



JOHNS HOPKINS  
SCHOOL of NURSING

THE CENTER  
FOR INFECTIOUS DISEASE  
AND NURSING INNOVATION



# ANNUAL REPORT

## 2021 - 2022

### OUR VISION

Quality, accessible care that is free of judgement, discrimination and inequity for persons at risk for or living with an infectious disease

### OUR MISSION

Is to cultivate scientific and programmatic infectious disease expertise within Nursing. Center affiliated scientists, trainees and staff design and test innovative, high quality, patient-centered models of care to improve clinical outcomes.

### OUR CULTURE

We strive for passion and an environment that nurtures an intense spirit for discovering new ways of increasing access and improving health equity for all people.



**Jason E. Farley**

*PhD, MPH, ANP-BC,  
FAAN, FAANP, AACRN*

Endowed Professor of Nursing  
Leadership and Innovation

## MESSAGE FROM THE **DIRECTOR**

Hello and welcome to our website for the Center for Infectious Disease and Nursing Innovation (CIDNI). My team and I are excited to share with you our work and to be the first academic center in the US to focus on the intersection of nursing and infectious disease.

The CIDNI team offers capacity building, technical assistance, and other forms of collaboration. CIDNI affiliated scientists have a broad interest in priority populations at risk or living with an infectious disease and the website details our focus areas.

If you are a patient living in Baltimore, we offer a variety of convenient services to facilitate improved access to judgment-free care, both in the community and in the privacy of your own home.

For potential doctoral students and the Johns Hopkins Masters Entry to Nursing Program students, we welcome conversations about how you can become a CIDNI trainee, and the center can support you and your work.

From everyone here at CIDNI, thank you for your interest in our work. We look forward to hearing from you.



# AFFILIATED FACULTY/STAFF

## JHU FACULTY SCIENTISTS



**Dr. Kamila Alexander**  
Assistant Professor



**Dr. Chakra Budhathoki**  
Associate Professor



**Dr. Jason E. Farley**  
Professor and Center Director



**Dr. Lisa Grubb**  
Associate Professor



**Dr. Hae-Ra Han**  
Professor



**Dr. Nancy Reynolds**  
Professor



**Dr. Tamar Rodney**  
Assistant Professor

## AFFILIATED SCIENTISTS



**Dr. Ricardo A. Arcêncio**  
Associate Professor



**Dr. Omeid Heidari**  
Post Doctoral Fellow



**Ntombasekhaya Mlandu**  
Clinical Nurse Practitioner

## STAFF



**Dorcas Baker**  
Regional Coordinator



**Adam Bocek**  
Community Outreach Specialist



**Bongiwe Cetywayo**  
Research Assistant



**Woudase Gallo**  
Research Program Assistant II



**Jessica LaRicci**  
Senior Program Coordinator



**Sibongile Lerefolo**  
Research Assistant



**Kelly Lowensen**  
Center Manager



**Amita Patil**  
Senior Research Data Analyst



**Nomusa Mthimkhulu**  
Study Coordinator



**Ingrid McDowell**  
Training Coordinator



**Msawenkosi Desmond Mkhize**  
Research Assistant



**Noxolo Mqadi**  
Research Assistant



**Nkateko Ndlhovu**  
Research Assistant



**Kisha T. Singleton**  
Administrative Program Coordinator

# CURRENT/FORMER TRAINEES

## CURRENT TRAINEES



**Alanna  
Bergman**



**Brenice  
Duroseau**



**Keri  
Geiger**



**Dominique  
Guillaume**



**Katherine  
McNabb**



**Diane  
Meyer**



**Yen  
Nguyen**



**Bunmi  
Ogungbe**

## FORMER TRAINEES



**Dr. Hyejeong  
Hong**



**Dr. Ana  
Kelly**



**Dr. Jeanne  
Murphy**



**Dr. Laura  
Starbird**



**Dr. Carrie  
Tudor**



**Dr. Brittney  
van de Water**



**Dr. Erin  
Whitehouse**



**Dr. Mitchell  
Wharton**

# ONGOING PROJECTS

Category: HIV, HIV Prevention

## AIDS Education and Training Center (AETC), Regional Partner for the MidAtlantic AETC

Lead Investigator: Dr. Jason E. Farley

The JHU MidAtlantic AIDS Education and Training Center is a Regional Partner with the University of Pittsburgh. We provide education, training, capacity building, clinical consultation, preceptorships and technical assistance on HIV and other comorbidities to health providers of Federally Qualified Health Centers, primary care sites, community health centers, medication assisted treatment centers, behavioral health centers, rural health centers, and Historically Black Colleges and Universities in the state of Maryland.

