The Annual Report of the Director of Public Health

2022

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Introduction

Prevention is better than cure. This is a sentiment which I am sure the vast majority of people would support. Yet the proportion of resources, effort and attention that is devoted to the prevention of illness is small compared with that devoted to treatment.

The analogy of people in a river is often used to illustrate the contrast between prevention and treatment. We can imagine people being found in a river estuary and being rescued from the water. Efforts continue to rescue people, but more and more people are found in the estuary needing rescue and more resources are used to rescue them. But why did the people end up in the river? They were falling in the river further upstream and then needing to be rescued downstream. Stopping people falling in the river upstream would mean that there would be no need to rescue people from the estuary.

Prevention is about looking upstream and taking the actions that are needed to stop people becoming ill or to reduce the severity of that illness. This report includes examples of where preventative action can and does improve health and prevent the need for more intensive and more costly treatment. The report aims to present the case for the importance of prevention as a vital and integral part of both healthcare and of wider community activities.

It is easier to see treatment working than it is to see prevention working. It is easier to see people getting better following treatment than it is to see people not getting ill because of prevention. It is easier to look for quick effects of treatment for individuals rather than to consider longer term population prevention. It may be easier to look for new technology to help us when something that has always been with us such as increased physical activity may offer far more benefit. It is easier to side-line prevention as a marginal activity that only gets support at times of plenty rather than considering how cost-effective prevention can transform our services. Supporting prevention may not be the easy thing to do, but it is often the right thing to do.

I want us all to see the benefits of prevention and to recognise prevention as a fundamental element of all care. I want us all to look upstream and to work upstream.

Dr Tim Allison MD MRCP FFPH

Director of Public Health and Health Policy, NHS Highland
Stiùriche na Slàinte Phoblach, Bòrd Slàinte na Gàidhealtachd

Key Messages

- Investment in preventative measures which promote, protect and improve health and wellbeing is essential to ensure the future sustainability of the health and care system.
- There are many examples of preventative actions that have already helped achieve major improvements in health, for example, improved social conditions, vaccination against communicable diseases and national screening programmes.
- The effects of prevention work have contributed to a decline in cancer and cardiovascular disease mortality rates. Priority should continue to be given to preventing cardiovascular and smoking related conditions and there must be continued efforts to improve early diagnosis for effective treatment.
- There are thousands of avoidable deaths and preventable health conditions every year in NHS Highland. Estimates of health loss and avoidable mortality should be used to help inform priorities for health and care service planning and redesign, and for disease prevention.
- Actions to address modifiable risk factors, such as high blood pressure, smoking, alcohol and drug use, healthy weight and physical activity, present a sizeable opportunity to improve health, add years to life and to reduce existing inequalities in these measures.
- A life course approach to prevention should be used to identify potential areas of action relating to both the individual and the community.
- The characteristics of effective prevention work can be considered when planning programmes of work and training to ensure existing health inequalities are not reinforced.
- The 'best buys' in prevention will meet one or more of these objectives: cost-effective; likely to reduce health inequalities; likely to reduce avoidable health and social care problems.
- The NHS has an important role to play in prevention as an employer, researcher, collaborative partner and commissioner of services. Ensuring prevention is seen as part of everyone's role, and that time and resources are allocated to it may be key to supporting the fundamental shift towards prevention that is required for the future sustainability of health and care systems.
- There are many examples and evidence of preventative interventions that provide a return on investment and have the potential to deliver savings to the NHS in the short and longer term.

From case studies

Smokefree

- Smoking cessation interventions, whether pharmaceutical or through advice and counselling, are one of the most cost-effective interventions for reducing ill-health and prolonging life.
- Quitting can help add years to your life. Smokers who quit before age 40 reduce their chance of dying too early from smoking-related diseases by about 90 percent. Those who quit by age 45–54 reduce their chance of dying too early by about two-thirds.

Living Well

- Self-management is vital in preventing health problems arising or getting worse.
- Self-management puts people in control of their health and empowers them to have improved health and wellbeing outcomes.
- Benefits of improved self-management include: increased self-esteem, increased control, feeling connected, less isolated, reduced anxiety, improvement in mood, feeling empowered to challenge and question health professionals, recognised as experts in their condition, and able to provide peer support.
- Self-management and prevention free up resources and reduce demand as people who are managing their health better are less likely to use these services.

Co-production, building capacity and community led activity

- Working in a collaborative way with people who use health and social care services will make these services more effective.
- Co-production is a methodology that services can use to make services better.
- Effective co-production relies on sharing power, budgets and responsibility throughout all parties with an interest in building better services.
- Successful co-production incorporates citizen involvement e.g. listening, involving, collaborating, and empowering.

Community Link Workers

- The key value of this work is that the service is able to provide person-centred support which recognises that social issues, such as debt, relationships, employment and loneliness, affect people's health and wellbeing, and to connect people to sources of support or resources within their community.
- This in turn will reduce demand on health and social care, including GP practices, and have a positive impact on wider determinants of health and wellbeing.
- Gathering data and evaluating the service will be key to assessing its impact on patients, GP practices and communities in NHS Highland. This will also allow the service to adapt to overcome any challenges.

Planet Youth, the Icelandic Prevention Model, in Highland

- Primary prevention of adolescent substance use is a key public health priority.
- Changing our relationship with substances requires changes in practice and culture, and so matching ambition and investment to the scale of the problem is essential.

Infant Feeding

- Breastfeeding is the foundation for improving future health and getting it right at the very start is fundamental for ensuring the best possible health outcomes for both mums and babies in Highland.
- Breastfeeding is a skill and needs everyone's support.

Vitamin D3 Distribution

- Vitamin D is needed to support bone and muscle health with the main source of vitamin D being sunlight.
- Living in Scotland means we only get enough sunlight between April and September, so it is recommended that higher risk groups take a vitamin D supplement.
- Breastfeeding women, babies who are being breastfed and infants under 3 years, receiving less than 500mls of infant formula are all offered free vitamin D in NHS Highland.

Money Counts Training

- The Independent Food Aid Network's (IFAN) 'Worrying About Money?' leaflet has helped raise awareness of organisations that can provide financial support, and how to access these, amongst staff, volunteers and those experiencing financial difficulties across Scotland.
- In NHS Highland the 'Worrying About Money?' leaflet is being promoted through 'Money Counts' training delivered by the Health Improvement Team (Public Health), in partnership with the Argyll & Bute Council, to a variety of health and third sector organisations to enable them to support any individuals who may have financial worries.
- Research has demonstrated from a return-on-investment perspective that there are financial gains for individuals accessing welfare support, and there is good evidence to suggest that income improvements are associated with health improvements across the income distribution.

Health Protection

- Immunisation is one of the most effective and cost-effective public health interventions. It is vital that a high vaccine uptake is maintained.
- Although there has been a considerable reduction in TB incidence in Scotland in recent years, the predominant challenge facing low TB incidence countries such as Scotland is that of latent tuberculosis infection (LTBI). Investigations have indicated that the implementation of new entrant screening for individuals from high TB incidence countries would be highly effective.

Recommendations

There are many opportunities for the promotion and strengthening of preventative work within the area served by NHS Highland. It is important for both the health of people and for the sustainability of services that these opportunities are taken up. The following recommendations build on what is presented within this report as priorities for action:

- Prevention must be explicitly considered as a part of all service and pathway design or redesign in health and social care.
- Resources allocated to prevention should be identified within NHS Highland for comparison with treatment resources.
- Prevention of ill health should be included as a core part of planning in the work of public sector partners and Community Planning Partnerships, for example through adopting the approach of health in all policies, partnership working, and supporting staff health and wellbeing.
- NHS Highland and Community Planning Partners should work collaboratively to prioritise prevention when allocating funding and commissioning services from the third and voluntary sector.
- The importance of the wider determinants of health such as environment, housing, education and employment should be recognised, so that opportunities can be taken to improve health. This includes the role of large employers such as NHS Highland as anchor institutions.
- Opportunities to improve health and reduce inequalities by maximising income and addressing money worries should be taken. This includes ensuring that health and social care staff are trained and equipped to raise financial issues as a routine part of assessments.
- Clear pathways should be available within NHS Highland services for referral to non-clinical opportunities for health improvement such as physical activity and use of green space. This should be included within pathways for long term conditions and staff should be equipped to support the pathways.
- Research into the effectiveness and cost effectiveness of preventative work such as social prescribing should continue, and its results should be used for prioritisation of services.
- Preventative work should build on the assets of local communities and co-produce services with those communities. Place-based planning is important.
- Preventative activity in early years should be maintained and strengthened including infant feeding and supporting parents.
- Prevention programmes known to be effective must be implemented and managed to give optimum results. These include tobacco control and alcohol programmes and include specific work to reduce the burden of smoking and alcohol related disease in hospitals.
- Immunisation programmes must be managed and promoted to maximise uptake across the whole population as well as through targeting to reduce health inequalities.

Introduction to prevention

The focus of this report is on prevention and examples of preventative work being undertaken to improve health within our region. The word prevention may mean different things to different people. In public health, prevention can be defined as policies or actions taken to protect and improve the health of people and populations. Prevention aims to prevent poor health, disability and early death from occurring and increase the likelihood that people will stay healthy and well for as long as possible[1]. Investing in preventative measures that help to promote health and wellbeing protects against future costs to the NHS, economy and society.

> "An ounce of prevention is worth a pound of cure"
>
> Benjamin Franklin

Prevention is not new. There are many examples of successful preventative work that have already helped achieve major improvements in health. Early work to improve sanitation, housing and social conditions contributed to improvements in life expectancy in the nineteenth and early part of the twentieth century. Vaccination to prevent disease is commonplace today and has led to a significant reduction in communicable diseases such as measles. It has been instrumental in reducing the harm from COVID-19. National screening programmes for pregnant women, newborn babies and for certain cancers have helped identify issues early, improve health and prevent severe disability or death. Actions to reduce smoking and dietary risk factors have contributed to decline in cardiovascular diseases[2].

The health concerns facing our region are common in Scotland and in other countries. An ageing population is increasing demand on health and care services as more people are living with one or more long-term health conditions and with increasingly complex needs. Social and health care costs are increasing and the need for greater resources to support an ageing population is predicted to produce consequential impacts on health and social inequalities[3]. Future public spending is unsustainable if no action is taken to reduce demands relating to the ageing population.

COVID-19 has also highlighted longstanding economic and social inequalities and how these impact on the health of individuals and communities[4,5]. These same factors lead to higher levels of vulnerability to the cost of living crisis.

Most health investment is spent on dealing with pressing and acute needs. Tackling preventable physical and mental health problems more effectively would reduce healthcare costs, reduce formal and informal caring costs and have an impact on working lives with important economic benefits[6]. A fundamental shift towards prevention is required to improve health outcomes, reduce demand for high cost services and improve the future sustainability of the health and care system.

Health in NHS Highland

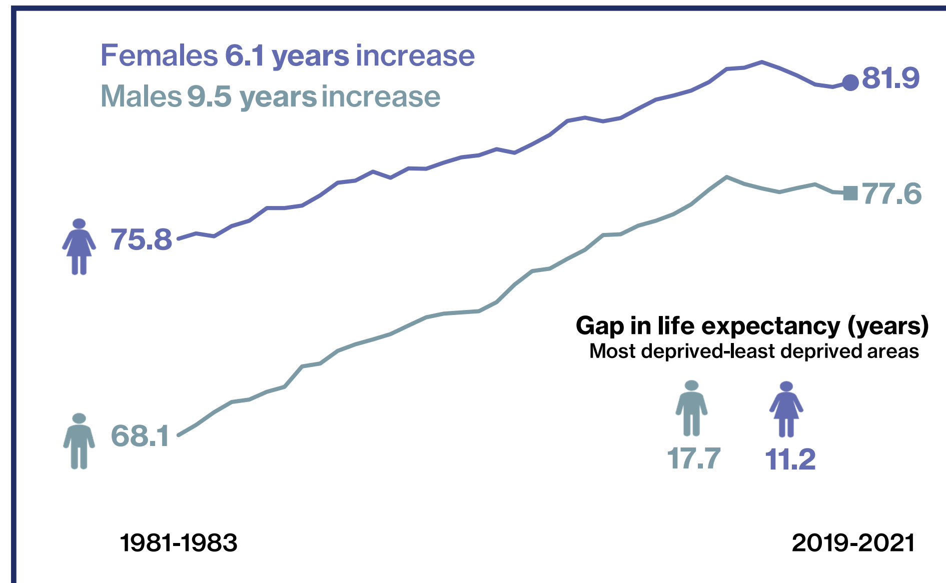
This section brings together an overview of health in the NHS Highland region with a focus on prevention and longer-term population health outcomes.

Life expectancy

Life expectancy is an important measure of population health. Following the pattern in Scotland, improvement in life expectancy in NHS Highland has stalled, probably as a result of economic austerity[7] (Figure 1). There are clear geographic inequalities in life expectancy in NHS Highland, largely reflecting socio-economic differences. People in some of the poorest neighbourhoods are dying over a decade earlier than their peers. Life expectancy at birth for females was 11.2 years longer in some of the least deprived neighbourhoods compared with the most deprived neighbourhoods in 2016-2020. For males that difference increased to 17.7 years[8].

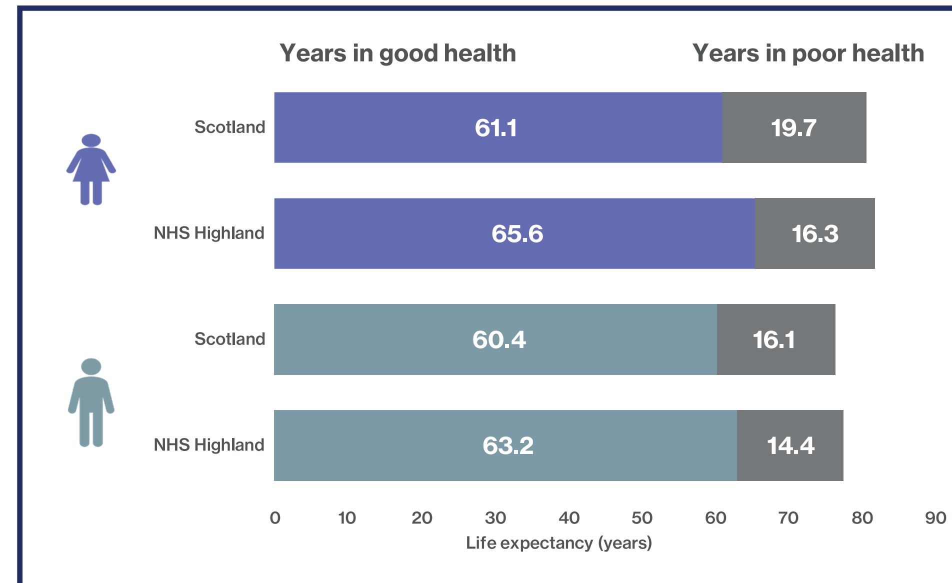
Healthy life expectancy provides insight into the proportion of our life expectancy spent in good health. It is an indicator of the health of the whole population. In 2019-21, the estimated healthy life expectancy at birth in NHS Highland was 65.6 years for females, and 63.2 years for males[9]. Life expectancy over the same period was 81.9 years for females and 77.6 years for males[10]. This means that around 20% of people's lives are spent in poor health (Figure 2). Deprivation has a large impact on healthy life expectancy. People in the most deprived areas spend more than a third of life in poor health.

Figure 1 - Trends in life expectancy, 1981-1983 to 2019-2021



Source: National Records of Scotland

Figure 2 - Healthy life expectancy at birth (years) in NHS Highland and Scotland, 2019-2021



Source: National Records of Scotland

Premature mortality

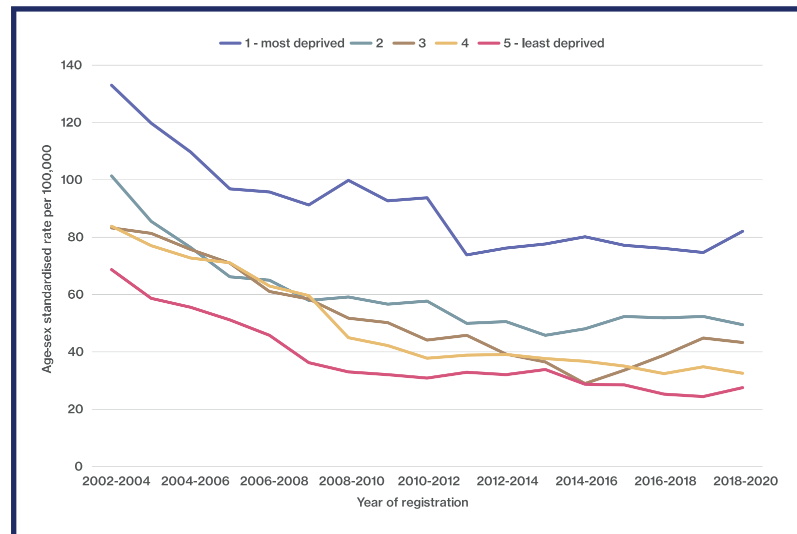
A premature death, defined as a person dying whilst under the age of 75 years, is a particular indicator of inequality. In 2020, premature deaths accounted for 34.7% of all deaths in NHS Highland, compared to the Scotland average of 36.5%. Premature mortality rates from cancers and heart disease remain consistently higher in the most deprived areas of NHS Highland compared to the least deprived[7]. Early deaths from coronary heart disease would be 42% lower if the levels of the least deprived area were experienced across the whole population (Figure 3).

