IMPACT-MH Year in Review

July 2025 – July 2026

Annual progress report from the thirteen IMPACT-MH research partner sites and the Data Coordinating Center.

IMPACT-MH 2026 Annual Meeting

September 22–23, 2026 · NIH, Rockville, Maryland

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A Message from our NIMH Collaborators

THE INITIATIVE

IMPACT-MH was established as part of NIMH's broader effort to advance precision psychiatry through computational, behavioral, and clinical data.

On behalf of the National Institutes of Mental Health (NIMH), we are excited about the past year's progress for IMPACT-MH, an initiative that uses behavioral measures and computational methods to predict individual-level outcomes in mental health care. A clear highlight was our annual meeting in New York, which brought together investigators from the consortium's thirteen institutions for scientific exchange.

The consortium's productivity has been outstanding: 66 publications are now listed in the NIMH Data Archive (NDA), reflecting the breadth and momentum of this work. Equally impressive is the scale of data sharing. Thanks to the Data Coordinating Center's stewardship and the efforts of each IMPACT-MH project team, the NDA now holds data from 161 data structures and more than 8,000 participants as of August 13, 2026, a growing foundation for open science which will multiply the scientific benefits of these projects.

We are grateful to the grantee teams for their engagement in DCC-led working groups, and to the DCC for their development of analytical tools for harmonization and data management across the consortium. We look forward to another productive year, and we thank everyone whose dedication continues to advance the promise of IMPACT-MH: more precise, data-driven care for people living with mental illness.

WHY IMPACT-MH MATTERS NOW

Mental health research increasingly relies on integrating clinical, behavioral, and computational data at the individual level. IMPACT-MH brings together partners across thirteen institutions to advance more precise approaches to characterization, prediction, and clinical decision-making.

The 2026 Annual Meeting offers an opportunity to share progress, address common challenges, strengthen collaboration, and align priorities for the year ahead.

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COOPERATIVE AGREEMENTS	PARTICIPATING INSTITUTIONS	U24 DATA COORDINATING CENTER

Meeting Agenda

SEPTEMBER 22–23, 2026 | NIH · ROCKVILLE, MARYLAND

01 DAY ONE
Tuesday, September 22

12:30 – 1:00 PM — Gather and Greeting

NIMH leadership · DCC leadership · Announcements and logistics

1:00 – 2:30 PM — GENERAL SESSION 1

1. PREDiCTOR — Icahn School of Medicine at Mount Sinai
2. IMPACT-Y — Yale University
3. REACH — NYU Langone School of Medicine
4. Duke-PMA — Duke University
5. JASPer-MH — Massachusetts General Hospital
6. PPSN — University of Pittsburgh
7. ARTEMIS — Ohio State University

2:30 – 2:45 PM — Break

2:45 – 4:00 PM — GENERAL SESSION 2

1. SPARC-XP — Massachusetts General Hospital
2. PREDICT-NP — Oregon Health & Science University
3. HALO — University of Washington
4. TRACC-MH — Albert Einstein College of Medicine & McLean Hospital
5. COMPASS — University of Michigan
6. ACE-D — Stanford University

4:00 – 4:15 PM — DCC Update

4:15 – 4:45 PM — General Discussion

5:00 – 6:00 PM — Reception

Pinstripes · 11920 Grand Park Ave, North Bethesda

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DAY TWO

Wednesday, September 23

8:30 – 9:00 AM — Breakfast and Arrival

9:00 – 10:00 AM — CONCURRENT BREAKOUT SESSIONS 1

- 1A EHR — Lead: Roy Perlis
- 1B Cognitive change measurement — Lead: Laura Germine

10:00 – 11:00 AM — CONCURRENT BREAKOUT SESSIONS 2

- 2A Sensor data / Longitudinal modeling — Leads: Sarah Yip & Matt Engelhard
- 2B Clinical translation — Leads: Alysa Doyle & Lara Foland-Ross

11:00 – 11:15 AM — Break

11:15 AM – 12:30 PM — CONCURRENT BREAKOUT SESSIONS 3

- 3A NLP & AI/ML — Leads: Guillermo Cecchi & Trevor Cohen
- 3B Return of results — Lead: Jessica Turner

12:30 – 1:00 PM — Lunch Break

1:00 – 2:00 PM — CONCURRENT BREAKOUT SESSIONS 4

- 4A OMOP — Lead: Hua Xu
- 4B Publication planning — Lead: Sarah Morris

2:00 – 2:15 PM — Break

2:15 – 3:00 PM — Joint Session — Publications Speed Dating

3:00 – 3:15 PM — Closing Remarks

Data Coordinating Center

Coordinating Individually Measured Phenotypes to Advance Mental Health Research

Grant No. 1U24MH136069-01

PRINCIPAL INVESTIGATORS



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2026 Highlights

Accomplishments. The Data Coordinating Center (DCC) continues to serve as the central engine for data integration and cross-institutional collaboration. Across the year, the center focused on transforming disparate clinical streams into unified computational assets, working through our operational pillars. Among its primary accomplishments, the DCC calibrated our centralized data management system, refining automated pipelines to gather and format heterogeneous data collected by partnering research projects for submission to the NDA. We fine-tuned our software and development tools like the Network Portal, Submission Portal, and NDA Mapper. The development of the Rosetta and Research Assistant provides the engine for exploration of IMPACT-MH instruments, the generation of datasets, and data element level analyses powered by AI/Claude. Data submissions through September 2026 include 139 data structures from 9,515 patients. Data structures consisted of New (20 submitted (4 approved), Modified (54 submitted and approved), Existing (85). Our Data Analytics Core team has been able to conduct feasibility studies focusing on common data elements. In addition, the team has begun work to develop a federated learning model that will provide powerful insights into model generalizability and behavioral phenotyping across heterogeneous clinical environments.

