

Nasjonal møteplass i regi av Innomed 2016, Trondheim
Akuttmottak og legevakt for eldre

Design of frail-friendly Emergency Departments: patients with dementia

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19th January 2016

Aim and objectives of the presentation

Present the key principles of frail-friendly ED design in relation to the specific aspects of people living with dementia and the core design features that:

- emerged from the £50m Department of Health England Dementia Capital Investment Programme (115 pilot projects);
- were used to underpin the new “Health Building Note 08-02: Dementia-friendly Health and Social Care Environments.”

(Department of Health, Health Building Note 08-02: Dementia-friendly health and social care environments, 2015)

Outline of the presentation

1. Aim and objectives
2. Context
3. Health and Social Care in the UK
4. DH England Dementia Capital Investment Programme
5. Dementia-friendly design principles and features
6. Health Building Note 08-02
7. Future steps: the UK's first frail-friendly ED
8. Conclusions

Context: ED design for all patients

The design of ED should take account of:

1. Accessibility
2. Navigation and travel distance
3. Information and communication
4. Safety and infection control
5. Security
6. Staff support
7. Waiting times

to improve the patient's journey through a distressful event in an **unfamiliar environment**.

Context: elderly patients

- Reduced fertility rates and increased life expectancy are leading to ageing populations. *(UN - DESA - Population Division, 2013)*
- Ageing population brings together a series of implications and co-morbidities. *(CSDH, 2008)*
- The elderly is the second major group that access the ED after deprived people on regular basis. *(Pascale, Achour, Price, Polverino, 2014)*
- An estimated 25-30% of people aged over 85 have dementia. *(WHO, 2013)*
- Dementia encompasses a range of conditions, which are progressive, degenerative, irreversible and with currently no cure. *(Access Economics Pty Limited, 2010)*

Context: dementia in the UK

- In the UK 850,000 people live with dementia. They are expected to increase to over 1M by 2021. *(Alzheimer's Society, 2014)*
- The current cost of dementia care for the UK economy is estimated on £26.3Bn a year. *(Alzheimer's Society, 2014)*
- In England there are: 168 NHS Acute Trusts; 8,000 GP practices from 7,331 locations; and 21,407 care homes.
- Older people occupy ~70% of acute hospital beds.
(Department of Health, 2009)
- In the UK ~66% of people with dementia live in the community. *(Alzheimer's Society, 2013)*

Context: older people in EDs

- >70 years = 15.5% of total ED attendances (22,363,638)*.
- ≥60 years account for 23% of attendances to the EDs.
- ≥60 years are more likely to arrive by ambulance, have more investigations done and spend a longer time in the ED, than the 21-59 age group.
- Hospital admissions for >60 years = 43% of all hospital admissions in England and Wales (15,462,047)**.
- Older people ED outcomes include: higher delays in diagnosis; unsuspected diagnosis; under/ overtreatments.

(Schnitker et al. , 2011)

* 2014-15 NHS England data ** 2013-14 FAEs NHS England data

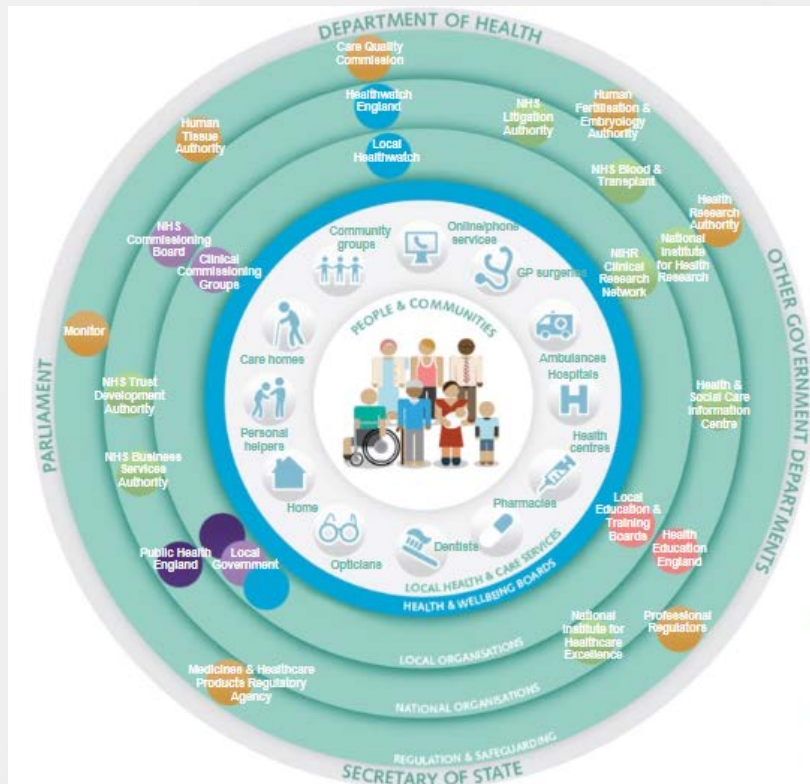
Context: Impact of the built environment

- Purpose-built and staffed built environments impact on the quality of care and on the wellbeing of people with dementia. *(Brod, Stewart, and Sands, 2000)*
- Design elements and layouts have been frequently associated with quality of care and behavioural outcomes. *(Kovach, C., et al., 1997)*

However,

- Limited understanding and lack of proven evidence on elements of the built environment for people living with dementia. *(Ulrich et al., 2008; Calkins, 2009)*

Health and Social Care in the UK: system

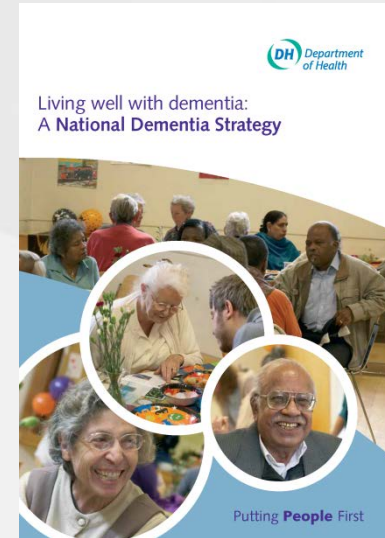


1997	Private Finance Initiative (PFI) to reduce the NHS England capital spending on new health and social care infrastructures.
2004	Foundation Trusts (FTs) to allow financial and operational freedom at Trust level.
2005	<i>NHS Reform</i> delegated budgets to the General Practitioners (GPs) and the right to supply the NHS to independent providers.
2013	<i>NHS Health and Social Care Act 2012</i> : Clinical Commissioning Groups (CCGs) to be in charge of commissioning services for Trusts, FTs, Primary Care and independent providers, while Public Health England (PHE) to be accountable for public health commissioning, through Local Authorities (LAs) and Social Care (SC) providers.

