Llywodraeth Cymru
Welsh Government

Shaping Our Health

CHIEF MEDICAL OFFICER FOR WALES ANNUAL REPORT 2023

How commercial interests influence our choices and behaviours

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Contents

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Introduction

In previous CMO annual reports, I have highlighted areas of emerging or underestimated public health importance. For the last three years, the focus has been on the COVID-19 pandemic; its evolution, unpredictability, global spread, and the devastating impact it has had on all aspects of our lives; our health, our economy, our security, even our freedom. In this report, I take the opportunity to examine how the activity of large companies can play a role in our health. Some of these activities can be positive, for example through employment or by providing services or products that are essential for health and wellbeing, but some can undermine our health.

Professor Sir Frank Atherton,
Chief Medical Officer

The strategies and approaches used by the private sector to promote products and practices that influence our choices which are detrimental to our health have been referred to as the commercial determinants of health[1]. I describe some of these practices and how markets for certain products like tobacco, alcohol, and unhealthy food and drink are dominated by large companies with huge distribution and marketing budgets and an overriding pursuit of profit over public health concerns. With increasing attention being paid to the commercial determinants as drivers of non-communicable diseases such as cancer, diabetes, respiratory and circulatory conditions that can result in premature deaths and increasing health inequalities[2]; the more we understand about how these activities shape the physical and social environments in which people live, work, play, learn and love – both positively and negatively, the better we will be able to predict and if necessary, intervene, in order to avoid health damaging consequences. These interventions may be necessary at the individual level, that is interventions that support consumer and general health behaviours or at a societal level, such as economic and regulatory policies that support greater transparency and target various corporate activities such as the supply chain, product formulation, accessibility, or working conditions and industrial relations.

I have previously drawn attention to climate change as the largest and most complex public health challenge of our time and the need for concerted action at local, national, and global levels. In conjunction with governments and

public institutions, there is a pivotal role for the private sector in addressing the observable negative consequences of long-term shifts in temperatures and changing weather patterns. Whether taking action to address rising inequality or environmental degradation, I commend those companies attempting to integrate these social and environmental concerns into their business operations. In this report, I draw attention to the recognised term of 'greenwashing' where a company or organisation makes unsubstantiated or exaggerated claims to appear more climate-friendly and environmentally friendly than they really are, and I highlight the need for greater transparency.

In line with previous reports, I begin with a summary of the latest health trends in Wales; life expectancy, the major causes of death, and examine where inequalities in health and health behaviours are evident. The report provides an update on SARS-COV-2 and describes the on-going management of the disease, alongside other respiratory diseases, as part of our routine seasonal winter planning. The findings and recommendations from our recently published "Health Protection System Review" are also described: further strengthening of this is crucial for our future preparedness so that we have the staff and structures in place for any new and emerging diseases.

The World Health Organisation has described air and noise pollution as posing significant environmental health risks. Therefore, I welcome and fully endorse the continued action the Welsh Government is taking to address air and noise pollution across Wales through the ongoing delivery of the Clean Air Plan for Wales, the introduction of the Environment (Air Quality and Soundscapes) (Wales) Bill and the Noise and Soundscape Plan for Wales 2023-2028. It is well documented that air pollution increases risks of heart and lung diseases as well as cancer and other conditions; exposure to pollutants reduces life expectancy for everyone. Noise (unwanted and harmful sounds) can cause annoyance, sleep disturbance and hearing damage, and over a longer period can increase the risk of blood pressure problems that lead to heart disease. Public health protection and improvement are at the core of the plans to tackle air and noise pollution. Proposed actions in Wales include the establishment of a framework to set national air quality targets, promotion of awareness of risks, impacts and mitigation measures, and the establishment of a duty on Welsh Ministers to produce a national soundscapes strategy. The actions in the plans and legislation will improve air quality and soundscapes in Wales, help prevent new problems from arising, and deliver benefits for personal health and well-being. They will also enhance our response to tackling climate and nature emergencies.

COVID-19 was a stark reminder that we do not live in isolation and that it is all too easy to be impacted, without warning, by global events. As the war in Ukraine continues, and the conflict in the middle east is renewed, there are both immediate catastrophic impacts for those being killed or injured in action and for those unable to access increasingly scarce health care and resources. There are also problems being stored up for future generations as a result of traumatic experiences. The impacts also have implications globally as war inevitably causes disruption to world supplies of food, fertiliser, and fuel.

Everyone in Wales has been impacted by the escalating costs of living. In my final chapter, I illustrate how the cost-of-living crisis is, in itself, a public health emergency and I identify some of the public health solutions needed to maintain a decent standard of living and avoid worsening public health prospects and widening inequalities for our citizens.

Thank you for your interest and for reading this report. As ever I welcome feedback on anything it contains, and you can email me at **PSChiefMedicalOfficer@Gov.Wales**

Chapter 1:

Health of the nation

Our changing population

The population of Wales continues to grow and in 2021 was estimated to be just under 3.11 million[3]. This is the first population estimate based on the 2021 Census.

Wales is set to continue along a trend towards an ageing population. The number of those aged 65 and over is expected to increase from 21% of the population in 2020 to 25% by 2045, an increase from 669,000 in 2020 to just under 837,000 in 2045[4]. The proportion of the working-age (16-65) population is expected to decrease over the same period, despite anticipated population growth and positive net migration.

The proportion of young people (those aged 0-15) in Wales is set to decrease by the year 2045 and account for just under 15% of the population; down from just under 18% in 2020 (approximately 563,000 in 2020 down to 487,000 in 2045)[5].

Living longer and living well

Statistics released by the Office for National Statistics (ONS) show overall life expectancy for the UK (at birth) for 2018-2020 to be 82.9 for females and 79.0 for males[6].

In Wales, the average life expectancy at birth is 82.1 for females and to 78.3 for males[7]. This represents small decreases for women and increases for men compared to 2017-2019[8].

Since 2011, mortality rates in Wales have remained stable although year on year fluctuations are evident. This marks an important change in trend as mortality rates had generally been falling since the Second World War. Apart from the increase in deaths recorded in 2020, the levelling off of mortality rates in Wales is similar to the trend exhibited in the other UK nations.

In 2021, there were 36,135 deaths registered in Wales, of which 3,650 were due to COVID-19. This compares with an average of 33,420 deaths per year between 2015 and 2019. COVID-19 continues to be associated with an increase in the age-standardised death rate in Wales[9].

Ischaemic heart disease was the leading cause of death in 2021 in Wales, followed by COVID-19, and dementia and Alzheimer's disease[10].

When reporting on leading causes of death, the Office for National Statistics separate out different kinds of malignant and benign cancer. However, when all types of cancer (both malignant and benign) are grouped together, it would be the leading cause of death in Wales in 2021 with 9,071 deaths.

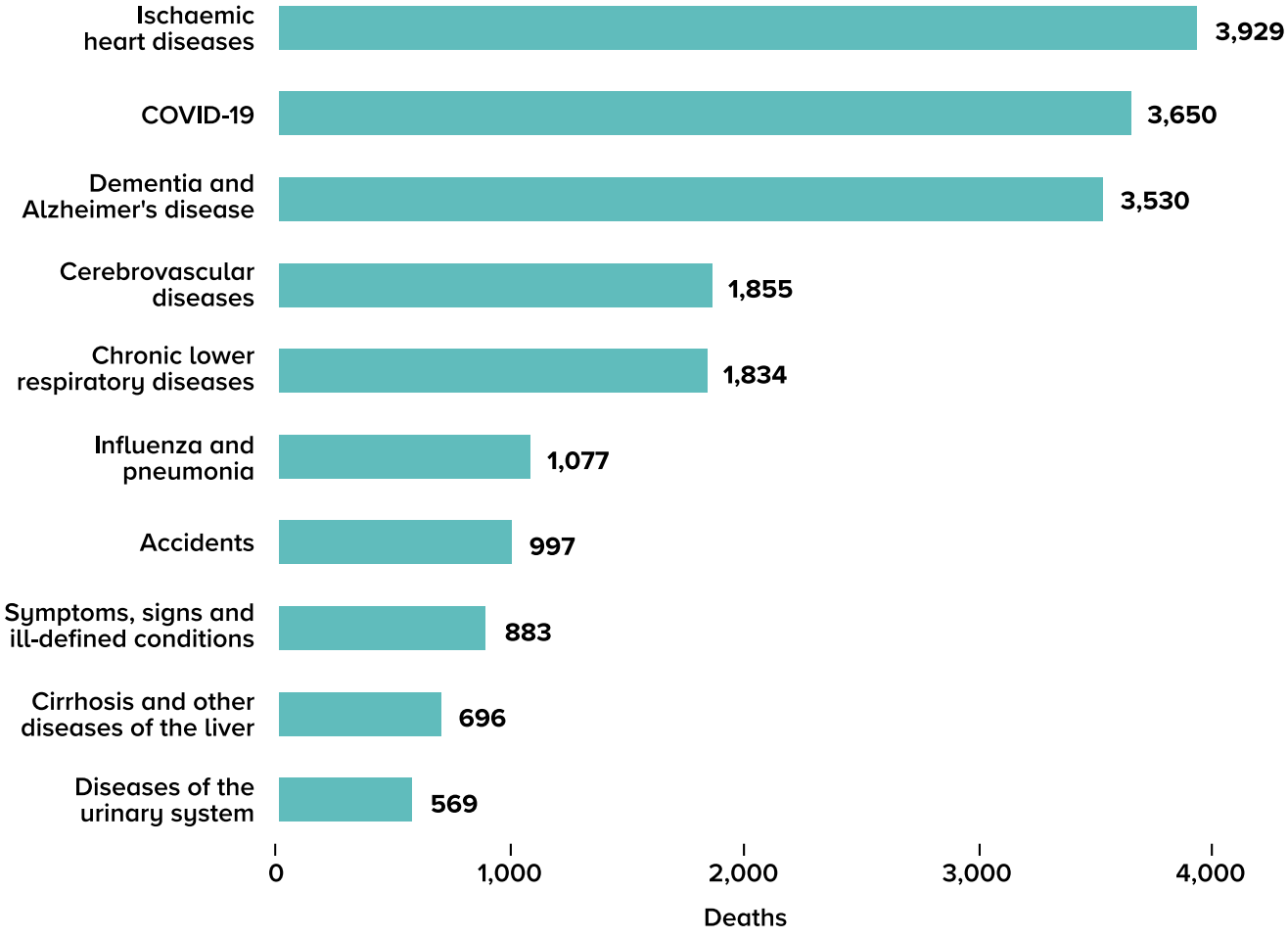
Due to the nature of the COVID-19 virus, it is difficult to determine to what extent deaths due to COVID-19 may have displaced deaths that would otherwise have occurred due to other causes, particularly given the high age specific rates in the older people (See figure 1)[11].

The National Survey for Wales also highlighted that 46% of adults in Wales reported having at least one long-standing illness (for the period April 2021 to March 2022)[12]. The data showed that the percentage of females reported as having at least one long-standing illness was higher (49%) than in males (43%)[13]. Adults in the oldest group were more likely to suffer from long-standing illnesses with 67% of those aged 65 and over reporting having a long-standing illness[14].

The 2021, census has shown that, in Wales the age-standardised proportion of the Welsh population reporting very good health was 46.6% and for good health was 32.5%. This was an increase of 0.9 and 1.1 percentage points respectively since 2011.

In 2021 5.1% of respondents reported bad health, a decrease of 0.9 percentage points from 6.0% in 2011. 1.6% of respondents reported very bad health, 0.3 percentage points decrease from 1.9% in 2011[15].

Figure 1: The ten leading causes of death, Wales, 2021



Source: Office for the National Statistics.

Note: When reporting on leading causes of death, the Office for National Statistics separate out different kinds of malignant and benign cancer. However, when all types of cancer (both malignant and benign) are grouped together, it would be the leading cause of death in Wales in 2021 with 9,071 deaths.

Excess premature mortality

During 2016 to 2018 an average of 11,000 people died prematurely before the age of 75 each year in Wales[16]. This equates to 150,000 years of life lost to premature mortality. Years of life lost calculates the number of years lost when a person dies prematurely from any cause. Avoidable deaths are defined as either preventable or treatable for those aged under 75 years.

Those living in the most deprived areas in Wales had twice as many years of life lost to premature mortality than those in the least deprived areas. In the most deprived areas of Wales there were an additional 1,590 deaths and 24,500 years of life lost.

In the most deprived areas both premature mortality and years of life lost are around double those of the most affluent areas. With each increase in level of deprivation, both the premature deaths and the years of life lost also increased. With a significant number of premature deaths being attributable to socioeconomic inequality, this remains an important public health challenge.

The large differences in premature mortality between most and least deprived areas can be related to differences in the prevalence of behavioural risk factors such as smoking and poor nutrition, as well as other barriers such as access to good employment, healthcare, transport, and other living conditions. Interventions that address the upstream determinants of health should continue to be prioritised.

Avoidable mortality is a measure of premature mortality specifically from causes that are considered avoidable through prevention or timely treatment. In 2020, avoidable deaths accounted for 37.0% of all male deaths in the most deprived areas of Wales compared with 18.9% in the least deprived areas; for females it was 25.7% and 14.1% respectively[17].

The gap in avoidable mortality between the most and least deprived areas widened to the highest level since 2003 for males and since the data began in 2001 for females.

The early years

In historical terms, Wales' rate of infant mortality remains low. There has been a slight increase between 2016 and 2019 (from 3.0 to 3.8 per 100,000)[18].

The 2018-19 Child Measurement Programme for Wales shows the percentage of children aged 4 to 5 years who are overweight or obese in Wales is 26.9%[19]. This is somewhat higher than other UK nations, with England having 22.6% and Scotland having 22.4% of children aged 4 to 5 years who are overweight or obese.

Data collection in 2020/21 was interrupted across many parts of Wales due to school closures and prioritisation of resources in response to the COVID-19 pandemic. We are, therefore, only able to report data for two Health Boards – Swansea Bay and Aneurin Bevan – where we have sufficient data for reliable results. This also means we cannot provide an overall figure for Wales.

In both Health Boards, we see a significant rise in the percentage of 4/5 year olds who are obese and a significant decline in the proportion with a healthy weight compared to 2018/19[20].

The percentage of children in Wales (aged 11-16) who have two or more healthy lifestyle behaviours has increased slightly between 2017/18 to 2019/20 (from 87.7% to 88.0%)[21].

Health behaviours in adults in 2021–22

30%
ate 5 or more portions of fruit and veg

36%
reported a healthy weight

56%
were active for 150 minutes or more the previous week

84%
drank within weekly guidelines

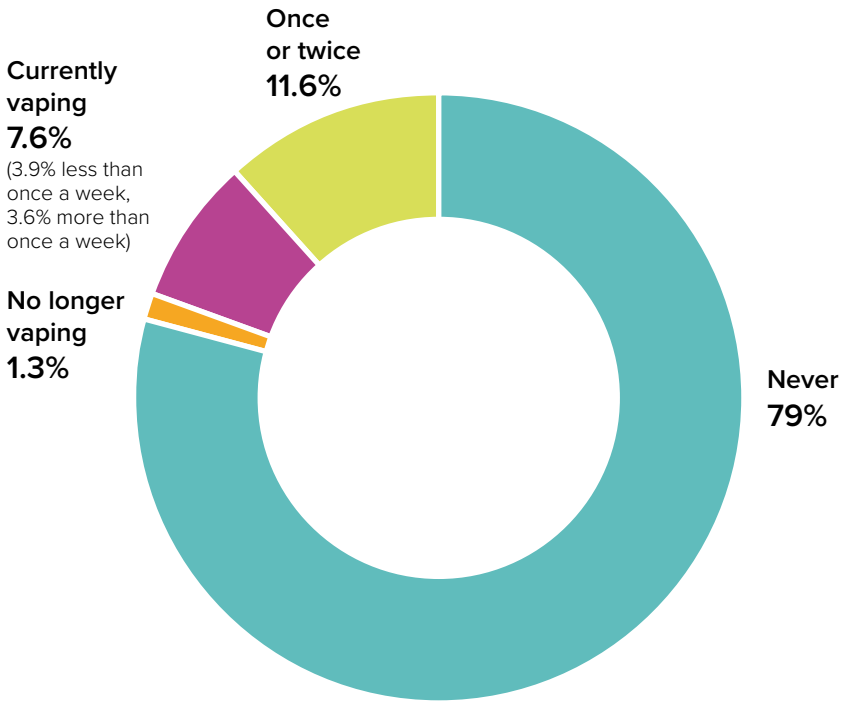
87%
did not smoke

In Wales, 25% of adults over the age of 16 are obese with the percentage of obesity highest for people in middle age[22]. Socio-economic status continues to influence key outcomes. Those in our least deprived areas are more likely to meet the guidelines around physical activity (62%) than those in the most deprived (46%)[23].

The picture remains similar for other unhealthy behaviours. Whilst smoking rates across Wales are now at their lowest level (13% of adults in Wales are smokers), those in the most deprived areas of Wales are more likely to be a smoker (22%) than those in the least deprived areas (5%)[24].

In relation to children and young people, data collected by the School Health Research Network (SHRN) shows that around one in five children (21%) in years 7-11 have ever tried vaping, with 5% using e-cigarettes at least once a week[25].

Figure 2: Tried e-cigarettes (%) in Great Britain



Note: This doesn't include a small percentage categorised as "Don't want to say"

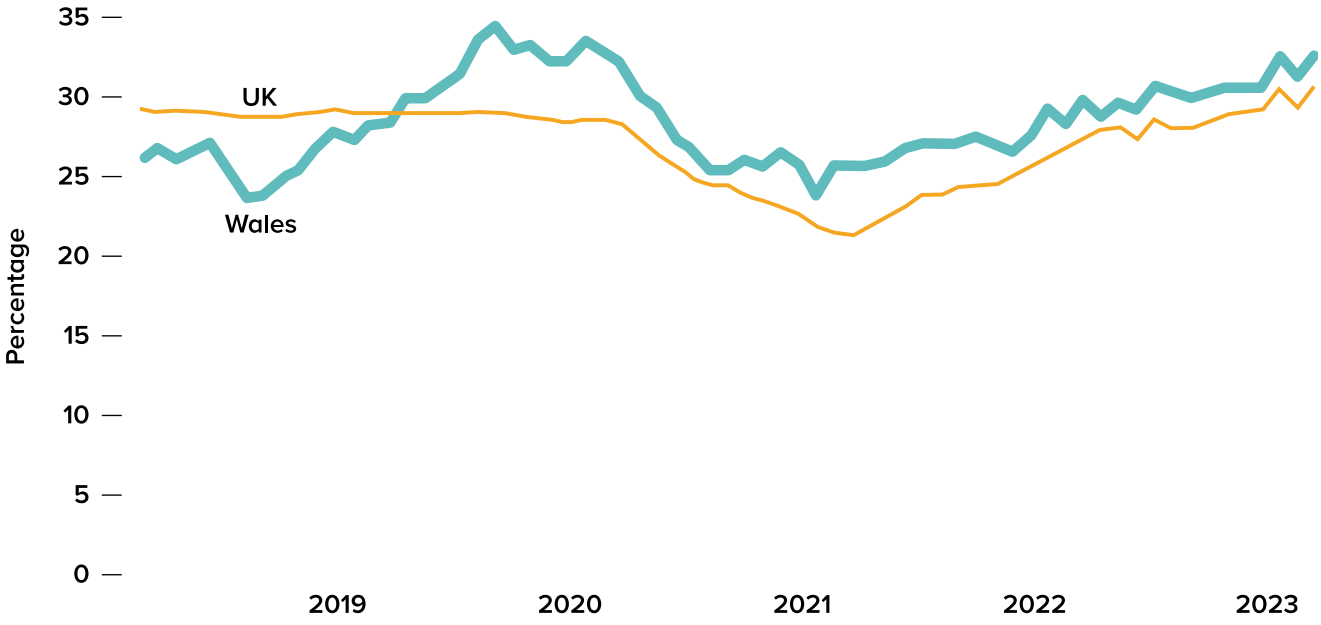
Source: Use of e-cigarettes among young people in Great Britain – Action on Smoking and Health (ASH)..

In 2023, the Action on Smoking and Health (ASH) survey report **Use of e-cigarettes among young people in Great Britain** also showed an increase in vaping among 11 to 17 year olds from 6.9% in 2022 to 7.6% in 2023, although both surveys have shown increasing number of young people experimenting (ever tried or trying with these products once or twice)[26].

Similarly, in the least deprived areas we see greater adoption of guidelines around the consumption of fruit and vegetables (36%) compared with those in the most deprived areas (24%)[27].

In the year to March 2023, nearly 1/3 of the Welsh population (32.1%) ate, on average, less than one portion of fruit and vegetables per day. This includes fruit and vegetables eaten at home, including carry-outs, but excludes any fruit and vegetables eaten outside the home (source: PHW analysis of Kantar Worldpanel Usage Foods data, daily average across 52 weeks ending 19th March 2023).

Figure 3: Population eating less than one portion of fruit and vegetables per day, percentage, persons all ages, Wales and UK, 25 February 2018 to 19 March 2023



Source: PHW analysis of Kantar Worldpanel data.

For alcohol consumption, we see that more people in the least deprived areas drink above the recommended guidelines (16%) than those in the most deprived areas (12%)[28].

However, alcohol-related mortality rates are much higher in the most deprived fifth compared to the least deprived fifth of Wales, despite the opposite relationship for drinking above recommended guidelines.

The percentage of adults in Wales reporting two or more healthy lifestyle behaviours stands at 93% but varies across deprivation quintiles[29].

Chapter 2:

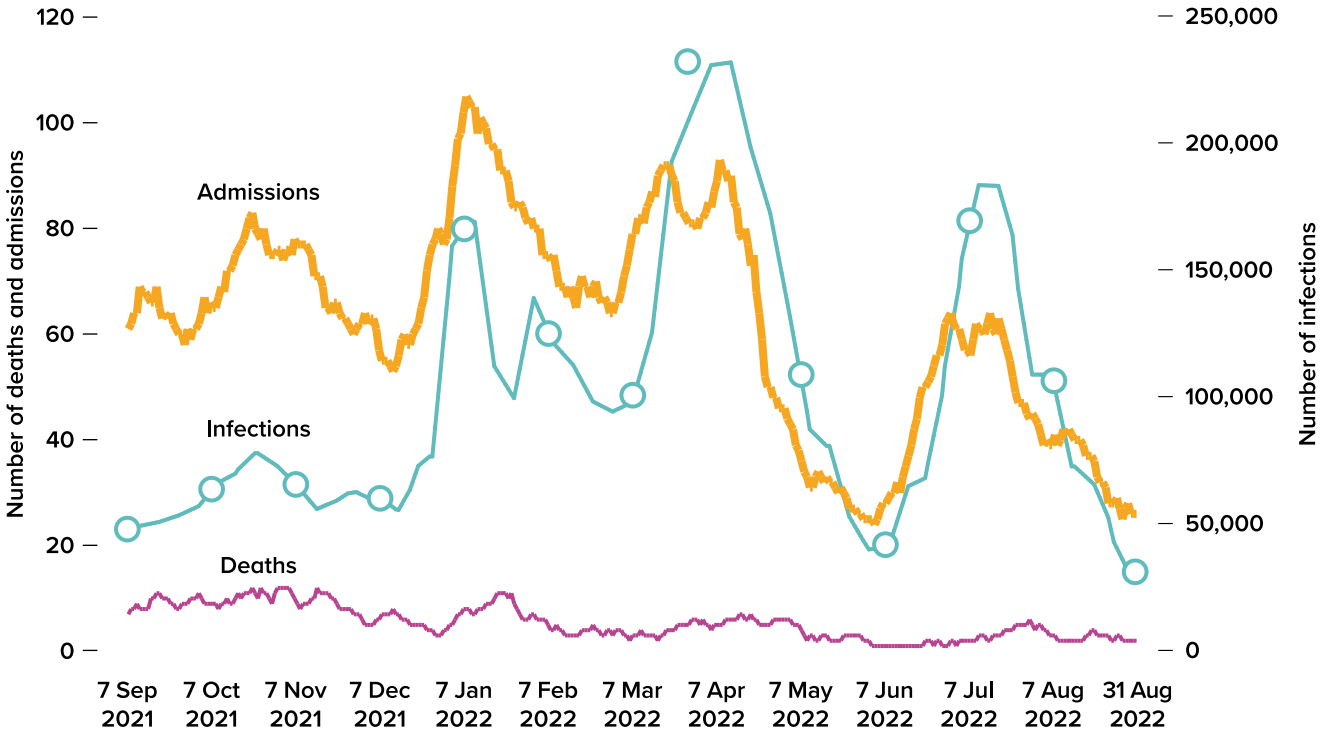
Health and care system resilience

Emerging from the COVID-19 pandemic

In recent years, my reports have focused on COVID-19, our emergency response to the initial outbreak and various stages of the global pandemic. We are moving into the third year since the COVID-19 pandemic arrived in Wales and the future is still difficult to predict.

