

Director of Public Health

INTEGRATED PREVENTION FOR LONG TERM CONDITIONS

Recommendations:

The NHS Board is asked to consider the following:

1. Note the key role of preventable long term conditions to NHS Greater Glasgow and Clyde's sizeable burden of poor health, premature mortality and inequalities
2. Approve NHS Greater Glasgow and Clyde's strategic approach to anticipatory care
3. Receive an update on NHS Greater Glasgow and Clyde's integrated prevention programmes for long term conditions in 2011/12

1. Introduction and purpose

1.1 The NHS, in common with other public services, faces enormous fiscal challenges. The 2007 global financial crisis, prolonged and deep recession, significant cuts in public spending and continuously increasing demands for healthcare together create a challenging scenario; operating in this environment requires a clear focus on the factors that represent the biggest challenges to population health and delivering interventions that offer strongest evidence of effectiveness in addressing these in the most efficient way.

1.2 This paper has three purposes; to quantify the central importance of long term conditions (LTCs) to NHS Greater Glasgow & Clyde's (NHSGGC) sizeable burden of poor health, premature mortality and inequalities; to demonstrate their enormous prevention potential; and to provide an overview of our current programme of preventive interventions for long term conditions.

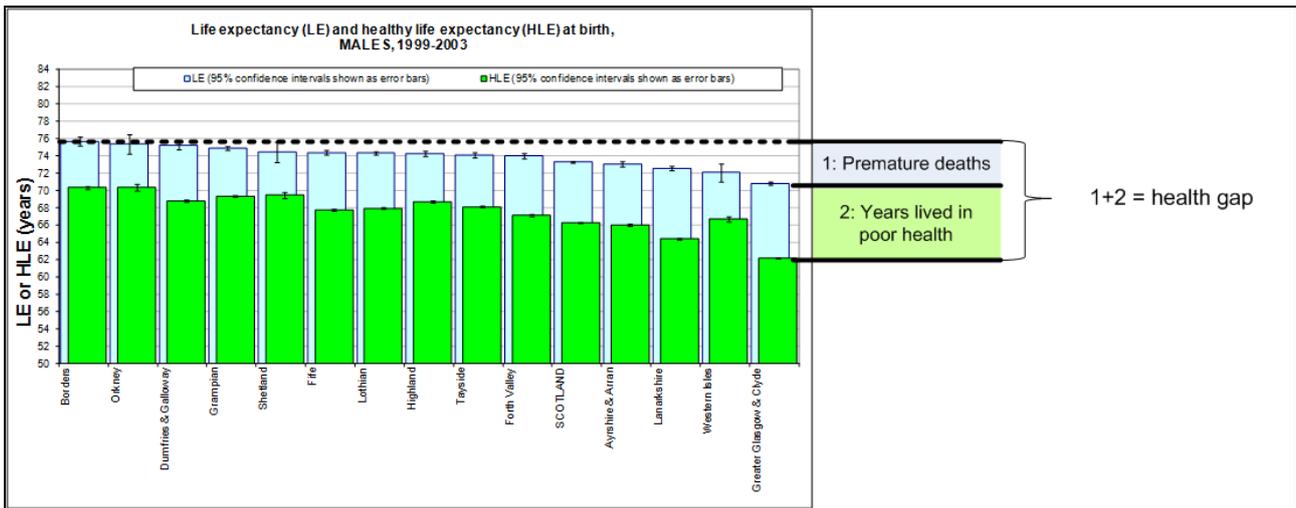
1.3 For the purposes of this paper, LTCs are defined as conditions with multiple risk factors, a prolonged course (likely to last longer than a year), generally limit functional capacity and do not resolve spontaneously, but can be ameliorated by medication and other therapies.

2. The population impact of long term conditions

2.1 The primary purpose of NHSGGC is to enable its population to live longer, healthier lives. Two key outcome measures show how successful we are in achieving these objectives; life expectancy (LE), an estimate of how long the average person might be expected to live; and healthy life expectancy (HLE), an estimate of how many years they are expected to live in a 'healthy' state. The gap between LE and HLE indicates the length of time spent in a 'not healthy' state and clearly a third aim for all healthcare systems is to try to increase HLE to bring it as close as possible to LE, reducing the time period over which people live in poor health.

2.2 Average LE in NHSGGC, although rising, is the lowest in Scotland and among the lowest in Europe. Male LE at birth among NHSGGC residents is 70.8 years. Deaths are considered to be premature when they occur before the usual age of death; in Scotland, this is defined as 75. Not only do NHSGGC residents have, on average, shorter lives compared with other Scottish residents, but they also spend more years in ill health. Male HLE at birth is 62.2 years. Figure 1 shows the size of the gap in both LE and HLE between NHSGGC and other Scottish Health Boards.

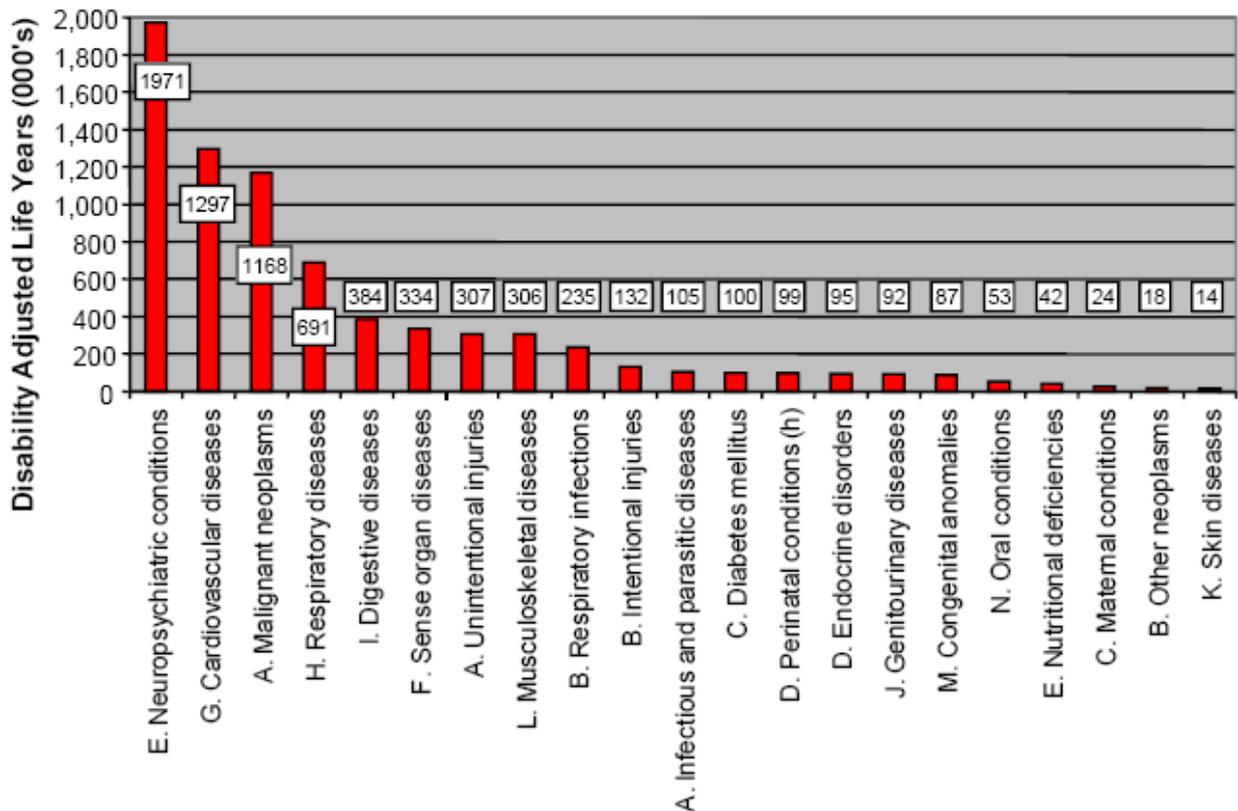
Figure 1: Male life expectancy and healthy life expectancy in Scotland, showing GGC disease burden



Updated HLE data (2009-10) are available only at national level via the Scottish Household survey. In Scotland as a whole in, HLE at birth for the least deprived quintile (68.5 years) is 18.5 years longer than for the most deprived quintile (50.0 years). However for geographies such as NHS Board and CHP area, there have been no HLE updates since the estimates for the 5-year period 1999-2003, as these are reliant on Census data.

2.3 The combined effect of early deaths and many years lived in poor health is called ‘burden of disease’, expressed in disability adjusted life years (DALYs). This allows us to fully understand the specific conditions which have the greatest impact on population health, informing prioritisation of resources. It is noteworthy that some of the conditions which contribute most to our overall burden of disease (eg depression, adult hearing loss) rarely feature in conventional mortality and hospitalisation reports (Figure 2).

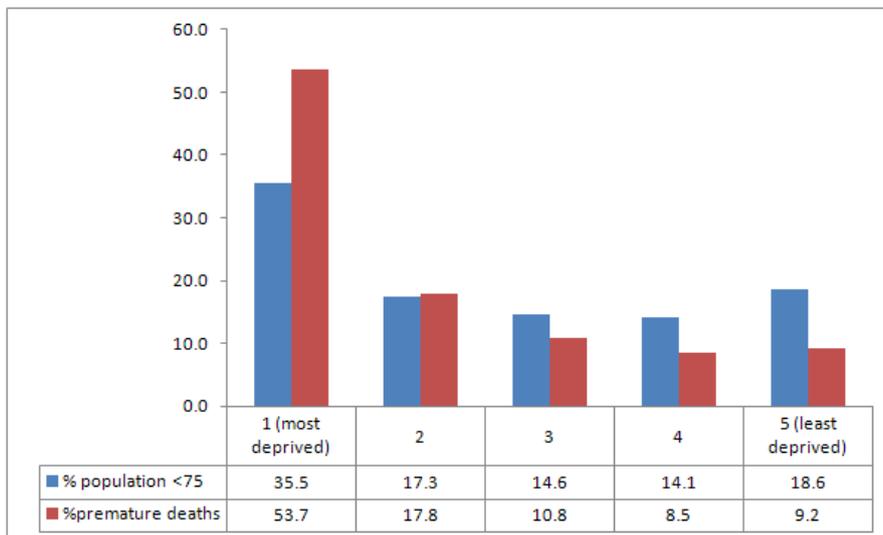
Figure 2: UK disease burden, by cause, 2004. (Source: Green & Miles, 2007)



