Room to Breathe

A Peer-led health audit on the respiratory health of people experiencing homelessness

GROUNDSWELL

groundswell
inclusive solutions to homelessness

Trust for London
Tackling poverty and inequality

Contents

Acknowledgments
With thanks to Trust for London for their funding and support of this work.

This study would not have been possible without the hard work and dedication of the peer researchers who collaboratively designed this study, delivered the field work and supported the analysis of the findings.

We would also like to thank the day centres and hostels that allowed us to enter their premises and supported us to speak to their clients.

With special thanks to the *Action Group* who used their expertise to guide the delivery of the project: Dr Al Storey, Dr Matthew Hodson MBE, Nigel Hewitt, Dr Noel Baxter, Ousainou Sarr and Dr Louise Restrick.

Finally, many thanks to the participants in this study who candidly spoke about their experiences and revealed true insight in to the barriers they face to improving their health.

Report written by Martin Burrows, Groundswell, 2016

Room-to-Breathe:

A Peer-led health audit on the respiratory health of people experiencing homelessness

Executive Summary

Respiratory Health is a major issue for people experiencing homelessness – to better understand this Groundswell delivered a peer research study to gain a greater insight into this important health inequality issue.

The issue was originally identified by our Peer Advocates – and we then engaged over 330 people experiencing homelessness in this study through focus groups and one-to-one survey based interviews.

Our findings reveal that the Respiratory Health of participants is extremely poor.

- **64% of participants who had slept rough reported as having had chest infections.**
- **Hospital admission rates for participants were particularly high** – this is an indicator of severity of condition but in most cases would have been completely preventable with ongoing primary care. 30% of participants had been admitted to hospital for 'frightening breathlessness'.
- **26% of participants use an inhaler** compared to 8% in the UK general population.
- **20% of participants report to suffer with asthma** compared to 8.4% in the general population.
- **11% of participants reported as having suffered from pneumonia,** 90% of these had been admitted to hospital for this condition.
- **4.9% of participants reported to have been diagnosed with COPD** compared to 1.9% in the general population.
- For all conditions surveyed, **the longer a participant had spent homeless** or unstable housed **the higher the likelihood that they had a diagnosed condition**.

The realities of homelessness and behaviours that homeless people commonly engage in cause significant damage to people's respiratory health.

- **85% of participants are current smokers.** This compares to 18% across the UK.
- **35% have smoked crack cocaine regularly in the past** and 15% currently smoke crack cocaine regularly.
- **46% of participants have smoked 'dogends' regularly in the past** and 15% currently smoke them regularly which carries additional risks of ingesting dangerous toxins and exposing individuals to contagions.
- **89% of drug users reporting that they have shared a pipe when smoking illicit substances.**
- **The physical environment in which people have slept rough raised other concerns.** 67% of participants had rough slept where there was mould and 38% where pigeon droppings were present.
- **69% have had difficulty breathing due to traffic fumes when sleeping rough.**
- **Participants highlighted concerns around living in temporary accommodation.** 78% reported that colds and flu spread around quickly, 76% were concerned about other people's hygiene and 35% reported that spraying hostels for pests affected their breathing.

We believe that there are clear indications that the problem is significantly bigger than this study has revealed and it is likely that many more of the participants have undiagnosed issues

- **The large quantities of tobacco smoked by many participants' places them at drastically increased risk of COPD, chronic bronchitis and lung cancer**. It is likely that more participants suffer from these conditions than those that self-reported to have been diagnosed.
- **Drug usage can make detection of illness difficult.** 80% of participants who use drugs find it difficult to know when they are ill and 84% have used crack or heroin to kill pain or get over an illness.
- **Rough sleepers may explain symptoms as due to their situation not as an indicator of underlying issue**. 69% of participants reported that they expect to have a cough when they slept rough. 81% find it takes longer to get over illness.

Access to preventative measures and treatment for respiratory conditions are not working for participants

- **Getting to a doctor can be difficult.** 63% of participants who have slept rough find it difficult to get to a doctor.
- **'Self-management plans' for managing COPD and asthma are not being implemented**. Only 40% of people who need a self-management plan have had these created for them.
- **Participants are at increased risk of contracting influenza due to the realities of homelessness and widespread underlying health issues.** While 52% of participants have had a vaccination in the last year, 21% have not had a vaccination in the last year and 22% have never had a vaccination.
- **Smoking cessation treatment is not being offered enough.** 42% of participants reported that they have access to smoking cessation support in a homeless service that they use. Support Workers may be missing the chance to provide very brief advice that could encourage quitting. Licensed medication as an aid to quitting is rarely used among this group.
- **This population is tobacco dependent and wants treatment.** Half of participants want to stop smoking. A similar figure to smokers among the general population. The scale of the problem and support needs of people experiencing homelessness mean that new thinking is needed around this.
- Significant further data has been gathered in this study around smoking cessation and desire to quit measurements. This data is available for further action on this issue.

Recommendations

For Homelessness Services

Groundswell recommends that Homelessness Services should take strong and immediate steps to improve the respiratory health of homeless people. These should include:

1. **'Support to quit'** smoking to be made a priority in homelessness services. Tobacco usage should be treated as seriously as alcohol and drug usage. In recognition of the important role that Key Workers play in client's lives, more support should be given by Key Workers to support their clients to stop smoking and direct clients to relevant further support. An important step towards this would be better understanding among staff of currently available initiatives, better information for clients and new approaches rolled out in services to aid quitting. Staff may want to go through this report with their clients with the aim of developing creative ways to reduce smoking in their service.
2. **Harm reduction practices around smoking.** For those that are having difficulty stopping smoking a 'harm reduction' approach should be encouraged by Support Workers by advising less frequent usage and quantity smoked. Awareness of 'risky' smoking practices like smoking discarded cigarettes and sharing drug paraphernalia should be further promoted. Information on the costs and practicalities of moving to electronic cigarettes to be shared.
3. **Identifying the signs.** Training for homeless sector staff should be rolled out that will allow them to identify the signs of poor respiratory health and where to signpost clients to get diagnosis and treatment. A message that **breathlessness or a persistent cough is not normal** should be adopted in homelessness services.
4. **Improving self-care, action plans and expectations**. Homeless service staff should place more emphasis on encouraging clients to think positively about steps that can be taken to improve self-care. Clients should be empowered by their Support Workers to expect a high level of care from healthcare services. Homelessness service staff to support their clients to access written asthma and COPD exacerbation action plans from GPs and respiratory healthcare professionals. These might include prescription of 'Rescue Packs' of oral corticosteroids and antibiotics.

For Healthcare Services

Healthcare services are key to diagnosis, treatment and prevention of respiratory health issues for people experiencing homelessness. To be more effective in achieving this Groundswell recommends that:

5. **Training for medical professionals** working in respiratory health around the health needs of people experiencing homelessness to be made more readily available. This should include guidance on how to approach people experiencing homelessness on quitting smoking.
6. **Education and guidance for GPs** to improve case finding for respiratory conditions amongst homeless people to be more readily available.
7. **Self-Management Plans** for people experiencing homelessness with existing respiratory conditions to be created for all applicable individuals.
8. **Respiratory focused health professionals in the community**. Breathing tests to be delivered by healthcare professionals in homelessness services, such as spirometry, exhaled carbon monoxide (CO) monitoring for assessing tobacco dependency, finger pulse oximetry for detecting low oxygen levels. Training around the correct usage of inhalers to be included for inhaler users.

9. **Motivational Interviewing.** Increased training to be provided for healthcare staff around motivational interviewing techniques to support people experiencing homelessness to be motivated to quit smoking.

For Health and Homelessness Commissioners

Commissioners of homeless and health services play a key role in ensuring good respiratory health among people experiencing homelessness. To achieve this Groundswell recommends:

10. **Pan-London Homeless Stop Smoking Services.** Pan-London Homeless Health Programme to include commissioning of stop smoking services for people experiencing homelessness.
11. **'Special' Tariffs for people with complex needs**. Commissioners should recognise that individuals with complex needs require additional support to quit smoking and that limitations to accessing treatment should not be restricted by individual tariffs for accessing treatment.
12. **Recognising the increased risk and need for vaccinations**. Public Health England guidance on national arrangements for the delivery of vaccination and immunisation (V&I) programmes for Flu and Pneumonia to include a targeted approach to reach people in temporary accommodation and rough sleeping. This should be adopted by CCGs adding homeless people to 'at Risk' list for vaccinations.
13. **Peer Support.** Peer Advocacy services which provides practical support for homeless people to access health services to be more widely commissioned across London. This would ensure people are more proactively addressing respiratory health issues and more likely to adhere to treatment.
14. **Specialist Homelessness Health Services.** The commissioning of specialist homelessness peripatetic nurses and specialist homelessness GP practices to be continued and extended across London; with a greater emphasis from these services on respiratory health - both in addressing existing conditions and on prevention.

Recommendations for Groundswell

15. **Stop Smoking Drive** to be delivered for Groundswell staff and volunteers. We recognise that we must be an organisation that champions good respiratory health! We are looking at our own incentive programme, offering electronic cigarettes starter packs and reducing times for smoking in our 'outside area'.
16. **Increase emphasis** on the need for treating respiratory health conditions through Homeless Health Peer Advocacy Programme. Additional training to be provided to Peer Advocates on identifying the issues and signposting to relevant services.
17. **Respiratory Health Task Group.** Building on the Room-to-Breathe Project and the work of the Action Group, Groundswell will continue to liaise with the Homeless Respiratory Health Task Group to tackle this issue within the homeless population of London.

Introduction

People experiencing homelessness face some of the biggest health inequalities in society and are some of the most expensive groups of patients to treat. This topic of respiratory health was identified as a key concern for people experiencing homelessness through Groundswell's *Insight and Action* programme: the topic was set through the analysis of 1,400 of Groundswell's Homeless Health Peer Advocacy appointments and in collaboration with our Peer Advocates who see the realities of homelessness and health inequality first hand.

Respiratory and lung health is a significant concern among this population due to the physical realities of homelessness and common lifestyle factors. Existing academic and clinical literature revealed that it is a huge issue for people experiencing homelessness with a key factor being the widespread use of tobacco products and illicit drug usage contributing and perpetuating the result of these health concerns. A full literature that highlights existing academic and clinical learning is available in the appendix of this report.

Through designing and delivering a Peer-Research project where co-researchers have personal experience of homelessness themselves we aimed to explore the extent of this issue among people experiencing homelessness in London. The study used a mixed-method approach aiming to understand the scale of the issue through quantitative data capture and broaden understanding of the issue through qualitative group discussions.

