Hospital Design for Older People with Cognitive Impairments:

A Review of Evidence-Based Design to Support Inpatients and Accompanying Persons

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Dementia Friendly Hospitals from a Universal Design Approach

Design Guidelines 2018

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dementia
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Background

Cognitive impairment is not a normal part of ageing, however it is common in hospitalised older patients, with dementia and delirium the most frequent causes. Cognitive impairment in over 38% of patients over 65, and in more than 50% of people aged over 85 years (Reynish 2017).

Difficulties processing thoughts leading to memory loss

Impaired decision making

Inability to concentrate and learning difficulties.
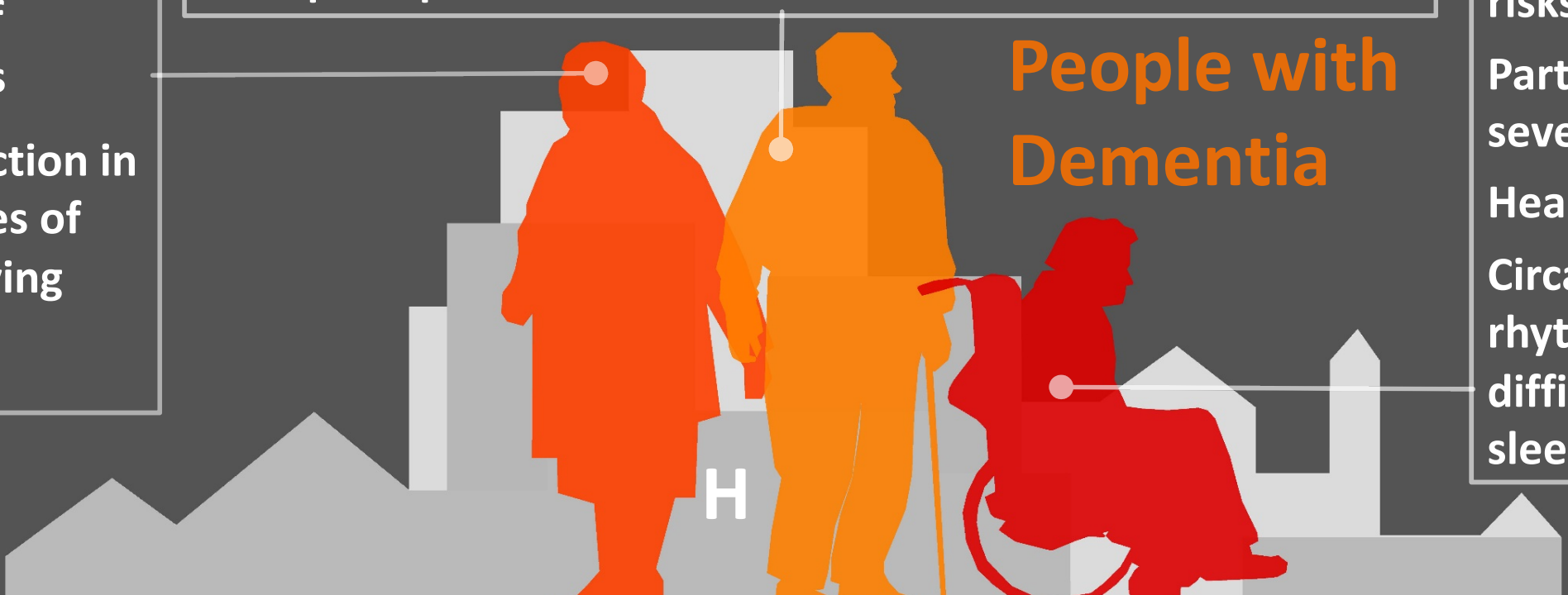
People with Cognitive Impairment

H

Overlap between cognitive impairment, dementia and delirium. Dementia friendly design is a useful and prevalent pragmatic descriptor for inclusive design which includes due attention to cognitive impairment.

