

NCDMPH



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University

2021 Annual Report

October 2020 to September 2021

The National Center for Disaster
Medicine and Public Health

Empowering Scientists and
Educators to Protect Our
Nation's Health from Disasters



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In coordination with the Uniformed Services University of the Health Sciences (USU), this report fulfills the requirements between USU and the Assistant Secretary of Defense for Health Affairs. The views within this report are solely those of the authors and do not reflect the view of USU, Henry M. Jackson Foundation for the Advancement of Military Medicine Inc., and the U.S. Department of Defense.

Report Design: Henry M. Jackson Foundation for the Advancement of Military Medicine Inc. (hjfm.org)

ABOUT NCDMPH

MISSION:

The mission of the National Center for Disaster Medicine and Public Health (NCDMPH or 'National Center') is to improve our Nation's disaster health readiness through education and science.

VISION:

NCDMPH is dedicated to being the Nation's academic center of excellence leading domestic and international disaster health education and research efforts. We are centered on the pillars of research, development, demonstration, and deployment of best practices. In collaboration with partners across government and in the private sector, we create and translate science and education to improve readiness.

NCDMPH is uniquely positioned as a bridge between federal agencies and academia.

- The National Center was founded under five federal agency partners: Department of Health and Human Services (HHS), Department of Defense (DoD), Department of Homeland Security (DHS), Department of Transportation (DOT), and Department of Veterans Affairs (VA).
- The National Center is both a federal organization and an academic center, located in an academic health institution, the Uniformed Services University of the Health Sciences (USU).

NCDMPH

- **Leads and collaborates** with government, private sector, community, and nonprofit partners to advance disaster medicine and public health education and research agendas.
- **Acts** as a neutral coordinator across federal, state, tribal and local governments, academia and non-government associations, and non-governmental organizations.
- **Convenes** experts from diverse backgrounds to define disaster health issues and recommend policy solutions.
- **Provides** consultation to partners within and external to the federal government regarding disaster health education, training, and science.
- National Defense Authorization Act 2020: NCDMPH is leading DoD efforts to meet the requirements of Sec. 740.
- National Health Security Strategy 2019-22: NCDMPH is listed as being, "strategically situated within the federal interagency to help advance the readiness of the public health and medical workforce through enhanced collaborative efforts in disaster health, research, and education. NCDMPH leads federal efforts to develop and propagate core curricula, training, and research related to medicine and public health in disasters."
- Pandemic and All-Hazards Preparedness and Advancing Innovation Act (2019), Pandemic and All Hazards Reauthorization Act (2013), Pandemic and All Hazards Preparedness Act (2006): These laws outline the tactics and tools NCDMPH implements to prepare our Nation.
- Homeland Security Presidential Directive 21 (HSPD-21): Established NCDMPH in October 2007 to be "...an academic center of excellence in disaster medicine and public health..."

Executive Summary

LETTER FROM THE DIRECTOR



The National Center for Disaster Medicine and Public Health (NCDMPH or “National Center”) has made tremendous strides in the past five years, hosting nationally impactful symposiums and webinars, producing online courses in disaster public health and bleeding control, and publishing cutting edge research. The National Center’s scope of work is growing and we have expanded our staff and budget dramatically as we are now entering an important new phase, leading a critical five-year program to prepare our National Disaster Medical System (NDMS) for catastrophic disasters and conflicts. We continue to leverage the successes of previous years as we engage in public/private collaboration to address the country’s urgent health and public health preparedness needs.

Even with the challenges brought by COVID-19, we have remained focused on improving our Nation’s disaster health preparedness. The National Center continued its operations with staff working remotely and then transitioned to a hybrid model as conditions and regulations allowed. New research projects came online and additional staff were hired to commence work on these projects. We conducted webinars, authored and published scientific papers and healthcare guidelines, and furthered our presence on social media. We continue to attract high profile Visiting Scholars. In presenting this latest Annual Report, I am delighted to highlight our accomplishments and share some of our objectives and aspirations for the next fiscal year.

Healthcare System Preparedness and Response Activities

The National Center was tasked by the Assistant Secretary of Defense for Health Affairs to lead a congressionally-mandated, five-year pilot study in collaboration with five government agencies to strengthen the NDMS. This year we completed the \$3 million Military-Civilian NDMS Interoperability Study (MCNIS) which now serves as the baseline that will direct the next five years of operational research and improvements.

Research Activities

- NCDMPH continues to publish in quality peer-reviewed journals, with 16 peer-reviewed papers and editorials and two book chapters to add to our disaster scientific knowledge.
- NCDMPH conducted research analyzing the lay public's ability to learn first aid skills and stop life-threatening bleeding.
- The MCNIS research used qualitative and quantitative methods to identify the weaknesses and opportunities for improvement of the current NDMS.

Education Activities

- Stop the Bleed training initiative continued expanding through the mobile application, available on Google and Apple app stores, achieving more than 3,500 downloads.
- Publications highlighting the gaps and overlaps in disaster health education nationwide.
- Continued engagement and collaboration with disaster experts from around the country and overseas.
- NCDMPH staff continue to engage with Uniformed Services University of Health Sciences (USU) students directing two courses at the USU School of Medicine as well as lecturing in other medical student courses.

The activities outlined in this report are the foundation upon which we will continue to develop collaboration, research, and education. As we commence 2022, we eagerly anticipate opportunities known and unknown to continue to build on our accomplishments and embrace further collaboration with existing and new partners.

Thank you for your support of the National Center and please continue to stay in touch with us via our website ncdmp.hhs.gov and social media: Twitter, Facebook, LinkedIn, Listserv or YouTube to stay up-to-date.

Sincerely,



Thomas Kirsch, MD, MPH, FACEP
Professor and Director, NCDMPH

National Center for Disaster Medicine and Public Health

FISCAL YEAR 2021 HIGHLIGHTS



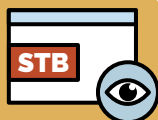
Received nearly
\$6 million in grant awards



Disaster Health Core Curriculum:
More than **8,000** page views



Stop the Bleed:
More than **191,160** total app downloads



Stop the Bleed:
73,329 page views



Stop the Bleed:
125,061 YouTube views to date



Event/Webinars:

More than **15,000** views



Meetings/Speaking Engagements:

Presented or participated in live and virtual conferences/events.



