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Health promotion and disease prevention in general practice and primary care: a scoping study

Abstract

Aim

This scoping exercise reviewed the current extent of knowledge about health promotion and disease prevention in general practice and the contribution of the wider primary health care team. Key objectives were to provide an overview of the range and type of prevention and health promotion activities, identify gaps in knowledge and areas for further empirical research.

Background

Since the 1970s there has been a growing policy and practice interest in the public health role of primary care but little is known about the effectiveness of delivery within primary care settings. This review examined who delivers interventions, where they are located, what approaches are developed in practices and how individual practices and the primary healthcare team organise such public health activities.

Methods

We undertook a comprehensive search of the literature. We followed a staged selection process involving reviews of titles and abstracts resulting. This resulted in the identification of 1140 papers for data extraction with 658 of these papers selected for inclusion in the review, of which 347 were included in the evidence synthesis.

Findings

Many of the research studies reviewed had some details about the type, process, location or who provided the intervention. Generally however, little attention was paid in the literature to examining the impact of the organisational context on the way services are delivered or how this affects the effectiveness of health promoting interventions in general practice. While many general practitioners (GPs) see health promotion as an integral part of practice, the main focus was on individual prevention approaches with practices engaging in both primary and secondary prevention. Currently, there is insufficient good quality evidence to support many of the preventive interventions undertaken in primary care.

Health promotion and disease prevention in general practice and primary care: a scoping study

Introduction

Internationally there has been growing interest in the public health role of primary care and how best to achieve a stronger orientation to prevention and health promotion services for patients (WHO 1978, WHO 2005). The increasing focus on chronic health management models – including prevention and self-management, reductions in demand through self-care and prevention have become important issues for policy and practice in many countries (Brady 2013). In the UK, prevention is a key element of new models of practice across primary and secondary care but with a particular emphasis on developing the public health role of general practice (NHS England 2014a). As managers of care it has been hypothesised that GPs paid under a capitation system would be more likely to focus on prevention than if they were paid on a fee-for-service basis, but there is little evidence to support this view (Peckham and Gousia 2015). In the UK the government also introduced a pay for performance system – the Quality and Outcomes Framework (QOF), which was designed to improve practices performance in a number of areas of preventive care, reduce variations in care and improve quality of care. However, the impact on health outcomes has been fairly limited and the extent to which QOF has improved the quality of primary care, particularly in relation to prevention, is highly debatable (Peckham and Wallace 2010, Dixon et al 2011, Langdown and Peckham 2013).

Since the mid-1990s professional bodies have argued that prevention should be a constituent element of normal professional practice of GPs and nurses and that prevention and health promotion should be an integral part of general practice (RCGP 2007, RCN 2007, Peckham et al 2011, Watson 2008). In the UK, successive governments have emphasised the important role of GPs in promoting their patients' health and in 2010 the newly elected Coalition Government specifically promoted greater GP involvement in public health (HM Government 2010). In the White Paper *Healthy Lives, Healthy People* (Sec of State 2010 cm7985) and other public statements, the government outlined an increased role for GPs and general practices in public health. In addition, since January 2012 there has been a call for all NHS professionals to 'Make every contact count' making prevention a part of every patient contact with the NHS including opportunistic advice as well as part of planned support sessions for patients (DH 2012, NICE 2013).

However, concerns have been raised about whether it is appropriate for increasing elements of health promotion, and public health more generally to be undertaken in general practice, given the limited consultation time available and a growing workforce 'crisis'. Despite the recognition of increasing pressures on general practice, new models of care being developed within the NHS – especially for primary and community care - involve a strong emphasis on prevention and health promotion (NHSE 2016). Similarly, a recent Health Education England Primary Care Workforce Commission report highlighted the need for more nurses to undertake health promotion in primary and community care settings and the continuing importance of the prevention role in primary care (HEE 2015). This, of course, is by no means a new idea and harks back to the 80's and 90's when practice nurses were called on to manage health checks in primary care to prevent coronary heart disease with GPs financially incentivised to undertake prevention and health promotion interventions and screening (Peckham et al 2011).

Yet there remain key questions about the both the effectiveness of prevention and health promotion activities undertaken by GPs and nurses, their focus and what the level of such activity is in practice (Peckham et al 2011). In particular, studies suggest that workload issues, lack of time, limited knowledge, and lack of skill remain key reasons for not engaging in prevention interventions in primary care (Brotons et al 2005, Rubio-Valera et al 2014). In order to examine some of these issues NIHR HS&DR funded this scoping project to provide a synthesis of the literature on prevention and health promotion in practice (Peckham et al 2015). The aim was to identify what is known about the effectiveness of prevention and health promotion activities in general practice and the wider primary health care team. The key objectives were to provide an

overview of the range and type of prevention and health promotion activities undertaken, identify gaps in knowledge and areas for further empirical research. While the study had a primarily UK focus the findings from the review provide more general insights to the role of primary care in prevention and public health and the lack of evidence about how these activities should most effectively be organised and delivered.

Methods

The aim was to conduct a synthesis of the research evidence and wider literature on the delivery and organisation of prevention and health promotion activities in primary care. We focussed on the contribution of activities undertaken in or associated with general practice, wider practice and the primary health care team but excluding mental health prevention. We undertook a comprehensive search of the literature. Our methodological approach was based on the standard methodology for scoping reviews (Arksey and O'Malley 2005, Anderson et al 2008). Reviews of public health prevention and health promotion interventions pose numerous challenges due to multi-component interventions, diverse study populations, multiple outcomes measured, wide range of approaches and study designs used, and the effect of context on intervention design, implementation and effectiveness (Jackson and Waters 2004). An initial scoping of the literature identified in excess of 20,000 articles that may be relevant to the topic area and we developed strategies designed to manage paper selection and data extraction including limiting the search to UK only articles. The search was run on four databases, namely Medline, Embase, Global Health and CINAHL Plus, using strategies designed specifically for each database combining two searches – one with broad terms 'prevention', 'health improvement' and 'health promotion and one focusing on a number of key areas alcohol and drug addiction, brief interventions, exercise therapy, immunisation, lifestyle, risk reduction, screening and smoking cessation (see supplementary material appendices described in Appendices 1 and 2. Results were limited to academic articles published in the English language between 1990 and 2012. This yielded 16,791 references. Paper selection was conducted in three sequential stages – by title, by abstract and by full text. At each stage, the following inclusion criteria:

- Is it focused on primary care?
- Is it health improvement (defined as primordial, primary, secondary or tertiary prevention, and also encompassing health promotion)?
- Is it, or could it be, related to service delivery or organisation?
- Does it report research findings, or alternatively, does it contain a description of health improvement activities undertaken in practice?

The 16,791 references were divided so that in the title selection stage, the title of each article was reviewed separately by three reviewers. If any one reviewer considered an article to be relevant, it was progressed to the abstract selection stage. In the abstract stage, references were divided so that each abstract was reviewed separately by two reviewers. If both reviewers considered an article to be relevant, it was progressed to the full text stage. In the full text stage, data from each paper was extracted by individual reviewers. This resulted in a final selection of 658 papers for inclusion in the review, of which 347 were included in the evidence synthesis with the remainder providing contextual and descriptive background information. Full details of our search strategy and methods for paper selection are set out in the published report (Peckham et al 2015) and details of numbers of papers and the selection process are shown in figure 1.

Description of papers

We distinguished between three broad areas of preventive and health promoting activities - screening, primary prevention and secondary prevention.ⁱ The use of these three areas emerged during the review process as the most coherent way of segmenting the substantial amount of literature. There were 148 papers concerning screening, although only 84 of these specifically examined research relating to a screening programme. The remainder were predominantly general descriptive accounts or commentaries. We identified 326 papers on primary prevention (164 included in the evidence synthesis) including 50 papers on child health, 49 on smoking, 40 on exercise and weight interventions, and 22 on vaccination. There were 64 papers that we left unclassified in terms of the intervention focus - including studies on welfare advice and community initiatives. Finally, we identified 126 papers on secondary prevention, with cardiovascular disease (CVD) being the most common topic but there were also papers specifically focussing on weight and exercise for people with symptomatic disease. As described in the published report, the papers covered a huge range of interventions, types of interventions and locations in which interventions were carried out (Peckham et al 2015).

Findings

In this paper we summarise the key findings by prevention and health promotion category. However, it was not always easy to distinguish between primary and secondary prevention in the allocation of papers, as some interventions might appear to be primary in nature, they might have been applied in practice to patients with an existing health problem, for example CVD. In reporting the findings we predominantly draw on the synthesis reported in our substantive report (Peckham et al 2015) except where it is useful to refer directly to specific studies.

Screening

We divided the 148 screening papers into systematic screening and opportunistic screening, though the boundary was blurred because opportunistic screening may be used in general practice to increase screening uptake for systematic screening programmes (Health and Social Care Information Centre 2012). We also categorised them by topic, 84 being evidence papers with the remainder being contextual or descriptive. Of the evidence papers, 16 examined sexual health screening, 13 diabetes screening, eight cervical cancer and six breast cancer with the rest predominantly CVD. NHS Health Checks combined accounted for nine papers. While many screening programmes are managed nationally there are several programmes in which general practice has a role; including cervical cancer screening, NHS Health Checks, child health surveillance, diabetes and CVD screening, and health checks for people aged over 75 years. Most studies focussed on screening coverage and women's experiences, including such aspects as informed consent, reasons for non-attendance rather than aspects of how services were organised and delivered (Peckham et al 2015).

Screening programmes for CVD, diabetes and kidney disease have become an increasingly important part of UK screening programmes that involve general practice although there is inconsistency in the way screening activities were delivered despite attempts by programme designers to standardise it (Peckham et al 2015). The initial national health checks programme was for people with learning disabilities as distinct from the later NHS Health Checks Programme discussed below. There was a very wide variation in service delivery of the health checks programme for people with learning disabilities but it had been successful in detecting unmet health needs and provision of appropriate support. The checks were carried out in different locations (for example GP surgeries and people's homes), and were carried out by a diversity of practitioners including GPs, practice nurses and community nurses (Robertson et al 2011). The ADDITION study examined screening and intensive management for people with diagnosed diabetes found only a small reduction in

cardiovascular events and death, but this was not statistically significant and screening was not associated with a reduction in mortality over a ten year period (Simmons et al 2012).

In 2009 the national NHS Health Check programme was introduced in England to undertake screening of people aged between 40-74 for risk of heart disease, stroke, diabetes and kidney disease in primary care. There has, though, been substantial controversy over the effectiveness of NHS health checks (Capewell et al 2015, Waterall et al 2015). Over time these screening activities have begun to be carried out in a wide variety of locations, including general practice, community pharmacy, workplaces and in one instance a mobile bus and by a variety of health care professionals and non-professionals (Peckham et al 2015). Where the screening took place in general practice, in the majority of cases, it was carried out by the practice nurse, although health care assistants and primary care staff were also mentioned. In community locations, there was a very wide range of personnel including practice nurses, health visitors, staff from an independent sector organisation and district nurses working with lay health workers but we did not identify any research that compared different delivery and organisational arrangements. Since completing the review the range of service providers has diversified following the transfer of commissioning NHS Health Checks to local authorities in 2013. This has led to less involvement by general practice (Price 2016).

For people aged over 75 there has been a health check programme since its introduction as part of the 1990 GP contract. However, the ways in which practices implemented this has been variable. We found that some practices offered a health check to all patients on their practice list who were aged over 75. Others only identified older persons who might be 'at risk' using a postal questionnaire, only approached patients who had not responded to a call for a routine health check or who had not visited their GP in the last year. Where unmet needs were identified, patients were referred to a wide variety of services, but the highest percentage of referrals was to a GP.

In 2004 the introduction of the national Quality and Outcomes Framework as part of the revised GP contract introduced performance payments for some screening activities – theoretically providing an incentive to screen patients. There have been a number of studies on the impact of QOF, but few have looked specifically at the identification of new cases of a disease. We identified two studies that suggested that the effect of QOF on uncovering previously undiagnosed conditions has been both modest and geographically variable. The analysis suggested that there remained a considerable amount of undiagnosed CHD and hypertension in 2007, three years after the introduction of QOF (McLean et al 2007). However, Dixon et al (2011) in their study of general practices in deprived areas, found that practices were screening opportunistically patients with family members with particular conditions, or patients who looked obese or overweight. The exact effect of QOF on this is difficult to pin down, as these practices stated that they were doing this before QOF was introduced.

Beyond these national programmes and initiatives, there is a wide range of screening activity within general practice. Most of the screening activity for Chlamydia occurs in contraception/sexual health services and general practice where both practice nurses and GPs offer the chlamydia test. We also found papers describing how practices involved receptionists in giving out leaflets or discussing screening with patients (McNulty et al 2008, Freeman et al 2009). Screening for alcohol misuse has also become increasingly important with GPs reporting asking about alcohol consumption 'all of the time' or 'most of the time' – but not routinely - in situations where patients do not ask them first. However, some screening and brief interventions for alcohol misuse are also undertaken by a wide range of practitioners including pharmacists – but again not routinely. GPs have described feeling awkward about enquiring about alcohol consumption GPs may be unaware of potentially problematic drinking behaviour in patients whose alcohol consumption is

only slightly above recommended levels (Rapley et al 2006). As a result, some GPs embed the question in a list of questions about lifestyle, which they say they 'ask everyone'.

Other screening activities identified in the review included antenatal screening for haemoglobin disorders, screening for dementia, falls, osteoporosis, atrial fibrillation, domestic violence, depression, adult hearing, hepatitis C, human immunodeficiency virus, oral cancer, syphilis and tuberculosis. These activities have been driven by personal interest, organisational contexts, perceived needs, QOF and other local public health initiatives. General practice also has a supportive role with respect to screening programmes that are carried out outside the practice, such as the breast screening and bowel cancer programmes which GPs support by verbally recommending screening, or sending out letters of invitation or information leaflets to increase participation. We found that QOF and NHS Health Checks were clearly associated with an increase in systematic approaches to, and organisation of, primary and secondary prevention advice and activity – especially related to smoking, diet and lifestyle with an increasing use of nurses and health care assistants being employed in practices.

Primary prevention

The King's Fund identified primary prevention as a key element in transforming health care systems (Naylor et al (2015). Primary care is seen as an ideal location for primary prevention given that most patient contacts occur in this setting. We identified 326 papers that were classified as primary prevention. Of these, 50 related to child health, 49 to smoking, 22 to vaccination and 40 to exercise and weight. In addition to these there were a small number of papers relating to falls, diabetes and mental health. Some of these categories overlapped, providing higher numbers of papers for some topics. There were also a substantial number of papers focusing on child health (just under 205 of the total primary prevention papers). This specifically reflects the way child health services are organised in the UK where GPs, practice nurses, health visitors and school nurses provide a wide range of child health services in conjunction with community health services.

