Utilisation by homeless people of acute hospital services in London

M E Black, M A Scheuer, C Victor, M Benzeval, M Gill, K Judge

Abstract

***Objectives*—To estimate the numbers and distribution of homeless people in London; to quantify the utilisation of acute inpatient services by homeless people in two health authorities; and to predict the total numbers of admissions in homeless people in district health authorities across London.**

***Design*—Data were collected from various sources on the distribution of homeless people across London boroughs. All unplanned acute inpatient admissions during November 1990 to relevant hospitals were identified.**

***Setting*—Bloomsbury and Paddington and North Kensington, two former inner London district health authorities.**

***Subjects*—Homeless people in London residing in bed and breakfast and private sector leased accommodation, residing in hostels, and of no fixed abode.**

***Main outcome measures*—Number and cost of acute unplanned admissions in homeless people in two health authorities in November 1990; predicted number of such admissions each year in district health authorities in London.**

***Results*—There were at least 60 000 homeless people in London in March 1990. The majority were housed in temporary accommodation (55 412). There were at least 3295 hostel dwellers and 651 people sleeping rough. Homeless people accounted for 105 (8%) of the 1256 acute unbooked admissions in residents of Bloomsbury and Paddington and North Kensington health authorities in November 1990. Considerable variations in the pattern of acute unplanned admissions in homeless people were observed in the two districts with respect to housing status and specialty of admission. The total number of acute unplanned admissions in homeless people across London each year was estimated at 7598, ranging from 38 in Bexley to 1515 in Parkside.**

***Conclusions*—The results have fundamental implications for resource allocation across London. Allocation must take better account of the heterogeneity, uneven distribution, and extra health needs of homeless people.**

Department of Public Health Medicine, Bloomsbury and Islington Health Authority, London WC1E 6DB
M E Black, MRCP, *senior registrar in public health medicine*
M Gill, MFPHM, *consultant in public health medicine*

King's Fund Institute, London NW1 7NF
M A Scheuer, MSC, *research officer*
M Benzeval, BSC, *senior research officer*
K Judge, MA, *director*

Department of Public Health Medicine, Parkside Health Authority, London W2 1PF
C Victor, PHD, *director of health services research*

Correspondence to:
Ms Scheuer.

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Introduction

With the movement towards the funding of regional and district health authorities on a weighted capitation basis the implications for provision of the extra resources that are needed for certain population groups need to be made more explicit, especially when these groups are concentrated in specific geographical areas. One striking example of this is the case of homeless people.

Recent estimates indicate that the "official" homeless population doubled between 1979 and 1988.[1] Furthermore, estimates of the "unofficially" homeless population show a similar upward trend. In 1990, 301 000 applications for rehousing were made to councils by households in England under the terms of section 3 of the 1985 Housing Act; about half of these applications were granted.[1] These successful applicants constitute the official homeless population, and many are housed in temporary accommodation by local councils. This definition excludes the many people living in hostels; on the streets; or in vulnerable, unstable, or unsatisfactory accommodation.[2] While not exclusive to urban areas, homelessness is especially associated with densely populated areas.[3-5]

Homelessness has profound implications for health.[6-10] Given the new emphasis on assessing the health care needs of resident populations,[11] it is essential to develop a better empirical understanding of what this means in the case of homeless people. Previous work has shown that most admissions to hospital in homeless people are acute, unbooked admissions.[12]

We determined the size and distribution of the homeless population across London's district health authorities; quantified the utilisation of acute inpatient hospital services by homeless people in two study areas—the former London district health authorities of Bloomsbury and Paddington and North Kensington; and assessed the impact of the utilisation of acute services by homeless people across London.

Subjects and methods

SIZE AND DISTRIBUTION OF HOMELESS POPULATIONS

We collected data from three main sources to estimate the number and distribution in London of officially homeless people in temporary accommodation, in hostels, and sleeping rough. The London Research Centre's Bed and Breakfast Information Exchange provided data on the numbers of households in March 1990 temporarily placed in bed and breakfast hotels and private sector leased accommodation by borough of location.[13] To estimate the number of homeless people we multiplied the number of households by 2·8, which was the best available estimate of household size.[14]

We included three types of hostels: emergency night shelters, short stay hostels, and "traditional" hostels, as categorised in the *London Hostel Directory 1989-90*.[15] The total number of bed spaces provided in each borough was calculated from listings in this directory. Assuming 100% occupancy,[5] this provided our estimate of the homeless population living in hostels. Many more hostel spaces are provided in London than those counted in the study, but they often cater for a mixed or settled population, or both (for example, former offenders, young workers, overseas students, etc).

