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COVID-19 and the care homes of the future

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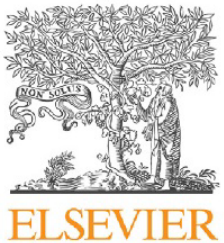

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Special Article

Nursing Home Design and COVID-19: Balancing Infection Control, Quality of Life, and Resilience

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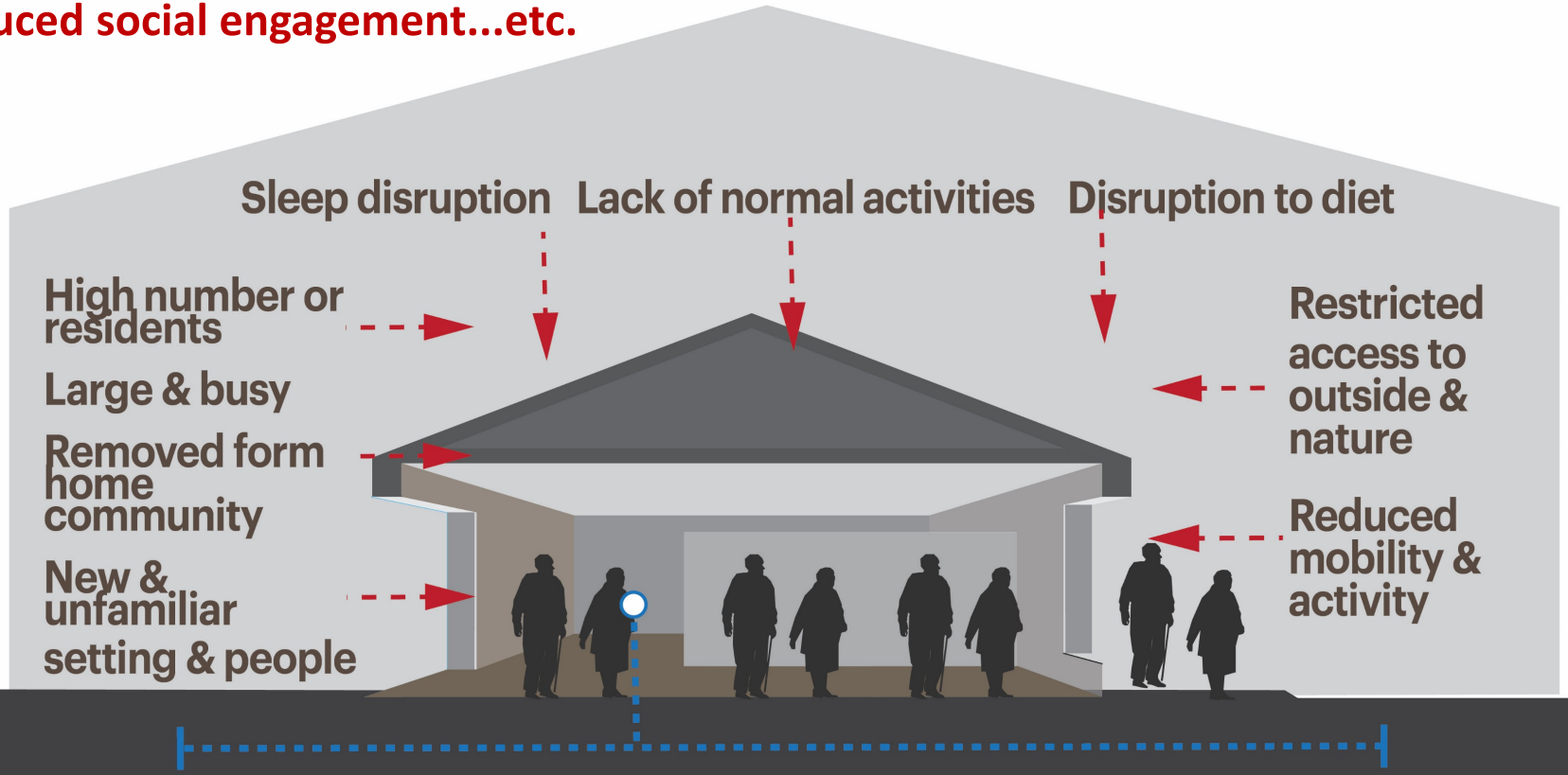
Built environment, Quality of Life, Infection Control and Resilience from a Universal Design Approach

Residential care settings for older people (nursing homes, long-term care facilities, or care homes) - Many existing design models have a negative impact on older people and do not adequately support quality of life. These flaws have been compounded by COVID-19 with many residents cut-off from the community, in quarantine or cocooning, experiencing a lack of exercise, or reduced social engagement...etc.