Studies on child health spanned a wide range of topics including accident prevention, breast feeding, weight management and exercise. Many of the papers examined changes in patient behaviour as a result of an intervention. Studies fell into three broad categories:

1. Interventions either within practices or by the primary health care team that were aimed at identifying children who might be at risk of health problems, and these activities often targeted particular groups of children.
2. Interventions that were aimed at intermediary organisations such as training for teachers.
3. Interventions or activities in schools or the community.

Again few studies explicitly discussed the delivery and organisation of public health services. Primary care practitioners support national programmes such as the childhood vaccination programme (often delivered through schools) as this tends to support increased uptake. Conversely, GPs were less likely to engage in lifestyle advice for children.

One of the few papers that addressed the context of a public health intervention policy discussed the variance in outcomes of a RCT of a community based breastfeeding support group (Hoddinott et al 2010). Through ethnographic enquiry of the complex intervention, they found there was variation in the way that services were organised, which could be explained through a Hierarchy of Service Attributes Model. In the study sites where breastfeeding rates increased, the model was underpinned by good personnel resources and organisational stability, and demonstrated reflective action cycles at its apex. In localities where

breastfeeding declined, the authors found that managers focused on solving the problems within the model, such as staff shortages, rather than ways to deliver the policy. The model provides a useful approach to understanding and explaining delivery of public health interventions in primary care and could be usefully applied to other scenarios.

There were 49 papers on smoking cessation covering a wide range of interventions, and it was not always possible to distinguish between those interventions which targeted all smokers (primary prevention) and those that focussed on smokers who already had an existing health problem (secondary prevention). There is good evidence to suggest that services for helping people to quit smoking are clinically and cost effective. Almost all GPs (98%) say that they follow NICE guidelines to ask patients about their smoking status and record this in patient records – although a number of studies highlighted poor recording of smoking status. Compliance with NICE guidelines was driven by the inclusion of payment criteria in QOF but despite this, fewer than half of GPs consistently advise patients to give up smoking. While complex, the main reason seems to be concerned with damaging the relationship with the patient by raising the issue of smoking cessation, especially if the GP believes that the patient is not motivated enough to quit (Pilnick and Coleman 2010). Overall, few papers examined the organisation and delivery of smoking cessation services, and only two compared different service approaches. While there were many smoking cessation activities taking place in general practice, there was little evidence on how best to organise services.

There were 40 papers on exercise, weight reduction and diet **which** were mainly aimed at a general adult population, although one referred specifically to people with mental health issues and was therefore excluded, and there were three papers that focused on older people. The majority of papers on weight loss were related to secondary prevention or identifying risk factors for a health issue – usually CVD. Interventions ranged from advice about lifestyle to specific recommendations concerning exercise or weight loss classes. However, there were very few good quality studies. In particular, those studies examining weight loss and obesity were generally of low methodological quality. While the GP is a trusted source of advice regarding diet, they are rarely the first port of call for overweight and obese people. The evidence suggested that GPs regarded adult obesity as being the responsibility of the patient, and felt they had very limited ability to effect changes in their patients' diet or behaviour (Ogden and Flanagan 2008). In addition, many GPs were hesitant to raise the issue of weight loss with overweight and obese patients if they feel it will negatively impact on their relationship with the patient (Hankey et al 2003), and many believe that it does not belong within the medical domain. On the whole interventions and referrals tended to be undertaken haphazardly (by both GPs and practice nurses). Recent research on changes in the public health system in England identified a number of problems related to the organisation and commissioning of services for helping obese and overweight people – particularly since the reorganisation of public health services in 2013 (Peckham et al 2015).

Secondary prevention

It was not always easy to separate primary from secondary prevention as there was often insufficient information in the papers reviewed about whether patient groups were symptomatic or asymptomatic. Thus many aspects of secondary prevention were also covered in papers on primary prevention. Of those papers specifically classified by the research team as secondary prevention, most (43) addressed CVD (including health checks), and there were 25 papers addressing weight and exercise for people with symptomatic disease.

Studies that examined services for cardiovascular prevention mainly focused on attempts to modify lifestyle risk factors in both symptomatic and asymptomatic patients but doctors did not always follow guidelines and

procedures. Risk factors included obesity, poor diet, lack of exercise alcohol use and smoking. Other areas included monitoring of blood pressure in symptomatic patients – especially those with peripheral arterial disease, and patient compliance with medications, especially statins. Ten papers specifically addressed lifestyle risk factors in asymptomatic patients, of which five also looked at trying to change people’s behaviour, such as encouraging exercise, or changing to a healthier diet, or smoking cessation. They covered a range of interventions - including Tai Chi, exercise classes, guided walks, counselling sessions, and in one case, a home exercise kit. Few papers were more than descriptive with no assessment of the best delivery or organisational methods for delivery or how services were selected. Few papers specifically looked at gender and cardiovascular disease. These studies showed that women tended to receive suboptimal care with regard to prescribing and diagnostic tests, risk factor assessment, secondary prevention therapy, cardiac investigation and coronary revascularisation.

Two papers examined ethnicity and CVD. Murray et al (2010) examined a ten year strategy to reduce health inequalities in Wandsworth, London. However, there was insufficient data in the paper to assess whether this had actually made any impact on health inequalities. The second study examined the feasibility of using screening to reach hard to reach groups in Sandwell. While the screening seemed popular, it was unclear if this had actually resulted in any lifestyle risk factor change (Patel et al 2007). However, these papers like many of those reviewed did not provide sufficient detail, about how the intervention was provided (by who, where, when, etc.).

As stated earlier, most papers on preventive interventions did not provided sufficient details about the organisation and delivery of those interventions to assess their effectiveness. One exception was in relation to welfare advice given in general practice by trained staff from organisations such as the Citizens Advice Bureaux or by specialist welfare advisors. These papers concluded that it was an effective intervention and a way to address the social, economic and environmental influences on the health of their practice population. Such services tended to be highly valued by both patients and the practice staff and lead to positive outcomes for patients (Abbott et al 2006, Burrows et al 2011).

Discussion

Our review found that the range and type of activities undertaken in general practice was diverse. However, we found that little attention has been paid to examining the impact of the organisational context on the way services are delivered or how this affects the effectiveness of prevention and health promotion interventions in general practice. The focus of most studies was on individual approaches for medical conditions related to specific disease prevention such as diabetes or CHD with practices engaging in both primary and secondary prevention. Activity does appear to be driven by specific contractual incentives and conditions - such as the QOF – as well as national policies and programmes.

The evidence base is very limited and the studies we examined were mixed in terms of detail and methodological quality. There is insufficient good quality evidence to draw clear conclusions about many areas of prevention and health promotion practice in general practice. It was often impossible to identify sufficient information about the context and organisation of the delivery of prevention and health promotion interventions. Of particular concern was that few high quality studies were identified in key areas of primary prevention with the exception of smoking cessation services where services to support quitting were viewed as effective. A key message though is that multiple risk factor interventions in primary prevention comprising counselling, education and drug treatments were more likely to be effective in high-risk groups than in the general population. While the provision of secondary prevention could be improved by using specific disease management programmes, the optimal

mix of their components remains uncertain. There is insufficient evidence to make clear decisions about the balance between universal, opportunistic and targeted health promotion interventions. The cost-effectiveness of preventive interventions and the impact of how they are organised and delivered was difficult to determine due to the diverse nature of the interventions (type and organisation, different target groups) and research methodology and the resultant dearth of cost effectiveness studies. Studies also tended to focus on specific interventions delivered by specific professionals (usually GPs or nurses) with virtually no comparative studies of different delivery or organisational models. Surprisingly few studies related to alternative models of delivery such as Community Oriented Primary Care (COPC). Though COPC has been trialled in many countries, it has yielded little evaluative research (Gavagan 2008, Gillam and Schamroth 2002).

Given the increasingly diverse nature of delivery within practices (through the use of practice nurses, healthcare assistants, counsellors and pharmacists) as well as some activities being shifted outside the practice (such as in schools, smoke-stop services and pharmacies), or delivered by non-practice staff (such as pharmacists, lay workers), studies that compare the relative effectiveness of different models are urgently needed. One exception was the research reported by Hoddinott et al (2010) on the variance of change in relation to breastfeeding groups. Their Hierarchy of Services Attributes model provides an approach that can help explain why and how the organisation and delivery of an intervention is contextually significant and could be applied to other prevention and health promotion prevention and health promotion scenarios.

Future priorities for research

Currently, the major areas of research tend to be driven by clinical interest and we need more discussion about the type and range of disease burdens in primary care. We need to move away from areas such as CVD where rates are declining to examine areas with chronic disease burdens, e.g. cancer, dementia, other disabilities of old age. In particular, while the QOF was associated with primary and secondary prevention activities and more systematic approaches to screening and prevention interventions it also influenced the focus of research.

We found substantial numbers of cross sectional studies examining patient and professional views but less research that examined what was being done and how. Future research is needed that examines the whole prevention pathway for health problems that are managed within primary care drawing together research from general practice, pharmacy, community engagement, etc. This review did not cover mental health. Addressing mental health issues remains a major area of activity in general practice and a future review should address this area of prevention and health promotion activity. Studies are required that examine interventions for a population group (e.g. older people) or an intervention type (e.g. welfare advice) rather than just a specific clinical intervention. Research that more fully examines the impact of prevention and health promotion activities on health inequalities is also needed as this was seldom examined in the studies we reviewed and the focus on screening and on reactive interventions for secondary care may exacerbate health inequalities (Lorant et al 2002, Capewell and Graham 2010).

Research on prevention and health promotion in general practice also needs to move beyond clinical research to include delivery systems and be conducted in a primary care context to ensure that it is relevant and more likely to be transferred to practice. One important driver for primary care practitioner involvement in research is the need to improve quality of care. This could be achieved by the development of a programme of research underpinned by Improvement Science (Marshall et al, 2013). This would enable researchers and primary care practitioners to work together to implement and evaluate intervention and innovations to promote and improve health within its organisational context.

Limitations

This was a complex review to undertake due to problems about definition of terms and also because of the

diversity of the topic. The research team made substantial efforts to identify appropriate search terms and develop inclusion and exclusion criteria but the volume of papers limited the extent to which paper selection was cross checked between researchers. While we made every effort to ensure consistency in searching and paper selection we recognise that our eventual strategy produced a particular set of results and that it is possible that alternative search strategies could have produced a fuller set of results in some areas of public health activity. Based on the experience of this review it is possible that undertaking a number of more narrowly focused reviews may be beneficial but our results suggest that there would still be very little data on the delivery and organisation of prevention and health promotion activities. Our conclusions about the delivery and organisation of prevention and health promotion activities were also limited by the often scant information provided in the published papers. There were papers that examined different interventions by different practitioners (for example screening by nurses or GPs, GPs or pharmacists undertaking health checks) and that discussed the provision of activities in different, specific locations such as the practices, schools or pharmacies but few papers made any comparison between these to allow a comprehensive analysis of the relative effectiveness of interventions.

Conclusion

There is currently insufficient evidence to support the most effective organisation and delivery of the prevention and health promotion interventions undertaken in general practice and primary care. This is not to conclude that there are no interventions that improve population health; for example, brief interventions for stopping smoking are effective. Some evidence supports specific interventions being undertaken with some patient groups and in some locations.. In particular there is very little evidence on the most effective way to organise and deliver services and further research is needed to understand what the most effective organisational models of delivery are.

Notes:

¹ Primary prevention is an activity or action taken prior to the onset of symptoms, while secondary prevention seeks to limit the impact of a disease that has already manifested.

References

Abbott S, Hobby L, Cotter S. What is the impact on individual health of services in general practice settings which offer welfare benefits advice? *Health Social Care Community* 2006; 14 (1): 1-8.

Anderson S, Allen P, Peckham S, Goodwin N. (2008) Asking the right questions: scoping studies in the commissioning of research in the organisation and delivery of health services. *Health Research Policy Systems* 6:7.

Arksey H. and O'Malley L. (2005) Scoping studies: towards a methodological framework, *International Journal of Research Methods* 8(1): 19 – 32.

- Brady, T.J., (2013) A meta-analysis of health status, health behaviors, and health care utilization outcomes of the chronic disease self-management program. *Preventing chronic disease*, 10.
- Brotons, C., Björkelund, C., Bulc, M., et al., (2005) Prevention and health promotion in clinical practice: the views of general practitioners in Europe. *Preventive Medicine* 40 (5), 595–601.
<http://dx.doi.org/10.1016/j.ypmed.2004.07.020>.
- Burrows J, Baxter S, Baird W, Hirst J, Goyder E. (2011) Citizens advice in primary care: a qualitative study of the views and experiences of service users and staff. *Public Health* 125: 704-10.
- Capewell, S. and Graham, H., (2010) Will cardiovascular disease prevention widen health inequalities?. *PLoS Medicine* 7(8), p.e1000320.
- Capewell, S., McCartney, M. and Holland, W., (2015) Invited debate: NHS Health Checks—a naked emperor?. *Journal of Public Health*, 37(2), pp.187-192.
- Dixon A, Khachatryan A, Wallace A, Peckham S, Boyce T, Gillam S. (2011) *The Quality and Outcomes Framework: does it reduce health inequalities?* Final report. NIHR Service Delivery and Organisation programme.
- Health Foundation (2011) *Evidence Scan: Improvement Science* London: Health Foundation.
- Freeman E, Howell-Jones R, Oliver I, Randall S, Ford-Young W, Beckwith P et al. (2009) Promoting chlamydia screening with posters and leaflets in general practice: a qualitative study. *BMC Public Health* 9(1):383.
- Gavagan, T., 2008. A systematic review of COPC: evidence for effectiveness. *Journal of health care for the poor and underserved*, 19(3), pp.963-980.
- Gillam S, Schamroth A. (2002) Community-oriented primary care experience in the United Kingdom. *American Journal of Public Health* 92: 1721-25.
- Hankey CR, Eley S, Leslie WS, Hunter CM, Lean ME. (2003) Eating habits, beliefs, attitudes and knowledge among health professionals regarding the links between obesity, nutrition and health. *Public Health Nutrition* 7(2):337-43.
- Health and Social Care Information Centre (2012) *Cervical Screening Programme, England 2011-12*. Leeds: Health and Social Care Information Centre.
- HM Government (2010) *The Coalition: our programme for government*. London: Cabinet Office. Available from: http://www.cabinetoffice.gov.uk/media/409088/pfg_coalition.pdf
- HM Government (2012) *The Health and Social Care Act 2012*, c.7. London: The Stationary Office. Available from: <http://www.legislation.gov.uk/ukpga/2012/7/contents/enacted>
- Hoddinott P, Britten J, Pill R. (2010) Why do interventions work in some places and not others: a breastfeeding support group trial. *Social Science and Medicine* 70(1): 769-78.
- Jackson N, Waters E. (2004) Guidelines for systematic reviews of health promotion and public health interventions taskforce. The challenges of systematically reviewing public health interventions. *Journal of Public Health* 26(3):303-7.