Partnerships/Collaborations:

Expanded partnerships with active engagements, a significant increase over prior years.



Journal Articles, Editorial & Book Chapters:

More than **15** publications



Increased Social Media engagement and following significantly:

- Over **3,000** Twitter followers
- Nearly **3,000** LinkedIn connections
- **600** Facebook followers
- **388** YouTube subscribers

For more information about NCDMPH visit, ncdmph.usuhs.edu or follow us on social media or subscribe to our listserv: Twitter, Facebook, LinkedIn, Listserv or YouTube



[Twitter.com/ncdmph](https://twitter.com/ncdmph)



[LinkedIn.com/in/ncdmph/](https://www.linkedin.com/in/ncdmph/)



[Facebook.com/NCDMPH1](https://www.facebook.com/NCDMPH1)

DISASTER EDUCATION

The NCDMPH understands that research, while foundational to our mission, is the first step in improving disaster health readiness. We identify educational needs in disaster medicine and public health preparedness and then interpret our research to create content that better prepares the nation for emergencies.

What we do at the National Center:

- Lead the national disaster health and public health education agenda by creating evidence-based curricula objectives and content with academic partners and validating training activities.
- Create collaborative and coordinated activities with academic partners, professional organizations, and the private sector.
- Integrate NCDMPH educational activities into the greater framework for national health care preparedness and response.

Photo courtesy of the American Red Cross

Stop The Bleed® Initiative



STOP THE BLEED® is about training, equipping, and empowering anyone to help in a bleeding emergency. The work cuts across all practice areas of the National Center, including education, research, and preparedness. And in keeping with the NCDMPH's emphasis on partnerships, Stop the Bleed is supported by a network of collaborators.

Key accomplishments and activities include:

Stop the Bleed® Mobile Application

The National Center launched the free Stop the Bleed® (STB) app in May 2018. The app provides action steps to take during a bleeding emergency – it is available at:

<https://play.google.com/store/apps/details?id=edu.usuhs.stb>

<https://itunes.apple.com/us/app/stb/id1336173602?mt=8>

Stop the Bleed® Education Consortium

NCDMPH continued to lead the Stop the Bleed® Education Consortium (SBEC), a group of subject matter experts that published the first national education standards for hemorrhage control training.

Transforming Technology for the Warfighter (TTW) Initiative

NCDMPH continues its research to develop novel hemorrhage control technology in partnership with Harvard-Brigham and Women's Hospital, Mayo Clinic, Linköping University in Sweden, and InnoVital Systems to develop a novel tourniquet design.

Learn more at <https://stopthebleed.usuhs.edu/>

First Aid For Severe Trauma (FAST™)

First Aid for Severe Trauma™ (FAST™) is a natural extension of STOP THE BLEED® and it is the first national course designed specifically for high school students. It is about training, equipping, and empowering young people to help save lives during a bleeding emergency. In November 2021, FAST™ was honored with a Platinum ASTORS Homeland Security Award. FAST™ is funded by a grant to the National Center from the Department of Homeland Security Science & Technology Directorate (DHS S&T), in collaboration with the American Red Cross. The FAST™ course was launched by the Red Cross on August 19, 2021. Thanks to the grant from DHS, FAST™ is available at a no cost charge to high school students under age 19. The coordinated effort between NCDMPH and partners on the FAST™ course is helping to achieve broad, nationwide adoption of this new program. First Aid for Severe Trauma™ (FAST™) is the first national STOP THE BLEED® course designed specifically for high school students. NCDMPH developed and launched FAST, in collaboration with the American Red Cross, with funding from a Department of Homeland Security Science and Technology Directorate grant. FAST teaches the knowledge and skills necessary for anyone to save lives in the minutes after a severe injury – before help can arrive. The Red Cross course launched nationwide in August in three formats: instructor-led, web-only, and blended to allow maximum flexibility for students and teachers. Shortly after its launch, NCDMPH and the Red Cross were honored with a Platinum ASTORS Homeland Security Award recognizing FAST for excellence in public safety. NCDMPH published multiple educational studies evaluating high schoolers' ability to learn bleeding control knowledge and skills in instructor-led, web-only, and blended formats, as well as high school teachers' ability to become bleeding control instructors in a virtual environment. In partnership with the HOSA-Future Health Professionals organization and a cadre of dedicated USU medical students, NCDMPH has led bleeding control skills training and assessment for nearly 500 high school teachers nationwide.

The number of teachers trained by the USU med students stands at 385, including the 2020 ILC (239 teachers) and 2021 ILC (57 teachers) plus additional teachers who signed up separately.

American Red Cross FAST™ website redcross.org/fast

DHS FAST™ website <https://www.dhs.gov/science-and-technology/first-aid-severe-trauma> (they were so excited about FAST™ that they created a “hype” video that you can see if you scroll down on the link)

NCDMPH FAST™ web page <https://ncdmph.usuhs.edu/fast>



Photo courtesy of Maria Ramirez, Weslaco ISD



Photo courtesy of the American Red Cross

DISASTER HEALTH CORE CURRICULUM

The Disaster Health Core Curriculum is a key component of the NCDMPH educational portfolio and helps inform and amplify domestic and international community-level preparedness. Challenges revealed by the COVID-19 pandemic as well as other disasters continued to drive health professionals to make use of this free resource to elevate their disaster health knowledge and have a direct impact on saving lives.

Through an ongoing partnership with the American Public Health Association (APHA), over 700 learners claimed continuing education for nurses and physicians in FY 20-21. This course has been applied to pieces of training across the 10 Medical Reserve Corps regions and local units, regional and local health departments, nursing schools, The Centers for Disease Control and Prevention, and Emergency Medical Services programs nationwide. Desiring to improve preparedness and response efforts across our nation, we are thrilled to extend Certified Health Education Specialists (CHES®) credits for health educators beginning November 1st, 2021.

