

# CHERISH

Center for Health Economics of Treatment Interventions for Substance Use Disorder, HCV, and HIV



## Newsletter - October 2020

### CHERISH Awarded Five-year Center of Excellence Grant to Continue Substance Use Health Economics Research



The National Institute Drug Abuse (NIDA) of the National Institutes of Health has awarded the Center for Health Economics of Treatment Interventions for Substance Use, HCV and HIV (CHERISH) a five-year grant to continue the Center's activities as a national center of excellence. CHERISH was founded in 2015 as a multi-

institutional center for health economics research in the substance use field, with an initial emphasis on addressing the needs of an integrated healthcare system and providers. The renewed funding will continue this work and will broaden the Center's focus to evaluating intervention outcomes for individuals, systems, and communities.

In its first five years, CHERISH funded 16 Pilot Grant awards to support economic analyses of treatments for substance use disorder, HCV and HIV among people who use substances. CHERISH Pilot Grant Recipients received funding, mentorship and dissemination training, and several have gone on to receive career development awards from NIDA. The Core will be led by **Dr. Brandon Aden**, an addiction medicine specialist at Weill Cornell Medicine, and will take advantage of the expertise of **Dr. Yuhua Bao** at Weill Cornell Medicine who is an experienced behavioral health services research mentor.

CHERISH has fostered a community for health economic researchers in the substance use disorder field through its Research Affiliates program, and provided almost 90 consultations to improve economic evaluations, and incorporate economic methods in substance use research. The CHERISH Methodology Core will continue these activities, and plans to develop new methods related to economic evaluation in implementation studies and adaptive interventions. The Core will be led by substance use health economists **Dr. Kathryn McCollister** at the University of Miami Miller School of Medicine and **Dr. Sean Murphy** at Weill Cornell Medicine.

The new CHERISH Population Data & Modeling Core will promote new approaches to use state datasets for population-level economic evaluations and advance simulation modeling methods for people with substance use disorder, HCV and HIV. The Core will be led by **Dr. Benjamin Linas**, an infectious diseases clinician and modeling expert at Boston Medical Center, and **Dr. Schackman**, and will draw on complementary expertise from investigators at Weill Cornell, Boston Medical Center and the Boston University School of Public Health.

The Dissemination & Policy Core, led by **Dr. Zachary Meisel** and **Dr. Janet Weiner** at the University of Pennsylvania Leonard Davis Institute of Health Economics (LDI), will continue to engage with policy stakeholders to bridge the divide between research and policy by drawing on LDI's unique resources.

#### In This Newsletter

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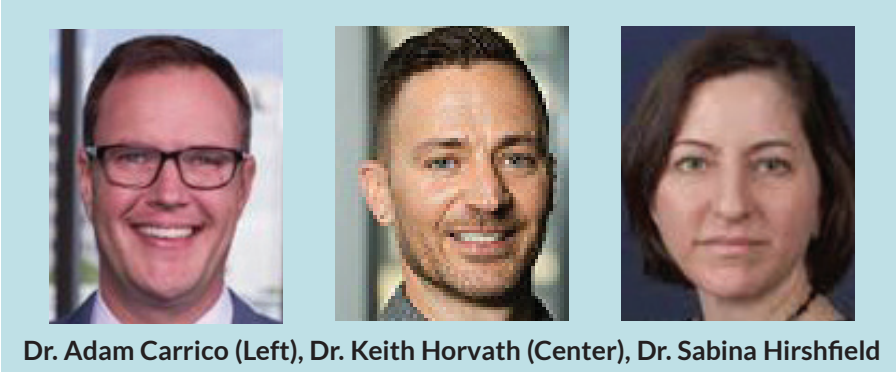
NEW

#### Congratulations Corner

- ▶ **Zachary Meisel, MD** appointed Vice Chair of Faculty Affairs at the Perelman School of Medicine at the University of Pennsylvania
- ▶ **Angelica Meinhofer, PhD** appointed an ASHEcon newsletter co-editor and received an NIDA K01 career development award
- ▶ **Josh Barocas, MD** received a 2020 HIV/AIDS Research Avenir Award and an NIDA K01 career development award

## Methodology Consultation Success: Dr. Adam Carrico

Approximately 1.6 million U.S. adults used methamphetamine each year from 2015 to 2018, many of whom had co-occurring substance use or mental illness. Higher rates of methamphetamine use were concentrated in non-urban areas, which raises concerns due to limited substance use treatment availability in outside of urban areas. Stimulant use is associated with increased risk of HIV transmission, and lower rates of viral suppression among HIV positive men who have sex with men (MSM) due to lower rates of engagement in HIV care. Successful behavioral health interventions to improve engagement in HIV care and viral suppression have often been limited to urban centers and confined to treatment settings, but mobile health (mHealth) technologies offer the opportunity to extend reach and efficacy of these interventions.



