

Collaborative Engagement for Long Term Conditions by clinical pharmacists for people who are homeless in Glasgow, Scotland

Authors: Richard Lowrie¹
Dr Andrea Williamson²
Dr Ruth Spencer³
Alison Hair⁴
Izzie Gallacher⁵
Dr Nigel Hewett⁶

Affiliations: ¹ Lead Pharmacist, Research and Development, Pharmacy and Prescribing Support Unit, NHS Greater Glasgow and Clyde, Glasgow, G3 8SJ / Pharmacist, Homelessness Health Service, Hunter St, Glasgow, Scotland.
² GP Homelessness Health and clinical senior university teacher, Glasgow University Medical School, Glasgow, G4 8QQ, Scotland.
³ Lead GP Homelessness, Homeless Health and Resource Services, Glasgow, G4 OUP, Scotland.
⁴ Pharmacist, Parkhead Health Centre and Pharmacist, Homelessness Health Service, Hunter St, Glasgow, G31 5BA, Scotland.
⁵ Top Notch Health Care Assistant, Homelessness, Homeless Health and Resource Services, Glasgow, G4 OUP, Scotland
⁶ Medical Director, Pathway Healthcare for homeless people, 5th Floor East, 250 Euston Road, London NW1 2PG, England.

Corresponding author: Dr Richard Lowrie
Pharmacy and Prescribing Support Unit,
NHS Greater Glasgow and Clyde,
West Glasgow Ambulatory Care Unit, Glasgow G3 8SJ
Richard.lowrie@ggc.scot.nhs.uk

Introduction

Over the past 25 years, for people without a fixed abode, shocking mortality outcomes have persisted: in 1992, one study showed mortality was 3 times higher with an average age of death at 47 years;¹ and in 2009, the all cause mortality hazard ratio was 4.4.² In 2011, the average age of death had decreased to 40.5 years.^{2,3} Homelessness confers an increased risk of dying from drug misuse, circulatory and respiratory disorders,² infections and external factors.⁴ Part of the excess mortality may be explained by exposure to co-existing risk factors e.g. alcohol and co-morbid Long Term Conditions (LTCs) including mental illness.^{5,6} Multimorbidity develops earlier.⁷⁻¹⁰ Levels of multimorbidity are higher, and the impact is more severe^{7,11,12} with a negative impact on functional status, increased and poorly co-ordinated use of health services, and increased healthcare costs.⁷ Recent work in Glasgow suggested levels of multimorbidity in a homeless population registered with a general practice, comparable to patients aged 84 years in mainstream practices, despite an average age of 43 years.¹² Emergency department attendances are five times greater, with admissions and duration of hospitalisation three times greater^{13,14} Low prescribing and use of medicines for prevention of health crises may contribute to high emergency service usage for LTCs instead of primary care services.¹⁵⁻²² Maximising opportunities for engagement in health care and optimal prescribing and use of medicines for LTCs is therefore important. For multiple reasons, still poorly understood but likely to be related to complex medical, psychological and social factors, patients present less to their GP for accrual of formal diagnoses of LTCs.⁷ In addition, people who are homeless are 40 times more likely than a housed person, not to be registered with a GP.²³ There are significant unmet health needs and high rates of missed scheduled appointments¹² which are likely to worsen health and further increase costs.^{24,25} Possible reasons for this^{2,4} include barriers to accessing healthcare services, caused by patient level (emotional e.g. priority setting in the context of a chaotic lifestyle), system level (e.g. health service organisation) and provider level (e.g. environmental barriers).²⁶ People who are homeless tend not to obtain preventative care, appearing when sick or injured, or when in need of medicines for pain or mental distress.²⁷ Initiation, dose up-titration, storage and adherence with medicines are more challenging for people who are homeless.^{11,12,28, 29, 30, 31, 32}

In addition to the excess burden of complex multimorbidity that homeless people experience, intersections with addictions and criminal justice have recently been explored.^{24, 33} 'Severe and Multiple Disadvantage' (SMD) has emerged as a descriptor of the problems faced by individuals in contact with housing, addiction services, and the criminal justice system with underlying poverty being pervasive and mental illness often contributory. Adverse childhood experiences are considered often at the root of SMD.²⁴

