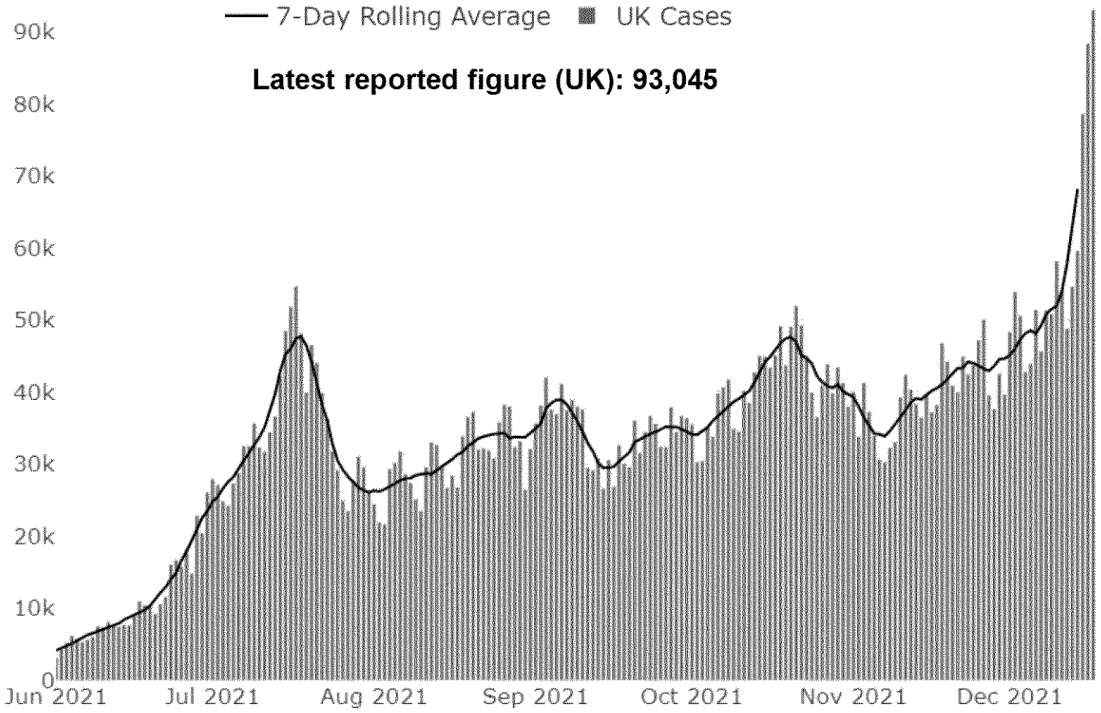
Cabinet Office

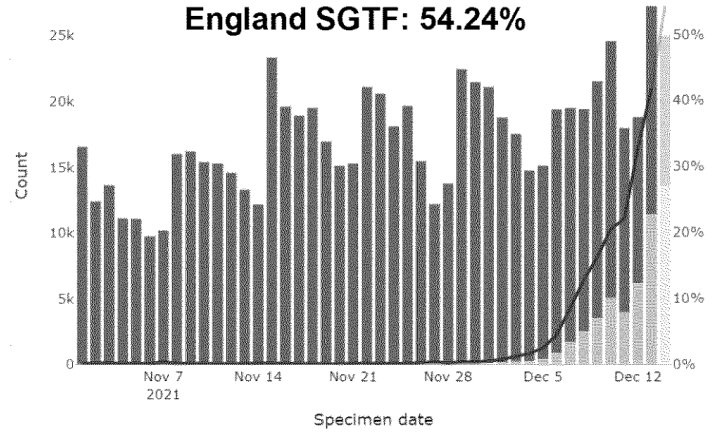
Overview

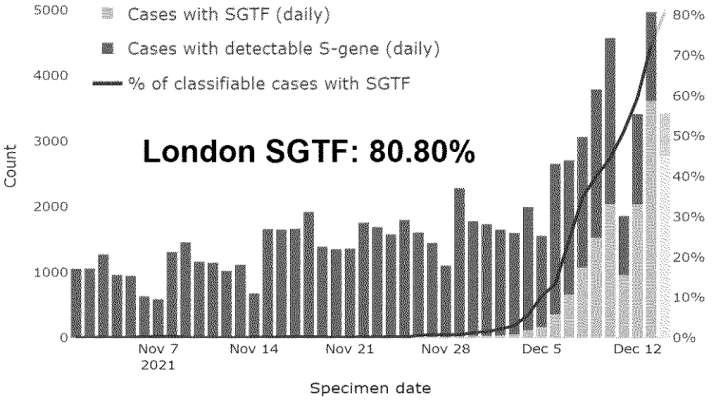
- Current data position
- Implications, modelling, uncertainty
- Impact of current plans: boosters and Plan B