Partnerships. Partnerships were fundamental to the DCC's operational reach over the last year. The center maintained joint leadership working groups to drive technical consensus across sites. By acting as the operational bridge between research sites, working groups led to the creation of more support tools including EMA/Behavioral task Guidelines, Audio-Visual data Guidelines, and instructions for creating New and Modified data structures. AI ETL pipelines were developed to support the workflow for EHR data conversion to OMOP. As we gather more information about these evolving data collection methods, we continue to recalibrate and refine our workflows and pipelines for them.

The DCC continues to lead the consortium through consistent touchpoints providing multiple communication streams for our research partners. Our Pointperson Network remains the primary contact point for regular, open communication and problem-solving. Regular monthly All Hands meetings provide an opportunity for consortium members to gather information and share research updates, with new emphasis on our Spotlight segment where individual sites challenge new ways of thinking. For the first time in April 2026, we supported our first in-person meeting led by Mount Sinai, preceding the SOBP NYC conference. This led to the establishment of working groups to take on new challenges like Clinical Translation, Return of Results, and issues specifically related to the Pediatric population.

Challenges. Despite these successes, the DCC confronted some structural and informatics challenges throughout the year. Resolving data heterogeneity across diverse patient populations has proven to be complex, as different research sites utilized varying measurement tools, sampling frequencies, and EHR platforms. Managing computational scaling for large volumes of data has required constant infrastructure optimization. The DCC's efforts have established an adaptable data ecosystem for precision psychiatry as we continue to evolve. By standardizing complex behavioral phenotypes and maintaining robust analytical pipelines, the center remains positioned to support groundbreaking computational translation and improve mental health outcomes nationwide.

PREDiCTOR

Phenotypes REimagined to Define Clinical Treatment and Outcome Research

Grant No. 1U01MH136535-01

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2026 Highlights

Accomplishments. Psychiatry lacks objective measures of behavior, leaving prognosis to clinical impression. PREDiCTOR is building individualized clinical signatures that predict treatment disengagement and crisis care (ED visits/hospitalization) among 2,100 help-seeking patients (ages 15–45) entering outpatient care across the Mount Sinai Health System. Recruitment is on track: 850 participants have enrolled. We obtained a legacy EHR dataset of ~22,000 patients and established recurring EHR pulls. The mindLAMP app is deployed to 500+ participants and has yielded 5,727 audio and 3,006 text diaries; video diaries launch this month. Elmhurst Hospital, a more ethnically diverse site serving many Spanish-speaking patients, joined the study and consented 40 participants (38% Spanish-speaking) in its first month. Over 40 didactic and outreach presentations have engaged clinicians across sites. Working with patients, we compared five audiovisual (AV) setups in a pilot study; OBSBOT webcams were least distracting and achieved higher consent rates than phone-based setups (93.5% vs. 38.7%) and now underpin all recordings (manuscript in preparation).

Published work shows: large language models can infer therapeutic working alliance from language across 950+ psychotherapy sessions (Lin et al., Translational Psychiatry 2025); among 365 participants, journaling peaks in the first month of enrollment and 8 PM reminders produce a twentyfold surge in hourly submissions (Davidson et al., IEEE ICDH 2026); and the study protocol and Contextual Bandit prediction framework, which adapts predictions as data accrue (Haas et al., Biological Psychiatry: CNNI, in press, IMPACT-MH special issue). In the legacy EHR cohort, models predict hospitalization within 180 days (AUROC: 0.83 first, 0.82 repeat), rising to 0.85 within a week of the event; clinical notes are the strongest single source (AUROC 0.78), and EHR-derived social determinants of health contribute independently (manuscript in preparation). One further manuscript is under review, and six invited talks and 25+ posters have covered therapeutic alliance, diary engagement, intake attendance, and early adversity as predictors of crisis care and disengagement. AV and smartphone feature extraction are underway for the upcoming data submission.

Partnerships. PREDiCTOR unites eight study cores across Mount Sinai, Johns Hopkins, Carnegie Mellon, McLean Hospital, and Deliberate AI, meeting weekly. Our team contributed to IMPACT-MH seminars, the Data Analytics Working Group, and All-Hands presentations, and coordinate with the DCC on harmonization. In April, PREDiCTOR hosted the first in-person All-Investigator IMPACT-MH meeting at Mount Sinai with NIMH program staff and the DCC, drawing ~100 in-person and 50 virtual attendees. Attendees valued the in-person connection and cross-project collaboration. We currently seek consortium partners to externally validate our EHR model over any time window, which uses structured data and clinical notes to predict ED visits and hospitalization. Partners could run the models locally or share data for joint analysis.

Challenges. Remaining challenges are largely technical: de-identifying unstructured EHR and AV data for IRB-compliant sharing, harmonizing features across modalities, and missingness in passive smartphone data, which dashboards now flag so staff can re-engage low-data participants. We await the release of the WAIS-5 cognitive data structure and continue to refine site-specific outreach to monitor and sustain recruitment pace.

IMPACT-Y

IMPACT-MH: Clinical and Behavioral Fingerprints of Psychopathology

Grant No. 1U01MH136497-01

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2026 Highlights

The IMPACT-Y project at Yale is recruiting a large group of individuals with a wide range of psychiatric symptoms and diagnoses, including complex comorbidity, and assessing them over time with both conventional and novel metrics of symptoms, transdiagnostic constructs such as stress, computational psychiatry-informed behavioral tasks, AI-enabled parsing of speech, and measures derived from the electronic health record. In this large dataset we will investigate which metrics are most predictive of the course of symptoms and function over time.

