BROWN Q&I
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Research during the COVID-19 pandemic: Identifying and addressing nursing center priorities

Ann Reddy, MPH, **Grace Wittenberg**, and **Rosa R. Baier**, MPH

This issue brief presents findings from a broad portfolio of research projects conducted by Brown's Center for Long-Term Care Quality & Innovation (Q&I) and Center for Gerontology & Healthcare Research (Gerontology).

When the pandemic began, Q&I and Gerontology researchers quickly mobilized to ask and answer important research questions.

Q&I was established at Brown with a gift from the American Health Care Association/National Center for Assisted Living (AHCA/NCAL), a trade association. Q&I maintains close collaborative relationships with AHCA/NCAL and post-acute and long-term care providers across the U.S.

Due to our existing relationships and expertise in the setting, we knew early in the pandemic that nursing centers would be disproportionately impacted by SARS-CoV-2. Our teams were able to be responsive to new and urgent research priorities thanks to our national data, expertise, and relationships with nursing center providers.

We have been at the forefront of efforts to understand the impact of COVID-19 and COVID-19 vaccination in this setting.

Key Findings:

- Throughout the pandemic, Q&I and Gerontology researchers have generated a broad portfolio of findings to inform nursing center practice and policy.
  - > Our findings demonstrated that the greatest risk of nursing center outbreak was community prevalence of COVID-19.
  - > One team presented nursing center vaccine safety data to CDC's Advisory Committee on Immunization Practices, among other CDC committees.
  - > The White House COVID-19 Task Force incorporated other results into suggested strategies to increase vaccine uptake.
  - > A Q&I-developed infection control peer coaching intervention is being adopted by nursing centers nationwide.
- Much of our COVID-19 research results from provider-researcher partnerships intended to accelerate pragmatic research of high-priority to providers.

Early Impacts of the Pandemic

In early 2020, our research centered on understanding the impact of the pandemic on nursing center residents.

A survey by Rosa Baier, Elizabeth White, and Terrie (Fox) Wetle found that, even a few months into the pandemic, staff were working under difficult conditions and with limited supplies of personal protective equipment (1). Staff expressed concern about the impact of both the virus and precautions on the residents under their care, people about whom they cared deeply. They also described changing and sometimes contradictory state and federal guidance, vilification by the public, and concerns about their safety and their families' safety.

> "Our staff are filling multiple roles while we fight this virus: they are caregivers, entertainers, spiritual companions, family members.
>
> "They really have been heroes."

Administrator survey participant (1)

A subsequent survey conducted by Ann Reddy and a Learning Health Systems Rehabilitation Research Network team found rapid shifts in how rehabilitation care was being provided in nursing centers, including shifting to the bedside or to telerehabilitation (2). Staff also described how quarantine, visitation restrictions, and other precautions affected residents' motivation and habilitation.

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COVID-19 Infection & Risk Factors

Beginning in summer 2020 and continuing to the present day, a research partnership with Genesis HealthCare – the largest nursing center corporation in the US – has generated a broad portfolio of findings to inform clinical practice, interventions, and policy. The Genesis HealthCare team, led by Vincent Mor and Elizabeth White, has examined everything from risk factors for outbreaks (3) to rates of asymptomatic infection (4), antibody prevalence (5), temperature trends (6), mortality (7,8) – and more.

This is an example of how Q&I partners with providers to catalyze and conduct research on provider priority topics.

Notably, this researcher-provider partnership resulted in findings that community prevalence of COVID-19 and facility size – *not* quality ratings – were related to the risk of an outbreak. This underscored the challenge nursing home leaders continue to face keeping the virus at bay, when staff are at high risk of being infected in the community and bringing the virus into the building when they come to work.

> "No [nursing center], no matter how excellent, can keep COVID-19 away if it's widespread in the areas where staff members live and work.
>
> "To protect our most vulnerable citizens, we have to protect everyone."

