

**Well North anticipatory
care project: Evaluation**

Supporting document:
Literature and context
review

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Well North Evaluation

Literature and Context Review

1. Approaches to anticipatory care

- 1.1 <http://www.shiftingthebalance.scot.nhs.uk/>, NHS Scotland.
- 1.2 Blamey, A., Ayana, M., Lawson, L., Mackinnon, J., Paterson, I., Judge, K., Final Report – The Independent Evaluation of Have a Heart Paisley (Summary): A National Health Demonstration Project. The University of Glasgow. (2004).
- 1.3 Sridharan, S, Gnich, W., Moffat, V., Bolton, J., Harkins, C., Hume, M., Nakaima, A., MacDougall, I., Docherty, P., Learning from the Independent Evaluation of Have a Heart Paisley – Phase 2. NHS Scotland. (2003).
- 1.4 Kerr, D. Kerr Report – Building a Health Service: Fit for the Future. Scottish Government (2005).
- 1.5 Evaluation of the Nairn Anticipatory Care Project, Final Report. University of Stirling. (2008).
- 1.6 National evaluation of Keep Well Policy & Practice Paper No. 1 Keep Well and the development of anticipatory care approaches in primary care, Published by NHS Health Scotland. (2010).
- 1.7 Lawson, K.D., Fenwick, E.A.L., Pell, A.C.H., Comparison of mass and targeted screening - Strategies for cardiovascular risk: Simulation of the effectiveness, cost-effectiveness and coverage using a cross sectional survey of 3921 people. Heart 2010 96: 208-212.
- 1.8 Griffin, S.J., Chanman, P., Simmons, R. K., Khaw, K. T., Whareham, N. J., Estimating the population impact of screening strategies for identifying and treating people at high risk of cardiovascular disease: modelling study. BMJ 2010;340: c1693.
- 1.9 National Evaluation of Keep Well Policy & Practice Paper No. 5. Who are reached by Keep Well? Characteristics of attendees by cardiovascular risk factors. NHS Health Scotland. (2010).

2. Experience of delivering services in rural and remote areas

- 2.1 The (Scottish Government) Remote and Rural Steering Group. Delivering for Remote and Rural Healthcare: The Final Report of the Remote and Rural Workstream. (2007).
- 2.2 Scottish Parliament Health and Sport Committee. Report on out-of-hours healthcare provision in rural areas. Report, SP Paper 421 HC/S3/10/R4, 4th Report. (2010).
- 2.3 Roberts, A., Godden, D.J., Garrett, L. Garrett Evaluation of the use of Telehealth in Argyll and Bute: Final Report. Centre for Rural Health Research and Policy (2010).

3. Health inequalities

- 3.1 **Scottish Public Health Observatory (ScotPHO) website -** <http://www.scotpho.org.uk/home/home.asp>.
- 3.2 Scottish Government. (1999). White Paper – Towards a Healthier Scotland.
- 3.3 Scottish Government. (2003). Partnership for Care, the Challenge, White Paper.
- 3.4 Scottish Government. (2003). Improving Health in Scotland – The Challenge.
- 3.5 Scottish Government. (2003). Measuring Inequalities Working Group. Inequalities in Health: A Report of the Measuring Inequalities in Health Working Group.
- 3.6 Scottish Government Report (2005). Delivering for Health.
- 3.7 Scottish Government. (2007). Better Health, Better Care: Action Plan.

- 3.8 Scottish Government. (2008) Equally Well: Ministerial task force on health inequalities.
- 3.9 Scottish Government. Health Analytical Services Division. (2008). First Report on headline Indicators (Equally Well).
- 3.10 Macintyre, S., Inequalities in Health in Scotland – What are they and what can we do about them? Medical Research Council Social and Public Health Services Unit, Occasional Paper 17. (2007).

4. Identifying and engaging hard to reach individuals

- 4.1 NHS Health Scotland. (2010) Policy and practice paper No. 2: Defining and Operationalising the Hard-To-Reach in Keep Well, Challenges in operationalising the term hard to reach,
- 4.2 NHS Health Scotland. (2010). Policy and practice paper No. 3: Models and Impact of Outreach in Keep Well.
- 4.3 NHS Health Scotland. (2011). National Evaluation of Keep Well & Policy Paper No. 7: Effect of deprivation on reach and engagement in general practice.

1. Approaches to Anticipatory Care

1.1 General overview - www.shiftingthebalance.scot.nhs.uk

According to NHS Scotland¹ anticipatory care and crisis prevention reduces avoidable unscheduled acute admissions, for people with a pre-existing condition; is structured, proactive care of patients with long term conditions; improves the quality of life of patients; and leads to a reduction in hospital admissions and in GP appointments.

Anticipatory care projects are being carried out throughout Scotland, and in the UK. For example:

- **Fife and Grampian are piloting ‘virtual wards’** for people most at risk of hospital admission in the coming year using multi-agency working to reduce hospital admissions among those most at risk.
- The introduction of the [Met Office COPD health forecasting scheme](#) in **East Lothian** demonstrated a reduction in admissions to acute hospital with COPD of over 20% in practices that used the scheme compared to an overall increase elsewhere in the area. **East Lothian, Moray and West Glasgow Community Health Partnerships** have all adopted the Met Office scheme.
- The **Cornwall Community Matron Service** has made a 59% reduction (30 per month) in admissions, as patients with long term conditions are increasingly managed in primary care. Source: Institute for Innovation and Improvement Contact.
- **Lanarkshire** partnerships are implementing proactive integrated care management across 6 localities for people identified as at high risk via SPARRA, referral from practitioner or from hospital. There is some early evidence of a reduction in emergency bed days as well as clear qualitative improvements.
- **NHS Dumfries and Galloway falls coordinators** oversee an integrated programme which includes: advice on falls prevention; community-based exercise classes support programmes for the general population; A&E staff and all community practitioners identifying older people at high risk; assessment of risk factors for those identified at high risk; intervention including Tai Chi, strength and balance exercises in a class setting or at home; equipment provision and social care.

1.2 (Blamey, A., *et al.* (2004). Final Report – The Independent Evaluation of Have a Heart Paisley (Summary): A National Health Demonstration Project. The University of Glasgow.

There are substantial health inequalities within Paisley and CHD (Coronary Heart Disease) mortality is strongly associated with increasing deprivation.

