



*Using health administrative data to identify approaches for improving outcomes for frail older adults with a focus on home support*

**Dr Austin Warters (PhD) Dublin North City and County Community Health Organisation  
Feb 2023**



**Trinity  
College  
Dublin**

The University of Dublin

Professor Maria O'Sullivan



**RCSI**

Professor Frances Horgan

# Why home support administrative data?

- Home support is a key enabler to Enhanced Community Care
- National programme to reform home support –
- A lot of research activity on older people and frailty (e.g. TILDA etc)
- At population level little is known about the people who use home support
- Lots of data on acute care, less on community services, lack of IT systems
- Using community health administrative data has considerable value – e.g. can inform population health planning
- Embedding research with a community health system can result in service improvements

Where is the  
data!



# Admin Data Analysis Methods!

Microsoft | Microsoft 365 Products

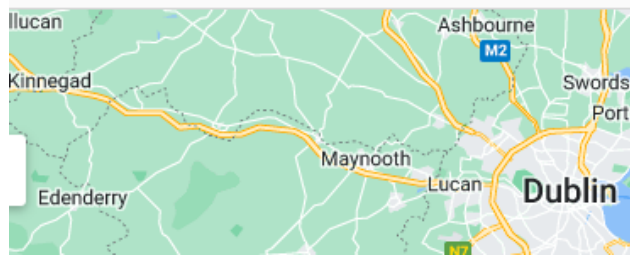
Microsoft Excel

Long Term Care  
Nursing Home  
600



Home  
Support  
2,000

HE Atlas Finder



## COMMON SUMMARY ASSESSMENT REPORT

Please complete all sections clearly in block capitals. Read guidance notes before completing

I confirm that the assessment process and purpose has been explained to me. I consent that information may be shared as appropriate by relevant health and social care professionals in the processing of this application.

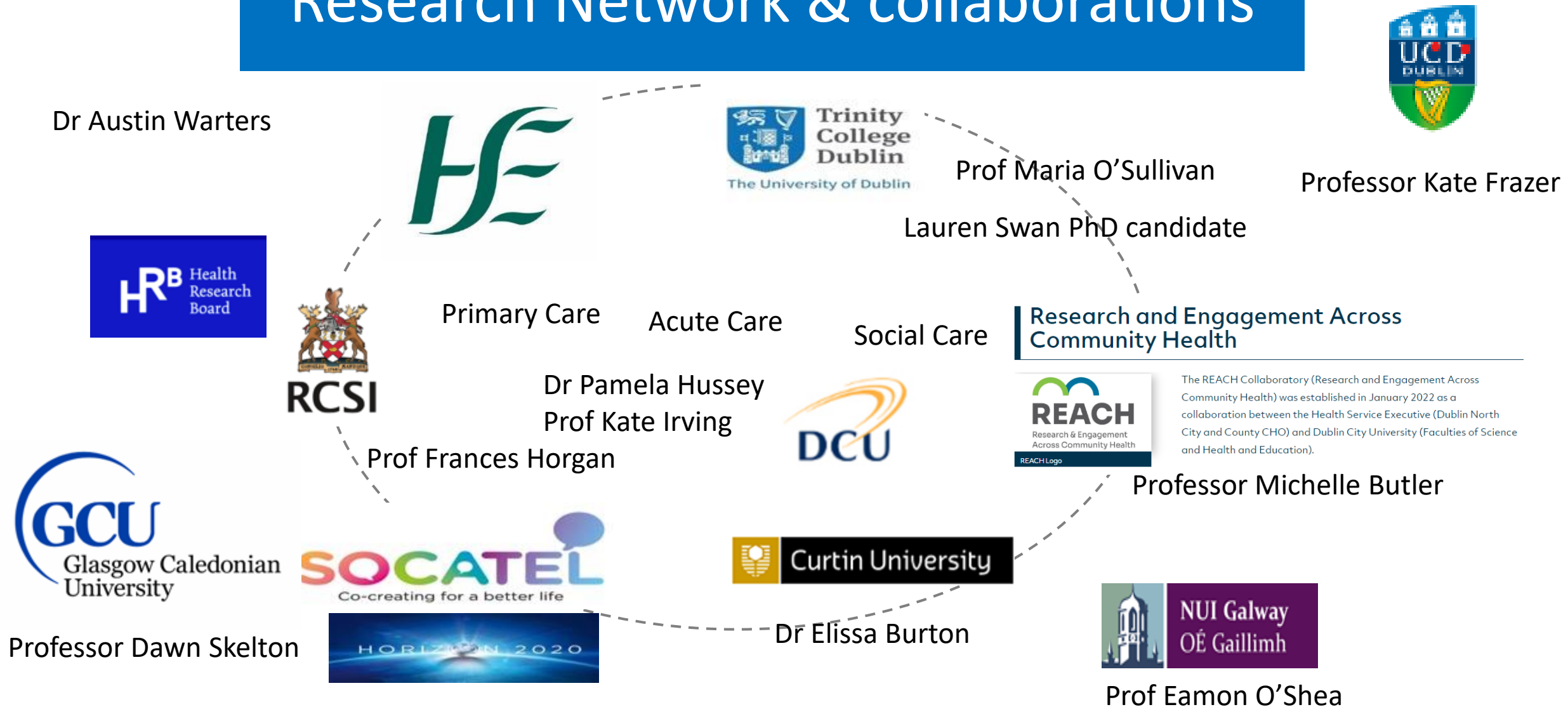
Signature \_\_\_\_\_ Applicant/Specified Person Date \_\_\_\_\_  
(Delete as appropriate)

1. SOURCE OF REFERRAL (PLEASE TICK):					
Community Hospital	<input type="checkbox"/>	Acute Hospital	<input type="checkbox"/>	GP	<input type="checkbox"/>
Mental Health	<input type="checkbox"/>	Community	<input type="checkbox"/>	Nursing Home	<input type="checkbox"/>



