PROFILE - PREVENTING EARLY UNPLANNED ACUTE HOSPITAL READMISSION FOLLOWING CRITICAL ILLNESS

Dr Eddie Donaghy : Research Fellow
On Behalf of PROFILE Research Team (TW, NL, JR, PR, LS, RL ED)
University of Edinburgh
Critical Care Research Group

‘What’s New in ICU’ Conference Edinburgh, 3rd June 2016
Critical Care faces challenges in the coming years with reduced public spending and projected increased demands on services by an ageing population and rise in chronic illness and multi-morbidity (refs 1-3)

Figure 1: The projected percentage change in Scotland’s population by age group, 2010-2035

Ref 4 Source: National records of Scotland (2014) Population Projections for Scottish Areas
Around 40% of the Scottish population suffers from chronic diseases – by the time they are 65, the figure rises to almost 66%.

The majority of over-65s have 2 or more conditions, and the majority of over-75s have 3 or more conditions.

More people have 2 or more conditions than only have 1 (ref 5).
• Scottish Intensive Care Society Audit Group Scotland:

• Admissions to Critical Care wards in Scotland were included in the audit in 2008 - @28,000

• Admissions to Critical Care wards in Scotland were included in the audit in 2013 - @43,000

• Significant Increase

• However- Caution- the Scottish Intensive Care Society Audit Report points out -increase partly due to new units taking part in the audit

• Nevertheless clearly a trend developed- ICU admissions increasing as is Survivorship- more ICU patients than ever discharged home –RECOVERY
• Over 100,000 patients are admitted to intensive care units (ICUs) in the United Kingdom (UK) per year.

• ICU survivors in Scotland each used on average >£14,000 in hospital resource over the subsequent five years (>£85 million per annual cohort of Scottish survivors; ≈£1 billion across the UK) (6-7)

• In addition to excess morbidity, substantial evidence - significant numbers ICU survivors experience reduced cognitive function & longer-term physical, psychological impairments & socio-economic problems (8-11)

• Growing ICU survivorship suggests more supports in community are/will be required to assist recovery - represents a major Health & Social care challenge.
Lone et al (2013) shown 23% of patients in Scotland surviving to be discharged from hospital after episode of critical illness ("ICU survivors") had an early unplanned acute hospital readmission within 90 days of hospital discharge.

- 13% readmitted within 30 days.

- Yes- ICU survivors at higher readmission risk - severity of illness

- However- Lone et al (2013) stated this suggests possible system failures & is not conducive to good patient care, also financially costly
PROFILE

• Preventing avoidable acute hospital readmissions has the potential to improve both the quality-of-life for patients & carers and the financial & operational well-being of healthcare systems.

• The recent focus on readmissions in OECD countries, driven in part by their effects on costs, also underlies a much more global concern about patients’ safety (12).

• Major problem - very little is known about early unplanned hospital readmissions to acute beds – little research (existing-mainly on ICU readmissions) therefore- need for research – hence PROFILE (following research Grant from CSO Scotland)
• Study Objectives-

• To understand who is at greatest risk of readmission,
• Understand why early readmission occurs,
• Develop metrics and toolkits to Reduce the Risk of Early Unplanned Readmission
• To drive improved ICU patient care on a national scale.

• PROFILE- mixed methods approach- Quantitative and Qualitative.

• Cresswell & Clark (2007) define a mixed methods research project:

A mixed methods study involves the collection or analysis of both quantitative and/or qualitative data in a single study in which the data are collected concurrently or sequentially, are given a priority, and involve the integration of the data at one or more stages in the process of research.
• **Qualitative aspect** – Recruit and conduct semi-structured interviews with up to up to 30 ICU Survivors who have had early unplanned (< 90 days) readmission to acute bed in *Lothian, Fife, Tayside* - and 30 Carers.

• Initially conducted Systematic Literature review to help develop semi-structured interview questions.

• Paucity of literature on ICU survivors readmitted to acute beds – therefore included – all general acute readmissions

• **Review Question:** *What are the reported risk factors, at an individual and systems level, that are associated with early unplanned acute hospital readmissions in adult ICU patients and adult general patients?* Recent Attention in area - why?

• The Review identified 4 Key areas – Systemic Factors, Patient-centred Factors: Clinical, Psychological and Socio-demographic circumstances
PROFILE

• Qualitative Component:

• 1-2-1 Semi-structured Interviews with ICU Survivors <= 90 days Early Unplanned Acute Hospital Readmission (n=29)

• And 1-2-1 Semi-structured Interviews Carers/Family Members (n=29)

• Also Conducted Focus Groups with same Cohort of ICU Patients & Carers in 6 Scottish Health Boards 3 Original Sites (Lothian, Fife, Tayside) + 3 New Sites Greater Glasgow & Clyde; Highland; Lanarkshire (n=43) – Test our Interview Findings for resonance.

