Director of Public Health

annual report

NHS
Grampian

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Foreword

We have been preparing the Director of Public Health (DPH) Annual Report for 2012, setting out some of the key markers of population health and the work associated with addressing these. This has been set against a backdrop of continuing fiscal constraints and a significant piece of legislation, the Public Bodies (Joint Working) (Scotland) Bill, introduced to Parliament on May 28, 2013.

As society's needs change so too must the nature and form of public services. We need to make the most effective use of our resources across the public sector. Since 2011, partners in Grampian have been working together in preparation for these changes.

In order to capitalise on improving our public health – including downward trends in premature deaths from heart disease and reductions in the numbers of smokers - we need to use our assets wisely - our people, our communities, our environment - as well as our facilities and other resources.

My report focuses on key public health issues in Grampian, many of which are also of concern in other parts of Scotland. It gives a flavour of work in hand in the NHS and with our partners - it is not a comprehensive account of all of our many and combined endeavours.

This report also builds on my previous DPH Annual Report 2011 which stressed the importance of working together and that the public health of Grampian was 'everyone's business'. It has been prepared by professional, administrative, and academic colleagues to provide key information and messages for all our partners and to assist incorporating public health needs and aspirations into future planning. I am particularly grateful to the editor of this report, Dr Linda Leighton-Beck, who led a team of our colleagues who are each acknowledged below.

The report is available in hard copy and available at http://www.hi-netgrampian.org/hinet/8354.html. Links to NHS Grampian on Facebook and Twitter are provided below.

For those who wish more detailed data, we have also created an appendix at http://www.hi-netgrampian.org/hinet/8354.html. Please note that the appendix is not present in the hard copy of this report.

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Executive Summary

The health needs of the Grampian population, as elsewhere in the UK, are changing. We highlight some of the 'big issues' that face us in planning healthcare and in improving health. As people live longer, we need to deliver care now to support those with poor health. At the same time, we need to plan for a future where people are able to live longer in good health and are as resilient as they can be in managing illness. In 2013, the first 'baby boomers' reached retirement age. This same group however, has been exposed to many risks. Despite the reduction in smoking, the increase in obesity, alcohol and substance misuse, low physical activity and poor diet continue to challenge our health in Grampian, as they do across Scotland.

In Grampian, average life expectancy at birth, 77.3 years for males and 81.3 years for females, is above the European Region average. However, against comparator countries of the European Union which joined prior to 2007, over two-thirds of countries have higher life expectancy than Grampian women and more than half of the countries have higher life expectancy than Grampian men. In Aberdeen, life expectancy at birth, 76.3 years for men and 80.9 years for women, is just above the Scottish average. Of the 36 Community Health Partnerships across Scotland, for life expectancy, Aberdeen, one of our economically wealthiest cities, ranks 21st for men and 20th for women. For those in the 15% most deprived areas of Aberdeen, born since 2006, life expectancy at birth remains around 5 years less than for their most affluent neighbours. Also, the gap between life expectancy and healthy life expectancy is wider for those in the most deprived areas. Comparing the most deprived with the least deprived 10%, healthy life expectancy is more than 22 years shorter in men and women.

Multi-morbidity, the co-existence of two or more chronic conditions within an individual, is a growing public health challenge. The number of people with morbidities, as well as the proportion of people with multi-morbidity increases, substantially with age. The majority of people with multi-morbidity are of working age. The onset of multi-morbidity occurs 10 to 15 years earlier in those living in the most deprived areas, compared to the most affluent. Multi-morbidity is associated with poorer outcomes and increased use of health and social care services.

The number of people dying prematurely is slowly improving.
Cardiovascular disease (including stroke), cancer and respiratory disease are the three main causes of death in Grampian. Cardiovascular disease mortality has fallen over the last 30 years. Deaths from cancer have also decreased. For respiratory disease, the change in death rates is less marked. Nevertheless, almost 1 in 6 deaths in Grampian in 2012 occurred in those aged under 65 years, with coronary heart disease, acute myocardial infarction, lung and breast cancer, and alcoholic liver disease in the 'top 5 'causes.

Primary prevention and earlier detection of disease offer the most cost-effective long-term strategy for our local population. We have made continuous improvements in our ability to detect disease early and support those

affected. Public uptake of immunisation and screening is vital in improving the health of the Grampian population. In 2012, almost 3,000 men, aged 65, were screened as part of a new programme to detect, early, Abdominal Aortic Aneurysm.

Cancer outcomes may be further improved when the disease is identified and treated at the earliest stage, through participation in screening programmes and minimising delays to diagnosis when cancer associated symptoms occur. It is expected that most 'early stage' breast and colorectal cancer cases will be detected by the existing screening programmes. Current participation levels by the public in Grampian are approximately 60% for bowel screening and over 80% for breast screening. Actions at individual, community, organisation and collaborative partnership levels can further reduce cancer risk in Grampian.

The Health Protection Team (HPT) of NHS Grampian, in collaboration with colleagues in the NHS and other agencies, has continued to build on previous achievements. This includes 86% of eligible girls, aged between 12 and 17 years having, completed the three dose course of vaccinations against Human Papilloma Virus, thereby decreasing their risk of developing cervical cancer in later life. High uptake of childhood immunisations, with more than 95% of children completing the primary vaccination course by 24 months, provides good individual and population protection. Ongoing challenges for health protection include our high reported rates of gastrointestinal infection and our low uptake of seasonal flu vaccine in at-risk individuals, both of which require the sustained efforts of the NHS, Local Authorities and Third Sector.

Alcohol, smoking and obesity have a major impact on our health, our services and our economy in Grampian. They also have significant resource implications. Based on Scottish estimates, a 10% overall reduction in the average alcohol consumption could save £1.3 million in healthcare costs in the first year. Maintaining the reduction in consumption for 10 years, would achieve cumulative estimated savings of £19 million. A 1% reduction in the number of smokers would achieve an estimated saving of £1-2 million in healthcare costs per year. A reduction of 1.5-2% in obesity in the adult population could save around £1 million per year in healthcare costs in Grampian, which could be redeployed for other needs and priorities. Added to these are the savings in the significant burdens on individuals, their families and the economy.

There is substantial evidence about the important influence of early life. Early optimisation of health and health behaviours present the best opportunity to improve the future health of the Grampian population. Over 22% of Grampian children in Primary 1 are 'at risk of overweight and obesity'. Although the extent of dental disease is continuing to fall, clear health inequalities remain and a high burden of decay is seen in a relatively small proportion of the population. The 'Protective Shell', a concept developed to support our work with Community Planning Partners, aims to direct our focus beyond these negative health outcomes towards positive attributes, or assets, which will help to protect against negative health outcomes. These include coping mechanisms, physical fitness, good mental health, parental attachment and family support.

Protecting our health during the working years is also key, particularly for those living in our most deprived areas, and are at greater risk of the earlier onset of multi-morbidity. Healthy workplace environments, policies and practices have a positive impact on the local economy. These constitute a huge asset to sustain good habits, helping to underpin the quality of life for individuals, families, businesses and communities. In Grampian, our Healthy Working Lives programme supports 173 employers, reaching over 76,000 employees. A record number of employers in this programme achieved Healthy Working Lives awards last year. The cumulative effects of utilising our individual and collective assets in this way will help to reduce the levels of serious preventable ill-health described in the first section of the report.

As one of the biggest local employers, **NHS Grampian supports the Health Promoting Health Service for its own staff as well as for patients**. Moray Community Health and Social Care Partnership, Aberdeen Royal Infirmary and the Mental Health and Learning Disability Service are helping to make 'healthy working lives' routine practice. Our aim is to have all our staff involved with Healthy Working Lives by the end of 2013, encouraging staff to be positive role models.

Work is good for health. There is strong evidence for supporting individuals to keep connected with the world of work, whilst overcoming a health barrier. A partnership approach with carers, employers, and services in the community is starting to make a difference to people's experience of sickness absence and its consequences. Public Health and Allied Health Professionals have identified critical points within clinical pathways for a brief intervention to help an individual to remain in or return to work. This will help to avoid the health inequalities suffered by those prematurely excluded from working life.

For those at high risk of preventable serious ill-health, the national Keep Well programme aims to help 40-64 year olds in the most deprived areas to take control of their own health and reduce their risk of cardiovascular mortality and related morbidity. Over 1630 patients in our most deprived communities benefited from a Keep Well health check in 2012-13. Support available includes a new locally developed Health Coach Service, drawing on Health Psychology expertise to build from the patient's existing assets and experience to make positive behaviour changes. We continue to learn from the responses of patients and practitioners to the Keep Well programme, to inform our future approaches to addressing inequalities.

An estimated 3,600 individuals have significantly reduced their over-consumption of alcohol to less hazardous or harmful levels since 2009, with 32,000 Alcohol Brief Interventions delivered by healthcare professionals. However, more than 180,000 individuals in Grampian are still likely to be drinking above Government guidelines for sensible drinking. We have tools and interventions in place that we know are effective. However, consistent delivery, with each of us playing our part, remains a significant challenge. Support is well-

established locally and the five Local Licensing Boards in Grampian are presently revising their policies in order to support this imperative.

NHS Grampian and partners have helped people to stop smoking ('quits'), with growing success. In 2012, we recorded 4840 successful 4-week quits. Of these quits, 57% were achieved in our most deprived communities. 25% of quits were sustained at 12 weeks, the highest rate in Scotland. This has been achieved through a partnership of our Smoking Advice Service, the Pharmacy and Medicines Directorate and our 138 community pharmacies in Grampian. The changes in health behaviour achieved reflect the importance of partners working together. Applying the most influential measures: legislative, fiscal and regulatory, our Tobacco Control Alliances are well placed to implement our continuing our drive to minimise tobacco use and its harms.

Implementing *Grow Well, Stay Well*, our local partnership framework, is vital, with 1 in 3 of the Grampian population estimated to be obese. The framework sets out a range of interventions to tackle obesity and overweight. Local decision makers and front line staff who provide health services should provide role models, as well as support. Sustaining our work together at individual, community and population levels, in the short and medium term, gives us the best approach to ensure positive change.

In order to encourage adults to be more active, we need to increase activity levels across the population and provide additional support to individuals at high risk. In Grampian, less than half the adult population meets UK physical activity guidelines, of activity adding up to at least 150 minutes of moderate intensity activity in bouts of 10 minutes or more. Walking is accessible, inclusive, needs no specialist equipment or expense and is one of the best ways to be active. We are working with *Paths for All* to achieve the Scottish Government's national outcomes for a happier, healthier, greener, more active Scotland. Specific aims include reducing the proportion of the population who are physically inactive, through a national walking programme. There is good evidence that people find it easier to be active when there is environmental support. This is another example of the power of partnership working to support change at both individual and population levels.

Effective partnership working is paramount. Realising it will require sustained collaboration, including with our academic institutions. Generating new evidence of what works well requires strong partnership between academic and service colleagues to ensure that the growing body of evidence is harnessed to support common endeavours to improve health and reduce inequalities.

In summary: demands on health and care services today are higher than ever before. The demographic shift, with significantly increased numbers of elderly people with multiple chronic conditions and the rapid development of new treatments will place growing pressure on service delivery by health and social services. Upward trends in obesity may offset the benefits of a downward trend in the numbers of people who smoke. While most health indices are better for

Grampian than the Scottish average, we must not be complacent about our health inequalities and how we tackle them. These pressures are now upon us. They are a stark reality and set to increase. Effective collaborative working is therefore not only desirable but also essential.

We must plan for today and work for a better future. The Single Outcome Agreement should be a key vehicle to achieve this. The Public Bodies (Joint Working) (Scotland) Bill provides the opportunity to assure that our public services are fit for purpose and to address the individual needs of our citizens for support - irrespective of age or circumstances. This chimes well with NHS Grampian's 2020 Vision, at www.nhsgrampian.org/healthfit2020 to be implemented in partnership with Local Authorities and the Third Sector, in order to provide fair and equitable services throughout Grampian as we move forward together.

1 Sentinel markers of population health: reflecting back and looking forward

1.1 Introduction

The health needs of the Grampian population, like elsewhere in the UK, are changing. As people live longer, we need to deliver care now to support those with poor health. At the same time, we must plan for a future where people live longer in good health and are as resilient as they can be to the impact of illness. This section sets out sentinel markers of health for the people of Grampian. It highlights the major challenges that face us in planning healthcare and in improving health in the future.

1.1.1 Markers of success

Life expectancy at birth in Scotland improved steadily for men and women over the 20th century.[1] Improved social circumstances, mass vaccination and effective treatments have reduced mortality from infectious causes dramatically. There has been a significant reduction in premature mortality from cardiovascular disease.[2] In Scotland, the introduction of the smoking ban in public places in 2006 delivered demonstrable improvements for health with cleaner air and a reduction in heart attacks, reduced second-hand smoke exposure in children and non-smokers, and among staff in high exposure workplaces.[3,4]

Technological advances in healthcare have continued apace, bringing new treatments for previously untreatable conditions, improvements in outcomes, earlier diagnosis and new ways of delivering healthcare. Grampian has a proud history in leading technological developments in health. The development of the first full body Magnetic Resonance Imaging (MRI) scanner in the 1980s by Professor John Mallard and his team revolutionised our ability to detect the causes of ill health.[5] NHS Grampian hosted the Scottish Centre for Telehealth and Telecare, prior to it becoming an integral part of the services provided by NHS24. The Centre's role is to develop cutting edge advancements in a range of clinical areas including surgery and stroke care.[6]

1.1.2 Our challenges for the 21st century

We have been forecasting for many years how, as people lived longer, the population would age, that the post World War II 'baby boomer' generation would live longer into retirement age and the number of people of working age would fall. In 2013, the first baby boomers reached 'retirement age'. This same group, however, was exposed to a high burden of risk factors. Despite the reduction in smoking, the increase in obesity, alcohol and substance misuse, low physical activity and poor diet continue to challenge our health in Grampian, as they do across Scotland.

Improved treatment brings better survival from the earliest years with around 80% of very premature babies, born at 26 weeks gestation, now surviving to discharge from hospital.[7] Improvements in treatment are also reflected in our ability to survive previously fatal illnesses.

The convergence of longer lives, the burden of risk factor exposure and improved survival from previously fatal health events comes at a price, with more people now living with long-term health conditions. For many, it is not a single condition, but multiple long-term conditions, all requiring self-management, healthcare support, medications and other interventions, and all impacting on the individual, their family, and potentially, their community.

1.1.3 Planning for our present

We have known about, and discussed, these challenges for many years, always with a view to a future time. More than a decade into the 21st century, the review of sentinel markers for population health illustrate, 'that time' is now.