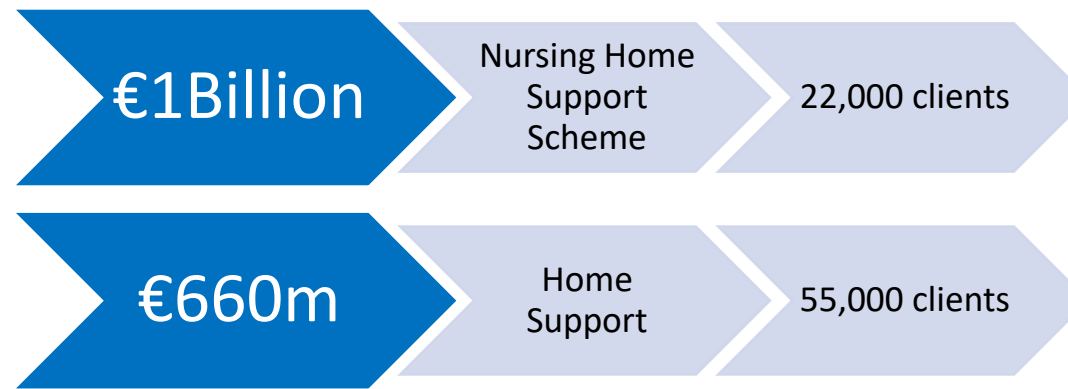


# Research Network & collaborations



1. **Prevalence of frailty among community dwelling older adults in receipt of low level home support: a cross-sectional analysis of the North Dublin Cohort;** Sara Kelly, Irene O'Brien, Karla Smuts, Maria O'Sullivan and Austin Warters; *BMC Geriatrics* (2017) 17:121, DOI 10.1186/s12877-017-0508-2
2. **High prevalence of dementia among community dwelling older adults in receipt of state funded home care packages: implications for health care planning;** I. O'Brien, K. Smuts, C. W. Fan, M. O'Sullivan and A. Warters; *Irish Journal of Psychological Medicine*, page 1 of 6. © College of Psychiatrists of Ireland 2017, doi:10.1017/ipm.2017.80
3. **Predicting admission to long-term care and mortality among community-based, dependent older people in Ireland;** Niamh Aspell, Maria O'Sullivan, Eamon O'Shea, Kate Irving, Chloe Duffy, Rebecca Gorman, Austin Warters; *Int J Geriatr Psychiatry*. 2019;1–9. DOI: 10.1002/gps.5101
4. **Residential Area Socioeconomic Deprivation is Associated with Physical Dependency and Polypharmacy in Community-Dwelling Older Adults: An Analysis of Health Administrative Data in Ireland;** Lauren Swan, Frances Horgan, Chie Wei Fan, Austin Warters, Maria O'Sullivan; *Journal of Multidisciplinary Healthcare* 2022:15 1955–1963 (2<sup>nd</sup> September 2022)
5. **Assessing Sarcopenia, Frailty, and Malnutrition in Community-Dwelling Dependant Older Adults- An Exploratory Home-Based Study of an Underserved Group in Research;** Lauren Swan, Niamh Martin, N Frances Horgan, Austin Warters and Maria O'Sullivan; *Int. J. Environ. Res. Public Health* 2022, 19, 16133. <https://doi.org/10.3390/ijerph190916133>

# Long-term care services for older people



**22 Million Home Support Hours**  
**HSE service plan 2022**



# Prevalence of Frailty in Community-Dwelling Older Adults Receiving Home Support (n 1312)

## Physical Function Domain



**Clinical Frailty Scale**  
**Frailty**      **41.5%**  
**Vulnerable** **38.4%**

Kelly et al. *BMC Geriatrics* (2017) 17:121  
DOI 10.1186/s12877-017-0508-2

BMC Geriatrics

### RESEARCH ARTICLE

Open Access



## Prevalence of frailty among community dwelling older adults in receipt of low level home support: a cross-sectional analysis of the North Dublin Cohort

Sara Kelly<sup>1</sup>, Irene O'Brien<sup>1</sup>, Karla Smuts<sup>1,2</sup>, Maria O'Sullivan<sup>2</sup> and Austin Warters<sup>3\*</sup>

O'Caoimh et al., 2014	54.3	784	Public Health Centres	Discharge
Kelly et al., 2016 [61]	41.5	1312	Community	Home Care
O'Halloran et al 2021	11.0	3,441	Community	TILDA

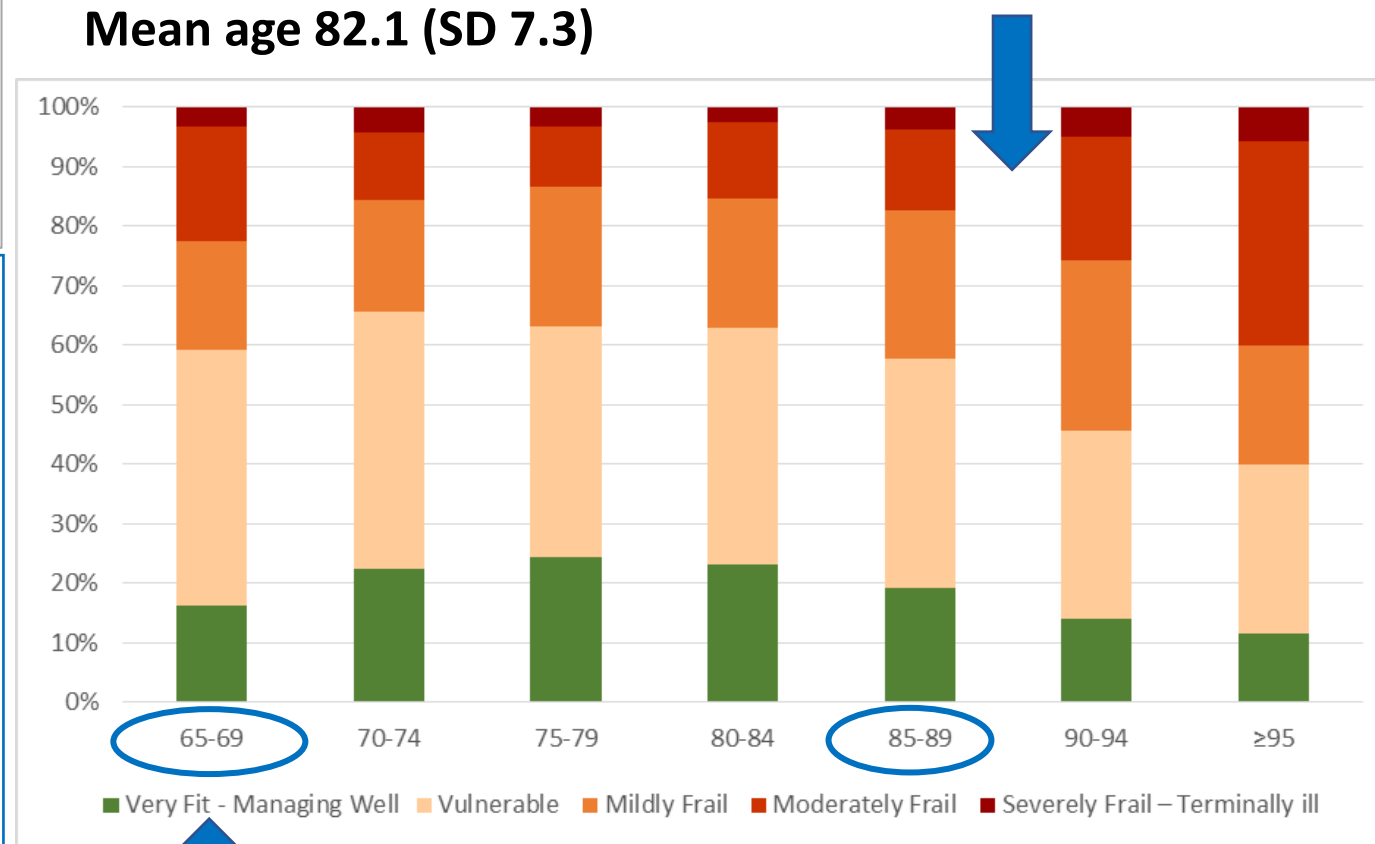


# Prevalence of Frailty in Community-Dwelling Older Adults Receiving Home Support (n 1312)

Physical  
Function  
Domain

**Clinical Frailty Scale**  
**Frailty 41.5%**  
**Vulnerable 38.4%**

- Mild-Moderate Frailty Similar up to 85 years
- Significantly increased 90+ years (chronological age)
- Similar 65-84 years
- Suggest opportunities to maintain and improve physical function



