Social problems, primary care and pathways to help and support: addressing health inequalities at the individual level. Part I: the GP perspective

How to cite:


For guidance on citations see FAQs

© [not recorded]
Version: [not recorded]
Link(s) to article on publisher’s website:
http://dx.doi.org/doi:10.1136/jech.2007.061937

Copyright and Moral Rights for the articles on this site are retained by the individual authors and/or other copyright owners. For more information on Open Research Online’s data policy on reuse of materials please consult the policies page.
Social problems, primary care and pathways to help and support: addressing health inequalities at the individual level. Part I: the GP perspective

Jennie Popay, Ute Kowarzik, Sara Mallinson, Sara Mackian and Jacqui Barker

J. Epidemiol. Community Health 2007;61;966-971
doi:10.1136/jech.2007.061937

Updated information and services can be found at:
http://jech.bmj.com/cgi/content/full/61/11/966

These include:

References
This article cites 31 articles, 10 of which can be accessed free at:
http://jech.bmj.com/cgi/content/full/61/11/966#BIBL

1 online articles that cite this article can be accessed at:
http://jech.bmj.com/cgi/content/full/61/11/966#otherarticles

Rapid responses
You can respond to this article at:
http://jech.bmj.com/cgi/eletter-submit/61/11/966

Email alerting service
Receive free email alerts when new articles cite this article - sign up in the box at the top right corner of the article

Notes

To order reprints of this article go to:
http://journals.bmj.com/cgi/reprintform

To subscribe to Journal of Epidemiology and Community Health go to:
http://journals.bmj.com/subscriptions/
Social problems, primary care and pathways to help and support: addressing health inequalities at the individual level. Part I: the GP perspective

Jennie Popay, Ute Kowarzik, Sara Mallinson, Sara Mackian, Jacqui Barker

Objectives: This study aimed to describe social problems presented to general practitioners (GPs) in UK inner cities and GPs’ responses; describe patients’ help-seeking pathways; and consider how these pathways can be improved.

Methods: The study involved a pilot survey and follow-up qualitative interviews with patients in two inner city areas in London and Salford in 2001-2. The pilot survey involved five practices in each locality. GPs completed questionnaires on 57 people presenting with social problems. A diversity sample of 12 patients were followed up for interview.

Results: Study results are presented in two parts. This paper focuses on the GP survey results. People were presenting with a wide range of social problems, and multiple problems were also common. Problems with welfare benefits and housing were the most common, but GPs were most likely to refer patients to more problem-specific services but did not believe these were available.

Conclusions: The study highlights the role GPs play in helping people deal with social problems but also identifies limitations in their response to these problems. It points to the need for more integrated pathways to help and advice for social problems. Primary care can make existing pathways more visible and accessible, and create new pathways through, for example, the new commissioning role and extending the scope of prescribing.

Many commentators have highlighted the potential role for primary care in the public health arena.\(^1\)\(^-\)\(^10\) Notwithstanding this potential, the development of a public health dimension to primary care has lacked strategic direction in the UK. In particular, the role of primary care in ameliorating the social causes of health inequalities has remained largely underdeveloped—with the exception of the determined efforts of a few practitioners who may pay a high personal price for operating at the margins of the mainstream.\(^11\)\(^-\)\(^12\)

Recent developments in health policy in the UK provide a framework that is at least conducive to change in this situation. Until recently, Primary Care Trusts (PCTs) have had lead responsibility for developing and delivering public health practice in local health systems. A recent re-organisation may result in public health “services” being delivered by a wider range of organisations including general practice. General practice will also be developing a much stronger commissioning role. Alongside these developments, important changes are underway in local government roles and responsibilities. They now have a statutory responsibility to protect and promote the well-being of their residents in partnership with other agencies. Overview and Scrutiny Committees have been established with a brief to monitor decisions relating to health and health care in their area. There is also a renewed emphasis on patient and public involvement (PPI) in health-related decision making, with National Health Service (NHS) Trusts having a statutory responsibility to consult on proposed changes to services, and PPI being built into the formal inspection and monitoring process. At the same time across central government there is renewed policy emphasis on tackling health inequalities, with a recent White Paper on public health introducing many new initiatives including local ‘experiments’ in community action for health and a national network of health trainers. Arguably, the opportunities for developing a more strategic approach to the relationship between public health and primary care have never been greater.\(^13\)\(^-\)\(^15\)