1.2 Demographic Challenges

1.2.1 More people of 'retirement age'

The change in demographic pattern, even looking back just 30 years to the early 1980s, is remarkable [Figures 1 - 3 and Appendix 1]. It is also striking that this 'ageing' demographic shift is not evident in the most deprived quintile in Grampian. Aberdeenshire and Moray, in particular, have experienced a major change in their populations with a 75% and 66% increase respectively in the number of people aged 75 years and over [Appendix 2]. This is a pattern predicted to continue with a near 100% increase in the number of people 75 years and over in Grampian from 2010 to 2035 [Appendix 3].

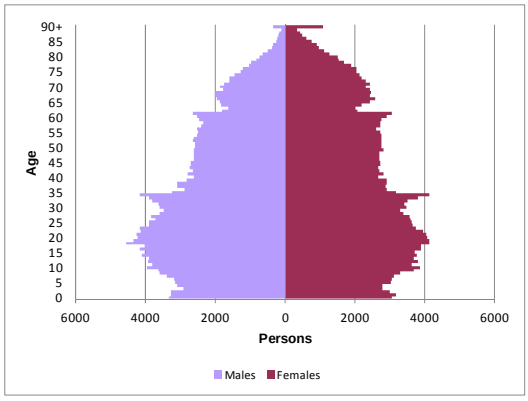


Figure 1: Grampian Population Estimate for 1981. Source National Records of Scotland (2002).

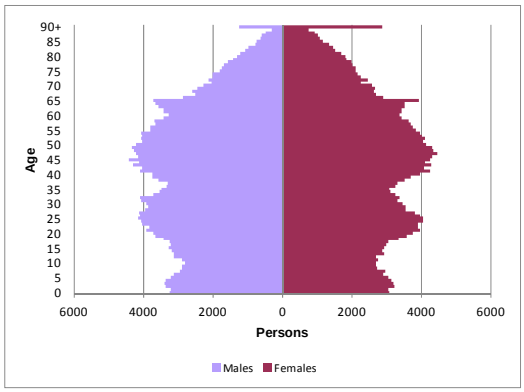


Figure 2: Grampian Population Projection for 2012. Source: National Records of Scotland (2012).

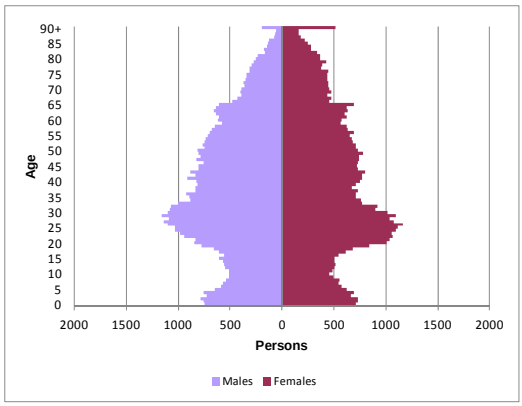


Figure 3: Grampian Community Health Index (CHI) Population for 2012 in Local Deprivation Quintile 1 (the 20% most deprived in Grampian).
Source: NHS Grampian Health Intelligence, using data files from Practitioner Services Division (2012) and Scottish Government (2012).

1.2.2 More people living into old and very old age

Life expectancy at birth in Scotland has been improving steadily.[1] However, of the European Union countries which joined prior to 2007, Scottish males rank 17th and females 20th out of 25 countries.[8] Compared to the rest of the UK, Scotland also lags behind.

Grampian does better than Scotland as a whole. In Grampian, average life expectancy at birth, 77.3 years for males and 81.3 years for females (2008-2010), is above the European Region average. However, against comparator countries of the European Union who joined prior to 2007, over two-thirds of countries have higher life expectancy than Grampian women and more than half of the countries have higher life expectancy than Grampian men.

In Aberdeen, life expectancy at birth (76.3 years for men and 80.9 years for women) is marginally better than the Scottish average (75.8 for men and 80.4 for women, for 2008-2010) ranking 21st for men and 20th for women out of the 36 Community Health Partnerships across Scotland. In the 15% most deprived areas of Aberdeen, those born since 2006, life expectancy at birth remains around 5 years less than for their most affluent counterparts [Appendix 4].

1.2.3 More people living with chronic diseases

Like life expectancy, healthy life expectancy (the number of years living in a healthy state) has also gradually improved over time in Scotland, though with little change in the last decade. The gap between life expectancy and healthy life expectancy has, however, stayed fairly constant. For those born in 2010, we would expect, on average, men would spend more than 16 years and women 19 years in a 'not healthy' state.[9] Comparing the most deprived with the least deprived 10% for 2010, healthy life expectancy was more than 22 years shorter in men and women. The impact on the deprived is of huge consequence; lower life expectancy, even lower healthy life expectancy and therefore a bigger gap between the most and least deprived and longer time in 'poor health'.

1.2.4 More people needing supported care

With the growing elderly population and time spent in 'poor health' we might expect an increase in supported care. However, over the last 12 years the number of care home places available in Grampian[10] reduced by 9%. In 2012, Grampian (with 3.7% of the over 65 year old population supported in care homes), and Aberdeen in particular (4.5%), was the second highest provider of care home support in Scotland.

The number receiving home care 'packages' is reducing, with 1.4% of the over 65 year old population of Grampian in 2012 receiving over 10 hours of home care and only 0.8% in Aberdeenshire, the second lowest in Scotland [Appendix 5]. The proportion of all people with 'intensive' care packages (over 10 hours per week of home care or care home) supported at home has increased to 27.3%.[10]

There has been low use of telecare in Grampian to support the very elderly at home with only 11% of over 75 year olds receiving any form of telecare. The

Scottish average is 18%.[10] It is worth noting, however, that work is in hand which is likely to change this position both locally, and nationally. The Digital Moray team, a partnership between the NHS, The Moray Local Authority, the Scottish Government, Highlands & Islands Enterprise, academia and industry, is improving health by developing and reaping the benefits of digital health innovations.

Eleven percent of the adult Grampian population reported that they provided regular care for another person [Appendix 6].[11] Currently, NHS Grampian provides around 7000 respite care weeks each year, of which two thirds are for overnight respite for unpaid carers [Appendix 7].

1.3 Chronic Disease Challenges

1.3.1 More people living with more than one chronic disease

Of the Grampian population, 39% report having at least one long-term condition, with 23% reporting a limiting condition impacting on their daily activities [Appendix 8].[11]

Multi-morbidity, the co-existence of two or more chronic conditions within an individual, is a growing public health challenge. Multi-morbidity is associated with poorer outcomes and increased use of health and social care services. Despite it being commonplace, we have not routinely considered the health of our population in terms of multi-morbidity burden.

A recent large Scottish primary care study reported almost 1 in 4 people were coping with more than one long-term condition.[12] While the prevalence of multi-morbidity increases in the older population, the majority of people with multi-morbidity are under 65 years old. The onset of multi-morbidity occurs 10 to 15 years earlier in those living in the most deprived areas compared to the most affluent.

Multi-morbidity impacts not only on mortality, but also on the complexity of care that a person requires; the duration of consultations with a GP; duration of stay in hospital; and the risk of complications as a result of medical care. For the individuals and their carers, multi-morbidity also impacts on quality of life.

1.3.2 Fewer people dying prematurely

Cardiovascular disease (including stroke), cancer and respiratory disease are the three main causes of death in Grampian. Cardiovascular disease mortality has fallen over the last 30 years [Figure 4]. For respiratory disease, the change in death rates is less marked. Chronic obstructive pulmonary disease (COPD) is the major cause of respiratory death in adults. Despite a considerable decline in population smoking rates over the past 25 years, illness and death as a result of damage sustained over a lifetime of smoking, remains high. In women, the rate of admissions and COPD as a cause of death has increased dramatically.[13]

Almost 1 in 6 deaths in Grampian in 2012 occurred in those aged under 65 years. The leading chronic disease causes of premature death in Grampian included coronary heart disease, lung and breast cancer, and alcoholic liver disease.[14]

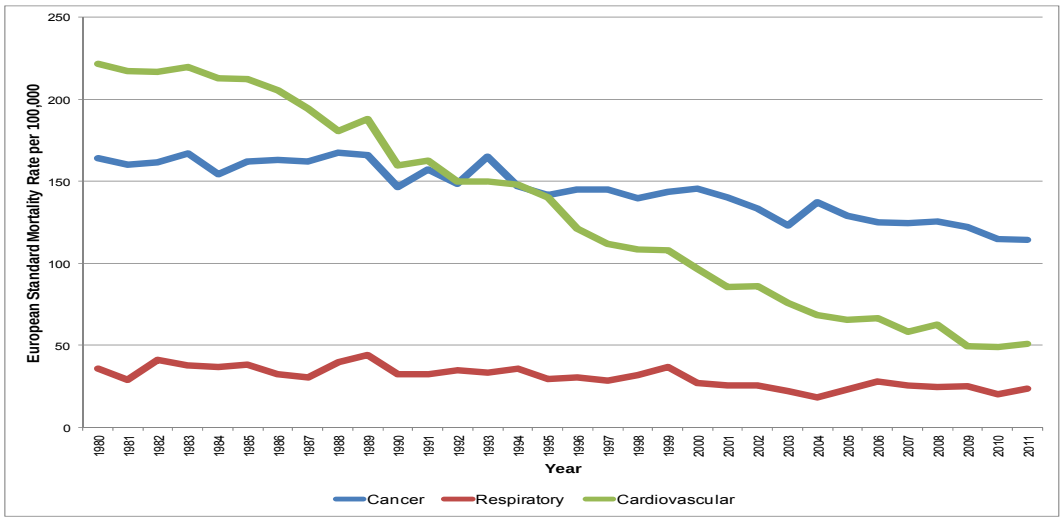


Figure 4: Mortality rates for Grampian 1980–2011 for cardiovascular disease, cancer and respiratory disease in those aged <75years (standardised by age and sex to the European standard population).
Source: NHS Grampian Health Intelligence, using data files from National Records of Scotland (2012).

1.4 Improving lifestyle and health choices

1.4.1 Early Detection

We have made continuous improvements in our ability to detect disease early and support those affected. 2012 saw the launch of a new screening programme for all men aged 65 years to help to detect Abdominal Aortic Aneurysm early.[15] In Grampian, in the first 7 months, almost 3000 men had been screened. Public uptake of immunisation and screening is a vital part of improving the health of the Grampian population, as is the participation in initiatives aimed at supporting and promoting self care and self management.

High uptake of primary and booster childhood immunisations in Grampian, with more than 95% of children completing the primary vaccination course by 24 months, provides good individual and population protection of the vulnerable and unimmunised [Appendix 9].

Cancer outcomes may be further improved when the disease is identified and treated at the earliest possible stage, through participation in screening programmes and minimising delays to diagnosis when cancer-associated symptoms occur.

1.4.2 Healthy lifestyle

The key to improving health rests with every one of us in Grampian. Taking part in more physical activity and eating more healthily are things that we can all do as individuals. However, it is crucial that we seek and take all available opportunities to encourage, facilitate and make healthy options the easy option for people in Grampian.

Of adults in Grampian, 39% take at least the minimum recommended levels of physical activity. Fewer than 1 in 4 people in Grampian reported eating the recommended 5 portions of fruit and vegetables per day.[16] This situation is improving but not nearly fast enough to meet the growing impact that obesity is having on our health [Appendix 10 (physical activity) and Appendix 11 (diet)].

1.4.3 Risk taking behaviour

Alcohol, smoking and obesity have a major impact on our health, our services and our economy.

In 2003, it was estimated that 1 in 20 adult deaths were attributable to alcohol and as high as one in four deaths in those aged 35-44 years.[11] Almost 50% of men aged 16-24 years in Grampian reported drinking in excess of 21 units of alcohol per week. Based on Scottish estimates, a potential £1.3 million saving could be achieved by NHS healthcare in Grampian in the first year if a 10% overall reduction in the average alcohol consumption could be achieved. This saving could amount to an estimated £19 million if the reduction in consumption was maintained over 10 years.[17]

The number of people smoking in Grampian has been falling, slowly [Appendix 12]. Small changes are important. If a 1% reduction in the number of smokers in Grampian was achieved, a saving of up to £2.1 million in healthcare costs per year could be realised.[18]

Almost 1 in 3 of the Grampian adult population were estimated to be obese in 2011 and 68.5% were overweight or obese [Appendix 13].[19] Nearly 20% of children in Grampian were obese in 2011. If obesity could be reduced by 1.5-2% in the adult population, the accompanying saving in healthcare costs would be in the order of £1 million per year in Grampian.[17]

These cost savings are estimates and only consider the health service impact. In addition, costs to the individuals, their families and the economy would be saved.

There is evidence of progress. School survey data shows a reduction in the proportion of children reporting alcohol consumption in the previous week, ever taking drugs or smoking regularly [Appendix 14].[20]

1.5 Planning for our future today

1.5.1 Importance of early life

The demand for health services today is higher than ever. The demographic shift, increased burden of long-term conditions and the rapid development of new treatments and interventions to manage even the most serious conditions all place growing pressure on healthcare delivery. These pressures are no longer of the 'future'. They are a reality and set to increase over the coming decades.

We must, therefore, plan for today and work for a better future to narrow the gap between life expectancy and healthy life expectancy for all. We need to take a 'long view' of health and its determinants.

There is substantial evidence about the important influence of early life, even before birth, on later health.[21] Poor foetal growth, often summarised by low birth weight, is associated with an increased risk of coronary heart disease, hypertension, type 2 diabetes, kidney disease and asthma.[22] In Grampian, 6.9% of babies are of low birth weight. However, this figure includes pre-term births, so the number of babies reaching at least 37 weeks gestation who experience poor foetal growth is lower (2.3%) [Appendix 15].[23]

The results of early life continue to shape our future health throughout childhood and early adult life. In adolescence and early adulthood, there are major biological and social transitions that set a trajectory in terms of risky behaviours and health. They shape our resilience, our ability to cope with future negative events including poor health.[24]

A gradual shift to prevention and early intervention is required, without compromising those children and young people who most need our services.

1.6 Conclusion. No time for complacency

Despite the apparent successful management of communicable diseases over the last century, the recent outbreaks of measles in London and South Wales serve as a stark reminder that there is no room for complacency. In Scotland, 2012 saw the highest rate of whooping cough in decades. Antibiotic resistance amongst common bacteria causing human illness has been increasing in Europe with health leaders concluding that the next 50 years may be 'very different' with the 'loss of the war' on infectious diseases.[25,26]

The downward trends in the major causes of morbidity and mortality observed, particularly as smoking prevalence has fallen, are predicted to reverse in response to the impact of obesity on our health. If the current trends continue, then over the next 20 years, as a result of obesity alone, we might expect 3,000 extra people living with cardiovascular disease or stroke, 5,000 extra people with diabetes and close to 1,000 extra people with cancer.[27]

The plans we make today and tomorrow to improve population health and healthcare in Grampian must recognise the pressure to manage these challenges now and at the same time, plan for a healthier future. These plans need to ensure that our systems and services provide a level of support which allows individuals, families, communities and organisations to play their part; today, as well as tomorrow.