Clinical Frailty Scale – Rockwood – Assessed in-home

# Prevalence of Dementia and Cognitive Impairment in Older Adults Supported by Home Care (n 1312)

**Cognitive  
Domain  
45%**



**Cognitive  
Impairment &  
Dementia**

*Irish Journal of Psychological Medicine*, page 1 of 6. © College of Psychiatrists of Ireland 2017.  
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and reproduction in any medium, provided the original work is properly cited.  
doi:10.1017/ipm.2017.80

SHORT REPORT

## High prevalence of dementia among community dwelling older adults in receipt of state funded home care packages: implications for health care planning

I. O'Brien<sup>1,2</sup>, K. Smuts<sup>1,2</sup>, C. W. Fan<sup>3</sup>, M. O'Sullivan<sup>4</sup> and A. Warters<sup>5,\*</sup>

<sup>1</sup> North Dublin Homecare Ltd., Dublin, Ireland

<sup>2</sup> Community Healthcare Organisation, Ballymun Healthcare Facility, Dublin, Ireland

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<sup>4</sup> Clinical Medicine, Trinity Centre for Health Sciences, St. James's Hospital, Dublin, Ireland

<sup>5</sup> Services for Older People, Health Service Executive, Community Healthcare Organisation, Ballymun Healthcare Facility, Dublin, Ireland

I O'Brien, K. Smuts, C. W. Fan, M. O'Sullivan. A. Warters. *Irish Journal of Psychological Medicine*, 2017. p1- 6.  
doi:10.1017/ipm.2017.80

# Cognitive Impairment Associated with Transition from Home Care to Long-term Care (n=1597)

Cognitive  
Domain  
43.1%



\*Cognitive &  
Impairment  
Dementia

## RESEARCH ARTICLE

WILEY International Journal of  
Geriatric Psychiatry

Predicting admission to long-term care and mortality among community-based, dependent older people in Ireland

Niamh Aspell<sup>1,2</sup>  | Maria O'Sullivan<sup>3</sup> | Eamon O'Shea<sup>4</sup>  | Kate Irving<sup>5</sup> | Chloe Duffy<sup>3</sup> | Rebecca Gorman<sup>3</sup> | Austin Warters<sup>2</sup> 

## Key Finding

**\*Cognitive Dysfunction was significantly associated with admission to Long Term Care**  
OR 2.10 (1.41-3.14),  $P < 0.001$

# Characteristics of Older Adults Receiving Home Support (n=1597)

## Demographics

Age, mean $\pm$ SD	83.3 $\pm$ 7.2
Age $\geq$ 80 years	72.2 % , (n, 1152)
Gender, female	63.6 %
Lives alone	55.4 %

## Physical Function

### *ADL Barthel Index*

Med-high dependency 67.7%

Score, mean  $\pm$  SD 13.1  $\pm$  3.9

## Hospitalisation

**Hospitalisation – 53.1 %**

**Acute hospitalisation 33.4 %**

## Polypharmacy

$\geq$  5 medications/d 67.5 %

$\geq$ 10 medications/d 32.6 %

## Mental Health

**Cognitive Impairment 43.1 %**

**Mental Health Condition 19.7 %**

\* sample n=1312 O'Brien et al; Kelly et al. All other data n = 1597. Aspell et al, Swan et al.

RESEARCH  
SERIES  
NUMBER 122  
March 2021

# DEMAND FOR THE STATUTORY HOME SUPPORT SCHEME

BRENDAN WALSH AND SEÁN LYONS

RESEARCH ARTICLE

WILEY  Geriatric Psychiatry

Predicting admission to long-term care and mortality among  
community-based, dependent older people in Ireland

Niamh Aspell<sup>1,2</sup>  | Maria O'Sullivan<sup>3</sup> | Eamon O'Shea<sup>4</sup>  | Kate Irving<sup>5</sup> | Chloe Duffy<sup>3</sup> |  
Rebecca Gorman<sup>3</sup> | Austin Warters<sup>2</sup> 

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<sup>3</sup>Trinity College Dublin, Centre for Health  
Sciences, St. James' Hospital, Dublin, Ireland

<sup>4</sup>Centre for Economic and Social Research on  
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<sup>5</sup>School of Nursing and Human Sciences,  
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Correspondence

A. Warters, PhD, Community Healthcare  
Organisation, Ballymun Healthcare Facility,  
Dublin, Ireland.  
Email: wartersa@tcd.ie

**Objective:** To identify factors that predict admission to long-term care (LTC) and mortality among community-based, dependent older people in Ireland, who were in receipt of formal home support.

**Methods:** An audit was conducted of all community-dwelling older adults receiving government funded home support during 2017 in the Dublin North Central, Health Service Executive administrative area. Data were extracted from the Common Summary Assessment Report (CSAR), a mandatory form used in the provision of home support. Multiple logistic regression analysis was used to examine the factors associated with admission to LTC and mortality, with the results presented as odds ratios (OR) and 95% confidence intervals.

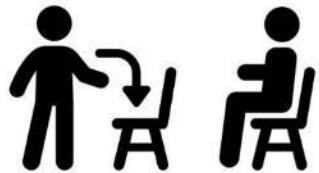
**Results:** The audit comprised 1597 community-dwelling older adults with a mean age of 83.3 (SD: 7.2) years. The prevalence of transition to LTC and mortality was 8% and 9%, respectively, during the 12-month period. Factors significantly associated with admission to LTC were "cognitive dysfunction" [OR 2.10 (1.41-3.14),  $P < .001$ ] and the intensity of home support [OR 1.05 (1.01-1.06),  $P < .003$ ], as measured by weekly formal care hours. Physical dependency and advanced age (aged 95 years +) were significantly associated with mortality in this population ( $P < .001$ ).





# Socioeconomic Factors & Home Support

Physical  
Function



Mental  
Health -  
Cognition




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Journal of Multidisciplinary Healthcare



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ORIGINAL RESEARCH

## Residential Area Socioeconomic Deprivation is Associated with Physical Dependency and Polypharmacy in Community-Dwelling Older Adults: An Analysis of Health Administrative Data in Ireland

Lauren Swan <sup>1,2</sup>, N Frances Horgan<sup>3</sup>, Chie Wei Fan<sup>4</sup>, Austin Warters <sup>5</sup>, Maria O'Sullivan<sup>1</sup>

<sup>1</sup>Department of Clinical Medicine, Trinity College Dublin (TCD), Dublin, Ireland; <sup>2</sup>North Dublin Homecare Ltd, Dublin, Ireland; <sup>3</sup>School of Physiotherapy, RCSI University of Medicine and Health Sciences, Dublin, Ireland; <sup>4</sup>Department of Geriatric Medicine, Mater Misericordiae University Hospital, Dublin, Ireland; <sup>5</sup>Older Person Services CHO9, Health Service Executive (HSE), Dublin, Ireland

