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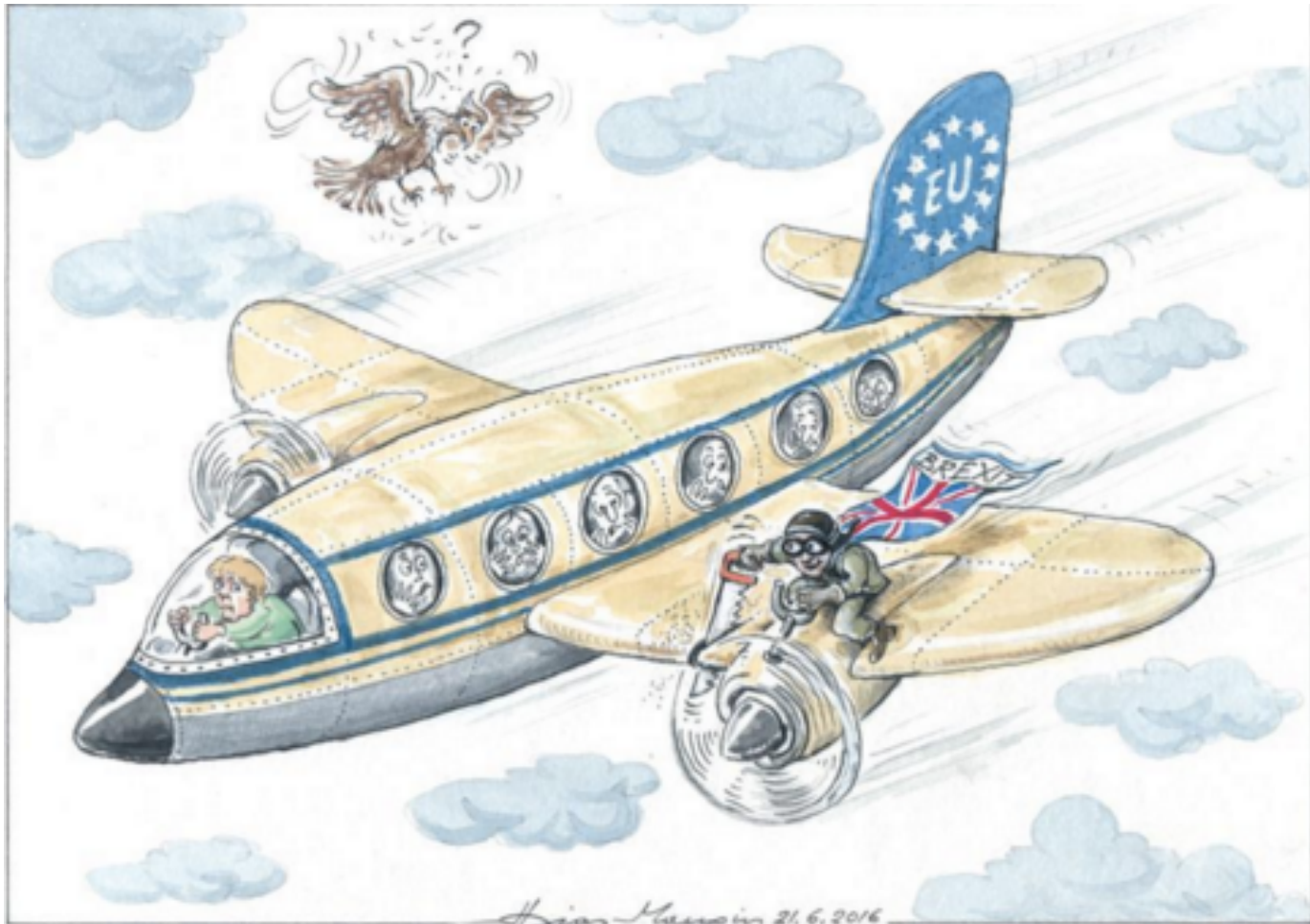
NUI Galway
OÉ Gaillimh

Risk for Adverse Outcomes related to Community Caregiver Stress

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National University of Ireland, Galway and University Hospital Galway

Stressful times.....







Background

- The proportion of older adults, including community dwellers, is increasing worldwide.
- This has resulted in increased numbers of older adults labeled as “frail”.
- Older adults are at increased risk of adverse healthcare outcomes.
- Prognostication is important to personalise care for older adults.
- What role do caregivers and caregiver stress play in this?

COLLaboration on AGEing (COLLAGE)





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COLLaboration on AGEing-COLLAGE: Ireland's three star reference site for the European Innovation Partnership on Active and Healthy Ageing (EIP on AHA)

R. O'Caomhán, C. Sweeney, H. Hynes, C. McGlade, N. Cornally, E. Daly, E. Weathers, A. Coffey, C. FitzGerald, E. Healy, E. O'Connell, G. O'Keeffe, R. O'Sullivan, S. Timmons, T. Foley, E. Creed, M. Hynes, A. Twomey, M. Sammon, D. Cullen, E. Mullan, F. Orfila, C. Paúl, R. Clarnette, S. Campbell, M. Lupari, S. McCarthy, L. Sahm, S. Byrne, C. O'Leary, S. O'Shea, J. O'Donoghue, J. McAdoo, P.M. Kearney, P. Galvin, I. O'Byrne-Maguire, J. Browne, R. Kenny, E. O'Herlihy, P. O'Toole, A. McFarlane, M. Deery, R. Bond, J. Martin, G. Shorten, W. Molloy

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European Geriatric Medicine, Vol. 5, Issue 6

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IRELAND

Site: Ireland: Collaboration on Ageing (COLLAGE)



COLLAGE is a collaboration formed by Cork Healthy Ageing (through Resource Generation & Education – University College Cork) and Louth Age Friendly County. This cross-sectorial initiative includes healthcare providers, local authorities, older people economic development agencies, SMEs, industry partners, community groups and academia.

The **CARTS (Community Assessment of Risk and Treatment Strategies) Programme** aims to delay or prevent functional decline and frailty and 3 adverse outcomes: institutionalisation, hospitalisation and death. It is an integrated screening assessment and treatment package that uses a rapid screening tool (providing a global assessment in 2-5 minutes) helping identifying and understanding the risk factors and thus to define the most beneficial interventions for the patients.

Within the framework of Ireland's National Age-Friendly Counties Programme, Louth has set out as the first county in Ireland to develop and implement an age-friendly county action plan: the **Louth Age-Friendly County Initiative (LAFICI)**. Among its objectives there are an improvement in the seniors' health and well-being, an increased participation of older people in the community life and the delivery of services through imaginative and cost-effective partnerships. Housing, building and transport are among the "physical" environments that are object of innovation in order to increase their age-friendliness.

The **Let Me Decide* Advance Care Planning and Palliative Care Programme in Long-term Care** implements



an advance care planning programme and a palliative care educational initiative into long-term care settings. The objective is to increase older people's independency and reduce unnecessary treatments.



Some examples of the impact of these good practices:

- CARTS is improving patients' empowerment, allowing them to take part in the definition of their specific management plans, based on their personal risk level. 803 patients were tested in the pilot phase, currently 5000 older adults are being assessed.
- Preliminary data on the use of CARTS show that high-risk individuals are 33 times more likely to be institutionalised, 3 times more likely to be hospitalised and 16 times more likely to die than the low-risk group within 6 months from the assessment. The tool proved to have a superior sensitivity, accuracy and specificity in predicting long term care, hospitalisation and death, improving care delivery, detection of frailty, communication and integration of care settings.
- 13,500 citizens aged 65+ participated in the pilot of the Louth Age-friendly Initiative. The guidelines for "Place to Flourish", directed to improving the person-centred characteristics of the environment in long term care setting, were adopted in 181 out of 581 places in residential care.