Opportunities for prevention

One way of describing the opportunities for prevention across our population is in terms of health loss. The concept of health loss captures both the quantity and quality of life lost due to physical and mental ill-health and is measured in disability adjusted life years or DALYs. One DALY represents one year of life that a person in full health has lost. Recent research by Public Health Scotland identified cardiovascular diseases, cancers, neurological disorders, mental health disorders and musculoskeletal disorders as the leading causes of ill-health and disability in NHS Highland[11]. They represent thousands of avoidable deaths and preventable health conditions every year (Figure 4).

Estimates of health loss characterise the proportionate impact of causes of morbidity and mortality on population health and can help inform priorities for health and care service planning and redesign, and for disease prevention.

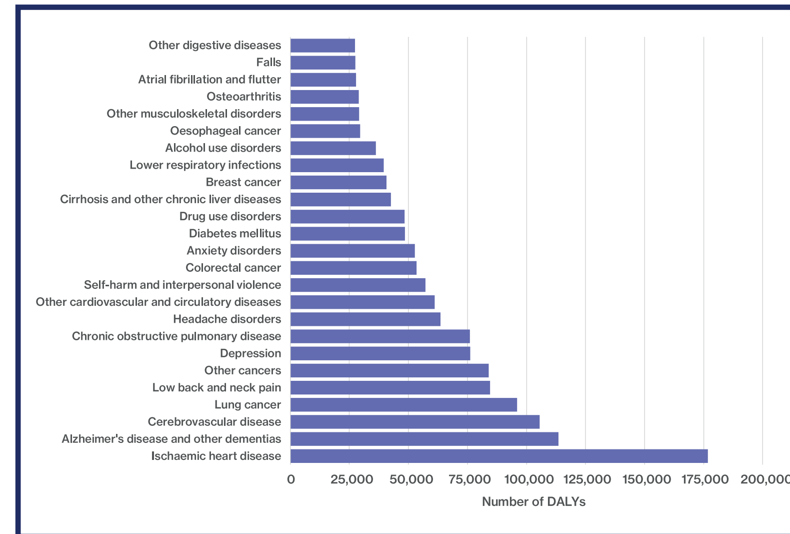
Figure 3 - Early deaths from coronary heart disease by deprivation group, age under 75 years, 2002 to 2020



Source: National Records of Scotland

3-year rolling age-sex standardised mortality rates per 100,000 population, directly standardised to the 2013 European Standard Population. Coronary heart disease (ICD-10 I20-I25).

Figure 4 - Leading causes of health loss (DALYs) in NHS Highland, 2015-2019



Source: Scottish Burden of Disease Study, Public Health Scotland

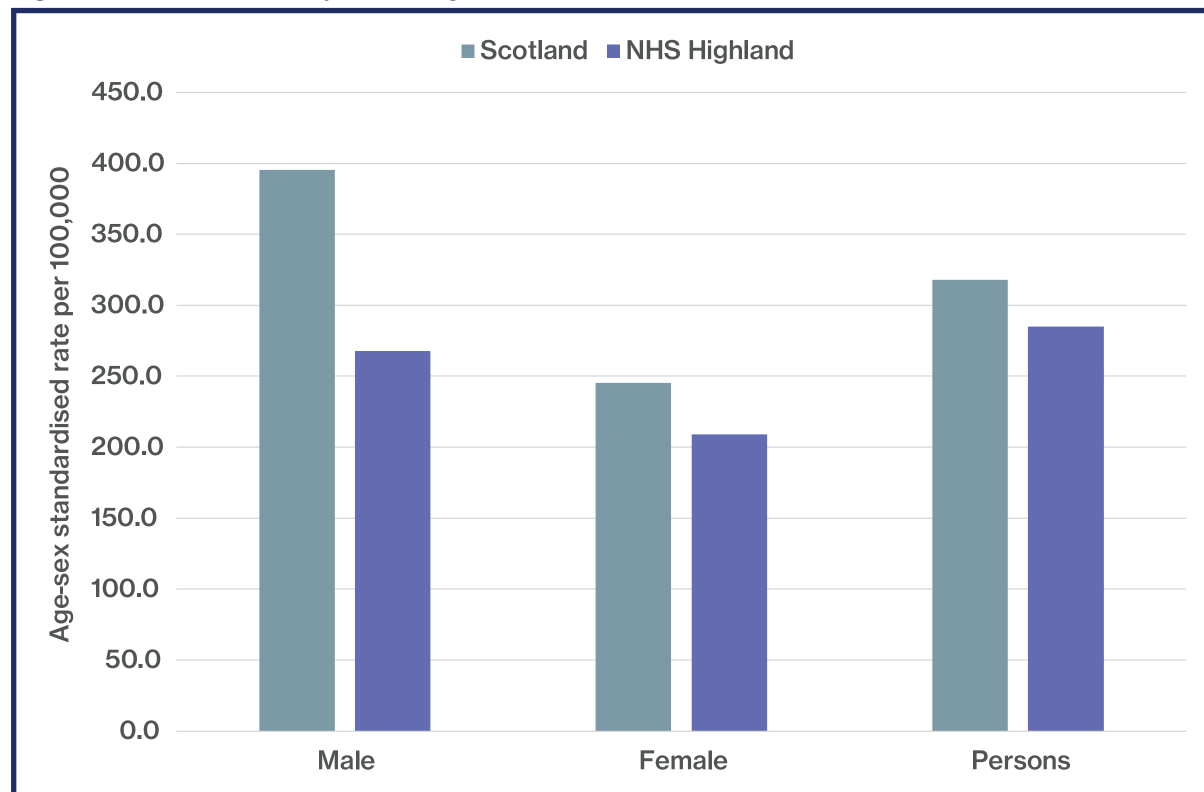
Number of Disability adjusted life years (DALYs), all ages, five-year aggregate

Avoidable mortality

Avoidable mortality is another way to inform priorities for prevention activity. Avoidable mortality is the number of deaths that could have been avoided had a public health or timely healthcare intervention been made and been successful[12]. It includes deaths from conditions such as heart disease, some cancers, respiratory diseases and type 2 diabetes, where environment and health behaviours may have contributed to early death. Also included are deaths that could have been prevented such as drug use disorders, accidental and self-inflicted injuries, and infections.

NHS Highland's avoidable mortality rate in 2018-2020 was 285.1 per 100,000 compared to the Scotland rate of 318.0 per 100,000. Rates were higher for males (267.6 per 100,000) compared to females (209.0 per 100,000) (Figure 5). In the three years between 2018 and 2020, 25% of all deaths in NHS Highland were classified as avoidable.

Figure 5 - Avoidable mortality in NHS Highland, 2018-2020



Source: National Records of Scotland

3-year average age-sex standardised mortality rates per 100,000 population, directly standardised to the 2013 European Standard Population. Based on an international definition by the Organisation for Economic Co-operation and Development (OECD) and Eurostat.

Effects of prevention on cancer and cardiovascular disease

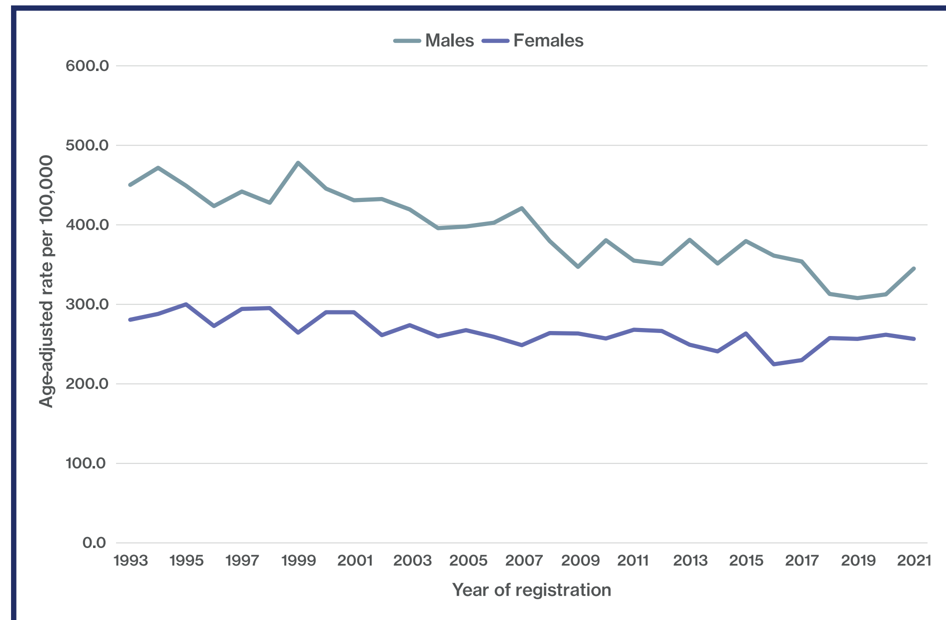
Cancer

Cancer is the leading cause of death in NHS Highland, accounting for more than one in four deaths each year. Mortality from cancer has declined over the past three decades (Figure 6). The age-adjusted cancer mortality rate for all cancers combined show a greater decrease in males than in females. The decline in cancer mortality largely reflects trends in the prevalence of risk factors, uptake of cancer screening programmes to aid early diagnosis, as well as advances in treatment that can affect survival.

Lung cancer

Lung cancer is the most common cause of death from cancer in both men and women in NHS Highland. Past actions to reduce rates of smoking have seen a decline in the death rate from lung cancer for males. Female lung cancer deaths have not improved and remained at a constant level (Figure 7). Prevention actions to reduce rates of smoking must continue and there must be continued efforts to improve early diagnosis for effective treatment. It is also possible that screening for lung cancer will be introduced soon.

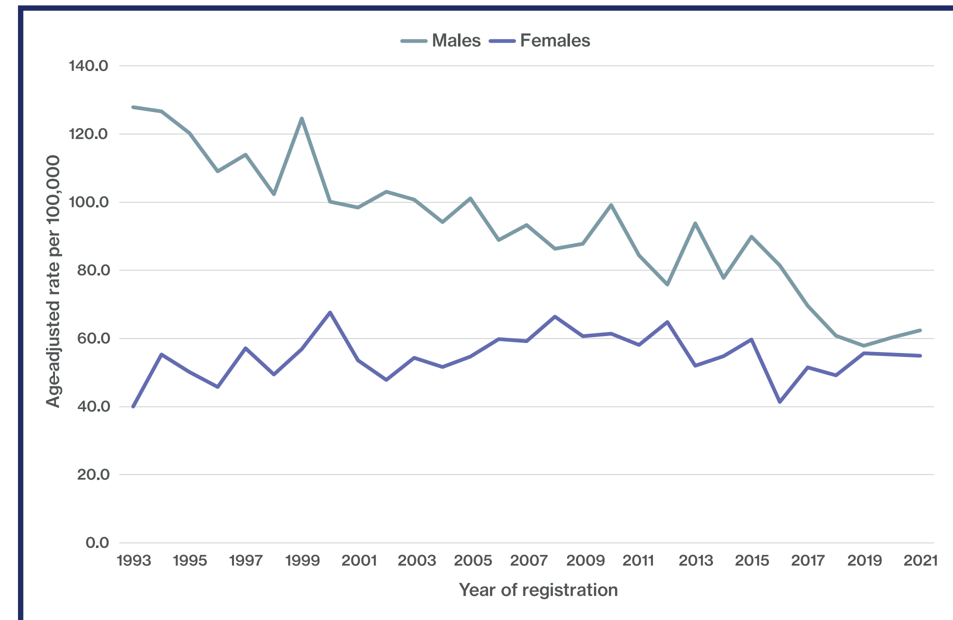
Figure 6 - Age-adjusted mortality rates for cancer in NHS Highland, 1993 to 2021



Source: National Records of Scotland, Public Health Scotland

Age-sex standardised mortality rates per 100,000 population, directly standardised to the 2013 European Standard Population. All cancers excluding non-melanoma skin cancer (ICD-10 C00-C97 excl. C44).

Figure 7 - Age-adjusted mortality rates for lung cancer in NHS Highland, 1993 to 2021



Source: National Records of Scotland, Public Health Scotland

Age-sex standardised mortality rates per 100,000 population, directly standardised to the 2013 European Standard Population. Trachea, bronchus and lung cancer and mesothelioma (ICD-10 C33-C34, C45).

Coronary heart disease and stroke

Heart disease and cerebrovascular diseases (stroke) are the second leading cause of death in NHS Highland. The main preventable risk factors for coronary heart disease and stroke are smoking, lack of exercise and a poor diet. Research also indicates a strong relationship between social deprivation and these risk factors.

Premature mortality rates from coronary heart disease (Figure 8) have shown a decline over the past two decades, falling from 244.7 per 100,000 population to 158.3 per 100,000 over the period. Coronary heart disease and cerebrovascular disease mortality rates over a ten year period show a continued decline (Figure 9). Preventative actions to control tobacco use and reduce smoking, high blood cholesterol and high blood pressure have contributed to the decline in risk. Priority should continue to be given to preventing cardiovascular and smoking related conditions.

Risk factors

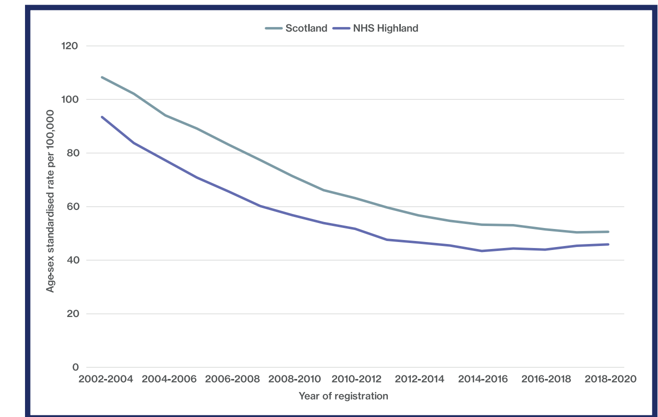
There is good evidence that preventable health conditions and avoidable deaths are linked to a range of modifiable risk factors including high blood pressure, smoking, alcohol and drug use, healthy weight, and levels of physical activity. These factors are known to correlate closely with environmental influences such as access to healthy food, safe streets, and exposure to poverty and chronic stress caused by unstable incomes, jobs and poor quality housing[13,14].

Tobacco smoking remains the biggest cause of lung diseases, heart disease and cancers; and is overall, the leading identifiable cause of poor health and early death in Scotland[15]. It has been estimated that half of all people who smoke regularly, will die prematurely as a result of smoking. Smoking prevalence in NHS Highland is around 20% of the adult population, which is comparable with the Scotland average of 19%. Smoking prevalence is significantly higher in men (26%) than women (15%)[16].

Dietary risk factors and unhealthy weight are not far behind smoking as modifiable risk factors for ill-health. Recent research at the University of Glasgow found that in Scotland obesity now accounts for more deaths than smoking among people in middle and older age[17].

Case study on Smokefree is on page 24

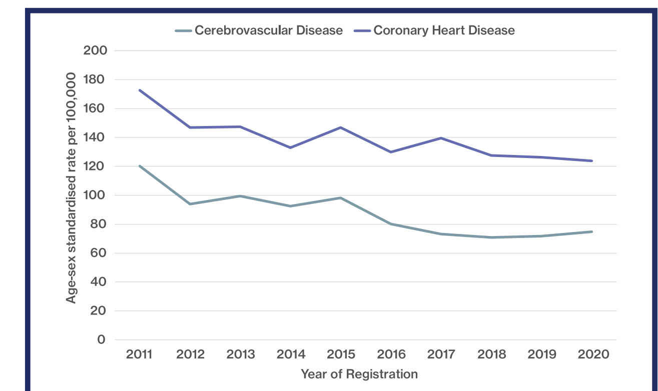
Figure 8 - Early deaths from coronary heart disease, age under 75 years, 2002 to 2020



Source: National Records of Scotland

3-year rolling age-sex standardised mortality rates per 100,000 population, directly standardised to the 2013 European Standard Population. Coronary heart disease (ICD-10 I20-I25).