UK primary care

UK care models for people who are homeless include mainstream general practice with a special interest; a mainstream practice without a special interest; or a specialised general practice restricted to homeless patients.³⁴ In addition to salaried, or contracted GPs, specialist homeless practices are staffed by nurses and multidisciplinary health, social care and addictions teams. There is insufficient evidence to favour one model over another, and uncertainty around the reach, effectiveness and cost of current models of primary care for people who are homeless, and a growing shortage of GPs in the UK.³⁵ However, specialist homeless primary care general practice teams may be more likely to achieve higher patient rated quality of care.³⁶ Examples of specialised GP services exist in the UK,^{35,37} including three in Scotland (Glasgow, Edinburgh and Aberdeen). Available data suggest few specialist general practice homeless services relative to those with a special interest in homelessness which in turn, are few in comparison with mainstream practices without a special interest.¹⁴ Over 99% of mainstream UK general practices without a special interest in homelessness subscribed to the primary care incentivised pay for performance system Quality and Outcomes Framework (QOF) contract from 2004, through 2016 when it was replaced in Scotland. QOF aimed to minimise variation in the uptake of evidence based medicines for LTCs, while preventing or delaying the onset of health crises. Engagement constituted at least one letter to each patients' home address, inviting attendance at the practice. QOF regulations permitted practices to exempt

non attendees, without financial penalty. Recent findings suggest people who are homeless, hard to reach, multimorbid and registered with a mainstream practice, are among those exempted, and more likely to die in the following year,³⁸ underscoring the need to have dedicated specialist services for people who are hard to reach. An emerging extension of these approaches is family practitioner (called general practitioner (GP)) led in-hospital management of people admitted to hospital;³⁵ an approach shown to improve quality of life and reduce street homelessness.³⁹

Scottish context

Mortality rates for the whole population in Scotland have historically been higher than in the rest of the UK, and improved less than the rest of Europe.⁴⁰ Mortality patterns resemble those seen in eastern European countries.⁴¹ Excess age and sex standardised mortality in Scotland is greater than in the rest of the UK, and increasing.^{40,42} Around a quarter of Scotland's excess mortality can be explained by socioeconomic, behavioural, anthropological or biological factors.⁴⁰ Self rated health is worse in Scotland as compared with England and Wales; and worse still in Glasgow.⁴³ While the excess in Scotland's self rated health can be explained by differences in economic activity, Glasgow's excess remains unexplained although psychological distress may be contributory.^{44,45}

Per head of population, homeless applications are more than three times greater in Scotland as compared to England (0.7% compared with 0.2%). In Scotland in 2015-16, there were 34,662 homeless applications⁴⁶ with applications to Glasgow City council (including an estimated minimum of 560 rough sleepers) accounting for 20% of the total.⁴⁷

Primary care for people who are homeless in Glasgow

In Glasgow, the specialist Homeless Health Services General Practice was set up in 2003 to address the health needs of homeless people in Glasgow city. Initially the practice was funded with a full time practice manager and practice nurse who would traditionally have a large focus on the administration of call/recall systems and management of LTCs. These roles have changed to a generic administration manager only. The current nursing resource consists of nurses who cover both RGN and addiction remit rather than focussing on managing LTCs. There are four GPs providing 1.2 full time equivalent support, with sessions per week from Health Inequalities Fellows, one full time health care assistant and other health services hosted in the health centre. These include dietician; podiatrist; occupational therapist; psychiatrist; and sexual health nurse. Patients are able to attend by appointment or drop in. Outreach clinics involving the GP and "wee Izzie" the health care assistant are held at local hostels. The practice shares consulting rooms and a waiting area with the other health care teams.

There is a lack of evidence around current primary care services for people who are homeless, and an escalating burden of LTCs with GP shortages around the UK as a whole. With medicines being the main therapeutic intervention for LTC management, timing has never been more propitious to involve pharmacists, as prescribers, to focus on LTC management as part of the collaborative homeless health care team.

What is known about pharmacist intervention in homeless health care?

Some studies have shown that within multidisciplinary teams, pharmacists have effectively recognised medicine related complications and provided medicines education.^{48,49} Other studies report positive interactions between homeless people and pharmacists⁵⁰ and the preference of women experiencing homelessness to receive drug information from pharmacists.⁵¹ The expanding roles of pharmacists in healthcare including examination of the effectiveness of their expanding roles e.g. prescribing in LTC management, remain unexplored in the context of homeless health.