Winter 2021/22 saw a COVID-19 wave driven by the Omicron variant which was causing a much higher proportion of reinfections than previous variants. However, because of high levels of vaccination, and reduced intrinsic severity of Omicron, the harms associated with this wave were lower than previous waves. Long COVID is a continuing concern, as a high proportion of the population has been infected during 2022.

Figure 4: 7-day rolling average of infections, admissions and deaths in Wales, September 2021 to August 2022



Source: National Influenza and COVID-19 surveillance report Week 39 report.

The Welsh Government's transition plan, **Together for a Safer Future: Wales' long-term COVID-19 transition from pandemic to endemic** was published in March 2022. It set out the principles upon which we would base our continued response to COVID-19, as we looked to the future of living with COVID-19 alongside other infectious diseases.

We removed the remaining legal domestic protections and requirements set out in The Health Protection (Coronavirus Restrictions) (No. 5) (Wales) Regulations 2020 by the end of May 2022. This meant removing the COVID-19 alert levels framework from law as well as the legal requirement to self-isolate.

Together for a safer future set out a transition period that ran until the end of June 2020. However, as we had done throughout the pandemic, we took a cautious and phased approach to scaling back protections. Changes were determined by public health conditions at the time.

In June 2022, the number of infections was rising once again and the Office for National Statistics reported an estimated 1 in 45 people in Wales had COVID-19, as the BA.4 and BA.5 sub-variants became more dominant across the UK. As a result, the decision was taken to extend the testing transition period, meaning free lateral flow tests to symptomatic members of the public, alongside free access to tests for those

visiting vulnerable people, were available until the end of July. By the end of July, the number of infections had fallen again so testing was scaled back to focus on those eligible for COVID-19 treatments, testing under the patient testing framework and testing of health and social care staff.

Over the summer, COVID-19 levels stabilised, and attention turned to preparing for winter. In July, we published our Winter Respiratory Vaccination Strategy, reflecting the advice of the Joint Committee on Vaccination and Immunisation and setting our national expectations and priorities for both the COVID-19 and Influenza vaccination programmes in 2022. In October 2022, we published our 'Winter modelling 2022 to 2023' paper and our 'Public health approach to respiratory viruses including COVID-19 2022 to 2023'. Our planning assumptions for Winter 2022/23 were based on the expectation of a mix of different viruses causing pressures on the NHS and other public services, with a second respiratory syncytial virus wave of 2022 after a small wave in the summer, and influenza increasing.

By November 2022, the BA.5 wave was subsiding but was being replaced by other variants with BQ.1 becoming the most dominant variant in Wales by the end of 2022. There were increases in hospital admissions of suspected and confirmed COVID-19 positive patients at this time, but it was unclear whether this was due to the introduction of new variants or due to changes in behaviour over the festive period. This coincided with a peak in influenza levels and added demand within a pressurised NHS and care system including increased cases of Strep A infections. By the end of January 2023, cases admitted to hospital with COVID-19 had decreased and other indicators were plateauing, but other Omicron variants continued to have an impact on case levels with XBB.1.5 and its sub-lineages dominant by the end of March. The influenza peak in late December/early January decreased quickly and remained stable at low levels or declining in most indicators by the end of March 2023. Surveillance including genomic sequencing to monitor change in variants and vaccination continue to be key components of our response[30].

The risk posed by respiratory viruses are increased in people of any age who have other serious health problems. The probability of severe outcomes increases in individuals with non-communicable diseases including cancer, chronic obstructive pulmonary disease, coronary heart disease, and type 2 diabetes, which are associated with smoking and poor diet. These risk factors are all associated with poverty, which is projected to increase with the cost-of-living crisis examined further in Chapter 5.

COVID-19 has been described as a 'syndemic' where the virus combines with existing patterns of clinical and behavioural risk factors to increase health inequalities[31]. Structural interventions to improve access to healthy foods, reduce smoking prevalence and reduce poverty will make the population more resilient to future health shocks. These interventions are most effective when underpinned by insights from the social and behavioural sciences. Behavioural insights were used to good effect to inform the COVID-19 response and an explanation of this approach is captured on page 46.

To build on the positive work we did together across the health protection system in responding to the pandemic, an independent review was commissioned to help us to learn and improve. This was published in February 2023 with recommendations covering all aspects of system design; governance and accountability; workforce; leadership, collaboration, and communication; intelligence; and horizon

scanning. The reviewers were impressed by the innovation shown in Wales during the pandemic and the way people worked together across organisational boundaries to Keep Wales Safe. An initial implementation plan has been agreed and work is already underway to respond to the recommendations. Agile regional health protection teams have been developed across Wales to support the work to eliminate TB and Hepatitis B and C, and to respond to local needs, outbreaks and future threats. We have also started work to review the Communicable Disease Outbreak Control Plan for Wales and to clarify the roles and responsibilities across the health protection system, to take account of changes in working practices during the pandemic.

Closely connected to this, and again looking to the future, the National Immunisation Framework for Wales, builds on what has worked well over many years in our routine programmes but also identifies and embeds lessons from our world-leading COVID-19 vaccination response. The framework sets out our priorities and expectations for the future of our vaccination services with an emphasis on vaccination equity, with the aim of ensuring nobody is left behind when it comes to the protection afforded by our vaccination programmes, which was a critical element of our COVID-19 approach and on which the NHS in Wales excelled.

COVID-19 and other communicable diseases, some of which have seasonal peaks, continue to impact health and care service delivery and demand across the Health and Social Care system. Services remain severely challenged and the focus is on stabilisation and recovery, against a backdrop of very significant financial constraint and workforce pressures. The concept of winter pressures no longer has the same relevance: maintaining system resilience is a year-round priority.

The 75th anniversary of the NHS is a time to reflect on the sustainability of our NHS and how the vision and delivery of an institution much valued by the public and based on the principle of healthcare free at the point of use will need to evolve. With record levels of demand – the 27 December 2022 was one of the busiest days the NHS in Wales has ever seen – it is clear that the service established by Aneurin Bevan in 1948 is operating in a dramatically different context.

Wales has an ageing population with increasingly complex health and social care needs. This will place more demand on public services in the medium and longer term, as a higher proportion of people experience chronic health conditions and multi-morbidities, with rising cost and resource pressures. Based on current trajectories for example, the numbers of people diagnosed with cancer in Wales will rise from the almost 20,000 diagnosed per year between 2017-19 to almost 25,000 by 2040 and the number of stroke survivors is expected to increase by 50% during the next 20 years. More than 200,000 people in Wales, approximately 7% of the population, are known to have a form of diabetes (including around 16,000 cases of type 1 diabetes). The prevalence is rising, and it is expected to reach 10% of the population by 2035. People living with frailty will increase particularly in the oldest age groups (between 25% and 50% for those aged 85 years old). Older people living with mild, moderate, or severe frailty are more likely to access emergency secondary care and experience delayed transfers of care. Mental health challenges including dementia are also predicted to increase.

During the pandemic there was a rapid shift towards the remote delivery of care through online technologies and tools such as the use of AI in diagnostic testing or wearables in behaviour change. Continued technological and scientific

innovation will influence care and how it is delivered but it is not a panacea as digital access, skills and training for staff and patients will need to be considered in tandem with innovation.

The NHS estate has an important role to play in our health system's efforts to become more sustainable and reduce our carbon emissions. In Wales, 61% of the estate was built before 1995 and maintenance estimates have, for the first time, exceeded £1 billion pounds. Capital investment of this size will need to be prioritised if we are to maintain and ensure business continuity and statutory compliance however it is clear that in the future, we will need to facilitate more patients being treated outside of the acute hospital setting.

There are nearly 20,000 more staff directly employed in the NHS in Wales now than 10 years ago, however workforce supply challenges are expected to continue as demand rises. Labour shortages are the biggest single challenge facing the NHS and adult social care in the UK and we will need to radically re-think how the workforce is recruited and retained for the future. The World Health Organization state that six million more nurses will be needed globally by 2030 to deliver the high standards of healthcare needed. Most will be needed in middle and low-income nations but some in developed countries as those currently working in the profession grow older[32]. The role of the patient will also need to change, with greater emphasis on self-care and prevention so that people manage and take control of their own physical and mental wellbeing. However, we cannot focus on individual responsibility alone. As outlined in this report, population health is determined by so many factors outside of the control of individuals. It is crucial that we continue to support evidence-based population health interventions which target prevention activity to better support people to stay healthy, provide a supportive environment and reduce health inequalities across entire populations.

As a strategic framework 'A Healthier Wales' remains our relevant route map for improving health and social care in Wales. Published in 2018, the actions were refreshed in 2021 to ensure that they were valid and that the issues brought to the forefront by the pandemic were addressed.

In line with the transformation requirements set out in A Healthier Wales, local health board and local authorities, services are changing, with many service developments and innovations accelerated by the context of the pandemic. To cite some recent examples:

- Within **dentistry**, some infection control measures remain as part of the approach to managing respiratory infections. These are implemented alongside the adoption of a new model of working, focused on prevention and needs-based care that will create the capacity needed to deliver more access for new patients. During 2022/23 almost 183,000 new patients gained access to a NHS dentist in Wales (17.2% of all patients treated in the year) and, overall, over one million people received NHS dental care through the general dental service, with nearly 1.4 million courses of treatment delivered. In the 24-month period ending March 2023, more than 1.3 million patients received NHS dental care through the general dental service.
- **Optometry** service recovery has worked well, with levels of service returning to pre-COVID-19 levels. An ambitious programme of reform is underway to introduce new contracted terms of service, which will introduce more patient pathways, shifting services from secondary care out into the community.
- **Community pharmacies** have embraced new ways of working to prevent pharmacy closures and ensure continued access to medicines. Following the significant reforms to the Community Pharmacy Contractual Framework introduced 1 April, 707 pharmacies (99% of all pharmacies in Wales) have been providing treatment for common minor ailments, access to repeat medicines in an emergency, annual flu vaccinations, and some forms of emergency and regular contraception as part of the Clinical Community Pharmacy Service (CCPS). The number of consultations delivered under the common ailments service alone has almost doubled from November 2021 (9,065) to November 2022 (17,813). In addition, as part of the new contract, all pharmacies have been enabled to provide a new National Independent Prescribing Service where a suitably qualified and competent pharmacist independent prescriber is available; this is the UK's first nationally commissioned community pharmacy prescribing service. The number of consultations delivered by Pharmacist Independent Prescribers in the community during November 2022 has increased by 210% compared to November 2021 (3,958 consultations versus 1,275 consultations).
- New ways of working have been introduced for **audiology** across Primary Care Clusters. An innovative programme of reform is underway to introduce more patient pathways and direct access, shifting services from secondary care out into the community. Advanced Audiology Practitioners are working to embed the changes and new ways of working have already been introduced in some areas.
- **'Transforming and modernising planned care and reducing waiting lists'**, published on 26 April 2022, outlined a number of milestones to ultimately achieve the national commitment to remove the backlog of waits in **planned care**. While there were continued improvements from March 2022 to March 2023, with a 55% fall in waits over 104 weeks, recovery remains very challenging indeed. The pace of delivery combined with the need to transform services and pathways remains a priority area for Welsh Government.

- **Cancer**: Cancer delivery against the target has been challenging despite clinical priority being given for the use of planned care activity. Demand has continued to grow. The number of new suspected cancer pathways opened in March 23 was 10.5% higher than March 2022. Through a Ministerial summit each health board has been clear on their plans to improve delivery.
- **Urgent & Emergency Care**: It has remained a remarkably challenging time for urgent and emergency care staff and services. The winter showed record levels of demand and high levels of risk across the system. However, timely access and safe care is still being evidenced through:
  - With the exception of December 2022, when levels of demand reached the highest levels ever recorded, the average ambulance response time to 'red calls' (the most urgent life threatening calls) remained under 8 minutes 25 seconds.
  - Around 80% of red calls receiving a response within 15 minutes.
  - Average time in an Emergency Department before triage is usually less than 23 minutes; and
  - Following this, the average time before assessment by a senior decision maker is just over 90 minutes[33].

  The six goals for urgent and emergency care national programme (launched in April 2022) has made progress increasing access to urgent primary care centres (UPCC) and same day emergency care (SDEC) services in year one:
  - UPCCs are now seeing an average of 10,000 patients per month.
  - SDEC services are treating and discharging around 4,500 patients per month.
- **Mental Health**: The most notable service development in mental health has been the implementation of the 111 press 2 for urgent mental health support service. All health boards have established the service. This represents a significant service transformation to improve access to mental health advice, support, and referral into specialist support if required.
- **Social Care**: Adult social care remains under significant pressure. Providers describe extremely difficult trading conditions because of the rising cost of staff and consumable resources. As with many employment sectors, social care is struggling to recruit staff. This is despite the recent Welsh Government budget providing resources to local authorities to ensure that all social care staff are paid to at least the level of the Real Living Wage in 2023 (at £10.90 per hour). The Social Care Fare Work Forum has produced a draft pay and progression framework for the sector. This will be non-binding to employers but is a first step consistent with the commitment to create, in the long-term, a National Care and Support Service for Wales. Wider plans to work towards this aspiration of the National Care and Support Service are being progressed through the Cooperation Agreement mechanism. The Minister has recently launched a consultation on a package of 'Rebalancing Care and Support' reforms to provide a stronger guiding hand on commissioning practice, and national oversight through the establishment of a National Office for Social Care.

Service re-configuration is key to transformation and sustainability. Clear pathway design for elective, emergency, and care for older people and those living with frailty should be prioritised with an emphasis placed on anticipatory approaches, upstream prevention, primary, community and social care. Local authorities and local health boards will need to work together to integrate and co-ordinate these services to meet individual needs and make the best use of resources.

We no longer live in a world which the NHS was originally designed for. People live longer, medicine can do much more, and technology is transforming the way we live. Our lifestyles and our expectations have changed. We need a deep understanding of these factors in order to build and sustain a modern health and social care system that meets the needs of the Welsh population in the future.

In April 2023, a number of important milestones were achieved that will help our understanding of current challenges and future needs.

- The new NHS Executive was established. The result is the creation of a hybrid body that brings capacity and capability together to provide a 'central guiding hand' to the NHS, supported by streamlined and strengthened accountability, governance, planning and performance management arrangements. The focus now is on agreeing a work plan in response to the Welsh Government mandate and remit letter, and upon embedding new ways of working.
- The introduction of Duty of Quality and Duty of Candour to support an ongoing system-wide approach to quality improvement within the NHS and further embed a culture of openness and transparency. The Duty of Quality applies to all NHS bodies and Welsh Ministers, for health-related functions and includes new Health and Care Quality Standards; and
- The establishment of the new Citizen's Voice Body, Llais, is another major step towards the integration of health and social care services. Llais will represent the views and experiences of people using services which are often so closely intertwined in people's care.

Recommendations

- **Welsh Government should continue to reform our health and care system in line with the ambition set out in our strategic framework "A Healthier Wales".**
- **Despite the intensity of immediate system pressures, an ongoing focus on service re-configuration is critical for long term sustainability. All partners should deliver at pace pathway redesign for planned and unscheduled care with an emphasis on upstream prevention. There should be particular focus on older people, those living with frailty and those with co-morbidities, so that people get the right care at the right time in the right place.**
- **Attention should be given to shaping and articulating our ambitions for the health and care system for future generations, based on honest dialogue with the public about what the NHS can and cannot do. This must be informed by a deep understanding of the current challenges and future demand projections.**

Chapter 3:

Determining our health

I would like to extend my thanks to those who have made expert contributions to this chapter: Professor Robert West, Professor Linda Bauld, Professor Tracy Daszkiewicz, Dr Julie Bishop, and Ashley Gould.

Introduction

The social determinants of health are the non-medical factors that influence health outcomes; factors including where someone is born and grows up, lives, and works and what kind of healthcare they have access to, will have an impact on their health. The World Health Organisation (WHO) describe how these social determinants are, in turn, impacted by wider factors, such as economics, social policy and politics. Crucially, they also point to the impact that commercial determinants have on health[34].

The WHO define commercial determinants as

> **'The conditions, actions, and omissions by corporate actors that affect health. Commercial determinants arise in the context of the provision of goods or services for payment and include commercial activities, as well as the environment in which commerce takes place. They can have beneficial or detrimental impacts on health.**[35]**'**

We therefore need to recognise how national and multi-national organisations are shaping the environments we work, play, live and learn in, in both a positive and negative way.

High population consumption or use of products such as tobacco, alcohol, unhealthy food and drink and gambling is often less about individual 'choices' and more as a result of the strategies used by large companies who produce, market, distribute, or sell these products[36].

The techniques that large companies use to drive sales and consumption are often described as the 'marketing mix': price, place, product, and promotion[37,38]. For example, if people have a limited budget as is the case for many in Wales today, then making unhealthy food and drink products as cheap as possible will increase their consumption. Companies can also target where they sell their products to reach as many people as possible who will consume them, meaning we have seen an increasing density of gambling, fast food and alcohol outlets in more deprived areas. Sales are accompanied by marketing – including advertising and promotion – which shapes people's choices both directly and indirectly through making consumption of these products normal and expected.

In March of this year **The Lancet** published a series of articles on the Commercial Determinants of Health. The findings are startling: four industries (tobacco, unhealthy food, fossil fuel, and alcohol) are responsible for at least a third of global deaths per year. The series outlines where commercial actors play a vital role but also points to commercial practices and products which have an increasingly negative impact on human and planetary health and equity. Dr Tedros Ghebreyesus – Director General, WHO states "It is time for a paradigm shift. Public health cannot and will not improve without action on the commercial determinants of health, from the local to global level. New forms of public health governance are needed."

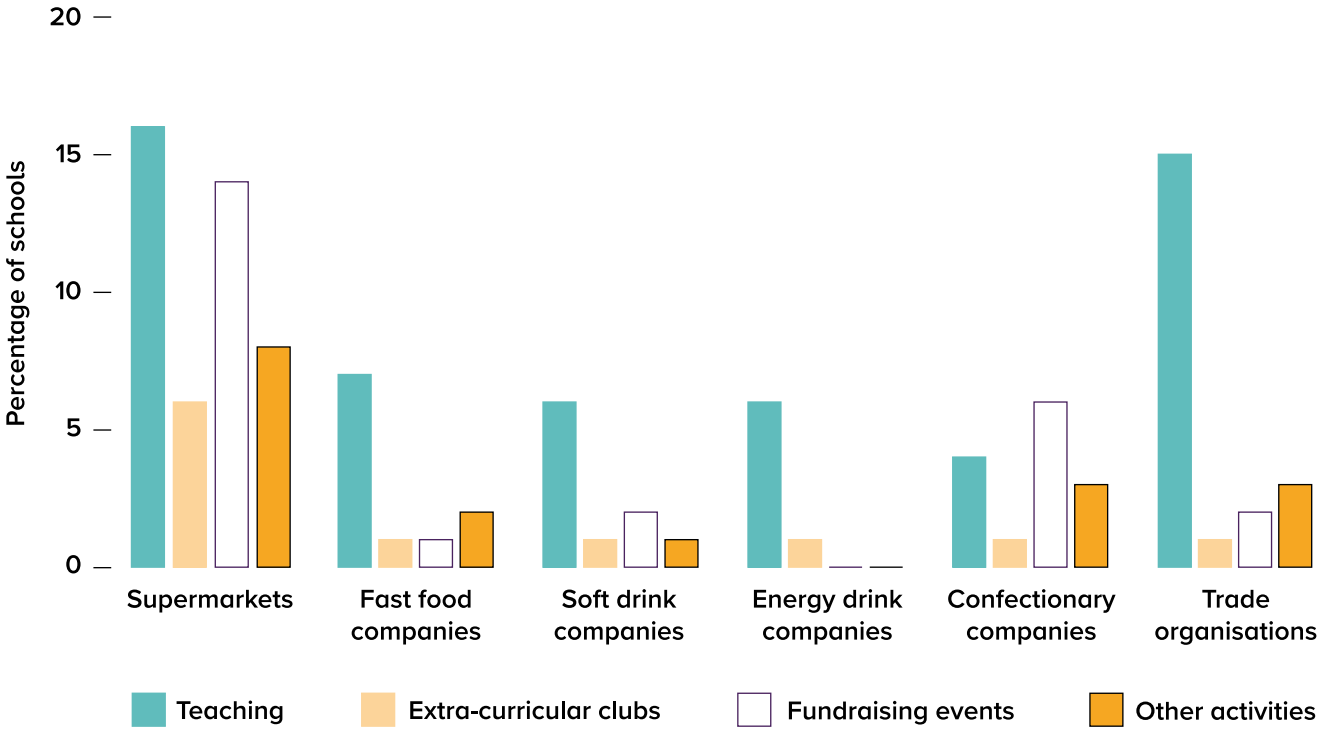
Targeting schools

One strategy commonly used by the food, alcohol, and gambling industries in marketing unhealthy products has been to fund education programmes in schools. These approaches have been criticised for a number of reasons partly because they tend to reinforce the role of the individual rather than the role of the industry as the cause of the problem and present the industry in a positive light. Concerns have also been raised about the content of industry sponsored material.

Wales has adopted a new curriculum, which for the first time recognises health and wellbeing as an equal element of the curriculum alongside traditional academic subjects and sets out one of the core purposes of education to create 'healthy and confident individuals.' Schools across Wales are embarking on the implementation of this new curriculum and the Health and Wellbeing Area of Learning and Experience is one of the most challenging because schools do not have subject experts in this field as they do in maths, history, or science. This means that our schools are particularly vulnerable to the influence of industry sponsored materials which can appear to be the solution in a pressured classroom. These are usually free of charge which can also be a factor. In a more positive development, the Welsh Government also invests in the Wales Police Schools Programme, with match funding provided by the four Police Forces. The programme delivers education in schools on substance misuse and also wider community and personal safety issues at all key stages of the curriculum amongst a range of other lessons.

The School Health Research Network[39] undertakes surveys of pupil health and wellbeing and regularly gathers evidence about the school environment, including policies and practices, relevant to health.