- Planning for a significant wave on current policies
- Options for further restrictions

UK cases by report date (left) S-gene target failure cases (right).

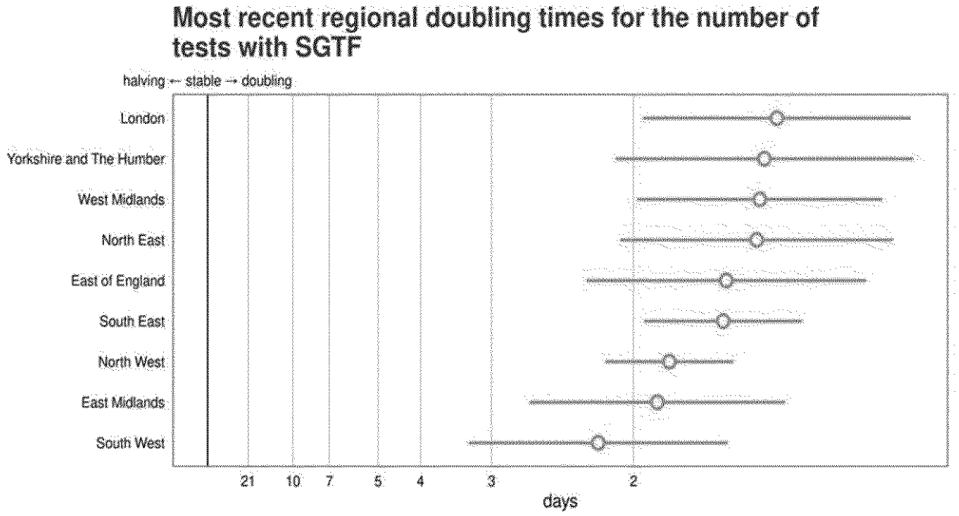


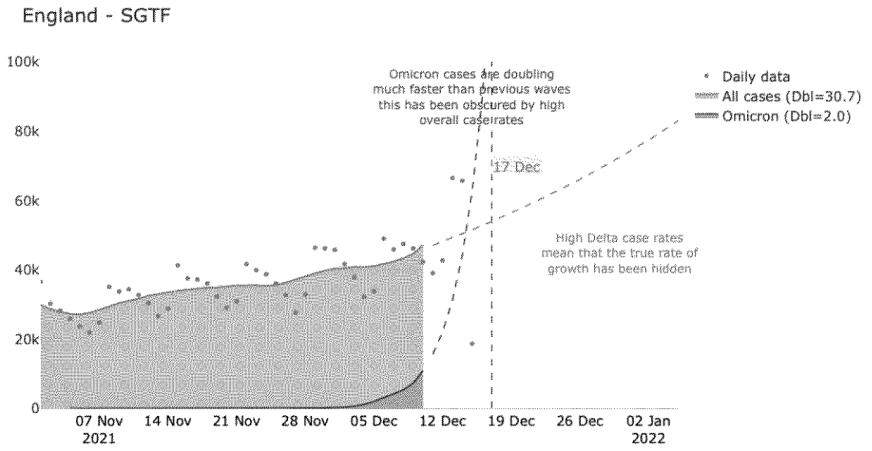
Report day: number of positive tests reported each day.

