Llywodraeth Cymru
Welsh Government

Restoring our Health

CHIEF MEDICAL OFFICER FOR WALES ANNUAL REPORT – JUNE 2022

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Contents

Mae'r ddogfen yma hefyd ar gael yn Gymraeg.
This document is also available in Welsh.

Introduction

Last year my special report focused on COVID-19 and our emergency response to the initial stages of the global pandemic. As I write this year's report, we are still at a phase where the disease is expanding and contracting in different parts of the world. The Omicron variant has led to new waves of infection across the globe and a surge of new cases in Wales. This has meant re-imposing protection and control measures to seek to reduce transmission. Wales has continued to see a huge vaccination and booster rollout effort, which has served as a significant protection.

Over time, the nature of the pandemic will change, and rather than being eliminated, it is likely that SARS-Cov-2 will become endemic and we will develop a different balance of approaches to manage the risks associated with COVID-19.

In this report, the chapter 'state of the nation' covers life expectancy, major causes of death, mortality trends, and inequalities in health and health behaviours. I highlight that the pandemic has had a particular influence on key trends: for example, we know that COVID-19 has deepened inequalities and we have seen its disproportionate impact on some of the most vulnerable people in our society.

This reinforces my findings in previous reports, where I have highlighted how inequalities can impact negatively on economic growth and trap people in cycles of poverty. I have described how poorer educational outcomes can lead to worse employment and health and well-being outcomes in later life. We must track and take action to address these trends; described in more detail in the Welsh Governments' Future Trends Report.

In the second chapter, I provide a 'focus on the pandemic', specifically for the time period between January 2021 and October 2021. The changing epidemiological picture, complicated by variants of concern is described alongside the measures imposed to limit the spread of infection.

I also describe the various methods of surveillance that were used and continue to be employed to detect, monitor, and map the spread of the virus.

Chapter three describes how our public health system and health and social care workforce have continued to face the extraordinary challenge presented by managing and treating people affected by COVID-19. Adopting new ways of working whilst under extreme pressure has been hugely demanding but has led to some opportunities for change across the NHS.

The chapter also has a focus on 'the health and social care system response' which describes some of these in detail, demonstrating how the system has adapted and is planning and moving towards 'recovery'.

I also dedicate a section in this chapter to describing the National Clinical Framework and how it has been developed to help achieve the 'quadruple aim' of better population health outcomes, patient and workforce experience, service quality, and value for money.

I have previously advocated a 'one health' approach as a way to help us to control infectious diseases, and as a way of tackling the pressures on our natural, economic, and social systems that sustain health.

This is an approach which can also be applied to climate change – a pressing public health issue which will increasingly dominate our lives as it adversely affects the most basic health requirements: clean air, safe water, sufficient food, and adequate shelter.

This is not just an issue for vulnerable developing nations, it is an issue we all face and I dedicate chapter four to examining this further and to the need to prepare, mitigate and adapt for climate change in Wales.

In 2021, COP26 did much to raise the profile of climate change especially in mobilising young people around the world who are increasingly aware of these risks and are actively demonstrating and wanting to hold decision-makers accountable.

Chapter four includes a number of case studies which highlight various responses to this emergency and demonstrates the commitment to decarbonise through new policies and actions across services and in different sectors.

In this year's report I have tried to strike a balance between looking back over the second year of the pandemic, and looking forward to the challenges that lie ahead.

In particular we must use our experience of COVID-19 to reset and improve action aimed at improving our health across the whole of society.

The pandemic has shown the interconnectivity of our world and how quickly everything we take for granted can be brought to a halt; equally it has shown us how resourceful and adaptable we all are and how we can find solutions to seemingly intractable problems.

This gives me great cause for optimism for the future and for our ongoing recovery.

Thank you for your interest and for reading this report.

Chapter 1:

Our changing population

The population of Wales continues to grow and in 2020 was estimated to be just over 3.16 million. The population of Wales is expected to grow by almost 4% up to 2043[1].

Figure 1: Projected population change in Wales up to 2043
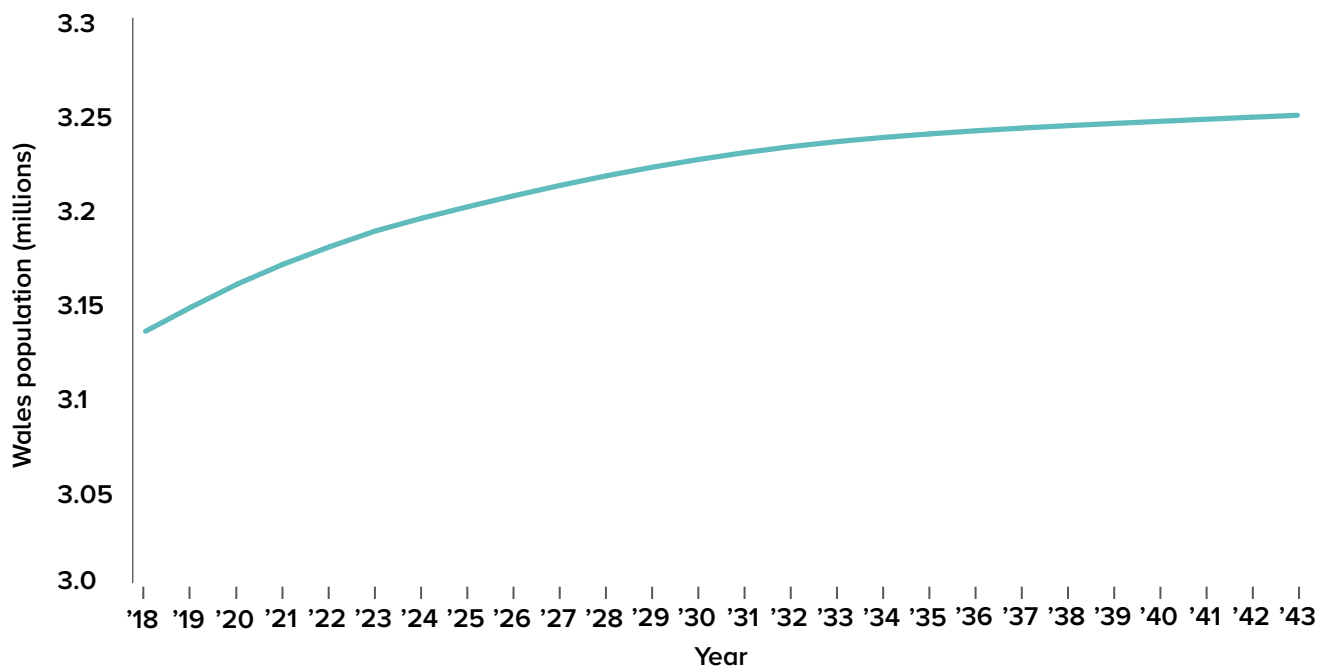
Source: Welsh Government, 2020.

Over the next 20 years Wales is set to continue on a trend towards an ageing population. The number of those aged 65 and over is expected to increase from 21% of the population to 26% of the population over the next two decades, equating to approximately 670,000 in 2020 to just over 860,000 in 2040[2]. The proportion of the working-age population is expected to decrease over the same period, in spite of anticipated population growth and positive net migration[3].

The proportion of young people (those aged 0-15) in Wales is expected to decrease by the year 2040 and account for 16% of the population; down from 18% in 2020 (approximately 560,000 in 2020 down to 520,000 in 2040)[4].

Living longer and living well

Improvements in the factors associated with health, for example health care provision, housing, education and GDP per capita, have historically led to a rising population life expectancy in Wales. The rate of rise stalled during the last decade compared to the 2000s.

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[5].

In Wales, the average life expectancy at birth drops to 82.0 for females and to 78.3 for males[6].

Since around 2011, the rise in life expectancy has stalled, and, due to the impact of the pandemic, actually decreased in 2020 with 4,960 COVID-19 deaths recorded in Wales, and a further 4,239 COVID-19 deaths recorded in 2021[7].

Figure 2: Life expectancy at birth in Wales and UK (2001-03 to 2018-20)
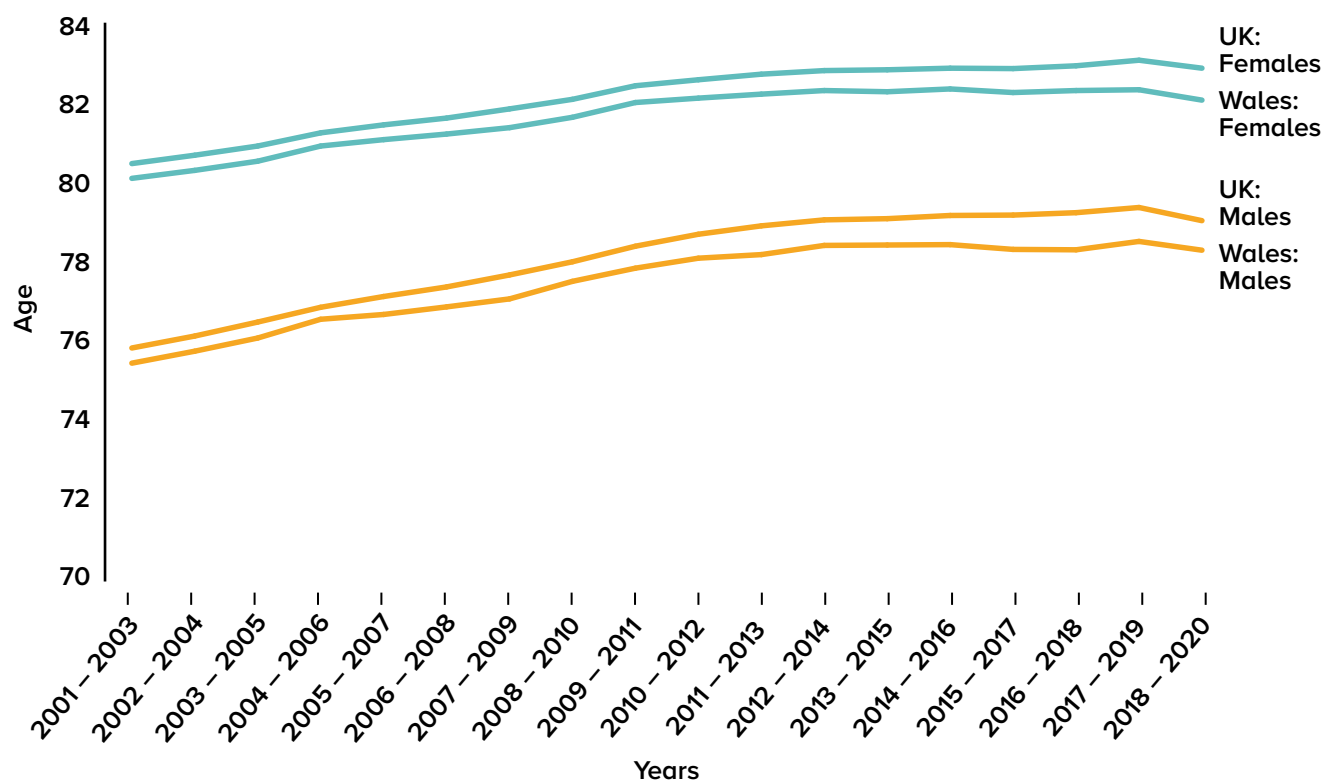
Source: Office for National Statistics, 2021.

There remains a significant difference in life expectancy and health life expectancy between the most and least deprived areas of Wales, and this gap shows no sign of reducing. Recent analysis (based on 2017 to 2019) shows the gap in life expectancy between the most and least deprived (on the slope index of inequality) is 9 years for males and 7.4 for females. On healthy life expectancy, the gap between the most and least deprived is 17 years for males and 18.3 years for females[8].

We want people in Wales to live long and healthy lives and we've put in place a number of progressive policies to achieve that ambition. We also work closely with Public Health Wales to both monitor the ongoing pattern of life expectancy and to explore further the underlying factors.

Figure 3: Slope index of inequality for life expectancy and healthy life expectancy, males and females, 2011-13 to 2017-19
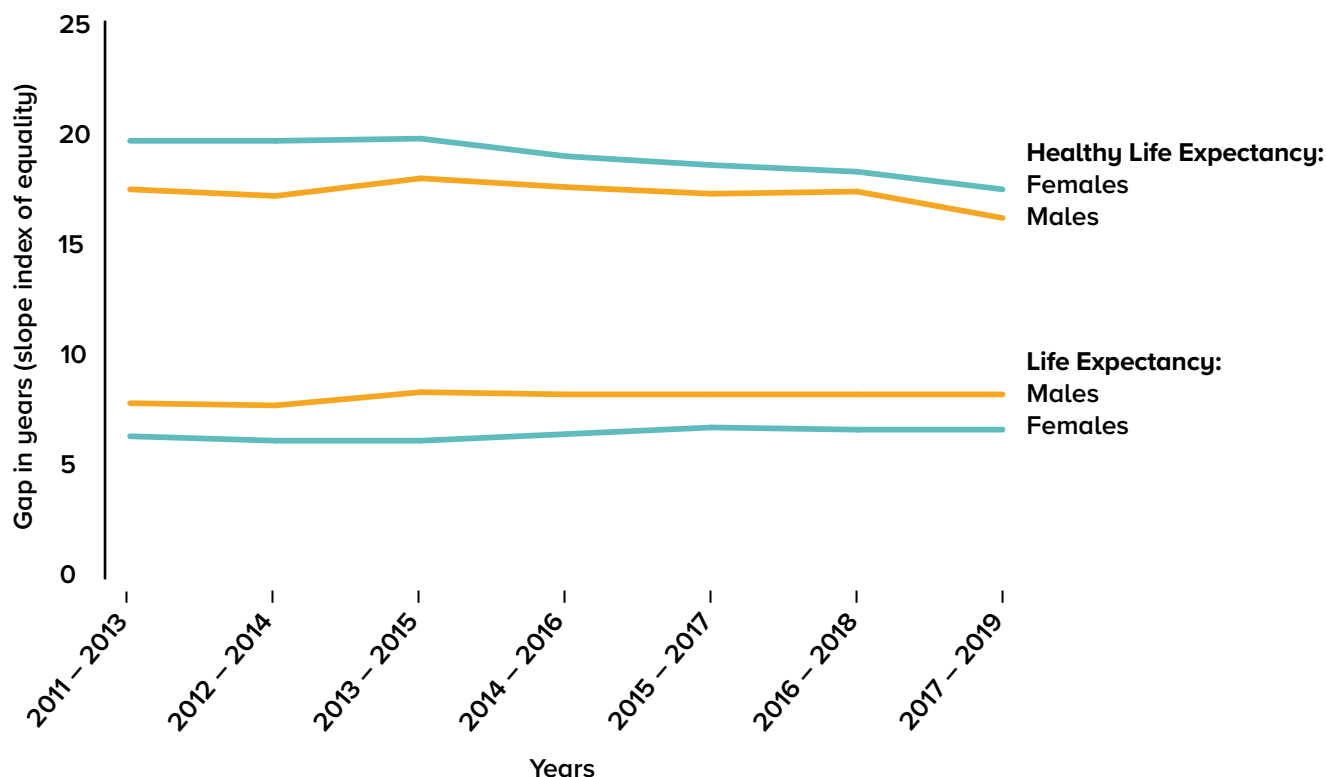
Source: Office for National Statistics.

Mortality and cause of death

Since 2011, mortality rates in Wales have remained stable although year on year fluctuations are evident. This marked an important change in trend as mortality rates had generally been falling since the Second World War[9]. The levelling off of mortality rates in Wales is similar to the trend exhibited in the other UK nations.

In 2020 there were 37,399 deaths registered in Wales, of which 4,382 were due to COVID-19. This compares with an average of 33,420 deaths per year between 2015 and 2019. COVID-19 is associated with an increase in the age-standardised death rate in Wales[10].

The impact of COVID-19 will also be apparent for deaths registered in 2021 when available.

Provisional data shows that ischaemic heart disease was the leading cause of death in 2021, followed by COVID-19, dementia, and Alzheimer's disease[11].

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 elderly (See figure 14).

Figure 4: Leading causes of death, Wales, 2021

Cause	Deaths
Ischaemic heart diseases	3,922
COVID-19	3,646
Dementia and Alzheimer's disease	3,529
Cerebrovascular diseases	1,855
Chronic lower respiratory diseases	1,837
Malignant neoplasm of trachea, bronchus and lung	1,736
Influenza and pneumonia	1,077
Malignant neoplasm of colon, sigmoid, rectum and anus	1,015
Symptoms, signs and ill-defined conditions	883
Cirrhosis and other diseases of the liver	695

Deaths

Source: Office for National Statistics.

Living with illness

The National Survey for Wales also highlighted that 46% of adults in Wales reported having at least one long-standing illness. The data showed that the percentage of females reported as having at least one long-standing illness was higher (48%) than in males (44%)[12].

In 2020-21, 84% of adults between 16 and 44 reported having good or very good health compared to 67% of adults aged 65 and over. Adults in the oldest group were more likely to suffer from longstanding illnesses with 65% reported having any longstanding illness[13].

This is 32 percentage points higher than was reported among adults between 16 and 44.

Most adults in Wales report good general health. 76% of over 16s reported being in 'good' or 'very good' health in the National Survey for Wales (May 2020 to March 2021)[14].

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)[15].

Figure 5: Rate of infant mortality for Wales and England and Wales combined from 2010 to 2019
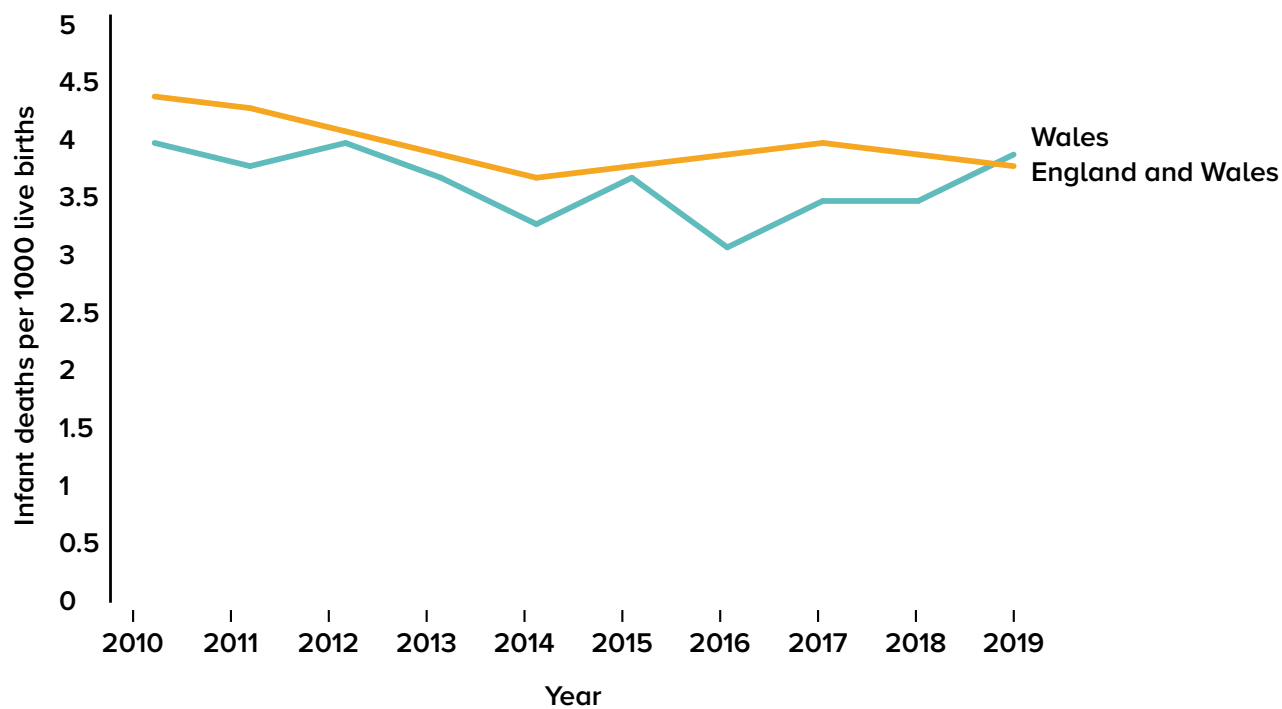
Source: Office for National Statistics.

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%*. 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.

Figure 6: Obesity and deprivation – Percentage of children, aged 4 to 5 years, who are obese, most and least deprived fifth in Wales, Child Measurement Programme for Wales 2012-13 to 2018-19
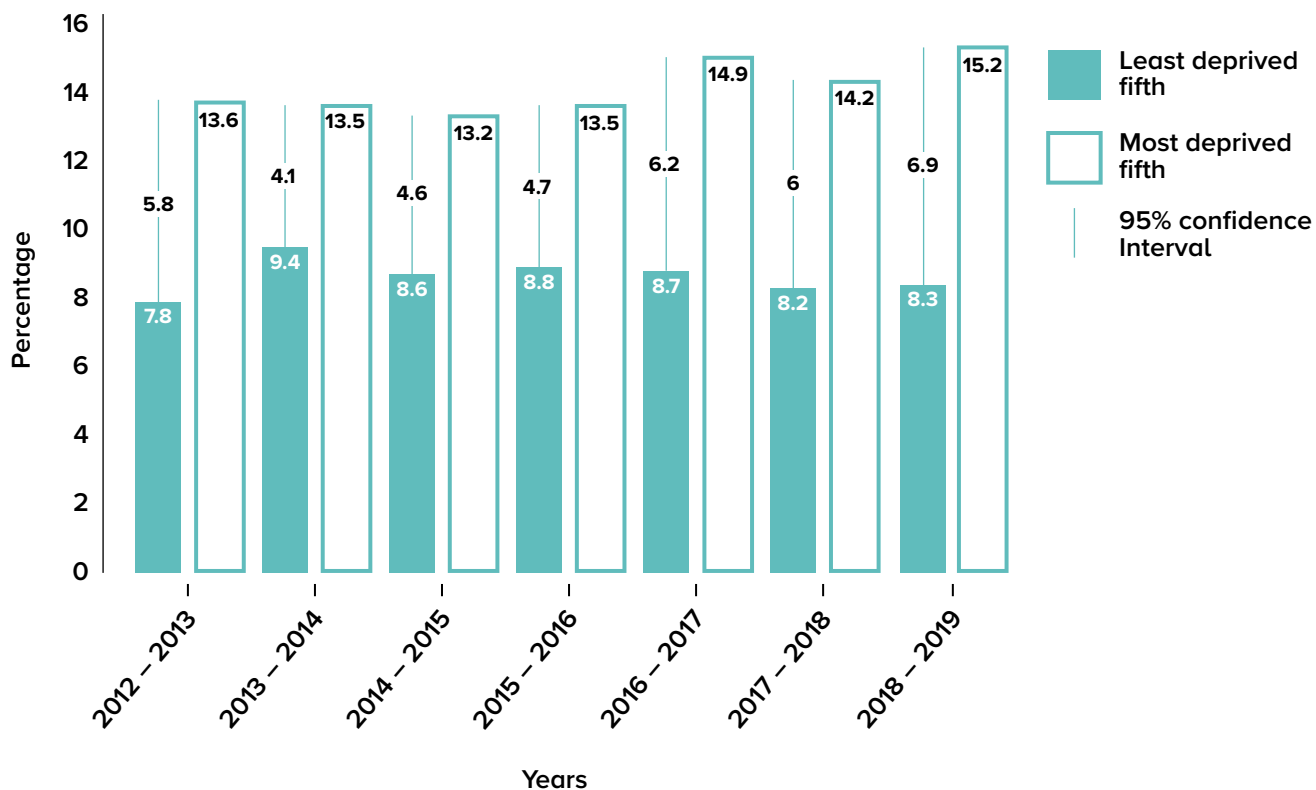
Source: StatsWales, Welsh Government.

The percentage of children in Wales (aged 11-16) who have fewer than two healthy lifestyle behaviours increased slightly between 2013-2018 (from 12.0% to 12.3%)[16].

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*   The collection of Child Measurement Programme data has been disrupted during the pandemic preventing any reporting for the academic year 2019-20.

Health behaviours in adults

The number of healthy lifestyle behaviours decreases in adults, with males having fewer healthy lifestyle behaviours than females[17].

31%
Ate 5 or more portions
of fruit and veg

37%
Healthy
weight

51%
Active for 150 minutes or
more the previous week

83%
Drank within weekly
guidelines

86%
Do not
currently smoke

In Wales 24% of adults over the age of 16 are obese with the percentage of obesity highest for people in middle age[18]. Socio-economic status continues to influence key outcomes here in Wales. Those in our least deprived areas are more likely to meet the guidelines around physical activity (60%) than those in the most deprived (41%)[19].

The picture is similar for unhealthy behaviours, with those in the most deprived areas more likely to smoke (21%) than those in the least deprived areas (8%)[20].

Smokers are generally more at risk of contracting respiratory infections and experiencing more severe symptoms once infected than non-smokers.

Smoking behaviours may be impacted by changes to living and working routines, changes in stress and anxiety levels, and changes in the support available to help people quit.

Figure 7: Percentage of respondents by smoking status, smoker, percentage, persons aged 16 and over, Wales, May 2020 to June 2021 compared to 2019-2020
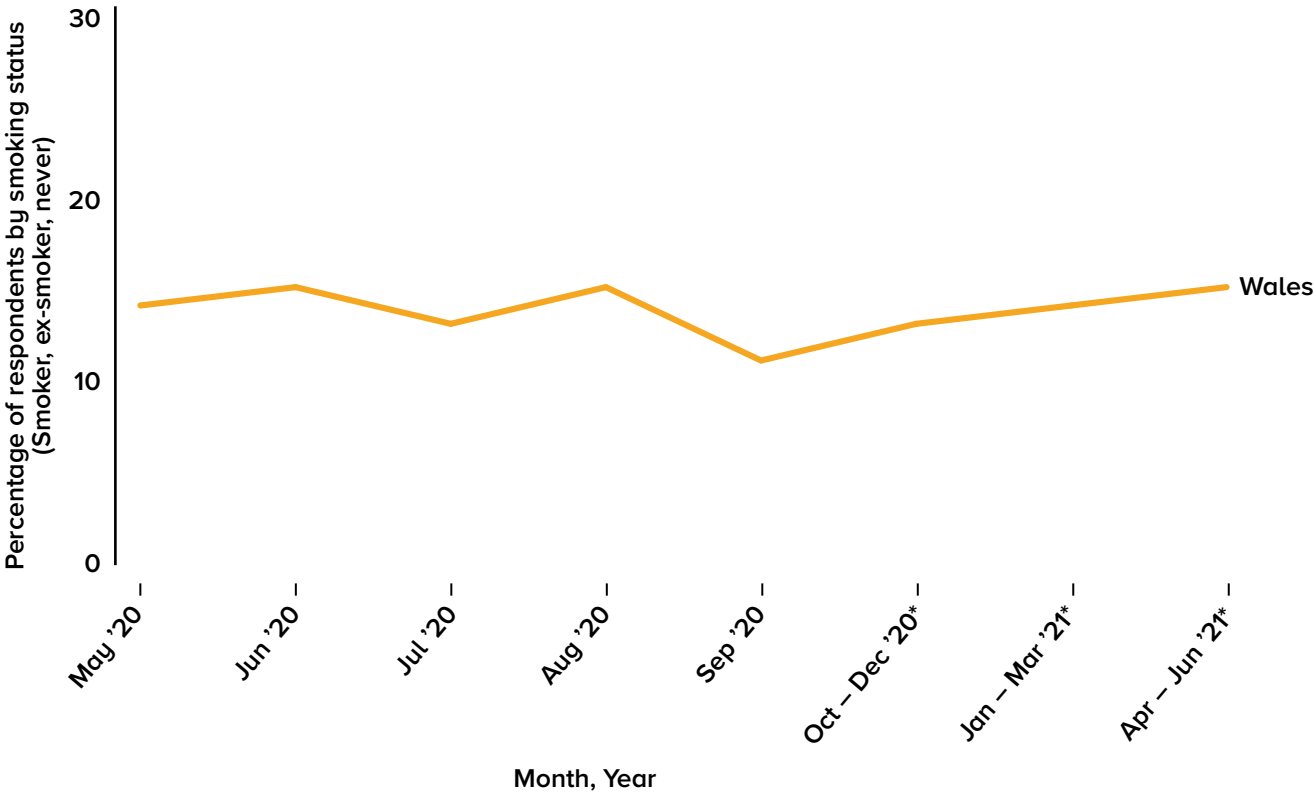
*The survey's carried out in 2019–20 (annual) and 2020–21 used different methods; caution should be taken when comparing the results. The survey also moved from monthly to quarterly reporting from Oct – Dec 2020

Source: Welsh Government. Adult lifestyle (National Survey for Wales).

Similarly, in the least deprived areas we see greater adoption of guidelines around the consumption of fruit and vegetables (34%) compared with those in the most deprived areas (22%)[21].

For alcohol consumption, we see that more people in the least deprived areas drink above the recommended guidelines (20%) than those in the most deprived areas (13%).

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 sensible guidelines[22].

The gap between the least and most deprived adults in Wales, with fewer than two healthy lifestyle behaviours, stands at four percentage points, but varies across deprivation quintiles.

