Characteristics of hospital inpatients referred to a homeless health team: A retrospective analysis

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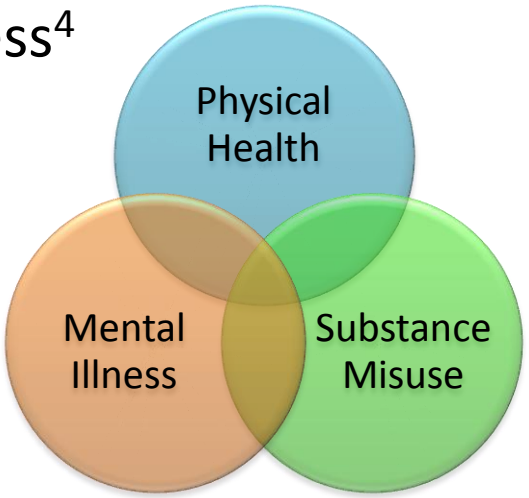
Background: Homelessness & Health

- **Inclusion Health Groups** *(those experiencing homelessness, prisoners, people who sell sex),* experience health inequity[1]
- **Homelessness** includes those "rough-sleeping" but also those in temporary accommodation (sofa-surfing, hostel dwellers, squatters, B&B) – **"Hidden Homeless"**[2]
- Rough-sleeping has increased by 165% since 2010[3]
- **Tri-morbidity** of Homelessness[4]



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The Challenge: Identifying affected inpatients

- Limited data on reasons for admission
- "Homelessness" is not routinely coded in NHS data
- Patients may be registered with an old address

Objectives:

"To explore the recorded reasons for admission to hospital for patients seen by Pathway homelessness teams and secondary healthcare usage in the 120 days prior to and following this index admission"

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Setting: Pathway Hospital Teams

- 7 of the 10 multidisciplinary teams embedded within NHS UK hospital trusts[5]
- All individuals who are referred and assessed are experiencing homelessness of some kind

- **Bradford**
- **Brighton**
- *Bristol (after study period)*
- **Guys & St Thomas'**
- **Kings Health Partners**
- *Leeds (team re-structuring)*
- **Manchester**
- **Royal London Hospital**
- *South London and Maudsley (mental health)*
- **University College London Hospital**

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Methodology

- All Patients assessed by 7 Pathway teams over 6 months *(1st January to 30th June 2016)*
- Retrospective analysis of hospital records and discharge summaries
- Demographic details, reason for admission, housing status and co-morbidities were collected *(where available)*
- Secondary healthcare usage 120 days before index admission and 120 days following discharge *(A&E attendances, unplanned or planned admissions)*
- Diagnostic reasons for admission categorised using International Classification of Diseases, tenth revision (ICD-10)[6]

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Exclusions

- Non-admitted patients (those seen in A&E or the community)
- Referrals not assessed by a Pathway team

Data Handling

- First admissions for each patient during 1st January to 30th June 2016 was identified as the “index admission”
- Each index admission was analysed independently regardless of whether a patient re-attended
- Frequent attenders included to provide accurate representation
- Missing data used as a separate category

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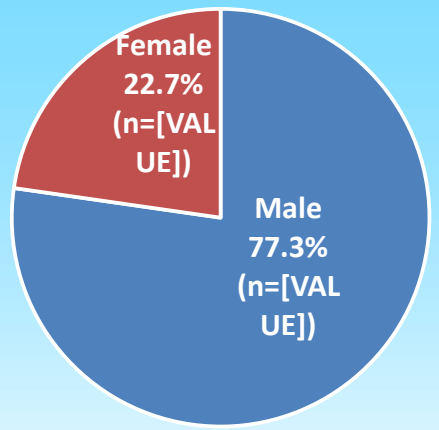
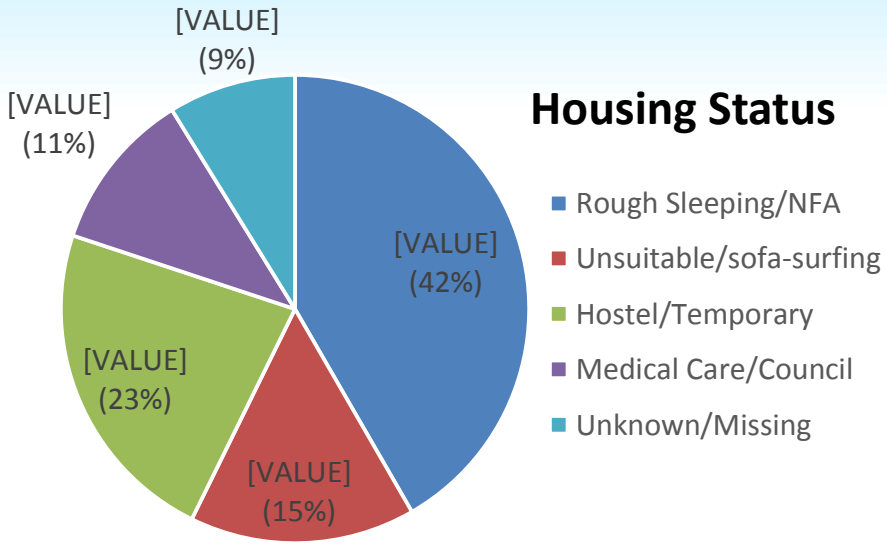
Results: Demographics