The data for those sleeping rough were derived from the street count undertaken by the Salvation Army and University of Surrey on 25 April 1989.[5] For practical reasons this study was undertaken in only 18 out of 32 London boroughs, and there may have been people sleeping rough in the boroughs which were excluded from the study. At the time of our study this was the only survey of people sleeping rough across London. The preliminary results from the 1991 census[16] indicate that the number of people sleeping rough in London was about twice the amount reported by the 1989 study.[5] Most of this difference was owing to substantial increases in Camden, Westminster, and the City of London. Estimates of people sleeping rough, however, fluctuate widely not only because of difficulties in measurement but also because of climatic and other environmental circumstances.

All of the sources presented data according to

local authority boundaries. This information was then converted to district health authority boundaries. Twenty seven local authorities were coterminous or completely contained within district health authority boundaries in January 1991. For the remaining six—Camden, Kensington and Chelsea, Lambeth, Southwark, Wandsworth, and Westminster—we assumed that the distribution of homeless populations within boroughs was the same as that of the resident population. This distribution was identified for the mid-1988 population by the Office of Population Censuses and Surveys (OPCS, personal communication).

TABLE I—*Number of homeless people by district health authority*

District health authority	Residents of bed and breakfast hotels	Residents of private sector leased accommodation	Residents in hostels	People sleeping rough	Total
Bexley	11	280			291
Barking, Havering and Brentwood	190	137			328
Greenwich	115	218	12		345
Hillingdon	157	238		16	411
Bromley	73	465			538
Richmond, Twickenham and Roehampton	257	443			700
Kingston and Esher	188	599		2	789
Tower Hamlets	101	322	417	12	852
Wandsworth	191	668			859
Hampstead	614	255	40	64	973
Lewisham and North Southwark	370	207	424	8	1009
Barnet	358	720		37	1115
Merton and Sutton	372	832	9		1213
Harrow	456	935			1391
Redbridge	515	1011			1526
Croydon	479	1148		2	1629
Camberwell	636	580	425	100	1741
Waltham Forest	224	1789			2013
West Lambeth	977	730	195	173	2075
Hounslow and Spelthorne	893	1294			2187
Enfield	300	1985			2285
City and Hackney	1313	1688		31	3032
Haringey	1198	2226			3424
Bloomsbury and Islington	1778	971	671	47	3467
Newham	414	3531		3	3948
Ealing	1442	2954		2	4398
Riverside	2315	2192	447	40	4994
Parkside	6250	4806	655	114	11 825
Total	22 187	33 225	3295	651	59 358

TABLE II—*Age distribution of homeless people admitted to Bloomsbury and Paddington and North Kensington health authorities, November 1990*

Housing status	Age range					
	0-4	5-14	15-24	25-44	45-64	≥65
Bloomsbury						
Bed and breakfast plus private sector leased accommodation			2	8		1
No fixed abode	1		5	15	8	5
Hostel accommodation				4	1	6
Total	1		7	27	9	12
Paddington and North Kensington						
Bed and breakfast plus private sector leased accommodation	3	4	23	15	6	
No fixed abode				2	2	
Total	3	4	23	17	8	

TABLE III—*Number of acute unplanned admissions in homeless people in Bloomsbury and Paddington and North Kensington health authorities by housing status and admission specialty, November 1990*

Housing status	Specialty			Total (%)
	Obstetrics	Psychiatry	Other	
Bloomsbury				
Bed and breakfast plus private sector leased accommodation	4		7	11 (1·7)
No fixed abode		7	27	34 (5·3)
Hostel		2	9	11 (1·7)
Other	143	31	414	588 (91·3)
Total	147	40	457	644 (100·0)
Paddington and North Kensington				
Bed and breakfast plus private sector leased accommodation	22	5	23	51 (8·3)
No fixed abode		3	1	4 (0·7)
Hostel				
Other	174	21	362	557 (91·0)
Total	196	29	387	612 (100·0)

UTILISATION OF ACUTE INPATIENT HOSPITAL SERVICES

We evaluated the unplanned utilisation of acute inpatient hospital services in two former inner London health authorities: Bloomsbury and Paddington and North Kensington. All unplanned admissions to seven acute hospitals in the study area during November 1990 were identified from patient administration systems. For each admission information was collected on age, sex, address and postcode, length of stay, and specialty of admission. The housing status of all patients identified as district residents on the basis of postcode was classified as follows: bed and breakfast hotel, private sector leased accommodation, no fixed abode, hostel, and other (permanent residents, "care of" addresses, and tourists). The method used was that of Victor *et al.*[12] Admission specialty was determined from consultant code.