Accomplishments. As of August 2026, IMPACT-Y has completed baseline data collection for 634 participants and one or more follow-ups for 410 participants. Several key infrastructure and methodological advances have been made: the team has integrated the mindLAMP platform, expanding capacity for passive digital phenotyping and ecological momentary assessment; significant work to automate our NLP pipeline for analysis of spoken narrative data has been made, and the team has begun extracting speech features to support topic modeling and sentiment analysis; a common data format has been established for computational task data, improving standardization and facilitating downstream analysis and cross-task data harmonization; and extraction of clinical features and SDoH information from EHR tabulated data and clinical notes has also made significant progress. Statistical analysis of baseline data from a 'frozen baseline' sample (N=549) is underway. ~60% of the participants meet criteria for 2 or more diagnoses. Global burden, as assessed using NIH toolbox measures, rises monotonically but not linearly with number of diagnoses: burden rises most steeply across the first few comorbid diagnoses and levels off at higher counts. Analyses of computational task data and spoken narrative data are ongoing.

Partnerships. Policies allowing participating investigators and collaborators to submit proposals to use IMPACT-Y data has been developed and disseminated. We anticipate that this process will generate numerous spin-off projects and sub-analyses alongside the core analyses supporting the grant's primary Aims. IMPACT-Y has also helped to foster cross-consortium partnerships, leading a special issue of Biological Psychiatry: Cognitive Neuroscience and Neuroimaging dedicated to IMPACT-MH, titled "Embracing Heterogeneity: Individually Measured Phenotypes to Advance Computational Translation in Mental Health." This recently published special issue centers IMPACT-MH as an organizing framework for reviewing advances in precision psychiatry, reflecting growing evidence that person-specific phenotypes often diverge from group-level patterns—underscoring the need for individualized approaches to understanding and treating psychiatric illness. The issue includes articles from the majority of the original IMPACT-MH U01s and from the Data Coordinating Center. Our monthly IMPACT-Y seminar series continues to draw strong attendance, covering a broad range of topics in computational psychiatry and related fields.

Challenges. Early recruitment moved more slowly than initially projected, reflecting the natural ramp-up period of a large, complex study launched on a compressed timeline. With infrastructure, staffing, and protocols now fully established, the team enters Wave 2 well-positioned for accelerated enrollment. Additional challenges, which were anticipated, have included integrating across a wide range of collaborators at several different sites, managing access to the electronic health record, and maintaining recruitment streams over time.

REACH

Behavioral Phenoscreening: Remote Assessment of Child Mental Health

Grant No. 1UF1MH141129-01

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2026 Highlights

Accomplishments. During the first project year, the REACH team focused on establishing the data and computational infrastructure needed to support all three Specific Aims. For Aim 1, we created and quality-checked a linked maternal-child Epic Cosmos dataset at project scale. The analytic cohort includes approximately 3.3 million children, with linked maternal prenatal, pregnancy, postpartum, and child health data. Extensive quality-control work evaluated cohort construction, mother-child linkage, diagnostic ascertainment, healthcare utilization, and variables relevant to model generalizability. These activities established the foundation for predictive modeling of childhood-onset externalizing disorders. Aim 1 analyses are underway, and two manuscripts are in preparation.

For Aim 2, we are developing a modular, reproducible pipeline for automated analysis of infant-caregiver videos. The pipeline includes video quality control, behavioral-task segmentation, infant pose estimation, skeleton-based movement analysis, facial action-unit detection, audio processing, and vision-language model-based behavioral scoring. We benchmarked general-purpose and infant-specific pose-estimation and action-recognition models, generated preliminary posture, movement, facial-affect, and acoustic features, and established procedures for validating computational measures against human annotations. This work supports the feasibility of extracting structured multimodal behavioral information from naturalistic infant-caregiver videos.

Partnerships. For Aim 1, REACH investigators worked closely with the NYU Langone Population Health Data Hub on Epic Cosmos access, curation, and analytic implementation. The project also supported interdisciplinary trainee development. Xinyi Shi, a third-year Epidemiology Ph.D. student, received mentored training in Epic Cosmos data curation, machine-learning approaches to disease prediction, and childhood externalizing disorders while contributing to Aim 1 analyses and manuscript development.

For Aim 2, we partnered with the NYU Center for Data Science, where four M.S. students completed a two-semester REACH capstone focused on computer vision, audio analysis, model benchmarking, pipeline integration, and reproducible scientific reporting. We also established two key data partnerships: a subcontract with the NYU Department of Psychology to curate NIH Baby Toolbox data on Databrary for project access, and a contractual agreement with Sago to conduct longitudinal follow-up of the former Baby Toolbox cohort. This follow-up will collect parent-reported child behavioral and externalizing outcomes that can be linked to existing infant video and questionnaire data. For Aim 3, we established a partnership with NYU Langone Health MCIT to support integration of infant behavioral testing within the health system and identify operational requirements for future remote deployment.

Challenges. For Aim 2, we pivoted from the originally planned Health Brain and Child Development (HBCD) cohort video data to NIH Baby Toolbox data and established the data-curation and follow-up partnerships needed to support this transition. We also adapted several existing computational tools for infant behavioral data. For Aim 3, after initial development planning with NYU Langone Health MCIT, we determined that dedicated engineering support would be needed and plan to hire a full-time software engineer. During the next project year, we will complete Aim 1 analyses and manuscripts, launch Sago longitudinal outcome collection for Aim 2, further validate and deploy the multimodal video pipeline, and begin Aim 3 platform development and testing in preparation for prospective data collection.

Duke-PMA

Duke Predictive Model of Adolescent Mental Health

Grant No. 1UF1MH141631-01

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2026 Highlights

Accomplishments. During this reporting period, the team completed all major Year 1 activities needed to prepare for prospective validation and participant enrollment. On model optimization, the team refined the model to substantially reduce the number of questionnaire items while maintaining strong predictive performance, an important step toward reducing participant burden and improving feasibility in resource-limited rural settings. NIH Toolbox behavioral measures did not provide a meaningful predictive advantage and will not be included in the deployed model; together with prior findings that brain MRI measures do not improve performance, these results support a streamlined approach based on lower-burden measures that are more readily implemented at scale.