Figure 8: Adults in Wales with fewer than two healthy lifestyle behaviours
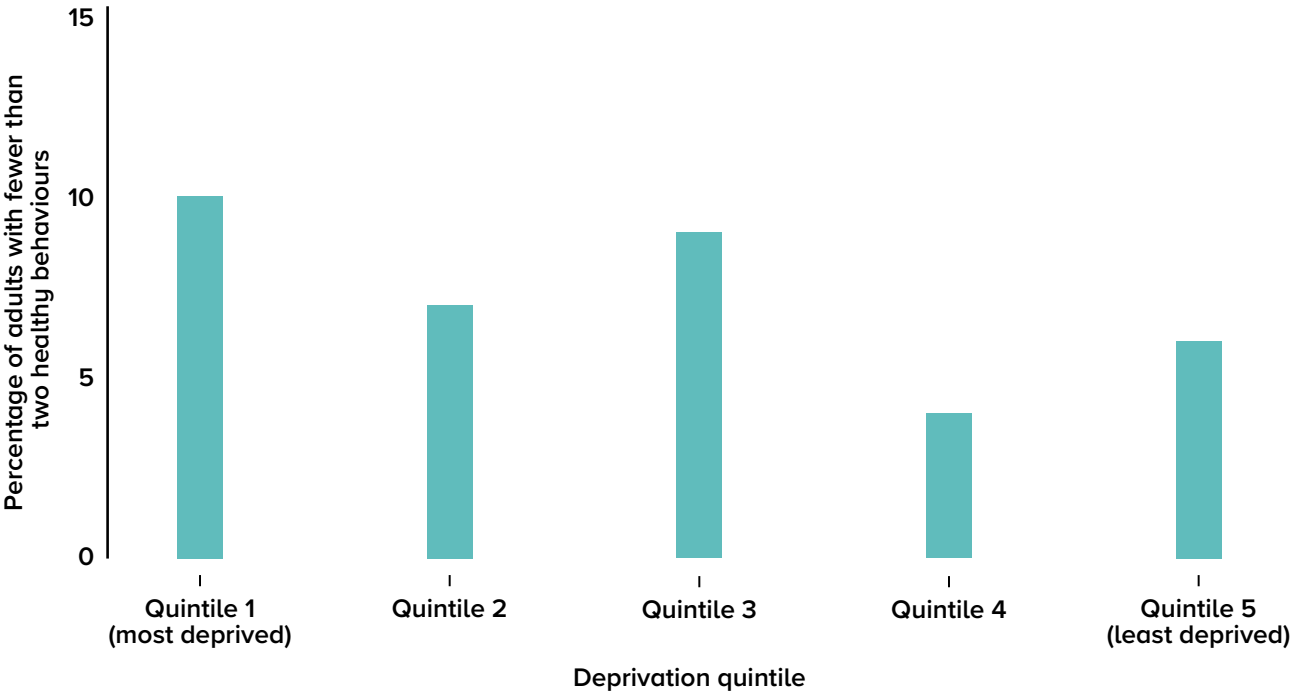
Source: Produced by Public Health Wales Observatory, using National Survey for Wales (Welsh Government).

Ageing well

Our health service will need to take an increasingly co-ordinated, whole system approach to ensure that the people of Wales receive the care and support they need as our population grows and ages.

As recognised in the Welsh Government's national strategy Prosperity for All, remaining both mentally and physically active into old age may significantly reduce the risk of developing dementia, other health conditions, and depression as a result of loneliness and isolation.

However, with more people living longer, the number of dementia cases will continue to rise. Alongside dignified care for the individual, we also need to recognise the impact that dementia has on families, friends, and carers.

Our Dementia Action Plan 2018-2022, and the companion document published in September 2021 which looks at strengthening provision in response to COVID-19, outlines what actions we will undertake to improve diagnosis, care and support for people with dementia. This includes action to support brain health and lifestyle changes that can support the risk reduction of developing certain dementias.
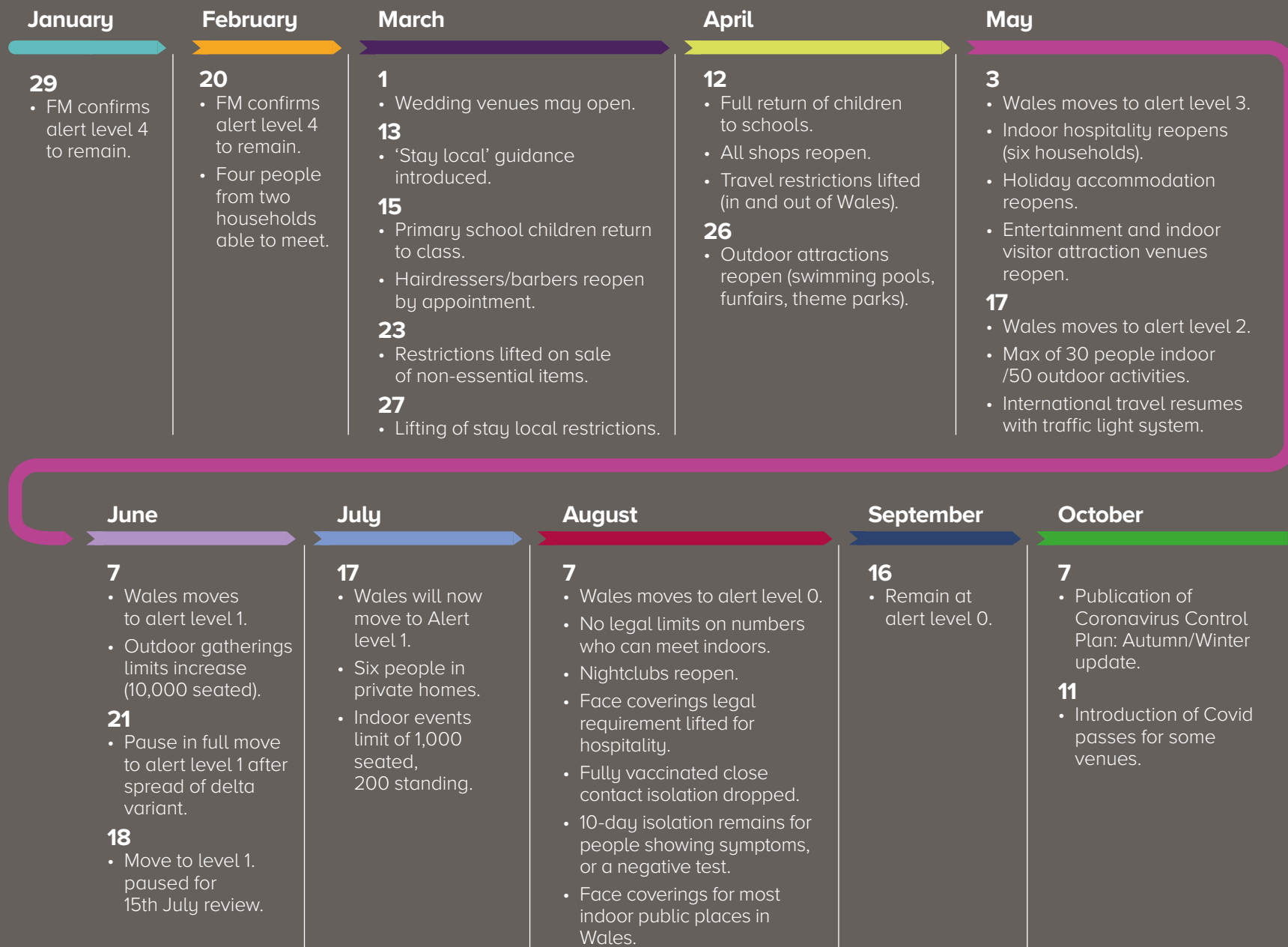
Chapter 2:

Focus on the Pandemic

The year 2021 started with protections put into place across the four nations as the UK responded to the late 2020 wave of COVID-19 infection (figure 10).

A timeline of key decisions in Wales

January

29
- FM confirms alert level 4 to remain.

February

20
- FM confirms alert level 4 to remain.
- Four people from two households able to meet.

March

1
- Wedding venues may open.

13
- 'Stay local' guidance introduced.

15
- Primary school children return to class.
- Hairdressers/barbers reopen by appointment.

23
- Restrictions lifted on sale of non-essential items.

27
- Lifting of stay local restrictions.

April

12
- Full return of children to schools.
- All shops reopen.
- Travel restrictions lifted (in and out of Wales).

26
- Outdoor attractions reopen (swimming pools, funfairs, theme parks).

May

3
- Wales moves to alert level 3.
- Indoor hospitality reopens (six households).
- Holiday accommodation reopens.
- Entertainment and indoor visitor attraction venues reopen.

17
- Wales moves to alert level 2.
- Max of 30 people indoor /50 outdoor activities.
- International travel resumes with traffic light system.

June

7
- Wales moves to alert level 1.
- Outdoor gatherings limits increase (10,000 seated).

21
- Pause in full move to alert level 1 after spread of delta variant.

18
- Move to level 1. paused for 15th July review.

July

17
- Wales will now move to Alert level 1.
- Six people in private homes.
- Indoor events limit of 1,000 seated, 200 standing.

August

7
- Wales moves to alert level 0.
- No legal limits on numbers who can meet indoors.
- Nightclubs reopen.
- Face coverings legal requirement lifted for hospitality.
- Fully vaccinated close contact isolation dropped.
- 10-day isolation remains for people showing symptoms, or a negative test.
- Face coverings for most indoor public places in Wales.

September

16
- Remain at alert level 0.

October

7
- Publication of Coronavirus Control Plan: Autumn/Winter update.

11
- Introduction of Covid passes for some venues.
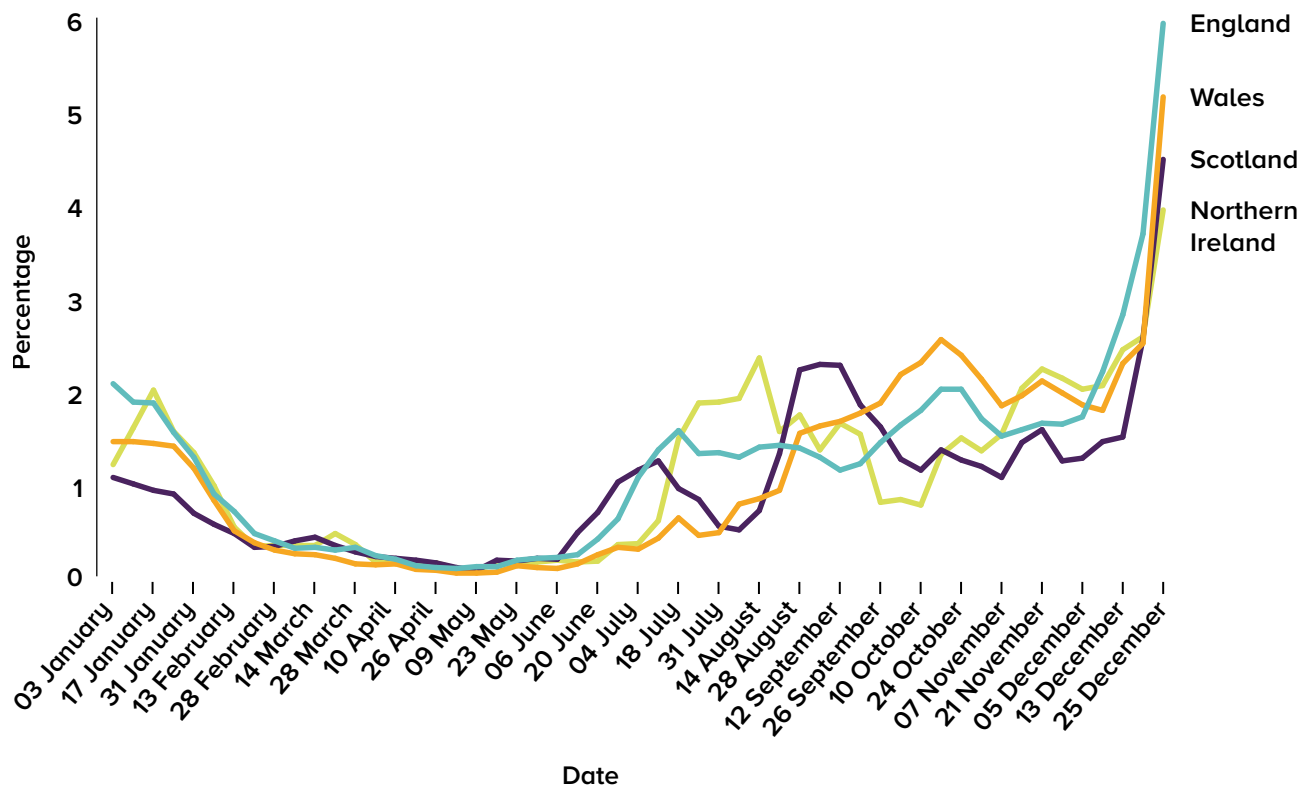
A new year with protections

At the beginning of 2021, the UK had the highest rates of cases and deaths per million among comparators, and saw the emergence of a new variant of concern, Alpha/VOC-20DEC-01 (figure 11).

Figure 10: ONS COVID-19 Infection Survey positivity by UK country


Source: Office for National Statistics.

Despite a rapid start to the intense vaccination rollout, in line with JCVI advice, and the imposition of controls on social mixing at alert level 4, as outlined in the **Coronavirus Control plan: alert levels in Wales**, this wave (from the end of 2020 to February 2021) was associated with the highest overall number and proportion of hospitalisations (figure 12). While there was a similar trend in hospitalisations over time, admissions were highest in Aneurin Bevan University Health Board during October 2021 (figure 13), where case incidences rates were also higher.

While there had been some limited mortality displacement occurring (where a period of high mortality can be followed by below-average mortality), mainly from March-June 2021, this was not enough to counter the high number of deaths seen since the start of the pandemic (figure 14).

Figure 11: Epicurve of all variant cases in Wales
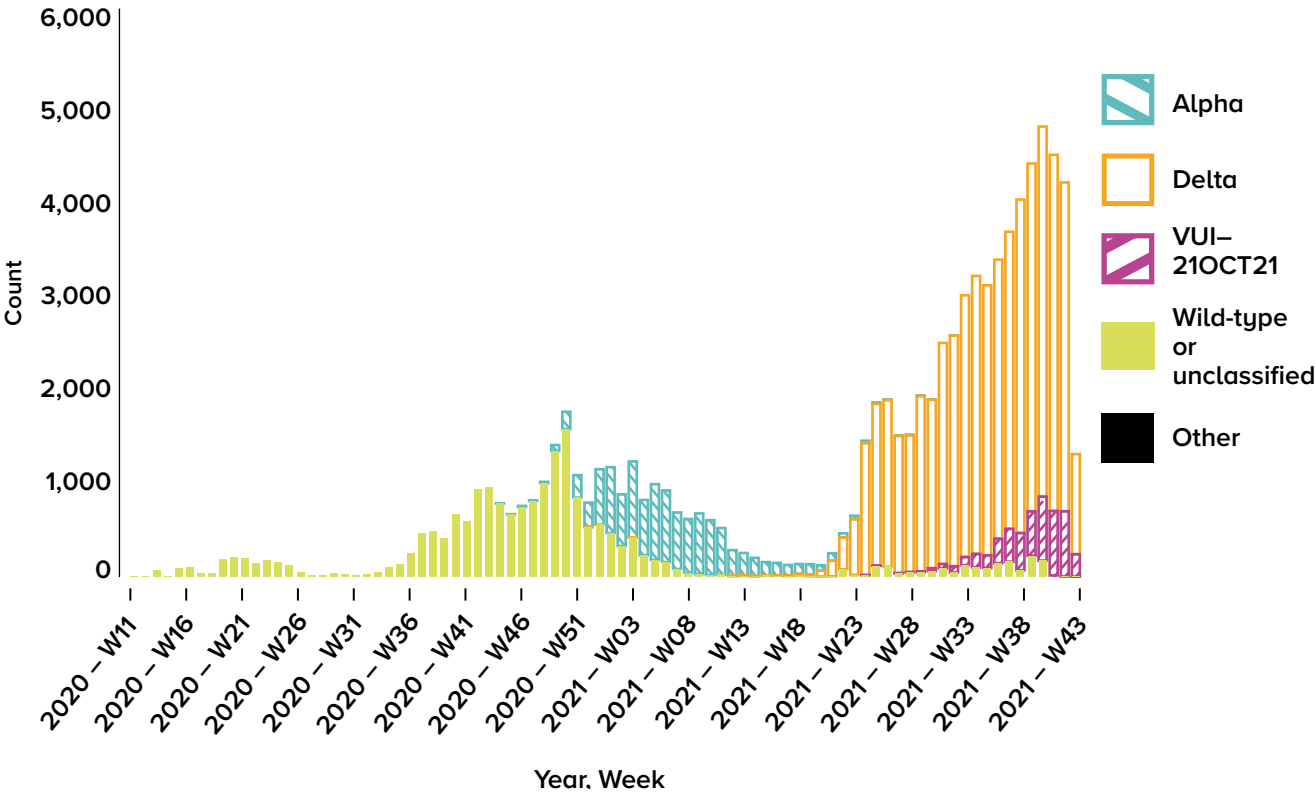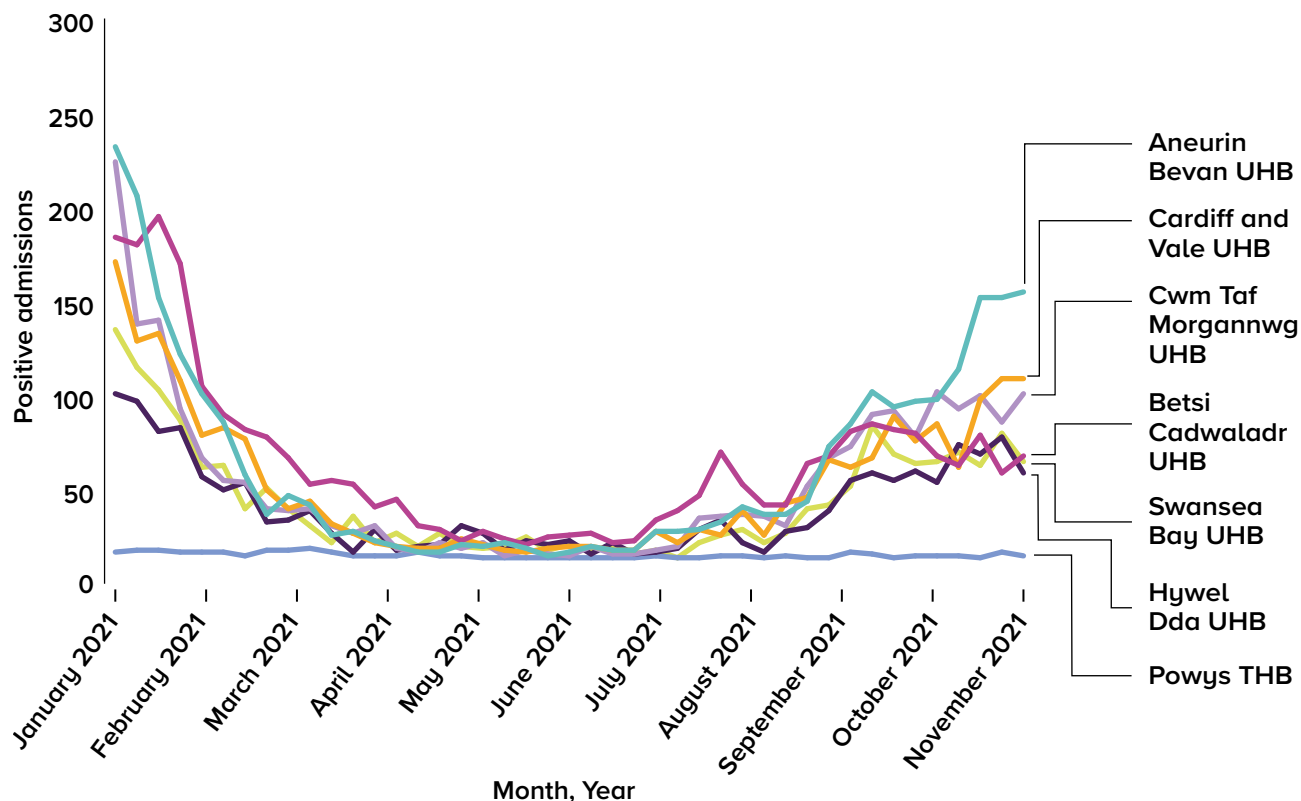
Figure 12: Weekly number of confirmed COVID-19 positive admissions* to all hospital wards in Wales
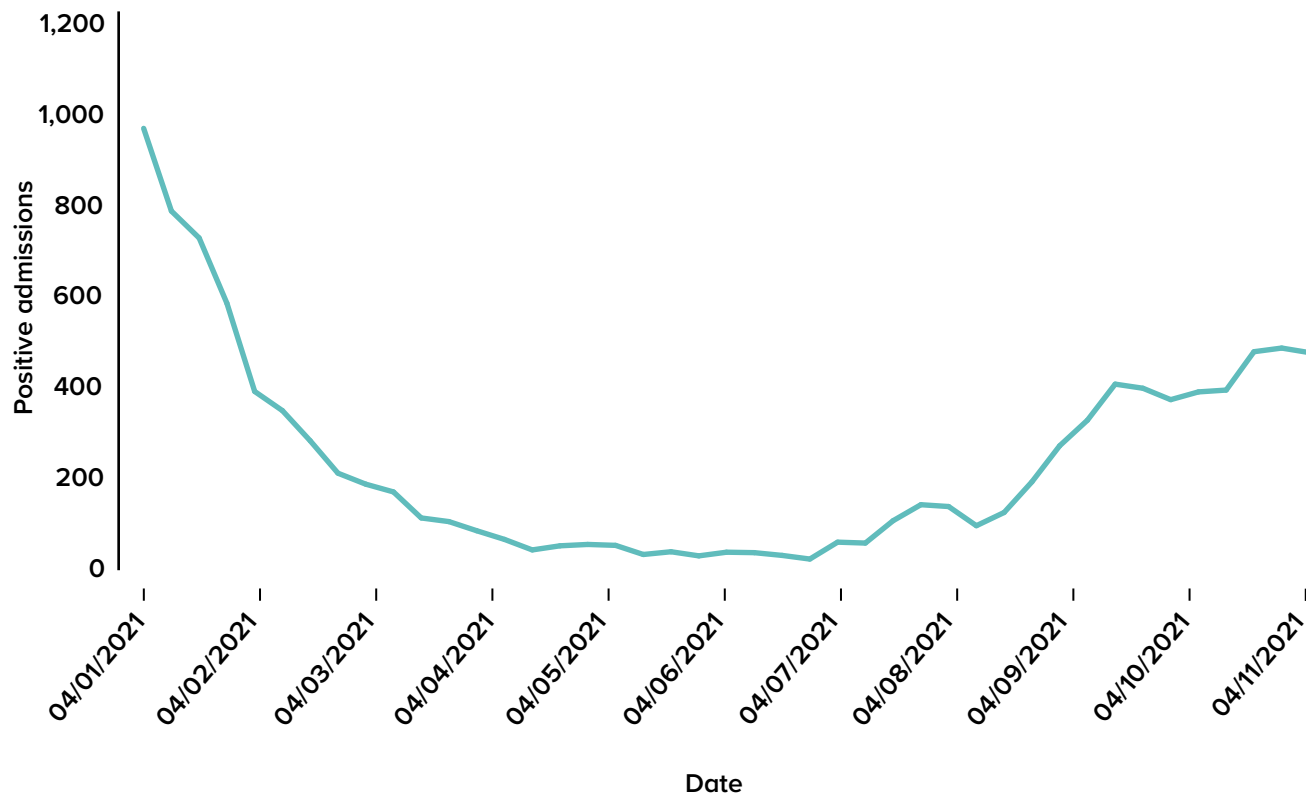
Source: Public Health Wales.

* Positive COVID-19 PCR test result within 28 days prior or on the day of, or day after admission.

Figure 13: Weekly COVID-19 positive admissions – within 28 days prior or on the day or day after admission by Health Board


Source: Public Health Wales.

Between March 2020 and October 2021, just over half of deaths involving COVID-19 were in men (data not shown), and the majority occurred in older people (figure 15).

The age standardised rate, per 100,000 people, of deaths due to COVID-19 varied by health board (figure 16), being highest in Cwm Taf Morgannwg, and lowest in Powys and Hywel Dda. Higher levels of deprivation is likely to be a contributing factor as is shown when using the Welsh Index of Multiple Deprivation. We can break down areas of Wales from the least deprived to the most deprived and, as shown in figure 17, the age-standardised rate of deaths involving COVID-19 between March 2020 and October 2021 was almost twice as high in the most deprived areas as the least deprived areas.

Areas with higher levels of deprivation often represent a range of risk factors for increased transmission and poorer health outcomes with COVID-19, including lifestyle (e.g., smoking, diet, obesity) and their associated comorbidities (e.g., heart and lung disease), environmental (e.g., increased transmission risk due to a higher number of household members, or poor ventilation), occupational (e.g., unable to work from home, or workplaces with higher levels of exposure), and other known social determinants of health (e.g., education and household income).

Figure 14: Number of deaths registered by week in Wales, 3 January 2020 – 3 December 2021
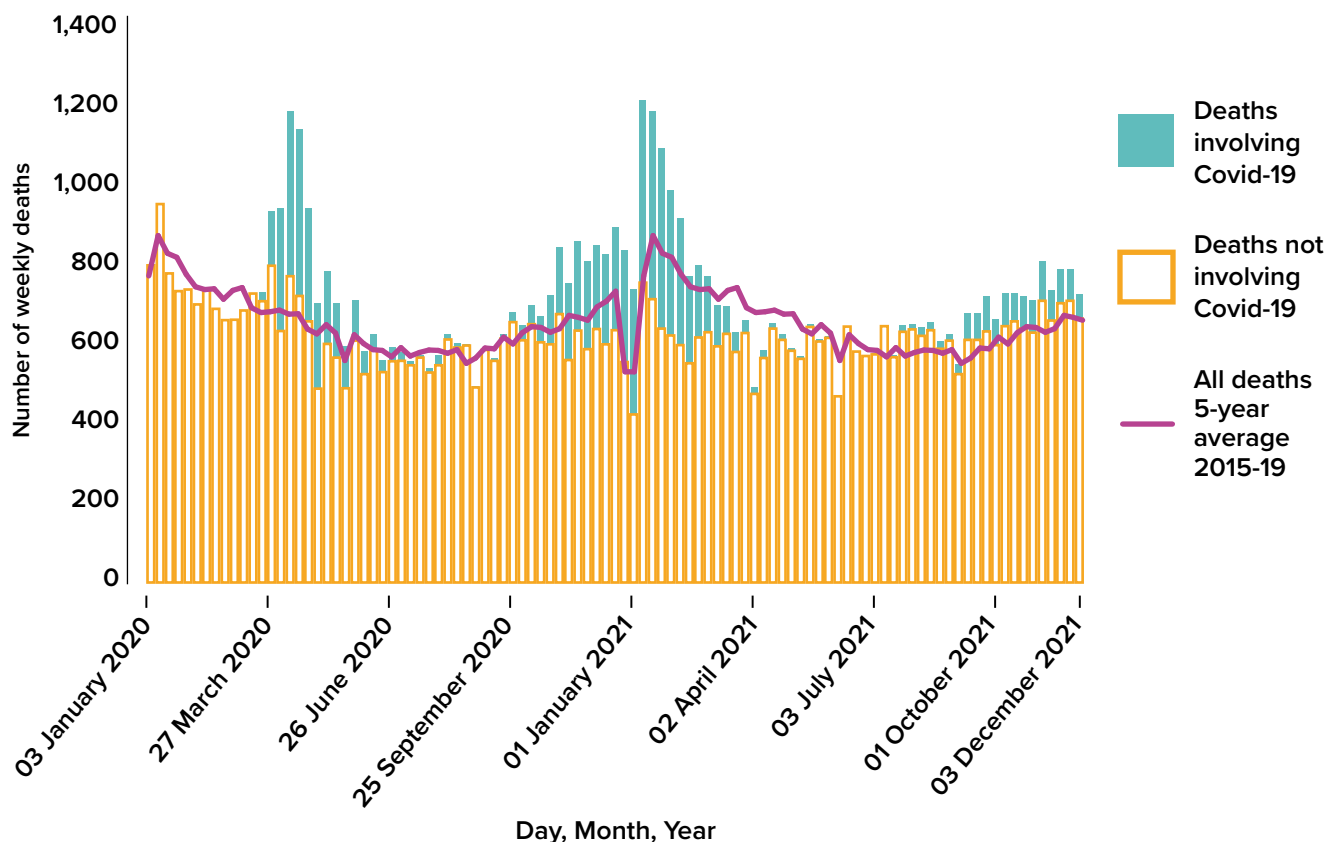
Source: Office for National Statistics.

Figure 15: Number of deaths involving COVID-19, by age group, March 2020 – October 2021
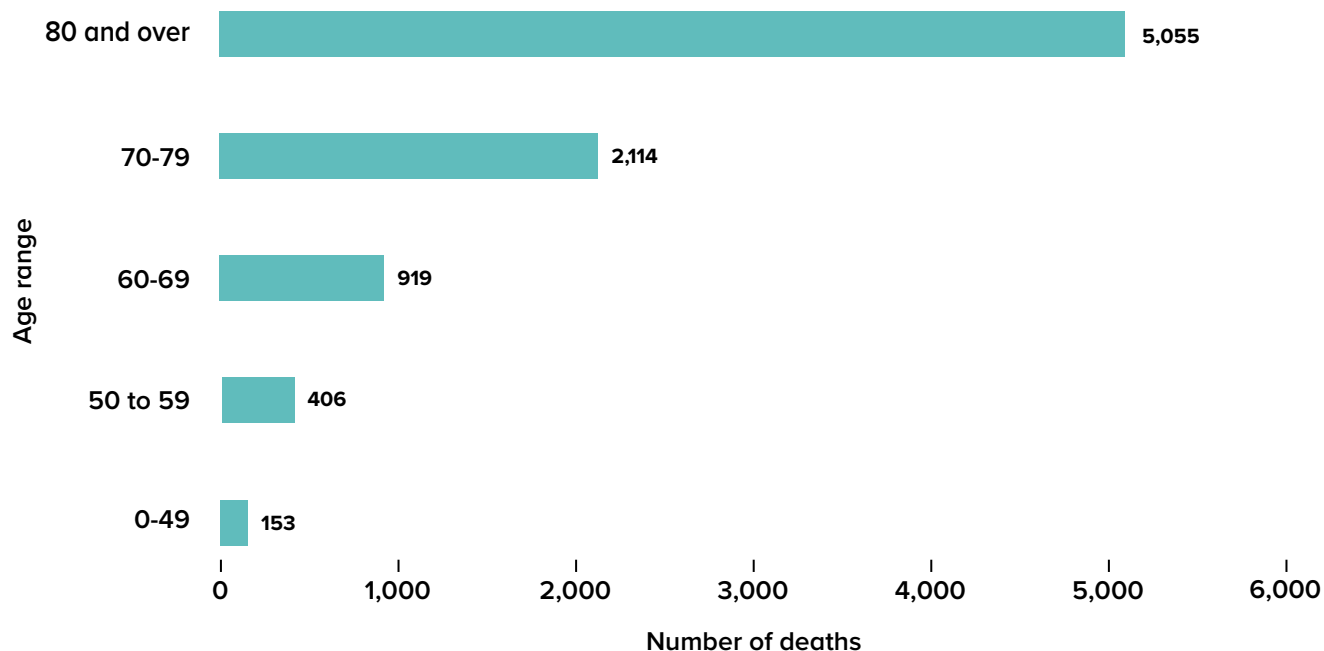
Source: Office for National Statistics.