<https://www.gov.uk/government/publications/the-health-and-care-system-explained/the-health-and-care-system-explained>

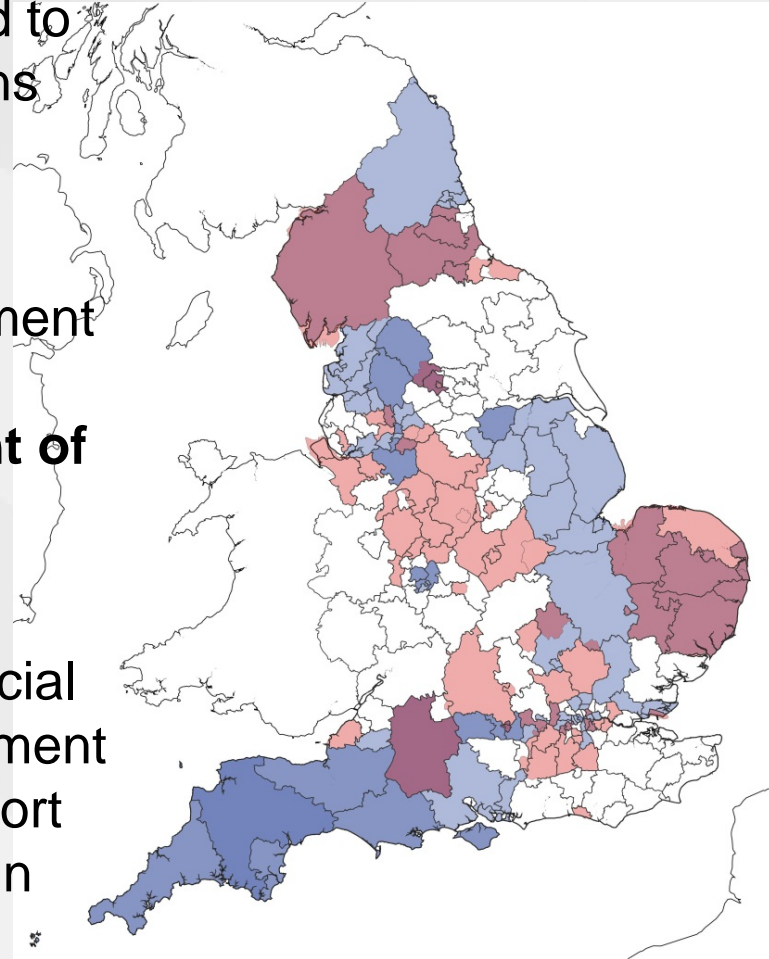
Health and Social Care in the UK: policy

- With the publication of Living well with dementia: A National Dementia Strategy in 2009, Dementia has become a UK national priority.
- In March 2012, the Prime Minister David Cameron launched the Dementia Challenge to tackle one of the most important issues we face as the population ages.



DH England Dementia Capital Investment Programme

- Health and social care environments need to respond to the needs of ageing populations and all its related conditions including dementia.
- One such response has been the Department of Health's England Capital Investment Programme **“Improving the environment of care for people with dementia”**.
- The DH Capital Programme has provided £50M capital funding for 116 NHS and Social Care pilot projects to improve the environment of care and gather evidence that will support the development of evidence-based design standards and guidance.

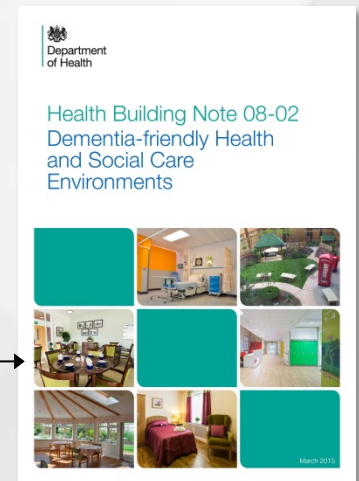
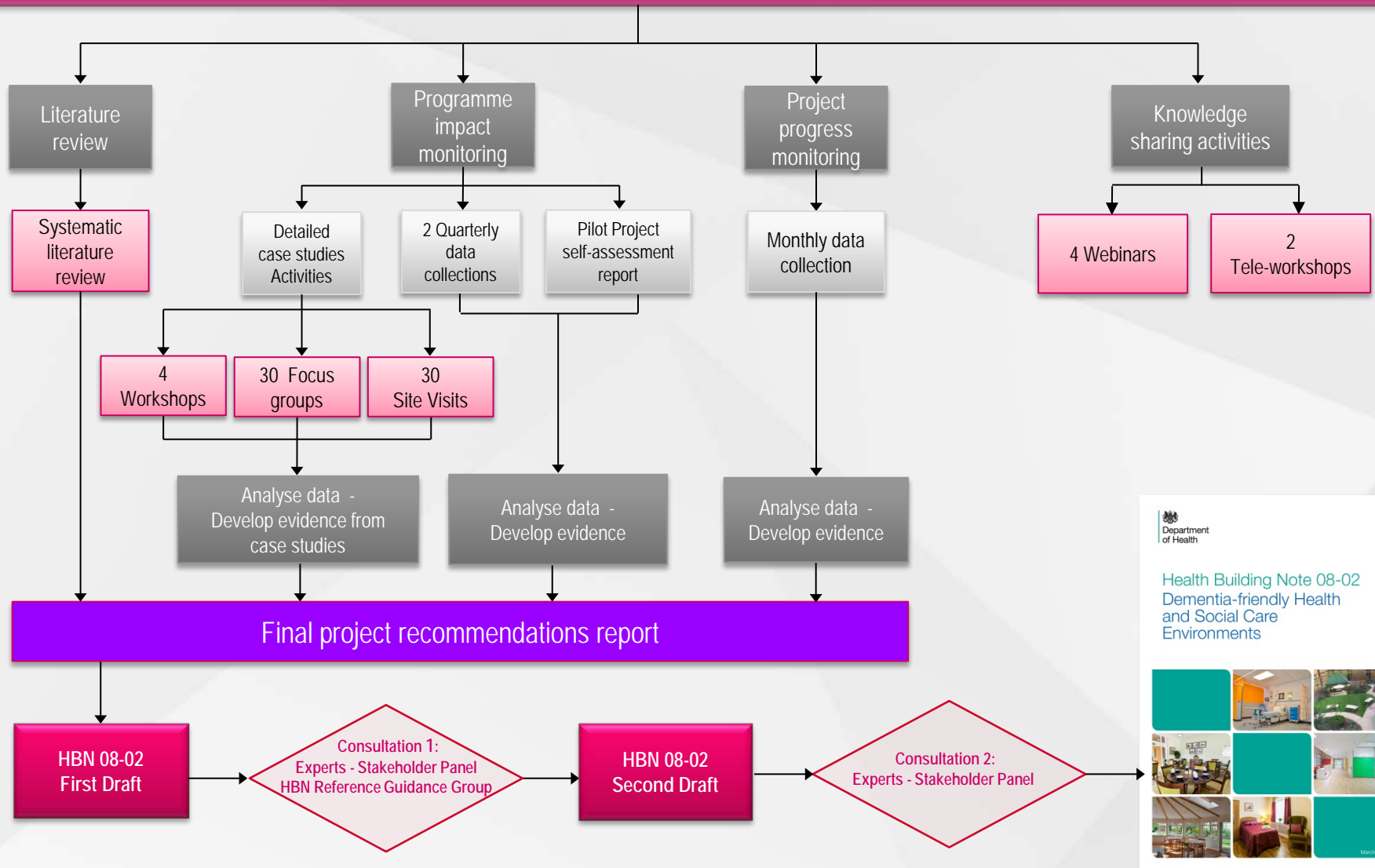