This evaluation suggests that patients who participated say that they have received enormous support and encouragement in their attempts to tackle their health issues. However, despite the establishment of a range of activities, there is limited evidence that indicates that the project has managed to achieve a shift in total CHD risk or in key risk factors or behaviours at a population level, or among key targeted sub-groups. Whilst it cannot be totally ruled out that change in CHD risk status or factors has occurred and gone unmeasured, the detailed process information that has been gathered by the independent

¹ <http://www.shiftingthebalance.scot.nhs.uk/improvement-framework/high-impact-changes/anticipatory-care-and-crisis-prevention/>

evaluation suggests that the project has suffered from many of the difficulties and repeated many of the mistakes of previous CHD prevention programmes.

The evaluation concludes that the project may be more successful in its subsequent phases if it redesigns its programme to focus on fewer headline objectives, and attempts to address these through interventions that have a strong evidence-base.

1.3 Sridharan, S. *et al* (2003). Learning from the Independent Evaluation of Have a Heart Paisley – Phase 2. NHS Scotland.

One of the goals Have a Heart Paisley set out to achieve was a targeted programme for the working age population (aged 45 to 60), and for those with existing heart disease, in Paisley. The aim of Phase 2 of the programme was to demonstrate the degree to which primary and secondary preventive measures can improve cardiac health by tackling risk factors and unmet needs for treatment. Phase 2 of the programme primarily focused on supporting those with the greatest risk of developing heart disease and making services accessible to those most in need, particularly living in the more deprived areas of Paisley.

The Phase 2 programme was delivered through three activities:

- **Primary prevention** targeted those aged 45-60 years old through delivery of a tailored primary prevention system. The overall aim was to reduce the targeted population's risk of cardiovascular disease.
- **Secondary prevention** targeted Paisley residents of any age who already had been identified with CHD, but whose condition was stable enough to be managed in the primary care setting.
- **Cardiac rehabilitation** focused on the development and integration of community based cardiac rehabilitation and risk factor modification.

The evaluation of Phase 2 suggests that implementation of the secondary prevention programme was limited by low rates of referral from primary care. Programme staff perceived the main reasons for this to be related to the willingness or ability either of primary care staff to refer or of clients to engage. In particular, staff noted that some practices in the areas of highest deprivation did not run dedicated CHD clinics and thus this group of clients were more likely to have been excluded. This was perceived to have negatively affected the programme's ability to address diversity of client need.

Primary care partnership working is highly recommended for successful implementation of prevention programmes related to community health and there was a perception among staff that stronger links between primary care and the secondary prevention programme may have facilitated higher levels of referral and participation. A related suggestion was that the programmes nursing staff, employed to conduct health screening for the primary prevention dimension, could have supported practices to undertake their secondary prevention clinics. This points towards a more general recognition of the need to use healthcare resources comprehensively and not in silos or boxes.

The need to engage GPs in the referral process was recognised by staff and reinforced by client reports. The patient's perception of the strength of a physician's recommendation has been identified in many studies as a strong predictor of engagement with cardiac health related interventions (Dinnes *et al*, 1999; Jackson *et al*, 2005).

Clients' willingness to engage was also perceived to be affected by a lack of adequate promotion and marketing of the programme. The requirement to take an Exercise Treadmill Test was thought to be off-putting for some clients and the risk stratification procedure was

considered to have unnecessarily excluded some clients. However, programme staff were generally positive about the value of the Secondary Prevention programme despite the lower than expected number of referrals.

Clients who engaged with the programme also described positive perceptions of their experience, although most of those interviewed did not complete the programme and many reported that they did not sustain behaviour changes although they reported lasting attitude changes.

1.4 Kerr, D. (2005). Kerr Report – Building a Health Service: Fit for the Future.

In planning the future of the NHS in Scotland the Kerr Report identified a need to:

- ensure sustainable and safe local services;
- redesign where possible to meet local needs and expectations – specialise where required having regard to clinical benefit and to access; and
- view the NHS as a service delivered predominantly in local communities rather than in hospitals.

Ninety per cent of health care is delivered in primary care but most attention is on the other 10%. The current emphasis on hospitals does not provide the care that people are likely to need.

The report identified 10 key proposals:

- All NHS Boards to put in place a systematic approach to caring for the most vulnerable (especially older people) with long term conditions with a view to managing their conditions at home or in the community and reducing the chance of hospitalisation.
- Targeted action in deprived areas to reach out with anticipatory care to prevent future ill-health and help reduce health inequality.
- Support for patients and their carers to manage their own health care needs and to help others with similar conditions.
- Implement urgently a national information and communications technology (ICT) system, including an electronic patient record and the development of tele-medicine, as a means to improve access, quality, research and integration of the NHS.
- Empower multi-disciplinary teams in community casualty departments to provide the vast majority of hospital-based unscheduled care – networked by tele-medicine to consultant led emergency units.
- Shorten waiting times and inform patient choice by separating planned care from urgent cases, treating day surgery as the norm (rather than inpatient surgery), enabling better community based access to diagnostics, developing referral management services and introducing a delivery function that will draw on best practice across the world to further speed up patient access to services.
- Concentrate specialised or complex care on fewer sites to secure clinical benefit or manage clinical risk.
- Develop networks of rural hospitals to support our remote communities and establish a Clinical School for Rural Health Care to ensure workforce development.
- A step change in the development of regional planning to ensure that Health Boards make regionally based decisions about the shape of hospital based health services.
- Set a clear agenda for Community Health Partnerships to work across barriers between primary and secondary care and engage with partners in social care to shift the balance of care.

1.5 University of Stirling (2008). Evaluation of the Nairn Anticipatory Care Project, Final Report.

The underlying principle of the Nairn Anticipatory Care Project is the identification of patients who are at greatest risk of hospital admissions and the targeting of resources towards their management. Initial quantitative analysis has shown the Nairn Case Finder to be efficient as a screening tool to identify those at highest risk of unplanned hospital admission.

For each of the 500, a health status assessment is conducted and an Anticipatory Care Plan (ACP) is developed, which includes some common anticipated events, such as:

- carer illness
- acute medical problem
- acute surgical problem
- slow gradual decline of multiple chronic diseases
- preferred place of death and resuscitation status.

The project has evolved, since its inception, and now additionally provides reactive immediate support and care for patients referred for either supported discharge from hospital or prevention of hospital admission. Currently, with less than 3% of the patient list receiving a more managed approach to their care, Nairn is on target for a 15% reduction in occupied bed days. All the patients interviewed for the evaluation stated that they benefited practically, emotionally or practically and emotionally from the input. Some patients placed an emphasis on the reassurance they were given on the potential future issues related to living with of a long-term condition whilst others emphasised the value of the emotional and practical support they received which enabled them to regain their confidence and independence.

