

Rollout of the COVID-19 vaccination programme in Wales

Report of the Auditor General for Wales

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Key messages

Context

- 1 The COVID-19 pandemic has affected everyone. The vaccination programme is a key strategic tool to fight the virus and help reopen the economy and wider society.
- 2 The purchase and supply of the vaccines is the responsibility of the UK Government. The vaccination programme in Wales is the responsibility of the Welsh Government and NHS Wales.
- 3 This report considers the rollout of the vaccination programme in Wales. In it, we discuss the shape of the programme, how it is performing, the factors that have affected rollout to date, and future challenges and opportunities. **Appendix 1** describes our audit approach and methods.
- 4 There are many vaccines in development globally, and the UK government has signed contracts for vaccine supply with eight major pharmaceutical providers (**Appendix 2**). At the time of our fieldwork, three vaccines were approved by the Medicines and Healthcare products Regulatory Agency (MHRA): Pfizer-BioNTech, Oxford-AstraZeneca and Moderna. All three vaccines require two doses to maximise effectiveness.

Key findings

- 5 Overall, the programme has delivered at significant pace, with local, national and UK partners working together to vaccinate a considerable proportion of the population who are at greatest risk. At the time of reporting, vaccination rates in Wales were the highest of the four UK nations, and some of the highest in the world. The milestones in the Welsh Government's vaccination strategy have provided a strong impetus to drive the programme. To date, the Welsh Government's milestones have been met.
- 6 The Welsh Government has adopted UK prioritisation guidance from the Joint Committee on Vaccination and Immunisation (JCVI). A national group in Wales provides additional guidance where further clarity on prioritisation is required. The guidance has generally been followed, but the process of identifying people within some of the nine priority groups (**Appendix 3**) has been complex.

- 7 The organisations involved in the rollout have worked well to set up a range of vaccination models which make best use of the vaccines available, while also providing opportunities to deliver vaccines close to the communities they serve.
- 8 Overall vaccine uptake to date is high, but there is lower uptake for some ethnic groups and in the most deprived communities. There are also increasing concerns about non-attendance at booked appointments, although health boards to date have been able to minimise vaccine waste.
- 9 The dependency on the international supply chain is the most significant factor affecting the rollout. Limited stock is held in Wales, primarily to allow for second doses and short-term supply to sites. This means that shortfalls in supply can seriously impact the pace of rollout. However, increasing awareness of future supply levels is allowing health boards to manage the calling of individuals effectively.
- 10 In the short-term, the workforce supporting the vaccination programme has been meeting the demands placed on it and many staff have been working 'above and beyond'. The current programme is unlikely to complete all second doses until September 2021, and an autumn booster programme is being discussed. This will offer little respite for key vaccination staff in an environment where workforce resilience is vital.
- 11 Early observations from military partners identified some sites were more efficient than others. Some vaccination sites may become unavailable in coming months as partner organisations look to reopen venues over the summer.
- 12 As Wales maintains its focus on delivering against existing milestones, there is a need now for the Welsh Government and NHS Wales to develop a longer-term plan for vaccine rollout. This needs to include sustainable workforce models which can respond to supply, whilst also responding to demands as other services are restarted.

- 13 Consideration also needs to be given to the longer-term estate requirements to support autumn boosters, with a focus on ensuring that vaccination models are cost effective. Strategies to minimise waste need to be maintained and increased action taken to encourage uptake as the programme moves to the remaining population.
- 14 More broadly, there is much to be learnt from the positive way in which the vaccine programme has been rolled out to date. The Welsh Government and NHS Wales should be looking to apply that learning to wider immunisation strategies and the delivery of other programmes.



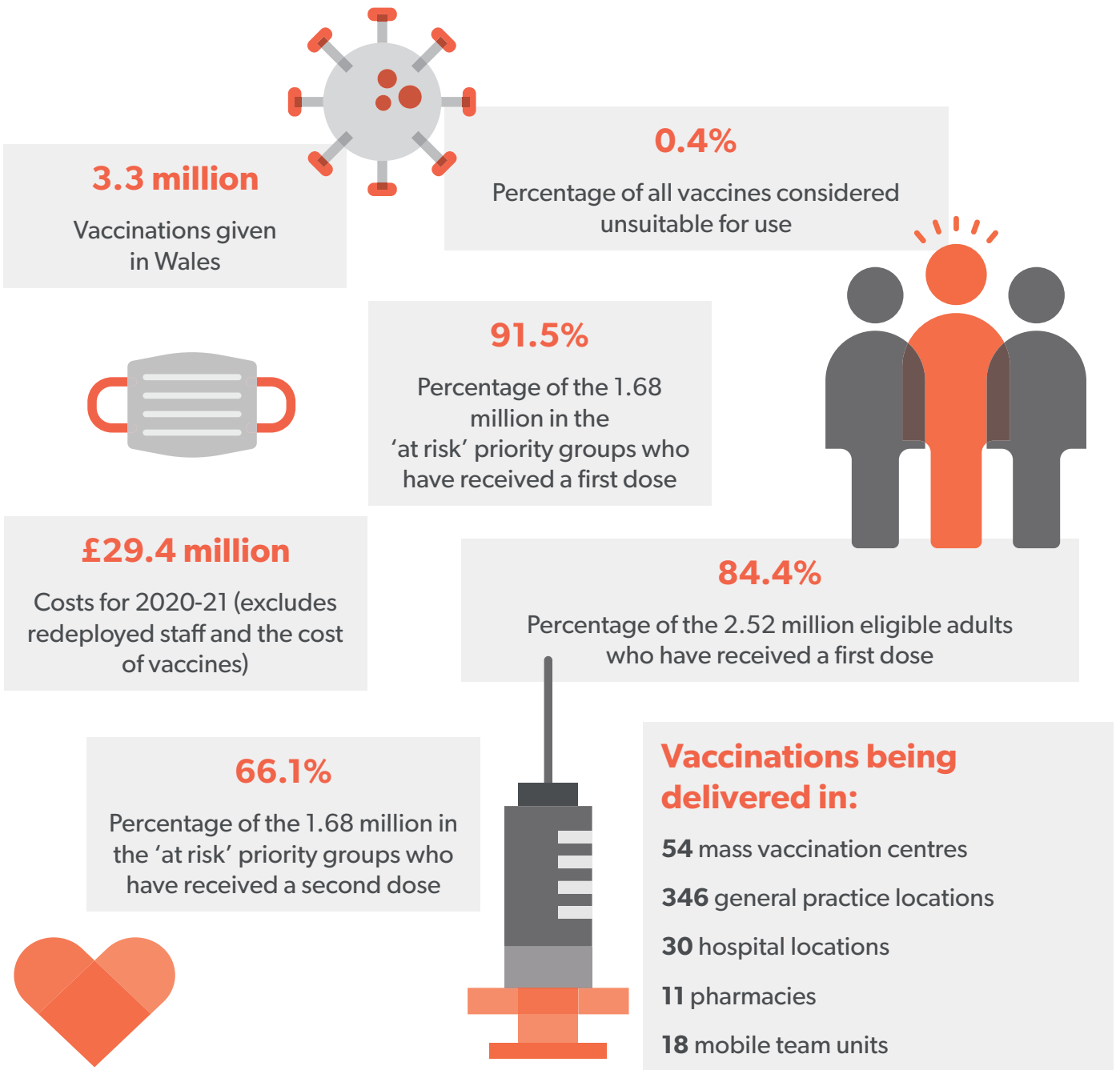
Wales has made great strides with its COVID-19 vaccination programme. Key milestones for priority groups have been met and the programme is continuing at pace with a significant proportion of the Welsh population now vaccinated. This is a phenomenal achievement and testament to the hard work and commitment of all the individuals and organisations that have been involved in the vaccine rollout to date.

