

VA

RESEARCH CURRENTS

Research News from the U.S. Department of Veterans Affairs



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Veterans show no health effects of uranium exposure 25 years later

Gulf War Veterans wounded in depleted uranium friendly-fire incidents showed no uranium-related health effects 25 years after exposure. Veterans with embedded uranium fragments had elevated urine uranium concentrations, while those who had been exposed to uranium through inhalation had lower urine uranium concentrations. Although these Veterans did not show any negative health effects, metal fragments still in their bodies continue to expose them to uranium radiation, and dangerous concentration thresholds may still be reached. The researchers recommend continued health surveillance for this group. (Environmental Research, January 2017)


HIV increases risk for lung cancer

HIV infection could contribute to the development of lung cancer, according to a study of participants in the Veterans Aging Cohort Study. Chronic inflammation and a dysfunctional immune system, both associated with HIV, are two factors that could increase the cancer risk, say the researchers. The study also showed that patients with lower T-cell counts were more likely to develop lung cancer. These findings could be used to target lung cancer prevention to this high-risk group, say the researchers. (The Lancet HIV, Dec. 2, 2016)

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Editor/writer: Mitch Mirkin

Writers: Mike Richman, Tristan Horrom

Layout: Michael Escalante

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U.S. Department of Veterans Affairs
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Virtual training for staff helps prevent pressure ulcers

A new training program decreased the rate of pressure ulcers in VA. The Virtual Breakthrough Series (VBS) is a teleconferencing and email-based training program that uses personalized coaching and group education to help staff implement care changes to prevent pressure ulcers in patients. After the project was implemented, the pressure ulcer rate dropped from 1.2 to 0.9 per 1,000 bed days of care. VBS has previously been used to prevent catheter-associated urinary tract infections and to prevent falls. The researchers say that together, these studies show that VBS could be a powerful tool to improve the quality and safety of care in VA. (Journal of Nursing Care and Quality, online Nov. 29, 2016)

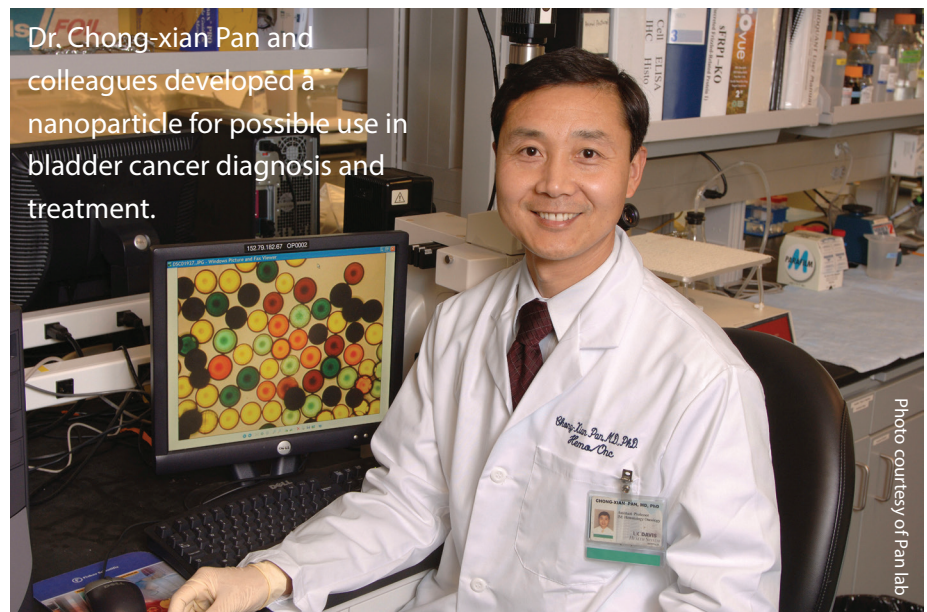


Can neurocognitive function predict suicide?

A study of Army administrative data found an association between decreased neurocognitive functioning and suicide in soldiers. Researchers found that lower scores on a computerized test of neurocognitive functioning—including problems in decision-making, problem-solving, verbal fluency, and memory—were linked to suicide attempts or death and suicidal thoughts in the following 12 months. The study showed more suicide attempts in soldiers who were female, less educated, white non-Hispanic, and younger at the time of testing, and who had a mental health diagnosis before testing. The researchers say that neurocognitive testing may be a useful tool in predicting future risk of suicide. (Suicide & Life-Threatening Behavior, Nov. 1, 2016)

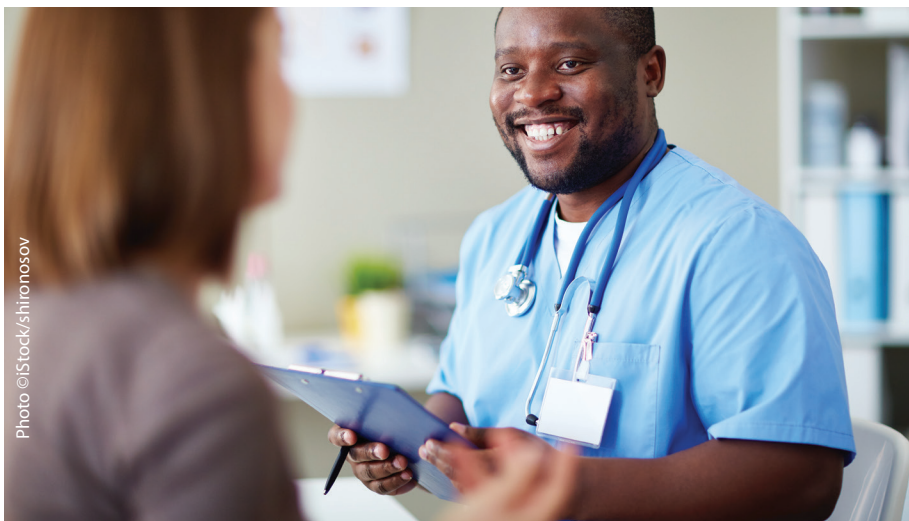
Nanoparticle may aid in bladder cancer diagnosis, treatment

