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SPECIAL SECTION

BROWN UNIVERSITY SCHOOL *of* PUBLIC HEALTH

GUEST EDITOR: BESS H. MARCUS, PhD

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Bess H. Marcus, PhD

On the cover: The Brown University School of Public Health building at 121 South Main Street in Providence, viewed from the College Street Bridge over the Providence River. [WIKIMEDIA COMMONS]

SPECIAL SECTION

Brown University School of Public Health

BESS H. MARCUS, PhD
GUEST EDITOR

Perspective: Advancing Public Health in Rhode Island and Beyond

FRANCESCA BEAUDOIN, MD, MS, PhD

Over a decade ago, Brown University formally established a unified School of Public Health, bringing together epidemiologists, behavioral scientists, health services researchers, data scientists, clinicians, policy experts, and community advocates. At the base of College Hill emerged a dynamic intellectual community committed to rigorous scholarship, innovative teaching, and public impact. In this issue of the *Rhode Island Medical Journal*, we showcase the depth and breadth of that work. The centers and initiatives featured here represent both the school's foundation and trajectory—rooted in people and place, responsive to urgent challenges, and driven by a shared commitment to improving lives.

Each year, faculty and research staff at Brown dedicate more than 600,000 hours to research, produce over 1,000 peer-reviewed publications, and engage with more than 75 local organizations to promote public health. Just as importantly, the school's work is deeply embedded in Rhode Island through research, internships, service, and teaching. That engagement reflects a much longer history—one that reaches well beyond the school's formal founding in 2013.

For nearly 150 years, Brown scholars and alumni have helped shape public health here in Rhode Island, regionally, and beyond. In the early twentieth century, **CHARLES VALUE CHAPIN, MD**, a Brown University graduate, led Providence through public health crises by championing local data, targeted intervention, and community trust. The 1970s saw the creation of a department at Brown focused on community health, and in the decades that followed, researchers built an evidence base for more humane models of care, including hospice services, that helped shape national policy and expand access to end-of-life care for millions of Americans. By the mid-1990s, undergraduate advocacy led to the creation of a formal concentration in public health, a momentum that set the stage for the early 2000s, when Brown committed to establishing a full-fledged school. This special issue is guest edited by **BESS H. MARCUS, PhD**, a Professor of Behavioral and Social Sciences at Brown University and the School of Public Health's second dean. From her vantage point as former dean and as a leading public health scholar in promoting physical activity in underserved and vulnerable populations, this issue is a sampling of the diverse areas of focus of public health at Brown.

Today, the school's commitment spans addiction science, aging and long-term care, health equity, child health innovation, global health systems, climate and environmental health, pandemic response, and health system sustainability.

When federal or local policymakers need timely analysis on how legislation may affect everyday people or health systems, they often turn to Brown researchers, who are deeply involved in the community and helping people understand how public health policy happens in practice. When local health departments seek real-time infectious disease data, they can rely on the Pandemic Center's widely distributed Tracking Report that aggregates, interprets, and contextualizes published data relevant to domestic and international infectious disease outbreaks and presents it in a concise, reader-friendly format. When families and communities confront addiction, researchers at the Center for Alcohol and Addiction Studies and the People, Place, and Health Collective partner across Rhode Island to advance evidence-based approaches to prevention, treatment, and recovery.

Recent efforts are also advancing research on youth mental health and digital media, healthcare affordability, and the health impacts of environmental exposures—issues that are felt in our homes, clinics, and communities. From the Pawtucket Heart Health Program, to working with our health systems to advance health data science, to strengthening HIV prevention and treatment efforts in Kenya, the work of the school is shaped by partnership with those most affected by the challenges we study.

THE MISSION FORWARD

This is such an important time for schools of public health and for public health more broadly. Partnerships with the federal government are strained, confidence in health systems is shaken, and public trust in science is being tested. As schools of public health nationwide ask important questions about relevance and responsibility, Rhode Island's only school of public health is uniquely positioned to respond.

Over the past 5 years, the school has grown significantly in size, and now it's time for a different kind of growth. We are focused on growing our impact, including expanding how our work shows up in the health people experience in their everyday lives, strengthening how we use data and technologies like AI, sharpening our science, and communicating that science more effectively to drive changes in policy and practice.

Our focus is also on keeping the public health workforce pipeline strong. The students the school educates are the people who will practice public health and sustain it long into the future. That means thinking strategically about our training programs and ensuring that we are preparing students for the careers and callings that await them. This is especially important at a time when public health systems have faced significant strain over the past year. Equally important in this next chapter is expanding the school's impact in the communities it serves. That includes Providence, where we work and many of us live, Rhode Island more broadly, and the communities we partner with globally—in places like China, India, the U.K., and across Europe.

The school's mission is about more than meeting the public health moment that we are in, it is recognizing our past, capitalizing on our strengths, and anticipating the future.

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Collaborative Research at the Brown University School of Public Health: An Introduction

BESS H. MARCUS, PhD
GUEST EDITOR

Research is the cornerstone of the Brown University School of Public Health. In fact, the Program in Public Health became a School of Public Health in 2013 in large part due to the outstanding research conducted in the research centers that were originally part of the Brown School of Medicine. Long-standing centers such as the Center for Alcohol and Addiction Studies, the Center for Biostatistics and Health Data Science, and the Center for Gerontology and Healthcare Research serve as anchors for school.

Other centers that played an important role in the School's development over its first decade include: the Center for Global Public Health, the Mindfulness Center, the Center for Health Promotion and Health Equity, the Hassenfeld Child Health Innovation Institute, the Center for Long-term Care and Quality, and the Center for Evidence-Synthesis in Health.

Newer centers that will play an important role at the school in our second 10 years and beyond include: the Pandemic Center, the Center for Climate, Environment and Health, the Center for Advancing Health Policy Through Research, and the Center for Health System Sustainability. Hospital-based Centers, including the Centers for Behavioral and Preventive Medicine and the Brown University AIDS Program remain vital to the success of our school and provide numerous opportunities for our faculty and students.

In this special issue, readers will learn about the work underway across the Brown University School of Public Health and at several of its centers that support research, training, and community partnerships. These articles highlight the range of public health research at the School, including efforts to address health equity, improve care for older adults, reduce substance use and chronic disease, strengthen global health systems and examine how environmental and social conditions affect health.

The contributions described below showcase both the history and current focus of the School's centers, and reflect their role in generating evidence to inform public health practice, and health care delivery and policy in Rhode Island and beyond.

ALISON TOVAR, PhD, MPH, is an Associate Professor of Behavioral and Social Sciences at the Brown University School of Public Health and Interim Director of the Center for Health Promotion and Health Equity. Trained in psychology, public health, and nutrition science, her work focuses on culturally tailored interventions to promote healthy eating in Latino communities and evaluating policies that promote healthy eating. In her article, Dr. Tovar traces the evolution of the Center from its roots in community-based cardiovascular disease prevention to its work in equity-centered research addressing structural racism, environmental justice, food access, overdose prevention, and chronic-disease disparities among historically marginalized populations.

ROSA R. BAIER, MPH, is the Director of the Long-Term Care Quality & Innovation Center and Professor of the Practice of Health Services, Policy & Practice at the Brown University School of Public Health. For more than two decades, she has developed and refined pragmatic approaches to improve care for older adults, and prior to Brown, she directed the state's quality reporting program as a contractor for the Rhode Island Department of Health. In her article, she uses case-based examples to describe how the research group she directs at Brown has emerged as a national leader in equity-centered, community-based participatory aging research.

EMILY GADBOIS, PhD, is an Associate Professor of Health Services, Policy and Practice at the Brown University School of Public Health and a faculty member of the Center for Gerontology & Healthcare Research. A health services researcher and gerontologist, her work focuses on the experiences and outcomes of older adults—particularly those with Alzheimer's disease and related dementias—and how healthcare policies and organizational practices shape care quality. In her article, she examines nursing home administrator perspectives during the COVID-19 pandemic, identifying lessons to strengthen policy and emergency preparedness in long-term care.

Associate Professor of Behavioral and Social Sciences and Epidemiology **DIANA GRIGSBY-TOUSSAINT, PhD, MPH**, is a social epidemiologist at the Brown University School of Public Health. She studies how neighborhood environments influence health, with a focus on diet, physical activity, and sleep among low-income and racially and ethnically diverse populations. In her study, she describes Rhode Island's greening efforts and the Project G-SPACE study, which examines how access to green space affects children's sleep, mental health, and physical activity.

OMAR GALÁRRAGA, PhD, is Professor of Health Services, Policy and Practice and Director of the Center for Global Public Health at the Brown University School of Public Health. In his article, he highlights the Center's global partnerships and research over the past decade, showing how culturally grounded, economically sound interventions can improve population health at scale while advancing equity.

CHRISTOPHER W. KAHLER, PhD, is Professor of Behavioral and Social Sciences and Psychiatry and Human Behavior and Director of the Center for Alcohol and Addiction Studies at the Brown University School of Public Health. A Fellow of the American Psychological Association and Vice President of the Research Society on Alcohol, he is an internationally recognized addiction scientist whose work focuses on reducing alcohol and tobacco use. In his article, he highlights the Center's 43-year legacy of generating rigorous evidence that reduces substance-related harm and advances recovery.

A licensed psychologist and clinician-scientist at the Brown University School of Public Health and Warren Alpert Medical School, **HAYLEY TRELOAR PADOVANO, PhD**, is an Associate Professor of Psychiatry and Human Behavior and of Behavioral and Social Sciences. In her article, Dr. Treloar Padovano describes a community partnership with Clínica Esperanza/Hope Clinic that used on-site liver screening and culturally responsive counseling to detect previously undiagnosed liver disease and connect patients to early intervention and care.

THERESA I. SHIREMAN, PhD, is Professor of Health Services, Policy and Practice and Epidemiology and Director of the Center for Gerontology & Healthcare Research at the Brown University School of Public Health. Her research has advanced understanding of medication use and outcomes among patients on chronic dialysis, and she has helped develop novel methods to track medication exposure. In her article, she highlights the Center's leadership in aging research, demonstrating how interdisciplinary, policy-relevant studies and national data resources have improved healthcare quality and outcomes for older adults and people with chronic conditions.

It has been my great pleasure to organize this special issue of the *Rhode Island Medical Journal*. This collection spotlights some of the important work conducted since the School's inception in 2013. Additionally, it highlights some of the exciting opportunities that lie ahead. This is an exciting time for the field of Public Health and researchers at Brown continue to be at the forefront of this important work.

Guest editor

BESS H. MARCUS, PhD, is Professor of Behavioral and Social Sciences and served as the second Dean of the School of Public Health at Brown University. She is a clinical health psychologist who has spent over 35 years conducting research on physical activity behavior and has published over 300 papers and book chapters as well as three books on this topic. She has developed a series of assessment instruments to measure psychosocial mediators of physical activity behavior and has also developed low-cost interventions to promote physical activity behavior in community, workplace, and primary care settings. Dr. Marcus is actively involved in numerous NIH grants on physical activity behavior and public health. Her work increasingly focuses on promoting physical activity in underserved and vulnerable populations.

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Four Decades at the Forefront of Addiction Research and Training

CHRISTOPHER W. KAHLER, PhD

ABSTRACT

This article summarizes the accomplishments and 43-year history of the Center for Alcohol and Addiction Studies (CAAS) at the Brown University School of Public Health, with a particular focus on the Center's work on substance use and chronic disease since the school's accreditation in 2013. Select research is highlighted as examples of the Center's broad range of clinical translational research that have informed fundamental understanding of addiction and the interventions, practices, and policies that most effectively reduce harm and support recovery.

KEYWORDS: Substance use; addiction; chronic disease; treatment; harm reduction

INTRODUCTION

Established at Brown University in 1982 under Founding Director David Lewis, MD, the Center for Alcohol and Addiction Studies (CAAS) maintains a 43-year legacy as one of the nation's most influential hubs for addiction science, serving as a leading source of robust evidence for effective substance use treatment and harm-reduction strategies. Following Lewis, Peter Monti, PhD, served as the CAAS director from 2000 to 2022, providing visionary leadership while CAAS's research and training capacity grew exponentially during a period of robust National Institutes of Health (NIH) funding. Most recently, longtime CAAS faculty member Suzanne Colby, PhD, served expertly as interim director from 2022–2023, and this author has proudly held the director position since 2023.

CAAS's mission is to "Improve the health and well-being of all individuals and communities impacted by substance use and addiction through collaborative, multidisciplinary research, exceptional education and training, and meaningful community engagement." As the oldest research center in the School of Public Health, CAAS brings together more than 40 faculty in the school—including psychologists, social workers, physicians, epidemiologists, and health services and policy researchers supported by more than $90 million in research funding—in addition to over 25 faculty affiliates across the university and affiliated hospitals. CAAS faculty have pioneered one of the nation's most influential postdoctoral addiction research training programs, which has produced over 200 leaders improving the health of individuals and communities domestically and globally. This training program has been continuously supported for 40 years by a training grant from the National Institute on Alcohol Abuse and Alcoholism (NIAAA), and for 23 years by a training grant from the National Institute on Drug Abuse (NIDA).

SCIENTIFIC FOCUS AND INNOVATIONS

CAAS has contributed fundamental knowledge to our understanding of addiction, spanning the continuum from determining who is most at risk to which interventions work best in specific populations, and assessing the profound impact of treatment and harm reduction on individual and community health. Our faculty, trainees, students, and staff have been at the forefront of crucial advances.