(Loughborough University Enterprise Ltd., IFF Research, Department of Health England, 2014)

Programme impact monitoring - DH 14 core outcomes

1. Improving quality of life
2. Promoting dignity
3. Enabling improved privacy
4. Encouraging independence
5. Increasing the therapeutic value of garden areas
6. Enabling dementia care providers to be more responsive to the needs of all people using their services
7. Enhancing the physical environment to allow better nutrition
8. Supporting cultural diversity
9. Improving the dementia care provider's ability to meet multiple complex needs
10. Enabling people to be cared for in a comfortable and safe environment of their choosing
11. Reducing stress and anxiety
12. Reducing aggressive and disturbed behaviour
13. Reducing slips trips and falls
14. Reduce inequalities

DH Dementia Capital Programme & HBN 08-02: Delivery Plan



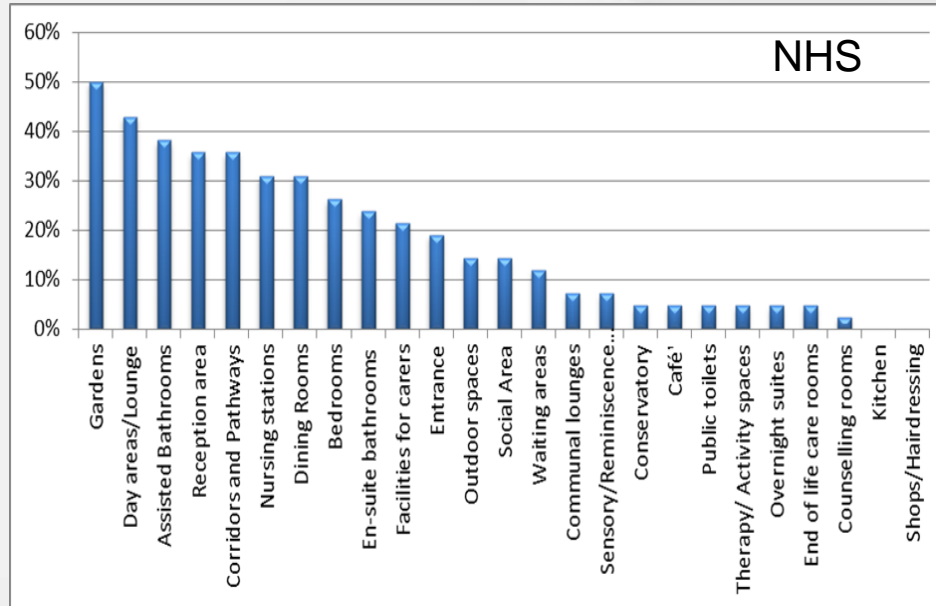
DH Dementia Capital Programme - Types of settings

Distribution of NHS settings	%
Hospital wards	64
Whole hospital approach	12
Other hospital areas	17
Integration with the community	7

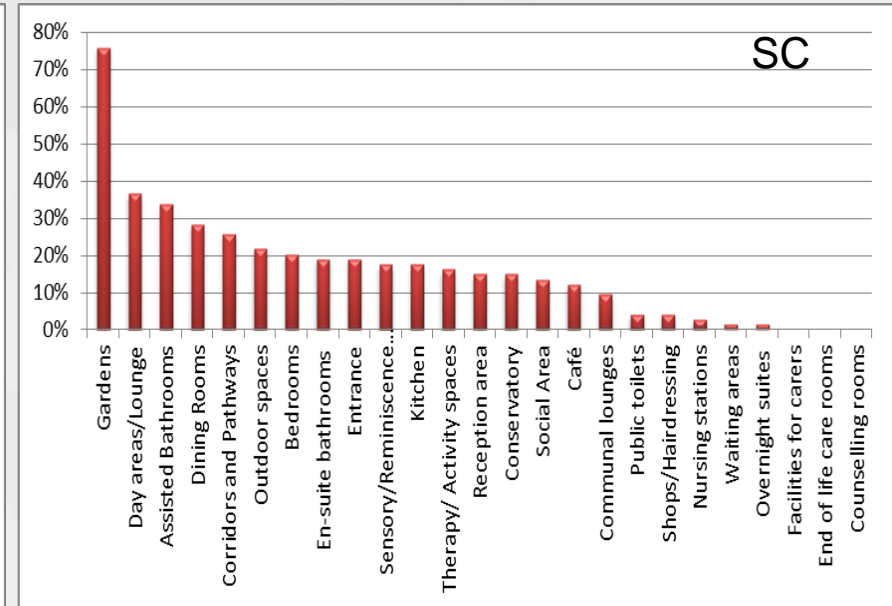
Distribution of SC settings	%
Care homes	73
General community day centres, respite centres or hubs	10
Sheltered & extra-care houses	3
Specialist dementia care facilities	1
Integrated projects	11
Nursing homes	3



DH Dementia Capital Programme - Types of spaces



- Gardens
- Day areas
- Assisted & en-suite bathrooms
- Reception areas
- Circulation spaces
- Nursing stations