For further information:
<http://www.collage-ireland.eu/>

EIP on AHA

- Increasing recognition of the role caregivers play in the care of older people.
- EIP on AHA composed of 6 Action Groups including a group dedicated to the prevention of frailty and functional decline.
- Caregiver action area of the Action Group A3, coordinated by UCC (Prof William Molloy) and NUIG (Dr Rónán O'Caoimh).
- This group focuses on improving the quality of life of older
- Adults through identification, assessment and management of the needs of caregivers.

EIP on AHA



EIP on AHA

A3 Action Group on Prevention and Early Diagnosis of Frailty and Functional Decline, Both Physical and Cognitive, in Older People

5

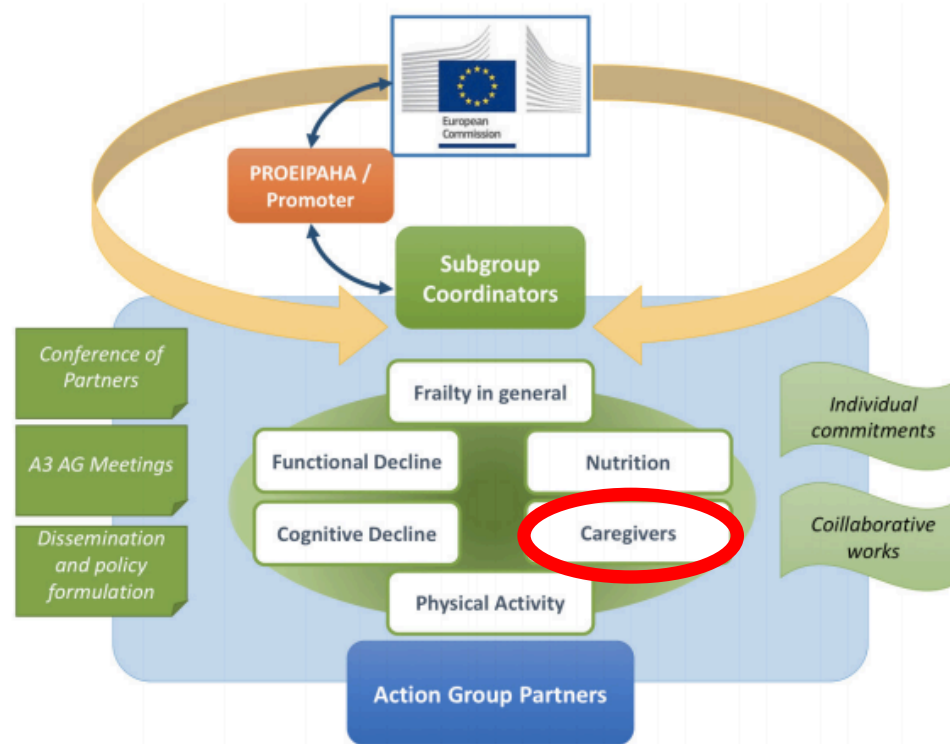
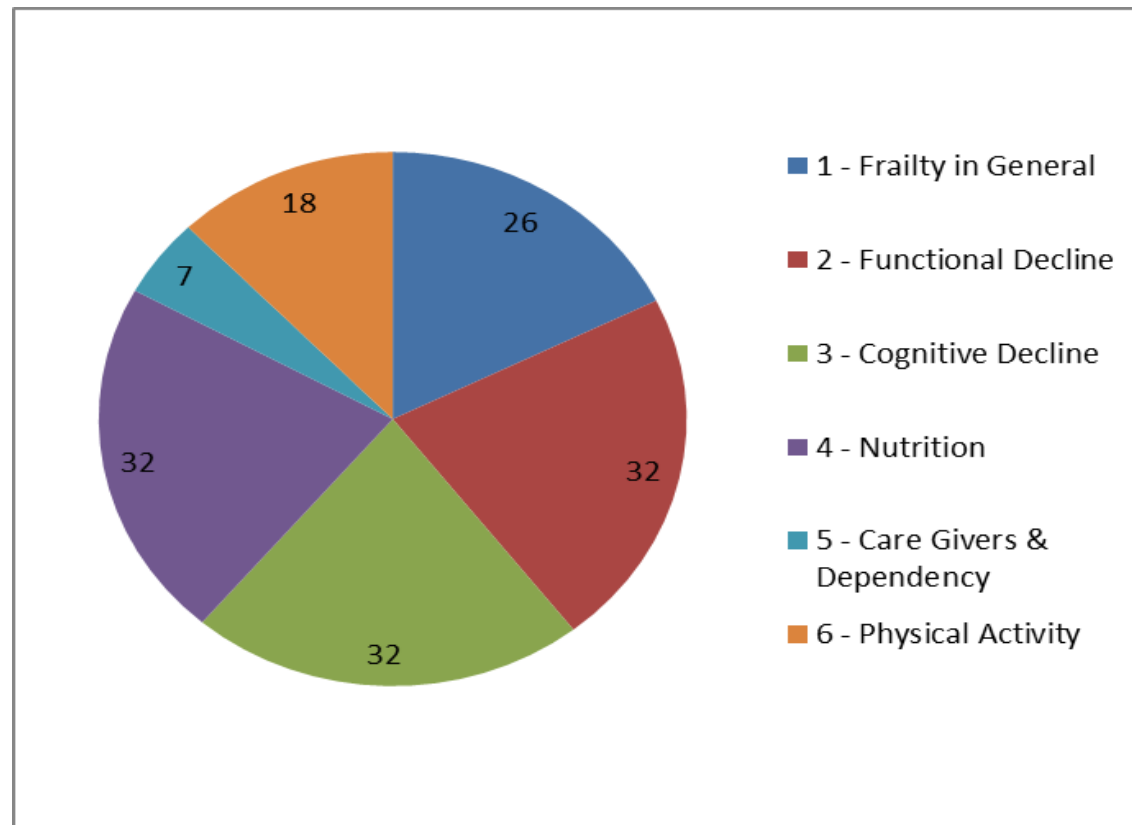