Pioneering Behavioral Therapies

CAAS research established the initial evidence on cue reactivity in addiction, directly leading to the development of cue exposure and skills training as effective addiction therapies, and has provided a crucial evidence base for promoting smoking cessation in people with other substance use disorders or mental illness. We continue to lead highly influential research, adapting motivational interviewing as a harm reduction tool across diverse populations—from reducing alcohol use in those experiencing stigma, trauma, or acute illness/injury to reducing substance-related harms in adolescents and young adults.

Driving Addiction Medicine

The legacy of groundbreaking CAAS research in addiction medicine includes major trials testing the only two medications to treat alcohol use disorder that have gained U.S. Food and Drug Administration (FDA) approval in the last 30 years (naltrexone and acamprosate) and extends to current trials of novel pharmacotherapies for alcohol use disorder like GLP-1 agonists and methylenedioxymethamphetamine (MDMA).

Leveraging Technology

CAAS houses leading innovative, technology-driven research, including the application of wearable sensors,

mobile apps, and smartphone surveys to understand substance use and recovery in daily life, and applying treatment technologies like virtual reality and brain stimulation.

Informing Policy

CAAS research directly informs policy and practice, for example, by innovating methods to reduce opioid overdoses through improved availability and access to overdose reversal medications and medications that support long-term recovery. Other policy-relevant work has examined how flavors affect e-cigarette use in adolescents and adults, provided critical analysis of e-cigarette flavor policy, and generated evidence that reduced-nicotine cigarettes can reduce tobacco addiction—research used by the FDA to propose a new rule to reduce the amount of nicotine in cigarettes.

NEW DIRECTIONS IN SUBSTANCE USE AND HEALTH

Since the accreditation of the Brown University School of Public Health in 2013, CAAS has increasingly focused on addressing the critical role of substance use as a public health threat to the prevention and management of chronic disease. This work has led to the two largest NIH-funded projects in the center's history.

For 15 years, CAAS has housed the Alcohol Research Center on HIV (ARCH) funded by a program project grant from the NIAAA. In partnership with the Providence/Boston Center for AIDS Research (CFAR), ARCH-supported research among people with HIV has demonstrated that alcohol has both direct effects on liver function and indirect effects on viral control and immune function through reduced adherence to antiretroviral therapy. ARCH research has shown how alcohol contributes to brain structural abnormalities and cognitive dysfunction, as well as how alcohol is associated with systemic inflammation. Intervention research has shown that an app-based intervention can reduce unhealthy alcohol use and sexual risk behavior in men who have sex with men; demonstrated that brief interventions, motivational interviewing, and text messaging are viable approaches to address unhealthy alcohol use in HIV care; developed adaptations of individual and couples-based approaches tailored for sexual and gender minority populations with HIV; and evaluated implementation of a cascading train–the–trainer model that resulted in major increases in the rates of alcohol screening and brief intervention delivered in HIV-care settings in South Africa. The ARCH also funded a series of innovative pilot grants (some co-funded with the Providence/Boston CFAR), hosted intensive summer workshops, and supported a robust program of postdoctoral training in alcohol and HIV research.

CENTER FOR ADDICTION AND DISEASE RISK EXACERBATION

In 2019, CAAS received funding from the National Institute on General Medical Sciences (NIGMS) to establish a Center of Biomedical Research Excellence, creating the Center for Addiction and Disease Risk Exacerbation (CADRE), which facilitates rigorous, multidisciplinary research that illuminates how substance use exacerbates the progression and outcomes of chronic disease. Through its emphasis on translational human laboratory studies, real-world behavioral assessment and the recruitment of diverse and underserved populations, CADRE strengthens CAAS's capacity to conduct impactful research that informs prevention, treatment, and public health policy and benefits the community.

CADRE plays a critical role in cultivating the next generation of substance use researchers across Rhode Island. CADRE's Clinical Lab Core and REACH Core provide investigators with scientific, methodological and technical support, including clinical and laboratory support, blood processing and analysis, and participant recruitment and engagement support. Recently, CADRE purchased the only FibroScan® machine devoted solely to research at Brown University. Noninvasive liver imaging with vibration-controlled transient elastography (VCTE™) allows for early detection of liver fibrosis that can result from unhealthy alcohol use alone and in combination with metabolic syndrome. CADRE services are available to investigators both within and outside Brown University, and can be accessed through competitive pilot-funding opportunities or by fee-for-service mechanisms that allow researchers to incorporate CADRE resources into new and ongoing studies.

CADRE supports a wide array of research projects that reflect its commitment to understanding how substance use interacts with physical and mental health across diverse populations. For example, partnering with Clínica Esperanza and The Hepatology Clinic at Rhode Island Hospital, a CADRE-supported project is providing no-cost, on-site liver scans to study participants with cardiometabolic and alcohol-consumption risk factors, aiming to prevent the progression of liver disease. Another CADRE project is partnering with Rhode Island-based organizations to examine how parental alcohol use and stress shape youth behavioral risk trajectories. Current CADRE projects are examining how nicotine product use among individuals with obesity influences smoking harm reduction and health outcomes, and are leveraging wearable and mobile assessment technologies to evaluate real-time patterns of cannabis use related to mood and depressive symptoms. Prior CADRE studies have explored how alcohol use affects inflammation in people living with HIV; how incarceration, tobacco use and alcohol use intersect within the social networks of justice-involved individuals to influence cardiovascular disease risk; and how alcohol consumption may influence biological markers associated with aging and Alzheimer's disease.

THE FUTURE

In 2023–2024, CAAS underwent a comprehensive strategic planning process, culminating in the Center's strategic plan, *CAAS Forward*. The plan identifies our mission-driven research priorities, including: (a) deepening research in harm reduction with a particular focus on medical comorbidities; (b) leading efforts to integrate laboratory and ecologic research methods; (c) expanding research on health equity and addiction; and (d) accelerating the translation of research into practice. Additionally, *CAAS Forward* prioritizes the deepening of CAAS's engagement with the local community, serving as a trusted source of information and collaboration, a partner to researchers and clinicians throughout the state, and a contributor to policy advances. Given the massive economic, social, community, and individual health costs of substance use and addiction, CAAS can play a vital role in Rhode Island supporting effective practices and policies that reduce use and harms and support recovery in our state. As the research community navigates a challenging funding climate at NIH, robust centers like CAAS will remain essential resources to maintain research continuity, to support the next generation of addiction scholars, and to innovate solutions to some of our most pressing public health priorities. We welcome engagement in our seminar series and new community, clinical and research partnerships to ensure our vital mission is shared with all.

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Disclosure

The author has no disclosures to report.

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Center for Gerontology & Healthcare Research

THERESA I. SHIREMAN, PhD

OVERVIEW AND HISTORY

The Center for Gerontology & Healthcare Research (CGHCR) is an internationally renowned healthcare research center grounded in interdisciplinary collaboration, located at the Brown University School of Public Health. Its foundation in 1987 followed the National Hospice Study led by David Greer, MD, former dean of the Warren Alpert Medical School, and Vincent Mor, PhD, a professor in the Department of Community Health. Through rigorous research linking national datasets, they established the multiple benefits of hospice delivery—patient and family quality of life and reduced healthcare costs—leading to a new Medicare benefit. Sidney Katz, MD, a major contributor to gerontology and creator of standardized measures such as the activities of daily living index, served as the inaugural director. The CGHCR's research and faculty expanded over the years, producing notable advances in gerontology, such as documenting the futility of feeding-tube insertion for nursing home residents with advanced dementia, culminating in a major reduction in their use nationwide; demonstrating that palliative care consultation for nursing home residents reduced invasive treatments and improved quality of life; and conceptualizing burdensome transitions at end of life, a metric in evaluating care quality.

In 2013, CGHCR became one of the core centers in the newly established School of Public Health. To this day, we remain steadfast in our mission to enhance the quality of life for vulnerable populations, especially older adults and people with chronic conditions, through rigorous, advanced methodological research and the translation of research into effective policies and practices. Given that nearly 20% of the U.S. population (61 million people) are over 65 years of age, there is an ever-expanding need to identify, test, and disseminate proven interventions and policies to meet public health expectations and maximize health-related quality of life.

FACULTY AND SCHOLARSHIP

To accomplish our mission, the CGHCR provides vital research infrastructure for faculty investigators and their research teams. Currently, we have over 30 faculty who lead project teams. Faculty come from a variety of backgrounds, including gerontology, epidemiology, health economics, health policy, internal medicine, geriatrics, pharmacoepidemiology, and biostatistics. Their interdisciplinarity allows for an extraordinary richness in theoretical framing, study design, and methods to solve challenges for older adults. Focal areas of expertise include chronic disease management (prevention and treatment); end-of-life and palliative care; long-term care supports and services; assisted living and nursing home care; prescription medication use (pharmacoepidemiology and pharmaceutical health services research); and innovative technology adoption for direct care. More recent emerging focal areas include transgender healthcare access and quality, and the impact of climate change on older adults' health. Over the last 5 years, our faculty, staff, and students have produced over 1,000 peer-reviewed publications, accepted across high-profile aging, medicine, policy and health services research journals.

CGHCR faculty and their teams are extremely successful in securing research funding, which now exceeds $30 million annually, mostly earned through awards from the National Institutes on Aging. Our national leadership in Alzheimer's and related-dementia research is vast and deep, as evidenced by the following projects:

In 2019, Dr. Mor, in collaboration with Susan Mitchell, MD, a colleague at Boston-based Hebrew Senior Life, secured the largest federal grant (U54AG063546) in Brown University's history, a 5-year, $53 million award to lead national efforts to improve healthcare and quality of life for people living with dementias and their caregivers. Established in September 2019, the National Institute on Aging (NIA) IMbedded Pragmatic Alzheimer's disease (AD) and AD-Related Dementias (AD/ADRD) Clinical Trials (IMPACT) Collaboratory mission is to build the nation's capacity to conduct embedded, pragmatic clinical trials of interventions within healthcare systems, helping them provide high quality, coordinated, and equitable care to people living with dementia and their care partners. Scalable and adoptable interventions that are effective in improving the care delivered to this vulnerable population are desperately needed. Since its inception, IMPACT has advanced the conduct of embedded pragmatic clinical trials, developed and disseminated knowledge, built investigator capacity, and catalyzed stakeholder collaboration. IMPACT was recently renewed for an additional 5 years at $84 million.

- In Fall 2024, Amal Trivedi, MD, and CGHCR colleagues secured a renewal for the 16th year of a program project grant (P01 AG027296: Alzheimer's Disease and Related Disorders Treatment and Outcomes in America: Changing Policies and Systems). Although the population living with ADRD is expected to triple by 2050, many recent policy changes aim to maximize the value of care for the "average" patient, without specific consideration of their consequences for high-cost, high-need populations, such as those with ADRD. The P01 project will undertake four synergistic projects testing the effect of recent national policies and payment changes on people living with ADRD in different states of disease progression, in different care settings, and exposed to different policies.
- Sarah Ackley, PhD, is leading a K99R00 grant modeling ADRD, entitled Mathematical Models of Tau-PET Measures and Cognitive Decline in Alzheimer's Disease Across the Lifespan.

Another vital resource offered through the CGHCR is LTCFocUS, a publicly available data resource for national and international gerontology scholars. LTCFocUS provides data on nursing home care in the U.S. Our goal is to allow researchers to trace relationships between state policies, local market forces, and the quality of long-term care, and enable policymakers to craft state and local guidelines that promote high-quality, cost-effective, equitable care for older Americans. The data contained in LTCFocUS.org provides users with the opportunity to develop reports, presentations, and publications. Researchers can use this website to examine care processes and resident outcomes within the context of their local markets and regulatory practices. Policymakers can use the information to shape state and local guidelines, policies, and regulations that promote high-quality, cost-effective, equitable care to older Americans. We have logged 322 publications acknowledging the use of LTCFocUS resources.

CGHCR faculty lead research projects and collaborate with colleagues from other centers and universities. Some of our active projects are listed below.

HEALTH POLICY AND PRACTICE

- Dr. Barnett: Physician Sub-specialization and the Health and Health Care of Older Americans
- Drs. Rahman and Kosar: Impact of Medicare and Medicaid Financial Policies on Post-acute and Long-term Care for Persons Living with Dementia
- Dr. Rahman: Assessing the Effects of Institutional Special Need Plan (I-SNP) Enrollment on Quality of Long-Term and End-of-Life care for Elderly Individuals with Dementia
- Dr. Trivedi: Effects of Expanding Medicare Advantage Enrollment to Persons with End-stage Renal Disease
- Dr. Trivedi: Impact of Randomized Payment Incentives on Disparities in Home Dialysis and Kidney Transplantation

PRESCRIPTION MEDICATION USE

- Drs. Dow and Hughto: Impact of Medicaid Prescription Cap Policies on Treatment Outcomes for Opioid Use Disorder: A National Mixed Methods Study
- Drs. Galarraga and Shireman: Impact of Prescription Caps on Health Outcomes in People Infected with HIV
- Drs. Hayes and Zullo: Prescribing Cascades among Nursing Home Residents with ADRD
- Dr. Joyce: The risks and consequences of a motor vehicle crash in older adults with Alzheimer's Disease and Related Dementias
- Dr. Zullo: Post-Acute Care Medication Use and Functional Recovery in Heart Failure
- Dr. Zullo: Clinically Significant Drug Interactions among Nursing Home Residents with ADRD

HEALTHCARE DISPARITIES

- Drs. Meyers and Hughto: Examining Health Comorbidities and Healthcare Utilization Disparities among Older Transgender and Cisgender Adults in the U.S.
- Dr. Rivera-Hernandez: Migration and outcomes among older adults with and without ADRD from Puerto Rico

CLIMATE CHANGE AND AGING

- Dr. Rivera-Hernandez: Long-Term Effects of Hurricane Maria on Healthcare Delivery, Migration and Mortality Among People with Kidney Failure in Puerto Rico
- Drs. Just and Shireman: CHAIRS-C: Climate, Health, and Aging Innovation and Research Solutions for Communities

TRAINING

Since our inception, CGHCR has actively trained future generations in contemporary health services research using a real-world learning environment. Faculty regularly include pre- and post-doctoral trainees in their funded research programs. Pre-doctoral and post-doctoral fellowship programs also embed post-doctoral trainees in the research teams of funded faculty mentors to practice and advance their research and scientific writing skills as they build toward their independence. Pre-doctoral trainees are typically graduate students in the Health Services, Policy & Practice Department or the Department of Epidemiology. These graduate students are actively involved in all stages of project development, from the development of researchable ideas to the execution of analyses and the preparation and submission of manuscripts. Faculty support post-doctoral research fellows through grant funding. In addition, the CGHCR has hosted several grants, under Linda Resnik's, PhD, leadership, to advance health services research and learning health system skills for rehabilitation faculty.