3. Disease burden is unequally distributed across NHSGGC

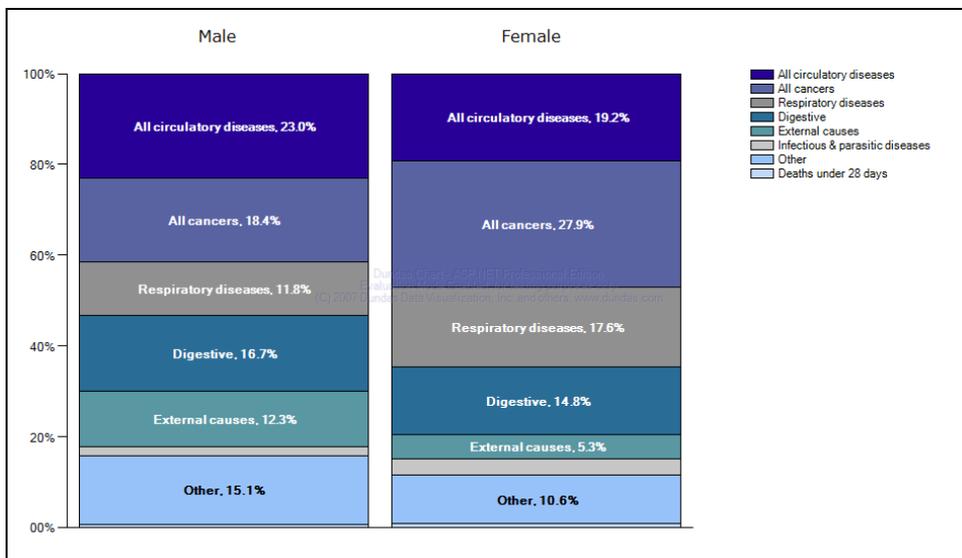
3.1 Premature mortality, poor health and unfavourable health-related lifestyles are not uniformly distributed across NHSGGC, but are clustered within certain population subgroups, particularly among those living in our most deprived areas. For example, although only 36% of our population live in the most deprived SIMD quintile, they account for over half (54%) of all NHSGGC's premature deaths (Figure 3).

Figure 3: Distribution of NHSGGC population aged <75 vs premature deaths, by SIMD quintile



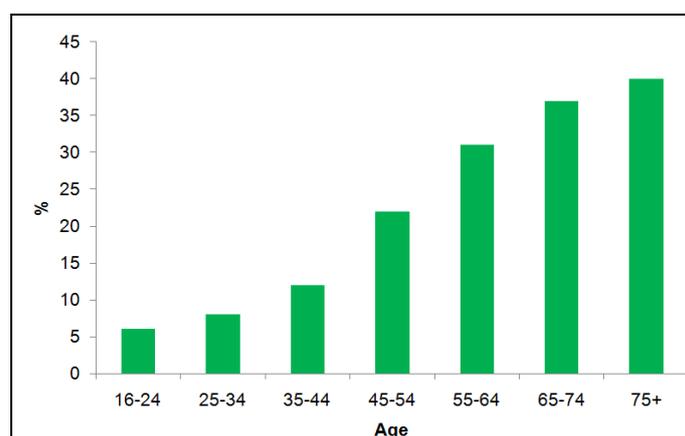
3.2 The specific causes of death which typically drive NHSGGC's premature mortality are shown in Figure 4, using East Glasgow as an example.

Figure 4: Conditions contributing to life expectancy gap between East Glasgow CHCP SIMD Q1 and Scotland's least deprived residents (SIMD Q5). Source: ScotPHO



3.3 Deprivation is not the whole story, however; the likelihood of experiencing a LTC increases steeply with age and as communities with higher proportions of older people are often less deprived. This should be taken into account as well as deprivation when planning services for LTC prevention and care (Figure 5).

Figure 5: Prevalence of LTCs in NHSGGC, by age.



4. NHSGGC's disease burden is highly preventable

4.1 In reality, the major causes of chronic diseases are known, and if these risk factors were eliminated, at least 80% of all heart disease, stroke and type 2 diabetes would be prevented; similarly, over 40% of cancer would be prevented. 60% of our total disease burden is generated by seven leading risk factors: high blood pressure (12.8%); tobacco (12.3%); alcohol (10.1%); high blood cholesterol (8.7%); overweight (7.8%); low fruit and vegetable intake (4.4%) and physical inactivity (3.5%). Table 1 provides a more detailed breakdown of the proportion (population attributable fraction; PAF) of total disease burden due to each risk factor in each major disease area.

Table 1: Individual & joint contributions of top 20 risk factors in industrial countries.
Source: Ezzati, 2003

Disease	Estimated % UK disease burden	Contributing risk factors (individual PAF for each risk factor)	Combined PAF for all preventable risk factors
Ischaemic heart disease	9.4%	High blood pressure (58%); high cholesterol (63%); high BMI (33%); low fruit and vegetable intake (28%); physical inactivity (22%); tobacco (22%); alcohol (0.2%)	89-93%
Unipolar depressive disorders	7.2%	Alcohol (3%); childhood sexual abuse (4%)	7%
Stroke	6.0%	High blood pressure (72%); high cholesterol (27%); high BMI (23%); low fruit and vegetable intake (12%); physical inactivity (9%); tobacco (22%); alcohol (0%)	81-86%
Alcohol use disorders	3.5%	Alcohol (100%); childhood sexual abuse (3%)	100%
Alzheimer and other dementias	3.0%	None of the selected risks	0%
Hearing loss	2.8%	Tobacco (10%)	10%
Chronic obstructive pulmonary disease	2.6%	Indoor smoke from solid fuels (2%); tobacco (69%)	71%
Road traffic accidents	2.5%	Alcohol (38%); illicit drugs (4%); occupational risk factors for injuries (4%)	45%
Osteoarthritis	2.5%	High BMI (21%); Tobacco (10%)	28%
Trachea, bronchus and lung cancers	2.4%	Indoor smoke from solid fuels (coal only) (0%); tobacco (85%); low fruit and vegetable intake (11%)	86%
Communicable, maternal, perinatal and nutritional conditions	9.0%	Multiple risks	24-25%
Non-communicable diseases	78.2%	Multiple risks	41-42%
Injuries	12.8%	Multiple risks	36%
All causes	100%	All 20 selected risk factors	39-40%

4.2 Although these behavioural risk factors are the immediate causes of our increasing burden of chronic disease, it is important to understand the more fundamental 'root causes' which shape the extent and distribution of LTCs in NHSGGC. In many individuals, particularly those who experience material disadvantage, risk factors often cluster and interact and people living in poverty are more likely to maintain risk behaviours, for several reasons. These include inequality of opportunities, constrained choice of consumption patterns, psychosocial stress and cultural norms. Aggressive marketing of harmful products, such as tobacco and energy dense foods, sustain the demand for these products among those who have fewer opportunities to substitute unhealthy habits with healthier options. There is also emerging evidence that

psychosocial factors, such as locus of control and social support, may also exert a specific impact on physical health outcomes through complex stress responses involving neuroendocrine pathways.

4.3 Data from the Scottish Health Survey show that the prevalence of various combinations of risk factors (smoking, alcohol, diet, overweight/obesity, and physical inactivity) is exceptionally high in the Scottish adult population, nearly all of whom (97.5%) have at least one of these behavioural risk factors. Residents of NHSGCG's most deprived communities have a greater than 3-fold increased risk of having multiple (ie four or five) risk factors relative to the least deprived.

5. Reducing the impact of long term conditions: what works?

5.1 Prospective population-based research demonstrates the marked impact of 'low risk' lifestyles, including:

- reduced age-specific cardiovascular and total mortality rates
- reduced prevalence of chronic disease
- increased life expectancy
- lower healthcare costs
- lower medication use
- higher self-reported quality of life

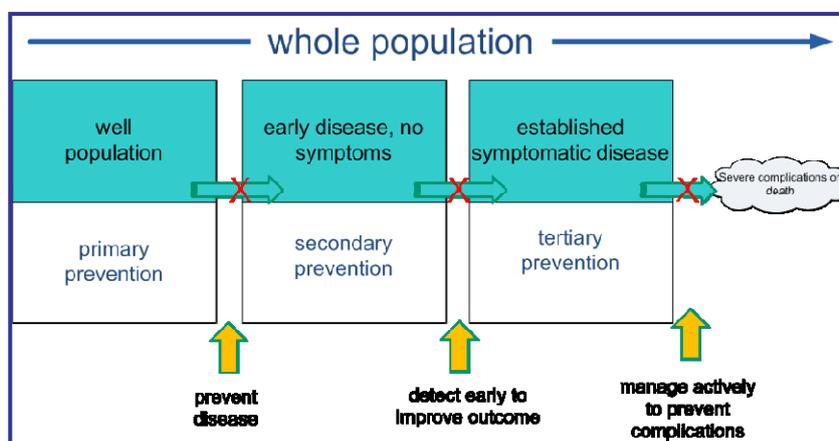
As one example among many international and UK cohort studies, the British Regional Heart Study demonstrated that men with no adverse lifestyle characteristics had a 53% lower risk of cardiovascular disease (CVD), compared with men with one risk factor; a 67% lower risk compared with men with two risk factors; and a 74% lower risk compared with men with three risk factors.

5.2 As shown in Table 2 (overleaf), these effect sizes are similar to, if not larger than, any risk reductions achievable through multiple drug interventions, without their attendant potential harms, costs and risk-shifting (ie choice of drugs to the detriment of healthy lifestyles).

5.3 There is also good evidence that well integrated primary, secondary and tertiary prevention programmes reduce the requirement for unplanned healthcare and generate financial gains in the longer term. These terms are defined below and shown diagrammatically in Figure 6.

- **Primary prevention:** protection of health by measures which eliminate causes and determinants of poor health, delivered either at a whole population level or to individuals.
- **Secondary prevention:** (also called screening) a systematic public health intervention which involves proactive testing for a disease or risk factor in a population with neither signs nor symptoms of the disease being sought, but whose members have some characteristic that identifies them as being at risk. The rationale for screening requires clear evidence that population health outcomes are improved by early detection and treatment.

Figure 6: Integrated prevention for LTCs



- **Tertiary Prevention:** measures intended to reduce or eliminate long term impairments, disabilities and complications from established disease. This includes interventions intended to prevent or

actively manage acute exacerbations of disease, as well as longer term work to maintain health and prevent chronic deterioration of an existing LTC over a period of many years.