- **1663** referrals to Pathway homeless team over 6 months
- **1135** (68.3%) referrals were admitted and assessed as experiencing homelessness
- **1009** patients
- Average age on admission = 43
- 75 (6.6%) No Recourse to Public Funds





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Most common ICD10:

V Mental and Behavioural Disorders (28.3%)

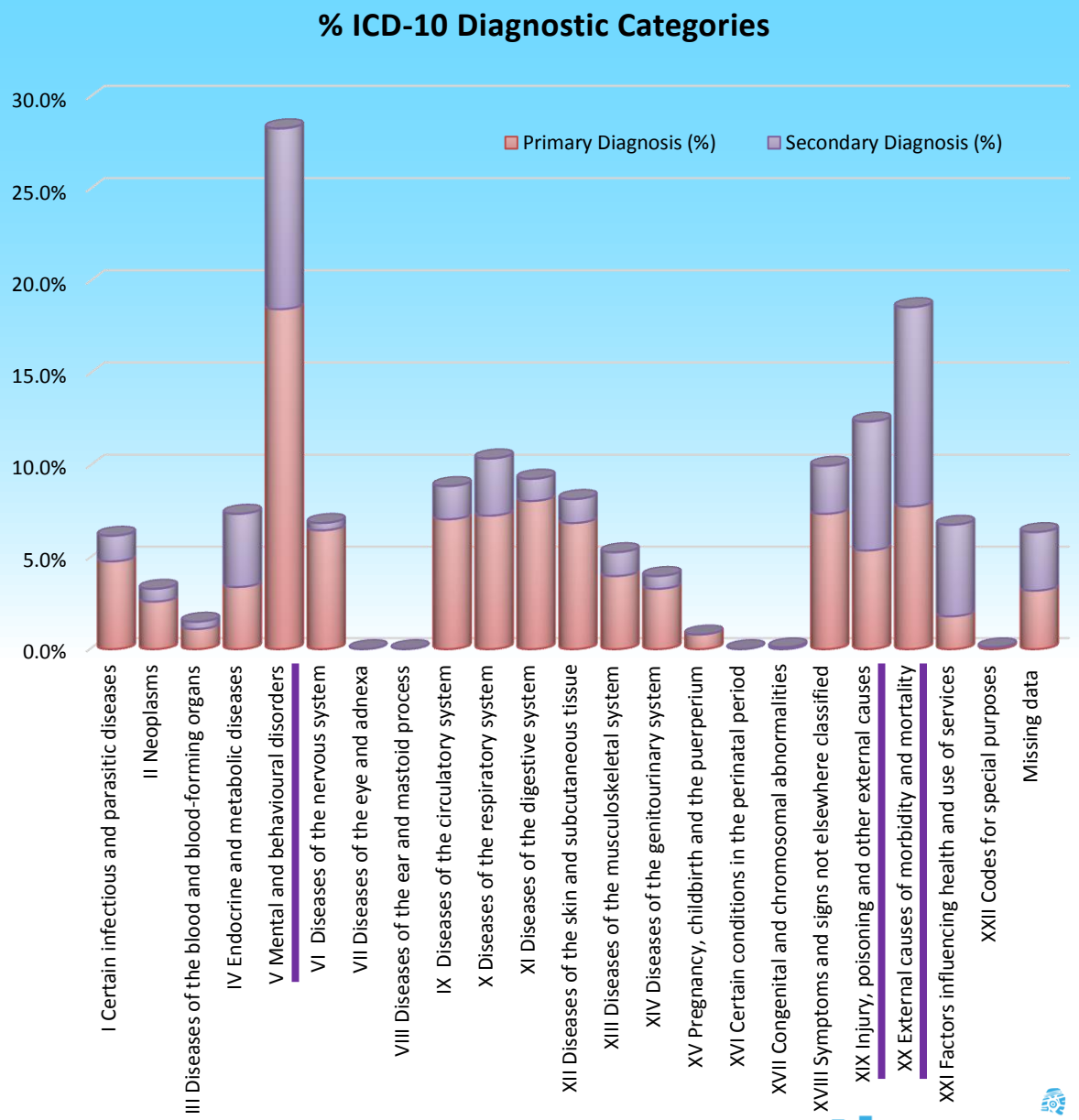
Overdose, EtOH intoxication/withdrawal

XX External causes of morbidity and mortality (18.7%)