2 Big Issues

2.1 Health Protection

2.1.1 Introduction

Health Protection involves the surveillance, investigation, control and prevention of communicable disease and environmental hazards to human health. The overriding priority is to provide a timely response to communicable disease and environmental incidents that may present actual or potential threats to the public's health.

During 2012, NHS Grampian's Health Protection Team (HPT), in collaboration with colleagues in the NHS and other agencies, has continued to build on previous achievements, including, for example, the high uptake of Human Papilloma Virus vaccine with 86% of eligible girls, aged between 12 and 17 years, having completed the three dose course of vaccinations. However, there are ongoing challenges. Addressing the high rates of gastrointestinal infection and the poor uptake of seasonal flu vaccine will require the sustained efforts of the NHS, Local Authorities and Third Sector.

We have highlighted some specific key health protection issues below. However, we strongly recommend that you read the supporting annual reports for more detailed information, on the NHS Grampian website at www.nhsgrampian.org/healthprotection.

2.1.2 Blood Borne Viruses

In Grampian, the number of new cases of Hepatitis B, Hepatitis C and HIV continues to increase year on year. During 2012, 49 new cases of Hepatitis B were identified, 70 new cases of Hepatitis C and 41 new cases of HIV. The prevention, testing and treatment of these blood borne viruses (BBV), therefore, remains a high priority. This is underpinned by the National Framework for Sexual Health and Wellbeing and Blood Borne Viruses (2011-15).[28]

During 2012, a Managed Care Network (MCN) approach was taken with Viral Hepatitis and HIV in Grampian, in conjunction with Sexual Health. The integration of these areas into one MCN has enhanced our collaborative approach. Local Authority and Third Sector partners have contributed jointly with NHS Grampian to develop a local strategy which will facilitate progress on the national outcomes. This approach has also enabled us to identify and reduce inequalities in access and use of services, as well as reduce the gap in health outcomes amongst the most vulnerable in our communities by effectively targeting resources. In Grampian, we have used the learning and development around Hepatitis and HIV during 2012 to inform further work, as well as our priorities for 2013/14. For more detailed information on local data and achievements in 2012-13, the Sexual Health and BBV MCN Annual Report is available at www.nhsgrampian.org/healthprotection.

2.1.3 Gastrointestinal illness

NHS Grampian continues to have one of the highest rates of gastrointestinal infection in Scotland. Some of these infections are the result of lifestyles and behaviours. For example, the risk of infection from swallowing organisms such as *Campylobacter*, *Cryptosporidium*, *E. coli* O157, or *Salmonella* is increased by poor hand washing practice, contact with animals, the use of untreated or poorly maintained private water supplies, travel abroad, inappropriate handling and inadequate cooking of raw food.

The HPT continues to work with partners to minimise the risk of gastrointestinal infections. Further information on gastrointestinal infections and the actions taken to minimise risk to health can be found in the annual report '*Epidemiology of gastrointestinal infections in Grampian in 2012'* at: www.nhsgrampian.org/healthprotection.

2.1.4 Infection Control

The decline in the development and approval of new antibiotics and the increasing number of drug resistant bacteria (especially multi-resistant Gram negative bacteria) has become one of the major public health threats of the 21st century (World Health Organisation 2012).[29] The concern is that, increasingly, there may be limited or no treatments available for individuals with infections.

Our main defence will be our ability to prevent infection occurring. Achievement of this is dependent on all staff involved in the care of individuals routinely maintaining excellent infection prevention and control practice. The Health Protection Team continues to provide infection control, advice, education and training to non-NHS sector organisations, particularly those providing care to the most vulnerable.

Challenges are anticipated as a result of the substantial shift in focus of care for older people from institutional (including NHS) settings to care at home or in a homely setting (Scottish Government 2011).[30] It is anticipated that the demand for training and advice provided by the HPT will increase as a direct result of community care service providers being required to support and deliver more complex care.

More information about NHS Grampian's Healthcare Acquired Infection surveillance can be found at http://www.nhsgrampian.org/ under Infection Prevention and Control.

2.1.5 Tuberculosis

In 2012, there were 36 cases of TB notified in Grampian. This number continues to fluctuate year on year. Each patient can pose many clinical management challenges, especially when they have problems with drug and/or alcohol dependency. Identifying patients with latent TB infection remains a priority, whether through NHS Grampian's expanding New Entrant screening programme or screening of household and workplace contacts of cases. A single case can lead to an incident requiring large numbers of people to be screened, all within a

relatively short timescale. Further information about TB in Grampian can be found in our annual TB report at www.nhsgrampian.org/healthprotection.

2.1.6 Immunisation

During 2012, Grampian uptakes were maintained above the 95% target for completion of the three dose primary course of vaccinations by 12 months of age. For the first time in Grampian, uptake of the MMR (Measles Mumps Rubella) vaccine by 24 months old exceeded 95%, providing a high level of protection to children in this age group. By the age of school entry at 5 years old, 97% of all Grampian children had received at least one dose of MMR vaccine and 94% had completed the two dose course.

Measles

In 2012, outbreaks of measles were reported in the UK, increasing the likelihood of measles infection being imported into Grampian and causing clusters of cases. Despite our high levels of MMR uptake in young children, on average, around 1 in every 7 of all Grampian teenagers remains unvaccinated with MMR. If the measles virus begins to circulate amongst these teenagers it is likely to give rise to several cases of illness, with a high risk of the infection spilling out to affect those too young to be vaccinated. [Note: This concern was addressed in 2013, by the offer of a catch up MMR programme for unimmunised children and young people].

Women of child bearing age who have not received MMR vaccine remain non-immune to rubella and are a particular concern given, the ability of this virus to cause devastating damage to a developing foetus if the infection occurs in the mother during early pregnancy.

When cases of measles arise in the community, evidence shows that healthcare workers are at higher risk of catching the infection than the general population. It is vital that those workers likely to come into contact with patients suffering from possible measles infection are themselves immune. Locally, healthcare workers who are uncertain of their own level of immunity are being encouraged to complete a course of two MMR vaccinations.

Whooping Cough

During 2012, there was a dramatic increase in cases of Whooping Cough (Pertussis) throughout the UK, including Grampian. Whooping Cough is a particular concern when it occurs in babies, as it can cause very serious, and sometimes fatal, illness. Over 95% of Grampian babies completed their three dose course of vaccinations against this infection by age 12 months. However, in 2012, a substantial proportion took several months longer to achieve this than the recommended completion of the course by 4 months of age. This meant that many babies remained unprotected, or with incomplete protection, at a time when they were at their most vulnerable to the complications associated with this infection. Locally, action has been taken to raise awareness of this issue amongst vaccinators and encourage earlier completion of the course of injections. In addition, as part of a UK-wide initiative, Whooping Cough booster vaccination was introduced for all women during pregnancy. This promotes an

increased level of antibody in the mother, which passes to the foetus and then subsequently protects the newborn baby until old enough to be vaccinated.

Seasonal Flu vaccination

In 2012, over 70,000 people aged 65 years or more received vaccination, giving an uptake of 76%. Unfortunately, only 54% of people aged less than 65 years, who suffer from underlying medical conditions, accepted the offer of vaccination. This left over 26,000 people unvaccinated and at increased risk. Seasonal flu vaccination has been introduced as part of routine ante-natal care for all women, because of the increased risk of becoming severely ill if they catch flu. Again, uptake has been lower than desired in this group. During last winter, only 47% of this group were vaccinated, leaving over 3600 women unprotected. Greater efforts will be necessary to promote the benefits and acceptability of flu vaccine in pregnancy.

Caring for patients with flu means that healthcare workers are also at increased risk of infection. To protect staff, NHS Grampian makes flu vaccination available, free of charge, each winter to NHS and social care staff involved in providing care. The aim is to reduce the risk of the member of staff becoming ill themselves and also potentially taking the infection home to their family. Although the reported uptake has been disappointing at only 24%, this low uptake is also seen in other Scottish Health Board areas and it is recognised that not all staff flu vaccinations are recorded, particularly in the community. A robust method of capturing these data is being developed and will be implemented during 2013/14 flu season.

Each year, considerable thought goes into planning the forthcoming seasonal flu vaccination campaign. Increased effort, locally and nationally, will be needed if we are to be successful in further raising awareness of the importance of flu vaccination amongst high risk patients and increasing the number of staff taking up their opportunity to be vaccinated.

HPV (Human Papilloma Virus) vaccination – a local success story

We have now completed the fourth year, following introduction of this vaccination for girls aimed at decreasing their risk of developing cervical cancer in later life. During the academic year 2011-2012, 86% of eligible girls completed the three dose course of vaccinations (overall Scotland uptake was 82.8%), and Moray CHP's uptake of 91.2% was the third highest in Scotland.

Changes to the vaccination schedule

Changes to the vaccines offered are being introduced in 2013. Rotavirus vaccination is being introduced for infants. Changes are being made to the Meningococcal C vaccination programme to improve the protection offered. Herpes Zoster (shingles) vaccine is being introduced for residents, aged 70 from 1st September 2013, with a phased catch up for those up to 79 years to follow. The seasonal influenza programme is being extended to include all children between 2 and 17 years, over the next three years. Further information about immunisation in Grampian can be found in our annual immunisation report at: www.nhsgrampian.org/healthprotection.

2.1.7 Conclusion

Public Health's Health Protection Team will continue to work in collaboration with colleagues in the NHS, partners and other agencies, to minimise both existing and emerging threats.

2.2 Children and Young People's Health

2.2.1 Introduction

Grampian's children and young people are our future adult population, and our future parents. Optimising the health and health behaviours of this group presents the best opportunity to improve the future health of the Grampian population.

There are 117,385 children and young people aged 18 years and under in Grampian (20% of the population): 38,730 (33%) are pre-school (0-5 years), 39,987 (34%) are primary school age (6-12 years) and 38,668 (33%) are older school age/ young adult (Figure 1). Almost half (49%) of people aged 0-18 years are resident in Aberdeenshire (National Records of Scotland 2013).[31]

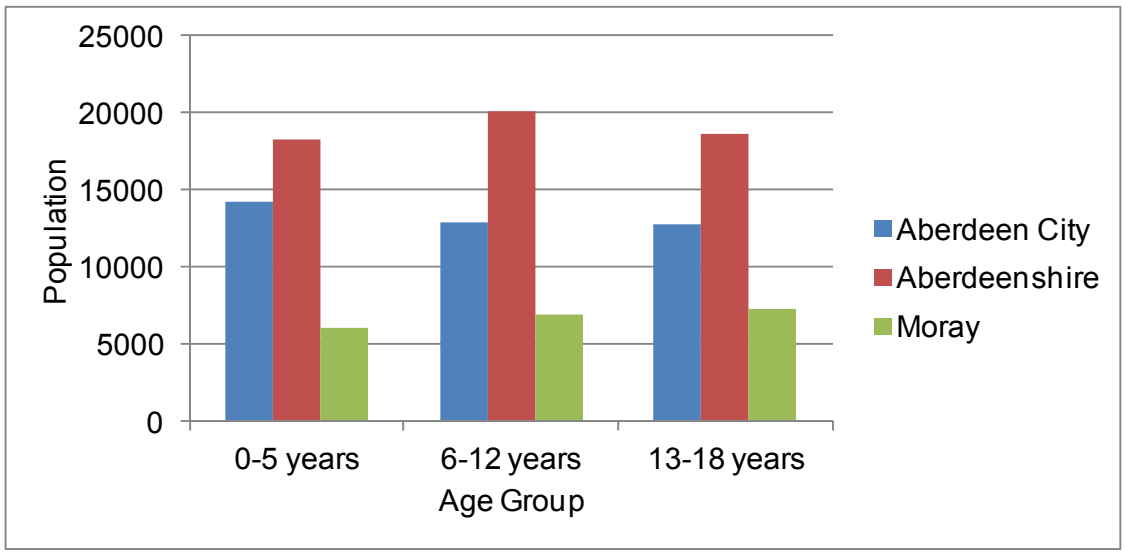


Figure 1 Grampian Population of Children and Young People by Local Authority Area in 2012 (National Records of Scotland, 2013).

2.2.2 Health profile

Births in Grampian rose to a high of 6,360 in 2010. This is likely to be part of a longer term fluctuation in both birth rate and birth number. In 2011, 6.9% of babies born in Grampian were low (1500-2499g) or very low (under 1500g) birth weight. 26 stillbirths were recorded in Grampian in 2011, equal to 4.1/1000 births (the Scottish average was 5.1/1000 births) (NHS National Services Scotland 2012).[32]

In the period 2007/8 to 2009/10, 226 maternity cases in Grampian recorded drug misuse and 200 neonatal discharges recorded drug misuse (this figure may include more than one admission of the same baby) (NHS National Services Scotland 2012).[33] *Hidden Harm*, a report by the Advisory Council on the Misuse of Drugs (2003)[34], suggests that around 1% of babies [60 per year in Grampian] are born to problem drinkers.

Over the last 10 years, teenage pregnancy rates in Grampian have remained fairly stable with some evidence of a decrease in more recent years. In the under 20 age group, the rate dropped from 50.6 pregnancies per 1,000 15-19 year old girls in 2006 to 41.0 per 1,000 in 2010. The rate among 15-17 year olds dropped from 35.9 in 2006 to 27.9 in 2010. The rate among 13-15 year olds showed a drop from 6.2 per 1,000 in 2006 to 5.7 per 1,000 in 2008, but a rise to 7.2 per 1,000 in 2010. The Grampian rates have been consistently less than the Scottish average over the 10 year period, but it is locally estimated that in some areas the teenage pregnancy rate is up to six times higher than the Scottish average. Teenage pregnancy rate is strongly associated with socio-economic deprivation (NHS National Services Scotland 2012).[35]

Rates for breastfeeding, for Grampian as a whole, compare well with Scottish averages (table 1).[36] However, some areas in Grampian have low or very low rates.

	2010/11		2011/12	
	Breastfed (inc. mixed breast and formula fed)	Exclusively breastfed	Breastfed (inc. mixed breast and formula fed)	Exclusively breastfed
First review (10 days old)	58.1 (46.8)	44.3 (36.3)	58.4 (47.0)	43.4 (35.9)
6-8 week review	46.3 (37.1)	32.4 (27.5)	45.4 (36.7)	31.9 (26.2)

Table 1 Percentage breastfeeding rates in Grampian (Scottish averages) (NHS National Services Scotland 2012).