Figure 5: Schools reporting that they use commercially sponsored materials from named organisations for teaching or other activities at school (SHRN School Environment Questionnaire 2022)

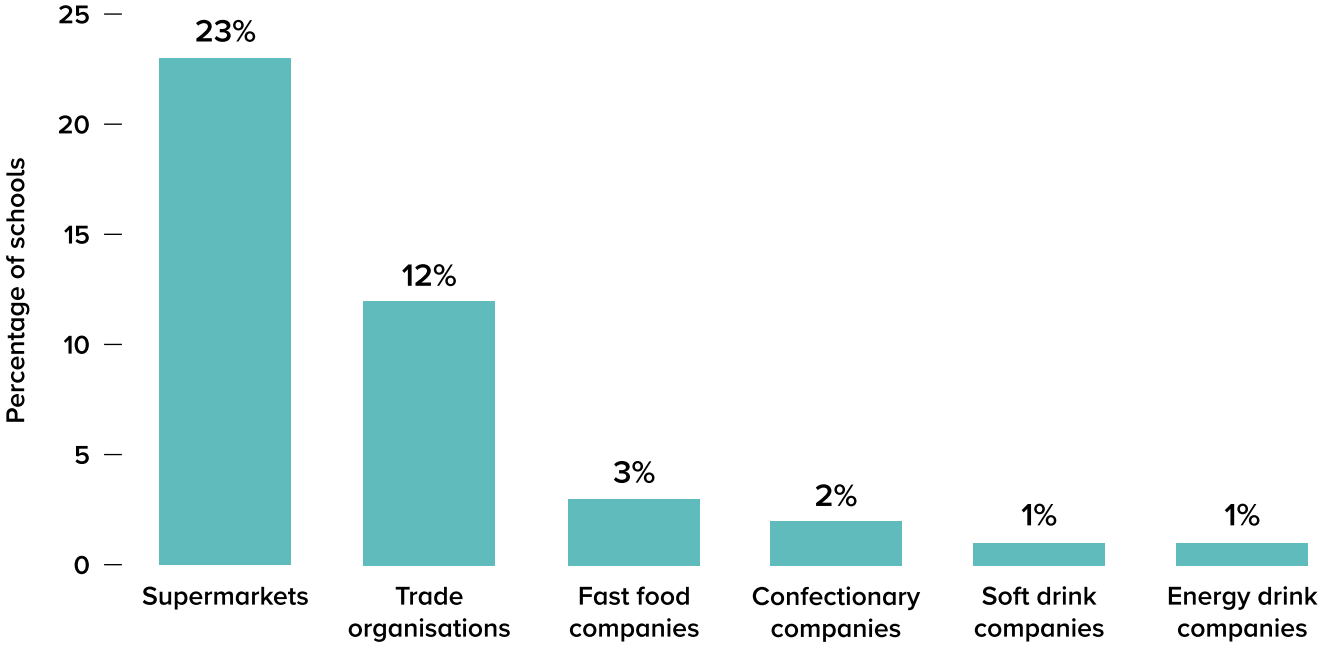


Source: SHRN School Environment Questionnaire 2022.

In the last School Environment Survey[40] 16% of schools completing the survey reported that they used commercially sponsored materials from supermarket and 15% from trade organisations for teaching of food and nutrition (Figure 5).

Information is not available about other areas such as gambling or alcohol. The survey also found that many schools invite companies into school or arrange visits from these same companies (Figure 6).

Figure 6: Does your school invite in representatives from or take students to visit any of the following?



Q68 Does your school invite representatives from or take students to visit any of the following?

Base: All school respondents that engage with at least one organisation, excluding 'Don't know' responses (168).

Schools and the alcohol industry

Researchers interested in the Commercial Determinants of Health have explored how the alcohol industry works with schools and the possible impact alcohol sponsored materials may have[41]. They looked in detail at three school-based youth education initiatives which focus on alcohol consumption and health harms: Drinkaware for Education, The Smashed Project (funded by Diageo), and Talk About Alcohol (Alcohol Education Trust). As is often the case, these are provided to schools through an intermediary body funded by the industry.

The researchers found that the materials all presented use of alcohol and alcohol related harm as a matter of personal responsibility, about making poor choices, or being influenced by peers rather than acknowledging the role of alcohol industry for example through advertising. There are challenges around how alcohol is portrayed as 'a 'normal' adult consumer product which children must learn about and master how to use responsibly when older. This contrasts with a growing recognition internationally of the harm from alcohol with the World Health Organisation issuing a statement in January this year in which it states that 'when it comes to alcohol consumption there is no safe amount that does not affect health'[42]. The United Kingdom Chief Medical Officers Guidelines produced in 2016 reflected this principle in talking about 'Low Risk Drinking Guidelines'.

Shifting how we see alcohol in a country where drinking alcohol is part of day-to-day life is challenging but ensuring that children receive accurate information when they are in their most formative years should be a key part of that process. There are examples internationally where this has been proactively tackled. In a recent Lancet Public Health Comment[43] piece, the example of the Irish Government was cited. On the 9th December 2022, the Irish Department of Education and Health Service Executive issued a formal letter to all schools explicitly warning them against using materials funded by the alcohol industry and went on to state: "In the same way, these guidelines apply in regard to resources funded by other industry sectors where there is a potential conflict of interest".

Common industry tactics

The tactics used by the commodity industries have evolved over time as the social, commercial, technological, and political environments have changed with a number of themes being identified. The overall aim for companies has been to expand their markets and profitability despite concerns about the harm caused by their products. They have used a wide variety of methods to achieve their objectives.

Tobacco

Smoking is extremely damaging to health and wellbeing. The reasons why people take up smoking and continue to smoke are complex. Whilst around 13% of people in Wales are smokers, we know that those living in our more deprived communities are much more likely to smoke than those in the least deprived areas. It is the cause of death for around half of all long-term smokers and the World Health Organisation (WHO) estimates that tobacco kills more than 8 million people each year worldwide. In Wales, we know that smoking is a leading cause of preventable death, and in 2018, around 5,600 deaths in people aged 35 and over were attributable to smoking. Treating smoking related diseases also has major economic impacts, costing the NHS in Wales an estimated £302 million per year. Smoking is also known to increase people's risk of developing a wide range of illnesses, which can be fatal or cause irreversible long-term damage to health. These include cancers, respiratory diseases, and cardio-vascular diseases, including strokes, heart attacks and dementia. Smoking-related illnesses also lead to a large number of hospital admissions. In 2018/19, around 28,000 admissions in people aged 35 and over are estimated to be attributable to smoking, which represents around 4.6 percent of all admissions in this age group. In July 2022, the Welsh Government published a new Tobacco strategy **A smoke-free Wales** where it set out an ambition for Wales to become smoke-free by 2030. Reducing tobacco smoking prevalence to below 5% will be a key milestone in eradicating the harm caused by tobacco. It will not only improve lives by preventing smoking related illnesses and deaths, but it will support a healthier, more equal society for all. From a health perspective there is no 'good side' to smoking.

Tobacco industry tactics

The tobacco industry has been responsible for more than 100 million premature deaths worldwide[44]. Most of these have occurred since it was clearly established that tobacco was lethal around 60 years ago. One might imagine that the discovery would have led to steps to close down the business or diversify it away from tobacco, but its revenues are greater than ever[45] and it is still one of the most profitable sectors for investors[46]. This raises the question: how has the tobacco industry been allowed to thrive for six decades since it was discovered that its products were lethal? The answer can be found in a combination of tobacco industry tactics and complicity or complacency on the part of policymakers as set out in Table 1.

Table 1: Tobacco industry tactics to expand markets and profitability in the face of concern over harmfulness of their products

Tobacco industry tactic	Purpose
Propaganda	To deny or minimise the harmfulness of their products, promote ideas about the benefits of their business to the economy and oppose effective tobacco control measures
Product modification	To make their products seem less harmful even if they are not
Front organisations, alliances and sponsorship	To legitimise their business
Incentivising decision makers	To garner the support of decision-makers and people and organisations with influence
Influencing science	To undermine findings on tobacco-related harm
Infiltration of organisations involved in tobacco control	To head off or mitigate regulation that would restrict their activities
Trading practices and pricing policies	To undermine the impact of excise duty
Threats and legal action	To deter and neutralise opponents
Aggressive marketing tactics	To expand sales in countries with relatively weak tobacco control infrastructure to compensate for reductions in markets with stronger tobacco control measures

The following paragraphs elaborate on how each of the tactics has been used.

Propaganda

Since evidence that tobacco smoking caused lung cancer first emerged, the tobacco industry has been using a range of propaganda techniques to cast doubt on the evidence and when this has become untenable to minimise its significance[47]. A similar approach was adopted when it was found that tobacco products were addictive[48]. One propaganda technique has been to solicit support from a few willing scientists which allowed them to falsely claim that scientific opinion is divided[49].

The tobacco industry has been successful in persuading policymakers that it is an important net contributor to economies when in fact economic analyses have shown convincingly that the costs to most economies in terms of lost productivity and healthcare outweigh the supposed gains in terms of employment[50,51].

The tobacco industry has also put huge resources into fighting tobacco control measures that would restrict their activities and market potential. The arguments have tended to involve claims that the measures would be ineffective or disproportionate and that they infringe on individual freedoms[52].

Perhaps the biggest triumph of tobacco industry propaganda is that banning the sale of tobacco products remains 'unthinkable' in policy circles despite that fact that there are no other products with anything like that level of toxicity that are permitted to be sold.

Product modification

Tobacco companies developed filter tipped and ventilated cigarettes that appeared to deliver less tar than other brands, leading smokers to believe that they were smoking less harmful products[53]. It became apparent relatively rapidly that the products remained extremely harmful because smokers smoked them more intensively in order to maintain their levels of nicotine intake[54]. Even when tobacco companies were banned from making explicit claims about safer cigarettes, they used branding devices such as pack colour to create an impression in smokers' minds that the products were safer[55]. It is also argued that tobacco companies continue to use similar tactics with other tobacco products such as those that are heated rather than burned.[56]

Front organisations, alliances, and sponsorship

The tobacco industry has spawned a large number of what may be termed 'front organisations' that pursue tobacco company interests and receive direct or indirect funding from the industry but purport to be 'independent' from it[57]. It has also forged alliances with organisations that have shared interests such as tobacco retailers and the hospitality industry[58]. This has allowed it to have a voice in policy forums that would otherwise be closed to it. In addition, the tobacco industry has engaged in extensive sponsorship of sports, the arts and charitable organisations[59] enabling the industry to appear to act as a legitimate and ethically acceptable business.

Incentivising decision makers

There is compelling evidence that policymakers have been incentivised to promote tobacco company interests with consultancy fees and directorships and, in some cases, this has apparently even extended to bribes[60].

Influencing science

Tobacco companies have overtly and covertly funded scientists to conduct research favourable to their interests and challenge findings on tobacco-related harm[61].

Infiltration of organisations involved in tobacco control

The tobacco industry appears to have on occasions been successful in securing representation, either covert or overt, on bodies tasked with producing tobacco control recommendations, both nationally and internationally[62]. In some cases this may have been facilitated by the fact that tobacco companies have been state owned[63].

Trading practices and pricing policies

One of the major threats to tobacco industry sales is increases in excise duty. Tobacco companies fight proposals for such increases with claims about 'black markets' and tobacco smuggling but the evidence indicates that the major threats to the effectiveness of increasing excise duty in reducing tobacco use comes from the industry itself. Companies have found ways of supporting the illicit importing of tobacco products into high tax countries by creating huge oversupply in nearby countries with low tax regimes[64]. They have also adopted pricing policies that allow smokers easily to 'trade down' to cheaper brands and so mitigate the cost of tax increases[65,66].

Threats and legal action

Tobacco control advocates and scientists have frequently suffered personal attacks and threats of litigation from tobacco companies[67]. This serves partly to tie them up in responding to these threats and make their lives extremely difficult, and partly to deter others from adopting strong anti-tobacco stances. The tobacco industry has also engaged in very aggressive litigation against jurisdictions that have attempted to introduce tobacco control measures[68].

Aggressive marketing tactics in emerging markets

As tobacco sales have declined in some countries because of restrictions on their activities, tobacco companies have switched their attention to emerging markets[69]. It is in the global south that we are now seeing the greatest growth in tobacco sales and there is potential for even greater growth, especially given that tobacco use remains rare among women in countries such as India and China.

The tobacco industry is thriving globally despite efforts by the public health community to curtail it. While sales are declining in some countries, this is being offset by increases in others. Tobacco industry tactics have, to that extent, been successful in preventing stricter and more effective measures to control their operations.

Regulation of tobacco

Wales has often been at the leading edge of tobacco regulation. On the 2nd April 2007, legislation was introduced to save lives and prevent diseases caused by second-hand smoke by prohibiting smoking in 'enclosed' or 'substantially enclosed' public places, including workplaces. We built upon these 2007 laws by introducing legislation in 2021 which made certain public places, including hospital grounds, school grounds and public playgrounds smoke-free. Not only does this protect children and young people from second-hand smoke in the areas where they spend much of their time, this legislation aims to de-normalise smoking so that this is no longer seen as a normal adult behaviour as we move closer towards eradicating smoking from our society.

Whilst government regulation in this area can and does have a significant impact, the tobacco industry continues to look to protect its market by developing new tobacco and nicotine containing products. Heated tobacco, which heats the tobacco to temperatures less than conventional cigarettes, releasing an aerosol that is inhaled, is one area where the tobacco industry has diversified. However, their tactics in attempting to create a new generation of people addicted to nicotine is most starkly seen in e-cigarettes.

Vaping

E-cigarettes or vapes were introduced to the UK in 2005, although widespread use wasn't really seen before 2009, when these products gained prominence as a weapon to reduce tobacco use since nicotine replacement therapy was developed. By 2010, the popularity of the e-cigarette was widespread and additional brands started to appear.

Activities around the use of e-cigarettes further increased through industry promoted events on social media, like Vapemeets and Vapefests. In 2015, Public Health England published their findings that e-cigarettes were 'around 95% less harmful than tobacco'.[70] However, vaping is not harm-free, and marketing often fails to highlight that these still contain nicotine, which is the same addictive substance in tobacco. The use of vapes is also habit forming, in exactly the same way as smoking a cigarette is. In addition to this, the vapes themselves have been found to contain toxins and a recent investigation undertaken by the BBC found "more than twice the daily safe amount of lead and nine times the safe amount of nickel" was identified in illegal vapes confiscated from school pupils.[71]

We therefore now have an environment where vape shops are common on our high streets. Whilst there may be a place for vapes as a tool to tackle tobacco smoking, the bright colours and fun flavours are a real draw to younger age groups. In as much as tobacco is hidden behind screens and plain packaging in supermarkets, the opposite is true for vape products, with often front of counter promotions and products placed throughout stores. Whilst these products are subject to age of sale restrictions, with the age set at 18, just like for tobacco and alcohol; marketing, illegal sales, and illegal products, along with online availability means that these products have become a common sight in schools across Wales and we know that 20% of young people have tried an e-cigarette. Even more concerning is the anecdotal evidence that some young people are becoming addicted to the nicotine in these products. Whilst it is true that these products are still relatively new and the long-term impact of their use is still developing, it is clear that caution must be taken in order to protect children and young

people and non-smokers. We face a real danger in the UK of creating a new generation of nicotine-addicted young people unless we take urgent action. Internationally more and more countries are taking a preventive approach to e-cigarettes, such as in Australia, where they will soon be unavailable in retail settings (and so only available on prescription for support tobacco cessation) effectively preventing their inappropriate use.

We must therefore make sure that we learn from our experience with tobacco and ensure we work as hard as possible to prevent the use and uptake of e-cigarettes by children and young people. I am however pleased that we in Wales have developed clear guidance for teachers and school leaders about the use of e-cigarettes in schools and that we are working to fully support people who are addicted to nicotine to quit, whether it be by tobacco or vapes.

I also want Wales to continue to be at the forefront of tackling tobacco use in our public places by looking at the other areas where we prohibit tobacco smoking. We already see some local authorities enforcing bans on public beaches, and I would like to see an ambition to look at banning smoking in outdoor settings like bars and restaurants as well so that we can support people in Wales – most of whom are non-smokers – to enjoy these environments in a smoke-free way.

Food and drink

The increase in the numbers of overweight and obese people is a global issue. Where this was once considered a problem only in high-income countries, overweight and obesity are now dramatically on the rise in low- and middle-income countries[72], particularly in urban settings. In Wales we now have over 60% of the population and nearly one in three of our children starting primary school overweight or obese[73]. We know that obesity and overweight tracks from children into adulthood and is associated with many physical and mental health problems across our life course.

The factors to overcome these issues are multi-faceted, complex and will require long-term, sustainable solutions. Overweight and obesity are associated with non-communicable diseases (NCDs) for example, hypertension, type 2 diabetes, certain cancers, and cardiovascular diseases. The rise in non-communicable disease is being fuelled by a global economic system that currently prioritises wealth creation over health creation. This means the sustainability of our health and social care system is hugely threatened by increasing obesity rates and we must consider solutions which will help to turn the dial.

Our food and drink environment

The food environment shapes our everyday choices, and the availability, cultural desirability, and prices of products can shape what we consume. The food industry influence can be exerted through four main channels[74]:

- marketing, which enhances the desirability and acceptability of unhealthy commodities;
- lobbying, which can impede policy barriers such as plain packaging and minimum drinking ages;
- corporate social responsibility strategies, which can deflect attention and whitewash tarnished reputations; and
- extensive supply chains, which amplify company influence around the globe.

For example, companies can choose to produce, price-set and aggressively market products such as ultra-processed foods, sugar-sweetened beverages, and alcohol, leading to increased risk of obesity and non-communicable diseases[75].

We know that pricing and advertising strategies impact upon communities where there are higher levels of deprivation and promotions contribute significantly to growing inequity gaps. The impact of shifting eating and drinking habits during the pandemic and the current impact of cost of living should redouble our efforts to ensure that people have access to healthier diets. Yet we still see promotions in our stores which encourage purchasing of products which are bad for our health and make us reliant on fat, salt and sugary based products.

We know that young people are especially at risk of being influenced by advertisements and celebrity promotion of material. For example, energy drinks, which have high levels of caffeine and sugar are associated with a range of adverse outcomes and risky behaviours. However, research has found that energy drinks are often marketed[76] on gaming sites and linked to sports and an athletic lifestyle, and are particularly aimed at younger males. Taste, price, promotion, ease of access and peer influences were all identified as key factors in young people's consumption choices. We have seen some supermarkets who have taken voluntary measures to restrict the sale of energy drinks to children, yet the environment is hugely complex and is an example where government intervention is required. In Wales, we are aiming to act through our Healthy Food Environment[77] and proposals to end the sale of Energy Drinks to children[78].

Evolution of the food industry

The food industry has grown at a rapid rate which has evolved a food culture and the way we shop towards promoting quick and easy options, many of which are fundamentally bad for our health. The evolution of food choices and wider digital outlets has not been necessarily demand led, the market has led these changes and consumers have responded.

Furthermore, there has been a growth of ultra-processed foods[79], which usually contain ingredients that you would not add when cooking homemade food. These can include chemicals, colourings, sweeteners, and preservatives. Many of these are not just commonly high in salt, fat and sugar but are very frequently less satiating than unprocessed foods, causing us to overeat.

Alcohol

The evolution of shopping has also changed the way we access alcohol and the shift from drinking out to drinking in. In living history, alcohol has become more available because of the huge growth in the number of supermarkets which sell alcohol, an increasingly liberal regime for off-license sales, and a more liberal on-license regime.

So, whilst we have legislation in place to limit the number of over-the-counter pain relief that can be purchased in a single sale, we have no limits on alcohol purchasing, other than proof of age.

Alcohol harm is widespread, it impacts on every aspect of society and is a causal link to other harms such as domestic abuse, poor mental health, homelessness, lost workdays, dependency, and addiction. Despite this, alcohol is one of the most normalised harms in the developed world. It is often viewed as an individual behavioural issue; but this is not the case. Alcohol related harms are the result of the policy, social and economic contexts in which they exist.

During the past 20 years as well as 24-hour licensing, spirit duty has been frozen for periods of time, both of which making access to alcohol easier. Minimum Unit Price (MUP), introduced in Wales in 2020, is a measure designed to tackle this issue. The intended effect of this legislation is to tackle alcohol-related harm, including alcohol-attributable hospital admissions and alcohol-specific deaths in Wales, by reducing alcohol consumption in hazardous and harmful drinkers. Prior to implementation of MUP, we worked closely with retailers, the alcohol industry, public health, and substance misuse stakeholders to develop guidance and additional supporting materials. We need to build on this intervention by doing more to draw attention to the harms of alcohol and mitigate the aspirational lifestyles promoted through the consumption of alcohol.

The use and consumption of alcohol is so normalised that people do not see the risk associated with its use, and for most people a drink every evening does not leave them feeling drunk or result in a hangover, so the harms are often ignored. The risks and creep of effects are real and functional dependency is a problem whether acknowledged or not.

Much of the normalisation of alcohol consumption is driven by marketing and how industry creates biases that influence our behaviour, Pettigrew et al describes this as Dark Nudges and Sludge. “Nudges steer people toward certain options but also allow them to go their own way. “Dark nudges” aim to change consumer behaviour against their best interests. “Sludge” uses cognitive biases to make behaviour change more difficult.[80]

This research identifies dark nudges and sludge in alcohol industry corporate social responsibility materials. These undermine the information on alcohol harms that they disseminate and may normalise or encourage alcohol consumption.

In this context, any behaviour change model or policy shift has to be able to counteract these techniques. This is made more difficult through the societal programming that has reinforced the norms around alcohol. The whole idea of a ‘healthy’ number of units creates the bias towards its normalisation i.e., if I stick to my number of units over the course of the week, alcohol is doing me no harm. These messages, sometimes subliminal, sometimes overt, enable industry to nudge us into believing this, and because we enjoy alcohol, it is easy to accept these messages as truthful, as it is the message we want to hear. This is why individual behaviour change cannot be our only focus. A strong policy position and an alcohol strategy that dilutes the messaging of industry and provides a platform for public health, offering accurate unbiased information to protect all ages from alcohol related harm, is needed.

Future dietary and drinking trends

As part of our Market Insight Programme this year, we commissioned a major study to identify trends in what people eat and how those might change from now to 2030. This shows that consumers, most of the time, will choose and consume food and drink that is both affordable and convenient. In other words, what matters most is the fit with their lifestyle and circumstances. This is a firmly embedded behaviour, but technological change is providing even more convenient options for people and will continue to do so. 'Affordable convenience' can be beneficial but, depending on the specifics, it can mean worse impacts for the wider environment and people's health. People tend to prioritise the here and now in their lives, not what their choices might mean for them or their families or society in several years' time.

Figure 7: Linear Forecast to 2030: Macro Food Groups

Population Assumption: 0% growth

	1999	2009	2019	Change 09 to 19	2030 (vs 2019)		
	Actual	Actual	Actual	%	Linear Fcst	% Change	Annual % Change
Bakery	1,041	888	733	-17%	579	-21%	-1.9%
Fish	146	158	146	-8%	132	-9%	-0.9%
Poultry	222	247	259	5%	240	-7%	-0.7%
Red meat	338	328	269	-18%	224	-17%	-1.5%
Processed meat	401	424	433	2%	410	-5%	-0.5%
Dairy & eggs	2,190	2,093	1,896	-9%	1,699	-10%	-0.9%
Plant based meat/dairy	5	35	78	120%	172	121%	**11.0%**
Oils & fats	215	225	212	-6%	186	-12%	-1.1%
Cereal	390	498	555	11%	597	8%	0.7%
Fruit	816	841	879	4%	857	-2%	-0.2%
Vegetables	1,843	1,613	1,479	-8%	1,291	-13%	-1.2%
Processed veg	359	325	341	5%	344	1%	0.1%
Sweet goods	621	639	626	-2%	560	-11%	-1.0%
Alcohol	640	744	712	-4%	676	-5%	-0.5%
Beverages	2,159	2,278	2,433	7%	2,964	22%	2.0%
Other	130	158	149	-6%	151	1%	0.1%
Total	11,516	11,495	11,200	-3%	11,081	-1%	-0.1%

Data used is weekly consumption (g) per person

Key Observations

- Data shows future consumption if patterns follow the direction of the past.
- Overall consumption will decline by 1%, with food consumption declining by 8%.
- Consumption of fruit and vegetables will not grow anywhere near enough to address issues with obesity levels.
- The only categories that grow strongly are beverages and plant-based foods.

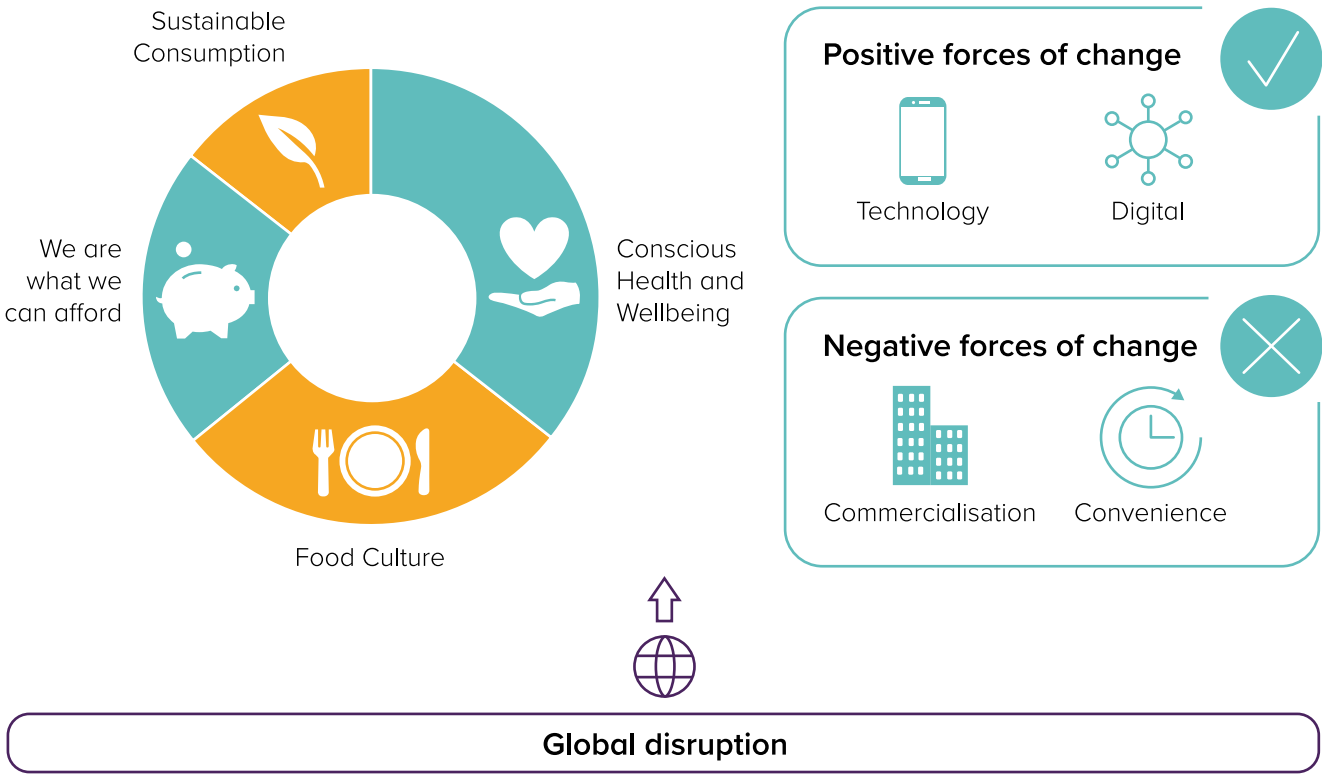
Bwyd a Diod Cymru Food & Drink Wales RHAGLEN MEWNWELEDIAD INSIGHT PROGRAMME · Brookdale CONSULTING · Category Insight · KANTAR · thefoodpeople · IGD

The trend modelling predicts that the consumption of fruit and vegetables will not grow much and there will be a continued move from fresh to processed products. The only categories that are predicted to grow are beverages and plant-based foods, neither of which are necessarily healthy choices. Whilst HFSS (high fat, sugar and/or salt) restrictions would encourage a fall in the consumption of such products (and in this research are forecast to fall by 6% by 2030), the anticipated consumption of ultra-processed food products is predicted to grow by 9% with them accounting for 40% of total volume of food and drink consumed by 2030.

The factors which are driving these forecast changes are socio-economic and are summarised in the pie chart below.

This forecast for our future diet means very few people will eat a healthy, balanced diet with a consumption profile in line with the Eatwell Guide, and powerful social and economic factors will drive trends in consumption. These trends are not necessarily healthy or sustainable.

Figure 8: Key drivers that will change what we will eat in 10 years time



Sustainability and food

Food has a huge impact on the environment. Food and drink are responsible for **17% of UK greenhouse gas emissions**, and the Climate Change Committee says changes to food, for example reducing waste or shifting diets, are a key part of achieving net zero.

The Lancet Planetary Health recently reported on a large European cohort study which identified that shifts towards sustainable diets could lead to co-benefits such as minimising diet related greenhouse gas emissions and land use, reducing carbon footprint, aiding climate change mitigation, and improving population health.

Food Standards Agency – recognising their role in doing more

Recognising their role in 'supporting government partners and others in the wider food system to make it easier for consumers to access a healthier and more sustainable diet[81], the Food Standards Agency (FSA) is prioritising the need for food to be healthier and sustainable in its FSA Strategy 2022-2027[82]. Within its strategy, the FSA highlighted how 'rising temperatures mean food and feed chains are at a greater risk from pathogens and other hazards like aflatoxins, the toxic substance caused by fungus'.

It is not just Governments and organisations who are looking to the health and sustainable impacts of climate change on food, a FSA consumer insights tracking report found that over three in five participants reported feeling concerned about the impact of food production on the environment, and over half of those surveyed reported concern about the healthiness of their personal diet[83].

CASE STUDY

UK food industry and NGO approach to sustainability in food and diet- findings from the Food Standard Agency rapid evidence assessment[84].

Based on analysis of sustainability commitments and resources of 21 UK food industry organisations and NGOs along the food chain, it appears that they tend to focus on a small range of sustainability topics which they perceive as being within their ability to act on. For the most part, their sustainability strategies do not go beyond their organisational boundaries or core business; for example, only organisations directly involved in primary production, and some citizen-facing ones, mentioned primary production impacts. Similarly, transport was not addressed where it was not part of the core business, except for supermarkets and restaurants doing home delivery who articulated intent to switch to electric vehicles.

Most organisations do not provide any definition of sustainability. The top areas addressed in company/NGO sustainability documents, in order of frequency mentioned, were food waste, carbon footprint, recycling, environment/environmentally friendly, and energy, followed by packaging, plastic, water use, and greenhouse gas emission.

Only one third of the organisations sampled appeared to link their sustainability plans to the wider food system context. While many goals were outlined, and some had science-based targets, specificity of action was often lacking, as were commitment of resources and targets, and many goals were aspirational in nature. Less than half of the organisations sampled provided time-frames, and only two organisations committed budget to sustainability actions.

Action for change

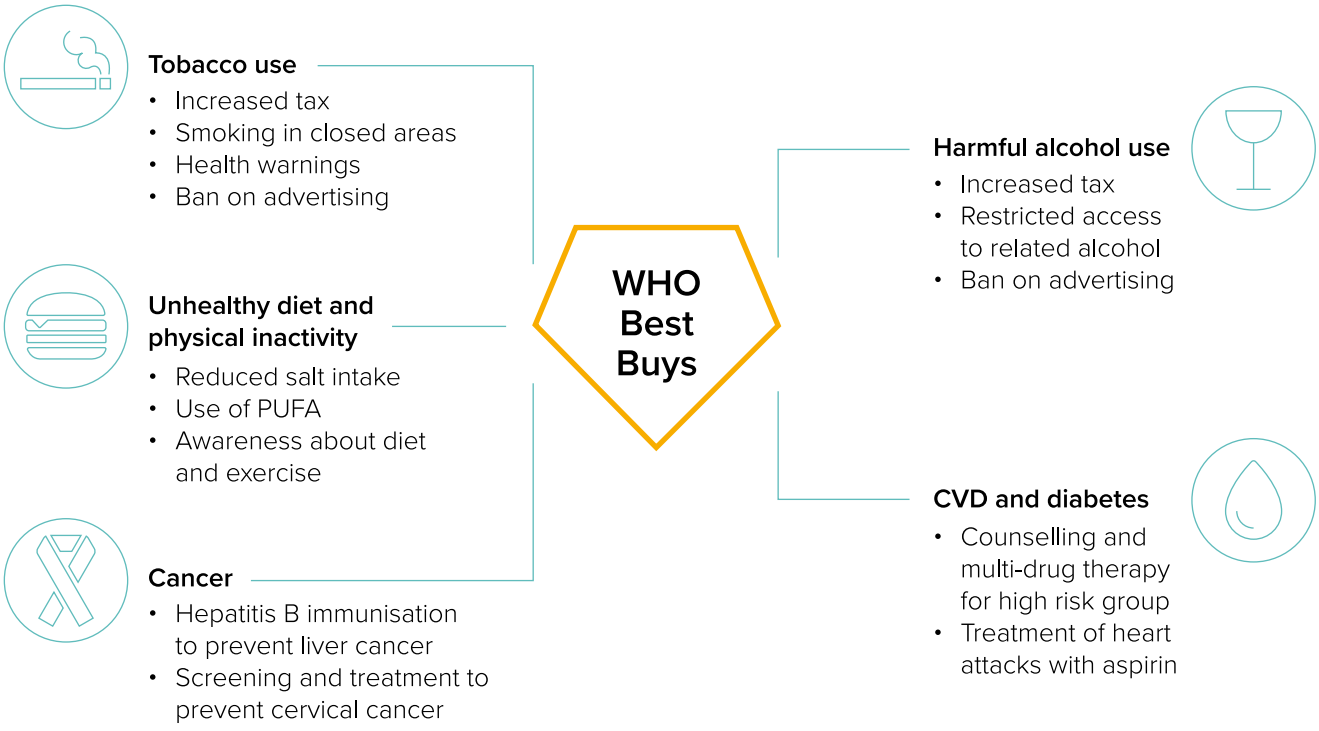
One of the most successful public health interventions has been the Soft Drink Industry Levy, which incentivised many manufacturers to reduce sugar in soft drinks. The levy was 18p per litre on soft drinks containing between 5g and 8g of sugar per 100ml, and 24p per litre on soft drinks containing more than 8g of sugar per 100ml. The policy has been highly effective, reducing the total sugar sold in soft drinks by retailers and manufacturers by 35.4% between 2015 and 2019, from 135,500 tonnes to 87,600 tonnes.[85]

Recent research shows for example[86], that the tax on sugary drinks may have prevented more than 5,000 cases of obesity every year among girls in their final year of primary school. Yet we know that decades of attempts to work on voluntary measures have not yielded the pace and scale of change required around reformulation.

The World Health Organisation suggests a number of actions such as partnering with civil society, adopting so-called 'best buy' strategies and conflict of interest policies, and supporting safe spaces for discussions with industry as examples of how we can help to address the commercial determinants of health.

These actions represent opportunities to move forward on the commercial determinants, particularly in line with consumer concern about the impact of food production on the environment.

Figure 9: World Health Organisation "Best Buys", 2017



These actions represent opportunities to move forward on the commercial determinants, particularly in line with consumer concern about the impact of food production on the environment.

We have seen some action from industry on these matters and it is important that we consider how we can leverage further change. The cost-of-living crisis, described in Chapter 5, has an overwhelming impact on low-income households, yet the solutions cannot and should not be to price people in these circumstances to only be able to access unsustainable, low quality and nutritionally poor choices. I have spoken with Henry Dimbleby, the lead on UK Government Food Strategy and I echo his calls for greater transparency across the private sector, so we can compare how the sector is responding to promote good dietary health, and I am also interested in his view, that many in the food industry now privately admit that in order to drive systemic change, voluntary schemes will never work, and the only way forward will be to adopt mandatory regulations that ensure there is a level playing field.

I want Wales to lead the way. Our **Healthy Weight: Healthy Wales** strategy aims to set out a direction for change. Through this Strategy we are creating the opportunities and enabling Wales to be world leading in its ability to reduce and prevent obesity, particularly for our future generations. Fundamentally this strategy is to enable the healthy choice to be made, the easy choice.

Our forthcoming legislation around the food environment will also help to take Wales to a place where we can aim to make a generational shift in the type of products which are actively marketed and sold. This includes going further than other parts of the UK and will include considering the role of temporary price reductions and the role of meal deals.

Gambling with our health

I have previously dedicated an **annual report** to this important public health issue. With half of adults in Wales saying that they gamble[87], and gambling advertising and opportunities surrounding us daily, it is easy to think of gambling as a common and harmless leisure activity. It is also easy to argue in support of gambling because of the economic benefits it brings – in the 2021/22 financial year, the National Lottery donated £1.7 billion to charities and good causes[88] and the industry paid £3.1 billion in taxes.[89]

However, we must balance these perceived benefits against the considerable, wide-reaching harms that can result from gambling. Harmful gambling is "a pattern of excessive gambling with impaired control over gambling behaviour, substantial negative consequences deriving from this impaired control, and persistence in excessive gambling despite these negative consequences".[90] In Wales, around 0.7% of adults – or 18,000 people – are harmful gamblers, with a further 2.9% – or 76,000 people – at risk of developing harmful gambling behaviour.[91] However, evidence shows that people tend to underestimate their gambling behaviour in self-reported surveys and so the true prevalence of gambling and related harms is likely to be higher.

Harm from gambling is distributed unequally, with those most likely to experience harms being those already experiencing disadvantage, such as people from socio-economically deprived backgrounds, people from black and minority ethnic backgrounds, and those with mental health problems.[92] Seven percent of people in the UK are "affected others", experiencing harm because of someone else's gambling.[93] It is estimated that every day, one person in the UK dies by suicide as a result of harmful gambling.[94]

The gambling industry needs harmful gamblers

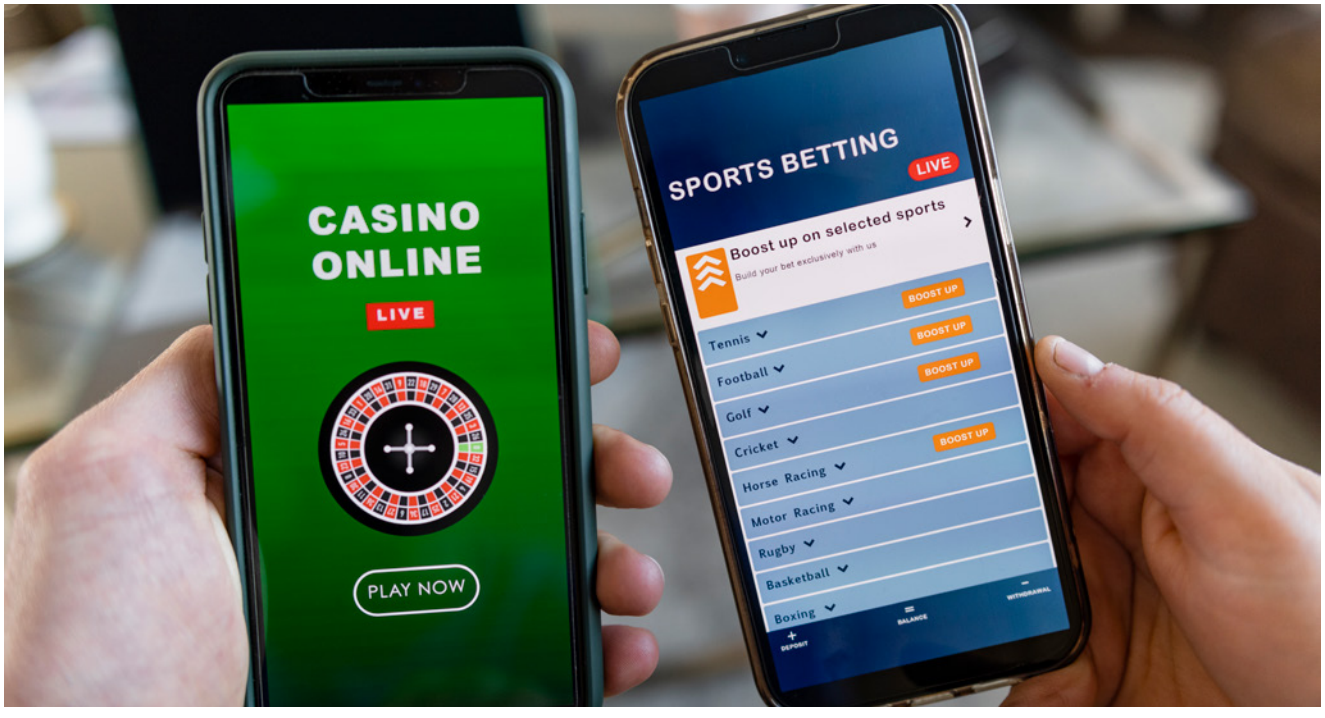
The gambling industry's operating model is reliant upon individuals becoming harmful gamblers. A 2020 House of Lords report showed that 60% of industry profits come from just 5% of gamblers who are already experiencing problems or are at risk of doing so. The report states that "the people most at risk are also the most profitable to the industry: the greater the problem, the bigger the profit."[95]

Advertising

In the UK, the main legislation designed to control gambling, the Gambling Act 2005, largely deregulated the marketing of gambling and lifted many former restrictions. As a result, the UK now has more opportunities to gamble than many other countries in the world, and evidence shows that the more different types of gambling an individual participates in, the more likely they are to become harmful gamblers.

While the UK heavily regulates advertising of other addictive products such as tobacco and alcohol, the volume of gambling advertising has exploded since the 2005 Act. Television advertising alone increased from 152,000 adverts in 2006 to more than 1.39 million just six years later.[96] The industry now spends £1.5 billion each year on advertising.[97] Evidence shows that exposure to advertising is associated with increased participation and riskier expenditure amongst not only "problem" gamblers, but also low and moderate-risk gamblers.[98] Meanwhile, a study from the University of Bristol found that a majority of gambling advertising is more appealing to children than adults.[99]

In a 2020 qualitative study conducted in Wales, participants raised concerns "that industry advertising targets poorer populations who may be more susceptible to the false hope of escaping desperate socioeconomic situations."[100] This finding is particularly concerning in light of more recent evidence from Senedd Research, suggesting that the cost-of-living crisis is causing increasing numbers of people to start gambling in the hope of paying off household bills.[101]



Sports sponsorship

Gambling and sports have become inextricably linked. Not only is sports betting one of the greatest predictors of gambling harm[102] but sponsorship of sports teams, and advertising at matches, is commonplace and has "normalised" gambling amongst young men.[103] While the Football Association has ended such sponsorship activities, many Premier League football clubs are still sponsored by gambling providers, including some in Wales.[104]

Placement of gambling premises

Evidence shows that people from deprived areas are more likely to become harmful gamblers, and that these areas have the most opportunities to gamble at land-based premises. In 2021, 21% of premises were in the most deprived UK decile, with just 2% in the least deprived decile.[105] Mapping exercises[106, 107] have shown that gambling premises in Wales are tightly clustered around areas with the greatest prevalence of harmful gambling. These are primarily deprived, urban areas.

Safer gambling messaging

The industry is publicly seen to play its part in warning of the dangers of gambling, with safer gambling messaging being a key feature of its advertising. However, several studies have shown that such messaging is ineffective[108] and impacts negatively on those experiencing harms. Stakeholders and service users interviewed by Public Health Wales criticised the well-known "When the fun stops, stop" strapline for positioning gambling as something "fun" which most people can do safely, stigmatising and shaming those experiencing harm.[109]

The voluntary levy

The UK charity GambleAware funds research, education and treatment services using money raised from the gambling industry through a voluntary levy. All those who profit from gambling are asked to voluntarily donate a minimum of 0.1% of their gross gambling yield, although some companies have not paid their fair share with some having paid as little as £1. The NHS and many researchers do not take funds from the voluntary levy due to their concerns over the source of funding.

This is a controversial area and evidence has shown that the voluntary levy system actually hinders research, as some institutions cannot or will not accept funding via this route.[110] In 2022, NHS England ceased using GambleAware funds to deliver its gambling treatment clinics, citing concerns from service users about the use of industry money.[111] Evidence also shows professional and public concerns about schools-based education programmes funded through this route, noting that such an arrangement would never be allowed to exist for education around tobacco or alcohol.[112] It is therefore welcome that the UK Government has announced, as part of their proposals to overhaul the gambling industry, to introduce a mandatory levy on the industry and for this money to be used to support research, education and treatment of gambling, including through the NHS.

The conditions created by the UK gambling industry result in both the creation of new harmful gamblers and barriers to those already experiencing harm in reducing their behaviour. Harmful gambling is devastating for gamblers, their families, and their communities. Whilst we now know some of the details of how the UK Government plan to reform gambling regulation, our approach in Wales has always

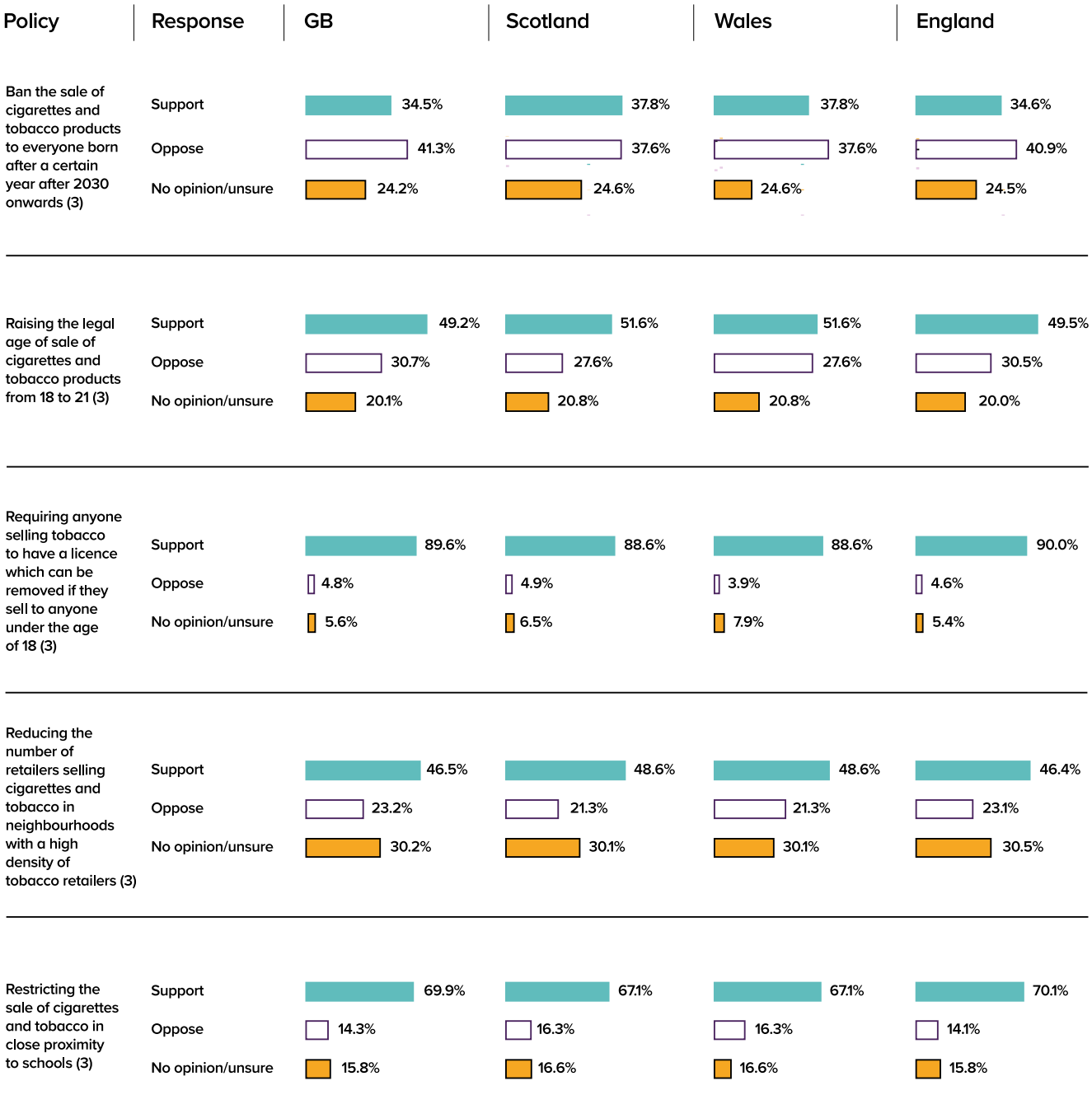
been to do what we can to protect those vulnerable to harm from the gambling industry. We will therefore continue to act if the plans do not go far enough to address the gambling industry's damaging practices and behaviours and remove the threats posed to vulnerable people by the gambling industry.

Tackling the commercial determinants – Public perception

There is often significant public and media debate around the relative merits of policies to tackle the commercial determinants of health, particularly the so called 'unhealthy commodities industries.' Action by Governments to restrict the impact of these industries on population health are often criticised as being an example of the 'nanny state,' yet the international research in the field of public health provides clear evidence that these are often the most effective at achieving change at a population level and in reducing inequalities in health.

Research has been undertaken to explore whether there is public support for these types of policies. Researchers asked a sample of the population in England, Scotland, and Wales about whether they supported certain policies to help reduce the levels of smoking and alcohol related harm in the population. The findings for some policies relating to smoking are summarised in Figure 10.

Figure 10: Prevalence of support for tobacco availability policies in Great Britain (GB), Scotland, Wales, and England (weighted data). GB unweighted n=2197; Scotland unweighted n=361; Wales unweighted n=183; England unweighted n=1653; unique weights for GB, Scotland, Wales, and England respectively



Source: Loren Kock et al. Tob Control doi:10.1136/tc-2022-057508.

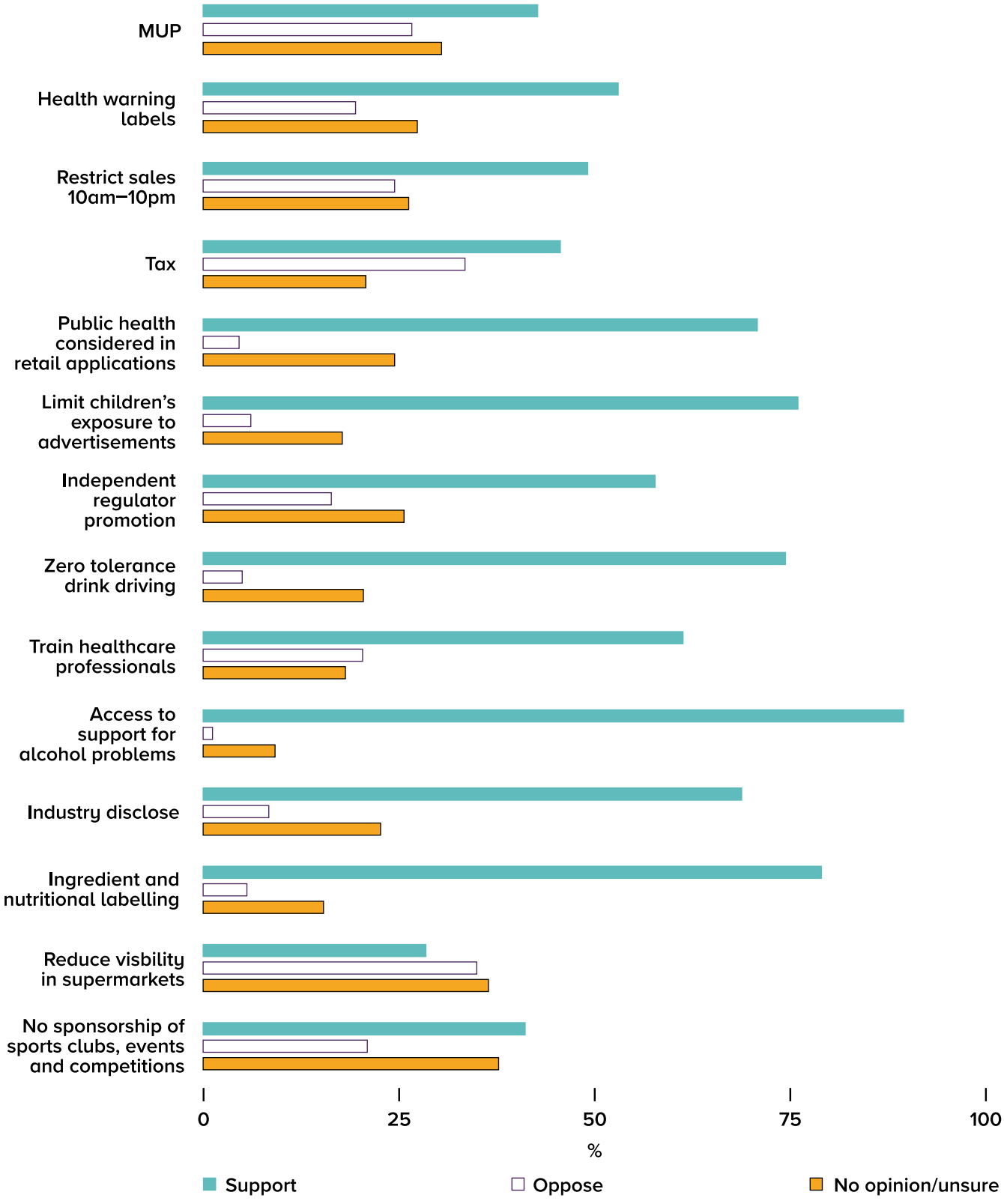
In relation to smoking the majority of respondents supported requiring retailers to have a license which can be removed if they sell to those under-age (89.6%) and for restrictions on the sale of cigarettes and tobacco near schools (69.9%). More supported than opposed raising the legal age of sale of cigarettes and tobacco to 21 (49.2% supported; 30.7% opposed; 20.1% unsure) and reducing the number of retailers selling tobacco in neighbourhoods with a high density of tobacco retailers (46.5% supported; 23.3% opposed; 30.2% unsure). In contrast other measures were less well supported with more people opposed than supported a ban on the sale of cigarettes and tobacco to everyone born after a certain year from 2030 onward (a 'tobacco-free generation') (41.3% opposed; 34.5% supported; 24.2% unsure).

Public Health Wales has also commissioned research to investigate whether there was public support to extend smoke free areas to outdoor spaces such as restaurants, beaches, shopping centres or national parks with the aim of normalising smoke free environments to help prevent children becoming smokers.

The research[113] found that there was support from the general public in Wales for restricting smoking in a variety of outdoor settings. Support was highest for public transport waiting areas (77% agree that it should not be allowed) and lowest for public pavements (59% agree). Non-smokers are much more likely to agree with restrictions than smokers and heavy smokers are even more resistant to restrictions. In relative terms, younger people (16-34s) are less likely to agree with restrictions (even non-smoking younger people) although even among this group at least half agreed that smoking should not be allowed in each setting. There is majority agreement that smoking should not be allowed in outdoor spaces because it normalises it – approaching three-quarters (72%) agree with this.

In relation to policies to reduce harm from alcohol researchers asked people across England, Scotland, and Wales[114] whether they supported, opposed or were unsure about a range of policies (Figure 11).

Figure 11: Proportion of the Welsh public surveyed who supported, opposed or were unsure about a range of Alcohol Policies. Alcohol Toolkit Study 2022



People in Wales expressed broadly similar views to those in other areas of the UK. The findings show majority support for a range of measures including the consideration of public health in granting licenses, nutritional labelling, and industry disclosure of activities. The only area where opposition was higher than support was for reducing the visibility of alcohol in supermarkets.

It is clear from these research findings that there is general support for the government to take action to protect public health, but there is clearly more work to do to explain the rationale for some of these policy measures. Further research in this area would inform how Public Health Wales and other public health professionals in Wales can strengthen advocacy and public understanding around key policies to tackle the commercial determinants in the future.

There is no doubt that big companies have helped to improve health in a number of ways through medical research, the formulation of medicines, the testing and development of things that keep us safe, such as seat belts. And history has given great examples of the commercial sector looking after the health of its workforce. We wouldn't usually find the promotion of chocolate as good advocate for health improvement, but in the case of Bourneville Cadbury's it is clear their approach did just that.

CASE STUDY

The Cadbury Factory first opened in the 1870's in Birmingham, as the workforce grew over the next three decades, when looking for a news site, rather than move to the industrial centre of Birmingham, the Cadbury Brothers, moved their business to the country. They became pioneers of employee welfare. George Cadbury was a housing reformer and bought 120 acres close to the site to build housing to improve the living conditions of the workforce. The Bourneville Village was created. Education was introduced for adults and children. Green spaces and sports fields were made available and meaningful physical activity and breathing outdoor air was encouraged. Community buildings were included, and the housing was built around green spaces to encourage a sense of community.

Living conditions had a direct impact on the improved health of the population with first figures published in 1915 showing the general death rate and infant mortality rate were much lower than that of Birmingham compared over a five-year period.

The Cadbury brothers left the village in a trust and today it is a focus of a great many initiatives for supporting people with addition care needs and offers a number of sheltered housing schemes for the elderly.

Content borrowed from
www.cadburyworld.co.uk/media/0iag3ico/bournville-factsheet.pdf

Recommendations

Tobacco

- The Welsh Government should explore legislative measures to expand the range of smoke free spaces – starting with outdoor eating areas.

E-cigarettes

- Reports of the increase in the use of e-cigarettes by young people is of great concern. I urge the Welsh Government to consider measures within its own competence to protect children and young people from these products, regulate e-cigarettes as for smoking in public places, and I to urge the UK Government to act on areas reserved to them on areas such as flavourings and advertising.
- I welcome the recent guidance issued to schools on vaping. Welsh Government should continue to support all actions to prevent e-cigarette use amongst children and young people, including raising awareness of the risks and helping those who have developed an addiction.

Alcohol

- Welsh Government should take the most effective strategic approach to alcohol; to dilute the messaging of industry, provide accurate unbiased information and support population health interventions in order to prevent and minimise alcohol related harm.
- With the changing curriculum in Wales – schools need to be provided with evidence based unbiased information, free from commercial influence that will support young people to

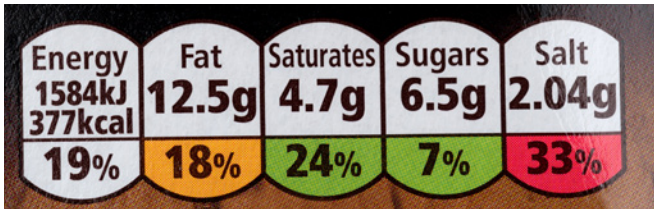
make informed choices about their health and wellbeing. Welsh Government should build on the example of the Irish Department of Education and Health Service Executive, which has formally advised schools against using materials funded by the alcohol industry, and issue similar advice against using any commercially funded materials.

Food and drink

- I want Wales to be exemplar in the UK and lead the way in addressing issues related to increasing levels of obesity and tacking our food environment. Welsh Government should consider the role of future taxes on salt and sugar if the industry-led (or UK led) pace of change is not in line with public health and sustainable development priorities.
- The impact of our changing eating and drinking habits during the pandemic and the current cost of living crisis should redouble our efforts to ensure that people have access to healthier and sustainable food. Welsh Government should consider the range of approaches in the retail environment to make healthier choices easier for consumers, and to limit the promotion of foods high in fat, sugar, or salt (HFSS products).

Gambling

- NHS Wales should develop a clear referral pathway and continue to work with the Welsh Health Specialised Services Committee to establish and deliver a specialist gambling treatment service for Wales.
- Our approach in Wales has always been to do what we can to protect those vulnerable to harm from the gambling industry. Welsh Government should continue to lobby the UK Government for greater controls in order to protect the population from the gambling industry's damaging practices.



Behavioural science

Lots of daily actions that affect our health (our behaviours) are shaped by a mix of factors including what we know, think and feel, but also by what our family, friends and people like us are doing, as well as by the places and things around us.

None of us have quick access to perfect information or unlimited brain power – we use mental short-cuts, so we do not need to think-through every single decision, every single day. Similarly, environments and people around us affect the things we do and can be altered by people/companies that do not always have better health as their number one goal.

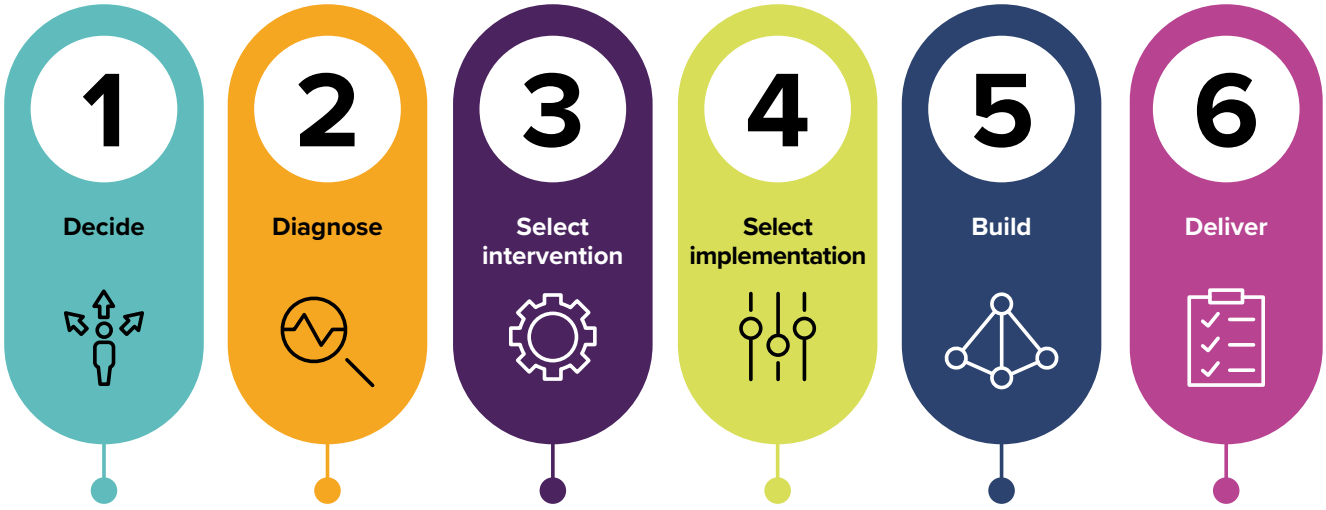
These short-cuts, reminders and influences can also **help and support** us to find and use ways to look after our health – things like putting fruit and nuts (and not chocolate bars) at the till points in shops; making cancer-screening even more the normal thing to do; and making walking and cycling the easiest and the best way to get about.

Behavioural science is a way of thinking through the things that shape behaviours – working mainly with groups of people to understand what helps and stops healthy actions, and then to come up with changes, to support better health and wellbeing. Throughout the COVID-19 pandemic, behavioural science routinely informed communications and policy activity to minimise infection through supporting adherence to, and maintenance of, a range of personal protective behaviours. Specific examples of the application of behavioural science during this period include:

- Monitoring adherence over time to the range of protective policies that were introduced to minimise the likelihood of infection.
- Advising ministers on the behavioural implications of proposed measures included in the regular reviews of Coronavirus regulations, synthesising evidence from a range of sources including the Independent Scientific Pandemic Insights Group on Behaviours (SPI-B).
- Advising on the materials used by those working on the front-line of Wales' Test, Trace, Protect activity.
- Informing a range of communications activities underpinning the Keep Wales Safe campaign, from increasing vaccination uptake through to countering misinformation and disinformation.
- Undertaking small-scale observational research to inform the reopening of major events, including sporting occasions and conferences.
- Working in localities to develop, implement and evaluate behaviourally informed approaches to increasing testing uptake and subsequent self-isolation among high-risk groups.

More details about how behavioural science was used at the time when protective measures in Wales were easing and consideration was given to how behaviours could be maintained in the longer term is provided at **Technical Advisory Group: Living safely with COVID-19 in Wales: risk communication and behavioural science perspectives | GOV.WALES**

Public Health Wales' new Behavioural Science Unit, working with University College London recently launched a guide to using behavioural science to improve and protect health in Wales. The guide describes the important steps to think through – shown in this graphic.



The guide and tools linked to it use the evidence-based Capability-Opportunity-Motivation, Behaviour (COM-B) model and other approaches including the APEASE tool to help to consider the Acceptability, Practicality, Effectiveness, Affordability, Spill-over effects (unintended adverse/beneficial outcomes), and Equity of proposals. They are available at **www.phwwhocc.co.uk/bsu**

Using behavioural science can help reduce unfair differences in health by helping to focus on those in greatest need and describing exactly what the change is (Step 1) and working with people to understand the things that are 'getting in the way' of change for them (Step 2). It is then important to get a balance between supporting individuals' decisions and making system-level changes (Steps 3–5).

The reduction in the number of people smoking shows the benefits of this way of working – a mix including gruesome labels, taxes, smoking bans and NHS support all helped more people to quit (and not start), and our society to become healthier, but it took a long time. We need to use that learning about behavioural science to help reduce ill health from obesity; in how we use less carbon and adapt to a changing climate; and doing all we can to prevent infectious diseases spreading, and individual disease (like cancers) developing.

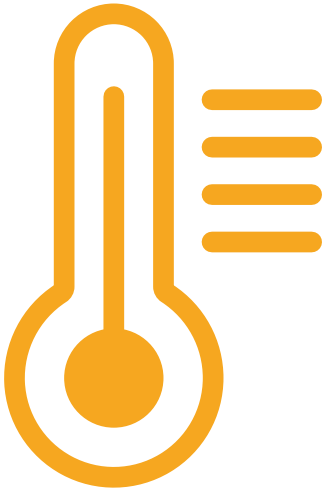
Chapter 4

Climate change and health

In my last report I set out the profound impact that climate change is having on health and wellbeing, I highlighted record-breaking extreme weather events and outlined the negative effects these changing weather pattens can have on our mental and physical health. I focused on the role and challenges for the health and social care sector in Wales in achieving net zero and adapting their services for the impacts of the Climate Emergency. I set out two key recommendations that remain relevant today; for all Health and Social Care partners to take action to reduce emissions; and for all health and social care partners to create adaptation plans in order to protect staff, patients, and the public from the consequences of 'locked in' climate change.

However, mitigating and adapting to climate change does not sit only with health and social care partners; every government body, the private sector, small local businesses to large international businesses needs to play a more proactive and preventative role.

2022 was a year in which climate scientists, environmentalists, and the weather itself delivered further stark warnings on the dangerous impacts of climate change. Countries experienced some of the worst flooding, snow fall and extreme heat in history[115]. The UK experienced the warmest year since temperature recordings started in 1884. The top 10 warmest years in the UK have all occurred in the past two decades.[116]



In October 2022 the ONS published excess mortality figures during the heat-periods of **1 June to 31 August 2022**.[117]

During the five heat-periods between **June** and **August 2022**,

3,271 excess deaths were reported for England and Wales,

additionally the average number of deaths per day was

higher for **heat-period days** than **non-heat-period days**.

An analysis of data undertaken by Public Health Wales showed there was an increase in deaths in Wales on the final day of each heat event (possibly a cumulative effect). On average, there were 98.1 deaths a day in Wales on days covered by a Met Office Extreme Heat Alert compared to 84.3 deaths on days with no alert, but there were no clear trends in people affected (people who died on heatwave days were not statistically different in terms of age and sex than those who died on non-heatwave days).

The recently issued **'Heat Health Risk: Advice Note for Wales Health and Social Care System Partners'** aims to support Health and Social Care system partners to plan and prepare for hot weather scenarios to prevent or reduce risks to health, as well as to enable a rapid and effective response when needed. The expectation is that when extreme or unusually hot weather is forecast by the Met Office, Health and Social Care partners should be ready to implement contingency arrangements and plans as appropriate. Staff should be made aware and key messages, advice and actions confirmed and a communications cascade actioned (within the organisations and beyond to any commissioned service providers).

We are in a time where it is impossible to ignore the strong evidence that the climate is changing. Our winters are getting warmer and wetter, our summers hotter and dryer. These climate changes are not only harming our natural environment, but also impacting on our social environment and our personal health. The World Health Organization (WHO) has stated that Climate Change is the single biggest health threat facing humanity[118].

Our understanding of the health impacts of climate change is also increasing. The long-term nature of climate change and the expected increased frequency of extreme weather events mean that the health and wellbeing impacts will not be limited to single extreme weather events (such as a heatwave or flood) in any given year, nor are they limited to one type of health outcome (for example, mortality from extreme heat). Instead, they are likely to be multifaceted and cumulative spanning physical, mental and social health and wellbeing outcomes at the individual and community levels, with the potential to widen inequalities.

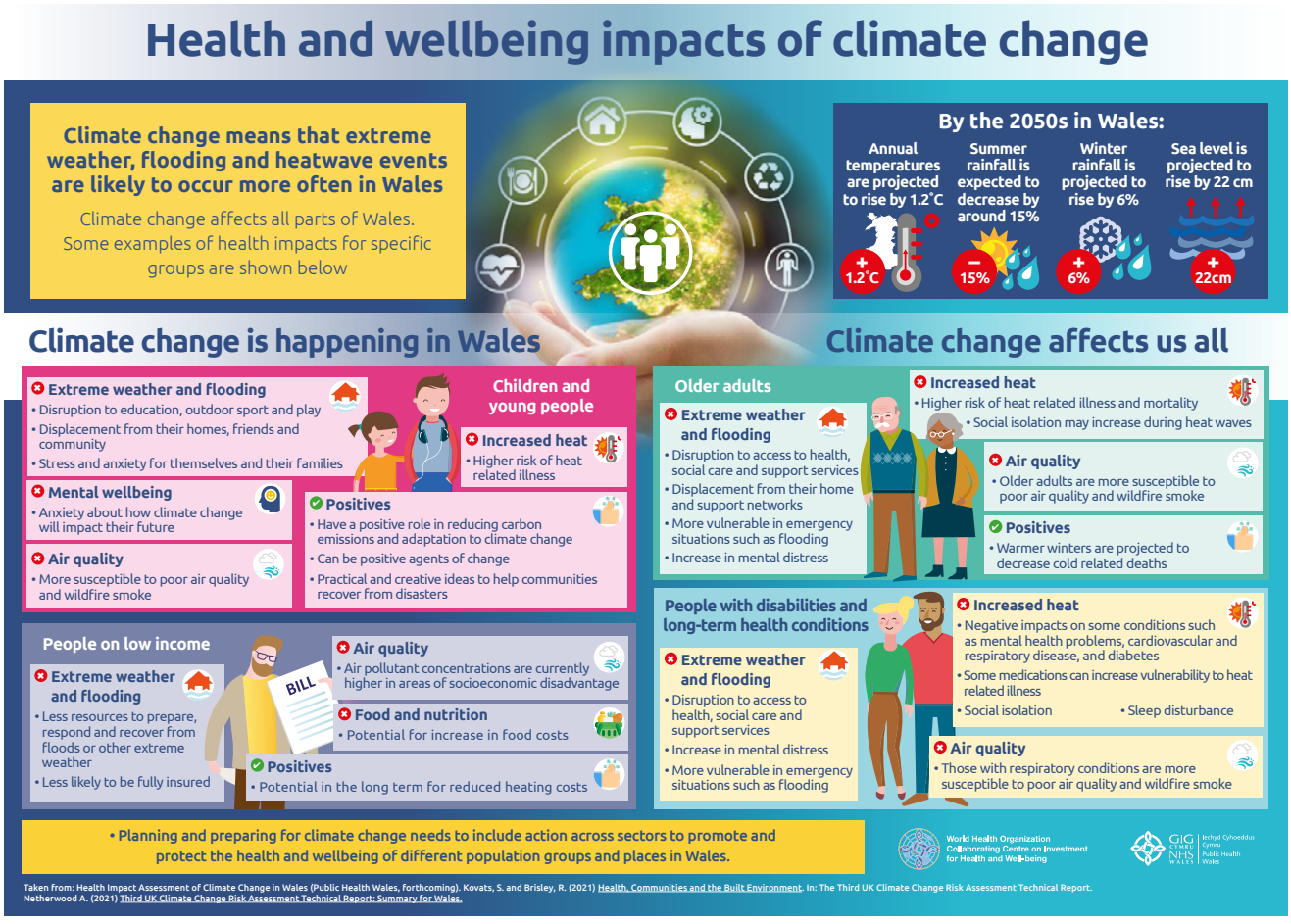
The ecosystems that are essential for population health will be negatively impacted by the nature and climate emergencies including water supply and quality, green infrastructure and biodiversity, air, and soil quality. Significant impacts are anticipated from higher temperatures and heatwaves and on food security and mental health and wellbeing. The wider determinants of health such as safe and secure housing, economic security, transport, and education will also be impacted. Increased frequency of extreme weather events is likely to place additional and new demands on health, social care and emergency services.