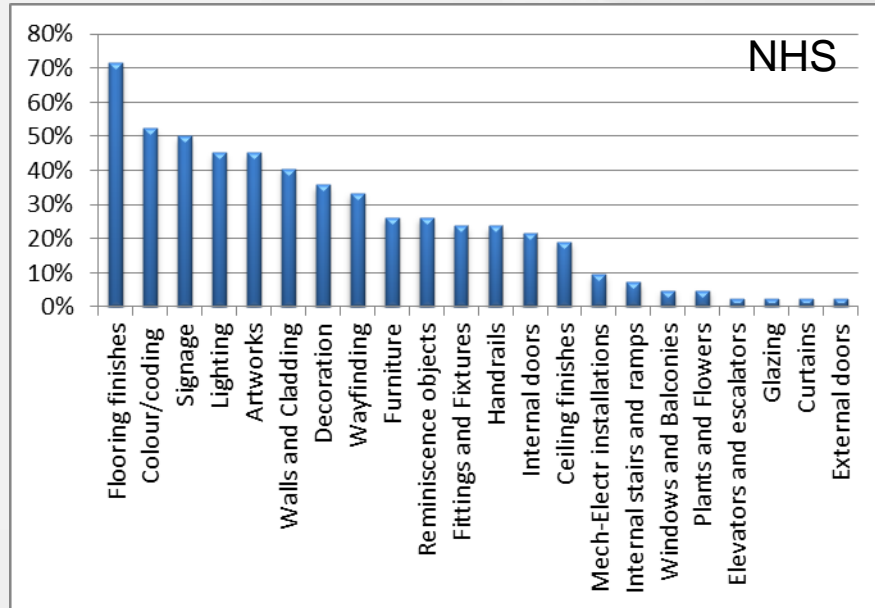


- Gardens
- Day areas
- Assisted & en-suite bathrooms
- Dining rooms
- Circulation spaces
- Bedrooms

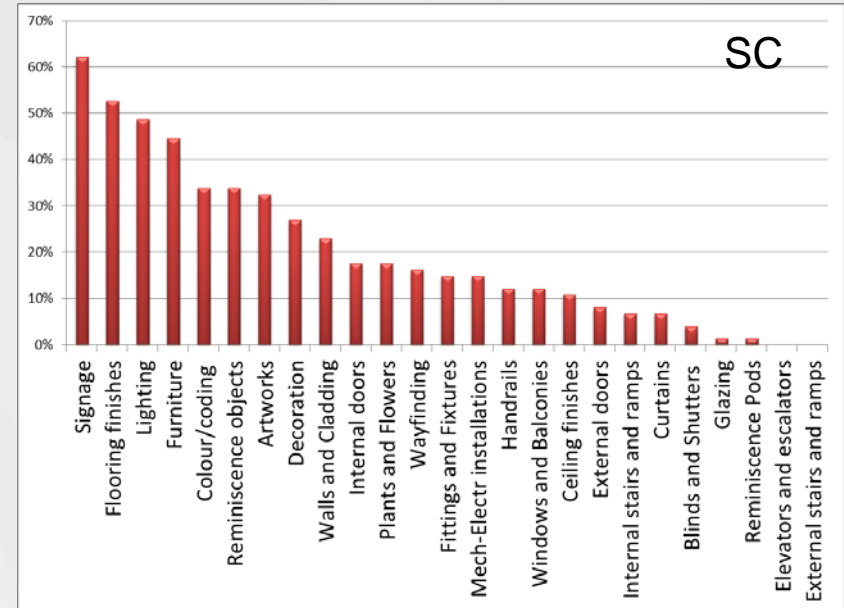
DH Dementia Capital Programme - Types of spaces



DH Dementia Capital Programme - Types of components

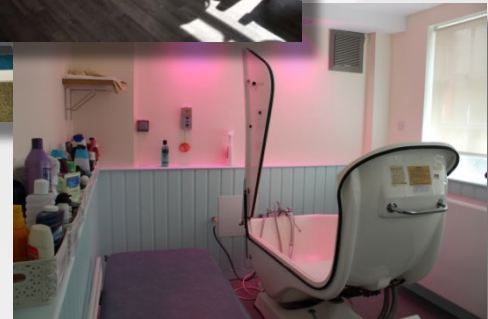


- Flooring finishes
- Colour coding
- Signage
- Lighting
- Artwork
- Walls & cladding



- Signage
- Flooring finishes
- Lighting
- Furniture
- Colour coding
- Reminiscence objects

DH Dementia Capital Programme - Types of components



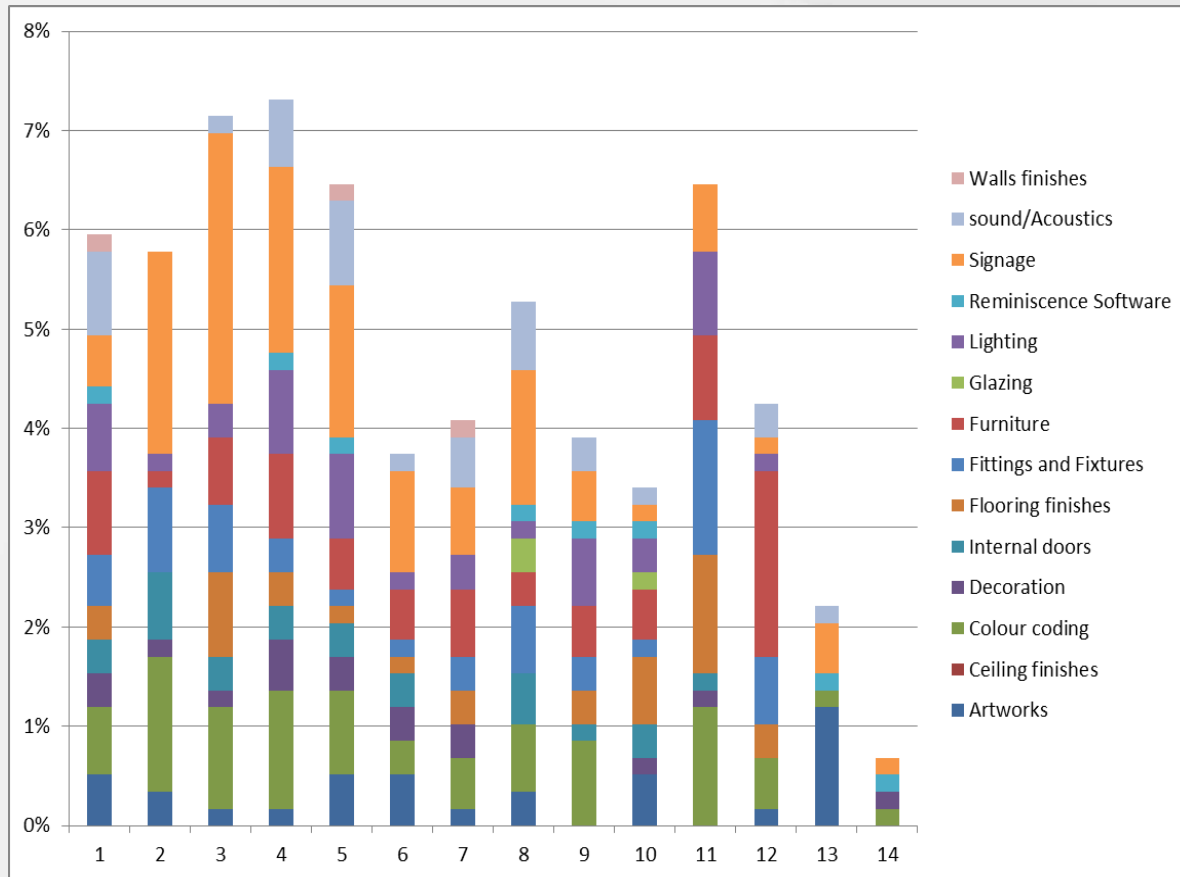
Programme data analysis - 115 pilot projects

1. The **literature review** established how built environment design features can impact on the quality of care and the experience of people living with dementia.
2. The **115 pilot projects** explored how spaces, environmental interventions and core design features can impact on Quality of Life (QoL) of people living with dementia and support integrated health and social care delivery.
3. The **gathered evidence** was analysed and rationalised towards a systematic (i.e. DH 14 core outcomes) set of core design features which can be purposefully designed for people living with dementia.