The evaluation suggests that a number of constructive lessons can be learned from the Nairn Anticipatory Care Project in terms of proactive and reactive care in the community as both people 'at risk' and 'in crisis' in Nairn who were interviewed for this evaluation found the project immensely helpful. The varied professionals interviewed for this evaluation proffered the same opinion. Currently, with the small local population and a very committed team, the project seems to be offering a good service to the targeted and referred patients. However, the evaluation suggests that there is a danger that the proactive side of the project may be sacrificed, at least on occasion, for the reactive care element.

1.6 NHS Health Scotland 2010. National evaluation of Keep Well Policy & Practice: Paper No. 1: Keep Well and the development of anticipatory care approaches in primary care.

The purpose of this paper was to:

- explore and explain the tensions and challenges underpinning the delivery of *an anticipatory care approach in primary care*, as defined and operationalised by national and local level Keep Well stakeholders; and
- to highlight the policy and practice implications resulting from these tensions.

The paper concludes that, Keep Well is a flagship for the approach of anticipatory care as delivered through general practice and linking to wider, community-based interventions. However, this has led to a series of tensions and challenges, which need to be explained and resolved, in order to inform the future development of such approaches. In addition, patients themselves may need to be supported to believe that they are eligible for such preventive approaches to health, as for some patients, the notion that they may be either a candidate for disease or a legitimate recipient of services may be new to them.

1.7 Lawson, K.D., et al. Comparison of mass and targeted screening - Strategies for cardiovascular risk: Simulation of the effectiveness, cost-effectiveness and coverage using a cross sectional survey of 3921 people, Heart 2010 96: 208-212.

This paper presents the findings of a simulated model of different screening strategies, with a view to establishing the most effective and cost effective method of screening for those at high risk of cardiovascular disease. These were:

- mass screening
- targeted screening of deprived communities
- targeted screening of family members
- combinations of the latter two.

The main findings of this research are that targeted screenings are considerably more cost effective than mass screenings, whilst also identifying a very large majority of those at high risk of cardiovascular disease. By using a combination of targeted screening of deprived communities and a screening of family members, it was shown that:

- to identify one individual at high risk of premature cardiovascular disease using mass screening required 16.0 people to be screened at a cost of **£370**
- screening of deprived communities, on the other hand, targeted 17% of the general population but identified 45% of those at high risk, and identified one high-risk individual for every 6.1 people screened at a cost of **£141**
- screening family members of those who had died as a result of cardiovascular disease targeted 28% of the general population but identified 61% of those at high risk, and identified one high-risk individual for every 7.4 people screened at a cost of **£170**.

Combining both approaches enabled 84% of high risk individuals to be identified by screening only 41% of the population. The paper goes further and suggests that extending targeting to mass screening identified only one additional high-risk person for every 58.8 screened at a cost of £1,358.

The paper concludes that targeted screening strategies are less costly than mass screening, and can identify up to 84% of high-risk individuals. The additional resources required for mass screening, they propose, may not therefore be justified.

1.8 Griffin, S.J., et al. Estimating the population impact of screening strategies for identifying and treating people at high risk of cardiovascular disease: modelling study, BMJ 2010;340:c1693.

This paper set out to estimate the potential impact of different screening strategies for identifying and treating people at high risk of cardiovascular disease. Significantly, this included strategies which made use of routine data for cardiovascular risk stratification, in light of the UK Government's recommended national strategy to screen all adults aged 40-74 for cardiovascular risk. The study was conducted with the participation of 16,970 men and women who were free from cardiovascular disease and diabetes at baseline aged between 40 and 74.

The key results of the research were that, compared with the recommended Government strategy, a screening approach using routinely available data could prevent a similar number of new cardiovascular events annually but requiring only 60% of the population to be invited to attend a vascular risk assessment. The research goes on to suggest that a similar result might be achieved by inviting everyone aged 50-74 for a vascular assessment, rather than everyone aged between 40 and 74.

The conclusion reached, therefore, in the paper is that compared with the UK government's recommended national strategy to screen all adults aged 40-74 for cardiovascular risk, an approach using routine data for cardiovascular risk stratification before inviting people at high risk for a vascular risk assessment may be similarly effective at preventing new cases of cardiovascular disease, but with the added benefit of potential cost savings.

1.9 NHS Health Scotland (2010). National evaluation of Keep Well Policy & Practice Paper No. 5: Who are reached by Keep Well? Characteristics of attendees by Cardiovascular risk factors.

This paper set out to examine the heart health of the target population who were living in some of the most deprived areas of Scotland, and to assess the extent of the burden of cardiovascular risk in these communities.

The Keep Well health check is said to have identified that around one fifth of attendees, who had no pre-existing heart disease, were at very high risk (20% threshold) of developing cardiovascular disease in the next 10 years. This degree of high risk extended even to those patients who were living in more affluent areas. The report states that the size of the population identified as being at risk was much greater than that reported in recent papers developing risk prediction algorithms in population cohorts in England (Hippisley-Cox, Coupland, Vinogradova, Robson, May, & Brindle 2007; Hippisley-Cox, Coupland, Vinogradova, Robson, Minhas, Sheikh, & Brindle 2008), which, they claim, suggests that the Keep Well approach has indeed been successful in identifying and engaging with a high risk population group.

Some of the key findings of the research included:

- Those who attended for a health check had, on average, a 14% risk of developing cardiovascular disease in the next 10 years.
- The pattern of attendees' cardiovascular risk factors varied across the pilots; however these differences between areas were small.
- The prevalence of some cardiovascular risk factors was high among attendees; for instance, more than half had cholesterol levels over 5.0mmol/l; over half were over-weight; over a quarter had raised blood pressure (systolic blood pressure greater than 140mmHg). In addition, one fifth of attendees were obese.
- Most risk factors were higher for the Keep Well population than for the general Scottish population, in particular smoking, hypertension, and HDL cholesterol.
- In each site, one fifth were at very high risk of developing cardiovascular disease in the future (CVD risk >20% in the next ten years).
- This was much higher than the predicted levels using either QRISK or Framingham in a general population sample in England.
- The prevalence of smokers and those with high CVD risk (>20%) increased with increasing deprivation. However, even among those from more affluent areas, the prevalence of risk factors and the proportion with high levels of CVD risk were substantial.