Whilst everyone will be affected, the impacts will be felt disproportionately by the most vulnerable; children and young people, older adults, people with disabilities and long-term health conditions, and those living on lower incomes. Some occupational groups including people working outdoors, and in manufacturing, transport, health and social care, and emergency services will be more exposed to health impacts at work. In Wales, areas at risk of flooding and

coastal communities face particular challenges from climate change. Taking system wide action on adaptation, enhancing extreme weather responses and building community resilience are all important in protecting health and wellbeing in response to climate change.

In Wales we need to ensure that we have a surveillance system in place to be able to capture the data on climate change health impacts (some of which are unknown), to generate the data on our different population groups, communities and in different localities. This ability to systematically collect, manage, analyse and interpret the information as well as to be able to communicate and disseminate the information is essential to our mitigation and adaption planning.

In my 2020-21 report I made a recommendation that the Welsh Government and Public Health Wales should identify intelligence gaps on the current and emerging threats and work with partners to develop climate and health surveillance systems to improve understanding, generate evidence, and inform health system planning and action. That recommendation still stands, and I urge both organisations to prioritise improving our climate related health surveillance systems.



Welsh Government action

Wales's commitment to tackling climate change is reflected in our sustainable development and environmental legislation which are already recognised as world leading. Over the last few years this legislative framework has been strengthened to provide a clear statement of intent, setting net-zero emissions by 2050 as the legal target, as well as supporting a carbon budgeting framework.

The focus across Wales should now be on delivery of **Net Zero Wales**, the emissions reduction plan focused on achieving Wales's second carbon budget (2021-2025). Given the disproportionate impact of climate change on the most vulnerable and it's potential to widen existing health inequalities, it is critical that delivery of that plan and the transition to net zero is done in a fair and just way, that is inclusive of every Welsh citizen.

In early 2023 Welsh Government put out a Call for Evidence[119] which will inform the development of Wales' decarbonisation pathway to Net Zero by 2050. It will also provide an initial step towards potentially developing a Just Transition Framework for Wales to be published in 2023. I fully support the ambition to develop a Just Transition Framework, and the opportunities for broader health and wellbeing benefits.

Health and Social Care action

Health and Social Care continues to be one of the largest carbon emitters in the Public Sector due to the size and scale of what we deliver for the people of Wales, the need to provide a 24/7 service all year around, and the continuing high level of demand for health services and goods.

In order to drive delivery of the NHS Wales Decarbonisation Strategic Delivery Plan (the Strategic Delivery Plan), and ensure NHS Wales contributes to the net zero targets and ambitions, I am pleased with the progress since my last report; that all NHS Organisations have developed Decarbonisation Action Plans (DAPs), mapping out their commitment to the 46 initiatives within the Strategic Delivery Plan. The Health and Social Care (H&SC) Climate Emergency National Programme and National Programme Board, (a collaboration of Welsh Government, clinicians, NHS and Social Care leaders and representatives, established to lead and support the climate change and decarbonisation agenda), is providing strategic leadership and assuring delivery including through regular qualitative reviews and annual quantitative reporting through the Net Zero Public Sector Reporting process.

Expanding the agenda further across health and social care, the Greener Primary Care Framework was launched in June 2022 and the Social Care in Wales – Decarbonisation Routemap towards Net Zero by 2030, was published in July. Activity is now underway to better understand social care and primary care emissions.

CASE STUDY: Swansea Bay University Health Board Solar Farm

Morriston Hospital is the first hospital in Wales, and it is believed in the UK, to develop its own full-scale solar farm.

Swansea Bay University Health Board secured land by way of a 26-year lease agreement to develop a 4-megawatt solar farm at Brynwhilach Farm, near Llangyfelach in Swansea. The solar farm comprises 10,000 panels on 14 hectares of land and provides power to Morriston Hospital via a 3km private wire connection. The solar farm supplies almost a quarter of Morriston Hospital's power, cutting the electricity bill by around £500,000 a year and significantly reducing carbon emissions. At peak production times it can meet the electricity demand for the entire hospital.

The project was funded by Re-Fit Cymru a Welsh Government scheme allowing the Welsh public sector to secure guaranteed savings and reduce carbon impacts by entering into Energy Performance Contracts.

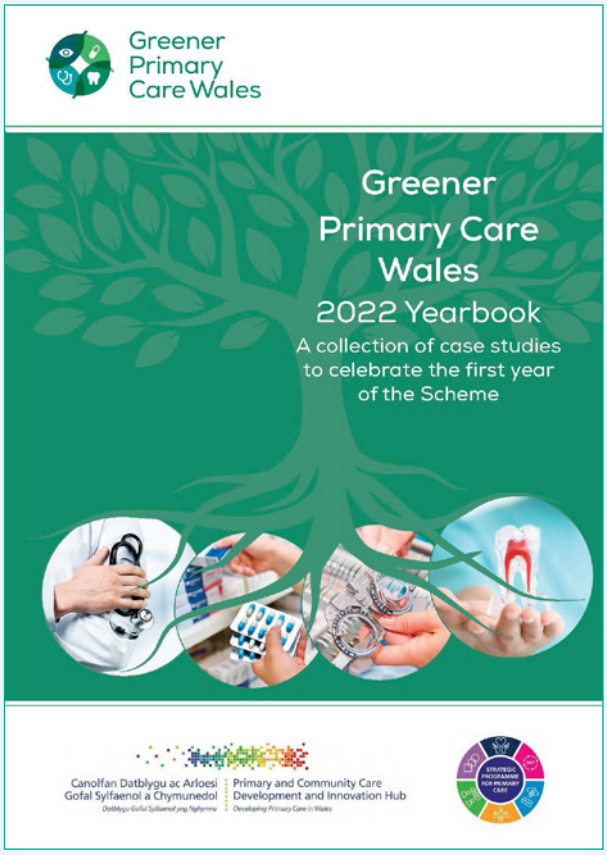
CASE STUDY: Greener Primary Care Framework

Greener Primary Care Wales was established by the Primary Care Division, Public Health Wales in 2022. The Greener Primary Care Framework can help independent primary care contractors (general practices, community pharmacies, community optometric practices and primary care dental practices) improve their sustainability and environmental impact. It answers the question – 'What can we do in our practice?'. The Framework has been developed in collaboration with a wide range of stakeholders, including professional and contractor bodies in Wales.

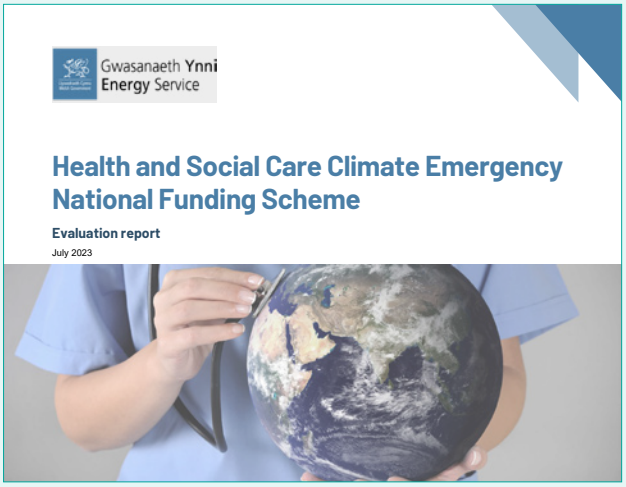
The Scheme allows practices to work towards a bronze, silver and gold status depending on the number of actions they implement. Public Health Wales has partnered up with Students Organising for Sustainability UK (SOS-UK) who deliver the Green Impact programme – a United Nations award-winning programme designed to support environmentally and socially sustainable practice within organisations – to support the Greener Primary Care Wales Framework and Award Scheme.

In 2022/23 109 Teams participated in the Framework with 638 actions taken. 8 Gold Awards were awarded with 27 Silver and Bronzes.

To celebrate the success of the practices involved and inspire others to take part a **Yearbook** has been developed, the Framework and Awards Scheme has also been relaunched for 2023/24.



Swansea Bay University Health Board (SBUHB) and Hywel Dda University Health Board (HDdUHB) – Green Teams Competition



In June 2022, The H&SC Climate Emergency National Programme launched a funding scheme for NHS Organisations. The primary objective was to provide initial financial support to projects that will contribute to the Welsh public sector's ambition to be collectively net zero by 2030 and increase resilience to the impacts of climate change. The fund focused on:

- Communication, engagement, or behavioural change activity,
- Decarbonisation or mitigation activity,
- Adaptation or resilience planning activity,
- Innovation activity.

In all 26 projects were supported across NHS organisations including initiatives focused on accelerating carbon literacy training across NHS Wales, the recruitment of Sustainability fellows/leaders across 5 organisations and projects focused on waste and reducing single use plastics, including piloting the first scheme in Wales to recycle inhalers. Additional projects are looking at waste in laboratories.
The Bevan Commission are also leading an All Wales Let's Not Waste collaboration project.

The case study below is taken from an evaluation of the Funding Scheme and features the Green Team competition undertaken by SBUHB and HDdUHB.

The **full evaluation toolkit and report of the funding scheme** was published in August 2023. The report presents the evaluation method, tool, summarised results, and conclusion. The report showcases the variety of projects undertaken to achieve carbon reductions in the healthcare sector and the willingness to drive change and great enthusiasm from individual staff and volunteers.

CASE STUDY: Green Team Competition – Swansea Bay University Health Board (SBUHB) and Hywel Dda University Health Board (HDdUHB)

The problem or task that your project is aiming to accomplish:

Supporting staff to introduce initiatives that can address emissions reductions, whilst considering wide impacts on social, financial and clinical outcomes.

The objective and target outcome for your project:

1. Recruitment of six teams in each Health Board, – Each team completing a SusQI project, with 6 case studies written up per UHB. – All case studies demonstrating carbon, financial and/or, staff time savings.
2. One showcase event with one award per UHB.
3. Embedding of SusQI into the Health Boards.
4. Scale up of successful projects

How successful your project was in meeting its objectives and targets:

Very successful, all six projects were completed within the competition time frame. The Showcase had over 100 attendees and support from Welsh Government.

An aspect of your project that was particularly successful:

Engagement and empowering staff as well as getting an opportunity to thank the teams directly during the Green Team showcase and awards event on 3rd February 2023.

An aspect of your project that was most challenging:

- **Length of competition:** the 10-week length of the project limited some teams ambition as they wanted an outcome within that time frame.
- **Project capacity:** This is dependent on staff having time to undertake additional work.
- **Spread and scale:** Sharing projects in the right places to the right people is challenging. Teams have been encouraged to share but there are issues around capacity to do this.

The most important factor that influenced the success of your projects:

Finding passionate staff - one area was down to 50% of staff and still completed. Support was available when they needed it throughout the Centre for Sustainable Healthcare.

Project evaluation – Green Team Competition – SBUHB/HDUHB

Project Evaluation
Direct carbon reduction
Indirect carbon reduction
Cash release
Capacity release
Cost avoidance
Strategic alignment
Scalability
Engagement potential
Sustainable healthcare

Direct Carbon reduction
Medium impact.

Indirect carbon reduction
Medium impact – huge potential in replicating, not just the projects but the model.

Cash release
High release – cost of Green Team Competition was £24,600. Savings from the project are estimated at £33,794,65.

Capacity release
Not applicable.

Cost avoidance
Limited avoidance –total came to £33.794.65.

Strategic alignment
Close alignment – the project supported the Health Board's decarbonisation strategy by enabling staff to make changes in their own space, as well as being innovative.

Scalability
Partially scalable – key barriers include embedding in QI, longevity, carbon foot printing training and support.

Adaptation planning

Whilst decarbonisation actions are focused on reducing emissions, Adaptation Planning focuses on understanding and anticipating the risks and impacts arising from climate change and making sure we are well prepared.

In December 2022 the Welsh Government published a progress report on its current national climate adaptation plan, **Prosperity for All: A Climate Conscious Wales**. The report sets out the huge amount of work and policy development being undertaken across all relevant sectors to deliver the actions set out in the plan for building resilience to the impacts of climate change.

However, the report also acknowledges the widening gap between the increasing level of climate-related risk and the level of adaptation, as highlighted in the Climate Change Committee's (CCC) 3rd UK Climate Risk Independent Assessment published in June 2021.

The Welsh Government has recognised the need for further climate adaptation measures and is developing an updated strategic approach for the next national plan due to be published in 2024. This will include consideration of:

- Further measures to address the areas of climate risk highlighted by the CCC's 2021 advice and the CCC's recommended '10 principles for good adaptation'.
- Updated methodological approaches for mapping and monitoring of pathways towards good adaptation outcomes.
- Whole system perspectives for addressing different areas of climate risk, taking into account the implications of cascading impacts and interrelationships.
- A 'Team Wales' approach, with broader consideration and support for the actions needed across the Welsh public sector, stakeholders, and society.

The Welsh Government has also commissioned the Climate Change Committee (CCC) to undertake an **independent assessment** of climate adaptation and future priorities for Wales. This is due to be completed in summer 2023 and will help to inform the next national adaptation plan.

In line with my 2021/22 recommendation, '**Adaptation plans which reflect the latest evidence of the health impacts of climate change should be developed by all partners in the health and social care system in order to protect staff, patients, and the public from the consequences of 'locked in' climate change,'** in 2022/23 NHS bodies across Wales were asked to consider how they should adapt to prepare for the impacts of climate change in terms of the risk it brings to the health of their populations, and the risk it brings to the delivery of their services.

To help ensure the public health impacts of climate change are front and centre of national and local planning, in July 2023 Public Health Wales published a **Health Impact Assessment** of Climate Change. Health Impact Assessments (HIA) are a systematic evidence based public health approach which is recognised and promoted across the world including by the World Health Organisation. It considers the impact of policies and plans on health and wellbeing and also the differential impacts across the population which could exacerbate health and social inequalities.

The HIA aims to support a range of agencies to enhance action on climate adaptation and resilience in Wales by providing evidence on the wide health and wellbeing and equity impacts of climate change in Wales, and what it means for peoples' lives in the places they live, work, learn and play. This includes economic, social, environmental, and mental wellbeing.

The role of businesses

As set out in earlier chapters, I have highlighted how commodity industries can significantly influence our environment and our choices in varied and complex ways; the very products that are manufactured, or sourced, how they are marketed, the price point, and who is most influenced by the marketing.

> The environment in which people live is a major determinant of their health. Many companies, particularly those in the agricultural, extractive, construction, automotive and aerospace industries, produce health damaging pollution and significantly contribute to the climate and environmental crises. Others may produce air pollution, plastic pollution, destroy natural environments and damage biodiversity, or deplete or contaminate water supplies. It is critical that all industries work to ensure that they preserve the natural world: clean air, adequate water, a stable climate and access to green spaces are prerequisites for good health.
>
> (Marmot, 2022)[120]

Air quality and soundscapes

Outdoor air pollution is a significant environmental risk to health. The ambient air pollutants of most public health concern are fine particulate matter ($PM_{2.5}$) and nitrogen dioxide (NO_2); there is currently no clear evidence of a 'safe' level of exposure below which there is no risk of health harms.

Chronic exposure (years) to these air pollutants can increase health risks from cardiovascular and respiratory diseases, and lung cancer. There is also growing evidence of effects on dementia, low birth weight and diabetes. Shorter-term exposure (hours/days) to high concentrations of pollutants can include eye, nose and throat irritation and an exacerbation of respiratory and cardiovascular symptoms.

Air pollution risks and impacts are influenced by a range of factors, including exposure concentrations and duration, and ability to cope with/adapt to exposure. As such, air pollution affects people in different ways; risks and impacts change over a lifetime too.

People who live, work, or spend time in highly polluted places may be at higher risk of pollution-related health problems (vulnerable). Children, older people, and those with chronic heart or lung problems are more likely to be affected by exposure (susceptible). Children can suffer from poor lung development and asthma symptoms because of air pollution exposure. In terms of inequalities, research suggests that people who live in the most deprived areas – where general health and air quality tend to be poorest – are more susceptible to, and so disproportionately affected by, air pollution exposure.

Unwanted or harmful sounds can disrupt sleep and increase levels of stress, irritation, and fatigue, as well as interfering with important activities such as learning, working and relaxing. They can reduce people's quality of life, and exposure to loud sounds can cause immediate or gradual hearing damage. Exposure to noise in the long term can increase risk of high blood pressure, and its related illnesses including cardiovascular disease.

Air and noise pollution often originate from the same activities which contribute to climate change. These include transport, industry (including agriculture), and emissions from homes and businesses. Therefore, it is important that steps are taken to consider how linkages between the air environment and climate change policy areas can be managed to best effect for the benefit of our health and wellbeing.

In 2020, the Welsh Government published its first **Clean Air Plan for Wales: Healthy Air Healthy Wales**. This Plan sets out a 10-year pathway to achieving cleaner air and is structured around four core themes, with actions to enable collaborative approaches to reduce air pollution. These are protecting the health and wellbeing of current and future generations; taking action to support our natural environment, ecosystems, and biodiversity; working with industry to reduce emissions, supporting a cleaner and more prosperous Wales; and creating sustainable places through better planning, infrastructure and transport.

An important action in the Plan and the recent Welsh Government Programme for Government was the introduction of a Clean Air Bill for Wales. This action has taken forward through the Environment (Air Quality and Soundscapes) (Wales) Bill, which was introduced to the Senedd in March this year.

The Bill complements existing measures set out in the Welsh Government's Clean Air Plan, it strengthens an existing suite of legislation relating to air quality and builds upon existing noise legislation to achieve appropriate soundscapes as set out in the Noise and Soundscape Action Plan 2018-2023.

Proposals in the Bill include:

- Enabling Welsh Ministers to set national air quality targets, providing a strong mechanism to deliver the Welsh Government's long-term ambitions for clean air and associated public health and environmental outcomes.
- Ensuring Welsh Ministers consult on a review or modification of the national air quality strategy every 5 years. This will ensure the public are able to access information about the plans Ministers have for Air Quality in the first half of each Senedd term.
- Enhancing and strengthening the Local Air Quality Management and smoke control regimes to ensure they operate proactively, preventatively and with a greater public health focus.
- Extending powers to enable Clean Air Zones to be created on trunk roads, providing for a substantial intervention to tackle air pollution hot spots if stronger action is determined to be necessary to deal with persistent problems.
- Enhancing Welsh Ministers' and local authorities' powers to prevent and tackle vehicle idling.
- Enabling people to protect their health and local environment by placing a duty on Welsh Ministers to take steps to promote awareness of the impacts of air pollution and ways in which it can be reduced.

In 2018, the Welsh Government published the **Noise and Soundscape Action Plan 2018-2023** (NSAP), which reframed noise policy in Wales in terms of the Wellbeing of Future Generations (Wales) Act 2015 ("the WFG Act"). It resulted in Wales being recognised as the first nation to include soundscapes in national policy, and it was referenced in the **United Nations Environment Programme's Frontiers 2022 report**.

The Environment (Air Quality and Soundscapes) (Wales) Bill will now require Welsh Ministers to produce a national strategy on soundscapes. In 2018, this was done voluntarily by the Welsh Government in the form of the NSAP. **I believe giving the new Noise and Soundscape Plan 2023-2028 a more solid legal foundation will raise its profile and increase its effectiveness in guiding informed decision-making, which will in turn promote improved health and wellbeing.**

The draft Noise and Soundscape Plan 2023-2028 retains and refines the core messages of the NSAP, which includes an ambition being appropriate soundscapes; a commitment to embed the five ways of working in the WFG Act; and a commitment to join up action on noise and air quality wherever it makes sense to do so.

The draft Plan covers new topics that have come to the fore within the last five years, such as issues around remote working, aural diversity, air source heat pumps, changes in speed limits, and fireworks. It also sets out what the Welsh Government has delivered over the last five years, such as noise mitigation works completed on the trunk road network.

Delivering improvements in our air environment, alongside broader action to tackle the climate and nature emergencies, can be costly and resource intensive. Forecasts for public finances are uncertain and outcomes will depend heavily on both the future performance of the economy, our recovery from COVID-19 and budgetary choices of changing Government administrations.

We need to work closely with commerce to ensure they clearly understand impacts of air and noise pollution, the steps needed to mitigate the sources of pollution and the speed in which solutions are required. We can only plan, mitigate and innovate if we are all in this together.

Greenwashing

As well as taking action to understand and mitigate pollution, companies also need to take responsibility for how this information is shared with their customers and consumers.

In 2021 Co-Op's Ethical Consumerism Report set out that, on a conservative basis, the estimated value of the 'green' pound across products and investments was a £122bn.

As businesses compete to keep up with consumers demand for more ethical products and to gain a share of the ever-growing 'green' market, consumers are also faced with more decisions and more information and disinformation, it can be confusing, overwhelming and/or difficult to understand how ethical a product, service, or business.

As seen with products like Tobacco and Alcohol, when companies focus solely on expanding their markets and profitability, public health impacts and concerns aren't always transparently addressed.

'Greenwashing' or 'green sheen' is a public relations tactic that's used to make a company or product appear environmentally friendly without meaningfully reducing its environmental impact[121]. It has become such an increasing issue that in June 2021 the UK Government set up an independent group to help tackle greenwashing[122].

Greenwashing examples include changing the name of products to sound more natural, using images that suggest an environmental benefit, association, or focus, focusing on only one narrow environmental risk or dimension, a lack of, or inaccessible evidence to substantiate claims, or claims that whilst true in one product category or part of the business do not extend across the business as a whole.

Greenwashing can also be simply making claims that are not true.

As a result, consumers lose trust in genuine green claims, and the 'knowledge-action' gap is widened meaning the general public do not have the information they need to make informed choices and are not able to use their buying power to support businesses with strong and genuine sustainability plans and credentials.