5.4 As shown in Table 2 overleaf, the nine risk factors which drive NHSGGC's large burden of disease are extremely common in the local population and there are highly cost effective interventions available to tackle these. At each point along the continuum of primary, secondary and tertiary prevention, the objective is either to prevent or control the underlying condition and delay progression of disease. Each stage of this integrated process has a preventive component, a clinical management component and a self care component. Health related behaviours, life circumstances and psychosocial factors all play an equally important role at each stage, not solely in primary prevention. Translated into practical action, this means a fully engaged clinical workforce, equipped with the knowledge, skills and easy electronic referral mechanisms. Every clinical consultation can begin a process of change, if practitioners move beyond recording patient status and provision of advice to engaging patients with healthier lifestyles. Patient-centred dialogue between patients and professionals on health related behaviours, particularly smoking, achieving healthy weight and engaging in adequate physical activity for health maintenance, must become the norm. However, replicating the highest quality of patient centred care will not happen by passive diffusion; rather, it will require:

- a coherent evidence based/ theory informed framework to underpin all consultations
- development of a patient information strategy containing auditable outcomes and process indicators
- dissemination of knowledge and skills via effective professional mentoring and support
- development of professional skills that use a range of strategies to promote the confidence, motivation and ability of patients to develop resilience, health literacy and healthy lifestyle choices
- efficient systems to familiarise patients and professionals with the range of available follow-up services and support appropriate to individuals

5.5 The role of formalised secondary prevention (screening) for the major conditions responsible for Scotland's disease burden requires careful consideration, as large scale proactive testing for a disease or risk factor in an asymptomatic population has the potential to do both good and harm, as well as increase health inequalities and to generate significant opportunity costs. There are well established criteria for establishing secondary prevention programmes, and it is therefore important to ensure that these are fulfilled before committing resources. Screening for CVD risk factors, diabetes, COPD, dementia and depression are supported by the strongest evidence, but only in defined populations (rather than across the population as a whole) and all are still being actively evaluated.

5.6 Tertiary prevention embraces a wide range of measures intended to reduce or eliminate long term impairment, disability and complications from established disease. As well as longer term programmes to maintain health and prevent chronic deterioration of LTCs, it also includes interventions intended to support rehabilitation, actively manage acute exacerbations and/or functional deterioration that could result in acute admissions to hospital, by providing an alternative pathway of care closer to the patient's home. Consequently, the tertiary prevention component of 'anticipatory care' includes generic interventions whose fundamental objective is to avoid hospital admission.

5.7 Structured chronic disease management (CDM) is the central pillar of tertiary prevention. A recent meta-review concluded that structured CDM programmes improve processes of care and disease control and can reduce hospitalisation rates among patients with defined diagnoses (eg heart failure). These intermediate outcomes have clear causal relationships with long term outcomes. CDM has the following features (Box 1).

Box 1: Core elements of chronic disease management programmes

- Structured, comprehensive care: multidisciplinary care for entire disease cycle
- Integrated care, care continuum, coordination of the different components
- Population orientation (defined by a specific condition)
- Active client-patient management tools (health education, empowerment, self-care)
- Evidence-based guidelines, protocols, care pathways
- Information technology, system solutions
- Continuous quality improvement

Table 2: Effectiveness and cost effectiveness of primary prevention for LTCs

Intervention type	% NHSGGC population with capacity to benefit <i>Sources: Scottish Health Survey; NHSGGC Health & Wellbeing Survey</i>	PAF of risk factor to overall disease burden	Effectiveness	Cost effectiveness
Preventing and managing hypertension				
Healthy weight	35% of men and 30% of women	12.8%	Overall combined cost effectiveness of prevention and optimal management: \$US302 per DALY in EuroA regions	
Dietary modification				
Increased physical activity				
Moderating alcohol consumption				
Pharmacotherapies				
Smoking cessation				
Five minutes of GP opportunistic advice to smokers presenting at GP surgeries, compared to no advice or usual care	33%	12.3%	Quit rate 0.73%	£1,151 per QALY gained
Nicotine replacement therapy, GP advice and prescriptions	33%	12.3%	Quit rate 1.86%	£2,388 per QALY gained
Group based model in Glasgow	33%	12.3%	Quit rate 6.3% at 1 year	£4,800 per QALY gained
12 week 1:1 pharmacy counselling in Glasgow	33%	12.3%	Quit rate 2.8% at 1 year	£2,600 per QALY gained
Preventing and managing harmful alcohol use				
Physician advice in general practice, two x 15' appointments 1/12 apart, with FU calls x2 from nurse	13%	10.1%	Reduces average consumption by 40% at 1 year	£4,507 per QALY gained
Preventing and managing high blood cholesterol				
Statins for primary prevention of CVD	80%	8.7%	59% reduction in fatal MI (95% CI 12-81%) and 40% reduction in non-fatal MI (95% CI 3-63%)	£21,844 per QALY gained
Preventing and managing overweight				
Physician counselling	44%	7.8%	1 DALY gained per 25 recipients	Cost \$4.5-9.5 per recipient
Physician-dietician counselling	44%	7.8%	1 DALY gained per 6 recipients	Cost \$9-20 per recipient
Increasing fruit and vegetable intake				
Dietary counseling in healthcare settings	62%	4.4%	Modest increase in consumption (0.19 to 1.1 portions/day)	Not cost effective as single intervention: Aus\$ 180-900,000 per DALY gained
Increasing physical activity				
Brief advice and one motivational interview with a health visitor, compared with brief advice only	64%	3.5%	22% increase in moderate (5 – 7.5 kcal/min) activity; 6% increase in vigorous (> 7.5 kcal/min) activity.	£20 per QALY gained

4. Integrated prevention for long term conditions: where are we now in NHSGGC?

I: Primary and secondary prevention

4.1 Keep Well was originally established by the Scottish Government in 2006 as a pilot anticipatory care programme, with an initial focus on addressing health inequalities in cardiovascular disease (CVD). Keep Well is a combined primary and secondary prevention programme, targeting individual residents in Scotland’s most disadvantaged areas. Its core element, the Keep Well consultation (or ‘health check’), is intended to identify individuals at particular risk of preventable serious ill-health, offering appropriate interventions and initiate monitoring and follow-up. In addition to addressing modifiable risk factors and health behaviours associated with CVD (e.g. high blood pressure, high cholesterol, smoking, overweight etc), the Keep Well health check also incorporates wider social issues including money worries, employability, literacy and mental health & well being.

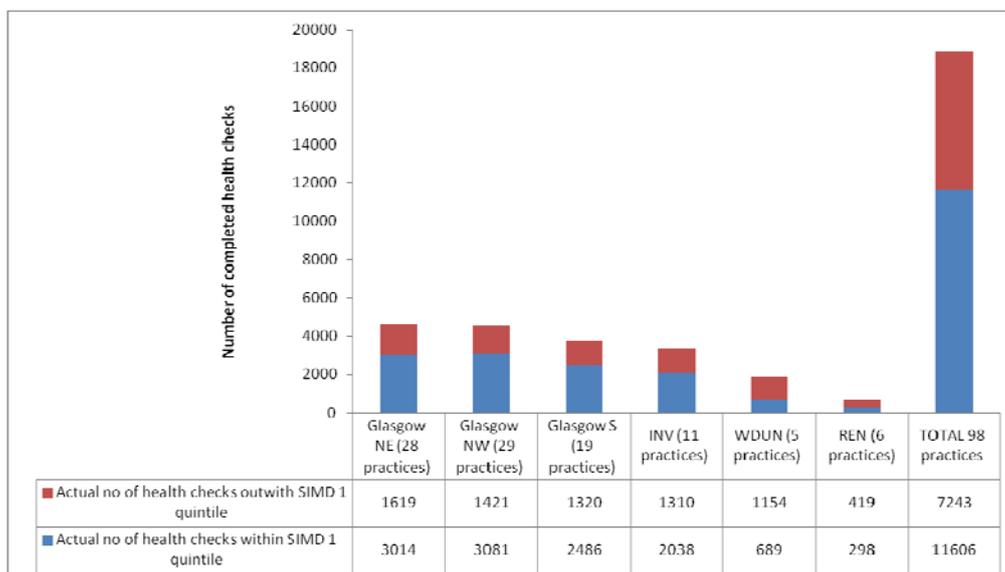
4.2 In March 2010, the Scottish Government announced its intention to mainstream the Keep Well programme across NHS Scotland from April 2012, stating that the intended focus of the programme should broaden to include the wider range of modifiable factors that contribute to health inequalities, and target the following population groups:

- **Core population:** Individuals aged between 40 and 64 not already included in practice stroke, diabetes or CVD disease registers and living in the most deprived geographical localities
- **Specific Vulnerable Populations:** South Asian and Black & Afro-Caribbean ethnic subgroups, offenders, gypsy/travellers, homeless individuals, those affected by substance misuse and carers.

4.3 In NHSGGC, Keep Well was implemented in late 2006, operating from 18 practices across North and East Glasgow. It subsequently extended incrementally to progressively include practices serving residents of the most deprived geographical areas within NHSGGC. By April 2012, 100 NHSGGC practices were participating within the Keep Well LES across Glasgow City, Inverclyde, West Dunbartonshire and Renfrewshire CH(C)Ps via Local Enhanced Service (LES) contract arrangements, supported by health improvement teams at CHP level. NHSGGC aims to extend the targeted programme to all GP practices serving our most deprived communities by April 2013, prioritising delivery of Keep Well as a joint GP practice/local health improvement initiative to ensure sustainable and cost effective coverage of our most deprived neighbourhoods.

4.4 In total, over 40,000 primary prevention health checks have been delivered within NHSGGC since establishment of the programme in 2006. 19,466 checks were delivered during 2011/12 financial year (Figure 7), exceeding the HEAT target of 7,050. Keep Well performance was previously monitored within the HEAT framework (H8), however this was discontinued at the end of the 2011/12 financial year.

Figure 7: Keep Well Completed Health Check Activity 2011/12



4.5 A comprehensive evaluation of the Keep Well programme in NHSGGC was published in May 2012 (available on request). This showed that some practices achieved very substantial, real change in their target populations, whereas others did not. Enormous variation between practices in intermediate outcomes was found at three critical points of the Keep Well pathway:

1. Before engagement (effectiveness of engaging subgroups at highest risk)
2. At the health check (effectiveness of initiating changes in health literacy, risk factors, health associated behaviours and wider practice systems)
3. After the health check (sustained change following the Keep Well consultation, both at individual patient level and in the responsiveness of health improvement services)

Practical action points showcased by the high performing Keep Well practices are summarised below (Table 3) and are fully described in a supplementary report 'Prevention 2012' embedded in this document (Appendix 1).