However, the job is far from over. A longer-term plan is needed that moves beyond the existing milestones and considers key issues such as resilience of the vaccine workforce, evolving knowledge of vaccine safety, the need for booster doses, and maintaining good uptake rates - especially in those groups that have shown some hesitancy in coming forward for their vaccinations.

Adrian Crompton
Auditor General for Wales



Key facts



As of the end of May 2021

Source: Public Health Wales and the Welsh Government

Main report

How the programme is set up

- 15 Public sector partners across the UK have worked together since the beginning of the pandemic to explore the potential for a COVID-19 vaccination. The programme in Wales was first established in June 2020 to enable an appropriate infrastructure to be put in place before any vaccinations came online.
- 16 The programme is based around the principle of local autonomy for vaccine deployment through health boards. Supply policy and guidance is nationally coordinated:
 - a the UK government's Department for Business, Energy & Industrial Strategy (BEIS) led on UK-wide arrangements for research, purchase, and coordination of the national vaccine supply¹ working with the UK Vaccine Taskforce. Responsibility for the Vaccine Taskforce is now shared between BEIS and the UK Department of Health and Social Care. Welsh Government officials engage with the Vaccine Taskforce to streamline vaccine supply and anticipate upcoming issues.
 - b the Welsh Government is leading on vaccine deployment in Wales. It developed the national [Vaccination Strategy for Wales](#)² and formed a national programme structure (including Stakeholder and Deployment Boards, and an operational delivery group). The Vaccine Clinical Advisory and Prioritising Group (VCAP) considers clinical developments in vaccination against COVID-19 infection. The group advises the programme and partners on the implementation of the national vaccination programme, interpreting the priorities as outlined by the JCVI for the Welsh context. Collectively, these national groups provide policy and guidance, support financial resourcing, and have facilitated the Primary Care COVID-19 Immunisation Scheme³ for commissioning primary care.

1 [The UK Government Vaccine Taskforce \(VTF\): 2020 achievements and future strategy](#) report provides an overview of UK level progress

2 The Vaccination Strategy for Wales was first published in January 2021 and formally updated in February, March and June 2021.

3 [The Primary Care COVID-19 Immunisation Scheme](#) sets out requirements and reimbursement for Primary Care providers that have signed up to the scheme.

- c health boards are responsible for local vaccination plans, set up of mass-vaccination sites through collaborative working with local partners, and aspects of training and staffing. They are also responsible for securing vaccination centres in primary care and outreach/mobile services, with the Welsh Immunisation System (WIS) working to identify those in the priority groups using information on GP and hospital-based IT systems.
 - d Public Health Wales provides expert advice, surveillance data, vaccine effectiveness and safety monitoring, and public and patient information and reporting. It also assists in the development of training policy, patient group directions (PGDs) and tools.
 - e other partners are responsible for logistics:
 - NHS Wales Shared Services Partnership and the Welsh Blood Service are responsible for supporting the pharmaceutical co-ordination team for consumable and storage logistics.
 - Digital Health and Care Wales has led the design, test and rollout of the WIS that enables identification and coordination of priority groups and related appointment booking, vaccination recording and clinical quality assurance such as vaccine batch control. The system also provides performance data.
- 17 The Vaccination Strategy for Wales provides a high-level framework setting out the expectations for prioritisation and delivery of the COVID-19 vaccine. The Welsh Government has adopted the [Joint Committee on Vaccination and Immunisation: advice on priority groups \(Appendix 3\)](#). The national strategy focusses on developing the infrastructure for vaccine deployment, and communication about progress.
- 18 The first version of the strategy provided a clear milestone for the first four priority groups. In February 2021, the updated strategy provided target dates for the remaining milestones (**Exhibit 1**), with the aim of achieving 75% uptake for priority groups 5-9. This approach has continued to focus all partners on the time-critical aims of the vaccination programme as it continues to roll out.

Exhibit 1: Current key milestones for the vaccination programme

<p>Milestone</p> <p>1</p>	<p>By mid-February 2021: Priority groups 1 – 4</p> <p>Subject to supply, the aim is to offer first dose vaccination to all care home residents and staff; frontline health and social care staff; those 70 years of age and over; and clinically extremely vulnerable individuals.</p>
<p>Milestone</p> <p>2</p>	<p>By mid-April 2021: Priority groups 5 – 9</p> <p>Subject to supply, the Welsh Government’s aim is to offer first dose vaccination to all remaining priority groups.</p>
<p>Milestone</p> <p>3</p>	<p>By July 2021: Offer first dose vaccination to the rest of the eligible adult population according to the JCVI guidance.</p>

Source: Welsh Government

- 19 Programme oversight and monitoring take place at national and local levels receiving significant and regular officer level scrutiny as well as ministerial oversight. Public Health Wales and the Welsh Government publish regular updates⁴. Public Health Wales also undertakes enhanced surveillance, including analysis on vaccination uptake by deprivation, age, ethnic background and gender.
- 20 Vaccination delivery models vary by health board, predominantly based on geography and population density. Mass vaccination sites are being used in areas of higher population density, but in rural and hard to reach areas some health boards have adopted smaller local site models which enable vaccines to be delivered closer to the communities that they serve. Some health boards also depend more on primary care than others. Irrespective of geography, health boards are using outreach models to vaccinate in care homes and have set up temporary and mobile hubs (such as the [Swansea Bay UHB Immbulance](#) service).
- 21 Workforce planning is largely a delegated responsibility for health boards. A national workforce group has created policy and guidance providing high-level productivity modelling and has developed role descriptors for recruitment.