Researchers have developed a nanoparticle that promises to help in the diagnosis and treatment of bladder cancer. The particle, called PLZ4-nanoporphyrin (PNP), emits fluorescent light when exposed to infrared light. By coating PNP with a molecule specific to bladder cancer, researchers were able to identify cancer cells with the light and diagnose the condition in mice. PNP was also shown to be able to release chemotherapy drugs, as well as photodynamic and photothermal treatment agents,



slower and more effectively than other methods. While this new technique of bladder cancer diagnosis and treatment has been shown to work so far only in mice, the researchers believe

it could easily be adapted to individualized medicine in a clinical setting. (Biomaterials, October 2016)



Intensive outpatient program did not lower health care cost or use

Intensive outpatient care resulted in health care use and costs that were similar to those of standard care in a VA Palo Alto Health Care System study. The study compared 433 high-need patients in standard

Patient Aligned Care Team (PACT) care with 150 patients in an Intensive Management program (ImPACT). Patients in ImPACT receive extra outpatient care, including tracking goals and priorities, care management for medical and social service needs, and coordination between VA and non-VA providers. Patients in both programs had similar costs and numbers of hospital visits. Those in the ImPACT group were slightly more satisfied with VA care. These results were surprising—the researchers expected ImPACT to reduce care utilization and cost. (JAMA Internal Medicine, Dec. 27, 2016)

'Safety huddles' ease risks linked to electronic health records

“Safety huddles” can help limit safety risks related to electronic health records (EHRs), found a VA study. These risks include mislabeled medicine, data loss due to computers not working, and incorrect treatment doses. One medical center used a daily meeting of care providers and support staff to discuss safety concerns and “great catches” of potential problems. Over 249 meetings, they were able to identify and address 245 EHR-related safety concerns. The study authors recommend that health care systems use huddles to help improve EHR use. (Journal of the American Medical Informatics Association, Dec. 28, 2016)

How do the experiences of U.S. and Australian Veterans compare?

A recent comparison based on data from VA and the Australian Department of Veterans' Affairs showed several differences in post-1990 deployment outcomes. The U.S. deployed significantly more personnel than Australia during this period. Veterans from the two countries had similar overall rates of PTSD. Gulf War Veterans from both countries had a reduced risk of suicide, compared with the general population, but U.S. Veterans of Iraq and Afghanistan had higher rates of suicidal thoughts. U.S. Gulf War Veterans had higher rates of multisymptom illness than Australians, and were also more likely to have been in combat. The two countries' health care systems were alike in terms of their range of services, focus on mental health, and increasing use of technology, but different in some aspects of service provision and financial structure. (Australian DVA website, Dec. 14, 2016)



Study compares infection control in VA, non-VA nursing homes

VA and non-VA nursing homes differed in their approach to catheter-associated urinary tract infections, according to a recent study. VA nursing homes reported more hours per week devoted to infection prevention, were more likely to have committees to review infection policies, had higher physician and nurse staffing-to-bed ratios, had higher percentages of 24-hour registered nurse supervision, and kept track

of catheter-associated urinary tract infection rates more regularly, compared with non-VA nursing homes. Most VA nursing homes also had infection prevention programs integrated within VA acute-care programs. A lower percentage of VA nursing homes had policies on appropriate catheter use, compared with non-VA nursing homes. The authors suggest that universal practices should be adopted in both VA and non-VA nursing homes. (Infection Control and Hospital Epidemiology, online Dec. 5, 2016)

A Veteran takes part in the 2012 National Veterans Summer Sports Clinic in San Diego.



Study to explore needs of **upper-limb prosthetics users**

Researchers hope the data they collect through a study of Veterans and active-duty members who have lost an upper limb will further improve amputation care in VA and the Department of Defense.

For nearly a decade, Dr. Linda Resnik has been researching prosthetic technologies and the outcomes of upper-limb amputation procedures at VA and Defense medical sites and in academia. A research scientist at the Providence (Rhode Island) VA Medical Center, she has written many papers on her findings and helped develop the VA-DoD clini-

cal practice guidelines for upper-limb amputations issued in 2014.

But Resnik has grown frustrated with the state of science in upper-limb prostheses, particularly the lack of studies that compare new technologies with older, commercially available devices. She's also well aware of the limitations of upper-limb prosthe-



VA photo

ses. Only 7 in 10 upper-limb amputee Veterans from the conflicts in Iraq and Afghanistan were satisfied with their prosthesis, compared with more than 9 in 10 lower-limb amputees, according to a 2011 study by VA's Office of Inspector General (OIG).

That study led OIG to call for an evaluation of the needs of Veterans with traumatic upper-limb amputations—the most common of which is at the transradial level, or just below the elbow—to improve satisfaction.

Resnik is confident her research team can provide important new knowledge. So is DoD's Orthotics and Prosthetics Outcomes Research Program, which in September awarded a \$2.5 million contract to the Ocean State Research Institute, the nonprofit arm of the Providence VAMC, to do the evaluation.

Resnik is the study's main investigator.

"We need data to better understand the needs of people with upper-limb amputations and to assess their limitations in functioning, their participation in life roles, and their satisfaction with prosthetic devices and the amputation rehabilitation care that they have received," she says. "Data from the study will be used to improve the quality of amputation care in VA and DoD, and to guide their evidence-based clinical practice guidelines for prescriptions, provision of rehabilitation services, and FDA regulatory approval."

More than 1,000 Veterans in the study

The Providence VAMC is coordinating the three-year study with collaborating investigators from VA medical centers in Richmond, Virginia; Puget Sound, Washington; and Gainesville and Tampa, Florida; and from the Brooke Army Medical Center in San Antonio.

According to Resnik, a random

sample of some 1,900 Veterans and active-duty service members with upper-limb amputations will be asked to participate. She expects about 1,100 will agree to take part. Participants will respond to survey questions about their amputations, their prosthesis use, the quality of their amputation-related health care, and how the amputation has impacted their lives. About 125 of the participants will also complete physical performance tests at one of the VA or DoD sites.

Participants, including those in the performance phase, will be in the study for one year, with an initial survey and a one-year follow-up to assess changes.