RTA, assault, stabbing

XIX Injury, poisoning and certain other consequences of external causes (12.4%)

Fracture, laceration, brain injury



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Tri-Morbidity of Homelessness

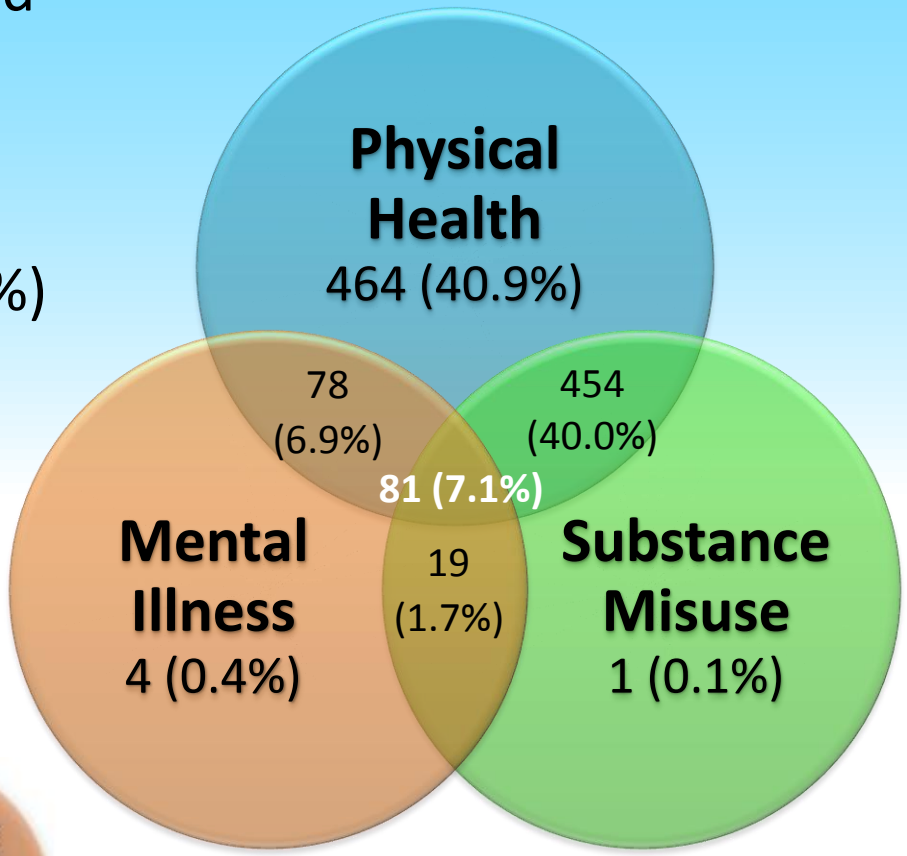
1077 patients **(94.9%)** admitted for physical health need

- In isolation (40.9%)
- With substance misuse (40%)
- With mental illness (6.9%)
- With both (7.1%)