INITIATIVES WITHIN CGHCR

CGHCR provides educational and research funding and acknowledges aging-focused scholarship through generous donations, including:

- Diamond Fund: The Diamond Fund provides resources to the CGHCR to support several types of public health aging activities for faculty and students, including pilot awards for faculty doing implementation science projects; MPH scholarships for translational science or aging-related projects with local public health or community-based organizations; research engagement with an equity lens; and aging course development.
- SURDNA Award: The SURDNA fellowship is designed to provide pilot funds or tuition support to faculty in clinical departments to gain formal research training and develop an independent line of aging research.
- Ginsberg Award: The Irwin E. Ginsberg Award provides a modest summer stipend for Brown University medical or public health student projects related to aging, and mentored by faculty affiliated with CGHCR.
- Gerontology Prize: CGHCR recognizes undergraduate or Master's public health students who complete a research project in gerontology, leading to a public presentation, publication or publication-quality manuscript.

SUMMARY

The Center for Gerontology & Healthcare Research stands as a national leader in aging and healthcare research, uniquely positioned to address the complex challenges facing our rapidly aging society. With over $30 million in annual research funding and more than 30 interdisciplinary faculty members, CGHCR combines rigorous scientific methodology with real-world impact to improve care quality and outcomes for older adults and people with chronic conditions. Our comprehensive research portfolio spans medication safety and pharmacoepidemiology, pragmatic clinical trials, federal policy evaluation, long-term care innovation, and emerging areas such as climate change impacts and transgender healthcare access. Through our nationally recognized training programs, innovative data resources like LTCFocUS.org, and strategic partnerships with healthcare systems and community organizations, CGHCR translates cutting-edge research into evidence-based practices and policies that enhance quality of life for vulnerable populations. As stewards of landmark initiatives, we remain committed to fostering the next generation of aging researchers while advancing scalable, equitable solutions for an aging America.

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Disclosure

Dr. Shireman receives grant funding from several Institutes within the National Institutes of Health.

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The Legacy and Leadership of the Center for Health Promotion and Health Equity (CHPHE)

ALISON TOVAR, PhD, MPH

ABSTRACT

Over the past decade, the Center for Health Promotion and Health Equity (CHPHE) at the Brown University School of Public Health has emerged as a national leader in equity-centered research, education, and community engagement. The Center's story began decades earlier, built on pioneering work in community-based health interventions that would shape the field of public health in Rhode Island and beyond.

DEEP ROOTS: THE PAWTUCKET HEART HEALTH PROGRAM AND EARLY COMMUNITY-BASED RESEARCH

CHPHE's legacy dates back to 1980 with the launch of the groundbreaking Pawtucket Heart Health Program, a landmark cardiovascular disease prevention initiative led by Thomas Lasater, PhD, and Kim M. Gans, PhD, MPH , LDN. As one of the first federally funded, community-wide health promotion studies in the U.S., the project helped define how public health could be practiced with communities, not just in them.[1-10]

From this foundation emerged a growing research group at the Center for Primary Care and Prevention at Memorial Hospital of Rhode Island, where Drs. Lasater and Gans continued to collaborate on numerous community-based intervention studies throughout the 1980s and 1990s. Their work laid the groundwork for what would become a dedicated research center committed to improving public health through culturally informed, equity-centered approaches.

BECOMING A CENTER: FOUNDING CHPHE (2002)

In 2002, the group officially became a center in the Brown University Program in Public Health, originally named the Institute for Community Health Promotion (ICHP). It was founded by Director Dr. Lasater and Deputy Director Dr. Gans, alongside founding faculty members Catherine Dubé, EdD, and Patricia Risica, DrPH. This designation recognized the team's growing impact in community health research and set the stage for broader interdisciplinary collaboration within Brown and the surrounding communities.

Since its founding, the Center has evolved through several identity shifts, reflecting its expanding scope and mission:

- ICHP (2002–early 2010s): Emphasized chronic disease prevention and health promotion through community-based interventions.
- Center for Health Equity Research (CHER): Signaled a growing focus on addressing structural and social determinants of health disparities.
- Center for Health Promotion and Health Equity (CHPHE, 2020–present): Represents the Center's current mission, improving health and advancing equity through community-engaged research, interdisciplinary collaboration, and advocacy on multiple levels.

A MILESTONE MOMENT: INTEGRATING INTO THE SCHOOL OF PUBLIC HEALTH (2013)

In 2013, when Brown formally launched its School of Public Health, the Center was already a vital part of its research and community engagement ecosystem. CHPHE's presence helped shape the School's emphasis on population health, health equity, and applied, interdisciplinary science.

Over the next decade, CHPHE grew into a vibrant hub of faculty, staff, students, and community partners committed to addressing the root causes of health inequities, from racism and poverty to food insecurity and environmental injustice.

NOTABLE ACHIEVEMENTS FROM 2013–2023

CHPHE has led a diverse portfolio of high-impact research and community programs. Highlights include:

Structural Discrimination and Health Inequities

Research led by Madina Agénor, ScD, MPH, describes how structural racism, measured through racially discriminatory laws and interpersonal discrimination in healthcare settings contribute to higher rates of premature death and limited access to preventive services and health insurance among Black, Latine, and LGBTQ+ communities.[11-15] These intersecting barriers underscore the need for structural, community-driven approaches to health promotion and equity.

Green Space and Child Health

Results from Project Green Space, led by Diana Grigsby-Toussaint, PhD, show that access to parks and other green spaces supports children's mental health, cognitive development, sleep, and physical activity. Using GPS tracking, parent surveys, memory tasks, and biological markers of stress, this research is uncovering how environmental exposures—like neighborhood greenery—can promote well-being, especially among children in historically marginalized communities.[16-22]

Similarly, another project is exploring how exposure to greenspace during pregnancy affects birth outcomes. In a multidisciplinary study bridging public health, medicine, and geography, one study is investigating how exposure to greenspace during pregnancy affects birth outcomes. By exploring different measures of greenspace exposure and their relation to maternal well-being, this research seeks to clarify mechanisms and improve environmental health equity, particularly in vulnerable populations.

Promoting Physical Activity Among Latinas Through Technology

A study, led by Tanya Benitez, PhD, MSW, found that a culturally tailored, Spanish-language intervention combining a website and text messaging significantly increased physical activity among insufficiently active Latinas over 24 months. The enhanced intervention, featuring personalized text reminders, gamified engagement, and community support, led to greater long-term gains in moderate-to-vigorous physical activity than the original version. This approach offers a scalable model for addressing persistent disparities in chronic disease prevention through sustained health promotion.[23-26]

Testing Incentives to Promote Physical Activity

A randomized trial, lead by Lauren Bohlen, PhD, and David Williams, PhD, is evaluating the effectiveness of insurance-based financial incentives (such as $100–200 reimbursements for gym visits) in increasing physical activity. The study compares gain-framed (rewards earned) and loss-framed (rewards withheld) incentive structures, with preliminary findings exploring how framing, habit formation, and anticipated regret influence sustained exercise behavior. This research informs how health plans and policy can use behavioral economics to promote physical activity at scale.[27]

Preventing Stimulant-Involved Overdose Deaths

As fentanyl contamination fuels a deadly "fourth wave" of the opioid crisis, research led by Jaclyn White Hughto, PhD, MPH, highlights that over 60% of surveyed stimulant users unknowingly consumed fentanyl-laced drugs. The Preventing Overdoses Involving Stimulants (POINTS) study identifies critical gaps in awareness and intervention, underscoring the need for harm reduction tools like fentanyl test strips and community drug checking. Community-informed strategies from this work are shaping local overdose prevention efforts and advancing equitable public health responses.[28]

Evaluating a Statewide Fruit and Vegetable Incentive Program

Early evaluation, led by Alison Tovar, PhD, of Eat Well, Be Well, Rhode Island's first statewide SNAP fruit incentive program, found no overall change in fruit and vegetable intake among participants. However, the program showed promising effects among individuals with higher baseline fruit and vegetable consumption. These findings highlight the importance of refining implementation strategies, increasing incentive amounts, and expanding outreach and nutrition education to improve equity and impact among lower-consuming SNAP recipients.[29]

Resilience Among African American/Black Adults Living with HIV

In a collaborative study led by former CHPHE faculty Akilah Dulin, PhD, and others, researchers used concept mapping to explore multilevel resilience resources among African American/Black adults living with HIV in the southern U.S. The study identified 12 clusters of resilience resources, ranging from personal strengths to neighborhood conditions, and found high consistency across different demographic and environmental contexts. Published in 2020, the study underscores the importance of culturally and contextually informed interventions, with the potential to guide future HIV care strategies that center the lived experiences and strengths of Black communities.[30]

Housing, Homeownership, and Health: Dulin's Study

In a compelling examination of long-standing structural inequalities, Dr. Dulin's work explored how Black homeownership relates to self-rated health, offering nuanced evidence of disparities in the benefits associated with housing investment across racial groups. Specifically, findings revealed that although homeownership generally conferred better self-rated health, this advantage was smaller, but still significant, for Black homeowners compared to their White counterparts.[31]

GRANT-FUNDED EXCELLENCE

CHPHE faculty have brought in over $10 million in competitive Centers for Disease Control and Prevention funding, and Foundations such as the Robert Wood Johnson Foundation among others, and in the past three years, reflecting both scientific excellence and deep community partnerships.

CONTINUING IMPACT: PROGRAMS THAT LAST

CHPHE's long-standing programs remain active and impactful. Other early programs such as SisterTalk, a culturally tailored weight-control intervention for Black women, continue to inform health-promotion strategies in diverse populations.[32]

LOOKING AHEAD: EQUITY AS A PUBLIC HEALTH IMPERATIVE

Now more than two decades since its founding and four decades since its roots in Pawtucket, CHPHE continues to grow as a dynamic and collaborative force, grounded in science, justice, and community. Whether through pioneering research on greenspace and health, deep partnerships addressing chronic disease and food insecurity, or empowering communities impacted by HIV, CHPHE's work remains at the forefront of efforts to build a healthier, more equitable future for all.

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The author has nothing to disclose.

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The Best Health for the Most People for the Least Cost

OMAR GALÁRRAGA, PhD

ABSTRACT

This article: (1) summarizes the accomplishments of the Center for Global Public Health (CGPH) at the Brown University School of Public Health, with a focus on the Center's work over the first decade following the School of Public Health's accreditation (2013–2023); and (2) provides a vision for the Center's future. Select research studies are highlighted throughout the article as examples of the Center's approaches to public health leadership and global partnerships.

KEYWORDS: Global health; low- and middle-income countries (LMICs); HIV; non-communicable diseases

INTRODUCTION

The Center for Global Public Health (CGPH) was founded in 1988 (then called the International Health Institute, IHI) to serve as a hub for Brown's international health initiatives, with a focus on strengthening faculty and student's global involvement. The goal was (and continues to be) to improve health in low- and middle-income countries (LMICs) through interdisciplinary research and training. The Center fosters research collaborations with institutions in the Global South, and provides supervised research opportunities for students at the undergraduate, master's, and doctoral level. The renaming to the Center for Global Public Health in 2025 signifies a broadened commitment to tackling complex global health issues through partnerships and innovation. The Center now integrates faculty, students, and staff from across the School of Public Health's four departments. Stephen McGarvey, PhD, was director of the Center from to 1999 to 2021, Mark Lurie, PhD, was director from 2021 to 2024, and the author has been the Center's director since 2024. This article showcases the scientific contributions by CGPH members over the past decade, illustrating how the Center works to achieve the best health, for the most people, for the least cost.

THE BEST HEALTH IN CONTEXT

Comprised of 18 faculty, the CGPH has led hundreds of studies testing epidemiological, behavioral, and socioeconomic interventions for and with populations at greatest risk. CGPH directs collaborative research, including identifying influences on adiposity and cardiometabolic phenotypes among Pacific Islanders,[1] determining migration-related risk factors for HIV-1 infection in Sub-Saharan Africa,[2,3] understanding factors shaping the utilization of antenatal care in African women,[4] and quantifying impacts of national health financing programs for low-income households in Latin America.[5] This and other cutting-edge work is possible due to the unique, long-standing partnership between the Center and non-US institutions. CGPH faculty work with more than 17 research partners in 13 countries (e.g., Kenya, South Africa, Mexico, Samoa, Ghana, Ecuador), and has over $10 million in annual funding for global health-related research.