Resnik expects this to be the largest and most comprehensive study of Veterans and service members with upper-limb amputations. She says Vets will be included regardless of their era of service or where and how they lost limbs. Prior national surveys were limited to Veterans and service members who lost limbs in the Vietnam War and the global war on terror, she notes.

Dr. Joseph Webster, medical director of the VHA Amputation System of Care at the Hunter Holmes McGuire VA Medical Center in Richmond, emphasizes that this isn't an "intervention" study that will look into the development or implementation of advanced prosthetics.

"It's really getting a better

understanding of exactly how people with upper-extremity amputations function both with and without prosthetic devices,” Webster says. “This is a small component of the amputee population that’s served in the VA, but it’s a population that has somewhat unique needs and requires unique considerations. The outcomes for these Veterans, as far as their prosthetic use and satisfaction, are still limited.”

In the Veteran population, upper-limb amputation is much less common compared with lower-limb loss, although the percentage has risen in recent years due to the many soldiers who have lost hands and arms in roadside blasts while on patrol in Iraq and Afghanistan. In fiscal 2016, 22 percent (20,158) of the Veterans who received amputation care at VA facilities had experienced an upper-limb amputation. Of those, 16 percent (3,225) had a major upper-limb amputation, which is a procedure at the wrist level or higher on the arm. Veterans with major upper-limb amputations often benefit more from a prosthesis, compared with those with finger or partial hand amputations, Webster says.

Improvements needed for upper-limb prosthetics

Although there are fewer Vets with upper-limb amputations than with lower-limb amputations, the medical community faces serious challenges when it comes to providing them with devices they are happy with. Resnik and Webster say that’s largely because there is a much greater need for flexibility with upper-body limbs such as arms and fingers compared, for instance, with legs, and that replicating that degree of flexibility can be hard. Lower-limb prostheses are generally less complex, and the components are larger and more durable, they say.

In the 2011 OIG study, some Veterans said upper-limb prosthetics would often break and require frequent repairs. Others reported requiring multiple prosthetic upper limbs to ensure they would have at least one functional artificial limb. Many Vets with upper-limb amputations were not able to be fitted with a functional prosthesis and ended up not using one, or using one that was only cosmetic and not functional.

Webster says fitting an amputee with the right prosthesis for an upper limb is only a small part of the challenge.

“Although there have been lots of advances in upper-extremity prosthetic devices, we’re still not really able to replicate the function of the upper extremity in the way that we’re able to replicate the function of the lower extremity with a prosthetic device,” he says. “So even if a Veteran with an upper-extremity amputation is able to be fit with a prosthesis, often they’re not satisfied with

the way the prosthesis functions and that it doesn’t allow them to complete tasks that would normally be completed with their upper extremity.”

Resnik further explains why upper-limb devices are inherently more complicated:

“Upper-limb devices are actively controlled either through body-powered harnesses or myoelectric controls,” electrical impulses generated by muscles in the body. “Active movement is necessary to open and close the terminal device or move other joints. Lower-limb devices, except on rare exceptions such as the powered knees and ankles new on the market, have no active movement, so they are mechanically simpler.”

Resnik and her team are in the start-up phase of the study and are getting the approvals needed to begin recruiting participants. She expects to start acquiring data in spring 2017. ★

"This is a small component of the amputee population that's served in the VA, but it's a population that has somewhat unique needs and requires unique considerations."

New developments in upper-limb technology

- **A sense of touch**—Investigators at VA's Advanced Platform Technology Center in Cleveland are developing a system to give sensory feedback to prosthetic hands—basically, restoring a natural sense of touch to users. Sensors on the hand control stimulation to electrodes around the nerves in the remaining part of the amputated limb. This causes the nerves to send impulses to the brain that are interpreted as tactile perceptions. The experimental system has now been in place more than a year in the first study participants, and results are promising.

- **The LUKE Arm**—The name stands for Life Under Kinetic Evolution, and is also a reference to the Star Wars character Luke Skywalker. This high-tech artificial arm was developed by DEKA Integrated Solutions Corporation with \$40 million in funding from the Defense Advanced Research Projects Agency, through its Revolutionizing Prosthetics Program. It was the first prosthetic arm capable of performing multiple simultaneous pow-

ered movements. VA researchers conducted an “optimization” study of the arm to help refine its design, and have continued to study how it may benefit Veterans. The findings have appeared in numerous journals—

most recently, in March 2016 in *Prosthetics and Orthotics International*. The arm gained FDA approval in 2014 and is expected to become available for Veterans, active-duty service members, and others in 2017.

- **Robotic control**—The BrainGate team, supported in part by VA, is learning how to harness users’ brain signals to provide natural, real-time control of robotic arms or other assistive devices. While the work may help those with an upper-limb amputation, the main focus is on those whose natural limbs are intact but who have total or partial paralysis. In one application, for example, a robotic limb is attached to

a wheelchair and used in much the same way the arm and hand were used prior to injury of the central nervous system. ★



Photo courtesy of DARPA

The LUKE prosthetic arm, developed through Defense Advanced Research Projects Agency funding and VA clinical research, is expected to become available to Veterans and military personnel in 2017.

Studies underscore drug risks for Vets using VA and Medicare

A set of recent VA studies pointed to safety risks for “dually enrolled” Veterans who have prescription drug coverage through both VA and Medicare Part D.

A set of recent VA studies pointed to safety risks for “dually enrolled” Veterans who have prescription drug coverage through both VA and Medicare Part D.

The research was led by a team at VA’s Center for Health Equity Research and Promotion, based in Pittsburgh and Philadelphia.

One study, led by Dr. Joshua Thorpe, included nearly 76,000 older Veterans who had a diagnosis of dementia and were enrolled in both VA care and Medicare Part D, which covers drugs for Medicare beneficiaries.

About 80 percent of the Veterans used only VA care, while the others received prescriptions in both systems.

The study found problems with potentially unsafe prescribing in both groups. Overall, more than 4 in 10 Veterans were exposed to potentially unsafe medication. But those who got prescriptions in the two systems—rather than only in VA—were at double the risk.