Yearly rates of admission for each category of homeless people except those of no fixed abode were calculated and applied to London district health authorities. It was not possible to calculate admission rates for those of no fixed abode as there is no clear population base for this group. People who are sleeping rough migrate across district boundaries to particular hospitals. In addition, those who claim to be of no fixed abode on admission to hospital include squatters and others unwilling to give their address.

Annual cost figures for acute unbooked admissions in homeless people were estimated by assigning local specialty average costs per day to observed lengths of stay.

To estimate the annual rate of unplanned acute hospital admissions in homeless people across London the observed admission rates for each group of homeless people were applied to our estimates of homeless populations in each district health authority.

Results

We estimated that at least 60 000 homeless people were in temporary accommodation in hostels, or sleeping rough in London. This is about one per cent of the London population. In March 1990 there were at least 22 187 people housed by local authorities in bed and breakfast hotels and 33 225 in temporary accommodation leased to local councils by the private sector. We identified 3295 hostel spaces for the homeless and 651 people sleeping rough.

Table I gives the distribution of homeless people across district health authorities in London. Parkside Health Authority had the greatest number of people living in bed and breakfast hotels (6250) and private sector leased accommodation (4806), followed by Riverside and Ealing. Bloomsbury and Islington Health Authority had the greatest number of hostel dwellers (671) and West Lambeth the greatest number sleeping rough (173).

There were 1256 unplanned admissions to the study hospitals in November 1990, of which 105 (8%) were in identifiably homeless people. The two districts studied showed different patterns of homelessness and, subsequently, different patterns of acute unbooked admissions in homeless people. Table II shows the number of admissions by age in the different homeless groups, and table III shows the variations in type of admission.

There was considerable variation in the estimated annual costs of acute inpatient admissions in homeless people in the two study areas (table IV). Admissions in hostel residents and those of no fixed abode were relatively more expensive than those in residents of temporary accommodation.

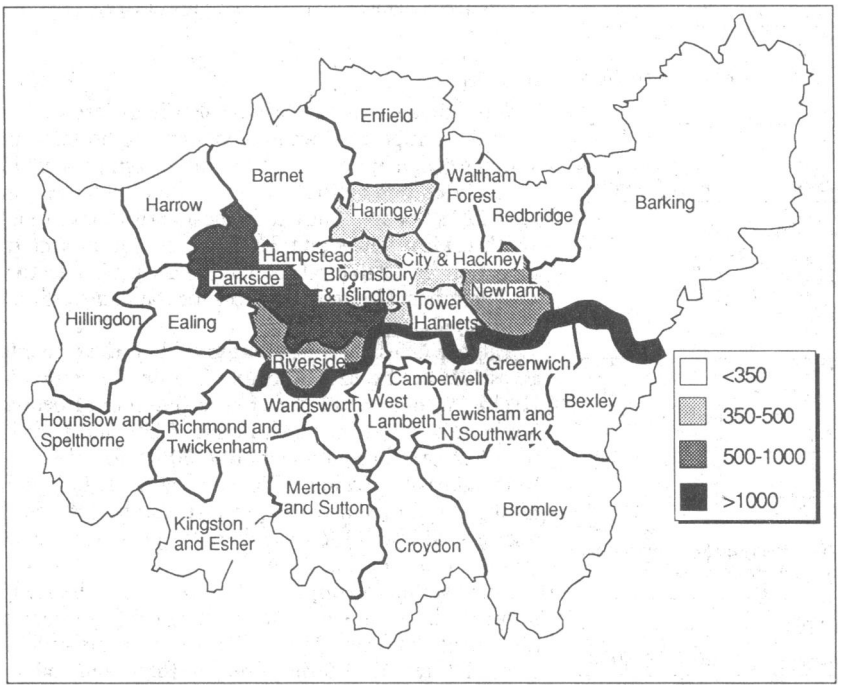
By using the rates of utilisation of acute inpatient