Correspondence: Lauren Swan, Email [swanla@tcd.ie](mailto:swanla@tcd.ie)

**Introduction:** Socioeconomic disadvantage is associated with multiple adverse health outcomes in ageing. Whether this negative

# Characteristics of Older Adults Supported by Home Care - **Residential Area Deprivation** n=1597 83.9 ± 7.1 years

## Socioeconomically Disadvantaged v Affluent Areas

**High Physical Dependency:** 16.2% v 6.9% p = 0.009  
*was twice that in affluent areas*

**Acute Hospitalisation:** 41.6% v 29.1% p < 0.001  
*as a trigger for home care*

**Polypharmacy:** 74.7% v 64.5%, p = 0.030  
**On average 6.5 years younger accessing home care**

**Cognitive Impairment:** 45.5% v 40.6% NS

**Mental Health Cond:** 25.3% v 19.2% NS

*No significant difference detected*

*The findings persisted in multivariable analyses when adjusted for **age and gender**.*

# Assessing Physical Function - **in Home Study** Older People in Receipt of Home Care – Findings

IPAQ international physical activity questionnaire

**n = 31:** 83.2 ± 8.2 years;

## Physical Function



### Pattern Suggests that Most Met the Criteria for:

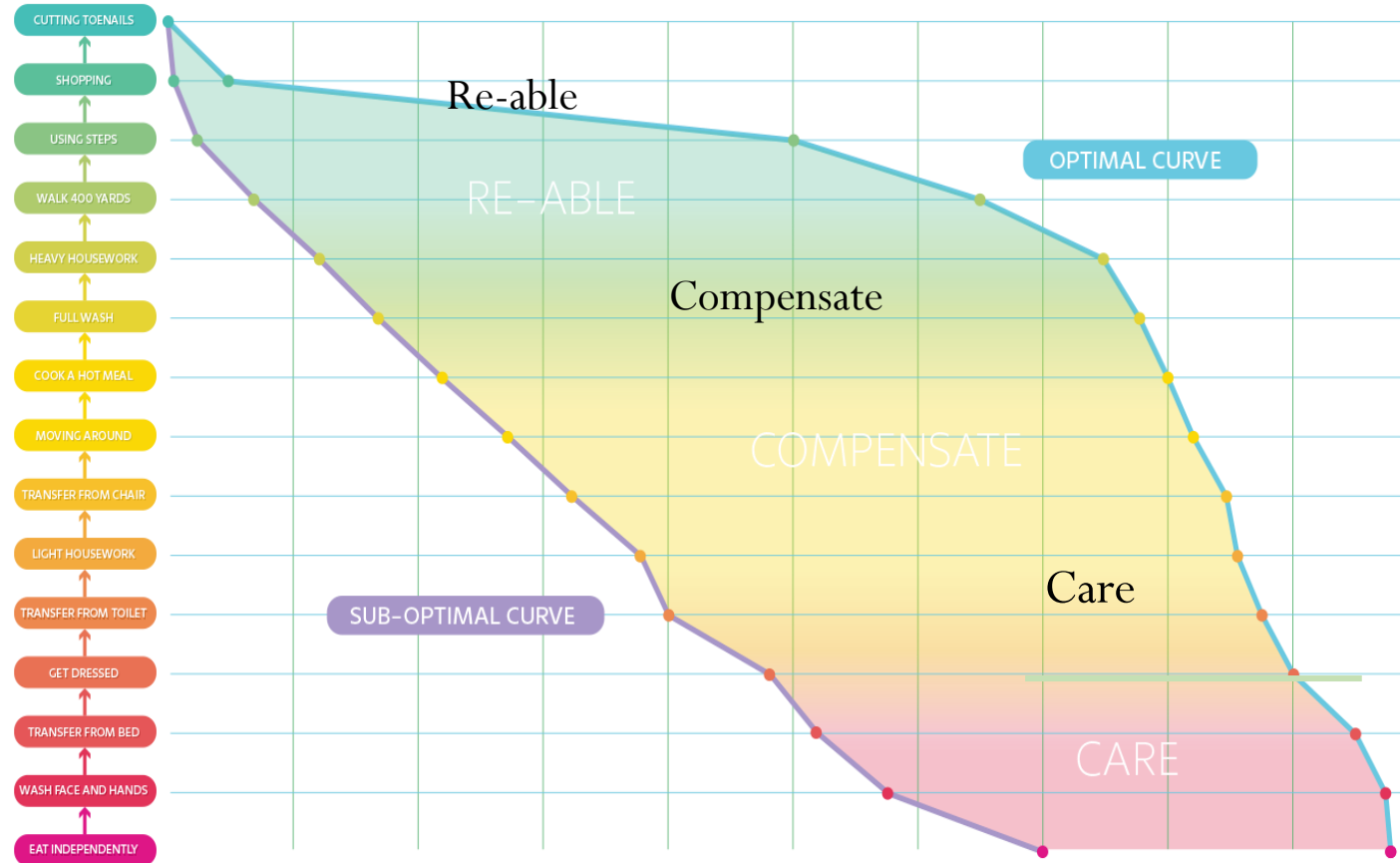
- **Frailty** – Clinical Frailty Scale - 97%
- Low Muscle Strength – Probable **Sarcopenia** - 94%
- **Low Physical Activity** - IPAQ - 71%
- 11.4 ± 1.6 hours of daytime spent **Sitting**
- **Malnutrition risk** Mini Nutritional Assessment **26%**
- **Hospitalisation** in past 12 mo. - **58%**

Int. J. Environ. Res. Public Health 2022, 19, 16133.