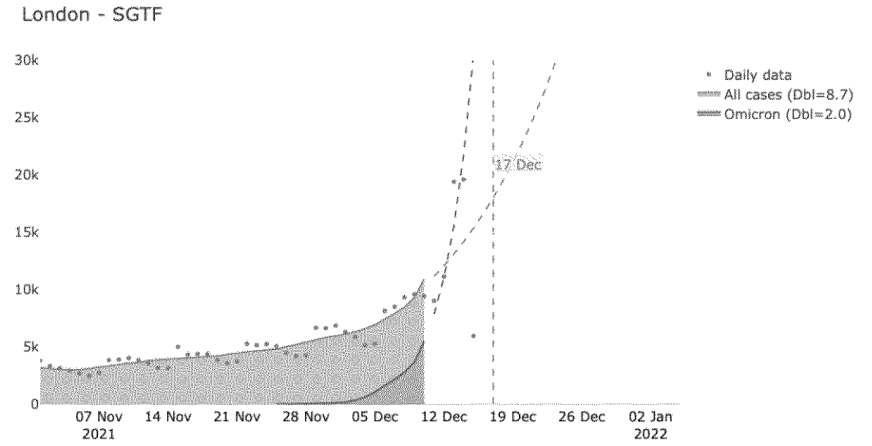




SGTF doubling times (left), illustrative SGTF extrapolation for England and London (right).



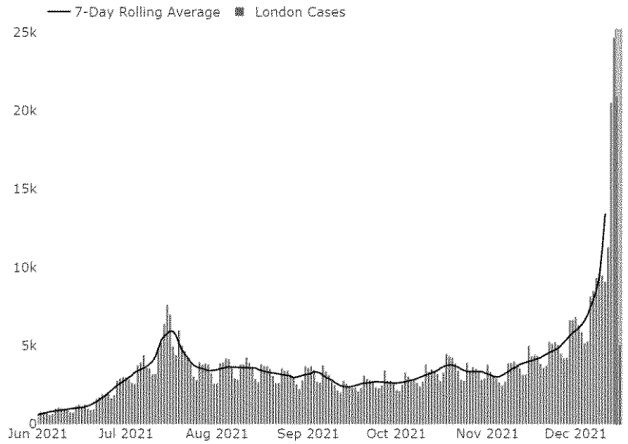




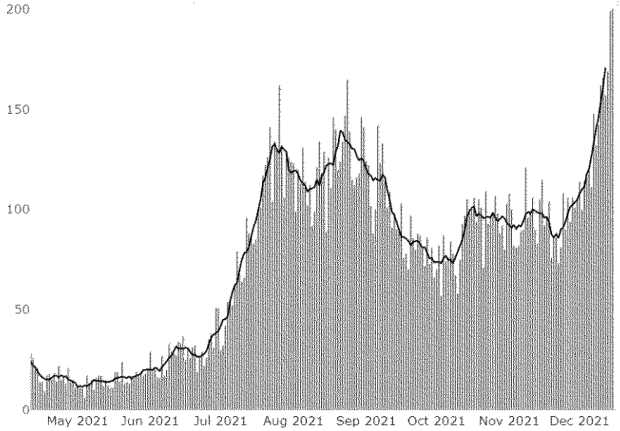
- **Doubling times below 2 days in most regions (Southwest has lower SGTF coverage than other areas).**

London cases and admissions.