Over 22% of Grampian children in Primary 1 are 'at risk of overweight and obesity', including 9.8% 'at risk of obesity' above the Scottish average (NHS National Services Scotland 2013).[37]

Of Grampian children in Primary 1, 68% have no obvious decay experience in primary teeth (Scottish average 67%). All Scottish Index of Multiple Deprivation (SIMD) quintiles at national level have shown an improvement in oral health in the National Dental Inspection Programme 2012 survey compared to earlier surveys. The extent of disease continues to fall in those most affected by decay but clear health inequalities remain and a high burden of decay is seen in a relatively small proportion of the population in Scotland. Among mainland NHS boards, Grampian has the lowest level of children (77%) participating in NHS General Dental Services (Scottish average 88%) (Information Services Division (ISD) 2012).[38]

A figure of 25 children per 100,000 total population (all ages) in Scotland develop type 1 diabetes each year. (Netdoctor 2013).[39] It has been predicted that, unless present trends are slowed, one in five children born in the UK in 2000 will develop (mostly type 2) diabetes in their lifetime (EarlyBird Diabetes Trust 2013).[40] [41]

One in 11 children in the UK has asthma; 72,000 children in Scotland (Asthma UK 2013).[42] Moray had a particularly high rate of hospitalisations for asthma in patients aged 0-15 years (728.7 per 100,000) in the 2010 ScotPHO Children and Young People Health and Wellbeing Profiles (Table 2) (ScotPHO 2010).[43] {Note: This is under investigation in 2013, to determine whether these represent a real issue, or reflect, for example, a coding issue.}

Aberdeen had a significantly higher rate than the Scotland average of emergency hospitalisations for unintentional injuries in the home aged 0-14 years and discharges from hospital following road traffic accidents aged 0-24 years. Aberdeenshire residents (of any age) had a significantly higher hospitalisation rate following road traffic accidents than the rest of Grampian in the 3 years from 2009 to 2011.[44]

Age-sex standardised rate per 100,000	Aberdeen City CHP	Aberdeenshire CHP	Moray CHSCP	Scotland
Discharges from hospital following road traffic accidents aged 0-24 years	119.0	191.7	114.6	87.9
Emergency hospitalisation for unintentional injuries in the home aged 0-14 years	631.1	395.4	335.2	377.5
Hospitalisations for asthma aged 0-15 years	365.1	289.9	728.7	382.1

Table 2: Selected measures from ScotPHO Children and Young People Health and Wellbeing Profiles (ScotPHO 2010).

2.2.3 Improving Children and Young People's Health

The importance of this group to the future health of Grampian and Scotland is underlined by the national Early Years Collaborative (EYC). In addition to the EYC, other key policies have created momentum, and a complex landscape, in relation to child health, including inequalities within this group. Some key themes arising from current thinking and policies in Scotland in relation to children and young people's health include:

- Preventing ill health, promoting good health and intervening early provide the best outcome; the pre-birth to 3 years stage provides unrivalled opportunity for improvement in future life chances, and parenting are central to this;
- Protecting children, tackling inequalities and improving outcomes for looked after children and other disadvantaged groups are key;
- Planning for services and efforts to improve child health should be undertaken in discussion with children, young people and families, and with stakeholders / partner organisations.

Percentage Prevalence	Aberdeen City CHP	Aberdeenshire CHP	Moray CH&SCP	Scotland
Regular smokers aged 15 years	12	13	13	13
Drank last week aged 15 years	34	36	38	34
Ever used drugs aged 15 years	17	13	18	21

Table 3: Selected Prevalence from Scottish School Adolescent Lifestyle and Substance Use Survey (2010).

The effect of concerted efforts to transform the lives of children underpins the wellbeing of future generations. There is also a positive economic effect with access to appropriate support reducing for example health costs and offending behaviour and increasing educational attainment and employability (Chief Medical Officer Annual Report 2011 – Transforming Scotland's Health).[45]

Another important theme is looking beyond negative health outcomes, which are often immediately obvious and amenable to measuring - for example medical diagnoses or admissions to hospital, and towards positive attributes, or assets, which protect against negative health outcomes. These would include coping mechanisms, physical fitness, good mental health, parental attachment, and family support. This is the focus of the EYC, and has been developed in NHS Grampian using the concept of the 'Protective Shell' (Figure 2).

The layers of the shell protect the 'state of good health' at the core from negative health impacts. These layers may last for different lengths of time, with some being lifelong while others are transient, or the protective effect may lessen with time.

They also provide varying levels of resilience, for example healthy behaviours and coping mechanisms may provide a very tough layer which offers a degree of protection against most potential harms. Similarly, the negative factors have differing levels of impact and length of effect.

The Protective Shell can therefore be very complex, but at its simplest, it is a visual statement of the fact that an individual's health is determined by a combination of positive attributes and negative impacts, though it is often the latter that we can measure and on which we have traditionally focused.

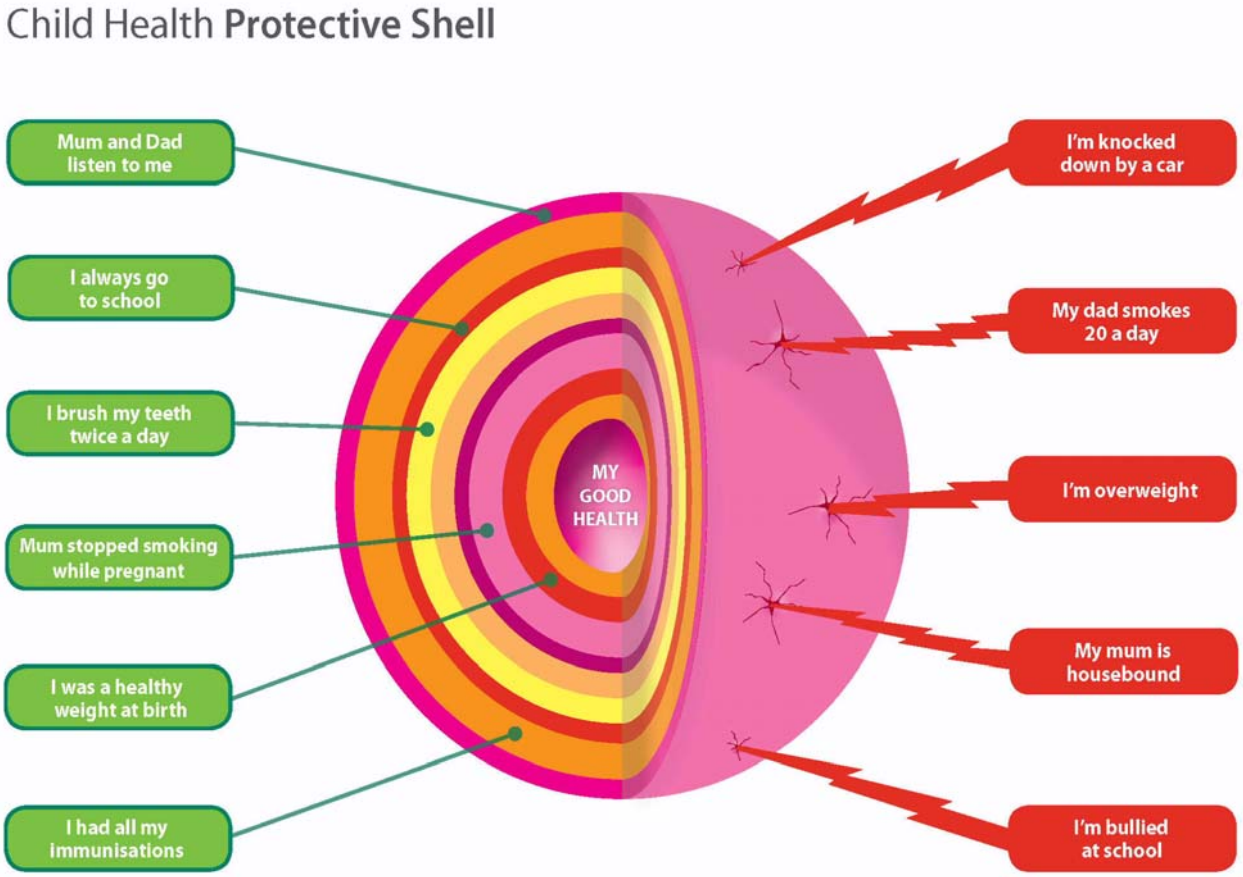


Figure 2: The Protective Shell. NHS Grampian, Public Health.

2.2.4 NHS Grampian's 2020 vision

In leading the development and implementation of the strategic framework we are setting out the direction of travel towards the 2020 vision for this population group. This vision is to make Grampian the best place in Scotland to grow up, by enabling all children and young people to have the best possible start in life.

Realising this ambition requires a truly integrated, partnership approach. It is increasingly clear that maximising the health of children, young people and indeed adults is dependent on a wide range of services and individuals, and on a holistic approach to each child.

2.2.5 Conclusion

In preparing a children and young people's strategic framework, Child Health 2020, we are engaging with children, young people and their families to ensure we are working together for a better tomorrow.

Under the banner of the Early Years Collaborative, NHS Grampian now meets with Local Authorities, Third Sector agencies and others, at strategic level, and within small working groups, making practical changes to improve child health in its widest sense. This seeks to demonstrate that children and young people's health really is everyone's business.

2.3 Cancer Risk Reduction

2.3.1 Introduction

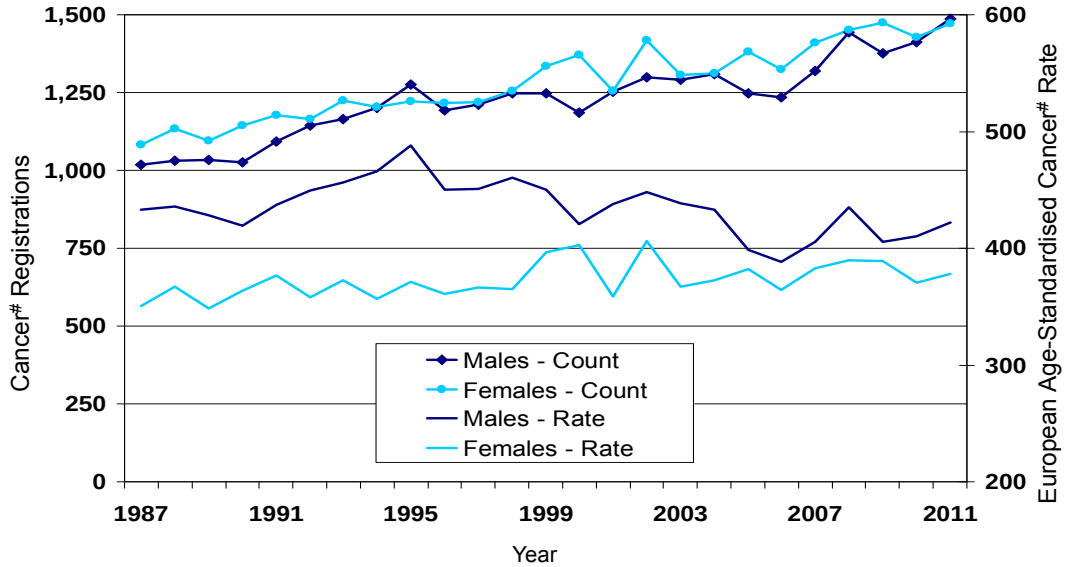
An increased awareness and understanding of cancer is important to reduce individual risk and improve outcomes across the population in Grampian. Cancer can be an emotive word. It is not a single and non-avoidable disease. Cancer does not have a single and predictable outcome for all patients.

Although there is a common disease process, leading to an uncontrolled accumulation of abnormal cells, there may be marked differences in rate of disease progression and the effectiveness of treatment between and within defined tumour groups.

Overall, cancer survival has improved. Approximately 3% of the Scottish population has been living with, or beyond, cancer for up to 20 years since diagnosis (ISD 2013).[46]

2.3.2 Reducing Cancer Occurrence (Primary Prevention)

It is likely that most people in Grampian will have direct experience of cancer, either personally, or within their extended family and friends. Local trends show an increase in the total number of cancer cases diagnosed over time (Figure 1).



All cancers excluding non-melanoma skin cancers (ICD-10 C00-C97 excl C44)

Figure 1: New Cancer Case Occurrence (Incidence) in Grampian residents (ISD 2013).

This can largely be explained by an ageing population and improvements in detection. At an aggregate level, it is estimated that one in three people living in Scotland will be given a cancer diagnosis during their lifetime.

As discussed in the Director of Public Health Annual Report for 2011, the overall risk of cancer occurrence is slightly lower in Grampian than the average risk for Scotland. However, the risk of cancer occurrence can be further reduced across the Grampian population.

There are unknown differences between individuals in baseline risks for specific cancers due to genetic susceptibility. Each individual's cumulative risk of cancer occurrence may be reduced by optimal exposures to modifiable risk, or protective factors. The observed decrease for the age-standardised cancer rate in men, in part, reflects a peak of smoking in men during the 1970s (Figure 1).

Registration data at Scotland level demonstrate that deprivation is associated with an increased risk of cancer occurrence (incidence) and death (mortality) from cancer (ISD 2012).[47] Cancer incidence increases by approximately one third between the least and most deprived areas, by the Scottish Index of Multiple Deprivation (SIMD) 2009 deprivation quintile. There is also inequity in mortality for all cancers combined. This is estimated to be over 75% higher in the most deprived areas than the least deprived areas.

There are exceptions to this observed pattern. The incidence of breast cancer is higher in affluent areas, although breast cancer survival is lower in more deprived areas.

Cancer occurrence risk (incidence) can be further reduced in the local population. Estimates for the proportion of cancer incidence which is attributable to specific lifestyle and environmental factors are shown in Table 1.[48] Almost one fifth of 'all cancers' incidence is attributable to tobacco smoke exposure. Diet choices are associated with approximately one third of colorectal cancers. This quantification is useful to inform local cancer control plans, although there are a few caveats.

Exposure	Theoretical optimum exposure level	UK Attributable Proportion Estimates 2010 (Persons)				
		Lung Cancer	Colorectal Cancer	Breast Cancer	Prostate Cancer	All Cancers
Tobacco smoke	Nil	85.6%	8.1%	-	-	19.4%
Alcohol consumption	Nil	-	11.6%	6.4%	-	4.0%
Deficit in intake of fruit & vegetables	≥ 5 servings (400 g) per day	8.8%	-	-	-	4.7%
Red /Processed Meat	Nil	-	21.1%	-	-	2.7%
Deficit in intake of dietary fibre	≥ 23 g per day	-	12.2%	-	-	1.5%
Overweight /Obesity	BMI ≤ 25 kg / m^2	-	13.0%	8.7%	-	5.5%
Physical exercise	≥ 30 min 5 times per week	-	3.3%	3.4%	-	1.0%
Exogenous hormones	Nil	-	-	3.2%	-	0.5%
Infections	Nil	-	2.2%	0.0%	-	3.1%
Radiation - ionising	Nil	4.7%	1.6%		-	1.8%
Occupational exposures	Nil	13.2%	-	4.6%	-	3.7%
Reproduction: breast feeding	Minimum of 6 months	-	-	3.1%	-	0.9%

Table 1: Attributable Proportion Estimates for modifiable exposures in the UK during 2010 (Parkin et al. 2011).

