

Mark Washburn



TREATING ADDICTION WITH TECHNOLOGY

Lisa Marsch is investigating new ways to use technology to improve the treatment of substance use disorders.

A RECENT TRIAL LED BY LISA MARSCH, an associate professor of psychiatry at Geisel, could help extend the reach of evidence-based behavioral health treatments. The study evaluated the effectiveness of a web-based treatment program used to supplement in-person counseling and methadone treatment for people with a history of drug abuse. Marsch found that the treatment regimen that included the web-based program was more effective than standard treatment.

“Patients get this very interactive and personalized behavior therapy experience through this technology,” says Marsch, who is the director of Dartmouth’s Center for Technology and Behavioral Health, which is part of Geisel’s Psychiatric Research Center. “What you see is that that translates into better treatment outcomes.”

The trial included 160 patients with a history of drug abuse. Half of the patients received standard treatment, which included methadone treatment and one-hour counseling sessions with clinicians trained in treating substance use disorders. The sessions were held once a week for the first four weeks and twice a month thereafter. The other

half of the patients also received methadone treatment and met on the same schedule with a counselor. But instead

“IT’S ABOUT EXTENDING THE REACH OF CLINICIANS AND PROVIDING MORE PERSONALIZED CARE.”

of 60-minute sessions, the patients spent 30 minutes with a counselor and 30 minutes working with a web-based therapeutic education system developed by Marsch and other behavioral health researchers.



VITAMIN D ON TRIAL

Pills containing vitamin D are often marketed for their alleged ability to boost the immune system. But a recent randomized, controlled trial led by Geisel assistant professor of community and family medicine Judy Rees found that taking vitamin D did not ward off or minimize the symptoms of upper respiratory tract infections. “Of course there are observational studies that show that vitamin D has various benefits,” Rees told the *New York Times*. “But those studies can’t eliminate the effects of lifestyle from causing bias. A randomized trial is designed to avoid those problems, and that’s what I think we did.”

The web-based program includes dozens of modules intended to help patients develop healthier patterns of behavior and avoid situations that put them at risk for drug use. The modules were developed using evidence from years of research into what works in behavioral health, and Marsch notes that the program is a great way to ensure that evidence-based treatments make their way into clinical settings, something that has long been a challenge.

The study followed patients for up to a year and had scheduled drug tests each week, although many patients missed some of the drug-testing sessions.

Overall, the experimental treatment that included the web modules proved to be more effective in helping patients avoid drug use by the two measured criteria. The first measure was the percentage of weeks patients were tested that they tested negative. Patients in

the standard treatment arm tested negative in 43 percent of weeks tested, compared to 59 percent for patients in the experimental arm. By a more conservative measure of success—the total percentage of weeks of the study

in which a patient tested negative (with missing samples considered positive)—the experimental treatment also proved more effective, with 48 percent of weeks of negative tests compared to 37 percent for those in the standard arm.

Marsch says that the study validates the importance of finding ways to use technology to implement evidence-based treatments. “There are so many barriers to widespread adoption of evidence-based behavioral health care, and this is how we’re trying to leverage technology to see if there are ways we can use these tools to promote greater access to things that work,” she says. “The goal is not about replacing clinicians, it’s about extending the reach of clinicians and providing more personalized care and support to patients at the same time.”

There is still a lot to be learned, she adds, “but the data are increasingly, overwhelmingly showing the promise of this at many, many levels.”

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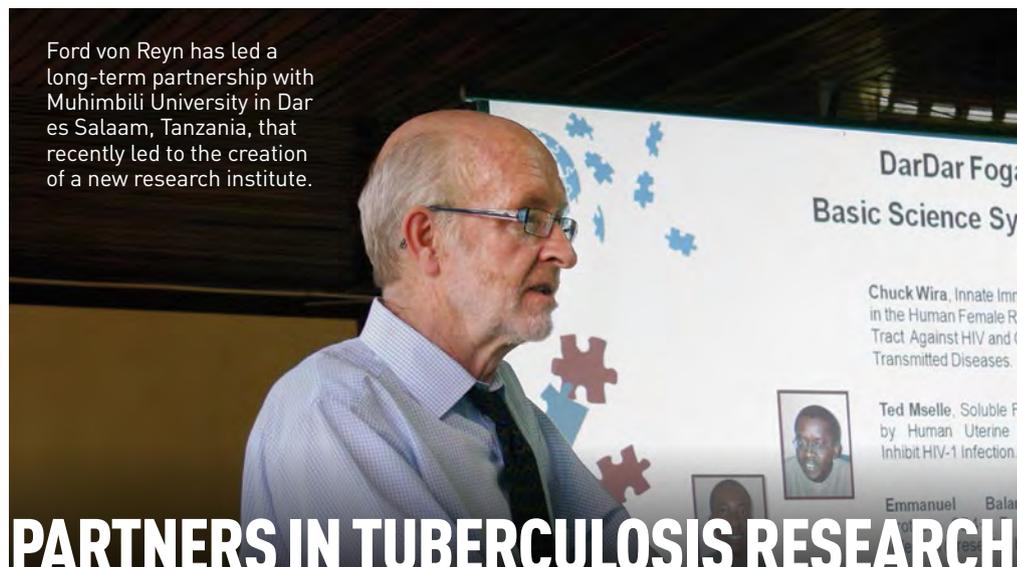
ESTABLISHING A MODEL OF SURGICAL CARE