"Breathing difficulties have impact on all your body. You can't move, and you can't leave. And you cannot walk for a long time… you get tired. When you have breathing difficulties… you have zero energy. Because your body doesn't get that oxygen if you want it. You can't be a normal person and can't look after yourself." – Focus Group Participant

Groundswell's work

Groundswell is a charity which enables homeless and vulnerable people to take more control of their lives, have a greater influence on services and play a fuller role in the community. We deliver a range of innovative projects which put homeless people at the heart of solutions to homelessness – the main body of our work focuses on Homeless Health.

Groundswell's Homeless Health Peer Advocacy (HHPA) service supporting homeless people to access healthcare, delivered by Peer Advocates – volunteers who all have personal experience of homelessness. Peer support enables people to overcome the practical, personal and systemic barriers which prevent them from addressing their health needs. This year we are on course to deliver over 2,000 one-to-one engagements, and 450 Health Promotion sessions with people experiencing homelessness. We also deliver peer support projects focusing on TB and on Hep C.

Groundswell's Insight

Groundswell's peers have a deep understanding of the realities of homelessness and the barriers that prevent people experiencing homelessness from accessing the healthcare they need – both through their lived experience and through delivering this work. Groundswell is uniquely placed to uncover new insight as our volunteers engage with over 8,000 homeless people in London each year about their health issues.

Ongoing Data Collection

HHPA volunteers gather data on all client engagement and group session delivered which is recorded on Groundswell's Salesforce database. This includes information on health issues faced, health service

used, health conditions, attendance rates, barriers faced, length of treatment etc. This data demonstrates the need around respiratory health.

10% of clients who worked with Peer Advocates for the current financial year have had treatment for a respiratory condition. Issues highlighted include asthma, TB, Lung cancer and COPD. However, for 59% of these clients this was not identified as a health need at the point of first referral.

Other considerations:

- Average (mean) age of clients with respiratory health issues is marginally older than other HHPA clients at 48 years. Ages ranged between 34 and 61 years old.
- 32% of clients with a respiratory health issue also have a disability – posing an additional barrier to accessing essential healthcare.
- 55% of clients with a respiratory issue identified that they needed help to find the right health service to meet their needs at first engagement.
- 64% of clients with a respiratory issue wanted to find out more information about their health condition at first engagement.

A small proportion of Groundswell's HHPA appointments are specifically for the treatment of a breathing related condition. Our data reveals that 1% are for treatment of 'Respiratory' issues and a further 2% recorded as treatment for 'TB'. However, for clients who have an identified respiratory issue the use of the HHPA service usage is far higher. While only 10% of our clients have identified respiratory issues, 18% of HHPA appointments are with these clients.

For many of our clients with respiratory issues this is one of a number of health issues which Groundswell's HHPA service supports them to tackle. These clients tend to be heavier users of secondary healthcare than HHPA clients who do not have an identified respiratory issue.

"Working with clients with breathing problems is really common. We had one guy referred to us from [Day Centre] who was having difficulty breathing. I went to pick him up. Every 5 steps he stopped and lit a fag. I couldn't get him on a bus… It turned out to be severe chronic asthma. He was coughing up loads of phlegm. He hadn't been to a doctors for a long while. He was advised to stop smoking but he said he was 60, he had done it all his life and he enjoyed it." – Groundswell Homeless Health Peer Advocate

Room-to-Breathe Methodology

With the topic of respiratory health set in collaboration with Groundswell Homeless Health Peer Advocates, an *Action Group* was formed bring together group of key stakeholders from health and homeless services, commissioners, and people with experience of homelessness. This group guided the project and provided specific feedback and support in delivery of the project based on their areas of expertise.

Design. Groundswell designed a peer-led research project that involved people with experience of homelessness undertaking data collection face-to-face with people who are currently homeless across London. A mixed method approach was employed that made use of quantitative data through a survey and qualitative data through focus groups. This would make it possible to explore participant's understanding of this health issue and related lifestyle and behaviours as well as understanding experiences from a statistical perspective.

Literature Review A literature review of current learning around respiratory health, health inequality and homelessness was undertaken which was used to shape the key areas of exploration for the project. The full literature review is available in the appendix.

Focus Groups. A Groundswell Peer Researcher then facilitated a series of six focus groups in homelessness hostels and day centres to explore in-depth the experiences of service users relating to respiratory health. Questions in the focus groups were deliberately broad allowing participants to discuss their perceptions, opinions and attitudes towards homelessness and healthcare services as well as to highlight myths and misgivings that may be associated with respiratory health issues. Focus Groups recorded and then audio recordings were transcribed, coded and analysed.

True peer research works with people from a community as co-researchers engaged during the entirety of the data collection process, rather than simply as passive research subjects. The key advantage of taking this approach is that peer researchers can reduce problematic power relationships that can exist when interviewing people who are experiencing social exclusion, often resulting in richer data.

Peer Researchers. Groundswell undertook a recruitment process for Peer Researchers recruiting six co-researchers who had recent experience of homelessness. Training took place over two days and focused on developing a theoretical understanding of research processes as well as practical approaches to interviewing. Learning took place through hands-on activities and was used as an opportunity for developing a survey based on the findings from the focus groups.

Survey. In collaboration with Peer Researchers and experts from the *Action Group* we refined a health audit survey to understand the extent to which respiratory health issues affected participants and the factors that may be affecting participant's respiratory health. This also included a series of statements from the focus group transcripts to gauge the extent to which experiences were shared and opinions agreed with. This was delivered by Peer Researchers on a one-to-one basis using tablet computers at homelessness services across London. Informed consent was sought and received from all participants who took part.

Survey responses were inputted into SPSS[1] data analysis software. Preliminary findings were fed back to peer researchers through workshops and the *Action Group* who directed the analysis of the data. This report was produced based on the study's findings.

In total 322 people with experience of homelessness directly participated in this project. This included six focus groups involving 44 participants and 272 one-to-one survey interviews, which were conducted by **six Peer Researchers**.

Who We Spoke To

Homelessness. Groundswell takes a broad definition of homelessness in that it is a state that individuals find themselves in where they do not have a secure place to live. Whilst rough sleepers are the most visible homeless population, the vast majority of homeless people live in hostels, squats, bed and breakfasts or in temporary and insecure conditions with friends and family[2]. For many of the

[1] SPSS (Statistical Package for the Social Sciences) is a software package used for statistical analysis.

[2] ODPM (2002), *More Than A Roof, A report into tackling homelessness*. Available at: http://webarchive.nationalarchives.gov.uk/20120919132719/http:/www.communities.gov.uk/documents/housing/pdf/156600.pdf

individuals that Groundswell works with the boundaries of street homelessness, insecure and temporary accommodation are blurred, moving and often crossed.

The Room-to-Breathe research project has comprised qualitative and a quantitative elements. Qualitative focus groups were held in six homeless services four of which were accommodation projects and two of which were day centres. A total of 44 people were spoken to in this phase of the research. The quantitative element of the project took place at 15 homeless services ten of which were accommodation projects and five of which were day centres a total of 272 people were interviewed during this phase although data was not usable in four cases which have been removed from the analysis.

Homelessness, and particularly rough sleeping in London is concentrated in central boroughs with 34% of rough sleepers in Westminster followed by 7% in Camden and 6% in Lambeth. Participants in the Room-to-Breathe survey used services across 16 of the 32 London boroughs with a concentration on the areas with highest levels of homelessness. 30% primarily used services in Westminster, 20% in Camden and 13% in Lambeth.

Gender. Across both phases of the project, 79% of participants were male and 20% female (one person did not want to give this information). This is similar to the expected gender profile of people experiencing homelessness. CHAIN data on rough sleeping in London found 14% females and 86% males however in UK accommodation projects for single homeless people, women are somewhat more highly represented at 30%.

Ethnicity. In terms of ethnicity, the sample is 66% White compared to 69% of rough sleepers. However, White British participants represented 39% of the sample but make up only 29% of rough sleepers. Black people are also somewhat over sampled in comparison to rough sleepers making up 25% of our sample but only 14% of rough sleepers whilst the proportion of Asians accessed in this survey (5%) is very similar to the proportion of rough sleepers (6%). These differences are likely to reflect the difficulties in accessing accommodation for non-British Europeans who are more likely to be rough sleeping.

Age. The age breakdown of participants is also likely to have been affected by the difficulties faced by younger people in accessing accommodation services. In comparison to rough sleepers in London participants were more likely to be in older age groups. Those over 55 represent 9% of rough sleepers but 15% of our sample, whilst those in the 18 – 35 age group are 40% of rough sleepers but only 25% of our sample. Those aged 46-55 comprise 22% of rough sleepers and 24% of room to breathe participants.

The Respiratory Health of Participants

Participants were asked to rate their health with 46% of participants describing their health as good or very good while 28% would describe their health as poor or very poor. While a significant proportion of participants did describe their health as good or very good this is not to say that participants were not concerned about their health: 58% of participants reported that they were worried about their health.

The prevalence of respiratory infections and disease among participants was particularly high especially when compared to the general population. A key indicator of this is the widespread usage

of inhalers among participants with 26% reporting to use one. Inhaler usage among participants is far higher than with the UK general population at 8%[3] indicating the presence of respiratory health issues.

All participants were asked about their history of respiratory conditions with the question '*Has a doctor or nurse ever told you that you have any of the following health conditions?'* and whether they had been admitted to hospital for this condition. Particularly noticeable was the high prevalence of asthma with 20% reporting to have been diagnosed, compared to 8.4% in the general population according to Asthma UK's figures[4] and COPD for which 1.9%[5] of the population compared to 4.9% in this study.

Condition	N	Percent	Number of Participants who were diagnosed and admitted to Hospital for this condition
Tuberculosis (TB)	9	3.4%	89%
Asthma	55	20.5%	56%
Pneumonia	30	11.2%	90%
COPD (Chronic Obstructive Pulmonary Disease)	13	4.9%	62%
Influenza (Flu)	42	15.7%	17%
Bronchitis	22	8.2%	32%
A lung infection	41	15.3%	54%
A pulmonary embolism	4	1.5%	100%
Any other problem with breathing or lung health	25	9.3%	48%

[3] Figure taken from QOF database by combining 2015 figures of inhaler usage for COPD (1.9%) and Asthma (6.1%). Available at: www.gpcontract.co.uk.

[4] 5.4 million People in the UK are currently receiving treatment for asthma: 1.1 million children (1 in 11) and 4.3 million adults (1 in 12) (Asthma UK Centre for Applied Research 2014).

[5] General Practitioner records, (2012).

None of the above	89	33.2%	
Total	**268**		

Period of Homelessness. For all of the health issues mentioned above, the longer that a participant has experienced homelessness, the higher the likelihood that the participant had suffered from a respiratory health condition. For example all of the participants who reported to have suffered from TB first became homeless over two years ago – two thirds had experienced homelessness for more than five years. Further to this, rough sleeping is a particularly damaging element of homelessness – Pneumonia a key example of this. 94% of participants who reported to have been diagnosed with Pneumonia had spent more than two years rough sleeping (Only 29% of participants had spent this time sleeping rough) – Almost half (48%) of the participants who had reported to have been diagnosed with Pneumonia had spent more than 10 years sleeping rough (only 14% of participants had slept rough for over 10 years). All participants who reported to have had a pulmonary embolism had been sleeping rough for over 10 years.