CASE STUDY: Article extract: The Volkswagen emissions scandal

What took place?

Volkswagen was found to be cheating in emission tests by making its cars appear far less polluting than they were. The US Environmental Protection Agency discovered that 482,000 VW diesel cars on American roads were emitting up to 40 times more toxic fumes than permitted – and VW has since admitted the cheat affects 11m cars worldwide.

What was the impact on emissions?

The scandal resulted in more harmful NOx emissions, including nitrogen dioxide, being released than had previously been thought.

The hidden damage from these VW vehicles was estimated to equate to all of the UK's NOx emissions from all power stations, vehicles, industry, and agriculture.

What was the impact on our health?

Emissions, or fumes, can cause inflammation of the airways, and can also react with other compounds to cause more serious respiratory conditions and aggravate heart problems. Long-term exposure to this pollution ultimately hastens death.

Source: **The Volkswagen emissions scandal explained | Volkswagen (VW) | The Guardian**.

Tackling misleading environmental claims

The Competition and Markets Authority (CMA) is the UK's primary competition and consumer authority, its objective is to make markets work well for consumers, businesses and the broader economy[123]. The CMA have produced guidance to help businesses understand and comply with their existing obligations under consumer protection law when making environmental claims.

What are environmental claims, and when are they misleading?

Environmental claims are claims which suggest that a product, service, process, brand, or business is better for the environment. They include claims that suggest or create the impression that a product or a service:

- Has a positive environmental impact or no impact on the environment.
- Is less damaging to the environment than a previous version of the same good or service; or
- Is less damaging to the environment than competing goods or services.

Environmental claims may concern the impact on the environment in general or on specific environmental aspects such as the air, water, or soil.

Environmental claims can be explicit or implicit. They can appear in advertisements, marketing material, branding (including business and trading names), on packaging or in other information provided to consumers.

All aspects of a claim may be relevant, such as:

- The meaning of any terms used.
- The qualifications and explanations of what is said
- The evidence that supports those claims
- The information that is not included or hidden
- The colours, pictures and logos used; and
- The overall presentation.

Environmental claims are genuine when they properly describe the impact of the product, service, process, brand, or business, and do not hide or misrepresent crucial information.

Misleading environmental claims occur where a business makes claims about its products, services, processes, brands, or its operations as a whole, or omits or hides information, to give the impression they are less harmful or more beneficial to the environment than they really are.

Source: Making environmental claims on goods and services – CMA – UK Government.

Businesses large and small need to take responsibility and ensure greater transparency regarding their impact on the environment and to be able to support any claims made regarding green credentials, enabling everyone to make informed choices.

In Summer 2023 the Welsh Government will publish its new 'Climate Action Wales' Public Engagement Strategy[124] and will launch a new national climate campaign and website.

This new Strategy will highlight the impact that climate change is already having on people and communities in Wales, and the important link between tackling climate change, and improving the health and wellbeing of the people of Wales. It will reference the co-benefits of making green home energy, transport, food, and consumption choices, from saving money to improving health. It will also **emphasise the importance of businesses leading the way**, for example by de-carbonising their own operations.

Haverfordwest-based **Totally Welsh** delivers quality Welsh milk and milk products to the public sector and corporate and domestic customers across the UK.

Founded in 1990, the company sources Welsh milk from Welsh cows, all within a forty-mile radius of its bottling plant. Totally Welsh customers include supermarkets, hospitals, schools and independent retailers. The firm also offers a doorstep delivery service in South Wales, delivering milk, milk products and breakfast traded goods to thousands of customers. The company employs around 100 people and achieved a turnover of £17 million in 2022.

Recycling and reusing have always been at the heart of the company's ethos. As well as reducing food miles by sourcing locally, Totally Welsh sources sustainable packaging. This year it hopes to start bottling its milk in glass in addition to the recyclable poly cartons.

Technical Compliance manager Sara Jones reflected on key lessons from participating in the Business Wales Accelerated Growth Programme Carbon Emission Reduction Pilot, partly funded by the European Regional Development Fund through the Welsh Government.

> **'We learnt how to categorise and measure our environmental impact through Scopes 1 and 2 (emissions owned or controlled by our company) and Scope 3 emissions being a consequence of activities but from external sources not owned or controlled by our company. We identified various processes and steps used through a flowchart for food safety management purposes. This detailed all the processes associated with milk arriving, getting dispatched and then delivery. The next phase will involve a full audit of the areas we've captured within the three scopes to identify further reductions. Technological changes, particularly in electric vehicle capability will also be considered'.**

Based in Cardiff, **TB Davies** is a fourth-generation family business founded in the 1940s, employing 21 people and had a turnover of £8m in 2022. Along with selling direct to consumers, its customers include major companies like Screwfix, Arco and Amazon. The company manufactures and distributes a wide range of climbing products, including steps, ladders, towers, and podiums for professional, trade and domestic users. It has taken pride in staying one step ahead through innovation ever since it became one of the first companies in the UK to introduce a line of revolutionary new aluminium ladders into its product range in the 1960s.

The company recently joined seven other companies to participate in the Business Wales Accelerated Growth Programme Carbon Emission Reduction Pilot, partly funded by the European Regional Development Fund through the Welsh Government. The three-month immersive programme helped them to develop a better understanding of their direct and indirect carbon emissions and take positive steps to reduce them.

Explaining the company's journey, Director Mat Gray says: **"We started by identifying what data we already had and where we could improve. For example, we use solar panels to supply most of our electricity, and we don't use gas on site, so we knew we were very "clean" regarding pollution. Previously, we struggled to measure Scope Three emissions, which we do not create. Instead, they are the emissions from those we are indirectly responsible for, up and down our supply chain. "The production of aluminium ladders is relatively energy and carbon intensive. And a lot depends on where the raw materials come from. "We were able to compile a significant amount of data on our own activity and our supply chain, including shipping companies. This allowed us to do a detailed analysis which identified areas where we could make the most significant carbon savings in the shortest timeframe. "The first phase of the journey has culminated in a Decarbonisation Plan, with a commitment to become Carbon Neutral by 2050. The plan identifies multiple goals to create company-wide transformation and shift our stakeholders, including suppliers, distributors and end-users, from a 'use-and-dispose' mindset towards one of 'repair and reuse', investing in a circular economy based on founding principles of quality, durability, and recyclability."**

It is clear that as well as taking steps positively contribute to addressing climate change, businesses can work with Welsh Government on innovation and technology solutions to make green choices easier, more convenient, and more affordable for people.

Recommendations

- **Welsh Government and business sector leaders should consider what further action can be taken to prevent 'green washing' and place requirements on commercial and other sectors to provide greater transparency on their products and practices.**
- **I reiterate my recommendation from my last report. The Welsh Government and Public Health Wales should identify intelligence gaps on the current and emerging threats and work with partners to develop climate and health surveillance systems to improve understanding, generate evidence, and inform adaptation planning and action.**

Chapter 5:

Cost of living: impacts on public health

As with the COVID-19 pandemic, the negative impacts of the cost-of-living crisis on health and wellbeing are being disproportionately felt by those on the lowest incomes in Wales. The pandemic also put unprecedented demand on health and social care services, creating a challenging backdrop ahead of usual winter pressures, with approximately one in three excess winter deaths linked to either living in cold homes or fuel poverty.[125]

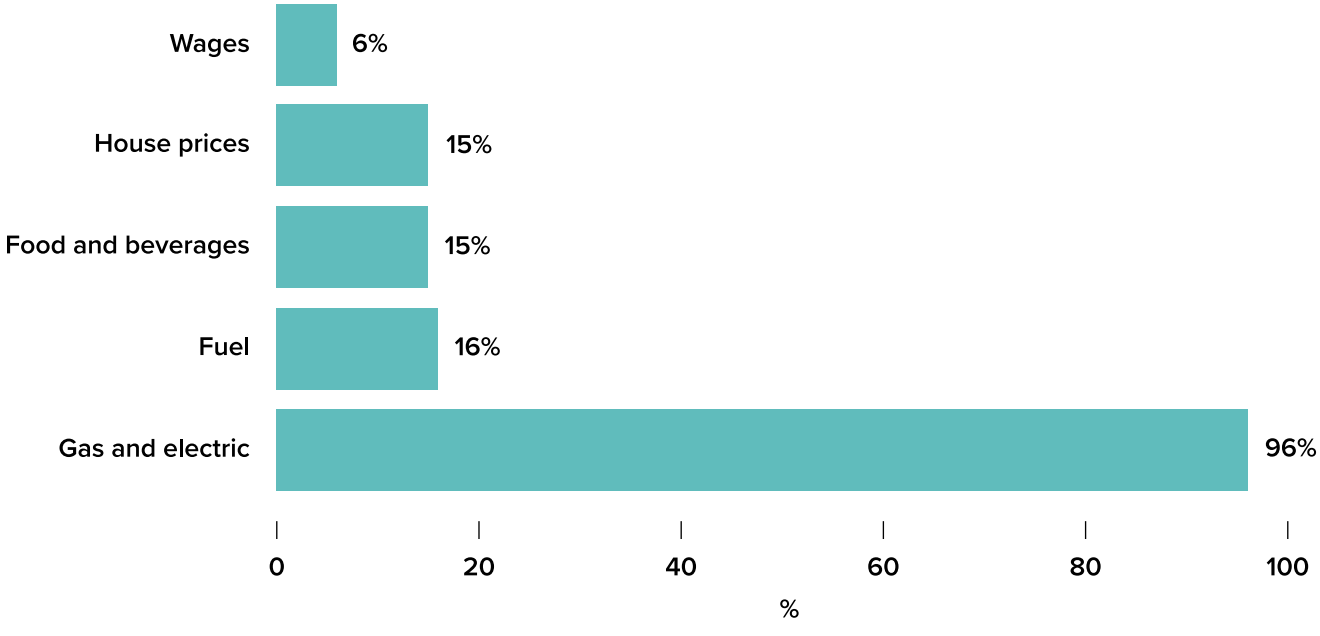
Much of the health harms and widening of inequalities Welsh citizens are facing as a result of the cost-of-living crisis – as well as the COVID-19 pandemic before that – are due to long-standing, entrenched problems, such as poverty, lower wages, and an older, less energy efficient housing stock. The cost-of-living crisis is putting further pressure on the same fault lines.[126]

Successive challenges to health and wellbeing in Wales have also shaped our experience of the cost-of-living crisis and how we can respond. These include the legacy of poor quality, energy inefficient homes,[127] austerity policies,[128] climate change,[129] the ongoing war in Ukraine, and, in particular, the COVID-19 pandemic.[130] This is occurring in the context of the changing landscape created by the UK's departure from the European Union.[131]

The impacts on public health

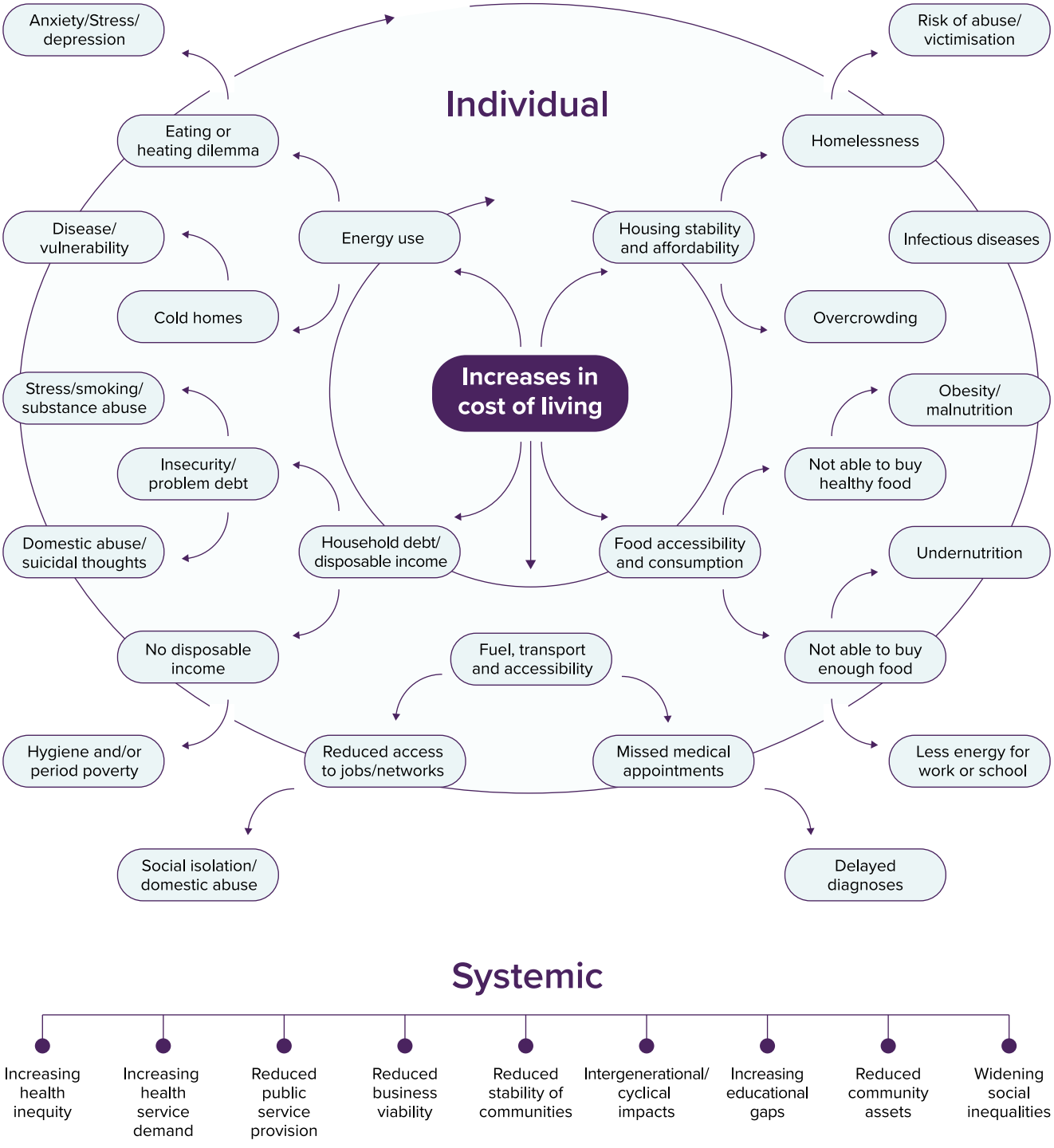
Having a warm, dry place to live, nutritious food, fair work and the ability to provide and draw support from the community around you are fundamental building blocks for living a healthy life. This year we have seen a rapid rise in the cost of the essentials – energy, housing, food and fuel – that has outstripped the average increase in people's wages and welfare payments, as shown in Figure 12. The resultant 'cost of living crisis' has meant that more people in Wales have been unable to afford these essential building blocks for a healthy life, with negative consequences for mental and physical health and wellbeing. Key examples of how the cost-of-living crisis links to health and wellbeing are summarised in Figure 13.

Figure 12: Wage increases compared to increases in the price of housing, food, fuel and energy prices (as at November 2022)



Source: Increase in median wages (Wales), 2020/21 vs 2021/22.

Figure 13: Conceptualisation of the ways in which the cost-of-living crisis links to health



Source: Public Health Wales (2022).

Affected groups

People living in the poorest parts of Wales already die more than six years earlier than those in the least deprived areas and spend more years in poorer health.[132] Without appropriate action, the effect of the cost of living crisis will be to push more people in Wales from just about coping to a state of struggling or crisis, while those who were already the worst off see their situation deteriorate further.

The cost-of-living crisis has the potential to affect everyone in Wales, but those who were already the worst off are those who are (and will be) hardest hit. This is likely to include people on low-incomes, homeless people, people living with disabilities, older people, children, and those living in rural areas.[133,134,135] The cost-of-living crisis will therefore accelerate what were already increasing differences in health between the best off and worst off households in Wales.

Price pressures also mean that businesses, charities and public service providers are seeing their costs go up so that budgets do not go as far as they used to.[136] This has a compounding impact on people in Wales as the whole system is less able to respond to the growing need for health, care and support services.

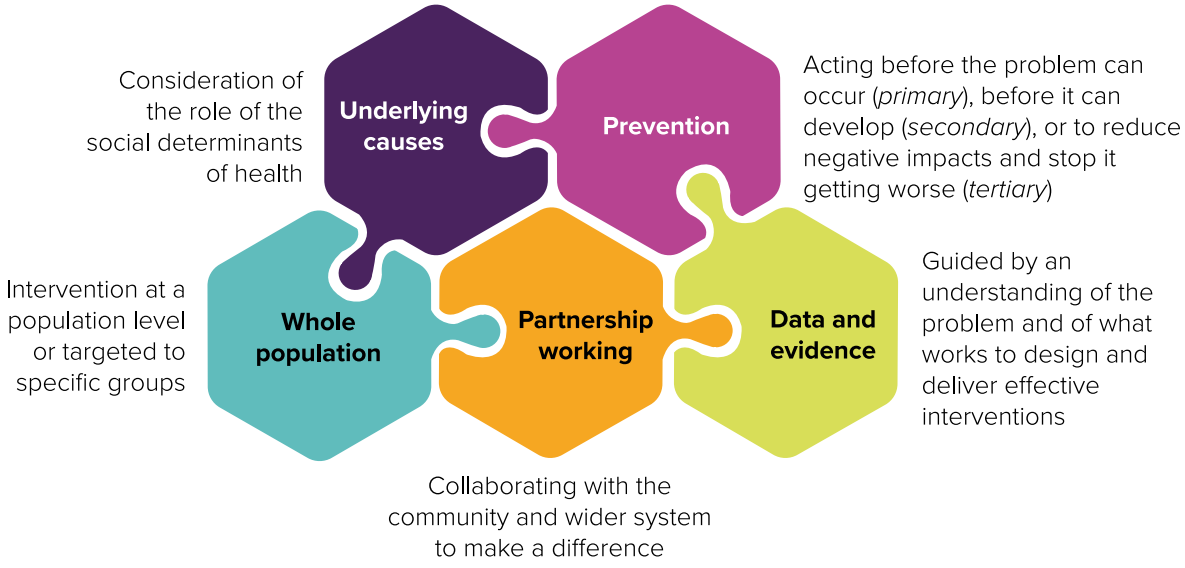
A public health response

Looking ahead it is clear that the cost-of-living crisis is more than a short-term economic squeeze. It is a long-term public health issue due to the severity and scale of its negative impacts on population health in the short-term as well as the potential for these to persist long-term and across generations.

Even once the current cost pressures ease, people may still have debt, or have lost their homes or businesses; they will still be affected by the poor health conditions they developed as a result of not being able to eat well, live in a warm home or attend medical appointments; or they may not be able to look to a better future because cold and hunger stopped them from doing well at school. This creates a long-term challenge for the systems and services in Wales charged with protecting and improving population health and wellbeing. The totality of the cost-of-living crisis' impacts on health and well-being have the potential to put it on a par with the COVID-19 pandemic.

Consequently, the cost-of-living crisis requires an urgent public health response in order to mitigate the negative effects of the immediate crisis across a number of policy areas as well as tackle the underlying causes of health inequalities to create a healthier and more equal Wales in the long-term. The elements that constitute a public health approach are set out in Figure 14. If we grasp this opportunity, we can put Wales on a surer footing for the public health challenges that may lie ahead.

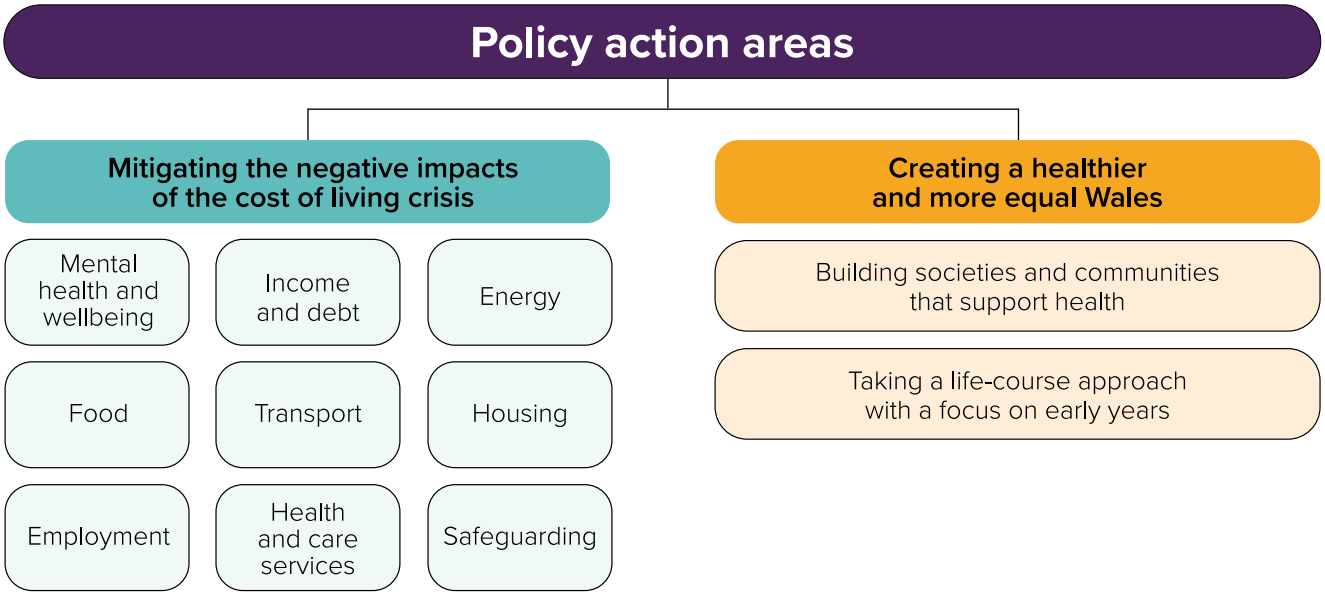
Figure 14: Five elements common to public health approaches



Source: Public Health Wales (2022), adapted from 'Public health approaches in policing: A discussion paper'.[137]

For action to reduce the unfair gaps in health and wellbeing across the population to be effective, we need to rethink the approach to decision-making in policy areas that shape the building blocks for a healthy life, such as employment, education, income, housing, environment and community factors. The priority policy action areas for mitigating the cost-of-living crisis on health and wellbeing and creating a healthier and more equal Wales are summarised in Figure 15 and are discussed in more detail in the following sections.

Figure 15: The priority policy action areas for mitigating the cost-of-living crisis on health and wellbeing and creating a healthier and more equal Wales



Source: Public Health Wales (2022).

Short-term action

Action is required across many areas in the short term to protect people from immediate harms, particularly as we go into winter months with higher fuel and food prices and stretched public services. In terms of short-term responses, the risk that the cost of living crisis poses to people's mental health is an overriding and pressing concern, with poor mental health being closely linked to poverty.[138,139] It is also recognised that low incomes are associated with poor mental and physical health, while increased income has a positive impact.[140] Mechanisms for maximising income during the cost of living crisis, particularly for those with the lowest incomes, will therefore benefit health and wellbeing.

Other short-term response actions, in addition to those relating to mental health and income maximisation, include actions to reduce fuel poverty, prevent homelessness and promote healthy eating.

Medium to longer-term action

In view of further anticipated falls in household disposable income, rising poverty levels, and subsequent longer-term impacts on health and health inequalities, medium to longer-term action is also vital. Examples of medium-term responses include housing energy efficiency measures; improving housing availability, affordability and quality; encouraging active, low-carbon travel options; and promoting fair work.