Understanding disease spread in context

CGPH strives to help move beyond solely the biology of diseases like HIV and TB, and show how factors like migration,[6] gender, and social networks influence disease transmission.[7] The research provides comprehensive analyses of why HIV-infection rates remain so high among key populations. Work by previous CGPH Director Mark Lurie, for example, examined the role of migration in the spread of two diseases nearly 100 years apart: tuberculosis following the discovery of gold in 1886 and HIV in the early 1990s.[6] Both cases found poor living and working conditions led to highly efficient transmission "hot-spots" of these diseases in South Africa when male migrant workers returned back to their rural homes. Other research by Dr. Lurie and CGPH faculty describes the syndemic effects of HIV, high fertility, gender inequality, and poor mental health contributing to sustained, high HIV-incidence among young women in Southern Africa, even as other groups' experience declined.[7] It argues that interventions must address these larger issues to be effective; focusing solely on individual choices and behaviors is not enough to achieve health gains at the population level.

Tailored interventions

CGPH improves public health strategies through better-targeted health interventions in LMICs, especially in regions like Sub-Saharan Africa, where social and cultural factors play a critical role in infectious disease dynamics. CGPH studies focus on groups facing the highest health risks and least access to care, including migrants, youth,[8] and sex workers.[9] The Center's research emphasizes health

programs and health interventions that cater to these groups. CGPH faculty apply rigorous methods and evidence-based frameworks to ensure interventions for these groups are population- and context-specific. Such approaches have applied the Assessment, Decision, Administration, Production, Topical Experts–Integration, Training, and Testing (ADAPT-ITT) framework to adapt and integrate entrepreneurship curriculum with a reproductive health-education platform to improve economic opportunity and reproductive health outcomes for indigenous adolescents in Ecuador,[10] and human-centered design processes to develop and tailor mobile mental-health tools to deliver evidence-based depression treatment in primary care in India.[11] Developing tailored and person-centered interventions enables evaluation not only of their effectiveness, but also their longer-term sustainability within the populations they are meant to serve. The work has directly informed public health programs aimed at reducing the impact of infectious and non-infectious disease at the national level, in Sub-Saharan Africa, Latin America and elsewhere.

Strengthening public health through medical expertise

The Center integrates clinical and medical expertise with public health practice; over a quarter of CGPH faculty are certified medical practitioners, with training in emergency medicine, surgery, clinical psychology, clinical psychiatry, and dentistry. Medically-trained faculty in the Center apply a population-level perspective to ensure public health strategies address individual care needs and simultaneously promote the greatest good for the most people. Examples of this work include partnering with the World Health Organization (WHO) to develop, implement, and evaluate technology-mediated education programs for dental workforce training,[12] and testing mobile phone-based surveillance systems in Ethiopia to assess community focal points to monitor cases of unaccompanied and separated children during humanitarian crises.[13] By integrating the two disciplines—public health and clinical care—the Center transforms clinical insights into scalable solutions that have a population-level reach.

FOR THE MOST PEOPLE

Another key area for CGPH is the use of mixed-methods to evaluate on-the-ground effectiveness of interventions to guide implementation, dissemination and scale-up. The Center has a large focus on implementation science and culturally-tailored interventions, aiming to reduce health disparities while serving sexual and racial/ethnic minorities in partner communities.

Implementation science

Uncovering genetic and epidemiological patterns is just the first step. It is important to move forward to implementation studies.[14] CGHP faculty and students implement culturally-adapted interventions to assess whether nurses and community health workers, for example, can help low-income individuals in high-prevalence countries better manage their diabetes.[15] Such differentiated-care models do not rely on doctors or expensive specialists; instead, they use community-trained workers and culturally-appropriate materials, making it more accessible and practical in resource-limited settings. That means resources can be made available where they are most needed and most effective. Many CGPH faculty are implementation science experts, and use implementation science frameworks and theory to guide each step of their research.

The same rationale underpins task-shifting approaches (i.e., rational redistribution of tasks among workforce teams) for improving access to care for HIV and comorbidities. For instance, as people with HIV are living longer due to wider access to antiretroviral therapy in Sub-Saharan Africa and elsewhere, they are now affected by cardiovascular, metabolic, and other non-communicable diseases. CGPH research shows that coinfection of HIV and hypertension will continue to increase in South Africa and Kenya for the next several years,[16] that integrated care for HIV and cardiovascular disease is effective,[17] and that the budget impact of integrated HIV/cardiovascular disease care is modest.[18]

Cultural context matters

CGPH researchers apply theory-based models, usually developed from Western research, to different LMIC contexts.[19] Although some parts of these models may hold true across regions, cultural factors like family-oriented values and an emphasis on social conformity may shape the impacts of reduced health and how people cope with it. CGPH faculty have expertise in systematically adapting theory-informed interventions so that they have the greatest impact for target populations, including adapting trauma-informed mental health interventions for youth affected by armed conflict in Colombia,[20] or programs focusing on entrepreneurial skills and sexuality education for indigenous youth in Ecuador.[21] This work highlights the importance of adapting social science theories and interventions to fit the specific cultural context of a community.

Need to address stigma and discrimination

Using qualitative approaches, CGPH research offers new models for understanding how stigma and discrimination are experienced and how they impact the psychological and behavioral health diverse populations.[22,23] By identifying key themes like family-prioritization and the use of concealment as a coping strategy, the research provides a solid example for how to create culturally-relevant interventions to improve health outcomes for specific communities.

FOR THE LEAST COST

Another important area of CGPH in the last decade has been the combination of microsimulation modeling[24] with economic evaluation to demonstrate how effective

interventions can also be cost-effective or even cost-saving in the long run. This workstream is guided by the goal of policy relevance. For example, in Mexico, after showing via a randomized controlled trial (RCT) that male sex workers exhibit a high incidence of HIV acquisition (5.2 per 100 person-years),[25] CGPH research showed that incentive-based interventions were not only effective for increasing PrEP adherence among male sex workers at high HIV risk,[9] but were also cost-effective for the national health system[26] in the short-term when compared to Mexico's willingness to pay for HIV-prevention services.

Health systems with limited resources are having to address the growing burden of non-communicable diseases among persons living with HIV in the Global South. To inform feasible approaches, the Center has led intensive modeling exercises to estimate the longer-term cost and budget impact of integrating and scaling up chronic disease management services within HIV-care programs, like those in Kenya, for both cardiovascular diseases[27] and mental health disorders.[28] Findings from this work suggest, scaling layered CVD services could offer 12% cost savings to county healthcare budgets, while reaching WHO Mental Health Action Plan targets would require 3% more of current health budgets.

To achieve long-term health gains in low-resource settings, interventions must be sustainable and, ideally, self-financing. CGPH research in Bangladesh has shown that access to microcredit can increase formal healthcare utilization and reduce catastrophic health expenditures.[29] Similarly, microfinance groups, where members save and lend their own money, can serve as a platform for chronic disease care delivery; our faculty have rigorously tested this approach via a cluster RCT and found group-level microfinance to be effective for improving viral suppression and retention in care among persons with HIV in rural Kenya.[30-32]

THE FUTURE

The past decade of CGPH has helped shape our understanding of how metabolic, infectious, and non-communicable diseases affect diverse populations, and how public health researchers and clinicians can help mitigate these effects on a national[33,34] and global scale.[35] Looking forward, the Center will continue to focus on the health and socioeconomic needs of the most health-disadvantaged populations in the Global South, strengthening its existing partnerships and creating new ones. The Center will expand its interdisciplinary programs for training both faculty and the next generation of early-career scientists. Key focus areas will include: (1) using implementation science to increase access to both oral and injectable long-acting pre-exposure prophylaxis (PrEP) for HIV prevention, (2) quantifying the health and economic impact(s) of integrating NCD services for aging populations living with HIV in settings outside East Africa, and (3) using modeling and quasi-experimental methods to evaluate impacts of changes in national health policies and foreign aid spending. With this agenda, the Center will respond to the latest research priorities,[36-38] increasing its impact through a focus on health equity in the Global South.[39]

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Partner-Engaged Pragmatic Research in Aging Care: Case Studies from the Long-Term Care Quality & Innovation Lab

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ABSTRACT

Since 2015, the Long-Term Care Quality & Innovation (Q&I) Lab at the Brown University School of Public Health has advanced pragmatic, partner-engaged research to improve care for older adults and chronically ill individuals receiving post-acute and long-term care. Rather than evaluating interventions under controlled conditions, Q&I researchers conduct embedded studies in real-world care settings, working with clinicians and frontline staff to implement interventions and assess their effectiveness and feasibility in routine practice. In parallel, researchers also collaborate with health systems and public agencies to generate practice-relevant evidence on operational priorities, positioning the lab as a translational research platform. This article presents two nursing home case studies: a pragmatic trial of a personalized music intervention for residents living with dementia and a portfolio of COVID-19-related partnered research. Together, these examples demonstrate how embedded, partner-engaged approaches generate actionable evidence, inform practice and policy, and position Rhode Island health system partners as contributors to evidence generation at scale in aging care.

KEYWORDS: Pragmatic research; embedded research; partner engagement; long-term care; nursing homes; translational research

EMBEDDED PRAGMATIC RESEARCH AS A PARTNERSHIP MODEL

The Long-Term Care Quality & Innovation (Q&I) Lab was founded in 2015 at the Brown University School of Public Health to generate evidence for strategies that improve care for older adults and chronically ill persons, with particular emphasis on those receiving post-acute and long-term care. Rather than testing interventions under tightly-controlled conditions, Q&I advances pragmatic, partner-engaged research in real-world care environments, working alongside health system leaders, clinicians, and frontline staff to identify research needs and design studies.

In some of Q&I's studies, such as pragmatic trials, this involves testing interventions embedded within routine clinical workflows and delivered by provider staff rather than researchers. In other work, the research itself is embedded: investigators collaborate closely with health systems to examine organizational priorities, generate evidence to inform decision-making, and guide practice improvement. Over time, these approaches have enabled Q&I to serve as a translational platform that combines partnership infrastructure, data resources, and applied research methods to support rapid-cycle feasibility and pilot studies, as well as multi-site effectiveness research.

Partnership is central to the success of this model; health system collaborators may be responsible for day-to-day implementation of research protocols and also play critical roles in identifying priorities, co-designing studies, facilitating access to care settings and data, and interpreting findings in light of operational realities. This helps ensure that research agendas align with frontline clinical needs, resulting in research that is useful and used, and that study procedures are feasible within real-world constraints.

Embedded pragmatic clinical trials (ePCTs) are one of Q&I's core strengths within this broader model of partner-engaged pragmatic research. ePCTs are effectiveness studies that differ from traditional randomized controlled trials (RCTs) in both design and purpose; interventions are delivered by clinical staff rather than research personnel, and outcomes are ascertained, when possible, using existing clinical and administrative data.[1] Implementing interventions through the same operational processes health systems routinely use to introduce change generates evidence that is immediately relevant and may increase the likelihood that effective approaches can be scaled.

This article examines two case studies that illustrate Q&I's model in practice: an ePCT trial evaluating a personalized music intervention for nursing home residents living with dementia, and a portfolio of COVID-19-related research. Together, these examples demonstrate how embedded, partner-engaged approaches shape study design, support implementation, and accelerate translation of evidence into practice. They further illustrate how early collaboration with regional providers can inform national research and infrastructure, positioning Rhode Island health system partners as contributors to evidence generation at scale in aging care.

CASE STUDY 1

A Trial of Personalized Music in Nursing Homes

An early illustration of Q&I's embedded pragmatic model emerged from national efforts to reduce antipsychotic medication use among nursing home residents living with dementia.[2] Although black box warnings caution against the use of antipsychotics to manage behavioral and psychological symptoms of dementia, these medications are sometimes used off-label to address agitation and aggression that affect residents' quality of life and can complicate caregiving.[3] A lack of feasible, evidence-based, non-pharmacologic alternatives complicates efforts to reduce antipsychotic use.

Awareness of personalized music as a potential intervention was heightened by the 2014 documentary *Alive Inside*, which illustrated music's capacity to calm and engage individuals living with dementia.[4] The film highlighted Music & Memory, a popular program involving the use of individualized playlists based on music preferences from young adulthood, typically between the ages of 16 and 26.[5] Recognizing both the promise of the intervention and the absence of rigorous effectiveness data, Q&I researchers first conducted exploratory analyses of outcomes among residents in participating nursing homes[6] and subsequently secured foundation funding to partner with a small group of nursing homes to prepare for real-world testing.

Participating facilities, including several in Rhode Island, collaborated with researchers to document how to identify residents, ascertain their music preferences, and manage the logistics of loading music devices with personalized music, and incorporating music into daily care (unpublished). These early partners played a central role in the research's early phase, helping to protocolize the program before the research scaled nationally for evaluation.

The resulting protocol became the foundation for the METRIcAL study, a five-year National Institute on Aging-funded ePCT evaluating the effectiveness of personalized music for nursing home residents living with dementia.[7,8] Because of pandemic-related disruption, the study ultimately consisted of two consecutive cluster RCTs conducted in 2019–2020[9,10] and 2021–2022,[11] respectively, in 81 nursing homes operated by four multi-state corporations. Consistent with pragmatic trial design, frontline staff, rather than researchers, delivered the intervention within usual care processes. Facilities received structured training and implementation guidance while retaining flexibility to adapt delivery to local workflows.

The research team simultaneously evaluated clinical outcomes and real-world feasibility, and implementation insights from the first RCT-informed adaptations in the second RCT, particularly as competing operational pressures intensified during the pandemic.[11] To reduce staff burden and improve fidelity, responsibility for identifying music preferences and creating playlists shifted from facility staff to the research team, illustrating how ePCTs evolve in response to contextual realities.