London Cases



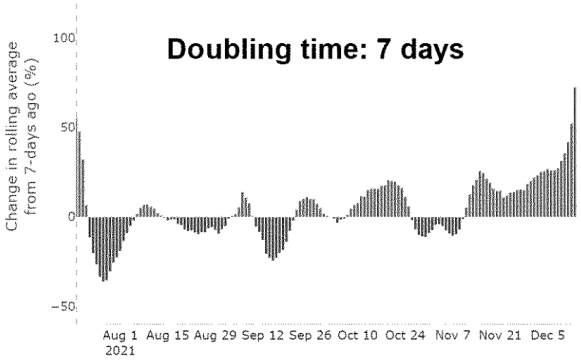
London Admissions



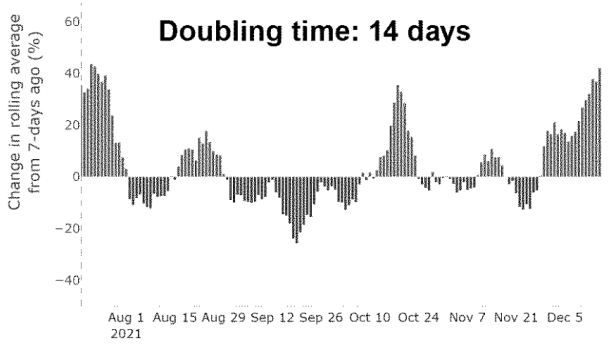
London 7 Day Cases by Age

	11 Oct	18 Oct	25 Oct	01 Nov	08 Nov	15 Nov	22 Nov	29 Nov	06 Dec	13 Dec
90+	75	84	84	105	51	70	66	78	96	153
85 — 89	59	76	87	82	56	70	78	71	84	133
80 — 84	87	80	96	75	61	68	56	62	78	115
75 — 79	103	113	123	112	74	73	69	59	87	146
70 — 74	119	142	152	125	102	86	77	77	109	156
65 — 69	133	162	195	166	150	139	112	122	148	220
60 — 64	153	197	201	217	192	213	204	203	220	339
55 — 59	183	209	254	250	214	255	246	268	310	491
50 — 54	200	234	300	287	231	287	299	351	403	593
45 — 49	284	324	370	356	283	377	428	493	606	829
40 — 44	282	340	380	405	330	413	460	569	712	1,025
35 — 39	199	217	273	273	264	322	345	410	553	1,011
30 — 34	159	184	219	226	243	274	305	375	502	1,274
25 — 29	147	175	207	220	233	262	280	341	513	1,633
20 — 24	159	176	198	198	208	241	258	285	463	1,388
15 — 19	430	494	455	344	309	362	398	506	631	966
10 — 14	750	918	778	535	420	622	758	946	1,049	1,073
5 — 9	281	343	332	309	299	497	620	713	850	842
0 — 4	70	84	84	92	103	133	153	181	227	255