Figure 16: Age-standardised rate of deaths due to COVID-19, by health board, March 2020 – October 2021
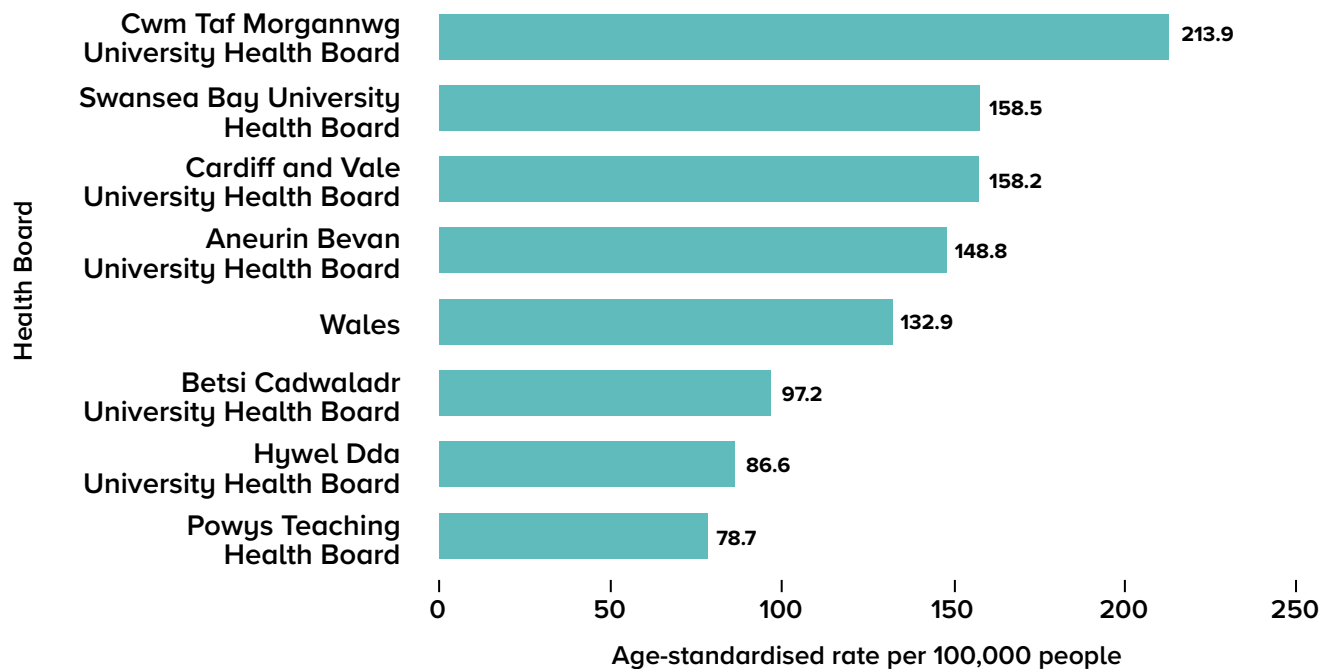
Source: Office for National Statistics.

Figure 17: Age-standardised rate of deaths involving COVID-19, by deprivation quintile, March 2020 – October 2021

Source: Office for National Statistics.

Both figures 16 and 17 demonstrate the cruel and unequal way COVID-19 has affected our population in Wales as in other parts of the UK. The unequal impact of 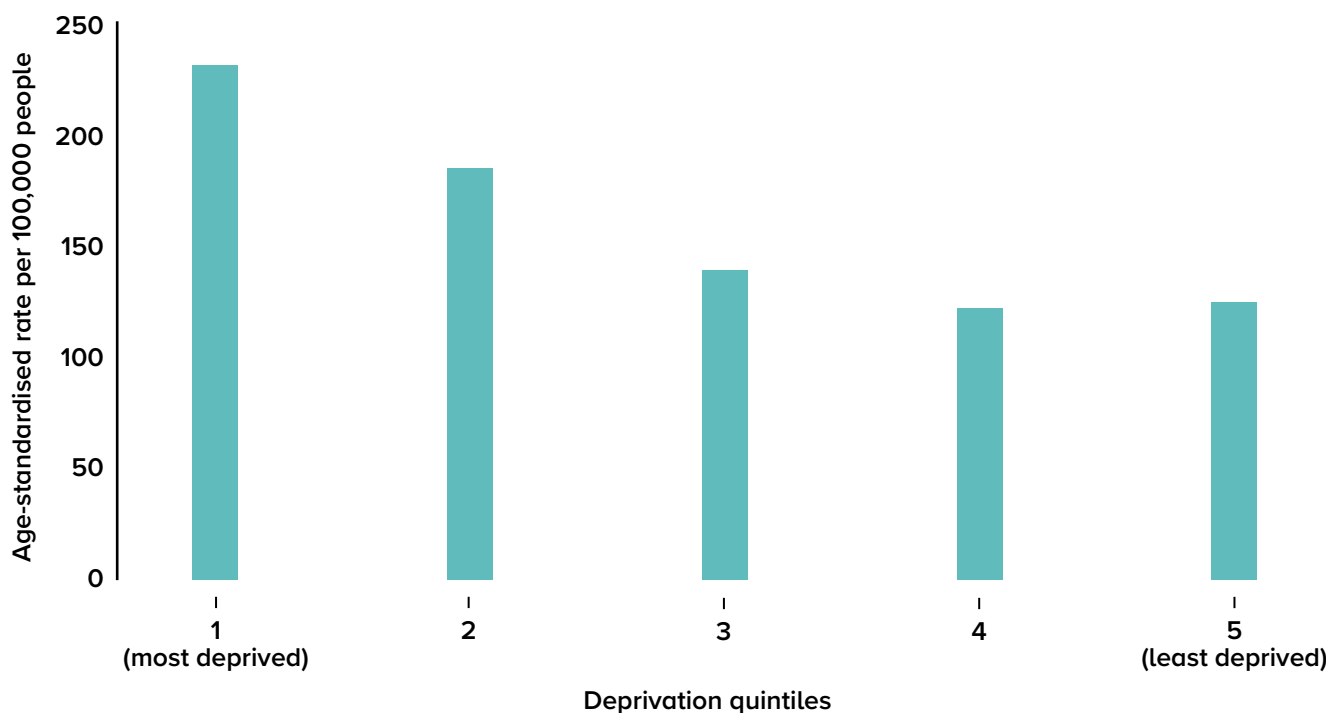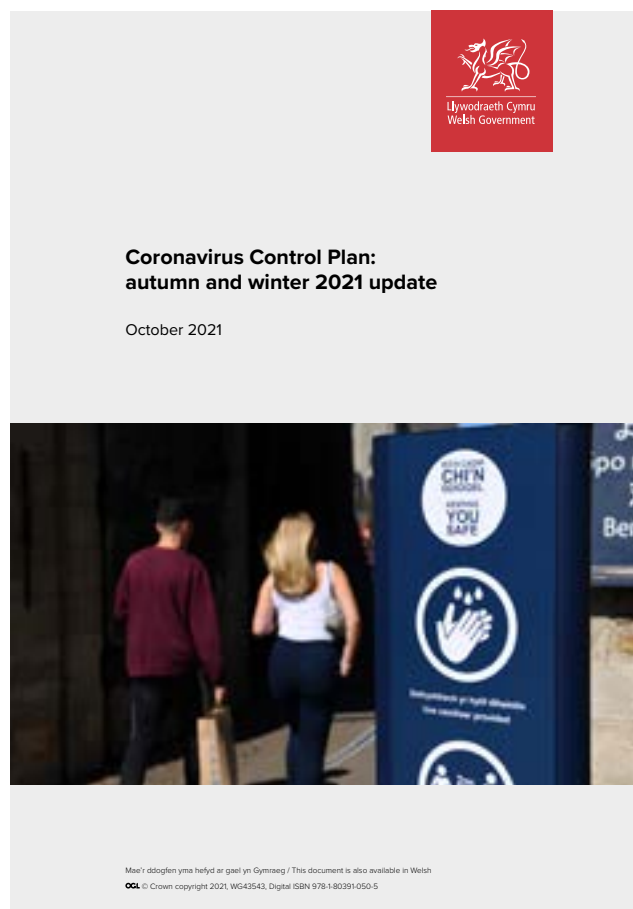COVID-19 saw older people, those with pre-existing health conditions (such as obesity) or other risk factors often aligned to a social gradient, being at greater risk of severe disease. In this sense, COVID-19 has further highlighted the crucial importance of public health prevention work and its role in tackling inequities. For this reason, tackling health inequities is quite rightly at the core of the Welsh Government's work in areas such as action to tackle obesity and smoking.

Furthermore, the Welsh Government has committed to mainstream action to tackle inequity in the recovery of healthcare services, and to further embed action on health inequity across the breadth of government activity through measures such as the forthcoming Health Impact Assessment regulations.

Llywodraeth Cymru
Welsh Government

**Coronavirus Control Plan:
autumn and winter 2021 update**

October 2021

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Spring Easements

In March, an updated Coronavirus Control Plan was published, setting out how the Welsh Government would take a cautious approach to moving through the alert levels in order to ease the protections put in place.

As case rates decreased across all health boards in Wales (figure 18), easements of protections led to gradually increasing population mobility (figure 19).

This started with two people from different households being able to enjoy the benefits of exercise outdoors together, eventually leading to the full return of children to schools for face-to-face education, all post-16 learners to further education and training centres, and university campuses re-opening for blended face-to-face/online learning for all students from 12 April. Wales completed the move to Alert Level 3 on 3 May, allowing gyms, fitness facilities, leisure centres, spas and swimming pools to reopen, organised indoor activities for children and adults (up to 15 people) to recommence, and community centres to reopen.

Figure 18: Time trend of positive cases, by Health Boards in 2021
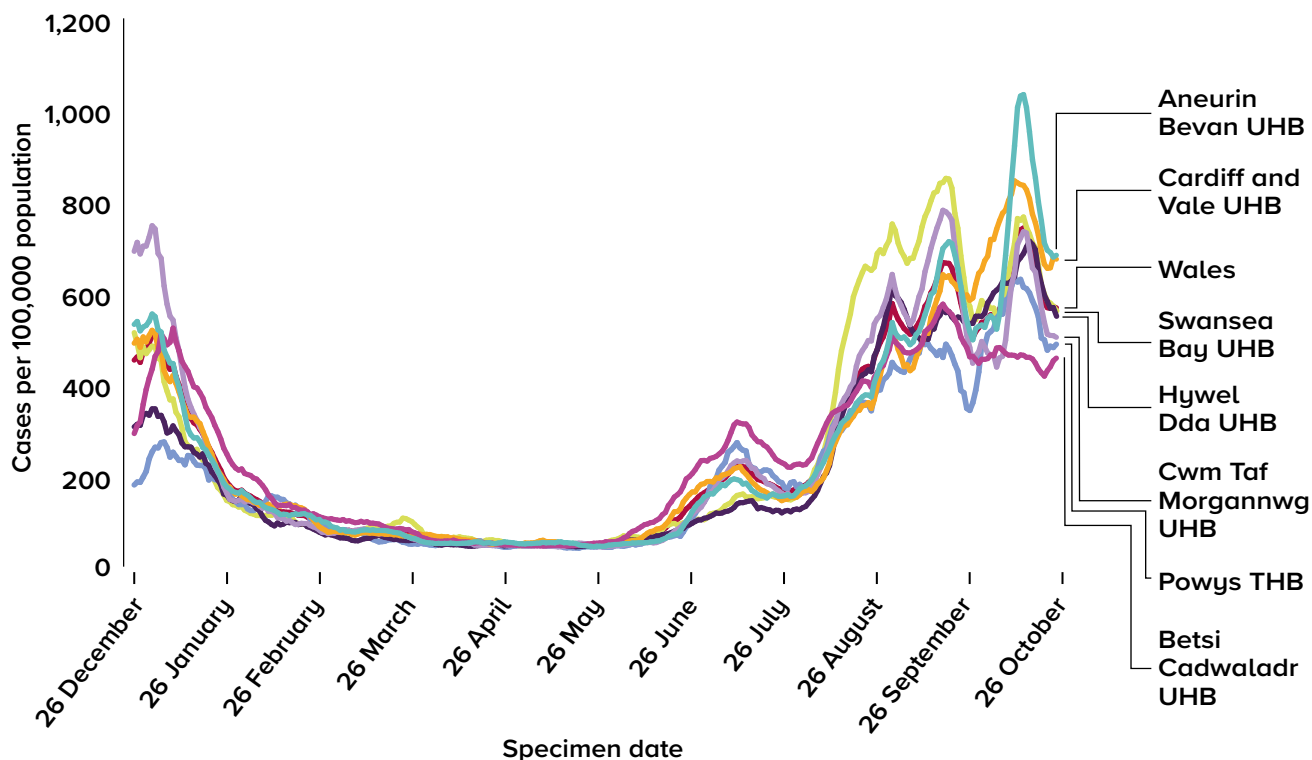
Source: Public Health Wales.

Figure 19: Change in mobility from baseline, average of Welsh local authorities, 7-day rolling average
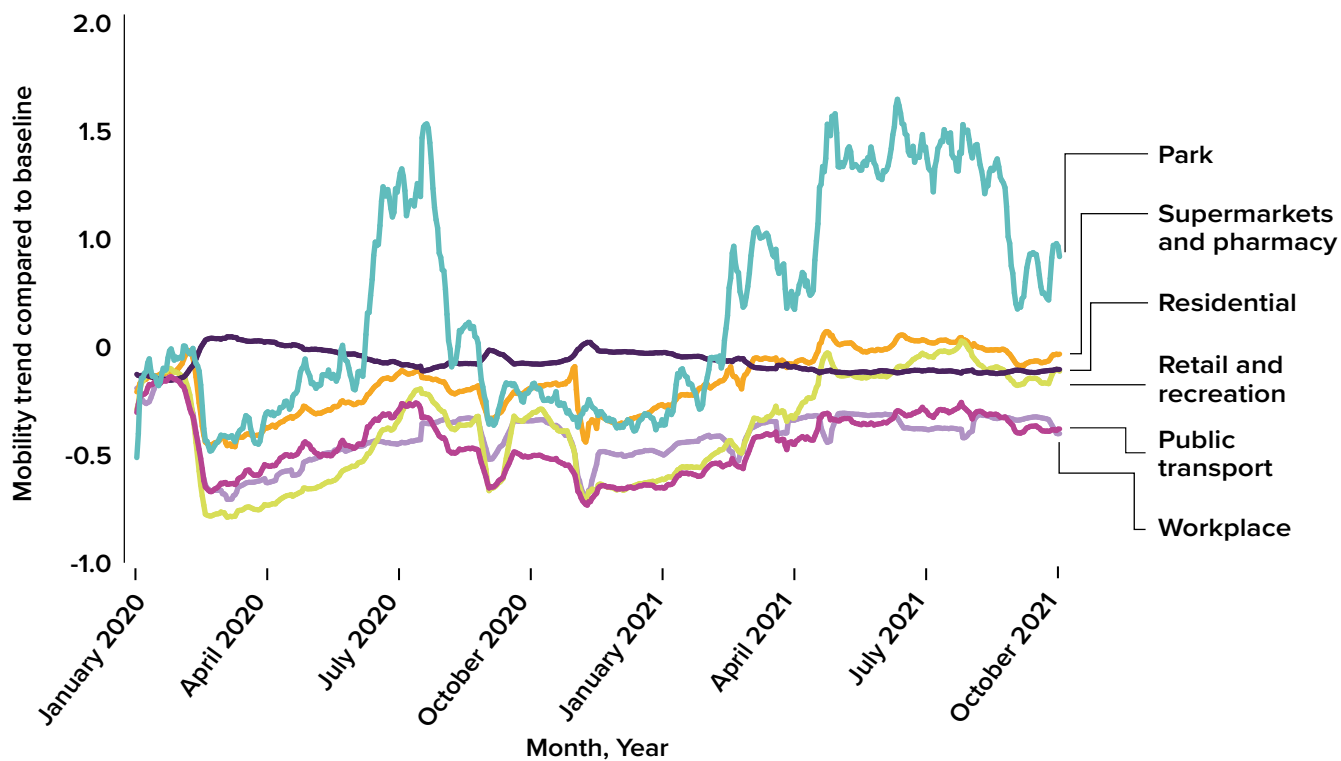
Source: Google COVID-19 Community Mobility Reports.

From 17 May, Wales moved to alert level 2, with further relaxations allowing the reopening of indoor hospitality, all holiday accommodation, entertainment venues such as cinemas, theatres, indoor-play centres, and indoor visitor attractions such as museums and galleries. Up to 30 people could take part in organised indoor activities, and up to 50 people in organised outdoor activities, including wedding receptions and wakes.

International travel restrictions were relaxed to a degree, with the introduction of a traffic-light system, aligned with England and Scotland. Countries were classified as green, amber and red, meaning people living in Wales were able to travel to a small number of foreign destinations without the need to quarantine on their return. International travel was, however, still discouraged unless it was deemed as essential.

Figure 20: Vaccination uptake by dose in Wales as at 10 November 2021
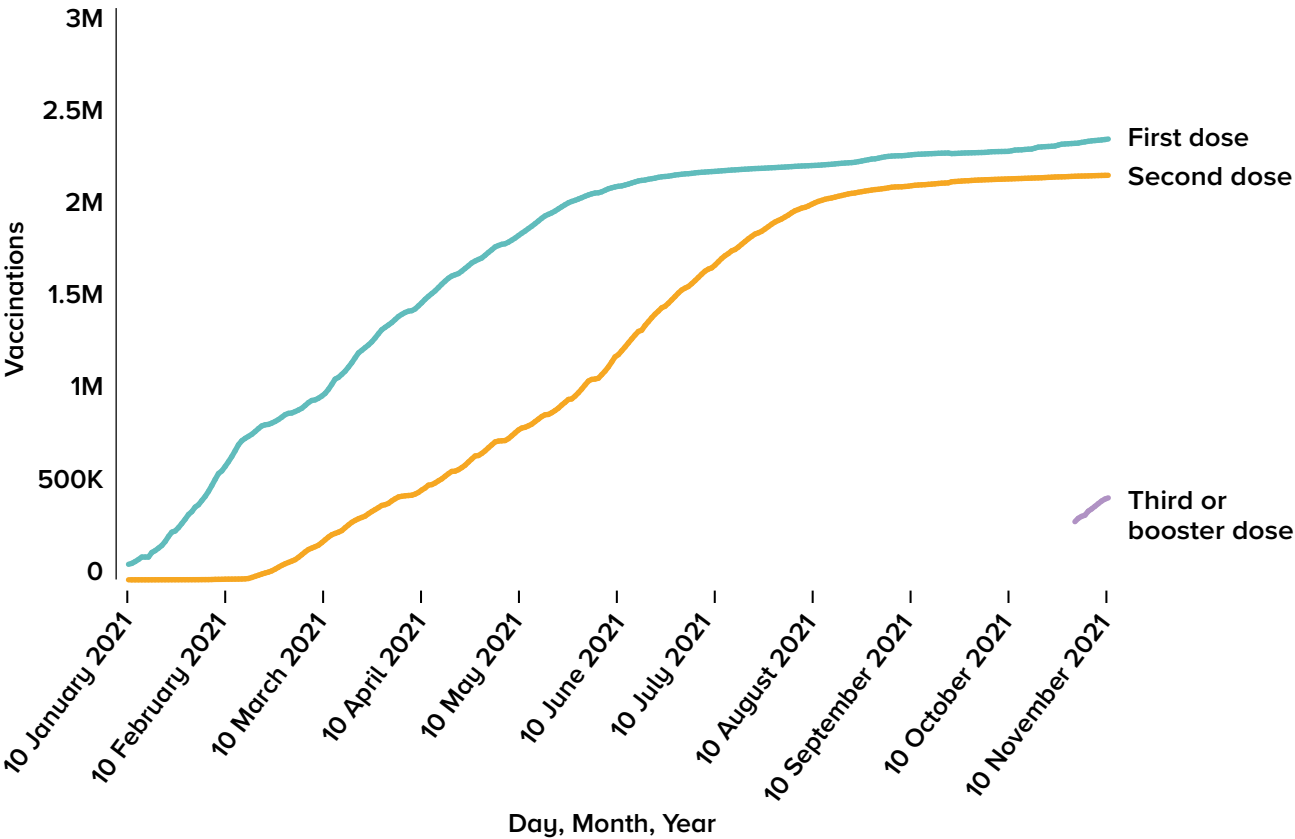
Source: UK Government.

Towards the end of May, COVID-19 cases were relatively low across most of Wales, with COVID-19 related pressure on the NHS down to the lowest levels since reporting began on 1 April 2020[23].

The turnaround time for Test, Trace, Protect (TTP) in all centres in Wales remained rapid, and contact tracing continued to perform well with the majority of contacts being identified and contacted within 24 hours (figures 21, 22, and 23).

Figure 21: Weekly positive cases eligible for follow-up by local contact tracing teams and the percentage reached within 24 and 48 hours, up to 30 October 2021
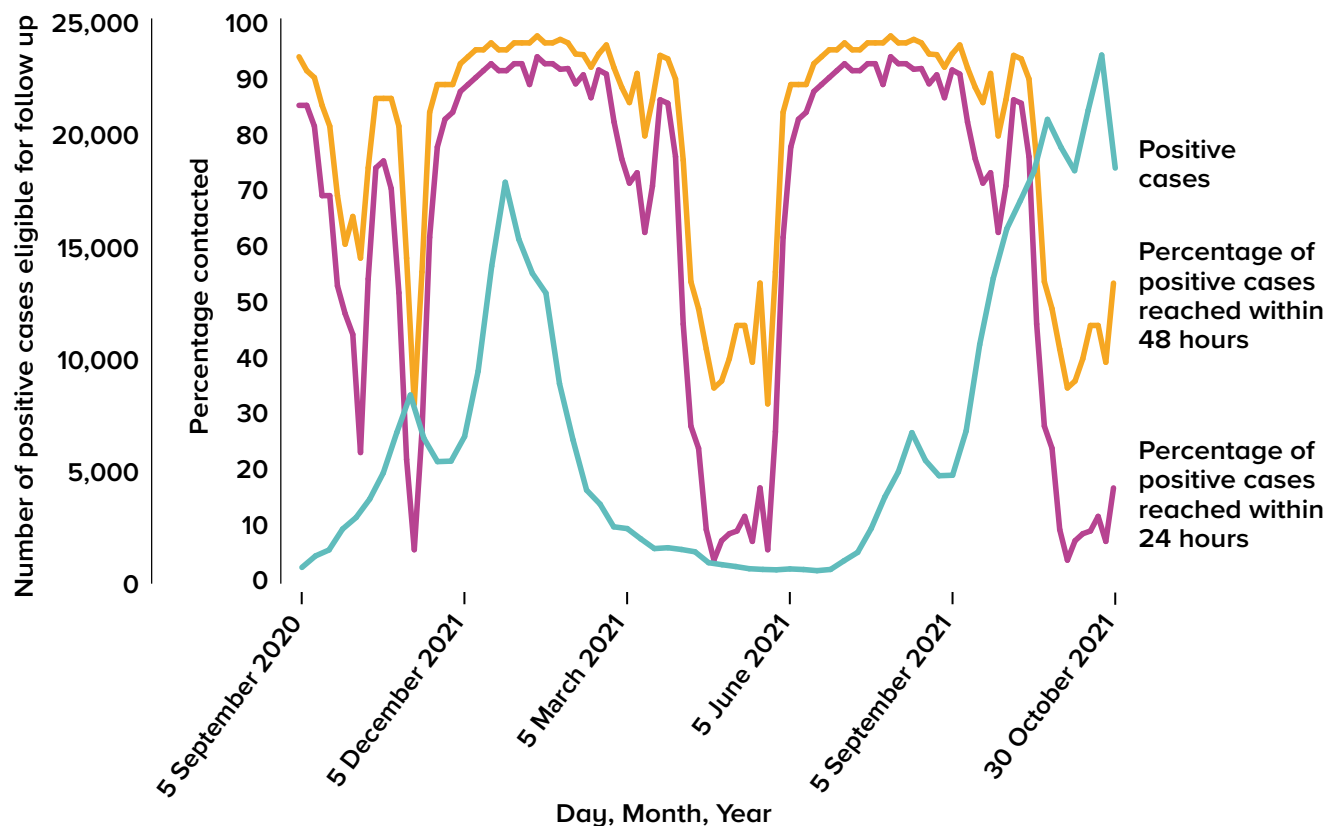
Source: Digital Health and Care Wales (DHCW).

Figure 22: Weekly close contacts eligible for follow-up by local contact tracing teams and the percentage reached within 24 and 48 hours, up to 30 October 2021
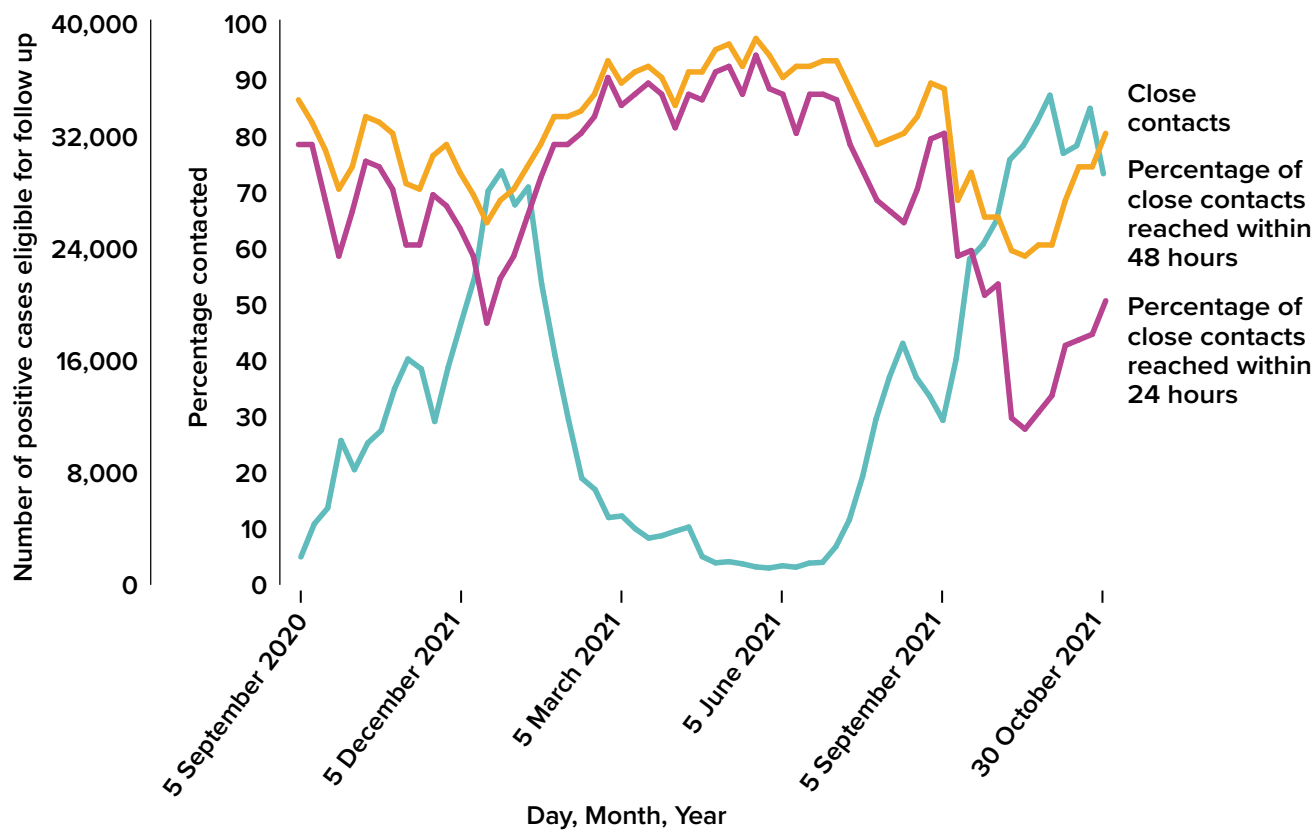
Source: Digital Health and Care Wales (DHCW).

Figure 23: Total number of antigen tests authorised through NHS Wales and non-NHS Wales laboratories, and the percentage of tests requiring rapid turnaround* completed within one calendar day, up to 31 October 2021
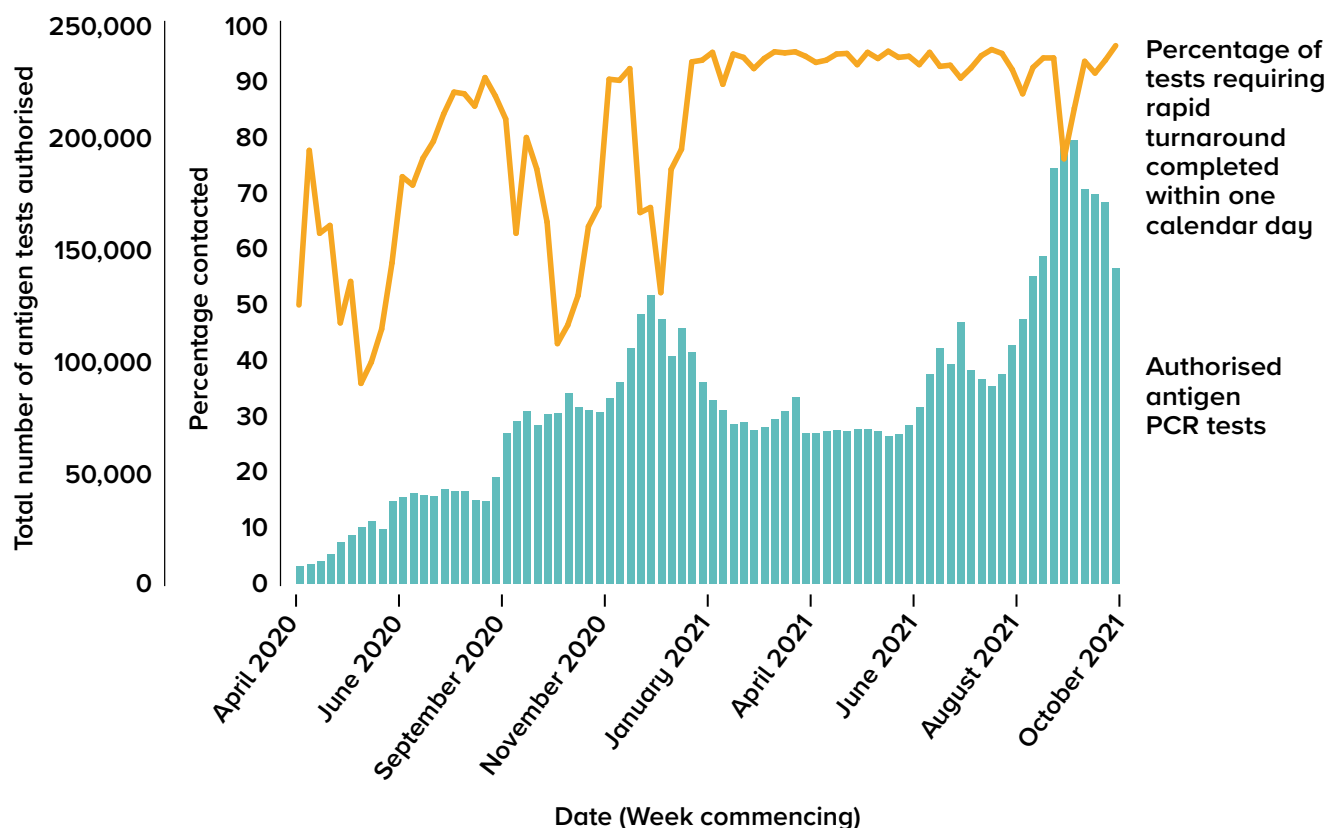
Source: Public Health Wales.