Langdown C, and Peckham S. (2013). The use of financial incentives to help improve health outcomes: is the quality and outcomes framework fit for purpose? A systematic review. *Journal of Public Health*. doi: 10.1093/pubmed/fdt077

Lorant, V., Boland, B., Humblet, P. and Deliège, D., 2002. Equity in prevention and health care. *Journal of epidemiology and community health* 56(7), pp.510-516.

Marshall M, et al. Promotion of improvement as a science. *Lancet* 2013;381:419-421.

McLean G, Guthrie B, Sutton M. (2007) Differences in the quality of primary medical care for cvd and diabetes across the NHS: evidence from the Quality and Outcomes Framework. *BMC Health Services Research* 7: 74.

McNulty CA, Freeman E, Oliver I, Ford-Young W, Randall S. Strategies used to increase chlamydia screening in general practice: a qualitative study. *Public Health* 2008; 122(9): 845-56.

Murray J, Saxena S, Millett C, Curcin V, de Lusignan S, Majeed A. (2010) Reductions in risk factors for secondary prevention of coronary heart disease by ethnic group in south-west London: 10-year longitudinal study (1998-2007). *Family Practice* 27(4): 430-438.

NHS England (2014) *Call to Action: Primary Care*.

National Institute for Health and Clinical Excellence. *Physical activity: brief advice for adults in primary care*. London: National Institute for Health and Clinical Excellence; 2013. NICE Public Health Guidance no. 44.

Naylor C, Imison C, Addicott R et al. (2015) *Transforming our Healthcare System: Ten priorities for Commissioners*. London: Kings Fund.

Ogden J, Flanagan Z. (2008) Beliefs about the causes and solutions to obesity: a comparison of GPs to lay people. *Patient Education Counselling* 71(1): 72-78.

Patel JV, Gunarathne A, Lane D, Lim HS, Tracey I, Panja NC et al. (2007) Widening access to cardiovascular healthcare: community screening among ethnic minorities in inner-city Britain - the Healthy Hearts Project. *BMC Health Services Research* 7(1): 192.

Peckham S and Gousia K (2014) *GP payment schemes review* London PRUComm. www.prucomm.ac.uk

Peckham S and Wallace A (2010) Pay for performance schemes in primary care: what have we learnt? *Quality in Primary Care* 18, 111-116.

Peckham S, Hann A, Boyce T. (2011) Health promotion and ill-health prevention: the role of general practice. *Quality in Primary Care* 19(5): 317-23.

Peckham, S., Falconer, J., Gillam, S., Hann, A., Kendall, S., Nanchahal, K., Ritchie, B., Rogers, R. and Wallace, A., (2015) The organisation and delivery of prevention and health promotion in general practice and primary care: a scoping study. *Health Services and Delivery Research*, 3(29).

Pilnick A, Coleman T. (2010) Do your best for me: the difficulties of finding a clinically effective endpoint in smoking cessation consultations in primary care. *Health (London)* 14(1): 57-74.

Price C (2016) Local council strips GP practices of NHS Health Checks *Pulse* 29 January 2016
<http://www.pulsetoday.co.uk/news/commissioning/local-council-strips-gp-practices-of-nhs-health-checks/20031011.article> Accessed 24/4/2016

Rapley T, May C, Kaner EF. Still a difficult business? Negotiating alcohol-related problems in general practice consultations. *Soc Sci Med* 2006; 63(9): 2418-28.

Robertson J, Roberts H, Emerson E, Turner S, Greig R. (2011) The impact of health checks for people with intellectual disabilities: a systematic review of evidence. *Journal of Intellectual Disability Research* 55(11): 1009-19.

Royal College of Nursing (2007) *Nurses as partners in delivering public health* London: Royal College of Nursing.

RCGP (Royal College of General Practitioners) (2007). 'Healthy People: promoting health and preventing disease'. Available at: http://www.rcgp-curriculum.org.uk/pdf/curr_5_Healthy_people.pdf (accessed 10 June 2010).

Rubio-Valera, M., Pons-Vigués, M., Martínez-Andrés, M., Moreno-Peral, P., Berenguera, A., Fernández, A., (2014) Barriers and facilitators for the implementation of primary prevention and health promotion activities in primary care: a synthesis through metaethnography. *PLoS One* 9 (2), e89554.
<http://dx.doi.org/10.1371/journal.pone.0089554>.

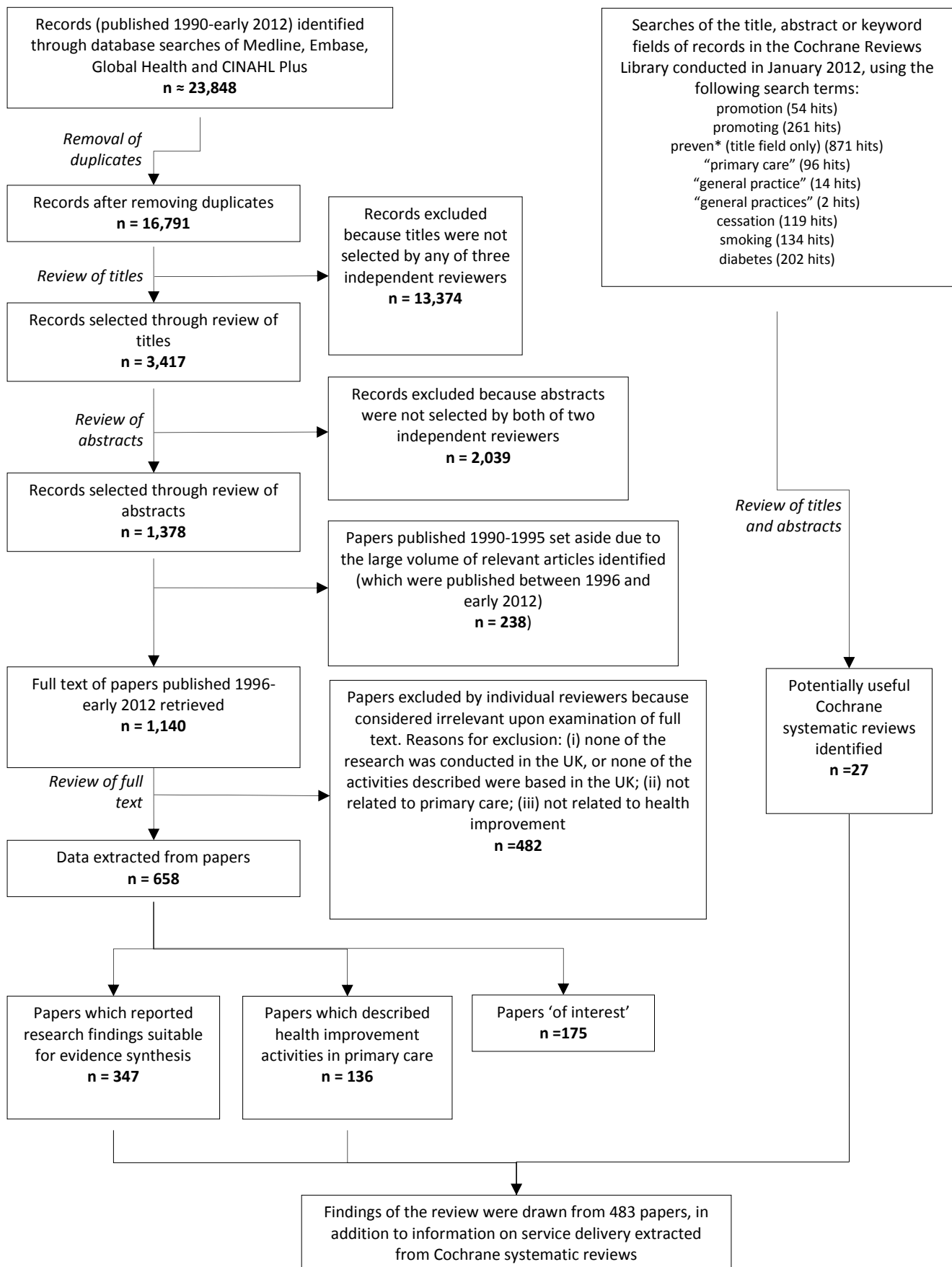
Simmons RK, Echouffo-Tcheugui JB, Sharp SJ, Sargeant LA, Williams KM, Prevost AT et al. (2012) Screening for type 2 diabetes and population mortality over 10 years (ADDITION-Cambridge): a cluster-randomised controlled trial. *Lancet* 380 (9855): 1741-8.

Watson M. (2008) Going for gold: the health promoting general practice. *Quality in Primary Care* 2008;16(3): 177-85.

World Health Organization (WHO) (1978) *Declaration of Alma Ata*. International Conference on Primary Care; 1978 Sept 6-12; Alma Ata, USSR.

World Health Organization (2005) *Primary Care: Now more than ever*. Geneva: WHO.

Figure 1: Flow diagram of review process



Appendices – to be added as online resources:

- 1. Search strategy A**
- 2. Search strategy B**

Appendix 1: Literature search

Search repeated for 2010-2012. Last search date: 12th May 2012

Ovid Medline

- 1 family practice/ (58510)
- 2 primary health care/ (46024)
- 3 physicians, family/ (14183)
- 4 physicians, primary care/ (336)
- 5 nursing staff/ (15236)
- 6 community health aides/ (2652)
- 7 primary care nursing/ (21)
- 8 community health nursing/ (17648)
- 9 ((primary or community) adj1 (care or health*)).ti,ab. (80838)
- 10 ((general or family) adj1 (practice* or practitioner*)).ti,ab. (59896)
- 11 (gp adj1 (service* or practice* or clinic or clinics)).ti,ab. (751)
- 12 ((practice or communit*) adj2 nurs*).ti,ab. (21784)
- 13 health visitor*.ti,ab. (2059)
- 14 family practice.jw. (13511)
- 15 (primary adj1 (care or health*)).jw. (5642)
- 16 (general adj1 (practice or practitioner*)).jw. (10182)
- 17 or/1-16 (236313)
- 18 exp Public Health/ (4819124)
- 19 social medicine/ (3577)
- 20 public health administration/ (13831)
- 21 exp Health education/ (124022)
- 22 health educators/ (154)
- 23 exp Preventive health services/ (378490)
- 24 Preventive Medicine/ (10288)
- 25 exp Health promotion/ (44345)
- 26 public health*.ti,ab. (98434)
- 27 ((primary or secondary or tertiary or primordial) adj1 prevent*).ti,ab. (19980)
- 28 ((disease* or ill*) adj3 (reduc* or prevent*)).ti,ab. (52929)
- 29 ((health* or intervention*) adj2 (promot* or improve* or educat* or protect* or program*)).ti,ab. (103386)
- 30 (prevent* adj2 (medicine or activi* or program*)).ti,ab. (25787)
- 31 (determin* adj2 (health* or disease*)).ti,ab. (11074)
- 32 education.jw. (52717)
- 33 public health.jw. (81262)
- 34 social.jw. (50276)
- 35 prevent*.jw. (37674)
- 36 community.jw. (27019)
- 37 or/18-36 (5111715)
- 38 exp Great Britain/ (269793)
- 39 (uk or united kingdom or britain or gb or gbr or british isles).ti,ab. (85033)
- 40 (england or scotland or wales or ireland).ti,ab. (66339)

41 (national health service or nhs).ti,ab. (18799)
42 or/38-41 (353245)
43 (addresses or autobiography or bibliography or biography or dictionary or directory or
editorial or government publications or interactive tutorial or interview or lectures or legal
cases or legislation or letter or news or newspaper article or patient education handout or
periodical index or portraits or video audio media or webcasts).pt. (1381680)
44 17 and 37 and 42 (20031)
45 44 not 43 (18756)
46 limit 45 to (english language and yr="1990 - 2010") (14819)

Ovid Medline

- 1 family practice/ (58510)
- 2 primary health care/ (46024)
- 3 physicians, family/ (14183)
- 4 physicians, primary care/ (336)
- 5 nursing staff/ (15236)
- 6 community health aides/ (2652)
- 7 primary care nursing/ (21)
- 8 community health nursing/ (17648)
- 9 ((primary or community) adj1 (care or health*)).ti,ab. (80838)
- 10 ((general or family) adj1 (practice* or practitioner*)).ti,ab. (59896)
- 11 (gp adj1 (service* or practice* or clinic or clinics)).ti,ab. (751)
- 12 ((practice or communit*) adj2 nurs*).ti,ab. (21784)
- 13 health visitor*.ti,ab. (2059)
- 14 family practice.jw. (13511)
- 15 (primary adj1 (care or health*)).jw. (5642)
- 16 (general adj1 (practice or practitioner*)).jw. (10182)
- 17 or/1-16 (236313)
- 18 exp Great Britain/ (269793)
- 19 (uk or united kingdom or britain or gb or gbr or british isles).ti,ab. (85033)
- 20 (england or scotland or wales or ireland).ti,ab. (66339)
- 21 (national health service or nhs).ti,ab. (18799)
- 22 or/18-21 (353245)
- 23 Preventive Medicine/ (10288)
- 24 exp immunization programs/ (7578)
- 25 exp primary prevention/ (101686)
- 26 ((disease* or ill*) adj3 (reduc* or prevent*)).ti,ab. (52929)
- 27 (prevent* adj2 (medicine or activi* or program*)).ti,ab. (25787)
- 28 (immuni?at* or vaccin*).mp. (293373)
- 29 ((primary or secondary) adj1 prevent*).ti,ab. (19558)
- 30 prevent*.jw. (37674)
- 31 or/23-30 (426949)
- 32 (health* adj3 improve*).ti,ab. (22492)
- 33 (better health or positive health).mp. (3805)
- 34 32 or 33 (25980)
- 35 exp Health Promotion/ (44345)
- 36 health education/ or exp consumer health information/ or patient education as topic/ or sex education/ (118647)
- 37 health educators/ (154)
- 38 ((health* or intervention*) adj2 (promot* or educat* or program*)).ti,ab. (78946)
- 39 or/35-38 (206242)

40 (addresses or autobiography or bibliography or biography or dictionary or directory or editorial or government publications or interactive tutorial or interview or lectures or legal cases or legislation or letter or news or newspaper article or patient education handout or periodical index or portraits or video audio media or webcasts).pt. (1381680)