Vincent Mor and colleagues, in The Washington Post (9)

Some of the Genesis HealthCare findings were validated in Veterans Affairs community living center (CLC) data and used as the basis for CLC interventions. For example, a team led by James Rudolph and Stefan Gravenstein validated temperature trend results showing that nursing center residents didn't have fevers high enough to reach the Centers for Disease Control & Prevention (CDC) fever thresholds (10). This study found that nearly three-quarters of CLC residents with COVID-19 did not reach CDC thresholds at any time during their infection (10).

Realizing that high temperature would not be a useful early warning sign of infection in nursing home residents, James Rudolph, Stefan Gravenstein, and others began to track residents' temperatures and flag potential infections based on changes from baseline (11).

This is one example of how we use research findings to inform interventions.

Vaccine Immunogenicity, Safety & Effectiveness

When nursing center residents and staff were prioritized for COVID-19 vaccination in late 2020, our pandemic portfolio of research expanded to include the vaccines.

Analyses from a team led by Barbara Bardenheier showed COVID-19 vaccines are safe for nursing center residents: we found no association between vaccination and short-term mortality, low rates of hospital transfer, and low rates of adverse events (12). Dr. Bardenheier's team presented results to CDC's Advisory Committee on Immunization Practices. CDC also included these data in its first report to the national Committee on Vaccination Safety.

Throughout the pandemic, our results have informed policy in near real-time.

Currently, Elizabeth White, Stefan Gravenstein, and David Canaday (Case Western) are leading a CDC contract to examine vaccine immunogenicity among nursing center residents – that is, if and how immunity changes over time and in response to different variants and boosters. This work expands upon prior findings from Drs. Gravenstein and Canaday, which helped to inform CDC policy regarding the need for and timing of boosters (13,14).

Vaccine Hesitancy & Coverage

Knowing how important staff vaccination coverage levels are to protect residents, we led several efforts to understand staff vaccine hesitancy and strategies to increase coverage (15). Much of this work was funded by National Institute of Health supplemental awards to the IMPACT Collaboratory.

Jill Harrison and others captured qualitative data about staff vaccine hesitancy. Our findings indicate reasons for hesitancy include beliefs that the vaccine has been developed too fast and without sufficient testing, personal fears about pre-existing medical conditions, and a general distrust of the government (16).

A randomized, controlled trial, led by Vincent Mor and Sarah Berry (Harvard), evaluated whether or not nursing centers that implemented certain strategies (such as designating champions) achieve greater staff vaccination coverage compared to controls. Results are pending (in press).

Finally, a survey led by Rosa Baier, Sarah Berry (Harvard), and David Gifford (AHCA/NCAL) identified several strategies associated with higher staff vaccination coverage, including centers designating frontline staff champions, setting goals, and distributing T-shirts or other gifts (17). The White House COVID-19 Task Force incorporated findings into suggested strategies to increase staff vaccine uptake.

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impactcollaboratory.org

These results speak to the continued need to listen to and address staff concerns.

"To build vaccine confidence, nursing [center] leaders must listen with empathy, be respectful of people's experiences, answer questions truthfully, maintain transparency, and communicate clearly in order to build trust."

Elizabeth White and colleagues, Journal of the American Medical Directors Association (15)

Infection Prevention

Even with increasing vaccination coverage, nursing centers have an ongoing need to strengthen infection precautions. Working with the Connecticut Department of Health, a team led by Rosa Baier developed and piloted a peer coaching intervention, ICAN, designed to help facilities model a culture of mutual accountability for infection precautions. AHCA/NCAL and others are now adopting ICAN.

Interested in ICAN?
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Our diverse portfolio of COVID-related work speaks to our ability to identify and address research priorities quickly, fostered by our ongoing provider-researcher partnerships.

About the Brown Center for Long-Term Care Quality & Innovation (Q&I): At Q&I, we partner with healthcare providers to identify and test interventions using pragmatic methods. Understanding the real-world context under which providers operate is central to our approach. More: brown.edu/go/innovation