Lauren Swan Niamh Martin Frances Horgan Austin Warters Maria O'Sullivan

# Tackling Frailty In Older People – ADL SMARTCARE

## Activities of Daily Life Hierarchy





Article

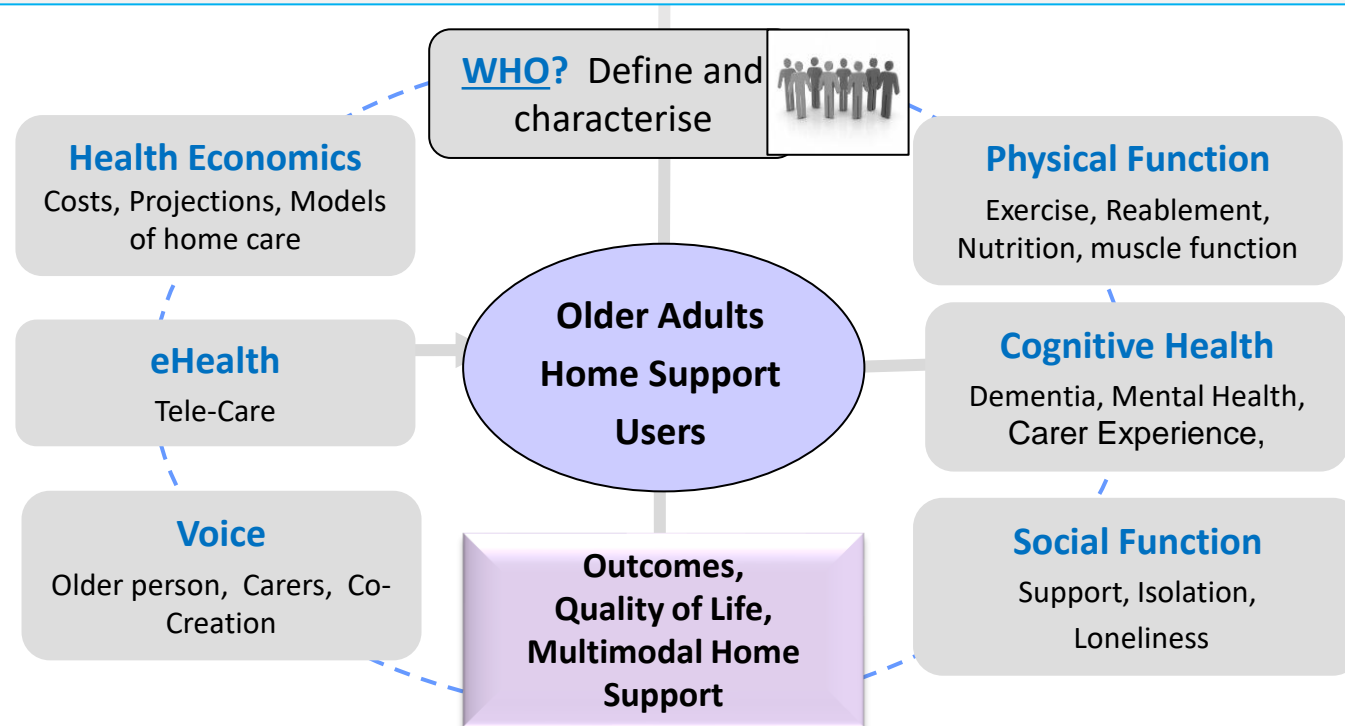
# Enhancing Existing Formal Home Care to Improve and Maintain Functional Status in Older Adults: Results of a Feasibility Study on the Implementation of Care to Move (CTM) in an Irish Healthcare Setting

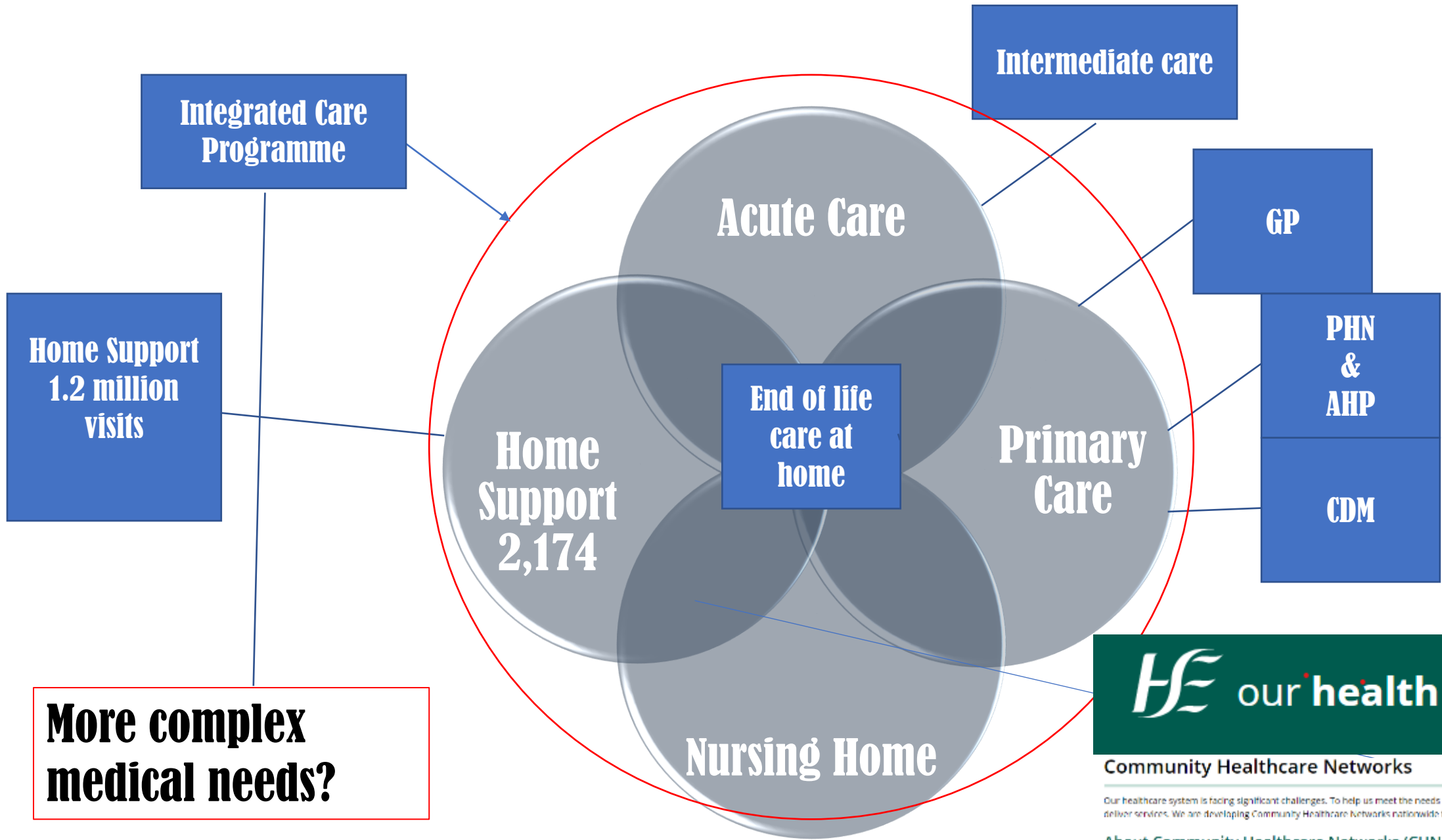
Frances Horgan <sup>1,\*</sup> , Vanda Cummins <sup>2</sup> , Dawn A. Skelton <sup>3</sup> , Frank Doyle <sup>4</sup> , Maria O'Sullivan <sup>5</sup> , Rose Galvin <sup>6</sup> , Elissa Burton <sup>7,8</sup> , Jan Sorensen <sup>9</sup> , Samira Barbara Jabakhanji <sup>9</sup> , Bex Townley <sup>10</sup> , Debbie Rooney <sup>11</sup> , Gill Jackson <sup>11</sup> , Lisa Murphy <sup>11</sup> , Lauren Swan <sup>5</sup> , Mary O'Neill <sup>12</sup> and Austin Warters <sup>13</sup>

**Abstract:** **Background:** Care to Move (CTM) provides a series of consistent ‘movement prompts’ to embed into existing movements of daily living. We explored the feasibility of incorporating CTM approaches in home care settings. **Methods:** Feasibility study of the CTM approach in older adults receiving home care. Recruitment, retention and attrition (three time points), adherence, costs to deliver and data loss analyzed and differentiated pre and post the COVID-19 pandemic. Secondary outcomes, including functional status, physical activity, balance confidence, quality of life, cost to implement CTM. **Results:** Fifty-five home care clients (69.6% of eligible sample) participated. Twenty were unable to start due to COVID-19 disruptions and health issues, leaving 35 clients recruited, mostly women (85.7%), mean age 82.8 years. COVID-19 disruption impacted on the study, there was 60% retention to T2 assessments (8-weeks) and 13 of 35 (37.1%) completed T3 assessments (6-months). There were improvements with small to medium effect sizes in quality of life, physical function, balance confidence and self-efficacy. Managers were supportive of the roll-out of CTM. The implementation cost was estimated at EUR 280 per carer and annual running costs at EUR 75 per carer. **Conclusion:** Embedding CTM within home support services is acceptable and feasible. Data gathered can power a definitive trial.