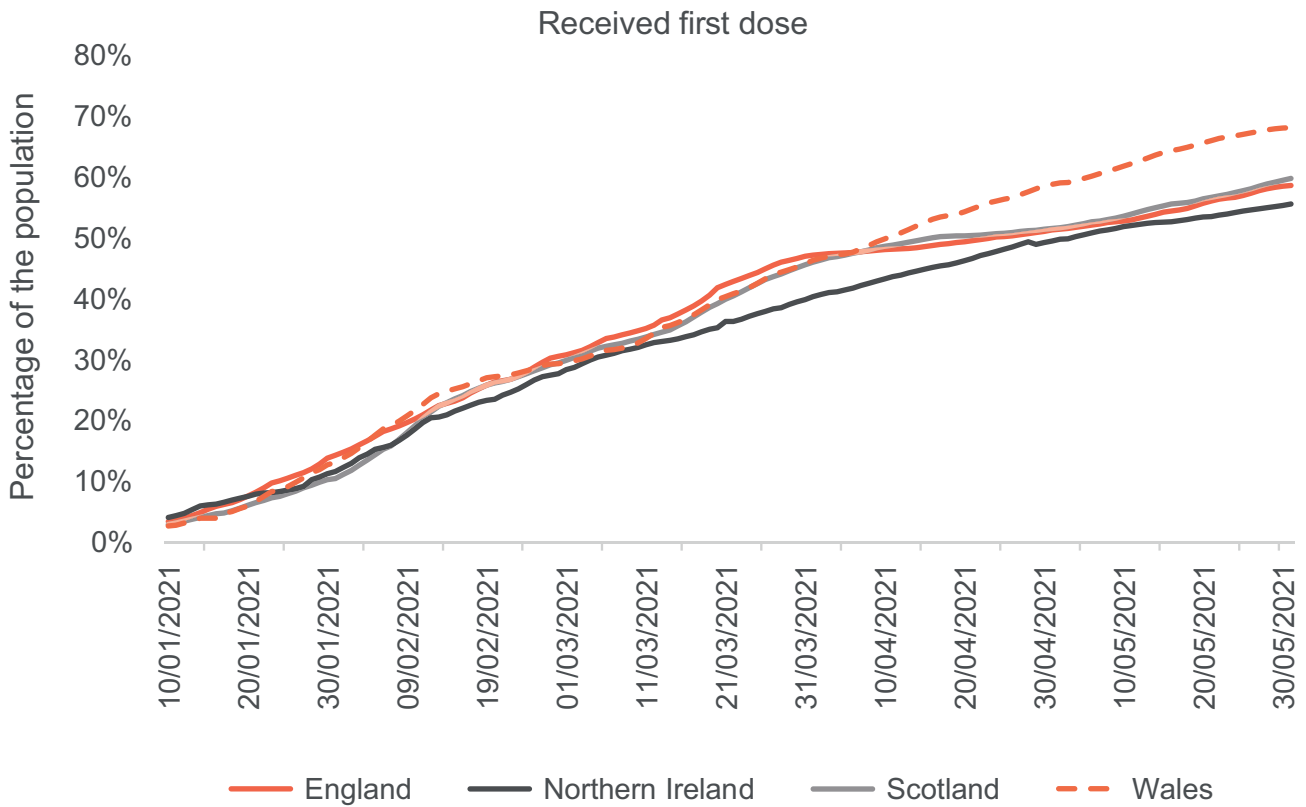
4 Public Health Wales vaccination updates are available on their [interactive dashboard](#). [Welsh Government updates](#) are published each week.