TABLE IV—*Annual estimated costs of acute admissions in homeless people (£000s)*

Housing status	Bloomsbury	Paddington and North Kensington	Total
Bed and breakfast plus private sector leased accommodation	173	599	772
Hostel accommodation	636		636
No fixed abode	1409	82	1491
Total	2218	681	2899

TABLE V—*Total number of predicted annual admissions by district health authority*

District health authority	Residents of bed and breakfast hotels	Residents of private sector leased accommodation	Residents in hostels	Total
Bexley	1·5	36·5		37·9
Barking, Havering and Brentwood	24·8	17·9		42·7
Greenwich	15·0	28·5	1·4	44·8
Hillingdon	20·4	31·0		51·4
Bromley	9·5	60·6		70·0
Richmond, Twickenham and Roehampton	33·5	57·8		91·3
Kingston and Esher	24·4	78·1		102·5
Tower Hamlets	13·1	41·9	48·0	103·1
Wandsworth	24·8	87·0		111·9
Hampstead	79·9	33·3	4·6	117·8
Lewisham and North Southwark	48·2	27·0	48·8	123·9
Barnet	46·7	93·7		140·4
Merton and Sutton	48·5	108·3	1·0	157·9
Harrow	59·5	121·8		181·3
Redbridge	67·1	131·7		198·8
Croydon	62·4	149·6		211·9
Camberwell	82·8	75·6	48·9	207·4
Waltham Forest	29·2	233·1		262·3
West Lambeth	127·3	95·1	22·4	244·8
Hounslow and Spelthorne	116·4	168·5		284·9
Enfield	39·0	258·6		297·7
City and Hackney	171·1	220·0		391·0
Haringey	156·1	290·0		446·1
Bloomsbury and Islington	231·6	126·5	77·3	435·3
Newham	54·0	460·0		514·0
Ealing	187·9	384·8		572·7
Riverside	301·6	285·5	51·5	638·6
Parkside	814·3	626·1	75·3	1515·6
Total	2890	4328	379	7598



Total predicted number of annual admissions in homeless people in district health authorities in London

services we estimated that homeless people in London generate over 7500 unplanned acute inpatient admissions each year. This does not include an estimate for admissions from people sleeping rough or of no fixed abode. These estimated admissions ranged from 38 in Bexley Health Authority to 1516 in Parkside Health Authority (table V). There was also considerable variation in the types of admissions among districts with regard to housing status.

Discussion

Although this empirical study was of a relatively small scale, the results have far reaching implications. They indicate that seven health authorities provide care for the majority of London's homeless people (figure).

Admissions in homeless people accounted for 10 in every 1000 inpatient admissions in residents in an average London district health authority. Three districts—Haringey, Riverside, and Newham—had over double this rate, and Parkside had 35 homeless admissions per 1000 resident inpatient admissions. This would imply that Parkside will spend at least 3·5% of its acute inpatient services purchasing budget on providing acute care for homeless people.

These results are based on the assumption that admissions in November 1990 were representative and that there is no seasonal variation in hospital admissions in homeless people. They are underestimates because we did not include admissions in people sleeping rough and we used a strict definition of homeless hostel dwellers.

One important way in which the special health care needs of homeless people could be better accommodated is by making further adjustments to the allocation of resources to district health authorities. Regional health authorities are currently developing funding proposals based on district capitation and have adopted various weighting strategies. All have used the Department of Health's formula as a starting point.[17] This formula weights estimates of district populations by the age spread of the population and the square root of the all cause standardised mortality ratio for people aged less than 75 as proxies for variations in morbidity levels between populations. The department has specifically encouraged regions to take account of other local factors, such as high levels of homelessness.

Homelessness is made even more problematic by another aspect of the NHS reforms. Districts are responsible for purchasing health care services for their resident population, but it is not always clear who is a resident. The department has stated that: "the principle is that the patient's perception of where he is resident (either currently, or failing that, most recently) is the criterion. If patients consider themselves to be resident at an address which is, for example, a hostel, there is no reason why that should not be accepted."[18] When no address can be given the district of the unit providing treatment will accept responsibility. Some health authorities, therefore, possibly may try to "disown" homeless people by pressing them to give their last permanent address. Regional health authorities will need to monitor how providers and districts assign residency.

