

Project Details	
Project Code	MRCPHS26Br Vickerman
Title	Modelling the health harms of homelessness and other social exclusions, and impact of interventions to mitigate their effects
Research Theme	PHS
Project Type	Dry lab
Summary	Homelessness is an increasing problem which is associated with considerable morbidity and mortality in the UK. Homelessness is also associated with other forms of social exclusion, such as incarceration and drug use, which are interlinked and further increases their health harms. Interventions can reduce different forms of social exclusion or mitigate their effects, but it is not clear what interventions are needed to reduce the health harms related to homelessness to low levels. This PhD will use epidemiological methods and mathematical modelling to determine the importance of different public health responses for addressing the health harms associated with homelessness.
Description	<p>Homelessness is an increasing problem in the UK, with rates of homelessness doubling over 2011-2021 to 274,000 homeless people in 2021. Homelessness is syndemic with other forms of social exclusion, with homeless people in England having high levels of drug use (20-40% used heroin or crack in last year) and incarceration (25-50% ever incarcerated). These forms of social exclusion are inextricably linked and related, with people who use drugs having high levels of homelessness (50% currently) and incarceration (69% ever) and incarcerated people having high levels of homelessness upon release (55%).</p> <p>Homelessness is associated with considerable health harms, including mental and physical illness and heightened infectious disease risk, resulting in their life expectancy being 30 years lower than the general population. The link between homelessness and other social exclusions further increases health harms, with data suggesting that just being homeless doubles mortality risk, while also having experience of incarceration and/or opioid drug use increases mortality risk eight times. These elevated mortality rates are likely to be partly due to homeless people accessing health services late, with homeless people having high rates of emergency department use (48% last year).</p> <p>Interventions exist to reduce homelessness and its related social or health harms, and similarly for people who use drugs and incarcerated people. For homeless people, this includes supported housing interventions, which increase housing stability, improve physical and mental health, and reduce use of emergency departments, drug use and criminal justice involvement.</p> <p>Although homelessness and other social exclusions (e.g., drug use and incarceration) are highly interlinked, it is unclear the degree to which exposure to one social exclusion increases the likelihood of experiencing another or the degree to which each social exclusion contributes to health harms. Modelling can help get insights to this, but unfortunately no existing studies have modelled the syndemic of homelessness and other social exclusions, and how they interact to result in wider harms to health—beyond increasing mortality. This will be the focus of this PhD. This PhD project sits at the interface of population health and social sciences and will advance a novel and topical area of interest focused on</p>

	<p>addressing the social determinants of health to reduce health harms in marginalised groups. The student will receive training and develop skills in epidemiological methods and mathematical modelling to address the following objective and aims.</p> <p>Overall objective: To use modelling to quantify the health harms associated with homelessness and related social exclusions, and assess the possible impact of interventions that act on these social exclusions.</p> <p>Aims:</p> <ol style="list-style-type: none"> 1. Use available datasets of homeless people and related groups in the UK to better understand: <ol style="list-style-type: none"> a. The degree to which homelessness overlaps with exposure to other social exclusions and vice versa, and b. How exposure to other social exclusions worsens health and intervention/social outcomes among homeless people; 2. Use findings from aim 1 to develop a model of the dynamics of homelessness and related social exclusions for the UK to: <ol style="list-style-type: none"> a. Evaluate the degree to which the risk of becoming or remaining homeless is affected by exposure to other social exclusions, and vice versa; b. Estimate the health harms resulting from homelessness, and the contribution of other social exclusions to these health harms. 3. Use data from existing interventions (that reduce relevant social exclusions or their health harms) to project their impact on reducing levels of homelessness and mitigate their associated health harms. <p>Our groups at the University of Bristol and Cardiff University hold several collaborations nationally, which provide an opportunity for the student to work on various datasets that feed into the modelling (details below). This project has implications at the national level, with it having the potential to strengthen the public health response to reduce the health harms among homeless individuals. The PhD will result in impactful journal articles, with results being presented at relevant conferences. There is flexibility in refining the project aims. For example, depending upon the student's interests, the epidemiological analyses and models could be tailored to focus on different health harms (mental/physical health or infectious disease outcomes). There is also flexibility in the datasets that could be analysed, including cross-sectional surveys of homeless people and people who use drugs, longitudinal surveys where homelessness is recorded, or linked administrative data to consider longitudinal trends in homelessness, drug use and incarceration, and their impact on health. We plan the PhD to focus on the UK, but there may be possibilities to focus on other global settings through our collaborative network. Lastly, although the focus of the models will be the homeless population, there is flexibility in which other social exclusions are included, which we initially planned to be drug use and incarceration. To help inform these choices, the student will be referred to key articles, encouraged to undertake brief literature searches, and supported to engage with collaborators.</p>
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