The study used a composite score that tracked exposure to three problematic classes of drugs: any high-risk drug not recommended for seniors; those drugs known to have cognitive side effects; and antipsychotics, which carry especially high risk for those with dementia.

The researchers say the results agree with those

◀ VA studies have highlighted the risks of Veterans' obtaining prescriptions from both VA and Medicare pharmacy plans.

from past studies that found worse outcomes for Veterans who juggle their health care between VA and Medicare.

Lack of integration between the systems

One factor could simply be a lack of integration between the two systems. In the case of dementia, these patients might be especially hard-pressed to keep track of prescriptions from multiple providers.

One solution, say the researchers, would be an electronic medical record system that allows for easy sharing between VA and non-VA providers. Pilot work along these lines is underway.

A greater role for pharmacists could also help. VA pharmacists could serve as “medication coordination managers” across both systems, say the researchers.

The dementia study appeared online Dec. 6, 2016, in the *Annals of Internal Medicine*.

The other study, led by Dr. Walid Gellad, focused on Veterans who were being treated for opioid addiction with buprenorphine. The drug is itself a type of opioid, but it can help patients wean themselves from more dangerous drugs like heroin.

However, when buprenor-

phine is used along with certain other drugs, the risk increases. These include other opioids, and benzodiazepines—tranquilizers such as Valium or Xanax, which have high potential for abuse.

The study, published online Dec. 7, 2016, in the journal *Substance Abuse*, included 1,790 dually enrolled Veterans with buprenorphine prescriptions, either from VA or Medicare Part D, or from both systems.



Veteran Ron Deluca receives a prescription from pharmacy technician Patrick Malloy at the VA Pittsburgh Healthcare System.

Among the VA buprenorphine recipients, 26 percent had an overlapping opioid prescription and 1 percent an overlapping benzodiazepine prescription from Part D.

Among Part D buprenorphine recipients, 19 percent had an overlapping opioid prescription and 16 percent an overlapping benzodiazepine prescription from VA.

In up to a third of the cases

of cross-system opioid overlap, the prescriptions overlapped for three months or longer.

The authors say the findings highlight “a previously undocumented safety risk for Veterans dually enrolled in VA and Medicare.”

‘Medical data sharing has to become a priority’


Gellad, lead author on the opioid study and a coauthor on the dementia research, published

an editorial earlier this year in the *Journal of General Internal Medicine* in which he examined dual health system use, particularly in the context of the Veterans Choice Act. The 2014 law widened the circumstances under which Veterans enrolled in VA care could get care from non-VA doctors.

Gellad noted that “prior work has documented convincing evi-

dence that dual use of Medicare and VA services comes with inherent risks related to care fragmentation and duplication of services.” These included higher risks of hospitalization for certain conditions, and higher cost and worse outcomes in cancer.

He concluded that “if dual healthcare system use is to become the norm within VA, then improving medical data sharing has to become a priority.” ★



A VA and Department of Defense study found that military personnel and Veterans who have been bereaved by suicide may themselves be at elevated suicide risk.

Photo: ©Stock/chaunpis

Suicide exposure leaves emotional scars on Vets, service members

Research suggests that among military and Veteran populations, the loss of a loved one, friend, or peer to suicide may increase one's own risk for suicide.

When someone dies by suicide, it can traumatize those close to the person—parents, spouses, siblings, friends, co-workers. Research suggests the death could even trigger suicidal thoughts and behaviors among loved ones and friends.

But what about active-duty service members and Veterans? How do they react when

someone they are close with dies by suicide?

They take an emotional hit, too. A study in the January 2017 *Journal of Affective Disorders* finds that military personnel and Veterans who have been bereaved by suicide may themselves be at elevated suicide risk. The study says that “appears to be especially true among those reporting

greater closeness to the suicide decedent, with effects observed even when controlling for current suicidal symptoms and prior suicidal thoughts and behaviors.”

The researchers pooled data from many other studies. Information on the degree of suicide exposure, or how it compares between the military population and civilians, was not collected.

Study co-author Dr. Peter Gutierrez, a clinical research psychologist with the VA Eastern Colorado Health Care System and VA's Rocky Mountain MIRECC for Suicide Prevention, says he's been interested in learning whether suicide exposure has

a greater psychological impact on Vets and service members than on the general population.

“Serving in the military and especially in combat operations, where your life literally depends on your buddy’s ability to do his or her job, creates a very, very tight-knit group,” he says. “So we want to know if that leads to different responses when someone dies. There’s a lot more about the nature of the relationship in addition to how close someone felt to the person who died by suicide that we think is worthy of study, so we can ask, ‘Are there differential effects of relationships for those in the military or who served in the military compared with those who never have?’

“It might be that losing a fellow service member has more of an effect like losing a sibling, than if a civilian co-worker dies by suicide,” says Gutierrez, co-director of the Military Suicide Research Consortium, a DoD-funded initiative that researches the causes and prevention of suicide.

Studies show ‘troubling effects’ of suicide on military

Suicide prevention is a major focus of VA. Of the more than 40,000 suicides in the United States each year, about 20 percent are Veterans.

But little research has been done on suicide bereavement in the military population. A 2015 study led by Dr. Julie Cerel, a clinical psychologist whose work is partly funded by the Military Suicide Research Consortium, looked at suicide exposure among Veterans in Kentucky. Nearly half of 931 Vets reported suicide exposure at some point. Those who did were much more likely to have depression and anxiety, and they reported a greater likelihood of suicide ideation, or thoughts of taking one’s life.

Gutierrez and his team took a broader look. More than 1,700 service members and Veterans

from around the country answered questions on their experiences with suicide exposure, history with suicidal thoughts and behaviors, suicidal symptoms, and their likelihood of attempting suicide.

The findings mirrored those of the 2015 study.

Nearly 6 in 10 participants reported knowing someone who died by suicide and, of those, more than 4 in 10 said a suicide death had occurred during their military years. Suicide-exposed people were much more likely than the non-exposed to report suicide ideation, suicide plans, suicide attempts, and non-suicidal self-injury. The sample was mainly male.