DISASTER HEALTH CORE CURRICULUM

To learn more about the “Disaster Health Core Curriculum” watch the introduction at: <http://bit.ly/2mAwYbT> and visit <https://ncdmph.usuhs.edu/education/core-curriculumlum>.

“
This is a *REALLY* important module given the current COVID crisis. Excellent discussions of the challenges that health care workers face were instructive and yet left room for the viewer to contemplate on how to adjust based on the scenario before them at that moment.

—
Very easy to follow, concise.

National and International Presentation Highlights

- 1. First Aid for Severe Trauma: Empowering High Schoolers to Respond to Traumatic Injuries**
Citizen CPR Summit, December 2020
Presenter: Craig Goolsby
- 2. How Public Health Education & Training Pivoted During an Extended Public Health Crisis (COVID-19)**
Preparedness Summit, April 2021.
Moderator: Nick Cagliuso
- 3. Advances and Limitations in Disaster Science**
Evidence-Based Practice for Public Health Emergency Preparedness and Response.
National Academies of Science, Engineering, and Medicine. Washington, DC.
Presenter: Thomas Kirsch
- 4. Teaching Everyone to Stop the Bleed**
Virtual Western Regional Alliance of Pediatric Emergency Management, February 2021
Presenter: Craig Goolsby
- 5. Battlefield Medicine for Your ED & Community**
Virtual Emergency Medicine Reviews and Perspectives (EM: RAP), April 2021
Presenter : Craig Goolsby
- 6. Disaster Science and Disaster Response. (plenary)**
Virtual Second Annual International Conference on Disaster Medicine, St. Maartens, W.I. April 2021
Presenter: Thomas Kirsch (virtual due to COVID-19)
- 7. Protecting Health Care Workers and Emergency Responders in Disasters**
Virtual Natural Hazards Workshop, Boulder, Colo., July 2021
Presenter: Thomas Kirsch
- 8. Conducting Research After a Disaster – Is Quality Possible?**
Virtual EMDM meeting. Universita Del Piemonte Orientale, Novara, Italy July 2021
Presenter: Thomas Kirsch

Webinars

The National Center recognizes the need to speak across a range of platforms to address critical disaster health and public health issues. We engage via publications, presentations, webinars, and through social media. It's about experts convening and communicating to experts, trying to help save lives.

Over the past year, the National Center hosted the following webinars addressing the response to and impact of the COVID-19 pandemic:



Collaboration during COVID-19: Healthcare Coalitions and Regional Assistance Committees

The COVID-19 pandemic emphasized the need for healthcare coalitions and regional preparedness collaborations to improve our disaster response. In this webinar, academics and practitioners from several regions share how their collaborations have supported COVID-19 response activities.

“

Improved awareness of how coalitions can be effective in crisis.

”

Further EMS engagement with HCC.



The Impact of COVID-19 on Children and Families

The fourth webinar in the COVID-19 series explored the complex mental health, educational and access to care impacts of the COVID-19 pandemic on children and families.

“

I really appreciated the examples to help with coping and may utilize that with teenagers in my practice (breathing, positive event journal, self-talk). I also felt I was given more resources (from Early Childhood Innovation Network) if I come across a family that could benefit from additional support due to COVID.

”

Using the tools about how COVID is affecting families will help in the elementary school I am a nurse at. It gave a better understanding of the struggles many are facing.

I plan on using some of the techniques explained in finding calming/relaxation strategies for at home with my children.

DISASTER SCIENCE AS ACTIONABLE SCIENCE

Actionable science is at the core of the National Center's strategic mission. We conduct, translate, and disseminate research that enhances both readiness on the ground and the policy that shapes it. And it can help save lives.

Here's how we get it done:

- Collaborate with our public and private sector partners to develop and drive a coordinated national disaster science and research agenda.
- Translate disaster-related research to solve practical problem sets and inform policy solutions for U.S. federal, state, tribal, and local partners.
- Build a base of science and education evidence to improve the Nation's disaster health preparedness.
- All of it with the goal of helping to save lives.

Grants and Research Programs

Advancing Critical Healthcare Infrastructure and Operational Modeling for Disasters: Current State and a Road Map Forward

Funded by the DHA, the National Center collaborated with the Johns Hopkins University Applied Physics Laboratory (JHU/APL) and Colorado State University to characterize the current state of the art in critical healthcare infrastructure and operational modeling. The results of an integrative literature review of more than 300 documents, supplemented by extensive open source research into the capabilities of public response mechanisms, serve as the baseline for these findings. The research was guided by interviews with modeling and engineering experts from across the Federal government and academia. A final virtual workshop offered a diverse group of stakeholders from within the healthcare, federal response, and operational modeling communities the opportunity to lend their perspective to the current work.



\$3 million

for the MCNIS research from the DoD Office of Health Affairs.

\$2.5 million

First Aid for Severe Trauma grant from the Department of Homeland Security.

Best Healthcare Practices in Response to Mass Shooting Workshop

Mass shootings have become far too common, costing hundreds of lives yearly. In collaboration with the HHS, DHS, and DOT, the National Center led a Best Healthcare Practices in Response to Mass Shooting study and workshop in September 2021 to better prepare hospitals and emergency medical systems to respond to these tragic events. Clinical experts who responded to shooting events at the Orlando Pulse nightclub (2016), in Las Vegas (2017), Sutherland Springs, Texas (2017), Stoneman Douglas High School (2018), Dayton, Ohio (2019), and El Paso (2019) participated in a consensus building study, led by NCDMPH researchers. The key findings from the study will be published as peer-reviewed science and as a guide to best practices for hospitals and the first response community. The workshop was partially funded by the DOT.

Developing Emergency Response Tools for Public Spaces

In collaboration with colleagues at Linköping University, Sweden, the National Center secured \$115,000 in funding from DHS to facilitate the development of a simulation model which will inform guidance and recommendations on bleeding control kit placement in public spaces.