On operational and site readiness, the team finalized the regulatory, contractual, technological, and community-engagement infrastructure required to launch enrollment. Subcontracts were executed with all participating sites, a single IRB and reliance agreements were implemented across the study network, and an iPad-based data collection platform was established using MyCap to support secure, HIPAA-compliant participant data capture. The team also formed a Community Advisory Board (CAB) with representation from participating rural communities; the board met twice during the reporting period and provided input on recruitment strategies, study procedures, and the feasibility of implementing the study in rural communities. Aim 3 protocols and procedures for the digital envirotyping and HOME assessments were finalized, positioning the project to implement these assessments once enrollment begins.

Partnerships. The study is being implemented through collaboration among the Duke and Vanderbilt research teams, participating rural primary care sites (Essentia Health, UNC Health, and Wake Forest Health Sciences), the IMPACT-MH Data Coordinating Center, Duke AI Health, and community representatives serving on the CAB. These partnerships help ensure that model refinement, study procedures, and recruitment strategies remain responsive to the needs and priorities of rural communities.

Challenges and Next Steps. No significant challenges or delays were encountered during the reporting period, and the project remains on track with the approved timeline. Next, the study team will begin enrolling youth ages 10–15 and their parents across participating rural primary care sites and deploy study iPads for participant-facing data collection, initiate HOME assessments and digital envirotyping activities, and continue quarterly CAB engagement. The transition of MPI Dr. Jonathan Posner from Duke University to Vanderbilt University Medical Center is being coordinated across institutions to maintain continuity of study leadership and operations.

JASPer-MH

Jointly Assessed Scalable Phenotypes for Mental Health

Grant No. 1U01MH136059-01

PRINCIPAL INVESTIGATORS



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2026 Highlights

Accomplishments. JASPer-MH examines how psychiatric symptoms, cognition and functioning change across young adulthood, and whether electronic health record (EHR) data alone, or EHR data plus deep phenotyping, can predict differential clinical and functional outcomes. We derived and cleaned a retrospective cohort of 299,137 patients aged 18 to 23 in our health system, of whom 123,900 had an active patient portal account and were eligible for direct recruitment. To date, 6,280 participants have provided informed consent. After setting up a novel infrastructure for the automation of recruitment, consent, and assessment, we achieved this scale within a 19-month period, despite studying a population that is typically very difficult to recruit. A research letter on our automated recruitment method and its yield has been submitted for publication, along with a critical review of studies leveraging EHR-based samples of children and adolescents for predictive modeling of psychiatric outcomes.

We completed baseline Session 1, covering symptoms, psychosocial history, and cognition, for 5,143 participants. Session 2, which added an omnibus symptom measure, substance use ratings, and cognitive testing (general ability, processing speed, and higher-order attention and executive functions), was completed for 4,151 participants. The first six-month follow-up was completed for 2,628, and a one-year follow up has been completed for 2,371 participants. In a planned interim analysis of approximately half the baseline data, roughly a quarter of these young adults reported moderate or greater depressive and anxiety symptoms. Latent profile analysis based on cross-diagnostic symptom dimensions yielded subgroups with four distinct psychiatric profiles that tracked with specific patterns of cognition and of academic, occupational, and other psychosocial functioning. We produced a clean baseline dataset of EHR, survey, and cognitive data. In parallel, we have generated dimensional phenotypes and geocoded environmental measures using our EHR pipeline. As the cohort continues to grow, and longitudinal data increases, we are focusing on analysis of the baseline data set.

Partnerships. We are seeking to organize a Boston regional meeting of IMPACT-MH sites, to complement the national meeting planned for the fall. We have also submitted a symposium to the International Neuropsychological Society's 55th annual meeting (in Boston, Feb 2027) that features cognitive measures from JASPer-MH along with four other IMPACT-MH sites (PREDICT-NP, TRACC-MH, REACH, and IMPACT-Y).

Challenges. Our primary focus in the cohort already recruited is study retention, even as we continue to enroll new participants; we are seeking to increase remuneration to maximize the proportion of individuals for whom 2-year outcomes will be available. We also continue to experiment with alternate means of recruitment to promote generalizability and mitigate the limitations that our health care system places on repeated outreach to participants prior to enrollment.

PPSN

The Pediatric Precision Sleep Network

Grant No. 1U01MH136020-01

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2026 Highlights

The Pediatric Precision Sleep Network (PPSN) is a multi-site project conducted across Pittsburgh, Boston, and Miami, recruiting 1,200 youth (ages 10-13) from pediatric primary care to identify sleep-based signatures that predict transdiagnostic mental health risk. Participants complete sleep monitoring at baseline and annually for up to three years, along with semi-annual questionnaires. Poor sleep health in adolescence predicts later mental health issues, but it has historically been challenging to distinguish normative, transient changes in sleep from at-risk patterns. The project applies computational strategies to build and validate sleep signatures, and leverages multimodal sleep features and signatures to inform mental health risk-stratification algorithms. The long-term goal is to develop practical, sleep-informed clinical tools that improve mental health screening and preventive treatment in adolescence.

Accomplishments. PPSN is nearing the halfway point (n=600) for baseline enrollment and has begun annual follow-up assessments at all sites. The data and analysis team has established pipelines for monitoring key participant characteristics, performing quality control, and deriving key outcomes. Two key manuscripts have been published, including a protocol paper describing the data collection methods for PPSN (Baker et al., 2026, BMC Psychiatry) and a review paper detailing computational strategies for sleep signature development (Soehner et al., 2026, Biol Psychiatry Cogn Neurosci Neuroimaging). With the DCC, we have established key data structures for sharing PPSN data with the NIMH Data Archive. Pre- and postdoctoral trainees have presented several posters on PPSN data, and investigators have presented initial analyses of the primary aims at national conferences and other invited lectures. Finally, a postdoctoral fellow was awarded a grant for secondary analysis of PPSN data.