Figure 9 - Age-adjusted mortality rates for coronary heart disease and cerebrovascular disease, all ages, 2011 to 2020



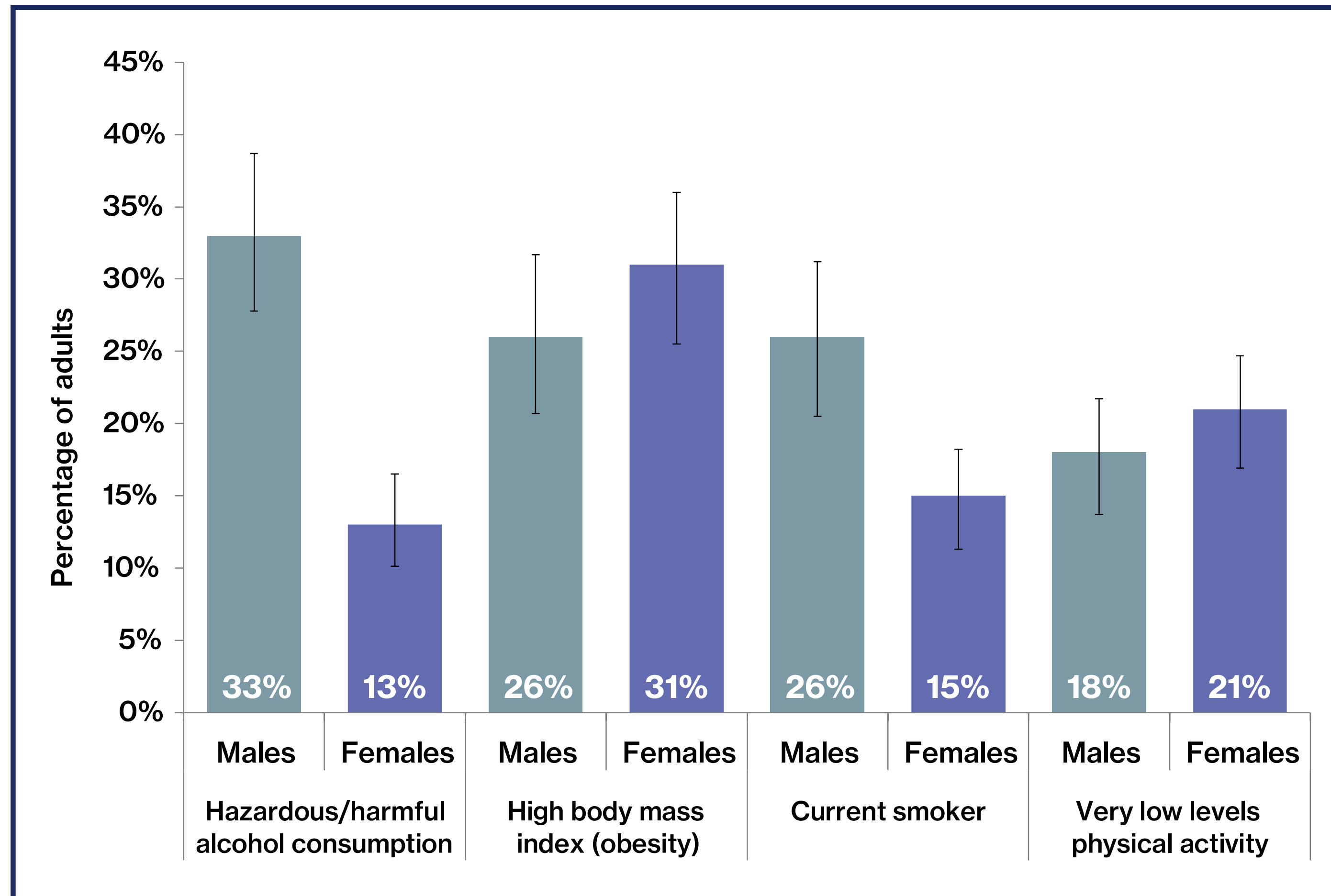
Source: National Records of Scotland

Age-sex standardised mortality rates per 100,000 population, directly standardised to the 2013 European Standard Population. Coronary heart disease (ICD-10 I20-I25). Cerebrovascular disease (ICD-10 I60-I69, G45).

Similarly, alcohol consumption is linked to a range of health risks. There is evidence that around 8% of health loss in Scotland is attributable to alcohol consumption, including the contribution of alcohol to deaths from cancer as well as admission to hospital for unintentional injuries[18]. There is no safe level of alcohol consumption[19], and it is estimated that around 23% of adults (33% of men and 16% of women) in NHS Highland consume alcohol at hazardous and harmful levels (Figure 10).

Addressing modifiable risk factors presents a sizeable opportunity to improve health, add years to life and to reduce existing inequalities in these measures.

Figure 10 - Prevalence of risk factors in NHS Highland, 2016-2019



Source: Scottish Health Survey

A life course approach to prevention

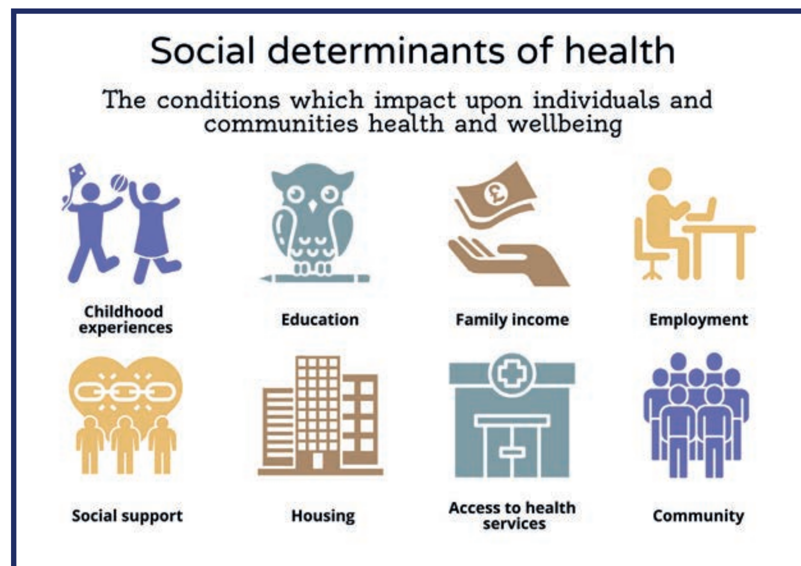
A person's physical and mental health and wellbeing is influenced throughout life by the wider determinants of health. These are a range of social, economic and environmental factors, alongside behavioural risk factors, which shape health and wellbeing for individuals and communities (Figure 11)[20].

It is well documented that social, political and economic factors outside the health system play a major role in influencing health outcomes and health inequalities[21]. Health inequalities have their roots in the unequal distribution of power, money and resources. This can lead to poverty and marginalisation of individuals and groups, and affects the distribution of environmental influences, such as good housing, work and education, which often cluster in the population. These influences can shape individual experiences and exposure to harms in the environment.

When looking at modifiable health behaviours such as smoking, poor diet and alcohol use, it is especially important to consider the major role of environmental influences. The risk factors reflect not only the choices that people make in life but also the ways in which choices are shaped by people's social circumstances such as employment, education, housing, income, relationships and communities. Addressing the wider determinants of health will help improve overall health by helping to improve the conditions into which people are born, live and work.

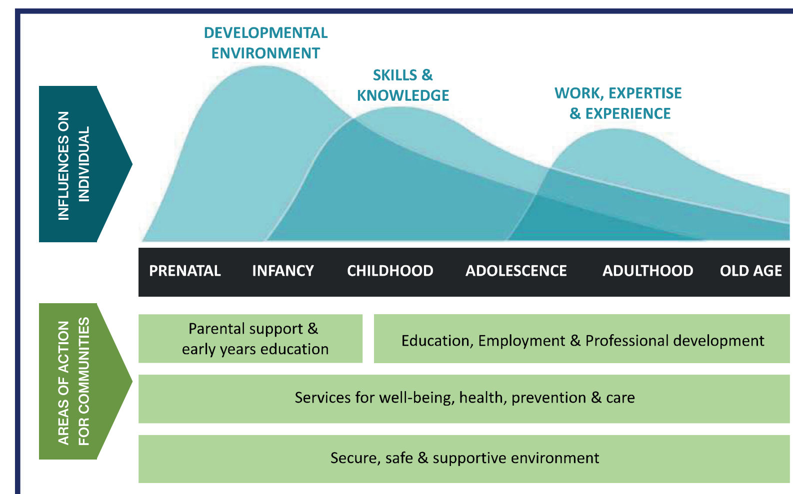
Unlike a disease-oriented approach, which focuses on interventions for a single condition often at a single life stage, a life course approach considers the critical stages, transitions, and settings where large differences can be made by prevention interventions. A life course approach to prevention identifies potential areas of action relating to both the individual and the community (Figure 12)[22].

Figure 11 - The determinants of health and wellbeing



Source: Adapted from NHS Health Scotland[20]

Figure 12 - A life course approach to prevention



Source: Davies S. Annual Report of the Chief Medical Officer, 2012[22]

Types of prevention

A public health perspective designed to understanding prevention typically considers three levels of activity: primary, secondary and tertiary. Prevention activities can also be considered as 'upstream' or 'downstream'. Upstream prevention activities address the economic, social and environmental causes of ill-health rather than treatment of illness or 'downstream' measures to change behaviours delivered to individuals.

Characteristics of effective prevention work

In 2018, a review by the Faculty of Public Health looked at the factors that support effective prevention work. The review highlighted much of the success or failure of preventative work is down to implementation, buy-in and collaborative working with other organisations. Partnership working, which includes co-production approaches working with individuals and communities, as well as partnership working between organisations is key to success[21,23].

Evidence from NHS Health Scotland highlights that policies and services delivered by national and local government need to help create a more level playing field to enable and realise the potential of community-led, assets-based preventative approaches to improve heath and reduce health inequalities[21]. Prevention is most effective when multi-component interventions are implemented at different levels of a system or setting[24].

Case study on Living Well is on page 48

Case study on Co-production is on page 56

The key principles and characteristics for effective prevention work are summarised in the box. Prevention activities tend to be less successful where there is a lack of supporting infrastructure and resources, communication issues, programmes not being implemented as planned, insufficient investment in staff knowledge, and individual factors reinforcing health inequalities.

Case study on Community Link Workers is on page 26

Three types of prevention

- Primary prevention - universal approaches which tackle the causes of ill-health and prevent health problems from developing
- Secondary prevention - early intervention aimed at reducing the progression of health problems
- Tertiary prevention - treatment aimed at reducing the impacts of ill-health

Characteristics of effective prevention work[21,22,23]

- Partnership working across sectors
- Multi-component programmes rather than single issue activities
- Programmes that reduce income and employment inequalities
- Widening access by offering prevention in communities and using a variety of methods
- Systematic and individually tailored processes for identifying people at risk and encouraging access to support
- Targeting population groups using appropriate and culturally sensitive language and materials
- Initial approach made by a familiar person, for example, GP or link worker
- Training health and care staff and partners to support prevention

Evidence for prevention

A report from NHS Health Scotland recommended that 'best buys' in prevention should meet one or more of three objectives: cost-effectiveness, likely to reduce health inequalities and likely to reduce avoidable health and social care problems (Figure 13)[28]. Cost-effective actions are those that achieve large improvements in health relative to the resources required.

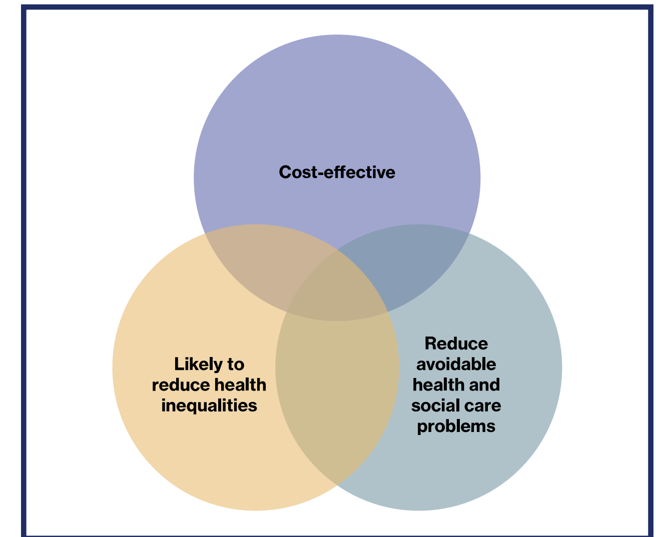
Much of the evidence for the impact of prevention programmes on health comes from economic evaluations. Economic evaluation measures the impact of prevention interventions on health relative to their cost, typically based on cost-effectiveness or return on investment analyses. Return on investment is a form of economic evaluation that places a value on the financial return of health benefits against the total costs of delivery of an intervention. Cost-saving approaches are where the health benefits are generated at a lower cost than usual practice.

A report from the World Health Organisation highlights that reducing or containing the costs of health care, without negative effects on health outcomes, requires cost-effective prevention interventions to play a significant role[2]. They suggested a hierarchy of prevention interventions (Figure 14) and recognised that all approaches require initial investment. Cost-effective approaches that are cost-saving but do not produce a return on investment can increase overall costs.

There are some limitations in the evidence available from economic evaluation methods. The measurement of costs and health benefits vary across studies, making it difficult to make direct monetary comparisons[25]. Most studies that identify potential savings from prevention do not specify how resources can be released in practice[26,27]. Additionally, the degree to which many public health interventions can influence future spending, and the timing of any cost-savings, may be subject to uncertainty. The impact of an intervention may extend beyond the NHS, requiring consideration of wider societal costs and benefits that may not be recognised for many years.

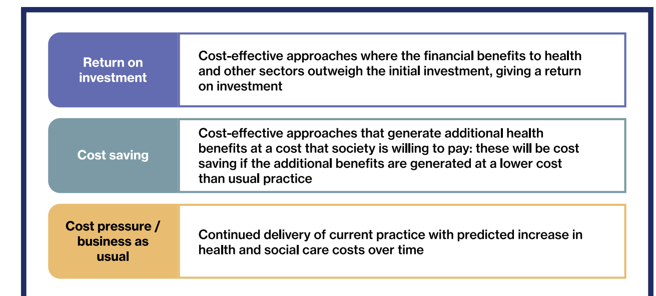
NHS Scotland have argued that the lack of evidence on actual savings made in practice should not stop investment in prevention[28]. Overall, many studies provide clear evidence that prevention can be highly cost-effective, provide value for money and give returns on investment in both the short and longer term.

Figure 13 - Objectives of prevention activities



Source: Adapted from NHS Health Scotland[28]

Figure 14 - Hierarchy of prevention



Source: Adapted from World Health Organisation[2]

Evidence of the impact of prevention work

This section summarises evidence and provides examples of prevention work that can be delivered locally.

Much of the evidence on cost-effectiveness relates to interventions that try and change the behaviours of individuals. One comprehensive source of evidence is the Assessing Cost-Effectiveness in Prevention (ACE-Prevention) study[29]. This study evaluated the cost-effectiveness of 150 preventive health interventions, addressing areas such as tobacco use, alcohol use, body weight, physical activity and nutrition. Many individual level interventions, including smoking cessation services, alcohol brief interventions and prescribing to increased levels of physical activity, were found to be cost-effective and with the potential to reduce future demand for health and care services.

Likewise, a report from Public Health England identified six preventative interventions that could deliver cost savings to the NHS and care system within five years[30]:

- Alcohol brief interventions
- Alcohol care teams in secondary care
- Tobacco screening, advice and referral in secondary care
- Improved management of hypertension in primary care
- Increased uptake of long-acting reversible contraceptives
- Implementing a fracture liaison service in secondary care.

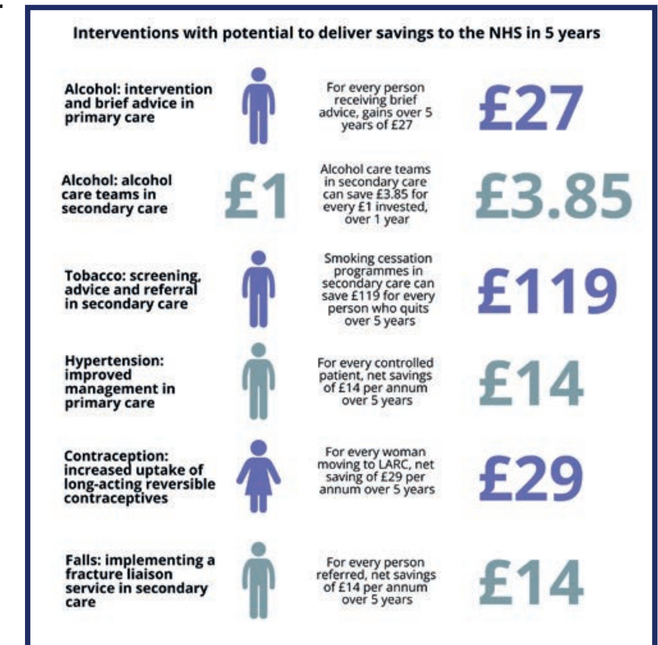
These interventions have proven to be effective where implemented and are based on National Institute for Health and Care Excellence (NICE) guidance or recommendations. Some interventions will require upfront costs and the savings are likely to accrue over time[30]. Details of the potential savings and benefits from these interventions averaged over a five year period are summarised in Figure 15.

Taxation policies to reduce alcohol and tobacco use, smoking cessation services, alcohol brief interventions, prescribing to increase levels of physical activity and multi-faceted school-based programmes to improve nutrition were all potentially cost-saving with the potential to reduce future demand for health and care services. With tobacco smoking, the short-term savings can be achieved through helping people who smoke being in contact with NHS services. Long-term savings come from preventing people from ever smoking.