In this paper we report on research that aimed to contribute to the development of a more effective role for general practice in particular and primary care in general in addressing the social causes of ill health. The research was part of a larger programme of work on the relationship between public health and primary care in two local health systems in England.\(^11\)\(^-\)\(^15\) The study reported here had two linked strands: a focus on the nature of social problems presenting to general practice in UK inner cities and how general practitioners (GPs) respond to these; and qualitative research on the pathways people follow as they seek help to deal with a wide range of social problems. The paper is divided into two parts. Here in part I we consider the background to the study, focusing, in particular, on models of the social causes of health inequalities and on previous research on the interface between social problems and primary care. We then describe the design of the study of GPs’ perspectives on the social problems patients present to them and how they respond to these, and present the findings of this study. In part II,\(^16\) we present findings of the qualitative study of the pathways people follow as they seek advice and support in relation to social problems and consider the implications of both strands of the research for policy and practice in public health and primary care.

Abbreviations: GP, general practitioner; PPI, patient and public involvement
BACKGROUND

The social causes of health inequalities

The experience of health and illness is strongly patterned across social groups and areas, and a considerable research literature highlights the causal role of social and economic inequalities operating at different levels in contemporary societies in the genesis of these health inequalities. One of the most frequently cited explanatory models, developed by Dahlgren and Whitehead, places individuals—with their own unique biological inheritance—at the centre of concentric half-circles. These denote the contextual factors arising from: immediate kinship networks; social, economic and material circumstances in local neighbourhoods; the socio-economic conditions and welfare policies within a particular country; and the wider international context. Processes operating within each domain, and across the domains, have been shown to contribute in complex ways to the genesis of health inequalities. Another model proposed by Brunner and Marmot links social structure to patterns of health and disease via material, psychosocial and behavioural pathways: with genetic, early life and cultural factors bringing further important influences to bear on population health. A third closely related approach—the life cycle model—presents a dynamic picture of individuals variously exposed over time and place to risks to health and/or protective factors.

Whilst highlighting the multifactorial character of the pathways leading to health inequalities, these explanatory models are strongly social in their orientation. They all point to the cumulative, enduring and unequal risks to health arising from injustices in the way societies are organised and differentially impacting on particular groups, living in particular places. They are also firmly focused on the macro dimensions of health inequalities. They seek to explain inequalities across different dimensions of the social world, with inequalities between social classes, ethnic groups, age groups, place and gender being the most significant dimensions recorded in the literature. However, whilst this macro perspective is important, equal attention is also required to the lived experience of inequalities at the individual level. Without this parallel micro focus, explanations for health inequalities will tend to be deterministic in their orientation, failing to recognise that the individuals involved are not passive recipients of their fate. The population of one locality was culturally very diverse; the other was largely white. The objectives were:

- To consider how more effective support for people experiencing social problems presented to GPs can be co-ordinated and delivered within primary care in the UK.
- To describe the wider pathways people follow when they seek help and support to deal with social problems and the place of general practice within these.
- To consider how more effective support for people experiencing social problems could be developed.

Social causes of ill health and primary care

There appear to be few studies that have considered how GPs respond to the social problems experienced by their patients, as opposed to the psychological consequences of these. The research that does exist, however, suggests that people presenting with social problems may have shorter less useful consultations and/or that GPs may not know how to respond to such problems. The reasons why at least some GPs do not respond to patients’ social problems are likely to be complex, but research suggests that it is partly due to patients’ reluctance to disclose social problems and partly because of GPs reluctance to probe for these. There is also some research suggesting that even when GPs recognise the presence of a social problem they are more likely to respond with consolation and reassurance than with practical help and/or referral to specialist services, and that they lack knowledge of local resources.

METHODS

Study objectives

The research took place in 2001–2 in two inner city localities in the UK—one in London and the other in Greater Manchester—characterised by high levels of social and economic disadvantage. The population of one locality was culturally very diverse; the other was largely white. The objectives were:

- To describe the type of “social problems” GPs perceive patients to be presenting with.
- To identify the options GPs feel are available for responding to patients’ social problems.
- To describe the wider pathways people follow when they seek help and support to deal with social problems and the place of general practice within these.
- To consider how more effective support for people experiencing social problems could be developed.

