Health and Homelessness in Scotland

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Strategic Insights Unit
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Introduction

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• Definition of Homelessness
• Obtaining the homelessness data
• The Cohorts
• The Health Datasets
• Interactions with Health Services
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• Main Findings
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High Level Research Questions

• What number and proportion of interactions with health services can be attributed to homeless people?

• How many homeless households have multiple or complex needs?
• Around two years to navigate Information Governance paperwork.
• Three years and eight months in total.
• Work finally published 19 June 2018
Definition of Homelessness

• Households who have applied to Scottish Local Authorities
• Have been assessed as homeless under section 28 of the Housing (Scotland) Act 1987
Obtaining the Homelessness Data

- Scottish Government Homelessness data (HL1) does not contain names of individuals
- A one-off data supply was set up (H2H) to obtain identifiable information for people in homeless applications to enable linking
- Contacted all 32 Local Authorities in Scotland to gather this information
436,000 people assessed as homeless at some point between June 2001 and November 2016

An under-estimate – around 75% of all homeless assessments included in study.

Local Authorities provided personal identifiable data which covered different time periods, e.g. due to IT system changes.

The Ever Homeless Cohort (EHC)

![Bar chart showing the percentage of the Ever Homeless Cohort across different regions in Scotland. The chart includes data for Orkney, Shetland, Highland, Moray, Inverclyde, North Lanarkshire, South Lanarkshire, Dumfries & Galloway, Falkirk, Edinburgh, East Dunbartonshire, and others. The percentages range from 3% to 95%, with the majority of regions having a percentage between 75% and 95%.]

95%
The Ever Homeless Cohort (EHC)

- 436,000 individuals assessed as homeless
  - 120,000 had been homeless on multiple occasions.

- At least 8% of the Scottish population has been homeless at some point in their lives.
This Study – Comparator Populations

• So take people who have been in households assessed as homeless in Scotland (Ever Homeless Cohort)

• Match these by age and sex to a non-homeless person living in a:
  – 20% most deprived area in Scotland (Most Deprived Cohort)
  – 20% least deprived area in Scotland (Least Deprived Cohort)

• Compares homeless people with non-homeless people living in areas of most and least deprivation, with age and sex controlled for.
## Summary: The Cohorts

<table>
<thead>
<tr>
<th></th>
<th>Ever Homeless Cohort (EHC)</th>
<th>Most Deprived Cohort (MDC)</th>
<th>Least Deprived Cohort (LDC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ever Homeless</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Drawn from:</td>
<td>All Geographical Areas</td>
<td>20% Most Deprived areas in Scotland</td>
<td>20% Least Deprived areas in Scotland</td>
</tr>
<tr>
<td>Number of People</td>
<td>436,000</td>
<td>436,000</td>
<td>436,000</td>
</tr>
</tbody>
</table>

- Each person in the EHC is matched on age and sex to the LDC and MDC. Not constrained to a match within same local authority.
- Cohorts have the same number of people.
- 1.3 million people in total in the study.
The Cohorts
(matched on age and sex)

Ever Homeless Cohort

Most Deprived Cohort

Least Deprived Cohort

Remaining Scottish population not in study

Most Deprived Areas

Least Deprived Areas

Scottish Index of Multiple Deprivation Quintiles
# The Health Datasets

<table>
<thead>
<tr>
<th>Dataset</th>
<th>Time Period</th>
<th>Number of Records</th>
</tr>
</thead>
<tbody>
<tr>
<td>A&amp;E (A&amp;E2)</td>
<td>2011-2016</td>
<td>2.1 million</td>
</tr>
<tr>
<td>Acute Hospital Admissions (SMR01)</td>
<td>2002-2015</td>
<td>2.3 million</td>
</tr>
<tr>
<td>Outpatient Appointments (SMR00)</td>
<td>2002-2015</td>
<td>9 million</td>
</tr>
<tr>
<td>Dispensed Prescriptions* (PIS)</td>
<td>2009-2015</td>
<td>9.5 million</td>
</tr>
<tr>
<td>Admissions to Mental Health Specialties (SMR04)</td>
<td>2002-2015</td>
<td>100,000</td>
</tr>
<tr>
<td>Initial Assessments at Drug Treatment Services (SDMD)</td>
<td>2002-2015</td>
<td>89,000</td>
</tr>
<tr>
<td>Deaths</td>
<td>2002-2015</td>
<td>23,700</td>
</tr>
</tbody>
</table>