Design overlap between quality of life, infection control and overall resilience

Integrated, balanced and holistic approach to care models, urban planning, architecture

Quality of Life in residential settings

- Community involvement and interaction and proximity to a persons home community
- Generativity, spiritual well-being, homelike environment, and privacy.
- Positive relationships with other residents, participation in meaningful activities,
- Opportunities to go outside the residence, including visiting family, organized tours, attending church, or experiencing nature.
- Mobility and accessibility

Resilience

Christie (2020) argues that resilience or "adaptation in the face of adversity" is influenced by a person's "protective factors," including "a sense of connectedness with others," a "sense of mastery and control," and "meaning making opportunities." (Christie 2020, Promoting resilience in dementia care: A Person-Centred Framework for Assessment and Support Planning)

Quality of life and resilience as key issues for pandemic prepardness: Design strategies have been primarily reactive to COVID-19, a prospective approach to improving quality of life, which includes maintaining connection to others and an overall focus on health and general wellbeing, is a critical part of pandemic preparedness as it strengthens resilience.

Design Issues Across Key Spatial Scales

Quality of life and care issues pertain to all aspects of the nursing home built environment (i.e. from nursing home location and interaction with the community, down to building details, components, and technology), therefore we adopt a spatial frame-work spanning macro (overall urban setting), meso (neighbourhoods and districts), and micro-scale level issues (site/building design).

Macro

City or wider urban context

Proximity to a person's home community

Given the importance that Christie (2020) ascribes to a "sense of connectedness" for resilience, proximity to a person's home community may be a critical factor in supporting and helping them adapt to adversity.

Integration with health and social care, and emergency services: Mapping local resources and creating service and care pathways among acute care, long-term care, health services, and the local community is important for integrated care.

This integration is vital during certain emergency situations, first for evacuating residents of nursing homes to hospitals if required.

Or for bringing emergency and medical aid to residents where evacuation is not safe or appropriate.

Meso

Neighbourhood or local community

Neighbourhood and public realm: Many of the overall neighbourhood issues that support quality of life and resilience (e.g. public transportation, access to amenities, access and size of open and green spaces), will also benefit the residents and staff of nursing homes, & family members.

Well-designed public realm with safe, accessible, & attractive pedestrian space is linked to walkability & improved social outcomes for older people

Integration with communities as promoted by models such as the 'Green House' require neighbourhoods of a certain quality

Air quality issues at local level: Older people are more vulnerable to both short-term and long-term air pollution. Emerging research is also linking poor air quality to higher rates of COVID-19, making air quality at a neighbourhood scale both a quality of life & resilience issue.

Care model and overall building configuration: Advantages of small settings (e.g. 'household' or 'green care' models) that minimise excessive movement and enhance QoL.

Access and internal circulation: advantages of smaller settings

Outdoor areas and spaces to exercise: exercise, access to nature, exposure to sun, and fresh air, while providing a less risky environment in terms of transmission.

Transitional spaces: The integration of "intermediate spaces" (i.e. porches, alcoves in corridors, and seating placed strategically to allow viewing of the streetscape) supports the activities of viewing, watching, and observing, from a safe distance and in safer outdoor air conditions.

Key staff spaces: adequate changing and hygiene facilities for staff, with the flexibility to segregate these areas further.

Respite areas for staff members with access to natural light and nature, given the challenges posed by COVID-19 in the context of mental health.

Ventilation and air quality at the building level: Increasing air flow through natural & mechanical ventilation within buildings helps dilute & remove the virus. Adapting a resident rooms with existing HVAC to create slightly negative-pressure to reduce spread of infection.

- Importance of space and spatial practices such as social distancing, isolation, or quarantine, all of which will have immediate and long-term implications for the built environment.
- Urgent need to examine traditional design models and provide alternative and holistic models that balance infection control and quality of life at multiple spatial scales. The convergence between these issues can benefit infection control, resilience, overall pandemic preparedness, and in turn improve the quality of life for nursing homes residents.

Thank You

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