41 17 and 22 and 31 (1403)

42 17 and 22 and 34 (497)

43 17 and 22 and 39 (2539)

44 41 not 40 (1309)

45 42 not 40 (489)

46 43 not 40 (2376)

47 limit 44 to (english language and yr="1990 - 2010") (961)

48 limit 45 to (english language and yr="1990 - 2010") (424)

49 limit 46 to (english language and yr="1990 - 2010") (1937)

50 or 48 or 49 (2966)

Ovid Embase

- 1 ((primary or community) adj1 (care or health*)).ti,ab. (95085)
- 2 ((general or family) adj1 (practice* or practitioner*)).ti,ab. (71206)
- 3 (gp adj1 (service* or practice* or clinic or clinics)).ti,ab. (1118)
- 4 ((practice or communit*) adj2 nurs*).ti,ab. (22387)
- 5 health visitor*.ti,ab. (2100)
- 6 exp primary health care/ (83783)
- 7 general practice/ (60846)
- 8 general practitioner/ (45161)
- 9 family medicine/ (5750)
- 10 community health nursing/ (24379)
- 11 health auxiliary/ (2090)
- 12 community care/ or community based rehabilitation/ (42397)
- 13 family nurse practitioner/ (24)
- 14 family nursing/ (700)
- 15 family practice.jx. (16273)
- 16 (primary adj1 (care or health*)).jx. (10666)
- 17 (general adj1 (practice or practitioner*)).jx. (11719)
- 18 or/1-17 (318809)
- 19 (uk or united kingdom or britain or gb or gbr or british isles).ti,ab. (139643)
- 20 (england or scotland or wales or ireland).ti,ab. (158606)
- 21 (national health service or nhs).ti,ab. (23656)
- 22 United Kingdom/ (269248)
- 23 or/19-22 (478485)
- 24 (health* adj3 improve*).ti,ab. (26276)
- 25 (better health or positive health).mp. (4383)
- 26 24 or 25 (30304)
- 27 ((health* or intervention*) adj2 (promot* or educat* or program*)).ti,ab. (88594)
- 28 exp health education/ (193925)
- 29 exp health educator/ (626)
- 30 or/27-29 (245887)
- 31 ((disease* or ill*) adj3 (reduc* or prevent*)).ti,ab. (62343)
- 32 (prevent* adj2 (medicine or activi* or program*)).ti,ab. (30546)
- 33 (immuni?at* or vaccin*).mp. (339927)
- 34 ((primary or secondary) adj1 prevent*).ti,ab. (26470)
- 35 prevent*.jw. (46037)
- 36 preventive medicine/ (18969)
- 37 preventive health service/ (17788)
- 38 primary prevention/ (20472)
- 39 or/31-38 (517885)
- 40 (book or editorial or erratum or letter or note or patent or press or release).pt. (1696203)

41 18 and 23 and 26 (683)
42 18 and 23 and 30 (3377)
43 18 and 23 and 39 (2032)
44 41 not 40 (668)
45 42 not 40 (2978)
46 43 not 40 (1815)
47 limit 44 to (english language and yr="1990 - 2010") (596)
48 limit 45 to (english language and yr="1990 - 2010") (2537)
49 limit 46 to (english language and yr="1990 - 2010") (1384)
50 47 or 48 or 49 (4049)

Ovid Global Health

- 1 (uk or united kingdom or britain or gb or gbr or british isles).ti,ab. (38414)
- 2 (england or scotland or wales or ireland).ti,ab. (26826)
- 3 (national health service or nhs).ti,ab. (2363)
- 4 british isles/ or exp uk/ (69092)
- 5 or/1-4 (84298)
- 6 (health* adj3 improve*).ti,ab. (7936)
- 7 (better health or positive health).mp. [mp=abstract, title, original title, broad terms, heading words] (1339)
- 8 6 or 7 (9153)
- 9 ((health* or intervention*) adj2 (promot* or educat* or program*)).ti,ab. (28920)
- 10 health promotion/ (9305)
- 11 health education/ (9826)
- 12 patient education/ (102)
- 13 sex education/ (390)
- 14 nutrition education.sh. (5191)
- 15 or/9-14 (42134)
- 16 ((disease* or ill*) adj3 (reduc* or prevent*)).ti,ab. (19963)
- 17 (prevent* adj2 (medicine or activi* or program*)).ti,ab. (8225)
- 18 (immuni?at* or vaccin*).mp. [mp=abstract, title, original title, broad terms, heading words] (108948)
- 19 ((primary or secondary) adj1 prevent*).ti,ab. (3531)
- 20 prevent*.jw. (16556)
- 21 preventive medicine/ (1504)
- 22 prevention/ or disease prevention/ (56750)
- 23 immunization programmes/ (2314)
- 24 or/16-23 (187194)
- 25 ((primary or community) adj1 (care or health*)).ti,ab. (15546)
- 26 ((general or family) adj1 (practice* or practitioner*)).ti,ab. (8057)
- 27 (gp adj1 (service* or practice* or clinic or clinics)).ti,ab. (176)
- 28 ((practice or communit*) adj2 nurs*).ti,ab. (659)
- 29 health visitor*.ti,ab. (1022)
- 30 family practice.jw. (650)
- 31 (primary adj1 (care or health*)).jw. (300)
- 32 (general adj1 (practice or practitioner*)).jw. (317)
- 33 general practitioners/ (3689)
- 34 primary health care/ (4167)
- 35 community health services/ or community health/ (3954)
- 36 or/25-35 (26626)
- 37 (annual report or annual report section or book or book chapter or bulletin or bulletin article or correspondence or editorial or patent or standard).pt. (119097)

38 5 and 8 and 36 (170)
39 5 and 15 and 36 (572)
40 5 and 24 and 36 (994)
41 38 not 37 (133)
42 39 not 37 (466)
43 40 not 37 (800)
44 limit 41 to (english language and yr="1990 - 2010") (81)
45 limit 42 to (english language and yr="1990 - 2010") (268)
46 limit 43 to (english language and yr="1990 - 2010") (424)
47 44 or 45 or 46 (677)

EBSCO Cinahl Plus

- S1 (MH "United Kingdom+") (204333)
- S2 (TI uk) or (TI united kingdom) or (TI britain) or (TI gb) or (TI gbr) or (TI british isles) (10823)
- S3 (AB uk) or (AB united kingdom) or (AB britain) or (AB gb) or (AB gbr) or (AB british isles) (20559)
- S4 (TI england) or (TI scotland) or (TI wales) or (TI ireland) (8810)
- S5 (AB england) or (AB scotland) or (AB wales) or (AB ireland) (13884)
- S6 (TI nhs) or (AB nhs) or (TI national health service) or (AB national health service) (16215)
- S7 S1 or S2 or S3 or S4 or S5 or S6 (222806)
- S8 health* N3 improve* (11982)
- S9 better health or positive health (2071)
- S10 S8 or S9 (13888)
- S11 (MH "Preventive Health Care+") (138501)
- S12 (disease* N3 reduc*) or (disease* N3 prevent*) or (ill* N3 reduc*) or (ill* N3 prevent*) (52686)
- S13 (prevent* N2 medicine) or (prevent* N2 activi*) or (prevent* N2 program*) (9007)
- S14 immuni?at* or vaccin* (33410)
- S15 (primary N1 prevent*) or (secondary N1 prevent*) (5486)
- S16 SO prevent* (11849)
- S17 S11 or S12 or S13 or S14 or S15 or S16 (217356)
- S18 (MH "Health Promotion+") (28038)
- S19 (MH "Health Education+") (75766)
- S20 (MH "Health Educators+") (2258)
- S21 (health* N2 promot*) or (health* N2 educat*) or (health* N2 program*) or (intervention* N2 promot*) or (intervention* N2 educat*) or (intervention* N2 program*) (120081)
- S22 S18 or S19 or S20 or S21 (173310)
- S23 (MH "Family Practice") (13315)
- S24 (MH "Primary Health Care") (27954)
- S25 (MH "Physicians, Family") (8543)
- S26 (MH "Community Health Nursing") OR (MH "Family Nursing") (22009)
- S27 (MH "Community Health Services+") (231870)
- S28 (MH "Community Health Workers") (712)
- S29 (primary N1 care) or (primary N1 health*) or (community N1 care) or (community N1 health*) (91150)
- S30 (general n1 practice*) or (general N1 practitioner*) or (family N1 practice*) or (family N1 practitioner*) (24448)
- S31 (gp N1 service*) or (gp N1 practice*) or (gp N1 clinic) or (gp N1 clinics) (568)
- S32 (practice N2 nurs*) or (communit* N2 nurs*) (78933)
- S33 health visitor* (2867)
- S34 SO "family practice" (3309)
- S35 (SO primary N1 care) or (SO primary N1 health*) (15809)
- S36 (SO general N1 practice) or (SO general N1 practitioner*) (5684)

- S37 S23 or S24 or S25 or S26 or S27 or S28 or S29 or S30 or S31 or S32 or S33 or S34 or S35 or S36 (353441)
- S38 Limiters - Publication Type: Accration, Advice and Referral Website, Algorithm, Anecdote, Audiovisual, Biography, Book, Book Chapter, Book Review, Care Plan, Cartoon, Chat Groups, Classification Term, Commentary, Commercial Website, Computer Program, Consumer/Patient Teaching Materials, Critical Path, Diagnostic Images, Directories, orial, Equations & Formulas, Exam Questions, Forms, Games, Glossary, Individual Testimonial Website, Information Website, Interview, Legal Cases, Letter, Listservs, Nurse Practice Acts, Obituary, Pamphlet, Pamphlet Chapter, Pictorial, Poetry, Questionnaire/Scale, Questions and Answers, Quick Lesson, Software, Standards, Teaching Materials, Tracings, Website (1063759)
- S39 S7 and S17 and S37 (11000)
- S40 S7 and S10 and S37 (651)
- S41 S7 and S22 and S37 (12935)
- S42 s39 not s38 (7988)
- S43 s40 not s38 (551)
- S44 s41 not s38 (9200)
- S45 s42 Limiters - Published Date from: 19900101-20101231; Language: English (7169)
- S46 s43 Limiters - Published Date from: 19900101-20101231; Language: English (515)
- S47 s44 Limiters - Published Date from: 19900101-20101231; Language: English (8278)
- S48 S45 or S46 or S47 (12037)

Appendix 2: Search results by database

Search repeated for 2010-2012. Last search date: 12th May 2012

Notes on derivation of search strategies

- Alcohol and drug addiction strategy derived from the Cochrane Drugs & Alcohol Review Group strategy, published at:
 - <http://onlinelibrary.wiley.com/o/cochrane/clabout/articles/ADDICTN/frame.html>.
- Brief intervention strategy derived from NICE Guideline PH1: Brief Interventions and Referral for Smoking Cessation, published online at: <http://guidance.nice.org.uk/PH1>.
- Exercise therapy strategy derived from NICE Guideline PH17: Promoting physical activity for children and young people, published online at: <http://guidance.nice.org.uk/PH17>.
- Immunisation strategy derived from NICE Guidance PH21: Reducing differences in the uptake of immunizations, found online at: <http://guidance.nice.org.uk/PH21>.
- Tobacco cessation strategy derived from NICE Guideline PH1: Brief Interventions and Referral for Smoking Cessation, published online at: <http://guidance.nice.org.uk/PH1>.

Ovid Medline

- 1 family practice/ (58098)
- 2 primary health care/ (45828)
- 3 physicians, family/ (14165)
- 4 physicians, primary care/ (314)
- 5 nursing staff/ (15203)
- 6 community health aides/ (2645)
- 7 primary care nursing/ (19)
- 8 community health nursing/ (17628)
- 9 ((primary or community) adj1 (care or health*)).ti,ab. (80350)
- 10 ((general or family) adj1 (practice* or practitioner*)).ti,ab. (59496)
- 11 (gp adj1 (service* or practice* or clinic or clinics)).ti,ab. (750)
- 12 ((practice or communit*) adj2 nurs*).ti,ab. (21712)
- 13 health visitor*.ti,ab. (2046)
- 14 family practice.jw. (13507)
- 15 (primary adj1 (care or health*)).jw. (5628)
- 16 (general adj1 (practice or practitioner*)).jw. (10075)
- 17 or/1-16 (235033)
- 18 exp Great Britain/ (266950)
- 19 (uk or united kingdom or britain or gb or gbr or british isles).ti,ab. (84527)
- 20 (england or scotland or wales or ireland).ti,ab. (65572)
- 21 (national health service or nhs).ti,ab. (18692)
- 22 or/18-21 (349558)
- 23 chewing tobacco.mp. (363)
- 24 (pipe adj2 smok*).mp. (293)

25 (cigar* or bidi* or kretek or paan or gutka or snuff or snus or betel).mp. (57271)
 26 "Tobacco Use Disorder"/ (6764)
 27 exp Tobacco/ (22296)
 28 Smoking/pc, th [Prevention & Control, Therapy] (14103)
 29 (quit* or stop* or giv* or ceas* or cessation or withdrawal).mp. (956662)
 30 or/23-28 (89104)
 31 30 and 29 (18258)
 32 smoking cessation.mp. (20679)
 33 exp "Tobacco Use Cessation"/ (17199)
 34 or/31-33 (28451)
 35 exp Substance-Related Disorders/ (329817)
 36 exp Drinking Behavior/ (50178)
 37 Psychoses, Substance-Induced/ (4149)
 38 (overdos* or over-dos*).ti,ab. (12763)
 39 ((drug* or substance or alcohol*) adj3 (addict* or dependen* or abuse* or misuse or
 withdraw* or intoxicat* or abstinen* or abstain*)).ti,ab. (83050)
 40 (alcohol* adj3 (consumption or drink*)).ti,ab. (31550)
 41 exp Amphetamines/ (30917)
 42 exp Anabolic Agents/ (11388)
 43 exp Anti-anxiety agents/ (54092)
 44 exp Antidepressive agents/ (111358)
 45 exp Barbiturates/ (48896)
 46 exp Benzodiazepines/ (55262)
 47 Cannabis/ (6240)
 48 exp Cocaine/ (21060)
 49 Designer drugs/ (580)
 50 exp Hallucinogens/ (20116)
 51 Heroin/ (4563)
 52 Ketamine/ (8290)
 53 exp Lysergic acid/ (4390)
 54 exp Methadone/ (9513)
 55 Opium/ (1712)
 56 exp Street drugs/ (7689)
 57 (alcohol or amphetamine* or angel dust or barbiturate* or cannabis or cocaine).ti,ab.
 (193203)
 58 (designer drug* or dexedrine or diet pill* or dissociative drug* or doping or dxm).ti,ab. (4177)
 59 (ephedra or ephedrine or ecstasy or hallucinogen* or hash oil* or hashish or heroin).ti,ab.
 (16983)
 60 (illicit drug* or inhalant* or ketamine or lsd or lysergic-acid* or mescaline or Marihuana or
 marijuana).ti,ab. (29587)
 61 (mda or mdma or methadone or methcathinone or methamphetamine* or Narcotics).ti,ab.