Types of interventions

Artwork
Blinds and Shutters
Ceiling finishes
Colour coding
Curtains
Decoration
Elevators and escalators
External doors
External stairs and ramps
Fittings and Fixtures
Flooring finishes
Furniture
Glazing
Handrails
Internal doors
Internal stairs and ramps
Lighting
MEP systems
Plants and Flowers
Reminiscence objects
Reminiscence Pods
Signage
Walls and Cladding
Way-finding
Windows and Balconies

Programme data analysis - 115 pilot projects



14 Core Outcomes	Rank
Improved Quality of Life (QoL)	1
Promoting dignity	2
Encouraging independence	3
Reducing stress and anxiety	4
Reducing aggressive and disturbed behaviour	5
Enabling dementia care providers to be more responsive to the needs of all people using their services	6
Enabling people to be cared for in a comfortable and safe environment of their choosing	7
Enabling improved privacy	8
Improving the dementia care provider's ability to meet multiple complex needs	9
Increasing the therapeutic value of gardens	10
Reducing slips, trips and falls	11
Enhancing the physical environment to allow better nutrition	12
Supporting cultural diversity	13
Reducing inequalities	14

Key principles of dementia-friendly design

This evidence has led to the identification of key dementia-friendly design principles valid across different settings.

Reduced abilities to see, hear, taste, smell and touch.

**SENSORY
IMPAIRMENTS**

Difficulties to distinguish between simultaneous sensory stimulations (i.e. multiple stimuli of the same type simultaneously).

Reduced abilities to remember, processes information and communicate.

**COGNITIVE
IMPAIRMENTS**

Difficulties in finding their way around and engaging with the environment and people in it (e.g. identify and reach the dining room).

Reduced mobility and balance.

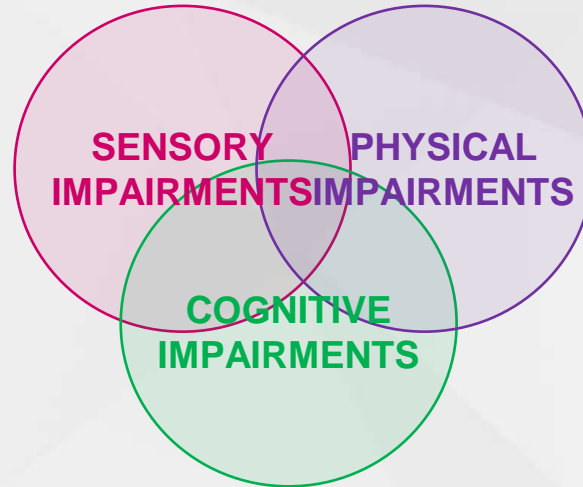
**PHYSICAL
IMPAIRMENTS**

Difficulties to perform physical activities and day-to-day functions (e.g. walking, standing and sitting, and eating, as the ability to chew and swallow is impaired).

Key principles of dementia-friendly design

1. Promote a safe environment;

- 2. Provide optimum levels of stimulation;
- 3. Provide optimum lighting and contrast;



- 9. Provide good visibility and visual access;
- 10. Promote privacy, dignity and independence;
- 11. Promote physical and meaningful activities;
- 12. Support diet, nutrition and hydration.

- 4. Provide non-institutional scale and environments;
- 5. Support orientation;
- 6. Support way-finding and navigation;
- 7. Provide access to nature and the outdoors;
- 8. Promote engagement with friends, relatives and staff;

Core dementia-friendly design features

This evidence has led to the identification of a set of core dementia-friendly design features valid across different settings and spaces.

CONSTRUCTION ELEMENTS

- Ceilings;
- Doors;
- Fixtures;
- Flooring;
- Walls;
- Windows & transparent panels.

ELEMENTS THAT CAN ENRICH THE BUILT ENVIRONMENT

- Artwork;
- Decoration;
- Furniture & fittings;
- Reminiscence hardware & software;
- Signage.

TECHNICAL ELEMENTS

- Acoustics;
- Colour;
- Lighting.

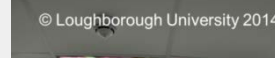
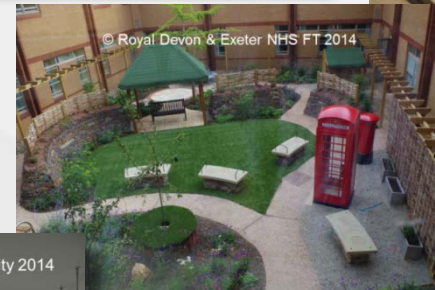
Core dementia-friendly design features

			DEMENTIA FRIENDLY DESIGN FEATURES													
			A	B	C	D	F	G	H	I	J	K	L	M	N	O
			Acoustics	Artwork	Ceilings	Colour	Decoration	Doors	Fixtures	Flooring	Furniture and fittings	Lighting	Reminiscence hardware and software	Signage	Walls	Windows and transparent panels
DEMENTIA FRIENDLY DESIGN PRINCIPLES	1	Promote a safe environment				X		X	X	X	X		X	X	X	
	2	Provide optimum levels of stimulation	X	X	X		X			X		X		X		
	3	Provide optimum lighting and contrast				X	X		X		X		X	X	X	
	4	Provide a non-institutional scale and environment	X	X	X	X	X		X	X	X			X		
	5	Support orientation	X		X		X					X	X	X	X	
	6	Support way-finding and navigation		X		X	X	X	X				X	X	X	
	7	Provide access to nature and the outdoors						X							X	
	8	Promote engagement with friends, relatives and staff	X	X			X		X		X		X			
	9	Provide good visibility and visual access				X		X			X			X		X
	10	Promote privacy, dignity and independence	X		X	X	X	X	X		X	X	X	X		X
	11	Promote physical and meaningful activities	X	X					X	X	X		X			
	12	Support diet, nutrition and hydration	X	X		X					X		X			