With so many global health challenges to address—such as HIV, malaria, and access to clean water—surgery often gets overlooked. Yet diseases that can be treated by surgery represent nearly 13 percent of the overall burden of disease and contribute significantly to death and disability, especially in poor countries such as Haiti.

In 2011, Joseph Rosen, a Geisel professor of surgery, led a group of Geisel and Dartmouth-Hitchcock Medical Center surgeons and clinicians to work with Haitian surgeons at l’Hopital Bon Sauveur—a charitable hospital in rural Cange run by the Haitian nongovernmental organization Zanmi Lasante and Boston-based Partners in Health. Their weeklong mission was part of an initiative to improve access to surgical care and to illustrate how partnerships with academic institutions can alleviate the surgical burden of disease in resource-poor countries.

Lessons learned from this mission are summarized in “Disseminating Surgery Effectively and Efficiently in Haiti,” which appeared in the July 2013 issue of the *Journal of Craniofacial Surgery*.

Ford von Reyn has led a long-term partnership with Muhimbili University in Dar es Salaam, Tanzania, that recently led to the creation of a new research institute.



PARTNERS IN TUBERCULOSIS RESEARCH

FOR MORE THAN A DECADE, C. FORDHAM VON REYN, a professor of medicine at Geisel, and his research team have been conducting research to reduce the burden of tuberculosis in Tanzania. Tuberculosis is the leading cause of death among people with HIV in Tanzania, and prevention and treatment of both adult and pediatric HIV-TB is a national priority.

DarDar—Dartmouth’s successful research and educational partnership with the Muhimbili University of Health and Allied Sciences (MUHAS) in Dar es Salaam, Tanzania—started with a collaborative TB vaccine trial and grew to include a broad range of related programs. (The name DarDar comes from a combination of Dartmouth and Dar es Salaam.) And last year, von Reyn and colleagues received a five-year, \$1.4 million grant from the Fogarty International Center at the National Institutes of Health (NIH) to create a first-of-its-kind, HIV-TB specific research institute at MUHAS.

The new Tuberculosis Research Institute at MUHAS (TRIM-TB) will expand Dartmouth’s collaboration on HIV-TB training and research programs there and help build the human, scientific, and administrative capacity necessary for the new institute to manage its own research activities.

“This is our third five-year Fogarty training grant and much of what we’ve been able to accomplish with our Tanzanian partners is because of this support from the NIH,” says von Reyn, director of Geisel’s program in Tanzania. “We’ll now be able to bring the MUHAS TB research infrastructure up to a level where they’ll be able to independently secure funding for their HIV-TB research.”

During the five-year project, TRIM-TB will bring together past Fogarty trainees from Tanzania with a faculty core and with new trainees who will complete MPH degrees at Dartmouth and MUHAS and master’s and doctoral degrees in pharmacology, public health, and epidemiology at Boston University. Research nurses will be trained in Tanzania at MUHAS.

Additionally, training in ethics, good clinical practice, and HIV-TB research methods will be provided for investigators, along with advanced TB microbiology and immunology.

But the start of this new institute does not mean the end of Geisel’s collaboration with its Tanzanian partners. To the contrary, von Reyn says, the TB vaccination work will return in two years and Dartmouth will continue sending students interested in the DarDar programs to Tanzania.

“We’re enthusiastic about getting started with this latest partnership,” he notes. “I recently returned from a meeting in Paris where we began TRIM-TB planning, and I’ll be making a site visit in 2015 to select people for the training.”

This project represents what Geisel and Dartmouth can do to help support advances in health care in the developing world, von Reyn says. “We have a lot of experience from the previous 13 years of working together. The idea of moving toward a point where MUHAS in Tanzania will be able to apply for their own independent TB research funding—and for Dartmouth to have played a role in getting them to that point—will be a rewarding achievement for our team.”

SUSAN GREEN