London Cases Growth Rate



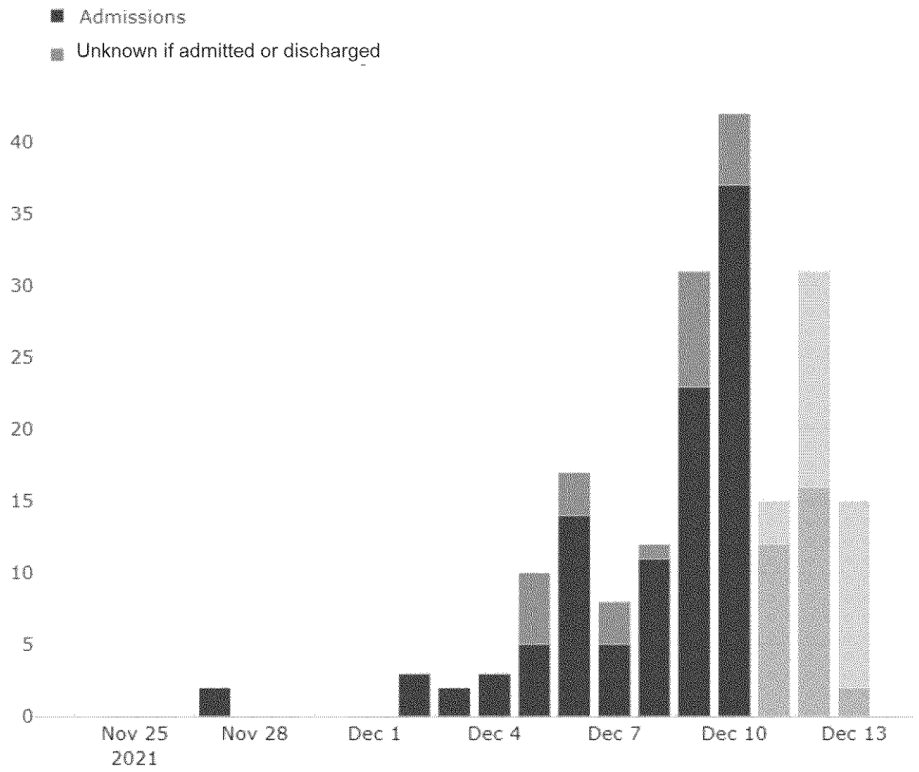
London Admission Growth Rate



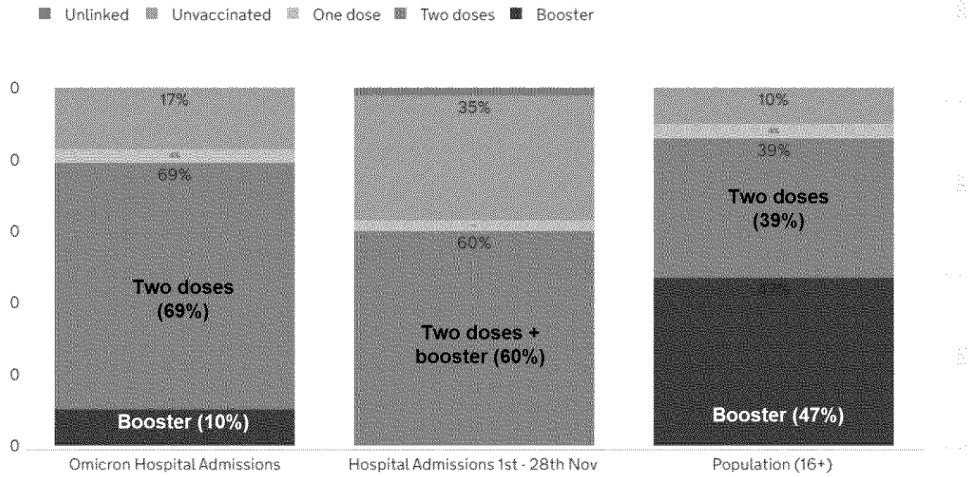
London 7 Day Admissions by Age

	06 Apr	04 May	01 Jun	29 Jun	27 Jul	24 Aug	21 Sep	19 Oct	16 Nov	14 Dec
Total	153	62	127	218	872	897	550	645	623	988
85+ yrs	16	7	4	14	71	73	50	84	60	123
75 — 84 yrs	34	4	15	22	78	117	101	117	85	140
65 — 74 yrs	27	7	9	15	93	140	80	87	95	118
55 — 64 yrs	18	2	17	28	113	135	95	95	118	158
45 — 54 yrs	19	8	22	29	150	114	63	89	81	125
35 — 44 yrs	18	11	32	26	120	101	67	73	78	100
25 — 34 yrs	12	9	17	49	151	125	57	47	49	113
18 — 24 yrs	3	4	5	22	56	36	12	15	12	41
6 — 17 yrs	3	4	5	6	17	29	15	17	22	35
0 — 5 yrs	3	6	1	7	23	27	10	21	23	35

Omicron A&E attendances (left), Omicron A&E admissions by vaccination status (right).



Source: NHSE, operational data between 24th November and 14th December on A&E attendances which are linked to omicron testing



Source: NHSE, operational data (left), UKHSA COVID-19 vaccine surveillance report (middle), NHSE Vaccines (right)

Note: Vaccination status is based on a very small number of Omicron hospital admissions (105 admissions to 10th December). This does not give robust evidence for effectiveness of boosters against Omicron at this stage and the proportions may change significantly as the numbers of admissions grow.

Data extrapolation - summary of analytical note.

- While uncertainty remains around Omicron's **transmissibility, immune escape and intrinsic severity**, its rate of growth can be calculated from PCR tests with S-gene target failure (SGTF) and genotyped Omicron cases.

- Example of how data is being extrapolated:
  - According to UKHSA, 38.7% of cases on 12 December were SGTF. Applying this percentage to the estimate of infections on this day gives a total of 77,856 SGTF infections on 12 December. SPI-M and UKHSA estimate that SGTF cases have been growing at **40% per day**, a doubling time of ~2 days.
  - Applying this rate of growth for 4 days produces an estimate of ~300,000 SGTF infections yesterday.