• To Date : Engaged and Spoken with 49 ICU Survivors with Early Unplanned Readmission and 52 Carers/Family Members
**Patient & Carer Inclusion Criteria**

1. Received invasive mechanical ventilation for 48 hours or more during their primary admission in the intensive care unit (ICU).
2. Had been readmitted into an acute hospital as an emergency within 90 days of hospital discharge from their primary ICU admission.
3. Were treated within the nominated health boards (Lothian, Tayside, Fife).
4. Family members/carers only. Were a family member/carer of a patient who fulfilled inclusion criteria outlined in 1-3 above.
5. Were aged 18 years or over.
6. Had capacity to give informed consent.

**Patient Exclusion Criteria**

1. Had elective surgery for organ transplantation.
2. Had a primary neurological admission diagnosis (brain trauma; intracerebral bleed; stroke).
3. Were in palliative care.
4. Unable to speak English.
5. Too ill to participate (GP advice).
PROFILE

• Patient Recruitment- Research Nurses select from Wardwatcher eligible patients

• After contacting GP Practice - Wrote to Patients asking to participate in semi-structured Interview

• Poor Response Rate – wondered why.

• Looked at literature on ICU different patients socio-demographic background – very broad- and saw significant proportion fell under category of ‘Hard to Reach Groups’

• Our recruits initially More socially affluent, university educated, middle class.
PROFILE- Literature Review Findings

Patient factors that increases risk of unplanned readmissions to acute bed

- Patients with lower socio-economic status
- Lower formal educational status & Unemployed
- Older People, People Live Alone, Poor Social Support
- Alcohol/Drug Misuse
- Poor Patient Literacy & Numeracy levels and Health Literacy levels
- Literacy Commission Scotland 2009 report- ‘almost 1 in 5 people in Scotland have problems reading & writing’ Meaning-Cannot read a medicine bottle or complete job application (average reading age in Scotland is 11 years)
PROFILE

• Ethics Amendment – made the case for change method of recruitment- cited research that ‘Hard to Reach’ groups – personal contact best- wrote to and then 1 week later Phone.

<table>
<thead>
<tr>
<th>Research Area</th>
<th>Eligible Patients Approached</th>
<th>Refusal Rate</th>
<th>Non Responders</th>
<th>Recruited</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tayside</td>
<td>22</td>
<td>4</td>
<td>10</td>
<td>8</td>
</tr>
<tr>
<td>Lothian</td>
<td>43</td>
<td>10</td>
<td>19</td>
<td>14</td>
</tr>
<tr>
<td>Fife</td>
<td>16</td>
<td>1</td>
<td>8</td>
<td>7</td>
</tr>
<tr>
<td>Across 3 Sites</td>
<td>81</td>
<td>15 (19%)</td>
<td>37 (45%)</td>
<td>29 (36%)</td>
</tr>
</tbody>
</table>
## PROFILE: Broad Overview of Participants

<table>
<thead>
<tr>
<th>Gender &amp; BME</th>
<th>Average Age</th>
<th>Age Ranges</th>
<th>Social Deprivation by SIMD Score</th>
<th>Multi-morbidity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male = 18 (62%)</td>
<td>58 Years</td>
<td>18-24yrs (1) 3%</td>
<td>Most Deprived 12/29=41%</td>
<td>Yes – (21/29) 72%</td>
</tr>
<tr>
<td>Female = 11 (38%)</td>
<td></td>
<td>25-34yrs (2) 7%</td>
<td>Medium 11/29=37%</td>
<td>No – (8/29) 28%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>35-44yrs (3) 10%</td>
<td>Least Deprived 6/29=21%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>46-54yrs (8) 28%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>55-59yrs (5) 17%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>60-64yrs (2) 7%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>65yrs+ (8) 28%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Polypharmacy</th>
<th>Drug/Alcohol Misuse</th>
<th>Formally Treated by NHS for Depression/Anxiety</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes – (22/29) 76%</td>
<td>Yes – (7/29) 21%</td>
<td>Yes – (12/29) 41%</td>
</tr>
<tr>
<td>No – (7/29) 24%</td>
<td>No – (22/29) 76%</td>
<td>No – (15/29) 59%</td>
</tr>
</tbody>
</table>
PROFILE: Research Findings from Interviews

• We were especially looking into Drivers for their Readmission and Associated Factors from Patient & Carer Perspective

• We asked them to address this in 2 ways

(1) Narratively – in interviews
(2) Patients and Carer/Family Member Using a Grading Scale to
(a) Assess Quality of Support From Hospital, Community Health, Social and Psychological Services and
(b) Whether any Delayed/Insufficient Support from these Services Played a Role in Support Played a Role in their Readmission
PROFILE: Research Findings from Interviews

PROFILE Scale 1

From Patient/Carer Perspective on a Scale 0-10 (0= Very Weak, 10 Very strong) how would you grade the following in terms of Supporting you at Home after Hospital discharge.