This research involved a pilot survey of the type of social problems presented to GPs and their responses to these, and a
follow-up qualitative study of help-seeking behaviour amongst a sample of people drawn from the survey.

The survey of social need presenting to general practice
The survey was exploratory and aimed to provide an indication of the types of social problems GPs feel they are presented with in routine care and the ways in which they seek to manage these demands on their time and resources, including the referral options they feel they have available. It was not expected to generate robust estimates of the frequency of these types of consultation nor the relative significance of different types of social problems.

Ten GPs were recruited (six in the London locality and four in the Greater Manchester locality). The questionnaire collected information on: patient’s age, sex and (in one area) ethnicity; the date, time of day and length of consultation; presenting problem and, if different, the underlying social problems perceived by the GP; action taken by the GP; action/referral preferred, but not available; and consultation type—that is, new problem or ongoing. Each GP agreed to return a completed pro-forma for 50 patients they perceived to be presenting with social problems over a 4-week period, giving a total anticipated sample of 500 patients. At the request of the ethics committee, GPs gave information to patients and obtained written consent for participation in the pilot survey and follow-up qualitative research at the same time. The information sheet and the two consent forms were available in nine languages.

Although the GPs opted into the study, expressed initial enthusiasm and decided on the number of pro-formas it would be feasible for them to complete in the time period agreed, pro-forma returns were much lower than anticipated. Even after the initial 4-week period was extended to 6 weeks only 57 pro-formas were returned—1.1% of the 500 anticipated. Several factors are likely to have contributed to the low response rate. Three of the 10 participating GPs had long periods of sickness absence. Delays of several months in obtaining ethics approval in one locality may have led to a loss of interest amongst some GPs. Low returns in one area were initially attributed to the timing of the survey—just after the Christmas/New Year break—but the completion rate remained very low despite a 2-week extension. In planning the work, we sought to counter some of the reported barriers to GP participation in research.40 41 GPs were actively engaged in developing the pro-forma, and in agreeing the target number of cases to be surveyed and the time period. Training, material resources and other support in the management of the survey were provided. However, it was clear from GP feedback that the research was felt to have added significantly to workloads.

Clearly the low response rate limits the utility of the data, but they do provide a window onto the diversity of social problems GPs feel they have to deal with and how they respond to these.

RESULTS

GPs’ perceptions of and responses to social problems
Table 1 provides description data of the sample. Just under two-thirds of the patients for whom GPs completed a pro-forma in the survey were women, and their ages ranged from 16 to 76 years, with around half in the 30–49 age group. In the London site, the GPs recorded ethnicity data for 46 out of the 47 people included in the survey. The largest groups were Indian, black African, white British, black Caribbean and white “other”, with small numbers of white Irish and “other” ethnic groups. Six people were refugees or asylum seekers. Ethnicity was not recorded in the Salford site. Across the sites the GPs reported that in around two-fifths of the cases the social needs identified were new to them, in around a sixth of cases it was reported to be a new occurrence of an old problem and in a third of cases the problems were reported to be ongoing.

Table 2 presents data on patients presenting problems as reported by the GP. In around three-quarters of cases social difficulties were not recorded as the presenting problem—over half were reported by GPs as presenting initially with physical/biomedical problems and around a quarter with psychological/emotional problems. However, GPs felt a wide range of social problems underpinned these consultations, and in some cases GPs identified more than one.

Table 3 presents data on patients’ social problems reported by the GP. The most frequent were problems with welfare benefits (around a third of patients) and housing (around a quarter). The next most frequently recorded were loneliness and unemployment.

As Table 4 shows, GPs were most likely to refer people to counselling services—both within and outside the practice—and/or to specialist advice services focusing on financial or housing problems. In contrast, very few referrals to community groups in the area were reported. Similarly, referrals to job centres or other local groups aiming to help people find paid work were rare. No referral was reported for 10 patients, four of whom were reported to be in contact with the relevant services already. In other cases, the GP felt there was no obvious referral.

A few GPs noted that they would have preferred to take a different course of action from the one they took, but for various reasons had not. For example, one GP felt constrained in acting further on a racist attack on a patient because there was no obvious mechanism for reporting these problems to the police. Another suggested that he would have preferred to refer his patient for debt counselling, but to his knowledge no such service was available locally.