- Datasets contain records for people in the cohorts only
- "*Selected prescriptions only relating to drugs, alcohol and mental health conditions."
Proportion of Interactions with each Health Service Dataset

- People in the EHC are over-represented in all datasets.
Proportion of people in each cohort using selected services

<table>
<thead>
<tr>
<th></th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>EHC</td>
<td>MDC</td>
</tr>
<tr>
<td>A&amp;E</td>
<td>68%</td>
<td>52%</td>
</tr>
<tr>
<td>Inpatient</td>
<td>61%</td>
<td>44%</td>
</tr>
<tr>
<td>Outpatient</td>
<td>80%</td>
<td>63%</td>
</tr>
<tr>
<td>Mental Health</td>
<td>7.2%</td>
<td>1.4%</td>
</tr>
<tr>
<td>SDMD</td>
<td>8.8%</td>
<td>1.2%</td>
</tr>
</tbody>
</table>

People who have experienced homelessness are more likely to have used the above services.
SDMD = Scottish Drugs Misuse Database
Calculating Ratios

- There were 2.1 million Accident and Emergency (A&E) attendances over the time period 1 January 2011 to 31 December 2016 inclusive for the 1.3 million people in the study.
- EHC has 1.8 times more A&E attendances than the MDC, and 3.5 times more than the LDC.

<table>
<thead>
<tr>
<th>A&amp;E Attendances</th>
<th>Number</th>
<th>Ratios</th>
</tr>
</thead>
<tbody>
<tr>
<td>EHC</td>
<td>1,160,127</td>
<td>EHC:MDC</td>
</tr>
<tr>
<td>MDC</td>
<td>625,776</td>
<td>1.8</td>
</tr>
<tr>
<td>LDC</td>
<td>332,240</td>
<td>EHC:LDC</td>
</tr>
<tr>
<td>Total</td>
<td>2,118,143</td>
<td>3.5</td>
</tr>
</tbody>
</table>

\[
\frac{1,160,127}{625,776}
\]
<table>
<thead>
<tr>
<th>Dataset</th>
<th>EHC : MDC</th>
<th>EHC : LDC</th>
</tr>
</thead>
<tbody>
<tr>
<td>A&amp;E</td>
<td>1.8</td>
<td>3.5</td>
</tr>
<tr>
<td>Acute Hospital Admissions</td>
<td>1.7</td>
<td>3.1</td>
</tr>
<tr>
<td>Outpatient Appointments</td>
<td>1.6</td>
<td>2.3</td>
</tr>
<tr>
<td>Dispensed Prescriptions*</td>
<td>2.5</td>
<td>8.2</td>
</tr>
<tr>
<td>• Opioid</td>
<td>6.5</td>
<td>169</td>
</tr>
<tr>
<td>• Alcohol</td>
<td>3.9</td>
<td>23.6</td>
</tr>
<tr>
<td>Admissions to Mental Health Specialities</td>
<td>4.9</td>
<td>20.5</td>
</tr>
<tr>
<td>Initial Assessments at Drug Treatment Services</td>
<td>10</td>
<td>133</td>
</tr>
<tr>
<td>Deaths</td>
<td>2.1</td>
<td>5.3</td>
</tr>
</tbody>
</table>
Deaths

• Only 2% of the 1.3 million people in the study died (c. 23,600).
• Most people in the study didn’t die.
• The EHC accounted for 60% of all deaths (Most Deprived Cohort: 29%, Least Deprived Cohort: 11%)
For 36-40 year olds, EHC males have over 20 times the rate of deaths per 1,000 people, compared to the LDC.
Cause of Deaths:
Once only Homeless

Drugs and alcohol deaths rank 3 and 4, behind heart disease & strokes and cancer

[Graph showing the number of deaths per 1,000 people within the cohort for various causes, including heart disease & strokes, cancer, drug-related conditions, alcohol-related conditions, and intentional self-harm.]
Cause of Deaths: Repeat Homeless