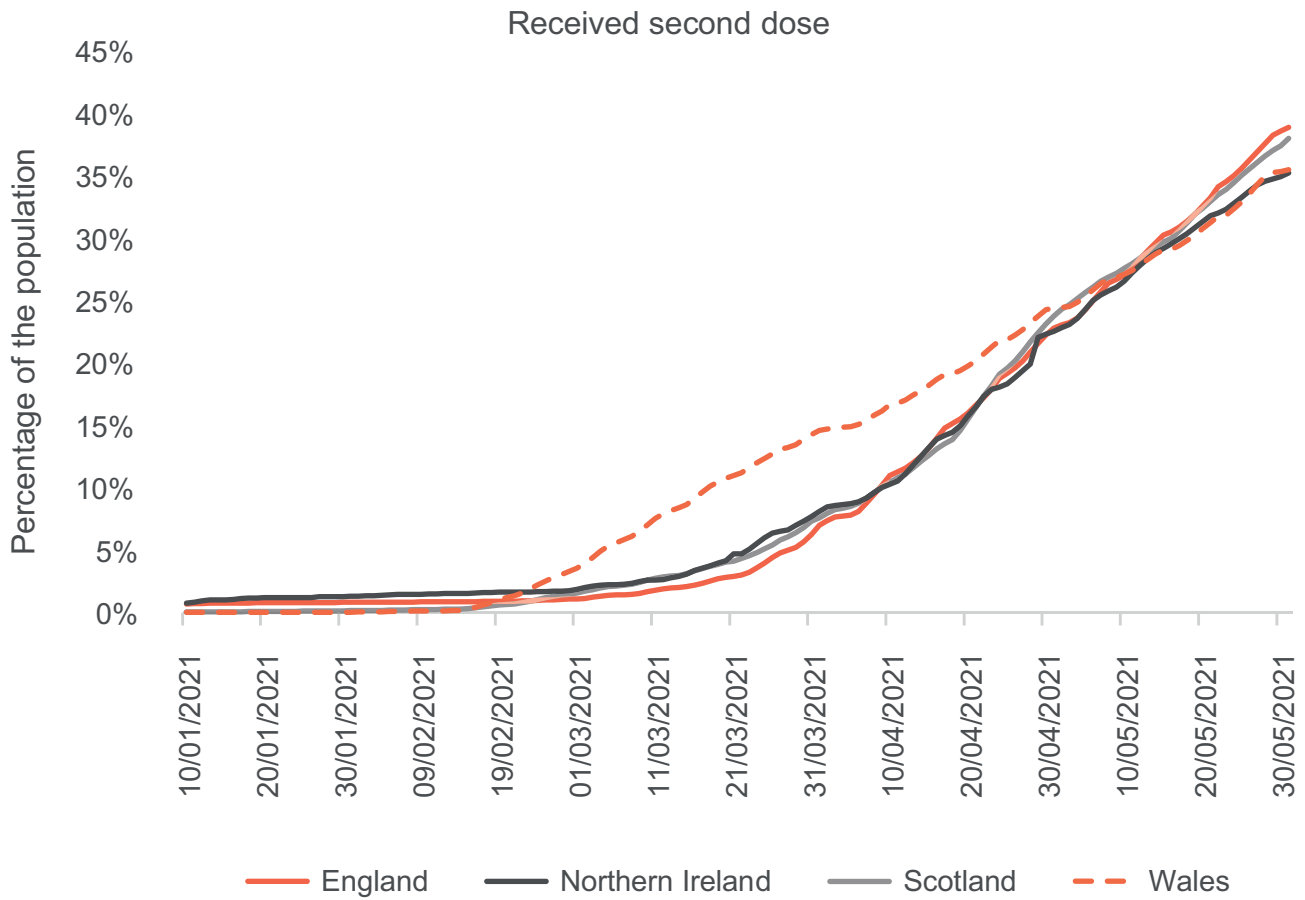
- 22 To date, vaccine procurement costs have been met by the UK Government in full. The Welsh Government funds the transport, storage, and additional local deployment costs in Wales. It provisionally estimated these costs at £34.9 million for 2020-21, including an estimated cost of £7.8 million for personal protective equipment (PPE). At the end of March, the actual costs for 2020-21 were reported as £29.4 million, as a result of costs associated with PPE largely being funded through existing PPE budget allocation. . Of the £29.4 million, £10.8 million has been spent on additional staffing, £9.54 million on the Primary Care COVID-19 Immunisation Scheme and £0.2 million on capital costs. Some staff are redeployed from within their organisations at no additional cost, although this has potential workforce implications for the part of the business where they originally worked.
- 23 Other non-pay costs include transportation, site venue hire, personal protective equipment and syringe packs, security, and communications material. We understand that some vaccination sites are provided to the programme at no additional revenue cost. This is likely to change if local authority or other partners require the return of their facilities and health boards need to relocate to alternative accommodation which may come at a cost. The forecast costs of the programme for the first three months of 2021-22 (April to June 2021) are £31.5 million.

How is the programme performing?

24 Overall, as of 31 May 2021, the percentage of the adult population to have received the vaccine in Wales is higher than in the other UK nations (**Exhibit 2**). Wales made particularly good progress delivering second doses in March, although England and Scotland have now accelerated the delivery of second doses.

Exhibit 2: Percentage of the adult population to have received first and second doses of COVID-19 vaccination by country, as at 31 May 2021

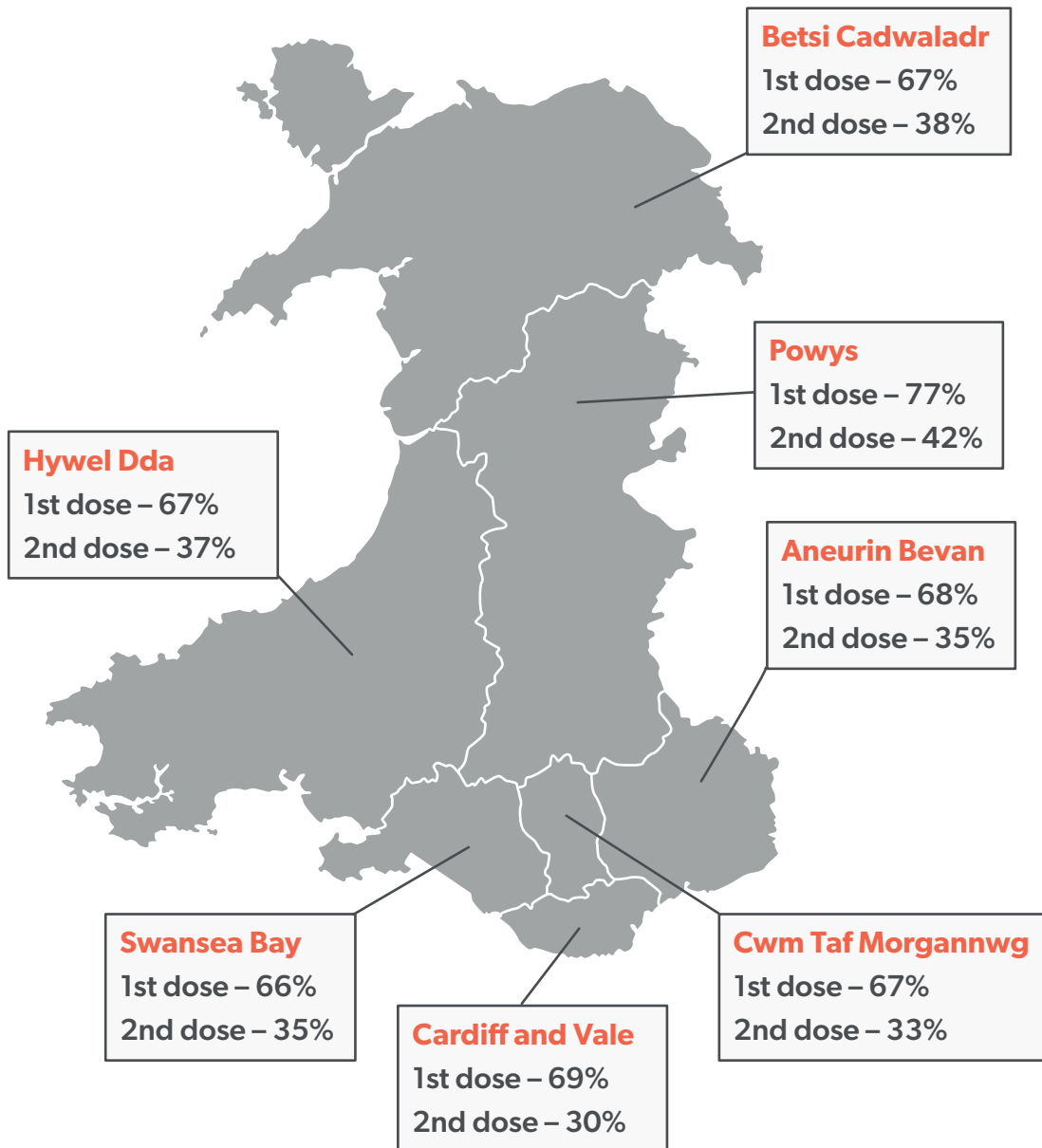




Source: [UK Coronavirus Dashboard](#)