“Together, our study and theirs [Cerel’s] begin to paint a picture of the potentially troubling effects of suicide bereavement among military populations, specifically that loss of a loved one, friend, or peer to suicide may increase one’s own risk for suicide,” the researchers write.

The average age in Cerel’s study was 62, compared with 33 in Gutierrez’s research. That means the lifetime suicide exposure rate of those in Gutierrez’s study—or the number of people they know who die by suicide—will likely be much greater over time because they’ve already been exposed at a relatively young age. A large percentage of the participants in Gutierrez’s research fought in Iraq and Afghanistan.

Clinicians should look at others besides family members

Gutierrez finds none of his study’s findings to be “alarming.” He cautions, though, that the impact of being close to someone who died by suicide is clinically important and should not be overlooked. Most clinicians who try to determine the chances of someone dying by suicide ask if that person has had a family member take his or her life, knowing there could be a genetic link, he says. But it’s much less common for clinicians to ask about suicides of fellow

Continued on page 22

VA researcher seeks to improve HIV care for Vets in rural areas

A research project is using videoconferencing to connect Vets with HIV in rural areas with VA specialists in remote locations.



Photo: ©iStock/AlinaMD

Only a modest percentage of the 26,000 Veterans in care for HIV in the United States live in rural areas and have limited access to high-quality HIV specialty clinics.

At the same time, HIV is a chronic condition that can have serious outcomes for patients who lack access to good treatment. The illness attacks the body's immune system and can cause AIDS, a potentially life-threatening disease. Long-term coordinated care by both a primary physician and an HIV specialist is essential.

Dr. Michael Ohl, an infectious disease specialist and HIV clinician with the Iowa City VA Health Care System, recognizes this challenge. The recipient of a Career Development award through VA's Health Services Research and Development program, he's seeking to create a model that will improve the accessibility and quality of specialty care for rural Veterans with HIV.

For his research, the "rural" classification is based on population density and proximity to VA specialty clinics in urban areas. Most of the rural Vets with HIV are men who contracted the illness through sex with other men, or in some cases through sharing intravenous needles. Women have gotten it through heterosexual contact and sharing needles.

Ohl says rural Vets with HIV are less likely to have an HIV test early in their illness.

"That means rural people with HIV are diagnosed with HIV infection and linked to care at a more advanced stage of infection. They have more severe immune compromise or are more likely to be sick or to have AIDS at the time that they are diagnosed in care. HIV infection is generally asymptomatic for a period of several years, but in the absence of treatment people develop AIDS and become seriously ill."

Providing HIV care through videoconferencing

Currently, Ohl is studying a telehealth model aimed at providing accessible and comprehensive specialty care for rural Vets with HIV. Telehealth means delivering care or services from a distance for example, through videoconferencing.

Ohl calls the model Telehealth Collaborative Care (TCC). The main goal of his study is to learn whether Vets who live near one of VA's community-based outpatient clinics (CBOCs) small primary care sites that serve as satellite clinics for large VA campuses welcome the chance to telecommunicate with an HIV specialist as a way to maintain their ongoing relationship.

The Veteran wouldn't have to travel long distances to an HIV specialty clinic, which are usually in large VA hospitals in cities. An HIV pharmacist, psychologist, or nurse-care manager may also be in on the video conference. A nurse at the outpatient clinic can administer treatment if it is prescribed by the specialist.

A Veteran can also meet with his or her primary care physician on-site. The primary care clinic and specialty care clinic can communicate, as well, to figure out how to best co-manage the patient.

The coordinated process lifts a major travel burden on Vets. Ohl has noted in his research that in 2010, rural Vets with HIV were 86 minutes by car from the closest infectious disease clinic, versus 23 minutes for urban Veterans. The rural Vets also were somewhat less likely than their urban counterparts to use specialty care.

The TCC study, which involves about 800 Veterans, is focusing on rural areas near San Antonio,

Houston, Dallas, and Atlanta, each of which has a VA hospital with a specialty HIV clinic. Veterans with HIV who live closer to a primary care clinic, or a CBOC, than to a specialty clinic and may have at least a 90-minute drive to the city are being offered telehealth.

Ohl says that through interviews with the Vets, he and his team are finding that most of those offered telehealth are choosing to take advantage of the option.

Results from the study are expected in the next year or two.

The research builds on Ohl's 2013 TCC pilot study, which found that 94 percent of rural Veterans with HIV (30 of 32) chose telehealth over traveling to the HIV clinic at the VA hospital in Iowa City. The study, which included patients from rural Iowa and Illinois, also showed that the average yearly travel time fell from 320 minutes before the study, when patients would be driving to the HIV clinic in Iowa City, to 170

minutes during the study, when they were driving to their nearest CBOC.

Nearly all of the patients were men, with an average age of 54.

Vets with HIV prefer direct contact with specialist

Ohl turned to the telehealth model after one of his other studies, published in August 2016 in the *Journal of Rural Health*, examined a program that calls for rural Vets with HIV to see a primary care doctor at a rural outpatient clinic. The doctor would in turn communicate with remote HIV specialists to guide management.

But this form of the Specialty Care Access Net-



Dr. Michael Ohl

work Extension for Community Health Outcomes (SCAN-ECHO) model, which has been successfully applied to hepatitis C patients, had little success when tested at two large metropolitan VAs on the West Coast and one small VA in the Midwest.

Only 9 of 21 rural primary care clinics (43 percent) adopted the HIV SCAN-ECHO model, and only 47 of 776 eligible Veterans (6 percent) participated. Instead, patients preferred to continue driving to the distant HIV specialty clinic, often bypassing more nearby primary care clinics on the way.

Those results were largely attributed to a reluctance by patients to transfer their HIV care from specialty clinics to primary care facilities, and to

HIV “exceptionalism,” a sense on the part of many patients and providers that HIV care is clinically and culturally unique and should not be integrated into the wider primary care system. Vets opted to drive long distances because of a comfort level they felt with their regular HIV doctors at specialty clinics, Ohl says.