2.3.3 Earlier Detection of Cancer (Secondary Prevention)

Cancers have multiple causes, and an individual cancer case can be attributed to more than one cause. Furthermore, the estimates do not necessarily represent the proportion of cancer cases that can be prevented by specific interventions.

As the causal associations, such as smoking or obesity, are not specific for cancer, a 'common risk factor' approach should be adopted across Grampian to improve aspects of general health and reduce other non-cancer, chronic disease risks.

Cancer is a progressive disease. Cancer patient outcomes may be improved by detection and treatment at the earliest possible stage of disease.

In England, the National Awareness and Early Diagnosis Initiative (NAEDI) was established to test the key hypothesis that '*delays lead to patients being diagnosed with more advanced disease and thus experiencing poor 1-year and 5-year survival rates, resulting in deaths that could potentially have been avoided*' (Richards 2009).[49]

Scotland's national Detect Cancer Early (DCE) programme was launched in February 2012, targeting improvements in breast, colorectal and lung cancer survival. Earlier detection is dependent on individual participation in evidence-based population screening programmes for sub-clinical stage disease, i.e. without identifiable signs or symptoms, and minimising delays to diagnosis when identifiable signs or symptoms occur.

It was recognised that an integrated cross-boundary and whole system approach was required across Grampian for DCE planning and implementation. Following interim transitional arrangements, the Grampian Cancer Care Network (GCCN) was established at the end of 2012.

A cross-sectoral approach for local communications and social marketing has been taken forward by Public Health in partnership with cancer charities, Local Authorities, and the Third Sector.

The messages from each phase of the national DCE campaign have been reinforced across Grampian using multiple channels of communication. In addition, tumour-specific targeted interventions have been developed for high risk, vulnerable or hard to reach groups in Grampian.

It is expected that most 'early stage' breast and colorectal cancer cases will be detected by the existing screening programmes. Current participation levels in Grampian are approximately 60% for the bowel screening programme and over 80% for the breast screening programme.

There has been ongoing debate in the health literature and UK media about the magnitude and balance of benefit and harm associated with breast screening. Following an extensive review of the available evidence, an expert UK Panel concluded that the benefits of screening and those of better treatments are 'reasonably considered independent' and recommended that 'the UK breast screening programmes confer significant benefit and should continue' (Independent UK Panel on Breast Cancer Screening 2012).[50 51] It was estimated that one breast cancer death is prevented for every 180 women who attend for breast screening. Although there was notable uncertainty, the Panel reasoned that for each breast cancer death prevented, about three 'over-diagnosed' cases will be detected and treated. By definition, an 'over-diagnosed' case would not have caused problems in the woman's lifetime in the absence of screening. However, it is not currently possible to determine the likely rate of progression for screen-detected cancers.

Minimising potential delays to diagnosis following the onset of potential 'cancer associated' clinical features is challenging. Actions have been taken at Scotland

and Grampian levels to increase a 'positive view' of cancer treatment and prognosis, support individual recognition and appraisal of symptoms, and minimise the interval before seeking medical advice.
Colorectal and lung cancer, in particular, may present with non-specific clinical features, which frequently occur with other non-cancer conditions. Therefore, symptoms have a low positive predictive value (probability of disease given clinical features) in the primary care setting to identify urgent suspected cancer cases. It is possible that increased 'false positive' patient flows through the diagnostic pathway may occur, resulting in potential harm for these 'true negative disease' patients and inefficient use of scarce resources. Conversely, a proportion of cancer cases will not present with a guideline approach of 'checklist' symptoms and signs.

Going forward, close collaboration will be required between clinicians working in primary and secondary care sectors to ensure robust integrated pathways of care for individual cases and patient subgroups. There is ongoing research into the use of risk assessment tools and novel diagnostic tests, such as Faecal Immunochemical Testing (FIT), to inform and support clinical judgements.

2.3.4 Conclusion

Collectively, actions at individual, community, organisation and collaborative partnership levels can be taken to further reduce cancer risk in Grampian.

Primary prevention offers the most cost-effective, long-term strategy for cancer control in our local population.

It is important to reinforce the key messages of Detect Cancer Early − *'the earlier we find cancer, the easier it is to treat'* and *'don't get scared, get checked'.*

2.4 Healthy Working Years

2.4.1 Healthy Working Lives

Introduction

Good health is a fundamental goal for the working years. These years, from 16 to 65 (Figure 1), and now beyond, comprise the bulk of the population. This is a very significant time when sustained good or bad habits, workplace environments, policies and practices can have a fundamental role in quality of life for individuals, families, organisations and communities. The cumulative effects are played out in the morbidities and co-morbidities described in the opening section, on the sentinel markers of health status, in this report. These, in turn, have an impact on the local and national economy in the short and the longer term. For all these reasons, nurturing our health during this time is essential.

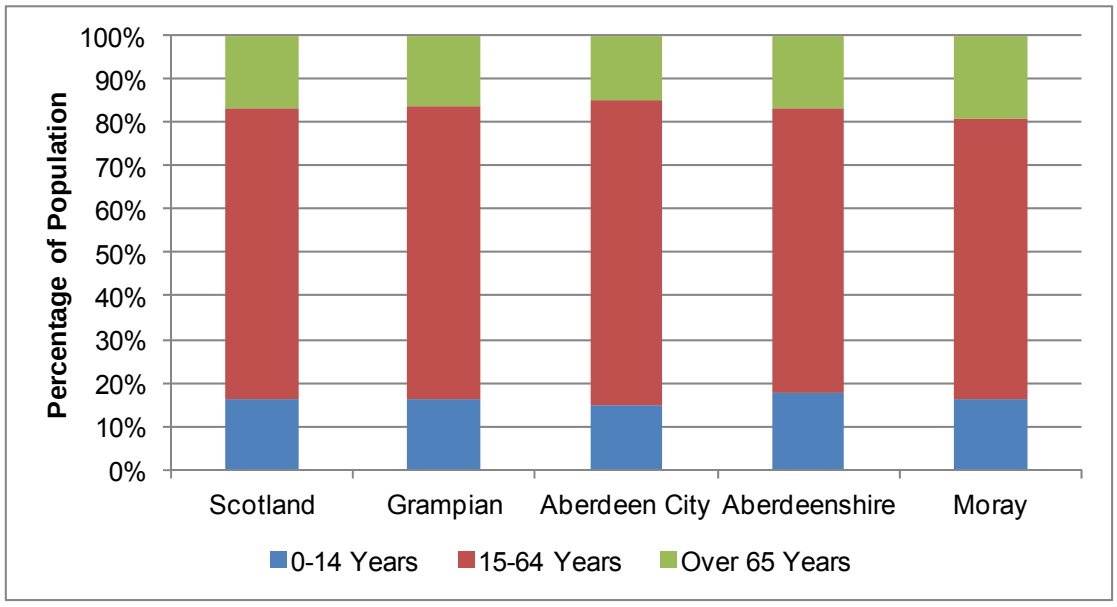


Figure 1: Population breakdown. Source: National Records of Scotland (2012).

Healthy Working Lives programme

Healthy Working Lives[52] is a Scottish Government programme designed to promote good health during this working period. It is a partnership involving the 14 territorial NHS Boards and NHS Health Scotland. The programme increases the awareness of employers about the importance of their role and contribution to the health of their employees and the ways in which this can benefit their business. We support employers to protect and promote their employees' health and to help their employees, in turn, to do the same for themselves.

Public Health and Occupational Health Services have delivered the Healthy Working Lives (HWL) service successfully for a number of years and are currently implementing the recommendations of a national review with an

increased focus on Small to Medium Enterprises (SMEs) and on addressing health inequalities.

Connecting with the business community

NHS Grampian is well placed to advocate for health with the business community. Our Healthy Working Lives programme supports 173 employers from large Oil and Gas companies to SMEs who make up 50% of our 'customers'.

We have done this by being customer-focused, providing solutions and services that customers want, and that customers can see make a contribution to their business.

Outputs and outcomes

The outcomes of this work contribute directly to the ambitions of *Health Works*[53] and to Scottish Government's National Outcomes.

In November 2012, a record number of 35 organisations from across Grampian received their HWL awards.

A growing focus of our workplace services is on reducing health inequalities. We actively profile our clients to help us, and them, better understand the health needs of their staff. The employees themselves are engaged in the process from the start, providing their views in an Employee Wellbeing Survey. Their views are then fed directly into a tailored Healthy Working Lives plan for their workplace.

As an example, a local employer identified that their lower paid employees had a higher rate of sickness absence. The employer targeted staff with tailored initiatives, with the support of their Healthy Working Lives Advisor, resulting in reduced absence rates. We also offer free Occupational Health and Safety visits to SMEs. One such visit to a small Aberdeenshire childcare nursery resulted in a registration to our award scheme. This business has now achieved a Silver award and has accessed free training events organised by the HWL team. Staff turnover has reduced to well below the average for the sector.

This detailed profiling of our clients' employees allows us to signpost and support involvement from the extensive expertise of the wider NHS Grampian Public Health Team. As an example, Keep Well[54], a national programme to provide cardiovascular health checks to 40-64 year olds living in our most deprived areas (also see section 2.4.3) and HWL are piloting an approach that could see free health checks taking place for a large, local workplace reaching hundreds of staff. This would help the employees to 'take control' of their own health with the explicit support and encouragement of their employer.

The following is a typical example of what can be achieved by an SME, in partnership with NHS Grampian, to support employers and employees to enjoy healthy working lives.

This local business has 18 employees, most of whom are low earners. Since it committed to HWL, its sickness absence has reduced by almost 60%. Its turnover has increased and its customer satisfaction has increased.
With the support of HWL, this business formalised its absence policies, so that all employees know what is expected of them from the very beginning. Having investigated the reasons for absence, the employer agreed to help staff to avoid back problems, with a series of talks and activities at work. Typical feedback from employees included:

- *'The physio was brilliant'*
- *'Posture is really important. A lot of people stand wrongly and they don't realise they're doing it'.*

Following this success, other sessions and initiatives helped staff to learn practical skills to improve health and well-being. These included tailored programmes for all staff from a trained fitness instructor; hand care and dermatitis talks; preventing work-related injuries; Friday night running sessions; a cycle to work scheme; and fruit snacks at team meetings.

The importance of these to the business was confirmed in feedback: *'I see Healthy Working Lives as a bit of marketing for the business. If you hold events and activities, the team talks about them and that is (real) marketing'.*

NHS Grampian as an employer

As one of the biggest local employers, we continue to promote the Health Promoting Health Service ethos to our own staff by rolling out health and wellbeing activities across our workplaces. Moray Community Health and Social Care Partnership, Aberdeen Royal Infirmary and the Mental Health and Learning Disability Service have all led by example, building 'healthy working lives' into routine practice. Our aim is to have all staff employed by NHS Grampian involved with Healthy Working Lives by the end of 2013, helping staff to help themselves and to encourage their patients by offering good role models.

Conclusion

In delivering the programme in partnership with businesses, our challenge in the coming year is to continue to support SMEs in Grampian and to tackle health inequalities. We will do this by maximising the resources and expertise available to these organisations, with mentorship from some of our larger clients, together with collaborative working within Public Health and our partner organisations.

2.4.2 The Working Years and *Health Works*

Introduction

In NHS Grampian, we are addressing the significant opportunities of *Health Works.*[55] The importance of finding, keeping and returning to work after illness and/or disability cannot be overestimated. We know that working and involvement in productive activity is crucial for the health and socio-economic wellbeing of an individual, their family and community, and is a key social determinant of good health.[56]

In implementing *Health Works*, we are improving health, directly for those in work in conjunction with local employers, and indirectly by addressing employability, through opportunities inherent in being one of Grampian's largest employers. Our work complements the activity of our partners in the three Employability Forums in Grampian.

Supporting individuals to keep connected with the world of work, whilst overcoming a health barrier, is vital. Hence, fostering a partnership approach with carers, employers, and services in the community makes a significant difference to people's experience of sickness absence and its consequences.

Partnership working

Close working between Public Health and Allied Health Professionals, with their pledge[57] and expertise in rehabilitation and enablement, has assisted us to identify critical points, within clinical pathways, for the inclusion of an employability intervention.

Employability intervention

Asking the 'work question' is rooted in the principles of transformational change. It puts the onus firmly on universal services as key agents in delivering improved outcomes: a lot of people doing at least a little to effect change will achieve much more that a few people doing a lot. It follows that signposting and referral rather than specific expertise are key. These will reduce health barriers to maintaining or securing employment.

Workforce Training

Bringing together resources[58] and a range of different health professionals, increases the likelihood that patients of working age, who use our clinical services, will come into contact with a workforce equipped with a core competence about 'employability' in its broadest sense.

We need to support our workforce to be confident and competent to ask patients about their work status. This has to be done routinely in clinical practice in a timely manner to promote further health gain. We have developed a brief training programme and resources for staff in clinical settings. These resources are available at www.hi-netgrampian.org under *Health Works*.

Following training, over 87% of respondents felt that asking about a patient's work status was part of their clinical role and, of those, 90% feel confident to

deliver a brief work-related intervention as part of a patient's recovery plan. We also know that staff awareness and use of NHS Grampian's resources, for referral and signposting to support patients to address employability, is increasing, indicating greater activity around addressing the issue of employability.

The range of staff actively involved in raising the issue of work with patients or signposting to other resources continues to grow and includes: Stroke and Neurology Rehabilitation pathway, local *healthpoints*, the Keep Well programme, Pulmonary Rehabilitation pathway; Adult Mental Health services; Community Dietetic services, Integrated Screening; and other services across a range of localities.

A strengthening alliance is essential to realise the potential for all patients, to experience wellbeing and prosperity by being able to maintain active working lives.

It is important, for example, that carers, young and older, who wish to remain in work or return to work after a period of caring, or wish to take up life long learning or training, are supported in their efforts to do so.[59]

We recognise and promote the fundamental importance of prompt occupational health support and advice for managing employees off work, or experiencing health difficulties whilst at work. For small to medium sized enterprises, we provide rapid access to expertise through our Working Health Services Grampian service[60] to try to avoid early and unnecessary exiting from productive working lives.