Table 3: Addressing 'critical control points' in primary prevention: learning from Keep Well

Before engagement	At the health check	After the health check
1. The engagement lessons from 'H2R' should be disseminated to individual practices and its recommendations systematically adopted	1. Improve shared understanding of strategic aims of anticipatory care	1. Optimise referral activity to support services
2. Increase the connectivity of local anticipatory care systems	2. Strengthen effectiveness of consultations as change enablers	2. Systematically address variations in referral activity
3. Engagement approaches should be tailored to patient characteristics	3. Consistent delivery of patient centred consultations	3. Support services to change in response to need
4. Proactive peer-led shared learning on engagement methods	4. Continue 'ASSIGN' evaluation	4. Replicate Community Oriented Primary Care (COPC) model
5. The outreach component of Keep Well should be consolidated	5. Enhanced support with complexity/adherence	
6. Accelerate data feedback & system improvement cycle	6. Tackle variation through real time clinical outcome monitoring	
	7. Customised services for defined population subgroups may still be needed	

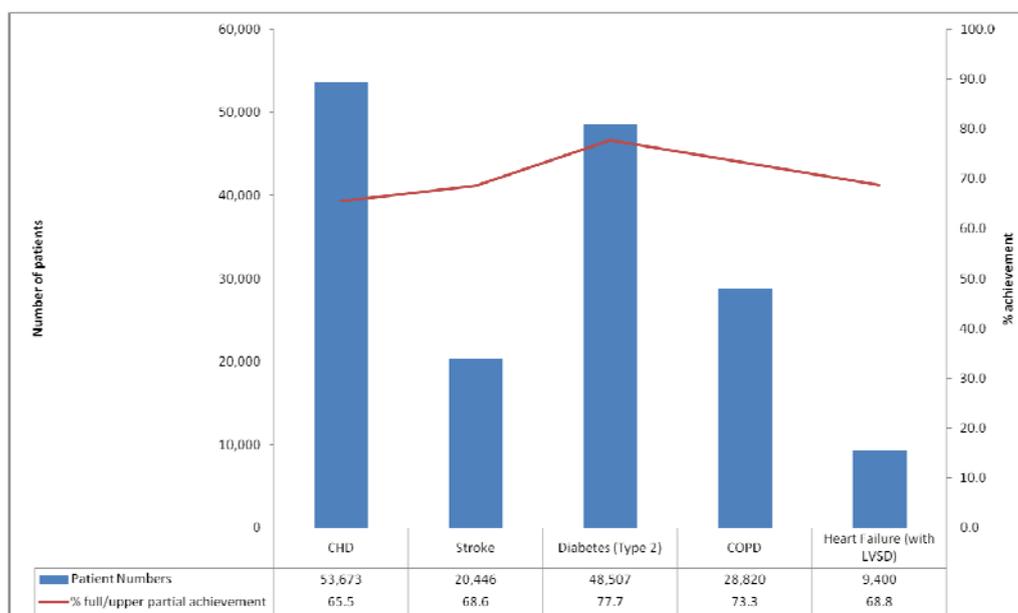
II: Tertiary prevention

4.6 The General Medical Services (GMS) contract, introduced on 1 April 2004, categorised the clinical work of general practice into one of three service categories: Essential, Additional or Enhanced Services. Enhanced Services (ES) are elements of Essential or Additional services delivered to a higher specification. Local ES provide Health Boards with a mechanism to address local health needs or policy objectives by improving patient care, increasing choice or achieving greater integration across primary and secondary care.

4.7 Given the challenges of chronic disease in NHSGGC and the need for integration between primary and secondary care, a bespoke programme of chronic disease management (CDM) has been commissioned from general practices, informed by evidence provided by each Managed Clinical Network (MCN). This aims to deploy effective and consistent interventions that engage the patient in healthy behaviours, strengthen social support networks, promote self care and a sense of control, as well as disease-specific clinical interventions.

4.8 Figure 8 provides summary data on delivery of primary care led CDM in 2011/12. Practices who achieved full or 'upper partial' achievement have provided evidence of completing a structured suite of relevant clinical interventions and health related behaviour discussions to a defined standard.

Figure 8: Chronic disease monitoring in general practice via Local Enhanced Services, 2011/12



4.9 An enormous amount of development and redesign activity is currently underway within the CDM Enhanced Services programme, to ensure that the programme is fully aligned to need and that practitioners are fully supported and enabled to fulfil the programme’s requirements, using much of the transferable learning from Keep Well (Appendix 1). Planned deployment of ‘Intelligent Templates’ (an electronic consultation support template, supported by a range of motivational tools, allowing a patient-centred dialogue that can be customised to the patient’s individual needs and priorities) will replace the current ‘one size fits all’ clinical template in April 2013; this development will strengthen patient-centred consultations for patients with co-morbidity and will also support more evidence based motivational interviewing techniques in relation to health related behaviours. More concerted action is also required to respond to the needs of patients who do not engage in the CDM Enhanced Services programme, using learning and operational systems from Keep Well and the needs assessment on housebound patients which reported in 2009.

5. Conclusion

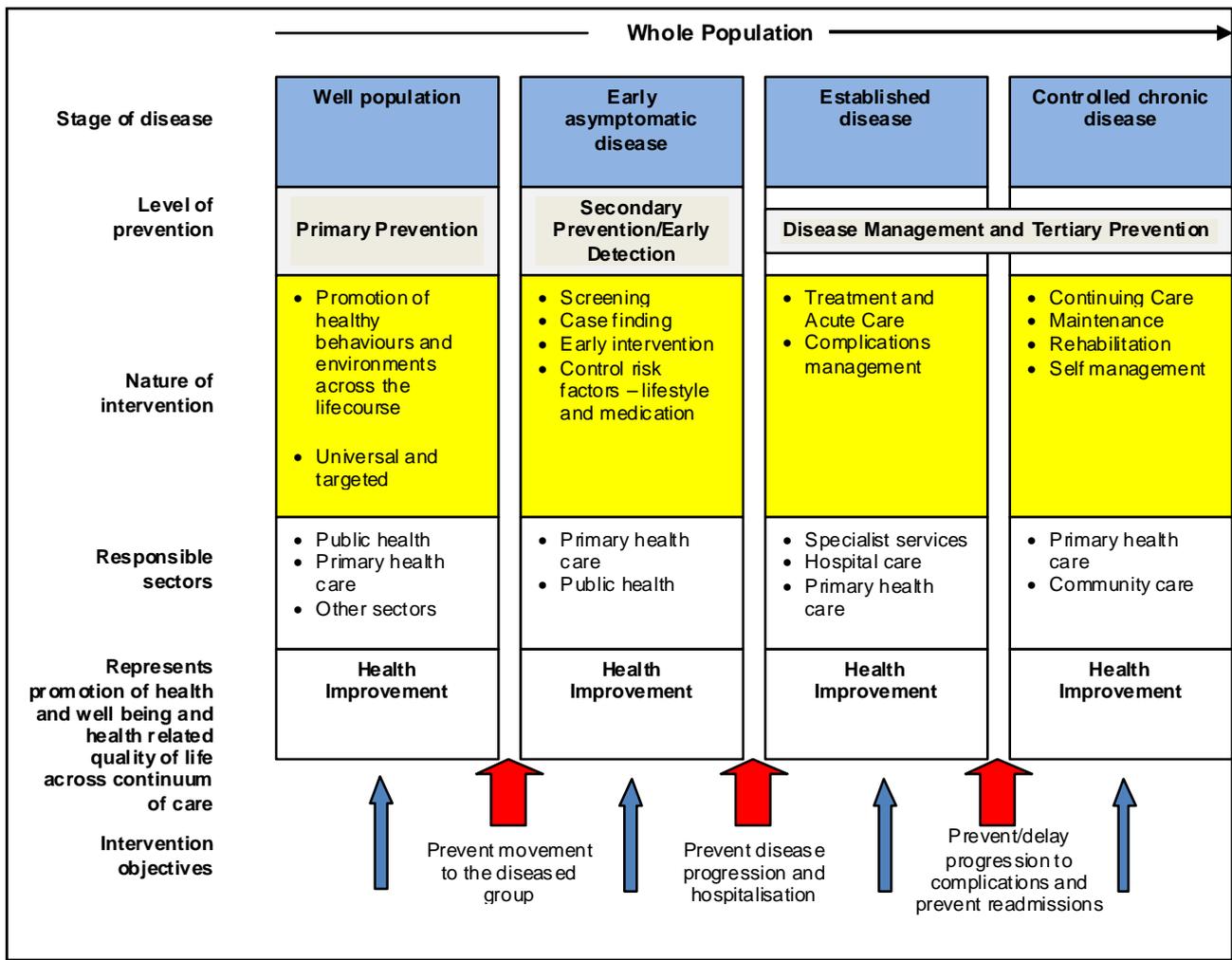
5.1 Tackling NHSGGC’s burden of preventable ill-health, and its resultant demand on healthcare services, will require the balance of spend to be shifted in favour of prevention, not just more spending on healthcare. Currently however, only 3-4% of total NHS expenditure is currently allocated to population-wide prevention and public health programmes, with most spending focused on ‘illness care’ services. The integrated prevention programme described in this paper (summarised overleaf in Figure 9) explicitly identifies the synergistic clinical, health improvement and public health actions required to achieve this.

5.2 Within this strengthened approach to prevention, it is vital that NHSGGC maintains a clear focus on achieving concerted ‘whole system’ action on the risk factors that make the biggest contribution to our total burden of disease and to our socially determined inequalities in health status.

5.3 NHSGGC should clearly prioritise NHS interventions that offer strongest evidence of effectiveness in addressing preventable risk factors for LTCs. The action points articulated in Appendix 1 provide a mechanism for driving further improvements in locally relevant primary prevention strategies, with much wider transferable learning for improving preventive healthcare.

5.2 Unfettered, technologies focussed on end stage chronic disease threaten the affordability of healthcare. Retargeting our collective efforts towards prevention, more accurate diagnosis and engaging patient empowerment/concordance across an integrated pathway provide solutions that rebalance the economic challenge and, if effectively deployed, promise delivery of measurable health gain over a relatively short time period (Figure 9).

Figure 9: Integrated prevention model for NHSGGC



Appendix

Prevention 2012: acting on the evaluation findings of ‘Keep Well’:



prevention **2012**

acting on the evaluation findings of 'Keep Well'

Dr Anne Scoular, Consultant in Public Health Medicine
July 2012

Executive summary

The NHS GG&C Keep Well Management Group has, from the outset, established a strong commitment to evidence based healthcare. In May 2012, it reported on the evaluation of 'Keep Well' over its first five years (2006-2010). In this short paper, we consider the implications of these evaluation findings for the future delivery of anticipatory care in NHS GG&C.