Cognitive impairment

Behavioural & Psychological Signs of Distress

Dysfunction in activities of daily living

Gait disorders impacting mobility & stability while walking

Muscular strength loss & associated functional decline

Visual & perception issues related to visuospatial & visuoperceptual defects

People with Dementia

Physical frailty

General mobility difficulties & increased fall risks

Partial and severe sight loss

Hearing loss

Circadian rhythm difficulties & sleep disruption

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Sleep disruption

Lack of normal activities

Disruption to diet

Noisy & busy

Austere & unfamiliar

Restricted access to outside & nature

Reduced mobility & activity

Cognitive impairment / reactive behaviour / difficulties with activities of daily living / impaired mobility, hearing or vision

Extended Length of Stay

In Australia, for example, a patient with dementia will have an average stay of **22 days compared to the average of six** days for all hospital stays. (AIHW 2012)

In Ireland it is estimated that care associated with **dementia in hospitals costs approx. €21 million per year.**

(Department of Health (IRL) 2014)

Role of the accompanying person undermined by hospital setting

Quality of relationships between patients, family members & staff influence **cognitive decline, quality of life & other** outcomes in people with dementia (Burgener 2002, Benbow 2014)

Accompanying person can ease the hospital experience by being present, providing familiar voices & items, and maintaining routines (Li 2003)

Provide **information to the staff** regarding the patient's needs, preferences & usual behaviour patterns (Moyle 2008)

Irish
National
Audit
of
Dementia

Report of the

Irish National Audit of Dementia Care in Acute Hospitals 2014

The majority of wards did **not have environmental cues** to help the person with dementia orientate themselves.

56% of wards had **no clocks** visible, 93% of wards had **no calendar visible**, while 84% of wards had **no personal objects** visible.

(INAD 2014)

74% of wards did not have signs to locate the toilets visible from the patient's bed or door of their room.

43% of wards had no signs on their toilet doors while 33% of wards had no signs on their bathroom doors.

54% of wards had no day room or patients' lounge (INAD 2014)

The Irish National Dementia Strategy 2014

Objective: *Hospitals should be* dementia-friendly*.....This includes environmental aspects as well as clinical support.....*

Methodology

Phase 1
- Peer and grey literature review to identify best practice international dementia friendly hospital design approaches and features
- Delphi method to select **Key Design Issues** to form an analysis framework for phase 2

Phase 2
- **Cochrane Systematic Review** to identify, appraise and synthesize empirical evidence in relation to the selected Key Design Issues

Phase 2: Cochrane Systematic Review

Intervention review to assess the benefits and harms of interventions used in healthcare and health policy.

- Identification of **relevant studies** from a number of different sources (including unpublished sources)
- Selection of **studies for inclusion and evaluation of their strengths and limitations** on the basis of clear, predefined criteria
- Systematic **collection of data**
- Appropriate **synthesis of data**

https://www.cochranelibrary.com/about/about-cochrane-reviews

Protocol Outcome Measures:

Primary outcome measures:

- **Health related quality of life** - EuroQol, Dementia Care Mapping (DCM)
- **Measures of function** - Barthel Index for Activities of Daily Living.
- **Measures of behaviour & mood** – the Cohen−Mansfield Agitation Inventory.
- **Quality of sleep** - patient self−reporting and staff observation.
- **Length of stay**.
- **Hospital readmissions**.
- **Wayfinding satisfaction-** patient wayfinding satisfaction questionnaires, interviews or staff observation.

Serious adverse effects will include:

- **Falls**, the use of **physical restraints**, and the number of patients taking **psychotropic medication**.

Protocol Secondary Outcomes:

- **Carer mood or depression** measured with Geriatric Depression Scale - Hospital Anxiety and Depression Scale or the Family Caregiving Burden Inventory.
- **Accompanying person (AP) hospital satisfaction rating** based on AP questionnaires, interviews or similar methods ..
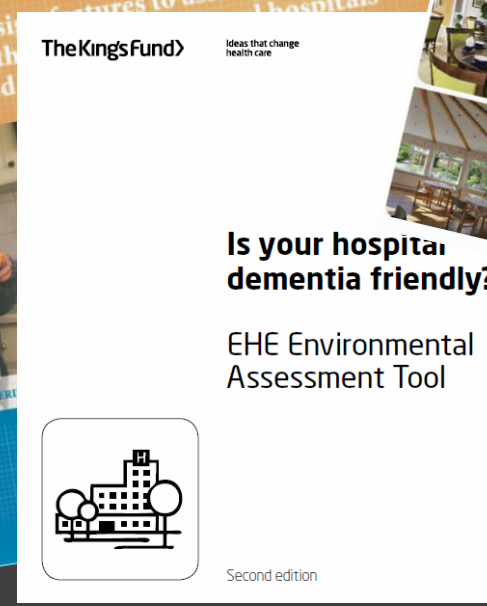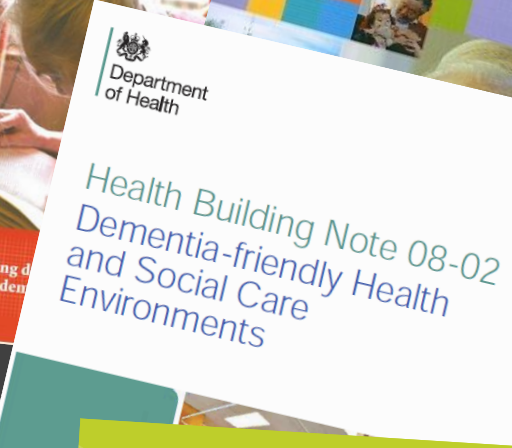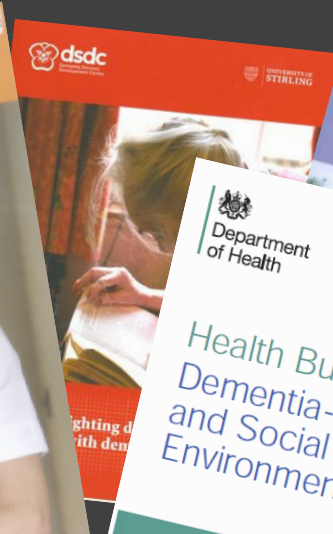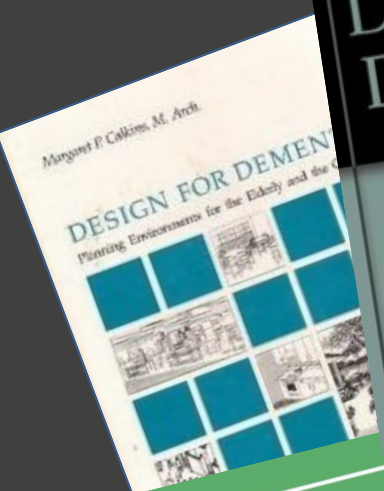
Findings

Phase 1: Key Design Issues

Phase 2: Cochrane Systematic Review: Initial Findings

Phase 1:
Key Design Issues

DESIGN FOR DEMENTIA

Margaret P. Calkins, M. Arch.

DESIGN FOR DEMENTIA
Planning Environments for the Elderly and the Confused

Design for Dementia

Judd, Stephen

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UNIVERSITY OF STIRLING

HOME SOLUTIONS 2

Department of Health

Health Building Note 08-02
Dementia-friendly Health and Social Care Environments

DEMENTIA, DESIGN AND TECHNOLOGY
Time to Get Involved

ACI
Aged Health Network
Key Principles for Improving Healthcare Environments for People with Dementia

DESIGN FOR DEMENTIA

GREGOR TIMLIN AND

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Improving the design of housing to assist people with dementia

Design features to assist patients with dementia in general hospitals

DEMENTIA DESIGN SERIES

The King's Fund
Ideas that change health care

Is your hospital dementia friendly?