Drs. Adam Carrico, Keith Horvath, and Sabina Hirshfield recently received R01 funding from the National Institute on Drug Abuse (NIDA) to conduct a randomized clinical trial of an mHealth intervention to improve HIV treatment engagement and viral suppression among MSM who use stimulants. Dr. Carrico is a Professor of Public Health Sciences and Psychology and Director of the Division of Prevention Science and Community Health at the University of Miami Miller School of Medicine. His research largely focuses on the implications of substance use on HIV transmission and disease

progression. Dr. Horvath is an Associate Professor in the Department of Psychology and San Diego State University. His primary research interests are the development and testing of mHealth interventions for sexual and gender minorities. Dr. Hirshfield is a Principal Research Scientist at SUNY Downstate Health Sciences University, where she conducts video- and message-based eHealth interventions with populations at-risk for, or living with, HIV. Her research includes home collection of dried blood spots for lab-based viral load testing. Together, the study team plans to evaluate the efficacy of the Supporting Treatment Adherence for Resilience and Thriving (START) mHealth intervention in improving and maintaining viral load suppression among MSM who use stimulants. The START intervention includes individual sessions and medication self-monitoring.

With input from the CHERISH Consultation Service, the START study team was able to include an economic evaluation for the mHealth intervention in his research plan. CHERISH Methodology Core Director **Kathryn McCollister** provided input for the grant application on how to best capture intervention costs and potential economic benefits of the START intervention. Dr. McCollister will also serve as a co-investigator to lead the economic evaluation for the intervention. Dr. Carrico reported that he was very satisfied with the consultation and would recommend the service to other investigators. "Dr. McCollister's input strengthened our application and we look forward to collaborating on this important and timely project that will provide valuable information on both the effectiveness and cost of this mHealth intervention," said Dr. Carrico.

## Consultation Service

### We have health economic evaluation expertise in:

- Budget impact and costing
- Cost-effectiveness
- Cost-benefit
- Quality of life
- Qualitative data collection
- Statistical analysis / econometrics

### We have health economic modeling expertise in:

- Markov modeling
- Monte Carlo simulation
- Discrete event simulation
- Compartmental modeling
- Agent-based modeling
- Longitudinal data

To learn more about CHERISH consultation services for researchers:

[www.cherishresearch.org/consultation](http://www.cherishresearch.org/consultation)

## Featured Publications

**Assoumou SA**, Paniagua SM, Linas BP, Wang J, **Samet JH**, Hall J, White LF, Beckwith CG. Rapid Versus Laboratory-Based Testing for HIV and Hepatitis C at a Drug Detoxification Treatment Center: A Randomized Trial. *J Infect Dis.* 2020;222(Supplement\_5):S376-83.

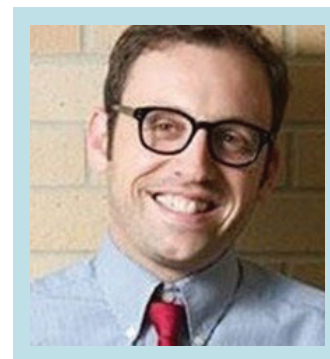


HIV outbreaks in Indiana, West Virginia, and Massachusetts have highlighted the need to rapidly identify and treat HIV infections among people who use drugs and their social networks in order to prevent disease transmission. Many state and local health departments have expanded their fourth generation laboratory-based HIV testing capacity that allows them to identify acute infections, and these tests are frequently employed in non-hospital settings such as drug detoxification centers. Laboratory tests can take between 3 and 5 days to process, however, leading to a delay in receipt of results or loss to follow up, and potentially continued HIV transmission. In contrast, rapid HIV antibody testing provides results within 20 minutes, although it cannot detect acute infections.