Health Building Note 08-02

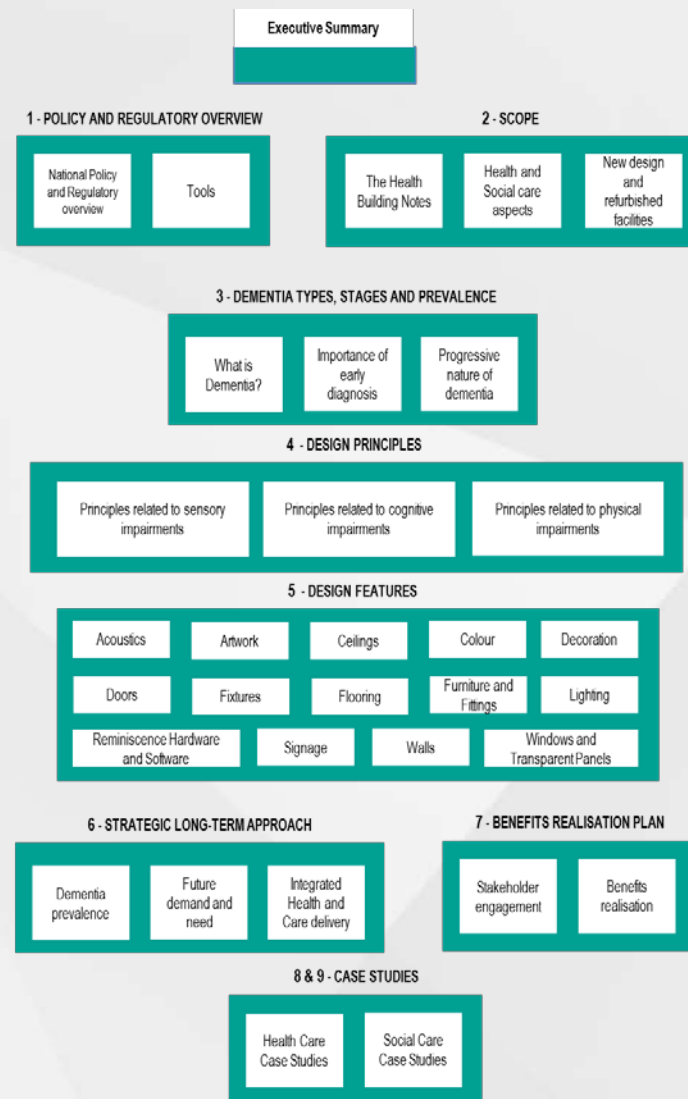
- The “**HBN 08-02: Dementia-friendly Health and Social Care Environments**” is the first HBN intended to provide guidance for the design of dementia-friendly environments in all health and social care settings where people with dementia need to access, navigate and stay.
- *Design principles and design features are interconnected and can allow an easy navigation of the document.*



(Loughborough University Enterprise Ltd., Department of Health England, 2015)

Health Building Note 08-02: structure

1. Policy and Regulatory overview;
2. Scope;
3. Dementia types, stages and prevalence;
4. Design principles;
5. Core Design features;
6. Strategic long-term approach;
7. Benefits realisation plan;
8. Health care settings case studies;
9. Social care settings case studies.



Future steps: Leicester Royal Infirmary 1/8

- Catchment of >1.0 million
- 380,000 City (13% old)
- 650,000 County (23% old)
- City >50% BME
- County >95% Caucasian
- 1 Acute Trust
- 3 CCGs
- 600 Hospital Consultants
- 600 General Practitioners

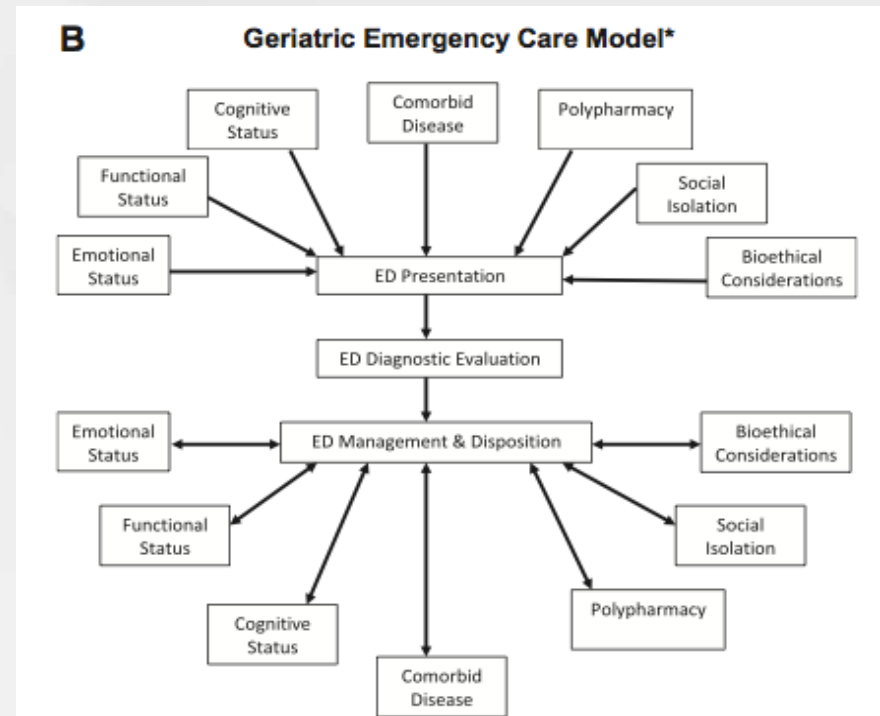


- Increasing geriatric attendances - currently >20%; 33,000/year.
- Frail (>70 years AND fragility fracture, confusion, from care home) 3% of attendances, 11% of breaches in 4-hr emergency access target, 15% of medical admissions, 25% of hospital bed days.