The paper concludes that the Keep Well health check is a valuable method of detecting individuals with CVD risk factors. The results, the report suggests, show persisting inequalities in the prevalence of risks for developing cardiovascular disease among the target population, although absolute differences in the prevalence of CVD risk factors such as high cholesterol and high blood pressure were marginal. However, they believe that targeted screening of those living in areas of socio-economic deprivation, did identify a

population at very high risk of developing CVD and with high levels of modifiable risk factors, such as smoking, high blood pressure and obesity.

2. Delivering Services in Rural and Remote Areas

2.1 Scottish Government (2007). Remote and Rural Steering Group, Delivering for Remote and Rural Healthcare: The Final Report of the Remote and Rural Workstream.

The remote and rural steering group were tasked to develop a policy for sustainable remote and rural healthcare services. It was established to develop a framework for sustainable healthcare within remote and rural Scotland. They identify several differences in the health experience between those in remote/rural areas and those in less remote areas. Whilst having fundamentally similar disease patterns, remote communities experience:

- higher suicide rates;
- higher incidence of alcohol related disease;
- a higher number of accidents in rural areas on roads and through climbing, farming, diving and fishing;
- a palliative care workload which is proportionally higher than might be seen in urban areas, as patients from remote areas often prefer to or are enabled to die at home, rather than in a distant centre; and
- a seasonal fluctuation in population.

The steering group was set 6 overarching targets:

- Deliver a strategy for sustainable healthcare in remote and rural Scotland, through a number of sub-groups, by acting as Programme Board for Projects, ensuring linkages between relevant projects and identifying synergies, cross cutting issues and gaps to be addressed.
- Define the role and function of a Rural General Hospital.
- Develop a framework of generic principles of service delivery for primary care in remote settings.
- Develop a rural education strategy, in support of the national agenda, including development of a proposal to establish a virtual school of rural healthcare.
- Review the role of the Helicopter Emergency Medical Retrieval Services to determine the appropriateness of this service in supporting unscheduled care in remote and rural areas.
- Develop workforce planning arrangements to support the remote and rural agenda.

The steering group proposed a model of rural health care which describes how much clinical care can be provided within local communities, with only a minority of cases requiring further referral out-with that community. They described how this would be achieved as follows:

'Within the remote and rural communities of Scotland, there are a limited number of health and social care professionals, whose skills and expertise need to be shared if communities are to have local access to the widest possible spectrum of care. The development of Extended Community Care Teams (ECCT) will ensure that a robust system of locally available services is both available and sustainable.'

All remote and rural areas will also have access to intermediate care services, some within a Community Hospital (CH) and others delivered through augmented care within a patient's home. Whilst some communities have access to a Community Hospital, others may have a Rural General Hospital (RGH), which may fulfil the Community Hospital function or these may be separate.

Services must be well planned and co-ordinated with a greater focus on more collective and collaborative responses within and across communities. This will include the formalisation of networks to ensure that larger centres are obligated to support and sustain healthcare services in remote and rural areas’.

The Report also drew up a series of suggested commitments for rural health. A brief summary of these are as follows:

- Health care provision in remote and rural communities should support self-care.
- CHPs (Community Health Partnerships) should ensure that teams are integrated and co-located including health and other relevant organisations.
- Priority is given to anticipatory care and the prevention of disease escalation.
- Action Plans are developed for implementing long-term condition management.
- There is local access to an emergency care service and that there is collaboration with the Scottish Ambulance Service to develop robust community emergency response systems.
- The system of care should ensure that people can be cared for as close to home as possible; remote Community Hospitals, acting as Community Resource hubs, should provide an agreed range of services, including enhanced diagnostics.
- NHS Boards should seek to maximise the provision of appropriate secondary care undertaken locally; the Rural General Hospital should be defined as a Level 2+ facility.
- The focus of mental health services in remote and rural communities must be upon early detection and prevention of disease escalation.
- Health and social care within remote and rural areas should be organised as integrated teams, known as Extended Community Care Teams (ECCT).
- Community Resource Hubs should have a skill mix appropriate to the health needs of the community.
- NHS Boards should review their primary care premises and prioritise their capital plans to include purpose built premises, working in collaboration with local authorities and other agencies to facilitate the co-location of teams.
- The Emergency Medical Retrieval Service (EMRS) Pilot should be established as soon as possible.
- The EMRS pilot should be supported by an independent evaluation including a prospective study which identifies the needs of the northern Highlands and the northern islands of Scotland.

2.2 Scottish Parliament, Health and Sport Committee (2010). Report on out-of-hours healthcare provision in rural areas, Report, SP Paper 421 HC/S3/10/R4, 4th Report, (Session 3).

The Report discusses the provision of out-of-hours healthcare in rural areas since the changes to rules requiring all GP practices to provide out of hours care in 2004. It suggests that new ways of working have developed, and ‘GP co-operatives’ have become the main replacement, whilst out-of-hours centres, telephone triage and consultation, and walk-in nurse-led clinics all added to the new mix of out of hours service. GPs in rural areas were also given the opportunity of having the support of an associate practitioner.

The Report arrived at a number of conclusions about how out of hours care is provided in Scotland’s rural areas. Significant among these were:

- The 41% increase in emergency calls made out-of-hours since the new GMS contract of 2004.
- The improvement of the NHS 24 system.

- A general confusion among the public over out of hours care and a loss of public confidence in the out of hours service.
- A lack of services working together in providing out of hours care.
- NHS boards should be responsible for delivering innovative arrangements for out of hours care in consultation with communities.
- Rural communities report 'grave problems' with the availability of ambulances to deal with emergency situations.
- A need for a continued support for GPs who have retained the responsibility for out-of-hours care to undertake training and fulfil family and personal commitments.

2.3 Roberts, A. *et al.* (2010). Centre for Rural Health Research and Policy. Evaluation of the use of Telehealth in Argyll and Bute: Final Report.

The Argyll and Bute Telehealth Project evolved as a development from the existing Telecare Service. Key aims of the project were:

- to expand the use of technology to support long term conditions;
- to develop expertise in local staff to use remote monitoring as part of patient care;
- to expand the specialist knowledge available in one locality by developing practitioners with a special interest in the project areas;
- to link the work on monitoring long term conditions to the reduction in crisis admissions to hospital for this patient group;
- to monitor in conjunction with other agencies the effectiveness of this work;
- to showcase Argyll and Bute as an innovative and forward thinking Partnership area; and
- to assist patients to manage their long term conditions.