25 There is some variation in the progress across health boards, most notably for Powys Teaching Health Board which is making the greatest progress (**Exhibit 3**). This is due to a combination of factors in Powys including a greater proportion of an older population and a higher level of supply per population as a result of batch sizes.

Exhibit 3: Vaccine doses given by health board as a percentage of the adult population as at 31 May 2021



Source: [COVID-19 Vaccination Enhanced Surveillance Report, Public Health Wales](#)

- 26 On 12 February 2021, the Minister for Health and Social Services announced that Milestone 1 of the vaccination strategy had been met. The Minister also announced on 4 April, that Milestone 2 had been met. Both milestones focus on the offering of an appointment for a vaccine. It is not possible to know if everyone eligible within the priority groups 1-9 were identified in the booking process. However, Welsh Government and health board officials took steps to help verify the position, such as contacting care homes to ensure all staff and residents had been offered a vaccination. At 31 May, around 95.5% of those in Milestone 1, and 87.9% of those in Milestone 2 had received their first dose.

- 27 While the programme has moved ahead to focus on Milestone 3, the Welsh Government and health boards are operating a 'no one left behind' policy. This means that anyone eligible in previous groups who has not yet had a vaccine for any reason can inform the relevant health board and make an appointment.
- 28 Public Health Wales surveillance reports show that influenza vaccine uptake is typically around 70% for those aged 65 and older. So far, the overall COVID-19 vaccine uptake for priority groups 1-9 is 91.5% which reflects positively in comparison. Reasons for not achieving 100% uptake include for example, people that are too unwell to receive the vaccine and the minority, to date, that have chosen not to have the vaccine. At the time of reporting, 66.1% of the priority groups 1-9 had received their second dose, and good progress was being made with vaccine rollout to younger age groups.
- 29 **Exhibit 4** shows some variation on uptake of first doses against the prioritisation groups by health board, particularly for priority group 6. We have observed extensive national-level discussion to respond to the challenges of identifying relevant population datasets. This included identifying all those aged 16-64 years clinically at risk where definitions of clinical conditions have needed to be clarified, and information about individuals is contained on different systems. There have also been challenges identifying unpaid carers who have previously not been recorded on any system. This indicates some of the difficulty in using a complex vaccination prioritisation model in the environment where no single centrally maintained population dataset exists for this purpose.

Exhibit 4: Percentage of first doses given by priority (P) group, at 30 May 2021

Priority Group	Aneurin Bevan	Betsi Cadwaladr	Cardiff and Vale	Cwm Taf Morgannwg	Hywel Dda	Powys	Swansea Bay
P1. Residents of care homes	97.5	98.6	98.0	96.4	98.2	96.8	98.8
P2. 80 years +	96.3	96.0	94.3	95.9	96.1	97.2	96.2
P3. 75-79 years	97.0	96.5	95.9	97.1	96.6	97.2	97.3
P4. 16-69 years clinically extremely vulnerable	94.2	93.8	93.2	94.7	93.9	95.7	94.4
P4. 70 – 74 years	96.6	95.6	95.4	96.5	95.7	96.2	96.6
P5. 65-69 years	94.9	94.5	93.5	95.4	94.3	95.0	95.5
P6. 16-64 years clinically at risk	88.6	86.5	88.1	88.2	86.7	90.4	87.8
P7. 60-64 years	93.6	91.6	91.5	93.7	92.2	91.6	93.3
P8. 55-59 years	91.6	89.4	89.3	91.9	90.0	89.4	91.1
P9. 50-54 years	89.7	87.7	86.5	90.1	87.5	88.1	89.0

Note: P2, P3 and P4 also includes data for those in the respective age groups who are also residents of care homes. Frontline health and care staff, as well as unpaid carers are not explicitly identified at health board level but instead included within the relevant age groups.

Source: [Weekly COVID-19 coverage report, Public Health Wales](#)

30 Equality considerations are a growing concern. Public Health Wales data shows clear variation in uptake among different ethnic groups with uptake lower particularly within the Black community (**Exhibit 5**).

Exhibit 5: Percentage uptake of first dose of COVID-19 vaccine by age and ethnic group as at 5 May 2021

Ethnic group	White	Black	Asian	Mixed	Other
80+ years	97.2	80.7	87.3	93.1	82.5
70-79 years	96.6	79.9	87.3	88.0	83.4
60-69 years	94.4	76.8	86.6	84.5	78.9
50-59 years	91.3	71.9	84.3	79.4	71.7

Source: [Monthly enhanced surveillance report, including analysis on equality of coverage, Public Health Wales](#)

- 31 As part of their analysis, Public Health Wales also found lower uptake in deprived communities. Although the differences are not as great as for ethnic groups, uptake between the least and most deprived areas for some age groups varies by up to 5.3%. Analysis of COVID-19 positive cases over the last 12 months has indicated that case prevalence and severity have been higher in Black, Asian and Minority Ethnic groups as well as in some of Wales' most deprived areas, with Merthyr Tydfil experiencing the highest number of cases per head of population. In March 2021, the Welsh Government published its [Vaccination Equity Strategy for Wales](#). The Vaccine Equity Committee met for the first time in April 2021 and is preparing a vaccine equity plan.
- 32 Vaccine wastage (known as vaccines unsuitable for use) to date is around 0.4% of all vaccines supplied. As of 31 May, this equated to around 14,400 doses. Wastage is more prevalent for Pfizer-BioNTech with 0.8% of doses unsuitable for use. Only 0.2% of Oxford-AstraZeneca doses have been deemed unsuitable, with 0.04% reported for Moderna. In comparison, NHS Scotland has estimated that around 1.8% of COVID-19 vaccines are wasted⁵. The other UK nations do not publicly report vaccine wastage.