Scottish pharmacy context

There are approximately 4000 pharmacists in Scotland, working across general practices, community pharmacies (independent contractors) and hospitals to provide pharmaceutical care on behalf of NHS Scotland. All patients receive medicines free of charge in primary and secondary care. Pharmacists undertake a five year pre-registration degree programme which includes one year of clinical practice. Since 2004, over 1000 pharmacists in NHS Scotland have been able to prescribe any medicine, independently, after completing a prescribing course which involves developing additional consultation skills; basic physical assessment; information retrieval; and synthesis and defence of clinical management plans.⁵² The number using their qualification in clinical practice and their specialist therapeutic areas, are unknown.⁵³ In Glasgow, two pharmacist independent prescribers each deliver a half day and in Edinburgh, one pharmacist independent prescriber provides half a day of support to the specialist homeless healthcare team.

Current pharmacist collaborative service model in Glasgow

Pharmacists consult with patients in the practice or in a local hostel. Patients are seen opportunistically when they present at the drop in clinic; referred or signposted by GPs or other staff e.g. hospital based discharge liaison teams. Some patients presenting to the practice have not previously registered, in which case, the patient's permission is obtained to access their clinical data held by their registered mainstream GP. For patients registered with the homeless health service, the pharmacist accesses clinical and prescribing information in the homeless health service clinical records. Pharmacists access and update registered patients' clinical records in real time, including prescription information.

The pharmacist offers patients a health and medicines check (Table 1). Pharmacists routinely see 4-6 patients in half day clinic; consultations usually last 30 – 50 minutes. Conditional on the patient's existing conditions, available time and priorities, the consultation includes some form of history taking; examination; near patient tests; review of all medicines, with examples given in Table 1.

Table 1 Components of health and medicines check

<p>History</p>	<ul style="list-style-type: none"> - Age - Sex - Accommodation type (if any) - Personal medical history (physical ,mental, addictions) - Family history of: <ul style="list-style-type: none"> o CHD/stroke o Premature (< age 60) atherosclerotic CVD (angina, myocardial infarction, transient ischaemic attack, ischaemic stroke) o Familial dyslipidaemia - Smoking history (lifetime smoking habit and # cigarettes smoked per day) - Alcohol history: Fast Alcohol Screening Test - History of imprisonment - Current prescribed medicines - Current/past illicit substance use
<p>Health check</p>	<p>Examination</p> <ul style="list-style-type: none"> - Systolic BP - Weight - Height - Waist circumference - Malnutrition Universal Screening Tool - O₂ saturation - Sputum for MC&S and TB screen - Peak Expiratory Flow Rate / Spirometry - Medical Research Council/COPD Assessment Test/Asthma 3 questions

	<p>Blood tests</p> <ul style="list-style-type: none"> - Blood Borne Viruses - Total cholesterol - HDL cholesterol - Triglycerides - Random glucose - Urine (proteinuria/microalbuminuria) - HbA1c - Renal function - NT-pro B-type Natriuretic Peptide <p>Other tests at follow up if indicated</p> <ul style="list-style-type: none"> - ECG - Echo
Medicines check	The pharmacist assesses the appropriateness of existing medicines and adherence. If appropriate, with patient's agreement, the pharmacist may initiate new treatments; modify existing treatments. This may include contacting the patient's community pharmacist, previous GP, hospital ward if recently discharged, or prison if recently liberated.

Consultations move at the patient's pace, the pharmacist being mindful of a possible history of dropout and non engagement with mainstream health care. Every effort is made to build trust, and show respect, and give the patient time to talk about what they want from the pharmacist and health service in general. Football is often discussed; Glasgow has many football clubs e.g. Partick Thistle, Queens Park, with two particularly famous clubs (Celtic and Rangers) both of whom have a faithful following particularly among the socioeconomically deprived (Celtic FC was formed in 1888 for the maintenance of dinner tables for the children and unemployed). Both clubs have provided the pharmacists with free replica football strips and occasionally match tickets, for distribution directly to patients on a one to one basis as appropriate, which is always well received and these gifts help improve trust.