Partnerships & Collaborations. At all sites, we have cultivated partnerships with primary care practices and practice-based recruitment networks to support study recruitment. We have established multi-site family and provider community advisory boards (CAB) to refine our study procedures and discuss real-world translation of study findings. Within the project, our sleep and electronic health record experts across all sites have partnered to advance a natural language processing algorithm that detects sleep health concepts in primary care records.

Challenges. Maintaining coordination across sites is an ongoing challenge, including protocol adherence, recruitment flow, and data harmonization. Obtaining electronic health record data pulls in a timely manner has also proven difficult, requiring close, iterative coordination with site informatics teams. We are strategizing, in consultation with our family CAB, how to reduce participant burden from repeated annual assessments and mitigate dropout over the multi-year study follow-up period. Variability in primary care clinic workflows across sites has affected recruitment pace, and we are working to maintain consistent recruitment flow while ensuring a representative range of sleep disturbance in the sample. Actigraphy and wearable device compliance and shipping present ongoing technical and logistical challenges in this age group; here too we have consulted with the family CAB to develop adherence strategies and have updated data collection protocols to improve data quality and reduce data loss. Finally, single-IRB updates can be slow to process, affecting protocol update implementation timeline.

ARTEMIS

Analyses to Reveal Trajectories and Early Markers of Imminent Shifts in Suicidal States

Grant No. 1UF1MH136537-01A1

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2026 Highlights

Accomplishments. In this first year, in service of Aim 1 we have: received IRB approval for the study, the study website and recruitment materials; implemented the subawards at all sites; recruited, hired, and trained multiple dedicated research staff for the recruitment and onboarding processes; organized our statistical and recruitment working groups; designed, confirmed, and implemented the screening, baseline, and weekly surveys; designed, confirmed, and implemented the multiple daily surveys; designed, confirmed, and implemented the cognitive tasks in both the Metricwire and Pavlovia platforms; designed, confirmed, and implemented the data management system with CHRR; and began recruitment on April 1. As of mid-August we have had over 700 participants consented, 444 have completed onboarding, and almost 300 have completed the study.

We have implemented multiple recruitment strategies, including recruiting through the MyChart system across OSUMC, and quite successfully recruiting through the Michigan team from the Prechter clinics and mailing lists. The in-person recruiting at Indiana and various OSUMC clinics is also underway, and the AAMWN events this summer are actively recruiting for the project. We have also begun targeted recruitment of clinical populations at OSUMC, including recruiting from the psychiatry emergency department, the psychiatric inpatient unit, the psychosis clinic (EPICENTER), and the outpatient behavioral health clinics. The nationwide mailings and initial social media campaigns started in July. We receive weekly summaries of recruitment results across the different sources, and review those monthly in the recruitment working group for potential modifications.

In support of Aims 2 and 3, we held a statistical working group meeting in person at OSU in February of 2026, discussing the approaches to the data analysis and planning the various testing and evaluation plans for the surveys and cognitive tasks. Regular monthly meetings of the working group has led to standardized data management plans and a simulation framework for testing different algorithms. As an outcome, several papers are in process evaluating the statistical modeling approaches in datasets from other similar but much smaller studies.

The cognitive task working group is assessing the first few hundred participants' data for each of the cognitive tasks, to confirm that the data are accurate and the task is functioning as expected. They will also be working with CHRR and the IMPACT-MH DCC on defining needed data types for the behavioral data.

We presented a symposium on dynamic systems theory's application to suicide risk modeling at the annual national Suicide Research Symposium in the spring. Multiple methodology papers are in development. We have submitted our initial NDA data structures and pushed our first data to DCC in June.

Partnerships. We have focused on getting started, so far; but we are very interested in partnering in analysis techniques with the other IMPACT-MH projects using EMA or intensive longitudinal sampling across different scales, e.g. IMPACT-Y, COMPASS, PPN, HALO, TRACC-MH.

Challenges. Our sample is well balanced by age, but not by sex as assigned at birth. We will be working to counterbalance that, and to improve our representation across multiple demographic layers, as we are accelerating recruitment overall in the coming months.

SPARC-XP

Scalable Phenotyping to Assay Risk in Childhood after eXposures in Pregnancy

Grant No. 1UF1MH141632-01

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2026 Highlights

Accomplishments. SPARC-XP examines whether routinely collected health record data can identify which children exposed to maternal infection or other environmental factors in utero are at greatest risk to receive a subsequent neurodevelopmental diagnosis. Year 1 focused on developing and externally validating the primary risk stratification model used for recruitment, using coded EHR data from 14,607 maternal-offspring dyads at Mass General Brigham to predict a diagnosis of autism or ADHD by age eight from data censored at age two. The model discriminated well in the held-out set at Mass General Brigham (AUROC 0.725, Brier score 0.096), and transferred successfully to Vanderbilt (AUROC 0.709, Brier score 0.098). In parallel, we completed geocoding for all Mass General Brigham deliveries, with coverage above 99.8% at every time point. We linked these addresses to a library of environmental measures covering census sociodemographics, deprivation, air quality, food access, and a novel greenspace measure derived from satellite imagery. We also scored more than 2.4 million clinical notes for dimensional symptom features, applying a novel hybrid of traditional natural language processing and locally-hosted language models.