TTW - Stop the Bleed: Development of a Novel Layperson Audiovisual Tourniquet

The purpose of this grant is to develop a dual-use (military and civilian) tourniquet that provides real-time audiovisual instructions and performance feedback to enable laypeople to perform life-saving successful hemorrhage control.

- Secured an additional \$267,636, to augment the original award of \$2 million, for production of a fully manufactured tourniquet.

NCDMPH also provided funds to other institutions to conduct disaster health education and research:

- Awarded \$12,601 to partners at the University of Akron to research the role of instructor background on Stop the Bleed learner outcomes
- Awarded \$124,773 to the Icahn School of Medicine at Mount Sinai on the project “The Mount Sinai Health System Response to COVID-19: A Comprehensive Approach to Large-Scale Pandemic Surge”
- Awarded \$37,423 in funding to partners at Icahn School of Medicine at Mount Sinai on the project “Military-Civilian Collaboration During the New York City COVID-19 Pandemic Deployment and Impact on Patient Transfer”
- Johns Hopkins Bloomberg School of Public Health (Dan Barnett)
- Awarded \$9,554 to the Public Health Foundation to support “Training in Hurricane-Impacted Communities: Before, During, and After the Storm”



PUBLICATIONS

Reed P, **Kirsch TD**. Military Health System Preparedness in Humanitarian Action, Joint Forces Quarterly, 2021 (Jan.). <https://ndupress.ndu.edu/JFQ/Joint-Force-Quarterly-100.aspx>

Wend, C., **Goolsby, C., Schuler, K.**, Fischer, S. Levy, M. Tourniquet Use in Animal Attacks: An Analysis of News Media Reports. Cureus. March 16, 2021; 13(3): e13926.

Barnett DJ, Rosenblum AJ, Strauss-Riggs K, **Kirsch TD**. Ready for a Post-COVID-19 World: The Case for Concurrent Pandemic Disaster Response and Recovery Efforts in Public Health. J Public Health Manag Pract. 2020;26(4):310-313. doi:10.1097/PHH.0000000000001199.

Goolsby, C., Rojas, L., **Rodzik, R.**, Gausche-Hill, M., Neal, M., Levy, M. High-School Students Can Stop the Bleed: A Randomized, Controlled Educational Trial. Academic Pediatrics. March 2021; 21(2): 321-328.

Charlton, N., **Goolsby, C.**, Zideman, D., Maconochie, I., Morley, P., Singletary, E. Appropriate Tourniquet Types in the Pediatric Population: A Systematic Review. Cureus. April, 13, 2021. 13(4): e14474.

Barnett DJ, Knieser L, Errett NA, Rosenblum AJ, Seshamani M, **Kirsch TD**. Reexamining Health Care Coalitions in Light of COVID-19. Disaster Med Public Health Prep, 2020. doi: 10.1017/dmp.2020.431.

Goolsby, C. Schuler, K., Rodzik, R., Charlton, N., Lala, V., Anderson, K., Pellegrino, J. The FAST VIP (First Aid for Severe Trauma Virtual In-Person) Educational Study. Western Journal of Emergency Medicine. ePub June 29, 2021.

Charlton, N., **Schuler, K.**, Ho, C., Hatten, J., Woods, W., **Goolsby, C.** Provider Fatigue During Direct Manual Compression for Life-Threatening Bleeding. Cureus. August 27, 2021; 13(8): E17487.

Peleg K, Bodas, M, Hertelendy AJ, **Kirsch TD**. The COVID-19 Pandemic Challenge to the All-Hazards Approach for Disaster Planning, Intl J Disaster Risk Reduction, 2021;(55):1-5. doi.org/10.1016/j.ijdr.2021.102103.

Kirsch TD, Strauss-Riggs K, Reed P, Sauer L. Strengths, Weaknesses, Opportunities and Threats that Impact Disaster Health Research. Am J Disaster Medicine. 2020. Doi:10.5055/ajdm.2020.000.

Goolsby, C., Lala, V., Gebner, R., **Dacuyan-Faucher, N.**, Charlton, N., **Schuler, K.** Emergency Physician Risk of Occupational Mortality: A Scoping Review. Accepted for publication by the Journal of the American College of Emergency Physicians Open.

Goolsby, C., Dacyuan-Faucher, N., Schuler, K., et al. 2021 International Consensus on Cardiopulmonary Resuscitation and Emergency Cardiovascular Care Science With Treatment Recommendations: Summary From the Basic Life Support; Advanced Life Support; Pediatric Life Support; Neonatal Life Support; Education, Implementation, and Teams; First Aid Task Forces; and the COVID-19 Working Group. Accepted for publication by AHA Statements.

Deitchman S, Hill A, **Kirsch TD**. Climate Resilience: It's Time for a National Approach. Accepted for publication by Health Security, 2021.

Deitchman S, Peek L, **Kirsch TD**. Disasters and Health: State of Science Commentary on the April 2019 Conference. Accepted for publication by Disaster Medicine and Public Health Preparedness, 2021.

Kirsch TD, Freer L. A Tribute - Paul Auerbach, MD. Accepted for publication by Wilderness and Environmental Medicine. 2021. doi:10.1016/j.wem.2021.08.004.

Upon publication, citations will be posted to the NCDMPH website and shared on social media. To learn more about NCDMPH's research efforts or view links to previously published articles please visit <https://www.usuhs.edu/ncdmph/research>

CONTRIBUTIONS TO USU BEYOND RESEARCH

National Center staff continue to support USU through service on committees, leadership councils, departmental activities, and teaching. Disaster health curricula are also incorporated into other USU programs. Specific activities include:

- Dr. Craig Goolsby serves as the Vice Chair for USU's Department of Military and Emergency Medicine (MEM). In this capacity, he chairs MEM's education and faculty promotions committees, and helps lead the nation's only department of military medicine in its execution of approximately 600 contact hours of medical student curriculum and a broad research mission.
- Dr. Tom Kirsch directs "Domestic Disaster Management and Response" in the Preventive Medicine and Biostatistics Department and contributes to the "Public Health Issues of Disaster in Developing Countries" which tackles broad issues of policy, strategy and operations associated with complex humanitarian crises and disaster.