The original logic model for Keep Well was constructed around the hypothesis that the programme would reduce CVD risk factors, morbidity and mortality within 5-10 years. After 2.5 years, a descriptive time series analysis of routine GRO data on coronary heart disease deaths spanning the time period before and after implementation of Keep Well Wave 1 suggested that CHD mortality declined at a similar rate in Keep Well compared with all other Scottish practices, with no evidence of a step change in the slope of this decline following the introduction of Keep Well. Although consistent with the impact of other 'real world' heart health programmes similar to Keep Well, these summative findings contrast with evidence from prospective population-based research demonstrating the marked impact of low CVD risk lifestyles, including reduced age-specific CVD and total mortality rates, reduced prevalence of chronic disease, increased life expectancy, lower healthcare costs, lower medication use and higher self-reported quality of life. These effect sizes are similar to, if not larger than, any risk reductions achievable through multiple drug interventions, without their attendant potential harms, costs and risk-shifting (ie a pharmacological approach operating to the detriment of healthy lifestyles).

Several possible explanations for the observed mismatch between this potential impact of Keep Well and the absence of any early measurable mortality impact at 2.5 years, which are fully described in this paper. In GG&C, there are indications that the explanation for this mismatch lies in variation; although Keep Well achieved a substantial impact on several health measures in some practices, there was enormous variation in intermediate outcomes between practices, at three critical points of the Keep Well pathway:

1. **Before engagement** (effectiveness of engaging subgroups at highest risk)
2. **At the health check** (effectiveness of initiating changes in health literacy, risk factors, health associated behaviours and wider practice systems)
3. **After the health check** (sustained change following the Keep Well consultation, both at individual patient level and in the responsiveness of health improvement services)

The ultimate effect of this variation was that some parts of the Keep Well programme achieved very substantial, real change in their target populations, whereas others did not. This report defines actions pertaining to each of these 'critical control points' that provide a mechanism for driving further improvements and should be implemented in future delivery of Keep Well.

The evaluation findings also provide an opportunity to reiterate the programme's strategic aims, some aspects of which were contested in the early years of the programme. Firstly, Keep Well should be explicitly defined as an anticipatory care programme for a wider gamut of preventable morbidity, rather than a narrow clinical CVD prevention programme. Secondly, given the fundamental social determinants driving NHS GG&C's poor health, Keep Well should more explicitly synergise clinical, health improvement and public health actions. Thirdly, as only 3-4% of our current health expenditure is allocated to population-wide prevention programmes, with most spending focused on 'illness care' services, Keep Well represents a small but vital step towards rebalancing this position. The action points articulated in this short paper in the, stimulating a suite of locally relevant primary prevention strategies which can work synergistically together.

Purpose

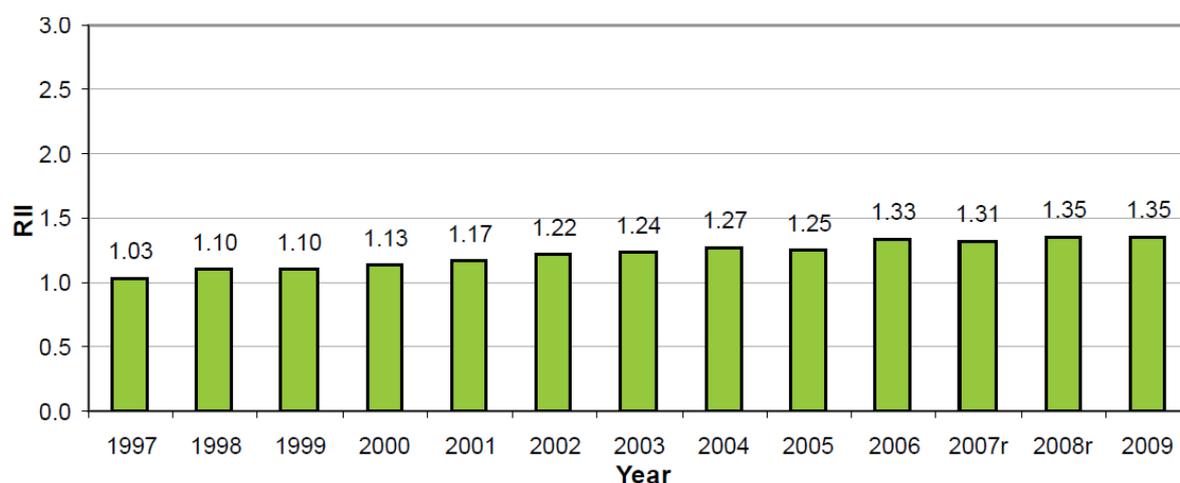
1. In May 2012, NHS Greater Glasgow & Clyde's (NHS GG&C) Keep Well Management Group reported on the evaluation of 'Keep Well' in NHS GG&C over its first five years (2006-2010). In this short paper, we consider the implications of these evaluation findings for the future delivery of anticipatory care in NHS GG&C.

Context

2. Health inequalities: health inequalities are defined as systematic differences in life expectancy and health problems among different population subgroups, represent a significant challenge in Scotland. Although healthy life expectancy has increased in recent years and the overall health of the Scottish population is improving, stark problems remain, with significant variation among people depending on their age, gender, disability status, residential area, ethnic group and socio-economic deprivation.

3. Deprivation is the most commonly cited factor influencing health inequalities. Premature mortality from all causes shows a widening gap between residents of Scotland's most deprived areas compared with those living in its least deprived areas.¹

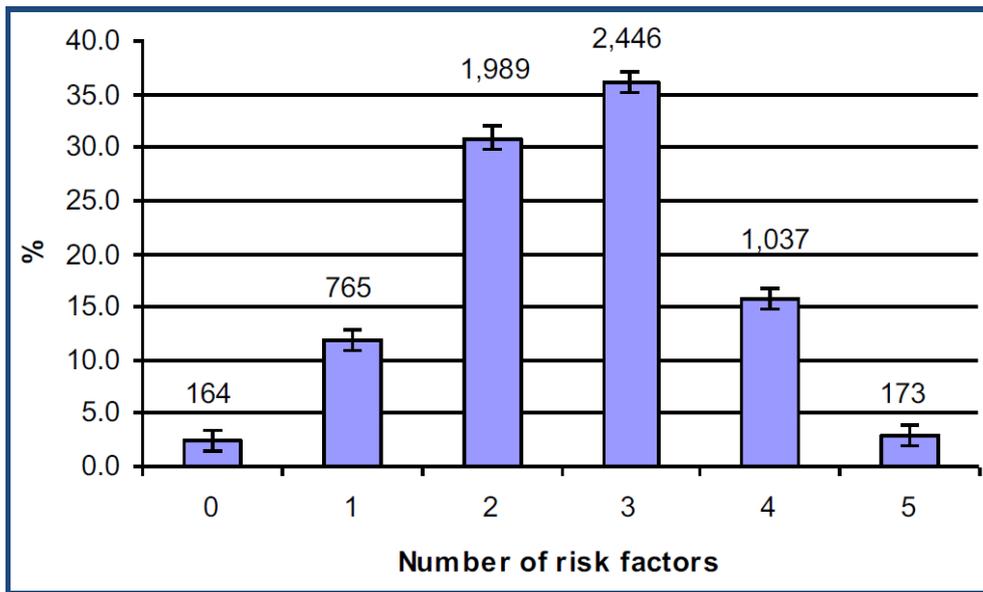
Figure 1: All cause premature mortality (<75yrs) in Scotland: Relative Index of Inequality, 1997-2009¹



By 2009/10, the life expectancy gap between our most affluent and most deprived areas had reached 13 years; a man living in one of Scotland's most deprived neighbourhoods could, on average, expect to live until the age of 68.7, dying after 21.3 years of living in poor health; in contrast, a male resident of the least deprived areas of Scotland could expect to live until the age of 82.0, dying after 12.1 years of poor health. A range of other indicators of poor health, such as mental illness and premature death from coronary heart disease (CHD), show a similar picture of divergence between subpopulations with different socio-economic circumstances.

4. Scotland's adverse risk factor profile: Data from the Scottish Health Survey show that the prevalence of various combinations of CVD risk factors (smoking, alcohol, diet, overweight/obesity, and physical inactivity) is exceptionally high in the Scottish adult population, nearly all of whom (97.5%) have at least one behavioural risk factor for CVD (Figure 2).² Residents of Scotland's most deprived communities (which typifies the Keep Well population) have a greater than 3-fold increased risk of having multiple (ie four or five) risk factors relative to the least deprived.

Figure 2: Risk factor prevalence (%; 95% ci). Source: Scottish Health Survey²
(Numbers indicated above bars represent number of individuals in each category)



However, the fundamental underlying determinants of these behavioural risk factors are complex and structurally determined, with risk factors often clustering and interacting. People living in poverty are more likely to maintain risk behaviours, for several reasons that include inequality of opportunities, constrained choice of consumption patterns, psychosocial stress and cultural norms. Aggressive marketing of harmful products, such as tobacco and energy dense foods, sustain the demand for these products among those who have fewer opportunities to substitute unhealthy habits with healthier options. Psychosocial factors, such as locus of control and social support, may also exert a specific impact on physical health outcomes through complex psychobiological stress responses involving neuroendocrine pathways.

5. National policy: Mounting a coherent policy response to the scale and trends of these challenges has been a leading priority for the Scottish Government for a number of years. Keep Well was part of a set of new policy initiatives developed in the mid 2000s, which sought to strengthen individual level health improvement interventions delivered by clinical healthcare services. Launched as a pilot programme in 2006, Keep Well set out to identify individuals at particular risk of cardiovascular disease, by targeting those living in Scotland's most deprived neighbourhoods.

In 2007, the Scottish Government established a Ministerial Task Force on Health Inequalities to identify and prioritise practical actions to reduce the most significant and widening health inequalities. In its final report, 'Equally Well', it made several policy announcements, one of which was the further extension of Keep Well, which was reiterated in The Scottish Government's 2012/13 spending review, in which it allocated around £1.8 billion to NHS Boards and local government to help tackle health inequalities and their underlying causes.

6. Local policy: Turning to the local context, the population of NHS GG&C endures the most extreme health inequalities in Scotland. Numerous local policies and frameworks have explicitly defined action to address these as a leading priority at the heart of all NHS GG&C planning and service delivery. With specific reference to Primary Care, a one day event was held in June 2008 to discuss how the work of the primary care team could be used to best effect in addressing health inequalities. This identified the need for a fundamental shift in

approach, in order to more effectively harness the respective strengths, skills and functions of general practice, public health, CH(C)Ps and key partner organisations, all of which were seen as vital components of a coherent system but required much closer integration. It also identified the need for change in other parts of the system to better support the role of practices in this collaborative work.