“There was this idea that HIV care is so technically complex and culturally different that it shouldn’t be happening in primary care clinics, it should be happening in specialty clinics. Therefore, even though you live hours away and nearer to a primary care clinic, HIV care is so exceptional that you’re willing to drive hours to the specialty clinic.

Ohl continues: “Given that

experience, we pivoted and asked Veterans, ‘What if you go to your local outpatient clinic and establish care with a primary care provider but also continue to see the entire specialty team by video in an HIV specialty clinic as needed? Then you can have access to both a local primary care person and a specialist, and they can coordinate their care.’ They said yes, and that’s where we got the 30 of 32” in the TCC pilot study.

Ohl says the issue of rural HIV care may be a paradigm for other conditions where a Veteran visiting a CBOC can see a primary care doctor and telecommunicate with a specialist in a distant city-based clinic.

“If we can figure this out for HIV, it can have implications for other conditions.” ★

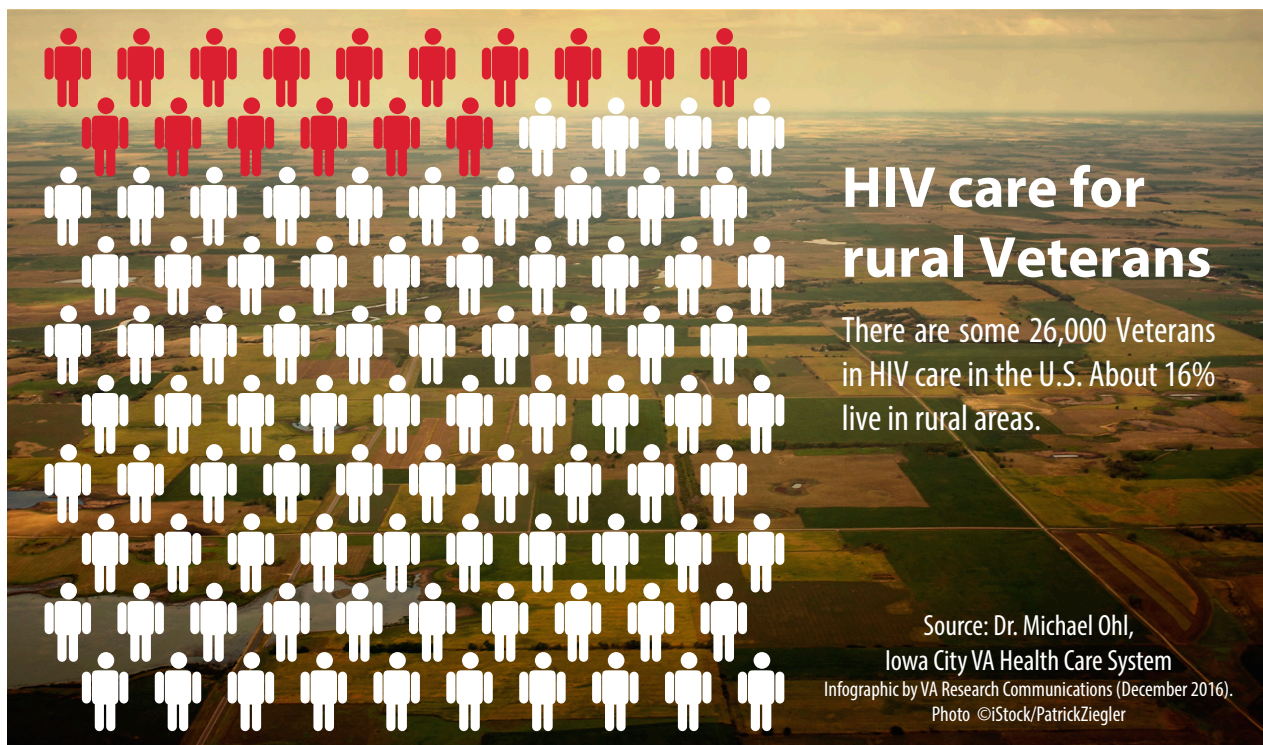




Photo: U.S. Army, via Wikimedia Commons

VA study yields strong evidence of ties between herbicides and high blood pressure in Vietnam-era Vets

In one of the iconic images of the Vietnam War, U.S. C-123s fly side by side spraying herbicides to destroy large, forested areas that were used by the Viet Cong for food and cover. That was the Air Force's Operation Ranch Hand, which accounted for 86 percent of the defoliants and herbicides sprayed by the U.S. military in Vietnam.

The Army Chemical Corps, a less-studied group of Vietnam-era Veterans, also played a key role in defoliation efforts. Using hand-held sprayers and helicopters, troops in the Chemical Corps conducted operations to clear the perimeter of U.S. military installations and to destroy crops in other areas. They also stored, distributed, and mixed defoliants and other chemicals.

Performing these duties potentially exposed them to herbicides that were used during the Vietnam War. The best-known is Agent Orange.

Now, a new VA study has found that exposure to herbicides is "significantly associated" with the risk of hypertension, or high blood pressure, in members of the Army

Chemical Corps. Findings from the study, published November 2016 in the *Journal of Occupational and Environmental Medicine*, point to a higher prevalence of hypertension in Veterans of the Corps who were exposed to herbicides during the war, compared with those who weren't.

Read more at www.research.va.gov/currents ★



Photo by Megan Moloney

Vietnam Veterans took part in a March 2016 ceremony at the Lexington (Kentucky) VA Medical Center in commemoration of the war's 50th anniversary.



Study: Physical environment checklist leads to **sharp decline in inpatient suicides at VA facilities**

VA's Mental Health Environment of Care Checklist has led to a sharp reduction in suicides among patients hospitalized in VA psychiatric units, says a new VA study.

Suicide is one of the leading causes of death in the United States, with at least 30,000 people taking their lives every year, including about 1,500 in inpatient hospital units.

An alarming number of Veterans are among those dying by suicide, some in inpatient hos-

pital settings. In an effort to decrease such tragedies, VA in 2007 launched the Mental Health Environment of Care Checklist. A multidisciplinary group of VA employees developed the program to review inpatient mental health units and eliminate hazards that could increase the

chances of patient suicide or self-harm. The group focused on architectural changes, with analyses suggesting that structural hazards such as anchor points like a hook on the wall or a ceiling vent were linked to most attempted or completed suicides.