Prospective assessment is underway at both the MGB and the Vanderbilt sites, with 179 children enrolled to date. In addition to maternal surveys and remote neurocognitive assessment of children at two timepoints, we are collecting a week of wearable heart rate, activity, and sleep data from a consumer wearable device.

Partnerships. Transferring the model to Vanderbilt required the harmonization of record-derived variables, and the resulting harmonization pipeline will be useable by other IMPACT-MH projects. We will also release the geocoding and environmental linkage code along with the note-scoring pipeline already shared with the JASPer-MH study; together, these studies allow one modeling approach to cover ages three to eight and eighteen to twenty-three. We are in discussions with the other Boston-based studies for a regional meeting this fall.

Challenges. To date, our greatest challenges have reflected the ambitious nature of the study design. Specifically, we were required to harmonize phenotypes between 2 very different health systems, navigating different institutional requirements and platforms for recruitment successfully. We were also required to create and then maintain pipelines for collecting and cleaning wearable data, as the original API site (Fitbit) transitioned to Google. In the coming year, while accelerating recruitment, we also anticipate submission of initial manuscripts describing our environmental phenotyping, our initial risk models, and our approach to sampling.

PREDICT-NP

Prediction and Diagnosis of Child Dysregulatory Psychopathology using Novel Phenotypes

Grant No. 1U01MH135970-01

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Syracuse University

2026 Highlights

Accomplishments. Over the past year, the study has made substantial progress across all aims. Our Steering Committee, comprised of MPIs, Drs. Nagel (OHSU) and Karalunas (Syracuse University), along with, Drs. Faraone and Zhang (SUNY Upstate), Weiskopf (OHSU), and Mooney (OHSU) and NIMH scientist, Dr. Berman, met twice monthly to guide study implementation and scientific direction. Under their leadership, the team refined predictive analytics, finalized data collection processes, and launched 12-month follow-up data collection while maintaining continuous enrollment. The decisions made by this group were operationalized by a strong research team utilizing REDCap for data capture and participant tracking tailored to each of the 4 data collection sites.

As of August 24,2026, we enrolled 1,292 youth ages 7-17 (mean age 10.76) and one caregiver per participant. Parent diagnostic interviews conducted to date (n=869; 54 scheduled) indicated that 52% of participants met DSM-5 criteria for current ADHD, while 15% met criteria for Generalized Anxiety Disorder, 13% for Oppositional Defiant Disorder, and 7% for Depression. Youth interviews among participants aged 11 and older (n=398; 32 scheduled) indicated lower rates of diagnostic reporting. Notably, parents report higher rates among their youth of current suicide ideation (12%) and previous attempts (12%) than youth self-reported (4% for ideation and attempts).

The study is actively disseminating scientific knowledge through presentations submitted to the American Academy of Child & Adolescent Psychiatry (AACAP) and International Neuropsychological Society, a submitted manuscript to the Biological Psychiatry CNNI special issue highlighting all consortium IMPACT projects, website content, and local media outreach. Additional manuscripts focused on ADHD prediction and suicide risk prediction are currently in development.

Partnerships. Collaboration around analytics, data collection, and data harmonization jointly led by MPIs Drs. Nagel and Karalunas include SUNY Upstate, data collection sites (Massachusetts General Hospital, Indiana University, Seattle Children's Hospital, OHSU), as well as other IMPACT Consortium partners. OHSU and Syracuse have led predictive analytics efforts that informed the measure selection, while SUNY has supported analytic activities and leads TriNetX analyses applied to our study.

Each data collection site has developed partnerships with behavioral health and primary care clinics that help identify potential study participants, supporting recruitment and engagement efforts. MPIs Nagel and Karalunas meet with site PIs and coordinators monthly to go over recruitment, data collection, and to co-learn about facilitators to success and to troubleshoot barriers.

Within the IMPACT Consortium, the team has worked closely with the Data Coordinating Center (DCC) to harmonize study measures with consortium partners. We also participate in specialized working groups, including electronic health record (EHR) data, clinical translation, machine learning, and pediatric research.

Challenges. Despite strong enrollment performance and continued recruitment efforts, the project has faced challenges meeting the ambitious recruitment targets outlined in the original grant proposal. As a result, the team is reassessing and revising recruitment expectations to better align with the realities of conducting a large, multi-site, clinically focused study.

HALO

Developing Data-Driven Clinical Signatures for People Who Experience Hallucinations

Grant No. 1U01MH135901-01

PRINCIPAL INVESTIGATORS



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2026 Highlights

Accomplishments. Recruitment and remote data collection launched in March 2025, following an optimization phase that refined study procedures, the SBM data collection system, and screening protocols. By early August 2026, our team had screened 6,636 candidates and enrolled 910 participants, with 606 completing 1-month assessments, 404 completing 3-month, 255 completing 6-month, 140 completing 9-month, and 73 completing 12-month follow-up. Data have been submitted successfully through the DCC portal, with new data structures in development to support future submissions. Dissemination has advanced through multiple submitted manuscripts and conference presentations.

Our audio feature extraction pipeline now operates at scale. Approximately 13,000 recordings have been collected, yielding roughly 145 hours of speech and 967,000 transcribed words. Nine feature families have been integrated with incoming ecological momentary assessment: psycholinguistic word counts (LIWC), semantic coherence (semantic proximity, language model perplexity and speech-graph connectivity), language complexity, cognitive distortion classification, emotion classification, self-harm and acuity signals, and verbal recall scoring, totaling over 230 features. Three additional families (hallucination and delusion content classification, broader clinical acuity signals) are currently in development.

Partnerships. Project work is distributed across the University of Washington, the University of Minnesota, Louisiana State University, and the University of North Carolina at Chapel Hill, with centralized coordination on recruitment, speech and behavioral data, verbal memory measures, and analytic approaches. The team has worked with the IMPACT-MH DCC on data harmonization and standards, and with other consortium projects, including co-moderation of the digital phenotyping session.