Drugs and alcohol deaths rank 1 and 2 respectively.
Temporal Analysis

• Previous analysis looked at the total number of interactions for each cohort.
• We can use the date of interaction relative to the first homelessness assessment.
• MDC and LDC controls inherit the first assessment date from their matched EHC control.
Temporal Analysis

![Temporal Analysis Graph](image)

- **AA**: Acute admissions (SMR01)
- **MH**: Mental Health
- **IorP**: Injury or Poisoning
- **OP**: Outpatient Appointments (SMR00)
- **MHA**: Admissions to Mental Health Specialties (SMR04)

- **Once**: People with one homelessness assessment
- **Repeat**: People with multiple homelessness assessments

Legend:
- **AA Drugs**
- **AA Alcohol**
- **AA Respiratory**
- **AA Other**
- **OP Repeat**
- **OP Once**
- **MH Prescriptions Repeat**
- **MH Prescriptions Once**
- **AA MH**
- **A&E Repeat**
- **A&E Once**
- **MH Repeat**
- **MHA Repeat**
- **MHA Once**

Years Relative to First Homelessness Assessment Date

Activity for homeless people relative to people in 20% least deprived areas
Temporal Analysis

(Zoomed in)
Individual Person-level Analysis of Drug-related, Alcohol-related and Mental Health Issues
Drugs+Alcohol+Mental Health

• 6% of people in EHC. This was much higher than in the control groups (MDC 1%, LDC 0.2%).
  – those experiencing repeat homelessness (11.4%).

<table>
<thead>
<tr>
<th>Number of People in the Cohort</th>
<th>Once Only EHC</th>
<th>Repeat EHC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proportion with:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>55.4%</td>
<td>39.3%</td>
</tr>
<tr>
<td>Any mental health</td>
<td>43.6%</td>
<td>59.4%</td>
</tr>
<tr>
<td>Any drugs</td>
<td>9.8%</td>
<td>26.4%</td>
</tr>
<tr>
<td>Any alcohol</td>
<td>8.1%</td>
<td>17.2%</td>
</tr>
<tr>
<td>Alcohol, drugs and mental health</td>
<td>3.8%</td>
<td>11.4%</td>
</tr>
</tbody>
</table>
Drugs+Alcohol+Mental Health

• 6% of people in EHC. This was much higher than in the control groups (MDC 1%, LDC 0.2%).
  – those experiencing repeat homelessness (11.4%).
  – those who had become homeless after being looked after by a local authority (13%).
  – those who had been looked after and slept rough at some point (25%)
  – those who had become homeless after being discharged from prison (27%).
North and East Ayrshire have the highest proportion of EHC people with evidence of drug, alcohol and mental health interactions.
Main Findings

- **At least 8% of the Scottish population** has been **homeless at some point** in their lives.
- Of those who had experienced homelessness at some point:
  - **Over half (51%) had no evidence of health conditions** relating to drugs, alcohol or mental health. This was much lower than in the control groups (MDC 74%, LDC 86%).
  - **Around 30% had evidence of a mental health problem** at some point during the study period (with no evidence of drug or alcohol-related conditions at any point). This was higher than in the control groups (MDC 21%, LDC 13%).
  - **There was evidence of drug and/or alcohol-related interactions for the remaining fifth of people (19%)**, higher than in the control groups (MDC 5.1%, LDC 1.2%). Of these, the vast majority (94%) also had evidence of mental health issues.
- **Increased interactions** with health services **preceded** people becoming homeless.
- **A peak in interactions** with health services was seen around the time of the first homelessness assessment.
Reaction (1)

• Nominated - Use of Evidence Civil Service Award 2018 Civil Service Award
• Referenced by OSR as good practice for transparency
• “It’s world-leading research and deserves to be recognised” – Stewart W Mercer FRCGP, FFPHM, FRCPE, Professor of Primary Care Research
“Powerful evidence on the strong links between homelessness and increased mortality and morbidity …has reinforced the need for strong connections between homelessness and health services in particular.”

Featured in 2019 Chief Medical Officer’s report and Hard Edges Scotland Research.
Reaction(3)

• Winner: Holyrood Connect 2019 – Data Innovation awards
• Made into an animation
Full Report & Executive Summary

• Available at:
  https://www.gov.scot/publications/health-homelessness-scotland

• Contact:
  andrew.waugh@gov.uk
The End