

Public Health Emergency Preparedness and Response: Non-Pharmaceutical Interventions to Reduce Transmission of Viral Respiratory Infections in Long-Term Care Communities

The analytic framework postulates the pathway through which non-pharmaceutical interventions (NPIs) prevent, slow, or stop the spread of viral respiratory infections in long-term care (LTC) communities.

NPIs are delivered to residents, visitors, or staff in LTC communities. NPIs can be delivered at the individual, community, or environmental level, or combination of different levels in a multipronged approach.

Individual-level NPIs could increase awareness about respiratory infections, infection control, and NPIs, leading to increased practice of individual-level NPIs.

Community-level NPIs could increase the practice of physical distancing and reduce access to the LTC communities. These NPIs could also increase testing, leading to increased detection of asymptomatic or pre-symptomatic individuals.

Environmental-level NPIs could improve air quality through better ventilation and improve cleaning and disinfection practices to reduce contamination in the LTC communities.

All NPIs could lead to reduced transmission of respiratory infections, resulting in reduced respiratory infections and reduced respiratory infection-related morbidity and mortality among LTC community residents, staff, and visitors.

Reduced access to the LTC communities and physical distancing could lead to changes in residents' socialization and impact their mental health.

Change in residents' mental health along with reduced respiratory infections and reduced infection-related morbidity and mortality may lead to changes in their quality of life.

Some key effect modifiers include setting (include inside or outside the U.S., rural vs. urban, type of LTC communities examined, and type of respiratory virus encountered), population characteristics (residents' age, gender, race, ethnicity, SES, underlying health conditions, and vaccination status), community characteristics (compliance with NPIs, size of community, room sharing, staff to resident ratio, and staff working multiple communities), and intervention characteristics (different number, type, or combination of NPIs).

Postulated potential harms associated with NPIs in LTC communities include staff burnout, turnover, and reduced mental health and lack of face-to-face interactions between residents and visitors.