**MHRN Steering Committee Meeting**

**October 26, 2018**

**Morning Session**

**NIMH and MHRN discussion about mental health needs and scientific opportunities in “real world" settings:**

**Bob Heinssen, PhD, Director, Division of Services & Intervention research (DSIR)**

*DSIR organized around translational pathway – accelerate downstream translational research, mission is to improve standards of care. Last 10 years framework organize around LHC principles and measurement based approaches to care. Within perspective of LHC, MHRN innovation & successes informed what is possible & what needs to be done.*

[ALACRITY Centers](https://grants.nih.gov/grants/guide/pa-files/par-16-354.html) *– touchstone document, distills learning over last 10 years about how we think about moving LHC forward and how DSIR is aligned. Division looking for areas or settings where near term traction is possible for improving MH care and MHRN outcomes. Designed to promote innovations, experimentation, find next big thing to pursue.*

* *Find areas of emerging opportunities where emerging science tells us there is a better way of doing things.*
* *Research to demonstrate how advances can be made real, within framework built for rapid implementation.*
* *Pointed, focused studies to challenge assumption that it takes 17 years to move scientific findings into clinical practice.*
* *Analyze needs and circumstances of end users so findings will rapidly generalize, provide tools to allow care settings to rise to higher quality and more impactful care.*

[EPINET](https://grants.nih.gov/grants/guide/rfa-files/rfa-mh-19-150.html) *– aspire to create LHC system in early psychosis space, momentum in evidence based programs in last 10 years, growth of specialty clinics. Plan to link programs through common approach, rigorous data collected at point of care, close the loop in LHC, where are areas of opportunity for traction?*

*In larger initiatives, teams and partnerships made most impactful initiatives move forward, need strategic & operational partnerships between scientists, HC administrators, clinicians and service users. Are there sources of innovation adjacent to MH that can be brought into the service and intervention space – HIT, decision science, new perspectives in behavioral sciences. One example, application of behavioral economic principles. Get new perspectives by pulling into research teams those with expertise in adjacent areas, capitalize on new technologies.*

[ISMICC](https://www.samhsa.gov/sites/default/files/programs_campaigns/ismicc_2017_report_to_congress.pdf) ***-*** *Interdepartmental SMI Coordinating Committee – analyzed resources, how can they be better aligned to achieve better outcomes. 45 recommendations – 7 might be areas where MHRN can make unique contributions, or be sure to communicate what MHRN has done in these areas.**Areas where MHRN might contribute:*

* *Using data to improve quality of care and outcomes*
* *Ensure quality measures are included in MH*
* *Establish standardized assessments for level of care & monitor consumer progress*
* *Adults with SMI, night not have enough contact with this group for central focus of what we do; think about children and adolescents, many identified in primary care; goals about prioritizing early identification and intervention*

*For future MHRN effort, would be very useful to DSIR to think how MHRN talents could make contributions to these goals.*

*Tremendous activity in DSIR for strategies that deal with the opioid crisis; acknowledge opioid abuse can’t be disentangled form MH issues and concerns, need coordinated approach to address crisis.*

*Other areas where DSIR would welcome MHRN input:*

* *Racial/ethnic disparities*
* *Youth mental health – interested in transdiagnostic approaches to identify those in need and offering treatments that don’t target so much syndrome but domains of impairment; area needs more flushing out operationally, through experimental therapeutics*

**Michael Freed, PhD, Services Research and Clinical Epidemiology Branch, MHRN Program Official**

[*NIH HEAL Initiative*](https://www.nih.gov/news-events/news-releases/nih-launches-heal-initiative-doubles-funding-accelerate-scientific-solutions-stem-national-opioid-epidemic) ***– Helping to End Addition Long term***

*Concept cleared at last Council meeting. Aggressive trans-agency effort to speed scientific solutions to stem national health crisis. Build extensive integrated care models; include medication assisted treatment (MAT) and implementation science. Hybrid effectiveness clinical trials. Encourage leveraging assets (MHRN Platform)*

*Lot of evidence for CC models, but not so much for CC for Medication-Assisted Treatment (MAT).*

*Interested in clinical effectiveness of collaborative care (CC); pay attention to implementation science – scalability, sustainability, adoptability. Will CC ultimately produce decrease in mortality from opioid use disorder?*

*[Notice of Intent](https://grants.nih.gov/grants/guide/notice-files/NOT-MH-18-014.html)* ***to Publish FOA for Practice-Based Research Network***

* *Implementation & practice change –science used to secure stakeholder commitment to adopt & scale up programs*
* *Like to see some integration of experimental therapeutics in trial design & attention to implementation science*
* *Collaboration with external collaborators – specific attention to disparity reduction and testing strategies to reduce disparities in MH status and utilization, quality of care, and outcomes; can include comorbidities and SMI*

