new facility where faculty, students, staff, and partners can come together to find solutions to the world's greatest health challenges."

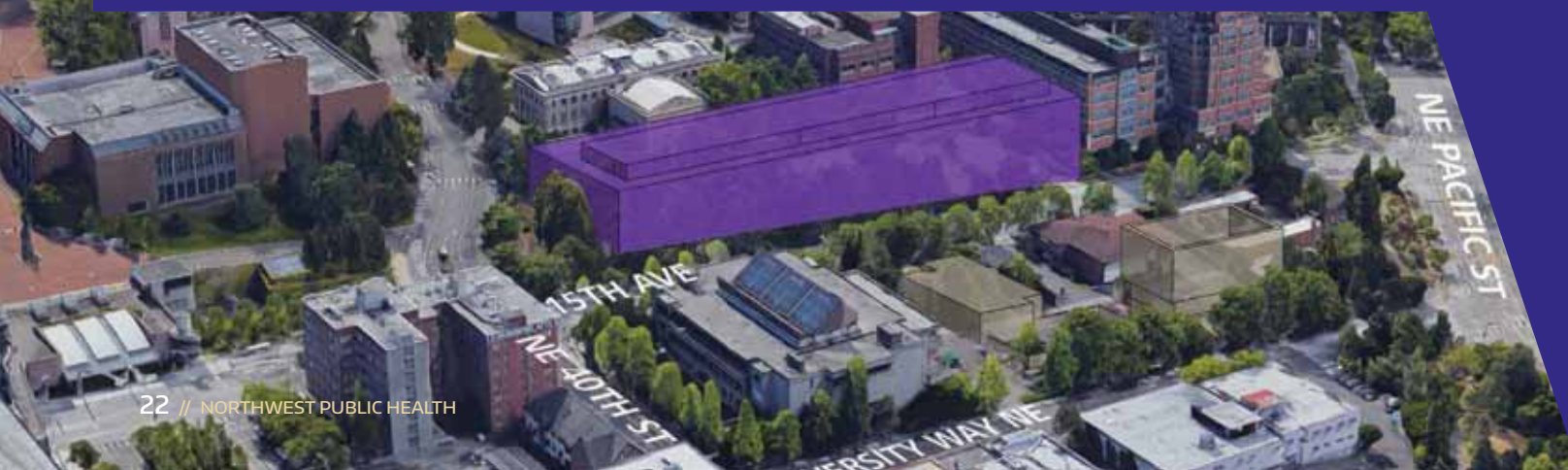
The building—funded with an additional \$20 million in state money—is scheduled to open on the Seattle campus in the fall of 2020. The facility will be located on the eastern side of 15th Avenue NE, just south of the intersection with NE 40th Street, near the western gate to campus.

"This location demonstrates the centrality of this initiative to the University," Cauce said.

The new facility will create space for ongoing collaboration among students and faculty from the six schools of Health Sciences and the rest of the University. The goal is to create innovation in population health across many disciplines and investigate the biomedical, social behavioral, cultural, environmental, and physical factors affecting the

health of populations around the world. The building will include rooms for collaborative group work, active learning spaces, technology-rich rooms to accommodate data visualization, offices and online interactive teaching and training for global partners.

"We know from our public health scientific advances that the place where people live, work, and play is central to many determinants of health. Similarly, we believe that place will be central to the success of the UW's Population Health Initiative," said Interim Dean Joel Kaufman. "A new population health-focused building will nurture new and existing collaborations within the School, across campus, and across the world."



Close Up: ERIC KING

Eric King is a graduate student in the UW School of Public Health, and one of two students on the executive leadership council for the UW Population Health Initiative. He shares his perspectives on our society's most pressing population health challenges.

Q WHAT KIND OF POPULATION HEALTH ISSUES ARE IMPORTANT TO YOU?

Racism and anti-LGBT issues. A racial health disparity that I would like to see improved upon are the maternal and infant mortality rates of Black and Latino populations. In some parts of the US, Black infant mortality rates are higher than those in underdeveloped countries, a product of historical racism that remains embedded in our systems and institutions.

We should also challenge how mass incarceration disproportionately impacts families of color for nonviolent drug crimes compared to white communities who have similar rates of substance use. Initiatives at the UW have an opportunity to shape curriculum to address how and why racism and the implications of racism continue in our society. I hope we can address and overcome the discomfort in talking about racism as we seek health equity.

LGBT, specifically transgender populations, have higher health disparities and more risk factors than any other demographic group. I would like to see targeted efforts that address discrimination, harassment, stress, lack of cultural humility, mental health, and substance abuse in the LGBT community. Suicide rates among transgender youth are unacceptably high; developing sustainable interventions and resources are urgently required.

However, to implement sustainable programs and interventions, we need to include the communities we work with throughout the process. This will ensure that projects are not driven by the prospect of publication, but by the level of impact felt by the population served.

Q WHY IS COLLABORATION ACROSS DISCIPLINES IMPORTANT?

It broadens our view and understanding of any topic, thereby improving our ability to think further outside of the box and become truly innovative. We all bring bias and our unique lens to the table, but the reality is the world is much more complex than the view of an individual.