7. NHS GG&C integrated anticipatory care framework: In 2011, NHS GG&C established an integrated anticipatory care framework for all long term conditions (LTCs), the primary aim of which was to optimise deployment of NHS resources by prioritising high impact actions for reducing the preventable burden of ill-health associated with all LTCs. It also provided a common language for defining and co-aligning interventions that were loosely operating under the collective banner of 'anticipatory care', a term which had become applied to such a wide variety of contexts that it had becoming almost meaningless. The framework was underpinned by the following three principles:

- i. A quantitative focus on the risk factors that make the biggest contribution to our total burden of disease and to our socially determined inequalities in health status
- ii. An integrated spectrum of primary, secondary and tertiary prevention activities is explicitly woven throughout all clinical care (Figure 2).
- iii. Prioritisation of NHS interventions that offer strongest evidence of effectiveness in addressing preventable risk factors for LTCs

At the time of development of this integrated anticipatory care framework, Keep Well was still being actively evaluated, with a number of outstanding questions surrounding its fundamental policy aims and the extent to which investment in Keep Well represented the best way of fulfilling these.

8. Keep Well – maintaining a critical perspective: The NHS GG&C Keep Well Management Group has, from the outset, established a strong commitment to evidence based healthcare, which has, at various times in the past, resulted in a number of explicit questions about some aspects of the national delivery model. In summary, these areas were:

- the risk of over-reliance on individualised Keep Well health checks at the expense of sustained, systematic, population level health improvement initiatives (including promotion of healthy eating norms, widening access to employment and training, provision of healthy leisure and recreation opportunities, promoting mental wellbeing and other interventions aiming to shape the social and physical environment).
- the risk of over-emphasis on CVD at the expense of other social, psychological and biomedical health determinants that are i) of immediate importance to patients; and ii) also represent powerful preventable risk factors for chronic disease, directly contributing to shortening life, impaired wellbeing and widening health inequalities
- the evidence base, amassed over the past four decades, on 'heart health' initiatives predicated on screening for high CVD risk individuals suggests that they achieve only small reductions in risk factors and thus represent a costly and relatively ineffective strategy that distract from cheaper and more effective policy interventions which benefit entire populations
- NHS GG&C sought to engage general practitioners in the long term, difficult work of supporting behaviour change, as distinct from a simpler commissioning model focused predominantly on delivery of health checks, irrespective of the type, extent or sustainability of any resultant behavioural or biomedical change

- NHSGG&C have consistently held the view that community pharmacy is not an appropriate setting for delivery of Keep Well health checks, for the reasons outlined below:
 - the long term nature of supporting patients with behaviour change
 - experience of the challenges of motivational interviewing in pharmacy settings
 - questionable use of scarce resources, with no prior evidence of impact
 - investment in time, training & governance into a team not yet in place
 - further pressure on pharmacies to deliver within already stretched capability
 - duplication of effort/confusion for patients invited to numerous health checks
 - unrealistic assumptions about the extent of clinical data sharing between pharmacies and GMS practices

Evaluation of Keep Well in NHS GG&C: key findings

9. Overview: The NHS GG&C evaluation report published in May 2012 provided an overview of the first five years (2006-2010) of the Keep Well programme in NHS GG&C; the full report is embedded within this document as [Appendix 1](#). The evaluation findings, aligned with an evaluation framework established in mid-2008, provide two types of outputs:

1. *Summative evaluation*: a judgment on the extent to which the programme achieved its stated aims in terms of effectiveness, efficiency, equity and acceptability.
2. *Process evaluation*: a structured understanding of how these observed outcomes were achieved and the extent to which significant variations were observed in key outcomes.

10. Summative population impact evaluation of Keep Well at 2.5 years: a descriptive time series analysis of routine GRO data on coronary heart disease deaths over the period January 1999 to December 2009 was conducted jointly by ISD Scotland and Glasgow University. This spanned the time period before and after implementation of Keep Well Wave 1 in February 2007. Over the 2.5 year period after implementation of Keep Well, CHD mortality declined at a similar rate in Keep Well compared with all other Scottish practices, with no evidence of a step change in the slope of this decline following the introduction of Keep Well.

11. Population impact of reducing CVD risk by lifestyle change: Although consistent with the impact of other 'real world' heart health programmes similar to Keep Well, these summative findings contrast with evidence from prospective population-based research demonstrating the marked impact of low CVD risk lifestyles, including:

- reduced age-specific CVD and total mortality rates
- reduced prevalence of chronic disease
- increased life expectancy
- lower healthcare costs
- lower medication use
- higher self-reported quality of life

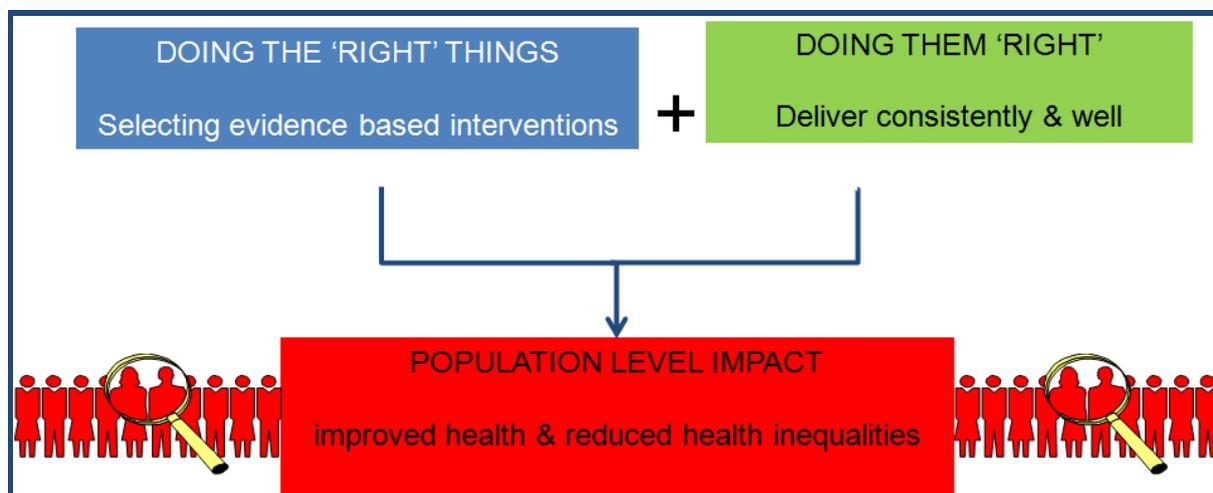
As one example among many international and UK cohort studies, the British Regional Heart Study demonstrated that men with no adverse lifestyle characteristics had a 53% lower risk of major CVD, compared with men with one risk factor; a 67% lower risk compared with men with two risk factors; and a 74% lower risk compared with men with three risk factors.³ These effect sizes are similar to, if not larger than, any risk reductions achievable through multiple

drug interventions, without their attendant potential harms, costs and risk-shifting (ie a pharmacological approach operating to the detriment of healthy lifestyles).

12. Explaining the difference: There are several possible explanations for the observed mismatch between the potential impact of Keep Well and the mortality impact at 2.5 years described in paragraph 10. In brief, these are:

- The above impact evaluation covering the period between 2007 and 2009 was based on the invalid assumption of a single 'start date' (February 2007), which did not actually reflect the incremental nature of the implementation in a much smaller set of intervention practices. Thus, many CVD mortality events would have occurred in practices that had not yet commenced the Keep Well programme, yet were categorised as active 'Keep Well' practices. The effect of this selection bias will have biased the results in the direction of a null effect (ie the effect of Keep Well on CVD mortality and other disease outcomes would have been underestimated)
- The original logic model for Keep Well (see Appendix 1) was constructed around the hypothesis that the programme would reduce CVD risk factors, morbidity and mortality within 5-10 years. Setting aside any debate about whether this timescale was over-optimistic, this impact evaluation was still insufficiently powered to detect any impact on mortality only 2.5 years after incremental implementation of the Keep Well programme
- Although the programme broadly contained the right mix of evidence based interventions, it is conceivable that they were not implemented sufficiently well or consistently across Scotland to impact on overall population outcomes (Figure 3).

Figure 3: Explaining the gap between 'real world' & theoretical impact of Keep Well



13. Variation as a key theme: The GG&C evaluation showed that Keep Well achieved a substantial impact on several health measures in some practices, but there was enormous variation in effectiveness outcomes between practices, at three critical points of the pathway:

4. **Before engagement** (effectiveness of engaging subgroups at highest risk)
5. **At the health check** (effectiveness of initiating changes in health literacy, risk factors, health associated behaviours and wider practice systems)
6. **After the health check** (sustained change following the Keep Well consultation, both at individual patient level and in the responsiveness of health improvement services)

The ultimate effect of this variation was that some parts of the Keep Well programme achieved very substantial, real change in their target populations, whereas others did not.

14. Congruity with 'Have a Heart Paisley': The NHS GG&C evaluation of Keep Well accords with those of 'Have a Heart Paisley', Keep Well's immediate predecessor as a national demonstration project. The Keep Well Management Group has been careful to ensure that the learning from 'Have a Heart Paisley' was systematically embedded into delivery of Keep Well from a very early stage, to avoid replication of ultimately ineffective interventions ([See Table 1 in full evaluation report](#)).

15. Clear evidence of need: The evaluation showed clear evidence of very considerable clinical, social and psychological need in the Keep Well population, with a high prevalence of preventable risk factors for future chronic disease of all types, not confined to CVD.

16. Keep Well generates extensive innovation: The process evaluation clearly demonstrated the programme's capacity to engage and work constructively with patients on their individual health improvement needs within small, defined projects, with many valuable lessons on how we should consolidate and improve these activities to deliver wider health gain, well beyond CVD prevention. The full evaluation report showcases very many opportunities for focused improvement effort in organisational systems, engagement efficiency, clinical management and, most crucially, in recognising and responding to need.

17. Community Orientated Primary Care (COPC): The approaches being developed in the Drumchapel COPC cluster should be replicated elsewhere, involving those who deliver the clinical components of anticipatory care in shaping change, sharing organisational systems between practices, enhancing the potential of clinical encounters to contribute more effectively to public health and health improvement systems at local and Health Board levels.