* *Tests requiring a rapid turnaround time are samples collected at hospitals, community and mass testing: in person sites processed in NHS Wales laboratories and samples collected at community test centres processed in non-NHS Wales laboratories.*

Meanwhile, there were concerns over the decreasing number of cases of the Alpha variant (VOC-20DEC-01) masking the rapid increase of the new Delta (VOC-21APR-02) variant (figure 11), which was assessed as having an increased growth rate advantage compared to Alpha[24]. Given the uncertainty regarding the growth advantage between the Alpha and Delta variants, with potentially reduced vaccine effectiveness against the Delta variant, the decision was made to adopt a cautious approach to the easing of protections back to alert level one. From 7 June, all organisers planning events and activities had to undertake a full risk assessment and put in place measures to prevent the spread of coronavirus, including social distancing.

Compared to the situation in Wales, case rates were rising earlier and faster in England, Scotland, and Northern Ireland (figure 10). It was clear that the UK was in the pre-peak stage of a third wave, and the decision was made to pause the full move to alert level one in Wales from 21 June.

Alert level zero

On 14 July, the Welsh Government published a further updated version of the Coronavirus Control Plan. This set out how Wales would move beyond alert level one to a set of baseline protections, called alert level zero[25].

Overall transmission of COVID-19 was decreasing in the second half of July (figure 18), with case incidence highest in those aged 11-17 (figure 24), which suggested that vaccination was providing a good degree of protection. As at 28 July 2021, a total of 4.33 million doses of COVID-19 vaccine had been given in Wales, of which 2.29 million were first doses and 2.04 million were second doses (figure 20), meaning that 80% of people aged 18 and over were now fully vaccinated[26].

Figure 24: 7-day average of cases per 100,000 by age band in Wales
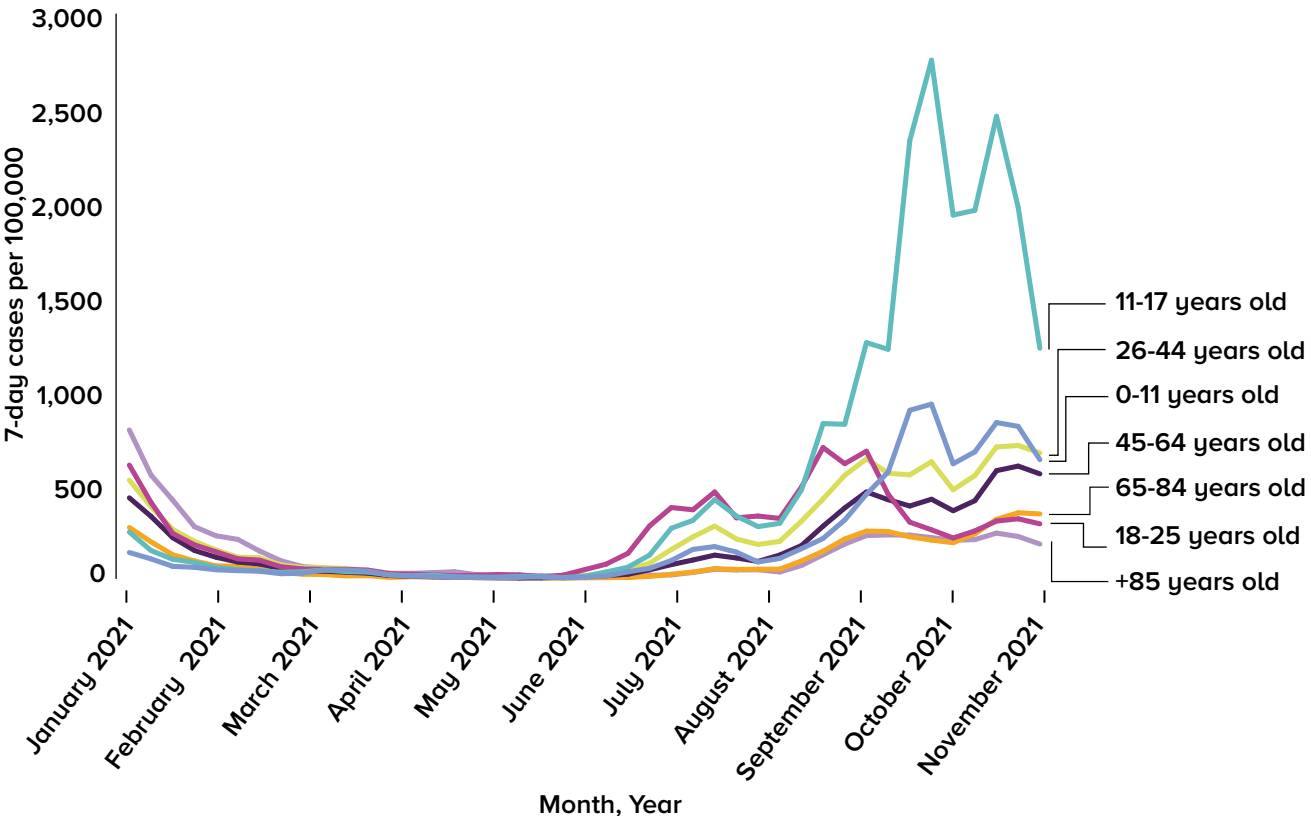
Source: Public Health Wales.

Surveillance data over this time period suggested the link between cases, hospitalisations and deaths had been weakened by the vaccination programme.

Technical Advisory Group: The 5 Harms arising from COVID-19

1

Harm directly arising from SARS-CoV2 infections.

2

Indirect COVID-19 harms due to surge pressures on the health and social care system and changes to healthcare activity, such as cancellation or postponement of elective surgeries and other non-urgent treatments (e.g. harm from cessation of screening services) and delayed management of long-term conditions.

3

Harms arising from population based health protection measures (e.g. lockdown) such as, educational harm, psychological harm and isolation from shielding and other measures.

4

Economic harms such as unemployment and reduced business income arising both from COVID-19 directly and population control measures, such as lockdown.

5

Harms arising from the way COVID-19 has exacerbated existing, or introduced new, inequalities in our society.

Reference: **www.gov.wales/technical-advisory-group-5-harms-arising-covid-19**

The balance of the five harms was clearly changing; with the observable reduction in serious illness, hospitalisation and deaths coupled with the need to address the other harms such as the socio-economic harms and those harms disproportionately affecting some groups in society.

The reduction in cases led to the decision to move Wales into alert level zero on 7 August, by:

- Removing the remaining legal limits and caps on the number of people who could meet, including in private homes, public places or at events.

- Amending regulation 16 on reasonable measures to remove the separate step on 2m social distancing, with physical distancing remaining a reasonable measure a responsible person can consider.

- Removing regulations which required specific reasonable measures to be taken in hospitality and retail premises, relying instead on the general reasonable measures under regulation 16 allowing nightclubs and adult entertainment venues to open.

- Removing the requirements in statutory guidance for specific premises to collect contact information. This was instead one of a number of the reasonable measures that should be considered for all businesses.

- Removing the requirement for face coverings to be worn in hospitality settings – adults and children over 12 would have to wear face coverings in other indoor public places, while schools, colleges and higher education settings would use the framework announced by the Minister for Education and Welsh Language to determine use of face coverings.

Vaccination: Helping us emerge from the third wave and boosting for future protection

The third wave starting in late summer 2021 was the largest in terms of case numbers and extended through to the end of October 2021 (figure 18), but the impact on hospitalisations (figure 12) and deaths (figure 14) was proportionately much lower.

The vaccine had some impact on transmission, but a key feature of cases from August onward was the high incidence in young and particularly school-aged children (figure 24), who at that stage had not been recommended for vaccination, were also a significant unvaccinated group (figure 25).

Figure 25: COVID-19 vaccination uptake by age and risk group, Wales as at 31 October 2021
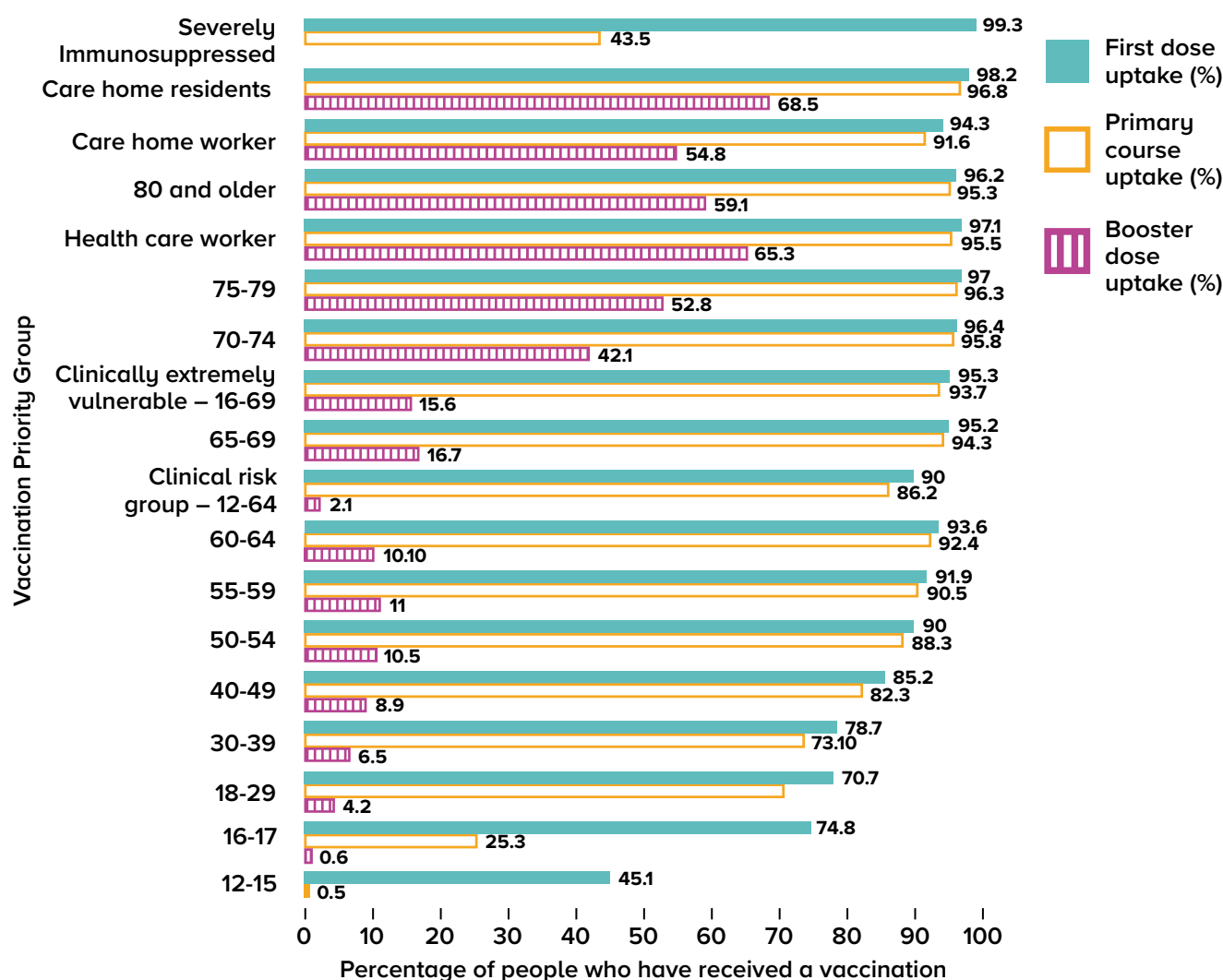
Source: Welsh Immunisation System (WIS), Public Health Wales.

*   Two doses with the exception of severely immunosuppressed who are recommended three doses.*

**   Booster doses in those aged under 50 may have been given due to clinical or occupation risk.

*** All age groups are based on age as of 31 March 2021, with the exception of the 12-15-year-olds age group, which is age as of 31 March 2021 plus those who turned 12 between 1 April 2021 and 4 October 2021. This age cut-off date is an interim method and is subject to change in the future as more individuals become eligible for vaccination.

The move to alert level zero, with the resulting increase in social interaction and transmission outside household settings, particularly among unvaccinated school-age children, was likely to have played the largest role in the progression of this wave. This was exacerbated by the intrinsic features of the Delta variant (increased transmissibility, increased pre-symptomatic transmissibility, and increased severity), which became predominant in summer 2021 (figure 11)[27].

Having offered all eligible cohorts their first and second doses of the vaccine, vulnerable people who were severely immunocompromised were prioritised for a third primary dose (figure 20). Among children and young people who did not have risk factors, 16 and 17-year-olds were offered one dose, with 17-year-olds offered their second dose when they were within three months of their 18th birthday.

Two doses were offered to 12-18-year-olds with specified underlying health conditions or who lived with someone who was immunosuppressed. The Minister for Health and Social Services confirmed on 14 September that a booster vaccine would be offered to all people aged 50 years and over, all frontline health and care staff, those aged 16-49 years with underlying health conditions that put them at higher risk of severe COVID-19, and adult household contacts of immunosuppressed individuals. The booster campaign began on 20 September, starting with vaccination of care home residents and health and social care staff.

The Joint Committee for Vaccination and Immunisation (JCVI), which has guided COVID-19 Vaccination eligibility throughout the pandemic, recommended the addition of those in younger age groups from 15 November 2021, approving second doses for 16 and 17-year-olds and, on 22 December 2021, approving a primary course of vaccination (two doses) for children aged 5 to 11 years in a clinical risk group, or who are a household contact of someone who is immunosuppressed.

In addition, the JCVI recommended booster vaccinations for young people aged 16 to 17 years, those children and young people aged 12 to 15 who are in a clinical risk group or who are a household contact of someone who is immunosuppressed, and children and young people aged 12 to 15 years who are severely immunosuppressed and who have had a third primary dose.

Regular meetings of JCVI to consider additional groups such as younger children and strategies for specific groups have continued and will continue throughout 2022.

By the end of October 2021, 88.9% of people in Wales aged 12 and over had received a first dose of the COVID-19 vaccination, 81.6% had received a second dose, and 16.5% had received a booster or third dose (figure 20) with all adults scheduled to have been offered a booster dose by the end of the year.

The evidence suggests that the roll-out of the vaccination programme mitigated the effects of the third wave.

Evidence emerged of waning immunity from vaccination over time, although this was clearest for cases of infection and mild symptomatic disease rather than for severe outcomes such as hospitalisations and death, and so making progress in the booster campaign was all the more important[28].

In addition to published vaccine effectiveness estimates from England, Scotland and outside the UK, estimates for vaccine effectiveness in Wales, using a national cohort linked dataset, are expected to be published in 2022 in line with estimates from elsewhere.

Tried and tested health protection – Test, Trace, Protect

Alongside vaccination, our Test, Trace Protect (TTP) service played an essential role in helping to control the spread of coronavirus (figures 21 & 22).

Modelling undertaken for our Technical Advisory Group (TAG) indicates that TTP has been effective in limiting transmission and is more effective at lower levels of virus circulation, as more people can be contacted and traced. Speed throughout is essential. Testing has merits in its own right as it supports the isolation of positive cases. Isolating as many positive cases as possible remains an important and proportionate response to the pandemic.

Testing for COVID-19 enables crucial mitigation, which is why we retained a legal duty for people to self-isolate.

Isolation on symptoms and maintaining isolation following a positive lateral flow or PCR test continues to be an important means of reducing case rates and the spread of the virus, which in turn helps to reduce the harms associated with COVID-19 and pressure on the NHS.

In August 2021, the requirement for vaccinated adults, children, and young people under 18 years of age to self-isolate if identified as a contact of a positive case was removed.

This decision reflected the harms from self-isolation – economic, social and to mental health – balanced against the risks of contacts becoming positive cases. On 29 October, these requirements were reviewed and tightened due to rising case rates, so that contacts, including fully vaccinated contacts, would have to take a PCR test before they could stop self-isolation[29].

The success of TTP has been built on the unique set-up of the contact tracing system in Wales, which has combined the national oversight and technical expertise of Public Health Wales, with the intelligence and knowledge of service delivery on the ground from the local authorities and regional health boards.

Border health

Robust border health measures can help prevent importation of infections and can mitigate onward transmission risks.

A suite of measures has provided protection, including passengers being required to provide personal/travel details and evidence of a negative coronavirus test before travel to the UK, and for them to adhere to post-arrival quarantine and testing regimes. A country risk-rating policy has determined post-arrival testing and quarantine regimes.

Between 15 February and 4 November 2021, Wales saw an increasing number of returning travellers.

A total of 359,115 Passenger Locator Form (PLF) submissions (which included a Welsh residential or isolation address) were received between 15 February and 4 November 2021 by UK Home Office from international travellers into the UK — most of whom travelled from, or through, Spain, followed by Greece, France, and Portugal (figure 26a & 26b).

It did not include those travellers who were exempt from completing a PLF or children under 11 years old, but may have included duplicates for travellers who submitted PLFs for different arrival dates, and submissions from persons who did not travel.

Of these, 3,186 (0.89%) travellers were confirmed cases of COVID-19 within 10 days of arrival.

Figure 26a: Countries travelled through by travellers

Country	Travellers
Spain	106,776
Greece	32,982
France	30,406
Portugal	20,312
Poland	14,834
USA	11,161
Germany	11,015
Cyprus	10,262
Italy	9,220
Netherlands	9,219
Romania	7,104
Malta	5,130
Croatia	4,816
Turkey	4,809
Bulgaria	4,344
Switzerland	4,151
India	4,049
UAE	3,890
Belgium	3,384
China	3,123
Canada	3,121
Gibraltar	3,017
Czech Republic	2,525
Hungary	2,473
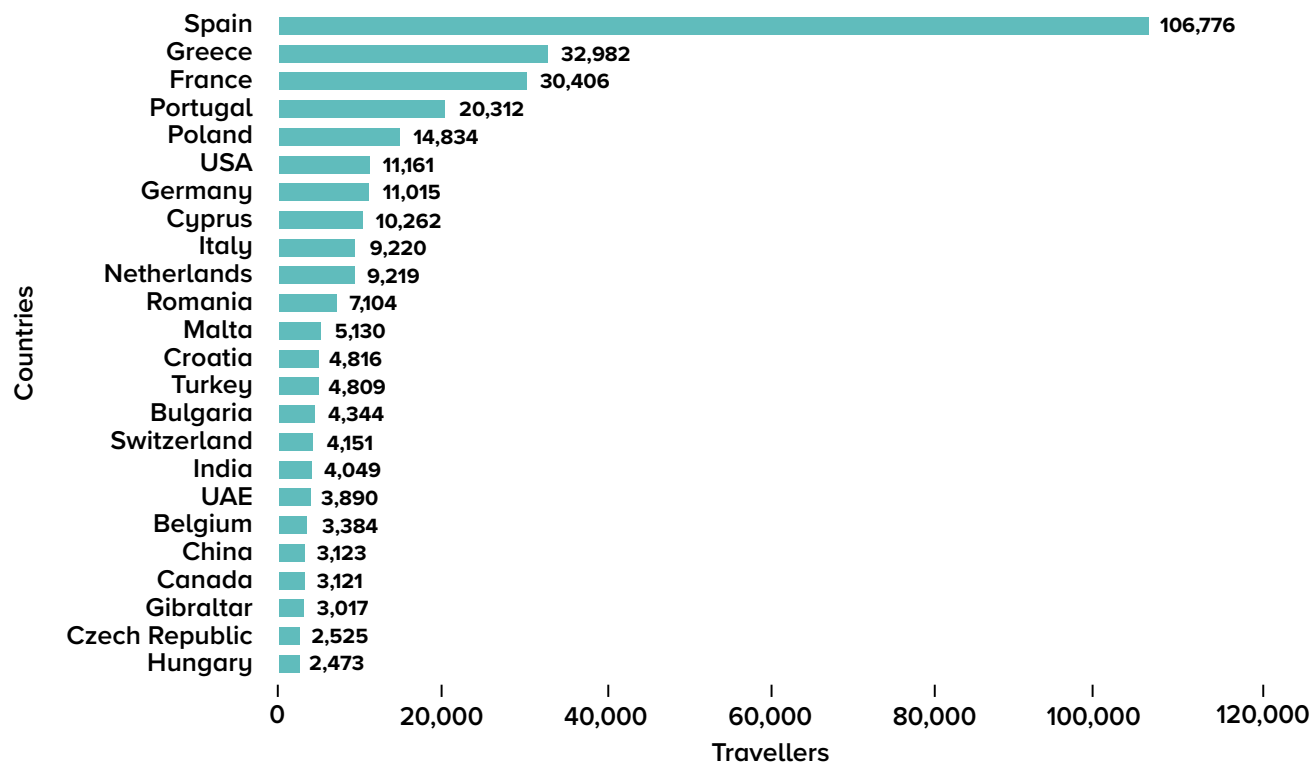
Source: Arriving Travellers Weekly Report; Week 44.

Figure 26b: Positive travellers by country

Country	Positive Travellers
Spain	1,326
Greece	282
France	181
Portugal	170
Cyprus	106
India	79
Poland	76
Pakistan	64
USA	61
Romania	53
Italy	52
Netherlands	50
Estonia	50
Germany	49
UAE	45
Turkey	42
Malta	39
Czech Republic	38
Croatia	37
Bulgaria	34
Egypt	24
Nigeria	23
Gibraltar	21
Iraq	20
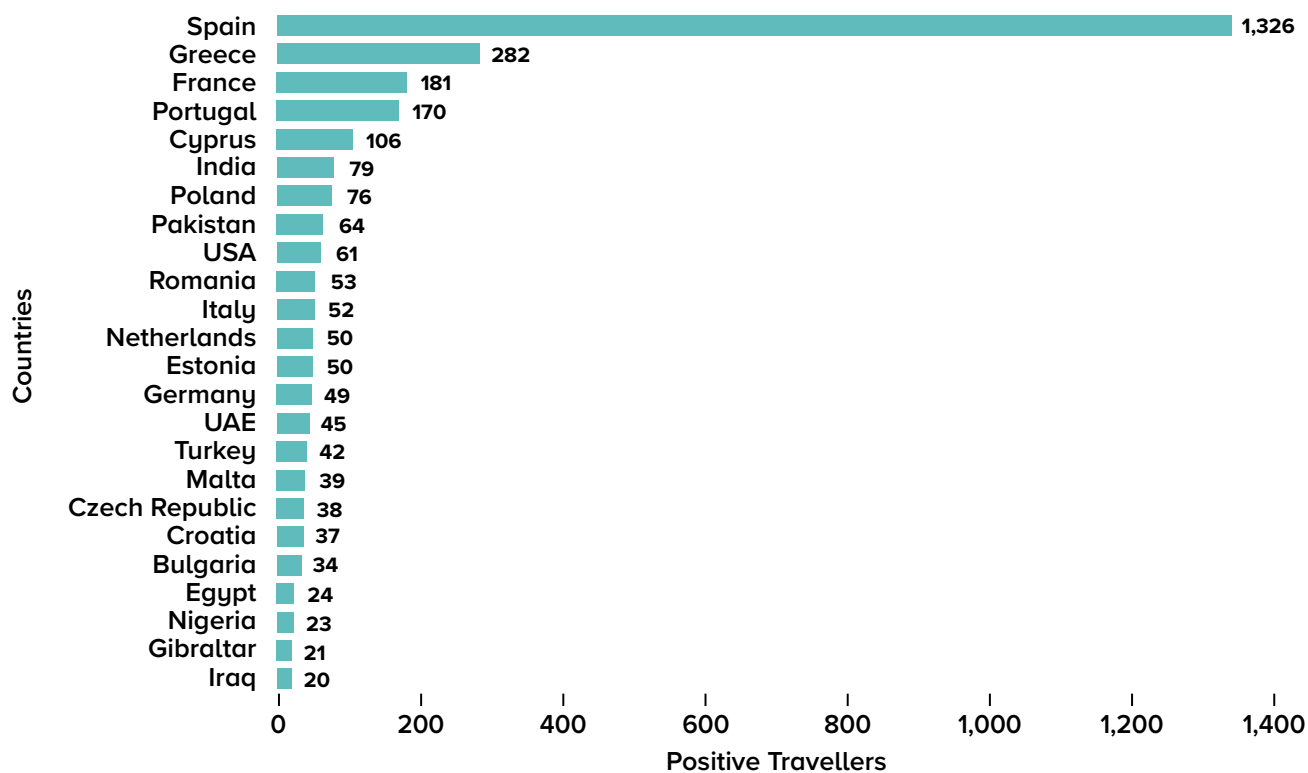
Source: Arriving Travellers Weekly Report; Week 44.

Figure 26c: Travellers by arrival date
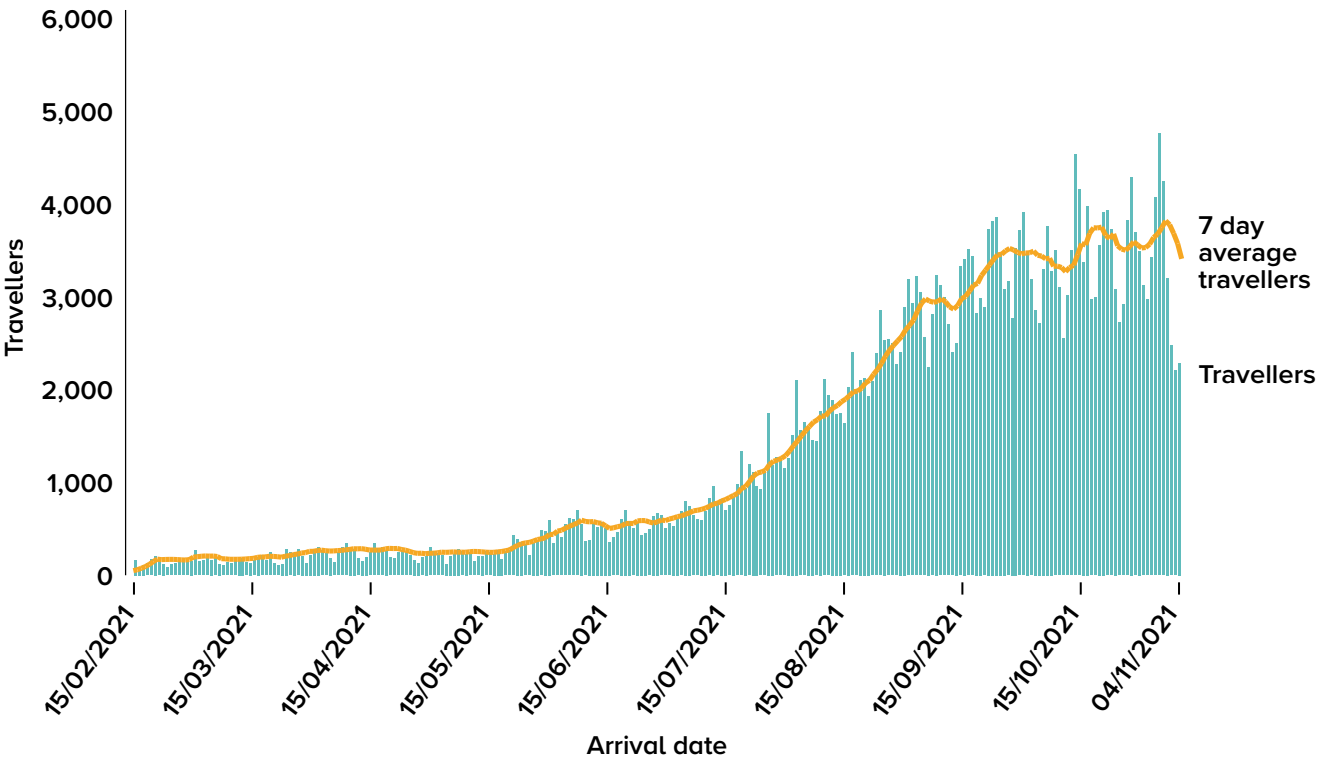
Source: Arriving Travellers Weekly Report; Week 44.

Surveillance

Alongside an impressive epidemiological and genomic surveillance service by Public Health Wales, two innovative approaches to monitoring the spread of COVID-19 were developed, including serological and wastewater surveillance.

Serological surveillance

Public Health Wales collaborated with the Welsh Blood Service to monitor samples of blood collected from healthy adult donors aged 17-85 years, providing information on changes in the proportion of the population either vaccinated or infected with SARS-CoV-2 over time, including those who had mild or no symptoms.

Known as serological surveillance, this information was useful to inform the public health response to the pandemic. Our surveillance found that the proportion of the population that had produced an immune response to natural infection was initially low in July 2020 at 4.4% and remained low until mid-December 2020 before peaking at 16.7% in late February 2021, and then remaining steady at around 15% until October 2021.

Meanwhile, the proportion of the population that had either been vaccinated or had an immune response to natural infection steadily increased to 99%, reflecting the high uptake of vaccine in the blood donor population.

Wastewater surveillance

Wastewater testing has previously been successfully used as a method for the early detection of other diseases, such as polio[30]. Early on in the COVID-19 pandemic, it was identified that SARS-CoV-2 RNA could be extracted and identified from wastewater samples collected from the inlets of municipal wastewater treatment works[31].