Three types of Telehealth initiative were trialled:

- home Telehealth Pods for patients with COPD on the Isle of Bute and Isle of Luing;
- surgery Telehealth Pods for more general patient monitoring in Oban, and Rothesay on the Isle of Bute; and
- community Telehealth Pods in Oban and the Isle of Luing.

Touch screen Pods are designed to enable patients to measure and record a range of key variables, including their own weight, body mass index (BMI), oxygen saturation, pulse and blood pressure without clinical supervision.

Key Findings:

- Users were generally older people (range 61-102 years). Seventeen home-based Pods were installed, of which 5 were subsequently removed. Patients with home Pods were expected to use the Pod to report daily; compliance was close to 100%. For the community based Pods, 13 patients in Luing made 50 uses out of an expected total of 130 (38%). Seventeen patients in sheltered housing signed on to use the Pod and were asked to attend monthly; they made 49 uses out of an expected 96 (51%). Usage tended to drop off with time.
- For the COPD patients with home Pods, comparing the periods March-November in 2008 and 2009 (i.e. pre and post-Pod installation) there was a reduction in GP visits from 47 to 28; A&E attendances from 9 to 2; hospital admissions related to COPD, from 11 to 1 and days of bed occupancy from 72 to 8.
- General satisfaction with the use of Telehealth Pods was high for all groups of patients, particularly the COPD patients who had home Pods. Specifically, patients felt comfortable and safe using the Telehealth technology, did not find it difficult, and felt that it improved awareness of their condition and was helpful in their setting. Qualitative feedback was also generally very positive about the use of home

monitoring Pods in Argyll & Bute for patients with COPD, although a number of issues concerning training, communication, and integration with existing work patterns were identified.

A number of conclusions and recommendations were made in the evaluation.

Conclusions

- Technical challenges hampered the integration of the community and surgery Pods; usage of the home Pods was high, whilst the community and surgery Pods were less well used when compared to target usage, but it remains early days for the latter installations.
- One might anticipate that usage will increase with time.
- Satisfaction with the use of Telehealth Pods in Argyll & Bute is generally high.
- Use of the home Pods for COPD show greatest satisfaction from both patient and health professional perspectives.
- Anticipatory care plans were completed in later stages of the pilot for the patients on home based Pods to allow a planned approach to crisis prevention and management and highlighting to the out of hours service that these patients had home monitoring in place.

Both the qualitative and quantitative results indicate that patients are satisfied using the telehealth Pods, finding them easy to use, improving awareness of self and being appropriate for a remote and rural setting; numbers and duration of hospital admissions for COPD declined in a comparable time period following installation of the Pods.

Recommendations

Overall findings of the evaluation are positive and support continuation of the Telehealth scheme.

- Inclusion of larger numbers of patients will permit formal statistical testing of efficacy.
- Future linkage of home Pods into a central location such as the Highland Hub could offer a co-ordinated response to patient alerts arising from monitoring systems.
- Aligning response protocols of the programme with staff work patterns is important; reliable, secure linkage to surgery record systems is encouraged (and was established following the evaluation period).
- Staff, particularly nurses, found the early stages of the Telehealth project challenging – some of these issues could have been addressed with additional communication, support and training.

3. Health Inequalities

3.1 Scottish Public Health Observatory – (ScotPHO)

http://www.scotpho.org.uk/home/Comparativehealth/health_inequalities/health_inequalities_policy.asp

The Scottish Public Health Observatory (ScotPHO) is a collaboration which brings together key national organisations involved in public health intelligence in Scotland, led by ISD Scotland (Information Services Division (ISD) and NHS Health Scotland. They seek to ensure the public health community has easy access to clear and relevant information and statistics to support decision making.

With regard to health inequalities ScotPHO provides a useful overview of the policy context for looking at health inequalities:

- Since devolution, a number of policy documents have focused on the issue of health inequalities in Scotland. The influential **1999 White Paper, Towards A Healthier Scotland**, recognised that health improvement action should encompass life circumstances as well as lifestyles and priority diseases, with all action underpinned by the need to reduce health inequalities. ScotPHO itself was built upon by subsequent policy documents such as the **2003 White Paper, Partnership for Care, the Challenge; Improving Health in Scotland: The Challenge, 2003**, and the **2005 Delivering for Health report**, all of which highlighted the need to reduce inequalities in health.
- In 2007, the current Scottish Government set up a **Ministerial Task Force on Health Inequalities**. The report of the Task Force, **Equally Well**, was published in 2008 and outlined recommendations for tackling the underlying causes of health inequalities under a range of key headings including: early years & young people; poverty & employment; physical environments & transport; alcohol, drugs & violence; health and wellbeing. Alongside two other Scottish Government-COSLA joint publications - **Achieving Our Potential: A Framework to Tackle Poverty and Income Inequality in Scotland, 2008** and **The Early Years Framework** - Equally Well is seen as the basis for cross-sector action on reducing inequalities in Scotland.

3.2 Scottish Government (1999). White Paper – Towards a Healthier Scotland.

This White Paper follows on from the Government's 1998 Green Paper *Working Together for a Healthier Scotland* and sets out their plans for improving health in Scotland. It calls for a coherent attack on health inequalities, a special focus on improving children and young people's health, and initiatives to drive down cancer and heart disease rates.

Three 'action levels' were set which formed the basis of national priorities in addressing the health needs of Scotland; these were:

- **Life circumstances:** (e.g. unemployment, poverty, poor housing, etc). These were to be improved through Social Inclusion Partnerships to promote inclusion and prevent exclusion in both urban and rural areas, and the New Deal for Communities programme which will help deprived communities articulate their needs better. A Social Inclusion Strategy will provide the framework for further co-ordinated action to promote social inclusion.
- **Lifestyles:** Aims include: less smoking, drug and alcohol misuse, and a new national committee to guide implementation of Government strategy; a healthier diet; more physical activity and a new Task Force to develop a National Physical Activity Strategy for Scotland.
- **Health topics:** In the 1998 Green Paper, the Government announced a number of priority health topics to which child health was added.

3.3 Scottish Government (2003). White Paper - Partnership for Care, the Challenge.

This White Paper focused on the promotion of health in the broadest sense and the creation of a 21st century health service. In particular, it focussed on patients and national standards as the key drivers of change in the health service and frontline staff as leaders of change. It sought a step change in Scotland's approach to health improvement.