**Greg Simon:** Brief overview of different stakeholder priorities ([see slides](https://github.com/MHResearchNetwork/MHRN-SC-Meeting_Fall-2018))

* MHRN already engage in 8-10 of ISMICC goals or have had discussions about them
* Consideration of broader stakeholder priorities – many overlap with MHRN activities
* How MHRN relates to other initiatives
  + ALACRITY – MHRN role is as a utility, we could be a laboratory for ALACRITY centers; already have established relationships with Rinad and the UW ALACRITY center
  + Additions Research Network (ARN) – now have overlapping activities extending to Opioids (Bobbi Jos R01 on Opioids and Suicide); more coordination across boundaries, or boundaries dissolving; NIMH more interested in intersection of the two areas
  + SUAY project funded by NIDA and NIMH

Collaborative Care – how to overcome silos – initially a triangle; now more of a pentagram – bridge gap between specialty MH, primary care, Substance abuse, ER services, etc. More complex scenarios of services.

Look where the evidence is – where do the patients go?

***Q – where are places MHRN can make an impact if had the resources?***

* Tie in peer support & early intervention for psychosis, youth screening/education – education so know what to do when symptoms first develop. Youth can work against stigma. Peers can demonstrate life gets better.
* Peer-provided respite services (club house model), important area of focus. Survey of DBSA constituents - highest on unhelpful list when in crisis – helplines and ERs.
* Peers in perinatal depression – From a patient with a peer – don’t have long wait, get individualized care…
* Peer support - one of the most important research questions now, patients say peers are most potent intervention. Don’t have a good model to do it in a HCS – what’s the right model? HFHS part of a study testing a model, but trial doesn’t solve administrative hurdles. Major opportunity for MHRN to partner with HCS stakeholders
* Examine social determinants of health – not addressed in collaborative care model. May be hierarchical situation -if don’t have a place to live/food to eat, won’t be addressing MH needs. Have good interventions that work with adolescents but need to figure out how to integrate into HCS that’s feasible & affordable
* Would like to see SMI studied in minority communities – how do we approach these communities – likelihood of contact with HCS before FEP lower with minorities, need to have different strategies for minorities
* Can NIMH move toward funding research across systems – more cross-sector collaborations, loop in other partners like education and corrections that folks fall into.
* More prevention and interventions to prevent the development of more SMI or substance abuse problems
* We have terrible treatments – MHRN could test new treatments like esketamine. KPNC had a program but had to discontinue due to lack of evidence.
* Examine those who have successfully come off opioids, why became addicted in first place, more patient stakeholders on committees. Need transgender and trans-youth programs
* Opioids are current health crisis - what is being done about the next big health crisis? Explosion of marijuana use, legalization with few guidelines. Have been some studies linking marijuana and MH problems.

**Early Afternoon Session**

*What efficiencies have been created? Cost efficiencies, process efficiencies.*

*What’s high value? Infrastructure? Leveraged not just by MHRN studies, but other funding organizations*

*How MHRN has changed practice?*

*Pragmatic trials - what have we learned about trial design?* *Need studies highly relevant to practice community and generalizable, why did it work or not? Experimental therapeutics – NIMH has tried to communicate since 2014, required in FOAs for clinical trials/non-trials, identify mechanisms, what is contributing to what is working or not;* *push methods development to lead to something more practical, what are the important constructs & how measured?*

*Interested in how practice has been changed. Retrospective look at how we thought about innovations in trial design – what couldn’t be done 10-15 years ago, going to scale but also figuring out why something is or is not working;* *Lead the field in developing new methods.*

**Group discussion on science, service and sustainability**

* How has MHRN supported research led to transforming mental health care?

*Interested in how practice has been changed.*

* MHRN lessons re: conducting large pragmatic trials & using the NIH experimental therapeutics approach & efficiencies of the research infrastructure?

*Retrospective look at how we thought about innovations in trial design – what couldn’t be done 10-15 years ago push methods development to lead to something more practical, what are the important constructs & how measured?* *Need studies highly relevant to practice community and generalizable, why did it work or not?*

* MHRN and the need to develop new research methodologies? *Push methods development to lead to something more practical, what are the important constructs & how measured? Expect MHRN to lead the field in developing new methods.*

**What have we learned from MHRN supported research studies?**

Introduction: MHRN PIs presentations and discussion with Josh Gordon and Shelli Avenevoli

**Overview**:MHRN – Areas if focus corresponds well to NIMH priorities; we have zero allegiance to theories or methods; theme is to be useful, do what needs to be done. Refer to MHRN project grid – diverse by design, only infrastructure involves all sites, other a mix of sites, match problems with capabilities.