In comparison with figures from previous research, GPs in this research reported relatively long consultations, although it is likely that the consent process for the study will have contributed to this. More than half of the patients (31/55; 56%) were reported to have had consultations lasting 15 min and a further quarter of 10 min (16/55; 29%). These figures suggest that GPs perceived these consultations to make heavy demands on their time.

DISCUSSION

The pilot survey was not designed to provide ‘representative’ findings in a statistical sense. Rather it sought to describe the range of social problems GPs report seeing in routine practice;

<table>
<thead>
<tr>
<th>Table 1 Patient characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sex (n = 57)</strong></td>
</tr>
<tr>
<td>Female</td>
</tr>
<tr>
<td>34 (60%)</td>
</tr>
<tr>
<td>16–29</td>
</tr>
<tr>
<td>30–49</td>
</tr>
<tr>
<td>50–79</td>
</tr>
</tbody>
</table>

Percentages have been rounded.

<table>
<thead>
<tr>
<th>Table 2 Presenting problems as reported by the general practitioner</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Biomedical</strong></td>
</tr>
<tr>
<td>Pain 12 (22%)</td>
</tr>
<tr>
<td>Physical illness 19 (35%)</td>
</tr>
</tbody>
</table>

Three general practitioners did not record a presenting problem. All percentages have been rounded.
to illustrate the referral options they feel are available to them; and to consider the role of GPs within the context of the wider help-seeking pathways followed by people experiencing social problems.

GPs reported a range of social problems amongst a sample of 57 patients consulting during the study period, although over two-thirds of patients initially presented with psychosocial or medical problems. Unlike other research, these GPs reported referring people to a range of services beyond their practice— with only 10 of the 57 patients not being referred on. To some extent these referrals reflected the pattern of social problems GPs identified amongst their patients: problems with finances, housing, unemployment and loneliness were most often reported, with referrals to counselling and advice services being most common. However, the frequency with which GPs referred people they felt had social problems for personal counselling suggests that, as reported in other research, they found it easier to respond to the psychosocial sequelae of these social problems rather than to the problems themselves.

The range of services GPs referred to was also relatively narrow, although more extensive than that reported in other research. There were, for example, very few referrals to community groups in the areas, and no referrals to Healthy Living Centres, which had a high profile in at least one area, providing a wide range of relevant support and advice. Similarly, although problems with employment and unemployment and loneliness were most often reported, with referrals to counselling and advice services being most common. However, the frequency with which GPs referred people they felt had social problems for personal counselling suggests that, as reported in other research, they found it easier to respond to the psychosocial sequelae of these social problems rather than to the problems themselves.

Developing and supporting individual primary care practitioners

One of the enduring issues in primary care is the extent to which the wider social causes of health inequalities at an individual level are an appropriate and/or legitimate focus for professional practice within primary care. This research did not explore GPs' views on their role in managing patients' social problems, but it is likely that such views will vary. The GPs in this study had all actively agreed to be involved, motivated in part by a belief that their work would be more manageable, and their patients' needs better met, if there were more appropriate and effective responses to social problems. As this research has illustrated, social problems are often complex, and responding to them can be a frustrating experience for GPs. Related research has found that community nurses also feel frustrated by their attempts to respond to the social causes of ill health, feeling that this work is not valued and receiving little support at an organisational level. It appears that primary care practitioners invest a considerable amount of time with patients experiencing social problems, so improving their referral options could save professional time, make their work more satisfying and address the social causes of health inequalities more effectively.

Referral pathways could be improved if accurate and timely information about the range of local services available to help people with social problem was more readily available to primary care professionals. Part of the problem here is the dynamic nature of the provision itself. Many advice services, for example, are supported from short-term and precarious funding streams. For this and other reasons (not the least of which is the public sector's penchant in the UK for almost constant re-organisation), closures, mergers and renaming of services are common, so local directories and professional knowledge can become quickly out of date. However, the increasing sophistication of IT systems offers opportunities to develop more effective and accessible knowledge management systems within local health systems linked to primary care settings. Whilst there are significant challenges in relation to both the content and maintenance of such systems, in this era of electronic libraries and the internet these should not be insurmountable.