Figure 1. Governance Structure of the Action Group A3

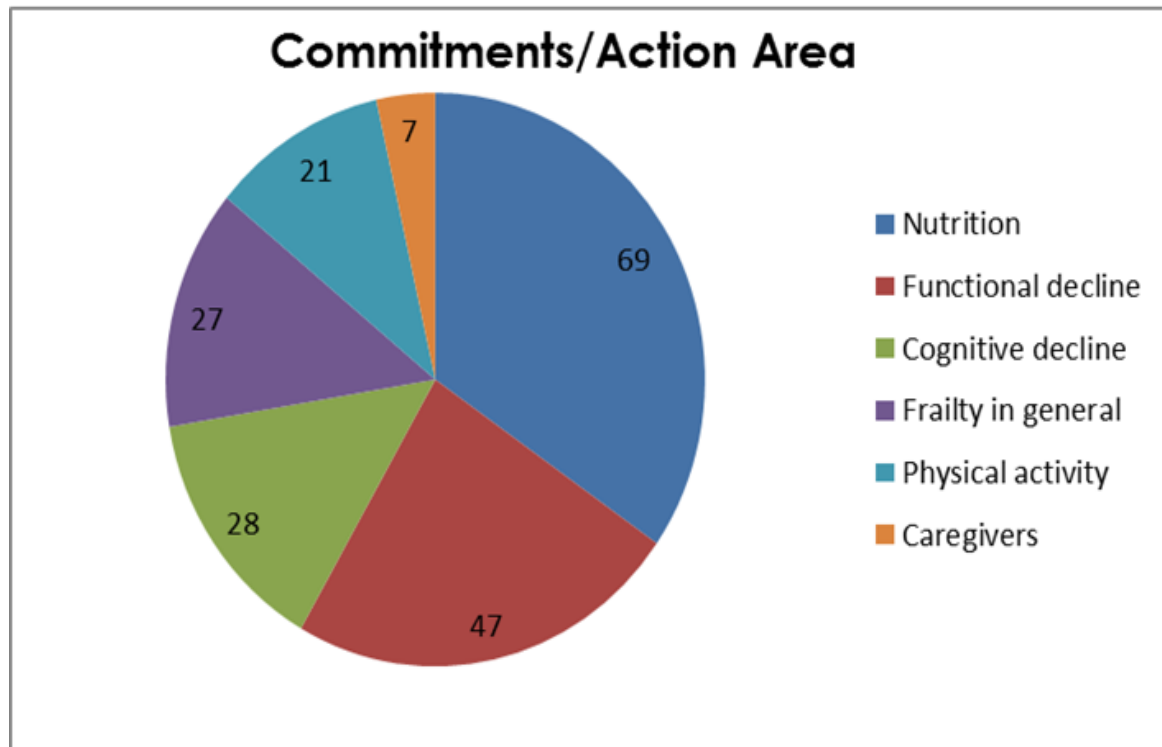
EIP on AHA

Distribution of deliverables/ Action Area



EIP on AHA

Distribution of Commitments/Action Area



Healthcare in our community



Public Health Nurses in the Community c 1906

Healthcare in Ireland

- Small country... 4.5 million citizens. Ref CSO 2011
- 535,393 aged over 65, 11% of the population (70% increase from 1961).
- By 2041.....22% (1.4 million).
- 24,253 beds in Long-term care, costing 0.9% of GDP....equivalent to \$2 billion (2011).
- 44,000 with dementia but by 2050 there will be 90,000-120,000 cases.
- Approx 10% >65 have mild cognitive impairment.
- In 2009 187,000 are carers in Ireland.
- 13% of caregivers are aged > 65 years.
- Average age of caregivers for older people is 73 years.

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Caregiving in the 21st century

March 2016 >

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Original Investigation | March 2016

A National Profile of Family and Unpaid Caregivers Who Assist Older Adults With Health Care Activities

Jennifer L. Wolff, PhD¹; Brenda C. Spillman, PhD²; Vicki A. Freedman, PhD³; Judith D. Kasper, PhD¹

[\[+\] Author Affiliations](#)

JAMA Intern Med. 2016;176(3):372-379. doi:10.1001/jamainternmed.2015.7664.

Text Size: [A](#) [A](#) [A](#)

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ABSTRACT

[ABSTRACT](#) | [INTRODUCTION](#) | [METHODS](#) | [RESULTS](#) | [DISCUSSION](#) | [CONCLUSIONS](#) |
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Importance Family and unpaid caregivers commonly help older adults who are at high risk for poorly coordinated care.



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Caregiving for older adults in the 21st century

- A total of 1,739 family and unpaid caregivers of 1,171 community-dwelling older adults with disabilities who participated in the 2011 US National Health and Aging Trends Study and National Study of Caregiving.
- Sample of caregivers providing substantial, some, or no help with health care, defined by coordinating care and managing medications.
- Results were extrapolated to total USA population.
- Examined:
 1. Caregiving-related effects, including emotional, physical & financial.
 2. Participation restrictions in valued activities,
 3. Work productivity loss.

Caregiving for older adults in the 21st century

- Estimate:
- 14.7 million caregivers assisting 7.7 million older adults in USA.
- 6.5 million (44.1%) provided substantial help, 4.4 million (29.8%) provided some help with health care.

Caregiving for older adults in the 21st century

Nature of Assistance Provided					
Disability-related activity					
Shopping	96.3	89.3	<.001	82.3	<.001
Transportation	92.4	86.2	<.001	80.4	<.001
Housework	95.6	82.0	<.001	72.1	<.001
Mobility	80.6	69.0	<.001	60.6	<.001
Banking	78.1	55.7	<.001	30.2	<.001
Self-care	70.4	43.0	<.001	31.2	<.001
Health system logistics					
Make appointments	90.8	53.1	<.001	14.8	<.001
Order medicines	83.6	36.7	<.001	16.6	<.001
Handle insurance issues	38.0	21.5	<.001	7.3	<.001
Health management					
Diet	45.1	24.1	<.001	15.2	<.001
Foot care	44.1	23.9	<.001	14.1	<.001
Skin care	38.8	23.1	<.001	7.9	<.001
Exercise	33.0	19.6	<.001	10.1	<.001
Dental care	28.2	9.2	<.001	3.6	<.001

Caregiving for older adults in the 21st century

- Caregivers were more likely to be female and adult children.
- Caregivers providing substantial help with healthcare activities were older than caregivers who provided no healthcare!
- They were also less likely to rate their health as excellent or very good.
- Almost half (45.5%) of the caregivers providing substantial help with health care assisted an older adult with dementia.

Caregiving for older adults in the 21st century

- The use of supportive services was low but was greater among caregivers providing substantial vs some or no help (26.7% vs 15.5% & 7.6%, $p < 0.001$).
- Caregivers were significantly more likely to experience:
 1. Emotional difficulty (aOR 1.79; 95%CI, 1.20-2.66),
 2. Physical difficulty (aOR, 2.03; 95%CI, 1.39-2.97),
 3. Financial difficulty (aOR, 2.21; 95%CI, 1.52-3.22).

Caregiving for older adults in the 21st century

- Caregivers were 5 times as likely to experience participation restrictions in valued activities (aOR, 5.32; 95% CI, 3.31-8.59).
- More than 3 times as likely to experience work productivity loss (aOR, 3.14; 95% CI, 1.40-7.02).
- Q.....What effect does this have on older patients?

Who is at risk?

What is the
greatest risk?

What is the
most
appropriate
response?

**The
Challenge of
Managing
Frail Older
Adults in the
Community**

It is possible
to identify risk
but how do
we quantify
it?

Should this
person stay at
home.....go to
a nursing
home?

Risk-prediction

- Successful prevention of functional decline requires more knowledge about risk factors and the stratification of patients is key.
- Risk is the chance an event will occur in the future.
- Amount of (likelihood) potential harm multiplied by the magnitude of that harm.
- It is possible to identify risk but how do we quantify it?
- Can the effects of caregiver stress be used to predict patients who will have worse healthcare outcomes?
- Are there instruments available for healthcare workers to use in the community?

Review

Risk prediction in the community: A systematic review of case-finding instruments that predict adverse healthcare outcomes in community-dwelling older adults

Rónán O'Caoimh^{a,b,*}, Nicola Cornally^{a,c}, Elizabeth Weathers^{a,c}, Ronan O'Sullivan^a, Carol Fitzgerald^a, Francesc Orfila^d, Roger Clarnette^e, Constança Paúl^f, D. William Molloy^{a,b}