Dissemination – 90 papers in peer-reviewed journals, quarterly newsletter, online code repository of technical tools.

Impact – changed care across the country, engaged in national quality measures, MHRN is recipient and driver of measurement-based care

**Brief Presentations by PIs and Discussion:** ([see afternoon slides](https://github.com/MHResearchNetwork/MHRN-SC-Meeting_Fall-2018) for brief updates on following projects)

* Continuously Learning Health Care System
  + ZS Implementation Evaluation (Brian Ahmedani)
  + Pediatric Firearm Safety (Rinad Beidas)
* Computational modeling
  + Suicide Risk Prediction (Greg Simon)
  + Causal Inference in Dynamic Treatment Regimes (Susan Shortreed)
* Clinical trials
  + CV Wizard Trial (Rebecca Rossom)
  + Reducing Unnecessary Antipsychotic Use in Youth (Rob Penfold)

Suicide Prevention Outreach Trial (Greg Simon)

**Current portfolio**, especially in terms of changing practice ([refer to slides](https://github.com/MHResearchNetwork/MHRN-SC-Meeting_Fall-2018))

* Areas of focus on suicide prevention, in HCS and elsewhere; early intervention for SMI in children and youth, reducing CV risk, reducing racial/ethnic disparities, personalized & precision medicine, developing research on opioid use/misuse, emphasis on measurement-based MH Care
* Have made major changes in suicide prevention. Published findings regarding PHQ9 & identification of suicide risk in December 2013, implemented in HCS across the country by 2015
* With very simple process changes, & change processes clear, can get rapid implementation. Example, if PHQ Item 9>=2, must record Columbia, went from 0% to 90% in 10 months
* In SPOT trial on population-based outreach, HCS ready to move toward rapid implementation if shown effective
* CV Wizard - Stopped data collection Sept.5, 2018 and all primary care clinics implemented by September 19th.
* Race/ethnicity – role of drawing attention & raising awareness of disparities, KP looks at all depression care measures stratified by race/ethnicity; new focus on cultural competence in prescribing antidepressants due to MHRN work
* Measurement-based care – recipients and drivers of increasing use of standard outcome measures
* Automated Follow-up pilot – use EHR system to reach out automatically to patients; led to immediate practice change

MHRN has a wide range of methodologic tools with study sample sizes ranging from 20 up to 30 million. Deep experience in pragmatic trials, qualitative studies, bio-genomics

*In 2013, NIMH expressed concern about implementation; in 2014/15 implementation science developed. MHRN has made progress – one of the best implementation scientist collaborating with MHRN, but still need to build the capacity. MHRN seen as very simplistic – is it so easy to push something through, no concern over acceptance of clinicians, patients, cost, impact on workflow?*

Path to implementation depends on current state, on nature of practice change, how simple it is to do.

Example - use of PHQ9 – brought initial findings to HCS, HCS was convinced and implemented even without evidence that it would reduce risk of suicide; For more intensive interventions like SPOT trial, HCS needs more evidence before implementation.

We design from the beginning with the HCS stakeholders in the room – we only build to their needs and specifications. How risk prediction models are implemented will differ across HCSs - most who have built risk prediction models ignored how risk varies over time – but it’s a stakeholder requirement. Other models have scientific value, but little implementation value.

Rinad, as external investigator and implementation scientist – reinforce idea that MHRN able to implement in 15 days because of embeddedness in the health system

Are interesting implementation questions that can be asked because we are so well situated; Categorize strategies used; Taking it to other HCSs – what are barriers, etc.

Not as simple as it sounds, GS sitting on the council for years in the HCS

In zero suicide, we are moving toward more mapping of what’s happening in the meetings, with providers, what questions do providers have; we are learning and more recently including this more

Difficulty of implementation depends on the heterogeneity and complexity of what you are trying to implement – ex. of simple lever – if/then statement in fewer than 10 words – can get rapid adoption; other more complex interventions, not a simple lever.

MHRN has not put what we have done in the language of implementation science. Are beginning with Zero Suicide and other efforts.

*We have things with high evidence and well-liked by key stakeholders – these get implemented*

*Are those things not well-liked, with no evidence, and implemented, what can we learn about those things – speaks to mapping, are plenty treatments that are not well-liked. How do we learn from each of these scenarios? Can we better systematize? What does implementation science teach us about what are the levers? NIMH has invested heavily in complex interventions, what has MHRN learned about these things.*

Hard to write this up if don’t have funding to write up implementation methods, etc. Rinad’s R21 is that, but it’s just a beginning.