Hospital Admissions. Similarly, for all conditions listed above, the likelihood of participants having been admitted to hospital also increases with length of time since a participant first became homeless and, if the participant has slept rough, with the total length of time spent street homeless. While the age of participants has an impact on the likelihood of having a condition, the length of time an individual has spent experiencing homelessness is a more influential factor than this.

Diagnosis Rates are known to be low amongst people experiencing homelessness, many of whom are only diagnosed around an emergency hospital admission. This means that comparison of hospital admission rates with those in the general population may give a more accurate impression of the extent of critical respiratory problems. One study of hospital admissions in the UK found a five year admission rate of 27.1 per 1000 for all respiratory infections including 8.5 per 1000 for pneumonia. The authors find a significant association between hospital admission and deprivation, however the combined figures are also highly skewed towards those under 5 years of age and over 75, groups which are not represented within our data[6]. When these groups are removed the average rate of admission for all respiratory infection was 14.4 per 1000 and for pneumonia, 3.9 per 1000. These figures cannot be directly compared to our data, which records lifetime prevalence and does not account for people who died in hospital following admission. The authors conclude that a targeted program focussing on the most vulnerable is needed including evidence based treatment of tobacco dependence, and vaccination against pneumonia and influenza to reduce health inequalities. Our research suggests an even greater level of health inequality experienced by homeless people demonstrating the need for specific approaches for this group. In our sample a rate of hospital admission for pneumonia of 7.2 per 1000 was found which is clearly very high given the age range of participants.

Primary Care Management. The vast majority of people with asthma and COPD can work with their primary care health care team to stay well, avoid exacerbations and reduce lung decline. Many hospital admissions are preventable and where hospitalisation occurs this would suggest a failure to optimise treatment within the life course of the person with the disease. The National Review of Asthma Deaths (NRAD)[7] reports that disadvantaged socio-economic groups have particularly poor outcomes when treated for asthma. This is especially so for those who also have depression or anxiety who can experience more asthma symptoms and have worse outcomes in terms of higher use of

[6] Hawker, J.I., Olowokure, B., Sufi, F., Weinberg, J., Gill, N., Wilson, R.C., (2003) "Social deprivation and hospital admission for respiratory infection: an ecological study", *Respiratory Medicine,* (97, 11).

[7] The National Review of Asthma Deaths (2014) *Why Asthma still Kills*, Available at: https://www.rcplondon.ac.uk/projects/outputs/why-asthma-still-kills

healthcare resources, less successful emergency treatment and more frequent admission to hospital. For those with COPD, hospitalisation for acute exacerbation of COPD is an indicator of increased likelihood of mortality following admission. A study undertaken in Barcelona revealed that for those admitted for this condition, 13.4% died in the following 180 days and a total of 71% had died within two years[8].

One focus group participant explained his as yet undiagnosed respiratory health issue:

"Well I have difficulty with sleeping. In the night I will be wheezing in my chest. I was sweating and so on and so forth. So yeah it was a very, very difficult time for me. Well initially they thought I was having asthma so they give me that [inhaler] so I said I use it, but later it stops, so they gave me some tablets. What I normally do is – because when you go to the GP, they don't have time. Normally. So what I do is I just, if there is any issues, I just rush to the A&E. Then everything is done."

'Frightening Breathlessness'. While these figures are high, there may be significantly more cases that are undetected: 30% of participants have been admitted to hospital for 'frightening breathlessness', an indicator of acute respiratory diseases like asthma and COPD exacerbation , pulmonary embolism and pneumonia Daily breathlessness lasting more than 3 months is also predictive of premature death[9]. While not a direct comparator, 10% for general population suffer from breathlessness on a daily basis[10] with this issue being particularly prevalent among the elderly with about 30% experiencing daily breathless.

Chest infections. For those that have slept rough there are increased risks – 64% of participants who had slept rough reported to have had chest infections while they were sleeping rough. One focus group participant explained his experience of chest infections:

"Green is infection. I can taste an infection on my chest before it comes. I get like a nasty taste to you know in my spit? And then a day later my spittle is all like a green colour… It creeps up on you as well. You don't realise it. You think you are all right and then you think OK I've got a little bit of a cough but you don't think about that it's a week or so, you leave it – because you are not interested. You lose that sense of what… you look like to other people and … you just don't think oh I have had this on for two or three days, this is damp, this is dried on me, this has dried on my chest. It is just sinking through. It happens, just creeps up on you. The next thing you know, you are ill."

Of the 11% of participants that have been diagnosed with Pneumonia, a lung condition caused by an infection and resulting in inflammation of the lungs, there is a high rate of hospital admission. Pneumonia is usually easily treated by medication if caught early and would only require hospital admission in a severe case – for participants in this study where 90% had been admitted to hospital it is likely that they had severe cases which are particularly dangerous (even life-threatening) for older patients, or people who have other debilitating health issues.

[8] Almagro, P., Calbo, E., Ochoa de Echagüen, A., Barreiro, B., Quintana, S., Heredia, J.L., Garau, J. (2002) Mortality after hospitalization for COPD, *Chest*, (121, 5).

[9] Aspinall, mP.J., (2014), *Scoping research on models of care to support earlier diagnosis of diseases related to breathlessness as a symptom,* Bayswater Institute and University of Kent., Available at: http://www.nhsiq.nhs.uk/media/2582027/breathlessness-scoping-research-full-report.pdf

[10] "IMPRESS Improving and Integrating Respiratory Services in the NHS", (2014), *IMPRES breathlessness resources*, Available at: https://www.networks.nhs.uk/nhs-networks/impress-improving-and-integrating-respiratory/news/impress-breathlessness-resources

Self-Management Plan. When an individual is diagnosed with asthma or COPD it is good practice for a medical professional to create a 'Self-Management Plan'[11] with the patient to assist them in managing the condition and reduce the levels of associated risk. However, for the 22% of participants who reported to have been diagnosed with COPD, asthma or both, only 40% reported to have had a self-management plan created for them. This puts 60% of these participants at increased risk of attacks, hospitalisation and even death. This is emphasised by the National Review of Asthma Deaths (NRAD) which highlights that 67% of deaths related to Asthma are with people who do not have a Personal Asthma Action Plan (PAAP): a factor that may have prevented their death[12]. With better routine medical care, ongoing clinical supervision and monitoring, people who are experiencing homelessness have a better chance to manage their health and the use of emergency care is far less likely.

It is also important to highlight that while 60% do not have an action plan, 40% of participants in this study do. This indicates that given the opportunity and the means to do so people experiencing homelessness are likely to do so.

Getting the Treatment You Need

It is also clear that the realities of homelessness can make detection of respiratory issues difficult. For example, 69% of participants reported that '*when you sleep rough you expect to have a cough'* making it hard to know if a serious respiratory or health issue has taken hold.

> *"When you sleep rough you expect to have a cough"* – Focus Group Participant
>
> 69% of survey participants agreed with this statement.

Barriers: Drugs and Staff. A further issue relates to the way that health may not be a 'priority' for people experiencing homelessness and the staff in homelessness services they are supported by. Often persistent coughs can be explained as a 'drug issue' or due to smoking – when there may be interrelated or underlying issues which therefore go unaddressed. This is further complicated by the fact that 80% of participants who use drugs find it difficult to know when they are ill and 84% have used crack or heroin to kill pain or get over an illness.

"Say when you are on the gear, especially the heroin, half the […] time you don't know you are ill anyway. Because you are so stoned and the heroin dries the cold up and all that, so you don't even know you've got it. You think fuck me, am I clucking a bit? When you aren't you think you are clucking." – Focus Group Participant

Focus group participants commonly spoke about how staff might not prioritise health as an issue instead focusing on issues relating to accommodation, benefits and mental health. This can mean that coughs or other ailments often go unquestioned. This participant explained:

"I suffer from depression. And the staff are aware of that. And if they don't see me for 24 hours, they try my phone, they phone my room, they come and check on me. They are very on it. If it's an illness that you actually have, they don't notice until you tell them. The guy next door to me… has just got out of hospital – I think it's something like 16 days in there with a liver condition. And it wasn't until he actually had a fall and they phoned the ambulance for him, because of the fall that they realised he had a liver problem."

[11] A 'Self-Management Plan' or 'Action Plan' is created by a medical professional and includes information and steps to take to manage a lung condition and cut down the risks of issues like Asthma Attacks.

[12] The National Review of Asthma Deaths, (2014) *Why Asthma still Kills*, Available at: https://www.rcplondon.ac.uk/projects/outputs/why-asthma-still-kills

GPs. Despite this, the proportion of participants registered with a GP was high with 88% registered with a GP in their local area (those who were not registered with a GP were predominantly people currently rough sleeping and non-British). While registration is high the ability to access a GP is made increasingly difficult by sleeping rough: 63% of participants agreed or strongly agreed *that "getting to a doctors when you sleep rough can be difficult".* One focus group participant explains:

"Sometimes you've got to, like, find doctors that are out of the area and so… it's too much of an effort to go and get the help that you need, than it is to just snuggle down and think fuck it, it will go away on its own. It's the truth!"

Even when people are in temporary accommodation, getting to a GP can be difficult. One focus group participant who lived in a hostel explained this issue:

"Hostels should have a nurse or someone who comes in, that comes in once a fortnight or once a week. Just one day a week, to see people. Because a lot of people like us don't like going to doctors and things like this. Terrible for appointments. I am one of the worst in the world keeping appointments, yeah. That's why I try to get them made early in the morning. So as soon as I get up I go and do it and it's done. But … because a lot of us won't go and just – I haven't had a doctor… I haven't even registered with a doctor since I moved here."

Further to this, 20% of all participants felt that they would not know where to go for treatment if they got ill (responses to this question were not influenced by nationality or whether currently rough sleeping).

Inhalers. While only 9% of participants in this study who used inhalers reported that they were not confident that they knew how to use it properly, it is likely that a higher proportion do not use their inhalers correctly. Up to a third of people with asthma do not use their inhaler in the right way[13] and if the technique is poor then it is likely to not be aiding the health of the individuals in question. Further to this the high prevalence of smoking among participants may be having a significant impact on the effectiveness of inhaler usage: 90% of participants who use an inhalers are also currently smokers. Clinical research has revealed that smoking can limit the impact of inhaler use in the treatment of asthma particularly[14].