The JHU AETC trains health professionals from various backgrounds and locations throughout the region. Training is tailored to meet prevention, care, and treatment challenges of specific geographic areas, clinics, and individual clinicians. The training center works diligently to prepare providers with skills and knowledge that is tailored to the populations they serve. This individualized focus is a key element of the AETC's success.

Our training and education are based on the unique needs of trainees, and provides the foundation for workshops, seminars, symposia, mini-residencies, teleconferences, and other training sessions that prepare providers and clinicians to provide effective HIV prevention, care, and treatment.

Category: SARS-COV-2 (COVID-19)

## Community collaboration to combat coronavirus (C-Forward). A Johns Hopkins COVID Community Research Initiative

Lead Investigator: Dr. Jason E. Farley

This is a randomized comparative effectiveness trial where households will be randomized to determine the optimal SARS-CoV-2 (COVID-19) testing modality in a population-representative sample of households in Baltimore City, Maryland. 1,386 households in Baltimore City will be randomized 1:1:1 to one of three testing modalities: 1) fixed-site standard of care testing; 2) community-based mobile van testing; or 3) self-collected home, based testing.

The target population will include English- and Spanish-speaking families residing in Baltimore City households (N=238,427). The sample size goal is 1,386 households (0.44% of households) or 3,000 individual household members.

Category: Infection Prevention and Control, HIV, Sexually Transmitted Infection (STI), SARS-COV-2 (COVID-19)

## Continuation of COVID-19 vaccinations and infectious disease testing co-located with the Baltimore City health department's syringe services program

Lead Investigator: Dr. Omeid Heidari

Lead Investigator: Dr. Jason E. Farley

This project involves collaboration of the Center for Infectious Disease, Baltimore City Health Department and the Syringe Support Services (SSP) van by collaborating to provide access to vaccines, HIV, HCV and STI testing and needle exchange services in the community.

Category: HIV, HIV Prevention, Sexually Transmitted Infection (STI), Viral Hepatitis

## Ending the HIV Epidemic (EHE) - Prevention Services

Lead Investigator: Dr. Jason E. Farley

Ending the HIV Epidemic (EHE) Prevention Services Program collaborates with surrounding community clinics, the needle exchange program, housing venues, and other community support partners to reduce the spread of HIV and increase access to PrEP as well as linking individuals who test positive for HIV treatment.

This program is a 5-year Ryan White Special Early Intervention Services funded project in collaboration with the Baltimore City Health Department HIV / STD Prevention Program to reduce the number of new HIV infections. Our community health workers provide HIV, HCV and STI testing (via community outreach or home-based options), linkage to HIV / STI prevention and treatment services including PrEP and PEP via standard of care in clinics, mobile sites, or telehealth visits.

Category: HIV

## Evaluating the influence of risk perception and cultural worldviews on HPV vaccination intention among Haitian immigrant women living with HIV

Lead Investigator: Dominique Guillaume

Faculty Mentor: Dr. Kamila Alexander

Haitian immigrant women in the United States experience some of the highest cervical cancer and HIV incidence rates nationwide. Despite their high objective risk of cervical cancer, Haitian immigrant women living with HIV are less likely to undergo HPV vaccination. Risk perceptions have been identified as a critical component of health behaviors; and studies have reported that women living with HIV have low perceived risk towards cervical cancer. Low levels of risk perception may negatively influence decisions to engage in health promotion behaviors such as HPV vaccination. This exploratory mixed-methods study guided by the PEN-3 Model and the Theory of Planned Behavior evaluates how HIV status, cultural worldviews, and affective measures of risk perception influence HPV vaccination intention among Haitian immigrant women living with HIV and Haitian immigrant women without HIV.

Hypothesis: Affective measures of HPV and cervical cancer risk perception will be more predictive of HPV vaccination intention than individual-level factors.



