



Medical Readiness, Warfighter Performance and Rapid Return to Duty

CDR Christopher Steele

Director, Military Operational Medicine Research Program
Chair, Joint Program Committee - 5

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MOMRP Overview

MOMRP portfolio serves to ensure Service members are
resilient to the rigors of combat
responsive to the challenges of training
resistant to longitudinal stressors

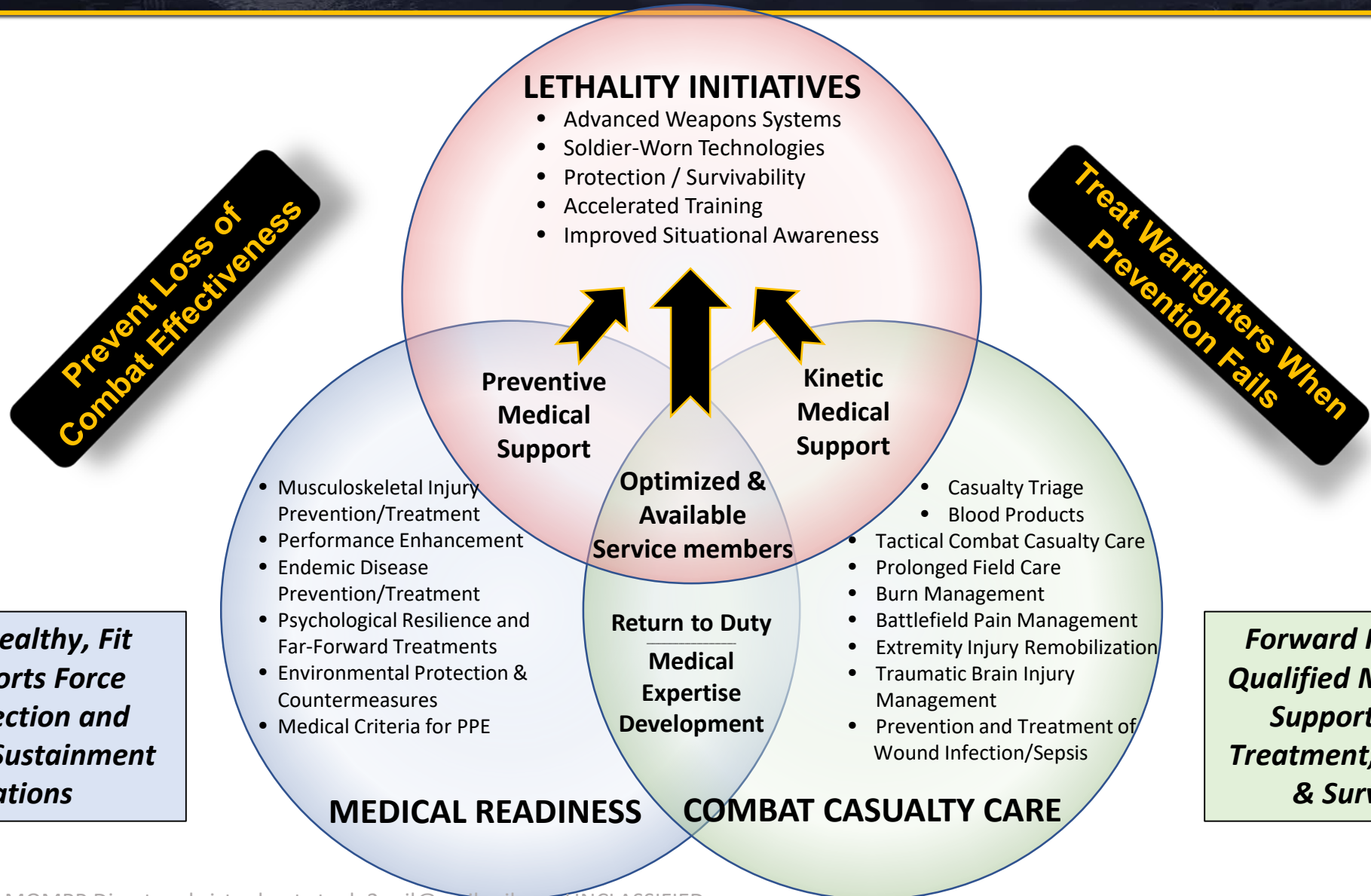
Develops capabilities and delivers solutions to:

- Prepare for the fight and stay in the fight
- Enable Service Members to overcome external and internal stressors
 - *Internal factors* are both physiological and psychological
 - *External factors* include heat, blast and repeated impacts (operating weapons systems, physical injury)





Building a Large Scale Combat (LSCO) Capable Force





Mission and Portfolios: Research Investment Program and DoD subdivision of S&T

Develop biomedical countermeasures against operational stressors and to prevent and treat physical & psychological injuries during training and operations in order to maximize the health, readiness and performance of Service members and their Families, in support of Multi-Domain Operations, Army CFT and Close Combat Lethality Priorities, and Human Performance Optimization & Enhancement, Maximizing Human Potential and DoD Total Force Fitness concepts.