182 (16.1%) Mental Illness

555 (48.9%) Substance Misuse

NB: Unreliably coded



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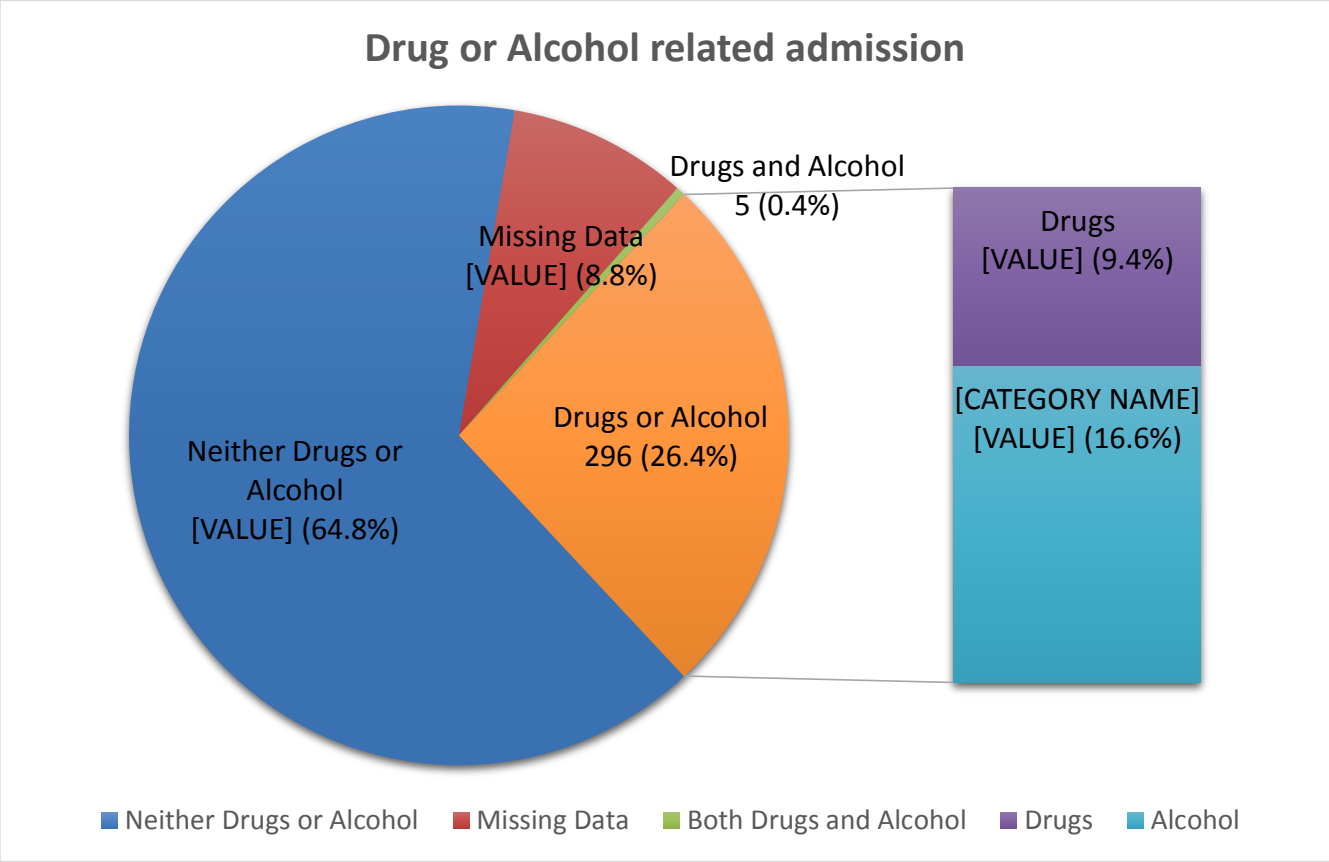
Substance Misuse



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Secondary Care usage 120 days prior to admission and 120 days following discharge

Characteristic		Average (SD)	Total	Maximum Attendances
Index Admission	Average LOS (days)	14	14	
Number of secondary care attendances 3 months prior to admission	A&E	0.68 (SD 2.36)	767	63
	Planned Admission	0.12 (SD 0.06)	135	48
	Unplanned Admission	0.54 (SD 0.03)	610	9
	Total Bed Days	3.49 (0.33)	3965	187
	Average LOS (days)		5	
Number of secondary care attendances 3 months following discharge	A&E	0.65 (SD 2.11)	735	32
	Planned Admission	0.25 (SD 2.79)	283	51
	Unplanned Admission	0.58 (SD 1.31)	654	12
	Total Bed Days	3.90 (SD 11.0)	4430	101
	Average LOS (days)		5	

- A&E Attendance reduced from 0.68 per patient to 0.65 (767 → 735) *p=0.31*
- Unplanned admissions increased from 0.54 per patient to 0.58 (610 → 654) *p=0.12*
- Planned admissions increased from 0.12 per patient to 0.25 (135 → 283) *p=0.03*

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Results: Secondary Care Usage

- Index admission excluded from “before” and “after” analysis
- Observational studies with a control group show Pathway intervention *does* produce financial savings
- Caution using “Before and After” methodology without a control group

Results: Discharge Destination

- **23.4%** housing improved on discharge (n=266)
- **36.8%** maintained the same housing (n=418)
- 1.6% housing deteriorated on discharge (n=18)
- 1.3% died prior to discharge (n=15)
- 36.8% unrecorded discharge destination (n=418)

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Mortality

50 patients died (5%)