- (41670)
- 62 (opioid* or opiate* or opium or oxycontin or oxycodone or percocet or phencyclidine).ti,ab.
(67355)
- 63 (poppers or pseudophedrine or psychotomimetic* or roofies or salvia divinorum or
solvent*).ti,ab. (72729)
- 64 (stimulant* or steroid abuse or street-drug* or tranquili?er* or valium or vicodin).ti,ab.
(20813)
- 65 or/35-64 (885117)
- 66 Motor Activity/ (65534)
- 67 exp Exercise/ (57752)
- 68 exp Exercise Therapy/ (24179)
- 69 ((physical\$ or motor\$) adj2 (activit\$ or exerc\$ or fitness)).ti,ab. (65520)
- 70 exercis\$.ti,ab. (163000)
- 71 (physical\$ adj5 (fit\$4 or activ\$3 or endur\$4)).ti,ab. (47664)
- 72 (exercis\$3 adj5 (fit\$4 or activ\$3 or endur\$4)).ti,ab. (11338)
- 73 ((promot\$ or uptak\$ or encourag\$ or increas\$ or start\$ or adher\$ or maintain\$ or sustain\$)
adj5 physical\$ activit\$).ti,ab. (7391)
- 74 ((promot\$ or uptak\$ or encourag\$ or increas\$ or start\$ or adher\$ or maintain\$ or sustain\$)
adj5 exercis\$).ti,ab. (25260)
- 75 ((self esteem or confidence or self efficacy or abilit\$ or enjoy\$ or learn\$ or body image\$) adj5
(physical activit\$ or exercise\$ or sport\$)).ti,ab. (3633)
- 76 ((decreas\$ or reduc\$ or discourag\$) adj5 sedentary).ti,ab. (535)
- 77 (pedomet* or step counter* or walk*).ti,ab. (53593)
- 78 (bicycl* or bike* or cycling or riding or rides).ti,ab. (44518)
- 79 ((active or activity) adj5 (transport\$1 or transportation or journey\$)).ti,ab. (18426)
- 80 ((active or activity) adj5 travel\$).ti,ab. (357)
- 81 (travel\$ adj5 (bike\$ or walk\$ or biking or cycle or cycling or bicycl\$ or mode\$1 or route\$ or
pattern\$1 or plan\$1 or planning or rollerblad\$ or skateboard\$ or scooter\$ or
rollerskat\$)).ti,ab. (1097)
- 82 ((transport\$1 or transportation) adj5 (bike\$ or walk\$ or biking or cycle or cycling or bicycl\$ or
mode\$1 or route\$ or pattern\$1 or plan\$1 or planning or rollerblad\$ or skateboard\$ or
scooter\$ or rollerskat\$)).ti,ab. (9416)
- 83 (journey\$ adj5 (bike\$ or walk\$ or biking or cycle or cycling or bicycl\$ or mode\$1 or rollerblad\$
or skateboard\$ or scooter\$ or rollerskat\$ or route\$ or pattern\$1 or plan\$1 or planning)).ti,ab.
(97)
- 84 (commut\$ adj5 (bike\$ or walk\$ or biking or cycle or cycling or bicycl\$ or mode\$1 or route\$ or
pattern\$1 or plan\$1 or planning rollerblad\$ or skateboard\$ or scooter\$ or rollerskat\$)).ti,ab.
(177)
- 85 (school\$ adj5 (bike\$ or walk\$ or biking or cycle or cycling or bicycl\$ or route\$ or rollerblad\$
or skateboard\$ or scooter\$ or rollerskat\$)).ti,ab. (439)
- 86 ((biking or cycle or cycling or bicycl\$ or walk or walking or walks) adj1 route\$).ti,ab. (55)

- 87 ((travel\$ or transport or transports or transportation or commut\$ or journey\$) and physical\$
activ\$).ti,ab. (944)
- 88 health club\$1.ti,ab. (137)
- 89 (leisure adj5 (centre\$1 or center\$1 or facilit\$)).ti,ab. (125)
- 90 (fitness adj5 (centre\$1 or center\$1 or facilit\$)).ti,ab. (353)
- 91 parks.ti,ab. (1697)
- 92 (fitness club\$1 or wellness centre\$ or wellness center\$).ti,ab. (164)
- 93 gym\$1.ti,ab. (446)
- 94 (pitch or pitches).ti,ab. (8061)
- 95 swimming pool\$.ti,ab. (1441)
- 96 gymnasia\$1.ti,ab. (24)
- 97 health spa\$1.ti,ab. (122)
- 98 Public Facilities/ (623)
- 99 swimming pools/ (1366)
- 100 ((promot\$ or uptak\$ or encourag\$ or increas\$ or start\$ or adher\$ or maintain\$ or sustain\$ or
self esteem or confidence or self efficacy or abilit\$ or enjoy\$ or learn\$) adj5 (swim\$ or walk\$
or running or biking or bicycl\$ or bike\$ or cycling)).ti,ab. (13630)
- 101 ((promot\$ or uptak\$ or encourag\$ or increas\$ or start\$ or adher\$ or maintain\$ or sustain\$ or
self esteem or confidence or self efficacy or abilit\$ or enjoy\$ or learn\$) adj5 (dance\$1 or
dancing or aerobics)).ti,ab. (133)
- 102 ((promot\$ or uptak\$ or encourag\$ or increas\$ or start\$ or adher\$ or maintain\$ or sustain\$
adj5 (sport\$ or horse riding)).ti,ab. (1348)
- 103 ((promot\$ or uptak\$ or encourag\$ or increas\$ or start\$ or adher\$ or maintain\$ or sustain\$ or
self esteem or confidence or self efficacy or abilit\$ or enjoy\$ or learn\$) adj5 (football or rugby
or netball or cricket or hockey or rounders or athletic*)).ti,ab. (870)
- 104 ((promot\$ or uptak\$ or encourag\$ or increas\$ or start\$ or adher\$ or maintain\$ or sustain\$ or
self esteem or confidence or self efficacy or abilit\$ or enjoy\$ or learn\$) adj5 (rollerblading or
rollerskating or skating or skateboard\$)).ti,ab. (86)
- 105 ((promot\$ or uptak\$ or encourag\$ or increas\$ or start\$ or adher\$ or maintain\$ or sustain\$ or
self esteem or confidence or self efficacy or abilit\$ or enjoy\$ or learn\$) adj5 (jump\$1 or
jumping)).ti,ab. (1040)
- 106 ((promot\$ or uptak\$ or encourag\$ or increas\$ or start\$ or adher\$ or maintain\$ or sustain\$ or
self esteem or confidence or self efficacy or abilit\$ or enjoy\$ or learn\$) adj5 (play\$1 or playing
or playfulness)).ti,ab. (17244)
- 107 ((promot\$ or uptak\$ or encourag\$ or increas\$ or start\$ or adher\$ or maintain\$ or sustain\$ or
self esteem or confidence or self efficacy or abilit\$ or enjoy\$ or learn\$) adj5 (games or tennis
or badminton or racquet sport\$)).ti,ab. (440)
- 108 ((promot\$ or uptak\$ or encourag\$ or increas\$ or start\$ or adher\$ or maintain\$ or sustain\$ or
self esteem or confidence or self efficacy or abilit\$ or enjoy\$ or learn\$) adj5 (pilates or
spinning or step\$ class\$)).ti,ab. (62)
- 109 physical education.ti,ab. (2248)

110 exp "Physical Education and Training"/ (12385)
111 Dancing/ (1512)
112 exp Sports/ (93804)
113 Recreation/ (4287)
114 "Play and Playthings"/ (6098)
115 or/66-114 (482920)
116 exp Immunization/ (122517)
117 exp Immunization Programs/ (7563)
118 (immuni\$ not innate immunity).ti,ab. (178208)
119 (vaccin\$ not vaccinia).ti,ab. (166796)
120 ((dtp or dtap or dpt) adj3 (vaccin\$ or immuni\$ or jab)).ti,ab. (1324)
121 ((diphtheria or tetanus or whooping cough or pertussis or polio* or hib) adj3 (vaccin\$ or
immuni\$ or jab)).ti,ab. (13535)
122 exp Vaccines/ (152174)
123 (mmr vaccin\$ or pluserix or priorix or trimovax or triviraten berna or virivac).ti,ab. (868)
124 (hvp vaccin\$ or papillomavirus).ti,ab. (19380)
125 (anti-HBsAg or Engerix-B or Recombivax HB).ti,ab. (633)
126 ((bcg or (bacillus and calmette and guerin)) and vaccine).ti,ab. (3382)
127 or/116-126 (382000)
128 exp Mass Screening/ (88587)
129 (screening or screen).ti,ab. (300285)
130 128 or 129 (333153)
131 (brief adj3 intervention*).ti,ab. (2621)
132 counsel?ing.ti,ab. (47595)
133 ((minimal or minimum or low) adj5 (intervention* or intensity)).ti,ab. (17234)
134 low-intensity.ti,ab. (7642)
135 advice.ti,ab. (25098)
136 motivational.ti,ab. (9197)
137 opportunistic.ti,ab. (19937)
138 (self-help or self help).ti,ab. (3824)
139 or/131-138 (120933)
140 risk reduction behavior/ (5013)
141 Harm Reduction/ (1149)
142 ((risk* or harm*) adj3 reduc*).ti,ab. (67235)
143 (safe* adj2 behavi*).ti,ab. (1245)
144 or/140-143 (72079)
145 exp LIFESTYLE/ (54934)
146 lifestyle\$.ti,ab. (36629)
147 (inactivit\$ or sedentary).ti,ab. (19205)
148 exp Health Behavior/ (80447)
149 health behavior.ti,ab. (3105)

150 health behaviour.ti,ab. (1390)
151 exp OBESITY/ (114045)
152 Weight Gain/ (19061)
153 Weight Loss/ (19276)
154 (weight adj3 (gain or loss or change*)).ti,ab. (84730)
155 (overweight or over weight or overeat\$ or over eat\$).ti,ab. (26771)
156 ((bmi or body mass index) adj2 (gain or loss or change)).ti,ab. (1591)
157 obes*.ti,ab. (126829)
158 food habit\$.ti,ab. (1246)
159 poor diet.ti,ab. (680)
160 healthy eating.ti,ab. (1649)
161 (fruit or vegetable\$).ti,ab. (41190)
162 exp *Leisure Activities/ (78376)
163 (leisure or relax* or holiday* or vacation* or recreation* or hobbies or hobby or play*).ti,ab.
(713512)
164 or/145-163 (1176435)
165 (addresses or autobiography or bibliography or biography or dictionary or directory or orial
or government publications or interactive tutorial or interview or lectures or legal cases or
legislation or letter or news or newspaper article or patient education handout or periodical
index or portraits or video audio media or webcasts).pt. (1376979)
166 17 and 22 and 34 (294)
167 166 not 165 (282)
168 limit 167 to (english language and yr="1990 - 2010") (246)
169 17 and 22 and 65 (1331)
170 169 not 165 (1249)
171 limit 170 to (english language and yr="1990 - 2010") (977)
172 17 and 22 and 115 (960)
173 172 not 165 (920)
174 limit 173 to (english language and yr="1990 - 2010") (804)
175 17 and 22 and 127 (684)
176 175 not 165 (627)
177 limit 176 to (english language and yr="1990 - 2010") (481)
178 17 and 22 and 130 (1791)
179 178 not 165 (1698)
180 limit 179 to (english language and yr="1990 - 2010") (1360)
181 17 and 22 and 139 (1790)
182 181 not 165 (1752)
183 limit 182 to (english language and yr="1990 - 2010") (1465)
184 17 and 22 and 144 (377)
185 184 not 165 (373)
186 limit 185 to (english language and yr="1990 - 2010") (349)

- 187 17 and 22 and 164 (2248)
- 188 187 not 165 (2174)
- 189 limit 188 to (english language and yr="1990 - 2010") (1870)
- 190 168 or 171 or 174 or 177 or 180 or 183 or 186 or 189 (5685)

Ovid Embase

- 1 ((primary or community) adj1 (care or health*)).ti,ab. (95085)
- 2 ((general or family) adj1 (practice* or practitioner*)).ti,ab. (71206)
- 3 (gp adj1 (service* or practice* or clinic or clinics)).ti,ab. (1118)
- 4 ((practice or communit*) adj2 nurs*).ti,ab. (22387)
- 5 health visitor*.ti,ab. (2100)
- 6 exp primary health care/ (83783)
- 7 general practice/ (60846)
- 8 general practitioner/ (45161)
- 9 family medicine/ (5750)
- 10 community health nursing/ (24379)
- 11 health auxiliary/ (2090)
- 12 community care/ or community based rehabilitation/ (42397)
- 13 family nurse practitioner/ (24)
- 14 family nursing/ (700)
- 15 family practice.jx. (16273)
- 16 (primary adj1 (care or health*)).jx. (10666)
- 17 (general adj1 (practice or practitioner*)).jx. (11719)
- 18 or/1-17 (318809)
- 19 (uk or united kingdom or britain or gb or gbr or british isles).ti,ab. (139643)
- 20 (england or scotland or wales or ireland).ti,ab. (158606)
- 21 (national health service or nhs).ti,ab. (23656)
- 22 United Kingdom/ (269248)
- 23 or/19-22 (478485)
- 24 chewing tobacco.mp. (400)
- 25 (pipe adj2 smok*).mp. (300)
- 26 (cigar* or bidi* or kretek or paan or gutka or snuff or snus or betel).mp. (88249)
- 27 tobacco/ (24691)
- 28 tobacco dependence/ (9540)
- 29 exp smoking/pc, th [Prevention, Therapy] (6854)
- 30 (quit* or stop* or giv* or ceas* or cessation or withdrawal).mp. (1216507)
- 31 or/24-29 (119253)
- 32 30 and 31 (24461)
- 33 smoking cessation.mp. (31866)
- 34 smoking cessation/ or smoking cessation program/ (29449)
- 35 or/32-34 (41216)
- 36 exp addiction/ (177736)
- 37 drinking behavior/ (28095)
- 38 alcohol consumption/ (54246)
- 39 exp alcohol psychosis/ (3228)
- 40 (overdos* or over-dos*).ti,ab. (15592)

41 ((drug* or substance or alcohol*) adj3 (addict* or dependen* or abuse* or misuse or
 withdraw* or intoxicat* or abstinen* or abstain*)).ti,ab. (101199)