EHE Environmental Assessment Tool

Second edition

ENVIRONMENTAL ASSESSMENT TOOL
HANDBOOK

RICHARD FLEMING
KIRSTY A BENNETT

RESOURCE 3
Environmental Design Resources

February 2017

dta
Dementia Training Australia

dpd
DESIGNING FOR PEOPLE WITH DEMENTIA

UNIVERSITY OF STIRLING

HammondCare

Key Design Issues

Participation & engagement
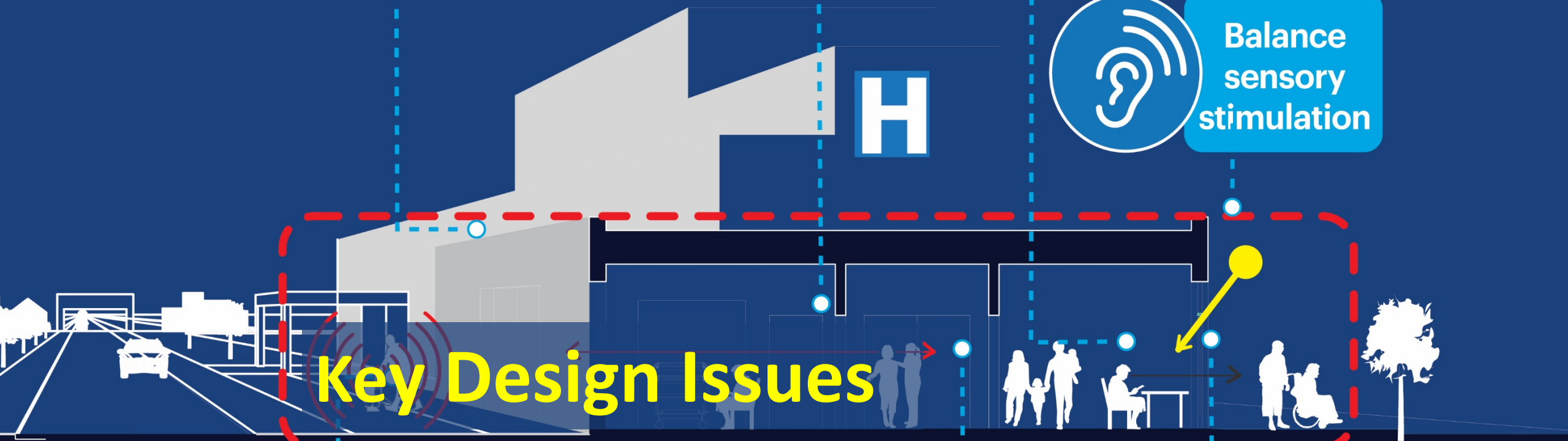
A people-centred environment

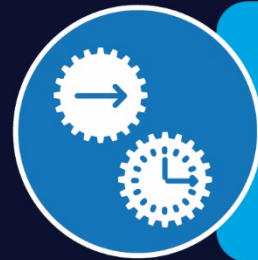Patient safety health & well-being

Balance sensory stimulation

Appropriate use of technology
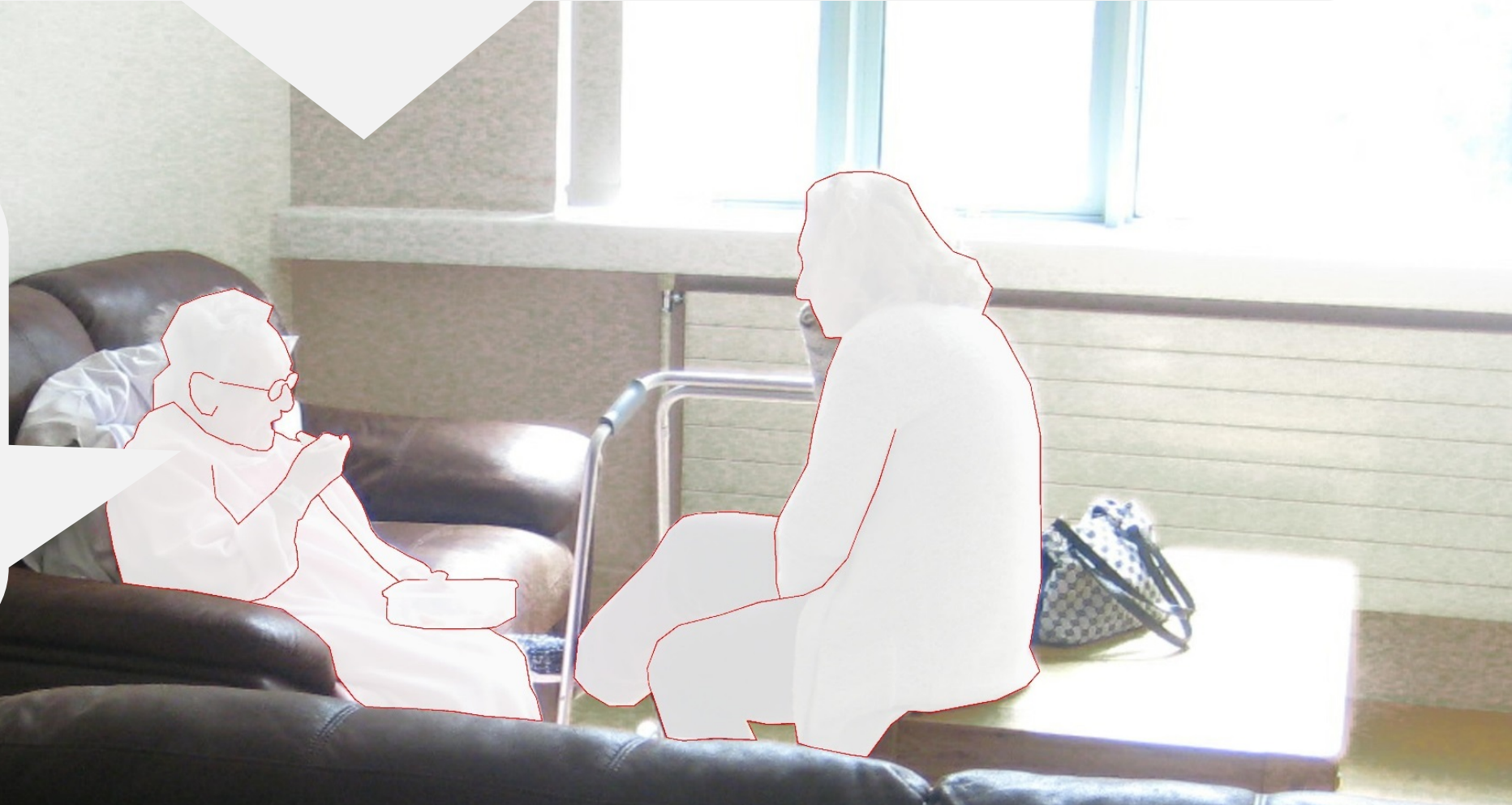
Space to support the needs of people with dementia