For example, how would you improve vaccination rates in an immigrant population? An interdisciplinary strategy could bring together an artist, medical provider, anthropologist, and linguist to create culturally relevant educational material such as a comic book. The artist could ensure the drawings looked like the intended audience, the anthropologist could focus on culturally relevant material, the linguist could select the correct language and word choice, and the provider could disseminate the information to patients.

This example shows that we all bring something unique to the table. If we want to have the greatest impact, we need to unite with other experts.

Q WHAT QUALITIES SHOULD NEXT-GENERATION POPULATION HEALTH LEADERS POSSESS?

I want to see leaders who challenge the status quo, question the answer, and strive for equity. Future leaders should be unafraid to speak up against injustice and be determined to dismantle oppression. They will also need to understand how to translate knowledge generated from research into effective programs and policies.

POPULATION DOSE:

BOOSTING THE IMPACT OF COMMUNITY HEALTH STRATEGIES

Whether it's healthy eating, active lifestyles, or reducing neighborhood violence, every community health initiative has the same goal: to improve health for as many people as possible. Healthy Dose: A Toolkit for Boosting the Impact of Community Health Strategies was developed to help evaluators and community practitioners plan, implement, and evaluate strategies that lead to meaningful population health outcomes.

Dose matters because it helps compare different kinds of community strategies using a common yardstick to estimate apples-and-oranges impacts. For

instance, Population Dose can compare strategies like building more sidewalks to increase walkability (high reach, low strength) to a daily walking group (low reach, high strength).

The Population Dose toolkit includes an interactive guide, a "dose calculator" that helps users plan strategies, and a PowerPoint presentation that introduces audiences to the dose concept.

Population Dose was created by Kaiser Permanente, Washington Health Research Institute's Center for Community Health and Evaluation, and the Nutrition Policy Institute at the University of California.

WIN A \$50 GIFT CARD

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Have a comment or suggestion about this issue of *Northwest Public Health*? Help us continue to improve what we do by filling out our reader survey. Send us your feedback by August 1, 2017, to be entered into a drawing for a chance to win one of two \$50 gift cards.

Access our reader survey by visiting:
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Northwest PUBLIC HEALTH

SPRING / SUMMER 2017 | VOLUME 34, No. 1

ABOUT

Northwest Public Health (ISSN 1536-9102) is published annually. Copyright 2017, University of Washington School of Public Health.

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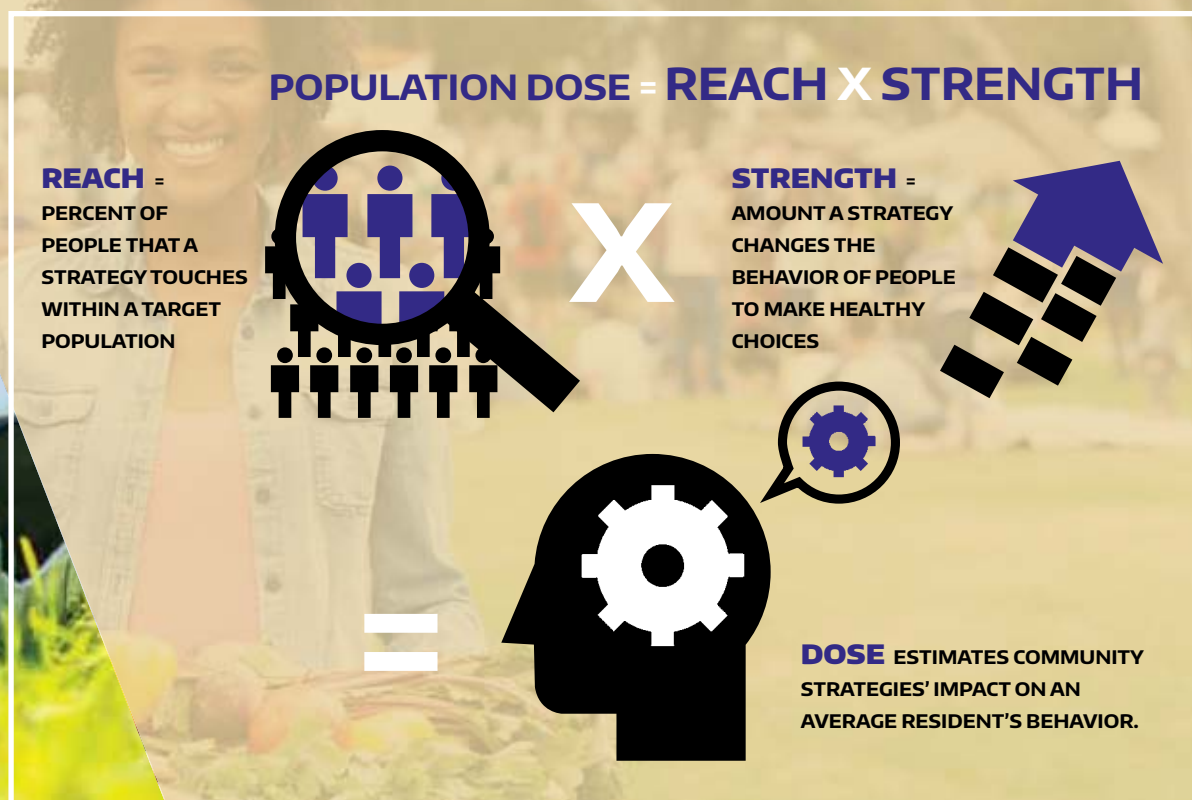
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