Conclusion

We acknowledge the additional challenges as a consequence of fiscal constraints, welfare reform, and other competing health priorities. Making every contact count[61], in the *Health Works* context, means asking patients about their work status and when needed, providing brief interventions to support a working age adult remain in, or return to, work. This is so often crucial to avoid the inevitable health inequalities that are suffered by those prematurely excluded from working life.

2.4.3 Keep Well

Introduction

Evidence indicates that health status is significantly influenced by our experience earlier in life. Programmes such as those associated with children and young people illustrate some of the issues and action we are taking, in partnership, to help our younger people to stay healthy.

Keep Well (KW) aims to engage people of working age who are deemed to be at high risk of serious preventable ill health. We aim to help individuals to take control of their own health and take action to reduce the risk of some of the co-morbidities outlined, in the opening chapter of this report, the sentinel markers of health status. For a range of reasons, some groups in our population have not had the benefit of this support. The Keep Well programme is there to address that gap.

Programmes, such as Keep Well, help to embed inequalities-sensitive practice in primary care. By addressing health inequalities, proactively, in this case during the working years, we aim to reduce cardiovascular mortality and related morbidity in Scotland's most deprived areas and with high risk groups. Keep Well does this by combining non-clinical with clinical support, putting the patient at the centre and facilitating access to other appropriate help.

Target population

The programme targets[62] 40 to 64 year olds, including carers, at risk of preventable serious ill-health, as identified by the Scottish Index of Multiple Deprivation (SIMD 2009). This is combined with income deprivation in non-urban settings to address the recognised challenge of targeting the most deprived residents in more rural settings using only SIMD.

In addition, vulnerable groups aged 35-64 years are being progressively screened, including South Asian ethnic subgroups; Black and Afro-Caribbean ethnic subgroups; Offenders; Gypsy Travellers; Homeless individuals; and individuals affected by substance misuse. It also includes the development of five yearly re-screening.

Programme delivery

Cumulatively, 6,195 patients in Grampian have benefited from a Keep Well health check, since the inception of the programme.

There is good evidence that our programme is reaching individuals in our most disadvantaged communities as Figure 1, below, illustrates. Of the 1,630 patients benefiting from a health check in 2012-13, 86% were in the most deprived quintiles (1&2). The Keep Well Programme Annual Report 2012-13 provides greater detail on outputs.[63]

The programme is delivered in Aberdeen, Aberdeenshire and Moray, currently through 33 GP practices; five Pharmacies; The Healthy Hoose (Aberdeen);

Aberdeen Sports Village; Kessock Clinic (Fraserburgh); Turning Point (Peterhead); and Leanchoil Hospital (Forres).

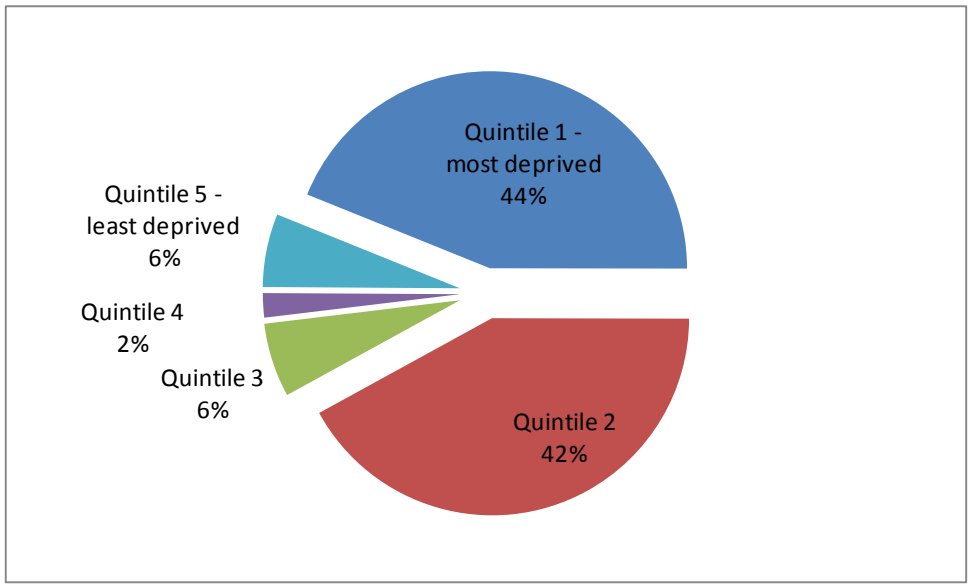


Figure 2: Keep Well health checks 2012/13, by SIMD 2009 quintile
Source: NHS Grampian Keep Well Programme data.

The patient is at the centre of the health check and any subsequent referral support focuses on four key health behaviours: diet, smoking, alcohol intake and physical activity.

The health check acts as a conduit for the patient to access an array of services, supplements existing interventions and provides an efficient approach for signposting.

Network of services

Keep Well has developed an infrastructure of local services and opportunities to support patients and practices: a partnership of public service and Third Sector organisations.

Local service directories for Aberdeen, Aberdeenshire and Moray offer patients access to a range of health and non-health services.

NHS services include: Smoking Advice Service; Healthy Helpings Weight Management Course; *healthpoint* and Community Pharmacy.

Partners' services include: VSA Carer Services; Benefits Services; Cash In Your Pocket Partnership (works with a range of organisations that encourage take up of benefits in Aberdeen and Aberdeenshire); Grampian Credit Union; North East of Scotland Credit Union; and Community Learning and Development e.g. Literacy Services.

Health Coaching Service

NHS Grampian has developed a new service, through Keep Well, which specifically addresses a service gap: where patients may recognise a need to make changes but feel ill-equipped to do so. We are drawing on evidence-based behaviour change techniques from Health Psychology to support patients to decide whether, and how, to make positive changes to their diet, activity, smoking or alcohol levels. The Health Coaching Service[64] is patient led: patients decide whether, what and how to change. They build from their existing experience, recognise, enhance, and draw on their own assets to make positive lifestyle changes.

Keep Well's Health Coaching Service is attracting positive feedback:

- *'This definitely helped me change my habits.'*
- *'No preaching, common sense approach'.*

Similarly, patients' feedback on their experience of Keep Well is positive:

- *'I am pleased with the positive results and it made me realise that small changes can lead to big results'.*
- *'Finding out my cholesterol is high may give me the motivation I need to address other issues, like my weight and lack of exercise'.*

Conclusion

We will continue to embed Keep Well for the target population across Grampian, simplifying, as far as possible, what is a complex programme to deliver. We must capitalise on the gains we have made in drawing a range of services round GP practices, and in some cases community pharmacies, and learn from the responses of patients, primary care, and other practitioners, to inform our approaches to addressing inequalities.

2.4.4 Alcohol

Introduction

Alcohol has been described as 'no ordinary commodity'. For many in Scotland, alcohol is a beverage of leisure and celebration, but also addiction. Its use can lead to both short and long-term harm on many fronts, often inadvertently through hazardous and harmful consumption.

It is acknowledged that Scotland's people have a special relationship with alcohol, said to be ingrained in our culture. Consistent with the Scottish Government's policies and strategies[65] and the World Health Organisation's Global Strategy on Alcohol, we need to assess alcohol's effect on our population and recommend action to address avoidable injury, disease, addiction and early death.[66]

We use an increasing body of evidence from surveys, alcohol sales data and healthcare and other monitoring systems to guide us in assessing the Grampian population's use of alcohol and related harm.

Youth alcohol consumption

Trend analysis from the Scottish Schools Adolescent Lifestyle and Substance Use Survey (SALSUS) surveys[67] is complex. It indicates that youth alcohol consumption in Grampian is higher than the Scottish average for 13 and 15 year olds. Within Local Authority areas in Grampian, Moray youths are estimated to have the highest level of 'past week' drinking.

However, from 2002 to 2010, the overall trend for youth drinking 'in the past week' for all three Local Authority areas is encouragingly downward.

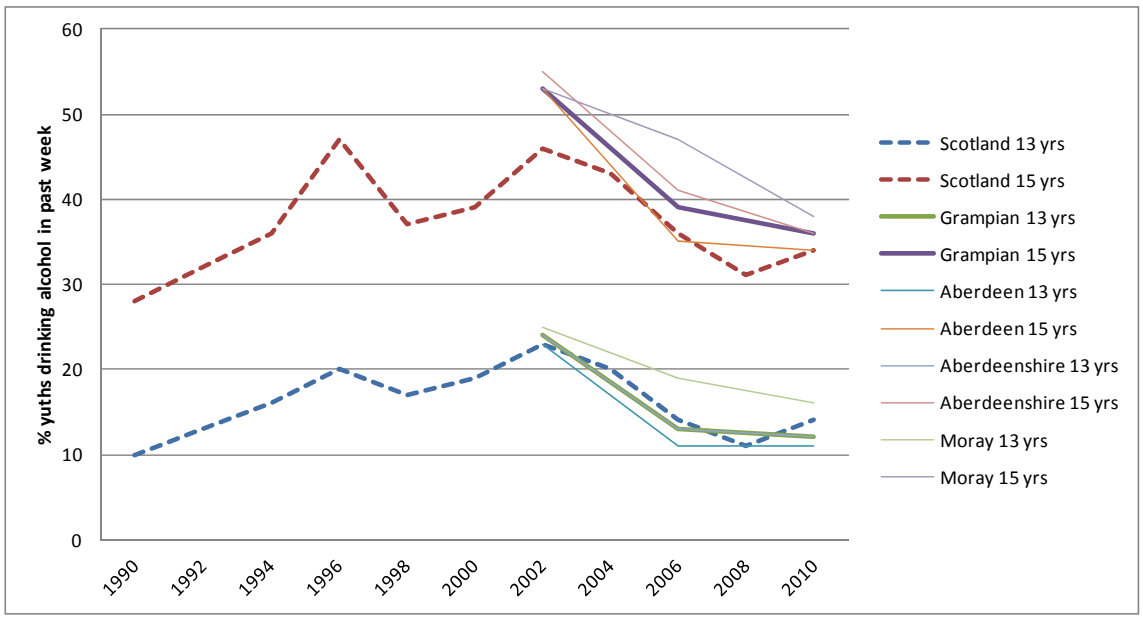


Figure 3: 13 and 15 year olds' alcohol consumption (SALSUS), Scotland, Grampian linked local authorities (Note: values for 13-year olds in Grampian and Aberdeenshire overlap).

Adult alcohol consumption:
Scottish Health Survey data collated over four years (2008-2011)[68] shows that 41% of Grampian adults (more than 180,000 individuals) drank above Government guidelines for sensible drinking. This is only slightly lower than Scotland's rate of 43% and is not a statistically significant difference.

Adult alcohol consumption in relation to guidelines	Grampian adults			Scottish adults		
	all	men	women	all	men	women
% drinking more than double daily sensible limits, on heaviest day in past week (women/men = 6/8 units).	21	26	15	21	26	17
Average units drunk on heaviest day in past week.	4.6	6.1	3.0	4.5	5.9	3.2
% usually drinking above weekly sensible limits (women/men = 14/21 units with 2 alcohol-free days/week).	22	26	17	23	27	19
Average weekly units.	12.0	16.9	7.3	12.0	16.6	7.8
Combined % drinking above weekly or daily sensible limits.	41	46	36	43	49	39

Table 1: Alcohol consumption for men and women in Grampian and Scotland (combined 2008-2011, Scottish Health Survey data).

Alcohol Sales
Alcohol sales data for Scotland consistently show consumption has increased significantly over the past 40 years; as price in relation to income decreases, consumption increases. There is some indication that sales data are now starting to show a downturn: a 2.6% reduction has been logged in overall sales since enactment of the Alcohol etc (Scotland) Act 2010, differentially significant for wine. However, this still means that, if taken as a population average, every Scottish adult is drinking 10.9 litres of pure alcohol each year. This is above the agreed 'sensible limits' of 21 units per week for men and 14 units per week for women and nearly a fifth more (19%) than in England and Wales.[69]

Whether this recent small decrease in sales relates to overall economic decline (and recognised association with reduced alcohol consumption), or early signs of the efforts of recent legislation on bans and restrictions of certain promotional sales, is less clear.[70] However, similar changes have not been found in England, where the legislation does not apply.

Comparative alcohol harms

Updated analysis on cirrhosis mortality rates for Scotland compared to other European countries, shows a very unfavourable position compared to Europe's evident decreasing trend. While liver cirrhosis does not derive exclusively from alcohol, it remains the main cause of this in Scotland and Grampian.

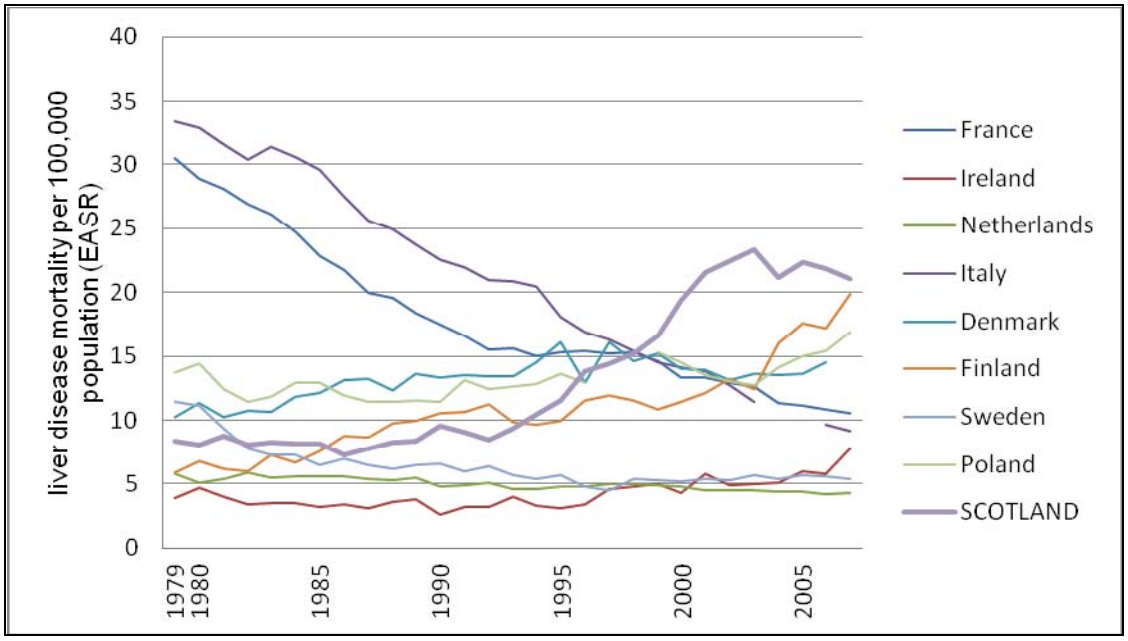


Figure 4: Liver disease mortality rates (EASR per 100,000 population) selected European countries and Scotland 1979-2007. Scotland and European Health for All Database 2012. Scottish Public Health Observatory (SCOTPHO).[71]