• Health Care Support from GP in Community
• Health Care Support from Nurses in Community
• Support in Addressing Psychological Issues
• My Main Family Member/Carer’s Intervention
• Support in Community from Social Services
• Social Support (explain) from Family/Friends
• Communication between Hospital & GP after Discharge
• Communication between Hospital and Family
• Quality of Information Provided to Myself and family on what to Expect/Do after discharge back Home
PROFILE: Research Findings from Interviews

PROFILE Scale 2
From Patient/Carer Perspective How Much did the Following Play in the Acute Re-admission (0= None, 10 Very Large Part).

• Quality of Information Provided to Myself and Family by Hospital Staff on what
• Communication between Hospital & GP after Discharge
• Communication between Hospital and Family
to Expect/Do after discharge back Home
• Health Care Support from GP in Community
• Health Care Support from Nurses in Community
• Psychological Issues Being Addressed
• Support in Community from Social Services
• Social Support (explain) from Family/Friends
• Any other Factors
<table>
<thead>
<tr>
<th>Grade Quality of Support to Help Recovery in the Community from Patient/Carer Perspective</th>
<th>0-3 Very Weak/Weak</th>
<th>4-6 Average</th>
<th>7-10 Very Strong/Strong</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality of Information Provided to Myself &amp; Family from Hospital Staff on what to Expect/Do after Discharge back Home</td>
<td>12/29 41%</td>
<td>2/29 7%</td>
<td>15/29 52%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Contributing Factors to Readmission from Patient/Carer Perspective</th>
<th>7-10 Very Strong/Strong</th>
<th>4-6 Average</th>
<th>0-3 Very Weak/Weak</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality of Information Provided to Myself and Family on what to Expect/Do after Discharge back Home</td>
<td>12/29 41%</td>
<td>3/29 10%</td>
<td>14/29 49%</td>
</tr>
</tbody>
</table>
### Support Given at Home After Discharge

<table>
<thead>
<tr>
<th></th>
<th>0-3 Very Weak/Weak</th>
<th>4-6 Average</th>
<th>7-10 Very Strong/Strong</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health Care Support from GP in Community</td>
<td>12/29 42%</td>
<td>1/29 3%</td>
<td>16/29 55%</td>
</tr>
<tr>
<td>Support in Community from Social Services</td>
<td>14/29 49%</td>
<td>5/29 17%</td>
<td>10/29 34%</td>
</tr>
</tbody>
</table>

### Contributing Factors to Readmission from Patient/Carer Perspective

<table>
<thead>
<tr>
<th></th>
<th>7-10 Very Strong/Strong</th>
<th>4-6 Average</th>
<th>0-3 Very Weak/Weak</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health Care Support from GP in Community</td>
<td>12/29 41%</td>
<td>3/29 10%</td>
<td>14/29 49%</td>
</tr>
<tr>
<td>Support in Community from Social Services</td>
<td>14/29 49%</td>
<td>5/29 17%</td>
<td>10/29 34%</td>
</tr>
</tbody>
</table>
### Support Given at Home After Discharge

<table>
<thead>
<tr>
<th></th>
<th>0-3 Very Weak/Weak</th>
<th>4-6 Average</th>
<th>7-10 Very Strong/Strong</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Psychological Issues Being Addressed</strong></td>
<td>12/29 41%</td>
<td>5/29 18%</td>
<td>12/29 41%</td>
</tr>
</tbody>
</table>

### Contributing Factors to Readmission from Patient/Carer Perspective

<table>
<thead>
<tr>
<th></th>
<th>7-10 Very Strong/Strong</th>
<th>4-6 Average</th>
<th>0-3 Very Weak/Weak</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Psychological Issues Being Addressed</strong></td>
<td>8/29 28%</td>
<td>2/29 7%</td>
<td>19/29 65%</td>
</tr>
</tbody>
</table>
PROFILE: Research Findings from Interviews

• What Emerged from in-depth analysis of Narrative Data and Scales - there was a Dichotomy of Experience from the 29 Patients.