Acknowledgement: Jay Banerjee MD

Future steps: Leicester Royal Infirmary 2/8

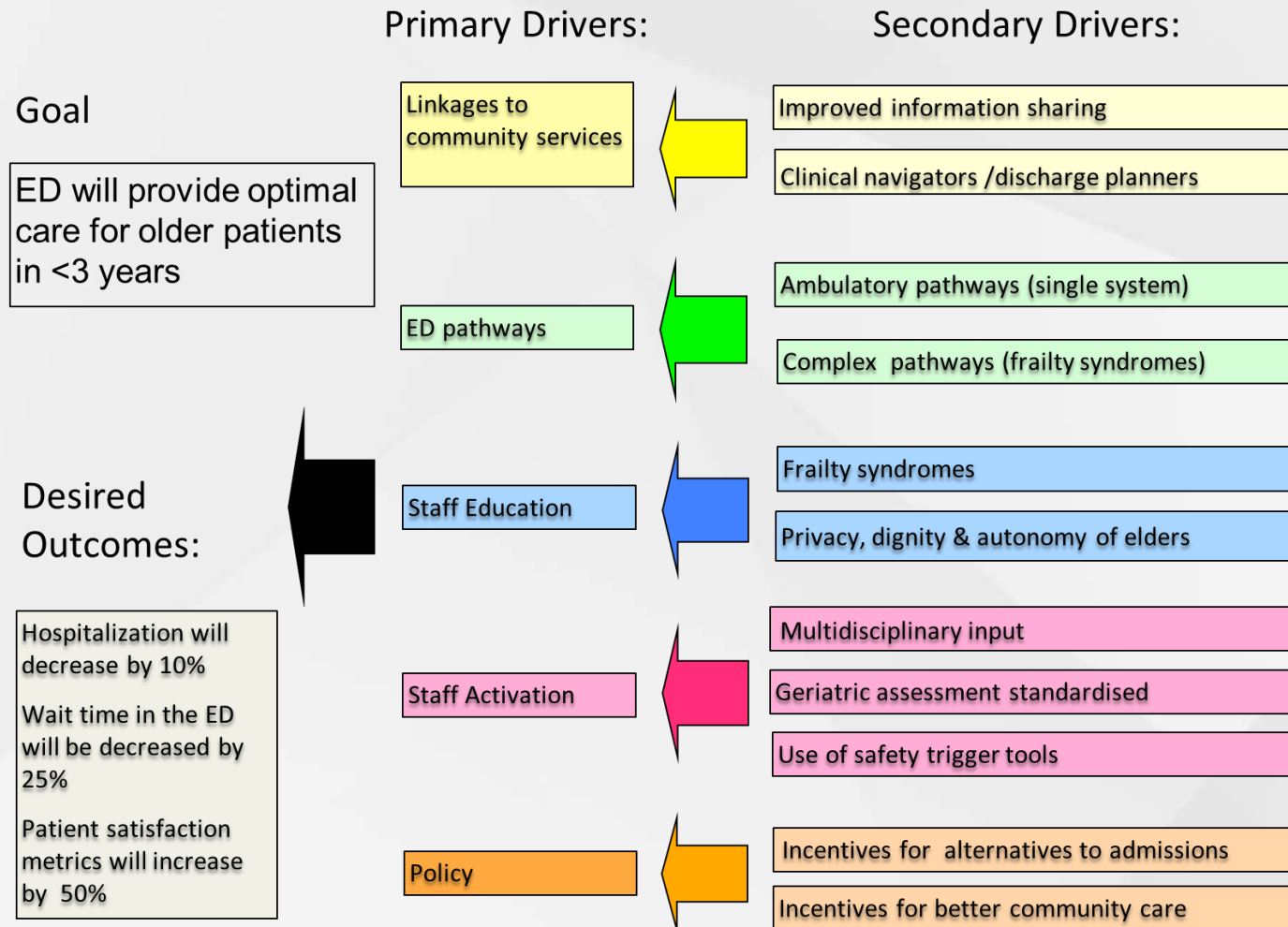
- Frail older people comprise a major and growing ED attendances.
- With this in mind in 2013 a £48 million scheme for the first UK's elderly and frail ED was developed at University Hospitals of Leicester NHS Trust.
- The new scheme was developed to support the elderly and frail patients' journey through the ED, aligned with the new HBN08-02.
- Frail-friendly design features should be applied to: bed areas; corridors; toilets and showers.



Acknowledgement: Chris Carpenter MD

Future steps: Leicester Royal Infirmary 3/8

Optimising of elderly and frail in ED



Acknowledgement: Jay Banerjee MD

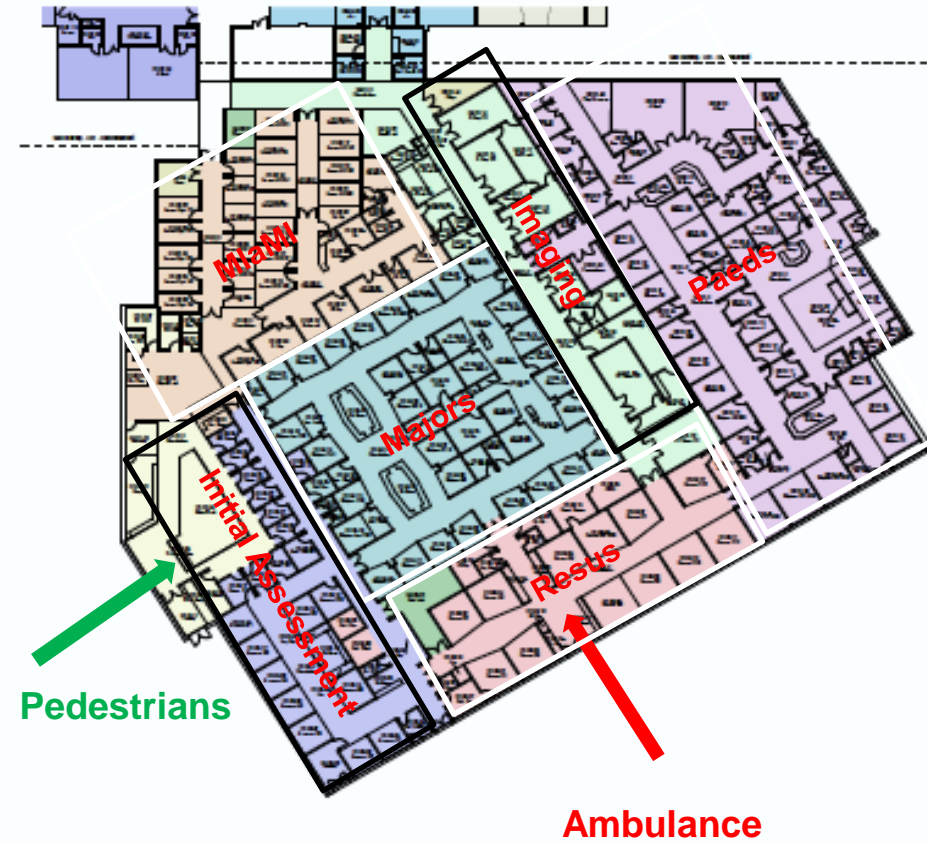
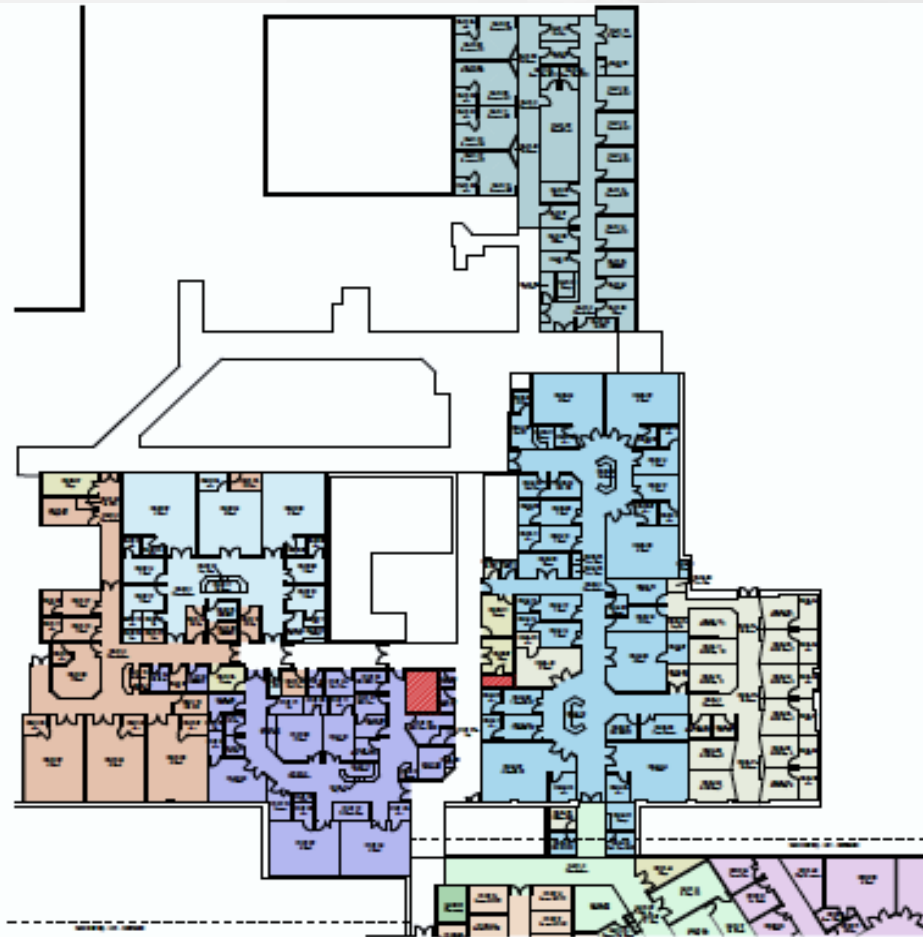
Future steps: Leicester Royal Infirmary 4/8