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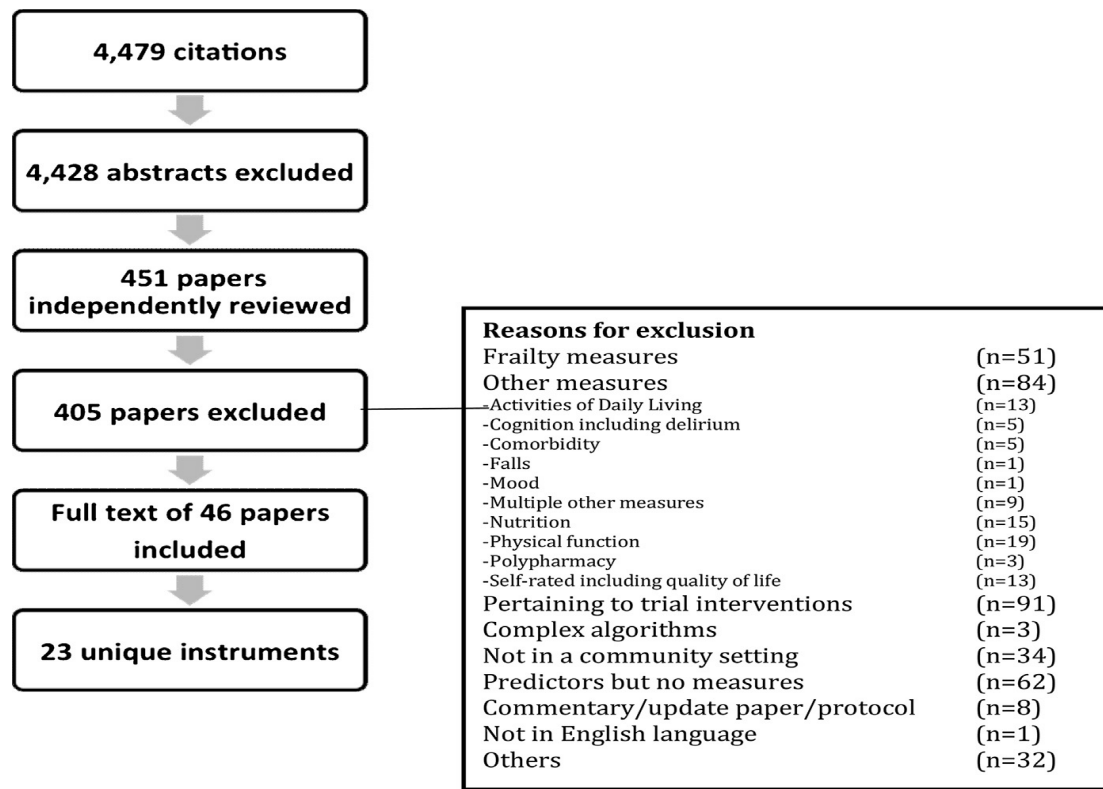
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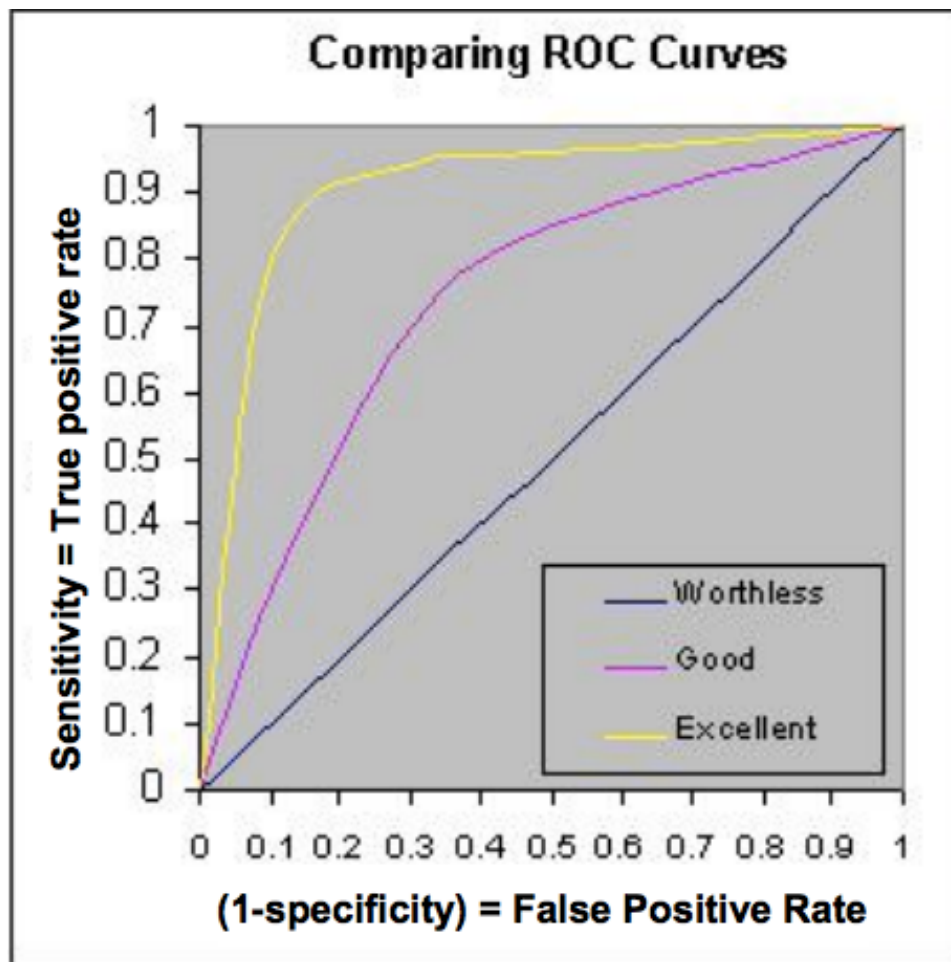
ABSTRACT

Few case-finding instruments are available to community healthcare professionals. This review aims to identify short, valid instruments that detect older community-dwellers risk of four adverse outcomes:

Review of community based risk prediction instruments



Receiver Operating Characteristics (ROC) curves



Predictive accuracy varied between instruments.

Outcome	Area under the curve
Hospitalisation	0.60-0.73
Institutionalisation	0.70-0.74
Functional decline	0.63-0.78
Death	0.56-0.82

Review of community based risk prediction instruments

- Few instruments identified in this systematic review, most were of poor quality.
- Half were validated by retrospective analysis of data from patients enrolled in existing longitudinal studies.
- Many potentially useful instruments were excluded as they are not validated in community settings.
- Reflecting other systematic reviews: instruments predicting hospitalisation had poor accuracy.
- Few instruments measured risk of institutionalisation.
- Few instruments included any kind of measure of caregiver stress.

The Community Assessment of Risk Treatment & Strategies (CARTS) programme.

Aim: To screen for frailty & risk of adverse healthcare outcomes by taking the role of caregivers into account.

Risk Factors for Adverse Outcomes in Community Dwellers



Age (>75 years)

No formal education

Living alone

Chronic medical conditions

Depression

Cognitive impairment

Sensory impairment (visual or hearing)

Poor nutrition

Poor mobility and ADL dependence

Caregiver stress

Understanding Frailty

What does being frail mean in practice?