Following implementation of

◀ Tony Wickliffe, with the Media Resources group at the Central Arkansas Veterans Healthcare System, applies a mural in a room on an inpatient psychiatric unit. In accord with VA's Mental Health Environment of Care Checklist, the Little Rock facility uses such artwork to avoid conventional picture frames, which could potentially be a hazard.

the program, each VA hospital with a psychiatric unit treating actively suicidal patients began using a checklist to report the potential hazards that could allow one to take his or her life. The checklist asks questions such as whether beds, walls, and ceiling vents are free of anchor points for hanging. Other potential hazards include non-shatterproof glass and non-tamper-resistant electrical outlets.

VA researchers have undertaken studies to evaluate the effectiveness of the checklist. The most recent study, published online Nov. 15, 2016, in *Psychiatric Services*, finds that the program led to a sharp decline in suicides at VA inpatient mental health units from 2000 to 2015. Plus, there was a sustained reduction in inpatient suicides during the last seven years of that period, with none occurring in each of the last three years.

Architectural changes may produce long-term effects

The study's lead author, Dr.

Vince Watts, says the research produced two main findings.

“First, it appears that the Mental Health Environment of Care Checklist has had a substantial and persistent reduction in inpatient suicide deaths,” he says. “Second, these findings suggest that architectural and environmental changes may result in more lasting effects in contrast to other improvement strategies for reducing suicides in hospital units.”

Other strategies for preventing suicides in hospitals include training staff better, performing more frequent checks of patients, and implementing a non-punitive culture that rewards incident-reporting and supports its



Shelving that has no sharp edges and is bolted to the walls avoids the potential suicide and self-harm risks associated with standard shelves or cabinets.

continued improvement.

Watts, a psychiatrist at the VA Medical Center in White River Junction, Vermont, and the study's other three researchers are with the VA National Center for Patient Safety, based in Ann Arbor, Michigan. That program was created in 1999 to lead the development of formal patient safety activities across the VA health system. One of its first actions was to institute a root cause analysis of adverse events such as inpatient suicide. Root cause analysis, used widely in industry, is a systematic approach that helps organizations identify and address the underlying causes of problems, instead of just “putting out fires” when they occur.

In a review of the National Center for Patient Safety's root cause analysis database, the researchers learned of 29 completed suicides in VA mental health units from 2000 to 2015 (24 before implementation of the checklist and five after). The rate of suicide in mental health units before the program kicked off was 4.2 per 100,000 admissions. It dropped to 0.74 suicides per 100,000 admissions—an 82 percent reduction.

The new study is an extension of a 2012 report led by Watts that linked the checklist to a drop in the inpatient suicide rate at VHA mental health units. Both studies focused on programs that took a

different approach from VA initiatives that entailed educating and training mental health staff to help curtail suicides.

Structural changes, according to Watts, reduce the burden on hospital staff to prevent suicides.

“The checklist and resulting environmental changes involve hardwiring of changes into the architecture of mental health units,” he says. “Thus, staff don’t have to remember to do something. The unit is just designed that way.”

Another implication of the finding, Watts says, is that there may be other effective approaches that, like structural changes, create no added burden on staff. One such approach would be the increased use of automated technologies to help provide care for patients with mental illness.

“Technologies tend to be better at performing the same task repeatedly,” he says. “This could have implications in the mental care system for Veterans and non-Veterans.”

Some inpatient suicides may have gone unreported

Non-VA hospitals, Watts says, have taken notice of his research on the Mental Health Environment of Care Checklist in hopes of reducing inpatient suicide rates. He says he and his colleagues at the National Center for Patient Safety are working with the health agency in the Canadian province of Alberta as it applies the checklist in its hospitals.

“We receive many inquiries about the Mental Health Environment of Care Checklist from non-VA health systems,” he says. “It is my understanding that many elect to use the program for their inpatient mental health units.”

His 2016 study, however, is not without its limitations. It is possible that some inpatient suicides at VA facilities may have gone unreported, which could potentially change the results of the

before and after comparisons, along with the fact that researchers tracked the effects of the checklist only for seven years.

Furthermore, Watts says, the impact of the program could possibly drop in the coming years.

“Future staff could stop using it and reverse the changes,” he says. “Staff members change and forget what was done and why it is done. Then one day a patient or nurse complains that they don’t have a place to hang their robe. Hospital workers try to accommodate this suggestion and put a hook on the wall. Later, that hook is used as an anchor point for a suicide attempt. We hope that won’t happen, but we continue to monitor in case it does.”

“Our goal is to have no inpatient suicides in the VA,” he adds. “Our hope is that a continued focus on this approach will result in a continued reduction in suicide.” ★

“The checklist [involves] hardwiring of changes into the architecture of mental health units.”

A sampling from the checklist

Below are examples of the guidelines contained in the VA Mental Health Environment of Care Checklist. To see the full list, visit www.patientsafety.va.gov/professionals/onthejob/mentalhealth.asp.

- Are all beds free of anchor points for hanging?
- Have electric and manually adjustable beds been eliminated unless indicated by clinical need?
- Are pillows and mattresses free of plastic, vinyl, or other materials that could be removed and used for suffocation or strangulation?
- Are all fitted bed sheets (with elastic) removed from the units and replaced with either non-elastic fitted sheets or standard flat bed sheets?
- Are light fixtures securely mounted to the ceiling by inaccessible fasteners or tamper-resistant fasteners (or equivalent) with nonbreakable lenses?

Insights into ‘beautiful minds’: The secrets of occupational high achievers with schizophrenia

The 2001 Oscar-winning film “A Beautiful Mind” told the moving true story of a math professor and Nobel laureate, John Nash, who struggled with schizophrenia.

In fact, high levels of professional achievement among those with schizophrenia are rare. The disease can be severely disabling. About 8 in 10 people with schizophrenia or other serious mental illnesses are unemployed, and those who are able to hold down a job often face a daily battle to manage their symptoms.