Findings from the first RCT demonstrated measurable effects among residents exposed to the intervention. In analyses using the Agitated Behavior Mapping Instrument, residents in intervention facilities were more likely to have no verbally agitated behaviors observed relative to residents receiving usual care.[10] They were also more likely to be observed experiencing pleasure during observation periods, suggesting an effect on affective state even when broader agitation measures did not change. By contrast, analyses relying on staff-reported or administrative measures of agitation did not demonstrate statistically significant differences.[9]

Equally important were insights generated through mixed-methods implementation evaluation.[11,12] Participating facilities identified key facilitators, including leadership engagement, family involvement in playlist development, and integration of music into care planning. They also surfaced barriers ranging from staff-time constraints and competing clinical demands, to challenges maintaining and managing music devices. These findings not only informed protocol refinements between METRIcAL's two RCTs but also subsequent Q&I studies focused on using technology-enabled approaches to help staff tailor and time non-pharmacologic dementia interventions.

This case illustrates defining features of Q&I's approach: interventions originating from frontline clinical priorities; development conducted in partnership with health system partners; and pragmatic methods designed to test effectiveness under real-world conditions while simultaneously assessing implementation barriers and facilitators.

CASE STUDY 2

Partnered Research During the COVID-19 Pandemic

While METRIcAL demonstrates how partner-engaged pragmatic methods can support evaluation of a discrete intervention in real-world care settings, this second case study highlights how sustained partnership enables research to pivot when contextual conditions shift. When the COVID-19 pandemic emerged, nursing homes were among the earliest and most severely affected healthcare settings,[13] yet little empirical evidence existed to guide operational, workforce, or policy responses. Long-standing collaborative relationships with nursing homes across the U.S. positioned Q&I researchers to rapidly align projects with urgent frontline priorities while generating practice-relevant evidence during a period of unprecedented system strain.

Within three months of the first reported U.S. nursing home COVID-19 outbreak, a Q&I research team launched a national survey to characterize frontline staff experiences. Findings, initially disseminated through issue briefs[14-16] and subsequently in the peer-reviewed literature,[17] provided

some of the earliest insight into the pandemic's impact on nursing home operations and workforce, including staffing shortages, psychological distress, and rapidly evolving infection-control demands. These findings informed national understanding of conditions on the ground in nursing homes, while also shaping Q&I researchers' subsequent research agenda and partnership strategy.

Early translational work emerging from these findings included collaboration with a state public health agency to design and pilot an infection-control coaching intervention tailored to nursing home operational realities.[18] The program was later disseminated nationally by a provider association and incorporated into the Centers for Disease Control and Prevention's Project FirstLine training,[19] illustrating how rapid, partner-engaged research could inform workforce development and infection-prevention practice.

Q&I researchers simultaneously leveraged existing partnerships to establish data-sharing collaborations capable of rapidly generating insight. Working with clinical leaders from a large, multi-state nursing home corporation—including facilities in Rhode Island—the team obtained electronic health record data in near real-time and examined COVID-19 infections,[20,21] transmission patterns,[22] testing,[23] vaccination,[24,25] and more. Early analyses demonstrated, for example, that outbreak risk was associated with facility size and surrounding community prevalence, not quality ratings.[20] Findings informed clinical decision-making, operational adaptations, and federal and state policy discussions during a period when facility-level data were limited.

This collaboration expanded to include 12 large, multi-state nursing home corporations participating in a data-sharing partnership. That partnership, in turn, laid the foundation for the Long-Term Care Data Cooperative, a national initiative launched in 2023 that aggregates electronic health record data from enrolled facilities, and links them with administrative and claims data to support benchmarking, effectiveness research, and public health surveillance.[26] This progression demonstrates how sustained partner engagement can extend beyond individual projects to establish shared research infrastructure capable of supporting ongoing learning.

Collectively, this pandemic-era portfolio illustrates the adaptability of a partner-engaged embedded research platform under crisis conditions. Rather than focusing on single interventions, this work addressed workforce experience, infection prevention, organizational response, and data infrastructure simultaneously. Existing partnerships evolved and expanded to include co-production of research and analytic capacity, demonstrating how embedded research collaborations can generate rapid, policy-relevant evidence while strengthening the systems required to sustain inquiry beyond the immediate crisis.

FROM STUDIES TO SUSTAINED RESEARCH INFRASTRUCTURE

These nursing home case studies illustrate the evolution of Q&I's partner-engaged embedded research model. The METRIcAL trial demonstrated how co-designed pragmatic studies can evaluate targeted interventions under real-world conditions while generating implementation insight to support scalability. The COVID-19 portfolio, by contrast, illustrates how sustained partnership enables research to mobilize rapidly in response to emergent system needs, expanding from individual projects to coordinated bodies of work and shared data infrastructure.

Across both examples, partnership functions to ensure research relevance, feasibility, and translational impact. Health system partners help surface priorities, shape protocols, interpret findings, and identify pathways for dissemination. In turn, embedded research generates evidence that is immediately actionable within real-world contexts and constraints, while informing broader policy and practice discussions.

Rhode Island has played a distinctive role within this model. The state's interconnected health care, academic, and policy communities facilitate collaboration and early testing, allowing interventions and research approaches to be piloted and refined before scaling nationally. In this way, the state functions as a local laboratory for innovation and contributes to national evidence and impact.

As the population continues to age and the health care system faces increasing clinical, workforce, and financial complexity, demand is growing for research models capable of producing timely, practice-relevant evidence. Embedded pragmatic partnerships offer one such mechanism. By aligning scientific rigor with sustained collaboration and understanding of real-world considerations and constraints, these platforms can accelerate translation of evidence into practice while establishing the partnership, data, and analytic infrastructure necessary to support ongoing translational research.

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Nursing Home Administrator Perspectives on the Role of State Guidance and Assistance in COVID-19 Response: A Rhode Island Case Study

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ABSTRACT

OBJECTIVE: The COVID-19 pandemic significantly impacted nursing homes in the United States. The Departments of Health within each state played a substantial role in providing guidance, issuing regulations, and supplying resources to help organizations respond to this health emergency. This research characterizes nursing home administrator perspectives on the role of Rhode Island's state agencies during the COVID-19 pandemic.

DESIGN AND METHODS: This qualitative case study includes data from 19 repeated interviews with administrators of six nursing homes, conducted from July 2020-December 2021. In-depth, semi-structured interviews focused on their COVID-19 response, including infection control, vaccination, and interactions with state agencies, among other topics. Interview transcripts were qualitatively analyzed to determine overarching themes.

RESULTS: Three themes emerged from analysis of interview transcripts: 1. Nursing home administrators described the regulatory guidance and communications from Rhode Island's Department of Health, which shaped their COVID-19 response. 2. Administrators discussed the tangible resources and support, such as personal protective equipment and staffing support, they received from the state. 3. Administrators identified the strengths and challenges in collaborating with state agencies and noted areas for improvement.

CONCLUSIONS: Study findings have implications for how states help nursing homes respond during emergencies. While the vaccine has reduced the impact of COVID-19 on nursing home residents and staff, insights provided by administrators in this case study suggest best practices for improving future health emergency communications around guidance and regulations, and suggestions for necessary resources.

KEYWORDS: COVID-19; regulations; guidance; Rhode Island; skilled nursing facility

INTRODUCTION

Nursing homes (NHs), were particularly impacted by the SARS-CoV-2 virus, resulting in significant loss of life for residents and staff.[1] Research shows that during the COVID-19 pandemic, NHs experienced viral outbreaks, extensive staffing shortages, stringent infection-control protocols, and frequently changing regulatory guidelines.[2-9] Since the advent of the COVID-19 vaccine in December 2020 and the lifting of the health emergency in May 2023, the severity of COVID-19 on NH residents and staff has dropped significantly[10,11]; yet, COVID-19 outbreaks, staffing shortages, and financial repercussions in NHs persist.[12]

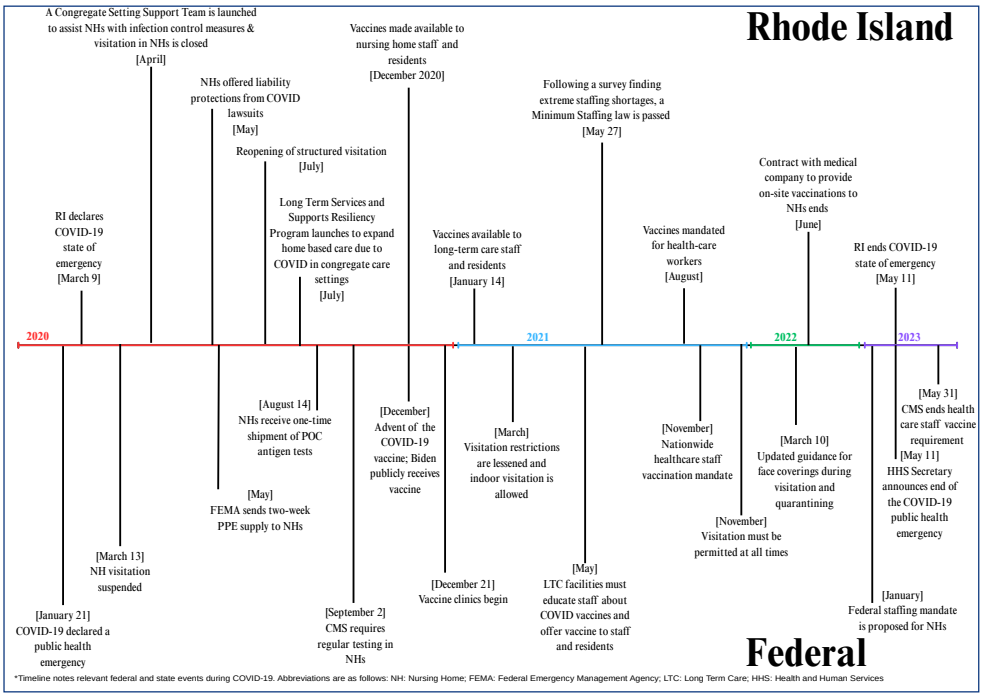
Throughout the pandemic, federal, state, and local agencies were responsible for the dissemination and enforcement of rapidly changing regulatory requirements, information, resources, and guidance for managing COVID-19 in NHs. In the United States (U.S.), states varied in their public health infrastructure, resources, support, and dissemination of information. Rhode Island (RI) currently has 76 NHs in operation, all of which were significantly impacted by COVID-19 [**Figure 1**]. In this article, RI presents as a case study for assessing the role of government in coordinating vital resources and disseminating information. Interviews with NH administrators provide context for how RI health officials communicated and implemented critically important regulatory and guidance information, tangible resources, and support during a major health emergency.

METHODS

This case study used data from the qualitative arm of a large mixed-methods study. Repeated, semi-structured interviews with NH administrators were conducted from July 2020–December 2021. Brown University Institutional Review Board approval was not needed because this study was determined not to be human subjects' research. This paper presents a subanalysis of the larger qualitative dataset and focuses on NH-administrator perspectives on COVID-19 in RI. Methods are outlined below with additional details published previously.[8,9,13]

NHs with varying bed count, percentage of Medicare-paid residents, quality ratings, and profit status were selected from eight diverse U.S. healthcare markets. Administrators of the selected NHs in RI were recruited via email and cold

Figure 1. Timeline of Relevant Federal and Rhode Island Events During the COVID-19 Pandemic



*Timeline notes relevant federal and state events during COVID-19. Abbreviations are as follows: NH: Nursing Home; FEMA: Federal Emergency Management Agency; LTC: Long Term Care; HHS: Health and Human Services

calls to participate in four interviews spaced three months apart. Participants received compensation. An interview guide was developed by the qualitative team in collaboration with content experts, which included questions on state and federal resources and guidance during the COVID-19 pandemic. Two qualitative researchers conducted each 30–60-minute interview by telephone or Zoom. Participant consent was obtained for permission to audiorecord. The recorded audio was professionally transcribed, de-identified, and checked for accuracy.

Interview transcripts were analyzed in a two-step process. First, using a modified grounded theory approach,[14] a coding scheme was developed based on interview questions and further edited throughout data collection and analysis. To ensure coding rigor, team members coded each transcript independently, then met weekly to reconcile line-by-line. A comprehensive audit trail[15] was kept throughout data collection and analysis to record team decisions, code definitions, and emerging themes. Coded data were entered into NVivo Version 12 Plus (QSR International). Second, relevant NVivo coding reports were compiled for each primary theme identified by the first round of analysis. Each primary theme was reanalyzed using thematic analysis.[16]

RESULTS

NH administrators from six RI facilities participated in at least one interview (n=19) between July 2020–July 2021. Facilities varied by CMS star-rating category, bed count, and profit status. Three themes emerged from our analysis of interview transcripts. Representative quotes for each theme are in **Tables 1, 2, and 3**.

First, RI's Department of Health (RIDOH) provided critical regulatory guidance around NH admissions, visitation, infection control, and vaccinations, which shaped COVID-19 responses. Administrators reported that admissions guidance and regulations specified whether or not NHs could admit residents with COVID-19, and imposed quarantining requirements. Similar guidance was issued for visitation, including the need for visitor screening, scheduling, and supervision. Participants noted that during COVID-19 outbreaks, the state required patients to be cohorted to reduce exposure. Lastly, administrators reported on early vaccine guidelines, and expressed a need for more education as well as the hope that vaccination would allow for visitation to re-open.

Second, in addition to developing regulations and guidance, RIDOH provided NHs with tangible resources. Such resources included the provision of personal protective equipment (PPE), which participants described as extremely valuable due to shortages. RIDOH also supported COVID-19 testing with staffing and lab contracting, and coordinated initial vaccine implementation by connecting local pharmacies with NHs for in-facility vaccine clinics. NH administrators described the financial support of stimulus funding and forgivable workforce stabilization loans, which were used to meet COVID-19-related costs. Lastly, administrators recognized the staffing support they received from the state, often from the National Guard, who helped prepare for and respond to infection-control surveys and administer COVID-19 tests.