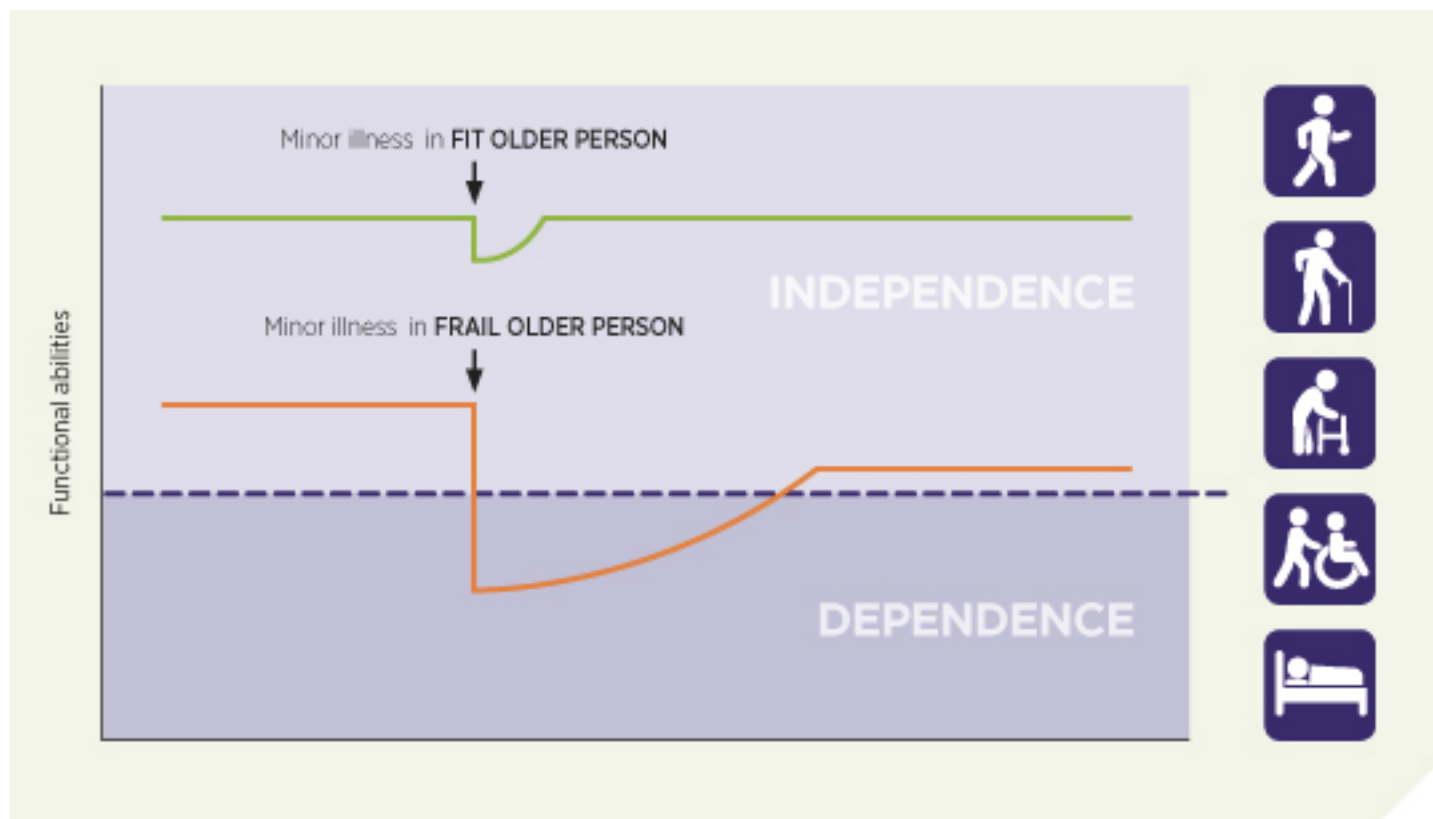


Fig 1. Frail older people display low resilience to minor stressors (e.g. urinary tract infection).²

This figure adapted from Clegg A, Young J, Iliffe S, et al. Frailty in elderly people. Lancet 2013;381:753(Figure 1) with permission from Elsevier.

The Risk Instrument for Screening in the Community (RISC)

- Assesses risk of adverse outcomes within a defined time period (i.e. one year).
- Measures ***care needs*** (mental state, medical state and ADLs) & ***care deficits*** (*ability of the caregiver network to manage any issues*).
- Quick, objective and reproducible
- Predicts hospitalisation, institutionalisation and death
 - Triage those at higher risk to rapid assessment
- Enhances the integrated care agenda
 - A common language between primary and secondary care



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BMC Geriatrics 2014, 14:104
nedcentral.com/1471-2318/14/104



RESEARCH ARTICLE

Open Access

Screening for markers of frailty and perceived risk of adverse outcomes using the Risk Instrument for Screening in the Community (RISC)

Rónán O'Caoimh^{1,7*}, Yang Gao¹, Anton Svendrovski², Elizabeth Healy³, Elizabeth O'Connell⁴, Gabrielle O'Keeffe⁵, Una Cronin¹, Eileen O'Herlihy¹, Nicola Cornally^{1,6} and William D Molloy^{1,7}

Abstract

Background: Functional decline and frailty are common in community dwelling older adults, increasing the risk of adverse outcomes. Given this, we investigated the prevalence of frailty-associated risk factors and their distribution according to the severity of perceived risk in a cohort of community dwelling older adults, using the Risk Instrument for Screening in the Community (RISC).

Methods: A cohort of 803 community dwelling older adults were scored for frailty by their public health nurse (PHN) using the Clinical Frailty Scale (CFS) and for risk of three adverse outcomes: i) institutionalisation, ii) hospitalisation and iii) death, within the next year, from one (lowest) to five (highest) using the RISC. Prior to scoring, PHNs stated whether they regarded patients as frail.

Results: The median age of patients was 80 years (interquartile range 10), of whom 64% were female and 47.4%

Risk Matrix

	Minimal	Mild	Moderate	Severe	Extreme
Certain					Extreme Risk
Likely				High Risk	
Possible			Medium Risk		
Unlikely		Low Risk			
Rare	Minimal Risk				

Development of the RISC

- The RISC records the presence of *Concerns*, the *Severity* of concerns (mild, moderate, and severe) and each *Caregivers' Network's* ability to manage these concerns.
- Across three domains: mental state, activities of daily living and medical state.
- **Risk = Concern + Status** (of the Concern) – **Caregiver Network**
- → Provided the Care Network is unchanged and with consideration for the expected course of the patient.

Caregiver Network Score

- Measured as a 5 point Likert scale:
- **1.Minimal/rare**
- **2.Low/unlikely**
- **3. Moderate/possible**
- **4.High/likely**
- **5.Extreme/certain**
- Validation conducted among community dwellers Cork 2012-2014.

Baseline data (n=801)

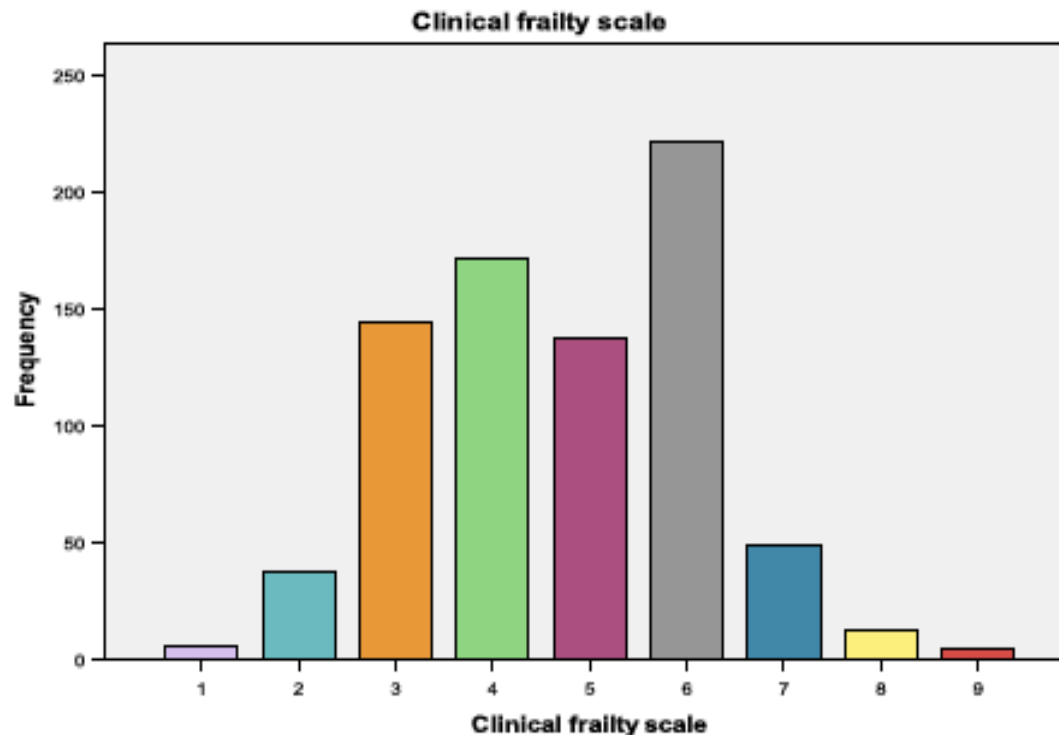


Figure 2 Distribution of clinical frailty scale scores in the study population (n = 784).

Clinical Frailty Scale*



1 Very Fit – People who are robust, active, energetic and motivated. These people commonly exercise regularly. They are among the fittest for their age.



2 Well – People who have **no active disease symptoms** but are less fit than category 1. Often, they exercise or are very **active occasionally**, e.g. seasonally.



3 Managing Well – People whose **medical problems are well controlled**, but are **not regularly active** beyond routine walking.



4 Vulnerable – While **not dependent** on others for daily help, often **symptoms limit activities**. A common complaint is being “slowed up”, and/or being tired during the day.



5 Mildly Frail – These people often have **more evident slowing**, and need help in **high order IADLs** (finances, transportation, heavy housework, medications). Typically, mild frailty progressively impairs shopping and walking outside alone, meal preparation and housework.