ADVISORY AND POLICY PANELS

2016 - current

• Forum for Medical and Public Health Preparedness for Disaster and Emergencies,

• National Academies of Science, Engineering and Medicine, Washington, DC

2018 - current

• National Construction Safety Team (NCST)

• National Institute of Science and Technology, Gaithersburg, MD

• American Red Cross Scientific Advisory Council

• International Liaison Committee on Resuscitation's First Aid Task Force

2020

• Council of Experts for Healthcare Ready's Community Disaster Risk Tool (CDRT), Washington, DC

• Healthcare Leadership Council National Dialogue for Healthcare Innovation (NDHI)

OPERATIONAL SCIENCE

Strengthening U.S. Healthcare System Preparedness and Response

The DoD National Disaster Medical System (NDMS) Pilot Program

The Department of Defense is facing critical questions related to the U.S. healthcare system:

- Is the National Disaster Medical System ready to care for casualties from a large overseas military conflict?
- Are there enough staff? Enough beds? Are the military and civilian healthcare systems properly connected — or are they set up for failure?
- What changes are needed to improve the NDMS and ensure the U.S. healthcare system is prepared to support it?

The COVID-19 pandemic revealed a stark picture of the limits of medical surge capacity across civilian healthcare systems in the U.S. The ability to care for patients struggled to keep pace with demand and raised questions about the capacity of the National Disaster Medical System (NDMS) as it is currently structured.

To address this potential security threat, the National Center was designated as the DoD lead for the DoD NDMS Pilot Program.

Phase-I of the NDMS Pilot Program was the Military-Civilian NDMS Interoperability Study (MCNIS), which informed the Pilot of immediate and long-term changes needed to strengthen the NDMS in order to provide definitive care for combat casualties.

In September 2021, the National Center convened more than 100 interagency, military, and civilian partners, in person and virtually, to validate the NDMS Pilot's first year study results.



The results were analyzed and refined to highlight reported weaknesses of the NDMS and suggested opportunities for improvement. They were grouped into five broad categories.

“ WEAKNESS ”

NDMS may be suited for short-term regional events, but it is insufficient to meet the needs of a large-scale crisis such as a near-peer conflict.

Private health care lacks flexibility to transfer hospital staff between health care systems.

“ OPPORTUNITY ”

Increase use of telehealth across regional partners to increase surge capacities.

Increase the rotation of military clinical providers through private sector NDMS hospitals to enhance clinical training and build professional relationships.

The NDMS Pilot Program took the next step at the end of September and established teams at five Pilot sites across the United States. The MCNIS findings will be field tested, and expanded upon, through the collaborative network of NDMS partnerships that were developed during the year-long study.



Four Key Elements: The DoD NDMS Pilot

- Will strengthen interoperable NDMS partnerships to care for combat casualties
- Will be conducted over five years at five sites
- Is in partnership with civilian NDMS healthcare organizations
- Is in collaboration with the secretaries of Veteran Affairs, Health and Human Services, Homeland Security, and Transportation



**National Disaster
Medical System Pilot**

VISITING SCHOLARS

The National Center provides an academic home for disaster health scientists within the federal sphere by welcoming and empowering diverse and respected scholars from a variety of disciplines.

The 2020/2021 Visiting Scholars are:



Joelle Simpson, MD, MPH is a nationally recognized expert in pediatric disaster preparedness and pediatric emergency medicine. As Interim Chief of Emergency Medicine at Children's National Hospital in Washington, DC, she provides strategic leadership for disaster preparedness, response, and community outreach efforts. She is an Assistant Professor of Pediatrics and Emergency Medicine at George Washington University School of Medicine & Health Sciences.



Rita Burke, PhD, MPH is an Assistant Professor of Research Surgery and Preventive Medicine at the Keck School of Medicine at the University of Southern California and the Division of Pediatric Surgery at Children's Hospital Los Angeles. Dr. Burke's research focuses on pediatric disaster preparedness and injury prevention. Her work includes evaluating gaps and identifying barriers in health and

school systems to meet the needs of children, particularly those with access and functional needs, in a disaster. She is also the co-chair of the Los Angeles Children in Disasters Working Group and member of the Scientific Advisory Council for the American Red Cross.



Scott Deitchman, MD, MPH is a retired USPHS Rear Admiral with 30 years of service. As the Associate Director for Environmental Health Emergencies in the National Center for Environmental Health at the Centers for Disease Control and Prevention (CDC), he led CDC's responses to the 2004 Asian tsunami disaster, the 2010 Deepwater Horizon oil spill, the 2011 Fukushima nuclear reactor emergency, and numerous

hurricanes. Dr. Deitchman brings to NCDMPH his extensive experience, expertise and research interests in crisis leadership during health emergencies, responses to natural and man-made environmental disasters, and promoting effective coordination among diverse response organizations.



Matthew Levy, DO, MSc is an Associate Professor of Emergency Medicine at the Johns Hopkins University School of Medicine with leadership roles with the Johns Hopkins Emergency Medicine's Division of Special Operations, as well as the Johns Hopkins EMS Fellowship, and the Johns Hopkins Center for Law Enforcement Medicine. Dr. Levy is also a Clinical Associate Professor and the Medical Director

of the UMBC Department of Emergency Health Services. Dr. Levy brings to NCDMPH his experiences with multiple local, state, federal and international elements related to emergency medical, tactical and disaster medicine.



In Memoriam

Paul Auerbach, MD, MS

The National Center was saddened to learn of the passing of Dr. Paul Auerbach, a world-renowned expert in wilderness and disaster medicine. Dr. Auerbach taught courses at the USU School of Medicine and worked for the past three years with the NCDMPH on projects related to climate change preparedness. He was a great colleague, excellent teacher, and true friend with a profound sense of adventure and curiosity. All of us at the NCDMPH hope that Paul's family will be comforted by a lifetime of warm memories.