Third, in discussing the resources and support provided by RI state agencies to NHs, administrators reflected on the strengths and challenges of working with these entities, and noted suggestions for improvement. The open lines of communication with RIDOH for questions and advice, access to a Quality Improvement Organization (QIO) that provided additional support, and state teams assigned during COVID-19 outbreaks, were identified as strengths of the RI state response. Administrators also noted that state guidance and regulations enabled them to redirect NH resident and family member frustrations and questions away from the NH staff towards an outside agency. Lastly, administrators expressed

that regular communication with and assistance from state regulators built new, more collaborative relationships. However, participants also reported on challenges, such as frequently changing guidelines from different government sources, inconsistencies between state and federal regulations, and the speed required to implement new regulations. Administrators stated that it was often a burden to implement regulations specific to NHs, and expressed the desire to contribute to policy development to ensure NH-specific resources, such as staffing, financial support, activities, and facility needs were included.

Table 1. Quotes Supporting Theme 1: The State Developed Regulations and Provided Guidance Regarding COVID-19 Response.

Sub-Theme	Quote & ID
Admissions: Infection control guidelines affect admissions and census	Obviously, when an outbreak happens, the Department of Health shuts us down to admissions. So, our census even prior to the outbreak, the biggest census we could have in the [name] building which is 120 beds would be 108 because on our rehab unit, we can only admit single people even to a semi-private room. We can only have one person in each room. Our census now in the [name] building is 77. (N2.3_2-21)
Visitation: DOH allows visits be scheduled, but at odds with what news is saying, families are frustrated	Visitation has been very difficult to explain to some because we are following the Department of Health guidance. The guidance says that visits can be scheduled. About 135 residents has been about our regular census. Just saying, "Come and visit any time", really doesn't make a lot of sense. That could be a lot of people visiting. So we have done schedules which is perfectly within the guidance of DOH. There were some news stories that were out there that said, nursing homes are going back to pre-COVID visiting. But that was the comment, so a lot of families have challenged us on that saying, "But we were told that it's pre-COVID visiting." And we're like, "Well, but that's not how the guidance is written." …The Department of Health has been in several times to visit our visitation policy because there have been complaints filed and they have never found us to be deficient. (N2.4_5-21)
Cohorting: State cohorting requirements increased exposure, "sheer, utter incompetence"	We would have someone in a room with somebody else and one of the residents in the room would test positive for COVID. And we knew damn well that their roommate was going to test positive the next time we tested three or four days later. The state made us take that roommate who tested negative, and transfer them to someone else who was not exposed to COVID, who also tested negative. So, I don't need to tell you what happens when you do that. So, if the Department of Health had changed that policy and basically said, "Well, even though the person tested negative, they've been exposed. Don't move them," quite honestly, the death toll in nursing homes would have been a hell of a lot less, not the thousand people that died. The Department of Health screwed up big time. Sheer, utter incompetence, in my opinion. (N5.4_7-21)
Vaccination: There needs to be education about guidelines and vaccines	It's just my concern is everybody thinks, "I'm going to get a vaccine and life's going to reopen back to normal." And there needs to be more education on the longevity that's going to happen before. This is just one step in a process. (N4.3_1-21)

Table 2. Quotes Supporting Theme 2: Tangible Support and Resources the State Provided to NHs

Sub-Theme	Quote & ID
PPE: Providing PPE, helps reduce re-using PPE	I have had to utilize the state reserves three times and that was fairly easy turnaround. There were a couple times they just sent stuff…. Because initially when we were wearing, having to re-wear stuff, use our masks for three days in a row. And then when it was like, "it's not an issue, we have the equipment, if you need the equipment it's here for you." Thank you State of Rhode Island. (N4.2_10-20)
Testing: State is reimbursing for costs of testing	I know the state has set aside some money to pay for testing, that's where we do our bulk of it. So we get some reimbursement for it. (N1.2_10-20)
Vaccination: State coordinated initial vaccine implementation	Vaccinations are going great. The state has put a good plan in place where we now we can get our new residents vaccinated quicker, where then we had two or three clinics set up and that was it. Now they've contracted with other partners to get us the vaccine, so we have another clinic next week and they will vaccinate residents that are new and any staff that want to get vaccinated. (N3.4_4-21)
Financial support: Forgivable workforce stabilization loan used to increase staff wages	So a couple of things that the state did which were helpful, is they did this workforce stabilization loan, it's a forgivable loan, provided the funds are spent on direct-care staff. So I know we applied for it. And I believe most every nursing home and assisted living in the state did. So we were able to give our employees an additional bump by using these funds. (N5.1_10-20)
Staffing: National Guard handles weekly testing	We have the National Guard, this will be, I think, week six. We have, the National Guard comes here every Thursday 1:00 to 4:00, and they test all our staff. And when I say all our staff, they test all our staff. Every person comes in whether it's their day off, they're off-shift. They have been absolutely amazing and vigilant in this process. If they can't make it in that day, we have certain other times either the day before or the day after that we'll make arrangements for them, as long as they reach out to us, and we have had 100% compliance every week. (N2.1_7-20)

Table 3. Quotes Supporting Theme 3: Strengths and Challenges of Guidance and Resources Provided by the State

Sub-Theme	Quote & ID
Strengths: Team assigned during outbreak, collaboration	When we had our first identified case, you get assigned a team. We email them regularly with questions, and they are very responsive, always helping us out. It's nice to have that relationship, the collaborative, which is not necessarily something that's always been the case with state surveyors… But both of us have collaborated. I feel the nursing homes and the Department of Health have been good resources for each other. (N2.2_10-20)
Strengths: Surveyors more collaborative	They [surveyors] do regular communications with us on a weekly basis now... They've been accessible, so if we have questions it's easy to reach out and to talk to them. They've been in all of our buildings doing infection control surveys. They've hit every home in the state, which was a requirement that most of us have found that when they've come, the surveyors that have come out have been very helpful. (N3.1_7-20)
Challenges: Guidelines change frequently requiring constant review	I have an inspection control COVID policy book, that's a huge binder. A lot of those policies come from the Department of Health, CMS Department of Health…We have a consultant company that comes in and assists us in our policies and practices…And they change frequently, especially screening forms when staff come in the building… We get a new policy, we go over it in the morning meeting... because it's been so confusing implementing… I'm still learning with the ever changing policies with the Department of Health. (N1rep.1_4-21)
Challenges: State's regulations might be too strict	They don't always match up. The state has some more stringent rules than the CDC does… It seems to me it would have been the other way around. Don't get me wrong. [governor] has done a good job so, you know, [laugh], dealing with this crisis but, you know, it's just some of it and maybe because she did do overkill. (N4.2_10-20)
Challenges: Disconnect between policymakers and NH realities	My frustration is with government…. you've got people making rules and regulations and passing legislation that are not in the trenches, don't understand the realities of the way our facilities function. They try. But without physically doing it you just don't get it. So they're coming up with things that, you know, sometimes it's pounding a square into a circle. You just have to get a bigger hammer. (laughs) (N5.4_7-21)
Thoughts on future, need financial support	I think we all know we can't go back to business as usual, but that was all being talked about before COVID, how do we survive, how does long-term care survive, what do we become? ... What we need, like you said, is the support though, and so that has to come in the way of some kind of financial support. (N3.4_4-21)

DISCUSSION

This qualitative study reflects NH-administrator perspectives on how RI state agencies communicated and implemented COVID-19 regulations and guidelines. Early in the pandemic, guidelines focused on COVID-19 positive admissions requirements, and infection-control measures around visitation, screening, testing, and viral outbreak management. To assist with implementing guidelines, the state supported NHs with PPE, COVID-19 testing and support, additional staffing via the National Guard, financial loans, stimulus funding, and a coordinated vaccine rollout. Although NH administrators noted many strengths to RI's approach to managing resources and communications during the pandemic, they also reported on the challenges they experienced and offered suggestions for improvement. Findings from this study highlight several key takeaways.

First, as NH administrators in this study reported, RIDOH and QIO provided critically needed support, information and guidance, and became increasingly collaborative over the course of the pandemic. However, the speed with which regulations and guidance changed, along with inconsistencies between state and federal regulations, were a source of frustration and confusion. In preparation for a future health emergency requiring critically important coordination of information and resources, policymakers should consider centralizing communication pathways to reduce duplicative or contradictory directives.[13]

Second, as reported in this study, federal and state guidelines and regulations were frequently implemented with little advance notice for NH administrators to effectively and efficiently train staff.[17,18] Additionally, state governmental entities frequently transferred the responsibility of enforcement onto NHs, rather than as a unified public health directive. For example, the COVID-19 vaccine was initially well received by NHs and the public alike as a lifesaving tool to reduce impacts of the virus on NHs, and as the first step towards NHs returning to normal operations. Despite its efficacy in reducing morbidity and mortality of COVID-19,[19] vaccine acceptance has waned in part due to inconsistent enforcement by government bodies. As the long-term care industry works with policymakers to create protocols for future emergencies, addressing inconsistent messaging around public health measures is critically important.

Lastly, given the frequency of changing regulations and guidelines around COVID-19 infection-control measures prior to the vaccine, and the reported disconnect on the part of policymakers with NH experiences,[20] administrators in this study indicated that their expertise could contribute towards policy development, improving federal and state understanding of needed resources, staffing, and financial support.

Although our findings may not be generalizable to all RI NHs and reflect administrator perspectives from July 2020–December 2021, they align with a recent report and call to action from the Office of the Inspector General.[12] As recommended in the report and reflected in our findings, effective communication, guidance, and assistance from state

and federal entities during a public health emergency was critically important to the long-term care industry. Policymakers and industry experts should consider collaborating with NH administrators as they design and improve NH policies and protocols.

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Greening in Rhode Island and Project G-SPACE

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ABSTRACT

This article (1) summarizes historical and present greening initiatives across Rhode Island, and (2) illustrates how Project Greenspace, Sleep Patterns, Activity Space, and Environment (G-SPACE) benefits from and builds upon this public health work.

KEYWORDS: Children; greenspace; community greening; sleep; mental health; physical activity

HISTORY OF GREEN INITIATIVES IN RHODE ISLAND

Tree planting and tree equity

Besides enhancing a city's physical beauty, urban forests reduce air pollution, provide natural stormwater management, and offer habitats for birds and pollinators.[1] The American Forests' "Tree Equity Score Analyzer" (TESA) determines the percentages of canopy cover across neighborhoods, and can be used by community organizations to promote tree equity, defined as the right number of trees for all community members to experience the health, economic, social, and other benefits of trees. There are several organizations that have historically engaged in greening initiatives in Rhode Island (RI), particularly Providence and the surrounding urban areas. One such organization is the Providence Neighborhood Planting Program (PNPP), started in 1989 with three goals: to plant street trees across the city, train residents to maintain plantings through a stewardship program, and instill the importance and value of trees and urban forests.[2] Over 16,000 trees have been planted and maintained in Providence as a result of the PNPP.[2] Another organization involved with greening initiatives is GroundworkRI, whose Tree Equity Initiative started in 2023, aims to plant 2,000 trees in low-canopy communities of Central Falls, Cumberland, Lincoln, and Woonsocket (GroundworkRI).[3] This project continues the work of the previous Trees4US Pawtucket-Central Falls initiative, which planted 197 trees through the Pawtucket-Central Falls Health Equity Zone's Trees for Human Health grant.

Greening schoolyards

In addition to greening city streets, there have been several efforts to increase green spaces in schools. The Providence Green Schoolyard Initiative is a collaboration between the City of Providence and community partners to transform schoolyards into vibrant green spaces that promote children's health and development.[4] In 2022, Bailey Elementary School opened Providence's first green schoolyard.[5] Another initiative is the Children & Nature Network (CNN), a collaborative focused on partnering with cities, including Providence, to enhance green spaces and outdoor learning opportunities; with over $6 million invested from CNN, Providence has been able to develop a detailed action plan and implement green schoolyard renovations.[2]

PROJECT G-SPACE

How does Project G-SPACE relate?

Greening efforts by organizations like the PNPP and GroundworkRI have not only allowed for an increase in access to greenspaces by residents, but also enhanced the ability to research how greening efforts impact local communities. Project Greenspace, Sleep Patterns, Activity Space, and Environment (G-SPACE), from the Social Epidemiology (Epi) Lab out of Brown University's School of Public Health, is an ongoing study investigating how access to green space influences the sleep, mental health, and physical activity of elementary school children.[6] Notwithstanding physical health benefits, few prior studies have explicitly examined the relationships between greenspace, sleep, and mental health. Since 2021, the Lab has worked with children and their families in an attempt to fully disentangle underlying mechanisms accounting for the associations between these critical pillars of overall health and well-being. Ultimately, we hope that findings from Project G-SPACE will provide further evidence to support intervention programs promoting green space access among school-aged children in RI, such as the greening efforts of the organizations already discussed, and serving on the study's advisory board.

Advisory board

The Project G-SPACE advisory board, composed of members from four organizations focused on creating healthier and more equitable communities, has served as a gateway to connecting with our community. In addition to GroundworkRI, the Rhode Island Healthy Schools Coalition (RIHSC) sits on the board. The mission of the RIHSC lies in making schools

across the state healthier by advocating for policies that promote nutrition, physical activity, and mental and emotional wellness for children.[7] The City of Providence is also represented on the board,[8] in addition to Thrive Outside, an organization based in Bristol with a mission of ensuring every child has the opportunity to access nature.[9] The Project G-SPACE advisory board has provided invaluable guidance and strategic advice, and has assisted greatly with expanding our reach across Rhode Island and creating long-lasting community partnerships.