But what about those who do succeed in the workplace, or in higher education? How do they do it?

A recent study sought to find out. A research team in Los Angeles, led by VA psychologist and health services researcher Dr. Amy Cohen, interviewed 10 men and 10 women with schizophrenia.

All met the definition of occupational success used in the study: relatively steady employment in a professional, managerial, or technical role, or status as a full-time student or responsible caregiver at home for children or elders—all roles that demand a level of daily function beyond what most people with the disease can sustain.

“The bulk of treatments for schizophrenia were developed from observations of individuals who are quite ill or hospitalized, rather than patients who have achieved a level of recovery.”

“It was a small sample but powerful data,” says Cohen.

The findings appeared online in *Psychiatric Services* on Nov. 15, 2016.

“To the best of our knowledge, no previous studies have addressed how individuals with schizophrenia who also met some definition of recovery manage the symptoms of their disease,” says Cohen, who is with the VA Desert Pacific Mental Illness Research, Education, and Clinical Center and the VA HSR&D Center for the Study of Healthcare Innovation, Implementation, and Policy.

Read more at www.research.va.gov/currents ★



People with schizophrenia who have been able to function well occupationally shared their strategies in interviews with VA researchers.

Suicide's effects on those who grieve

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service members, friends, and co-workers, he notes.

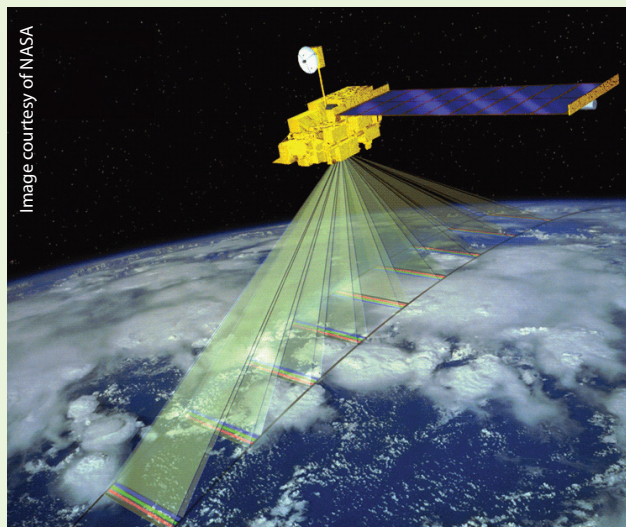
“We think that really should become routine,” he says, “because if the person was close to the decedents, the impacts of those deaths can have a huge negative impact on them that clinicians should be aware of.”

Experts believe a suicide death intimately affects six people, on average, most of whom are family members. But Gutierrez says Cerel’s research supports the fact that more than 20 people are intimately impacted and as many as 110 are at least exposed and potentially affected to some extent.

“When you’re talking about military personnel, it’s commanders as well as comrades,” he says. “So the number of people who are potentially negatively impacted by a suicide death is a lot larger than we used to think it is.”

According to Gutierrez’s study, suicide exposure and suicide bereavement—and their link to suicidal thoughts and behaviors with service members and Vets—deserve further investigation. Gutierrez would like to see a study in which those who have been exposed to suicide are followed over many years and regularly assessed.

“That way, we can determine whether suicide risk changes over time and whether risk factors interact differently perhaps based on future life stresses,” he says. “Much could be learned from a longitudinal study on suicide bereavement. It is also worth designing a cross-sectional study with new variables that would help us much better understand the impact of suicide exposure and suicide bereavement on the military population.” ★



Researchers used data from the MODIS instrument aboard NASA's Terra satellite, among other sources, to learn about air pollution that may have affected deployed U.S. troops.

Satellites, airport visibility readings shed light on troops' exposure to dust storms, pollution

Using data from NASA satellites and airport visibility sensors, VA researchers and colleagues are extending an approach used to study air pollution in the U.S. They are developing methods to estimate exposures—from dust and sand storms and other sources—for U.S. troops who fought in Iraq and Afghanistan.

The work to date is reported in three related studies in the Journal of the Air and Waste Management Association.

The goal is to build reliable tools for epidemiologists trying to tease out the links between respiratory health and exposure to air pollution, especially in areas of the world where American troops are deployed but that lack air-quality monitoring networks like those in the U.S.

Read more at www.research.va.gov/currents ★



Facial fillers for patients with HIV

HIV and antiretroviral therapy can **decrease fat tissue and volume** in the face, leading to sunken cheeks and an older appearance. **VA researchers** in Sacramento, California, found that an injectable gel that is widely used cosmetically—a hyaluronic-acid-based filler—can lead to **long-lasting improvements** for HIV patients and boost their quality of life.

Source: "Safety and Efficacy of a Volumizing Hyaluronic Acid Filler for Treatment of HIV-Associated Facial Lipoatrophy," *JAMA Dermatology*, online Nov. 2, 2016.

Infographic by VA Research Communications (December, 2016). Photo for illustrative purposes only. ©iStock/efenzi

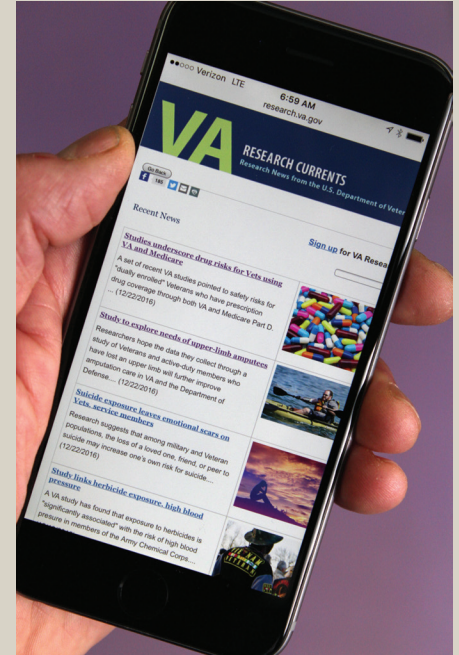


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VA Research Communications | 31 Hopkins Plaza, Ste. 102 | Baltimore, MD 21201
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