# ONGOING PROJECTS

Category: SARS-COV-2 (COVID-19), Tuberculosis

## Impact of COVID-19 on tuberculosis prevention and control in Brazil: Analysis of social protection policies, epidemiological situation, and technology incorporation (CoV-TB Project – BRAZIL)

Lead Investigator: Dr. Ricardo A. Arcêncio

Brazil is on the list of affected countries in which, prevention, diagnosis, and treatment of TB are challenging. Treatment success among those diagnosed is slightly more than 70%. COVID-19 has turned the situation even more critical by dismantling policies aimed at confronting the disease, the stress generated within health services, and changes in the epidemiology of TB in the Brazilian context. Essential strategies such as DOTS, which were successful in controlling the disease have had their activities suspended. The inclusion of TB in the political agenda has been questionable by Social Movements, and their actions may have had a portentous effect in protecting families affected by TB. Technological innovations are needed by TB health services, to monitor people affected by the disease remotely. However, many professionals found themselves without this resource. Thus, this study aims to evaluate the impact of COVID-19 on TB prevention and control. The project is structured in three domains: Domain 1: Policy approach: interviews will be conducted with key informants from institutions, management of social movements, and collection of official documents, with subsequent triangulation. In Domain 2: Epidemiologic evaluation: A survey of TB data and COVID-19 to conform the cohorts and thus evaluate the real impact of the pandemic impact on TB. In Domain 3: digital technology impact assessment: users with TB (using the vDOT system) in some municipalities of the five macro-regions will be selected based on Domain 2. The vDOT will be verified and the impact of vDOT on adherence and care will be assessed. This project is being sponsored by CNPQ – The National Council for Scientific and Technological Development) in Brazil.

Category: Anti-microbial resistant organisms, Tuberculosis

## Improving access to DR-TB/HIV treatment in South Africa through nurse-led models of care

Lead Investigator: Dr. Jason E. Farley

This portfolio of work seeks to optimize treatment opportunities by integrating DR-TB and HIV treatment into primary care settings, where nurses provide the vast majority of care in South Africa.

Category: Anti-microbial resistant organisms, HIV, Tuberculosis

## Intersectional Stigma Through the Care Continuum: A Mixed-Methods Study Integrating Theory and Method

Lead Investigator: Alanna Bergman Faculty Mentor: Dr. Jason E. Farley

Adherence to HIV and tuberculosis (TB) treatment is the most effective means to improve patient outcomes. Stigma, which undermines adherence and reinforces healthcare inequities, remains a major barrier to achieving TB eradication and HIV prevention goals. Despite this, we know little about if and how stigma changes over time, or in response to hallmark events in infectious disease treatment. As individuals move from pre-diagnosis to diagnosis of one or more infectious diseases, and towards TB cure and/or HIV viral suppression, they move in and out of illness identities. This research will use mixed-methods to explore stigma through the TB/HIV care continuum to determine if individuals experience higher levels of stigma at specified time points, and whether illness identity, mediated by the hallmark events of HIV viral suppression as well as TB smear and/or culture conversion, impact a person's stigma score.

A nested prospective cohort within LEAP-TB-SA will undergo serial stigma measurements to determine if mean level of stigma changes through the care continuum. This data will be triangulated against serial qualitative interviews to highlight if and how stigma changes over time and across hallmark events.

Category: Anti-microbial resistant organisms, HIV, Tuberculosis

## Leveraging health to enable and adapt community health care worker strategies to improve TB/HIV patient outcomes in South Africa (LEAP-TB-SA)

Lead Investigator: Dr. Jason E. Farley

Mycobacterium tuberculosis (TB) is the leading cause of death for persons living with HIV (PLWH) in South Africa (SA). Estimates suggest that if factoring in immediate lost to follow-up, a mere 52% of TB/HIV co-infected individuals have successful treatment outcomes.

mHealth solutions designed to support affordable human resources for health, such as community health workers (CHWs), offer the opportunity to reimagine a patient-centered, system-level solution that may radically change care models in low resource settings. The 'leap' of mHealth is most potent and practical in settings where desktop-based infrastructure is lacking, and hard-wired internet connectivity is unavailable. This study combines individual cascade steps through TB and HIV smartphone and tablet-based mHealth applications implemented by a CHW with an innovative TB/HIV cascade intervention.

Hypothesis: The intervention will have fewer composite negative TB outcomes (i.e. treatment failure, loss to follow-up, and death) compared to attention controls.