Science

ENVIRO

Environmental Health & Protection

THREATS

- Heat
- Dehydration
- Cold Stress
- Dust/Air Pollution
- Toxic Industrial Chemicals/Materials
- Water Contaminants
- Altitude & Undersea
- Hypoxia

INJURY

Injury Prevention & Treatment

THREATS

- MSK Injury Prevention MSKI Treatment
- Orthotics & Prosthetics
- Blast Overpressure
- Blunt Head/Body Trauma
- Spinal Injury
- Sensory Injury & Treatment
- Degraded Visual Environment

PHYSIO

Physiological Health & Performance

THREATS

- Disaggregated/Continuous Operations
- Sleep Deficit and Circadian Desynchrony
- Sustained Fatiguing Work (Physical/Mental)
- Cognitive Rehab
- Malnutrition
- Dietary Supplements
- Aviation Medicine

PSYCH

Psychological Health (PH) and Resilience

THREATS

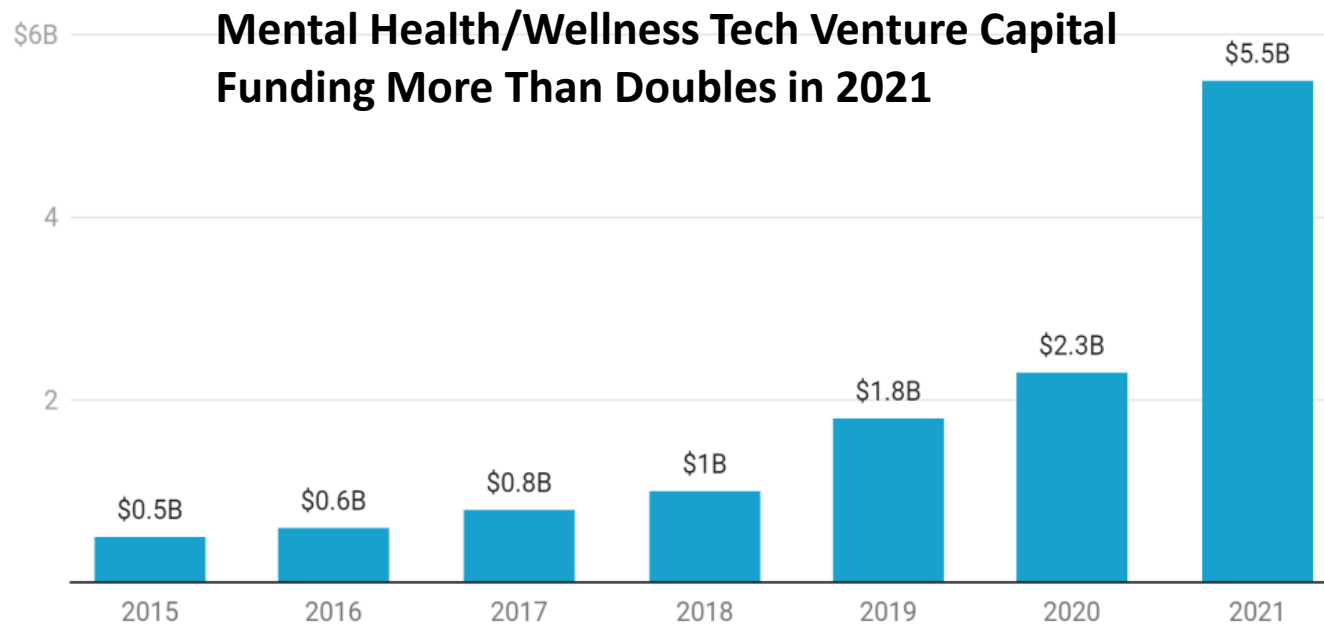
- PTSD/Clin Disorders
- Suicide Behavior
- Alcohol/Other Drug Use
- Co-occurring Mental Disorders
- Access/Retention in Behavioral Health Care
- Family Transitions and Well-being

MILCOHORT Epidemiology Efforts
Wearables for Health, Readiness and Performance

Service Member



Digital Health Investments...