Vaccinations and Immunisation. The number of participants who have had access to vaccinations like Flu Jabs reveal that access to preventative or ongoing care can be restricted. In England, influenza vaccination is recommended for all those aged 65 years and over and all those aged six months to under 65 years falling in to a clinical risk category.[15] While 52% of participants have had a vaccination in the last year, 21% have not had a vaccination in the last year and 22% have never had a vaccination. Story *et al's* study of eligibility for influenza vaccination found nearly 40% of homeless people were eligible for vaccination on grounds of risk compared to 13% in the general population, however, only a quarter of those eligible had received a vaccination. Story *et al* argue that the importance of this health inequality demonstrate a need for more targeted outreach approaches to ensure vaccinations reach homeless people. In addition to addressing the needs of a group with particularly high risks, vaccination is a low cost preventative measure which is cost effective for the NHS. People experiencing

[13]Lavorini, F., Magnan, A., Dubus, J.C., Voshaar, T., Corbetta, L., Broeders, M., Dekhuijzen, R., Sanchis, J., Viejo, J.L., Barnes, P., Corrigan, C., Levy, M., Crompton, G.K., (2008), "Effect of incorrect use of dry powder inhalers on management of patients with asthma and COPD." *Respiratory Medicine* (102, 4).

[14] Chalmers, G.W., Macleod, Little, S.A., Thomson, L.J., McSharry, C.P., Thomson, N.C., (2002), "Influence of cigarette smoking on inhaled corticosteroid treatment in mild asthma", *Thorax* (57).

[15] Risk Groups include: Those with respiratory disease, chronic heart disease, chronic renal disease, chronic liver disease, chronic neurological disease, diabetes, immunosuppression (disease or treatment), and pregnant women.

homelessness should be added to the 'at risk' group outlined by Clinical Commissioning Groups and a more targeted approach directed towards this group.

The Causes of Respiratory Health Issues

The findings of this study reveal a bleak picture of poor respiratory and lung health for participants. Due to the relatively small numbers of participants who have reported to have had existing conditions, we cannot definitively correlate the lifestyle factor that may have influenced these issues. There is however similar relationships to existing clinical studies around respiratory health and lifestyle and our findings reveal that the high prevalence of smoking is a key factor, with the physical realities of homelessness likely to be contributing to damaging physical health.

Smoking – Impact on Respiratory and Lung Health

As previously discussed the detrimental effect of smoking tobacco on lung and respiratory health is long established and the subject of extensive campaigns by health authorities. While the prevalence of tobacco smoking among people experiencing homelessness has also been previously established, this study serves to further embed not only the widespread nature but the quantity of tobacco smoked among participants creating a picture of the wider homeless population. This was achieved through Peer Researchers recording 'Pack Years'[16] to measure the quantity of tobacco participants have smoked and for what period during the participants life the tobacco was smoked.

Prevalence of Smoking Tobacco

The most recent figures from Public Health England reveal that prevalence of current smoking among the general adult population is slightly lower in London at 17% than across England where the prevalence is 18%[17]. This figure paints a stark comparison with participants in this study for which 85% of participants reported to be current smokers. This figure is almost double the peak prevalence of adult smoking which reached 45% in 1974[18] and is slightly higher than the rate of smoking found by other authors studying homelessness[19][20][21]. Only 6% of participants have never smoked tobacco products at any time in their lives.

> *"Smoking is just a part of being homeless, isn't it?!"* – Focus Group Participant
>
> 34% of survey participants agreed with this statement.

The prevalence of smoking hand rolled tobacco is also clear among participants with 64% of participants currently smoke hand rolled tobacco regularly. This compares to 40% of male and 23% of female smokers in the general population who smoke hand-rolled cigarettes[22]. A likely explanation of this is the reduced cost of smoking hand rolled cigarettes. An illustration is that 70% of participants have smoked 'straight' (manufactured) cigarettes in the past,

[16] Pack Years is calculated by multiplying the number of packs of cigarettes smoked per day by the number of years the person has smoked. For example, 1 pack-year is equal to smoking 20 cigarettes (1 pack) per day for 1 year, or 40 cigarettes

Peer Researcher Case Study – Why smoke a 'Dogend'?

Whilst conducting the Survey in one of the day centres in central London, I met a chap who is currently sleeping rough. When we got to the 'How many cigarettes made from dog ends do you smoke a day' question I nearly keeled over when he responded that he couldn't possibly tell me as he smoked them constantly every waking hour, from morning, noon 'til night. Talking it through we eventually settled on the round figure of a 100 a day as that was all he did: look for butts and smoke them. He went on to explain that it wasn't just about needing to satisfy a nicotine craving but the activity of finding the butts gave him a purpose and helped pass the time. His face lit up with delight when he smoked discarded cigarette. He made me feel sad and happy at the same time - and a certain amount of admiration for finding joy and purpose in the smallest and most awful of things. – Peer Researcher

but only 26% of participants report to currently smoke them regularly now. A worrying finding is the widespread nature of smoking 'Dogends' or discarded cigarette butts: 46% of participants have smoked Dogends regularly in the past and 15% currently smoke 'Dogends' regularly.

Some participants are also engaging in 'high risk' practices that are likely to increase ingestion of toxic substances and infectious agents, increasing the hazards associated with cigarette smoking[23]. As discussed above, one of these practices is smoking discarded cigarettes or 'dog-ends', and similarly re-making cigarettes from discarded cigarettes also presents an increased risk of exposure to toxins trapped in filters. This study reveals that this practice is widespread with 64% of participants having re-made cigarettes made of discarded cigarettes. Further to this, 75% of participants have shared cigarettes with other people and 55% are aware that they have smoked counterfeit tobacco.

	Which of the following have you smoked regularly at any time in your life?		**Which of the following do you currently smoke regularly?**	
	N	Percentage	n	Percentage
"Straight" cigarettes	189	70.5%	65	26.2%
"Dog ends" (discarded cigarette butts)	122	45.5%	38	15.3%
Roll ups (hand rolled cigarettes)	216	80.6%	160	64.5%
Total Responses	268		248[24]	

Prevalence of Illicit Substance Misuse

The prevalence of smoking illicit substances like cannabis, crack[25], heroin and crystal meth among people experiencing homelessness is well established, as is the association with using these substances with acute respiratory symptoms and complications on the airways[26]. While less is known

[23] Aloot, C.B., Vredevoe, D.L., Brecht, M.L., (1993), "Evaluation of high-risk smoking practices used by the homeless" *Cancer Nursing,* (16, 2).

[24] 20 participants of the study were not asked this question due to technical issues with the tablet computers used for data collection.

[25] Crack Cocaine is chemically purified, very potent cocaine in pellet form that is smoked through a pipe and is considered highly and rapidly addictive.

[26] Tashkin, D.P., (2001), "Airway effects of marijuana, cocaine, and other inhaled illicit agents", *Current Opinion in Pulmonary Medicine*, (7, 2).

about how smoking illicit substances like crack can contribute to developing chronic respiratory problems, it is evidenced that it can exacerbate existing conditions like asthma, pneumonia and bronchitis[27] and crack smoking in particular is associated with distinct acute respiratory symptoms of cough with black sputum, wheeze, chest pain, and shortness of breath[28].

This study has revealed the extent to which participants are smoking illicit substances allowing an insight in to the nature of the problem within the wider population of people experiencing homelessness in London. Participants were asked to report which substances they have regularly smoked at any time in their lives, which substances they currently smoke, and how much, for how long they have smoked this substance. The results are as follows:

	Which of the following have you smoked regularly at any time in your life?		**Which of the following do you currently smoke regularly?**	
	N	Percentage	N	Percentage
Cannabis	129	48.1%	38	15.3%
Legal Highs (New Psychoactive Substances)	40	14.9%	8	3.2%
Heroin	81	30.2%	27	10.9%
Crack Cocaine	93	34.7%	38	15.3%
Crystal Meth (Methamphetamine)	8	3.0%	2	0.8%
Total Responses	268		248[29]	

Perhaps unsurprisingly with the established link between the cycle of homelessness and substance misuse, the usage of substances is high compared to the extent reported in the general population[30]. It is also important to point out that participants were asked to report which substance they had smoked, and therefore the total amount of drug use is likely to be higher for substances that can be imbibed though other methods e.g. intravenous drug usage. The findings also create a picture of polysubstance misuse. For example, all but two of the participants who had smoked crack cocaine on a regular basis also have regularly smoked heroin. The negative impact on respiratory health of drug use did not come as a surprise when discussed in focus groups:

[27] Leece, P., Rajaram, N., Woolhouse, S., Millson, M., (2013), "Acute and Chronic Respiratory Symptoms among Primary Care Patients Who Smoke Crack Cocaine", *Journal of Urban Health*, (90, 3).
[28]Haim, D.Y., Lippmann, M.L., Goldberg, S.K., Walkenstein, M.D., (1995), "The pulmonary complications of crack cocaine. A comprehensive review", *Chest,* (107, 1).
[29] 20 participants of the study were not asked this question due to technical issues with the tablet computers used for data collection.
[30] Home Office, (2015), "Drug Misuse: Findings from the 2014/15 Crime Survey for England and Wales" *Statistical Bulletin 03/15 Second Eddition,* Home Office, Eds., Deborah Lader.

"That's where all my health problems come from; crack. Well it was cigarettes basically when I first started, then it went on to being crack that comes out. And through that the heroin. So that's where I got my breathing problems…they all come direct from cocaine and heroin." – Focus Group participant

Those that indicated that they are current or previous users of class A drugs[31] tend to have longer histories of homelessness and an increased likelihood of having experienced street homelessness. For example, 73% of participants who reported to be a regular class A drug user reported to have first become homeless over 2 years ago and a third (33%) reported to have become homeless over 10 years ago. Alongside the impact on the respiratory system that drug use might have directly, drug usage is also likely to have a significant impact on an individual's self-care which can also be damaging for health. This may be in terms of activities that make the individual prone to catching colds and other ailments but also longer term behaviours which impact on the immune system.

"If you are on the gear and … because you are just sitting out there, freezing cold weather…, all your tops come off, sitting there in t-shirt, bloody minus 2 you know?" – Focus Group Participant

"People don't realise it – you are killing yourself every time you do it [crack] anyway. I nearly died from it and I still carried on. It don't stop you. It's mad how it can take control of your life. If you are more smoking, your defences – you are going to go down anyone. Because you are not eating properly. You are not sleeping properly, you know what I mean? So your immune system is right down anyway. So that's why I think homeless people are more prone to catch disease than a lot of other people. Because your defences are right the way down." – Focus Group Participant

Legal Highs. A surprising finding from the survey results is the relatively low levels of participants who reported to have been regularly smoking new psychoactive substances – also known as 'legal highs'. Only 15% of participants reported to have ever used new psychoactive substances regularly in their lives and 3% to currently be smoking them regularly. One focus group participant explained his experience of smoking 'Spice':

"Spice thing making me worse man. I can't breathe freely, I can't breathe. When I do some few times, I am going fucked…. Spice, what he is saying is right. It's just brought it all into a different thing. Because I was smoking it and I tell you what, fuck, the breathing. I was coughing up all sort of things. It was like plastic." - Focus Group Participant

This finding is contradictory to the experience of our Homeless Health Peer Advocates who report in ongoing data collection that legal high usage is widespread among their homeless clients. Explanations for the low numbers revealed in this study may be that participants areusing these substances but not smoking them or, giventhat participants were asked if they 'regularly' smoked for a year or more, some participants may have only recently started or were occasional dabblers in synthetic cannabinoids like 'Spice'. As one Groundswell Peer Advocate highlighted in a focus group:

"Everyone I know dreads starting smoking it ['Spice']. Every one of my clients, the really chaotic people are on it. I've seen some people have some really terrible experiences on it. There's one guy I work with who is a heavy user and it changes him completely. He's got a lot of health issues and it means I can't get him along to his appointments" – Groundswell Homeless Health Peer Advocate

Risks of Sharing drug Paraphernalia. Similarly to the 'risky' behaviours associated to smoking tobacco, sharing drug paraphernalia can also have adverse effects on health like an increased risk of

[31] Class 'A' drugs are illegal narcotic drugs classified as being of the most harmful and addictive. Examples include Heroin, Cocaine and Methamphetamine.

transmitting pulmonary TB[32] or the potential for transmission of blood borne viruses like hepatitis[33]. Among participants in this study this was an alarming trend with 89% of drug users reporting that they have shared a pipe. Further to this, some participants are aware of the impact this might have with 39% of participants agree or strongly agree with the statement that "When I share a pipe we all seem to get ill together." As these focus group participants explain:

"I find that when I smoke … especially when you are smoking gear like… you continually …you continually doing it all day, you get loads of shit on your chest and it closes in. And when you are smoking a pipe, you've always got infections… a lot of infections go with it. Say that it was five people and you are smoking, you are guaranteed within two days, I have always got an infection." – Focus Group Participant

"Because obviously if you are smoking crack then obviously when you are the street, you start smoking crack, plus you get a lot of chest infections off people if you are sharing pipes. So then that always gives you a lot of shit on your chest. Well because most of the people like… who are on the street.. a lot of them are smoking things, share things, so if one gets it its easily spread isn't it? You aint too fussy are you when you want to do that type of stuff. [You don't] question who people are type of thing. Just get on with it, don't you? And lose that sense of perspective." – Focus Group Participant

Quantities of substances smoked.

Smoking tobacco constitutes the most significant preventable cause of illness and death in the UK[34] and the burden is disproportionately felt by poorer people. Ill-health caused by smoking is much more common amongst the poorest and most disadvantaged in society, smoking is the primary reason for the gap in life expectancy between the rich and the poor. The poorest in our communities smoke at higher rates and smoke more on an individual level – their habit is the single biggest reason for the difference in their life expectancy compared to the richest in our communities. [35] Consequently, quantifying the amount an individual has smoked in their life gives a strong indication of the potential for a range of health problems and health inequalities faced.

Pack Years. A common practice is to use "Pack Years" as an indicator of lifetime exposure to tobacco where one pack year is equal to twenty cigarettes smoke a day for one year. The formula has been adapted to give measures for rolling tobacco, pipes, cigars and 'spiffs' of cannabis.[36] In this study we have assumed that a cigarette made from 'dog ends' is equivalent in quantity to a hand rolled cigarette. This data gives a valuable means of comparing the smoking habits of people experiencing homelessness to the general population and an indication of risk across a variety of respiratory health issues. In addition, quantitative data was collected on lifetime smoking of "legal highs", crack cocaine, heroin and crystal methamphetamine. Whilst this data cannot be directly converted into a pack year measure, it gives an indication of potential for additional respiratory health implications of substance misuse.

---

[32]Munckhof, W.J., Konstantinos, A., Wamsley, M., Mortlock, M., Gilpin, C., (2003) "A cluster of tuberculosis associated with use of a marijuana water pipe", *The International Journal of Tuberculosis and Lung Disease,* (7, 9).

[33] Hunter, C., Strike, C., Barnaby, L., Busch, A., Marshall, C., Shepherd, S., Hopkins, S., (2012) "Reducing widespread pipe sharing and risky sex among crystal methamphetamine smokers in Toronto: do safer smoking kits have a potential role to play?" *Harm reduction Journal*, (9,9).

[34] Ash Fact Sheet, *Smoking Statistics: Illness and Death,* 2015. Available at: http://ash.org.uk/files/documents/ASH_107.pdf

[35] Jha, P., Peto, R., Zatonski, W., Boreham, J., Jarvis, M.J., Lopez, A.D., (2006), "Social inequalities in male mortality, and in male mortality from smoking: indirect estimation from national death rates in England and Wales, Poland, and North America", *The Lancet*, (368).

[36] More further explanation of the Pack Year formula and references available here: http://smokingpackyears.com/references.html

Our data reveals not only high rates of smoking but the large quantities smoked by participants over the course of their lives. Only 20% of participants did not have a significant pack year history; 23% have a pack year history of 1 -10; 13% of 10 – 20; 16% of 20 – 30; 8% of 30 – 40; 5% of 40 – 50; 5% of 50 – 60; and 9% have a pack year history of over 60. In many cases, the risks of contracting a health problem are complex with age, genetic factors, lifestyle factors and presence of multiple health problems interacting with smoking behaviour. However, this level of smoking is clearly associated with a range of respiratory health problems.

COPD: 43% of participants have a pack year history of over 20. Research has suggested that this level of smoking combined with any respiratory infection in those aged over 40 is very likely to indicate COPD[37]. Given the high levels of respiratory infection and premature mortality amongst people experiencing homelessness it does not seem unreasonable to assume that a significant proportion of this group have COPD. In fact, 19% of participants have more than double the pack year history which has been found to be a likely indicator of COPD. These figures are stark in particular in contrast to the number of participants who had been told by a Dr that they had COPD, only 4.9 had been diagnosed suggesting huge levels of undiagnosed COPD.

"I have just had my COPD checked and I haven't been given my flu jab this year. I just went for my COPD check the other day and .. .er… my actual age is 46 and COPD checks my lung age was 94. And she said if I carry on smoking I will be lucky to last five…between five and ten years." – Focus Group participant

Chronic Bronchitis: Participants with a pack year history of around 20 are over 4.5 times more likely to develop chronic bronchitis and those with a pack year history of around 45 are over 7 times more likely to develop this condition compared to non-smokers[38]. This suggests that 25% of survey participants have increased their risk of developing chronic bronchitis by almost 5 times. 21% by *at least* 7 times. In fact, 7% of participants have a pack year history of over 70, twice the amount needed to increase the risk of chronic bronchitis by seven times.

Lung Cancer: In men the risk of lung cancer increases by 9 times for those with a pack year history of 1-20; 17 times greater for those with a pack year history of 20-30; by 25 times for 30-40 pack years; by 32 times for 40-50 pack years; by 46 times for 50-60 pack years and by 48 times for those with a pack year history of over 60.[39] On the basis of this evidence, 80% of room to breathe participants have an increased risk of developing lung cancer due to smoking with more than one in three participants increasing their risk by at least 17 times. Nearly one in ten participants fall into the highest risk category in which smoking has increased the risk of lung cancer by 48 times. However, no participants reported having been diagnosed with lung cancer. The survey findings suggest that this population has a high likelihood of developing lung cancer and should be a priority group when a lung cancer screening programme becomes established in the UK.

---

[37]Sandelowsky, H., Ställberg, B., Nager A., Hasselström J., (2011), "The prevalence of undiagnosed chronic obstructive pulmonary disease in a primary care population with respiratory tract infections - a case finding study", *Family Practice,* (12, 122).

[38] Forey**, B.A.,** Thornton**, A.J.,** Lee, P.N., (2011) "Systematic review with meta-analysis of the epidemiological evidence relating smoking to COPD, chronic bronchitis and emphysema", *Pulmonary Medicine*, **(**11,36).

[39] Pesch, B., Kendzia, B., Gustavsson, P., Jöckel, K., Johnen, G., Pohlabeln, H., Olsson, A., Ahrens, W., Gross, I.M., Brüske, I., Wichmann, H.E., Merletti, F., Richiardi, L., Simonato, L., Fortes, C., Siemiatycki, J., Parent, M.E., Consonni, D., Landi, M.T., Caporaso, N., Zaridze, D., Cassidy, A., Szeszenia-Dabrowska N., Rudnai, P., Lissowska, J., Stücker, I., Fabianova, E., Dumitru, R.S., Bencko, V., Foretova, L., Janout, L., Rudin, C.M., Brennan, P., Boffetta, P., Straif, K., Brüning, T., (2012), "Cigarette smoking and lung cancer – relative risk estimates for the major histological types from a pooled analysis of case-control studies", *International Journal of Cancer*, (131, 5).

Homelessness and the impact on Respiratory and Lung Health

Rough Sleeping

Realities of sleeping rough. It's not difficult to imagine that the physical hardships of sleeping rough would have a negative impact on the body. Not only the likelihood of becoming ill, but also taking longer to recover than if an individual was in accommodation: 81% of participants felt that it takes longer to get over illness when you are sleeping out.

Participants in focus groups were asked to report which aspects of sleeping rough were likely to have the greatest effect on their respiratory and lung health. Some of the key themes that came out related to the difficulty in keeping yourself clean and warm while rough sleeping and the conditions of spaces where individuals were forced to sleep.

For example, in a number of the focus groups, participants reported how sleeping in doorways of buildings meant they were often in close proximity to roads. Similarly, the need to be on busy thoroughfares when begging can also mean that you can spend the day at low level near heavy traffic. When survey participants were asked about this, 69% agreed or strongly agreed that "traffic fumes can make it hard to breathe when sleeping rough". Long term exposure to traffic fumes has a demonstrated link to lung disease. For example, while the most common cause of COPD is smoking, past exposures to fumes, chemicals and dust will have also contributed to causing many currently occurring cases[40].

Similarly, spaces where people are forced to take shelter when sleeping out was also felt to have a damaging effect. Key concerns highlighted were having to sleep in spaces where pigeon droppings were present, where 38% of participants reported this had been the case for them, and mould, where 67% of participants had slept in places that had mould.

"If you live in a place, for example, full of waste – last time [I was street homeless] I used to sleep on the top of the building. That building got a pigeon nest on it and you got the shit, you know the pigeon shit on it. You know the shit of anything you are going to get difficulties in your chest. And then you start itching, you know, that's what happened. We stayed about four month with the pigeon and mice." – Focus Group Participant

Being able to keep the body warm and clean while sleeping out was also an area of concern for participants which they felt could have an impact on their respiratory and lung health. 68% of participants often had wet clothes when they were sleeping rough. 47% of participants agreed that 'it's not possible to keep yourself clean on the streets'.

The realities of sleeping rough are likely to not only be a factor contributing to poor respiratory and lung health to begin with, but are also likely to be damaging to an individual's recovery. Even with the best clinical practice to deal with a health issue, discharging an individual back to the street once treatment has been administered will be damaging for the individual in question. This focus group participant explains:

"And then the homeless people, it doesn't matter what treatment you give them, it's not going to work….. do you know why? Because they sleep on the street. And that affect him. You cannot just get someone who got a chest infection, you will give him treatment and you sent him back down the road. That's not going to be called a treatment." – Focus Group Participant

Hostels and temporary accommodation.

[40] Health and safety Executive (2014) *Work-related Chronic Obstructive Pulmonary Disease (COPD) in Great Britain in 2014*, Available at: http://www.hse.gov.uk/Statistics/causdis/copd/copd.pdf

Living in hostels and temporary accommodation, while a considerably better option than rough sleeping, was also felt by focus group participants to have a damaging effect on respiratory health. Participants in focus groups were asked about the conditions of their hostels that they felt were bad for their respiratory health. Key issues that were highlighted were the temperature, damp and mould, and the cleanliness of the hostel were highlighted as concerns. Among survey participants, 23% reported that their hostel was cold, 19% felt that their hostel was damp and mouldy. 74% felt their hostel was clean, implying that 26% felt it was unclean. Interestingly, participants who reported to have lived in a hostel in the past were more likely to report issues with hostels. This may match a topic discussed in focus groups around the way that temporary accommodation was improving.

Clean sheets and bug sprays. Another topic discussed in focus groups was having clean sheets to sleep in. For asthma sufferers this is an essential step to remove allergens and reduce the chance of flares or 'episodes'. However, for a small proportion of survey participants taking the steps to reduce this risk were made difficult. For example, 13% reported that they were not given new bedding when they moved in to their hostel and 10% reported that they did not have decent facilities to keep their bedding clean. However, a revealing, and divisive topic was around the spraying of hostels for pests like bed bugs. When this was raised with survey participants, 35% agreed or strongly agreed that spraying hostels for pests affected their breathing. A further 20% said this was not applicable which is likely to highlight that this is not being done in their hostels. This focus group participant explains:

"I tell you what has an impact on my breathing – … because of the bed bugs in the place. They have to keep spraying. And when they spray that stuff, even like when it's cleared out the room and I get in there, I am guaranteed two days after they spray my room, I am ill. You see when they spray, you know what I mean, if people have got a bit of a chest problem anyway, you have got to be really bloody careful. As I said, that's why I stay I go down my mum's or my brothers or my step brothers [when they spray for pests]. Stay for a couple of days." –Focus Group Participant

While concerns around facilities were highlighted, more common were concerns about the close proximity that participants live in with other people, especially when many other people in hostels might be suffering from illness or long term health conditions. For example, 78% of participants felt that colds and flu spread around quickly in hostels. As one focus group participant explains:

"Anything that is airborne in a place like this – it's the same as a jail or hostel – everyone is like passing each other all the time, it's quite a… a lot of poorly people, like airborne like flu and things like that… you sneeze, everyone is going to get it. You catch it, other people catch it." – Focus Group Participant

Personal Hygiene. Another key concern of participants was a perceived risk around the personal hygiene of other residents in hostels. This topic was a regular discussion in focus groups when conditions in hostels were discussed. One focus group participant explained this concern:

"There are some residents, their hygiene is really bad. And I think they bring it into communal areas. I have complained about it. It's this one particular resident. And she is like…. It's just really bad anyway. So like… it might not be any of us, but if some other person comes in here and they are dirty and they come and then they will pass it [illness] around"

This was clearly a concern shared with many of the survey participants as 76% either agreed or strongly agreed that they were worried about other people's hygiene in hostels. Close proximity to people who have low levels of self-care may raise the chance of spreading illness, but generally makes hostels places that are not pleasant to be. For some focus group participants they felt the staff should be doing more to deal with this issue. One focus group participant explains how this concern even led him to return to the street:

"The hostel is clean. The hostel – no problem with the hostel. But people –they mess it up. The building…it doesn't create the dirt… That's the reason why I left. The bacteria from dirty people, the people that don't clean and they don't wash. Because where they hold on to the door keys with that smell everywhere, really ill people. They won't clean. You understand me so.. and then you touch the bacteria there and you became ill. This is the most important thing. And I saw people … I saw one guy, I was one year at the hostel, one year. He doesn't change his shirt for one year. He doesn't wash for one year. And I complained about it for three months. What they do is they have got about seven cleaners. They got seven cleaners that walk in after him to clean up. Why they don't just clean the person?" – Focus Group Participant

Improving Respiratory and Lung Health

Stopping Smoking

The most effective way of improving the respiratory and lung health of people experiencing homelessness is to treat smoked tobacco and illicit substance dependence. The survey reveals that among participants who smoke, most want to stop smoking, many think they could, but the vast majority have not. By effectively supporting people experiencing homelessness to stop smoking it would make a drastic change to their health - some of these changes are almost immediate, for example after 72 hours breathing is easier and energy levels increase[41] and some longer term, for example, after 15 years of not smoking the risk of a heart attack falls to the same as someone who has never smoked. Stopping smoking can also make you live longer: stopping smoking at age 60, 50, 40, or 30 gains, respectively, about 3, 6, 9, or 10 years of life expectancy[42].

Half (50%) of participants who smoke said that they want to stop smoking and a further 15% were unsure which would indicate that with support they may be willing to quit. This is comparable to figures for the general population, where 68% of current smokers in the UK reported that they wanted to quit[43]. Further to this 50% of all participants (including those who do not want to quit smoking) feel that they could stop smoking (20% were unsure). For those that had tried to stop smoking, attempts often failed and a number of participants reported to have returned to smoking tobacco after significant periods of non-smoking. 65% of participants have tried to stop smoking at some point in their lives and 22% had done so in the last year – however, for many of the participants we spoke to the last time they stopped smoking they only managed to do this for a short period. For example, 31% reported that last time they stopped smoking they stopped for less than a month. 10% of participants had started smoking again after over 5 years of non-smoking. In the general population more than a third of all smokers make at least one attempt to stop in a given year but only about 2-3% of smokers succeed long term[44].

This study reveals a desire among many people experiencing homelessness to stop smoking – but despite this the level of smoking remains dangerously high. Despite the fact that 90% of participants that smoke reported that they are 'aware of what the risks are with smoking tobacco' stopping smoking full stop is not happening. However, the 10% of participants who been successful in stopping smoking are evidence that it can be done.

[41] *Smokefree NHS*, Available at: http://www.nhs.uk/smokefree/why-quit/what-happens-when-you-quit
[42] Doll, R., Peto, R., Boreham, J., Sutherland., I., (2004), "Mortality in relation to smoking: 50 years' observations on male British doctors", *British Medical Journal*, 2004. (328).
[43] Larder, D., "Smoking-related behaviour and attitudes, 2007", *Office for National Statistics*, 2008.
[44] West, R., (2006), *Background smoking cessation rates in England,* Available at: http://www.smokinginengland.info/

Peer Researcher Case study – Stopping Smoking

Whilst interviewing people for the survey at hostels and day centres, participants were asked to say how strongly they agreed or disagreed with the following statement: "Smoking tobacco is part of being homeless". On more than one occasion this was met with a vehement and loudly outraged response of 'I Strongly Disagree'. I was very surprised that it provoked such a strong reaction especially from regular smokers. One man explained that he thought the statement was "utter rubbish" as choosing to smoke was nothing to do with being homeless and plenty of people with more stable living arrangements smoked like troopers!

We also asked 'Who do you think would be the most help when giving up smoking' many of the people I spoke to instantly replied with 'Me' or 'Myself' before I had even got a chance to read through the various options. This happened on numerous occasions. One man said that he very much believed that if he wanted to do something he would and really it was down to him, and that he had got himself through much harder things. – Peer Researcher

Why aren't people stopping?

In response to this question a number of focus group participants responded that they simply enjoyed smoking. Further to this 80% of survey participants agreed or strongly agreed with this statement. However, contrary to this, many focus group participants reported that their smoking was related to the detrimental impact of their situation: boredom and stress were commonly given in focus groups as reasons for smoking. As one focus group participant explained:

"[I started smoking again] because I got a big lump of bird. You know, boredom as well. Because sitting in the nick, most of your pals smoke. Smoking skunk again as well. That's why I started smoking cigarettes again really."

Another common topic discussed was around the 'lifestyle' of homelessness and how smoking was just 'part of the territory'. We asked survey respondents whether they felt that 'Smoking tobacco is part of being homeless': 34% agreed or strongly agreed that this was the case. Being around many other people who smoke in homeless services was also identified as a barrier, 35% of participants feel that it is impossible to stop smoking tobacco when you live in a hostel. This focus group participant explained:

"Lifestyle isn't it? It's the lifestyle. Most people that are homeless are either criminals or… something like that. So it's like it's just one of the things [smoking] that go with the other. Yeah? If you are in care, then you are either into crime or you are into drugs. And the same with homeless people… They can't get… you can't get away from it. Like both of them just go hand in hand." – Focus Group Participant

It is important to reiterate that many smokers continue smoking not by choice but because they are addicted. A large part of this addiction is due to dependence on the nicotine delivered rapidly to the brain with each inhalation. Addiction does not make it impossible to stop doing something, it just means that there are powerful urges and needs that have to be overcome in order to do so. For many people experiencing homelessness who may be currently or have previously experienced drug addiction the difficulty stopping smoking may be increased compared to those who have not. Similarly

the likelihood of stopping smoking is reduced if an individual has mental health problems[45] which are also prevalent in the homeless population.

Access to Smoking Cessation

With the right support anyone can stop smoking. Encouragement from a medical practitioner or a support worker can be the thing that makes a difference in committing to stop. 36% of survey participants felt that a GP would be the person who would be the most helping them to stop smoking. The results of the survey reveal that the topic of stopping smoking is not being approached to the extent that it could be with participants. While 86% of participants who smoke have visited a medical practitioner in the last 12 months, only a half of these (50%) were advised to quit smoking by the medical practitioner.

Further to this, 66% of all participants who smoke have not been advised by a support worker at a homeless service to stop smoking in the last 12 months. This is a worrying finding as support workers are likely to spend considerably more time with their clients than the client is likely to with a medical practitioner. It is clearly a missed opportunity: a study undertaken in the USA with homeless young people revealed that being asked by a service provider about smoking was associated with significantly higher motivation to quit and interest in smoking cessation services[46].