DSSR and Visiting Scholars information is at: <https://www.usuhs.edu/ncdmph/research-education>.

LOOKING FORWARD: 2022 PRIORITIES

We will continue to focus and plan activities and projects which fall under the National Center's mandate set under HSPD 21. We are proud to have completed the MCNIS and to have convened more than 100 interagency, military, and civilian partners, in person and virtually, to validate the results. We have transitioned to the implementation phase of the NDMS Pilot program and the National Center's presence has expanded across the country by establishing five NDMS Pilot sites in Sacramento, San Antonio, Denver, Omaha, and Washington, DC. We look forward to strengthening the relationships with our interagency and academic partners. The National Center's staff continues to scale up as the scope of our mission grows. Our team looks forward to addressing the challenges that lie ahead.

Science

- Continue work on the Transforming Technology for the Warfighter Grant to develop a novel hemorrhage control device with partners from Harvard-Brigham and Women's Hospital, Mayo Clinic, Linköping University in Sweden, and InnoVital Systems.
- Pursue grant opportunities to further conduct research and develop tools for disaster science and education as well as related public health efforts.
- Continue to research and publish scientific articles related to disaster science, public health and education.

Education

- Continue to lead the Stop the Bleed Education Consortium and educate lay people on how to stop the bleed and how to use a tourniquet.
- Engage with graduate students, directing and teaching two disaster health courses at the USU School of Medicine, as well as assisting with teaching other courses across the university.
- Identify and host Disaster Science Student Rotation and Visiting Scholars to provide opportunities to collaborate and engage with recent graduates and practicing professionals.
- Publish strategically for the benefit of the field.
- Pursue grant opportunities and collaborations.
- COVID-19 Related Training Public Health Preparedness in TRAIN Learning Network Study
 - The purpose of this research is to conduct a descriptive analysis to review the literature and the public health training courses completed in the preceding 5-year period to determine the overall growth of the TRAIN Learning Network and the change in utilization patterns related to the pandemic.

Photo courtesy of the American Red Cross

NCDMPH STAKEHOLDERS

Interagency collaboration is at the core of the National Center's mission. We broaden the reach of our work through valued partnerships which will continue to evolve and expand over time.

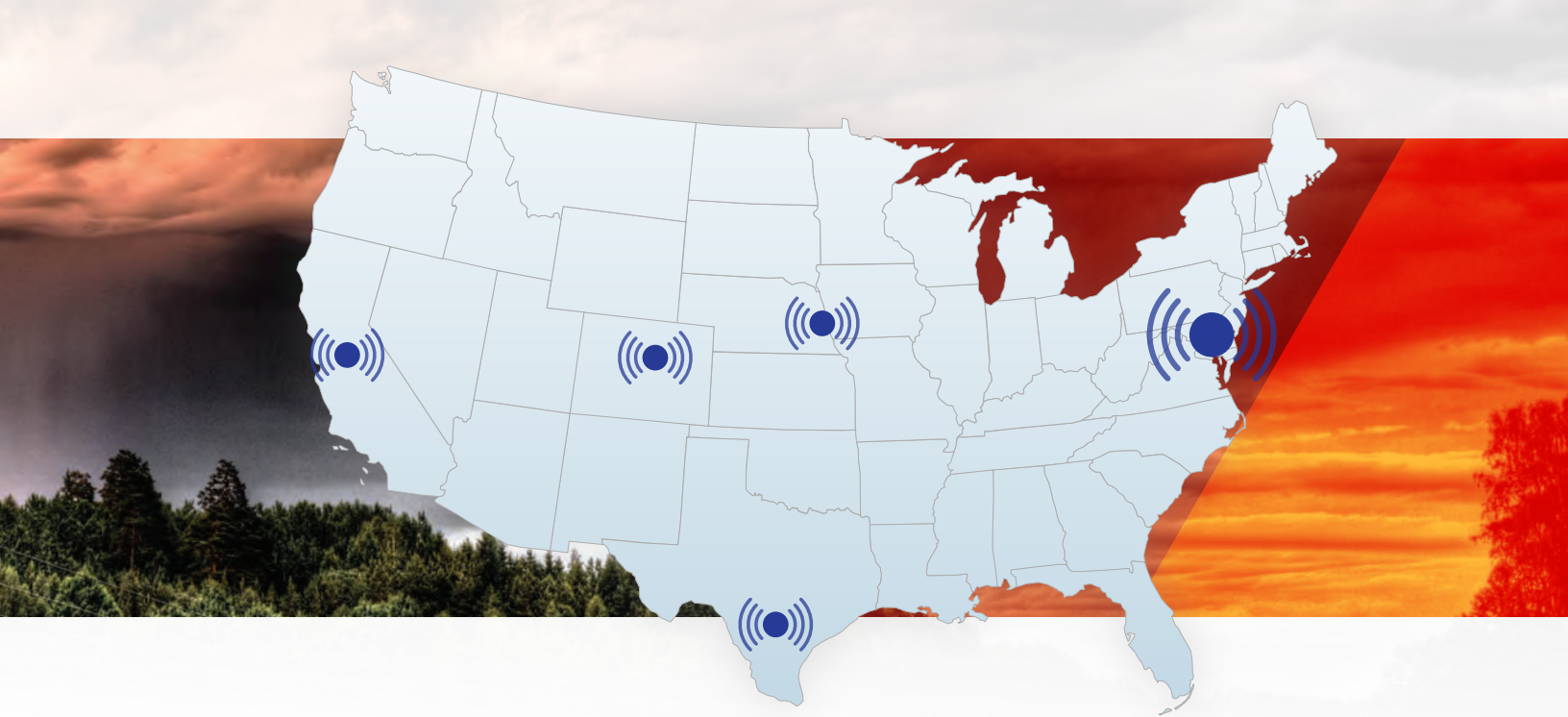
Internal - Uniformed Services University

