PICTURE predictive analytic tool proves adaptable and reliable in hospital outside of U-M

In a recent study published in *Critical Care Medicine*, researchers from Michigan Medicine, the Weil Institute, U-M Precision Health, and Hurley Medical Center (Flint, MI) analyzed data from more than 11,000 hospital encounters to externally validate a predictive analytic originally developed at the Weil Institute, called PICTURE (Predicting Intensive Care Transfers and other Unforeseen Events).
Physician-aided artificial intelligence improves detection of acute respiratory distress syndrome

Investigators from the Weil Institute and Michigan Medicine examined how the unique strengths of AI and human physicians can complement each other to enhance diagnosis of acute respiratory distress syndrome (ARDS).

Specialized tourniquets developed at the Weil Institute are enhancing emergency care in Ukraine

Precision Trauma LLC, a partner of the Weil Institute, donated over 700 “Turn-i-Kit” devices to support emergency care providers in Ukraine. Turn-i-Kits are designed to be easy for untrained first-responders to apply under stressful conditions.

Catalyzing collaboration and inspiration: The 2023 Massey Traumatic Brain Injury (TBI) Grand Challenge kickoff event

Attendees at this year’s kickoff represented not only medical backgrounds but also engineering, military, computer science, chemistry, and IP/commercialization—all united with the goal of improving TBI care and outcomes.
Upcoming Funding Opportunities

**MTRAC for Life Sciences Innovation Hub: Kickstart Grant Program**
(Deadline: May 1, 2023)

Kickstart awards offer early-stage project funding, enabling biomedical innovators to develop proof of concept for technologies. These awards, which are up to $42,500, have a cost share requirement. To be eligible for the Kickstart program, an invention disclosure needs to be filed with an innovator's institution.

**Department of Defense (DoD) - Spinal Cord Injury Research Program**
(Deadline: May 24 for pre-proposals)

The DoD has opened its FY23 Spinal Cord Injury Research Program. The program will fund Clinical Trial Awards, Clinical Translation Research Awards, Translational Research Awards, and Investigator-Initiated Research Awards.

**More DoD Opportunities Opening Soon!**

- **Traumatic Brain Injury and Psychological Health (TBIPHRP)** – will fund Clinical Trial Awards, Focused Program Awards, Investigator Initiated Research Awards, Health Services Research Awards, and Translational Research Awards
- **Combat Readiness-Medical Research Program (CRRP)** – will fund Translational Research Awards
- **Joint Warfighter Medical Research Program (JWMRP)** – will fund Military Medical Research and Development Awards
- **Military Burn Research Program (MBRP)** – will fund Clinical Translational Research Awards and Technology/Therapeutic Development Awards

**Advanced Research Projects Agency for Health (ARPA-H)**
(Deadline: Through March 14, 2024)
ARPA-H has released its first Open BAA seeking revolutionary high-risk, high-reward proposals for research with big, audacious goals to improve health outcomes across patient populations, communities, diseases, and health conditions. This agency is expected to be similar to DARPA, and U-M OVPR has created a resource page and coaching program for those interested.

**US Army Medical Research and Development Command**
*Deadline: Through 2027*

The DoD USAMRDC has released its new BAA, with a rolling deadline through 2027. Budgets are not limited, and grants can be for up to 4 years. Pre-applications are required, and full applications can only be submitted if invited. Combat casualty care areas of interest are related to hemorrhage, TBI, acute secondary organ damage, care during transport, and burn injuries.

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**ANNOUNCEMENTS**

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**New Publications**

Weil members, please remember to note your affiliations with the Weil Institute so we can help amplify your research!

**Barriers to the Initiation of Telecommunicator-CPR during 9-1-1 Out-of-Hospital Cardiac Arrest Calls: A Qualitative Study**
DOI: 10.1080/10903127.2023.2183533

**Calcium During Cardiac Arrest: A Systematic Review**
DOI: 10.1016/j.resplu.2023.100379

**Collaborative Strategies for Deploying Artificial Intelligence to Complement Physician Diagnoses of Acute Respiratory Distress Syndrome**
DOI: 10.1038/s41746-023-00797-9

**Effectiveness of Lay Bystander Hands-Only Cardiopulmonary Resuscitation on a Mattress Versus the Floor: A Randomized Cross-Over Trial**
The Power of PICTURE and AI-Physician Partnerships

DOI: 10.1016/j.annemergmed.2023.01.012

External Validation and Comparison of a General Ward Deterioration Index Between Diversely Different Health Systems
DOI: 10.1097/CCM.0000000000005837

Management of Acute Upper Gastrointestinal Bleeding in Critical Care Transport
DOI: 10.1016/j.amj.2022.12.006

Sustained Perturbation of Metabolism and Metabolic Subphenotypes Are Associated With Mortality and Protein Markers of the Host Response
DOI: 10.1097/CCE.0000000000000881

The Ward or the Intensive Care Unit: Is It All Relative?
DOI: 10.1513/AnnalsATS.202211-945ED

Troubleshooting FoCUS Image Acquisition: Patient Positioning, Transducer Manipulation, and Image Optimization
DOI: 10.3791/64547

See all member publications from 2023

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About the Weil Institute

The Weil Institute for Critical Care Research & Innovation is named after the late Dr. Max Harry Weil—a physician and professor widely regarded as a key founder of the field of critical care.

As the Weil Institute, we are one of the world's first comprehensive research enterprises devoted to transforming critical care medicine by accelerating science and moving it from bench to
We do so by bringing together integrative teams of world-class U-M scientists, clinicians, and engineers with industry partners and funding sources to develop and deploy cutting-edge solutions that elevate the care, outcomes, and quality of life of critically ill and injured patients and their families.

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