6 Moderately Frail – People need help with **all outside activities** and with **keeping house**. Inside, they often have problems with stairs and need **help with bathing** and might need minimal assistance (cuing, standby) with dressing.



7 Severely Frail – **Completely dependent for personal care**, from whatever cause (physical or cognitive). Even so, they seem stable and not at high risk of dying (within ~ 6 months).



8 Very Severely Frail – Completely dependent, approaching the end of life. Typically, they could not recover even from a minor illness.



9. Terminally Ill - Approaching the end of life. This category applies to people with a **life expectancy <6 months**, who are **not otherwise evidently frail**.

Scoring frailty in people with dementia

The degree of frailty corresponds to the degree of dementia. Common **symptoms in mild dementia** include forgetting the details of a recent event, though still remembering the event itself, repeating the same question/story and social withdrawal.

In **moderate dementia**, recent memory is very impaired, even though they seemingly can remember their past life events well. They can do personal care with prompting.

In **severe dementia**, they cannot do personal care without help.

* 1. Canadian Study on Health & Aging, Revised 2008.
2. K. Rockwood et al. A global clinical measure of fitness and frailty in elderly people. CMAJ 2005;173:489-495.

Clinical Frailty Scale*



1 Very Fit – People who are robust, active, energetic and motivated. These people commonly exercise regularly. They are among the fittest **N=6 (0.8%)**



2 Well – People who have **no active disease symptoms** but are less fit than category 1. Often they exercise or are very **active** occasional **N=37 (4.7%)**



3 Managing Well – People whose **medical problems** are **well controlled**, but are **not regularly active** beyond routine walking. **N=144 (18.4%)**



4 Vulnerable – While **not dependent** on others for daily help, often **symptoms limit activities**. A common complaint is being “slowed up”, and/or being tired during the day. **N=171 (21.8%)**



5 Mildly Frail – These people often have **more evident slowing**, and need help in **high order IADLs** (finances, transportation, heavy housework, medications). Typically, mild frailty progressively impairs shopping and walking outside alone meal preparation and housework. **N=138 (17.6%)**



6 Moderately Frail – People need help with **all outside activities** and with **keeping house**. Inside, they often have problems with stairs and need **help with bathing** and might need minimal assistance (e.g. standby) with dressing. **N=221 (28.2%)**



7 Severely Frail – **Completely dependent for personal care**, from whatever cause (physical or cognitive). Even so, they seem stable and not at high risk of dying (within ~ **N=49 (6.3%)**



8 Very Severely Frail – Completely dependent, approaching the end of life. Typically, they could not recover even from a minor illness. **N=13 (1.7%)**



9. Terminally Ill - Approaching the end of life. This category applies to people with a **life expectancy <6 months**, who are **not otherwise evidently frail**. **N= 5 (0.6%)**

Scoring frailty in people with dementia

The degree of frailty corresponds to the degree of dementia. Common **symptoms in mild dementia** include forgetting the details of a recent event, though still remembering the event itself, repeating the same question/story and social withdrawal.

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Total N=784 (97%)



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RISC Score Sheet

Demographics

Personal Details: Name _____

Address _____

Gender : M ☐ F ☐ DOB / / ID _____

Living Arrangements:

Alone ☐ Spouse ☐

Child ☐

Other _____

Instructions	Step 1	Step 2	Step 3
Domain	Concern		Caregiver Network
If NO concern for a Domain, move on to the next Domain. Complete all 4 domains	Is there concern about issues in this domain? (Circle Yes or No) Then complete Step 2	Circle the present severity of the concern (Circle:1,2,3) 1. Mild. 2. Moderate. 3. Severe. Then complete Step 3	Is the caregiver network able to manage (Circle:1,2,3,4 or 5) 1.Can manage 2.Carer strain 3.Some gaps 4.Cannot manage 5.Absent/liability
1. Mental State	N Y ↓ →	1 2 3	1 2 3 4 5
2. ADLs	N Y ↓ →	1 2 3	1 2 3 4 5
3. Medical/Physical State	N Y ↓ →	1 2 3	1 2 3 4 5
4. Other specify _____	N Y ↓ →	1 2 3	1 2 3 4 5

Global Risk Score

(circle 1,2,3,4 or 5)

A. Institutionalisation Overall risk of admission to long-term care (nursing home) in the next year.	1 Minimal / rare	2 Low / unlikely	3 Moderate / possible	4 High / likely	5 Extreme / certain
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B. Hospitalisation Risk of hospitalisation including prolonged admission or readmission in the next year.	1 Minimal / rare	2 Low / unlikely	3 Moderate / possible	4 High / likely	5 Extreme / certain
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C. Death Risk of death in the next year.	1 Minimal / rare	2 Low / unlikely	3 Moderate / possible	4 High / likely	5 Extreme / certain
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Global Risk Score Definitions

- 1. Minimal:** Little or no serious consequence related to the risk / **Rare:** The event will almost never occur.
- 2. Low:** Small impact from the risk, unlikely to cause serious harm / **Unlikely:** Low probability of the event occurring.
- 3. Moderate:** Significant risk present / **Possible:** The event may occur but is infrequent or unlikely to occur soon.
- 4. High:** Serious impact likely from the risk / **Likely:** High probability of the event occurring.
- 5. Extreme:** Severe consequences likely / **Certain:** The event will almost certainly occur.

RISC Score Sheet®

Demographics

Personal Details: Name _____

Address _____

Gender : M ☐ F ☐ DOB / / ID _____

Living Arrangements:

Alone ☐ Spouse ☐

Child ☐

Other _____

Instructions	Step 1 Concern	Step 2	Step 3 Caregiver Network
Domain If NO concern for a Domain, move on to the next Domain. Complete all 4 domains	Is there concern about issues in this domain? (Circle Yes or No) Then complete Step 2	Circle the present severity of the concern 1. Mild. 2. Moderate. 3. Severe. Then complete Step 3	Is the caregiver network able to cope (Circle 1, 2 or 3) 1. Can manage 2. Caret strain 3. Some gaps 4. Cannot manage 5. Absent/Inability
1. Mental State	N <input type="checkbox"/> Y <input checked="" type="checkbox"/> ↓ →	1 2 <input checked="" type="checkbox"/> 3	1 2 3 <input checked="" type="checkbox"/> 4 5
2. ADLs	N <input checked="" type="checkbox"/> Y <input type="checkbox"/> ↓ →	1 2 3	1 2 3 4 5
3. Medical/Physical State	N <input checked="" type="checkbox"/> Y <input type="checkbox"/> ↓ →	1 2 3	1 2 3 4 5
4. Other specify _____	N <input type="checkbox"/> Y <input type="checkbox"/> ↓ →	1 2 3	1 2 3 4 5

Global Risk Score

(Circle 1, 2, 3, 4 or 5)

A. Institutionalisation Overall risk of admission to long-term care (nursing home) in the next year.	1 Minimal / rare	2 Low / unlikely	3 Moderate / possible	4 High / likely	5 Extreme / certain
B. Hospitalisation Risk of hospitalisation including prolonged admission or readmission in the next year.	1 Minimal / rare	2 Low / unlikely	3 Moderate / possible	4 High / likely	5 Extreme / certain
C. Death Risk of death in the next year.	1 Minimal / rare	2 Low / unlikely	3 Moderate / possible	4 High / likely	5 Extreme / certain

Global Risk Score Definitions

- 1. Minimal:** Little or no serious consequence related to the risk / **Rare:** The event will almost never occur.
2. Low: Small impact from the risk, unlikely to cause serious harm / **Unlikely:** Low probability of the event occurring.
3. Moderate: Significant risk present / **Possible:** The event may occur but is infrequent or unlikely to occur soon.
4. High: Serious impact likely from the risk / **Likely:** High probability of the event occurring.
5. Extreme: Severe consequences likely / **Certain:** The event will almost certainly occur.