Community work

A key component to the success of Project G-SPACE lies with our community partnerships and their ability to spread awareness of this study to eligible families. The study team has had the privilege of collaborating with five public school districts and nine independent schools across RI, including schools in Bristol-Warren, Central Falls, Cranston, Johnston, Providence, and Newport. In total, public school districts have allowed Project G-SPACE to achieve a student reach of over 6,000, while independent schools have allowed for a student reach of over 3,500. Beyond the mission of G-SPACE, the Lab actively strives to give back to our school communities; one such example was a donation of protective sunglasses to several partnered elementary schools to watch the solar eclipse in April 2024.

In addition to schools, the Lab has been fortunate to collaborate with several other organizations across RI to inform the study protocol and recruitment strategy. The Lab maintains both a virtual and physical outreach presence in an attempt to reach and recruit families within the study demographic, tabling at local events throughout the year, such as farmer's markets, and running radio and social media advertisements. The Lab has also formed connections with both grassroots and institutional environmental health advocates in the state, including GroundworkRI and the Providence Parks Department. The partnership with GroundworkRI is a noteworthy example of the symbiotic relationships the Lab has forged with community organizations through this project; the executive director of GroundworkRI serves on the study's advisory board, offering feedback and recruitment support, while the Lab has provided data collection and analysis expertise to measure the efficacy of their tree-planting initiatives.

CONCLUSION

Importance of this work

Ideally, results from Project G-SPACE will add a health perspective to the important greenspace work already going on in Rhode Island communities, and justify the existence and expansion of these programs. Greenspace exposure is a significant environmental determinant of child morbidity and mortality.[10] Findings from a 2024 study of 2,103 children ages 2 to 5 years old report that increased greenspace exposure is associated with fewer early-childhood internalizing symptoms such as anxiety and depression.[11] However, limited research has been conducted in diverse cohorts of United States children in middle-to-late childhood living specifically in urban cities, a key gap addressed by Project G-SPACE. Childhood consists of important developmental windows where factors such as a lack of daily exposure to greenspace and insufficient sleep can have cumulative effects on learning, emotional health, and long-term wellbeing. In urban communities like Providence, understanding the role of greenspace in attenuating adverse health effects and promoting improved wellness strengthens efforts to address disparate health outcomes facing the city. Project G-SPACE is not only relevant to the community as a collective, but also has significant implications for families, schools, and citywide organizations that strive to mobilize evidence-based research to enhance children's quality of life and daily habits; through generating locally grounded data, the study can inform programming and tailored public-health initiatives that seek to ensure each child has access to safe and quality greenspace, bridging research with practice.

The Future

Project G-SPACE illustrates the strength of research-community partnerships to promote the health and wellbeing of Rhode Islanders. Preliminary findings suggest there are protective effects of greenspace exposure and physical activity on sleep quality and mental health of elementary school-aged children. Given the diverse population across the state, it is important to investigate these outcomes stratified by sociodemographic factors to uncover potential health disparities. Forthcoming longitudinal analyses will further elucidate these pathways to help identify mechanisms for equitable research and policy intervention. Existing greening initiatives such as tree planting and landscape design are likely to have indirectly impacted these results. To maximize greenspace resource allocation and related health benefits, future work should leverage strategic collaborations between researchers, community organizations, and other stakeholders to directly evaluate greening programs and initiatives.

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Addressing Chronic Steatotic Liver Disease through Community Partnerships, Integrated Behavioral Interventions, and Point-of-Care Diagnostics

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ABSTRACT

OBJECTIVE: To evaluate the feasibility of a community-based, point-of-care (POC) screening and intervention model for Metabolic and Alcohol-associated Liver Disease (MetALD) in an underserved Rhode Island population.

APPROACH: A partnership between the Brown University CADRE and Clínica Esperanza/Hope Clinic (CEHC) utilized electronic health record (EHR) screening followed by on-site FibroScan® imaging and a Motivational Interviewing (MI) lifestyle intervention.

RESULTS: Preliminary pilot data identified liver stiffness (fibrosis) in 21% of participants and steatosis in 57%. All identified patients were previously unaware of their condition.

CONCLUSIONS: Integrating POC diagnostics with culturally attuned behavioral interventions in a community-centric clinic can bypass traditional barriers to care and detect "silent" liver disease at treatable stages.

KEYWORDS: MetALD; metabolic and alcohol-associated liver disease; community-based participatory research; steatotic liver disease; vibration-controlled transient elastography; VCTE™; FibroScan®

INTRODUCTION

Steatotic liver disease (SLD) affects approximately 40% of North Americans,[1] with progression to advanced stages posing a major threat to individual lives and global public health.[2,3] Common, intersecting lifestyle risk factors include at-risk drinking and weight-related behaviors, both of which are preventable.[4] In the United States (U.S.), alcohol consumption is now the leading cause of liver transplantation and liver-related deaths, with mortality rates doubling from 1999 to 2022, with an 8.9% increase since 2018.[5] This trend is worsened by a growing global presence of metabolic syndrome, which acts synergistically with alcohol use to produce cirrhosis and hepatocellular carcinoma.[6,7] Community-based interventions targeting these modifiable behaviors could save the U.S. hundreds of billions of dollars annually and save tens of thousands of lives.[8,9]

In Rhode Island (RI), the impact of intersecting risks could be devastating.[10] Two-thirds of RI adults experience overweight or obesity,[11] and the obesity rate is expected to increase 47% by 2030.[12] One in 10 Rhode Islanders have a diabetes diagnosis, and one in four report a complete lack of any physical activity or exercise outside their regular job.[13] Post-COVID-19 economic hardships have further linked food insecurity to poorer diet quality and problematic alcohol use.[14,15] On average, 367 RI residents die annually from alcohol-related chronic conditions, two-thirds of which are attributed to alcohol-associated liver disease (ALD).[16] Alcohol use disorder (AUD) diagnoses were cited for the majority of the remaining deaths (30.5%), with the prevalence of undiagnosed liver disease unknown among them.[16–19] The number of RI women dying from these conditions rose by 34.2% in just five years,[16] aligning with national trends.[20] Fully alcohol-attributable deaths from chronic conditions peaked in 2020, underscoring the potential influence of limited care access.[16]

SLDs are classified by etiology and include metabolic dysfunction-associated steatotic liver disease (MASLD), alcohol-associated liver disease (ALD), and a recently added diagnosis of MASLD with excessive alcohol consumption, designated metabolic and alcohol-associated liver disease (MetALD).[21] Crucially, MetALD recognizes dual contributions of cardiometabolic factors and alcohol use.[21] Combined effects of metabolic and alcohol risk-pathways work synergistically to increase risk for steatosis (liver fat), fibrosis (liver scarring), and hepatocellular carcinoma (HCC) liver cancer.[22-24] Despite compounding risks,[25] the combination of alcohol and obesity-related pathways in MetALD is rarely studied or treated together.[26] Without intervention, the prevalence of modifiable lifestyle risk factors will continue to rise.[27] Deaths could double by 2040, with populations experiencing health disparities hit the hardest.[28,29] Importantly, silently progressing steatosis and/or fibrosis caused by MetALD often go unnoticed until later stages, yet would be preventable or treatable if addressed earlier.[30] Screening and intervention strategies that support earlier detection of risk factors and/or liver disease progression among populations experiencing disparities are sorely needed.[31]

RI disparities in liver health

Although liver-related mortality continues to rise across RI and nationally, the burden is not shared equally. Nationwide, acceleration in alcohol-associated liver deaths is

significantly worse for adults ages 25 to 44, females, and Hispanic communities, highlighting a crisis in early detection and linkage to care.[5,20] Similarly, the prevalence of obesity and chronic disease comorbidities is disproportionately high in people experiencing poverty, those without health insurance, and in Hispanic communities.[32] Where MetALD prevalence is ≈2.2–2.6% among U.S. adults overall,[26,33] it is ≈8.0–12.6% among Hispanic adults, a 4-to-6-fold disparity.[24] Likewise, liver cancer incidence and mortality disproportionately affect Hispanic communities in RI, and the rate for Hispanic females was higher (7.9) than the national rate (6.1).[34] According to assessments of community needs, residents living in Providence, Central Falls, and Pawtucket neighborhoods are more likely to die of preventable chronic diseases and lack of healthcare access due to elevated poverty, language barriers, and high rates of uninsurance.[35]

There is a critical, unmet need for integrated interventions that are culturally relevant and delivered through existing community healthcare systems to reduce disparities via early disease detection and connection to life-saving care.[36] Socially constructed systems of disadvantage contribute to disparities in income, resources, and insurance status, creating insurmountable barriers at each phase of liver-health care, from screening to diagnosis and treatment.[37] People who eventually die of preventable liver damage often have multiple missed opportunities for detection and intervention for alcohol- and weight-related risk factors.[4,38] Current care systems predominantly focus on disease management rather than targeted prevention, and people from populations most affected are often unaware of their diagnosis until advanced stages.[39] Improving early detection of steatosis and fibrosis at point-of-care (POC) settings offers a crucial response to this growing crisis, leveraging established health-disparity research frameworks and partnerships with RI community clinics serving at-risk populations.[40]

Brief behavioral interventions are effective for changing modifiable lifestyle risks, but they are not available to most who need them.[41] Access to preventative and early-intervention resources are especially lacking among RI communities experiencing poverty and disparities in fatal diseases and cancers.[34] Although compliance with behavior-change recommendations is a challenge for any chronic, fluctuating health problem, the stigma around alcohol-related health conditions and obesity is staggering.[42] Too often, individuals are blamed for health problems caused by modifiable behaviors, without acknowledgment of the vast evidence that socioeconomic health determinants intersect with personal risks to drive disparities in health outcomes.[43] Experts are calling for a multipronged approach to decrease the morbidity and mortality of chronic SLDs, including population-based screening in primary care settings to detect behavioral risk factors and liver damage at early stages.[44]

Early detection to save livers and lives

To dismantle logistical barriers, the clinical paradigm must shift from passive referral-based models to active POC efforts that extend and integrate the care continuum directly into the communities experiencing liver-related health disparities. **Table 1** provides a comparison of traditional, referral-based liver screening pathways that require patients to navigate a complex health-system structure versus an integrative, POC model that provides rapid results and mitigates risk of patients falling through the cracks of fragmented care systems. Traditional pathways often require separate appointments for lab work, imaging at specialty centers, and follow-up consultations. These are inadequate to support RI communities facing practical barriers to proper healthcare access. POC diagnostic testing, specifically vibration-controlled transient elastography (VCTE™) with FibroScan®, can offer a cost-effective solution to condense this timeline and save RI lives.

The Center for Addiction and Disease Risk Exacerbation (CADRE) leverages RI's status as an IDeA state to drive biomedical and clinical innovation. Funded by the National Institute of General Medical Sciences (NIGMS), CADRE is a Center of Biomedical Research Excellence (COBRE) that seeks to understand mechanisms through which alcohol and other drugs increase risk for and progression of chronic diseases. CADRE-supported research included the Pathways project, a specialty-care initiative based at the Rhode Island Hospital (RIH) Hepatology Clinic on Chapman Street in Providence, RI, designed to identify and treat

Table 1. Comparison of logistical barriers in a traditional liver health screening pathway versus a point-of-care (POC) diagnostic testing model.

	Traditional Referral Model	Point-of-Care (POC) Testing
Diagnostic Speed	**Weeks to months** (separate labs/imaging, appointments, locations)	**Minutes to hours** (same-day appointments and results)
Patient Burden	**High** (multiple commutes, time off work, need to secure childcare)	**Low** (single visit in familiar location)
Loss to Follow-up	**High** (attrition at every referral step)	**Minimal** (immediate linkage to first-stage intervention and resource access)
Primary Focus	**Specialist** (lacking care coordination)	**Community, Primary care** (patient navigators/ navegantes are advocates and liaison to providers)
Stigma Mitigation	**Weak** (depends on patient-initiated action & referrals to "other" care)	**Strong** (screening is a part of linguistically and culturally appropriate routine care)
Overall Goal	**Treatment, disease management**	**Early detection, disease prevention**

moderate-to-severe AUD as an underlying cause of ALD in patients with advanced disease. This study utilized ecological momentary assessment (EMA), implemented on a customized smartphone application, and blood-based biomarkers (eg, phosphatidylethanol [PEth], a direct alcohol metabolite), to bridge the gap between clinical visits and daily life. While Pathways demonstrated the efficacy of telehealth-delivered motivational interviewing (MI), it also highlighted a critical need. Most individuals at highest risk of chronic SLD from behavioral etiologies never reach specialty clinics until their disease is advanced. To bridge this gap, the CADRE mobilized a team science focus to implement a community-based, POC model by partnering with Clínica Esperanza/Hope Clinic (CEHC).

CEHC partnership

CEHC is a nonprofit, holistic care center founded in 2007 to provide high-quality, culturally attuned and linguistically appropriate healthcare to uninsured adults in RI. It serves as a vital medical home for those who have been marginalized by traditional healthcare systems. Clinic demographics match those identified in community-based needs assessments. Most (90%) are Spanish-speaking, and 80% are living below the federal poverty line with an annual income less than $20,000. Common chronic diseases among CEHC patients include hypertension (59%), diabetes (41%), and hyperlipidemia (22%). Since 2013, the clinic's visit and patient volume increased nearly four-fold, demonstrating an extraordinary and accelerating need for care. Total visits peaked at over 11,200 visits annually by 2025, serving 3,317 unique individuals and showing record-high engagement at 3.41 visits per patient, on average. Moreover, new patient acquisition has scaled nearly ten-fold since CEHC opened. Together, these dramatic increases signal that the community need is not only growing but that patients are increasingly relying on CEHC for consistent, high-frequency support. CEHC's strong community engagement provided the foundation for our partnership, which aimed to improve screening, reduce stigma, and offer no-cost diagnostic liver imaging with FibroScan®.