It focussed on a range of headline goals grouped around a number of broad headings, which included:

- **Health Improvement**
 - a new approach to improve health in Scotland and to reduce health inequalities
 - a sustained effort to tackle the lifestyles and circumstances which damage health
 - new actions focused on early years; teenage transition; the workplace and in communities
 - legislation to secure the place of Health Improvement in Community Planning.
- **Listening to Patients**
 - a new statement of a patient's rights and responsibilities
 - patients treated as full partners in their healthcare
 - better NHS complaint handling with new legal rights if necessary
 - better health information through a Patient Information Initiative and NHS 24.
- **Quality, National Standards and Inspection**
 - a new guarantee of service within national waiting time targets
 - new clinical targets and local targets for waiting times to drive service improvement; patients and public involved in developing standards
 - NHS Quality Improvement Scotland inspecting performance against standards
 - clear arrangements for intervention, with statutory powers to tackle service failure.
- **Partnership, Integration and Redesign**
 - redesigned services, to meet national standards and deliver quicker treatment
 - legislation to create new Community Health Partnerships matched better with social work services and with stronger roots in the community
 - new ways to involve health professionals in redesigning services
 - a challenge to NHS Boards to improve public involvement in service redesign
 - new Scottish Health Council to help the public engage with the Health Service
 - additional funding for service innovation
 - support from the Centre for Change and Innovation.
- **Empowering and Equipping Staff**
 - strengthened partnership between NHS Scotland and its workforce
 - support for local leadership in service redesign
 - more resource for workforce planning and development
 - new support for continuing professional development and training
 - better reward systems for staff at all levels
 - major investment in information services to achieve an Integrated Care Record
 - (Organising and Reform) abolition of NHS Trusts
 - a requirement on NHS Boards to devolve authority and involve clinicians in service
 - Redesign; Cost-effective support services.

3.4 Scottish Government Report (2003). Improving Health in Scotland – The Challenge.

This paper set out to provide a strategic framework to support the processes required to deliver a more rapid rate of health improvement in Scotland and highlighted further actions to improve the health of the people of Scotland. It followed the 1999 White Paper – Towards a Healthier Scotland, which had a particular focus on tackling health inequalities as the 'overarching aim' of the Executive's health improvement agenda.

The 'Challenge' facing Scotland was summarised as:

- Scotland has poor health by UK and European standards;
- Scotland has high levels of inequality in health outcomes for different socio economic groups (for example – in terms of life expectancy, rates of Coronary Heart Disease);
- Poverty in the broader sense is a central feature of the problem;
- There are strong cultural influences on health that have to be confronted;
- Health improvement requires change by both society and individuals; and
- History demonstrates that societies and people can adapt to meet new threats and challenges.

To address Scotland's problems, three main objectives were established:

- To set out the work programme of: the Scottish Executive's actions to improve health; the strengthened Special Health Board formed by the integration of the Public Health Institute of Scotland (PHIS) with the Health Education Board for Scotland (HEBS); health improvement activities within NHS Boards.
- To relate work programmes and processes across Scotland that are central to health improvement including: health improvement as a cross-cutting policy for the whole Programme for Government; Community Planning Partnerships; the health improvement work of COSLA and local authorities; the impact on health that arises from the work of the business sector, voluntary sector and other strands of Scottish life.
- To encourage the many organisations and individuals within Scotland who contribute to health improvement and to allow them the opportunity to influence future work and phases of this long-term plan for change.

3.5 Scottish Executive (2003). Health Inequalities: Inequalities in Health. Report of the Measuring Inequalities in Health Working Group.

The Measuring Inequalities in Health Working Group was set up by the Scottish Executive to determine the most appropriate indicators to use to monitor progress in tackling health inequalities. The 23 indicators recommended by the Working Group in this report were adopted in Improving Health in Scotland – The Challenge (2003). The remit of the Working Group was to consider alternative methods of measuring health inequalities in Scotland and to advise on possible targets. More specifically, the remit of the Group was to:

- identify the information required to monitor changes in health inequalities;
- collect and analyse the information currently available;
- identify data gaps and advise on alterations to existing data streams/generation of new data streams;
- advise on a range of measurement issues (e.g. which socio-economic and statistical measures to use);
- identify possible targets which could be set for reducing health inequalities in Scotland, and to consider the advantages and disadvantages of each and make recommendations.

The Report gave a broad summary for the main population groups of trends in the health inequality ratios.

- **Children:**
 - no significant change in inequalities related to dental caries in five year olds
 - low birthweight babies
 - breastfeeding
 - hospital accident admissions and infant mortality
 - a significant narrowing of inequalities in relation to mothers smoking during pregnancy.

- **Young People:**
 - no significant change in inequalities in the suicide rates
 - hospital accident admissions and teenage pregnancies, for both those aged 13-15 and those aged 13-19 years old.
- **Adults:**
 - lifestyle – a significant widening of inequalities between 1995 and 1998 in fresh fruit consumption for males but not for females
 - no significant change in inequalities in green vegetable consumption, smoking or obesity
 - self-reported health and long-standing illness – a significant increase in inequalities in females reporting a long-standing illness between 1999 and 2001 - no other significant changes between 1999 and 2001
 - mental health (GHQ12 scores) – no significant change in inequalities
 - mortality rates – there has been a significant widening of inequalities in coronary heart disease mortality rates for males between 1991 and 2001, the increase for females was not quite as significant.
 - there have been no significant changes in inequalities in cancer mortality rates
 - for all-cause mortality, the increases in inequalities between 1991 and 2001 have been significant for males but not for females
 - life expectancy – the inequality ratio has widened for males between 1991-93 and 2000-02 and remained fairly constant for females.
- **Older People:**
 - mortality rates - no significant changes in inequalities during the 1990s.

3.6 Scottish Government Report (2005). Delivering for Health.

This report set out a programme of action for the NHS, which stressed the need to reduce reliance on episodic, acute care in hospitals for treating illness. It emphasised the importance of a wider effort to improve health and well-being, through preventive medicine, through support for self-care, and through greater targeting of resources on those at greatest risk, with a more proactive approach in the form of anticipatory care services.

The reports' aim was to improve the health of the people of Scotland, and to close the (Social Economic Status) gap in life expectancy, in part by devolving care to a local level and encouraging people to take greater control over their own health.