UCC

Coláiste na hOllscoile Corcaigh, Éire
University College Cork, Ireland

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77-015-0095-z



RESEARCH ARTICLE

Open Access



The Risk Instrument for Screening in the Community (RISC): a new instrument for predicting risk of adverse outcomes in community dwelling older adults

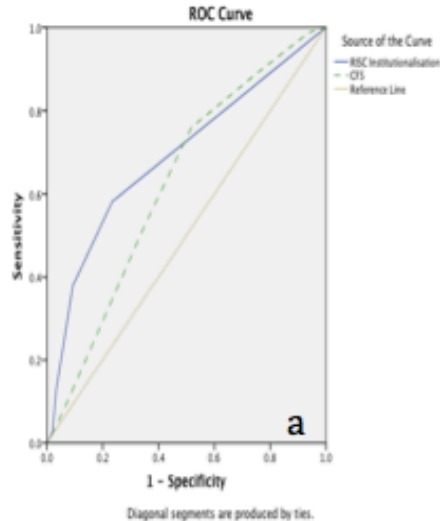
Rónán O'Caoimh^{1,7,8*}, Yang Gao¹, Anton Svendrovski², Elizabeth Healy³, Elizabeth O'Connell⁴, Gabrielle O'Keeffe⁵, Una Cronin¹, Estera Igras¹, Eileen O'Herlihy¹, Carol Fitzgerald¹, Elizabeth Weathers^{1,6}, Patricia Leahy-Warren⁶, Nicola Cornally^{1,6} and D. William Molloy^{1,7}

Abstract

Background: Predicting risk of adverse healthcare outcomes, among community dwelling older adults, is difficult. The Risk Instrument for Screening in the Community (RISC) is a short (2–5 min), global subjective assessment of risk created to identify patients' 1-year risk of three outcomes: institutionalisation, hospitalisation and death.

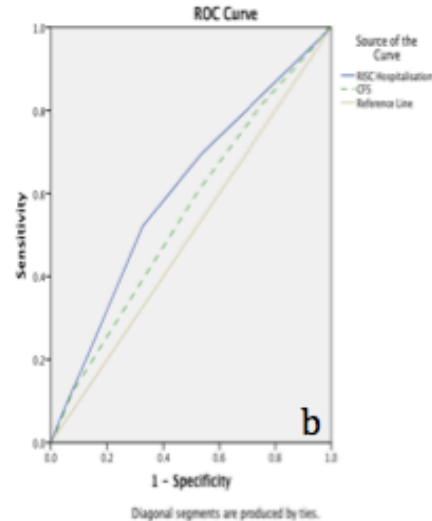
Methods: We compared the accuracy and predictive ability of the RISC, scored by Public Health Nurses (PHN), to the Clinical Frailty Scale (CFS) in a prospective cohort study of community dwelling older adults ($n = 803$), in two Irish PHN sectors. The area under the curve (AUC), from receiver operating characteristic curves and binary logistic regression models, with odds ratios (OR), compared the discriminatory characteristics of the RISC and CFS.

RISC Instrument Testing



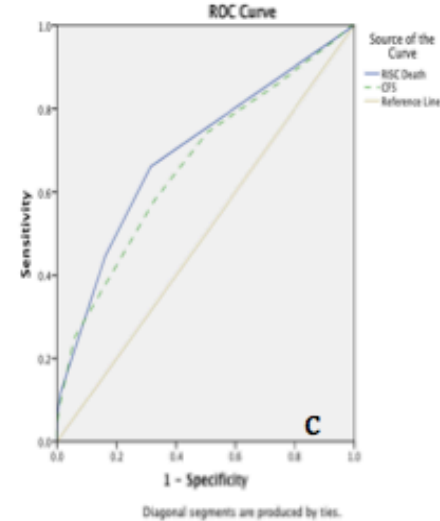
Institutionalisation

AUC = 0.70



Hospitalisation

AUC = 0.61

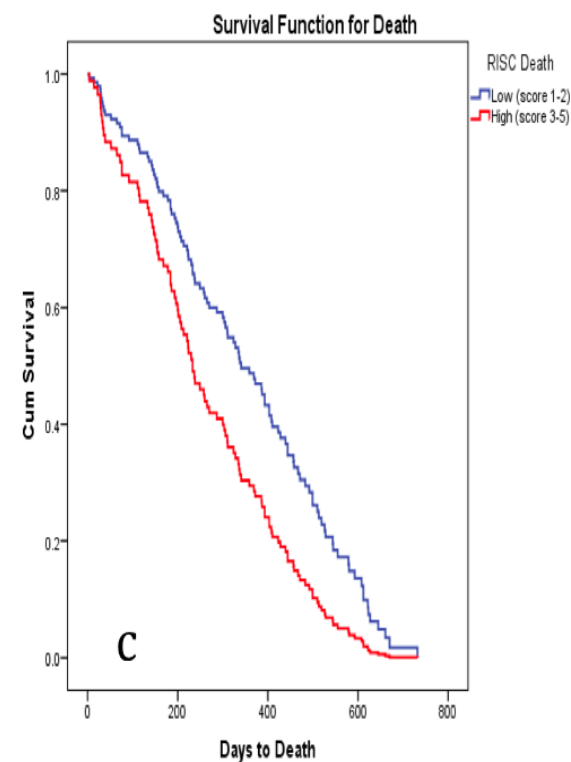
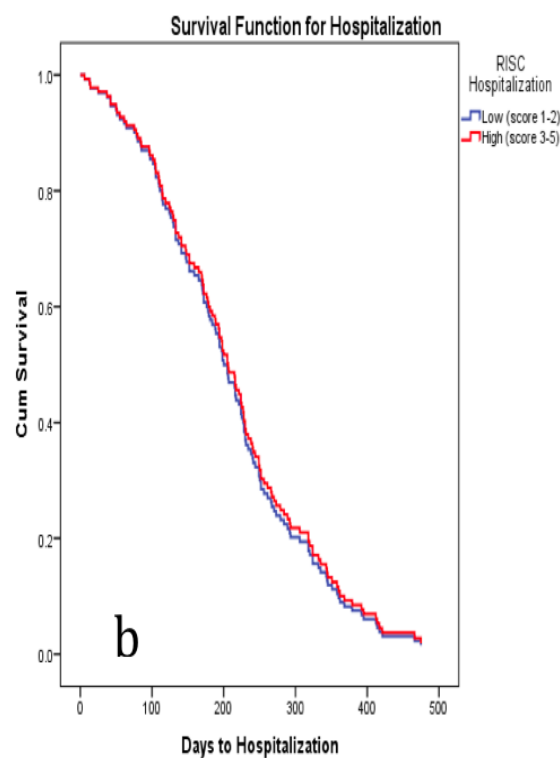
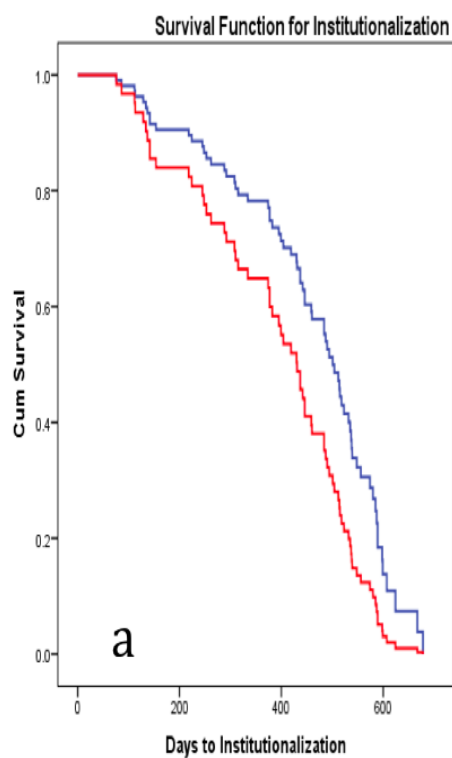