Case study on Smokefree is on page 24

Case study on Planet Youth is on page 33

Figure 15 - Preventative interventions with the potential to deliver savings to the NHS within five years



Source: Adapted from Public Health England[30]

The importance of the earliest years of life in setting the tone for the whole lifespan is well documented[31]. Reports from the Chief Medical Officer for England[32], Public Health England[30] and the Australian Prevention Partnership Centre[33] found strong support for the benefits of prevention in childhood. There is evidence that investment in early childhood, child health and development, and preconception, pregnancy and childbirth care can yield a 10-to-1 benefit to cost ratio in health, social and economic benefits[5]. It can also reduce rates of non-communicable diseases and mental health disorders across the life course.

A range of evidence-based interventions are recommended in National Institute for Health and Care Excellence (NICE) guidance that could improve children's health outcomes while delivering short-term cost benefits. Health behaviour interventions during preconception and pregnancy, breastfeeding, and family-based early childhood obesity prevention interventions have all demonstrated evidence of effectiveness and cost-effectiveness[32].

Case study on Infant Feeding is on page 35

Case study on Vitamin D3 is on page 51

Case study on Planet Youth is on page 33

Reports from the Institute of Health Equity[34] and NHS Health Scotland[27] recognise there are fewer examples of good studies and economic measures in the wider determinants of health than for behaviour change. They underline that evaluation of complex social interventions, which will have multiple effects over the long term, may have limited measures of economic impact.

Despite this, there are a range of programmes that evidence suggests are both cost-effective and likely to be effective in reducing health inequalities[34]. These include programmes and interventions that:

- ensure adequate incomes and the living wage
- increase employment opportunities
- reduce unemployment in vulnerable groups
- improve working conditions and workplace health
- improve housing conditions to keep people warm, safe and free from cold and damp.

Investment in programmes likely to help reduce health inequalities should be a core objective. Examples of interventions that provide a return on investment and improve health can be seen in Figure 16[35].

Case study on Money Counts is on page 42

Figure 16 - Making the case for public health interventions

Source: The King's Fund and Local Government Association[34]

The COVID-19 pandemic has highlighted the important role of work to protect the health of the population from serious risks and infectious diseases through vaccination, infection control and incident response (health protection). A 2017 systematic review evaluated the cost-effectiveness of 18 health protection interventions, including vaccination programmes and the control of infectious diseases such as HIV and hepatitis B.

These studies demonstrated a consistently high return on investment, reflecting the high disease cost of infectious diseases and the benefits of prevention[36]. It is estimated measles, mumps and rubella (MMR) vaccination in the United Kingdom has realised savings of £241k to £544k over ten years in reduced treatment costs[2]. Likewise, evidence from a 2018 review concluded the majority of adult vaccinations are cost-effective[37].

Case study on Health Protection is on page 54

Priorities for Prevention

This section has summarised evidence on the role of prevention and the potential to improve health in a cost-effective way, reduce health inequalities and reduce the future demand for and cost of health and other public services. Preventative interventions can be cost saving, though how such programmes can enable cash to be released from existing services remains a challenge.

The strength of evidence is such that the Scottish Government identified a set of public health priorities for Scotland[38]. The priorities do not reflect all of the activities that contribute to the health of the population. Work must continue to protect the health of the population from serious risks and ensure health and care services are delivered in a high quality and cost-effective way.

The NHS has an important role to play in prevention as an employer, researcher, collaborative partner and commissioner of services[39]. Ensuring that prevention is seen as part of everyone's role and that time and resources are allocated to it are key to supporting the fundamental shift towards prevention that is required.

Public health priorities

- A Scotland where we live in vibrant, healthy and safe places and communities.
- A Scotland where we flourish in our early years.
- A Scotland where we have good mental wellbeing.
- A Scotland where we reduce the use of and harm from alcohol, tobacco and other drugs.
- A Scotland where we have a sustainable, inclusive economy with equality of outcomes for all.
- A Scotland where we eat well, have a healthy weight and are physically active.

Case Studies

Smokefree
Community Link Workers
Planet Youth
Infant Feeding
Money Counts
Living Well
Health Protection
Vitamin D3
Co-production

Case study: Smokefree

Introduction

Scotland is a world leader in tobacco control, implementing legislation, policy and strategy with the aim of a tobacco free generation by 2034. It is well known that smoking causes harm and reducing rates of smoking will save lives, reduce the cost of treating smoking related disease, improve quality of life and reduce health inequalities. Supported by national level input, local health board areas are supporting progression towards creating a tobacco free Scotland. NHS Highland's tobacco strategy aimed to support smoking prevention, protection and cessation, with an underpinning principle of reducing health inequalities.

Background

Smoking remains the leading cause of preventable ill health and premature death in Scotland. As well as improved health outcomes, reducing premature death and protecting those exposed to tobacco smoke, the cost savings to the individual and to the NHS of stopping smoking is significant. For example, someone smoking 20 cigarettes a day, buying an average packet of cigarettes at £9, would save £3,285 per year if they quit. That is £16,425 over 5 years and £32,850 over 10 years.

Around 17.5% of adults in NHS Highland smoke (ScotPHO 2019), which is comparable with the rest of Scotland. 19% of men and 16% of women smoke in NHS Highland .

Smoking Cessation Service

There is a network of Smoke-Free Advisers across NHS Highland, and 85 Community Pharmacists providing free, confidential, non-judgemental services to everyone who smokes. Many people can quit on their own, but evidence suggests that quitting with help can be up to four times more successful, and that people are more likely to stay smoke free if they have had support to quit.

From April 2021 to March 2022, more than 1767 quit dates were set. Of those that quit, over 675 remained quit at 1 month, and over 410 remained quit at 3 months. Over 245 of those who remained quit at 3 months were from the 40% most deprived areas.

In the whole NHS Highland area, a network of smoking cessation advisors cover our geography.

In addition, **85** community pharmacies deliver smoking cessation support.

PHARMACY

Over **1,400** promises have been made to our Smoke-free Homes & Cars Challenge, helping to protect over **2,000** children.

Smoke-Free Homes... and Smoke-Free Cars

Nearly **1800** people stopped smoking with support from our services during the pandemic and remained quit at 3 months.

CONGRATS!

Our Smoke-free Sports programme has reached over **700** young people.

We have **26** hospitals, including a mental health hospital.

There is also one prison within the Highlands.

We've branded our service as e-cigarette friendly to support more people to stop smoking.

Smoking cessation is one of the most cost-effective interventions for reducing ill health and prolonging life. The UK National Institute for Health and Clinical Excellence (NICE) has reported that smoking interventions are highly cost-effective, at **£975-£2,400** per quality-adjusted life years (QALY) gained.

Cost-effectiveness

Smoking cessation interventions, whether pharmaceutical or through advice and counselling, are one of the most cost-effective interventions for reducing ill-health and prolonging life. Studies have shown that the more intensive the intervention, the more cost-effective it is. A directory of healthcare programmes which ranked the cost-effectiveness of interventions in relation to quality-adjusted life years (QALYs) gained showed that giving up smoking following the advice of a general practitioner was ranked third in a list of 21 medical and surgical interventions aimed at preventing or treating disease. The UK National Institute for Health and Clinical Excellence (NICE) has reported that smoking interventions are highly cost-effective, at £975-£2,400 per QALY gained[40].

Smoking prevention policies such as advertising and marketing bans and high taxation play an invaluable role in preventing young people from taking up smoking. Smoking prevention policies are therefore cost effective and ensure that society will reap the benefits of these policies in future decades. Work to reduce the harm from smoking needs to not only provide support for quitting but also provide a range of preventative measures.

Case study: Community Link Workers

Community Link Workers (CLWs) are non-clinical practitioners who work one-to-one with individuals referred by GP practice staff, to address non-medical factors which contribute to poor health and wellbeing.

Evidence

- Majority of studies find positive changes in outcomes following Social Prescribing however evaluation can be challenging.
- An independent review estimated that in the UK, up to a fifth of patients presenting at GP practices have a problem which requires social prescribing.

https://bit.ly/3GPF375

Research

There are recommendations that future research needs to acknowledge and consider complexities of health when designing social prescribing and related evaluations.

https://bit.ly/3OFnClh

Challenges

- Use of a wide range of outcome measures to evaluate CLW makes it difficult to compare and synthesise evidence.
- Delivering CLW services across remote and rural areas where there may be limited social prescribing opportunities.
- Traditional research methods are not the best measure for evaluating social prescribing approaches.

Social return on Investment

Studies have estimated this to be from:

£1 ⇨ £1.09

£1 ⇨ £8.56

https://bit.ly/3ilX4je

we are withyou
at Argyll and Bute
Community Links

Area	Who	Why	Where
North Highland	Change Mental Health (formerly Support in Mind Scotland)	Awarded contract through commissioning process	29 most deprived practices in North
Argyll and Bute	We Are With You	Awarded contract through commissioning process	12 practices, identified via patient list size & Scottish Index of Multiple Deprivation

CLWs are social prescribers and aim to impact on the socio-economic issues affecting individuals. They work with the individuals to identify barriers to improving health and wellbeing and take a person-centred approach to mitigating these. They support the individual over an identified period of time.

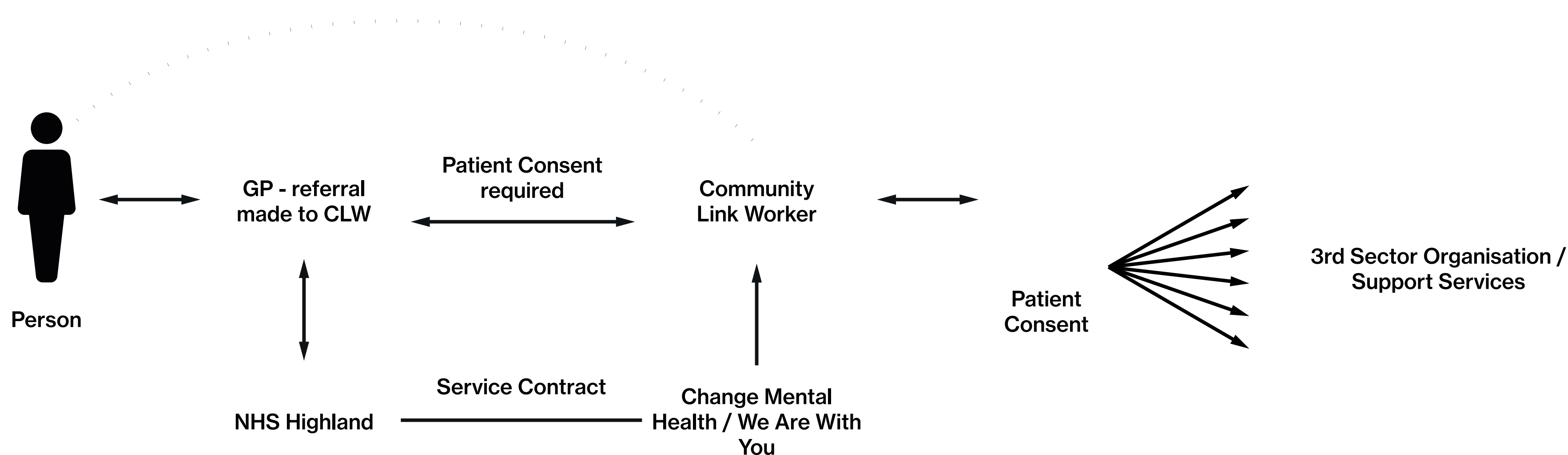
Patients are seen on an average of 4-6 sessions but this is flexible depending on need. Argyll and Bute CLWs offer group work sessions as additional support.

Further role of a CLW

- Work with local community groups to support funding applications.
- Promote and assist the shape and delivery of local services.
- Recognise gaps in services and highlight need for change.
- Network and connect with local and national organisations to bring about change in our local communities.

Referral pathways

The following diagram provides an oversight on the referral process



A short animation about Community Link Workers

Please scan this QR code using a smart device to watch a video about: Community Link Workers

Referrals from individual GP practices to CLWs

Number of referrals for Apr to Sep 22 - Argyll and Bute	
Area	Number of referrals
Bute	67
Campbeltown	44
Dunoon	52
Helensburgh	42
Lochgilphead	20
Isle of Islay	15

Number of referrals for May to Oct 22 - North Highland	
Area	Number of referrals
Inverness	141
Caithness	58
Ross-shire	56
Lochaber	30
East Sutherland	23
Badenoch and Nairn	17
Skye and Lochalsh	7
Black Isle Corridor	4
West Sutherland	1

Top reasons for referral (North Highland)
1. Mental health and wellbeing
2. Loneliness and isolation
3. Social isolation
4. Bereavement
5. Housing and essential needs
6. Stress management and financial advice

North Highland

University of the Highlands and Islands: mixed method evaluation to monitor and measure the impact of the introduction of community link workers in three main areas:

- Impact on people, their carers and their families
- Impact on the third sector as part of the social prescribing system
- Impact on the wider health and care system

Argyll & Bute

Impact of the service evaluated using Warwick Edinburgh Wellbeing Scale).

- 93.8 % of clients who have completed a well-being scale at entry and exit from the service showed an improvement in well-being.
- 100% of people felt listened to, treated with respect and compassion
- 100% of people would recommend the Links Worker to other people
- 100% of people felt connected with the right sources of support

Feedback

Argyll and Bute

"Thank you for all your help as it has definitely helped going to the walking group and getting out and about. At least I am getting up earlier and trying to get earlier to bed as I was beginning to think before I had the meetings with you that I was never going to get back to getting out of bed at a reasonable time. I know where I can get help again so hope you are kept in your post and enjoy living in Argyll."

"I honestly can't thank the CLW enough for all the help he gave me and the changes we have made. Thank you again."

"My Links Worker was very easy to talk to and made me feel relaxed when I was getting support. She made some phone calls to various organisations about help and information I needed - always with my consent. She pointed me in the right direction about activities I would enjoy. I am glad I got the opportunity to talk with her because I felt that pills on their own were not the answer to my problems. Also I was able to talk to the Links worker for longer than an appointment with the doctor although I have had good support from my doctor."

"My Links Worker was amazing I feel really different about myself now and am feeling more confident in myself and about the future"

we are withyou
at Argyll and Bute Community Links

North Highland

"I've not met you before, but I'm one of the GPs at an Inverness Practice. I've been reviewing a 37 year old lady who I referred to you. I just wanted to pass on that she has really benefited from her session with you and feels you have been incredibly helpful." (GP to a CLW)

"I had some feedback today from a patient who was referred to the CLW. The patient says they really appreciate the time the CLW has spent with them, they have found all the advice she has provided really useful and said that they feel better knowing someone is helping them. They appreciated having someone to talk to in their own environment as they said they felt comfortable and how at ease they were made to feel. Thank you, it was great to see a positive change in the patient's attitude and overall outlook." (GP to a CLW)

"Just wanted to share some positive feedback with you. I had a lady who was very low when she started and was feeling depressed, demotivated and had put on a lot of weight. She wanted to focus on her weight gain first, so I put her in touch with a support organisation. I had my 4th session with her today following her meeting with them and she sounded like a different person, so positive. She said they have helped her understand so much about herself and she is feeling really motivated now, she is doing daily walks and has got into gardening and is loving it. She said 'I can't thank you enough, thank you for looking after me so well' which was lovely to hear!" (CLW about a patient)

Conclusion

- The key value of this work is to provide person-centred support that recognises that social issues such as debt, relationships, employment and loneliness affect people's health and wellbeing, and to connect people to sources of support or resources within their community.
- This will help people access the right support and services at the right time, and when they most need it.
- This in turn will allow for GP appointments to be more medically focused and also have a positive impact on the wider determinants of health and wellbeing.
- The data gathered from the CLW work will help shape, inform and direct approaches to social prescribing.

Case study: Planet Youth, the Icelandic Prevention Model, in Highland

The Planet Youth, Icelandic Prevention Model aims to increase protective factors, and decrease risk factors, to delay and reduce substance use among young people in Highland. Over five years (2020-2025), the Ten Steps[41] of the approach will be applied in Highland.

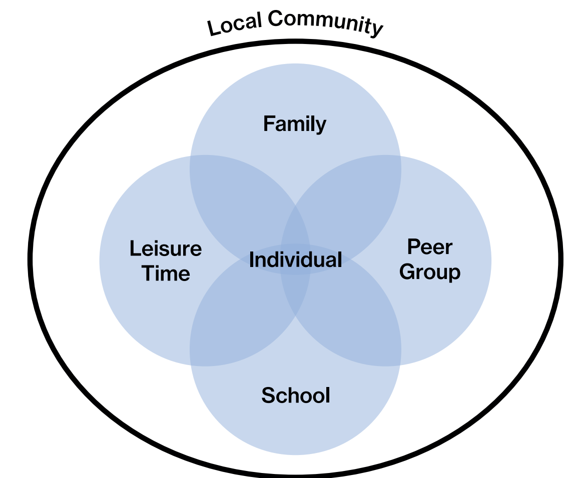
Planet Youth is a primary prevention, whole systems, and whole family approach that works in collaboration with stakeholders by collating and analysing survey data on risk and protective factors that influence alcohol, tobacco and other drug use. This anonymous local data from S4 pupils informs development and implementation of local action plans that respond to findings in key areas of young peoples' lives. Since being applied in Iceland, this approach reduced substance use rates among young people from among the highest in Europe to the lowest. Watch this video[42] we created for more information.