Implications of evaluation findings

18. Implications: In this context, three main conclusions can be drawn from these findings:

- In keeping with the evidence base on 'heart health' initiatives seeking to reduce multiple CVD risk factors at a population level, there is no evidence, to date, that Keep Well's population level impact is likely to differ from that of its predecessors.⁴ However, referring back to Figure 4 above, it is important to differentiate between failure to 'do the right thing' and failure to 'do it right'. All research evidence on population level CVD prevention indicates that Keep Well contains powerful interventions for CVD mortality reduction (as well as addressing other major preventable drivers of health inequalities). The NHS GG&C evaluation also points clearly to the conclusion that the CVD prevention performance of Keep Well would be transformed if the levels of achievement currently attained by the highest performers were replicated more widely. This could be achieved by addressing the currently extensive variation at each of the three 'critical control points' described in Paragraph 13. Modelling work to empirically demonstrate this conclusion is currently underway, in partnership with national agencies.
- Keep Well has achieved increasing effectiveness as it matured beyond a small scale project, progressively enabling multiple agencies and individuals to work together for sustained health gain in our most disadvantaged neighbourhoods. It should therefore be seen and commissioned as an integrated primary care/health improvement system, rather than a set of biomedical 'health checks' in isolation.
- The process evaluation findings of Keep Well are equally relevant to our tertiary prevention (chronic disease management) programmes in NHS GG&C, as the

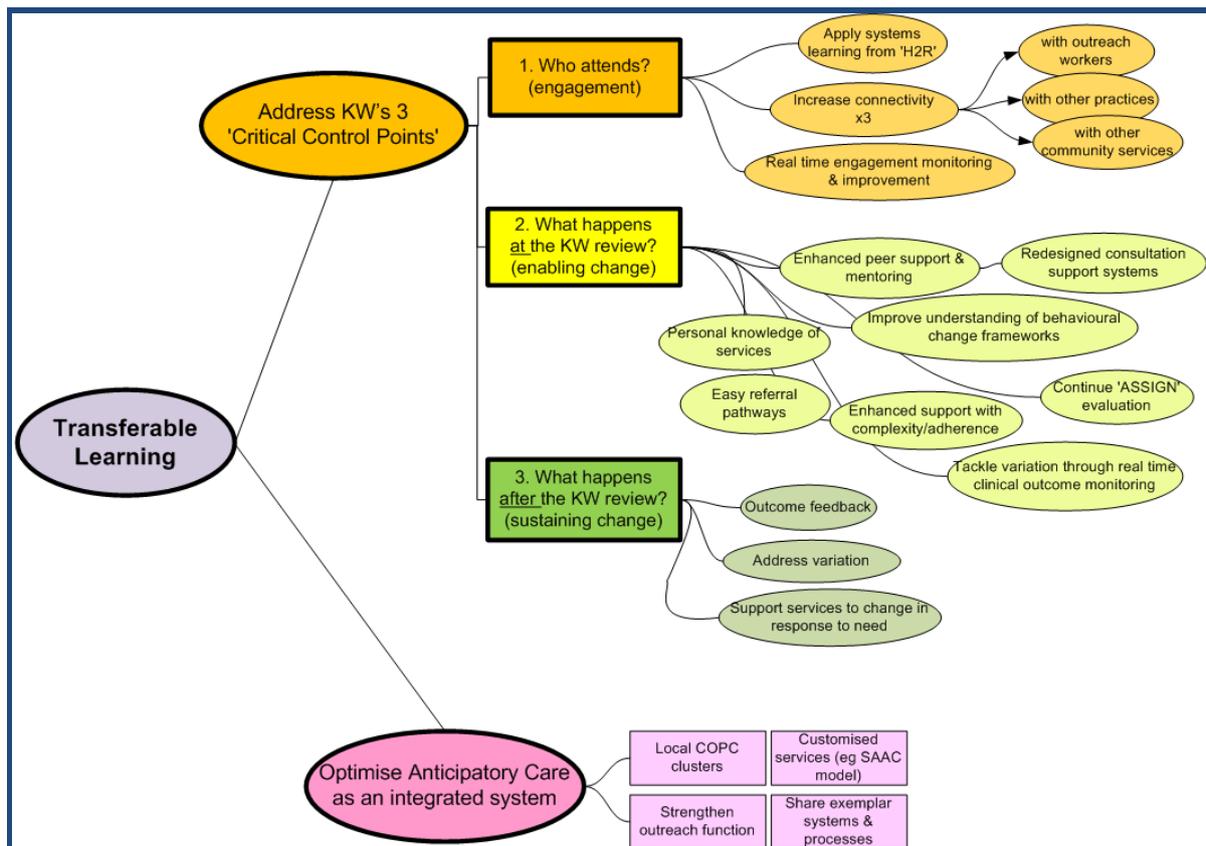
variability seen at Keep Well's three 'critical control points' is also a prominent feature of the later phases of chronic disease management pathways

Translational learning

19. Translational learning from the evaluation of Keep Well falls into two discrete areas (Figure 4):

- action to address Keep Well's three 'critical control points'
- action to improve the overall integration of anticipatory care as a single system

Figure 4: Overview of translational learning from evaluation of Keep Well



20. Critical control point 1: Engagement

Action point 1.1: The engagement lessons from 'H2R' should be disseminated to individual practices and its recommendations systematically adopted.

After two years of operation, approximately one quarter of the target population in Keep Well remained unengaged, despite considerable effort invested by practices and the Keep Well project team in engagement and invitation attempts. 'H2R' was a highly successful short term project established to develop a more structured understanding of factors associated with failure to engage and to define the feasibility, effectiveness, and cost-effectiveness of various engagement strategies for this subgroup. Full details of its recommendations are provided on [pages 61-71 of the evaluation report](#).

Action point 1.2: Increase the connectivity of local anticipatory care systems.

Improved practice in engagement will happen neither by passive diffusion of ideas nor by distributing formal protocols and guidance, but needs structural and organisational changes to create more integrated anticipatory care functions at local level. Increased connectivity is required in three key relationships:

- with **other practices** as a local functioning anticipatory care unit
- with the **outreach worker function**
- with **local community services**, including the voluntary sector

Action point 1.3: Engagement approaches should be tailored to patient characteristics

Sociological research exploring facilitators and barriers to engagement with Keep Well indicated that the target group can be divided into three broad segments, based on their general attitudes towards health and their perceived value of Keep Well health checks in particular.⁵ This research showed clearly that no single strategic approach will engage all three groups equally. These three broad segments are:

i) *'Health Involved'*: this group are generally 'early adopters' of preventive healthcare, convinced of the benefits that accrue from making the effort to stay healthy. For these people there will be few if any attitudinal barriers to engagement in Keep Well, however it still pays dividends to ensure that any potential practical barriers are minimised, eg by providing a degree of flexibility in appointment times.

ii) *'Healthy Enough'*: this second segment of the Keep Well target population acknowledges that health is important, but currently a direct link between improved health and an improved life is not clear to them – other life issues have priority. All feel sufficiently healthy and as such no additional effort is urgently required. Emotional barriers and rational misperceptions, as well as even minimal required effort or inconvenience, mean that an invitation to participate in a health check will likely be declined or simply ignored. For this segment, research identified concepts which will minimise the required effort and/or improve perceptions of the benefits of a health check, thus making participation 'worth it' for these people. For this group, engagement strategies include:

- Testimonials of those who have benefited from a health check
- Communication campaign focusing on other life priorities as reasons to stay healthy
- A phone call following any letters to confirm/rearrange/arrange appointment

iii) *'Health Wary'*: the third and final group in the segmentation analysis was characterised as having significant emotional barriers to attending preventive healthcare. These barriers are apparently so profound as to demand face to face 'coaxing', directly reassuring the individual of the benefits of participation.

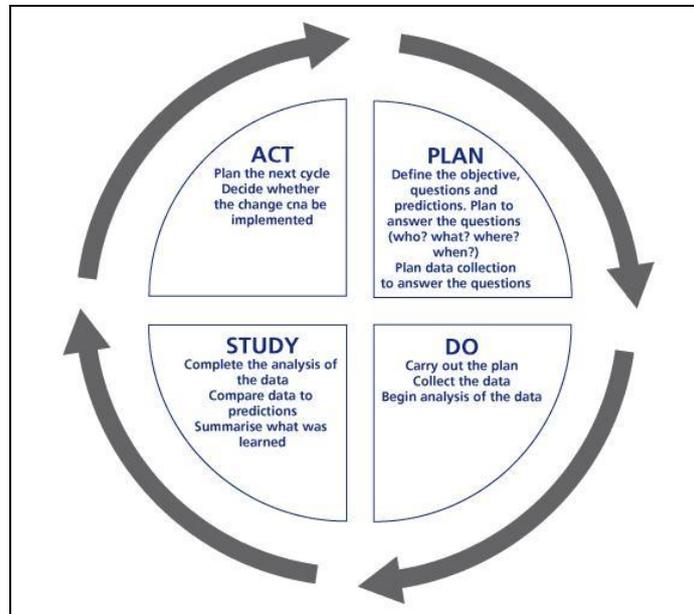
Action point 1.4: Proactive peer-led shared learning on engagement methods

Evaluation of Keep Well evidenced some excellent engagement practice. All professionals involved in planning and delivering Keep Well should have a working knowledge of the factors found to predict patient engagement in GG&C ([Pages 41-49 and 61-71 of the evaluation report](#)) and elsewhere.⁵ In particular, it is vital to carefully tailor sequential invitation methods to individual patients who have not attended after their second invitation.

Changing isolated exemplars into sustained, organisation-wide best practice in patient engagement will require peer-to-peer learning, using a variety of methods, including:

- Systematic training of primary care support teams (Keep Well and generic) in evidence based engagement practice
- Replication of collaborative learning approaches such as COPC collaboratives
- Continuation of PDSA (Figure 5) to facilitate further process improvements for engagement and to rapidly share these across the wider system.

Figure 5: Plan Do Study Act (PDSA) Improvement Cycle



Action point 1.5: The outreach component of Keep Well should be consolidated

Evaluation of Keep Well showed that appropriately trained outreach workers have enormous potential, however this is not uniformly exploited, with disparate local arrangements for outreach functions across GG&C and highly variable outcomes. Learning from the disparate models that have characterised the first phase of Keep Well should be distilled into a new, harmonised model, with outreach workers being explicitly recognised as a vital, permanent component of the anticipatory care workforce and provided with an appropriate training and performance management framework to maximise their potential. Their strategic objectives, skills and competency set should be more firmly embedded in a coordinated system, working in close alignment with practices and associated health improvement services. In addition to their operational role in patient engagement for both Keep Well and, potentially, in CDM, outreach workers can also influence practices to change their patient engagement systems and contribute to community health improvement through family and social networks. In view of the considerable variations in outreach approach and the innovative nature of the role, ongoing evaluation of this aspect of the programme will be vital.

Action point 1.6: Accelerate data feedback & system improvement cycle.