Study Challenges. Sufficient Events for Prediction and Modeling. Our target variables for prediction (i.e., severe negative outcomes) are uncommon; the majority of our study participants do not experience hospitalizations, criminal justice involvement, or attempted suicide over the course of the 12-month data collection period. To increase the likelihood that we will have sufficient “events” for modelling in our study sample, we have increased our targeted outreach and recruitment efforts to higher risk populations which are expected to have a greater likelihood of these negative outcomes (e.g., participants receiving mental health services at community mental health centers).

Representation Across Regions. Recruitment has not been evenly distributed across US States. We have tested and continue to refine region-tailored advertisements, including in Alaska, and run targeted campaigns in lower-enrolling states, tracking the yield to refine strategy.

Fraudulent Participation/Data integrity. Fully remote recruitment and data collection is susceptible to fraudulent participation in the form of impostors claiming to be the study's intended population of interest. Self-referred enrollment requires ongoing refinement of eligibility and identity verification. We have added intake response-pattern reviews, strengthened identity verification procedures, and introduced video confirmation for select cases, balancing rigor against barriers to legitimate participation.

TRACC-MH

Trajectories of Risk and Cognitive Change in Mental Health

Grant No. 1UF1MH135991-01A1

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2026 Highlights

TRACC-MH (Trajectories in Real-time Assessment of Cognitive Change in Mental Health) is developing and validating dynamic cognitive phenotypes, time-varying measures of cognitive function derived from ecological momentary assessment (EMA), to improve individual-level prediction of clinical outcomes. Project activities span inpatient cognitive monitoring, outpatient cognitive monitoring, community cognitive monitoring, and community co-design of digital cognitive assessments.

Infrastructure and Methods. Year 1 established the study's multi-site infrastructure. This includes IRB approval across all three protocols, staffing at both participating sites (McLean Hospital and Albert Einstein College of Medicine/Montefiore), and integration of REDCap, MetricWire, and TestMyBrain into a unified measurement pipeline. A pilot study of the inpatient EMA burst schedule found that a five-prompts-per-day, three-day design was infeasible for acutely hospitalized patients, while a three-prompts-per-day, five-day design was well tolerated; the latter was adopted as the study standard. Analytic development in Year 1 focused on a framework of dynamic cognitive models of increasing specificity (location-scale, autoregressive, and cosinor models), currently under evaluation via simulation study and feeding into an ensemble modeling approach linking cognitive dynamics to primary clinical outcomes.

Enrollment. As of August 2026, the project had enrolled 41 participants in inpatient cognitive monitoring at McLean, 7 in outpatient cognitive monitoring, 13 in community cognitive monitoring at Einstein, and 34 in community co-design of digital cognitive assessments at Einstein. Enrollment is expected to scale substantially in Year 2.

Measure Development. The project developed a novel EMA-adapted self-referential encoding and recognition memory task, validated in a sample of 4,969 TestMyBrain participants, to address a gap in the assessment of long-term memory and self-referential processing within cognitive EMA batteries. Cross-site integration is planned for November 2026. Speech-based measures, including a weekly verbal fluency task and a daily reflection prompt, were also implemented within the EMA protocol.

Return of Research Results. TRACC-MH is developing a detailed return-of-research-results program, led by Dr. Agustin Yip with report-pipeline development led by Dr. Fahimeh Mohebbi. This includes measure-level specification of what is returned to participants and clinicians, protocols for reporting partial measures with qualification rather than suppression, and prototype reports presenting individual cognitive scores against age-referenced norms alongside EMA symptom trajectories.

Dissemination and Partnerships. Project findings were presented at IMPACT-MH monthly meetings and the April 2026 in-person consortium meeting at Mount Sinai; presentations on co-design methods and return of research results are planned for the September 2026 annual meeting. A manuscript on hierarchical Bayesian modeling of digital time-series data (Cataldo) has been submitted to Current Opinion in Behavioral Sciences, and a multi-author abstract (Mohebbi, Cataldo, Strong, Yip, Ressler, Germine) has been submitted for consideration as part of an IMPACT-MH symposium at the International Neuropsychological Society annual meeting. TRACC-MH's daily EMA reflection prompt was harmonized with the Mount Sinai PREDICTOR protocol's speech-based prompts, and a subset of TRACC-MH's cognitive measures was harmonized with JASPer-MH's cognitive task battery (five overlapping tasks), supporting cross-project comparability within the consortium. Community engagement for cognitive monitoring and community co-design continues in partnership with Mosholu Montefiore Community Center, CO-OP City JASA, and Bronx residents' associations and faith communities, conducted bilingually. Recruitment for community cognitive monitoring was expanded in Year 1 to include identification of eligible patients through Montefiore outpatient clinics, complementing existing community-partner outreach. Cognitive assessment tools adapted under community co-design will be deployed through TestMyBrain, an open, not-for-profit digital research platform that will make these assessments available to the broader research community.

COMPASS

A Comprehensive Mobile Precision Approach for Scalable Solutions in Mental Health Treatment

Grant No. 1U01MH136025-01

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2026 Highlights

Accomplishments. The Comprehensive Mobile Technology to Personalize Behavioral Interventions for Depression During Treatment Initiation Study (COMPASS) is building a prospective, multimodal cohort and embedded digital-intervention platform for adults entering outpatient mental health care. Recruitment began in February 2025. As of September 1, 2026, 1,925 participants had completed the baseline survey, demonstrating strong progress toward the study's enrollment goals. The baseline cohort is 71.6% female (1,379 participants), 27.9% male (537), and 0.5% unknown sex (9). Participants reported race as American Indian (5; 0.3%), Asian (218; 11.3%), Black (194; 10.1%), White (1,307; 67.9%), more than one race (107; 5.6%), or unknown (94; 4.9%); 160 participants (8.3%) reported Hispanic ethnicity. Among 1,924 participants with complete baseline symptom scores, the mean PHQ-9 score was 10.6 (SD 6.0) and the mean GAD-7 score was 10.2 (SD 5.8). Nearly half had clinically significant depressive symptoms (PHQ-9 ≥ 10: 959; 49.8%), just over half had clinically significant anxiety symptoms (GAD-7 ≥ 10: 981; 51.0%), and 713 (37.1%) met both thresholds. These data confirm that COMPASS is enrolling a large and clinically relevant sample with substantial symptom burden.