5 [Scotland's COVID-19 Vaccine Deployment Plan – Update March 2021](#)

- 33 Reasons for vaccines being unsuitable for use include doses that fail quality assurance on initial inspection, doses that fail quality assurance following preparation and vials/doses which expire during the vaccination session. Specific requirements for storage, transportation, and shelf-life of Pfizer-BioNTech once thawed have presented challenges.
- 34 Arrangements to minimise wastage include:
- a systematic recording of temperatures during the different stages of transportation to ensure storage requirements are met from source to site storage, and then on to vaccine centres.
 - b using reserve lists so that people can attend at short notice at the end of the day to use any vaccine left because of people not attending booked appointments. Approaches to reserve lists vary across health boards with some making reserve lists open to all priority groups while others are targeted to specific priority groups.
 - c allocation of the Pfizer-BioNTech vaccine mainly to mass vaccination sites. Pfizer-BioNTech shelf-life once defrosted is shorter than the Oxford-AstraZeneca, so the allocation to mass vaccination sites helps to ensure that it is used rather than reaching the end of its shelf-life.

What have been the factors affecting rollout to date?

- 35 Vaccine supply is the most significant factor affecting the pace of the rollout. UK-wide supply, while agreed through formal contractual obligations, is constrained by commercial pharmaceutical supply and international demand. In general, the Welsh Government and NHS Wales are informed of the expected notional supply around one month ahead. But this can change at short notice both upward and downwards, so reliable projections are difficult beyond two weeks and are in a range, with best, realistic, and worse case scenarios from BEIS.
- 36 Supply challenges to date include:
- a the temporary withholding of a batch of Pfizer-BioNTech vaccines, equating to 25,000 vials, because of quality control issues in January. The MHRA quality control process ensures that vaccines are safe to administer.
 - b a reduction in February resulting from the refurbishment of both Oxford-AstraZeneca and Pfizer-BioNTech facilities in Europe to accommodate increased production levels.
 - c a reduction in April owing to the reprioritisation of Indian-produced Oxford-AstraZeneca vaccine resulting in an expected four-week delay.

- 37 Workforce models have evolved since the beginning of the vaccination programme, with a need to remain flexible to expand or reduce services at relatively short notice in response to supply. All health boards initially used registered health staff immunisers. This was then supplemented through GP practices, which has enabled vaccination activity to be scaled up and offered close to home. Changes to UK legislation has also enabled non-registered staff to be trained to vaccinate under supervision, and over time other partners, such as the military and more recently fire and rescue service personnel, have assisted in the rollout. Plans are also in place to use community pharmacies, with the first pharmacy offering of the COVID-19 vaccine launched in April 2021 in Cardiff.
- 38 Support staff, clinical staff who have either previously left or retired, and volunteers are also helping at vaccination sites in a variety of roles. The Welsh Government and health boards recognise the goodwill of retired staff who have agreed to come back and assist, as well as volunteers, but we heard mixed views on how easy and beneficial making use of these groups has been in practice. We heard of cumbersome processes to bring back retired or returning staff, some volunteers were only offering to help for short periods, and there were differing views about the need to undertake mandatory training.
- 39 Prioritisation in line with the Welsh Government policy and guidance has been an essential element of the programme to date. Almost all (99%) of the population at most risk from COVID-19 are in priority groups 1-9. All health boards have adopted prioritisation principles set out within the national vaccination strategy. However, there have been concerns about how the prioritisation approach has varied across Wales and the risk that some (including NHS staff) may have received their vaccine ahead of their allotted priority group. This has arisen because of the desire not to waste unused vaccine and the differing approaches to manage reserve lists. Welsh Government officials have written to health boards in an attempt to standardise the approach for reserve lists. There have also been challenges defining 'frontline' for health and social care staff, which may have also resulted in some staff receiving the vaccine earlier than intended.

- 40 We found that communications relating to prioritisation for the COVID-19 vaccination at a UK, Welsh Government and health board level have been generally consistent, reducing the risk of mixed messaging. In addition, work undertaken by Community Health Councils has found that the public have generally been happy with the communication that they have received from health boards. However, there appeared to be greater concern at earlier stages of the programme from people:
- a wanting to know where and when they will be vaccinated;
 - b not understanding why, for example, a couple could not go to the same vaccination centre on the same day; and
 - c feeling that some with lower priority had been vaccinated before them.
- 41 As the programme has gathered pace, many of those initial concerns have eased. A longer lasting issue related to the format of invite letters. These letters are produced automatically by the Welsh Immunisation System for individuals invited to attend a mass vaccination centre, and for the first three months of the programme there was little that could be done to tailor them. We heard of concerns around:
- a identical letters being used for first dose and second doses. An example was given to us where an individual was called back for a second dose at the initial recommended four-week period⁶, but they thought they had received a first dose letter again in error and ignored it.
 - b the format of the letters, with interchangeable use of English and Welsh language over several pages, affecting the clarity of the letter and how to raise a concern or rearrange the booking.
- 42 The format of invite letters has since been addressed in relation to the use of English and Welsh language although the need to make clearer that the invitation is for second doses remains.

6 Initial guidance from the JCVI recommended that the second dose of the COVID-19 vaccine should be administered at four weeks after the first dose. This was subsequently changed to up to 12 weeks in January 2021.

What are the future challenges and opportunities?