Source: Pitchbook

2021 TOP FUNDED CLINICAL INDICATIONS
2017-2021; numbers equate to funding rank



	2017	2018	2019	2020	2021
MENTAL HEALTH	\$0.5B 2	\$1.4B 1	\$1.0B 1	\$2.7B 1	\$5.1B 1
DIABETES	\$0.3B 4	\$0.4B 4	\$0.5B 4	\$0.8B 6	\$1.8B 2
CARDIO-VASCULAR	\$0.5B 1	\$0.6B 3	\$0.6B 3	\$1.1B 4	\$1.8B 3
PRIMARY CARE	\$0.1B 15	\$1.0B 2	\$0.5B 5	\$1.7B 2	\$1.6B 4
MUSCULO-SKELETAL	\$0.5B 3	\$0.2B 12	\$0.2B 14	\$0.2B 12	\$1.4B 5
ONCOLOGY	\$0.3B 6	\$0.4B 5	\$0.6B 2	\$1.3B 3	\$1.4B 6

Great opportunity to benefit DoD, lots of external movement in this space





Psychiatry & Clinical Psychology Disorders Portfolio

Understand the brain-based biological underpinnings of psychological health disorders (PTSD and others), and with this knowledge, develop evidence-based prevention and intervention strategies to mitigate the impact of psychological trauma and restore psychological health to Service Members.





Psychiatry & Clinical Psychology Disorders Portfolio Highlights

PTSD Screening Tools	Advances in PTSD Treatments	Behavioral Health Delivery & Implementation
<ul style="list-style-type: none"> PTSD Screening Tool for objective detection <ul style="list-style-type: none"> Systems Biology Consortium: Multi-omics blood-based biomarker assessment at pre- & post-deployment in ADSM cohorts Vocal markers Project VALOR: Shortened self-report screening tool and patent filed for vocal markers of PTSD (2019; w/MITRE) 	<ul style="list-style-type: none"> Psychotherapies: Massed-Prolonged Exposure (PE), Cognitive Processing Therapy (CPT), Written Exposure Therapy (WET) CAP: Therapy adjunct with robot-guided Transcranial Magnetic Stimulation, CPT for posttraumatic headache, Intensive Outpatient Program-PE, and multiple successful pilots Stellate Ganglion Block: RCT showed effectiveness; prospective cohort study to characterize intermediate-term effects of SGB 	<ul style="list-style-type: none"> Telehealth found to be accepted and non-inferior (currently and pre-COVID) TACTICS: Overcoming barriers to implementing evidence based treatments in the MHS Written Exposure Therapy for PTSD: transitioned to a clinical practice implementation pilot within MHS Trauma-Informed Guilt Reduction intervention to address residual distress not unique to PTSD (a transdiagnostic intervention)
<p>NEXT Steps</p> <ul style="list-style-type: none"> Mature and Transition Biomarker Initiatives to aid detection and optimize treatment 	<p>NEXT Steps</p> <ul style="list-style-type: none"> Advance and Transition SGB Initiatives 	<p>NEXT Steps</p> <ul style="list-style-type: none"> Improve far-forward delivery capabilities



Psychological Health and Resilience Portfolio

Deliver evidence-based solutions and inform policies to optimize, enhance, and sustain Service Member, Unit and Family psychological health, well-being, and readiness and reduce negative impacts of training, garrison and operational stressors



Sub-Portfolios:

Resilience | Suicide Prevention | Family Related Issues | Sexual Harassment & Assault Prevention | Alcohol & Substance Use



Prevention Research Initiatives to Reduce Sexual Assault

MOMRP FY19 investment: \$6,763,322

- Effort centered around the DoD SAPRO's Prevention Plan of Action (PPOA) that identified and prioritized actions and steps to be taken at the DoD, Service, and/or National Guard (NG)/Reserve level to improve sexual assault prevention. Highlights:
- Primary prevention programming--approaches that take place before sexual violence has occurred to prevent initial perpetration or victimization
- Ecological approaches--preventative interventions at multiple levels of the social ecological model (i.e., individual, relationship, community, and society)
- Cross-cutting prevention initiatives—prevention programming that capitalizes on shared risk and protective factors across multiple outcomes