The team has established workflows to collect, clean, harmonize, analyze, and survey, electronic health record, wearable, and SensorKit data. Early analyses using pilot digital clinical trial data have demonstrated the feasibility of machine-learning approaches to personalize intervention assignment and have identified bidirectional, person-specific relationships of sleep and physical activity with mood. This work provides an analytic foundation for the primary COMPASS aims as the cohort matures.

Partnerships and Collaborations. Partnerships are central to COMPASS. The digital intervention companies Headspace and SilverCloud support delivery of the study's mindfulness and cognitive behavioral therapy app-based treatments. CareEvolution provides the MyDataHelps platform and supports the mobile data infrastructure. Clinical teams in Michigan Medicine Ambulatory Psychiatry, Collaborative Care clinics, and University Health Services identify and invite eligible patients and help embed recruitment in routine care. The University of Michigan AI & Digital Health Innovation center contributes interdisciplinary expertise and connections across artificial intelligence, digital health, and implementation. Ongoing collaboration with the IMPACT-MH Data Coordinating Center supports common data standards, scheduled data sharing, and cross-site scientific exchange.

Challenges. The rapidly changing digital technology ecosystem remains the primary operational challenge. The Fitbit app transition to Google Health illustrates how vendor, platform, device, and operating-system changes can affect participant instructions, data capture, and longitudinal consistency. The team is monitoring these changes, updating participant-facing materials and data pipelines, and validating continuity and quality across transitions while maintaining privacy and security.

ACE-D

Accelerating Cognition-guided Signatures to Enhance Translation in Depression

Grant No. 1U01MH136062-01

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2026 Highlights

ACE-D (Accelerating Cognition-guided signatures to Enhance translation in Depression) is developing and validating a cognitive biotype of depression characterized by both behavioral and neural circuit impairments for prognosis and treatment selection. The project tests whether prospectively stratifying individuals based on the presence or absence of this biotype can guide a biotype-matched precision treatment strategy for depression. Over the past year, the project has reached several major milestones across its national prospective cohort study and precision treatment randomized trial.

Accomplishments. Using large archival datasets, the empirical foundation for the cognitive biotype was established, defining thresholds for cognitive behavioral and cognitive control circuit impairment. Building on this foundation, the project is now evaluating the cognitive biotype across two prospective studies.

The remote, 52-week prospective cohort study aims to enroll 1,200 adults with major depressive disorder (MDD) and to examine the stability and clinical prognostic relevance of scalable behavioral measures of cognitive performance. The study is now 61% enrolled. Nearly 10% of participants have completed the 52-week follow-up with low attrition (9%). Participants undergo repeated remote cognitive testing alongside patient-reported clinical and functional assessments, providing a growing dataset for evaluating the reliability, prognostic validity, and clinical relevance of remotely administered cognitive measures.

In parallel, our double-blind precision treatment trial aims to randomize 162 adults with MDD, stratified based on cognitive biotypes defined by cognitive behavioral performance and cognitive control circuit function. The trial prospectively stratifies participants according to the presence (C+) or absence (C−) of the cognitive biotype, and tests whether a precision treatment strategy targeting cognitive impairment improves depression outcomes in C+ participants. The study is currently 8% randomized. A major milestone has been the standardized implementation of an automated data processing pipeline for real-time biotype stratification. Participants complete assessments, are stratified and randomized, and leave with study medication on the same day as their scan — demonstrating the feasibility of precision circuit mapping for stratification within a clinical trial workflow.

Partnerships. ACE-D is led jointly by Stanford and the University of Illinois Chicago, and combines expertise in psychiatry, primary care, neuroscience, neuroimaging, cognitive assessment, biostatistics, and clinical trials. Cross-site coordination has been central to implementing both prospective studies. Primary care partnerships extend recruitment into clinical settings and broaden patient access to precision mental health research. They also increase representation of the heterogeneity and complexity of real-world clinical populations, strengthening the relevance of precision circuit mapping across research and clinical settings.

Challenges and Priorities. The remote, 52-week prospective cohort study continues enrollment toward its target of 1,200 participants. Randomized trial recruitment remains on target, despite a high screening burden: only 2% of individuals screened reach baseline assessment and randomization. We are expanding recruitment pathways, strengthening primary care engagement, and evaluating opportunities to improve screening efficiency.

Over the coming year, priorities include maintaining randomized trial recruitment milestones, continuing enrollment and longitudinal follow-up in the remote study, and advancing analyses across the program. Together, these efforts will move ACE-D toward its central goal of establishing prospectively defined cognitive biotypes that inform more precise treatment selection for depression.

IMPACT-MH Consortium Partners

With thanks to the advisory board and NIMH staff who guide the consortium's work.

External Advisory Board

The EAB provides strategic oversight and expert guidance on the consortium's data management and analysis framework, advising on harmonization, rigor, and cross-site collaboration.



David Mandell
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The board also includes members of the DCC Core Team and NIH/NIMH representatives.

NIH / NIMH

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Notes

IMPACT Mental Health

Year in Review

JULY 2025 – JULY 2026

Annual progress report from the thirteen IMPACT-MH research partner sites and the Data Coordinating Center.

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