Wastewater monitoring has the potential to be representative of the true levels of SARS-CoV-2 in the community, less affected by testing policy, behaviour, and other service effects. Data from wastewater testing complements existing COVID-19 surveillance systems, by providing:

- an efficient, pooled community sample, since the virus is shed in the faeces of individuals with symptomatic or asymptomatic infection;

- information on changes in total COVID-19 infection in the community connected to a wastewater catchment;

- data for communities where timely COVID-19 clinical testing is impaired or unavailable;

- a leading indicator for early warning of changes in prevalence or distribution[32].

- While wastewater can be a leading indicator, the time between the appearance of the virus in untreated wastewater and the appearance of increased numbers of symptomatic patients oscillates between a few days and a few weeks[33, 34, 35].

Although the virus can be detected in wastewater the evidence currently available indicates, with a high level of confidence, that COVID-19 it is not active in wastewater or spread to others though this mechanism.

CASE STUDY: Wastewater programme

In response to the COVID-19 pandemic, in July 2020, the Welsh Government established a programme of sampling wastewater to identify trends in the levels of SARS-CoV-2.

This has been delivered in partnership with Bangor University, Cardiff University, Public Health Wales, Dŵr Cymru Welsh Water and Hafren Dyfrdwy.

The Welsh Government programme works closely with similar programmes being operated by Scottish Government, Northern Ireland Executive and UK Government (Defra/JBC: Wastewater COVID-19 monitoring in the UK: summary, 19 November 2020, 2021).

In September 2020, the programme began to monitor 19 of the major wastewater treatment sites across Wales (nine in North Wales and eleven in South Wales).

These sites are being sampled up to 5 times per week, capturing close to 75% of Wales' population on mains sewerage (10% on septic tanks are not included).

Figure 27a: Total reported COVID-19 cases (green) within each catchment for each region; mean normalised SARS-CoV-2 signal (orange) for catchments in each region, weighted by their population size. Range 01/01/21 – 31/10/2021 (North Wales)
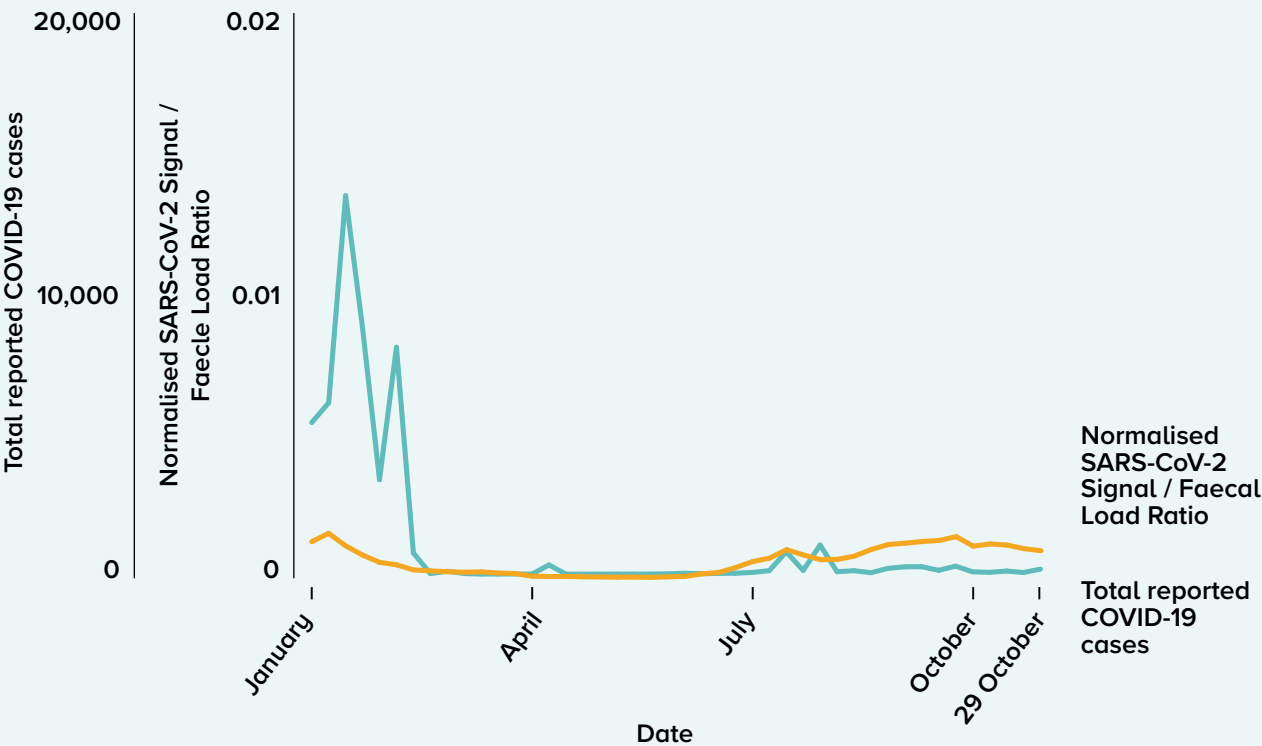
Source: Welsh Government Wastewater Programme / Public Health Wales.

Figure 27b: Total reported COVID-19 cases (green) within each catchment for each region; mean normalised SARS-CoV-2 signal (orange) for catchments in each region, weighted by their population size. Range 01/01/21 – 31/10/2021 (South Wales)
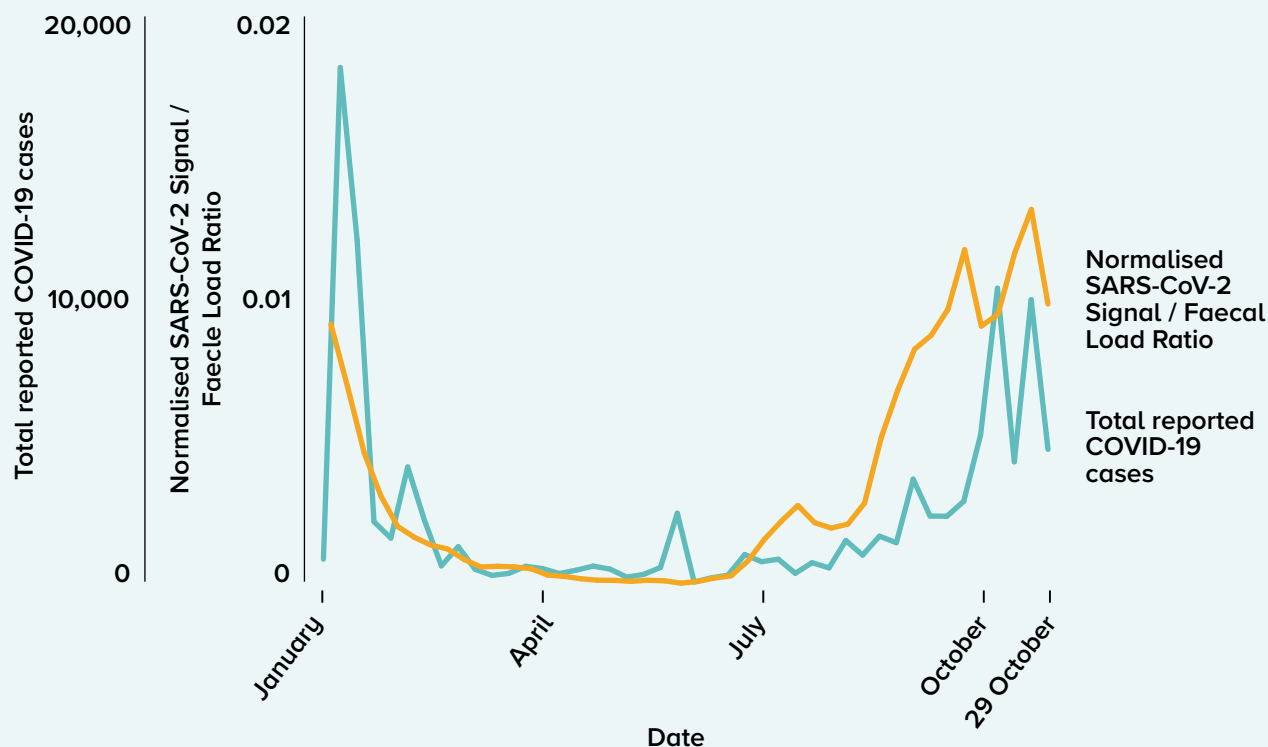
Source: Welsh Government Wastewater Programme / Public Health Wales.

Figure 27 shows the COVID-19 signal derived from wastewater sampling against reported positive COVID-19 cases reported by Public Health Wales (PHW). The chart shows that during the period of monitoring the wastewater signal was largely confirmatory of the positive test cases reported.

In the period since the 'Second Wave' the relationship between the wastewater signal and positive case numbers has changed, with less SARS-CoV-2 RNA being recovered for an equivalent number of cases. Whilst the exact cause of this has not been identified, it is likely to be as a result of the impact of different dominant variants, vaccinations, and a changing positive case age profile.

Despite these changes, wastewater is still providing a complimentary and independent source of intelligence for policy makers and public health officials in Wales.

From October 2021, the wastewater programme is expanding the geographical and population coverage of the monitoring network (Phase 3), increasing the number of sites covered from 19 to 47. In parallel to the expansion of sites, work is also being undertaken to improve the sample collection methodology.

Stationary composite auto-samplers will be installed at all of the sites, providing a long-term resilient network that can improve both health and environmental monitoring in future years as wastewater epidemiology science evolves.

Looking back

Following the arrival of COVID-19 in Wales, much has changed. The past year has impacted on each and every one of us and every part of our society, and with various levels of harm on us as individuals and as a nation.

A wide range of factors have contributed to our differing experiences of COVID-19, including social deprivation, an ageing population, ethnicity, close knit communities, employment, economic support, our built environment, work and leisure places, travel, education, our NHS and social care services, mass and social media, trust in government, and personal and societal values.

As is the case for many diseases, COVID-19 has exposed the most vulnerable in our society to both direct and indirect harm, and has exacerbated inequalities. It has placed immense pressure on our health and social care systems and shown that they were not designed with the challenges of a pandemic in mind.

We have learnt that controlling the disease and its impacts is as much a question of the behaviour of individuals and communities as it is of the characteristics of the virus itself.

Science across a broad spectrum of disciplines, from virology and epidemiology to the behavioural and social sciences, has helped us understand and mitigate some of the challenges presented by the virus, and progress has been made at an incredible pace.

Just as running a marathon with no training is ill advised – our learning and our experiences will help us be better prepared and plan for the uncertain future of SARS-CoV-2 and any other health threats, such as epidemics, antimicrobial resistance, and climate change. SARS-CoV-2 will become endemic, this is inevitable, and embracing this transition will help us to adapt and overcome the challenges it presents.

Chapter 3:

The health and social care system response

The COVID-19 pandemic has presented one of the biggest challenges that the health and care system across the UK, and the world, has ever faced. These pressures have significantly affected the system's ability to meet wider demands, and have placed great stress on our workforce.

Photo credit – Aneurin Bevan Health Board – Dr Nick Mason.

To recover and to rebuild the health of the population of Wales, the NHS must continue to transform the care it delivers. As we go into 2022, we must continue to respond to COVID-19 in Wales while also recovering backlogs of care and continuing to deliver day-to-day services. In addition, we must address capacity in services such as mental health, emergency and urgent care, social care, and primary care.

Responding to the pandemic in Wales has inevitably meant new ways of working with our partner organisations, and new ways of caring for, and interacting with, patients. It is important to acknowledge that while COVID-19 has brought negative impacts that will be felt in our communities for many years to come, we have also seen positive outcomes in the form of innovations in digital care and patient experience that we will seek to build upon.

The pandemic has necessitated strengthened collaborative planning and working across health and care partners. This collaboration has enabled us to meet many different aspects of need, from surges in intensive care demand to logistical planning for the storage and distribution of vaccines with complex cold chain requirements across Wales.

Collaboration is now focused on accelerating improvements in care quality and efficiency, and will be key to reducing the backlog in planned care, both fairly and swiftly. We are continuing to harness our collective resources and expertise to share the practices and processes that we know deliver the best outcomes, to direct capacity where it is most needed, and to reduce duplication and waste.

Closer working is also helping to break down barriers between acute, community, primary, and social care.

This will help to avoid unnecessary hospital visits and allow patients to leave hospital as soon as they are well enough.

Acknowledging that COVID-19 has affected different population subgroups in Wales in different ways has meant the need to work closely with communities. Ongoing engagement with the third sector, community leaders, trade unions, and health and social care staff networks will be needed for genuine progress in tackling the inequalities that have arisen from COVID-19.

For example, it has been possible to explore, and respond to, issues such as COVID-19 vaccine misinformation leading to hesitancy among people from some communities. With the help of partners, factual information has been developed to address fears, the use of webinars and 'Ask the Expert' sessions have been held and community leaders engaged to help increase knowledge and achieve acceptance. Health boards continue to focus services on under-served groups that may have experienced barriers and challenges in accessing the vaccine.

They are working with a range of partners and community voices to encourage those who haven't taken up their offer to come forward.

We have seen a huge amount of innovation in vaccination delivery from using drive-in centres and walk-throughs, to mobile and pop-up clinics in shopping and faith centres, and at homeless shelters. Vaccination teams have worked closely with community mental health teams and charity organisations to reach out to some of our most vulnerable groups in society to offer protection against COVID-19.

Bringing people together across sectors and communities has had a demonstrable impact on vaccine uptake, vaccine inequity, and local resilience, and so we must continue to grow these relationships in the coming year. Behavioural insights supported by surveillance data has provided a deeper understanding of vaccine hesitancy, accessibility, and acceptability, which has enabled targeted intervention amongst under-served groups.

Whilst the pressures on the health system will require our workforce to pivot once again, we will continue to use behavioural insights and quantitative data to enable and empower people to take individual responsibility for themselves, their loved ones, and their wider communities.

The pandemic has seen greater reliance on digital technology. Telephone and video consultations have allowed the NHS to provide care safely for thousands of patients, and the use of remote working has benefited those NHS staff whose jobs could be undertaken from home during lockdown periods.

We must continue to take opportunities to transform and futureproof ways of working, including enabling swift regular check-ins with patients, and professional-to-professional consultations, while not losing services that are best conducted in person.

The hard work, commitment and expertise of health and social care staff has enabled Wales to respond to the COVID-19 pandemic and to save the lives of thousands of people. As hundreds of staff were re-deployed to new roles, it is important to acknowledge that the period since March 2020 has been challenging, stressful and uncertain for all of our workforce. Inevitably there will be further challenges and change ahead, so that issues of sustainability, development and retention of staff, and protecting their physical and mental health must be a key priority.

An announcement was made of record funding for training new healthcare professionals in Wales, with more than £260m to be allocated in 2022-23 to education and training that will increase workforce capacity and resilience. The development of the Medical School in North Wales is also a major milestone for our future.

**DIOGELU CYMRU
KEEP WALES SAFE**

Llywodraeth Cymru
Welsh Government

Health and Social Care in Wales – COVID-19: Looking forward

March 2021

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March 2021 saw the publication of **Health and Social Care in Wales – COVID-19: Looking Forward**. This report recognises the significant impact that COVID-19 has had on society and on health and social care services.

It identifies some of the opportunities and risks, looking ahead to the next phase of the pandemic response, and towards recovery.

Recovery means not just addressing waiting times, but taking the opportunity to review the entire patient pathway and redesign the relationship between citizens and the care services, more as equal partners.

We need to embrace innovation and change, particularly around prevention of ill-health before it leads to serious illness and hospitalisation, placing a further burden on our NHS.

Recovery will not be a quick fix, but it gives us the opportunity to review and reflect and build new sustainable ways of working for the future.

The development of the National Clinical Framework, for example, describes the vision for how clinical services will develop in a way that achieves the quadruple aim of better outcomes, improved quality, an engaged workforce, and higher value care.

CASE STUDY: National Clinical Framework

A Healthier Wales set out a broad range of actions designed to move us to a sustainable health and care system.

It led to a National Clinical Framework that described how we will develop clinical services in a way that achieves the quadruple aim of better outcomes, improved quality, an engaged workforce, and higher value care.

The Framework sets out a number of ways that this can be achieved.

The core argument of the National Clinical Framework is that the realisation of prudent and value based healthcare is based on being a 'learning' health and care system.

This is a system which is data driven. Data is used to inform clinical decision making and change the way services are delivered.

This will result in a better balance of healthcare quality, cost, and outcome. This approach is known as Value Based Healthcare and its application by clinicians is called Prudent in Practice.

Data-driven system

In order to enable the health and care system to be data driven, a new digital strategy will be introduced to accelerate digital modernisation and integration of services in NHS Wales. This will allow the data-driven cycle to function by:

- creating high-quality data from different types of patient interaction with multiple parts of the health and care system;

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National Clinical Framework:

A Learning Health and Care System

Welsh Government 2021

Mae'r ddogfen yma hefyd ar gael yn Gymraeg / This document is also available in Welsh.
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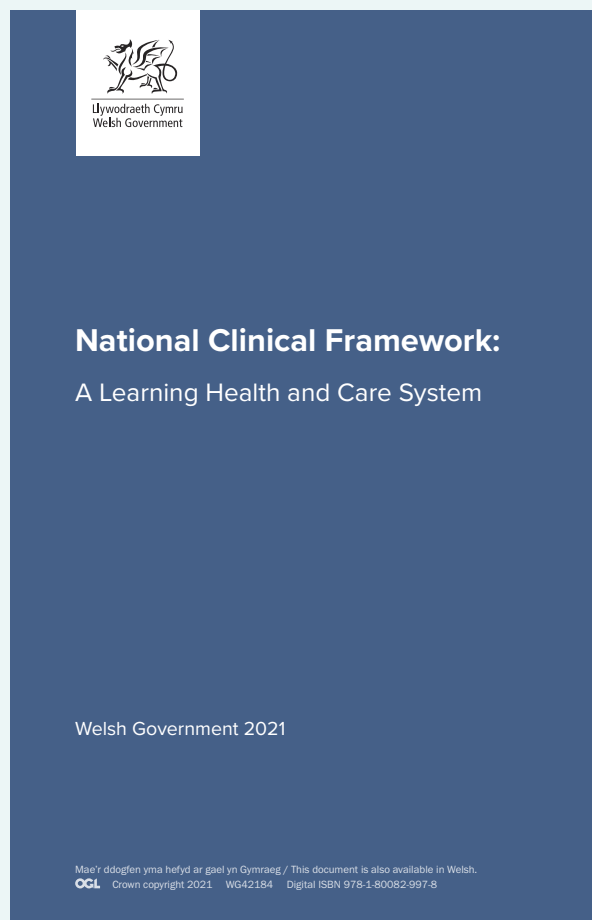
- turning raw data from multiple systems and organisations into actionable intelligence and knowledge, and;

- applying the knowledge into new clinical practice with individual patients in determining treatment decisions and with groups of patients when planning services.

D2K
DATA TO KNOWLEDGE

Data analysis.
'Intelligence for value'.
Operational insights.
Research insights.
Outcomes.
Big data.

P2D
PRACTICE TO DATA

Clinician and care–facing apps.
User-centred design.
Public-facing apps.
National data resource.
Plug & play ecosystem.
Population data.

K2P
KNOWLEDGE TO PRACTICE

Broad 'Clinical' networks.
Evidence-guided pathways.
Localised by health boards.

Nationally Agreed Pathways

Another key aspect of creating higher value healthcare is encouraging standardisation of practice across Wales against professional guidelines and reducing unwarranted variation in practice.

This is a long standing principle of quality in healthcare delivery. The National Clinical Framework introduces the need for nationally agreed pathways of care to act as high level reference points for services across Wales to plan against and work towards.

These pathways describe what services need to deliver in order to meet professional guidelines but do not set out who, how or where – these are matters to be determined by local organisations and teams in a way that best meets the needs of the local population according to the available resources.

In the years ahead, nationally agreed pathways will become an increasingly important reference point for NHS services in Wales to plan against.

National Clinical Networks

In order to create these national clinical pathways, health board and trust clinicians must come together to review professional guidelines and agree what should be delivered.

This needs to be done in an expert, structured and methodical way that makes use of all
professional disciplines, involves all NHS bodies, and includes patient involvement.

The vehicle for this in Wales is through the national clinical networks. National networks will identify unwarranted variation in clinical practice and support the local quality assurance cycle – with a particular focus on quality improvement.

The national clinical networks will evolve according to the burden of disease and system pressures facing NHS Wales, so they are likely to range in format and scale; from standing strategic networks, to operational delivery networks, to communities of practice networks.

NHS Executive

In order to create a seamless and integrated health and care system – joining good practice, comprehensive planning and robust accountability – the National Clinical Framework describes the formation of an NHS Executive function. The NHS Executive will use the clinical networks as a means of translating local intelligence for the benefit of the whole system, and to inform the national planning and accountability process.

Quality Statements

The National Clinical Framework requires that this overall approach is applied to many clinical services and, in order to guide how this is best done, it will use Quality Statements. These Quality Statements will set out what good clinical services look like and what pathways, data and attributes are required. These Quality Statements will focus on crucial system enablers (such as critical care) and the burden of population disease (such as cancer and cardiovascular disease).

Health protection and the public health system

Priorities

Continuing to respond to both the COVID-19 pandemic and other respiratory viruses anticipated to circulate during the remaining winter months was a key health protection priority.

However, there is a wide range of other potential threats to public health, many of which have been exacerbated by the COVID-19 pandemic, should be kept under review under review. The respiratory illness response plan aims to reduce the impact of COVID-19 and influenza infections through effective delivery of vaccination programmes and other pharmaceutical and behavioural interventions.

This is supported by the delivery of a comprehensive surveillance programme, allowing for rapid detection of incidents and outbreaks, to assist the public health system to take appropriate action to reduce harm.

Multiplex testing is able to rapidly identify the causative virus in those who are symptomatic, using genomic techniques to detect both new COVID-19 variants and the genetic drift of influenza viruses.

Contact tracing, with a focus on warning and informing and the targeting of high-risk settings, and sectors such as health and social care, will continue to be supported by appropriate guidance on the management of respiratory outbreaks.

The public will continue to be supported with campaigns and guidance on how to reduce their personal risk of respiratory viral illness through control measures such as frequent handwashing, respiratory practice such as 'Catch it, Bin it, Kill it', social distancing and mask wearing where advised. We will continue to work with Public Health Wales (PHW) and port health authorities in Wales, as well as UK and international partners, to assess and manage imported infection risks.

We will continually re-evaluate our response to COVID-19 as we transition to living with the virus. Planning has started to consider what 2022-23 might look like and how the COVID-19 vaccination programme might align with other immunisation programmes in the longer term, as we move from pandemic to endemic. While responding to the immediate threats of COVID-19 and respiratory disease, it is important that we continue to also prioritise our response to other high priority communicable diseases. Work to monitor and respond to outbreaks will continue to be undertaken by Public Health Wales, with emphasis on improving risk assessment and response to various diseases such as gastrointestinal, zoonotic and emerging infections.

Maintaining immunisation programmes remains a key priority to protect public health from preventable infections. Childhood immunisation programmes for diseases such as Measles, Meningococcal and Rotavirus and others, continued as essential services during the pandemic, with appropriate assurance to parents, and infection control measures in place. Latest data suggests that routine vaccination uptake in young children and infants remained stable throughout the pandemic.

In the latest reporting period, April to June 2021, 91% of children were up to date with routine vaccinations by five years of age, unchanged from the same periods in 2019 and 2020. The Welsh Government will continue to monitor uptake of all national immunisation programmes, working closely with key NHS stakeholders to encourage uptake, promote equity, and ensure that, where required, 'catch up' opportunities are offered as soon as possible.

Along with COVID-19, the response to antimicrobial resistance is one of our greatest and most challenging global public health threats. Surveillance of healthcare-associated infections and antimicrobial usage will continue to be a priority, with particular regard to the threat of resistance to those receiving hospital treatment. The Welsh Government has asked Public Health Wales to prioritise support for NHS Wales and communities in appropriate prescribing and use of antimicrobials, including the delivery of awareness and education campaigns such as those organised in support of European Antibiotic Awareness Day and World Antibiotic Awareness Week.

Some activities around antimicrobial resistance were inevitably paused due to the pandemic response, and we will aim to restart work to support the prevention and control of targeted blood stream infections, and the burden of urinary tract infections.

Throughout the COVID-19 pandemic, Public Health Wales, local authorities, Natural Resources Wales, and other system partners have continued to monitor and respond to public health risks from environmental hazards. This is a core health protection function, covering 'big-bang' acute major incidents such as industry-scale chemical releases, as well as smaller-scale air/water/land pollution events and chronic 'rising-tide' scenarios.

As we emerge from the pandemic response, we will take stock of the capabilities, structures, and processes in the wider environmental health system, to ensure we continue to have future-proofed arrangements to help us respond to these hazards in line with multi-agency statutory responsibilities outlined under the Civil Contingencies Act.

Reducing air pollution, risks, and inequalities remains another key priority going forward.

The Welsh Government will co-ordinate the provision of specialist public health advice through partners to support the implementation of the Wales Clean Air Plan and develop a new Clean Air Act for Wales. Specific actions will include setting new health-based air quality standards, establishing new monitoring networks and modelling capabilities, and enhancing the impact of the Local Air Quality Management regime.

Climate change is one of the greatest challenges facing governments across the world. In Wales, we will take action both to mitigate the risks to public health and to adapt infrastructures and systems to improve resilience.

This is described in more detail in chapter 4 of this report.

Challenges and risks

Difficult decisions needed to be made during the pandemic to ensure the best use of health protection expertise and resources. As a result, work on several communicable disease priority areas was paused temporarily. A key area to progress is the work needed to meet the target to eliminate Hepatitis C in Wales by 2030.

We know we need to identify and engage with an estimated 8,000 residents who are either unaware they have the disease or who until now have been unwilling to engage with traditional services. We will need to re-invigorate Hepatitis C testing in substance misuse services as we know that injecting illegal and performance-enhancing drugs is a key risk factor. All of the UK Nations have set ambitious targets for tackling Hepatitis C and we must work to align and progress during the year ahead.

Another priority area for development nationally is a funded, evidence-based Tuberculosis (TB) Strategy and Service Specification for Wales with the ultimate aim of eliminating endemic TB. Although Wales currently has the lowest TB rates in the UK, even a single case of TB can lead to large and difficult-to-manage clusters and outbreaks. We can often have several ongoing outbreaks of TB in Wales at a time.

A number of national actions will require financial investment and/or innovative service development and there will need to be local service specifications and improvement actions for NHS bodies in Wales to ensure that TB prevention and control activity is co-ordinated and delivered in line with national guidance.

The introduction of a mandatory licensing system for practitioners of specified special procedures, such as tattooists and body piercers, in accordance with the provisions of Part 4 of the Public Health (Wales) Act 2017, is another priority that will need to be progressed, in order to ensure only those trained and with assured hygiene practices are able to perform procedures, which are invasive and could risk infection, haemorrhage, and blood-borne viruses.
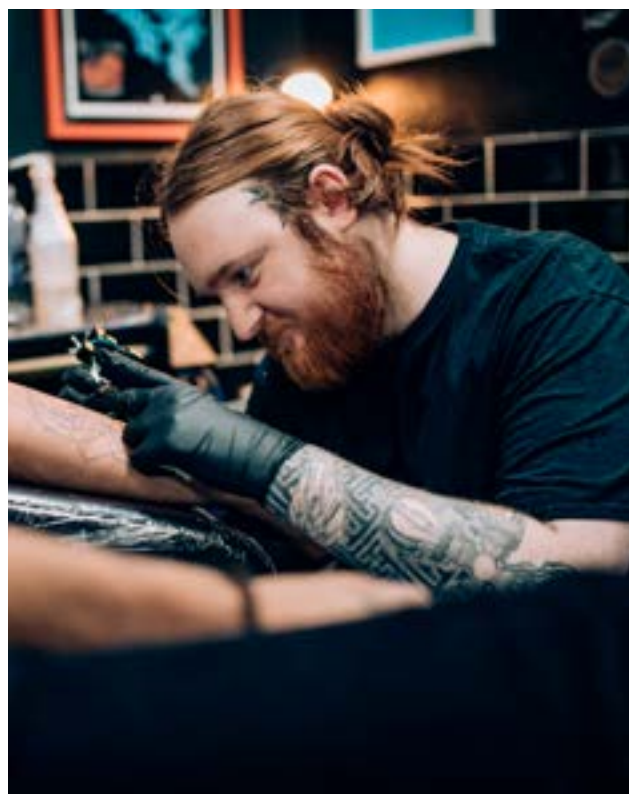
Implementing a recovery plan to reinstate routine services, such as food premises inspections, will be a priority as we move past the acute stage of pandemic response to ensure food safety for the population.

This comes at a time when the food safety landscape is changing significantly, and we must ensure we maintain regulatory approaches that make best use of technology, data, and relationships.

Protecting health through All Wales Screening Programmes

In March 2020, as non-urgent outpatient appointments were suspended, the Welsh Government endorsed Public Health Wales' recommendation to temporarily pause some of the population-based adult screening programmes. This affected Breast Test Wales, Cervical Screening Wales, Bowel Screening Wales, Diabetic Eye Screening Wales and Wales Abdominal Aortic Aneurysm Screening. The programmes were gradually reinstated between June and September 2020 but some constraints such as a reduction in the number of participants in each clinic due to COVID-19 safe pathways, limitations in the availability of clinic locations, and reduction in staff availability, remained in place. Each programme has put together action plans to mitigate the service backlog and Public Health Wales are working towards full recovery and reinstatement of all screening programmes.

Uptake of the Human Papillomavirus (HPV) vaccine was impacted by school closures during lockdown, with uptake of one dose in 2020-21 school year 8 children (12-13 year olds) currently at 60.1%. Catch-up immunisations must be prioritised for those in this cohort who did not receive immunisations as scheduled.

Opportunities as we recover

At the start of the pandemic, the Welsh Government expanded an existing online Sexually Transmitted Infections (STI) testing pilot that was being carried out in three health boards across Wales, ensuring testing and contraception was still available while access to sexual health clinics was limited. The online system, managed by Public Health Wales, is now providing approximately 90,000 STI tests per year and approximately 1,200 condoms each week are supplied to those at risk.