There have been more than 100 peer reviewed articles published on the Icelandic model. The evidence base for Scotland is also growing with a recent qualitative study[43] which concludes transferability to a Scottish context is feasible and highlights primary prevention of adolescent substance use is a key public health priority.

Work based on the Planet Youth model has been undertaken in both the Highland Council and Argyll and Bute areas. In Highland through Scottish Government and the Highland Alcohol and Drugs Partnership (HADP), supported by third-sector organisation Winning Scotland, and actioned by a local coalition group, work is underway to increase positive activities for young people and families, increase social cohesion among families, and support families and schools with consistent messaging regarding alcohol, tobacco and other drugs.

The local coalition group consists of schools' representatives, chairs of the relevant Community Partnership sub groups, representatives from Highland Council, NHS Highland, HADP, Highlife Highland, Winning Scotland Foundation, Police Scotland, Third Sector, and, importantly, local champions. Planet Youth provides training, guidance and templates to support local delivery and application of this process.

The project in Argyll and Bute is at an earlier stage of development. Focus is upon two secondary schools where work is underway to deliver upon the partnership action plan. Following engagement with staff and parents, support and commitment have been secured for the project and the next step is to galvanize community support for development and implementation.



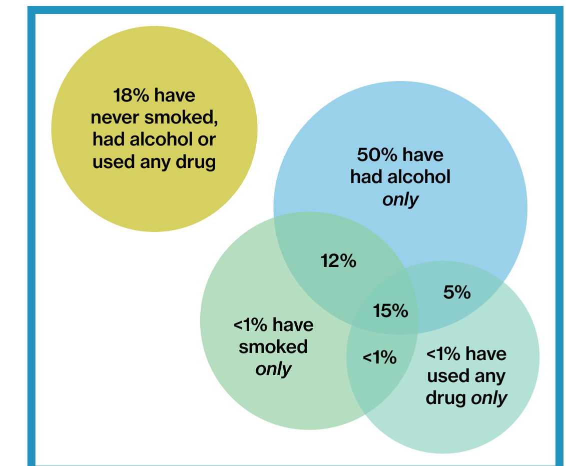
Given that poverty is linked with problematic substance use, it is essential to focus resources at a faster pace for people who are experiencing the most disadvantage. The pilot therefore compliments other initiatives targeted at young people at higher risk of substance use in relation to protective factors including access to leisure activities and anti-poverty measures.

Monitoring and evaluation of the impact of the agreed actions will be highlighted by continued survey results. In addition, quality improvement techniques will be applied to actions to measure effectiveness more periodically. While each of the actions have a number of survey questions we can reference, ultimately, we aim to see reductions in the prevalence of substance use among young people. The initial survey, completed autumn 2021, highlighted the following substance use among young people.

Whilst we aim to see a reduction in substance use among young people, there are a range of other benefits that are associated with this approach, and linkage across all six public health priorities; where safer communities, early years support, good mental health, equality of opportunity and physical activity, all contribute to reducing the harm from substance use.

The various impacts of alcohol, tobacco and other drug use in Scotland are well documented. Changing our relationship with these substances requires changes in practice and culture, and so matching ambition and investment to the scale of the problem is essential. As with all prevention work, this needs to be committed to long term.

Substance usage of young people



Case study: Infant Feeding

Vision Aim

To reduce the breastfeeding attrition of any breastfeeding at 6 – 8 weeks by 10% by 2025.

Outcomes

To support an increase in breastfeeding at birth, exclusive breastfeeding at 10 – 14 days and 6 – 8 weeks to support improvement in short, medium and longer term health outcomes for babies and mothers.

Evidence to support

In 2016, the Lancet published an item[44] titled: *Why invest, and what it will take to improve breastfeeding practices?*. This series highlighted that breastfeeding is one of THE most preventative health measures for children and mothers regardless of where they live, but it has often been overlooked as a critical need for the health of the population. Evidence provides a strong economical case for investing in promotion and support of breastfeeding where it is estimated that boosting breastfeeding to 45% for infants less than 6 months of age in the UK would cut treatment costs of common childhood illnesses such as pneumonia, diarrhoea and asthma. The cost savings for these illnesses alone has been estimated to be £5 million.

In 2012, Unicef, a leading children's charity commissioned a report[45] titled: *Preventing disease and saving resources*. Findings demonstrated that for just five illnesses (breast cancer in the mother and gastroenteritis, respiratory infections, middle ear infections and necrotising enterocolitis in the baby) moderate increases in exclusive breastfeeding would translate into cost savings for the NHS in the UK of up to £50 million per year and tens of thousands of fewer hospital admissions and GP consultations for both mum and baby.

Infant Feeding Service

Pathways to service

There is a range of support for women who chose to breastfeed, including:

Specialist breastfeeding service	Referral pathways are in place for any NHS Highland or council staff to refer women into a specialist service for women experiencing problems with breastfeeding
Volunteer breastfeeding peer support	All breastfeeding women are asked to consent to refer to peer support.
Infant feeding support workers	Referral pathway is mainly from local midwifery and Health Visiting staff direct to the infant feeding support worker. The aim of the service is that all breastfeeding women will be seen by a support worker in the postnatal period. Support is provided for as long as it is needed.
Antenatal Facebook Breastfeeding Course	Advertised on parent portal on Badgernet and promoted to women through clinical staff and social media advertising this online course supports women with breastfeeding.
Postnatal breastfeeding support on Facebook	All breastfeeding women receive details of this group on discharge from hospital/home birth.
Self referral	Details of support for breastfeeding are available on the NHSH website and on all leaflets given to breastfeeding women to support self referral

Monitoring and Evaluation

Quality Improvement is embedded in the Infant Feeding Service and data is crucial to ensuring systems are working and women and families are happy with the support they are being given.

National data from Public Health Scotland is used to support ongoing improvement. More information can be found in their report on Infant feeding statistics - Financial year 2021 to 2022[46].

NHS Highland Infant feeding Service

NHS Highland

What services we provide

Breastfeeding co-ordinators within Raigmore
Supporting projects to reduce supplementation and spread colostrum harvesting project

Key workers
Midwifery and health visiting staff who are local breastfeeding key contact for local staff

Volunteer supporters
Offering support groups and a 365 day/year telephone support service

Infant feeding support workers
Offering ante and post natal support in SIMD 1 and SIMD 2 areas

Vitamin D
Distribution to all breastfeeding mothers and infants under 3 years

Ante natal colostrum harvesting

Specialist breastfeeding clinical service
82 women seen already in 2022

Staff training
There have been **502** staff trained this year

Facebook
Ante natal breastfeeding education course every 3 months(between **150** and **170** participants) and post natal support page with over **3,500** users

Supporting breastfeeding in public
Over **400** public venues signed up

Strategy and policies
10 clinical policy/ guidelines to support best practice in Infant feeding

Chart 1: Exclusive breastfeeding at 6 – 8 weeks NHS Highland

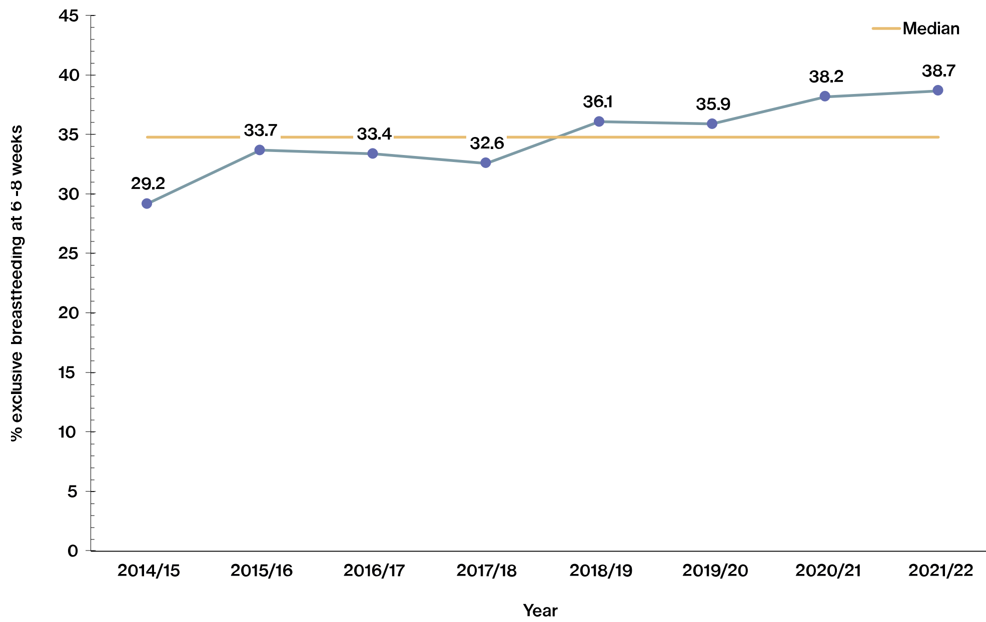


Chart 2: Exclusive breastfeeding at 6 – 8 weeks Argyll and Bute HSCP

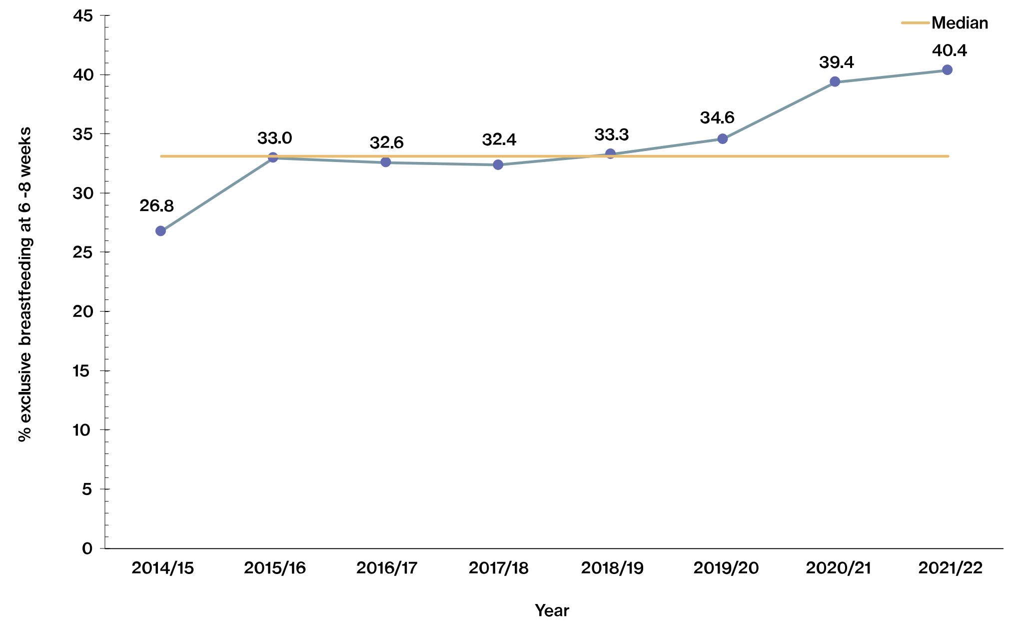
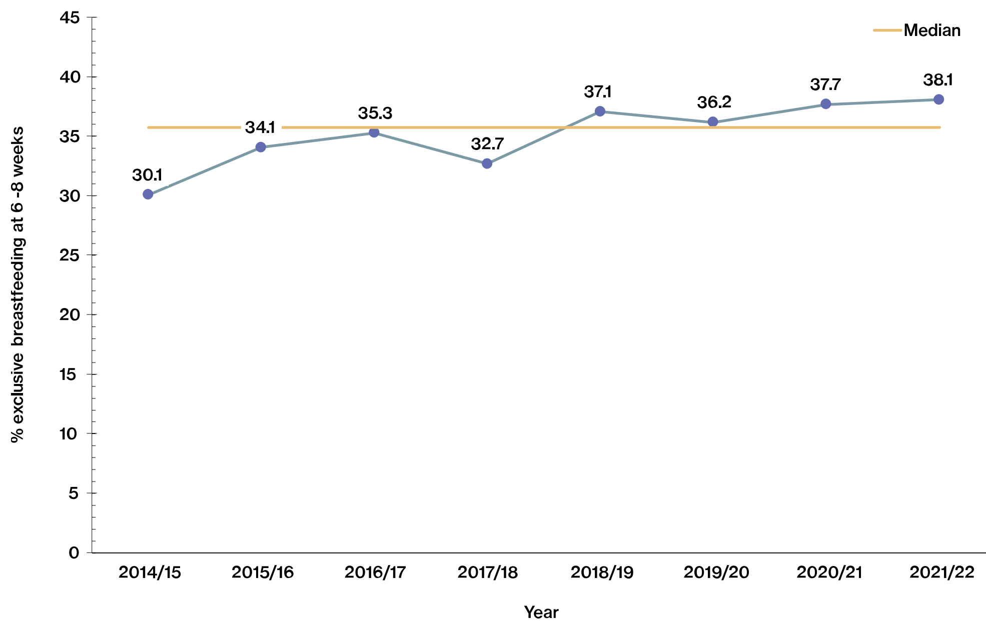


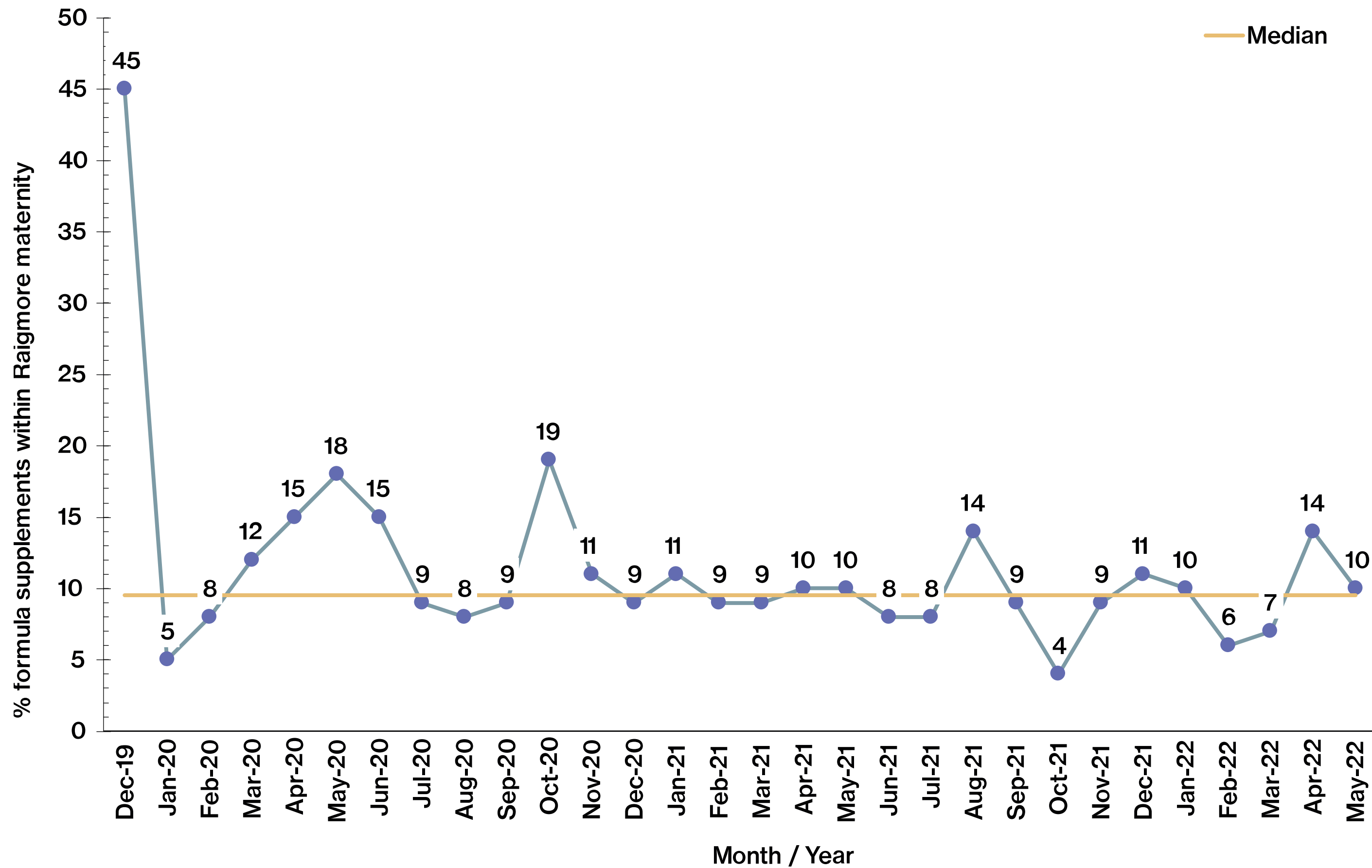
Chart 3: Exclusive breastfeeding at 6 – 8 weeks Highland HSCP



Supplementation of Formula within Raigmore Hospital

This project commenced in 2019, where supplementation rates were 45% - currently supplementation is about 11% per month. Data is manually collected from the breastfeeding coordinators daily.