Only 42% of participants reported that they have access to smoking cessation support in a homeless service that they use. However, this may be an issue of awareness more than availability of service as many of those who reported to not have access to a smoking cessation service were interviewed in homeless services where other participants reported that they had access. One Focus Group participant explained that he wasn't aware of the smoking support that was available to him and the options available to aid quitting:

"The fact that they haven't got access to information to tell them about what is available and where to go and things like that. Because you are in such a bubble when you are in that life, when you are on the streets. It really is and you withdraw from quite a lot of agencies that can help you. So it's about having the information in the first place as to where to go to get help with this and where to go to get help for that. And when you don't know you tend to withdraw even more and then just sit and suffer in silence." – Focus Group Participant

The chance of successfully quitting smoking can be significantly increase by using licensed medication such as nicotine replacement therapy and Varenicline. Research has revealed that this can double the chances of successfully quitting[47]. If medication is used alongside behavioural support this can further increase the likelihood of successfully quitting significantly[48]. Survey participants who had attempted to quit smoking in the survey were asked which medications they may have used to aid them in quitting. The following results were found:

[45] Donald, S., Chartrand, H., Bolton, J.M., (2013), "The Relationship Between Nicotine Cessation and Mental Disorders in a Nationally Representative Sample," *Journal of Psychiatric Research*, (47, 11).

[46] Tucker, J.S., Shadel, W.G., Golinelli, D., Ewing, B., Mullins, L., Staplefoote, B.L., (2015), "Reducing Cigarette Smoking Among Unaccompanied Homeless Youth", *CA: RAND Corporation*, http://www.rand.org/pubs/research_briefs/RB9828.html.

[47] Stead, L.F., Perera R., Bullen, C., Mant, D., Hartmann-Boyce, J., Cahill, K., Lancaster, T., (2012), "Nicotine replacement therapy for smoking cessation" *The Cochrane Library*, (14, 11).

[48] Stead, L.F., Lancaster, T., (2012), "Combined pharmacotherapy and behavioural interventions for smoking cessation", *Cochrane Database of Systematic Reviews,* (10).

Have you tried any of the following ways to stop smoking?	n	Percent
Nicotine patches	86	59%
E-Cigarettes	63	43%
Nicotine Gum	51	35%
Varenicline (also known as Champix)	5	3%
Bupropion (also known as Zyban)	1	1%
Cytisine	1	1%
Going 'Cold turkey' (just stopping without help)	86	59%
Other	25	17%
Total Responses	145	

While the use of nicotine patches, nicotine gum and E-cigarettes is widespread as an aid to stop smoking, prescription medication use was low among participants. For the small number of participants who had quit smoking the most common way of achieving this was through 'going cold turkey' (42%). Only one person who had successfully quit smoking had used medication, in this case varenciline. One focus group participant explains his experience of trying to stop smoking:

"I went to my doctor's surgery and he put me on the non-smoking thing. It worked for about three or four months. Patches and such yeah. But then again four months after – uh huh, these boys was … pressing me back smoking again. Then I stop on my own for another month. Back again." - Focus Group Participant

Extensive data has been collected in this study around *'Will to quit'* and smoking cessation techniques and is available for further input in to tackling this issue.

Reducing the Risk of Smoking

The study has revealed that a large number of Participants simply don't want to quit. 24% of participants disagreed with the statement *'I want to stop smoking'*. 12% strongly disagreed. While stopping smoking full stop is without doubt the best way to reduce the risks of respiratory disease and lung infections, not everyone may be in a place to stop completely. While there is evidence to suggest that smoking cessation does not have an impact on adhering to substance abuse rehabilitation programmes[49], people who are in the early months of recovery from drug or alcohol addiction may be advised that they should not attempt quitting until they are established in their recovery[5051]. However, reducing the quantity smoked and the regularity of smoking can reduce the risks significantly and can prepare people for giving up when they choose to do so.

Recent guidance from the National Institute for Health and Care Excellence (NICE), advises that smokers who are struggling to quit should be advised to cut down taking a 'harm reduction' approach[52]. Simple steps like reducing the time between waking up and having a first cigarette can be a step towards doing this: this study reveals that 73% of participants who smoke have their first

[49] Reid, M.S., Selzer, J., Rotrosen, J., (2006), "Smoking Cessation Treatment at Substance Abuse Rehabilitation programs" *Northeast ATTC Resource Link* (5, 2).
[50] Bobo, J.K., McIlvain, H.E., Lando, H.A., Walker, R.D., Leed-Kelly, A., (1998), "Effect of Smoking Cessation Counselling on Recovery from Alcoholism: Findings from a Randomized Community Intervention Trial," *Addiction*, (93, 6).
[51] "Alcohol Rehab. How to Stop Smoking in Recover". Available at: http://alcoholrehab.com/addiction-recovery/stop-smoking-in-recovery/
[52] NICE guidelines [PH45], *Smoking: harm reduction*, (June 2013), Available at: http://www.nice.org.uk/guidance/PH45

cigarette 30 minutes or less after waking up. NICE goes on to recommend steps that should be taken by organisations and health services to improve people's chances of cutting down including; Raising awareness of licensed nicotine replacement therapy, distributing 'self-help' materials, behavioural support and supplying nicotine containing products to people who are trying to cut down. Tobacco dependency is a long term and relapsing condition. Health professionals should work with tobacco smokers over the long term and revisit motivation and try alternative interventions at each visit.

It is also important that people who engage in 'risky' smoking behaviours like smoking 'dogends' and sharing pipes should be made better aware of the risks involved with these practices. This can reduce the risk of transmitting infectious agents and reduce the impact of ingesting further dangerous chemicals.

Conclusion

This study has revealed the large extent to which breathing issues and poor respiratory and lung health affects people experiencing homelessness in London. Through involving over 330 people experiencing homelessness in this study we have revealed the gravity of the issue among the homeless population in general and on the individuals we spoke to. The high rate of hospital admissions clearly marks the severity of the issue for the people involved but also highlights a heavy burden placed on NHS secondary care services when in many cases this may have been completely preventable through ongoing treatment through primary care.

The realities of homelessness present a contributing factor to the issue but also cause barriers to getting the treatment that people need to deal with conditions that may have manifested as a result. Our findings make clear that diagnosis, preventative steps and ongoing care are underutilised by participants which is likely to be further exacerbating the issue for individuals.

Another key finding has been around the extent of tobacco usage and illicit substance misuse which appears to be a key factor in the poor respiratory health of participants. Through collecting data around the prevalence and the quantities that people are smoking we have revealed not only do the vast majority of participants smoke, but they are heavy users of tobacco products. This is a further indicator that, while the study has revealed disproportionately high incidences of respiratory disease and infections, it is likely that the true scale of these issues in the homeless population is likely to be far higher and is going undetected and untreated. It is also likely to be hampering existing initiatives that are attempting to support homeless people to stop smoking and by limiting the likely effectiveness of smoking cessation schemes.

Key to improving the respiratory and lung health of people experiencing homelessness is the wider promotion of smoking cessation and harm reduction for people experiencing homelessness through homelessness and health services. While the scale and the circumstances of the problem makes this a very different proposition to that within the general population: levels of consumption are high and ‘risky’ behaviours common, it must be remembered that a similar proportion of participants in this study to the general population want to stop smoking. While the study reveals that interventions are available to homeless people, the vast majority of participants who have attempted to quit have not been able to successful in their attempt.

To address these issues there is a need for practice to be changed in health and homelessness services and awareness among homelessness support staff will need to be improved. Understanding of the risks and implications of respiratory infections and lung disease and encouragement towards steps that can be personally taken by homeless people to improve their health also need to be further promoted.

Room-to-Breathe Action Projects

As part of the Room to Breathe Action Commission event which met to review the findings of the report and take action, a number of initiatives have been planned to tackle the issue of respiratory health among people experiencing homelessness. These include:

1. 'Leading by Example' Action Project

It was recognised at the event that there is a high prevalence of smoking among homelessness services staff. This not only means that Support Workers often enable clients to smoke by sharing tobacco but also do not offer positive role models to promote quitting. This project was built on the idea that support workers should be more conscious of their behaviours, with the message that stopping smoking actually makes you feel a lot better about yourself. It's a chance to be proud of something in your life that you can have control of.

'Leading by Example' will roll out across homeless services by first presenting the Room-to-Breathe findings to staff meetings at test sights to increase buy-in. It will at first promote simple, practical steps like not smoking with clients on the way to meetings. It will then increase its range through starting a wider campaign to stop smoking among homelessness service staff, ultimately trying to reduce smoking among clients. There will be a wider push around the 'Stoptober' campaign to prevent smoking among homelessness service staff which will be framed around a competition between homelessness services. This plan will also support development of other healthier lifestyle choices as a replacement for smoking. It was felt that emphasis on stopping smoking was a good means to promote a change of attitude in services amongst staff and residents around health in general.

2. Respiratory Specialist In-Reach Action Project

A plan for rolling out respiratory health promotion 'in-reach' sessions in to homelessness services was created at the Action Commission. It will involve respiratory health experts from The Pan-London Respiratory Network and the British Lung Foundation delivering sessions in hostels and day centres for homelessness service staff and clients. It will involve raising awareness by supporting people to identify the signs of poor respiratory health and would also use spirometry, pulse oximetry and exhaled CO monitoring to identify issues and as a tool for promoting smoking cessation.

3. 'Breathe-Easy Champions' Action Project

The Homelessness Health Co-ordinators in Hammersmith and Fulham and Westminster have proposed to roll out the 'Breathe-Easy' Champion Action Project. With expert support from Kick-it and the British Lung Foundation they will support each hostel in these boroughs to appoint a 'champion' for driving forward smoking cessation and highlighting issues around respiratory health. These could be clients or staff working in the services. The Champion would be trained to deliver this work and then feedback to co-ordinators on their successes.

Appendix

Appendix 1: Literature Review

General Poor Health. People with experience of homelessness are known to have significantly worse health outcomes than the general population and higher rates of mortality.[53][54] In one recent UK study 73% of participants reported a physical health problem and 80% a mental health issue.[55] The report corroborates other evidence of a lack of appropriate provision and high rates of hospital admission, often for long stays[56] suggesting a high level of undiagnosed health problems which are only treated when crisis emerge. As well as the human cost of these issues, costs to the NHS for secondary care have been estimated as 8 times that of treating the general population.[57] Because of the depth of exclusion faced by this group traditional approaches to measuring health inequalities will struggle to explore the experiences of homeless people. For example, studies based on Indices of Multiple Deprivation are often based on the post code of an individual which clearly excludes those without a fixed address. Story *et al* argue that when this population is accessed, the slope of health inequalities across the population is best described as a cliff with a relatively small number of people experiencing dramatically larger inequalities in health.[58]

Respiratory Health. Research into the health of homeless people has often tended to focus on mental health and substance misuse which are often seen as particularly significant issues for this group[59]. However, it is also clear that respiratory health is a source of significant health inequality. Within the general population, a clear inequality has been shown across the spectrum of respiratory illness for example deprivation is associated with increased admission to hospital for respiratory infections[60]. However, this form of research often fails to capture the experiences of the most vulnerable in society who are often missing from official statistics.