Key Stakeholders, Collaborators, and Transition Partners

- DoD Sexual Assault Prevention Research Office (SAPRO)
- 21st Century Sailor Office (OPNAV N17)
- Army Resilience Directorate (ARD)
- Air Force Directorate of Integrated Resilience(AF/A1Z)
- Psychological Health Center of Excellence (PHCoE)
- Department of the Navy's Sexual Assault, Sexual Harassment & Suicide Prevention and Response Office (DON SAPRO)
- Office of Diversity, Equity, and Inclusion (ODEI)
- Reserve Component/National Guard Bureau (NGB) – Warrior Resilience & Fitness (WRF)

Organization	Title
University of Florida	Reducing Sexual Assault at the U.S. Air Force Academy: Adaptation, Implementation, and Evaluation of the Sexual Communication and Consent Program
Womack Army Medical Center	Preventing Sexual Violence Toward Male Victims Through Targeting Hazing Behavior
New York University	Unlocking What Makes Military Behavioral Health Interventions Work, Stumble, or Fade Away: Understanding Barriers and Facilitators That Can Be Applied to Sexual Assault Prevention
Boston University Medical Campus	Strength at Home Couples Program: Examining Sexual Aggression
United States Air Force Academy	EAAA at USAFA: Intervention with the Fourth Degree Classes of Cadets
University of Texas at Austin	Optimizing Human Resources to Address Battalion-Level Factors That May Impede or Support Implementation of Sexual Assault and Sexual Harassment Prevention Programs
University of Texas Health Science Center, Houston	Building a Better Workplace: A Sexual Harassment and Assault Prevention Program for Active Duty Service Members
Brown University, Rhode Island Hospital	Personalized Web-Based Sexual Assault Prevention for Service Members



Psychological Health & Resilience Portfolio Highlights

Family: Strengthening Military Families	Suicide Prevention: DoD Military Suicide Research Consortium (MSRC)	Resilience: Small Team Adaptability	Prevention Research to Reduce Sexual Assault
<p>After Deployment, Adaptive Parenting Tools (ADAPT)</p> <ul style="list-style-type: none"> • Prior studies show improved outcomes in parents and children (e.g., lower distress) • SMART optimization study is examining multiple formats, sequences, and “doses” of ADAPT in military families <p>Marriage Checkup</p> <ul style="list-style-type: none"> • Pilot study of primary care intervention showed improved marital health • RCT found improved depressive symptoms, communication, and compassion at 6 month follow-up (Cigrang et al., 2022) 	<p>Multi-disciplinary consortium focused on evidence-based screening and suicide risk assessment, interventions, and approaches to prevent military suicide and mitigate suicidal ideations and behaviors</p> <p>Dissemination & Implementation Core to facilitate transition of results</p> <p>Brief Cognitive Behavioral Therapy (BCBT), Crisis Response Planning, and Lethal Means Counseling were found to be promising interventions for reducing suicide ideations/behaviors</p>	<p>iCOVER</p> <ul style="list-style-type: none"> • Peer-based intervention for acute stress has been rated useful, relevant, and helpful by National Guard prior to deployment (Adler & Gutierrez, 2022) • Distribution to NATO counterparts <p>Mindfulness/Yoga</p> <ul style="list-style-type: none"> • Frequency of mindfulness practice was associated with better fewer attentional lapses, less emotion regulation difficulties, greater mental toughness, and higher self-reported mindfulness (Nasif et al., 2021) 	<p>Program Announcement on:</p> <ul style="list-style-type: none"> • Development or adaptation of prevention efforts to reduce the occurrence of sexual assault and/or harassment • Understanding the diagnosis, assessment, and screening of adjustment disorders as a consequence of sexual assault • Stressors that precipitate adjustment disorders • Announcement yielded 8 awards; results pending
<p>NEXT Steps: Develop evidence-based interventions to support the needs of military families throughout deployment cycle</p>	<p>NEXT Steps: Validate and advance transition of effective suicide prevention interventions</p>	<p>NEXT Steps: Develop resilience building solutions to reach units and individuals at optimal times and rapid methods of dissemination (e.g., Quick Guides)</p>	<p>NEXT Steps: Disseminate findings and plan for follow up studies, including studies addressing cross-cutting prevention</p>



Comprehensive Cross-Cutting Prevention Opportunity to Decrease Harmful Behaviors

MOMRP FY20 investment: \$9,579,087

Project Aims

Effort focuses on optimizing health promotion via prevention initiatives for the military that provide education and skills, protective environments, and healthy climates and relationships in efforts to prevent various forms of violent, abusive, or harmful behaviors including:

- Suicide ideation & behaviors and non-suicidal self-injury
- Sexual violence (sexual harassment and assault)
- Harassment (e.g., gender and racial discrimination, retaliation)
- Domestic abuse (intimate partner violence)
- Alcohol and substance use, misuse, and disorders

Key Stakeholders, Collaborators, and Transition Partners

- 21st Century Sailor Office (OPNAV N17)
- Army Resilience Directorate (ARD)
- Air Force Directorate of Integrated Resilience(AF/A1Z)
- Defense Suicide Prevention Office (DSPO)
- Department of the Navy's Sexual Assault, Sexual Harassment & Suicide Prevention and Response Office (DON SAPRO)
- DoD Sexual Assault Prevention Research Office (SAPRO)
- Family Advocacy Program (FAP)
- Military Community and Family Policy (MC&FP)
- Military-Civilian Transition Office (MCTO)
- Office of the Deputy Asst Secretary of the Army – Equity and Inclusion (ODASA-EI)
- Office of Diversity, Equity, and Inclusion (ODEI)
- Psychological Health Center of Excellence (PHCoE)
- Reserve Component/National Guard Bureau (NGB) – Warrior Resilience & Fitness (WRF)
- Special Operations Command – Preservation of the Force & Family (SOCOM POTFF)
- US Marine Corps – Marine & Family Programs (M&FP)

Organization	Title
University of Colorado Anschutz Medical Campus	Protective Environments: Military Community Engagement to Prevent Firearm-Related Violence
RTI International	Enhancing Utility and Evaluating Cross-Cutting Outcomes of the Sexual Communication and Consent (SCC) Program
Naval Health Research Center	
Henry Jackson Foundation	Better Together: A primary prevention intervention targeting transdiagnostic interpersonal emotion regulation among military couples
University of Kentucky Research Foundation	Integrating Social Networks and Team Intervention Approaches to Reduce Ostracism in the Military
Arizona State University	Cross-cutting Prevention Through an Upstream Focus on Social Determinants of Health Within Military Settings



MOMRP Psychological Health Key Directions

Psychiatry and Clinical Psychology Disorders

- Primary prevention of the spectrum of PH disorders
- Repurpose FDA-approved drugs to mitigate acute stress reactions
- Personalized approaches -utilize PTSD subtypes to optimize treatment
- Definitive trials testing PTSD treatment alternatives to psychotherapy in Active Duty samples, e.g. stellate ganglion block, neuromodulation, etc
- Solutions to sustain psychological health of Healthcare personnel



Psychological Health and Resilience

- Facilitate dissemination & implementation of effective suicide prevention interventions into the MHS and military community
- Continue developing and validating cross-cutting primary prevention interventions
- Evidence-based interventions to support family readiness
- Holistic multi-level approaches to enhance resilience





Optimizing the Force: Digital Phenotyping for Readiness



Individual feedback on Sailor status and deviation from norms

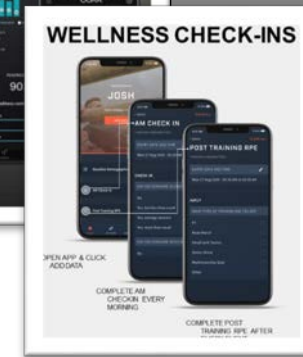
- Wearables as a scalable enabler of Sailor status (CREW Program)
- Sleep and wearable data as a marker of behavioral state
- Enables “Intrusive Leadership” for check-in if Sailor unpredictably deviates from their baseline or deviates significantly from crew average
- Improved capability to monitor and manage fatigue and other crew/squad endurance threats in real-time
- Medical can inform Leadership on the performance & recovery after injury/degradation
- Behavioral health providers who have relied heavily on self-report of sleep by individuals

Enhance Readiness

8.5% of Sailors had at least one BH encounter (DoD Health of the Force)

11% of Sailors reported Sleep Disorder; Joint Force has similar challenges

- Obtaining objective information can help identify red flags early to inform wellness services and early treatment in the Military Health System
- Enhance Service Members performance in Military environments; prevent loss of readiness pre/during/post deployment



Important to distinguish use cases:
Healthy Populations
V/S
Post-Diagnosis

Large-scale data collections exist

Large Ongoing Efforts

- **Wearable Covid-19 Pre-detection and behavioral health assessments: 62K person data set (UCSF/UCSD/MIT-LL)**
- **Optimizing the Human Weapons System: (OHWS, DEVCOM-SC, MIT-LL)**
- **Crew Readiness Endurance and Watchstanding (CREW/OWL: NHRC, Pulsar Informatics, NIAWC, MIT-LL)**



Q's?



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