42 (alcohol* adj3 (consumption or drink*)).ti,ab. (37049)

43 exp amphetamine derivative/ (61945)

44 exp anabolic agent/ (18404)

45 exp tranquilizer/ (286637)

46 exp barbituric acid derivative/ (103845)

47 exp benzodiazepine derivative/ (125089)

48 cannabis/ (17546)

49 cocaine derivative/ (518)

50 designer drug/ (526)

51 exp psychedelic agent/ (44878)

52 exp diamorphine/ (14964)

53 exp ketamine/ (20344)

54 exp "drugs used in the treatment of addiction"/ (88196)

55 exp opiate/ (39704)

56 street drug/ (2206)

57 drug withdrawal/ (82494)

58 (alcohol or amphetamine* or angel dust or barbiturate* or cannabis or cocaine).ti,ab.
 (230448)

59 (designer drug* or dexedrine or diet pill* or dissociative drug* or doping or dxm).ti,ab. (6166)

60 (ephedra or ephedrine or ecstasy or hallucinogen* or hash oil* or hashish or heroin).ti,ab.
 (20234)

61 (illicit drug* or inhalant* or ketamine or lsd or lysergic-acid* or mescaline or Marihuana or
 marijuana).ti,ab. (33676)

62 (mda or mdma or methadone or methcathinone or methamphetamine* or Narcotics).ti,ab.
 (50802)

63 (opioid* or opiate* or opium or oxycontin or oxycodone or percocet or phencyclidine).ti,ab.
 (82022)

64 (poppers or pseudophedrine or psychotomimetic* or roofies or salvia divinorum or
 solvent*).ti,ab. (104755)

65 (stimulant* or steroid abuse or street-drug* or tranquili?er* or valium or vicodin).ti,ab.
 (22681)

66 or/36-65 (1140515)

67 ((physical\$ or motor\$) adj2 (activit\$ or exerc\$ or fitness)).ti,ab. (78385)

68 exercis\$.ti,ab. (193435)

69 (physical\$ adj5 (fit\$4 or activ\$3 or endur\$4)).ti,ab. (57906)

70 (exercis\$3 adj5 (fit\$4 or activ\$3 or endur\$4)).ti,ab. (13420)

71 ((promot\$ or uptak\$ or encourag\$ or increas\$ or start\$ or adher\$ or maintain\$ or sustain\$)
 adj5 physical\$ activit\$).ti,ab. (9009)

72 ((promot\$ or uptak\$ or encourag\$ or increas\$ or start\$ or adher\$ or maintain\$ or sustain\$)

- adj5 exercis\$).ti,ab. (29110)
- 73 ((self esteem or confidence or self efficacy or abilit\$ or enjoy\$ or learn\$ or body image\$) adj5 (physical activit\$ or exercise\$ or sport\$)).ti,ab. (4451)
- 74 ((decreas\$ or reduc\$ or discourag\$) adj5 sedentary).ti,ab. (640)
- 75 (pedomet* or step counter* or walk*).ti,ab. (63806)
- 76 (bicycl* or bike* or cycling or riding or rides).ti,ab. (54186)
- 77 ((active or activity) adj5 (transport\$1 or transportation or journey\$)).ti,ab. (18314)
- 78 ((active or activity) adj5 travel\$).ti,ab. (446)
- 79 (travel\$ adj5 (bike\$ or walk\$ or biking or cycle or cycling or bicycl\$ or mode\$1 or route\$ or pattern\$1 or plan\$1 or planning or rollerblad\$ or skateboard\$ or scooter\$ or rollerskat\$)).ti,ab. (1323)
- 80 ((transport\$1 or transportation) adj5 (bike\$ or walk\$ or biking or cycle or cycling or bicycl\$ or mode\$1 or route\$ or pattern\$1 or plan\$1 or planning or rollerblad\$ or skateboard\$ or scooter\$ or rollerskat\$)).ti,ab. (11825)
- 81 (journey\$ adj5 (bike\$ or walk\$ or biking or cycle or cycling or bicycl\$ or mode\$1 or rollerblad\$ or skateboard\$ or scooter\$ or rollerskat\$ or route\$ or pattern\$1 or plan\$1 or planning)).ti,ab. (136)
- 82 (commut\$ adj5 (bike\$ or walk\$ or biking or cycle or cycling or bicycl\$ or mode\$1 or route\$ or pattern\$1 or plan\$1 or planning rollerblad\$ or skateboard\$ or scooter\$ or rollerskat\$)).ti,ab. (222)
- 83 (school\$ adj5 (bike\$ or walk\$ or biking or cycle or cycling or bicycl\$ or route\$ or rollerblad\$ or skateboard\$ or scooter\$ or rollerskat\$)).ti,ab. (505)
- 84 ((biking or cycle or cycling or bicycl\$ or walk or walking or walks) adj1 route\$).ti,ab. (68)
- 85 ((travel\$ or transport or transports or transportation or commut\$ or journey\$) and physical\$ activ\$).ti,ab. (1155)
- 86 health club\$1.ti,ab. (160)
- 87 (leisure adj5 (centre\$1 or center\$1 or facilit\$)).ti,ab. (166)
- 88 (fitness adj5 (centre\$1 or center\$1 or facilit\$)).ti,ab. (451)
- 89 parks.ti,ab. (2114)
- 90 (fitness club\$1 or wellness centre\$ or wellness center\$).ti,ab. (199)
- 91 gym\$1.ti,ab. (1022)
- 92 (pitch or pitches).ti,ab. (8940)
- 93 swimming pool\$.ti,ab. (1738)
- 94 gymnasia\$1.ti,ab. (27)
- 95 health spa\$1.ti,ab. (142)
- 96 ((promot\$ or uptak\$ or encourag\$ or increas\$ or start\$ or adher\$ or maintain\$ or sustain\$ or self esteem or confidence or self efficacy or abilit\$ or enjoy\$ or learn\$) adj5 (swim\$ or walk\$ or running or biking or bicycl\$ or bike\$ or cycling)).ti,ab. (15826)
- 97 ((promot\$ or uptak\$ or encourag\$ or increas\$ or start\$ or adher\$ or maintain\$ or sustain\$ or self esteem or confidence or self efficacy or abilit\$ or enjoy\$ or learn\$) adj5 (dance\$1 or dancing or aerobics)).ti,ab. (180)

- 98 ((promot\$ or uptak\$ or encourag\$ or increas\$ or start\$ or adher\$ or maintain\$ or sustain) adj5 (sport\$ or horse riding)).ti,ab. (1786)
- 99 ((promot\$ or uptak\$ or encourag\$ or increas\$ or start\$ or adher\$ or maintain\$ or sustain\$ or self esteem or confidence or self efficacy or abilit\$ or enjoy\$ or learn\$) adj5 (football or rugby or netball or cricket or hockey or rounders or athletic*)).ti,ab. (1038)
- 100 ((promot\$ or uptak\$ or encourag\$ or increas\$ or start\$ or adher\$ or maintain\$ or sustain\$ or self esteem or confidence or self efficacy or abilit\$ or enjoy\$ or learn\$) adj5 (rollerblading or rollerskating or skating or skateboard\$)).ti,ab. (92)
- 101 ((promot\$ or uptak\$ or encourag\$ or increas\$ or start\$ or adher\$ or maintain\$ or sustain\$ or self esteem or confidence or self efficacy or abilit\$ or enjoy\$ or learn\$) adj5 (jump\$1 or jumping)).ti,ab. (1141)
- 102 ((promot\$ or uptak\$ or encourag\$ or increas\$ or start\$ or adher\$ or maintain\$ or sustain\$ or self esteem or confidence or self efficacy or abilit\$ or enjoy\$ or learn\$) adj5 (play\$1 or playing or playfulness)).ti,ab. (20196)
- 103 ((promot\$ or uptak\$ or encourag\$ or increas\$ or start\$ or adher\$ or maintain\$ or sustain\$ or self esteem or confidence or self efficacy or abilit\$ or enjoy\$ or learn\$) adj5 (games or tennis or badminton or racquet sport\$)).ti,ab. (546)
- 104 ((promot\$ or uptak\$ or encourag\$ or increas\$ or start\$ or adher\$ or maintain\$ or sustain\$ or self esteem or confidence or self efficacy or abilit\$ or enjoy\$ or learn\$) adj5 (pilates or spinning or step\$ class\$)).ti,ab. (87)
- 105 physical education.ti,ab. (3059)
- 106 motor activity/ (30313)
- 107 exp exercise/ (158508)
- 108 exp kinesiotherapy/ (36748)
- 109 exp "sports and sport related phenomena"/ or exp disabled sport/ or exp sport/ or swimming pool/ or team sport/ (100427)
- 110 physical education/ (8467)
- 111 recreation/ or dancing/ (12940)
- 112 or/67-111 (576376)
- 113 (immuni\$ not innate immunity).ti,ab. (187792)
- 114 (vaccin\$ not vaccinia).ti,ab. (188791)
- 115 ((dtp or dtap or dpt) adj3 (vaccin\$ or immuni\$ or jab)).ti,ab. (1459)
- 116 ((diphtheria or tetanus or whooping cough or pertussis or polio* or hib) adj3 (vaccin\$ or immuni\$ or jab)).ti,ab. (14397)
- 117 (mmr vaccin\$ or pluserix or priorix or trimovax or triviraten berna or virivac).ti,ab. (1030)
- 118 (hpv vaccin\$ or papillomavirus).ti,ab. (21971)
- 119 (anti-HBsAg or Engerix-B or Recombivax HB).ti,ab. (729)
- 120 ((bcg or (bacillus and calmette and guerin)) and vaccine).ti,ab. (3711)
- 121 exp immunization/ (172171)
- 122 or/113-121 (387007)
- 123 (screening or screen).ti,ab. (361889)

124 exp screening/ (332187)
125 123 or 124 (532113)
126 (brief adj3 intervention*).ti,ab. (3223)
127 counsel?ing.ti,ab. (57403)
128 ((minimal or minimum or low) adj5 (intervention* or intensity)).ti,ab. (20166)
129 low-intensity.ti,ab. (8623)
130 advice.ti,ab. (32036)
131 motivational.ti,ab. (10591)
132 opportunistic.ti,ab. (23202)
133 (self-help or self help).ti,ab. (4809)
134 or/126-133 (145961)
135 ((risk* or harm*) adj3 reduc*).ti,ab. (84019)
136 (safe* adj2 behavi*).ti,ab. (1427)
137 risk reduction/ (41705)
138 harm reduction/ (1682)
139 or/135-138 (112901)
140 lifestyle/ or lifestyle modification/ or sedentary lifestyle/ (66362)
141 lifestyle\$.ti,ab. (46011)
142 (inactivit\$ or sedentary).ti,ab. (22406)
143 exp health behavior/ (196458)
144 health behavior.ti,ab. (3311)
145 health behaviour.ti,ab. (1708)
146 exp obesity/ (196733)
147 body weight/ or weight change/ or weight control/ or weight fluctuation/ or weight gain/ or
weight reduction/ (239199)
148 (weight adj3 (gain or loss or change*)).ti,ab. (101205)
149 (overweight or over weight or overeat\$ or over eat\$).ti,ab. (34036)
150 ((bmi or body mass index) adj2 (gain or loss or change)).ti,ab. (2041)
151 obes*.ti,ab. (156975)
152 food habit\$.ti,ab. (1520)
153 poor diet.ti,ab. (760)
154 healthy eating.ti,ab. (2052)
155 (fruit or vegetable\$).ti,ab. (51341)
156 exp recreation/ (30428)
157 (leisure or relax* or holiday* or vacation* or recreation* or hobbies or hobby or play*).ti,ab.
(826805)
158 or/140-157 (1546296)
159 (book or orial or erratum or letter or note or patent or press or release).pt. (1696203)
160 18 and 23 and 35 (506)
161 18 and 23 and 66 (2139)
162 18 and 23 and 112 (1303)

163 18 and 23 and 122 (779)
164 18 and 23 and 125 (2188)
165 18 and 23 and 134 (2113)
166 18 and 23 and 139 (657)
167 18 and 23 and 158 (4179)
168 160 not 159 (428)
169 161 not 159 (1915)
170 162 not 159 (1213)
171 163 not 159 (693)
172 164 not 159 (2004)
173 165 not 159 (2067)
174 166 not 159 (594)
175 167 not 159 (3832)
176 limit 168 to (english language and yr="1990 - 2010") (384)
177 limit 169 to (english language and yr="1990 - 2010") (1621)
178 limit 170 to (english language and yr="1990 - 2010") (1070)
179 limit 171 to (english language and yr="1990 - 2010") (557)
180 limit 172 to (english language and yr="1990 - 2010") (1705)
181 limit 173 to (english language and yr="1990 - 2010") (1847)
182 limit 174 to (english language and yr="1990 - 2010") (551)
183 limit 175 to (english language and yr="1990 - 2010") (3388)
184 176 or 177 or 178 or 179 or 180 or 181 or 182 or 183 (7948)

Global Health

- 1 (uk or united kingdom or britain or gb or gbr or british isles).ti,ab. (38414)
- 2 (england or scotland or wales or ireland).ti,ab. (26826)
- 3 (national health service or nhs).ti,ab. (2363)
- 4 british isles/ or exp uk/ (69092)
- 5 or/1-4 (84298)
- 6 ((primary or community) adj1 (care or health*)).ti,ab. (15546)
- 7 ((general or family) adj1 (practice* or practitioner*)).ti,ab. (8057)
- 8 (gp adj1 (service* or practice* or clinic or clinics)).ti,ab. (176)
- 9 ((practice or communit*) adj2 nurs*).ti,ab. (659)
- 10 health visitor*.ti,ab. (1022)
- 11 family practice.jw. (650)
- 12 (primary adj1 (care or health*)).jw. (300)
- 13 (general adj1 (practice or practitioner*)).jw. (317)
- 14 general practitioners/ (3689)
- 15 primary health care/ (4167)
- 16 community health services/ or community health/ (3954)
- 17 or/6-16 (26626)
- 18 chewing tobacco.mp. [mp=abstract, title, original title, broad terms, heading words] (178)
- 19 (pipe adj2 smok*).mp. [mp=abstract, title, original title, broad terms, heading words] (192)
- 20 (cigar* or bidi* or kretek or paan or gutka or snuff or snus or betel).mp. [mp=abstract, title, original title, broad terms, heading words] (13783)
- 21 exp tobacco/ (8665)
- 22 tobacco smoking/ (22143)
- 23 tobacco chewing/ (120)
- 24 (quit* or stop* or giv* or ceas* or cessation or withdrawal).mp. [mp=abstract, title, original title, broad terms, heading words] (402110)
- 25 or/18-23 (28053)
- 26 25 and 24 (6651)
- 27 smoking cessation.mp. [mp=abstract, title, original title, broad terms, heading words] (2874)
- 28 smoking cessation/ (572)
- 29 or/26-28 (6912)
- 30 exp substance abuse/ (9778)
- 31 exp addiction/ (2489)
- 32 alcoholism/ (6484)
- 33 exp poisoning/ (33406)
- 34 drinking/ (2069)
- 35 (overdos* or over-dos*).ti,ab. (1644)
- 36 ((drug* or substance or alcohol*) adj3 (addict* or dependen* or abuse* or misuse or withdraw* or intoxicat* or abstinen* or abstain*)).ti,ab. (10689)
- 37 (alcohol* adj3 (consumption or drink*)).ti,ab. (10559)