Hospital admission data reveal a fairly static trend of hospital admissions across Scotland over the past five years, with some hint of a slight increase across the Local Authority areas in Grampian for the year 2011/12.[72]

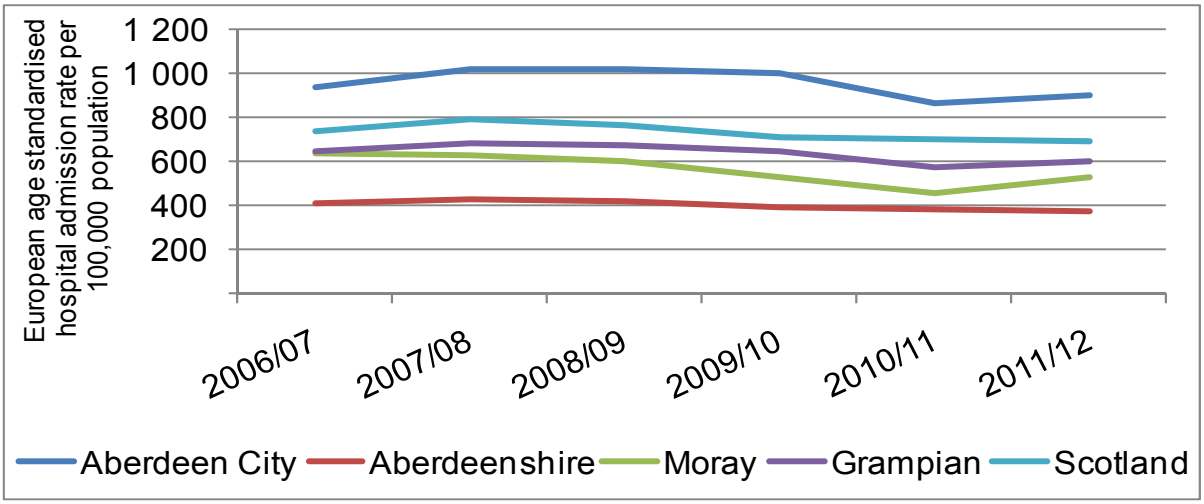


Figure 5: ISD (2013) Alcohol-related Hospital Admission rate (per 100,000) for Scotland, Grampian and 3 Local Authorities, including provisional statistics for 2011/12.

Mortality and hospitalisation rates are most usually evidence of long-term harm from alcohol drinking. They also demonstrate a socio-economic gradient such that individuals from more deprived areas are more affected than those from more advantaged environments. Alcohol consumption itself does not currently reveal a similar pattern in that regardless of socio-economic status, Scots consume alcohol at levels significantly above sensible limits.

Effective Interventions

The WHO Summary of the Evidence of Effectiveness of Alcohol Policies[73] provides a framework for interventions, categorising each according to the scientific evidence base underpinning their impact on alcohol problems (Table2). Efforts will need to focus more firmly on a number of these, if our local population is going to benefit. Where evidence of effectiveness is less clear, evaluating projects that try to clarify where true impact can be made would be a worthwhile use of staff time, public funding and energy.

Evidence of action that reduces alcohol-related harm	Evidence of action that does not reduce alcohol-related harm
Convincing	
Alcohol taxes Government monopolies for retail sale Restrictions of outlet density Minimum purchase age Lower legal blood alcohol concentration (BAC) levels for driving Random breath-testing Brief advice programmes Treatment for alcohol use disorders	School-based education and information
Probable	
Minimum price per gram of alcohol Restrictions on the volume of commercial communications Enforcement of restriction of sales to the intoxicated and those under age	Lower taxes to manage cross-border trade Training of alcohol servers Designated driver campaigns Consumer labelling and warning messages Public education campaigns
Limited/Suggestive	
Suspension of driving licences Alcohol locks which prevent cars starting if the driver is over the limit Workplace programmes Community-based programmes	Campaigns funded by the alcohol industry

Table 2: Strength of impact through alcohol policies.
Evidence for the Effectiveness and Cost-Effectiveness of interventions to reduce alcohol-related harm. WHO Regional Office for Europe 2009.

Some of these interventions, such as minimum pricing of alcohol, cannot be determined locally, although support for this is well-established, particularly among health professionals. For other interventions, such as embedding alcohol brief interventions into routine clinical practice, or limiting the number of licensed premises in our communities, local leadership is required.

Efforts are progressing with the five Local Licensing Boards in Grampian in preparation for revision of each of their policy statements later in 2013. NHS Grampian's specific aim here is to promote the objective of protecting and improving the public's health. It is hoped this will lead to some restriction of new licensed premises' applications, or conditions under which they operate.

Local implementation of the alcohol brief interventions (ABI) programme continues with embedded work evidenced through General Practice, Sexual Health Services and Antenatal Care programmes. Since 2009, 32,000 Alcohol Brief Interventions (ABIs) have been delivered by healthcare professionals.

From this, it is estimated that at least 3,600 individuals will have significantly reduced their over-consumption of alcohol to less hazardous or harmful levels. Progress remains slow, however, on delivery through the opportunities that Emergency Department attendance offers, as over 11% of attendances are estimated to be directly linked to alcohol consumption.

Specialist addictions services continue to strive for local service improvement. Equity of service provision has improved greatly in recent years, with minimal waiting times now across Grampian for such psychiatric and community-based specialist services. Activity figures for the specialist service show that approximately 800 referrals were made in 2012 for alcohol problems and this may be an increasing trend. This is monitored closely as hidden need possibly becomes more evident, through increased clinical and public awareness and acknowledgement of the harms of alcohol.

Conclusion

There is no debate about the negative impact that alcohol has on our population and there is little evidence that we have turned the corner in reducing this. When nearly half of the adult population (41%) uses a product to their potential detriment, significant effort and resource can be justified in addressing this. We have some tools and interventions that we know are effective. Making it all happen with each of us playing our part, is the challenge**.**

2.4.5 Tobacco

Introduction

Tobacco Control seeks to reduce the harm caused to a population's health by tobacco use. Its main elements are derived from the application of Articles 6 to 14 of World Health Organisation Framework Convention on Tobacco Control[74], a binding international treaty, developed and monitored through the efforts of an international civic alliance.[75] It has its effect through consistent and universal implementation of a raft of regulatory, legal, educational and supportive measures.

The obligations of the treaty are expressed in current Scottish health and social policy. They are reflected in consistent investment in services to support smoking cessation, prevent uptake of smoking, legislate against tobacco advertising in 2002, legislate on smoking in public places in 2006, on increasing the legal age for tobacco purchase in 2007, and on establishing a register for tobacco retailers in 2011. They also include ongoing public awareness campaigns and legislation on tobacco sales displays implemented in 2013.

Smoking Cessation

For NHS Grampian, the dominant focus of tobacco control since 2008 has been the delivery of support to help people stop smoking, measured through the NHS Health, Efficiency, Access and Treatment (HEAT) target H6[76] and its successor.[77]

The number of successful 4-week quits recorded in 2007[78] was 229. In 2012, it was 4,840. Of these quits, 57% were achieved in our most deprived communities (SIMD quintiles 1 and 2).

In Grampian, 25% of quits were sustained at 12 weeks, the highest rate in Scotland.[79] This was achieved through a partnership between our Smoking Advice Service, the Pharmacy and Medicines Directorate and our 138 community pharmacies. It effectively doubles the investment in smoking cessation support in Grampian. This immediate, accessible and less formal service is particularly popular with residents in our more deprived communities.

Smoking in decline across Grampian

Fewer adults now smoke. Between 2000 and 2010 smoking prevalence fell from 27% to 22%.[80]

Fewer children smoke and more children have never smoked. In 2002, 13% of 13 year olds smoked and 24% of 15 year olds. By 2010, this had fallen to 3% and 13%. In 2002, 56% of 13 year olds had never smoked and only 36% of 15 year olds. By 2010, 82% of 13 year olds had never smoked and 56% of 15 year olds.[80]

Fewer pregnant women smoke. In 2001, 22% of pregnant women smoked and in 2011 it had fallen to 16%. The proportion of mothers who had never smoked

increased consistently. At the same time, whilst the gap between smoking rates for the most and least deprived had narrowed, it is still significant.[80]

The sustained increase in the proportion of people who have never smoked is a really significant indicator of a change in the population's health behaviour.

Costs and Benefits

This reduction in smoking has significant health benefits. Every 1% reduction in smoking could result in 46 fewer deaths, 218 fewer hospital admissions in Grampian each year and potential reduction in health costs of £2.1 million.[81]

The changes in health behaviour cannot be attributed only to our smoking cessation services. The raft of measures listed above is implemented by partners in national government, special health boards, Local Authorities, the Third Sector and others. No single sector can reduce the burden of tobacco-related ill health. In partnership, however, applying in combination the most influential measures, legislative, fiscal and regulatory, we are well placed to continue our drive to reduce tobacco use and its harms.[82]

Where are we going now?

The launch of a new national strategy for Scotland, *Creating a Tobacco Free Generation* (2013), provides a framework for all tobacco control measures[83] with ambitious targets, timescales, and an emphasis on asset-based community development approaches to reduce inequalities in poor health outcomes related to use of tobacco. Targets are set for reduction in smoking prevalence across deprivation quintiles in Scotland[84] so that national prevalence falls to 4% by 2036 and to 7% in the most deprived quintile.

Conclusion

Grampian Tobacco Control 2020[85] reflects the national strategy. Alliances and partnership between and within agencies are producing significant positive changes in behaviour. Effective partnership working in Tobacco Control Alliances will help us to tackle this massive cause of illness and health inequality. By integrating our efforts, we can reduce and eliminate much of the remaining tobacco-related harm in the population we serve.

As the community changes its own health behaviour, we will reduce the impact of smoking on chronic disease by 2020.

2.4.6 Obesity

Background

Obesity is a major public health challenge globally.[86] Worldwide obesity rates have more than doubled since 1980. At least 65% of the world's population lives in countries where overweight has overtaken underweight as the main cause of death (WHO 2012).[87] Almost 1 in 3 of the Grampian population were estimated to be obese in 2011 (based on Scottish Household Survey data)[88] and 69% were overweight or obese. Direct healthcare costs to the NHS in Scotland as a result of obesity were an estimated £191 million in 2007-08 and the total cost to Scotland was in excess of £457 million (CMO 2010).[89]

Root Cause

At an individual level, obesity results from an imbalance between energy intake (food and drink) and expenditure (physical activity). It increases the risk of a range of non-communicable diseases including type 2 diabetes, coronary heart disease, stroke and cancer (Scottish Government 2011b).[90] In 2009, NHS Grampian spent £490,000 on weight management drugs which, according to the Scottish Intercollegiate Guidelines Network (SIGN 115; 2010),[91] should only be used where diet, physical activity and behavioural changes are also supported.

Environment

Increasing obesity rates are also being driven by a shift in the way we live our lives.[92] Technological advances have changed what we eat and how we get around. The Scottish Government (2010)[93] acknowledges that the scale of change needed cannot rely on individual behaviour change alone and that action is needed at a population level.

NHS Grampian Activity

Our local Healthy Eating, Active Living (HEAL) strategic framework, *Grow Well, Stay Well*, sets out a range of interventions to tackle obesity and overweight. The framework highlights the importance of working with our Community Planning Partners. To support this, Aberdeenshire Community Planning Partnership hosted a workshop, in September 2012, to consider obesity and to identify high impact changes. In broad terms, it was agreed that the Community Planning Partners will focus on:

- Increasing awareness of, and commitment to, the obesity agenda by local leaders and decision makers across the Partnership.
- Increasing front line staff awareness, knowledge and skills, ensuring consistent messages on food and physical activity for service/facility users.
- Improving workforce healthy weight by Healthy Eating Active Living advice, support and opportunities.
- Improving the food environment within partner organisations including reviewing current accessibility and availability of energy dense foods.

Our adult weight management pathway, part of the HEAL strategic framework, aims to deliver an integrated weight management service that includes nutrition,

physical activity and behavioural support. Stakeholders reviewed the successes, challenges and priorities of adult weight management activity locally, agreeing to:

- Develop an accessible online resource for healthcare professionals to raise awareness of the pathway, enabling them to identify and refer patients for services.
- Improve provision of community-based, specialist weight management services, including psychological support.

Working with Partners

The NHS makes a major contribution to weight management. However, some of the most successful weight management services have been delivered by non-NHS organisations. NHS Grampian is trialling and monitoring the effect of partnerships with commercial weight management providers to deliver accessible adult weight management services, which will support adults to lose weight and maintain a healthier weight.

Targeting men

Men are less likely to engage in weight management programmes.[94] NHS Grampian is working with the Scottish Premier League to support the innovative Football Fans in Training programme (2013).[95] Participants, aged 35-65 years, report finding the lifestyle changes they learn easy to maintain. They also report that they continue to be more active, lose weight, eat more healthily and, as a result, feel better.[96]

Employer support for NHS Staff

The consequences of poor health and wellbeing at work are costly. Obesity in the workplace appears to be associated with increased rates of absenteeism and also with reduced productivity while at work.[97] The Boorman Review (Department of Health, 2009)[98] recommends that the NHS should work to reduce obesity among its own staff. NHS Grampian is committed to support staff, through the Healthy Working Lives programme, to achieve and maintain a healthy weight. We need to take a supportive and sensitive approach. We also need to recognise the added potential benefit to patient health gained by educating and empowering staff about weight management. We are working with commercial weight management organisations to provide workplace-based weight management classes. Our in-house weight management programme, Healthy Helpings, is available to the general public and staff, offering advice on healthy eating and lifestyle, and the best ways to change behaviour. In addition, we are collaborating with *Paths for All* (2013)[99] to pilot the workplace-based 'Walk and Weigh' initiative, which combines a comfortable walk outdoors with a weigh-in at work.

Conclusion

Obesity is a continuing, major public health challenge in Grampian. The scale of change that is needed to reduce levels of overweight and obesity requires us to work together at population, community and individual levels, so that these changes become the norm.

2.4.7 Physical Activity

Introduction

Let's Make Scotland More Active,[100] our national strategy for physical activity, sets out the vision for a more active Scotland − once an active nation and now increasingly inactive, unfit and overweight (Physical Activity Taskforce 2003).[101] Physical activity offers protection against a number of chronic diseases. Described as 'the best buy in public health', physical activity can improve health and wellbeing, promote independence and quality of life (NHS Health Scotland 2008).[100] Currently, in Grampian, 45% of men and 33% of women (Scottish Government 2011)[102] meet UK Physical Activity Guidelines (Department of Health 2011).[103] For adults in Grampian to be more active, we need to maintain and increase activity levels across the entire population, as well as encourage particular groups.