The initial design brief was subject to revision and changes to incorporate the following elements:

1. Specialist room design affected furniture, bedding and specialist sanitary and patient entertainment equipment.
2. Interior finishes including ceiling, floor, door, fixtures, lighting, signage and wall were altered.
3. The “front-door” would also include adjacencies, emergency frailty units, imaging and point-of-care testing with access to all therapy services.
4. There would be open access for carers and families at all times.
5. Greater emphasis on multidisciplinary teams and integrated workforce also emerged from this collaboration.

Acknowledgement: Jay Banerjee MD

Future steps: Leicester Royal Infirmary 5/8

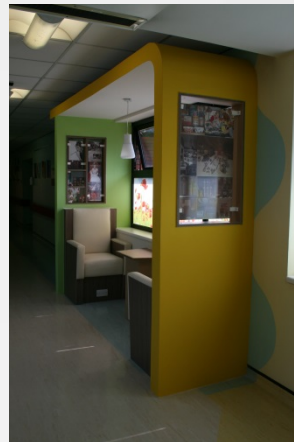


Acknowledgement: Jay Banerjee MD

Future steps: Leicester Royal Infirmary 6/8

Spatial requirements (1:200)

Subject/ Topic	Example
Patient Flow	arrival and assessment processes, navigation – width of corridors, mobility impaired access, dementia patients habitual 'wandering'
Location of Frailty Bays	acoustic requirements, staff supervision, key adjacencies
Number/ Type of Bedded Areas	multi-bedded areas and single bedded areas – ratio and arrangement, privacy and dignity issues
Location/ Arrangement of WC's	key adjacencies, access and mobility issues
Location of Specialist Assessment/ Treatment Areas	diagnostic imaging, physiotherapy facilities
Natural Lighting	windows, roof lights, external views



Future steps: Leicester Royal Infirmary 7/8

Specialist room/equipment (1:50)

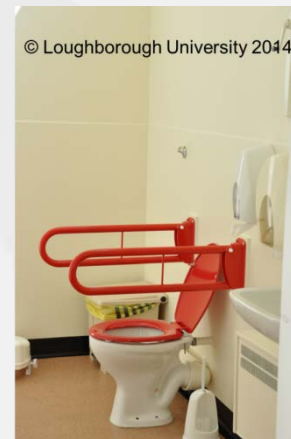
Subject/ Topic	Example
Specialist Furniture	high backed armchairs, reclining chairs, large faced clocks, wardrobes
Specialist Beds/ Bedding	pressure relieving mattresses, low level beds
Bed head Services	concealed services – tamper proof, avoid confusion in dementia patients, less institutional environment
Specialist Equipment	hoists (mobile/ fixed), monitoring equipment (wireless), medicine fridges
Specialist Sanitary Requirements	arrangement of fittings and dispensers to en suites, alarm/ patient call, commodes
Patient Entertainment	positive distraction methods – music, television, projection, artworks



Future steps: Leicester Royal Infirmary 8/8

Interior finish requirements

Subject/ Topic	Example
Floor Finishes	matt, plain and un-patterned, slip resistant, anti-glare
Ceiling Finishes	acoustic properties
Wall Finishes	appropriate use of colour, non-institutional
Door Finishes	colour contrast, appropriate closing mechanisms, way finding – patient and staff use, recognition for dementia patients
Fixtures & Fittings	specification of handrails, fixed furniture – curved edges, colour of sanitary ware/ associated grab rails, commonality in the arrangement of fixtures & fittings
Artificial Lighting	appropriate lighting levels – glare versus visibility
Artworks/ Signage	design principles – text size, graphics, location, integration with interior design scheme, improved way finding for elderly patients



Conclusions

- The ED is the crucial **interface between health and social care** where older people represent the most important “customers”.
- Over 65 years old patients **access to ED is increasing**, and at a higher rate for >80 years.
- Age brings together a series of **co-implications** (e.g. dementia) that might affect patients’ journey.
- **ED design principles** need to take account of elderly patients.
- The evidence-based core **design features** can be purposefully designed for EDs.
- The DH programme delivered an **evidence-based design guidance** widely accessible through the Gov.UK website.

<https://www.gov.uk/government/publications/dementia-friendly-health-and-social-care-environments-hbn-08-02>

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***Thank you
for your kind
attention***



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Hospitals of Leicester NHS Trust.

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