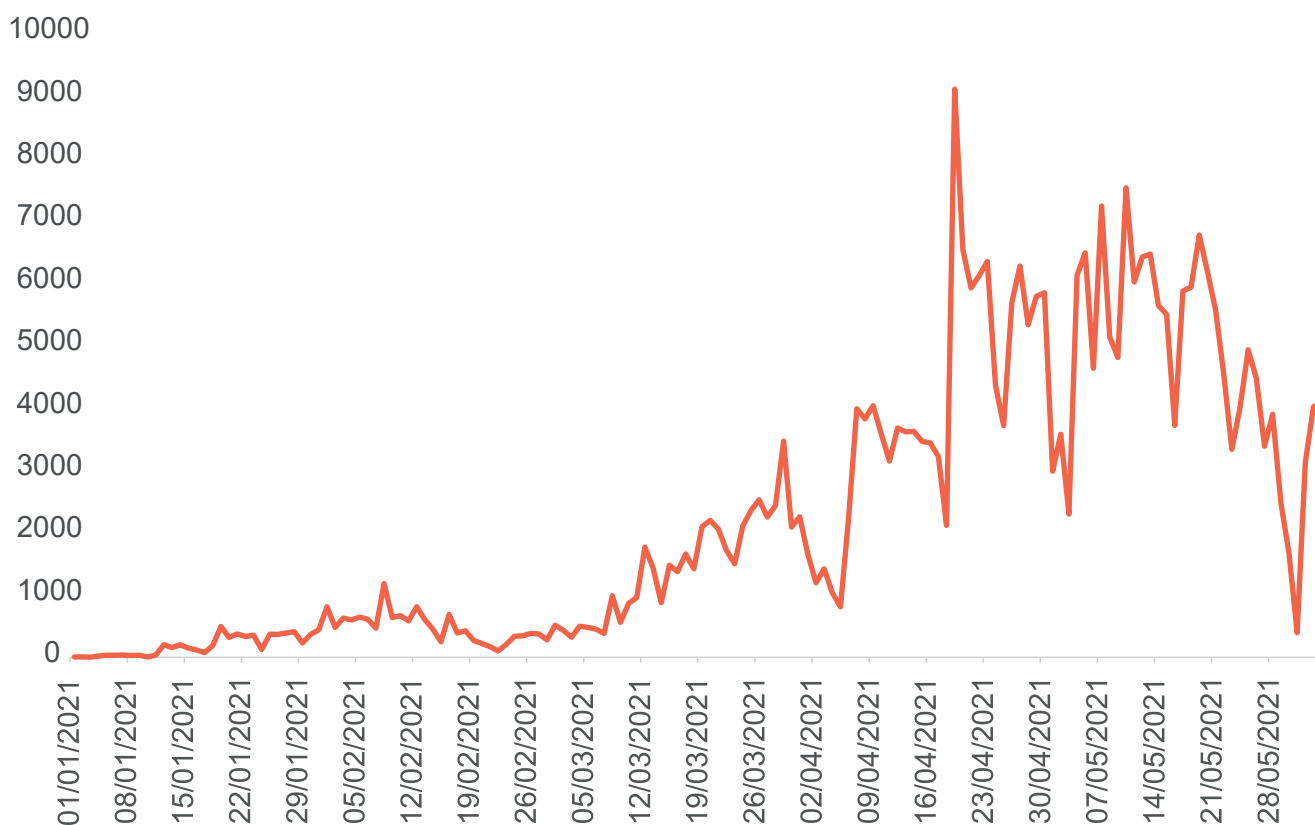
- 43 The vaccine programme in Wales has progressed extremely well but there is still some way to go. Around 4.5 million doses are needed to protect 90% of the adult population in Wales with two doses. At the current rate, and with 3.3 million doses completed as at 31 May, this could mean that second doses for the remaining adult population are not completed until September. Alongside this, there is increasing discussion of an autumn booster programme. It is likely that there will be little respite between finishing vaccinating the remaining adult population and planning a possible next phase of the programme. This all points to a need to develop a longer-term plan for vaccine rollout that looks further ahead and moves beyond the here and now.
- 44 Vaccine supply is likely to remain a significant challenge. While new vaccines are also becoming available, the more that are in use, the greater the challenge to coordinate their deployment. Storage, transportation, preparation, shelf-life, and training requirements differ depending on the vaccine. Changes to JCVI guidance may also present challenges. For example, the recent guidance to offer under 40s an alternative to the Oxford-AstraZeneca vaccine⁷ could result in slower rollout if alternative vaccines are not available. As more vaccines come on stream in Wales, complexity will increase further as may waste and operational efficiency. The Welsh Government are aware of this risk and are working to mitigate it.
- 45 The current workforce model is meeting the needs of the vaccination programme. However, as other services are restarted and as the wider economy reopens, a sustainable and still flexible workforce solution will be needed for the medium to longer term. Key issues include:
- a some health board staff supporting the vaccination programme have been redeployed from their normal role. As other services are restarted, there will be competing workforce pressures as staff are called back to their core roles.
 - b we have heard that the workforce is fatigued, with many having worked above and beyond at many stages of the pandemic. This will not be sustainable in the longer term. We also heard that as the economy reopens and COVID restrictions are eased, the supply of volunteers is reducing.
 - c consideration is being given to the potential to combine a COVID-19 booster programme with the routine flu immunisation programme, or whether there is a clinical need to keep them separate. Either way, there are implications for the development of the workforce to meet demand.

7 JCVI statement on [Use of the AstraZeneca COVID-19 vaccine: 7 May 2021](#)

- 46 Sites used as mass vaccination centres have largely been made available to health boards through the goodwill of partners. Many of these venues were closed due to COVID-19 restrictions. With restrictions easing, organisations will now be looking at the potential to reopen these venues before the anticipated end of the current programme as a way of remaining commercially viable, for example, Venue Cymru in Llandudno. Health boards are likely to need to consider alternative cost-effective options for vaccination centres at relatively short notice to deliver the remainder of the current programme. They will also need to look at how to accommodate the longer-term COVID-19 vaccination programme alongside the wider immunisation programme.
- 47 There will always be differences in vaccination models to respond to local population needs and geography. Nevertheless, some models will be delivering greater efficiency than others. Early observations from the military partners involved in the vaccination programme identified vaccination sites were not always making the most efficient use of qualified staff and that rates of vaccination per hour per staff varied between 2.6 and 10.2. This variation in vaccination rates merits further investigation by operational officials, but the local variations will be, in part, due to supply and vaccine type. Health boards and the Welsh Government need to maintain a focus on ensuring that service models provide value for money. This will also help inform the shape of future models and programme design.
- 48 As the programme moves forward, there is a growing concern that the younger population are less likely to accept the offer of a vaccination. Health boards are continually assessing and adapting vaccination models to ensure they are accessible to all and working in partnership with other agencies to understand the reasons for vaccine hesitancy and to put actions in place. This has included some positive actions being taken to engage community leaders in particular ethnic communities, and members of the travelling community. Health boards and partners need to maintain this focus to build trusted relationships and improve the confidence in the vaccine programme. This is likely to be resource intensive if the Welsh Government and NHS wants to maintain its overall positive uptake rate for the remainder of the population and to ensure uptake of second doses is as high as is being achieved for first doses.