Important to consider – there are evidence-based interventions that will never be implemented. Implementation science will not solve the problem of something the customers don't want.

We map onto what is pragmatic, working within HCSs, engaged with stakeholders,

Incredible value by doing things in a real-world setting;

We need to create a science out of it so others can do it

*Leads to innovation - ALACRITY merged implementation science and behavioral economics*

Also important to know about de-implementation

Are there resources that MHRN has that can generalize other interventions not within integrated HCS

Ex – community health care setting and specialty centers for FEP

Disappointing conversations with intervention developers – a lot of investment in time and tax dollars in intervention that won’t be implemented

Intervention development process is not set up to deliver

*Not new - Refer to deployment focused interventions – read R34 announcements – pilot effectiveness announcements, make them more service ready, identify key ingredients, make them more efficient, Develop and test interventions in vivo in first place, and think of stepped approach - matching people with level of intensity; reserve specialty resources for those who need something more*

Encourage folks to MHRN before R34

Missing piece – need a framework for analyzing where our settings are

Need systematic way to determine if this is a good place, this analysis is missing even in the current state of implementation science

***EFFICIENCIES IN METHODS DEVELOPMENT***

*Biostatistical expertise is underrepresented. Can MHRN publish to methodologists, enhance the field in general, collaborate with academia? Need innovative methods culturally, socially, and clinically to serve on board – social scientists.*

Beyond quantitative methods? There is a science to engagement –Is there a place for qualitative work? The science of mixed methods has potential for great innovation. Crowd sourcing, innovative technologies - ways to get stakeholder input efficiently and across a whole population.

*Have we thought about a Methods Interest Group?* Did some polling and there is interest, Susan is convener and leader of group. MHRN hasn’t been clear about methodological expertise in the network; describe more clearly; we have a substantial resource; need to publicize what we’ve done.

Dance between experimental therapeutics and pragmatic trials will be very interesting

What is the problem that approach is trying to solve – boring instrumentalism, doing another trial of what we already know, fear a trial will produce a null result.

Experimental therapeutics paradigm - learning from null reports; make them informative.

When you have a null result, or a success, can you go back and unpack it; what are operative mechanisms? Purpose of theory is to be broken/tested – what would null result tell us? We engaged the target, mediator or mechanism, and it did not work - purpose of paradigm is that it be able to generalize.

MHRN has a lot of strengths in area of methods for pragmatic trials.

***Other MHRN efficiencies***:

1. data collection and electronic intervention need to be in EHR
2. Need strong relationship with EHR programmers; ideally paid for by study but employed by HCS; has permissions to touch different parts of EHR – build reporting workbench, build data collection tool
3. MHRN can recruit 100 times more rapidly with 1/10th the cost

Have reusable infrastructure:

* Example of suicide risk prediction – have encounter based cohort designed risk prediction; reusable code packages and experienced staff who can accomplish this. Trust is the lubricant – sharing of sensitive information without fear; can send out data harvest programs with one-day turnaround
* Example of SPOT methods of identifying and enrolling eligible participants -can potentially be used for an esketamine trial for suicide prediction that will take same machine to enroll people.

*Can anyone else use these tools?*

Sometimes. Example, FEP exported to OnTrack in NY. Other code being repurposed. Disseminating these technologies in our own systems – use tools through the patient portal.

Next round of risk prediction work – talk to EHR vendors; use statistical methods that operate within stakeholder constraints. We are all about who will use this in the research world and who will use it in the real world.

We can do a better job of leveraging students – clinical scholars, graduate students, post-docs.

Currently testing out these approaches. Have implementation science doctoral student working on Zero Suicide, Rebecca has resident working on TUBS. Need to formalize into a clearer path – need a system

Training grant? Interest, no traction yet. Do have K-12 training grants – when do we call them MHRN activities?

View risk prediction models as a supplement to current process

About to propose implementation and qualitative research – how do providers and patients think about this kind of information; accuracy & credibility

***Next MHRN***

Bring together relatively diverse disciplines and brought to bear on complex problems, all driven by stakeholder requirements

Previous work in predictive analytics – how do we provide necessary information to decision-maker in the moment; requirements drive the methods (Clever Hans example)

How do we represent complex temporal relationships – critical

Clustered scenarios

Privacy challenges accuracy of interpretability

Data sharing issues

Consider resource limitations

Don’t have a good predictor of who you can send home

Biological markers – will help stakeholders; how do we integrate into large datasets – may have access to AllOfUs;

Propose supplement to AllOfUs with MH recruitment targets.