A number of key actions were identified along with a statement of how these were to be implemented. These included:

- **reducing the health gap** by:
 - developing and delivering anticipatory care for those 'at risk' wherever they live and increasing health care services delivered in disadvantaged communities.
- **enabling people with long-term conditions to live healthy lives** by:
 - increasing support for self-care
 - anticipating the needs of vulnerable people and by identifying those people at greatest risk of hospital admission and providing them with earlier care to prevent deterioration of health and reduce emergency admissions.
- **establish new health and social care services in communities** by:
 - prioritising investment in local services
 - including Community Health Centres that deliver diagnostic and day-case treatment
 - developing practitioners with extended roles

- fully utilising the skills of all professionals through stronger teamwork in Community Health Partnerships
- accelerate improvements in mental health services, by identifying priorities for investment in a delivery plan that builds on our *Framework for Mental Health in Scotland*.
- **build on recent progress on waiting times** by:
 - delivering our waiting time commitments for 2007.

3.7 Scottish Government (2007). Better Health, Better Care: Action Plan.

The Better Health, Better Care Action Plan sets out the Scottish Government's programme to deliver a healthier Scotland by helping people to sustain and improve their health, especially in disadvantaged communities, ensuring better, local and faster access to health care.

Section two of the Action Plan specifically sets out to address health inequality by:

- increasing healthy life expectancy in Scotland;
- breaking the link between early life adversity and adult disease;
- reducing health inequalities, particularly in the most deprived communities; and
- reducing smoking, excessive alcohol consumption and other risk factors.

3.8 Scottish Government (2008). Equally Well: Ministerial task force on health inequalities.

The Task Force identified several key health inequalities facing Scotland:

- In 2006, healthy life expectancy at birth was 67.9 years for men and 69 years for women.
- In the most deprived 15% of areas in Scotland in 2005-06, healthy life expectancy at birth was considerably lower at 57.3 years for men and 59 years for women.
- A higher proportion of babies born to mothers living in the most deprived fifth of the population have a low birth weight than those born to mothers living in the most affluent areas (9% compared to 5% in 2004-05).
- In Scotland in 2006, people who had a low household income, or reported finding it difficult to manage on their household income, had poorer mental wellbeing than those with a high household income or who reported finding it easy to manage on their income.
- There are large and increasing relative inequalities in deaths among young adults due to drugs, alcohol, assault and suicide.
- In Scotland in 2006, more than two thirds of the total alcohol-related deaths were in the most deprived two fifths of areas.
- Those living in the most deprived 10% of areas of Scotland have a suicide risk double that of the Scottish average
- Adult smoking rates increase with increasing deprivation.
- In Scotland in 2005-06, smoking rates ranged from 11% in the least deprived 10% of areas to 44% in the most deprived 10%; compared with the non-South Asian population.
- The incidence of heart attacks in Scottish South Asians is 45% higher in men and 80% higher in women.
- Lesbian/gay/bisexual and transgender people experience lower self-esteem and higher rates of mental health problems and these have an impact on health behaviours, including higher reported rates of smoking, alcohol and drug use.

- Just under a quarter (24%) of all individuals in households with at least one disabled adult or disabled child are living in relative low income, compared to 16% of those in households with no disabled adults or disabled children.

In order to reduce inequalities in healthy life expectancy and wellbeing generally, the Task Force identified a number of priorities where action was most needed:

- Children's very early years, where inequalities may first arise and influence the rest of people's lives.
- The high economic, social and health burden imposed by mental illness, and the corresponding requirement to improve mental wellbeing.
- The 'big killer' diseases: cardiovascular disease and cancer - some risk factors for these, such as smoking, are strongly linked to deprivation.
- Drug and alcohol problems and links to violence that affect younger men in particular and where inequalities are widening.

In the light of these priorities, and evidence about what causes inequalities in health, the Task Force agreed a series of key principles, including:

- Improving the whole range of circumstances and environments that offer opportunities to improve people's life circumstances and hence their health.
- Addressing the inter-generational factors that risk perpetuating Scotland's health inequalities from parent to child, particularly by supporting the best possible start in life for all children in Scotland.
- Engaging individuals, families and communities most at risk of poor health in services and decisions relevant to their health.
- Delivering health and other public services that are universal, but also targeted and tailored to meet the needs of those most at risk of poor health.

3.9 Scottish Government, Health Analytical Services Division (2008). First report on headline indicators (Equally Well).

This was the first report on long-term monitoring of health inequalities, produced by the Scottish Government. Its aim was to present the detailed definitions for each of the indicators of inequalities in health outcomes (as agreed by the Task Force), and to present current trends to set a baseline for long term monitoring at Scotland level.

Measuring Inequality: The expert group recognised that different types of measure give insight into different aspects of inequalities. The recommended approach therefore uses a combination of measures, with the aim of giving a fuller understanding of the inequalities concerned, which include:

- **Relative Index of Inequality (RII):** How steep is the inequalities gradient? This measure describes the gradient of health observed across the deprivation scale, relative to the mean health of the whole population.
- **Absolute gap:** How big is the gap? This measure describes the absolute difference between the extremes of deprivation – the rate in the most deprived minus the rate in the least deprived group.
- **Scale:** How big is the problem? This measure describes the underlying scale of the problem, puts it into context and presents past trends at Scotland level.

The Report provided a summary of trends and current baselines for proposed indicators of inequalities in health outcomes.

3.10 Macintyre, S. Medical Research Council Social and Public Health Services Unit, Occasional Paper 17 (2007). Inequalities in Health in Scotland – What are they and what can we do about them?

This paper asks ‘what are health inequalities, and what causes them?’. It then goes on to detail what is known to work in reducing health inequalities and what is likely to reduce health inequalities.

The most immediate causes of Socio-Economic Status (SES) inequalities in health are identified as:

- specific exposures (e.g. damp housing)
- hazardous work or neighbourhood settings
- infectious agents
- adverse life events
- behaviours (e.g. smoking, diet, exercise)
- personal strengths or vulnerabilities (e.g. coping styles, resilience, ability to plan for the future).

Mechanisms can be physical (e.g. exposure to air pollution), psychosocial (e.g. adverse life events), behavioural (e.g. smoking) or combinations of these (e.g. smoking to deal with stress caused by living in a physically threatening environment). Such influences are often referred to as ‘downstream’ causes.

Intermediate causes are identified as the pathways by which members of different SES groups get to be at lower or higher risk of such exposures and vulnerabilities (e.g. the education, taxation, and health care systems, the labour and housing markets, planning regulations, crime and policing etc). The most fundamental causes are international political and economic forces and the forms of social stratification in a given society. For example, in the USA health tends to be strongly associated with the distribution of income and with race, while in the UK it tends to be more strongly associated with social class. Such influences are often referred to as ‘upstream’ causes.