- 30% died during admission (n=15)
- 16% died within 30 days of discharge (n=8)
- 20% died between 30-120 days of discharge (n=10)
- 28% died after 120 days from discharge (n=14)

6% (n=3) had no date of death

Av. age of death = 52 years

	Age at death	Diagnosis on admission	Primary ICD10 Secondary ICD10 *(where applicable)*
1	60	Hypothermia	XIX Injury, poisoning and certain other consequences of external causes
2	66	Renal Failure	XIV Diseases of the genitourinary system
3	56	Distal Tibial Fracture	XIX Injury, poisoning and certain other consequences of external causes XX External causes of morbidity and mortality
4	45	Renal Failure	XIV Diseases of the genitourinary system
5	64	Biliary Sepsis	I Certain infectious and parasitic diseases II Neoplasms
6	54	Road Traffic Collision, cardiac arrest	XX External causes of morbidity and mortality XIX Injury, poisoning and certain other consequences of external causes
7	29	Renal Amyloidosis	XIV Diseases of the genitourinary system
8	71	Fall, cognitive impairment	XVIII Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified VI Diseases of the nervous system
9	39	Cervical Cancer	II Neoplasms
10	55	Passive suicide – stopped all medications	V Mental and behavioural disorders XX External causes of morbidity and mortality
11	61	Road Traffic Collision – hit by lorry	XX External causes of morbidity and mortality XIX Injury, poisoning and certain other consequences of external causes
12	68	Metastatic Lung Cancer	II Neoplasms XXI Factors influencing health status and contact with health services
13	77	Sepsis	I Certain infectious and parasitic diseases
14	60	Renal Cancer	II Neoplasms XIV Diseases of the genitourinary system
15	48	Diverticular Perforation	XI Diseases of the digestive system

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Conclusion

- Most inpatient admissions had a physical health component
- Physical illness was commonly associated with mental illness or substance misuse
- Most patients maintained or improved their housing status on discharge
- Unplanned secondary care usage was not consistently reduced following support and intervention from a hospital Pathway team
- Slight reduction in A&E attendances and statistically significant increase in planned attendances were observed
- Demographic details (age, gender) in line with the literature[7]
- Morbidity and Mortality consistent with the life experiences of people experiencing homelessness in the UK[8]

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Key Points

- Unplanned hospital admission marks a threshold in deteriorating health[9]
- Complex presentations require increased length of stay and downward trajectory may require further secondary care usage
- “Before and after data” without a control group may not be an appropriate method of measuring the effectiveness of an intervention with complex patients
- Need a common dataset throughout Pathway teams, and beyond
- Pathway help coordinate care and improve wider outcomes (housing, discharge support)
- Seeking “in-year” savings from the care of complex patients should be replaced with increased resources and specialist inclusion health services[10]

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Any questions

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With special thanks to all Pathway teams for accommodating this Service Evaluation

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Limitations

- Limited resources and a lack of consistent information in records and discharge summaries *(particularly NHS records)*
- The process of collecting and analysing data was labour intensive
- Data was often missing or inconsistently recorded, meaning that estimates provided may represent underestimates
- Multiple patient records *(different name spellings, varied date of birth)*
- Small number of duplicate patients re-referred during the study period

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Outcome	Data source
Demographic characteristics	
▪ **Age during admission**	Pathway database and hospital record
▪ **Gender**	Pathway database and hospital record
▪ **Nationality/ recourse to public funds**	Pathway database
▪ **Housing status**	Pathway database
Clinical characteristics	
▪ **Primary reason for admission (ICD 10 code)**	Hospital discharge summary
▪ **Secondary reason for admission (if applicable)**	Hospital discharge summary
▪ **Multi-morbidity**	Pathway database
▪ **Deaths (where applicable)**	Hospital record
Admission characteristics	
▪ **Length of admission (days)**	Hospital discharge summary
▪ **Type of admission (planned or unplanned)**	Hospital discharge summary
▪ **Whether a surgery or procedure took place)**	Hospital discharge summary
▪ **Whether the admission was related to a recent trauma (road traffic accident, assault, overdose, other)**	Hospital discharge summary and Pathway database
▪ **Whether drugs and/or alcohol were involved in circumstances of admission**	Hospital discharge summary and Pathway database
▪ **Type of discharge (self-discharge or medical discharge)**	Hospital discharge summary and Pathway database
Secondary Care Usage	
▪ **Readmission and A&E attendances 120 days prior to admission and 120 days following discharge**	Hospital record
▪ **Characteristics of A&E attendances and admissions (length of admission, type of admission, reason for admission)**	Hospital discharge summary