It was anticipated that national online testing would serve a large proportion of asymptomatic people, taking the pressure off clinics by enabling them to see only those who were symptomatic or for whom the digital solution was inappropriate or inaccessible. The reality has been that it has also made STI testing more accessible, particularly for those in rural areas, and has helped reduce perceived stigma.

The service has therefore been able to address a previously unidentified and, therefore, unmet need. As a result, more testing is being carried out and more positive cases of chlamydia, gonorrhoea, syphilis, HIV, and hepatitis (B and C) are being identified. This, in the long-term, will reduce the cost of untreated or late treatment of infection, both for the individual and for their contacts and/or children who could be infected, for example, late diagnosis of HIV resulting in ITU care and additional treatment costs for AIDS-related illnesses, or long term impact of syphilis infection, which results in cardiac and neurological disorders.

The online testing system has been more successful than anticipated and it has become evident that the system needs to be maintained post-pandemic.

Going forward, there is potential to improve this service further by expanding the type of tests available, providing additional options for accessing test kits, and linking people to other services. Continuing with telephone and video consultations, as well as face-to-face consultations when required, alongside online testing and community provision, offers a real opportunity to modernise sexual health services in Wales through the use of technology and more streamlined ways of working.

Meanwhile, the Bowel Screening Wales cancer screening programme has also seen positive developments during the pandemic that should be built upon as we move forward.

Greater participant uptake is being seen, with uptake now consistently above the standard of 60% for the first time in the life of the programme. Pre-pandemic plans to reduce the age-range for screening have progressed, so that from October 2021, men and women aged 58 and 59 started to receive invitations.

The intention is to gradually reduce the starting age to 50 years of age and increase the sensitivity of the test over the next few years in line with recommendations from the UK National Screening Committee.

Cancer care

Priorities

Cancer is a leading cause of death, and reducing cancer mortality rates has been a long-term priority for the Welsh Government. There have been consistent improvements in cancer outcomes for many years, resulting from developments in cancer investigation, treatment, and care. Unfortunately, our outcomes compare unfavourably with international comparators, likely to be heavily influenced by levels of deprivation and associated rates of co-morbidity, frailty, health-harming behaviour and cultural attitudes to help-seeking behaviours.

Challenges and risks

During the pandemic, around 4,000 fewer people have presented for cancer treatment in Wales. This was despite the Welsh Government having issued essential services guidance, based on advice from the World Health Organization, which included the need to maintain cancer services.

There was a significant drop-off in people presenting to the NHS with symptoms of suspected cancer, and cancer screening programmes were also paused for several months. In addition, many people affected by cancer either did not attend their appointments due to fear of overwhelming NHS systems or of contracting COVID-19 from visiting a healthcare environment. Others had their therapy altered or postponed to reduce their risk of complication, infection, and increased mortality.

By September 2020, cancer screening services resumed and primary care referrals recovered to their expected level, but diagnostic and treatment capacity (e.g. endoscopy), which had already seen increased demand before COVID-19, was affected by infection prevention controls that, while essential, resulted in reduced productivity. In addition to staff illness and self-isolation, this has had a significant impact on the number of people waiting for an investigation or treatment for cancer.

By September 2021, the number of people waiting for diagnostics had doubled and the number waiting for treatment was increased by as much as 70%. Those being treated have experienced disrupted pathways and increased treatment times. Although there is not yet any definitive evidence of cancers presenting at later stages, this is something that could be expected and, in combination with treatment delay, could set back cancer outcomes in the immediate years ahead.

Opportunities as we recover

The Welsh Government has set a clear expectation for recovery of cancer services. Services are required to resume the pre-pandemic waiting list volume in order to reduce the potential for harm.

In addition, services should aim to achieve the cancer waiting time target of 75% of patients starting definitive treatment within 62 days. These expectations are reflected in the NHS planning framework and Quality Statement for Cancer. NHS services are being supported with £240 million of funding to support cancer diagnostic and treatment activity.

The disruption caused by the pandemic provides an opportunity to reform cancer pathways for the better, including better regional working and adoption of nationally agreed pathways of care. This is the direction set out in the Quality Statement for Cancer, which will apply the National Clinical Framework to help transform cancer services in Wales and get back to accelerating the pace of improvement in outcomes.

NHS Wales
Annual Planning Framework
2021 – 2022

OGL
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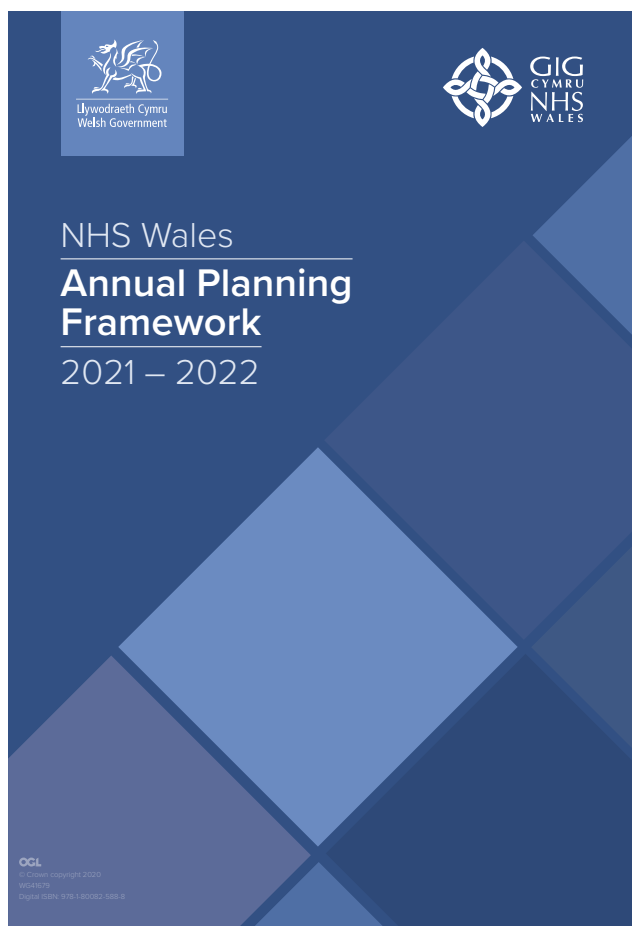
Primary care services

Priorities

Primary and community care continues to be one of the five Ministerial priorities in the **NHS Wales Annual Planning Framework 2021-2022**. Care and support should be about the whole person, encompassing mental wellbeing and physical health; with community services needing to work with each other, and with hospitals, to provide the right care at the right time from the right professional or service, as close to home as possible.

The Primary and Community Care 2021-22 Planning Framework sets out specific priorities both for our COVID-19 response and for the recovery of other activity, building on key lessons from 2020-21.

The four key priorities are:

- management of COVID-19, including the vaccination service and care for people with Long COVID;

- delivering essential services, requiring joined-up care with hospital services;

- development of integrated community care services, including optimal use of allied health professionals, such as therapists, to deliver increased provision of recovery, rehabilitation and health services for people in care homes; and

- improved access to primary care, including new ways to access urgent and routine care closer to home.

Work will also continue on a programme of primary care contract reform:

- dentistry will focus on addressing priority needs and inequalities, stepping up preventive care, and making effective use of resources to address the treatment backlog;

- optometrists will be encouraged to optimise their skills and utilise the full extent of their education, training, and experience to support the shift of appropriate services from hospitals to primary care;

- community pharmacy will build on and develop its role in service delivery, especially clinical services;

- general practice will build on learning from the past 12 months to streamline the General Medical Services contract and focus on core service provision to patients, with services of an enhanced nature planned and delivered on a footprint of GP geographic clusters.

Challenges and risks

We face a significant challenge in ensuring that our local community services can become seamless and organised around the needs of individuals on a 24/7 basis.

This includes integration between primary care services such as general practice, dentistry, optometry, and pharmacy, alongside the third sector services which support so many individuals; between primary care services and wider community services such as health visiting, nursing and community therapy, and between health and social services. This will enable people to have more of their treatment and care as close to home as feasible, ideally relying on hospitals for specific investigations where necessary rather than as the default destination.

Key specific service risks include maintaining access to primary care. Any perception that services are not available or have reduced capacity to cope can result in harm. Primary care has a key role to play in critical national programmes for vaccination and waiting list recovery, and the ability to manage these pressures alongside delivering primary care must be carefully considered.

The ability to direct appropriate pathways into the wider community and primary care sector is key to support recovery efforts. We must create a better understanding by professionals and the public of the role of the wider primary and community care team.

The pandemic has seriously impacted on the ability to provide dental services. Although the number of urgent treatments is beginning to return to pre-COVID-19 levels, the total numbers able to access routine services are only at about 35% of 2019-20 levels, because of the need to put in place measures to prevent infection spread between patients. This remains a major cause of concern. Children's dental health promotion must remain a priority.

DIOGELU CYMRU
KEEP WALES SAFE

GIG
CYMRU
NHS
WALES

What to expect from your dental practice?

Access to dental services during COVID-19

- Due to COVID-19 dental services are experiencing a backlog
- We need to take extra steps to keep patients and staff safe
- We are trying to prioritise those most in need

If you have good oral health:

Help us by continuing to look after yourself by brushing your teeth.

We ask for your patience while normal services resume.

If you have any of the following:

Pain;

A concerning lump;

An ulcer that hasn't healed in 2 weeks;

You will be able to access emergency services.

If you are with a practice and your emergency is during normal business hours:

Contact your practice to arrange an emergency appointment.

If it is 'out of hours' or you are not with a practice:

Visit **NHS 111** online and search for your local dental service.

For further information visit 111.wales.nhs.uk/dentalservices

HELP US
HELP YOU

Opportunities as we recover

We must take advantage of opportunities to provide people with access to broader primary care through the national and local 111 service, including 'phone first' and other digital approaches. This will maximise access to specialist professional advice and guidance online. Better technological advances will modernise our prescription services and improve patient care through the successful dental e-referral system. All of these developments are helping to identify what can and should be delivered safely and closer to home in primary care settings.

Using optometrists with higher qualifications, to enable patients to receive appropriate care closer to home, is important and can significantly reduce the demand for hospital based ophthalmology care. Likewise, developing the role of our community pharmacy in services, especially clinical services, will build on the developments we saw during the pandemic. Encouraging allied health professionals to develop further new models of care will help to keep people well. This includes remote self-management guides, group consultations and preventative treatments.

By increasing the capacity of community-based staff we will support long-term physical and mental health conditions, including for people with orthopaedic problems, people living with cognitive decline and memory loss, and people who have long COVID. Rehabilitation has become a particular area of focus during the pandemic for those affected by COVID-19.

This focus must continue and also ensure people come forward for treatment, including those who may have delayed seeking advice for a health problem, and people affected by the lockdown measures, such as those who have isolated or who were formally shielding.

As the health system moves towards recovery, there are many valuable lessons from the rapid transformation that occurred in response to the pandemic. Many of the lessons are aligned to the 'care closer to home' principle as set out in *A Healthier Wales*, particularly the digital solutions. The health and care workforce and patients have been flexible in adapting to new ways of communicating and this has ensured people have access to the support they require, using a variety of approaches including telephone, digital, and face-to-face contact.

Urgent and emergency care services

The challenge

Urgent and emergency care services have been under increasing pressure for a number of years across all parts of the system, including community care services, the ambulance service, emergency departments, hospitals, and other essential health and social care services.

This has, at times, resulted in delays for individuals' access to essential services, which can have an effect on their experience and outcomes. The challenge is multi-factorial and has been compounded by the effects of the COVID-19 pandemic on our population and our services.

Six goals for urgent and emergency care

We have developed six goals for urgent and emergency as expectations for the health and social care system, and to enable delivery of the Welsh Government's Programme for Government commitments. Delivering all 'six goals' consistently and reliably through whole-system collaboration between Health Boards, NHS Trusts and Regional Partnership Boards, and partners across public services and the third sector, will be needed to enable optimal patient and staff experience, clinical outcomes, and value.

The Six goals for urgent and emergency care set out our expectations for health, social care, independent and third sector partners for the delivery of the right care, in the right place, first time for physical and mental health. The six goals represent the outcomes we expect for people who need to access urgent and emergency care. They focus on preventing escalation and maintaining independence for the patient. The six goals are supported by a series of 'quality statements' which set out what we expect health boards and trusts to deliver with their partners.

Figure 28: NHS Wales' 'six goals for urgent and emergency care'

6 Home first approach and reduce the risk of readmission

1 Co-ordination planning and support for populations at greater risk of needing urgent or emergency care

2 Signposting people with urgent care needs to the right place, first time

3 Clinically safe alternatives to admission to hospital

4 Rapid response in a physical or mental health crisis

5 Optimal hospital care and discharge practice from the point of admission

Six Goals for Urgent and Emergency Care

The six goals above are supported by a national structure, which oversees progress towards achievement.

Five priorities have been identified for 2022-2023:

1. Continue to implement Urgent Primary Care Centres across Wales – access to care in the right place, first time as close to home as possible.

2. Deliver safe alternatives to ambulance conveyance to Emergency Departments – including optimising experience, increasing ambulance availability and reducing pressure on Emergency Departments.

3. Implement Same Day Emergency Care services to support 100% of type 1 emergency departments – avoiding unplanned, longer-than-needed stays in hospitals.

Consistent and reliable delivery of Welsh Government hospital discharge requirements (guidance) to:

4. Reduce risk of harm, loss of independence and poor outcomes in older and frail people.

5. Reduce length of stay in bed occupancy, congestion, and delays at Emergency Departments' 'front door'.

Critical care services

Priorities

Priorities for critical care recovery, future direction and transformation are set out in the quality statement for care of the critically ill, which will apply the National Clinical Framework to help transform critical care services in Wales and accelerate the pace of improvement. This is in addition to the nationally directed programme for critical care based on the Task and Finish Group report on critical care published in July 2019. This report highlighted that there is a need to expand critical care capacity in Wales as a priority. Demand on critical care is increasing worldwide, but in Wales, there are only 5.7 critical care beds per 100,000 population compared to 7 per 100,000 in the rest of the UK and 11.5 across Europe on average[36]. The average number of critical care beds per 100,000 population varies between health boards.

There has been minimal expansion in the number of critical care beds in Wales during the last 15 years and capacity has not been expanded in line with increased demand. Inadequate critical care capacity within Wales is leading to deferred or refused admissions, cancellation of planned surgery, transfers of emergency patients, and premature discharges affecting the quality of care delivered.

Implementing the Task and Finish Group recommendations demands a focus on:

- development of Post Anaesthetic Care Units (PACUs);

- addressing the workforce deficit to meet professional standards;

- a phased expansion of critical care beds;

- improving flow out of critical care units and ensuring discharges are stepped down from critical care in a timely manner.

Challenges and risks

Critical care has been under sustained pressure since the beginning of the pandemic. Between the start of the pandemic and 4 November 2021, more than 1,723 patients with COVID-19 have been admitted to critical care units in Wales. This is in addition to normal activity.

This pressure has been exacerbated further by high levels of staff attrition, sickness, and isolation. Pressures across the system mean it is, in many cases, not possible to redeploy staff or increase the number of critical care beds as clinical areas previously used are being utilised for unwell or recovering medical patients.

The nursing workforce is the largest constraint within critical care capacity with at least seven full-time nurses required for every bed. Single-room layouts and other infection streaming pathways will need further increases together with workforce development, recruitment, training pathways, and diversification.

Opportunities as we recover

Despite the challenges posed by the pandemic response, some progress has already been made towards addressing the acknowledged issues within critical care.

This includes:

- Small-scale expansion of critical care beds.

- Development or expansion of critical care outreach in most health boards.

- Development of post-anaesthetic care units (PACU) in some health boards.

- Some improvement in therapies provision.

- Dedicated adult critical care transfer services (ACCTS) went live in South Wales in August 2021 and in North Wales in October 2021.

- Establishment of five long-term ventilation beds.

Adoption of new treatments and medicines has impacted on the provision of critical care services such as rollout of some COVID-19 interventions improving survival rates and reducing length of stay. Work is progressing on the rollout of the Welsh Intensive Care Information System (WICIS), the digital intensive care unit expected to be completed by mid-2024.

Planned care services

Priorities

Planned care was already experiencing increased demand prior to COVID-19. The pandemic has worsened the situation and so going back to the previous operating model, where many patients were referred into secondary care unnecessarily, is no longer an option. The planned care model needs to change fundamentally to build a more sustainable service for the future.

Five goals for planned care have been developed to support health boards to plan and respond to the current situation.

They will form the basis of health boards plans for the coming years, and together present a comprehensive approach to planned care.

- **Effective referral**: Ensure that referral guidance and thresholds are in place to ensure that those most in clinical need are referred to the appropriate setting.

- **Advice and guidance**: Develop access to high quality advice and guidance to enable informed decision making for individuals as well as primary and secondary care clinicians.

- **Treat accordingly**: Access to appropriate care at the right time at the right place.

- **Follow up prudently**: Giving individuals more choice and control over their care.

- **Measure what's important**: Transforming care to better meet the clinical need of the patient.

Challenges and risks

The focus since March 2020 has been on addressing the harms caused by the pandemic, including treating those suffering from COVID-19 and preventing the NHS and social care from being overwhelmed. As a consequence, the impact on waiting lists across all specialities over this period has been significant. The challenge is not therefore just rebuilding capacity to pre-pandemic levels but also addressing the significant backlog.

Workforce is also a challenge and we will need to explore and redesign range of skills and competencies across the multidisciplinary teams. The aim being to maximise our resources with everyone being encouraged to work at the top of their skillset.

Recovery has to transform and redesign new ways of delivery, looking across the whole pathway, and working in partnership with the public. We need to recognise that planned care starts in primary care, resources and support need to be right to manage care effectively, and referrals are made only when clinically needed.

The new planned care goals help to support this approach and identify how ways of working will be changed in order to achieve this.

Opportunities as we recover

The use of group video consultations during the pandemic proved to be beneficial for both patient and clinical groups. While virtual review is not appropriate for all consultations, it will continue to play a critical role in delivering planned care services in the future.

New models of surgical delivery in protected areas away from acute hospital sites are being explored, including for cataract and orthopaedic procedures.

The use of artificial intelligence (AI) is an area under review to support the shared management of care with patients. This is in conjunction with 'see on symptom' and patient initiated follow-up. We need to build on the partnership role between patient and clinician to support self-management.

**Improving Health and Social Care
(Covid 19 Looking Forward)**

Social Care Recovery Framework

Llywodraeth Cymru
Welsh Government
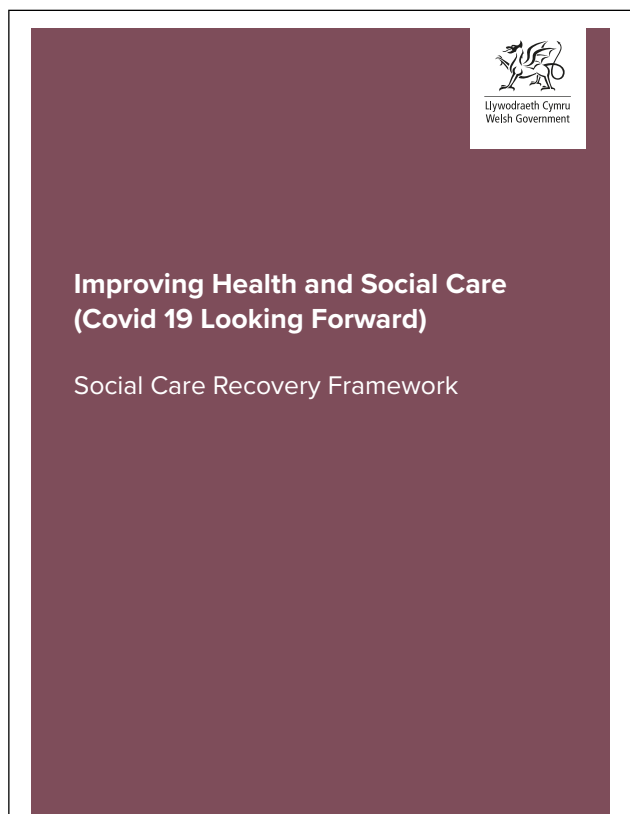
Social care

Priorities

Recovery priorities for social care in Wales are set out in the Welsh Government's **Social Care Recovery Framework**, published in July 2021. This drew on partners' contributions to outline both the key considerations for maintaining care and support for people and delivering their personal outcomes during the pandemic and recovery phases, and also the desired features of the future system of social care, complementary to the strategic direction outlined in the White Paper 'Rebalancing Care and Support'.

Recovery planning is focused on three core groups – people who need care and support, unpaid carers who need support, and the social care workforce.

Planning is underpinned by the following principles and commitments:

- Recovery planning has well-being and 'what matters' at its core.

- It is focussed on reducing inequalities and avoiding disproportionate impacts.

- It includes considerations of prevention and early intervention.

- We continue to work with unpaid carers and the third sector to understand the impact of COVID-19.

- We increase the availability and diversity of respite services for unpaid carers.

- We will continue to support families to stay together.

- People are able to return home as quickly, sustainably, and safely as possible.

- Timely contact between universal and preventative services, particularly for children and young people, remains a high priority.

- MEIC and Child line helplines continue to be available.

- Families receive the support they need at the earliest opportunity.

- Specialist advocacy provision is available.

Priorities for unpaid carers and service providers include:

- Ensuring that the risk of COVID-19 entering care homes in Wales is minimised.

- Promoting safe visiting into and out of care homes.

- Supporting the resilience of the social care sector.

- Understanding the scale of the issues related to insurance and indemnity, and identify potential solutions.

- Recovering and maintaining stable placements for children.

- Addressing legal processes related to children's placements.

- Considering developing a testing protocol for foster carers.

Priorities for the social care workforce include a commitment to prioritise the well-being of the social care workforce, and ensure that the domiciliary care workforce continues to be able to access COVID-19 related support.

A £40m recovery fund for social care was established by the Welsh Government in September 2021. This will support appropriate recovery of services in local authority areas across Wales, with the activity aligning both with the priority areas set out in the framework, and with any wider recovery plans developed by local authorities and their relevant Regional Partnership Boards.

An additional £42.7m has been allocated to care and support with particular reference to current system and winter pressures.

Going beyond the short-to-medium-term focus of the Recovery Framework, the long term priorities for social care in Wales are determined by the Welsh Government's Programme for Government commitments for social care – including those in relation to the Social Care Recovery Framework – and by the wider programme developed in response to the Welsh white paper 'Rebalancing Care and Support'.

These in turn are complemented by other statements of strategic intent including A Healthier Wales, the Strategy for an Ageing Society, and the National Strategy for Unpaid Carers.

Challenges and risks

During the pandemic, the social care sector has dealt with unprecedented levels of challenge, supporting many of the most vulnerable people in our society; young, older, and disabled.

At the same time as putting the social care system under great strain, the pandemic has made the fragility of the sector more visible.

Moving out of the pandemic will leave social care facing great demand, with workforce issues at critical levels, significant disruption to services, and needs for recovery and reform continuing to manifest themselves.

As well as depressing workforce availability across all services, in adult services it has driven up demand for domiciliary care, forced changes (for example in visiting and going out arrangements) in residential care settings, and caused limitations in the availability of crucial support services for unpaid carers, such as day centres and the availability of respite provision.

All of these factors, as well as the cumulative impact of protections on older people and non-pandemic driven factors such as demographic change, e.g. people living longer and needing support, will potentially drive changes in demand for types of care, such as domiciliary support, extra-care, and elderly mentally infirm.

Similarly, in children's services, adaptations have had to be made, for example, in relation to increased use of virtual methods to support contact with vulnerable children and families, in adoption work, in the operation of children's homes, in the level and nature of children's safeguarding concerns, and referrals to statutory service.

All of these factors have increased pressure on these vital services. Whilst the availability of suitable placements remains deeply challenging, in part because of a slowing-down in the rate at which children exit care owing to pandemic conditions, the Welsh Government and stakeholders continue to work together to manage the number of children becoming looked after, to extend more support to families with children on the edge of care, and to support more children to experience 'looked after' care closer to their home.

Opportunities as we recover

The pandemic has substantially exposed a range of significant challenges in social care across the whole of the United Kingdom, but at the same time has catalysed proposals for change by the UK Government to which Welsh Ministers are responding. This recognises the unique financial opportunity to stabilise Welsh social care services and to transition to a new state, which is sustainable and better serves people who need care and support.

In taking forward recovery and reform, the challenge will be to build upon the foundations of the Social Services and Wellbeing (Wales) Act 2014.

This will involve capitalising on, and extending, areas of progress such as direct payments, embracing the increased professionalisation of the workforce and focusing more on recruitment and retention, improving remuneration including paying the Real Living Wage to social care workers, and working in partnerships regionally. It will also require making progress in newer, less-explored directions, such as relational models of care and support and place-based care utilising mechanisms, including a new five-year Regional Investment Fund, and looking towards a national care service of the future.

Work has been started on establishing a National Care Service for Wales, as outlined in the White Paper 'Rebalancing Care and Support' published earlier in 2021. This National Service would be predicated on the idea that new models of care delivered by local authorities ensure people experience better care consistently.

Innovation and digitally-enabled transformation

Priorities

A Healthier Wales sets out the Welsh Government's vision of a health and social care system that collaborates across industry, academia and the third sector to deliver improved healthcare value by developing, sharing, procuring, and adopting new technologies and innovative practice.

The focus must now be on delivering this approach, which utilises technology and innovation to prevent illness and to support people to manage their own health and well-being. Patients should be able to engage with health and care services digitally, be monitored remotely and supported in living independently for as long as possible, through the provision of integrated health and social care services, which are delivered closer to home.

A new Digital and Data Strategy for Health and Care in Wales will be published at the end of the summer 2022, reflecting the game-changing experience of the pandemic, and also major changes to digital policy.

This includes a new NHS Wales organisation, Digital Health and Care Wales, and more than £200m of additional investment in digital transformation over the past three years.

The £75 million Digital Priorities Investment Fund currently supports more than 40 different programmes and initiatives.

The Welsh Government digital team is working with digital directors in each organisation to accelerate spend this year, focused on digital innovation, cyber security, and infrastructure. Priority areas for development will include allowing patients to access their digital health and care record to manage appointments, prescriptions, test booking, and results.

Another priority for the Welsh Government is ePrescribing. Following a strategic review, funding has been confirmed for an ambitious digital medicines management programme, which goes beyond traditional hospital ePrescribing. The programme will deliver four themes in parallel; patient access to prescribing record, primary care electronic transfer of prescriptions, ePrescribing in secondary care, and a common data platform supporting end-to-end medicines administration.

This hugely ambitious programme will be delivered over the next 3-5 years, using accelerated delivery approaches.

Protecting the security of our NHS systems will remain a key priority. The pandemic response period saw the establishment of an NHS Wales Cyber Resilience Unit, and each NHS organisation is taking steps to strengthen their position using the Cyber Assessment Framework.

Challenges and risks

The response to the pandemic has required a shift in the way that health and social care services engage with patients, with thousands of in-person appointments being replaced by telephone and video consultations. The benefits to patients, staff, and the environment of continuing with these consultations where possible must be weighed up against the need to deliver some services in person, and the need to consider those members of the Welsh population who cannot access, or easily use, digital technology.

Opportunities as we recover

The pandemic has accelerated some elements of A Healthier Wales, with the digital response delivered at an accelerated pace as several all-Wales programmes were deployed nationally in 6-8 week cycles.

This included significant investment in mobile and remote working to enable NHS staff to observe working from home guidance and to continue working when self-isolating.

An all-Wales digital contact tracing platform was commissioned, developed and deployed by NWIS in less than 40 days in April and May, and has enabled local teams to work together as part of a national system.

This has delivered a well performing service which has reached 92.5% of the positive cases and 89.5% of the close contacts eligible for follow-up (as of 19 March 2022[37]). Digital vaccine and laboratory platforms have also been developed, allowing effective reporting of immunisation delivery, and of test results to primary care and contact-tracing services.

We have also seen:

- accelerated NHS innovation and service change;

- the adoption of new digital, diagnostic and precision medicine technologies at scale;

- local supply chains contributing to the pandemic response, as part of economic recovery and a foundational economy approach;

- system support for the principle of 'locking in' new practice and technology and 'maintaining momentum';

- increased partnering with universities and industry.

In order to build on those achievements and hold on to the learning from the pandemic response, the Minister for Health and Social Services announced a new Innovation programme for Health and Care in Wales in the summer of 2021. Existing innovation activities will be consolidated into a single programme with a tighter focus, strengthening national direction and helping to maintain the pace and scale of change in health and social care.

The programme features a range of technology interventions, national technological solutions and platforms, all linked to the theme of meeting system needs, challenges, and opportunities.

Engagement is underway with key partners and stakeholders on the new programme and future opportunities, including how the new programme will form part of the future Innovation Strategy for Wales.

Our approach to understanding, developing and adopting new technologies also takes place on a number of other coordinated fronts.

This includes continued work by Health Technology Wales, established in 2017, to provide a strategic, streamlined, and nationally coordinated approach for the identification, appraisal, and adoption of medical technologies into practice across Wales.

Meanwhile, there will be increased investment in Technology Enabled Care (TEC). The programme has demonstrated significant benefit at a regional level, supporting the case for national rollout, such as the development and deployment of the National Video Consultation Service (NVCS) in response to the COVID-19 pandemic.

The NVCS has already enabled more than 250,000 video consultations since its inception in April 2020, with 92% of patients rating their experience good, very good, or excellent. Furthermore, 1.7m kg of CO_2 has been saved due to the reduction of travel, together with an average 58 minutes saved per patient journey.

Mental Health Services

Priorities

In considering the impact of COVID-19, there is broad consensus among professionals that there will be long-term impact on population mental health and increased demand for mental health services. The NHS confederation released a report in August 2020 that predicted three key drivers of additional demand:

- **COVID-19 suppressed demand** – those that would have been referred to services had the pandemic not struck.

- **COVID-19 exacerbated demand** – existing service users needing more support due to a deterioration in their mental health during the pandemic.

- **COVID-19 driven demand** – new demand driven by people needing support due to the wider impacts of the pandemic, such as self-isolation, increases in substance misuse, and domestic violence.

We continue to provide support to NHS services through focused investment and coordinated planning.

A key element of our approach is to provide population support at a preventative, community, and primary care level to reduce demand for more specialist services.

We have enabled open access to online cognitive behavioural therapy (CBT) via SilverCloud, strengthened our CALL national mental health helpline, and developed the Youth Mental Health Toolkit.