Orientation & navigation

Phase 2: Cochrane Systematic Review: Preliminary Findings

Engagement with friends, family, staff & community: communal rooms and spaces for interaction; images of locality

Space & supports for an accompanying person: adequate space & seating beside beds; family zone in room; family rooms

Engagement & participation

Soften the institutional environment: smaller ward size; more home like colours; more welcoming nurses' station

Use familiar & recognisable design: intuitive & familiar fittings & objects within the ward

Facilitate personalisation: dedicated lockers or wall space for memorabilia/personal objects

A people-centred environment

Provide a **safe environment**: handrails and grabrails for stability; non–slip floors;

Support **meaningful activities**: kitchen within family room to allow a person make a cup of tea or wash dishes; provision of an outdoor space to carry out light gardening activities

Support **diet, nutrition & hydration**: a dedicated dining room or familiar and home–like dining tables and chairs

Support patient safety and health

Optimise **positive sensory stimuli**: views: pleasant daylight; a gentle breeze from outside

Minimise **negative stimuli**: control excessive glare; acoustic panels to absorb sound

Contact with nature: good views to nature; internal planting; images of nature

Access to **outdoor spaces**: garden space, balconies or roof terraces directly accessed from the ward

Balance Sensory Stimulation
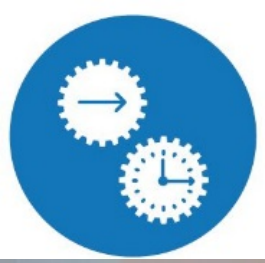
Legible environment: good colour contrast between walls/floors so key building elements are legible & spaces are easily understood.

Enhance orientation to date, time & location: large format clock/calendars; external views to prominent landmarks; or internal images of the local context

Way-finding for navigation: colour panels or doors as a visual cue; wayfinding signage, images or symbols for directional information.

Good visibility/visual access: higher illumination; direct views from bed to WC door; glazed internal doors or panels

Fáilti
Reception

An slí amach
Exit

Support Orientation & Navigation

Space for **belongings**

Family Zone in patient room

Space to support a person with dementia

Space for **retreat in multi-bed wards**: family /day rooms

Communal areas in single–bed wards: family rooms or social areas in circulation space

Space and supports for **patient mobility & activities**: generous circulation areas to encourage walking within the ward; handrails in corridor for stability; small seating & interest areas along corridors to provide resting and destination points.

Space to support a person with dementia

Challenges: confounding variables and heterogenous data

- **Difficulties with Randomised Control Trials or Cluster−Randomised Trials in relation to the built environment**

- **Confounding variables – improved or new models of care; staffing levels; staff training etc.**

- **Heterogenous data - clinical, methodological and statistical heterogeneity in the studies and results**

Conclusion: Positive developments

- Growing recognition of the need for more supportive hospital environments for people with cognitive impairment & dementia.

- Contemporary hospital design with a focus on universal design, biophilic design, salutogenic design, and generally a less clinical/more humane design is naturally a more supportive design for people with cognitive impairment & dementia.

- Currently still a lack of rigorous studies specific to the built environment, but this is changing and more data to underpin evidence based design is available through journals such as Health Environments Research and Design (HERD).

Thank You
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More Information available online at
www.trinityhaus.tcd.ie

www.trinityhaus.tcd.ie/dementiafriendlyhospitals/