More differentiated and timely information on the processes and outcomes of patient engagement at individual practice level will be needed to increase the pace of innovation at practice level. PDSA cycles, if appropriately explained to practices, can be a powerful facilitator for engagement, shared organisational learning and rapid improvement. Consideration should therefore be given to improved reporting capacity and to repeating the analytical approach to engagement used in the local evaluation ([Pages 41-49 of the evaluation report](#)).

21. Critical control point 2: What happens at the health check

The effectiveness of anticipatory care is fundamentally dependent on improving health literacy, risk factors and behaviour through many thousands of unique patient encounters. Six specific actions are vital to achieving this in a consistent way.

Action point 2.1: Improve shared understanding of strategic aims of anticipatory care

Although preventive anticipatory care is now very well established as national policy, there remain enormous variations in primary care practitioners' readiness to tackle the root causes of NHS GG&C's growing burden of chronic disease and to assume a wider role in tackling health inequalities. The potential of preventive anticipatory care will only be realised if its strategic aims are effectively translated into substantial change in clinical practice by frontline clinical groups. The process of doing this is highly context dependent and the approach to building this shared understanding of the strategic aims of anticipatory care should explicitly take account of different histories, cultures, patterns of roles and relationships and the varying capability for learning and change between individual practices.

Action point 2.2: Strengthen effectiveness of consultations as change enablers

Although the GG&C Keep Well evaluation showed some evidence of good practice in delivery of preventive healthcare to individual patients, the dominant finding identified the need to support practitioners in using the Keep Well consultation to begin a process of change, ensuring that practitioners move beyond recording patient status and provision of advice. Achieving this will require a number of actions, including development of training materials, redesign of clinical templates, enhanced peer support & mentoring from the Primary Care Support function, implementation of the outputs from the currently ongoing Keep Well consultation development work (in which a group of experienced practice nurses is actively engaged in development of future consultation support materials for Keep Well and CDM LES), involvement of clinical psychology input to Keep Well and creating structures that actively support practice-to-practice dissemination of learning and innovation.

Action point 2.3: Consistent delivery of patient centred consultations

There is now powerful evidence that patient-centred care improves clinical outcomes; accordingly, there is a strong drive towards placing it at the heart of NHS Scotland's Quality Strategy. Patient-centred dialogue between patients and professionals on health related behaviours must become the norm. However, replicating the highest quality of patient centred care will not happen by passive diffusion; rather, it will require:

- a coherent evidence based/ theory informed framework to underpin all consultations
- a purposeful strategy containing auditable outcomes and process indicators
- dissemination of knowledge and skills via effective professional mentoring and support
- appropriate consultation support tools that allow individualised goal setting
- clinical templates tailored to each individual patient's priorities and needs
- professional skills that are sufficiently well developed to allow flexibility in consultations
- professional skills that use a range of strategies to promote the confidence, motivation and ability of patients to develop resilience, health literacy and healthy lifestyle choices
- efficient systems to familiarise patients and professionals with the range of available follow-up services and support appropriate to individual need

Action point 2.4: Continue 'ASSIGN' evaluation

Evaluation of the 'real world' performance of the 'ASSIGN' CVD risk prediction algorithm in Keep Well Waves 1 and 2 found that it classified substantially fewer individuals as 'high risk' compared with JBS-2. Although this difference declined with increasing deprivation, its overall magnitude was unexpected, particularly as the 'ASSIGN' risk score had been specifically developed as a deprivation-sensitive tool on the grounds of social equity, to increase the number of individuals within more deprived subpopulations who were offered preventive therapies. Accordingly, ongoing comparative evaluation of the impact of 'ASSIGN' and JBS-2 is recommended, with ongoing monitoring of the numbers of patients classified as high risk. Longer term follow up of this cohort of patients to ascertain future CVD events is also proposed.

Action point 2.5: Enhanced support with complexity/adherence

It was clear from the outset that the Keep Well programme identifies significant clinical and social need, much of which equates directly to known preventable risk for chronic disease, premature death and health inequalities. The size and complexity of these risk factors in a sizeable minority of individual patients cannot be realistically resolved in a 30-40 minute consultation; conversely, the health economic case for a dedicated health case manager (as piloted in the Wave 2 South West Glasgow programme) and long term medicines service (as piloted in the three Wave 1/2 primary prevention sites) to help deal with different types of complex need, was weak.

However, much can be achieved within existing resources. Strengthened connectivity and more effective functional relationships are needed between clinicians and the wide range of support services that exist. In addition to improving the reach and content of the existing Health Improvement Service Directory, more intensive organisational development will be needed to build familiarity and meaningful collaboration between clinicians and support services, service change tailored to local context, clinical and social need and continuously modified through bi-directional feedback.

Action point 2.6: Tackle variation through real time clinical outcome monitoring

More detailed and timely information on clinical processes and outcomes at individual practice level will help clinicians with benchmarking and will increase the pace of improvement. Consideration should therefore be given to more frequent reporting of the types of clinical data used in the local evaluation

22. Critical control point 3: What happens after the health check?

The third 'critical control point' for securing health gain from Keep Well is the extent to which the programme creates sufficiently widespread, sustained and appropriate change in its target population. Even small changes in some risk behaviours can translate into population level impact at an individual level, further augmented by the potential for health related attitudes and behaviours to transmit across social networks, thus the effect of key changes at a population level is generally much greater than simply the sum of individual level effects.

The Keep Well evaluation identified three specific actions required to support sustained health improvement after the Keep Well health check, as follows:

Action point 3.1: Optimise referral activity to support services

Evaluation of the current Keep Well programme shows enormous variations in referral activity relative to need. Systems for outcome communication to the referring clinician are inconsistent and unsystematic. The service directories initiated through Keep Well represent

a considerable achievement, but there is an urgent need to improve on these and to widen access to accurate, regularly updated local information, with a single point of access for staff to relevant directories for preventive healthcare and self management, creating linkages between directories to fully use the potential of other related search engines. A clear patient information strategy should be developed to guide this work, supported by Keep Well but involving other key stakeholders within the organisation and in partner agencies.

Action point 3.2: Systematically address variations in referral activity

The proportion of patients with apparently similar need who are referred to relevant services is enormously variable across different practices, as is the proportion of those referred who take up that service.

Action point 3.3: Support services to change in response to need

Data on service outcomes are much less complete, but the limited information that is available (eg for Live Active and smokefree services) suggests similar extensive variations in the proportions of patients who sustain their engagement with services and achieve a positive outcome. Much more systematic, timely feedback of data on individual patients should be implemented, enabling clinicians to refer appropriately and services to systematically document outcomes in all patients. Real time monitoring of aggregated quantitative activity data, stratified into appropriate subgroups, should be regularly shared and jointly interpreted to inform service change. The approaches used by the Keep Well areas which have established data driven commissioning models should be replicated across the entire system.

23: Optimising integration of anticipatory care as a single system

The drive for greater integration is a prominent theme in modern health and social care systems; evidence and experience both suggest that greater connectivity, alignment and collaboration within and between services enhances quality of health and social care, quality of life, patient satisfaction and system efficiency, ensuring that the right interventions are delivered to the right people, at the right time and place. In the specific context of preventive anticipatory care, integration is similarly vital, requiring good connectivity between clinicians and community based preventive and support services, working effectively and collaboratively towards clear common goals and priorities. NHS GG&C has established an integrated anticipatory care framework, within which Keep Well has a major role in primary and secondary prevention of all long term conditions and the framework content should underpin the strategic priorities for Keep Well.

Action point 4: Replicate Community Oriented Primary Care (COPC) model

The Drumchapel COPC project offers considerable promise as a sustainable mechanism for improving pathways, connections and feedback between clinicians and the much wider set of stakeholders who shape the community's underlying health determinants across the lifecourse. COPC has generated a number of specific initiatives that firmly recognise the role of Keep Well as a preventive, anticipatory care programme, explicitly extending its boundaries beyond the narrow concept of a clinical service commissioned from general practice.

Action point 5: Strengthen outreach role in the integrated anticipatory care system

As highlighted in Action Point 1.5, outreach workers are not being managed to full capacity and need to be more firmly embedded in a coordinated system, working in close alignment

with practices and associated health improvement services. In view of the considerable variations in outreach approach and outcomes, more rigorous evaluation of this aspect of the programme is essential.

Action point 6: Share exemplar operational systems & processes

Although the evaluation findings of Keep Well were considered at high level at a dedicated Development Day in May 2012, more detailed operational learning points from Keep Well's evaluation to date should must be systematically applied to future programme design, using existing planning structures such as the Keep Well Implementation Group.

24: Customised services for defined population subgroups may still be needed

Action point 7: Customised services for defined population subgroups should be rigorously evaluated to inform their future development

The evaluation of Keep Well demonstrates clearly that there are identifiable subgroups of patients who are eligible for the programme, who have extensive unmet anticipatory care needs, but who remained unengaged after repeated engagement attempts. South Asian patients are currently being successfully targeted using novel types of culturally-specific approaches, building a clearer understanding of this population subgroup's anticipatory care needs. This nested programme (South Asian Anticipatory Care; SAAC) within Keep Well is being evaluated during 2012/13 to determine specific transferable learning. The evaluation findings must directly inform how this service should evolve in the future.

Conclusion

The evaluation findings provide an opportunity to reiterate the programme's strategic aims, some aspects of which were contested in the early years of the programme. The recommendations defined in this paper also identify clear, practical steps for maximising the programme's overall effectiveness in fulfilling these aims.

25: Strategic focus beyond CVD prevention

It is imperative that the strategic focus of Keep Well is more consistently understood as a vital strand of integrated anticipatory care, tackling health inequalities through integrated primary and secondary prevention for a wider gamut of preventable morbidity, rather than a narrow clinical CVD prevention programme.

26. Appropriately integrated NHS response to health inequalities

The fundamental underlying social determinants of NHS GG&C's poor health require a powerful integrated response that synergises clinical, health improvement and public health actions, whilst maintaining current approaches to informing and influencing the vital, more 'upstream' policy actions outwith the direct control of territorial Health Boards.

27. Investment in targeted primary prevention needs to be strengthened

Tackling NHS GG&C's burden of preventable ill-health and resultant demand on healthcare services requires the balance of spend to be shifted in favour of prevention, not just more spending on healthcare. However, only 3-4% of total NHS expenditure currently goes toward population-wide prevention and public health programmes, with most spending focused on 'illness care' services. Keep Well represents a small but vital step towards rebalancing this position. The action points articulated in this short paper provide a mechanism for driving further improvements in locally relevant primary prevention strategies that work synergistically together.

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Appendix

Evaluation of 'Keep Well' programme in NHS Greater Glasgow & Clyde:

