Closing the Gap

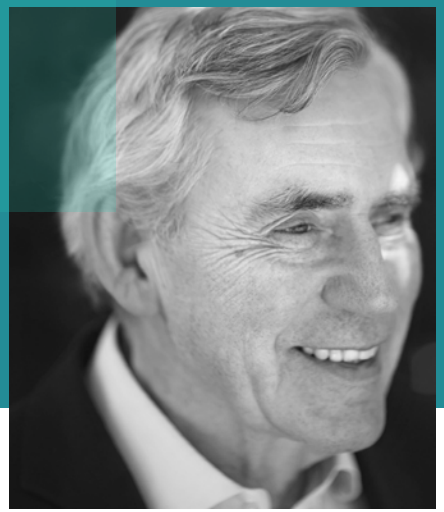
How Cooperation Can Reduce Scotland's Health Inequalities

Andrew Mooney

Our Scottish Future

Health Commission Report

Foreword by Rt Hon Gordon Brown



Scotland's NHS will be unable to cope - and waiting lists will continue to be at record levels - unless we dramatically reduce the inequalities in Scotland that are causing poorer health among those on low incomes - and mean a continuously higher demand for accident and emergency services, hospital beds, GP consultatations and prescriptions.

This intensified pressure on the NHS emerges from the most up to date figures revealed today by Our Scottish Future's new report on health inequalities.

It shows that that men in the most deprived areas of Scotland not only live 14 years less but can expect to spend 35% of their lives in poor health.

Poorer women face similar problems. They live 11 years less than women from less deprived areas and spend 37% of their lives in poor health.

That's why one of the most important predictors to the life chance of a new-born child is where they were born.

For in stark contrast, both men and women in the least deprived areas spend less than half that time - 15% of their lives - in poor health.

Infant mortality is higher, drugs deaths and alcohol related deaths are higher, deaths from smoking are higher and as this report warns, failure to deal with these inequalities costs Scotland £9 billion a year.

Individuals living in the most deprived areas spend 22% longer in hospital per stay and require 72% more emergency bed days per head than individuals from the least deprived quintile and they have 66% more A&E attendances per head.

A total of 250,000 extra A&E attendances in the year, one in every six visits to over two-thirds of their disposable income on food. But, in reality, individuals in the deprived areas of Scotland were 2.5 times less likely to have consumed a single portion of fruit and vegetable in the previous day compared with individuals in the least deprived quintiles.

Exercise matters. Individuals living in the most deprived areas in Scotland were 1.7 times less likely to have met the daily activity guidelines compared with those living in the least deprived areas.

As thousands wait for their appointments and thousands more queue to get through to GP surgeries, the NHS urgently needs more investment and fair remuneration for its hard working nurses, ambulance workers, and staff.

And this needs to be matched with a strategy to end health inequalities which disfigure our country and cut short too many lives.

This strategy should be based on a cooperative approach, with Scotland working hand in hand with the rest of the UK. For example, last year, Our Scottish Future recommended creating a Marmot City Network headquartered in Scotland which would share expertise from around the UK.

This new report reveals how our failure to act to address these inequalities means things are getting worse. It also sets out the ideas that can help us rectify this and this new report complements important new studies which challenge us to put eradicating health inequalities at the heart of our social and economic policies.

About the Author

Andrew is a recent graduate from the University of Cambridge, where he studied a Masters in Population Health Sciences.

Prior to this, he worked in a variety of analytical roles both within the NHS and private sector.

During his time at the NHS, he developed numerous data products currently used by clinicians across the country.

He also holds a Masters in Mathematics and Physics from the University of Glasgow.

Introduction

A strong indicator of the progress of a society is by measuring its healthy life expectancy. A healthy society can build the foundations toward a wealthy one. It was therefore worrying to report in our previous paper, “A Fractured Service”, that not only has healthy life expectancy seen little change in over a decade, but it has declined since 2009-11[1]. Men now have 8 fewer months of healthy life expectancy, women have almost 23 months fewer, compared with over a decade ago.

The most troubling statistics were the variations in healthy life expectancy; a 24-year difference is observed between the richest and poorest areas in Scotland. Men in the most deprived areas of Scotland can expect to spend 35% of their lives in poor health, with women 37%. In stark contrast, both men and women in the least deprived areas can expect to spend 15% of their lives in poor health. Not only do those living in the most deprived areas of our society have shorter life expectancy (almost 14 years less for men, 11 years for women), but they spend twice as long, in relative terms, in ill health at the end of their lives.

This reality is not isolated to one corner of our country, there are stories of real suffering in all our towns, cities, and communities. Areas of affluence and opportunity are just a short walk from those of deprivation and hopelessness. Decades of political, economic, and social policy have driven such diametrically opposing life outcomes. There are no simple solutions. Peeling back the myriad layers which drive health inequality will take years to correct.

In January 2023, the Health Foundation will present their in-depth findings on health inequalities in Scotland, “Health Inequalities in Scotland: An independent review”. This vitally important report, produced in partnership with the MRC/CSO Social and Public Health Sciences Unit at the University of Glasgow[2], Strathclyde University’s Fraser of Allander Institute[3], Nesta in Scotland, the Diffley Partnership, and IPPR Scotland, will set out key policies and proposals for the Scottish Government to consider.

As we will discuss, local people know their situations best, so should have the ability to develop their own solutions. However, the deep-seated health inequalities in Scotland are replicated, perhaps even exacerbated, in other parts of the UK. In this paper, we will outline some of the areas of collaboration which can lead towards improved health equity. It is hoped that the suggestions made in this paper will complement those from the work by the Health Foundation, leading us toward a fairer, healthier, and wealthier Scotland.

Access to Health

Health inequality negatively impacts everyone. If we cannot draw on the unique talents of all our fellow citizens, we become poorer economically and socially. It also exposes our societies to increased health risks. The pandemic has shown that in our interconnected world, if we do not have viruses under control everywhere, then nowhere is safe from infection.

In our previous paper, we estimated the indirect costs of health inequality in Scotland due to loss of productivity: £9.3 billion per year[1]. It was calculated from the extra number of years of poorer health before retirement for those living in more deprived areas. We also showed that economic inactivity had worsened due to the pandemic; around 22,000 extra people had exited the workplace between March 2020 and March 2022 due to ill health. One potential explanation for this was increased waiting times for elective NHS treatment.

High levels of inequality in society contributes to an increased burden on the health system. Analysing Public Health Scotland data, we have found that health inequality has a direct health cost of £341 million each year. Combining direct and indirect costs, health inequality in Scotland amounts to over £9.7 billion each year.

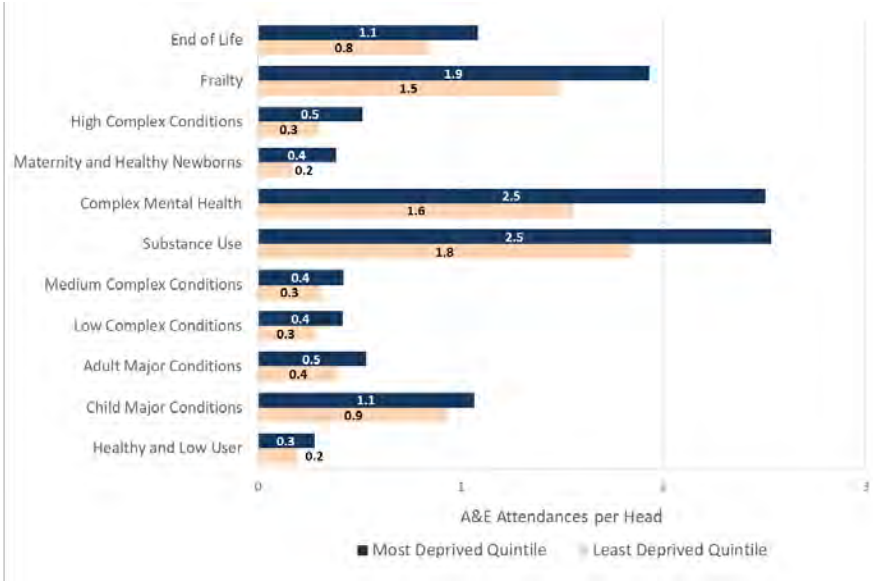
NHS services in Scotland are free at the point of need and therefore a strong foundation to building a fairer society. However, equal access does not necessarily translate to equitable access. Those from more deprived backgrounds are more likely to have multiple co-morbidities, requiring greater need of health services.

We discussed some of the causes of increased health need in our previous paper, including obesity, mental health, and homelessness. Other determinants will be addressed later in this paper. It is important to state that even though individuals from more deprived areas consume more acute hospital care, they do not receive the necessary care required. A study conducted by the Health Foundation found that patients seeing a GP in the least deprived areas would on average receive a consultation lasting 11.2 minutes, compared with 10.7 minutes for patients in the most deprived areas[4]. This is known as the Inverse Care Law, a term coined by Julian Taylor Hart in 1971[5]. This law refers to the inverse relationship between health need and its actual utilisation. This means that individuals who need the most medical care are less likely to receive it.

Using data provided by Public Health Scotland for financial year 2019/20, we have analysed hospital activity based on levels of deprivation. Analysis has shown that individuals living in the most deprived quintiles in Scotland had 66% more A&E attendances per head than those living in the least deprived areas. Increased A&E activity was seen across all demographics

(Figure 1). A clear social gradient was observed for A&E attendances in each demographic – the more deprived, the greater the average number of attendances per person in the year. If the A&E needs of our whole society matched those of the least deprived quintile, A&E departments would have around 670 fewer people attending each day. This equates to 16% of daily A&E attendances in Scotland, substantially reducing demand.

Figure 1. Comparison of A&E attendances per head, by demographic cohort and level of deprivation

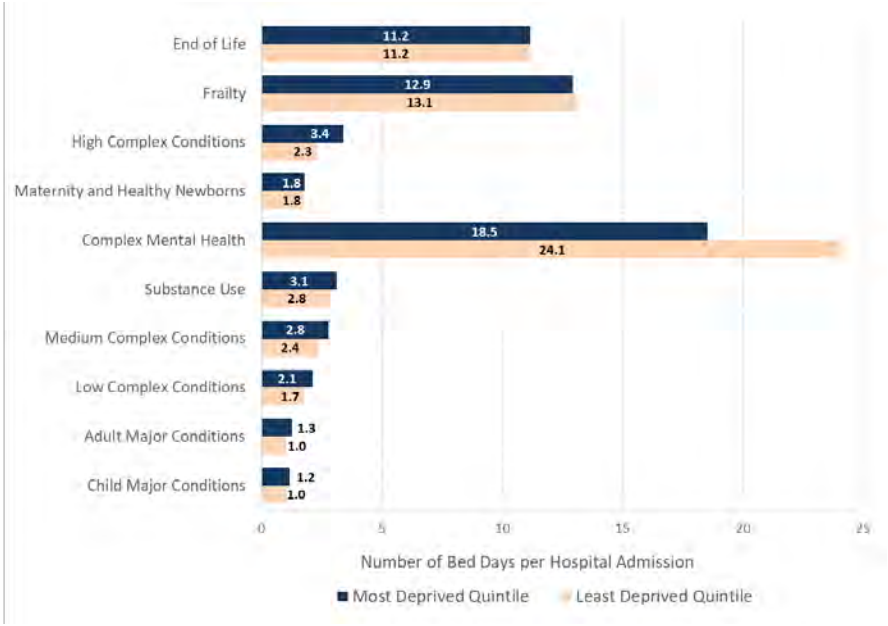


Source: OSF analysis of a Public Health Scotland data request

Conducting similar analysis for hospital admissions, individuals living in the most deprived areas spent 22% longer in hospital per stay and had 72% more emergency bed days per head than individuals from the least deprived quintile. There was a clear social gradient for most demographic cohorts in both analyses, in particular High Complex Conditions and Substance Use. The Complex Mental Health cohort was the only one to show no clear gradient across the deprivation levels, driven predominantly by the complexities of long term stays for these individuals.

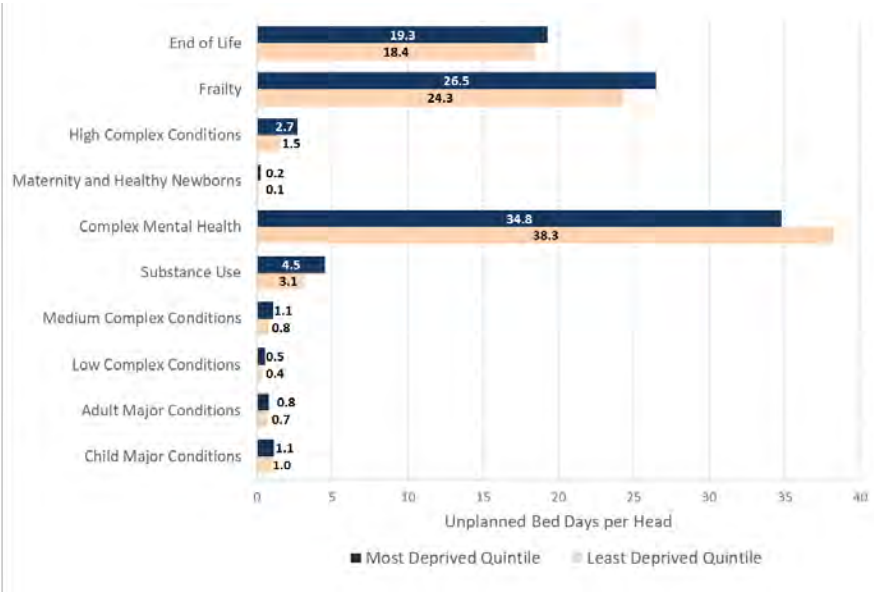
If length of stay in hospital for all levels of deprivation matched those of the least deprived quintile, then the NHS would have saved 800 hospital beds each day during 2019/20. This equates to around 5% of hospital capacity. A similar analysis for the emergency bed days per head metric would result in the NHS saving 1,510 emergency beds each day during 2019/20. This equates to around 10% of hospital bed capacity.

Figure 2. Average Length of Stay per admission, by demographic cohort and level of deprivation



Source: OSF analysis of a Public Health Scotland data request

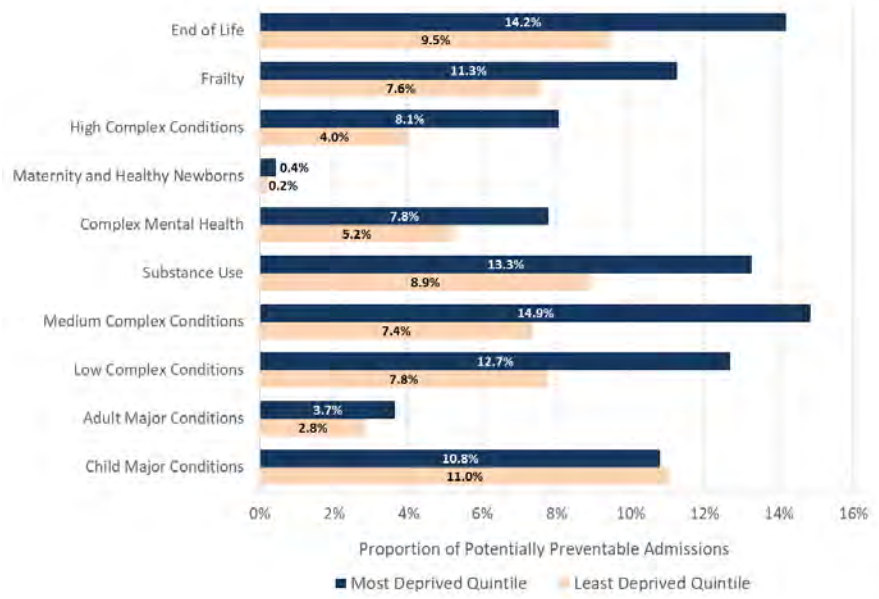
Figure 3. Unplanned bed days per head, by demographic cohort and level of deprivation



Source: OSF analysis of a Public Health Scotland data request

We found no statistically significant differences when analysing delayed discharge activity between deprivation levels. However, individuals living in the most deprived quintiles had 64% more potentially preventable admissions compared with those living in the least deprived areas. There was a clear social gradient across each demographic cohort, with individuals in the Medium Complex Conditions group experiencing the largest percentage point difference between the most and least deprived areas.

Figure 4. Proportion of admissions which were potentially preventable, by demographic cohort and level of deprivation.



Source: OSF analysis of a Public Health Scotland data request

There will inevitably always be a disparity in health activity driven by some level of deprivation (no society is perfectly equal), but these graphs highlight the vast differences. Multiple reasons explain why individuals from the most deprived areas use more acute health services. One reason is accessing healthcare. Those living in more deprived areas may not engage with their local health professionals and instead use acute services when needed. Another reason is that individuals from more deprived areas have more complex health needs and so need to spend longer in hospital as a result. Both reasons can be justified by the lack of service provision in the community (as articulated by the evidence from the GP example mentioned), unsure whether their health concern requires professional support (perhaps due to lower health literacy) and waiting until a crisis point, poorer health behaviours and lifestyle, or mistrust of authorities (particularly in the case of Substance Use). Together, these issues can create a cyclical process of worsening health, not having local services to support individuals, and longer stays in hospital as a result. To remedy some of the problems created by the Inverse Care Law, it is important to migrate support upstream through community services and prevention.

Recommendation

The work carried out by the Deep End GP practice network to address disparities in access to primary care services is to be commended[6]. We recommend building on this success through greater emphasis on prevention and community services. This requires shifting away from centralised control of authority and resource allocation to allow local communities to develop their own solutions. It follows the philosophy that local people know their local problems best. Providing them with the tools to addressing their problems can be more beneficial long term. Our forthcoming paper outlining the principles of a relational health system will emphasize the opportunities to tackling health inequality through prevention and community provision.

Understanding Our Health

Individual decision making is not necessarily the root cause which results in poorer health. Psychosocial factors can lead to addiction; financial constraints can impact on diet; accessibility and lack of free time could result in reduced physical exercise.

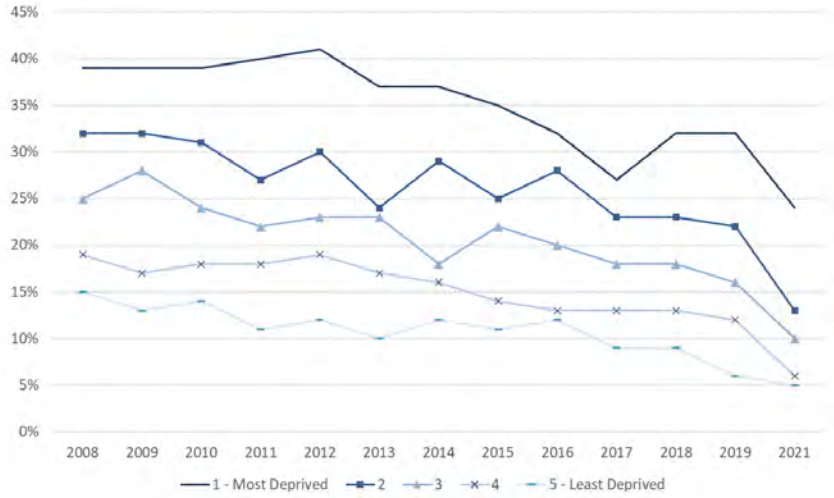
The previous chapter outlined several ways which leads to increased health need. One justification was individual health behaviours. We will discuss some of these in this chapter, but it is important to state that individual decision making is not necessarily the root cause which results in poorer health. Psychosocial factors including stress, discrimination, and social support can lead to addiction; financial constraints can impact on diet; accessibility and lack of free time could result in reduced physical exercise. These factors will be considered when discussing individual health behaviours.

Smoking

Smoking is one health behaviour with a positive long-term trend. In 2003, the prevalence of smoking in adults was 28%, falling to 11% by 20217. This considerable drop has occurred during a period of increased political attention. These include pricing and advertising controls on tobacco products, restricting smoking in public and private places, and legislation to increase the legal age of purchasing[2]. Despite this, smoking is still the cause for around one in five deaths in Scotland, and the primary preventable cause of premature death and ill health[7].

Smoking behaviour has a strong social gradient; in 2021, prevalence by age-standardisation was almost five times higher in the most deprived areas (24%) compared with the least deprive quintile (5%) (Figure 5). These figures are down substantially from 2003, where the most deprived areas had a prevalence of 45% compared with 17% in the least deprived areas. However, this gap between areas persists.

Figure 5. Smoking prevalence in Scotland, by year and level of deprivation



Source: Scottish Health Survey 20217

Whilst health literacy and not fully comprehending the health issues of smoking may factor, there remains other reasons. Marketing strategies by the tobacco industry are more prevalent in areas of deprivation. A study from Glasgow University in 2020 found that children living in the most deprived areas of Scotland saw seven times the number of tobacco marketing compared to their peers in the least deprived quintiles[8]. Evidence has also shown that socioeconomic factors can influence the uptake of smoking[9]. Lack of financial, or job, security can lead to increased stress levels. Nicotine can be addictive and cause the body to release dopamine. This chemical can alleviate stress and induce feelings of calm[10]. Smoking therefore may be used to support an individuals' mental health. Addressing these other determinants may be more effective strategies longer term than trying to influence the health behaviour through restrictions or advertising and pricing controls.

Diet and Physical Exercise

As we outlined in "A Fractured Service", obesity disproportionately affects those from our more deprived communities. We outlined several reasons for this in our previous paper, but poor diet and lack of adequate physical activity are two drivers. Research has shown that those living in the most deprived areas of Scotland were 2.5 times less likely to have consumed a single portion of fruit and vegetable in the previous day compared with individuals in the least deprived quintiles[2]. This relative difference has been stable over the previous decade. Financial constraints are one explanation for this. To meet the recommended dietary requirements set by the Eatwell guidelines, the poorest 10% of Scottish households would need to spend over two thirds (67.6%) of their disposable income on food[11]. Another potential difference in dietary consumption is the proliferation of fast-food chains. The more deprived areas of Glasgow have a higher density of fast-food outlets than less deprived areas[12]. With increased accessibility to these low cost, high calorie outlets, these chains may be aiding the inequality in diet.

There is a clear social gradient in levels of physical activity. Individuals living in the most deprived areas in Scotland were 1.7 times less likely to have met the daily activity guidelines compared with those living in the least deprived areas. One barrier to lack of physical activity is access to quality outdoor spaces. Individuals from areas of higher deprivation are less likely to have green spaces, reducing the opportunity for health activities[13]. A study in Denmark found that people living more than 1 km from green space were more likely to be obese and less likely to exercise rigorously than those living closer than 300m[14].

Addiction

We have previously discussed the tragic rise in deaths of despair, part driven by alcohol and drug addiction. Like the other health behaviours mentioned, addiction disproportionately impacts the most deprived areas in our society. Individuals might self-medicate with these health-harming behaviours to reduce the woes, worries, and stressors of daily life[15]. However, continued usage can isolate individuals from wider society, further impacting their health[2].

Co-occurring with drug and alcohol addiction is problem gambling. There lacks substantive data on problem gambling (the Scottish Health Survey is only sent to several thousand homes, so likely to be biased from lower response rates), but there exists a social gradient where more deprived areas experience a higher prevalence of problem gambling[7]. Like fast-food outlets, gambling establishments have a higher density in more deprived areas of Glasgow[12]. This can create a cyclical pattern of addiction, financial instability, followed by long-term health issues.

Recommendation

In recent years, we have seen taxation policies introduced to attempt to alleviate the worst of these health behaviours. This includes increasing pricing on tobacco products, the Soft Drinks Industrial Levy, and minimum unit pricing for alcohol. The recent UK Labour Party paper, "A New Britain", recommended local governments be provided more capacity to generate its own revenue[16]. Through this mechanism, we propose allowing local governments the tax raising powers to target health harming groups. We have already seen this used by city councils through emission zone charges for the most polluting vehicles[17]. Finance raised through such a "Preventative Health Subsidy" could be spent on local preventative health measures, including community mental health services. Our forthcoming paper on a Relational Health System will discuss some of the opportunities of fiscal devolution for health.

Health Screening, Vaccinations, and Immunisation

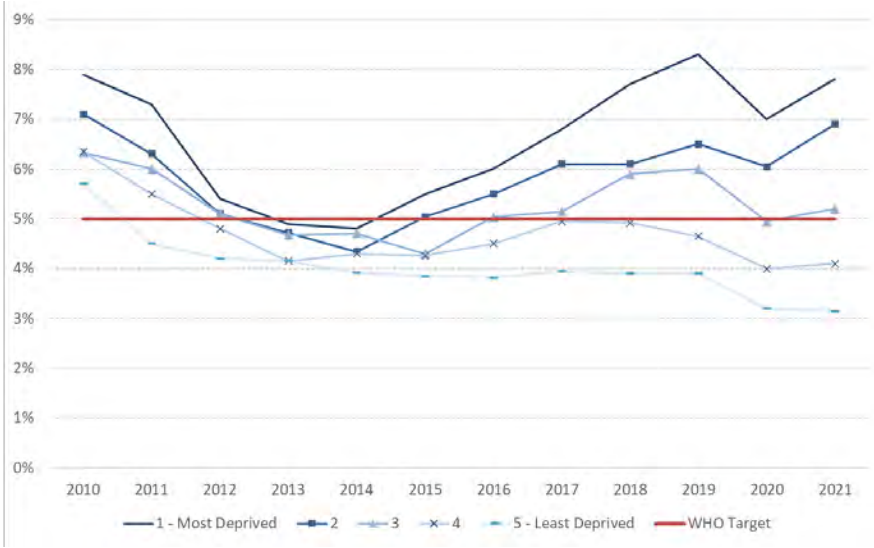
NHS Scotland currently offers cancer screening programmes for bowel, breast, and cervical cancer. Across all screening programmes, evidence has shown that individuals from the most deprived areas are less likely to take up their screening invitation[18]. In particular, women living in the most deprived areas of Scotland are 30% less likely to be screened for breast cancer[19]. Breast cancer screening detects tiny cancers, often when they are less advanced and easier to treat. If caught early, women are five times more likely to survive[19]. Therefore, if women in more deprived areas do not take up their invitation, they are at increased risk of mortality. This is perhaps one of the reasons why, taking all cancers into account, people living in the most deprived tenth of areas in Scotland are 40% more likely to get cancer, but twice as likely to die from cancer, when compared those in the least deprived areas[2].

We see a similar pattern with vaccinations which was particularly noticeable during the pandemic and the race for getting citizens vaccinated against COVID-19. During that programme, individuals from the most deprived areas

were only around half as likely to take up one or more doses of the vaccine compared with those living in the least deprived areas[20].

This vaccine follows-through to child immunisation programmes. For the measles, mumps, and rubella (MMR) vaccination in 2 year olds, Scotland was a success story. Between 2010 and 2014, all deprivation levels saw a reduction in toddlers who did not receive their first dose, meeting the WHO target of 95%[21]. However, from 2015 onwards, we began to see an increase in vaccine hesitancy for the most deprived population. This trend has sadly continued to increase, with the three most deprived quintiles now not meeting the WHO target.

Figure 6. Percentage of 24-month-olds who had not received the first dose of the MMR vaccine, by year and level of deprivation



Source: Childhood immunisation statistics, Public Health Scotland[21] and Health Inequalities in Scotland, University of Glasgow[2].

Analysis of children born between 2009-2013, showed that those living in the most deprived quintiles were 1.4 times more likely to miss their MMR vaccine compared with those in the least deprived areas[22]. This risk increased by the start of primary school: children from the most deprived areas were 1.5 times more likely to have missed one or more of their vaccinations. As discussed by Miall et. al.[2], two groups emerge here: vaccine hesitancy from parents who worry about the safety of vaccines has increased in recent years[23], and those who face barriers due to social advantage. On this second group, there already exists programmes to try and increase uptake[24].

Health Literacy

Like other areas we have discussed, mistrust and lack of access will contribute to reduced uptake. However, what also significantly impacts uptake of screening, vaccinations, and immunisation is health literacy. When the population are not fully informed of the benefits of such programmes, it can lead to disinterest or hesitancy. Furthermore, if the benefits are not articulated clearly, it can lead to confusion. Our research found no recent figures to exist, but previous studies have suggested that up to 1.2 million adults may have some difficulties with reading and comprehension[25]. This could make it difficult to understand the need for the health programmes offered to them, unsure how to take their medication correctly, or miss outpatient appointments. The NHS continuously improve their health literature outputs, but an estimated 4 in 10 adults do not fully comprehend the materials[26]. This is estimated to cost the NHS up to 5% of national health spending - circa £750 million each year[26].

The rise of social media and proliferation of mis- or dis-information has also contributed to reduced health literacy. Even before the pandemic and rise of many misconceptions around protective health behaviours[27], the UK witnessed a reversal in public health confidence due to the controversy surrounding a health publication. In 1998, the Lancet published an article by Andrew Wakefield purporting to a potential link between the MMR vaccination and the appearance of autism[28]. Whilst actions were taken including the retraction of the paper and the author no longer allowed to practice medicine, doubts in some areas of the world persist. The Lancet is a well-respected medical journal where papers must go through a review process. That is not the case on social media. The UK Government are increasingly working with social media companies to reduce the potential of health disinformation, but more must be done[29].

Some public health campaigns over the past decade have cut-through the health literacy barriers and improved outcomes for those living in more deprived areas. When Jade Goody, a reality TV star, was diagnosed with cervical cancer, she spent the remainder of her life campaigning for others to take up their screening invitation. In the year following her death in 2009, nearly 500,000 extra women in the UK turned up for their smear test. A study of 900 women produced afterwards identified one third of the cohort to be influenced by Goody's story, with the biggest increase from those of lower socioeconomic backgrounds[30]. Communicating with the population where they are likely to engage can be an effective way to improving health literacy.

One way of connecting with the population is through soap opera storylines. During the pandemic, many of the UK's best loved programmes produced storylines revealing the mental health struggles of characters. It has been reported that one in five people who saw a mental health storyline on a soap or drama realised that they themselves had a mental health problem, or had experienced one in the past[31].

Recommendation

With a shared culture, these campaigns and storylines impacted Scotland as much as it did the other parts of the UK. With this in mind, we propose the establishment of a collaborative Health Insights Unit. The unit will have three primary objectives: improve health literacy by engaging with public institutions, reduce mis- or dis-information through engagement with multi-national social media organisations, and bring health experts from across the UK together to better understand the underlying causes of health-harming behaviour.

We envisage public institutions to include public information broadcasters on programming with health storylines, national and regional sports teams to engage their local populations in physical activity, or working with national chefs as part of a UK-wide drive to improve school food standards and food education for children.

It will not supersede the devolved health improvement teams (such as the Office for Health Improvement and Disparities in England, or Health Improvement Scotland), instead find ways to bring the devolved nations together to improve UK-wide health literacy, reduce misinformation, and increase understandings of the wider determinants of health.

The creation of a new UK Chief Medical Officer (CMO) Panel will have oversight of this new unit. The Panel will be chaired by the four Chief Medical Officers of the devolved governments, on a rotating basis, publishing regular reports on the UK's key public health challenges, including health inequality.

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Health inequality negatively impacts everyone. If we cannot draw on the unique talents of all our fellow citizens, we become poorer economically and socially.

Inequality Across the Life Course

In the previous section, we described how health behaviours are multi-faceted and not necessarily due to individual decision-making or disregarding of public health advice. Instead, people may continue smoking to alleviate stress, or continue to consume fast-food due to value for money. One of the best predictors of life chances today is where you were born[32]. Individuals born in the most deprived areas are more likely to remain living in deprived areas. This section will discuss the inequalities across the life course, how starting life in deprivation compounds over time, severely impacting long-term health.

Early Years

Health inequality can begin before birth. Baby development begins in the womb, where they are affected by the health of their mother. Evidence has shown that women who are overweight or smoke during pregnancy at are increased risk of miscarriage, premature birth, or low birthweight. This is concerning since women from deprived areas are more likely to be overweight, and nine times more likely to smoke, than those from less deprived areas[33]. Whilst other factors may influence, this is a likely reason that babies born to mothers from areas of high deprivation are twice as likely to be born underweight, compared with those born to mothers from less deprived areas[33]. Low birthweight can lead to longer term health problems in adulthood. Longitudinal research has shown that both coronary vascular disease[34] and type 2 diabetes[35] have low birthweight as one of their risk factors.

Inequalities begin to widen from early childhood. Across each development stage for young children, a clear deprivation gradient is observed. From the most recent Early Child Development Statistics, children aged 27-30 months living in the most deprived areas were twice as likely to have a developmental concern

compared to those in the least deprived. These inequalities have been observed consistently in the 27-30 month age group since 2013/14. In 2020/21, almost one in four children from the most deprived areas at 27-30 months had a developmental concern - mainly in the problem solving and speech, language and communication domains[36]. With an attainment gap already developing as toddlers, by the time children reach school age, those from more deprived areas struggle to equal their peers. This can be seen by a consistent attainment gap in literacy and numeracy throughout primary school[37]. A positive shift in recent years has been the pivot towards the getting it right for every child (GIRFEC) approach. This means that educators and schools must adapt to all their students, with increases in play-based learning a key classroom tool[38].

Recommendation

Across the United Kingdom, most share a belief that every child deserves the best start in life. The introduction of Sure Start Children's Centres across the UK by the last Labour government was one of their greatest achievements. With financial pressures, these were scaled back by the following Conservative government. Analysis by the Institute for Fiscal Studies has since shown that Sure Starts in England helped close the gap of hospitalisations between the most and least deprived areas by nearly 50%[39]. We propose that across all devolved administrations, all families have access to a Children's Centre. Working together across our borders, we can identify services and offerings which are of benefit to parents and young children, continuously improving the support needed.

Adolescence

Inequality continues to be observed through school, with children from the most deprived areas 3.4 times more likely to be excluded, missing schooling which could harm their educational prospects[40]. Missing lessons could result in poorer health literacy, leading to worse health outcomes as we have already established[41]. By the time children leave school, those from the most affluent areas are almost twice as likely to achieve five or more awards at level five compared with their peers in the most deprived areas[42]. This is reflected in tertiary education statistics, where those from the least deprived areas are more than twice as likely to enter further education[43]. Whilst university education is not a barometer of success, it does have a correlation with higher

earning potential[44]. With children from more deprived backgrounds effectively facing a barrier to further education, it may lead to them unable to fulfil their potential and not entering well paid work.

Recommendation

Young people from more deprived areas are at a higher risk of binge drinking, anti-social behaviour and groomed into gangs and criminal activity[45]. To improve the lives of young people in more deprived areas, the recent Longfield Commission on Young Lives report recommended a new Sure Start Plus programme for England – essentially a Sure Start for teenagers[45]. These centres are designed to co-ordinate and deliver health and education support for vulnerable teenagers. Established in and around schools, the hubs will be run by charities, public bodies, business, and philanthropy organisations. We propose that across all devolved administrations, every community should have access to a Sure Start Plus centre. This would allow young people a safe space to interact, particularly on weekend evenings, and if linked with local businesses, opportunities for work experience. Networks between centres can help identify which support services are most effective for vulnerable teenagers, with the aim to co-operate in ensuring all our young people can flourish.

Adulthood

Most of us will spend the majority of our adulthood in some form of employment. In the Whitehall studies, Marmot et. al. reported on health inequalities existing within the administrative public sector. They uncovered a mortality gradient based on levels of seniority. Individuals on the lowest pay grade had a mortality rate three times higher than those of the highest grade and a much greater risk of coronary heart disease[46]. Adjusting for confounding factors such as BMI and smoking status, they still found those on lowest employment grades were at greater risk of a heart attack. Whilst no universally accepted cause is available, heightened levels of stress due to lack of control or autonomy at work, as well as financial pressures, could impact on health. This was corroborated by Whitehead, who reported that a sense of control and status were factors in health inequalities in the workplace[47]. This becomes an increasing concern, particularly with the rise of zero-hours contracts and casual employment, with little to no control over your working day.

Some people actively seek casual employment due to life circumstances, such as family commitments or further education. However, when those are the only opportunities, and not enough work is available, underemployment can lead to ill health. Evidence has shown that underemployment is associated with higher levels of stress and mental ill health, with individuals having a higher prevalence of depression[48]. Whether underemployment causes depression, reverse causation or other confounders, is an area of active research.

The third area we will discuss is unemployment. Scotland is currently experiencing one of its lowest unemployment rates (3.3%) in a decade, with around 93,000 individuals reporting as unemployed[49]. Whilst this may be historically low, unemployed individuals can still face poorer health outcomes. Studies have shown that those who were recently made unemployed is associated with larger weight gain, a reduced sense of wellbeing, and loss of sleep due to worry[50]. During the pandemic, the risk of mass unemployment due to a government mandated shutdown was a real possibility. Thanks to the rapid implementation of the furlough scheme, millions were saved from unemployment, potentially allowing it to be viewed as a public health success story. Furlough may have been a one-off policy decision, but looking forward, it is important the State is prepared for major shocks or transitions in the economy.

Automation

The biggest predicted shift in the labour market is from increased automation and the rise of artificial intelligence. NESTA has predicted that around 16% of workers in the UK are employed in at-risk jobs, with those from the most deprived areas having three times a greater risk of their jobs being automated than those from the least deprived quintile[51]. Similar analysis conducted by the ONS found that education status of individuals can help determine the risk of automation. Jobs which were determined to be low risk of automation were filled by highly educated people (87% had a university degree)[52]. As we have shown, tertiary education is balanced more toward those from less deprived backgrounds, further worsening inequalities. Like every technological revolution and labour market shift of the past, short-term displacement of workers usually leads to compensation effects of improved productivity, higher quality jobs and higher quality of life for many individuals. Whilst this may bring long term riches, we need to ensure that all citizens are protected and able to live with financial security. This is arguably one of the most important areas of co-operation between each of the devolved nations.

Recommendation

In 2022, the UK Government announced a Lifelong Loan Entitlement scheme in England, allowing all post-18s a four year loan entitlement which can be used throughout a learners life[53]. Whilst this is an important step in achieving lifelong learning, we would recommend all devolved nations are able to access (supported by the UK Treasury), extended to six years to allow greater learning mid-life, and a loan write-off scheme for those from deprived areas.

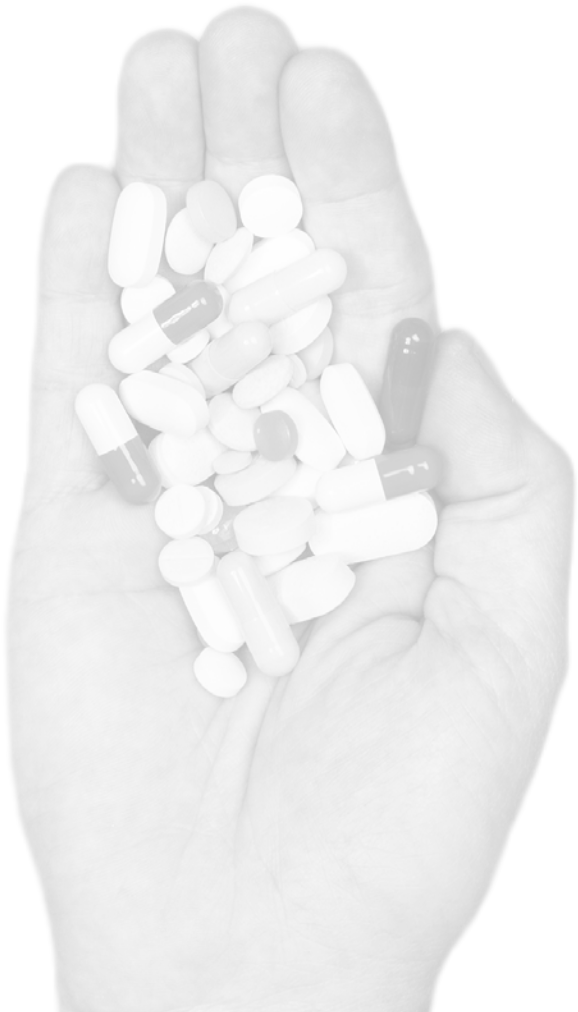
Recommendation

The introduction of furlough payment during the pandemic reasoned that employees should not be penalized for events outside their control. Other than this isolated event, the social security net of our country has frayed considerably, with citizens no longer having strong protection against personal catastrophic events including sickness, caring for relatives, or unemployment.

The UK offers a relatively comprehensive set of social benefits, however remuneration in some circumstances is substantially lower than other highly industrialised nations. This is felt most acutely for individuals who are made unemployed.

In Germany, their Kutzarbeit model sees private sector employees accept reduced working hours and pay, with the State compensating the lost wages[54]. This is to allow companies to avoid layoffs and loss of expertise during downturns in the economy. Whilst in New Zealand, Jacinda Ardern's government have recently announced an income insurance scheme whereby unemployed individuals are paid 80% of their previous pay for six months (subject to a cap for high earners), funded by a 1.39% levy for employers and employees[55]. This provides employees time to find a job suitable to their skillset, rather than finding immediate work (usually poorer paid) to stem financial suffering.

The UK economy today, and in the future, will be different from both nations mentioned. What works there, may not be transportable here. Therefore, we recommend that the UK Government, with direct input from the devolved administrations, hold a consultation on the future of social security. This commission should have increased democratic participation in the form of citizen juries, work with trade unions and business groups, to establish what a resilient social security net, fit for the challenges of the future, would entail.



Older Adults

Whilst social security for older adults has been somewhat protected since 2011 with the 'triple lock' on pensions, guaranteeing a minimum increase in state pension, 11% of Scottish pensioners continue to experience poverty[56].

Alongside financial insecurity, individuals from the most deprived areas are more likely to spend most of their later years in ill health – twice as long in relative terms1. This is one reason why those from more deprived areas are unable to experience the stereotypical 'retirement lifestyle' and less likely to enjoy their later years through leisure and personal fulfilment[57]. Having potentially suffered setbacks from birth and all through their life, it is a great tragedy that older adults from more deprived areas continue to face poorer outcomes up until their passing.

Rather than isolated on their own, the drivers of poor health overlap, their effect magnifying, resulting in the diametrically opposing life outcomes we see today.

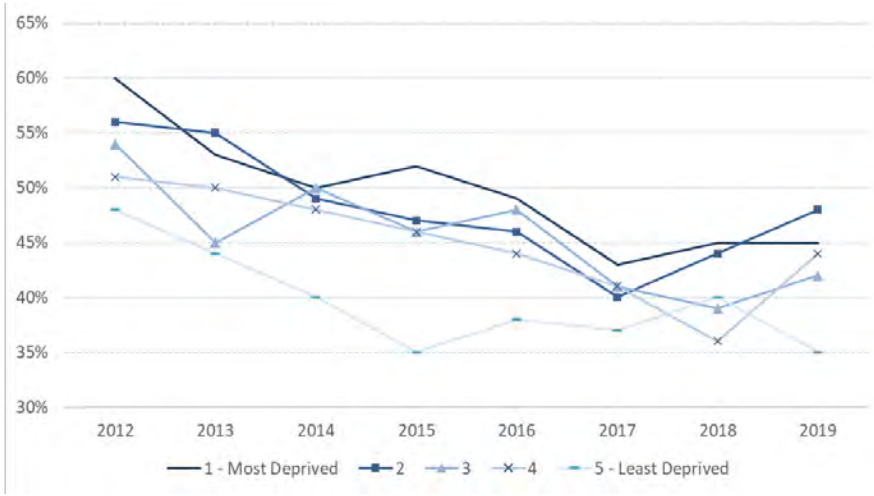
Wider Determinants of Health

Alongside the life course, wider social and environmental factors can impact on health inequality. Some of this is driven by the change in our moderate climate. In 2022, Scotland saw it highest ever recorded temperature at 34.8C in the Borders[58], followed by one of its coldest in a decade, - 15.7C, in Braemar[59]. As the impacts of Climate Change begin to see effect, health can be severely impacted. Across Scotland, we expect our winters to become warmer and wetter, our summers hotter and drier, with more frequent and intense weather extremes[60]. Heatwaves are a risk to health, particularly older adults, or those with respiratory or heart conditions[61]. When our built environment is not able to sustain habitable living to cope with vast temperature variation, it can lead to health problems, potentially mortality.

Housing

The quality of Scottish housing somewhat follows social gradient, in that housing for lower income families is of a poorer standard than housing for higher income families, but this is not perfectly defined[3 62]. On average, 43% of dwellings in 2019 failed the Scottish Housing Quality Standard. This varied from 35% of homes occupied by the highest income families, to 48% of homes for the second lowest income families. The slight disparity between the two lower income bands may be due to the housing mix and relatively better performance of council homes compared with private tenancy[3].

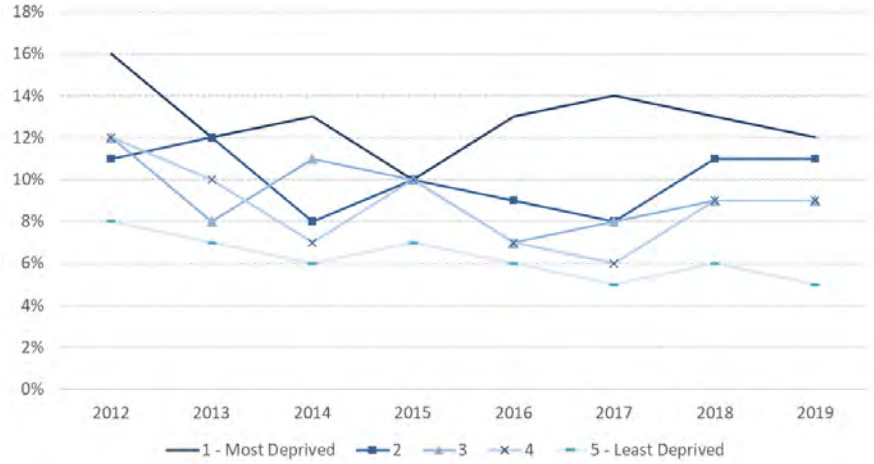
Figure 7. Proportion of houses failing the Scottish Housing Quality Standard, by year and level of deprivation.



Source: Scottish House Conditions Survey 2019, Scottish Government[62] and Health Inequalities in Scotland, Fraser of Allander[3]

An important consideration is the level of mould and damp in a house. This does follow a strict social gradient. Whilst an average of 9% of Scottish homes contain mould, this rises to 12% for the lowest income households, compared with 5% for the highest income households. Penetrating damp has a direct relationship with respiratory health conditions[63]. With lower income families having the greatest risk of their homes developing penetrating damp, it can heighten health inequalities.

Figure 8. Proportion of houses containing mould, by year and level of deprivation.



Source: Scottish House Conditions Survey 2019, Scottish Government[62] and Health Inequalities in Scotland, Fraser of Allander[3]

One way of alleviating damp is by keeping homes warm enough during the winter. However, this also reports an income gradient, with 87% of the highest income households reporting they can keep their home warm enough, compared with 77% of lowest income households[64]. The cost-of-living crisis, particularly with increasing energy bills, is likely to have seen these figures continue to diverge. With an inability to heat homes, citizens will die. A study by NICE reported that for every degree centigrade drop in external temperature in the coldest 10% of homes, death rates rise 2.8%. For the warmest homes, this drop is 0.9%[65]. It is vital that we build, or retrofit, homes to cope with temperature extremes, without the need for expensive heating or cooling.

As part of our Environmental Commission, our report "Energy as a Common Wealth" recommended providing everyone with £1,000 to spend on home heating improvements[66]. There is a positive case for this policy; it would improve the quality of housing, whilst kickstarting a green new deal for the country. Such a move could reduce multiple disparities which lead to health inequality. High quality jobs would be created across the country, allowing individual to re-skill and improve earnings. And improving the quality of housing will reduce heating bills, potentially leading to reduced winter deaths.

Environment

Wider environmental factors, particularly pollution and loss of green space, not only contribute to the climate crisis (and thus the health issues mentioned above) but their own health problems too. Air pollution is well-known to cause respiratory ill health. It is estimated that air pollution accounts for the early deaths of around 4,000 people in Scotland every year[67]. People living in the more deprived areas are disproportionately affected by air pollution – higher concentrations of pollutants are typically found in more socially disadvantaged areas[68]. The lack of green space exacerbates the issues of air pollution, where, as we outlined in our physical activity section, those living in areas of high deprivation are more likely to have less access to green spaces[13]. Another by-product of a deficit in urban green spaces is that it drives urban heating effects[69], further increasing heat-health risks.

We have already shown the link between access to green space and physical exercise, but it is also correlated with higher levels of mental ill health. Several studies have shown that easy access to local green space is linked with a heighted sense of well-being[70] [71], including reduced prescribing of anti-depressants[72].

Across housing and natural environment, the quality of the physical space can influence health. To return to some of our previous recommendations, it is crucial local people are involved in the decision making of their built environment. They know their situation best, and by offering local, innovative solutions, we can all benefit. These last set of recommendations cover the whole of this paper.

Recommendation

Across all wider determinants, we have reported on correlations to health and equity. Many of the studies mentioned were carried out on small segments of the population. And in many cases, whilst they consider confounding factors, they are not able to build them into models. Scotland has rich health and social care data, linked at individual level, allowing us to analyse many different outcomes. However, we do not currently link in education, income and welfare, criminal justice, housing, or environment. Some have been carried out on an ad-hoc basis, but we recommend scaling this up to a national dataset for understanding health inequality. This would open opportunities to better understanding the causes of the causes, and lead toward data-informed policy making. Replicating the process in other parts of the UK would allow for greater comparisons to be made. The data linkage project could be overseen by the Health Insights Unit, with data anonymised or synthetically recreated, to allow researchers across the UK to better understand the wider determinants of health inequality.

Recommendation

Following on from the previous recommendation, too often health outcomes are not considered in policy making. When conducting feasibility studies or cost-benefit analyses, impact to health is not considered. We recommend that policies relating to welfare, education, the environment, housing, and transportation include health co-benefits. This would extend from the UK Government, to devolved administrations, and the auditing of local government investments.

Recommendation

Most opportunities to improving health and reducing inequalities is at a local level. Professor Sir Michael Marmot, one of the world's great students of the social determinants of health equity, outlined a framework to reduce the health equity gap through the Marmot City Regions[73]. Several towns, cities, and regions across the UK have taken this framework and developed their own plans for education and skilling, housing, transport, and employment. Whilst these areas can work in isolation, collaboration and cooperation are vital to maximising the benefit for all. Last year, we recommended a Marmot City Network to be created, "Ending Health Inequalities", which would be headquartered in Glasgow and allow practitioners to share expertise[74]. The Institute of Health Equity, where Professor Sir Michael Marmot is Director, will announce the Health Equity Network in January 2023[75]. We hope that across our United Kingdom, people will come together to share their solutions to help reduce inequity in our country.

Conclusion

Today in Scotland, one of the great predictors to the life chance of a new-born child is where they were born. Beginning from the health behaviours of their mother in the womb, to the opportunities at school or employment; from the communities in which they live, to the access to care when they need it; many of the building blocks to good health are outwith their control. Rather than isolated on their own, the drivers of poor health overlap, their effect magnifying, resulting in the diametrically opposing life outcomes we see today.

As we look toward the major challenges of the future: the increases of online mis- and dis-information, the rise of automation, the effects of climate change; we have seen the potential damages to health, and the inequity of health, that lack of planning could bring. Our current crises, including cost-of-living, are already showing signs of adversely affecting health. Through cooperation, pooling our resources, and working together across the United Kingdom, we can address these challenges and ensure everyone benefits.

We have shown in this paper for the need to work locally. Equipping local people with decision making powers, financial tools, and data insight can lead toward long-term solutions. It is by grasping the breadth of the wider determinants of health, mindful of their complexities, and having the emotional literacy to understand their impact on our fellow citizens, that can allow for the introduction of policies which improve our collective health and well-being.

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Our Scottish Future believes that good government in Scotland and across the United Kingdom has to be based on the values of cooperation, empathy, solidarity and reciprocity.

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