Infectious diseases among homeless populations

The prevalence of infectious diseases, such as tuberculosis, HIV and hepatitis C, in homeless populations is significantly higher than in the general population. However, figures show much local variation raising questions about the need for a more locally-based response.

Overview: Between 2009 and 2012 there was a 34% increase in households accepted as homeless by their local council each quarter. Temporary accommodation placements also increased, with bed and breakfast placements almost doubling over the past 2 years. Nationally in England, the number of people sleeping rough is estimated to have risen 23% on average between autumn 2010 and autumn 2011, and in London the figure is 43% (Crisis 2012).

On average, homeless people die aged 47 years, 30 years below the national average life expectancy (Crisis 2011). Morbidity is also high, with a much higher prevalence of mental and physical health problems compared with the general population. There is a higher prevalence of infectious diseases than in the general population, which can lead to community infections, and which are associated with malnutrition, long periods of homelessness, and high use of medical services. Targeted health interventions could therefore have a pronounced effect on public health.

HIV, Hepatitis C and tuberculosis are the most heavily studied infectious diseases among homeless populations. However, high rates of other infectious diseases – such as hepatitis A and B, diphtheria, foot problems and skin infections – have also been reported in some studies.

Current advice: NICE has pathways on tuberculosis, HIV testing and prevention, and hepatitis B and C testing, which bring together all related NICE guidance and associated products in a set of interactive topic-based diagrams.

NICE public health guidance on identifying and managing tuberculosis among hard-to-reach groups uses a broad definition of homelessness that includes overcrowded and substandard accommodation. NICE recommends that in areas of identified need, including major urban centres with a high incidence of tuberculosis, commissioners should ensure there is a programme of active case-finding using mobile digital radiography in places where homeless people and substance misusers congregate. This includes: homeless day centres, rolling shelters, hostels and temporary shelters established as part of cold weather initiatives and venues housing needle and syringe programmes.

Screening and treatment of tuberculosis is either cost saving or below £20,000 per quality-adjusted life year in homeless populations with a tuberculosis prevalence of 0.25% or higher. When active case-finding was combined with measures to improve treatment completion rates, cost effectiveness increased.
The Health Protection Agency is now part of Public Health England, which has responsibility for improving the public’s health and wellbeing, including protecting the population from infectious diseases. See the HPA guidance on tuberculosis for further information.

**New evidence:** A systematic review and meta-analysis of 43 studies (4 from the UK), involving 59,736 homeless people, assessed the prevalence of tuberculosis, hepatitis C virus and HIV in this population between 1984 and 2012 (Beijer et al. 2012).

Results showed that homeless people have a much higher likelihood of having 1 of these 3 diseases than do the general population, although there was considerable variation between the studies. In the USA, the prevalence of tuberculosis was at least 46 times greater in the homeless population than the general population, and the prevalence of hepatitis C viral infection was increased about 4 times. In the UK, the prevalence of tuberculosis was at least 34 times greater in homeless people than in the general population, and the prevalence of hepatitis C viral infection was approximately 50 times greater. HIV prevalence was typically 1 to 20 times higher in US homeless people than in the general population, but no studies were found in the UK. However, there was considerable heterogeneity between studies suggesting the need for locally based studies to inform service planning and public health measures.

Of the 17 studies of tuberculosis included in the review, 15 reported tuberculosis prevalence higher than 0.25%, suggesting that universal screening of homeless populations could be considered. The prevalence of tuberculosis was higher in studies in which chest radiography was used for diagnosis than in those in which other diagnostic methods were used. The reviewers suggested that screening programmes should not be restricted to symptomatic people presenting to health services, which happens less and later in marginalised groups than in general populations.

The prevalence of tuberculosis in homeless people was positively associated with prevalence in the general population, but this relation did not hold for hepatitis C virus and HIV. The reviewers highlighted this result as potentially important from a public health perspective because it suggests that general population measures to reduce rates of hepatitis C virus and HIV infections might not translate into lower prevalence in homeless people. They suggested that more effective treatment and management should be considered including syringe and needle exchange programmes, first-aid centres in large cities, and annual snapshot interventions for homeless populations.

**Commentary:** “This paper reminds us of the raised incidence of a number of infectious diseases in homeless populations around the world (but mainly Europe and the US) over the last 28 years. However, the most striking fact that emerges is the variation in patterns of disease between locations. This argues for the regular assessment of homeless populations, wherever they are found, in order to provide a locally adapted response. For this to be most effective it will need health organisations to have a ‘memory’, being able to monitor trends and the effectiveness of various interventions over time. Bringing public health and local authorities together may prove a powerful alliance in tackling problems that have medical and social determinants.

“The evidence provided by this paper supports current NICE guidance. It is recognised and accepted as standard practice to screen homeless populations for hepatitis, HIV and tuberculosis. Screening for tuberculosis is more problematic in primary care, where Mantoux tests are not routinely carried out and blood tests not as yet routine. However, a low threshold for referral for chest X-ray as well as referral to secondary care is accepted. Screening with a mobile chest X-ray unit in London at sites where homeless people are found has proved effective in case finding and follow up”. – Philip Reid, General Practitioner, Great Chapel Street Medical Centre for Homeless People, Soho, London

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