• 13 out of 29 Scored the Support they Received From Hospital to the Community As Very Weak/Weak and Felt Because this was a Contributing Factor in their Readmission

• 13 out of 29 Scored the Support they Received From Hospital to the Community As Very Strong/ Strong and Felt the main Contributing Factor in their Readmission was purely the Clinical Event- Triggered the Readmission

• 3 out of 29 Scored the support Average
PROFILE: Research Findings from Interviews

• When Looked at these two Dichotomised Groups Interesting Differences.
• Patients who Scored Support Services Lowest & Contributing to their Readmission – Had Highest Need, Previous to Admission Biggest Users of Health & Social Care Services

• Most Multi-morbidity (Average of 4 LTC’s)
• More than 1 Acute Readmission Since Hospital Discharge (10 out of 13)
• Most Cases of being Treated for Depression (8 out of 13),
• Most Likely to Live in Socially Deprived Area (7 out of 13)
• Most Likely to Have Drug/Alcohol Misuse Problems (7 out of 13)
• Most Likely to Live Alone and Be Over-reliant on One Unpaid Carer
• Highest Polypharmacy (Highest Drug Adverse Events-causing readmission)
• Most Likely to Have Significant Mobility Problems (6 out of 13)
• Most Likely to Need Specialist Equipment (adverse event causing readmission)
PROFILE: Research Findings from Interviews

- When looked at these two dichotomised groups interesting differences.
- Patients who scored support services highest & **Not** contributing to their readmission – had lowest need previous to admission lowest users of health & social care services

- Least multi-morbidity & chronic illness
- Fewest acute readmission since hospital discharge
- Least cases of being treated for depression (1 out of 13),
- Least likely to live in socially deprived area (2 out of 13)
- Least likely to have drug/alcohol misuse problems (1 out of 13)
- Least likely to live alone and be over-reliant on one unpaid carer
- Lowest polypharmacy (highest drug adverse events-causing readmission)
- Least likely to have significant mobility problems (2 out of 13)
- Least likely to need specialist equipment (adverse event causing readmission)
PROFILE: Research Findings from Interviews

• Patients who Scored Support Services Lowest & Contributing to their Readmission – Had Highest Need, Previous to Admission Biggest Users of Health & Social Care Services

• Most Multi-morbidity; Likely More than 1 Acute Readmission Since Hospital Discharge; Most Cases of being Treated for Depression; Most Likely to Live in Socially Deprived Area; Most Likely to Have Drug/Alcohol Misuse Problems; Most Likely to Live Alone and Be Over-reliant on One Unpaid Care; Highest Polypharmacy; Most Likely to Have Significant Mobility Problems; Most Likely to Need Specialist Equipment

• Constitute High Risk Group of ICU Patients at Risk of an Early Unplanned Hospital Readmission

• Off course given seriousness of event led to ICU admission – all are at risk.

• However this group –especially ‘At Risk’- Constitute on a Toolkit ‘RED FLAG’
• Findings from the 5 Focus Groups with ICU Patients with early Unplanned Readmission (Still 1 more to go) MIRRORED the 1-2-1 interviews

• A Dichotomised Experience- across all 5 Health Board areas.

• Consequences for Development of A Toolkit to Highlight those ICU Patients at Risk of Having an Early Unplanned Hospital Readmission

• Toolkit Must Address Patient Clinical, Social and Psychological Factors and Address Systemic Factors to Reduce Risk/Prevent Early Unplanned Readmission
PROFILE: TOOLKIT CONCLUSIONS
Patient Clinical, Psychosocial & Social Factors Checklist

• Identify Chronic Illness/Multi-morbidity and Polypharmacy
• Identify Mental Health Problems both Prior to and as a Consequence of ICU Event
• Mobility Assessment.

• Assess Social Support.

• Establish whether Patient has Drug or Alcohol Misuse Problems.

• Assess if Patient has new Need for or Continued use of Specialist Equipment

• Check whether Patient has had previous Unplanned Early Hospital Readmission

• Goal Setting.
• Communicate with Hospital and General Practice Services

• Communicate with Hospital and Community Pharmacy Services

• Communicate with Hospital and Community Psychological Services

• Communicate with Hospital and Community Social Services

• **Conduct Teach Back** To ensure patient and carer/family member have understood advice and guidance, take them through the key issues as above.
Person-centred Care People at the Centre of Health and Social Care

• Toolkit **Must Not** Be a “Tick Box” Exercise but Dialogue Patient/Carer

1. What matters to you?
2. Who matters to you?
3. What information do you need?
4. Nothing about me without me
5. Personalised contact

An approach delivered with Listening, Dignity, Compassion & Respect
References

References