- Department of Military and Emergency Medicine (MEM)
- Department of Preventive Medicine and Biostatistics (PMB)
- Center for Health Professions Education (HPE)
- Center for Human and Military Performance (CHAMP)
- Center for the Study of Traumatic Stress (CSTS)
- Leadership Education and Development Program (LEAD)

External

Federal government

- Department of Defense (DoD)
 - Office of the Assistant Secretary of Defense for Health Affairs
 - Office of the Assistant Secretary of Defense for Homeland Defense and Global Security
 - Combatant Commands
 - Defense Health Agency (DHA)
 - Services: Army, Navy and Air Force Offices of the Surgeons General
 - National Guard Bureau
- Department of Health and Human Services (HHS)
 - Office of the Assistant Secretary for Preparedness and Response (ASPR)
 - National Institutes of Health (NIH)
 - National Library of Medicine (NLM)
- Department of Veterans Affairs (VA)
 - Veterans Emergency Management Evaluation Center (VEMEC)
 - Veterans Health Administration (VHA)
 - VA Office of Emergency Management
- Department of Homeland Security (DHS)
 - Office of Science and Technology
- Department of Transportation (DOT)
 - National Highway Traffic Safety Administration (NHTSA)
- Department of Commerce
 - National Institute of Standards and Technology (NIST)



Academic institutions

- Arizona State University (ASU) Public Health Law and Policy Program
- University of Akron, Survival Behaviors Lab
- Brigham and Women's Hospital, Department of Emergency Medicine, Boston, MA
- Cedars Sinai Medical Center, Los Angeles,
- Children's National Hospital, Washington, DC
- Columbia University, National Center for Disaster Preparedness, NYC, NY
- George Washington University School of Medicine and School of Public Health Washington, DC
- Johns Hopkins School of Public Health, Center for Humanitarian Health
- Johns Hopkins Applied Physics Laboratory
- Linköping University (Linköping, Sweden)
- Mayo Clinic
- National Center for Trauma and Emergency Medicine Research, Gertner Institute for Epidemiology & Health Policy Research, Tel-Hashomer, Israel
- University of Colorado, Natural Hazards Center, Boulder, CO
- Colorado State University, Ft. Collins, CO
- University of Virginia, Department of Emergency Medicine

Professional associations

- American Academy of Pediatrics (AAP)
- American College of Emergency Physicians (ACEP)
- American Red Cross (ARC)
- American College of Surgeons (ACS)
- American Geophysical Union (AGU)
- American Public Health Association (APHA)
- Association of State and Territorial Health Officials (ASTHO)
- HOSA: Future Health Professionals
- National Academies of Science, Engineering, and Medicine
- National Association of County and City Health Officials (NACCHO)

Other partners

- Center for Disaster Philanthropy
- Henry M. Jackson Foundation for the Advancement of Military Medicine Inc.
- InnoVital Systems, Inc.
- Kern Center for the Science of Health Care Delivery
- National Academies of Sciences, Engineering, and Medicine (NASEM)
- Trust for America's Health

STAFF



Thomas Kirsch, MD, MPH, FACEP, Director

Email: thomas.kirsch@usuhs.edu

Dr. Kirsch brings over 30 years of domestic and global disaster health and public health response, research, and education experience to the National Center, which he draws upon to strategically build partnerships and advance the NCDMPH vision and mission.



Christopher Brown Chief of Staff, NCDMPH

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Mr. Christopher Brown serves as the Chief of Staff for the NCDMPH and oversees the daily operations of the Center and its staff, while strategically expanding the Center's research, educational and technical advisory support to Federal partners. Mr. Brown is a retired U.S. Navy Captain; his 28 years of service included two command tours, multiple deployments to the Mediterranean and Pacific theaters, and contingency operations in the Middle East and Africa.



Craig Goolsby, MD, MEd, FACEP, Science Director

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Dr. Goolsby is an Air Force combat veteran who brings extensive experience in battlefield medicine, field training and medical education. He leads the Stop the Bleed portfolio, positioning NCDMPH as a key leader in the field.



Captain Eric Deussing, MD, MPH, FACPM, MC, US Navy, NDMS Pilot Program Director

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CAPT Eric Deussing leads the National Disaster Medical System (NDMS) Pilot Program. This congressionally directed, interagency Pilot will increase our Nation's capability to care for combat casualties and respond to other medical surge events through an interoperable network of federal and civilian partners. Previously, he served as the DOD liaison to the CDC. CAPT Deussing's earned a bachelors and a Doctor of Medicine from Tulane University; he also earned a Master of Public Health degree from the Uniformed Services University.



Commander Mike Klemann, MSC, US Navy, NDMS Pilot Program, Principal Deputy Director

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CDR Klemann is the Principal Deputy Director for the DoD's NDMS Pilot Program. He has served in Strategic, Operational and Joint roles, developing and overseeing integrated global response capabilities for Global Patient Movement and Force Health Protection, as well as Medical Operations at the Navy Medicine Headquarters. His most recent assignment was with the US Transportation Command, Scott AFB, where he led the Global Patient Movement Integration Cell.



Adeteju Adeniji, MPH, CMHC Research Project Administrator, Operational Research, Henry M. Jackson Foundation

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Ms. Adeniji brings an abundance of state-level public health emergency preparedness experience to the Pilot. Her understanding of health promotions research and program planning and implementation enables the accomplishment of her role as the Research Project Administrator on the NDMS Pilot team. In this capacity, she provides a plethora of administrative responsibilities and aids in the scoping and fulfillment of research activities for the NDMS Pilot Program.



Audrey Berard, MBA, Senior Program Manager, Henry M. Jackson Foundation

Ms. Berard provides administrative project oversight to maximize the effective use of program resources. She is responsible for budgeting/accounting, space management, personnel management, contracts, and purchasing. Ms. Berard also participates in a wide range of research and educational programmatic activities.