38 exp amphetamines/ (899)
 39 exp anabolics/ (610)
 40 exp neuroleptics/ (795)
 41 exp antidepressants/ (1002)
 42 exp barbiturates/ (811)
 43 exp benzodiazepines/ (628)
 44 exp cannabis/ (1568)
 45 exp controlled substances/ (3772)
 46 exp psychotropic drugs/ (2334)
 47 ketamine/ (207)
 48 methadone/ (431)
 49 exp drug users/ (7774)
 50 (alcohol or amphetamine* or angel dust or barbiturate* or cannabis or cocaine).ti,ab. (42588)
 51 (designer drug* or dexedrine or diet pill* or dissociative drug* or doping or dxm).ti,ab. (478)
 52 (ephedra or ephedrine or ecstasy or hallucinogen* or hash oil* or hashish or heroin).ti,ab.
 (2948)
 53 (illicit drug* or inhalant* or ketamine or lsd or lysergic-acid* or mescaline or Marijuana or
 marijuana).ti,ab. (3914)
 54 (mda or mdma or methadone or methcathinone or methamphetamine* or Narcotics).ti,ab.
 (6930)
 55 (opioid* or opiate* or opium or oxycontin or oxycodone or percocet or phencyclidine).ti,ab.
 (3310)
 56 (poppers or pseudophedrine or psychotomimetic* or roofies or salvia divinorum or
 solvent*).ti,ab. (14461)
 57 (stimulant* or steroid abuse or street-drug* or tranquili?er* or valium or vicodin).ti,ab. (2886)
 58 or/30-57 (121553)
 59 ((physical\$ or motor\$) adj2 (activit\$ or exerc\$ or fitness)).ti,ab. (20784)
 60 exercis\$.ti,ab. (24780)
 61 (physical\$ adj5 (fit\$4 or activ\$3 or endur\$4)).ti,ab. (18908)
 62 (exercis\$3 adj5 (fit\$4 or activ\$3 or endur\$4)).ti,ab. (2147)
 63 ((promot\$ or uptak\$ or encourag\$ or increas\$ or start\$ or adher\$ or maintain\$ or sustain\$)
 adj5 physical\$ activit\$).ti,ab. (3481)
 64 ((promot\$ or uptak\$ or encourag\$ or increas\$ or start\$ or adher\$ or maintain\$ or sustain\$)
 adj5 exercis\$).ti,ab. (3743)
 65 ((self esteem or confidence or self efficacy or abilit\$ or enjoy\$ or learn\$ or body image\$) adj5
 (physical activit\$ or exercise\$ or sport\$)).ti,ab. (919)
 66 ((decreas\$ or reduc\$ or discourag\$) adj5 sedentary).ti,ab. (236)
 67 (pedomet* or step counter* or walk*).ti,ab. (8744)
 68 (bicycl* or bike* or cycling or riding or rides).ti,ab. (4893)
 69 ((active or activity) adj5 (transport\$1 or transportation or journey\$)).ti,ab. (1711)
 70 ((active or activity) adj5 travel\$).ti,ab. (136)

- 71 (travel\$ adj5 (bike\$ or walk\$ or biking or cycle or cycling or bicycl\$ or mode\$1 or route\$ or pattern\$1 or plan\$1 or planning or rollerblad\$ or skateboard\$ or scooter\$ or rollerskat\$)).ti,ab. (404)
- 72 ((transport\$1 or transportation) adj5 (bike\$ or walk\$ or biking or cycle or cycling or bicycl\$ or mode\$1 or route\$ or pattern\$1 or plan\$1 or planning or rollerblad\$ or skateboard\$ or scooter\$ or rollerskat\$)).ti,ab. (1100)
- 73 (journey\$ adj5 (bike\$ or walk\$ or biking or cycle or cycling or bicycl\$ or mode\$1 or rollerblad\$ or skateboard\$ or scooter\$ or rollerskat\$ or route\$ or pattern\$1 or plan\$1 or planning)).ti,ab. (40)
- 74 (commut\$ adj5 (bike\$ or walk\$ or biking or cycle or cycling or bicycl\$ or mode\$1 or route\$ or pattern\$1 or plan\$1 or planning rollerblad\$ or skateboard\$ or scooter\$ or rollerskat\$)).ti,ab. (95)
- 75 (school\$ adj5 (bike\$ or walk\$ or biking or cycle or cycling or bicycl\$ or route\$ or rollerblad\$ or skateboard\$ or scooter\$ or rollerskat\$)).ti,ab. (231)
- 76 ((biking or cycle or cycling or bicycl\$ or walk or walking or walks) adj1 route\$).ti,ab. (28)
- 77 ((travel\$ or transport or transports or transportation or commut\$ or journey\$) and physical\$ activ\$).ti,ab. (552)
- 78 health club\$1.ti,ab. (97)
- 79 (leisure adj5 (centre\$1 or center\$1 or facilit\$)).ti,ab. (151)
- 80 (fitness adj5 (centre\$1 or center\$1 or facilit\$)).ti,ab. (149)
- 81 parks.ti,ab. (1149)
- 82 (fitness club\$1 or wellness centre\$ or wellness center\$).ti,ab. (60)
- 83 gym\$1.ti,ab. (187)
- 84 (pitch or pitches).ti,ab. (328)
- 85 swimming pool\$.ti,ab. (967)
- 86 gymnasia\$1.ti,ab. (26)
- 87 health spa\$1.ti,ab. (52)
- 88 ((promot\$ or uptak\$ or encourag\$ or increas\$ or start\$ or adher\$ or maintain\$ or sustain\$ or self esteem or confidence or self efficacy or abilit\$ or enjoy\$ or learn\$) adj5 (swim\$ or walk\$ or running or biking or bicycl\$ or bike\$ or cycling)).ti,ab. (1656)
- 89 ((promot\$ or uptak\$ or encourag\$ or increas\$ or start\$ or adher\$ or maintain\$ or sustain\$ or self esteem or confidence or self efficacy or abilit\$ or enjoy\$ or learn\$) adj5 (dance\$1 or dancing or aerobics)).ti,ab. (56)
- 90 ((promot\$ or uptak\$ or encourag\$ or increas\$ or start\$ or adher\$ or maintain\$ or sustain) adj5 (sport\$ or horse riding)).ti,ab. (491)
- 91 ((promot\$ or uptak\$ or encourag\$ or increas\$ or start\$ or adher\$ or maintain\$ or sustain\$ or self esteem or confidence or self efficacy or abilit\$ or enjoy\$ or learn\$) adj5 (football or rugby or netball or cricket or hockey or rounders or athletic*)).ti,ab. (193)
- 92 ((promot\$ or uptak\$ or encourag\$ or increas\$ or start\$ or adher\$ or maintain\$ or sustain\$ or self esteem or confidence or self efficacy or abilit\$ or enjoy\$ or learn\$) adj5 (rollerblading or rollerskating or skating or skateboard\$)).ti,ab. (9)

- 93 ((promot\$ or uptak\$ or encourag\$ or increas\$ or start\$ or adher\$ or maintain\$ or sustain\$ or self esteem or confidence or self efficacy or abilit\$ or enjoy\$ or learn\$) adj5 (jump\$1 or jumping)).ti,ab. (84)
- 94 ((promot\$ or uptak\$ or encourag\$ or increas\$ or start\$ or adher\$ or maintain\$ or sustain\$ or self esteem or confidence or self efficacy or abilit\$ or enjoy\$ or learn\$) adj5 (play\$1 or playing or playfulness)).ti,ab. (2019)
- 95 ((promot\$ or uptak\$ or encourag\$ or increas\$ or start\$ or adher\$ or maintain\$ or sustain\$ or self esteem or confidence or self efficacy or abilit\$ or enjoy\$ or learn\$) adj5 (games or tennis or badminton or racquet sport\$)).ti,ab. (114)
- 96 ((promot\$ or uptak\$ or encourag\$ or increas\$ or start\$ or adher\$ or maintain\$ or sustain\$ or self esteem or confidence or self efficacy or abilit\$ or enjoy\$ or learn\$) adj5 (pilates or spinning or step\$ class\$)).ti,ab. (15)
- 97 physical education.ti,ab. (3394)
- 98 exercise/ (13708)
- 99 physical fitness/ (2425)
- 100 physical activity/ (14165)
- 101 exp sport/ (5463)
- 102 fitness/ (392)
- 103 health clubs/ (138)
- 104 exp sports facilities/ (1096)
- 105 recreational facilities/ or leisure centres/ or outdoor activity centres/ (257)
- 106 exp recreational activities/ (2270)
- 107 physical education/ (3541)
- 108 or/59-107 (67655)
- 109 (immuni\$ not innate immunity).ti,ab. (71325)
- 110 (vaccin\$ not vaccinia).ti,ab. (82196)
- 111 ((dtp or dtap or dpt) adj3 (vaccin\$ or immuni\$ or jab)).ti,ab. (800)
- 112 ((diphtheria or tetanus or whooping cough or pertussis or polio* or hib) adj3 (vaccin\$ or immuni\$ or jab)).ti,ab. (9203)
- 113 (mmr vaccin\$ or pluserix or priorix or trimovax or triviraten berna or virivac).ti,ab. (518)
- 114 (hvp vaccin\$ or papillomavirus).ti,ab. (6637)
- 115 (anti-HBsAg or Engerix-B or Recombivax HB).ti,ab. (267)
- 116 ((bcg or (bacillus and calmette and guerin)) and vaccine).ti,ab. (2435)
- 117 exp immunization/ (63425)
- 118 immunization programmes/ (2314)
- 119 exp vaccines/ (50476)
- 120 or/109-119 (138219)
- 121 (screening or screen).ti,ab. (58657)
- 122 exp screening/ (25754)
- 123 121 or 122 (62816)
- 124 (brief adj3 intervention*).ti,ab. (483)

125 counsel?ing.ti,ab. (8630)
126 ((minimal or minimum or low) adj5 (intervention* or intensity)).ti,ab. (2534)
127 low-intensity.ti,ab. (785)
128 advice.ti,ab. (9435)
129 motivational.ti,ab. (1189)
130 opportunistic.ti,ab. (8348)
131 (self-help or self help).ti,ab. (621)
132 or/124-131 (29985)
133 ((risk* or harm*) adj3 reduc*).ti,ab. (19623)
134 (safe* adj2 behavi*).ti,ab. (505)
135 risk reduction/ (3872)
136 or/133-135 (21548)
137 lifestyle/ (6272)
138 lifestyle\$.ti,ab. (14166)
139 (inactivit\$ or sedentary).ti,ab. (6359)
140 health behaviour/ (1667)
141 health behavior.ti,ab. (603)
142 health behaviour.ti,ab. (809)
143 obesity/ or overeating/ or overweight/ or thinness/ or weight reduction/ (54899)
144 weight control/ or weight gain/ (13239)
145 (weight adj3 (gain or loss or change*)).ti,ab. (41341)
146 (overweight or over weight or overeat\$ or over eat\$).ti,ab. (17666)
147 ((bmi or body mass index) adj2 (gain or loss or change)).ti,ab. (770)
148 obes*.ti,ab. (57424)
149 food habit\$.ti,ab. (2184)
150 poor diet.ti,ab. (772)
151 healthy eating.ti,ab. (1635)
152 (fruit or vegetable\$).ti,ab. (52214)
153 leisure/ or enjoyment/ or free time/ or holidays/ or leisure activities/ or leisure behaviour/ or
recreation/ (2378)
154 exp leisure activities/ or games/ or social activities/ or television/ (2728)
155 (leisure or relax* or holiday* or vacation* or recreation* or hobbies or hobby or play*).ti,ab.
(82508)
156 or/137-155 (241266)
157 (annual report or annual report section or book or book chapter or bulletin or bulletin article
or correspondence or orial or patent or standard).pt. (119097)
158 5 and 17 and 29 (97)
159 158 not 157 (78)
160 limit 159 to (english language and yr="1990 - 2010") (54)
161 5 and 17 and 58 (334)
162 161 not 157 (264)

163 limit 162 to (english language and yr="1990 - 2010") (164)
164 5 and 17 and 108 (311)
165 164 not 157 (258)
166 limit 165 to (english language and yr="1990 - 2010") (156)
167 5 and 17 and 120 (616)
168 167 not 157 (488)
169 limit 168 to (english language and yr="1990 - 2010") (248)
170 5 and 17 and 123 (458)
171 170 not 157 (418)
172 limit 171 to (english language and yr="1990 - 2010") (309)
173 5 and 17 and 132 (511)
174 173 not 157 (426)
175 limit 174 to (english language and yr="1990 - 2010") (268)
176 5 and 17 and 136 (117)
177 176 not 157 (114)
178 limit 177 to (english language and yr="1990 - 2010") (101)
179 5 and 17 and 156 (690)
180 179 not 157 (581)
181 limit 180 to (english language and yr="1990 - 2010") (360)
182 160 or 163 or 166 or 169 or 172 or 175 or 178 or 181 (1186)