People who are obese tend to be less physically active, yet we know that being physically active contributes to the achievement and maintenance of a healthy weight, balancing energy intake with output (Scottish Government 2011).[93]

Health Inequality

Inequalities in physical activity can be influenced by interconnected factors including age, gender and access to community facilities. Opportunities for physical activity need to be available to people regardless of disability, ethnicity, or other health issues (NHS Health Scotland 2013).[104] We are working with Grampian's Community Planning Partnerships, through the Single Outcome Agreement, to tackle this.

Environment

People find it easier to be active when the environment supports it (NICE 2008a).[105] It is not sufficient to expect people to change their behaviour by themselves. An accessible, appealing and safe environment will help people to be physically active. In 2007, NHS Health Scotland, Forestry Commission Scotland and Scottish Natural Heritage established the Green Exercise Partnership. Its overarching purpose is to promote better health and quality of life through greater use of the outdoors for physical activity and contact with nature.[106]

Workplace Health

A healthy workforce is essential to Grampian's economy. However, in the UK, mental health problems such as stress, depression and anxiety and musculoskeletal disorders have accounted for the majority of working days lost (NICE 2008b).[107] The incidence of these disorders can be reduced by physical activity. Physically active employees are less likely to suffer major health problems, take sick leave and have accidents at work).[108]

Employer support for NHS Staff

As an employer, NHS Grampian has a responsibility to encourage staff to be more physically active, supporting this through the Healthy Working Lives

initiative[109] described in a previous section. We provide incentives through the Cycle to Work scheme, and discounts for use in recreation facilities and we support active travel through the Operational Travel Plan (NHS Grampian 2010).[110] The plan aims to reduce congestion on our sites to make it easier, and safer, for both staff and the public, to walk and cycle. There are opportunities, on some sites, for staff to take guided walks in their lunch breaks. The NHS Grampian Sports Committee provides a range of activities. We plan to extend these initiatives, progressively, and continue to reduce some of the barriers to staff being more physically active and acting as exemplars to patients and to other employers.

Other employers, including a number of our partners, already encourage their own employees to be more active and have been supported to do this through Healthy Working Lives, which is open to all employers.

Workforce Development

NHS staff, as opportunity permits, should routinely talk about the importance of physical activity with patients in the hospital setting.[111] This conversation should form part of patient rehabilitation, and support the prevention of future illness. As an extension to our work in primary care, there are plans to support the delivery of brief advice and brief interventions in appropriate areas in acute care/hospital settings.

Through the *AHP Pledge*[112], NHS Grampian Allied Health Professionals are encouraging physical activity with patients, by making sure that this point of contact, where appropriate, is an opportunity to improve health. Through NHS Health Scotland, we support learning and development for health professionals, including *Raising the Issue of Physical Activity* (NHS Health Scotland 2012b)[113] and Physical Activity Worksheets (NHS Health Scotland 2012a).[114]

NHS Grampian is participating in the recently launched Scottish primary care feasibility study. The study will run for 12 months to support NHS staff to provide brief advice and interventions to the public, encouraging them to become, and remain, physically active.

NHS Grampian support for patients

Plans are in place for generic exercise classes to be piloted by the Grampian Cardiac Rehabilitation Association. Primarily to support people with long-term conditions, these classes can also involve the inactive population and act as a preventative measure. Exercise classes may not be the preferred option for all individuals and a range of activity opportunities, such as health walks, are already provided. This initiative will provide:

- An important route for those moving out of the ‘condition management phase’.
- Opportunity for health professionals to signpost/refer inactive adults to local physical activity opportunities.
- A range of activity opportunities that cater for various levels of ability and interest, provided by partners.

Working with Partners

Walking is described as one of the best ways to be active (Health and Social Care Alliance Scotland 2012).[115] It is accessible and inclusive, needing no specialist equipment or expense. We work with *Paths for All*[116] to achieve the Scottish Government's national outcomes for a happier, healthier, greener, more active Scotland. Partners work together to support a network of walking for health schemes across Scotland, to help increase the proportion of physically active people by encouraging more people to walk, more often. Short, local, low level, led walks in communities are facilitated by volunteers. Volunteers are provided with the opportunity to complete the *Paths for All* accredited Health Walk Leader training. Volunteers are also supported through training. This is held regularly to support current health walks and enable the establishment of new walks. In Fraserburgh, for example, there are as many as 40 walkers turning out each week. There are also three new health walk groups in Aberdeen, developed with partners under the banner of *Walk Aberdeen*, and plans are in place for the development of further walks across the city. There are currently eight walking groups in Moray, run by trained volunteers and walking weekly. The walks last from 10 minutes to an hour and are designed to help inactive people become more active. The development of *Walk, Jog, Run Moray* (2013)[117] has been the result of collaboration between NHS Grampian and its partners.

Conclusion

Being physically active promotes health, prevents disease and makes an important contribution to the health and wellbeing of our population. Employers in particular have a significant opportunity to ensure a fit and active workforce. NHS Grampian is working with its partners, integrated through the Single Outcome Agreement, to make sure that more people in Grampian enjoy the benefits of having a physically active life.

2.5 Academic Public Health

Introduction

Our relationships with our universities are a fundamental component in our Public Health effort in Grampian. In particular, their expertise in research, evaluation and teaching support our understanding, inform our decision-making and influence our practice.

These relationships are both synergistic and iterative, with Public Health practice also informing theory and our progressive understanding of the outcomes of interventions *in vivo*.

The issues we describe here give a very brief flavour of the contribution of our universities to our overall efforts in Grampian.

Living with 'Big Data'

With computerisation of all aspects of healthcare, as a health system, we record increasingly large amounts of complex data about everyone. Such data form part of the 'Big Data' revolution, where benefits for health are being recognised through the analysis of very large, complex healthcare datasets. Information is gathered about us from before birth, through antenatal visits and scans, through our lives as we encounter healthcare provision in school, general practice, community pharmacies and hospitals. The data are not restricted to healthcare but accompany every part of our daily lives.

Improvements in the collection and storage of such information make it increasingly possible to link up the information from different healthcare sources to provide a view across the system and over our lifetimes. The University of Aberdeen, in collaboration with NHS Scotland, and the Universities of Dundee, Edinburgh, Glasgow, St Andrews and Strathclyde, has recently been successful in becoming one of four Health Informatics Research Centres (HIRC) of Excellence in the UK.[118] In Aberdeen, we will explore the use of 'Big Data' to understand the influences on early growth and development, how early life influences adult health and wellbeing, how policy impacts on health and the safe use of medicines, particularly during pregnancy.

Underpinning our ability to use 'Big Data' to better understand health and care, has been the establishment of the Grampian Data Safe Haven (DaSH).[119] DaSH is a collaboration between NHS Grampian and the University of Aberdeen as part of a Scottish Safe Haven Network: a secure environment that enables data from different sources to be linked and made available to support high quality research to improve population health. DaSH comprises state of the art dedicated computer servers to safely store patient and public data. In accordance with the recommendations of consultations with the public and healthcare professionals, identifiable data, which is crucial to enabling linkage of different datasets, will now only be stored in an NHS DaSH server and to the highest levels of security.[120,121]

The data for research, with all identifiable information removed, will be accessible without the need to transfer and move data outside the safe haven, enabling the data custodians to retain rigorous control over access and security. Within our Grampian DaSH, data about our population, their health, healthcare and illnesses, will be accessible alongside special data collections from clinical and population studies. This platform affords the opportunity for ground breaking research and supports population health surveillance. It could be used to develop new ways of supporting information sharing with patients, between professionals, and across agencies in a secure and controlled way.

How early life influences healthy ageing

The growth in collection of data provides important opportunities to understand and improve health and healthcare. We are fortunate in Grampian to have a series of special collections of exceptionally rich information about people born here in the first half of the 20th century. The Aberdeen Birth Cohorts of 1921 and 1936, along with the Aberdeen Children of the 1950s have been used by researchers to understand an array of social, educational and other determinants of health and illness. New understanding about health, generated from these cohorts, has already influenced health and research globally.[122]

Current research on 'Pathways to a Healthy Life', is using the Aberdeen Birth Cohorts to improve our understanding of what makes some people resilient and others vulnerable to the changes we experience as we age. Initial areas of focus are on cognitive resilience and healthy brain ageing and physical resilience to the impact of multi- morbidity.[123] This work will help us understand how best to support individuals and communities to maximise their health.

Harder to reach groups: health behaviour messages for 18-25 year olds

Some groups in our population have little contact with health services. Consequently, for these populations, routine and historical data collections are not enough to give us a full picture of their health. Young people between 18 and 25 years, making the critical transition from adolescence into adulthood, are one such example.[124] There is evidence that both positive and negative health behaviours established during this transition persist into later life.[125,126] Traditionally, this age group is also known to challenge beliefs and experiment with their lifestyle and with risky behaviours.

The World Health Organisation (WHO) identifies 'emerging adults' as at risk of weight gain. We have seen in this report (section 2.4.6) that obesity is one of the major challenges for the Grampian population. In 2010, the prevalence of obesity was 13.3% amongst 16-24 year olds in Scotland and the rate of increase of obesity in the past decade is highest amongst this age group. Despite the recognition that they are a vulnerable age group, they are neglected in terms of health surveillance and planning services, probably because they are 'harder to reach' with health behaviour change programmes.[127]

In addressing this, Grampian Lifestyle Survey (2007) explored the lifestyle of 18-25 year olds.[128] Later, this was followed up with detailed focus group discussions. It was challenging to recruit from the whole spectrum of young

adults: those in higher and further education, those in the community and those who were 'Not in Education, Employment or Training' (NEET). Of the 1,313 young people who took part, 856 were students (65%) and of all participants, 70% were females.[129]

The follow up research [Appendix 16] indicated that focusing messages on the 'here and now', 'feeling good' and 'appearance' were crucial, to encourage participation in programmes and sustained behavioural changes for a healthy lifestyle. These factors were identified in the context of obesity prevention. However, they may be generalisable in addressing other social issues among these 'harder to reach' young adults.

Support for the wider workforce

If we are to succeed in our partnership work through the Single Outcome Agreement and in our responses to the recently introduced Public Bodies (Joint Working) (Scotland) Bill , we require to support our combined workforce with relevant, consistent, high quality training.

For example, it is vital that our staff work from an evidence base, and also help to generate new evidence. To do that effectively and efficiently, they need robust skills in evaluation and we are working with colleagues in our universities to support that drive. Examples range from the provision of evidence syntheses to Master's qualifications in Public Health, specific modules and Continuing Professional Development (CPD).

Another element of the public health drive is to ensure that relevant staff of partner agencies have the competencies and confidence to help us engage in and make change at a population level. In addressing this, we have sourced e-learning from the Robert Gordon University which will contribute to the range of workforce learning and development.

Conclusion

Close collaboration between our universities and NHS Grampian Public Health helps optimise the health benefits from research, evaluation and training. The work outlined sits within a much greater spectrum of research and other activity. It serves to illustrate, however, the huge opportunities locally to learn more by working together to improve health and care for our population.

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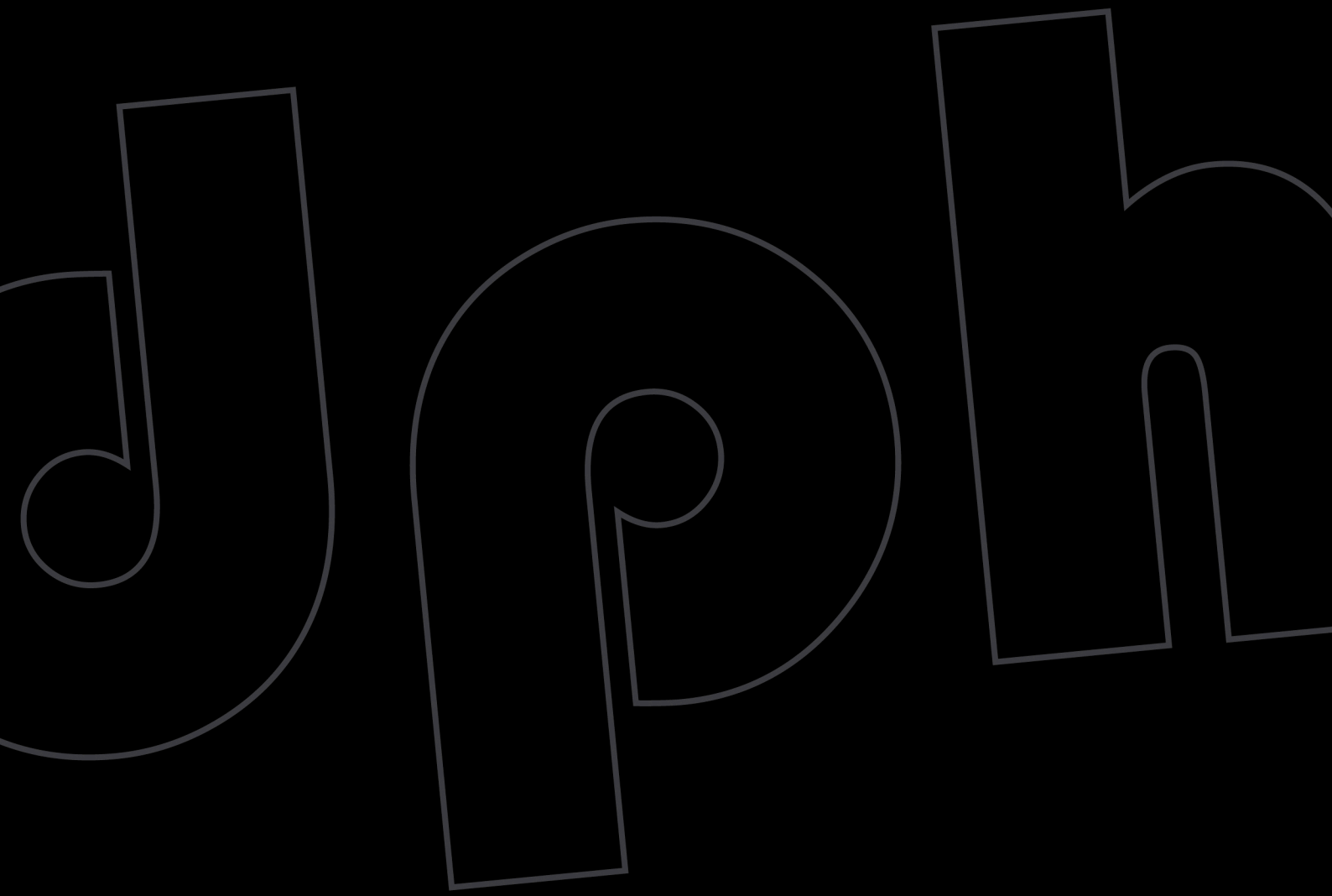

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