Nicole Dacuyan, MPH, Project Manager, Henry M. Jackson Foundation

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Ms. Dacuyan continues to support activities to develop a research-informed novel hemorrhage control device. Nicole came from the Center for the Study of Traumatic Stress where she worked in research focused on military mental health.



Jonathan Freed, MA, Chief Strategic Communications Officer, Henry M. Jackson Foundation

Mr. Freed leads strategic communications for the NCDMPH and the NDMS Pilot. He has served as a communications executive, trusted adviser, and national spokesperson at Fortune 30 - 250 companies including insurance, airlines, banking, and utilities. He was asked to lead the rebranding and repositioning effort at the National Security Agency following the leaks of Edward Snowden. In his previous career in journalism, he was a news correspondent for networks including CBS News and CNN.



Kimberly Gill, Ph.D. Senior Research Scientist III, Operational Research, Henry M. Jackson Foundation

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Dr. Gill is a sociologist with 20 years of research, evaluation, teaching and applied experience in the public health aspects of disaster. She serves as Senior Research Scientist on the NDMS Pilot Program to implement and coordinate quantitative, qualitative and mixed methods research that generates new knowledge in the fields of disaster medicine and public health.



Aaron Hinton, Henry M. Jackson Foundation

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Aaron Hinton serves as the Administrative Assistant for the National Center for Disaster Medicine and Public Health (NCDMPH), where he is responsible for the operations supporting NCDMPH and all projects in collaboration with federal partners. Aaron received his B.A. in Psychology from Stevenson University. Aaron provides 15 years of healthcare experience, financial management and strategic communications experience with support to the Lombardi Comprehensive Cancer Center at Georgetown University Hospital and at the National Oceanic and Atmospheric Association.



Gabriela House-Lee Senior Outreach Coordinator, NDMS Pilot Program, Partnerships and Planning, Henry M. Jackson Foundation

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Ms. House-Lee brings direct patient care and state-level public health program coordination experience to her role on the NDMS Pilot team, in addition to six years of Army National Guard experience. As the Senior Outreach Coordinator for the Partnerships and Planning team of the NDMS Pilot, she develops and coordinates outreach strategies and events, and fosters collaborative and strategic partnerships.



Michelle Kimball, MS, CEM, NDMS Pilot Program, Deputy Director for Partnerships and Planning, Henry M. Jackson Foundation

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Ms. Kimball has years of experience in civilian healthcare emergency preparedness, international disaster response and public health emergency preparedness. In addition to civilian healthcare emergency preparedness expertise, Ms. Kimball brings experience working with the Puget Sound Federal Coordinating Center to the DoD NDMS Pilot Program.



Victoria Klimczak, Program Manager, Henry M. Jackson Foundation

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Ms. Klimczak has contributed to numerous National Center projects including the Crisis Symposium, "Stop the Bleed" Initiative, and is now Program Manager on the NDMS Pilot team. As the NDMS Pilot Program Manager, she provides administrative oversight and is responsible for finance, personnel management, and contracts supporting the Program.



Clark Lee, JD, MPH, CPH Research Associate III, Operational Research, Henry M. Jackson Foundation

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Mr. Lee is the lead Research Associate for the NDMS Pilot Program. He brings over 15 years of experience as a public health and safety researcher, and over 12 years of experience as a public health emergency planner and preparedness consultant. His interests include the application of mixed methods research approaches to evaluating and improving public health and health care emergency preparedness programs, as well as the use of legal and policy interventions to promote public health and safety.



Drew Naumann, NRP Strategy and Operations Specialist, Partnerships and Planning, Henry M. Jackson Foundation

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Mr. Naumann has over 16 years of experience in emergency medical services, public health leadership, and military medicine. His role at NCDMPH is to advise the NDMS Pilot team on issues related to strategy, operations, and the military planning process.



Norma Quintanilla, BS, Project Coordinator, Henry M. Jackson Foundation

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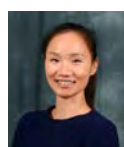
Ms. Quintanilla is the liaison for the Disaster Health Core Curriculum at NCDMPH. She has contributed to numerous projects including, Advancing Critical Healthcare Infrastructure and Operational Modeling for Disasters, Surge Considerations for U.S. Hospitals in the Context of the National Disaster Medical System: An Integrative Literature Review, Best Healthcare Practices during Mass Shooting Virtual Workshop and on-going research efforts focused on Disaster Health Education.



Raphaele Rodzik, MPH, Project Coordinator, Henry M. Jackson Foundation

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Ms. Rodzik supports our health and public health research efforts focused on the First Aid for Severe Trauma (FASTTM) course.



Keke Schuler, PhD, Research Manager, Henry M. Jackson Foundation

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Dr. Schuler joined NCDMPH as a Research Manager. Her research is multidisciplinary and employs advanced quantitative modeling approach to study public health questions.



Allyson Sison, MA, Project Administrator, Henry M. Jackson Foundation

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Ms. Sison brings local-level public health emergency preparedness experience with program coordination and response to her role on the NDMS Pilot team. She provides a wide range of administrative duties and programmatic support for the Program.



William (Wills) Sizemore, MS, Military NDMS Consultant

Email: willsize2@aol.com

Mr. Sizemore brings over 30 years of experience as a US Army medical support planner and operator. He also has 5 years' experience as the Defense Support to Civilian Authorities Subject Matter Expert for the Defense Health Agency including extensive coordination with other Federal Agencies on the Department of Defense participation in NDMS.



Kimberly J. Stoudt, Ed.D., LAT, ATC, EMT Instructional Design and Assessment Specialist, Henry M. Jackson Foundation

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Dr. Kimberly Stoudt is a nationally certified athletic trainer and emergency medical technician with tactical training for austere environments and extensive experience in diagnosing and treating a variety of musculoskeletal injuries and conditions. Dr. Stoudt lectures on musculoskeletal evaluation and Tactical Casualty Combat Care (TCCC) in the USUHS School of Medicine. She most recently assisted in the development of First Aid for Severe Trauma (FASTTM).

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