Creating a healthier, more equal Wales

A key part of building a healthier and more equal Wales in the long-term involves harnessing enabling legislation, such as the Wellbeing of Future Generations Act and Socio-economic Duty. These can be implemented in order to mainstream consideration of health, wellbeing and equity in all policies (also known as a 'health in all policies' approach).

Other long-term aims include building societies and communities that support health, including community resilience, community cohesion and social capital; healthy behaviours; and an 'Economy of Wellbeing' (a society that prioritises wellbeing in its economic decisions).

Recommendation

- **Welsh Government should continue to lead and collaborate with key partners to act on the range of public health solutions required to mitigate the cost-of-living crisis in the short, medium and longer term.**
- **The differences in premature mortality between the most and least deprived areas in Wales are stark. In order to reduce unfair gaps in health and wellbeing, Welsh Government should continue to prioritise and invest in interventions that address upstream determinants of health; early years, education, employment, income, housing, and the environment, in order to avoid worsening public health prospects for our citizens.**

Annex A

Update on recommendations from Protecting our Health CMO Annual Report 2020-21

Chapter	Recommendation	Update
2	In recognition of the value and the benefits of independent scientific advice received during the pandemic, the Welsh Government should establish a functioning agile, robust, and sustainable scientific advisory structure that covers the breadth of disciplines (operational research, policy modelling, behavioural science, etc.), with appropriate potential for further expansion during times of emergency. Given both the determinants of, and the response to COVID-19, and any future pandemics are not limited to Wales, the new scientific advisory structure would need to work in collaboration with all relevant partners in Wales, across the four UK nations, and internationally.	The establishment of a new Health Protection Directorate within the Health and Social Services Group of Welsh Government during 2022 includes a Science Evidence and Advice division. This is in recognition of the value of the scientific advice and builds on the work of the Technical Advisory Group (TAG) during the COVID-19 response. This division is led by the Chief Scientific Officer for Health and is working collaboratively with Public Health Wales, academic institutions and other relevant partners. It is also linking with the other nations of the UK and making international links. It will provide the opportunity to deliver the breadth of disciplines into other areas of policy and be prepared to respond during times of emergency response.

Chapter	Recommendation	Update
3	In implementing extensive recovery plans, the health and social care system should give particular emphasis on ensuring the lessons learnt from the pandemic inform the future design and delivery of services, in particular: • maximising the use of digital technology in ways that ensure recovery efforts are inclusive • focus on prevention as a way of enhancing health equity • co-produce new pathways with service users • prioritise long term workforce needs to ensure sustainability. Welsh Government should prioritise strengthening the health and social care infrastructure and occupational health services to ensure workforce wellbeing. Greater monitoring from services including patient experience and integrated data capture to inform evidence of effectiveness and value should be undertaken by local health boards and local authorities.	**DIGITAL:** There is widespread clinical demand not to return to pre-pandemic ways of working – clinicians across Wales have recognised the benefits associated with technology driven ways of working. Through adopting user centred design of new/ replacement platforms (to underpin wider service transformation), this will ensure that new solutions maximise the use of digital. However, digital must only be an additional means of engaging, and shouldn't completely replace existing means of engaging with patients as some are unable, or unwilling, to use digital methods of interaction. This will be covered by the Digital Service Standards for Wales which we will ask all health organisations to comply with. In September 2022, the NHS Leadership Board approved a proposal to establish a NHS Health Inequalities Group. The NHS Health Inequalities Group will be jointly chaired by the NHS and the Welsh Government and will seek to maximise the impact of healthcare services in tackling health inequalities. Planning Framework 22-23, with a focus on tackling obesity and tobacco as key drivers of health inequalities. We know that smoking and obesity were factors in poorer outcomes for COVID-19, and that these risk factors feature more prominently in certain groups, notable in our less affluent communities. In order to focus prevention in these areas, the Minister for Health and Social Services has directed Local Health Boards to concentrate their share of Prevention and Early Years funds on tackling smoking and obesity.

Chapter	Recommendation	Update
3		To support both recovery and building a more sustainable planned care system for the future, the development of national pathways co-produced and implemented locally will help ensure efficient and prudent models of care.
4	**Mitigation** Partners across the health and social care system should deliver decarbonisation action as identified in the NHS Decarbonisation Strategic Delivery Plan, and Social Care Routemap, including meeting targets for lighting, heating, and transport to deliver the ambition to be collectively net zero by 2030.	A Health and Social Care National Programme Board has been established to provide strategic leadership. The Board will set the direction for the Health and Social Care sector and drive delivery on the needed to reach the 2030 net zero ambition, through the 46 initiatives in the NHS Decarbonisation Strategic Delivery Plan and 15 Social Care Routemap initiatives. Decarbonisation plans were further expanded with the Launch of the Greener Primary Care Framework supporting this sector in its contributions to decarbonisation targets. All NHS Organisations are fully engaged with the climate agenda and have developed and are delivering against their own Decarbonisation Action Plans in working towards the targets within the Strategic Delivery Plan which includes delivery dates for lighting, heating and transport.

Chapter	Recommendation	Update
4		All Health Boards have established Green Groups that are made up of voluntary healthcare professionals in clinical, and non-clinical roles who recognise that the climate emergency is a health emergency and are acting to make change through grass roots projects and activities. Welsh Government has ringfenced £2.6m funding to support decarbonisation innovation, including a scheme for small to medium-sized grass roots initiatives which have potential to be scaled up and spread across the NHS. We have established the first hospital-owned, renewable energy solar farm at Morriston which has exceeded initial expectations on its energy generation, significantly reducing carbon emissions and supplying almost a quarter of Morriston's power. Welsh Government are now supporting plans to provide battery storage for the solar farm. Work is underway to reduce prescriptions for and transition from High Global Warning Potential Inhalers to more sustainable inhalers.

Chapter	Recommendation	Update
4	**Adaptation** Adaptation plans which reflect the latest evidence of the health impacts of climate change should be developed by all partners in the health and social care system in order to protect staff, patients, and the public from the consequences of 'locked in' climate change. The Welsh Government and Public Health Wales should identify intelligence gaps on the current and emerging threats and work with partners to develop climate and health surveillance systems to improve understanding, generate evidence, and inform adaptation planning and action.	We are scaling up our work on adaptation planning. NHS bodies across Wales are being asked to consider how they should adapt to the impacts of climate change and the risks it brings to population health and delivery of services. Welsh Government are working with Public Health Wales to update evidence to improve understanding of the public health risks from heat and vector borne pathogens, as well as flooding and extreme cold weather.

References

INTRODUCTION

1 The commercial determinants of health – The Lancet Global Health

2 Corporate practices and the health of populations: a research and translational agenda (thelancet.com)

CHAPTER 1

3 Office for National Statistics (2021) Mid year population estimates

4 Office for National Statistics (2020) National population projections by year and age

5 Office for National Statistics (2020) National population projections by year and age

6 Office for National Statistics (2021) Life expectancy estimates, all ages, UK

7 Office for National Statistics (2021) Life expectancy estimates, all ages, UK

8 Office for National Statistics (2021) Life expectancy estimates, all ages, UK

9 Deaths due to COVID-19, registered in England and Wales – Office for National Statistics (ons.gov.uk)

10 Death registration summary statistics, England and Wales – Office for National Statistics

11 Deaths due to COVID-19, registered in England and Wales – Office for National Statistics (ons.gov.uk)

12 Adult general health and illness (National survey for Wales): April 2021 to March 2022 | GOV.WALES

13 Adult general health and illness (National survey for Wales): April 2021 to March 2022 | GOV.WALES

14 Adult general health and illness (National survey for Wales): April 2021 to March 2022 | GOV.WALES

15 Health, disability and provision of unpaid care in Wales (Census 2021) | GOV.WALES

16 Years of Life Lost – Public Health Wales (nhs.wales)

17 Socioeconomic inequalities in avoidable mortality in Wales – Office for National Statistics (ons.gov.uk)

18 Child and infant mortality in England and Wales – Office for National Statistics (ons.gov.uk)

19 Child Measurement Programme – Public Health Wales (nhs.wales)

20 https://phw.nhs.wales/services-and-teams/child-measurement-programme/

21 Well-being of Wales, 2022 (children and young people's well-being): a healthier Wales [HTML] | GOV.WALES

22 Adult lifestyles by year, 2020-21 onwards (gov.wales)

23 Adult lifestyles by area deprivation, 2020-21 onwards (gov.wales)

24 Adult lifestyles by area deprivation, 2020-21 onwards (gov.wales)

25 SHRN-2021-22-National-Indicators-Report-FINAL-en.pdf

26 Use of e-cigarettes among young people in Great Britain – ASH

27 **Adult lifestyles by area deprivation, 2020-21 onwards** (gov.wales)

28 **Adult lifestyles by area deprivation, 2020-21 onwards** (gov.wales)

29 **Well-being of Wales, 2022: a healthier Wales [HTML] | GOV.WALES**

CHAPTER 2

30 **National flu and covid-19 surveillance reports**

31 **State of the world's nursing 2020: investing in education, jobs and leadership** (who.int)

32 Bambra, C., Riordan, R., Ford, J. and Matthews, F., 2020. The COVID-19 pandemic and health inequalities. *J Epidemiol Community Health, 74*(11), pp.964-968

33 **https://nccu.nhs.wales/urgent-and-emergency-care/experimental-kpis/**.

CHAPTER 3

34 **Commercial determinants of health (who.int)**

35 **Commercial determinants of health (who.int)**

36 Knai, C (2018) *Systems Thinking as a Framework for Analyzing Commercial Determinants of Health*. The Milbank Quarterly, 96: 472-98

37 Alcohol Health Alliance (2013) **Health First: An evidence-based alcohol strategy for the UK**. University of Stirling and the Alcohol Health Alliance

38 Obesity Health Alliance (2021) **Turning the Tide: A 10 year healthy weight strategy**, Obesity Health Alliance, London

39 **School Health Research Network (shrn.org.uk)**

40 **Report on the 2022 School Environment Questionnaire for the Welsh Network of Health School Schemes September 2022**

41 Van Schalkwyk MCI, Petticrew M, Maani N, Hawkins B, Bonell C, Katikireddi SV, et al. (2022) **Distilling the curriculum: An analysis of alcohol industry-funded school-based youth education programmes**. PLoS ONE 17(1): e0259560

42 **No level of alcohol consumption is safe for our health (who.int)**

43 Van Schallwyk, M, Petticrew, M, Maani, N, Hawkins, B. **Denormalising alcohol industry activities in schools**. COMMENT. Lancet Public Health Volume 8, Issue 2, February 2023

44 Frieden TR, Bloomberg MR. *How to prevent 100 million deaths from tobacco*. The Lancet. 2007 May 19;369(9574):1758–61

45 **Tobacco Products – Worldwide | Statista Market Forecast [Internet]**. Statista. [cited 2023 Mar 5]

46 Branston JR. *Industry profits continue to drive the tobacco epidemic: A new endgame for tobacco control?* Tob Prev Cessation. 2021 Jun 11;7(June):1–3

47 Sweda EL Jr, Daynard RA. *Tobacco industry tactics*. British Medical Bulletin. 1996 Jan 1;52(1):183–92

48 Henningfield JE, Rose CA, Zeller M. *Tobacco industry litigation position on addiction: continued dependence on past views*. Tob Control. 2006 Dec;15(Suppl 4):iv27–36

49 Grüning T, Gilmore AB, McKee M. *Tobacco Industry Influence on Science and Scientists in Germany*. Am J Public Health. 2006 Jan;96(1):20–32

50 ASH. **The Economics of Tobacco [Internet]**. ASH. [cited 2023 Mar 5]

51 Warner KE. *The economics of tobacco: myths and realities*. Tobacco Control. 2000 Mar 1;9(1):78–89

52 **Arguments and Language – TobaccoTactics [Internet]**. [cited 2023 Mar 5]

53 Harris B. *The intractable cigarette 'filter problem'*. Tobacco Control. 2011 May 1;20(Suppl 1):i10–6

54 Cataldo JK, Malone RE. *False Promises: The Tobacco Industry, "Low Tar" Cigarettes, and Older Smokers*. Journal of the American Geriatrics Society. 2008;56(9):1716–23

55 Hammond D, Parkinson C. *The impact of cigarette package design on perceptions of risk*. Journal of Public Health. 2009 Sep 1;31(3):345–53

56 Simonavicius E, McNeill A, Shahab L, Brose LS. *Heat-not-burn tobacco products: a systematic literature review.* Tobacco Control. 2019 Sep 1;28(5):582–94

57 **Front Groups – TobaccoTactics [Internet]**. [cited 2023 Mar 3]

58 Dearlove JV, Bialous SA, Glantz SA. *Tobacco industry manipulation of the hospitality industry to maintain smoking in public places*. Tobacco Control. 2002 Jun 1;11(2):94–104

59 Rosenberg NJ, Siegel M. *Use of corporate sponsorship as a tobacco marketing tool: a review of tobacco industry sponsorship in the USA, 1995-99*. Tobacco Control. 2001 Sep 1;10(3):239–46

60 Saloojee Y, Dagli E. *Tobacco industry tactics for resisting public policy on health*. Bull World Health Organ. 2000 Jul;78:902–10

61 **Influencing Science: Funding Scientists – TobaccoTactics [Internet]**. [cited 2023 Mar 3]

62 **Expert report accuses tobacco TNCs of infiltration [Internet]**. [cited 2023 Mar 5]

63 **China National Tobacco Corporation – TobaccoTactics [Internet]**. [cited 2023 Mar 5]

64 **Tobacco Smuggling – TobaccoTactics [Internet]**. [cited 2023 Mar 3]

65 **Tobacco Industry Pricing Strategies [Internet]**. TobaccoTactics. [cited 2023 Mar 3]

66 Hiscock R, Branston JR, McNeill A, Hitchman SC, Partos TR, Gilmore AB. *Tobacco industry strategies undermine government tax policy: evidence from commercial data*. Tobacco Control. 2018 Sep 1;27(5):488–97

67 Landman A, Glantz SA. *Tobacco Industry Efforts to Undermine Policy-Relevant Research*. Am J Public Health. 2009 Jan;99(1):45–58

68 Puig S. *Internationalization of Tobacco Tactics*. Duke J Comp & Int'l L. 2017 2018;28:495

69 mul GGH, Tan GPP, Van Der Eijk Y. *A Systematic Review of Tobacco Industry Tactics in Southeast Asia: Lessons for Other Low- And MiddleIncome Regions*. International Journal of Health Policy and Management. 2021 Jun 1;10(6):324–37

70 **E-cigarettes around 95% less harmful than tobacco estimates landmark review – GOV.UK** (www.gov.uk)

71 **https://www.bbc.co.uk/news/health-65614078k**

72 **Rates of overweight and obesity are now dramatically on the rise in low- and middle-income countries**

73 **Healthy Weight: Healthy Wales delivery plan 2021 to 2022 [HTML] | GOV.WALES**

74 **The commercial determinants of health – The Lancet Global Health**

75 **Ultraprocessed food and chronic noncommunicable diseases: A systematic review and meta-analysis of 43 observational studies – PubMed (nih.gov)**

76 **Energy drinks – Press Office – Newcastle University (ncl.ac.uk)**

77 **Healthy Food Environment www.gov.wales**

78 **Ending the sale of Energy Drinks to children**

79 **Ultra-processed foods (soilassociation.org)**

80 (2020) **https://onlinelibrary.wiley.com/doi/full/10.1111/1468-0009.12475**

81 **Our strategy | Food Standards Agency**

82 **Food you can trust**

83 **Consumer insights tracker | Food Standards Agency**

84 **A rapid evidence assessment of UK citizen and industry understandings of sustainability (food.gov.uk)**

85 Holmes J, **Tackling obesity, King's Fund, 2021,** retrieved 10 February 2023

86 **https://journals.plos.org/plosmedicine/article?id=10.1371/journal.pmed.1004160**

87 Gambling Commission. 2018. **Levels of problem gambling in Wales**. [Accessed: 15 February 2023]

88 Gambling Commission. 2021. **Industry statistics: November 2022**. [Accessed: 15 February 2023]

89 HM Revenue and Customs. 2022. **Annual report and accounts 2021-2022**. [Accessed: 15 February 2023]

90 Blank, L et al. 2021. *Interventions to reduce the public health burden of gambling-related harms: a mapping review*. Lancet Public Health 6(1), pp.50-63. doi:10.1016/S2468-2667(20)30230-9

91 Gambling Commission. 2018. **Levels of problem gambling in Wales**. [Accessed: 15 February 2023]

92 Rogers, R et al. 2019. **Gambling as a public health issue in Wales**. [Accessed: 15 February 2023]

93 NatCen Social Research. 2020. **Treatment needs and gap analysis in Great Britain: Synthesis of findings from a programme of studies**. [Accessed: 15 February 2023]

94 **Gambling With Lives. 2019. Written evidence (GAM0098)**. [Accessed: 15 February 2023]

95 House of Lords. 2020. **Gambling Harm: Time for action**. [Accessed: 15 February 2023]

96 Welsh Government. 2018. **Gambling with our health: Chief Medical Officer for Wales annual report 2016-17**. [Accessed: 15 February 2023]

97 House of Lords. 2020. **Gambling Harm: Time for action**. [Accessed: 15 February 2023]

98 Torrance, J et al. 2020. *It's basically everywhere: Young adults' perceptions of gambling advertising in the UK*. Health Promotion International. doi: 10.1093/heapro/daaa126

99 University of Bristol. 2021b. **What are the odds?** The appeal of gambling adverts to children and young persons on twitter. [Accessed: 15 February 2023]

100 John, B et al. 2020. *Gambling harm as a global public health concern: A mixed method investigation of trends in Wales*. Frontiers in Public Health 8. doi:10.3389/fpubh.2020.00320

101 Senedd Research. 2022. **Taking a public health approach to gambling in Wales**. [Accessed: 15 February 2023]

102 John, B et al. 2020. *Gambling harm as a global public health concern: A mixed method investigation of trends in Wales*. Frontiers in Public Health 8. doi:10.3389/fpubh.2020.00320

103 McGee, D. 2020. *On the normalisation of online sports gambling among young adult men in the UK: a public health perspective*. Public Health 184, pp. 89-94. doi:10.1016/j.puhe.2020.04.018

104 Welsh Government. 2018. **Gambling with our health: Chief Medical Officer for Wales annual report 2016-17**. [Accessed: 15 February 2023]

105 University of Bristol. 2021a. **The geography of gambling premises in Britain**. [Accessed: 15 February 2023]

106 Rogers, R et al. 2019. **Gambling as a public health issue in Wales**. [Accessed: 15 February 2023]

107 GambleAware. 2022a. **Gamble Aware GB Maps**. [Accessed: 15 February 2023]

108 University of Bristol. 2022. **Exploring alternatives to 'safer gambling' messages**. [Accessed: 15 February 2023]

109 Public Health Wales. 2023. **Gambling health needs assessment for Wales**. [Accessed: 15 February 2023]

110 Bowden-Jones, H et al. 2022. *Gambling disorder in the UK: Key research priorities and the urgent need for independent research funding*. Lancet Psychiatry 9, pp. 321–329 doi: 10.1016/ S2215-0366(21)00356-4

111 NHS England. 2022. **Ceasing of the dual commissioning and funding by GambleAware of the NHS elements of the problem gambling treatment pathway**. [Accessed: 15 February 2023]

112 Public Health Wales. 2023. **Gambling health needs assessment for Wales**. [Accessed: 15 February 2023]

113 *Public attitudes towards new smoke-free outdoor spaces in Wales*. Report of Findings. 2022 Beaufort Research for Public Health Wales

114 **Annual Findings – Graphs – Alcohol in Wales**

CHAPTER 4

115 **The deadliest and most extreme weather events of 2022 | The Week UK**

116 **UK weather: 2022 was warmest year ever, Met Office confirms – BBC News**

117 **Excess mortality during heat-periods – Office for National Statistics (ons.gov.uk**)

118 **Climate change and health. Report by the WHO secretariat**.

119 **Just Transition to Net Zero: Wales Call for Evidence (gov.wales)**

120 **marmot-review_opt.pdf (legalandgeneral.com)** (121)

121 **https://www.greenpeace.org.uk/news/golden-age-of-greenwash/**

122 **https://www.gov.uk/government/news/new-independent-group-to-help-tackle-greenwashing**

123 **Making environmental claims on goods and services - GOV.UK (www.gov.uk)**

124 **Draft strategy for engaging the general public in action on climate change | GOV.WALES**

CHAPTER 5

125 Azam, S., Jones, T., Wood, S., Bebbington, E., Woodfine, L., and Bellis, M. (2019). **Improving winter health and well-being and reducing winter pressures in Wales**. Cardiff: Public Health Wales

126 Roberts, M., Petchey, L., Challenger, A., Azam, S., Masters, R., and Peden, J. (2022). **Cost of living crisis in Wales A public health lens. Cardiff**: Public Health Wales

127 Watson, I., MacKenzie, F., Woodfine, L., and Azam, S. (2019). **Making a Difference. Housing and Health: A Case for Investment**. Cardiff: Public Health Wales

128 Currie, J., Boyce, T., Evans, L., Luker, M., Senior, S., Hartt, M., Cottrell, S., Lester, N., Huws, D., Humphreys, C., and Little, K. (2021). *Life expectancy inequalities in Wales before COVID-19: an exploration of current contributions by age and cause of death and changes between 2002 and 2018*. Public Health, 193, 48-56

129 Edmunds, N., and Green, L. (2021). **Health and well-being impacts of climate change: Infographic**. Cardiff: Public Health Wales

130 Dyakova, M., Couzens, L., Allen, J., Van Eimeren, M., Stielke, A., CotterRoberts, A., Kadel, R., Bainham, B., Ashton, K., Stewart, D., Hughes, K., and Bellis, M. (2021). **Placing health equity at the heart of the COVID-19 sustainable response and recovery: Building prosperous lives for all in Wales**. Cardiff: Public Health Wales

131 Petchey, L., Green, L., Edmonds, N., Van Eimeren, M., Morgan, L., Azam, S., and Bellis, M.A. (2019). **The Public Health Implications of Brexit in Wales: A Health Impact Assessment Approach. A rapid review and update**. Cardiff: Public Health Wales

132 Office for National Statistics. (2022). **Health state life expectancies by national deprivation quintiles, Wales: 2018 to 2020**. 25 April 2022

133 Office for National Statistics. (2022). **Impact of increased cost of living on adults across Great Britain: June to September 2022**. 25 October 2022

134 House of Commons Library. (2022). **Poverty in the UK: Statistics**. 13 April 2022

135 Joseph Rowntree Foundation. (2020). **Poverty in Wales 2020**. 2 November 2020

136 Federation of Small Businesses (FSB) Wales. (2022). **FSB Wales' response Economy, Trade and Rural Affairs Committee inquiry (Cost of Living)**. May 2022

137 Christmas, H., and Srivastava, J. (2019). **Public health approaches in policing: A discussion paper**. Warwickshire: College of Policing and Public Health England

138 Backhaus, I., Hoven, H., Di Tecco, C., Iavicoli, S., Conte, A., and Dragano, N. (2022). *Economic change and population health: lessons learnt from an umbrella review on the Great Recession*. BMJ Open, 12, e060710

139 Marmot, M., Allen, J., Boyce, T., Goldblatt, P., and Morrison, J. (2020). **Health Equity in England: The Marmot Review ten years on**

140 Thomson, R.M., Igelström, E., Purba, A.K., Shimonovich, M., Thomson, H., McCartney, G., Reeves, A., Leyland, A., Pearce, A. and Katikireddi, S.V. (2022). *How do income changes impact on mental health and well-being for working-age adults? A systematic review and meta-analysis*. The Lancet, 7(6), E515-E528