**Mission: Promote Ageing in Place: Strategies to Reduce Physical, Cognitive & Social Frailty**





### Community Healthcare Networks

Our healthcare system is facing significant challenges. To help us meet the needs of our service users we must change how we deliver services. We are developing Community Healthcare Networks nationwide to deliver this change.

#### About Community Healthcare Networks (CHN)

We have a growing and ageing population. Life expectancy is increasing, as is the prevalence of chronic disease. These and other factors continue to place increasing pressure on our health services. How we deliver services needs to change so we can meet the needs of people using our services, and for our staff.

There will be 95 CHNs across Ireland. Each CHN will deliver primary healthcare services across a population of 50,000. It will consist of between 4-6 primary care teams, with GPs involved in delivering services. Working together in multi-disciplinary teams will deliver the bláncaire vision to provide the right care, in the right place at the right time.

**Table 4:** Ageing population projections for a Community Health Network (CHN) 2022-2030

	2022 Population*, n (%)	2030 Population*, n (%)*	% Increase	Received home- support **, n (%)	Estimated population receiving home- support, (%)
Total Area Population (0-85+ years)	60,400	61,611			
Age Category					
85+	1,634 (2.8)	1,813 (3.0)	11.0%	648 (55.0)	39.7%
80-84	1,507 (2.4)	1,828 (2.9)	21.3%	243 (20.6)	16.1%
75-79	1,955 (3.3)	2,407 (3.9)	23.1%	178 (15.1)	9.1%
70-74	2,495 (4.1)	2,942 (4.7)	17.9%	82 (7.0)	3.3%
65-69	2,921 (4.8)	3,321 (5.4)	13.7%	28 (2.4)	1.0%
Total ≥ 65	10,512 (17.4)	12,311 (19.9)	17.1%	1,179	11.2%

\*Data obtained from CSO 2016 Health Atlas Projections

\*\* Data obtained from Health Service Administrative Data 2022

- ✓ **55%** of all home-support commissioned in this CHN in 2022 was to **individuals aged 85 years and older**.
- ✓ **39.7%** of all individuals aged 85 years and older in this are received formal home-support services in 2022.
- ✓ The mean age for those receiving home-support in the CHN is **84.6 years**.

# ***Is frailty the core business of Primary Care?***

**Addressing Frailty has been identified as  
*'..the future core business of public health'***

*(Liotta et al, 2018)*

*Int J Environ Res Public Health. 2018 Dec 13;15(12):2843..*

***'..improve the targeting of interventions towards high risk frail community-dwelling older adults ...'***

*(Hendry et al, 2019)*

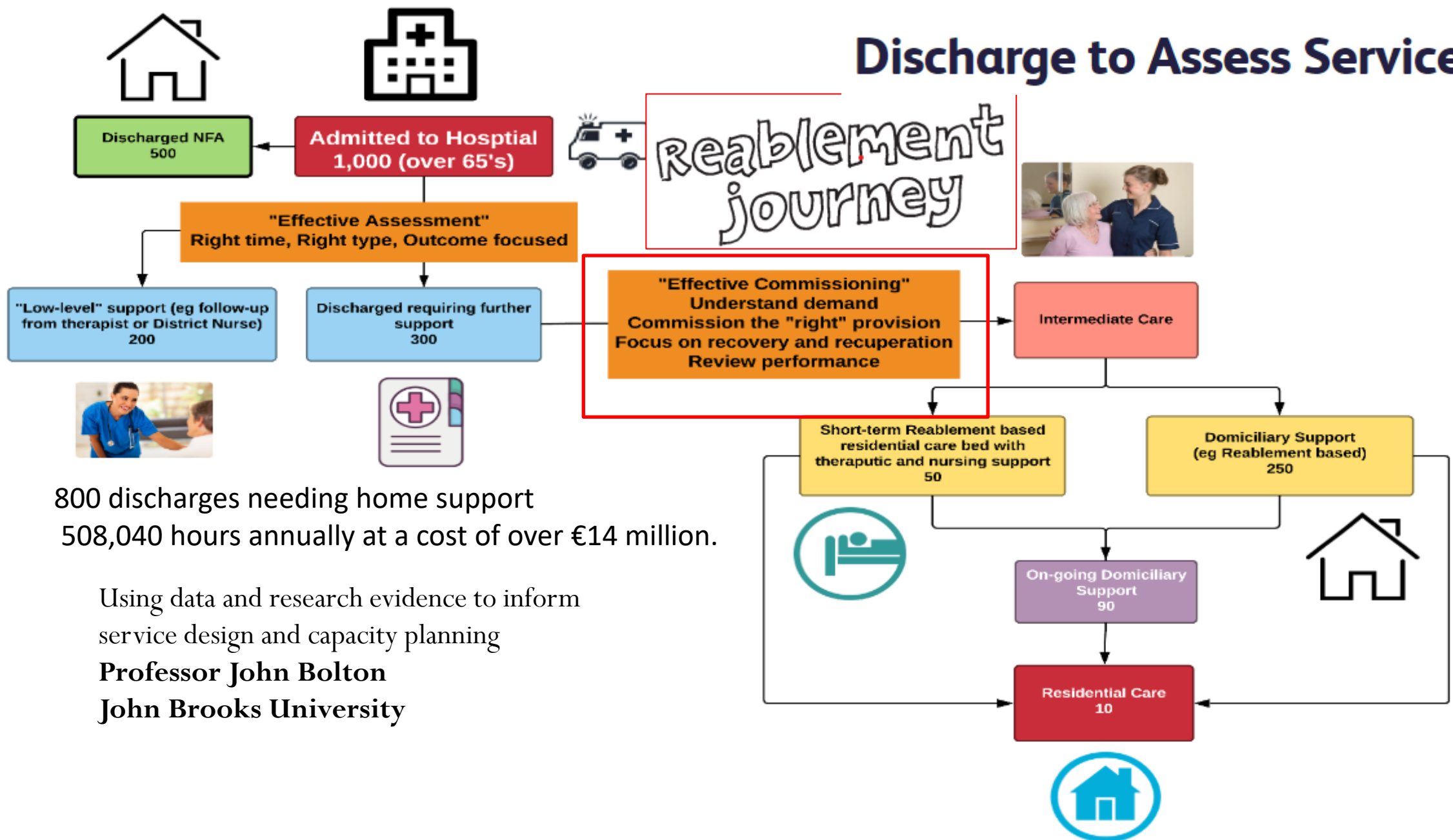
*Translational Medicine. 2019,19(2)5-10; Advantage EU joint Action on Frailty)*