49 Having dropped at the end of March and early April, the number of individuals who do not attend for their appointment has since increased again (**Exhibit 6**). It is understood that non-attendance is greater for first dose vaccines, than second dose vaccines. Non-attendance impacts the pace of the programme and represents a cost-inefficiency as staff can end up underutilised. Arrangements to call those on reserve lists in at short notice are helping to fill empty slots, but as the percentage of the population yet to have a vaccine reduces, filling these slots will become more challenging. Non-attendance rates do vary by health board with Aneurin Bevan, Cardiff and Vale, and Swansea Bay University Health Boards experiencing some of the highest levels.

Exhibit 6: Numbers of people invited for vaccination but did not attend by day up to the end of May 2021



Source: Welsh Government

Note: the data used is intended for internal management information purposes and has therefore not been validated

- 50 Some of the reasons for non-attendance have included delays in invite letters being received, and problems getting through to contact numbers to rearrange appointments, as well as people not turning up because of vaccine safety concerns. Difficulties in getting time off work to attend appointment slots and clashes with holidays as society opens are increasingly likely to result in further non-attendance over the coming months. There is opportunity to reflect on the current approach for booking, with consideration to web-based systems to support self-booking of appointments. This will help provide flexibility and minimise the resource intensive process when people have to re-book or staff must find people to fit in the slots. The programme is actively working on establishing this with Digital Health and Care Wales.
- 51 Following a recent 'Programme Assessment Review' in March, the Welsh Government has considered future challenges and how it strengthens national programme management arrangements. To date, there has been limited additional central capacity to drive the programme at a national level, and reliance has been placed on a relatively small number of officials both within the Welsh Government and across the NHS to lead the rollout programme. Programme management arrangements during the early part of the vaccine rollout were rather unwieldy, with early oversubscribed Stakeholder Boards due to intense interest. In excess of 60 people from different professional backgrounds attended. Changes have been made to tighten up these arrangements and we understand that more changes are planned to further streamline programme management and governance.
- 52 Whilst the challenges outlined here need to be carefully considered as the vaccine rollout moves to its next stage, it should be recognised that the programme has moved at a scale and pace not previously seen in Wales. There is much to celebrate in that and there are many positive lessons to learn for the delivery of other programmes and the wider immunisation agenda.



Appendices

- 1 Audit approach and methods**
- 2 UK COVID-19 vaccines purchased and status as at 1 June 2021**
- 3 Welsh Government's vaccine prioritisation (based on the JCVI recommendation)**

1 Audit approach and methods

Our primary focus was on the national vaccination programme and the deployment of vaccines in Wales. We drew on the vaccination deployment of three health boards to obtain an understanding of rural and urban settings. We considered the set-up of the national programme, performance of the programme, and the factors or issues that have affected rollout.

Our work excluded vaccination arrangements administered by the UK government. The National Audit Office has examined the UK government's preparations for potential COVID-19 vaccines⁸. We reviewed that report to help inform our wider understanding of procurement, contracting and vaccine costs, which are administered UK-wide.

Audit methods

We used a range of methods:

- **document review:** we reviewed national strategy, guidance, Welsh Government announcements and update reports, health board vaccination plans, local and national performance reporting. We also reviewed national vaccination stakeholder and deployment board papers and minutes.
- **observations:** we attended several national vaccination stakeholder board and deployment board meetings as observers.
- **semi-structured interviews:** we interviewed Welsh Government officials involved in the vaccination programme, selected members of the national vaccination deployment board, and senior managers from three health boards involved in the set-up of vaccination sites and the deployment of vaccines.
- **data analysis:** we reviewed available data on first and second dose vaccination progress in Wales and the other UK nations. We considered vaccine wastage and deployment costs, in relation to pay costs, non-pay costs and the extent of costs associated with vaccination in primary care settings.

It is not possible for us to present data for the same period throughout this report. Data in this report are taken from differing sources and are published at differing intervals. Detailed information on vaccine availability, stock, and utilisation by manufacturer is not publicly available for reasons of commercial confidentiality.

We completed our fieldwork between February and April 2021.

8 [Investigation into preparations for potential COVID-19 vaccines](#), National Audit Office, December 2020

2 UK COVID-19 vaccines purchased and status as at 1 June 2021

Vaccine	No of doses	Status
Oxford-AstraZeneca	100 million	Approved 30 December 2020 and in deployment across Wales from January 2021
Janssen	20 million	Approved 28 May 2021
Pfizer-BioNTech	100 million	Approved 2 December 2020 and in deployment across Wales from January 2021
Moderna	17 million	Approved 8 January 2021 and in deployment from April 2021 in Aneurin Bevan and Hywel Dda University Health Boards
GlaxoSmithKline/Sanofi Pasteur	60 million	Phase 3 trials
Novavax	60 million	Encouraging phase 3 safety and efficacy data
Valneva	100 million	Phase 3 trials
CureVac	50 million (initial order)	Phase 3 trials
Total	507 million	

Source: Recent [GOV.UK announcement](#), updated based on [information from the London School of Hygiene and Tropical Medicine](#) and recent [GOV.UK announcement](#)

3 Welsh Government's vaccine prioritisation (based on the JCVI recommendation)

Vaccine prioritisation groups

- 1 People living in a care home for older adults and their staff carers
- 2 All those 80 years of age and older and frontline health and social care workers
- 3 All those 75 years of age and over
- 4 All those 70 years of age and over and people who are extremely clinically vulnerable (also known as the "shielding" group) – people in this group will previously have received a letter from the Chief Medical Officer advising them to shield
- 5 All those 65 years of age and over
- 6 All individuals aged 16 years to 64 years with underlying health conditions*, which put them at higher risk of serious disease and mortality
- 7 All those 60 years of age and over
- 8 All those 55 years of age and over
- 9 All those 50 years of age and over

Source: Welsh Government



Audit Wales

24 Cathedral Road

Cardiff

CF11 9LJ

Tel: 029 2032 0500

Fax: 029 2032 0600

Textphone: 029 2032 0660

We welcome telephone calls in
Welsh and English.

E-mail: info@audit.wales

Website: www.audit.wales