Death

AUC = 0.70

ROC curves comparing the outcomes between the RISC and Clinical Frailty Scale

RISC Instrument Testing



Kaplan meier survival analysis comparing high and low risk patients (classified by RISC)

MEASURING THE EFFECT OF CARERS ON PATIENTS' RISK OF ADVERSE HEALTHCARE OUTCOMES USING THE CAREGIVER NETWORK SCORE

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Abstract: *Background:* Although caregivers are important in the management of frail, community-dwelling older adults, the influence of different caregiver network types on the risk of adverse healthcare outcomes is unknown. *Objective:* To examine the association between caregiver type and the caregiver network subtest of The Risk Instrument for Screening in the Community (RISC), a five point Likert scale scored from one ("can manage") to five ("absent/liability"). To measure the association between caregiver network scores and the one-year incidence of institutionalisation, hospitalisation and death. *Design:* Observational cohort study. *Setting and Participants:* Community-dwelling adults, aged >65, attending health centres in Ireland, (n=779). *Procedure and Measurements:* The caregiver network subtest of the RISC was scored by public health nurses. Caregivers were grouped dichotomously into low-risk (score of one) or high-risk (scores two-five). *Results:* The majority of patients had a primary caregiver (582/779;75%), most often their child (200/582;34%). Caregiver network scores were highest, indicating greatest risk, when patients had no recognised primary caregiver and lowest when only a spouse or child was available. Despite this, patients with a caregiver were significantly more likely to be institutionalised than those where none was required or identified (11.5% versus 6.5%, p=0.047). The highest one-year incidence of adverse outcomes occurred when state provided care was the sole support; the lowest when private care was the sole support. Significantly more patients whose caregiver networks were scored high-risk required institutionalisation than low-risk networks; this association was strongest for managing medical domain issues, odds ratio (OR) 3.87:(2.22-6.76). Only difficulty managing ADL was significantly associated with death, OR 1.72:(1.06-2.79). There was no association between caregiver network score and risk of hospitalisation. *Conclusion:* This study operationalizes a simple method to evaluate caregiver networks. Networks consisting of close family (spouse/children) and those reflecting greater socioeconomic privilege (private supports) were associated with lower incidence of adverse outcomes. Caregiver network scores better predicted institutionalisation than hospitalisation or death.

Key words: Caregivers, social networks, frailty, risk assessment, community assessment.

Caregiver Network Score-validation

- Caregiver network scores were available for 779/801 (97%).
- A primary caregiver was identified for 582/779 (74.7%) patients; 197/779 (25.3%) regarded as sufficiently independent to not have or require a carer.
 1. Children (200/779, 26%) were the most common primary caregiver followed by:
 2. Extended family (148/779, 19%),
 3. Spouses (134/779, 17%),
 4. Siblings or other distant family members, e.g. nephews, nieces and cousins (57/779, 7%).

Caregiver Network Score-validation

- The majority of patients (412/779, 53%) were living with someone. Of these....
 1. 260/412 (63%) were living only with a spouse,
 2. 70 (17%) only with a child and
 3. 46 (11%) within an large extended family unit.
- No differences in age, gender or percentage living alone between those with and without a recognised carer.

Table 1
Characteristics of caregiver network types where available (n=779)

Variable			p=X	Spouse	Child	Extended family unit	Sibling or other distant family	Others*
			-	n=134 (17.2%)	n=200 (25.7%)	n=148 (19.0%)	n=57 (7.3%)	n=43 (5.5%)
Age	79±10	81±10	0.06	77.5±9	84±10	80±11	80±10	78±11
Female	63%	65%	0.57	46%	77%	69%	69%	53%
Living alone	48%	47%	0.80	2%	61%	47%	79%	82%
Cognitive Impairment	12%	37%	< 0.001	43%	32%	42%	20%	41%
AMTS score	10±0	10±0	< 0.001	10±1	10±0	10±1	10±0	10±0
Barthel Index score	20±2	17±6	< 0.001	17±7	17±6	16±7	18±5	18±5
Medications	4±5	5±5	0.004	6±4	5±5	6±6	5±3	5±4
Receiving home help	38%	57%	< 0.001	47%	65%	55%	52%	60%
Hospital length of stay	0±0	0±0	0.76	0±0	0±0	0±0	0±0	0±0
Clinical Frailty Scale	4±1	5±2	< 0.001	6±2	5±2	5±2	4±3	5±3
PHN frailty perception (n=335; 42%)	19%	49%	< 0.001	57%	53%	47%	37%	35%
Charlson Index	1±2	1±2	0.001	1±2	1±2	1±2	1±2	1±1.25
Institutionalisation (n=82; 10.2%)	13 (6.5%)	69 (11.5%)	0.047	7 (5.2%)	25 (12.4%)	19 (12.7%)	10 (17.2%)	(13.8%)
Hospitalisation (n=142; 17.7%)	35 (17.6%)	107 (17.8%)	0.95	30 (22.2%)	32 (15.9%)	22 (14.7%)	12 (20.7%)	(19.0%)
Death (n=125; 15.6%)	24 (12.1%)	101 (16.8%)	0.11	22 (16.3%)	36 (17.9%)	29 (19.3%)	7 (12.1%)	(12.1%)

Results are presented as n (percentage) or median ± interquartile range. PHN= Public health nurse; * Others includes patients receiving privately funded home supports, state funded home supports, care from friends and neighbours etc

Exploration of different caregiver subtypes: distribution of demographic details.

Table 1
Characteristics of caregiver network types where available (n=779)

Variable	None n=197 (25.3%)	Primary caregiver identified n=582 (74.7%)	p=X		Child n=200 (25.7%)		Sibling or other distant family n=57 (7.3%)	Others* n=43 (5.5%)
Age	79±10	81±10	0.06	77.5±9	84±10	80±11	80±10	78±11
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Exploration of different caregiver subtypes: distribution of demographic details.

RESEARCH ARTICLE

Systematic Review and Meta-Analysis of the Impact of Carer Stress on Subsequent Institutionalisation of Community-Dwelling Older People

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Abstract

Background

In the caregiving literature there is a common assertion that a higher level of carer stress is a critical determinant of premature ending of homecare. However, this contention has not been systematically assessed. We therefore systematically reviewed and meta-analysed the prospective association between various forms of carer stress and subsequent institutionalisation of community-dwelling older people.

Methods

Systematic literature search of prospective studies measuring carer stress at baseline and institutionalisation at follow-up. Given substantial interchangeability in the measurement of carer stress, we included a wide number of exposure measures, namely: carer stress, burden, depression, distress, anxiety, burnout, and strain. Institutionalisation included both

OPEN ACCESS

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Caregiver Network Score

Table 3

Comparing odds ratios (95% Confidence intervals) between caregiver networks classified either as low-risk “can manage” (score 1/5) or high-risk “under strain/not managing” (scores 2-5/5), for the three domains of the RISC and each adverse outcome

Domain	Institutionalisation	Hospitalisation	Death
Mental state		1.35 (0.75 - 2.43)	
ADL		1.59 (0.99 - 2.55)	
Medical state		1.42 (0.82 - 2.44)	1.68 (0.97 - 2.91)

* p <0.05; Low-risk group = reference group

Conclusions

- Ageing population is resulting in increasing numbers of older adults in the community.
- Increased prevalence of frailty & risk of adverse healthcare outcomes.
- Commensurate increase in the number of caregivers (usually unpaid & often experiencing caregiver stress & emotional, physical & financial consequences).
- Exploring the impact of caregiver stress on patients risk of adverse healthcare outcomes is complex but important...“the missing piece”.
- Few instruments available that use caregiver stress to predict adverse healthcare outcomes.
- The RISC *Caregiver Network* score is a simple method for community healthcare providers to evaluate caregiver networks using a Likert scale from one to five.
- Further study is required to examine the interplay between caregiver networks, adverse healthcare outcomes and caregiver stress to investigate if targeting and modifying these can reduce risk for community-dwelling older adults.

Thank You



Caring is wonderful....Questions?