CINAHL Plus

- S1 (MH "Family Practice") (13315)
- S2 (MH "Primary Health Care") (27954)
- S3 (MH "Physicians, Family") (8543)
- S4 (MH "Community Health Nursing") OR (MH "Family Nursing") (22009)
- S5 (MH "Community Health Services+") (231870)
- S6 (MH "Community Health Workers") (712)
- S7 (primary N1 care) or (primary N1 health*) or (community N1 care) or (community N1 health*) (91150)
- S8 (general n1 practice*) or (general N1 practitioner*) or (family N1 practice*) or (family N1 practitioner*) (24448)
- S9 (gp N1 service*) or (gp N1 practice*) or (gp N1 clinic) or (gp N1 clinics) (568)
- S10 (practice N2 nurs*) or (communit* N2 nurs*) (78933)
- S11 health visitor* (2867)
- S12 SO "family practice" (3309)
- S13 (SO primary N1 care) or (SO primary N1 health*) (15809)
- S14 (SO general N1 practice) or (SO general N1 practitioner*) (5684)
- S15 S1 or S2 or S3 or S4 or S5 or S6 or S7 or S8 or S9 or S10 or S11 or S12 or S13 or S14 (353441)
- S16 (MH "United Kingdom+") (204333)
- S17 (TI uk) or (TI united kingdom) or (TI britain) or (TI gb) or (TI gbr) or (TI british isles) (10823)
- S18 (AB uk) or (AB united kingdom) or (AB britain) or (AB gb) or (AB gbr) or (AB british isles) (20559)
- S19 (TI england) or (TI scotland) or (TI wales) or (TI ireland) (8810)
- S20 (AB england) or (AB scotland) or (AB wales) or (AB ireland) (13884)
- S21 (TI nhs) or (AB nhs) or (TI national health service) or (AB national health service) (16215)
- S22 S16 or S17 or S18 or S19 or S20 or S21 (222806)
- S23 (MH "Smoking/PC/TH") (4625)
- S24 (MH "Tobacco+") (3999)
- S25 (MH "Tobacco Abuse (Saba CCC)") (1)
- S26 chewing tobacco (64)
- S27 (pipe N2 smok*) (56)
- S28 (cigar* or bidi* or kretek or paan or gutka or snuff or snus or betel) (8413)
- S29 S23 or S24 or S25 or S26 or S27 or S28 (14802)
- S30 (quit* or stop* or giv* or ceas* or cessation or withdrawal) (108214)
- S31 S29 and S30 (4436)
- S32 (MH "Tobacco Abuse Control (Saba CCC)") (1)
- S33 (MH "Smoking Cessation") (9645)
- S34 (MH "Smoking Cessation Programs") (1183)
- S35 smoking cessation (11658)
- S36 S31 or S32 or S33 or S34 or S35 (12706)
- S37 (MH "Substance Use Disorders+") (75086)
- S38 (MH "Alcohol Drinking") (12143)

S39 overdos* or over-dos* or excessive use (3674)

S40 (drug N3 addict*) or (drug N3 dependen*) or (drug N3 abuse*) or (drug N3 misuse) or (drug N3 withdraw*) or (drug N3 intoxicat*) or (drug N3 abstinen*) or (drug N3 abstain*) or (substance N3 addict*) or (substance N3 dependen*) or (substance N3 abuse*) or (substance N3 misuse) or (substance N3 withdraw*) or (substance N3 intoxicat*) or (substance N3 abstinen*) or (substance N3 abstain*) or (alcohol* N3 addict*) or (alcohol* N3 dependen*) or (alcohol* N3 abuse*) or (alcohol* N3 misuse) or (alcohol* N3 withdraw*) or (alcohol* N3 intoxicat*) or (alcohol* N3 abstinen*) or (alcohol* N3 abstain*) (52077)

S41 (alcohol* N3 consumption) or (alcohol* N3 drink*) (15241)

S42 (MH "Amphetamines+") (2084)

S43 (MH "Adrenergic Agents+") (21849)

S44 (MH "Antianxiety Agents+") (6414)

S45 (MH "Antidepressive Agents+") (12177)

S46 (MH "Barbiturates+") (1274)

S47 (MH "Cannabis") (3112)

S48 (MH "Cocaine+") (2696)

S49 (MH "Designer Drugs") (93)

S50 (MH "Hallucinogens+") (1045)

S51 (MH "Heroin") (1438)

S52 (MH "Ketamine") (1402)

S53 (MH "Lysergic Acid Diethylamide") (138)

S54 (MH "Opium") OR (MH "Methadone") (2666)

S55 (MH "Street Drugs+") (2559)

S56 alcohol or amphetamine* or angel dust or barbiturate* or cannabis or cocaine (40635)

S57 designer drug* or dexedrine or diet pill* or dissociative drug* or doping or dxm (994)

S58 ephedra or ephedrine or ecstasy or hallucinogen* or hash oil* or hashish or heroin (4037)

S59 illicit drug* or inhalant* or ketamine or lsd or lysergic-acid* or mescaline or Marihuana or marijuana (5973)

S60 mda or mdma or methadone or methcathinone or methamphetamine* or Narcotic (10588)

S61 opioid* or opiate* or opium or oxycontin or oxycodone or percocet or phencyclidine (12665)

S62 poppers or pseudophedrine or psychotomimetic* or roofies or salvia divinorum or solvent* (1547)

S63 stimulant* or steroid abuse or street-drug* or tranquili?er* or valium or vicodin (5183)

S64 S37 or S38 or S39 or S40 or S41 or S42 or S43 or S44 or S45 or S46 or S47 or S48 or S49 or S50 or S51 or S52 or S53 or S54 or S55 or S56 or S57 or S58 or S59 or S60 or S61 or S62 or S63 (159167)

S65 (MH "Motor Activity") (4522)

S66 (MH "Exercise+") (48670)

S67 (MH "Therapeutic Exercise+") (25350)

S68 (physical* N2 activit*) or (physical* N2 exerc*) or (physical* N2 fitness) or (motor* N2 activit*) or (motor* N2 exerc*) or (motor* N2 fitness) (35855)

S69 exercis* (78866)

S70 (physical* N5 fit*) or (physical N5 activ*) or (physical* endur*) (34087)

S71 (exercis* N5 fit*) or (exercis* N5 activ*) or (exercis* endur*) (4368)

S72 (promot* N5 physical* activit*) (1249)

S73 (promot* N5 exercis*) or (uptak* N5 exercis*) or (encourag* N5 exercis*) or (increas* N5 exercis*) or (start* N5 exercis*) or (adher* N5 exercis*) or (maintain* N5 exercis*) or (sustain* N5 exercis*) (5780)

S74 (decreas* N5 sedentary) or (reduc* N5 sedentary) or (discourag* N5 sedentary)(179)

S75 pedomet* or step counter* or walk* (19773)

S76 bicycl* or bike* or cycling or riding or rides (7102)

S77 (active N5 transport*) or (active N5 journey*) or (activity N5 transport*) or (activity N5 journey*) or (active N5 travel*) or (activity N5 travel*) (464)

S78 (travel* N5 walk*) or (travel* N5 biking) or (travel* N5 cycle) or (travel* N5 mode) or (travel* N5 modes) or (travel* N5 route) or (travel* N5 routes) or (travel* N5 pattern*) or (travel* N5 plan*) or (travel* N5 rollerblad*) or (travel* N5 skateboard*) or (travel* N5 scooter*) or (travel* N5 rollerskat*) (275)

S79 (transport* N5 walk*) or (transport* N5 biking) or (transport* N5 cycle) or (transport* N5 mode) or (transport* N5 modes) or (transport* N5 route) or (transport* N5 routes) or (transport* N5 pattern*) or (transport* N5 plan*) or (transport* N5 rollerblad*) or (transport* N5 skateboard*) or (transport* N5 scooter*) or (transport* N5 rollerskat*) (439)

S80 (journey* N5 walk*) or (journey* N5 biking) or (journey* N5 cycle) or (journey* N5 mode) or (journey* N5 modes) or (journey* N5 route) or (journey* N5 routes) or (journey* N5 pattern*) or (journey* N5 plan*) or (journey* N5 rollerblad*) or (journey* N5 skateboard*) or (journey* N5 scooter*) or (journey* N5 rollerskat*) (65)

S81 (commut* N5 walk*) or (commut* N5 biking) or (commut* N5 cycle) or (commut* N5 mode) or (commut* N5 modes) or (commut* N5 route) or (commut* N5 routes) or (commut* N5 pattern*) or (commut* N5 plan*) or (commut* N5 rollerblad*) or (commut* N5 skateboard*) or (commut* N5 scooter*) or (commut* N5 rollerskat*) (45)

S82 health club* (114)

S83 (leisure N5 centre*) or (leisure N5 center*) or (leisure N5 facilit*) or (fitness N5 centre*) or (fitness N5 center*) or (fitness N5 facilit*) (1048)

S84 parks (325)

S85 fitness club* or wellness centre* or wellness center* (142)

S86 gym* (1179)

S87 pitch or pitches (1171)

S88 swimming pool* (253)

S89 health spa* (104)

S90 (MH "Sports Facilities") (13)

S91 swim* or walk* or running or biking or bicycl* or bike* or cycling or dance or dancing or aerobics sport* or horse riding or football or rugby or netball or cricket or hockey or rounders or athletic* or rollerblading or rollerskating or skating or skateboard* or play* or games or

tennis or badminton or racquet sport* or pilates or spinning or step* class* or physical education (102860)

S92 (MH "Physical Education and Training+") (1471)

S93 (MH "Sports+") (33214)

S94 S65 or S66 or S67 or S68 or S69 or S70 or S71 or S72 or S73 or S74 or S75 or S76 or S77 or S78 or S79 or S80 or S81 or S82 or S83 or S84 or S85 or S86 or S87 or S88 or S89 or S90 or S91 or S92 or S93 (195132)

S95 (MH "Immunization") (11351)

S96 (MH "Immunization Programs") (2686)

S97 (MH "Vaccines+") (22241)

S98 vaccin* not vaccinia (27290)

S99 immuni* not innate immunity (23775)

S100 (dtp N3 immuni*) or (dtap N3 immuni*) or (dpt N3 immuni*) or (dtp N3 vaccin*) or (dtap N3 vaccin*) or (dpt N3 vaccin*) or (dtp N3 jab) or (dtap N3 jab) or (dpt N3 jab) (155)

S101 (diphtheria N3 vaccin*) or (diphtheria N3 immuni*) or (diphtheria N3 jab) (804)

S102 (tetanus N3 vaccin*) or (tetanus N3 immuni*) or (tetanus N3 jab) (953)

S103 (whooping cough N3 vaccin*) or (whooping cough N3 immuni*) or (whooping cough N3 jab) (49)

S104 (pertussis N3 vaccin*) or (pertussis N3 immuni*) or (pertussis N3 jab) (1232)

S105 (polio* N3 vaccin*) or (polio* N3 immuni*) or (polio* N3 jab) (1032)

S106 (hib N3 vaccin*) or (hib N3 immuni*) or (hib N3 jab) (469)

S107 mmr vaccin* or pluserix or priorix or trimovax or triviraten berna or virivac (305)

S108 hpv vaccin* or papillomavirus (4524)

S109 anti-HBsAg or Engerix-B or Recombivax HB (26)

S110 (bcg N3 vaccine) or (bacillus N5 vaccine) (673)

S111 S95 or S96 or S97 or S98 or S99 or S100 or S101 or S102 or S103 or S104 or S105 or S106 or S107 or S108 or S109 or S110 (42373)

S112 (MH "Health Screening+") (41161)

S113 screening or screen (63781)

S114 S112 or S113 (71723)

S115 brief N3 intervention* (1593)

S116 counselling or counseling (28756)

S117 (minimal N5 intervention*) or (minimum N5 intervention*) or (low N5 intervention*) or (minimal N5 intensity) or (minimum N5 intensity) or (low N5 intensity) (3477)

S118 low-intensity (1010)

S119 advice (13453)

S120 motivational (3116)

S121 opportunistic (3704)

S122 self-help or self help (1939)

S123 S115 or S116 or S117 or S118 or S119 or S120 or S121 or S122 (53326)

S124 (MH "Harm Reduction") (1030)

S125 (risk* N3 reduc*) or (harm* N3 reduc*) (20116)

S126 safe* N2 behavi* (717)

S127 S124 or S125 or S126 (20746)

S128 (MH "Life Style+") (95547)

S129 lifestyle* (14280)

S130 inactivit* or sedentary (5427)

S131 health behavior or health behaviour (21084)

S132 (MH "Obesity+") (36187)

S133 (MH "Body Weight Changes+") (44713)

S134 (weight N3 gain) or (weight N3 loss) or (weight N3 change*) (20770)

S135 (overweight or over weight or overeat* or over eat*) (8337)

S136 (bmi N2 gain) or (bmi N2 loss) or (bmi N2 change) or (body mass index N2 gain) or (body mass index N2 loss) or (body mass index N2 change) (552)

S137 obes* (43293)

S138 food habit* or poor diet or healthy eating or fruit or vegetable* (15932)

S139 (MH "Leisure Activities+") (29040)

S140 leisure or relax* or holiday* or vacation* or recreation* or hobbies or hobby or play* (71526)

S141 S128 or S129 or S130 or S131 or S132 or S133 or S134 or S135 or S136 or S137 or S138 or S139 or S140 (246835)

S142 Limiters - Publication Type: Accration, Advice and Referral Website, Algorithm, Anecdote, Audiovisual, Biography, Book, Book Chapter, Book Review, Care Plan, Cartoon, Chat Groups, Classification Term, Commentary, Commercial Website, Computer Program, Consumer/Patient Teaching Materials, Critical Path, Diagnostic Images, Directories, orial, Equations & Formulas, Exam Questions, Forms, Games, Glossary, Individual Testimonial Website, Information Website, Interview, Legal Cases, Letter, Listservs, Nurse Practice Acts, Obituary, Pamphlet, Pamphlet Chapter, Pictorial, Poetry, Questionnaire/Scale, Questions and Answers, Quick Lesson, Software, Standards, Teaching Materials, Tracings, Website (1063759)

S143 S15 and S22 and S36 (408)

S144 S143 not S142 (309)

S145 S143 not S142 Limiters - Published Date from: 19900101-20101231; Language: English (289)

S146 S15 and S22 and S64 (1911)

S147 S146 not S142 (1469)

S148 S146 not S142 Limiters - Published Date from: 19900101-20101231; Language: English (1338)

S149 S15 and S22 and S94 (2352)

S150 S149 not S142 (1798)

S151 S149 not S142 Limiters - Published Date from: 19900101-20101231; Language: English (1718)

S152 S15 and S22 and S111 (963)

S153 S152 not S142 (659)

S154 S152 not S142 Limiters - Published Date from: 19900101-20101231; Language: English (606)

S155 S15 and S22 and S114 (4304)

S156 S155 not S142 (3262)
S157 S155 not S142 Limiters - Published Date from: 19900101-20101231; Language: English (2992)
S158 S15 and S22 and S123 (2956)
S159 S158 not S142 (2263)
S160 S158 not S142 Limiters - Published Date from: 19900101-20101231; Language: English (2112)
S161 S15 and S22 and S127 (350)
S162 S161 not S142 (262)
S163 S161 not S142 Limiters - Published Date from: 19900101-20101231; Language: English (245)
S164 S15 and S22 and S141 (3716)
S165 S164 not S142 (2789)
S166 S164 not S142 Limiters - Published Date from: 19900101-20101231; Language: English (2582)
S167 S145 or S148 or S151 or S154 or S157 or S160 or S163 or S166 (6211)