There are several risk factors experienced by homeless people which might explain increased respiratory problems. Smoking is the leading preventable cause of death in the UK, causing one third of all deaths due to respiratory disease.[61]

---

[53] O'Connell J.J*., (2005), Premature Mortality in Homeless Populations: A Review of the Literature,* Nashville: National Health Care for the Homeless Council.

[54] Morrison, D.S., (2009) "Homelessness as an independent risk factor for mortality: results from a retrospective cohort study." *International Journal of Epidemiology,* (10).

[55] *The unhealthy state of homelessness: Health audit results*, Homeless Link, 2014.

[56] Office of the Chief Analyst, (2010), *Healthcare for Single Homeless People*, Department of Health.

[57] Ibid.

[58] Story, A., (2013), "Slopes and cliffs in health inequalities: comparative morbidity of housed and homeless people", *The Lancet*, (328).

[59]Nielsen, S.F., Hjorthøj, C.R., Erlangsen, A., Nordentoft, M., (2011), "Psychiatric disorders and mortality among people in homeless shelters in Denmark: a nationwide register-based cohort study." *The Lancet*, (377).

[60] Hawker, J.I., Babatunde, O., Farzana, S., Weinberg, J., Noel, G., Richard, W., (2003), "Social deprivation and hospital admission for respiratory infection: an ecological study", *Respiratory Medicine*, (97).

[61] ASH, *Smoking statistics*, (2015). Available at http://www.ash.org.uk/files/documents/ASH_93.pdf.

Smoking is primarily responsible for 80% of deaths due to lung cancer and COPD which includes bronchitis and emphysema[6263] and quitting is the only way to significantly improve outcomes.[646566] Because of the association between smoking and deprivation it has been argued that this constitutes the largest single contributor to health inequalities in the UK.[67] Life time exposure to tobacco is a key determinant of a number of health conditions. This is often measured in "Pack Years" where 20 cigarettes a day for one year equates to one pack year.[68] Amongst people experiencing homelessness, levels of smoking are very high with some studies suggesting as many as 80% smoke demonstrating a clear risk.[697071]

Drug and alcohol abuse are also common amongst people experiencing homelessness. This has a range of implications for health. Some drugs are smoked which has a direct impact on respiratory health.[72] However drug and alcohol use also has less direct impacts by making people more susceptible to infection.[73]

Housing. Homelessness is also likely to involve living in environments which may be damp and cold. In addition the potential for overcrowding and proximity to other vulnerable individuals in hostels and sheltered accommodation has the potential to increase the rate of respiratory illness.[747576] Indeed, some of the strongest evidence on strategies to address health inequalities through the built environment are around warmth improvement and energy efficiency suggesting real potential to improve the health of vulnerable people.[77]

---

[62] ASH, *Smoking Statistics Illness and Death*, (2015). Available at http://www.ash.org.uk/files/documents/ASH_107.pdf

[63] Anthonisen, N.R., Connett, J.E., Kiley, J.P., Altose, M.D., Bailey, W.C., Buist, A.S., Conway, W.A., Enright, P.L., Kanner, R.E., O'Hara, P., (1994), "Effects of smoking intervention and the use of an inhaled anticholinergic bronchodilator on the rate of decline of FEV1. The Lung Health Study." *JAMA* (272, 19).

[64] ASH, *Smoking statistics: Illness and death*, Dec 2015, available at http://www.ash.org.uk/files/documents/ASH_107.pdf

[65]Farr, B.M., Woodhead, M.A., Macfarlane, J.T., Bartlett, C.L., McCraken, J.S., Wadsworth, J., Miller, D.L., "Risk factors for community-acquired pneumonia diagnosed by general practitioners in the community." *Respiratory Medicine*, (94) 2000.

[66] Anthonisen, N.R., Connett, J.E., Kiley, J.P., Altose, M.D., Bailey, W.C., Buist, A.S., Conway, W.A., Enright, P.L., Kanner, R.E., O'Hara, P. "Effects of smoking intervention and the use of an inhaled anticholinergic bronchodilator on the rate of decline of FEV1. The Lung Health Study." *JAMA,* (272) 1994.

[67] Sharma, A., Lewis, S., Szatkowski, L., BMC Public Health (2010) "Insights into social disparities in smoking prevalence using Mosaic, a novel measure of socioeconomic status: an analysis using a large primary care dataset" *BMC Public Health* (10).

[68] http://smokingpackyears.com/

[69] Heffron, W.A., Skipper, B.J., Lambert, L., (1997), "Health and lifestyle issues as risk factors for homelessness." *Journal of the American Board of Family Practice,* (10).

[70] Segal, S.P., Gomory, T., Silverman, C.J., (1998), "Health status of homeless and marginally housed users of mental health self-help agencies." *Health Social Work,* (23).

[71] Holohan, T.W., (2000), "Health and homelessness in Dublin", *Irish Medical Journal,* (93), 2000.

[72] Rayner, C., Prigmore, S., "Illicit drug use and its effect on the lungs." *Nursing Times,* (104), 2008.

[73] Raoult, D., Foucault, C., Brouqui, P., (2001) "Infections in the homeless", *The Lancet Infectious Disease*, (1, 2).

[74] Rogers, M.A., Wright, J.G., Levy, B.D., (2004), *Influenza. In The Health care of Homeless Persons: A Manual of Communicable Diseases and Common Problems in Shelters and on the Streets*, Boston Healthcare for the Homeless Program.

[75] Thiberville, S., Salez, N., Benkouiten, S., Badiaga, S., Charrel, R., Brouqui, P., (2014), "Respiratory viruses within homeless shelters in Marseille", BMC Research Notes, (7, 81)

[76]Wrezel, O., (2009), "Respiratory infections in the homeless" *UWO Medical Journal,* (78, 2).

[77] Thomson, H., Thomas, S., Sellstrom, E., Petticrew, M., (2003), "Housing improvements for health and associated socio-economic outcome", *Cochrane Database of Systematic Reviews*, (28, 2).

Rates of respiratory infection are known to be high amongst people experiencing homelessness[78] and death from respiratory illness is seven times more likely than in the general population.[79] This is particularly worrying as hospitalisation for respiratory infection is most common amongst the very old and very young who do not constitute a significant proportion of people experiencing homelessness.[80] Tuberculosis is a particularly worrying problem for vulnerable individuals experiencing homeless. London accounts for 45% of Europe's TB cases and the rates have been increasing. The vast majority of these cases come from people born outside the UK however, 17% involve homeless people who account for nearly half of the most worrying drug resistant co-hort. This presents a significant risk to public health in general.[81]

Other respiratory infections often get less academic attention but cause serious health problems. One study found rates of pneumococcal infection of 226.7 per 100 000 amongst homeless people compared to 9.7 per 100 000 in the general population. Pneumococcal infection can lead to a variety of respiratory infections including bronchitis and pneumonia. 27% of those hospitalised for pneumonia will die as a result.[82] Another study found that nearly 40% of people using front line homelessness services in London were eligible for influenza vaccination on the basis of clinical risk factors compared to only 13% of the general population however only a quarter of those in need had in fact received a vaccination compared to around 50% of the general population.[83] This suggests a level of deep inequality beyond that found across the rest of society and has been used to justify the need for more specialist proactive outreach services to encourage vaccination.

Chronic respiratory disease is also a significant problem across the population which disproportionately affects those with experience of homelessness. For example, one US study found high levels of diagnosed respiratory disease as well as a high prevalence of undiagnosed conditions. 24% of subjects reported and asthma diagnosis, 19% chronic bronchitis and 4% COPD. Lung function tests suggested that 15% had a form of obstructive lung disease which is more than twice the rate found in the general population.[84] In the UK GP records suggest 1.2 million people had been diagnosed with COPD in 2012 and 8 million with asthma.[85] However, rates of diagnosis are known to be low around respiratory disease across the population. COPD, which is closely linked with bronchitis, is known to be underdiagnosed[86] with some studies suggesting as many as 50% of older smokers may have the condition.[87] Because of the common underdiagnoses of respiratory disease, statistics on hospital admission may give a clearer picture of the levels of extreme need. For

[78] Hwang, S.W., (2000) "Mortality among men using homeless shelters in Toronto, Ontario", *JAMA*, (283,16).
[79] O'Connell J.J., (1991), "Nontuberculous respiratory infections among the homeless", *Seminar of Respiratory Infection* (6).
[80] Hawker, J.I., Babatunde, O., Farzana, S., Weinberg, J., Noel, G., Richard, W., (2003), "Social deprivation and hospital admission for respiratory infection: an ecological study", *Respiratory Medicine*, (97).
[81] Story, A., Murad, S., Roberts, W., Verheyen, M., Hayward, A.C., (2007), "Tuberculosis in London: the importance of homelessness, problem drug use and prison", *Thorax*, (62, 8).
[82] Wrezel, O., (2009), "Respiratory infections in the homeless" *UWO Medical Journal,* (78, 2).
[83] Story, A., Aldridge, R.W., Gray, T., Burridge, S., Hayward, A.C., (2014), "Influenza vaccination, inverse care and homelessness: cross-sectional survey of eligibility and uptake during the 2011/12 season in London", *BMC Public Health,* (14, 44).
[84] Snyder, L.D., Eisner, M.D., (2004), "Obstructive lung disease among the urban homeless", *Chest*, (125).
[85] http://statistics.blf.org.uk/pneumonia
[86] Lopez, A.D., Shibuya, K., Rao, C., Mathers, C.D., Hansell, A.L., Held, L.S., Schmid, V., Buist, S., (2006), "Chronic obstructive pulmonary disease: current burden and future projections", *European Respiratory Journal*, (27, 2).
[87] Lundbäck, B., Lindberg, A., Lindström, M., Rönmark, E., Jonsson, A.C,. Jönsson, E., Larsson, L.G., Andersson, S., Sandström, T., Larsson, K., (2003) "Not 15 but 50% of smokers develop COPD?--Report from the Obstructive Lung Disease in Northern Sweden Studies", *Respiratory Medicine*, (97, 2).

example, any admission to hospital for asthma should be considered as a failure of the system as the condition can be managed in primary care settings.[88]

Overall, the literature on homelessness and respiratory health makes clear that people experiencing homelessness are likely to be at greater risk of a wide variety of health problems. However, much of the research into health inequalities does not adequately capture the situation of the most vulnerable in society who can account for some of the most extreme needs.

[88] The National Review of Asthma Deaths (NRAD), (2014), *Why asthma still kills*, Royal College of Physicians.