# Using administrative data for service improvement

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# Discharge to Assess Service





# Discharge to assess: transforming the discharge process of frail older patients

Natalie Offord, specialist registrar in geriatric medicine, Paul Harriman, head of special programmes, and Tom Downes, consultant geriatrician and clinical lead for quality improvement

[Additional article information](#)

## ABSTRACT

The 2012 Royal College of Physicians report *Hospitals on the edge* is clear that ‘decisions about service redesign must be clinically led and clinicians must be prepared to challenge the way services – including their own service – are organised’. This paper describes a service redesign in which

we have gained learning and experience in two areas. Firstly, a description of measured improvement by the innovation of redesigning the traditional hospital-based assessment of frail older patients’ home support needs (assess to discharge) into their own home and meeting those needs in real time (discharge to assess). In combination with the formation of a collaborative health and social care community team to deliver this new process, there has been a reduction in the length of stay from completion of acute hospital care to getting home (from 5.5 days to 1.2 days for those patients that require support at home). Secondly, the methodology through which this has been achieved. We describe our translation of a Toyota methodology used for the design of complex cars to use for engaging staff and patients in the design of a healthcare process.

**KEYWORDS:** Discharge to assess, process design, statistical process control, quality improvement

## Introduction

DEPARTMENT: NURSING INFORMATICS



Outline



Images

## Disruptive innovation and the changing face of healthcare

Sensmeier, Joyce E. MS, RN-BC, CPHIMS, FHIMSS, FAAN [Author Information](#) ✓

Nursing Management (Springhouse): November 2012 - Volume 43 - Issue 11 - p 13-14

doi: 10.1097/01.NUMA.0000421681.71712.86

FREE



Metrics



DEPENDENCY





I only asked you to make a cup of tea, that doesn't need a risk assessment first .....





DEPENDENCY



Task orientation  
Risk aversion

Promoting independence



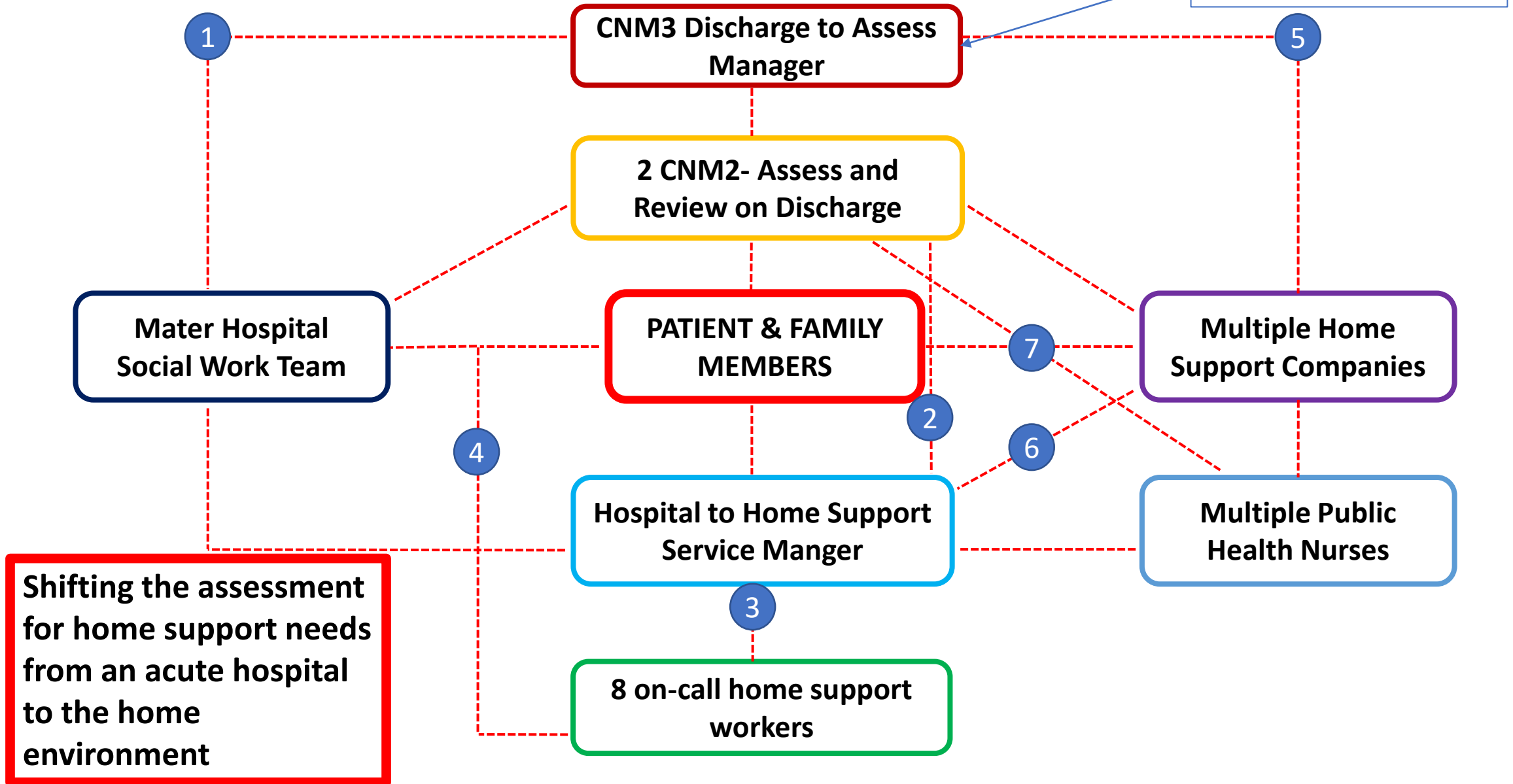
Enabling

# How does it work?

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## Discharge to Assess – Navigating a complex system