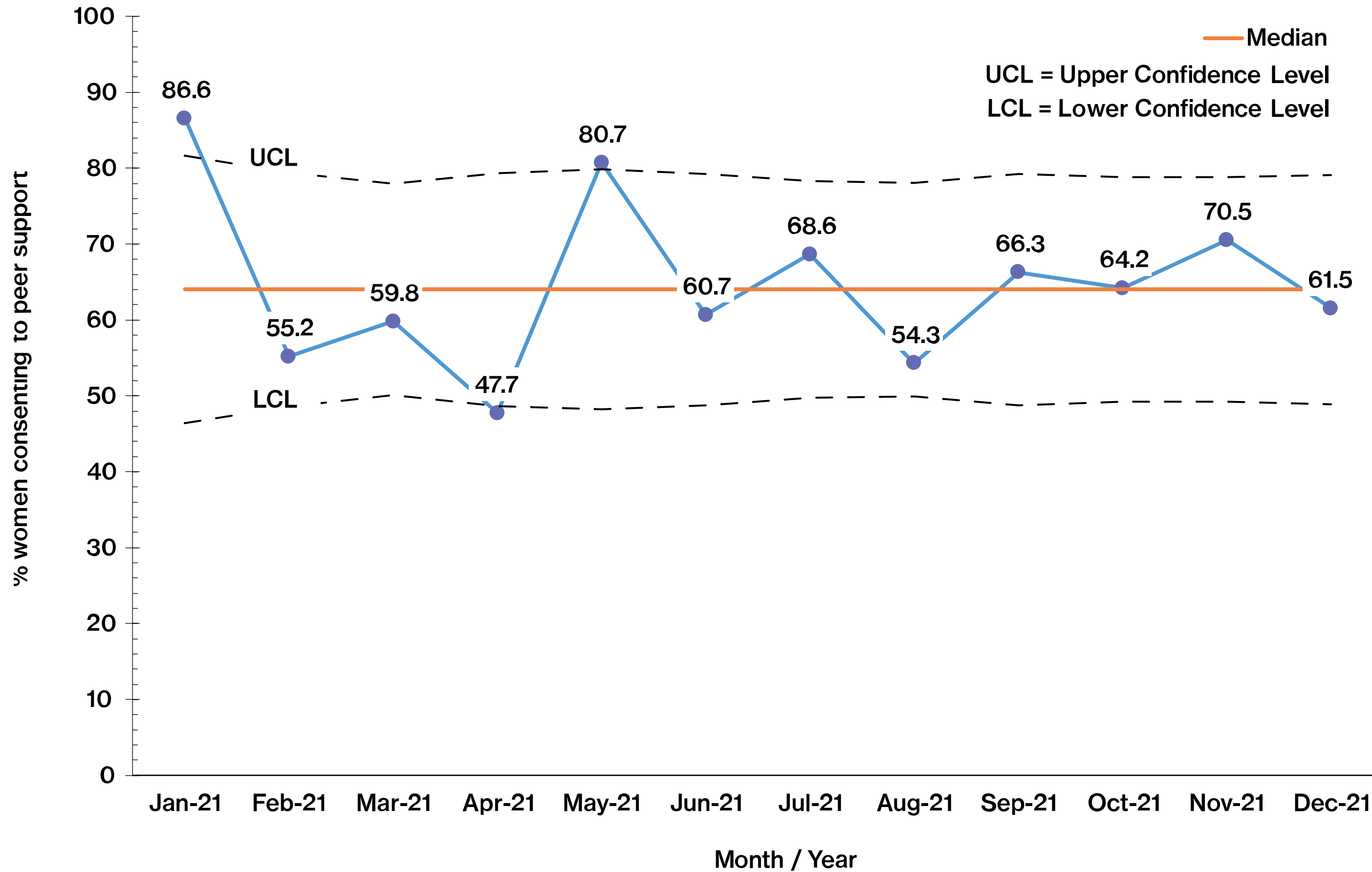
Chart 4: Formula Supplementation within Raigmore Maternity



Peer Referrals

Annually, we monitor percentages of women who consent to a peer on discharge from hospital. In 2021, 64% of women who were breast or mixed feeding consented to a volunteer support.

Chart 5: Percentage of women monthly who consent to peer support in Highland HSCP



Infant feeding support workers

Infant feeding support workers offer antenatal and postnatal support in the more deprived areas of NHS Highland, identified as Scottish Index of Multiple Deprivation quintile 1 (SIMD 1) and quintile 2 (SIMD 2). There has been an increase in exclusive breastfeeding at 10 to 14 days and exclusive breastfeeding at 6 to 8 weeks following this work.

Exclusive breastfeeding at 10 – 14 days

	2017/18	2018/19	2019/20	2020/21
SIMD 1	29.2	26.9	28.4	30.4
SIMD 2	35.7	36.3	38.8	41.0

Exclusive breastfeeding at 6 – 8 weeks

	2017/18	2018/19	2019/20	2020/21
SIMD 1	20.8	21.5	20.5	24.7
SIMD 2	28.1	31.9	31.9	32.1

Antenatal Colostrum Harvesting Toolkit for Scotland

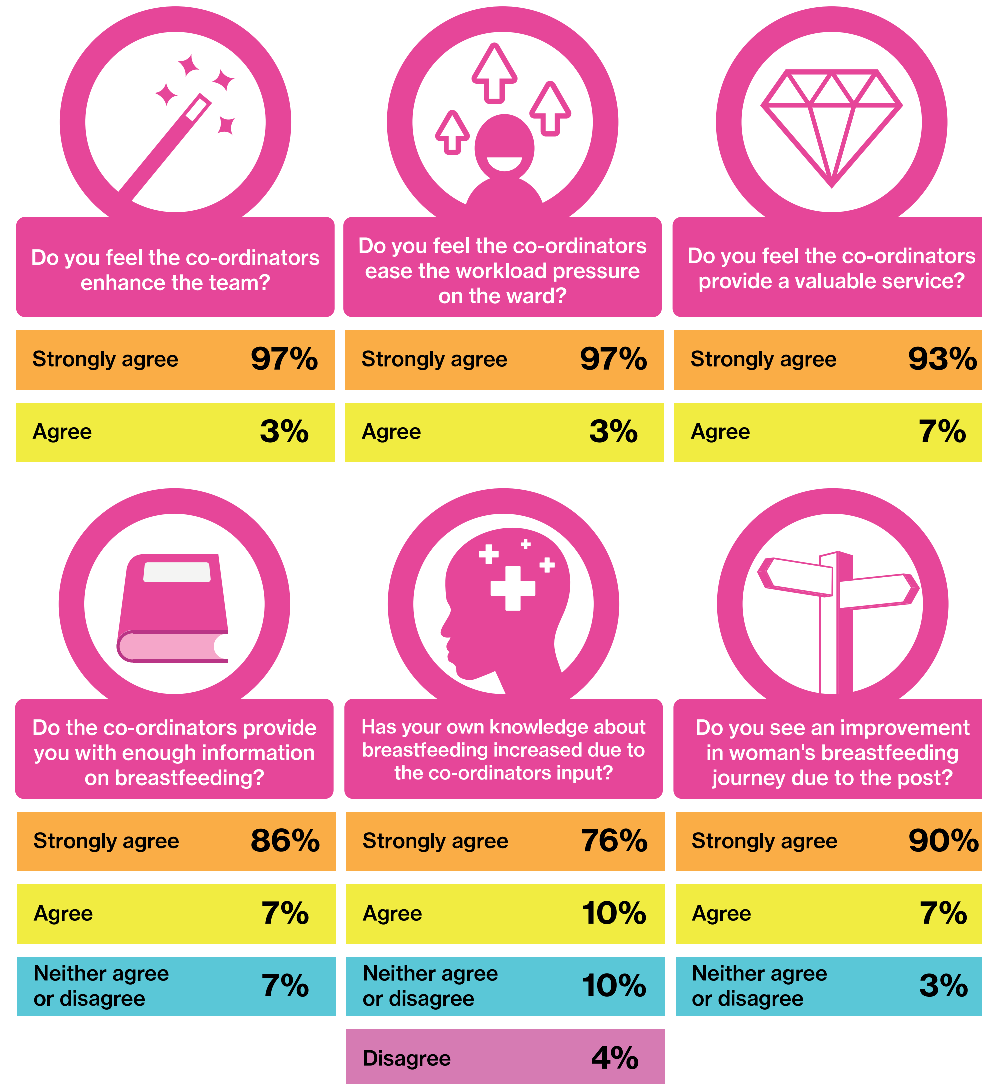
NHS Highland initiated the pilot of antenatal colostrum harvesting in Scotland and developed a toolkit, known as the Antenatal Colostrum Harvesting Bundle[47] to support other boards implement a similar project in their area. To date this has been adopted by seven other health boards.

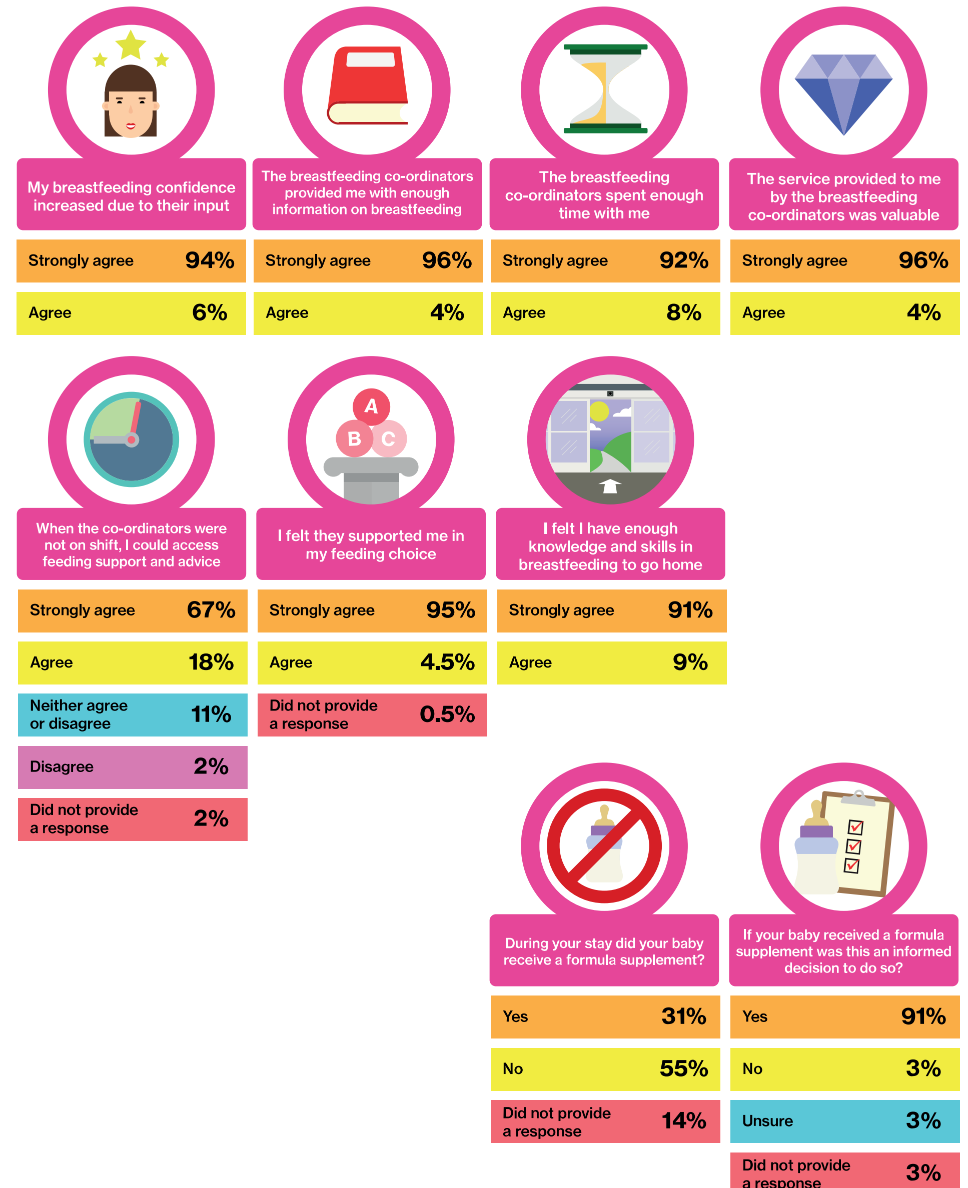
Service User Feedback

The Care Opinion website has been developed to allow the public to share their experiences of UK health and care services, good or bad. This information is then passed to the right people with the aim of helping to make a difference. The NHS Highland Breastfeeding Support Service have their own page on the website[48], which is regularly reviewed by team members.

Evaluation of Breastfeeding co-ordinators on postnatal wards

Two sets of infographics detailing the results of both staff and service user feedback





Case study: Money Counts Training

Money Counts training aims to promote using the *Worrying About Money?* leaflet to initiate person-centred conversations around financial worries and support individuals to access relevant services.

Context

- The Independent Food Aid Network (IFAN) works with partner organisations in local authority areas to develop localised Worrying About Money leaflets. In Highland, it was agreed through the Highland Poverty Action Network (HPAN) that training to support the use of the leaflet would have the potential to impact on poverty.
- A partnership between Argyll and Bute Council and the Health Improvement Team was developed to deliver the training.

Description

There are two levels of training available which aims to:

- Increase understanding of poverty and its impact
- Increase confidence to ask about money worries
- Increase knowledge of support services for money matters

It is aimed at anyone in a position to have a conversation about financial issues and encourages person-centred conversations, using the *Worrying About Money?* leaflet.

The *Worrying About Money?* leaflet is a step-by-step process to identify the issues and guide to the most appropriate support services.

Health Inequalities

The fundamental cause of health inequalities is an imbalance in power, income and wealth and of the three, income is the most important determinant.

Evidence

Research by ScotCen Social Research[49] found that the 'Worrying About Money?' leaflet helped raise awareness amongst staff, volunteers and people experiencing financial challenges, about which organisations can provide financial support and how they can be accessed.

The research suggested that where possible, training should be provided for those wishing to use the leaflet to generate conversations about money to ensure that this is done sensitively.

Impact of welfare advice

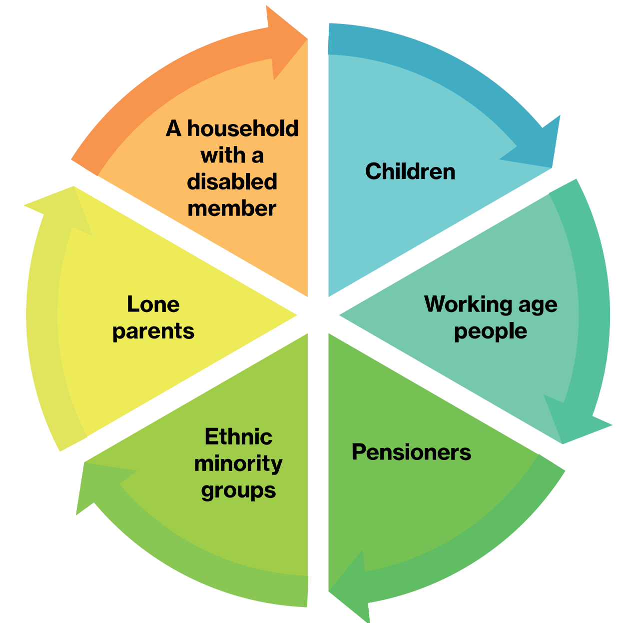
Research from the Glasgow Centre for Population Health[50], where welfare officers allocated to GP practices, showed from a return-on-investment perspective, the financial gain for individuals accessing welfare support was over £19 for every £1 invested and over £25 when debt negotiation and management was included over a period of 12 months. This demonstrates the benefit of individuals accessing welfare support regardless of the means through which they do this.

Evidence

Looking at data on The Health Foundation website[51], there is a strong correlation between health and income. 32% of people in the lowest income category (poorest) report less than good health and at the top decile of income distribution (richest) the figure is 11%.

There is evidence to suggest that income improvements are associated with health improvements across the income distribution.

Who is likely to be living in poverty?