In a recent study published in the *Journal of Infectious Diseases* that was conducted at a drug detoxification center in Boston, CHERISH Research Affiliate **Sabrina Assoumou** and colleagues compared laboratory-based and rapid testing for HIV and HCV among people who use drugs in order to assess receipt of results. The single-site randomized trial found that all patients in the rapid testing arm who received their results did so in the same day. The median time to receive laboratory testing results after processing was 11 days, which included several follow up attempts to contact participants. Individuals randomized to rapid testing were more than twice as likely to receive their results within a two-week period compared with those who received laboratory-based testing (96% for HIV and 93% for HCV for rapid testing versus 42% for HIV and HCV with laboratory-based testing). Although laboratory-based testing could be helpful for HIV surveillance and to address acute HIV outbreaks, these findings highlight the distinct advantage of rapid testing in venues serving people who use drugs.

**Barocas JA**, Eftekhari Yazdi G, Savinkina A, Nolen S, **Savitzky C**, **Samet JH**, Englander H, **Linus BP**. Long-term Infective Endocarditis Mortality Associated with Injection Opioid Use in the United States: A Modeling Study. *Clinical Infect Dis.* 2020; epub ahead of print.

Injection-related infective endocarditis (IE) is a serious and expensive medical complication among people who inject drugs (PWID). In some states, such as North Carolina, there has been a 12-fold increase in injection-related IE between 2007 and 2017. Approximately 1.3% of people who inject drugs report IE within the past year, and between 0.5% and 11.8% report IE within their lifetime. Higher injection frequency, unsterile injection practices, and injection equipment sharing are all associated with greater risk of injection-related bacterial infections, including IE.



In a recent study published in *Clinical Infectious Diseases*, CHERISH Research Affiliate **Joshua Barocas** and colleagues sought to understand the effect of injection frequency and injection behaviors such as skin cleaning or equipment sharing on IE mortality risk among PWID. They developed, calibrated, and validated a Monte Carlo micro-simulation model called the Reducing Infections Related to Drug Use Cost-Effectiveness (REDUCE) Model. Using the REDUCE model, they found that approximately 257,800 people in the United States are expected to die from injection-related IE by 2030, which equates to about 7.26 million years of potential life lost. The risk of injection-related IE death was more pronounced among people who did not use sterile injection practices such as skin cleaning or sterile injection equipment, whereas injection frequency had little effect on the risk of injection IE death.

These findings suggest that an individualized patient-centered approach to intervene with injection behaviors and increase education about sterile injection practices could significantly decrease injection-related IE deaths among PWID. The authors emphasize the importance of adopting a harm reduction approach, including expansion of syringe service programs, to decrease the mortality associated with the opioid crisis in the U.S.



## Introductory Health Economics Online Trainings

CHERISH has posted online modules providing an introduction to economic evaluation methods to evaluate health care interventions, with a focus on cost-effectiveness analysis (CEA) of interventions for substance use disorders.

### Training Module 1. Cost-Effectiveness Analysis (17 min)

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This training module introduces participants to economic evaluation methods, with an emphasis on cost-effectiveness analysis of treatment interventions of substance use disorder.

### Training Module 2. Cost Analysis (19 min)

This module builds on module 1 as it describes the role of analytic perspective in determining which costs to include and the appropriate valuation of those resources.

### Training Module 3. Health Utilities and Direct Utility Assessment Methods (10 min)

This training module introduces participants to health-related quality of life assessments as a common measure of effectiveness in economic evaluations.

### Training Module 4. Health Utilities and QALYs for Cost-Effectiveness Analyses (7 min)

At the end of this module, participants should be able to describe the differences among preference based, non-preference based, generic, and disease specific quality of life measurement tools, and understand how these utility measures are used to calculate quality-adjusted life years as a measure of effectiveness for economic evaluations.

### Training Module 5. Cost-Benefit Analysis (14 min)

At the end of this module, participants should be able to describe the methodological differences between a cost-benefit analysis and cost-effectiveness analysis, and understand when the use of a cost-benefit analysis is most appropriate.

### Training Module 6. Budget Impact Analysis (7 min)

At the end of this module, participants should be able to understand when to conduct a budget impact analysis, how this information is used by stakeholders, and how the intended stakeholders affects the assessment methods selected.



## Find Us at Upcoming Conferences

Center investigators and staff are looking forward to promoting CHERISH at the following upcoming conferences:

**AHSR 2020**  
VIRTUAL



October 14-16, 2020



October 6-27, 2020

**13th Annual Conference on the  
Science of Dissemination  
and Implementation in Health**

December 14-16, 2020