# Niamh Martin



# PASSING THE BATON

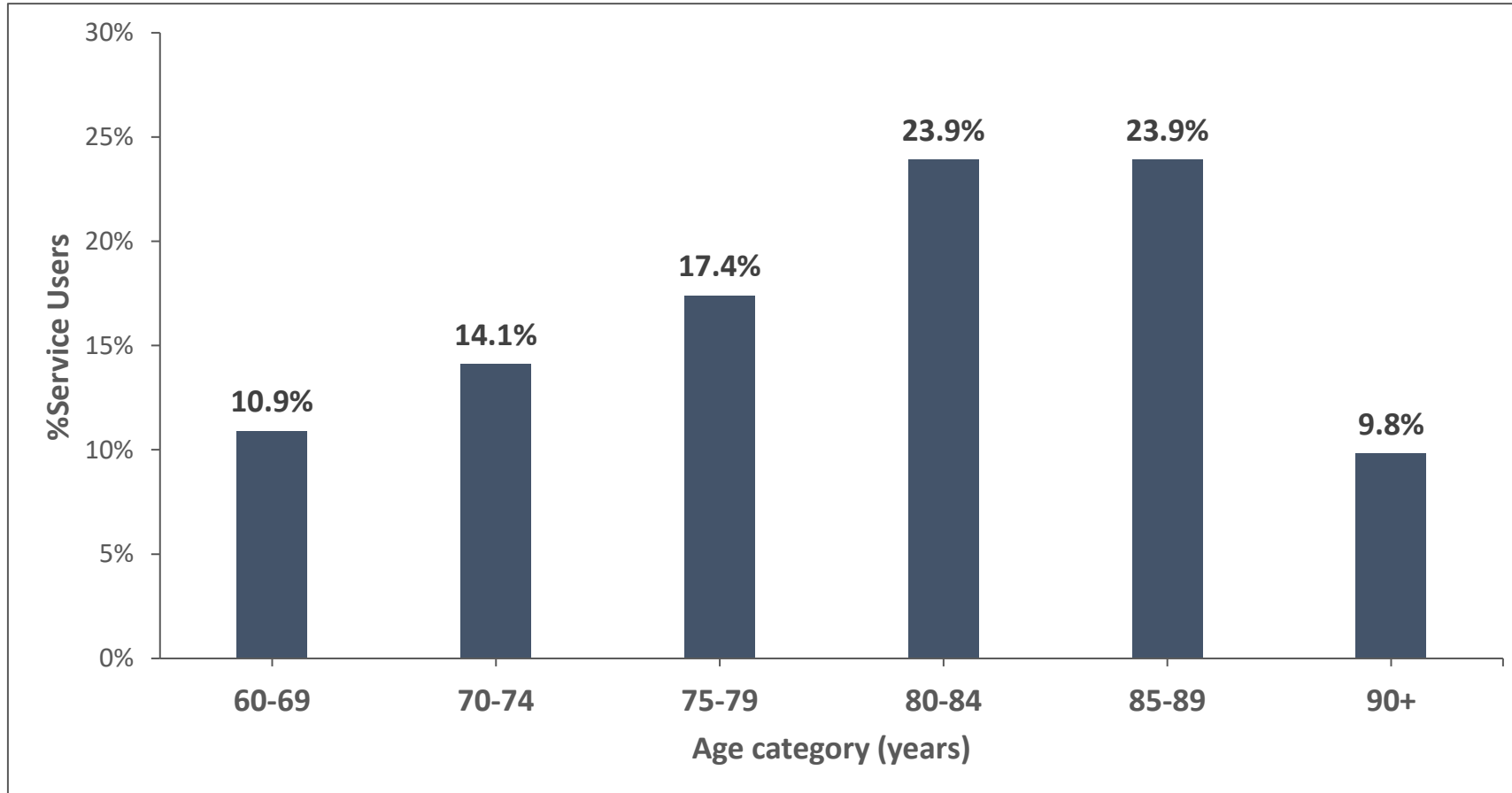
A Practical Guide to Effective Discharge Planning



# Population Characteristics

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# Age Profile



**Youngest client:** 62 years old

**Oldest client:** 97 years old

**Mean Age:** 80.6 years old

55% of individuals were aged 80 years and older

# Socioeconomic Status



17%

AFFLUENT



57%

AVERAGE



26%

DISADVANTAGED

	Affluent	Average	Disadvantaged
Mean Age	85.8 ± 7.6	80.6 ± 7.8	76.7 ± 7.2

As **26%** of approved patients were living in **disadvantaged areas** this often **increased the complexity** of managing their transition home from hospital.

**9-year age difference** between highest and lowest SES groups suggests that those in **disadvantaged areas** are requiring the hospital to home service at a **significantly younger age**



# Measuring improvement

- The mean Barthel score, when assessed in an acute setting, was  $11.6 \pm 5.8$  and **increased to**  $15.3 \pm 5.7$  at time point 2 when assessed in the community.
- The average turnaround time to put homecare in place to support discharge is 8 days without D2A
- Discharge to Assess is a 48 hour turnaround
- This results in an estimated 4 days saved per patient

# D2A Service



**743.5 hours per week**  
applied for by acute  
healthcare professionals



**527 hours per week**  
when reassessed following  
hospital to home service

29.1%  
Decrease

Of those who received the service, the **mean duration** of the hospital to home programme was **14.1 days**.

The shortest duration required was 1 day and the longest was 40 days.

# Independent.ie

## **Revealed: Ireland's most overcrowded hospitals as number of patients on trolleys hits record high**

3<sup>rd</sup> January 2023

The HSE is urging people to consider all options before going to a hospital emergency department



Overcrowding in our hospitals has hit a record high, according to the INMO

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 **#End**  **paralysis**

 GET UP, GET DRESSED,  
GET MOVING





**Saving independence**



**Saving a life**

# BMJ Open Does the engagement of clinicians and organisations in research improve healthcare performance: a three-stage review

**NIHR** | National Institute for Health and Care Research

## Evidence

Annette Boaz,<sup>1</sup> Stephen Hanney,<sup>2</sup> Teresa Jones,<sup>2</sup> Bryony Soper<sup>2</sup>

Encouraging a research-positive culture in health and care organisations is important to give patients wider access to clinical research and improve patient care and treatment options.

Evidence shows clinically research-active hospitals have better patient care outcomes.

**To cite:** Boaz A, Hanney S, Jones T, *et al*. Does the engagement of clinicians and organisations in research improve healthcare performance: a three-stage review. *BMJ Open* 2015;5:e009415. doi:10.1136/bmjopen-2015-009415

► Prepublication history and additional material is available. To view please visit the journal (<http://dx.doi.org/10.1136/bmjopen-2015-009415>).

Received 17 July 2015  
Revised 28 September 2015  
Accepted 16 October 2015

## ABSTRACT

**Objective:** There is a widely held assumption that engagement by clinicians and healthcare organisations in research improves healthcare performance at various levels, but little direct empirical evidence has previously been collated. The objective of this study was to address the question: Does research engagement (by clinicians and organisations) improve healthcare performance?

**Methods:** An hourglass-shaped review was developed, consisting of three stages: (1) a planning and mapping stage; (2) a focused review concentrating on the core question of whether or not research engagement improves healthcare performance; and (3) a wider (but less systematic) review of papers identified during the two earlier stages, focusing on mechanisms.

**Results:** Of the 33 papers included in the focused review, 28 identified improvements in health services performance. Seven out of these papers reported some improvement in health outcomes, with others reporting improved processes of care. The wider review demonstrated that mechanisms such as collaborative and action research can encourage some progress

## Strengths and limitations of this study

- This review brings together for the first time a diverse body of literature addressing whether engaging clinicians and healthcare organisations in research is likely to improve healthcare performance.
- It also explores the mechanisms through which improvement is achieved to try and understand how any improvements might come about.
- However, it relies on the quality and coverage of the existing literature.
- It is an extremely complex topic, but nonetheless one worthy of further exploration, particularly given the pressure to justify research spending in healthcare systems, and to encourage its implementation.

healthcare performance at various levels,<sup>1 2</sup> but little direct empirical evidence has previously been collated. A previous review (published in 2011) looked at the effects on patients of their healthcare practitioner's or



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*The End!*  
*Thank you for*  
*your attention!*