To support children with emotional and mental health issues we have extended school counselling services and supported teachers with CAMHS in-reach support. We have also provided additional funding for community and specialist eating disorder services. Although referrals have now generally returned to pre-pandemic levels, with the exception of specialist CAMHS, we continue to monitor closely for increased demand, acuity, and any change in presentation patterns or altered needs.

Challenges and risks

Since mid-March 2020, a number of population surveys across the UK and in Wales have reported the impact of the pandemic and lockdown measures on aspects of individuals' mental health. Overall, the available evidence suggests that levels of depression and anxiety have increased during the pandemic and remain higher than pre-pandemic estimates. Aspects of personal health and wellbeing, concern about the health and wellbeing of others, and personal finances have all caused worry for individuals to differing extents over the course of lockdown

The impacts have not been felt consistently across all groups. Responses to the surveys show that certain groups of people, such as those with pre-existing mental health conditions, young adults, Black, Asian and Minority Ethnic communities, those in lower income households, and women report higher levels of mental health concerns than others, and have done so throughout the pandemic. A survey by the Children's Commissioner for Wales also highlights the impact on children and young people.

There is consistent evidence that economic recessions and factors such as unemployment, declining income, and unmanageable debts are strongly associated with poor mental well-being, higher rates of common mental disorders, substance-related disorders, and suicidal behaviours.

Concerns have been raised about an increased risk of suicides due to the protections imposed and raised levels of anxiety. In response, the Welsh Government worked with partners to monitor the data more closely during the pandemic and ONS data show that deaths by suicide appear to have reduced during 2020.

However, any changes to the suicide risk associated with the pandemic are likely to be dynamic.

Risk factors expected to be exacerbated by the pandemic include depression, post-traumatic stress disorder, hopelessness, feelings of entrapment and burdensomeness, substance misuse, loneliness, domestic violence, child neglect or abuse, unemployment, and other financial insecurities.

Opportunities as we recover

Mental health services were positioned as essential services during the pandemic and, overall, there is evidence of a suppression of demand across mental health services in Wales during the period of the pandemic.

There was a surge in demand post lockdown, which has led to increased waiting times and service pressure, although whether there will be a sustained long term increase in demand for NHS specialist mental health services and/or presentations at primary care for mental health and wellbeing issues is still to be determined.

Specialist CAMHS, especially those supporting young persons with disordered eating, have seen a very high number of referrals coinciding with a return to school for most children in Wales.

We have seen indications, through higher use of the Mental Health Act (1983) and feedback from services of increased complexity in some presentations, not just with mental illness and disorders but with accompanying social and emotional health issues.

Health improvement and inequalities

Priorities

Obesity and tobacco remain two of the greatest causes of avoidable harm to people here in Wales, and through our Healthy Weight, Healthy Wales and Tobacco Control strategies, we will continue to coordinate cross-government action to tackle these.

However, the pandemic has brought a renewed focus onto the inequity that exists around smoking and obesity, and onto the wider inequity arena. We know that people who are obese or who smoke are more likely to suffer greater harm if they contract COVID-19, meaning the health inequity attached to smoking and being overweight has been highlighted like never before.

Higher rates of obesity and smoking amongst our most deprived communities has left them more exposed to the impact of COVID-19, and we must renew our efforts to drive down the inequity that exists across Wales, to identify the challenges and barriers these communities face, and understand that the causes are wide ranging, from our food environment through to income inequity.

Obesity

Obesity was one of the most significant public health challenges and priorities for us before COVID-19. However, the pandemic has further demonstrated to us why we have to focus on supporting people across Wales to be a healthy weight.

Obesity has been a strong risk factor for severe disease during the COVID-19 pandemic; several studies have shown that living with excess weight causes greater risk of serious illness, hospitalisation or death from COVID-19, with risk growing substantially as body mass index (BMI) increases. This is also linked to a range of co-morbidities associated with obesity, such as chronic conditions that include diabetes, cardiovascular diseases, and some cancers. We also know that these people have a tougher time fighting COVID-19, even if they have a milder form of the virus.

Obesity levels are greatest in our most deprived communities, as can be seen in our Child Measurement Programme data. Supporting parents and families therefore, will be integral to our approach moving forward. We know that the reasons for people living with obesity are complex, and our Healthy Weight; Healthy Wales strategy seeks to understand the broad range of challenges by working across government and key partners in Welsh Civic Society. Whilst we recognise the food environment is a key factor, there are a range of wider determinants that drive the inequity that exists, such as access to physical activity and our built environment.

Our dietary behaviours also have an impact on our planetary health. As part of our Net Zero Plan, we have an ambition over the next 20 years to shift the population's diet closer to the Eatwell Guide. This will mean a substantial increase in our consumption of fruit and vegetables, a decrease in red and processed meats and dairy products, and a decrease in foods high in fat and sugar.

Tobacco

Smoking is another key health promotion priority, as the leading cause of preventable death in Wales. In 2018, around 5,600 deaths in people aged 35 and over were attributable to smoking. Whilst there has been a significant reduction in the number of smokers in Wales, there is evidence that smoking rates are higher in certain groups, including people living in socio-economically deprived areas, people in routine and manual occupations, people who are unemployed, people with mental health conditions, people from some ethnic minority backgrounds, and people from the LGBTQ+ community. The use of illegal tobacco is also understood to be more prevalent in our most disadvantaged communities. These disparities in smoking rates are causing a greater burden of smoking-related diseases in these groups and in turn, contributing to inequalities and health inequity.

We are currently developing our new Tobacco Control Strategy for Wales and the first Delivery Plan, which sets out the specific targeted actions that will help us to reduce the harms from tobacco in Wales. We have established our ambition for Wales to be smoke-free by 2030, which means achieving a smoking prevalence rate in adults of 5% or less over the next eight years.

The strategy will focus on three key themes:

- Reducing inequalities.

- A focus on future generations – stopping the next generation of smokers starting.

- A whole-system approach for a smoke-free Wales.

To support the delivery of the strategy, we will put in place a series of two-year delivery plans, from 2022 to 2024, which will set out in detail the actions that we will undertake and support as we work towards a smoke-free Wales. We are already taking action in relation to illegal tobacco, for example, not only in relation to enforcement and disruption work, but also to raise public awareness with the aim of reducing the availability and demand of illegal tobacco in Wales. In recognition of the inequalities and inequity which arise as a result of smoking, tackling inequality is noted as one of the central themes of our Tobacco Control Strategy. Our plans will foster direct engagement with the identified priority groups, to better understand the barriers and challenges that exist to stopping tobacco use. This means a focus on innovation, to seek new ways to engage with harder to reach groups, and provide solutions that work for them in an effort to tackle entrenched inequities.
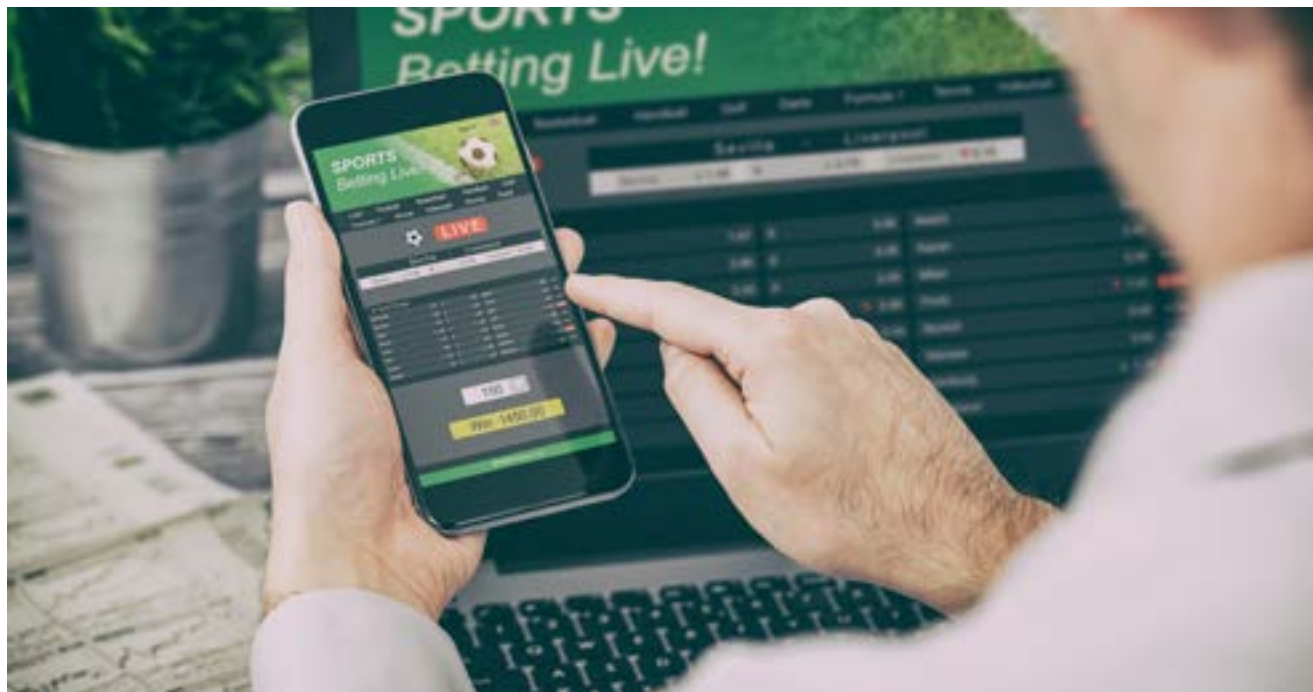
Gambling

The 2016-17 Chief Medical Officer for Wales Annual Report 'Gambling with our Health' highlighted the relationship between gambling and health, and made a number of recommendations to address the inequity of harm. In the years since the report's publication, the gambling landscape has changed enormously. Gambling advertising has increased rapidly since 2005 and significant changes have been seen in how consumers gamble, with a shift to more online gambling. We have long known that those who are economically disadvantaged and living in our most deprived communities suffer the most harm from gambling.

In December 2020, we established a task and finish group to look in more depth at the issues around problem gambling. Working alongside a range of partners, we are taking an integrated and collaborative approach to gambling policy, in line with our view that it should be recognised as a public health issue which requires a population-level intervention.

A key recommendation in that report was for greater regulatory control in Wales and the UK. We know that the Gambling Act (2005) has not kept pace with the agile and rapidly changing industry and we welcome the UK Government's Review of the Act.

Our response to the review set out our policy position on gambling and called for a number of measures to address harms including the introduction of a strengthened legislative framework and robust regulatory system for the gambling industry, greater restrictions on advertising, safer products, the introduction of a statutory levy to support harm minimisation, a gambling ombudsman to be appointed, prevention, evidence-based treatment options, and research into gambling-related harm.

Challenges and risks

We cannot underestimate the scale of these challenges, especially obesity. It feels like we have a mountain to climb to see a shift change. However, we have a real opportunity with Healthy Weight: Healthy Wales to support the fundamental change that is needed across the population and to position Wales as world-leading in the support that is offered. Policy, funding, and legislation can help to deliver approaches based on international evidence of what works.

However, we know that there is a leadership role at all levels required to make sustainable change happen. This change needs to happen within our communities to empower and embolden people to help support this shift in what we eat and the way we move in our daily lives. However, there is also a leadership challenge across organisations throughout Wales.

We will be supporting Health Boards to place a greater focus on reducing and preventing obesity through their planning and built in targets, but obesity is not only a health system problem. We need to see partners across the public and private sector recognise and make changes so that they contribute towards common goals.

Over the course of the pandemic, the Welsh Government has concluded a Memorandum of Understanding with the World Health Organization's Regional Office for Europe on health equity. This Memorandum of Understanding has seen Wales establish the Welsh Health Equity Status Reports initiative ('WHESRi') and thereby become the first country to apply a milestone World Health Organization Health Equity Status Report initiative framework.

The framework sets out the following five essential conditions for prosperous and healthy lives for all:

- Health and health services.

- Health and income security and social protection.

- Health and living conditions.

- Health and social and human capital.

- Health and employment, and working conditions.

This framework makes it clear that although work in health and health services (such as our public health prevention work and our work to tackle inequalities in accessing services) have a key role to play in addressing inequities, they are only one part of the solution to tackling health inequities across the life course.

We know, therefore, that work is required on several fronts if we are to make a meaningful and tangible impact on tackling health inequities, and the scale of the challenge cannot be overstated.

As part of its WHESRi work, Public Health Wales has mapped the wider social, economic, and environmental impacts of COVID-19 in Wales and where inequities have been exacerbated as a result of the pandemic.

Work has also started on the development of a Welsh Health Equity Solutions Platform ('the Solutions Platform'), which brings together data, policies, health economics and modelling, international learning and evidence on vulnerable groups, in order for us to ensure interventions across government are firstly considered through the health equity lens and are formulated in order to maximise their impact on tackling health inequities.

Opportunities as we recover

Our Healthy Weight: Healthy Wales ten year strategy, published in late 2019, sets our guiding direction of travel across four themes including healthy environments, healthy settings, healthy people and leadership, and enabling change. Whilst the pandemic has stymied our initial delivery, we will be placing an absolute focus upon making change happen.

A 2022-2024 Delivery Plan will be published this year, which will include a commitment of over £13m funding to drive change. This will set out seven national priority areas. There will be a focus on delivery, including funding services to provide equitable access to support across Wales, delivering system led work with communities, piloting interventions such as a Children and Families Programme, introducing positive changes in the food environment, and developing behavioural change campaigns to support sustainable change.

The pandemic has brought the costs of tolerating societal health inequalities into sharp relief and compels us to redouble our efforts to tackle inequities. With this in mind, our recovery provides a real opportunity to replicate the innovation experienced over the course of the pandemic and consider fresh approaches to tackle inequities in areas such as service design with remote and digital service provision. In doing this, we will need to work with people, particularly those with protected characteristics, who are the subject of health inequities to properly understand the barriers they face. This will ensure our interventions are tailored to meet their needs as opposed to meeting perceptions of need.

We have an opportunity to make the case more clearly than ever on the need to shift focus and resource into prevention.

CASE STUDY: CMEAGW

COVID-19 Moral and Ethical Advisory Group for Wales[38] (CMEAGW)

The establishment of CMEAGW:
The Covid-19 Moral and Ethical Advisory Group for Wales (CMEAGW) was established in April 2020, based on the model of the UK MEAG[39]. (UK MEAG was commissioned by the four UK Chief Medical officers to advise on COVID-19, having been originally established to advise on ethical issues relating to pandemic flu).

Brought together to consider moral and ethical issues, within the context of Wales' devolved legislative framework, the members of CMEAGW have facilitated an appreciation of differing community needs, and enabled communities with all of the protected characteristics under the equality Act 2010 to have a voice. Membership of the Advisory Group includes the Children's and Older People's Commissioners, Equality and Human Rights Commissioner, Disability and Learning Disability rights groups, and voices from a broad range of faith and belief groups, race, gender and sexuality, clinical, human rights, legal, governance, biomedical ethics, chaplaincy and third sector partners.

With a focus on offering ethical advice and support to policy makers and practitioners on issues relating to the provision of health and social care during the pandemic, CMEAGW produced a Statement of Ethical Values and Principles[40] designed to guide thinking about difficult resource allocation decisions at time when NHS Wales, both staff and service users, were under severe pressure and at risk from being potentially overwhelmed.

Drawing on the work of the UK MEAG, the UK Clinical Ethics Network (UNCEN[41]), other Bioethics centres in the UK and expertise from Health Board Clinical Ethics Committees throughout Wales, the Advisory Group produced the 'Values and Principles' checklist[42] which incorporated many elements of Welsh legislation and policy (such as the Children's Rights Measure Wales, Future Generations Act and A Healthier Wales) and helped to analyse an ethical problem in order to achieve the best approach.

The group was clear that it was not providing 'yes or no' answers like a research ethics committee would normally do, but were aiming to provide a framework for ethical decision making.

The work of CMEAGW: As well as the initial work on articulating core moral and ethical values and principles underlying decision making in healthcare policy development and practice, topics addressed by the group included advice on:

• Ethical approaches to managing surge demand for scarce healthcare resources prioritisation.

• Participation in decision making and informed consent in COVID-19 testing.

• Standards of practice for 'Do not attempt resuscitation' decisions.

• Reciprocity and protecting health and social care staff at higher risk by the nature of their role.

• Resolving conflicts of need and risk in visiting healthcare premises during pregnancy and maternity.

• The use and operation of vaccine certification.

- Appropriate measures to determine value of COVID-19 vaccination in under 18 year olds.

- Using ethical values and principles to reduce risk of moral distress and injury in healthcare staff.

- Ethical approaches to COVID-19 waste water surveillance in specific settings such as prisons, schools, and large offices.

- Consistency, knowledge and skills in ethical decision making in NHS Wales, and access to Clinical Ethics Committee advice.

- Ethical considerations in cohorting paediatric emergency patients who cannot be tested for COVID-19.

- Equality Impact Assessment as a key initial driver for policy development and quality and safety of care.

- Embedding sustainable equitable approaches to developing the Citizen Voice Body.

- Equitable approaches to prioritisation of need as NHS Wales addresses the backlog of care following the pandemic.

The future: CMEAG Wales has been reviewed with NHS Wales and Welsh Government policy colleagues as the demand for direct COVID-19 advice recedes. Its work and functions are considered to add value and could be continued via two routes: by developing and embedding ongoing ethical expertise and advice in each NHS body (NHS Trusts and HBs), and as a function of the Citizen Voice Body.

CMEAGW has clarified that it is essential to have wide and diverse citizen representation as well as clinicians on any such group.

Many apparently ethical issues turn out to be a function of legislative requirements of equality and diversity, which must always be addressed before moving on to the purely 'ethical' dimension of resource allocation.

The experience of CMEAGW has underlined the centrality of amplifying the lived experience voice of underserved communities − typically, the old and the young, minority ethnic communities, disabled and learning disabled groups.

Bringing these broad perspectives into planning and decision making will help ensure that all our citizens' rights are considered, and the Welsh Government commitment to reducing inequality is taken forward effectively.

Chapter 4

Climate risks and health

The environment around us — the places where we live, work, and play — can have a profound impact on our health and wellbeing.

As confirmed by the strong evidence of adverse health impacts from air pollution exposure (where tens of thousands of people in the UK have their lives shortened each year), harm can result from our interaction with environmental hazards[43].

Yet it is important to recognise that environmental assets such as clean air and water, access to natural resources and green space, and good quality housing, can have positive influences on our physical health, mental health, and wellbeing.

The principles of sustainable 'place-making' acknowledge this[44], advocating for green and fair communities where healthy behaviours, outdoor play, leisure, and active/sustainable travel are promoted and facilitated to protect health and wellbeing for current and future generations.

This relationship between human and environmental health is a reciprocal one. The state of our environment (defined here as all natural resources, animal and plant ecosystem biodiversity, and sustainability) is heavily influenced by human activity too.

Climate change is a prime example of this relationship and is regarded by the World Health Organization (WHO) as the single biggest health threat facing humanity[45]. The detrimental impacts of climate change on environmental and human health are evident and have been well documented over the last year or so. Media reports have covered record-breaking snowfall in Madrid, Spain; winter storms in Texas, US; dust storms in China, and flooding in Australia, as well as record high temperatures in Moscow, Russia; large wildfires in Greece, and severe flooding in West Germany. All incidents have been linked with significant health impacts[46].

Impacts of climate change incidents are also being reported closer to home here in the UK and Wales. For example, Storm Christoph hit the UK in January 2021 and Storm Arwen in November 2021 causing major flooding and damage to homes in Scotland, Northern Ireland, North Wales and North-West England[47]; heat waves saw the highest September 2021 temperature on record in Wales[48]; and there were significant floods in South Wales in October 2021[49].

In its most recent assessment, the UK Climate Change Risk Assessment (CCRA) reported that, since 2017, the world has continued to warm with effects on weather and climate becoming more evident across the globe[50].

So what are the implications for Wales? Well, the CCRA reports that between the mid-1970s and mid-2010s, average annual temperature increased by 0.9C, rainfall by 2%, and sunshine hours by 6.1%.

There has also been a UK-wide sea level rise of 16cm since 1901. These changes have brought about atypical weather events such as extreme heat and cold episodes, storms, strong winds and heavy rainfall events, as well as linked incidents including floods, water disruption and scarcity, drought and contamination, landslides, and wildfires.

On top of the serious implications of this for business sectors and society, the public health consequences of these climate-related risks are not insignificant and add to a persistent and growing environmental burden of disease.

Public Health Wales has published a series of helpful **infographics** highlighting the importance of climate change impact on the health and wellbeing of the population of Wales. Importantly, these resources highlight that inequalities are of concern as more vulnerable and disadvantaged groups could be disproportionately affected by impacts, and that some places and buildings – especially where patients and vulnerable people, live, or visit – may be affected to a greater extent by extreme weather events.

They also recognise the importance of food security and access to healthy diets and development, and the role that access to natural resources can play in benefiting our physical, social and mental health.

Public health case for change

There are real opportunities to influence and make a difference to reduce climate risks, and we all have a role to play in this.

Governments, sector partnerships, businesses and individuals must work together to create and seize opportunities which help to mitigate future threats, and strengthen resilience to help us adapt to contemporary risks.

The two broad responses to Climate Change:

- **Mitigation**[51]: human intervention to reduce the sources or enhance the sinks of greenhouse gases.

- **Adaptation**[52]: the process of adjustment to actual or expected climate and its effects.

In the short to medium-term, the extent to which climate change impacts populations will depend on vulnerabilities and susceptibilities, i.e. the ability to avoid exposure to risks and hazards, resilience, and capability to adapt[53]. This is due to there being risks and consequences which are already 'locked in'.

Longer-term, since climate assessments and evidence increasingly point to the changes being human-induced, effects will be influenced by the pace and effectiveness of transformational action taken to reduce harmful emissions and avoid breaching dangerous temperature thresholds and potentially irreversible tipping points[54]. Without intervention, the trajectory could be one of further temperature increases and weather extremes by the 2050s; the UN recently estimated there could be an increase in temperatures of 2.7°C by the end of the century unless immediate action is taken[55].

The public health argument to act now is strong. Prompt and effective action to halt and reverse the climate changes we are observing can bring about many benefits, not least to population health. The public health benefits of effective mitigation interventions would far outweigh their cost[56].

Further, the WHO considers that strengthening community resilience, and building system-wide adaptive capacity to climate change, can also lead to health benefits by protecting vulnerable populations from disease outbreaks and weather-related incidents, reducing health costs, and promoting social equity[57].

Health co-benefits will be gained across other sectors too, including in energy generation, transport, food and agriculture, housing and buildings, industry, and waste management[58,59].

This is because many of the same actions that reduce greenhouse gas emissions can also improve air quality and support progress towards other Sustainable Development Goals (SDGs)[60].

The promotion of urban green spaces can have a two-fold benefit, both facilitating climate adaptation and mitigation and also offering benefits to health, such as stress relief, reduced air pollution exposure, and increased space for physical activity and interactions[61,62].

Other measures, such as enabling walking and cycling activities, can improve health via increased physical activity, resulting in reduced rates of cardiovascular, respiratory and cancer diseases[63].

Although research into the physical health risks posed by climate change is extensive, the toll on mental health is much less explored, and should not be underestimated.

Those affected by flooding are likely to experience worsening mental health. As stated in CCRA3 "Flooding increased the risk of mental disorders (anxiety and depression) and post-traumatic stress disorder (PTSD) in people whose homes have been flooded and who experienced disruption as a result of flooding"[64].

This negative effect on mental health from flooding is not short lived; "three years after flooding, the prevalence of negative mental health outcomes in affected persons is reduced but still significant[65]", and must be taken into consideration alongside plans to adapt to the physical health effects of climate change.

In addition to this, the British Association of Counselling and Psychotherapy found that 55% of people felt climate change had impacted their mental well-being. People are reporting rising levels of fear and depression about their lives, the planet, and future generations. CCRA3 stated that "Young people are particularly vulnerable as they have fewer resources and strategies to cope with this challenge to their wellbeing, and patterns of mental health in children and teenagers is also an important determinant of mental health in adult life[66]."

International commitments, COP26 and Wales reflections

In 2015, the 21st Conference of Parties to the United Nationals Framework Convention on Climate Change (COP21) took place in Paris. The resulting Paris Agreement introduced a legally-binding international treaty on climate change and set the goal of limiting global warming to below two degrees centigrade compared to pre-industrial levels.

The Intergovernmental Panel on Climate Change (IPCC) has concluded that the world must limit temperature rise to 1.5^0C if we want to prevent millions of climate change-related deaths and avoid catastrophic health impacts[67], with every tenth of a degree increase in warming projected to have a serious impact on human health[68].
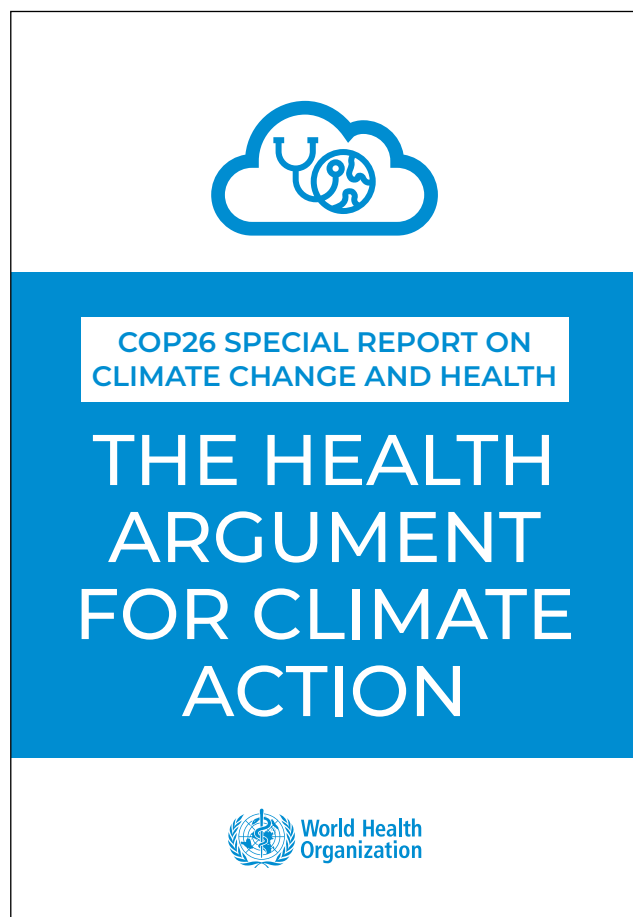
The IPCC Sixth Assessment Report, focussing on Adaptation and Vulnerability, highlights, with high confidence, that strengthening the resilience of health systems to climate change will protect human health.

The UN Climate Change Conference UK 2021, COP26, brought key parties together again to accelerate action towards the goals of the Paris Agreement and the UN Framework Convention on Climate Change. This conference was more important than ever.

The challenge of climate change requires everyone to work together across geographic and sectoral boundaries, and collaboration remains essential if we are going to be successful in reaching net zero and tackling the climate emergency.

The First Minister, Minister for Climate Change and the Deputy Minister for Climate Change all attended the COP26 conference along with a range of organisations from Wales, to showcase the actions being taking forward and to hear from others on the challenges they face and the solutions they are delivering to build resilience in their communities and the environment.

Ministers came away from COP26 feeling hopeful, inspired and determined to ensure that Wales plays its part in tackling the climate emergency.

COP26 SPECIAL REPORT ON CLIMATE CHANGE AND HEALTH

THE HEALTH ARGUMENT FOR CLIMATE ACTION

World Health Organization

The World Health Organisation (WHO) produced the **COP26 Special Report on Climate Change and Health: The Health Argument for Climate Action (2021)**, which launched ahead of the conference. This report outlined ten recommendations for interventions that could help with safeguarding our health and climate.

The recommendations, based on consultations with over 150 organisations and 400 health professionals and experts worldwide, each propose a set of priority actions and come with a selection of resources and case studies to inspire and guide policymakers.

The COP26 Health Programme, developed and delivered by the UK Government with partners including the WHO, Health Care without Harm (HCWH), and the Global Climate and Health Alliance (GCHA), brought together 47 countries to focus on building climate resilient and sustainable low carbon health systems, COP26 health professional advocacy, and health adaptation research.

The programme culminated in some important joint commitments from the four UK nations, with all UK Health services committing to becoming net zero, and building climate resilience.

In Wales, this included NHS Wales and Social Care committing to the ambition for the public sector in Wales to be collectively net-zero by 2030, and to the delivery of the NHS Wales Decarbonisation Strategic Delivery Plan.

Welsh Government Minister for Health and Social Services, Eluned Morgan, said; "*Heath and social care in Wales has a crucial role in contributing to our collective ambition to reach net zero by 2030. We know how tirelessly our NHS and care staff have worked throughout the pandemic and that further winter pressures lie ahead. However, the climate emergency has not and will not go away and must be responded to with the same urgency that the pandemic has required of our sector.*"

In addition to contributing to COP26 in Glasgow, a series of Wales-specific climate events (**COP Cymru**) took place across October and November.

Public Health Wales, lead one of these discussions, showcasing the links between climate change and health, providing examples of actions needed to tackle climate change through supporting system change, and those which would protect and improve the health of our communities.