Category: HIV

## OWEL cancer education and awareness program (OCEAP)

Lead Investigator: Joyline Chepkorir Faculty Mentor: Dr. Hae-Ra Han

Women living with HIV/AIDS (WLH) are at heightened risk for cervical cancer, and those 45+ years old also have elevated risk for breast cancer. Older Women Embracing Life (OWEL), a community advocacy organization, has formed the bedrock for social, emotional, spiritual, and mental support for WLH and their families in Baltimore city. Based on an initial stakeholder meeting, cervical and breast cancer literacy among WLH has been identified as a top priority as there is no program in place to focus on the health issues most salient to WLH. Cervical and breast cancers are preventable and can be detected early yet WLH, particularly Black women, bear a disproportionately higher burden of deaths from these cancers due, in large part, to limited cancer health literacy. To address this need, the purpose of this study is to develop and implement a cancer education and awareness program.

Hypothesis: The intervention will improve cancer literacy and decrease negative perceptions about breast and cervical cancer screening in Black WLH.

# ONGOING PROJECTS

Category: HIV Prevention

## Place-based Determinants of Violence & HIV Risk Experiences among Black Young Women in Baltimore

Lead Investigator: Dr. Kamila Alexander

Intimate partner violence (IPV) disparities disproportionately affect Black adolescent and young adult (AYA) women ages 16-24 years living in areas with endemic HIV. In fact, homicide by an intimate partner is a leading cause of death and as many as 70% of women reporting lifetime IPV indicate their experiences occur before the age of 25. In this research, we use an activity space approach to examine physical, sexual, or psychological IPV among Black AYA women living in the Baltimore Metropolitan area. We define activity spaces as those places and spaces in which one engages in routine activities. These daily routines and paths constitute predictable and regular socio-behavioral patterns and are shaped by Black AYA women's social networks; influencing access to resources and reflecting specific social norms that elevate risk or promote protection from IPV. Violence victimization is associated with several socio-spatial factors however, IPV among Black AYA women is often invisible, occurring in private, semi-private, or public spaces within the context of intimate relationships. Thus, there is an urgent need to develop effective and sustainable interventions that address place-based determinants of IPV to improve health outcomes for Black AYA women. The scientific premise of this research is that IPV and HIV risks and protective factors may shift as people move about their daily lives and might vary depending on a AYA woman's individual characteristics.

Category: HIV Prevention

## Pilot trial of an intervention to increase HIV engagement and reduce Intimate Partner Violence among Black women living with HIV

Lead Investigator: Dr. Kamila Alexander

Black women living with HIV (LWH) continue to experience disparities in exposure to intimate partner violence (IPV) and sub-optimal HIV care engagement. Black women LWH are twice as likely to experience IPV than non-HIV infected Black women. IPV experiences among Black women LWH are associated with decreased access to social support resources and impaired mental and physical health. Cognitive behavioral approaches (CBA) are efficacious to reducing stigma, improving IPV safety strategies, and increasing HIV care engagement, yet interventions designed for Black women LWH and experiencing IPV are lacking. Furthermore, few CBA interventions leverage the existing resilience of Black women LWH using a sources of strength framework. The overarching aim of this research is to conduct: a) component testing of an intervention among Black women with lived experiences of HIV and IPV; and b) a pilot study to evaluate acceptability, feasibility and preliminary efficacy of a 7-session small group-based CBA intervention to reduce HIV and IPV stigma and subsequently increase IPV safety strategies and HIV care engagement. The intervention is delivered by a trained community health worker and will enroll and randomize 80 IPV-exposed Black women LWH into the experimental CBA or control condition.

Category: Anti-microbial resistant organisms, HIV, Tuberculosis

## Predicting HIV Viral Suppression Among People Treated for Multi-drug Resistant Tuberculosis

Lead Investigator: Keri Geiger

South Africa has a high burden of persons co-infected with multi-drug resistant tuberculosis (MDR-TB) and human immunodeficiency virus (HIV). MDR-TB/HIV co-infection is difficult to treat due to drug-drug interactions which lead to antiretroviral treatment (ART) substitutions, overlapping side-effect profiles, and high pill burden. While worldwide only about 55% of MDR-TB patients are successfully treated, South Africa has shown a recent improvement in MDR-TB treatment outcomes. Although many patients with MDR-TB/HIV co-infection will be cured of MDR-TB, they must continue on daily ART for the rest of their lives. Data suggest that some patients who successfully complete MDR-TB treatment fail to achieve HIV viral suppression by the time they complete MDR-TB treatment. As new TB treatment options are introduced and more people survive MDR-TB, understanding the effects of MDR-TB treatment on HIV viral suppression will only increase in importance.

The purpose of this study is to investigate predictors of HIV viral suppression among people living with HIV/AIDS (PLWHA) who have successfully completed MDR-TB treatment.