A number of key principles for effective policies to reduce inequalities in health are identified:

- maintain and extend equity in health and welfare systems;
- address ‘upstream’ and ‘downstream’ causes;
- level up not down;
- reduce inequalities in life circumstances (especially education, employment, and income);
- prioritise early years interventions, and families with children;
- address both health care and non-health care solutions;
- target, and positively discriminate in favour of, both deprived places and deprived people;
- remove barriers in access to health and non-health care goods and services;
- prioritise structural and regulatory policies;
- recognise need for more intensive support among more socially disadvantaged groups;
- monitor the outcome of policies and interventions, both in terms of overall cost effectiveness and differential cost-effectiveness;
- ensure programmes are suitable for the local context;
- encourage partnership working across agencies; and
- involvement of local communities and target groups.

The paper also identifies a number of key policy characteristics more likely to be effective in reducing inequalities in health:

- structural changes in the environment: (e.g. area wide traffic calming schemes, separation of pedestrians and vehicles, child resistant containers, installation of smoke alarms, installing affordable heating in damp cold houses);
- legislative and regulatory controls (e.g. drink driving legislation, lower speed limits, seat belt legislation, smoking bans in workplaces, child restraint loan schemes and legislation, house building standards, vitamin and folate supplementation of foods);
- fiscal policies (e.g. increase price of tobacco and alcohol products);
- income support (e.g. tax and benefit systems, professional welfare rights advice in health care settings);
- reducing price barriers (e.g. free prescriptions, school meals, fruit and milk, smoking cessation therapies, eye tests);
- improving accessibility of services (e.g. location and accessibility of primary health care and other core services, improving transport links, affordable healthy food);
- prioritising disadvantaged groups (e.g. multiply deprived families and communities, the unemployed, fuel poor, rough sleepers and the homeless);
- offering intensive support (e.g. systematic, tailored and intensive approaches involving face to face or group work, home visiting, good quality pre-school day care); and
- starting young (e.g. pre and post natal support and interventions, home visiting in infancy, pre-school day care).

4. Identifying and Engaging Hard to Reach Individuals

4.1 NHS Health Scotland (2010). Policy and practice paper No. 2: Defining and Operationalising the Hard-To-Reach in Keep Well: Challenges in operationalising the term hard to reach.

This paper emphasised that the multiplicity of approaches to capturing the most hard to reach populations within the Keep Well net showed the difficulty of operationalising what appears to be a straightforward concept at a policy level – identifying and engaging with those within a particular age-band, registered with a general practice and living within an area with the greatest concentration of disadvantage.

Three problems areas were identified:

- Not all practices identified as suitable by pilots participated, thus not all those personally eligible within an area were included; participating practices may have differed in important ways from those that did not.
- If multiple deprivation is a marker for being hard to reach then the magnitude of the task of engaging this target group is dependent on the concentrations of deprivation associated with population composition.
- In the absence of national direction, local areas took different approaches to targeting their populations – therefore are likely to have had different outcomes in terms of reducing inequalities of reach (Sridharan, 2008).

According to the evaluation there is a lack of conceptual clarity around who is hard to reach and this impedes the development of the most appropriate strategies for reach. More explicit efforts to develop clarity around these questions may have helped prior to implementation.

In summary, they suggest that the key components of the logic that brought health improvement policy from a problem of health inequalities to the broad solution of Keep Well with its central notion of reaching the hard to reach is not inherently problematic. What is problematic is the lack of clarity that the term entails conceptually, politically and practically. Instead what it offers is the opportunity to develop more careful theoretical and policy thinking about who and where the hard to reach are, why and in what ways they are hard to

reach, and how different interventions might, in various ways with heterogeneous populations, tackle structural differences in service usage. These are issues that are explored in subsequent Policy & Practice Papers.

4.2 NHS Health Scotland (2010). Policy and practice paper No. 3: Models and Impact of Outreach in Keep Well.

Early work by the national evaluation of Keep Well in 2009 identified outreach as an expanding and relatively novel method to reach and engage those who had not responded to other, more traditional, approaches to invitation (O'Donnell, 2009).

The paper suggests that the data generated through fieldwork identified three drivers of a move to include outreach approaches within the wider suite of efforts to engage the target population:

- as a response to the slow-down in practice-based rates of engaging individuals in health checks;
- a perceived mismatch between practice-based methods and the needs of the hard-to-reach; and
- barriers to subsequent engagement with hard-to-reach groups beyond attendance at health checks.

4.3 NHS Health Scotland (2011). National Evaluation of Keep Well & Policy Paper No. 7: Effect of deprivation on reach and engagement in general practice.

This paper aimed to report on the impact of deprivation on reach and engagement of the target population at a practice level. This drew upon data from three Wave 1 pilot sites: Glasgow North and Glasgow East, which were combined and are reported as a single site, and Dundee. (Reach and engagement were calculated as a percentage of the total target population, as follows:

- Reach = (Number contacted in the target population / Total target population) x100.
- Engagement = (Number attending for a health check in the target population /Total target population contacted) x 100.

All 18 practices in Glasgow and 13 out of 18 practices from Dundee agreed to report practice data on patients' engagement with KW (including contacts made with the target population and their subsequent attendance for a health check) – giving 31 practices which are included in this paper.

The report concludes that high levels of reach and engagement are possible in practices with high levels of deprivation. However, in those practices serving populations with the most concentrated deprivation, levels of engagement begin to tail off.

By way of an attempt to partially explain this phenomenon, the report noted that findings reported in Policy and Practice paper 4 (Reach and Engagement) found that some practices, particularly in Glasgow which had high levels of deprivation, did not target individuals within their practice population but instead targeted everyone within the Keep Well age range. They agreed that whilst this may be a feasible, and indeed logical, approach to take if the majority of patients aged 45-64 also live in the 15% most deprived SIMD datazones - where the practice-level deprivation is more diluted, they believe that this may require greater development of practice information systems and resources to accurately target a smaller percentage of patients. They suggest that high levels of trust and on-going, continuous relationships have also been reported between patients living in deprived practices and their general practice which may also account, at least in part, for the higher levels of

engagement within more deprived areas. However, once patients are encountered living in the most severely deprived areas, it may be that the multiple issues which face them are so great that preventive health care is not a priority in their lives.