This event was followed by a series of regional roadshows for example in South West Wales on November 8th, which brought together partners to focus on adaptation and resilience, and included a discussion around public health and the need to change our consumer eating habits.
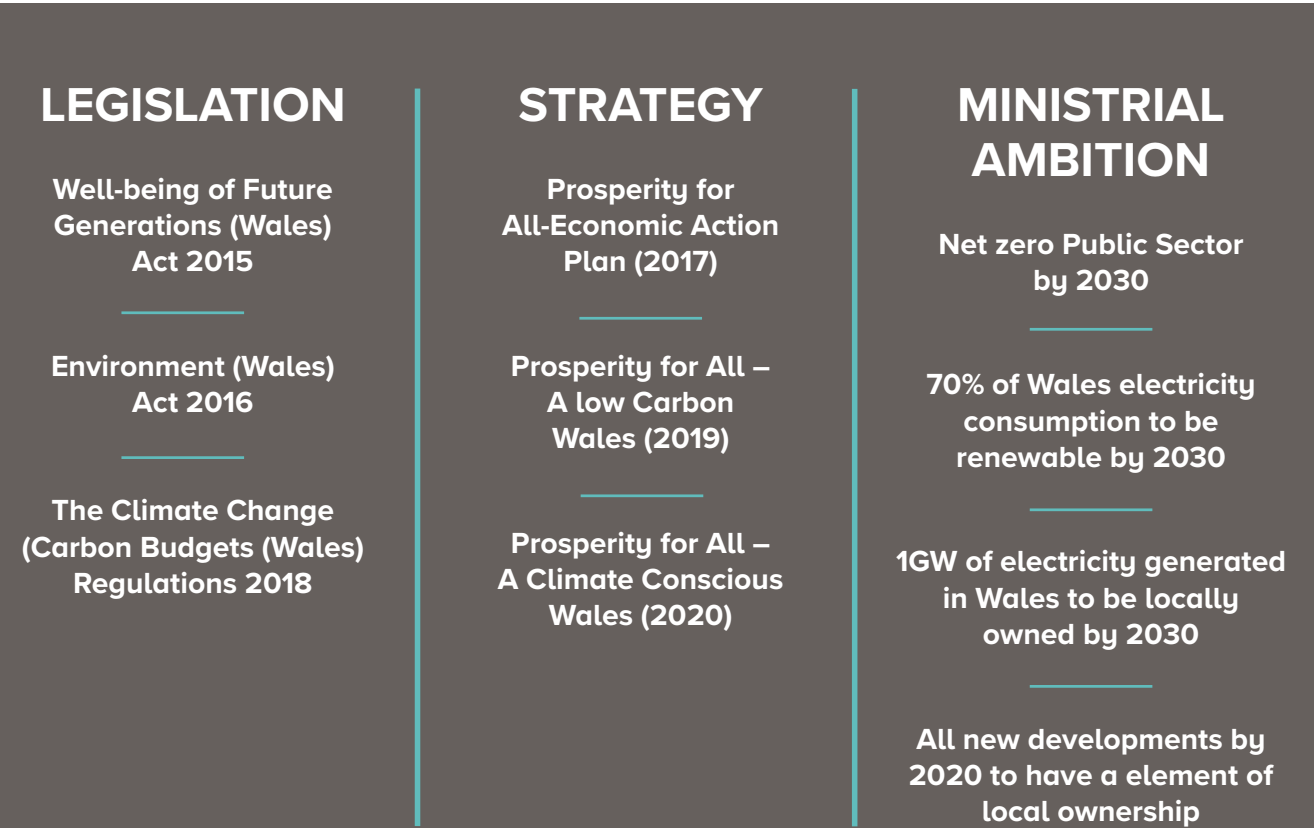
Wales Climate Week helped to kick-start a nationwide conversation on the collective action needed to ensure Wales meets its climate change targets.

National and regional events made a contribution to the debate with a strong call to action for us all to alter our behaviour and contribute to the change needed.

Wales' ambition and action: what is the Health & Social Care system doing?

In 2019, Wales became the first country in the world to declare a 'climate emergency'[69], triggering greater and more focused action to tackle climate change. Action towards this goal in Wales is established through a series of legislative tools, strategic commitments, and Ministerial ambitions (Figure 29).

Figure 29: Wales' Commitments to Climate Change, NHS Wales Decarbonisation Strategic Delivery Plan 2021[70]

LEGISLATION

Well-being of Future Generations (Wales) Act 2015

Environment (Wales) Act 2016

The Climate Change (Carbon Budgets (Wales) Regulations 2018

STRATEGY

Prosperity for All-Economic Action Plan (2017)

Prosperity for All – A low Carbon Wales (2019)

Prosperity for All – A Climate Conscious Wales (2020)

MINISTRIAL AMBITION

Net zero Public Sector by 2030

70% of Wales electricity consumption to be renewable by 2030

1GW of electricity generated in Wales to be locally owned by 2030

All new developments by 2020 to have a element of local ownership

In terms of the legislative framework:

- The UK Climate Change Act (2008) established the UK Climate Change Committee (CCC), and a requirement on the Welsh Government to consider the Committee's advice.

- The Well-being of Future Generations (Wales) Act (2015) provides a framework for sustainable development in Wales, placing a duty on Welsh Government and other public bodies to ensure that any action taken to meet the needs of the present do not compromise the ability of future generations to meet their own needs.

- The Environment (Wales) Act (2016) places additional duties on the Welsh Government to reduce emissions by 80% by 2050, with interim targets set for 2020, 2030 and 2040. In December 2018, based on advice from the UK Climate Change Committee[71] established in the UK Climate Change Act (2008)[72], the Welsh Government set the first interim emissions targets and the first two carbon budgets in regulations[73]. In 2019, the CCC recommended an amendment to the 2050 target, increasing it from 80% to 95%. This was accepted by the Welsh government, declaring an ambition to achieve net-zero by 2050, which was made statutory in regulations in February 2021.

The most recent development in Wales' commitment to tackle climate change comes in the form of *Net Zero Wales*; the plan to meet the second carbon budget. Net Zero Wales commits to the ambition for the public sector to become collectively net zero by 2030, and sets out the important leadership role for the sector.

Net Zero Wales was launched on 28 October, ahead of COP26. This is Welsh Government's second emissions reduction plan setting out 123 policies and proposals that will be delivered over the next 5 years to put us on a path to net zero, including policies for the public sector.

The plan demonstrates Wales is globally responsible and it recognises the role that everyone can play in helping to build a greener, more equal Wales.

In summer 2022 the Welsh Government will consult on, and publish, a Public Engagement Strategy setting out how everyone in Wales can deliver the actions in Net Zero Wales.

The emissions from the health sector in Wales are the largest of the public sector, with the NHS Wales Carbon Footprint estimated to be 1,001,378 tCO₂[74,] representing approximately 2.6% of Wales' total emissions. To mitigate these emissions, the Welsh Government published the NHS Wales Decarbonisation Strategic Delivery Plan in March 2021; a clear and ambitious mandate for action with 46 decarbonisation initiatives across the highest emissions areas – procurement, buildings, land use, mobility and transport – the majority of which are for delivery by 2025.
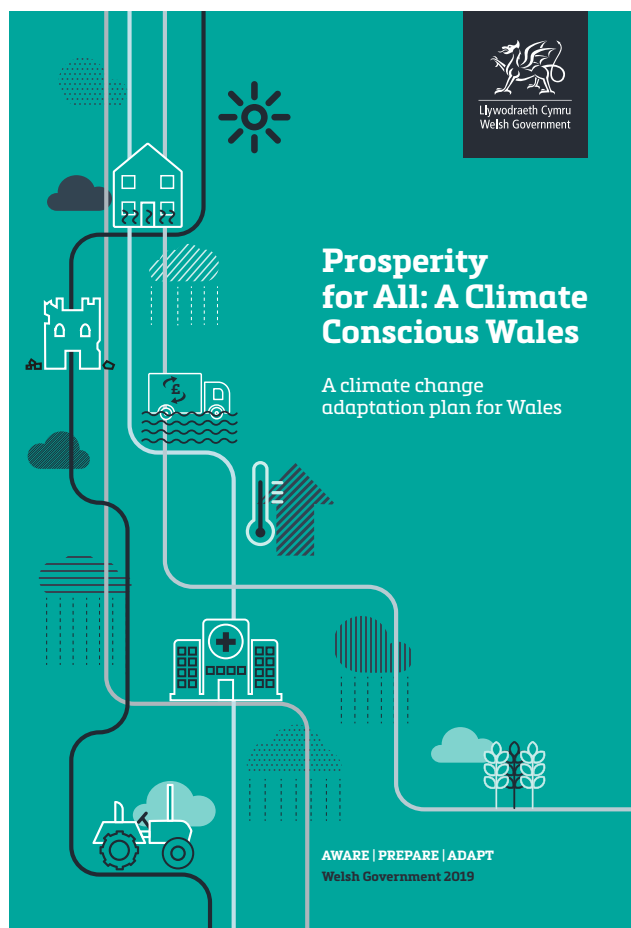
The challenge has been embraced across the Health sector, with NHS Wales and social care committed to the ambition of a net-zero public sector by 2030. Significant steps have already been taken to address the key areas of concern. Across the NHS Wales estate, low carbon heating will be used in all new builds with renewable energy generated on site by 2030, and all lighting across the estate will be LED by 2025. Directly reducing emissions from transport and the NHS fleet will have a significant impact and by 2030, the Welsh Ambulance Service will aim for all new ambulances to be plug-in electric or low-carbon fuel.

To address emissions in the supply chain, reducing emissions will also be part of the new procurement contracts for major NHS Wales suppliers.

The NHS Wales Decarbonisation Strategic Delivery Plan sets out the requirement for Action Plans to be developed at health board, trust, and special body level. These plans, developed two-yearly and committed to within Integrated Medium-Term Plans, will form the basis of how the delivery plan initiatives will be implemented. The first iteration of these plans were developed in April, and their reporting mechanisms are currently being established.

Whilst this mitigating action is essential, it is inevitable that the health and social services systems in Wales will be at the forefront of responding to the detrimental impacts of the Climate Emergency, on both health outcomes and service delivery. Public Health Wales evidence suggests that, as a result of climate change, by the 2050s, Wales will experience a rise in annual temperatures of 1.2°C and a 6% rise in winter rainfall, putting a dual pressure on health services.

Not only must health and social care services continue to operate in challenging circumstances of flooding, or overheating of equipment and IT systems, they will also need to adapt to higher service demands from those suffering adverse health effects. Heat stress or respiratory disease brought about by increased temperatures, or ongoing mental health impacts from flooding or extreme weather are among the issues that health services will be dealing with at higher frequencies. Adaptation is essential.

Prosperity for All: A Climate Conscious Wales

A climate change adaptation plan for Wales

AWARE | PREPARE | ADAPT
Welsh Government 2019

The Welsh Government's current 5-year adaptation plan, **A Climate Conscious Wales**, published in December 2019, is already in its second year of delivery. It sets out the actions we are taking to address climate resilience across Wales, including policy measures for flood prevention, air quality and climate-related risks to health.

The Welsh Government is in the process of reviewing its policies in the light of the updated evidence from the Climate Change Committee (CCC) in its third Climate Risk Independent Assessment.

The risk assessment reminds us that mitigation of, and adaptation to, the climate emergency must go hand-in-hand.

As NHS Wales begins to deliver the Decarbonisation Strategic Delivery Plan, we must apply this approach as a matter of priority in health and social care systems. In line with commitments set out in *A Climate Conscious Wales*, Public Health Wales (PHW) has reviewed the evidence set out by UK Climate Risk, and updated public health guidance, advice, and messaging for episodes of extreme heat, cold, and flooding accordingly.

We know that enabling action is needed to ensure a resilient healthcare system across Wales. Alongside mitigating the effects of climate change, we also must adapt to those very real impacts that climate change will bring on its current trajectory.

NHS Wales' partners are already playing a pivotal role in decarbonising their systems and estates, but they will rapidly need to develop a clear understanding of the local and national risks to the health of the people of Wales, and to their ability to deliver essential healthcare services.

Welsh Government will work with PHW and others across the NHS in Wales to identify and assess these risks, providing advice and guidance as needed to ensure robust adaptation plans are maintained from April 2022.

The social care sector has embarked on its decarbonisation journey too, with work well underway to determine its own carbon footprint and to deliver a decarbonisation routemap for the sector in June 2022. The social care sector is well represented and actively engaged as work progresses, and is committed to its collective efforts in the public sectors' 2030 net zero ambition.

In addition to mitigating actions, the social care sector will also need to consider necessary measures to ensure social care systems are resilient to the extra pressures they will experience due to climate change.

Demographically, Wales' increasing older population is particularly susceptible to climate risks, and this could lead to an increased demand for social care and supporting services, while at the same time causing serious disruption to the delivery of these services.

Collaborating to mitigate climate change

Welsh Government continues to work with Public Health Wales, UK Health Security Agency, health boards, local authorities, Natural Resources Wales, and other partners to protect the health of people and the environment from the risks of climate change.

This includes working with policy makers and the public to take action to limit the extent of climate change as well as to prepare to deal with its effects.

Healthcare professionals and providers have a critical role to play in catalysing local action to respond to climate change.

CASE STUDY: Green Network

The Climate Emergency is a public health emergency, but the healthcare sector itself currently contributes to the problem.

It is therefore essential that healthcare professionals and providers are both educated on the priority of climate change as a health risk, and also take the necessary action to reduce our contribution to climate change in all its various forms.

Green Health Wales is a network of healthcare professionals across Wales who recognise that the climate and ecological emergency is a health emergency. Three of the carbon hotspots within clinical practice are anaesthetic gases, including nitrous oxide and metered dose inhalers.

Anaesthetic gases are responsible for approximately 1.7% of the NHS carbon footprint. Project Drawdown was Wales Environmental Anaesthesia Network's (WEAN) first project and was formally launched at 8 hospitals in Wales in 2019.

It has made inroads in reducing the footprint from desflurane, sevoflurane and isoflurane which are commonly used to keep patients asleep. The primary focus was on reducing desflurane use which has little clinical benefit but a global warming potential of 2540 (compared with 130 for sevoflurane), as well as being more costly.

The pre-pandemic reduction in carbon emissions from these anaesthetic gases was 65% and this increased to 80% with alteration in workload due to the pandemic. This represents a reduction of 4,309,212 $KgCO_2e$ or 10.8 million miles in a car on an annual basis.

The ambition to sustain the carbon footprint achieved during the pandemic, even as workload increases was re-launched at the WEAN Conference October 2021.

All hospitals in Wales have committed to being involved. Local consultant and trainee leads, and some pharmacists will be rolling out the project tailored to their hospital's needs.

The emphasis is being placed on regional (including spinal) anaesthesia, or total intravenous anaesthesia (TIVA) if regional anaesthetic options are not suitable.

Nitrous oxide Nitrous oxide (NO_2) is a greenhouse gas with 265 times more global warming potential than CO_2, it is ozone-depleting and contributes to 5.6% of the UK's emissions. Led by Cardiff and Vale, and involving other health boards across Wales, Multi-Disciplinary Teams (bringing together clinicians from different specialities) have been collaboratively undertaking a sustainable, quality improvement project to further understand how, when, and where nitrous oxide is used.

The project is underway and has ambitious targets to cut nitrous oxide consumption by 90%, which will prevent approximately 1 million litres of nitrous oxide emissions per year within Cardiff and Vale. Once applied to all Health Boards, this will be the single biggest reduction in carbon footprint from any current NHS Wales project.

Sustainable Hand Surgery

Orthopaedic surgeons in Betsi Cadwaladr University Health Board have been nationally recognised for reducing the consumables used and the volume of clinical waste generated by creating a new, streamlined surgical procedure pack.

The team also reduced the use of ward beds and theatre space, effectively challenging the assumption that all surgical procedures must take place in theatres, when minor surgery can be carried out in rooms with lower energy requirements. This project demonstrated it was not only safe to carry out the surgery in this manner, but it also increased productivity, had a lower environmental impact, a lower economic cost, and also reduced time in the hospital for patients.

The project has forecast annual savings of 11.6 tonnes of (CO_2 equivalent) and £12,641 a year.

A **Sustainable Respiratory Care** project has been launched. This will be delivered through national collaboration including the respiratory implementation group, Greener Practice, and the Greener Primary Care Framework.

A platform for professional and patient apps have been launched. National lean respiratory guidelines, which prioritise the prescription of more environmentally friendly inhalers, have been developed.

There is an ambitious target of switching from the current 70% prescription of metered dose inhalers to 25%. This will be a huge carbon saving and will transform respiratory care nationally.

The Greener Health Network is inspiring new, green, clinical speciality groups and communities of practice. This is a strong movement for change that can embed sustainability within all clinical decision making, and help to inform undergraduate and postgraduate curriculums.

Collaborating to adapt to risks

Welsh Government continues to work with Public Health Wales, UK Health Security Agency, health boards, local authorities, Natural Resources Wales and other partners to protect the health of people and the environment from the risks of climate change. This includes working with policy makers and the public to take action to limit the extent of climate change as well as to prepare to deal with its effects

Much of the recent discussion, particularly in light of the COP26 event in Glasgow, has focused on the actions needed to limit climate change (mitigation).

However, considerable work is still needed to help people to adjust their lives to deal with the impacts and consequences of climate change (adaptation).

Recognising this, Public Health Wales is updating advice for the public to reflect the latest evidence base and to help people manage risks from extreme weather events including very hot and cold spells and flooding episodes. Another linked threat is wildfires, and Public Health Wales is working closely with other agencies in a collective endeavour to prevent, and reduce the harms from these incidents which are a growing concern in Wales.

CASE STUDY: Wildfires

In April 2021, fire crews tackled a large wildfire in Machen, Caerphilly.

The fire lasted nearly 5 days and covered over 50 hectares of land. At its peak, local residents were advised to keep windows and doors closed to help avoid exposure to harmful smoke plumes. While such fires are typically small in comparison with those seen in the United States, Australia and other parts of Europe, Wales does have a problem with wildfires; over 1300 wildfires were reported to Fire and Rescue Services between January and July 2021.

Most fires occur in our valley communities in close proximity to people's homes and can damage our environment, threaten property and life, and produce hazardous smoke which pollutes the air. As our climate warms, the question is: will wildfires become a more serious issue in Wales and what are we doing to address this problem?

Current climate change predictions suggest that we will see conditions more favourable for wildfires.

Hotter and drier summers will create the ideal conditions for fire, while milder and wetter winters will encourage plant growth, which can then act as a fuel for fires when conditions dry out.

Since wildfire ignition depends not just on weather conditions but also on human factors such as arson, campfires, and fuel availability, it is difficult to say whether this will result in more fires. However, projections from the Met Office show that a 2°C increase in global temperatures will double the days in the UK with very high fire danger and extend the wildfire season into late summer and autumn.

Wildfires can present very real risks to local people. The smoke can contain a range of hazardous chemicals such as fine particulate matter and irritant gases, which can cause breathing difficulties and exacerbate lung and heart conditions.

Many wildfires are in our most disadvantaged community areas too, where population health is generally relatively poor and people are more susceptible if exposed to air pollutants. In the future, wildfire events are also likely to coincide with periods of extreme hot weather and drought which will also challenge people's health. Wildfires can also cause soil erosion which can increase the risk of landslides and flooding, contaminate water courses and supplies and, of course, damage the natural environment, which is very influential on health and wellbeing.

We are actively tackling this issue. For a number of years, colleagues from across the health protection system (including emergency services, Natural Resources Wales, local authorities, Public Health Wales, and Welsh Government) have been working collaboratively to raise awareness of the risk of wildfires, educate communities around fire safety and to develop better ways to prevent wildfires.

Operation Dawns Glaw – an all-Wales task force focused on reducing the number of wildfires – runs annual campaigns to raise awareness of their impacts, and Welsh Government has recently funded the Healthy Hillside Project.

This latter project is focused on reducing impacts of wildfires across seven high-risk sites in the South Wales valleys and creating a sustainable integrated approach to wildfire prevention by linking conservation management with proactive wildfire prevention techniques, such as controlled burns, vegetation management and the creation of fire breaks.

It will also seek to deliver a Health Impact Assessment to better understand the impact these events have on local communities; it intends to involve the public, local health practitioners, and public health professionals to consider a wide range of health issues such as air quality, burns and injuries, and mental health issues associated with environment damage and loss of natural amenities.

We are also writing up our learning by contributing to UK-wide action on wildfires and climate change through the UK Health Effects of Climate Change Report. A dedicated chapter on wildfires will look to improve our understanding of how climate change will affect wildfires and what additional risks this may present to communities in Wales.

Empowering young people to respond to the climate crisis

The young people of Wales will face the ongoing and increasing impacts from climate change throughout their lives. This can bring stress, anxiety, and negative effects on mental well-being.

Initiatives across Wales support young people to take action to respond to the climate crisis, and the Office of the Future Generations is providing platforms to ensure young people are supported and their voices heard across Wales.

CASE STUDY: Eco-Schools

In Wales, the Eco-Schools programme helps children and young people take action against climate change.

Eco-Schools is a unique programme that places pupil driven environmental change at its heart.

Since the inception of Eco-Schools over 25 years ago, the programme has gone from strength to strength and the positive impact that it has on pupils, school environments, and whole communities has grown year on year. Giving pupils of all ages a platform to come together to identify environmental improvements, formulate a plan, and see the fruition of their concepts is incredibly empowering. Facilitating change-makers who leave school knowing that their voices and ideas can and do make a difference cannot be underestimated.

Schools are increasingly utilising the Eco-Schools programme to deliver aspects of the Curriculum for Wales, in order to develop the Ethical Informed Citizens of Wales and the World that we hope all young people will become.

The Eco-Schools process ensures that pupils have the opportunity to investigate, critically evaluate, and develop actions to improve their school and local environment. At the same time, they are learning about key issues that affect our local and global environment as well as how to make a positive difference and be a part of the solution.

There are currently over 800 schools across Wales with the prestigious Eco-Schools green flag, and many more working towards the award. Furthermore, Eco-Schools is a global programme which currently runs in 70 countries around the World.

Taking part in the programme in Wales makes a school a part of the global family of 56,000 schools worldwide who are taking positive action to create a sustainable future.

CASE STUDY: The office of Future Generations Climate Change and Young People

Recent reports have indicated that 57% of children and young people in the UK are experiencing climate change induced distress. These numbers are even higher for those in the global south who see the physical consequences of inaction on climate change to their people, land, and homes.

This climate anxiety of youth was palpable at COP26 this year and peaked as activists realised the promises from leaders were just not good enough. The voices of young people at the conference were loud, but they were not being heard in the places that mattered.

The Future Generations Commissioner, Sophie Howe, is working with Members of the Senedd, the Royal College of Psychiatrists (RCPsych) and young leaders to set up a cross-party group (CPG) on Climate, Nature, and Well-being.

This builds on a conference hosted recently by RCPsych, at which delegates heard from a range of speakers about both the challenges posed to mental health by the climate and nature emergencies, as well as how some of the solutions to these crises can also boost well-being, for instance projects that support time spent in nature such as **Welcome to Our Woods**, and the links between climate, well-being, and the arts.

The cross-party group will explore practical, climate-action based solutions, and will forefront the voices of young people.

The Office of Future Generations has made a number of policy recommendations in its **2020 report**, including addressing climate change as a racial and socioeconomic issue, reducing pollution, improving access to green space, and active travel.

RECOMMENDATIONS

CHAPTER 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.

CHAPTER 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.

CHAPTER 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.

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.

Annex A

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

Recommendation	Update
1: Focus on health protection Services	We have again invested heavily in our health protection services in 2021-22. We now need to undertake a review of our health protection system to ensure that both funding and responsibilities are allocated to the organisations who are best placed to deliver those services going forwards. This review will be undertaken during 2022. On a UK level, we have contributed to the development of a four-nation framework, which sets out our co-operation on serious cross-border health threats. This framework is currently being scrutinised by each nation's legislature, however both legislative and non-legislative arrangements have already been introduced to underpin it. The Health Security (EU Exit) Regulations 2021 came into force on 1 September 2021. The regulations establish a standalone regime, which will ensure all parts of the UK continue to coordinate on data sharing, epidemiological surveillance, and their approach to the prevention and control of serious cross-border threats to health. The regulations also support the implementation of the UK's arrangements with the EU for cooperation on health security under the Trade and Co-operation Agreement. A Memorandum of Understanding has been agreed between the four nations and covers areas such as communication campaigns and messaging, principles of providing mutual aid, and the education and training of our health protection workforce. Further to this, the framework's operation will be underpinned by a UK level work programme agreed by the 4 nations.

Recommendation	Update
2: Continually monitor the resilience of our COVID-19 response systems, including case management and contact tracing systems	During 2021 we have seen increases and significant spikes in demand for testing and contact tracing. We have invested in our NHS Wales laboratory network and received an allocation of testing under the UK programme that provides a capacity of up to 35,000 a day. We also provided £92m in 2021-22 to ensure that the TTP contract tracing service was fully supported and resourced. This enabled the contact tracing workforce to be maintained at around 2,200 throughout the year. To further improve the resilience of the contact tracing service, a number of actions were taken during the year, including setting up a new national team to provide daily surge support, creating a new Arriving Travellers Team in February 2021, and establishing a national network of community outreach leads in May 2021. During January and September 2021 Test, Trace and Protect managed significant spikes in testing demand and cases maintaining resilient turnaround times and follow up. In September, testing demand doubled to an average of 180,000 tests a week compared to July and August with no constraints required to protect turnaround times. The investment made in the workforce and infrastructure, alongside a strong partnership response, enabled the systems to manage changing demand and respond effectively to reduce case levels and spread of the virus. The TTP policy and delivery board and oversight group have monitored the systems' resilience and ensured the response has met the changing nature of the virus, including the emergence of new variants.
3: Prepare for future pandemics	There has been an iterative process of identifying lessons throughout the experience of the pandemic, to inform future preparedness. The ability to co-ordinate and collaborate with others for the provision of scientific and technical information, in order to support policy development and decision-making throughout the pandemic response, has been essential. This has involved drawing upon relevant independent, impartial experts from across public health, academia, and government to inform our response. This learning and best practice should continue to be used to support preparation for future pandemics.

Recommendation	Update
4: Engage fully with the public on all parts of the response	The Welsh Government has used all available channels to communicate with the public, including regular press conferences, media engagement, social media activity, engaging and sharing assets with stakeholders, and through the Keep Wales Safe campaign.
	The aim of the public-facing communications has been to set out clearly the latest public health situation and the action being taken to protect the public, including the COVID-19 related protections in place and vaccine programmes. We have also aimed to understand people's concerns, identify barriers to compliance with desired or mandated behaviours, and to provide information that is understood and reaches people across all communities and in all parts of Wales.
	Working closely with the Technical Advisory Group 'Risk Communications and Behavioural Insights' sub group, focus groups and stakeholder engagement have been particularly helpful in providing insights into the COVID-19 response and have helped to target communications to relevant groups and communities. Links have also been made to the Warn and Inform groups and local authority engagement and outreach officers in order to facilitate two-way communications between the public and communications team.
5: Adopt a One Health approach to sustainable development in Wales	One Health principles are helping to shape policy and practice by bringing together partners from the human, animal, and environmental sectors to strengthen collaborative working practices, and to tackle issues such as Antibiotic resistance (AMR). Driven by their over-use, both in people and in animals, a 'one health' approach has informed a governance framework enabling relevant parts of the Welsh Government to work closely with the Animal and Environment Antimicrobial Resistance Delivery Group, reporting both to the Wales Animal Health and Welfare Framework Group (WAHWFG) and to the Wales Healthcare-associated infection/AMR Steering Group, chaired by the Chief Medical Officer for Wales. Delivery partners such as Public Health Wales (PHW), Natural Resources Wales (NRW), and various academic institutions are also working together to design plans for the monitoring of the potential for AMR spread in the environment.
	At a regional level, partners in Hywel Dda Health Board, Public Services Board, and Regional Partnership Board, have adopted a 'one health approach' to facilitate working together on a number of interlinked issues, for example, recognising the links between human, animal, and environmental aspects of the food system, including nutrition, food safety, sustainable food production, and distribution.
	One Health has featured in recent UK policy, with the G7 Health Ministers' Declaration in June 2021 calling for better surveillance of emerging threats to public health from infections in animals and the need for rapid identification of mitigation measures, such as the development of vaccines, treatments, and infection control measures.

Recommendation	Update
6: Enable the health and social care response including the COVID-19 vaccination programme	In terms of COVID-19 vaccination, we have, and will, continue to be led by the latest clinical and scientific evidence and advice from the Joint Committee on Vaccination and Immunisation (JCVI). Due to the nature of the virus and the need to provide people with the maximum protection in response to waves of infection and different variants over the last year, there have been times when there has been a need to significantly uplift the vaccination workforce and infrastructure. To mitigate the impact on the NHS as much as possible, there has been a campaign to use volunteers from non-NHS workforce from other public and emergency services, voluntary sector, retirees, and students.

COVID-19 vaccination workforce planning at a national and local level has, and will, continue to take account of new and existing pressures on the health and care system. All NHS Wales organisations aim to use a workforce model split between core staff and flexible staff, and targeted use of local premises and resources. The strength of this model is the agility to step up and down dependent on the path of the pandemic, any future waves and on future vaccination planning. This blended model for vaccine supply, workforce and estates will continue to be pursued by Health Boards, ensuring flexibility for services and accessibility and equity for patients. |
| 7: Continue to monitor inequities and, where they exist, identify solutions to address them | Under the provisions of the Well-being of Future Generations (Wales) Act 2015, the Welsh Government's Ministers are required to set national milestones to assist with measuring progress towards achieving the seven well-being goals of the Act. The national milestone '*to increase the percentage of children with two or more healthy behaviours to 94% by 2035 and more than 99% by 2050*' has contributed to enhancing and focussing the monitoring of work to tackle inequities. This will be further strengthened during 2022 with the development of milestones on adults who have two or more healthy behaviours, and a milestone on healthy life expectancy at birth (including the gap between the least and most deprived).

In 2021, Public Health Wales published its first report as part of the Welsh Health Equity Status Report initiative (established following the Memorandum of Understanding between the Welsh Government and the WHO Europe Region). This report contributes greatly to our work in monitoring inequities through providing a multidimensional picture of the COVID-19 implications on health equity and vulnerability, and identifies where action is required to address inequities which have been exacerbated by the pandemic. The forthcoming Welsh Health Equity Solutions Platform, referenced earlier in this CMO report, will also provide a key tool to monitor inequities and to inform policy interventions to ensure they are as effective as possible in tackling inequities. |

Recommendation	Update
8: Ongoing research into tackling and monitoring of the direct and indirect long-term effects of COVID-19	During 2020 & 2021, UK Research and Innovation and the National Institute of Health Research have funded 19 studies on Long COVID to help diagnosis and treatment. The studies examine the causes of Long COVID, trial drugs, investigation of symptoms, evaluation of health services, and exploring ways that patients can monitor the condition to optimise their recovery and return to work. The outputs of these studies will be shared with policy and practice over 2022-2023. The Health and Care Research Wales COVID-19 Evidence Centre (WCEC), which is in receipt of funding of £3m over 25 months (ending March 2023), has already published a number of reviews which have informed Welsh Government decision making. The WCEC includes Long COVID in its work programme and has already published information on studies which include, or are currently open to, the Welsh population. In February 2022, the COVID-19 Evidence Centre will outline a work programme which includes undertaking further evidence synthesis on Long COVID, based on issues addressing Welsh need with a view to informing Welsh policy and practice across the NHS and social care sector. WCEC has reported on its work to date at its Annual Symposium held on 23 March 2022. The WCEC outlined its work programme in January 2022, which includes undertaking further evidence synthesis on Long COVID, based on issues addressing Welsh need with a view to informing Welsh policy and practice across the NHS and social care sector.

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