Category: SARS-COV-2 (COVID-19)

## Prevalence and predictors of forgone healthcare during the COVID-19 pandemic in Baltimore City

Lead Investigator: Diane Meyer

Lead Investigator: Dr. Jason E. Farley

Description: The Coronavirus 2019 (COVID-19) pandemic has led to widespread disruptions in healthcare utilization in the United States, including increases in forgone care, and has disproportionately impacted vulnerable and minority communities. The purpose of this study is to further understand the prevalence and predictors of forgone care in Baltimore, MD using a population representative sampling strategy with oversampling of populations currently underrepresented in the current COVID-19 forgone healthcare literature. The knowledge gained from this study will be critical to better understanding how the social determinants of health intersect with healthcare utilization during large-scale public health emergencies and will help inform efforts to improve health system resilience for future health threats.

Hypotheses: H1: African American and Latinx people will have a higher prevalence odds ratio (POR) for forgone healthcare after controlling for health insurance status; H2: Impoverished people, regardless of race/ethnicity, will have a higher POR for forgone healthcare.

# ONGOING PROJECTS

Category: SARS-CoV-2 (COVID-19)

## SARS-CoV-2 prevalence study (CoVPN 5002 - The COMPASS Study)

Lead Investigator: Dr. Jason E. Farley

This COVID study is funded by the COVID-19 Prevention Network (CoVPN) of the National Institute of Allergy and Infectious Diseases. This surveillance study seeks to estimate the number of people who have or have had the SARS-CoV-2 virus using venue-time sampling approaches.

Category: Anti-microbial resistant organisms, HIV, Tuberculosis

## Understanding and predicting loss to follow-up from multidrug-resistant tuberculosis treatment in the setting of high HIV burden

Lead Investigator: Katherine McNabb

Faculty Mentor: Dr. Jason E. Farley

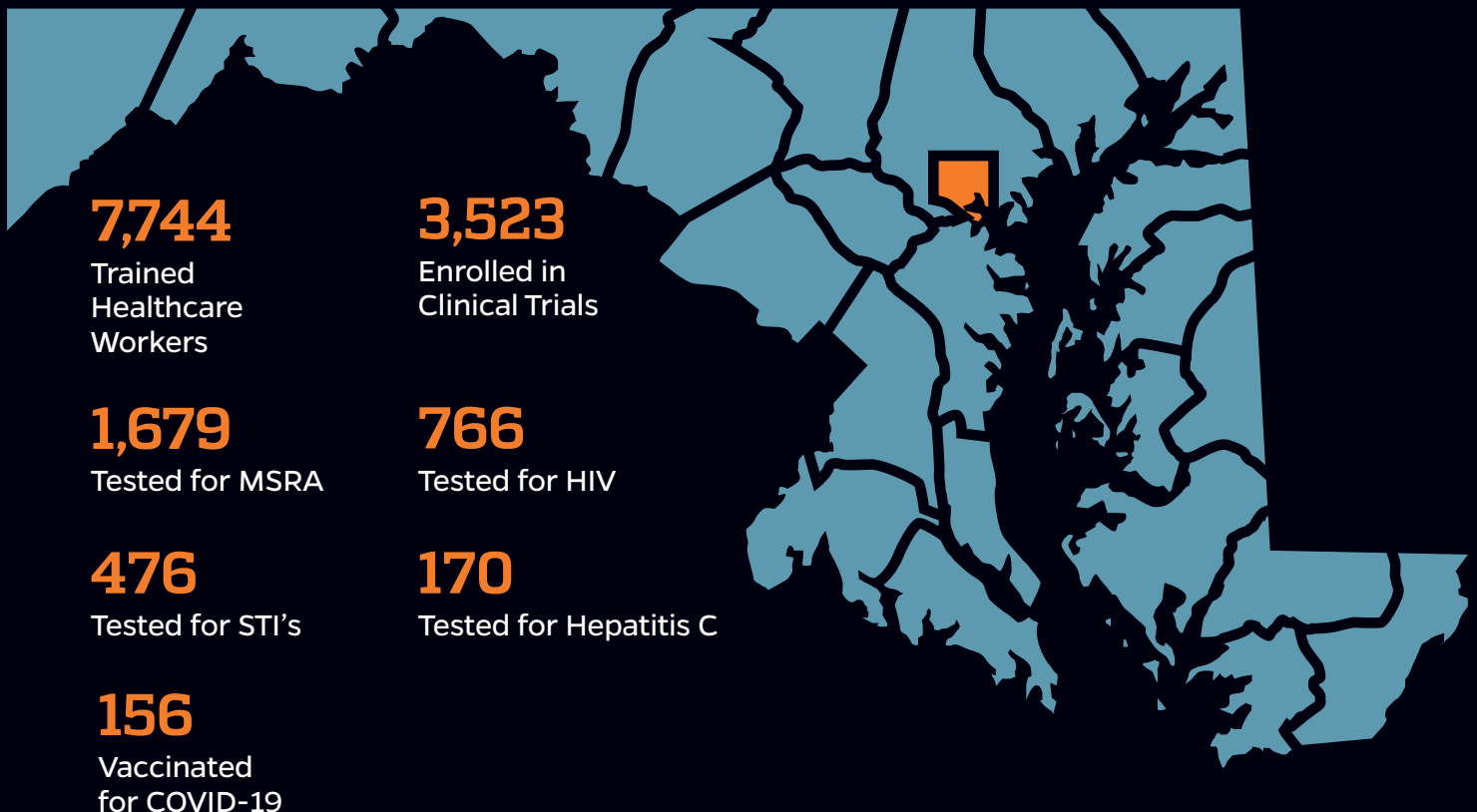
The World Health Organization estimates that 16% of all multi-drug resistant tuberculosis (MDR-TB) patients are lost to follow up (LTFU), placing them at increased risk for the development of additional resistance to antituberculosis medications and early death. Despite mounting knowledge about the risk factors for LTFU from MDR-TB treatment and the End TB Strategy directive that patients at-risk for suboptimal treatment success be given priority attention, there is currently no evidence-based method that allows for the early identification of patients at-risk for being lost from care. This study will develop a model for predicting LTFU from MDR-TB treatment that can ultimately be used to guide MDR-TB providers in identifying patients at high-risk for LTFU and prioritizing their receipt of support services that promote care engagement and retention.