In the light of our findings and other published work on homelessness we conclude that weighted capitation allocations to districts need to take better account of the following three factors: the heterogeneity of homeless populations; the uneven distribution of different types of homeless and migrant people; and the extra health needs of different types of homeless people. Regions might incorporate these factors into a more general deprivation index or they may use them on their own to adjust resource allocation plans.

A fundamental limitation is that this paper and the research base to date has described the consequences of existing, potentially inappropriate patterns of service utilisation by homeless people.[19,20] As yet we have little systematic information about homeless people's capacity to benefit from different, particularly community based, sorts of health care intervention.[21] Finally, the focus of this study should not shift attention from the underlying social, economic, and political factors contributing to homelessness and the need for an effective housing policy. Our results and

the issues raised are discussed in greater detail elsewhere.[22]

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Role of peak bone mass and bone loss in postmenopausal osteoporosis: 12 year study

Marc A Hansen, Kirsten Overgaard, Bente J Riis, Claus Christiansen

Abstract

Objective—To examine the role of peak bone mass and subsequent postmenopausal bone loss in the development of osteoporosis and the reliability of identifying women at risk from one bone mass measurement and one biochemical assessment of the future bone loss.

***Design*—Population based study.**

***Setting*—Outpatient clinic for research into osteoporosis.**

***Subjects*—178 healthy early postmenopausal women who had participated in a two year study in 1977. 154 of the women underwent follow up examination in 1989, of whom 33 were excluded because of diseases or taking drugs known to affect calcium metabolism.**

***Main outcome measures*—Bone mineral content of the forearm and values of biochemical markers of bone turnover.**

***Results*—The average reduction in bone mineral content during 1977-89 was 20%, but the fast losers had lost 10·0% more than had the slow loser group (mean loss 26·6% in fast losers and 16·6% in slow losers; $p<0·001$). Prediction of future bone mineral content using baseline bone mineral content and estimated rate of loss gave results almost identical with the actual bone mineral content measured in 1989. Seven women had had a Colles' fracture and 20 a spinal compression fracture. The group with Colles' fracture had low baseline bone mineral content (34·7 (95% confidence interval 31·3 to 38·1) units *v* 39·4 (38·1 to 40·8) units in women with no fracture) whereas the group with spinal fracture had a normal baseline bone mineral content (38·1 (35·0 to 41·1) units) but an increased rate of loss (−2·4 (−3·5 to −1·3)%/year *v* −1·8 (−2·1 to −1·5)%/year in women with no fracture).**

***Conclusions*—One baseline measurement of bone mass combined with a single estimation of the rate of bone loss can reliably identify the women at menopause who are at highest risk of developing osteoporosis later in life. The rate of loss may have an independent role in likelihood of vertebral fracture.**

Department of Clinical Chemistry, Glostrup Hospital, University of Copenhagen, DK-2600 Glostrup, Denmark
Marc A Hansen, MD, *resident physician*
Kirsten Overgaard, MD, *research fellow*
Bente J Riis, MD, *research fellow*
Claus Christiansen, MD, *head of department*

Correspondence to:
Dr Hansen.

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Introduction

The incidence of osteoporotic fractures is increasing, mainly because of the increasing age of the population. The personal and social costs of osteoporosis and its complications in the Western World are enormous and will continue to rise if no measures are taken.[1] Treating established osteoporosis is difficult and often disappointing.[2] It is therefore essential to be able to prevent the disease from developing or to treat the early stage of the disease before fractures occur.

Prevention could be accomplished by treating all women. But the drugs available for prevention of osteoporosis may have long term adverse effects and are often expensive. An alternative strategy is to treat only the women at risk of developing osteoporosis. The two major risk factors are low peak bone mass and rapid bone loss. Peak bone mass can be measured, although it is necessary to ensure that the methods are accurate.[3] Furthermore, as recently shown, one baseline measurement of biochemical parameters that reflect bone turnover accurately estimates the rate of postmenopausal bone loss in the following two years.[4,5] But this biochemical approach does not estimate the bone mass and no long term data exist on the rate of loss.

We conducted a study to assess the validity of biochemical testing shortly after the menopause to estimate the rate of postmenopausal bone loss in the following 12 years. A further aim was to assess the ability of one measurement of bone mass combined with one biochemical screening just after the menopause to predict the bone mass at the age when fractures start to occur.