Level 1 Feedback - Argyll and Bute

- 7 courses delivered
- 26 attendees from a variety of health and 3rd sector organisations throughout Argyll and Bute

Chart 1: Confidence before and after session in talking to someone about money issues (numbers)

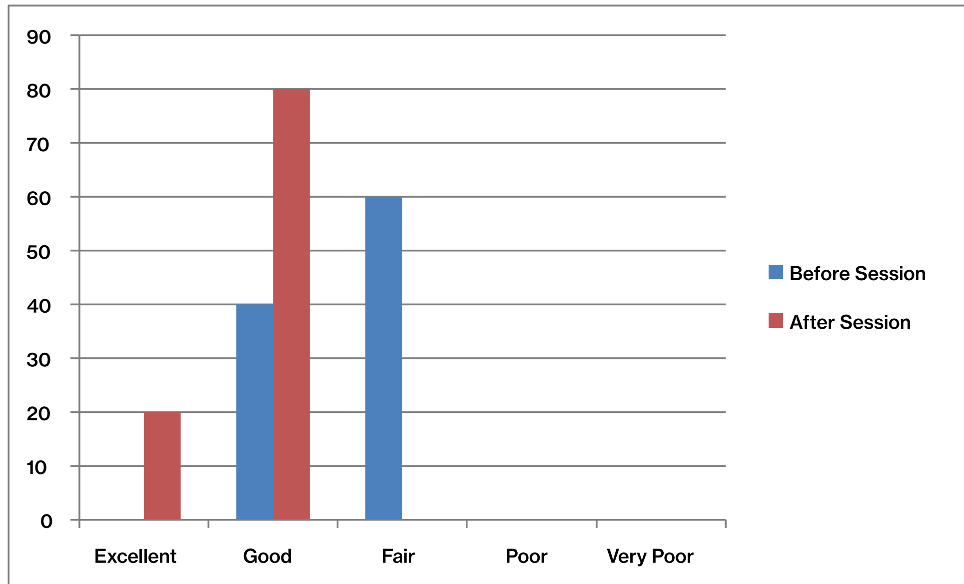
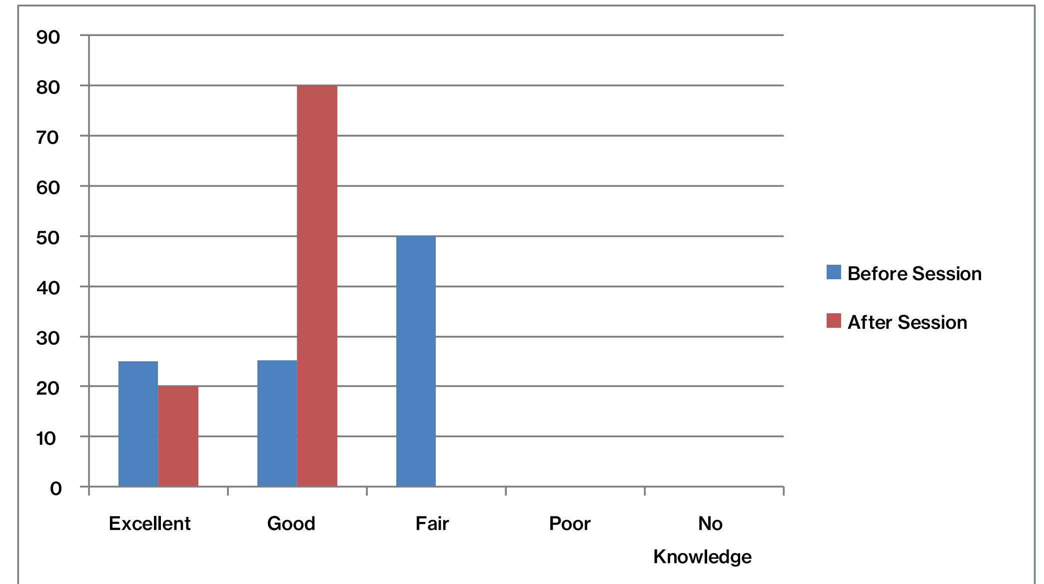


Chart 2: Knowledge of services which help people maximise their income before and after session (numbers)

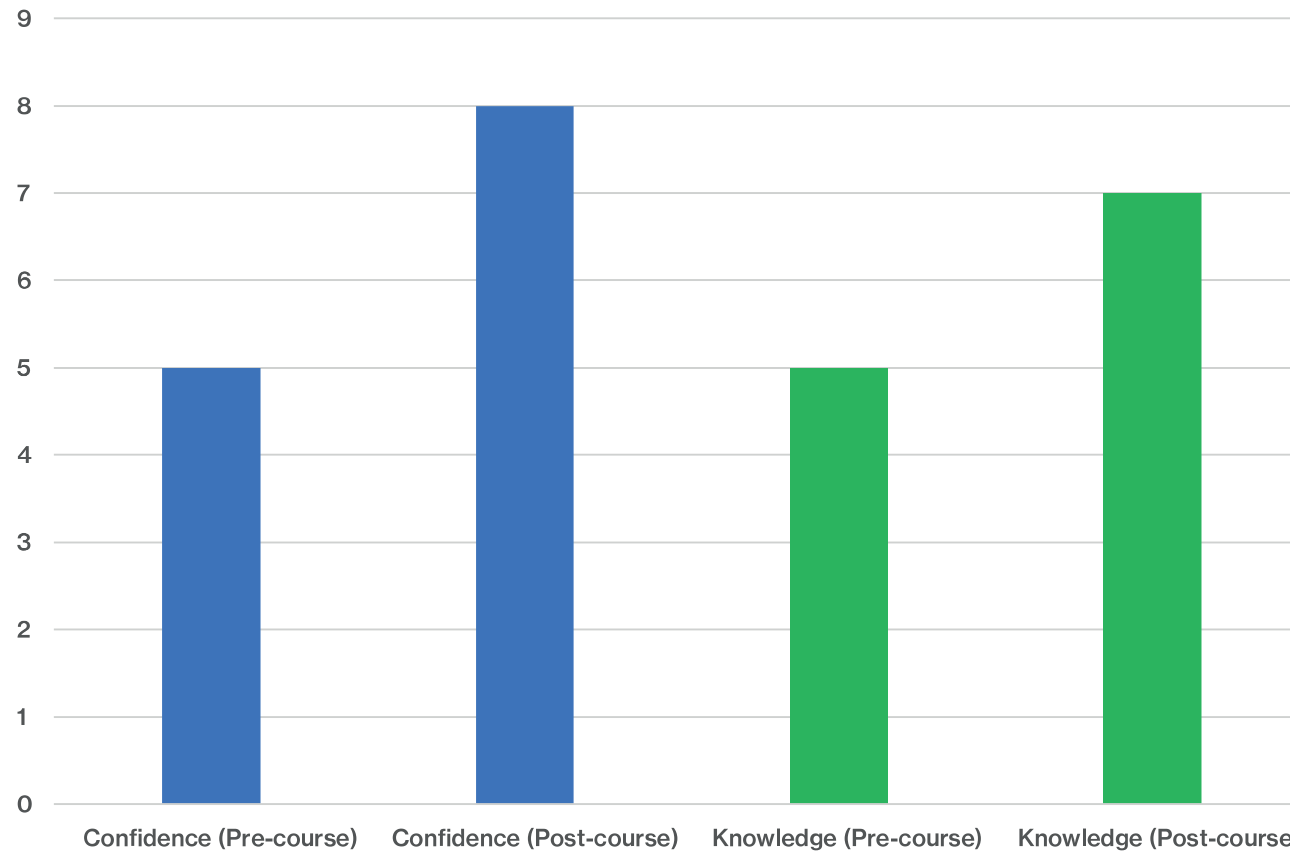


Level 1 feedback – North Highland from Jan 2022

Course name	Number of courses (from Jan 2022)	Number of attendees
Money Counts Level 1	10	71

The delivery of the training in North Highland is a partnership between Public Health, Fareshare/Cfine and Social Security Scotland

Chart 3: Average pre and post confidence & knowledge



Level 2 feedback – North Highland from Jan 2022

Course name	Number of courses (from Jan 2022)	Number of attendees
Money Counts Level 2	9	60

8.1. This learning activity helped me to increase my understanding of poverty and its impact			Response Percent	Response Total
1	Strongly disagree		0.0%	0
2	Disagree		0.0%	0
3	Neither agree nor disagree		12.0%	3
4	Agree		40.0%	10
5	Strongly agree		48.0%	12
			answered	25

8.2. This learning activity helped me to increase my confidence to ask about money worries			Response Percent	Response Total
1	Strongly disagree		0.0%	0
2	Disagree		0.0%	0
3	Neither agree nor disagree		16.0%	4
4	Agree		48.0%	12
5	Strongly agree		36.0%	9
			answered	25

8.3. This learning activity helped me to increase my knowledge of support services for money matters			Response Percent	Response Total
1	Strongly disagree		0.0%	0
2	Disagree		0.0%	0
3	Neither agree nor disagree		0.0%	0
4	Agree		52.0%	13
5	Strongly agree		48.0%	12
			answered	25

Participant feedback:

“It was about the right length of time with the right amount of information. Both instructors knew their subject and were keen to get the audience involved. I enjoyed the course so thank you very much for your time today.”

“Overall course was interesting and very well delivered.”

“This is a really valuable course to take and opens great discussions amongst a variety of colleagues. Thank you for a thorough and informative presentation.”

“Very friendly and went at the right pace for me. I thought it was very informative.”

“Very useful training. Thank you! I can definitely apply the learning to my current role.”

Further developments & conclusion

- Work is underway (North Highland) to develop an app for smart devices based upon the *Worrying About Money?* leaflet. This effort will involve support from partner organisations who deliver the training.
- Ongoing evaluation to understand how learning has been used in practice.
- The key value of the work is to maximise income and reduce reliance on non-cash first approaches.
- With the current increase in cost of living, it is vital that everyone is aware, and has access to all their entitlements.

Case study: Living Well

Living Well is a strategy to support enablement, prevention and self-management in Argyll and Bute (October 2019 – October 2024)

Vision/aim/outcomes

The Argyll and Bute Living Well strategy was launched in September 2019 and makes a commitment to support people living with long-term conditions and those at risk of developing them.

Our intention is to highlight the importance of self-management, and to ensure that we have the structures in place to support people to Live Well effectively with the right information, and support when they need it.

Self-management and prevention go hand in hand, as self-management is vital in preventing health problems arising or getting worse. Self-management puts people in control of their health and empowers them to have improved health and wellbeing outcomes. Benefits of improved self-management include: increased self-esteem, increased control, feeling connected, less isolated, reduced anxiety, improvement in mood, feeling empowered to challenge and question health professionals, recognised as experts in their condition, and able to provide peer support.

Self-management and prevention also free up resources and reduce demand, meaning that more people can receive the right care in the right place at the right time. People who are managing their health better are less likely to use these services.

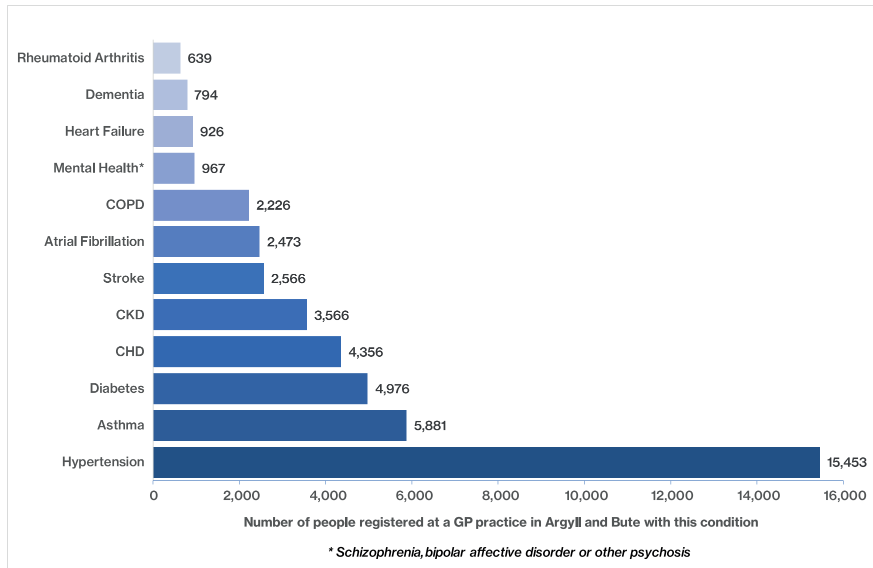
Context

Argyll and Bute has a population of 86,810 with a quarter of the population over 65 and a further 27% within the 45-64 age group

Data shows that not only are people living longer, they are doing so with long-term conditions. We know that approximately 47% of people have a diagnosed condition and the majority of these have more than one diagnosis.

> "Self-management is not a replacement for services. Rather, it's about developing the tools to support people alongside services. By managing conditions effectively, people can take control and live fuller, more independent lives."
>
> Alliance 'Gaun Yersel' (2008)

Types of Long-Term Conditions in Argyll & Bute



Source: Public Health Scotland, ISD Scotland Quality and Outcomes data for 2018-19 financial year (published February 2020)

The Living Well strategy recognises that people can become experts in how their condition affects them, and that the most effective services that support people are often community based, third sector and peer led. When asked how they 'lived well', people in Argyll and Bute responded:

Who/Why/What/Where/How

The Living Well Strategy development process took place over 12 months and included extensive consultation and engagement.

Speaking to those living with long-term conditions meant that the strategy themes could be developed in partnership. Further information about the actions which accompany each theme can be found on the Living Well website[47].

Monitoring /evaluation

The Living Well Strategy takes a partnership approach and reports to a multi-agency Living Well Steering Group and the Argyll and Bute HSCP Prevention Programme Board. A mid-strategy report can be accessed on the Living Well website[52].

Describe the value to the person/population/organisation

Living Well grant funding has been available to 3rd sector organisations for 4 years of the strategy. This essential work contributes to capacity building for prevention and health improvement across Argyll and Bute communities. Between £46,000 and £76,000 has been awarded to 3rd sector organisations, with outcomes ranging from increased physical activity to peer support and reduced isolation.

The Living Well strategy has promoted working in an anticipatory way across many Argyll and Bute services, from our community services to within the HSCP. Strong strategy leadership from the Integration Joint Board and Public Health team has enabled front-line and support professionals to buy in to a prevention approach. This ethos will continue and ultimately benefit the organisation and our population through reducing demand and improving health and wellbeing.

People - People living in Argyll and Bute have the tools and support they need to support them to Live Well

Community - There are a wide range of local services to support people to Live Well

Workforce - Staff are able and motivated to support the people they see to Live well

Leadership - Effective Leadership is in place to support the delivery of the Living Well strategy

Case study: Vitamin D3 Distribution

Return to main document

Vision Aim

For all breastfeeding/mixed feeding mothers to receive free vitamin D3 tablets for the duration of their breastfeeding experience and for all infants under 3 years who are breastfeeding or who are taking less than 500mls of infant formula per day to receive free vitamin D3 drops.

Sub Aim

By February 2022, 95% of breastfed mothers and babies discharged from Raigmore Maternity unit will receive vitamin D supplements*

(Baseline data from July 2021 0%)

*Breastfeeding/mixed feeding mothers will receive vitamin D tablets and breastfed babies will receive vitamin D drops

Evidence to support

The Scientific Advisory Committee on Nutrition produced a report on vitamin D and health in 2016[53], providing evidence to support vitamin D3 distribution to breastfeeding women and infants under 3 years who were breastfed or receiving less than 500mls of formula/24 hours to reduce the risk of rickets and osteomalacia.

The Scottish Government as part of the Programme for Government in January 2021 issued funding and guidance to all NHS Boards on the universal distribution of vitamin D3 to all breastfeeding women and infants under 3 years[54]. This was an extension to the universal provision of Healthy Start vitamins in 2017 to all pregnant women in Scotland.

The prevention and treatment of rickets and osteomalacia is vitamin D3 supplementation which is relatively inexpensive at just over £1 per 3 month supply per individual. The preventive cost compared to the surgical cost to treat skeletal abnormalities such as curvature of the spine or bow legs is minimal in comparison and vital to prevent metabolic bone disease.

North Highland vitamin D3 distribution model

Starting the vitamin D3 distribution model within our largest maternity unit meant that we could test an early preventative model from birth to a large cohort of breastfeeding mothers and babies. Using quality improvement methodology was key to assessing our method and process changes and ensuring a large reach of our project.

Having a clear aim and shared ambition was fundamental to this project:

In order to achieve this aim...

By February 2022, 95% of breastfed dyads discharged from Raigmore Maternity unit will receive vitamin D supplements (Baseline data from July 2021 0%)

We need to ensure...

Staff Education and Awareness

Systems and Workflow

Parental communication and evaluation

Which requires...