Primary Aim: To develop a prediction model for LTFU from MDR-TB care based on the patient characteristics available at treatment initiation utilizing LASSO regression and k-fold cross-validation.

# BALTIMORE CITY PATIENT SERVICES

## MARYLAND

Since 2013 CIDNI has helped the local community





# GLOBAL IMPACT

## South Africa

Research, Training, Patient Care, Technical Assistance, Health System Evaluation

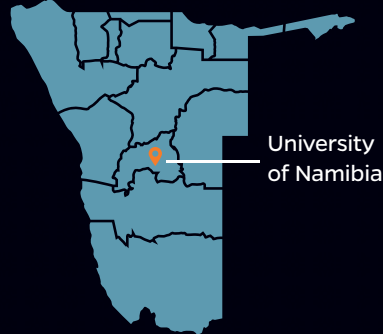
**3,011** Enrolled in clinical trials  
**842** Healthcare workers trained  
**26** DRTB sites provided technical assistance  
**8** TB contacts screened



## Namibia

Curriculum development with University of Namibia

**250** Healthcare workers trained



## Tanzania

Health System Evaluation

**1** Hospital provided technical assistance  
**25** Healthcare workers trained



## China

Technical Assistance, Health System Evaluation

**1** Hospital provided technical assistance  
**150** Healthcare workers trained



## Myanmar

Training, Health System Evaluation

**35** Healthcare workers trained



## India

Research, Training

**1** Hospital provided technical assistance



## Ukraine

Training, Technical Assistance, Health System Evaluation

**120** Healthcare workers trained  
**4** DRTB sites provided technical assistance



## Brazil

Research, Training

**1** Healthcare worker trained



## Lebanon

Research, Training

**2** Healthcare facilities provided technical assistance  
**150** Trained Healthcare Workers





# JOHNS HOPKINS

## SCHOOL *of* NURSING

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## CONTACT US

### Address

525 N. Wolfe Street, Suite 511  
Baltimore, Maryland 21205

### Phone

Main line: 443-326-5759  
PrEP line: 443-509-2912

### Email

[CIDNI@jhu.edu](mailto:CIDNI@jhu.edu)

## GET INVOLVED

Join us for a community event

Email us at: [CIDNI@jhu.edu](mailto:CIDNI@jhu.edu)

Donate: [www.secure.jhu.edu/form/CIDNI](http://www.secure.jhu.edu/form/CIDNI)