APPROACH

Conceptual framework

The Liver Health Study at CEHC was designed as an interdisciplinary collaboration leveraging expertise in hepatology, alcohol science, biomarker discovery, and weight management. This team initiative investigated the viability of screening for MetALD at the POC in a community clinic. The key premise was that providing personalized feedback from POC diagnostics can reduce biobehavioral risk factors and prevent the progression of liver damage to advanced disease. The project also established procedures to explore a non-invasive plasma biomarker panel that predicts steatosis and fibrosis, using FibroScan® as a reference standard. A scaffolded flow of screening, risk stratification, and preventative intervention is possible through combining chart reviews, behavioral screening, and POC diagnostic testing. Moreover, immediate access to proven behavioral interventions can be aligned with the cultural and readiness-to-change needs of the patients served. This pilot initiative was approved by the Brown University Institutional Review Board.

Screening and risk stratification

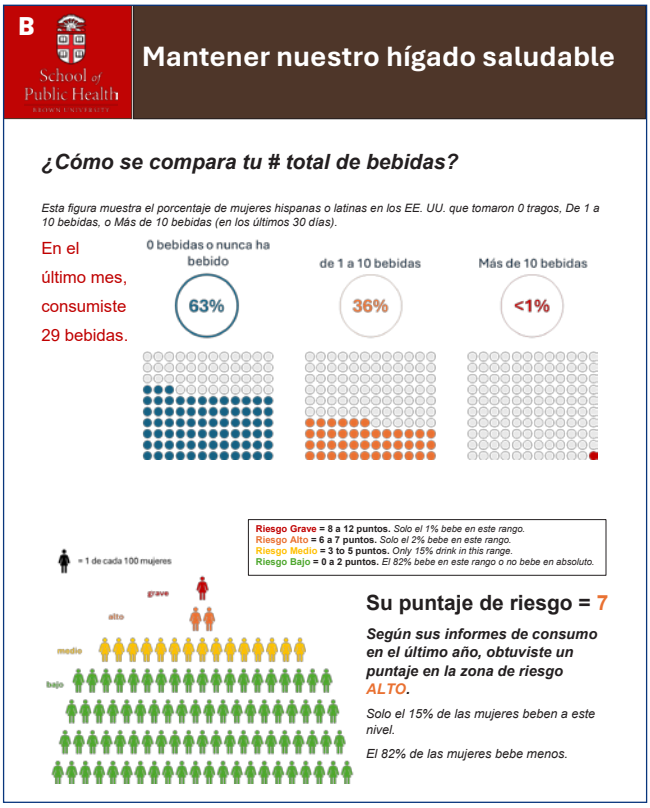
The Liver Health Study used an efficient two-stage screening process to target adults over the age of 21 with multiple health-risk factors. Review of electronic health records (EHRs) identified patients with body mass index (BMI) of 25+ and an Alcohol Use Disorder Identification Test—Consumption[45] (AUDIT-C) score of 3 for women and 4 for men, respectively.[46] Positive EHR results prompted POC behavioral screening with a semi-structured timeline followback interview to quantify recent alcohol intake[47] and diagnostic imaging using VCTE™ with FibroScan® to detect steatosis and fibrosis.[48] CADRE's ability to locally support other research teams aiming to use FibroScan® at POC offers a reproducible model for clinical partnerships throughout the state. Randomization procedures were piloted to allocate patients into either standard or enhanced brief MI lifestyle intervention. After BMI/AUDIT-C screening and Fibro Scan®-informed risk classification, the intervention was delivered by a bilingual and bicultural interventionist with doctoral-level training in clinical psychology and MI supervised by the primary researcher, an RI-licensed psychologist. The interventionist sought to ensure the nuances of cultural health beliefs and language were respected.

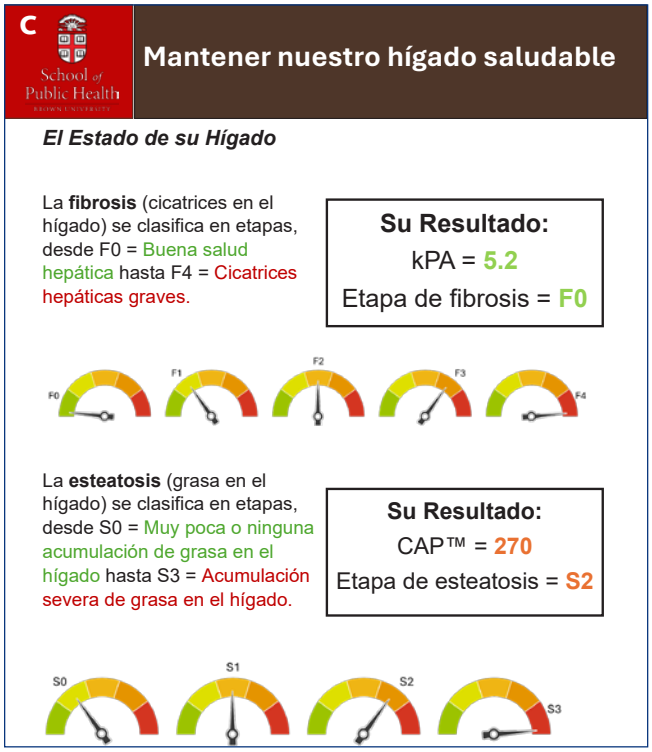
MI lifestyle intervention

The brief MI lifestyle intervention spanned one month, beginning with a 60-minute in-person session following baseline assessments, followed by two 10-minute telephonic check-ins, and concluding with a 30-minute in-person booster session after follow-up. The intervention applied MI principles and techniques to enhance patients' perceived importance of modifying lifestyle risks for MetALD, while fostering the confidence and autonomy necessary for change.[49] Adherence to the relational pillars of partnership and empathy was supported by a detailed manual with semi-scripted prompts, drawing on decades of established research.[50,51] Technical components, such as cultivating change talk and softening sustain talk, were strategically employed to guide patients in developing initial change plans that capitalized on personal facilitators while preemptively addressing barriers.

In the standard (control) condition, a clinical handout facilitated discussions by providing information on the progressive course of steatotic liver disease, as well as connections between liver health and alcohol consumption, dietary quality, and physical activity [**Figure 1**].[52] In the enhanced

Figure 1. Liver health information and personalized feedback report
[**A**] Information on lifestyle risks and the progressive course of steatotic liver disease and [**B**] personalized feedback with alcohol-consumption risk stratification, enhanced with fibrosis (kPA) and [**C**] steatosis (CAP™) scores and [**D**] liver health connections. All participants received information depicted in **A** and **D**; those randomized to the enhanced condition also received personalized feedback depicted in **B** and **C**.





(experimental) condition, the handout also provided personalized risk stratification based on self-reported drinking patterns, gender, ethnicity, and FibroScan® results. The interventionist used this report to highlight discrepancies between the patient's current lifestyle and their stated values or future goals.[53] Throughout the process, the interventionist remained attuned to the participant's fluctuating readiness to change, implementing specific strategies to facilitate the transition from building motivation to strengthening commitment and action planning. Importantly, study outcome assessors were masked to condition.

FibroScan® integration

For liver screening, the trained operator positions the probe in the intercostal space along the mid-axillary line lateral to the xiphoid and perpendicular to the abdominal skin surface, such that the probe can non-invasively and painlessly assess the center of the liver. The probe emits a shear wave through tissue to obtain the liver stiffness measurement (LSM) for fibrosis assessment and, simultaneously, an ultrasound wave to obtain the controlled attenuation parameter (CAP™) for steatosis assessment. The SmartExam Acquisition Interface screen simultaneously displays ultrasound quality control metrics, probe feedback, CAP™ acquisition progress, and the real-time shear wave propagation map.

Strategic integration of FibroScan® screening and MI lifestyle intervention hinged on the integration of Navegantes (ie, community health workers), a designated CEHC staff liaison to study staff, and collaboration between CEHC leadership and the Brown University investigative team. Navegantes facilitated communication, assisted with administrative tasks, and conducted community outreach. This reciprocal model ensured that the research was mutually beneficial through enhancing the clinic's capacity to serve its patients. The capstone of the CEHC and CADRE collaboration was the implementation of VCTE™ with FibroScan®. Traditionally, liver imaging includes logistical barriers that preclude inclusion of CEHC patients in no-cost liver-health screening and behavior-change support, including separate appointments and significant travel. By bringing the FibroScan® directly into the CEHC clinic and pairing it with immediate brief MI intervention and personalized feedback, the diagnostic timeline was condensed from months or weeks to hours or minutes. Moreover, intervention to promote multiple behavioral lifestyle changes was implemented in a familiar setting, with linkage to specialty AUD and hepatology care facilitated by project and clinic staff already familiar to patients. Diagnostic testing at the POC identified silently progressing fibrosis and steatosis in an at-risk population experiencing poverty and cultural and linguistic barriers to traditional liver-screening pathways. **Figure 1** provides an example of visual and numerical personalized feedback that helped patients understand their liver health risks, serving as a biologically-based anchor for encouraging behavior change. The personalized report and all study materials were provided in Spanish; for an English translation, see **Supplemental Material** (please email corresponding author for supplemental material).

Community integration and infrastructure

All participants regardless of condition underwent Fibro Scan®. Acquisition of the FibroScan® device and staff training and certification for its proper use were made possible by the CADRE Clinical Lab Core (CLC). The CLC is committed to advancing scientific discovery through technologies capable of producing objective, quantitative measures of disease progression or improvement in response to investigational interventions. The FibroScan® instrument exemplifies this capacity and has become increasingly relevant due to the growing burden of liver disease over the past decade. Interest in FibroScan® has been diverse among RI research teams. For example, studies have evaluated its potential role in routine clinical examinations and investigated how comorbidities such as heart failure may influence liver health. FibroScan® diagnostic results are concordant with those obtained from more costly and less accessible technologies. The CADRE CLC operates under a fee-for-service model; interested investigators can access a list of available services at https://cadre.sph.brown.edu/cores/clc. Investigators interested in scientific collaboration may contact the corresponding author.

Preliminary findings and clinical impact

There were over 300 EHRs reviewed, ultimately leading to enrollment of 14 patients in no-cost VCTE™ screening with FibroScan®. Of 58 initial screens completed, 43% were potentially eligible to participate. Of 17 in-person screenings, 14 patients met all participation criteria (82% eligibility rate). All 14 eligible patients enrolled in the study and received no-cost blood tests and FibroScan® screening (100% acceptability rate), and 13 engaged in an MI lifestyle intervention to address modifiable risk factors for MetALD (93% acceptability rate). Twelve participants completed all baseline and follow-up assessments (86% retention rate). Due to budget and timeline constraints, the protocol of the pilot trial did not include a repeated FibroScan®, though blood tests were repeated and there are proposals under review to conduct a full-scale randomized controlled trial.

Of relevance for the RI medical community, VCTE™ with FibroScan® identified three CEHC patients with LSM (kPA) scores indicating fibrosis—21% of study participants. When the study physician indicated that a participant had an abnormal blood or FibroScan® result, both results were sent by encrypted email to the clinic coordinator and lead clinic physician. For non-urgent results, the clinic added their results to their EHR to address at the next upcoming appointment. For urgent results, an appointment was made at CEHC as soon as possible with a referral to the RIH

Hepatology Clinic. The CAP™ score identified eight patients with liver-fat buildup—57% of study participants. Prior to participation, these patients were unaware of their disease and had not received liver-health screening or specialty services. Detailed empirical findings from this exemplary research partnership are forthcoming (Treloar Padovano et al, in preparation), and primary feasibility and acceptability outcomes are publicly registered at clinicaltrials.gov under record number NCT06924281.

DISCUSSION

Reciprocity in research and clinical benefit is paramount. The vital partnership between the Brown University CADRE and CEHC exemplifies a strategic model that bridges the gap between clinical research and community benefit. By integrating specialized liver-health resources into a trusted medical home, the collaboration addressed four critical needs: (1) reducing disparities by overcoming linguistic and logistical barriers to screening; (2) implementing personalized, POC alcohol and weight-related behavioral interventions; (3) mitigating the stigma associated with liver disease through culturally attuned motivational interviewing; and (4) providing no-cost diagnostic imaging to an at-risk, uninsured population.

CEHC's role was foundational to this success. The clinic facilitated seamless integration by embedding research objectives within existing workflows, facilitating patient outreach through Navegantes, and supporting administrative tasks, such as scheduling and follow-up. This synergy allowed for the immediate provision of personalized feedback from FibroScan® results, which served as a catalyst for behavior change. With just 14 scans, we identified three patients with fibrosis and eight with steatosis. The Liver Health Study's high hit rate underscores the immense need for targeted screening and preventative interventions for SLD among RI's Hispanic communities. Integrating screening and behavior-change support into the medical home, especially one as trusted as CEHC, allows the "silent" progression of MetALD to be interrupted and patient voices to be heard. Importantly, upon completion of the study, the corresponding author and interventionist disseminated results of the successful pilot trial to CEHC stakeholders, including Navegantes, leadership, and providers.

CONCLUSIONS

The partnership between the CADRE and CEHC represents a shift toward strategic health promotion by providing accessible screening, early detection, and chronic disease prevention. When a patient receives a FibroScan® result showing liver fat or stiffness, they see firsthand the body's reaction to their lifestyle behaviors. Congruently, by using POC diagnostic testing and culturally attuned behavioral interventions, clinicians can detect liver disease at stages where lifestyle change is a viable solution and then provide immediate support. To save the lives of Rhode Islanders most in need, multidisciplinary teams must continue to dismantle the logistical and societal barriers to chronic disease prevention.

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