Training to midwifery staff

Knowledgeable Health Information resources team

Promotion of vitamin D distribution to staff

Standard operating procedure

Effective monitoring and evaluation of distribtution

Promote messages of vitamin D distribution

Qualitative evaluation

Ideas to ensure this happens

Vitamin D now added to all mandatory training sessions

Training carried out with HIRSteam on benefits of vitamin D, who is eligible to order and implemtation of recording database

Midwifery staff removed from PECOS ordering system and now order instead through HIRS

HIRS order via PECOS to New Start Highland and collect orders

Work with NHS Highland Comms team on a social media campaign to increase awareness of free vitamin D distribution

Divise a parental questionnaire to assess whether vitamins are being administered to babies and children

Work with NCH, breastfeeding peers and Homestart Highland to form focus groups to receive parental experiences of distribtion and administration of vitamin D

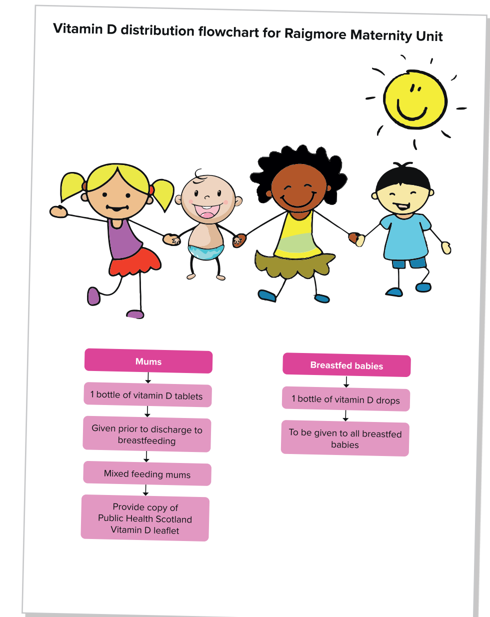
Formation of a short term multi-disciplinary working group on vitamin D

Regular feedback to midwifery leadership team meeting to discuss progress and any issues with new

Work with local Badgernet Midwife and Clevermed to record vitamin D distribution in maternity

Runcharts developed to capture the numbers of vitamin D tablets and drops administered weekly

Distribution of vitamin D to breastfeeding women and breastfed babies from maternity unit



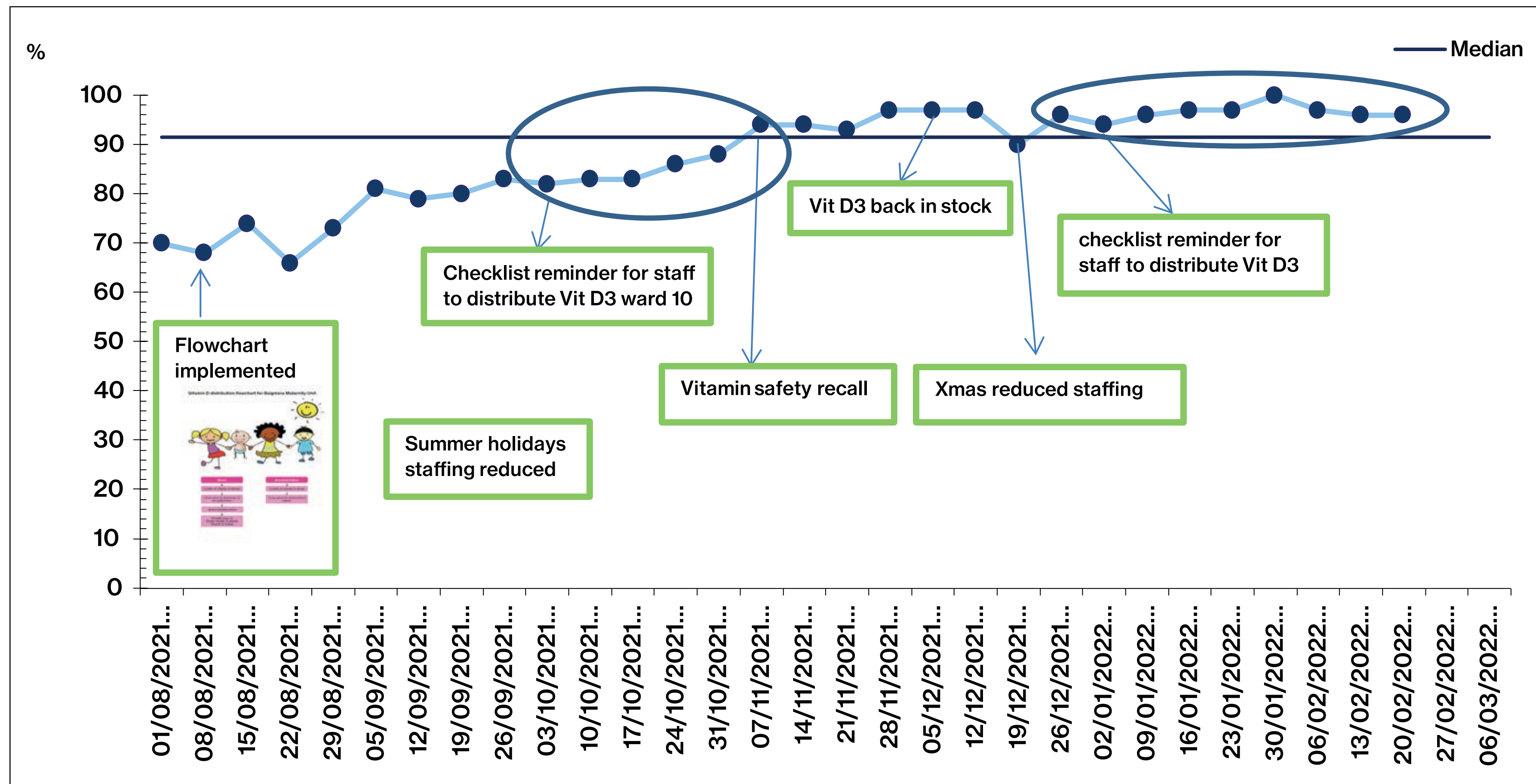
Pathways to service

Although maternity distribution was key, there was a clear need to ensure continued distribution via health visiting services/family nurse partnership and a standard operating procedure was developed which demonstrated clearly when vitamins should be distributed to mothers and by whom.

Vitamin D3 tablets – should be distributed to any mother breast or mixed feeding. Vitamin D3 drops – should be distributed to any infant under 3 years who is being breastfed or receiving less than 500mls of infant formula in 24 hours:

- 1 bottle at birth – Midwifery
- 1 bottle at 4 months – HV/FN
- 2 bottles at 8 months – HV/FN
- 3 bottles at 13 – 15 months – HV/FN
- 2 bottles at 27 – 30 months - HV

Monitoring and Evaluation



Case study: Health Protection

Return to main document

Vaccination

After the supply of clean drinking water, immunisation is the most effective public health intervention for preventing illness and deaths from infectious diseases. According to the World Health Organisation (WHO), immunisation prevents between four and five million deaths[55] each year from diseases such as pertussis, influenza and measles. In addition to the health benefits, immunisation is recognised as one of the most cost-effective public health interventions available.

One example of the impact of vaccination is that of the introduction of the rotavirus vaccine. Rotavirus is a very common cause of gastroenteritis in children and prior to the introduction of a new rotavirus vaccine in 2013, rotavirus infections led to around 130,000 young children across England and Wales visiting the GP and 12,700 hospital admissions each year in babies and young children[56]. Following the introduction of the rotavirus vaccine across NHS Highland, the admission to hospital for rotavirus gastroenteritis decreased markedly with reductions of over 200 bed days seen in each of the two year periods post vaccine introduction. This finding is consistent with a study on the impact of rotavirus vaccine conducted in Germany which found that a low-moderate vaccine uptake was associated with a 36% reduction in rotavirus-related hospitalization for children less than 24 months in the eastern Federal States[57].

Similarly, this year has seen an unprecedented global outbreak of monkeypox virus predominantly affecting the gay, bisexual and men who have sex with men (GBMSM) community which began in May. Despite rapid early transmission across the world and concerns that the infection could become endemic, there has been a dramatic decline in incidence. There have been no new cases of monkeypox infection across Scotland for almost two months as of November 2022. It is not possible to ascertain the impact of specific interventions given the range of measures deployed as part of the outbreak response although awareness raising resulting in behaviour change in combination with the rapid rollout of the vaccination programme to those at highest risk are likely to have played a part.

Although vaccination is a well established intervention, ensuring vaccine uptake remains high remains a key priority. Despite vaccination being such an integral intervention, there are a number of challenges facing healthcare services with respect to maintaining high uptake rates. These include the re-emergence of eliminated diseases such as measles, the emergence of new outbreaks, service reorganisation and the increasing risks posed by the global anti-vaccination movement. In 2019, the WHO cited vaccine hesitancy as one of its top ten global threats[58]. Although the uptake of vaccines is generally high, uptake is lower in more deprived communities and amongst certain ethnic minority groups with reducing inequalities a key aim for all involved in immunisation programmes.

New entrant Latent TB Infection (LTBI) screening

Tuberculosis (TB) remains a leading cause of death and illness worldwide with an estimated 1.6 million deaths in 2021[59]. TB disproportionately affects the most deprived and vulnerable members of society and thus serves to exacerbate existing health inequalities.

Over recent years there has been a considerable reduction in TB incidence in Scotland, a trend typical across many developed countries. However, the predominant challenge facing such low TB incidence countries is that of latent tuberculosis infection (LTBI). Across the UK[60] and the United States, the majority of active cases are the result of 'reactivation' of LTBI with Carlson et al.[61] highlighting how 80% of the active TB cases in the US are the result of LTBI 'reactivation'. This challenge is compounded by the declining political commitment and investment that is frequently associated with a declining TB incidence[62]. This is recognised within the World Health Organisation's framework for low incidence countries[63] which places an emphasis on screening for LTBI in TB contacts and selected high-risk groups.

Scotland's TB Framework[64] describes the Scottish Health Protection Network's strategy in relation to TB control. One of the principal objectives is to reduce the harm caused by preventable TB infections through achieving fewer cases of active TB via person to person transmission or reactivation of LTBI. One of the recommendations is to screen new entrants from high TB incidence countries. This could identify more than 80% of TB cases in Scotland among people born outside the UK[65] and has been assessed as cost effective[66].

Work is being undertaken to explore options to achieve the outcomes of Scotland's TB Framework. Identifying and treating cases of LTBI is not only beneficial to patients but also wider communities and NHS services given the reduction in transmission and reduced need healthcare services which demonstrates the use of investment to save.

Case study: Co-production, building capacity and community led activity

Working collaboratively with communities for better health and wellbeing outcomes

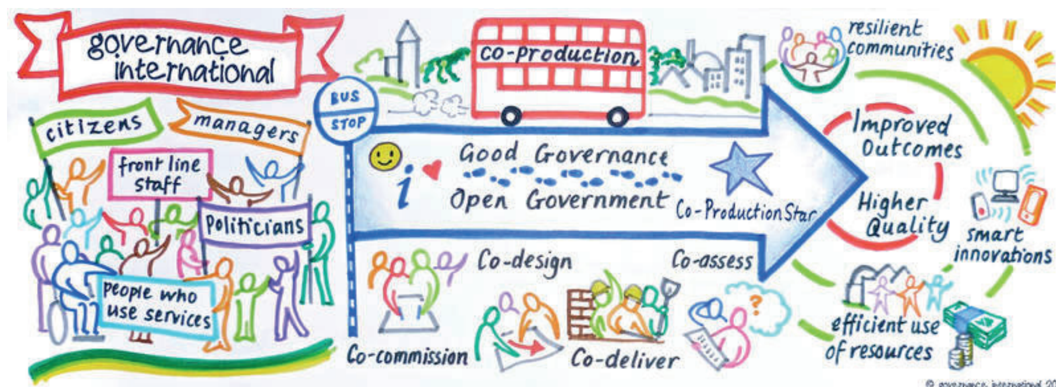
What is Co-production?

Co-production is an approach that can be used to build stronger, safer and more vibrant communities in which local people can live better lives. Co-production involves coming together around a common vision or goal. This can include people who use services and people who deliver services working collaboratively to enable everyone to live well. The following phrases illustrate the spirit of co-production:

- doing with, rather than doing to
- equal partnerships
- citizen power
- community led and bottom up
- assets based, i.e. focus on what's strong rather than what's wrong
- blurring boundaries between delivering and receiving services

Co-production can take place at different levels and includes:

- Co-design – working together to develop plans for new services
- Co-deliver – working together to implement services
- Co-assess – working together to evaluate the effectiveness of services
- Co-commission – working together to develop commissioning plans and procure services



There is no universal definition of co-production, however, the New Economics Foundation (NEF) defines co-production as:

> 'The relationship where professionals and citizens share power to design, plan, assess and deliver support together. It recognises that everyone has a vital contribution to make in order to improve quality of life for people and communities'.

There are many successful projects across Highland that have come about using principles of co-production.

Jean's Bothy in Helensburgh

Just some of the feedback received from members about Jean's Bothy mental health & wellbeing hub, based in Helensburgh:

- "Jean's Bothy has helped me gain confidence."
- "Jean's Bothy has enhanced my life like nothing else has."
- "Jean's Bothy acts like a family I can turn to whenever I need to."

Opened in September 2018, the hub has grown to over 290 members who play an integral part in the operation and day-to-day management with overall support coming from the Development Manager. A full monthly programme of activities includes local delivery partners offering their services on a paid for basis to deliver highly skilled sessions such as Art Therapy, Creative Writing, Woodwork and Fitness. However, just as important are the sessions delivered by members and volunteers. These vary depending on the current membership, currently on the programme is Knitting & Crochet, Resin & Stonecast, Guitar Playing, Sewing and Walking Groups. The cottage space allows members to take ownership of the space, taking responsibility for preparing lunches, serving teas/coffees, maintaining the garden space, growing fruit & veg and cleaning duties.

Member reps have been identified to raise any issues/suggestions at a monthly steering group meeting which includes local partners alongside ENABLE Scotland colleagues and HSCP staff. The diverse backgrounds members come from and different lived experiences encourages acceptance, tolerance and non-judgment as key components to its success.

Jean's Bothy's strength is in the membership, who are encouraged to use their skills and interests to help others. A Photography & Wellbeing Group has created an exhibition last year, and this year have created a Bothy Calendar. A Script Writing Group went on to produce a stageplay that went on tour. The Book Group are currently working on a book festival for next year in partnership with other organisations and the Art Group are currently exhibiting their work in the local library. These are just a few examples of how ideas have grown and formed strengthening relationships between members and a feeling of achievement that boosts wellbeing and a sense of purpose.

Reducing stigma associated with accessing mental health support is something that Jean's Bothy will continue to address. Members who initially were reluctant to tell others they were members have become some of the most vocal advocates of Jean's Bothy and what it offers. Our membership reflects local society, and in turn shows that mental health support is for everyone.

Lorn and Oban Healthy Options (LOHO)

LOHO was formed in 2011, with its ethos firmly rooted in the saying: "If the problem is in the community, the solution is in the community". They bring together community activists, health specialists, and entrepreneurs and have strong partnerships with health professionals, clients and other third sector organisations. The Board of Trustees are all local people and there are two advisory groups which each have a volunteer and a service user representatives as well as a community member and a partner organisation member.

LOHO works with a very wide target audience, for example, people living with one or more chronic conditions or who are at risk of developing such conditions; people who, due to illness or injury, need pre or post surgery or treatment support; people experiencing mental health issues; those affected by the COVID-19 pandemic; and people who are socially isolated. Programmes on offer provide clients with advice, education, activities and support to develop self-management strategies, not only improving quality of life of the person experiencing them but also reducing the rate of progression or likelihood of additional conditions developing, thereby reducing the need for NHS services and adding to already burgeoning waiting lists.

"Local NHS services are limited and this partnership will facilitate a local community based rehabilitation pathway for patients with a neurological condition from diagnosis onwards which allows comprehensive access to supported self-management guidance in their own community with a right time, right place, right people approach."

Derek Laidler, Professional Lead Therapist (Argyll and Bute)

Please scan this QR code using a smart device to watch a video about: Lorn Healthy Options: Client Voices: Mairi Rochead

Please scan this QR code using a smart device to watch a video about: New Healthy Options Service: 'THRIVE' - Graham's Story!

The Role of Public Health and the Way Forward in Building Community Capacity for Prevention

Our remote and rural communities in Highland have high levels of social capital and often mobilise to find solutions to local issues. There is a rich, vibrant and responsive third sector and many exemplars of community led activity exist including setting up new services and taking local assets into community control. There are also very high levels of volunteering and a shared sense of community identity in Highland. Community empowerment was never more apparent than during the lockdown response during the COVID-19 pandemic when communities developed innovative local responses to deliver shopping and meet the needs of vulnerable people unable to leave home.

Notwithstanding this visible community empowerment, there are well known challenges to co-producing local services, for example, layers of bureaucracy and governance, fragile and unsustainable funding streams, and finite numbers of people available to volunteer. In addition to existing challenges, new ones have arisen from the ongoing pandemic recovery and cost of living crisis. These challenges are manifesting as increasing levels of hardship and distress, and long waiting times for referrals to healthcare.

The legislative landscape in Scotland is supportive of empowering communities. This evolved from the publication of the Christie Commission review of public services in Scotland in 2011[67] which concluded "… unless Scotland embraces a radical new collaborative culture throughout our public services, both budgets and provision will buckle under the strain …" and "that effective services must be designed with and for people and communities – not delivered 'top down' for administrative convenience". This is set within the context that 40% of public sector spending in Scotland is on preventable problems that could be eliminated by addressing the root causes.

The Community Empowerment (Scotland) Act 2015[68] provides a legal framework to promote and encourage community empowerment and participation. It creates rights for community bodies and places duties on public authorities. It includes the following requirements:

Empower community bodies through the ownership of land and buildings and strengthening their voices in the decisions that matter to them; and

Support an increase in the pace and scale of public service reform by cementing the focus on achieving outcomes and improving the process of community planning.

The Public Sector (Joint Working) (Scotland) Act 2014[69] has brought together the delivery of health and social care with the intention of improving the health of the people who use these services. It sets out requirements to:

- Take account of the participation by service-users in the community in which service-users live; and
- Ensure services are planned and led locally in a way which is engaged with the community (including in particular service-users, those who look after service-users and those who are involved in the provision of health or social care).

Despite this legislation there is an imbalance of power and control of funding and assets which works against effective co-production. Greater community empowerment could be achieved by moving the locus of control of these assets and funding from statutory services to communities. This is worthy of debate in relation to what kind of society and country we live in and public health professionals have the community engagement skills to broker these conversations.

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