However, passively making more accurate timely information available will not be sufficient in itself to extend the referral options primary care workers have available to respond to social problems. For example, as noted earlier, none of the GPs reported referring the patients in the survey to a Healthy Living Centre or Sure Start Project, despite the relatively high visibility

---

### Table 3

<table>
<thead>
<tr>
<th>Social problems</th>
<th>Base numbers</th>
<th>Females (34), n (%)</th>
<th>Males (23), n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benefits</td>
<td>19 (33)</td>
<td>9 (27)</td>
<td>10 (44)</td>
</tr>
<tr>
<td>Housing</td>
<td>16 (28)</td>
<td>13 (38)</td>
<td>3 (13)</td>
</tr>
<tr>
<td>Unemployment</td>
<td>11 (19)</td>
<td>6 (18)</td>
<td>5 (22)</td>
</tr>
<tr>
<td>Loneliness/isolation</td>
<td>11 (19)</td>
<td>10 (29)</td>
<td>1 (4)</td>
</tr>
<tr>
<td>Caring for others</td>
<td>7 (12)</td>
<td>6 (18)</td>
<td>1 (4)</td>
</tr>
<tr>
<td>Drugs/alcohol</td>
<td>7 (12)</td>
<td>4 (12)</td>
<td>3 (13)</td>
</tr>
<tr>
<td>Employment</td>
<td>7 (12)</td>
<td>2 (6)</td>
<td>5 (22)</td>
</tr>
<tr>
<td>Access to services</td>
<td>6 (11)</td>
<td>3 (9)</td>
<td>3 (13)</td>
</tr>
<tr>
<td>Debts</td>
<td>6 (11)</td>
<td>5 (15)</td>
<td>1 (4)</td>
</tr>
<tr>
<td>Food/weight</td>
<td>5 (9)</td>
<td>4 (12)</td>
<td>1 (4)</td>
</tr>
<tr>
<td>Racism/discrimination/ asylum</td>
<td>5 (9)</td>
<td>1 (3)</td>
<td>4 (18)</td>
</tr>
<tr>
<td>Personal care</td>
<td>4 (7)</td>
<td>2 (6)</td>
<td>2 (9)</td>
</tr>
<tr>
<td>Safety/fear of crime</td>
<td>4 (7)</td>
<td>3 (9)</td>
<td>1 (4)</td>
</tr>
<tr>
<td>Violence</td>
<td>3 (5)</td>
<td>2 (6)</td>
<td>1 (4)</td>
</tr>
<tr>
<td>Children's behaviour</td>
<td>3 (5)</td>
<td>3 (9)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Other family issues</td>
<td>3 (5)</td>
<td>3 (9)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Insurance claim</td>
<td>2 (4)</td>
<td>1 (3)</td>
<td>1 (4)</td>
</tr>
</tbody>
</table>

Multiple response; percentages have been rounded.

### Table 4

<table>
<thead>
<tr>
<th>Referrals</th>
<th>Base numbers</th>
<th>Females (34), n (%)</th>
<th>Males (23), n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Counselling</td>
<td>17 (30)</td>
<td>13 (38)</td>
<td>4 (17)</td>
</tr>
<tr>
<td>Housing</td>
<td>7 (12)</td>
<td>4 (12)</td>
<td>3 (13)</td>
</tr>
<tr>
<td>Welfare rights</td>
<td>6 (11)</td>
<td>3 (9)</td>
<td>3 (13)</td>
</tr>
<tr>
<td>CAB</td>
<td>6 (11)</td>
<td>2 (6)</td>
<td>4 (17)</td>
</tr>
<tr>
<td>Social service</td>
<td>6 (11)</td>
<td>4 (12)</td>
<td>2 (9)</td>
</tr>
<tr>
<td>Benefit agency</td>
<td>5 (9)</td>
<td>2 (6)</td>
<td>3 (13)</td>
</tr>
<tr>
<td>Community groups</td>
<td>4 (7)</td>
<td>2 (6)</td>
<td>2 (9)</td>
</tr>
<tr>
<td>Job centre</td>
<td>2 (4)</td>
<td>0 (0)</td>
<td>2 (9)</td>
</tr>
<tr>
<td>Drug/alcohol service</td>
<td>1 (2)</td>
<td>0 (0)</td>
<td>1 (4)</td>
</tr>
<tr>
<td>General advice</td>
<td>14 (26)</td>
<td>12 (35)</td>
<td>2 (8)</td>
</tr>
<tr>
<td>No referral reported</td>
<td>10 (18)</td>
<td>5 (15)</td>
<td>5 (22)</td>
</tr>
</tbody>
</table>