Decisions are shared, including an assessment of the patient's support network for medicines and handling diagnostic and prognostic information. If medicines are discussed and changed, the patient's usual community pharmacist is contacted, to confirm previous medicines, remaining supplies and to raise awareness of the need to support the patient when they next present to the pharmacy. The community pharmacist is asked to contact the practice if, for example, the patient does not come to collect medicines for a weekly pickup. Interventions instigated or mediated by the pharmacist include prescribing; diagnostic workup; clarification of prescribed medicines and dates of last prescribing e.g. from prisons or hospitals post liberation/discharge; ordering tests/further examinations; referral onto the GP; onward referral to another healthcare professional within or outwith the homeless health service including social prescribing. Given the importance of building trust with patients, the pharmacist ensures no fragmentation of care, by immediately updating shared clinical records, and by checking with the GP before instigating any changes that fall outwith the pharmacist's sphere of competency (agreed between pharmacist and GPs in advance). The pharmacist may act as an advocate, e.g. by contacting other healthcare staff or clinics, about missed appointments, on the patient's behalf. Table 2 describes characteristics of a sample of 124 patients seen, and changes made by pharmacists between Aug 2015 and Aug 2016.

Table 2. Patient and pharmacist intervention characteristics

Patient characteristic or pharmacist intervention	Patients (n = 124)*
Registered with Homeless Health service practice	54 (43.5%)
Gender (% male)	100 (80.6)
Age (years)	45.0 (10.8)

Number of pharmacist consultations per patient	2.4 (3.4)
Prescribing	
New medicine started	53 (42.7)
Existing medicine stopped	10 (8.1)
Current medicine dose changed	33 (26.6)
Formulation changed	8 (6.5)
Phone community pharmacy for clarification	11 (8.9)
Diagnostic workup	
Tests undertaken or arranged	37 (29.8)
New diagnosis made during consultation	5 (4.0)
Referrals to specialist clinics	
Direct contact with specialists on patient's behalf	8 (6.5)
Social prescribing	3 (2.4)
Other	
Wound care	2 (1.6)
Called emergency ambulance	2 (1.6)
Inhaler technique check and demonstration	16 (12.9)

* Data are number of patients (%) or mean (SD)

These results do not include the repeated advice (general and specific) given by pharmacists to patients in the context of the consultation, or the support for adherence through reminders, recalls, repeat prescription re-ordering, synchronising quantities of medicines and personalised co-ordination of prescribing, dispensing and taking medicines. One patient had been seen by the pharmacist on 23 different occasions during the evaluation period, which was necessary to ensure adherence and support integration with mainstream health service. A range of therapeutic areas are included in the medicines changes described above e.g. medicines for opiate overdose; cardiovascular disease; pain; chronic respiratory disease. Referrals included instigating and arranging appointments with secondary care based infectious diseases teams; out patient respiratory teams; dentists; occupational therapists; dieticians. Perhaps the most important difference the pharmacist can make is to provide a low threshold listening space for patients to openly discuss what is important to them. As a recent addition to the team, the pharmacist has more time per patient than core service providers who often find themselves under pressure, like many front line healthcare providers, to see all patients presenting for help. Planned outcomes under evaluation in future work include those described in Appendix I.

Next steps

The developing role of the pharmacist in the care of patients who are homeless, requires robust evaluation of effectiveness and costs, from a health care and patient perspective. Future work is planned to enable pharmacists to conduct assertive street outreach, in collaboration with street outreach workers. Other developments include the setup of a process to identify and prioritise patients recently discharged/self discharged from hospital; a systematic review of interventions by healthcare professionals, to improve outcomes in homeless adults; and a subsequent feasibility study for a multicentre randomised controlled trial of Collaborative Engagement for Long Term Conditions in adults who are homeless. Potential collaborators in this study are asked to contact the author for more information, or attend the forthcoming 5th Homeless and Health International Symposium (http://www.homelessnessandhealth.co.uk/events/2017/?mc_cid=c52934cccb&mc_eid=2041db32ef).

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Appendix I: Outcomes due for measurement in 2017

Outcome	<ul style="list-style-type: none">- patients engaged at least once and repeatedly;- health and social care/housing interventions offered/accepted;- types of screening delivered and yield;- surrogate clinical disease measures e.g. BP, Weight.- prescribing (type/number/dose) and dispensing (regularity) of evidence-based/appropriate medicines;- onward referrals e.g. GP-based chronic disease; specialist homeless services (GP/Pharmacist/nursing input) or out-patient specialist clinic;- uptake of offered daily activities and transfer from unstable housing; benefits advice and other support;- A&E, GP emergency service and hospitalisations (number and duration);- costs (NHS perspective)- qualitative review of services provided during the project
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