Multiple response; percentages have been rounded.
CAB, Citizen's Advice Bureau.
of these initiatives locally and nationally. In the feedback session, it emerged that they did know about these and other initiatives, but had not made the connection to the social problems they identified. Active facilitation may be required to help GPs and other service providers recognise the mutual benefits that could flow for themselves and service users if there were better connections between their services and other initiatives. This type of facilitation could be provided by public health specialists or specialists with the knowledge and skills necessary to help others to build relationships across organisations and sectors. IT-based systems can also help to support the development of shared learning across professional groups and between professionals and service users, but the challenges of building communities of practice across professional groups should not be underestimated.

The range of referral options could also be increased by extending social prescribing beyond health promotion activities, such as exercise. There are examples of this happening around the country, with one GP in Leicester, for instance, developing better links with local employment services.

There are also existing initiatives in primary care in the UK that have shown to improve access to relevant advice and support for people with social difficulties, such as the appointment of individuals to facilitate referrals to other services and providing welfare and other advice in close proximity to general practice. There are of course barriers in the way of such developments becoming part of mainstream general practice and primary care. It could be argued that appointing specialist facilitators, for example, will be expensive and therefore unsustainable, although exploratory cost-benefit work suggests that the savings in terms of time and health gains could be considerable.

There are also cultural, organisational and professional barriers to these developments. There have been many initiatives over the years to link general practice into multiprofessional working to improve the service offered to patients. These have had some success, but they have also revealed considerable resistance on the part of many, albeit not all, GPs to engage with the wider social causes of health inequalities. Similarly, other professionals can find the world of primary medical care difficult, sometimes feeling that their skills and experience are undervalued. This can contribute to the failure of initiatives seeking to develop more multidisciplinary working or aiming to create better links between services.

Recent policy developments in the UK may offer new ways of transcending some of the financial and cultural barriers to the development of more appropriate and accessible responses within primary care to the social causes of health inequalities. For example, in some localities, the new “personal health trainers” to be established could focus on the wider determinants of ill health (as well as, or instead of, health-related behaviour), providing support for people experiencing social problems and helping to build stronger links between services. The new general medical services (GMS) contract also provides opportunities for extending the role of primary care in supporting people experiencing social problems. It divides what GPs will be paid for into core and enhanced services. While the details of most enhanced services will be determined at a national level, GPs can opt to provide further enhanced services and with the return of practice-based commissioning there may be greater scope for the development at a local level of social prescribing and other initiatives focused on meeting social needs.

New models of general practice and primary care are also emerging, and these could, in theory, open up new ways of responding to the social causes of health inequalities at the individual level. In some inner city areas, for example, there is a move away from the traditional GPs, who over time builds up detailed knowledge of patients’ lives—a model which does not necessarily work for highly transient and/or culturally diverse populations or is not attainable in the context of skilled labour shortages. Increasingly, other service models, including walk-in centres and specialist clinics, are emerging. Where these services are targeted at groups experiencing particular disadvantage, such as refugees, there would seem to be a strong case and obvious scope for a focus on social problems to be developed. These services also appear to be more likely to be established in close proximity to other services—as with the connected care models heralded as examples of good practice in the recent social care Green Paper, in which GP surgeries are sited in the same location as social services and housing advice centres.

**CONCLUSIONS**

This research suggests that there is considerable scope for developing and supporting a more effective role for primary care practitioners in responding to the social causes of health inequalities at the individual level. However, as we discuss in Part II of this paper, support from a GP was typically only one element of complex pathways followed by people seeking help and support to deal with complex and often long-standing social problems. In Part II we will describe these pathways in detail and consider some of the wider implications of the research for policies aiming to reduce health inequalities.
The research reported on was funded by the UK Department of Health.

Authors’ affiliations
Jennie Popay, Ute Kowarzik, Sara Mallinson, Jacqui Barker, Institute for Health Research, University of Lancaster, UK
Sara Mackian, Department of Geography, Manchester University, UK

Institute for Health Research, University of Lancaster, UK
Department of Geography, Manchester University, UK

Competing interests: None declared.

REFERENCES