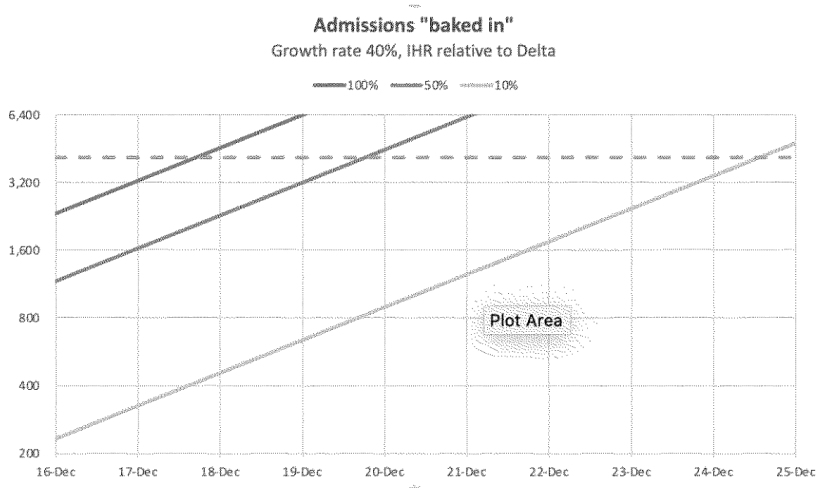
- A proportion of these infections will lead to hospital admissions. LSHTM calculates that during the recent Delta wave, from July to November 2021, the infection hospitalisation ratio mean was 0.78%.

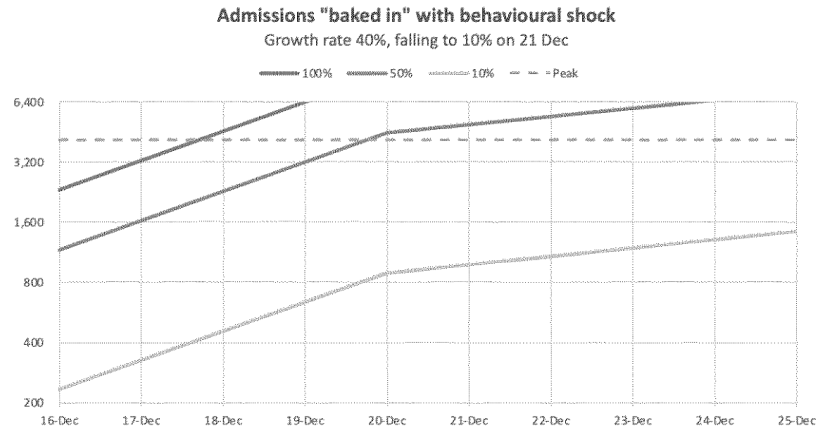
- Applying this mean infection:hospitalisation (IHR) to the number of infections seen on 16 December, ~2,300 daily admissions would already be "baked" into the system.

- There is currently no strong evidence that Omicron infections are either more or less intrinsically severe than Delta infections, but even if we assume that the IHR is 50% of Delta, we would reach the same number of hospitalisations after one additional doubling time, currently ~2 days.

Hospitalisations are already “in the system” due to the lag between infection and admission.

- 77k (England) cases yesterday might represent ~300k Omicron infections.
- A proportion of these will end up in hospital (1% for Delta). This takes 7-10 days to happen.
- If 40% daily growth is sustained, infections will be **10x** higher in a week.
- Even if Omicron is much less severe, early action is necessary to prevent admissions breaching the January peak.
- The bottom chart shows the continuing high numbers of admissions we can expect even if a behavioural shock is achieved. A shock this size is also unlikely.





Assumptions: 77,299 cases on 16 Dec, cases = 38% of infections, 39% of infections Omicron, 4 days from infection to positive test.

How long could the wave last?

This approach would see a high peak in infections. Hospitalisations would remain at levels much above the January 2021 peak for several months, from December through to March.

SPI-M have assessed different modelling groups. The SPI-M consensus view suggests that sticking to Plan B only measures would mean:

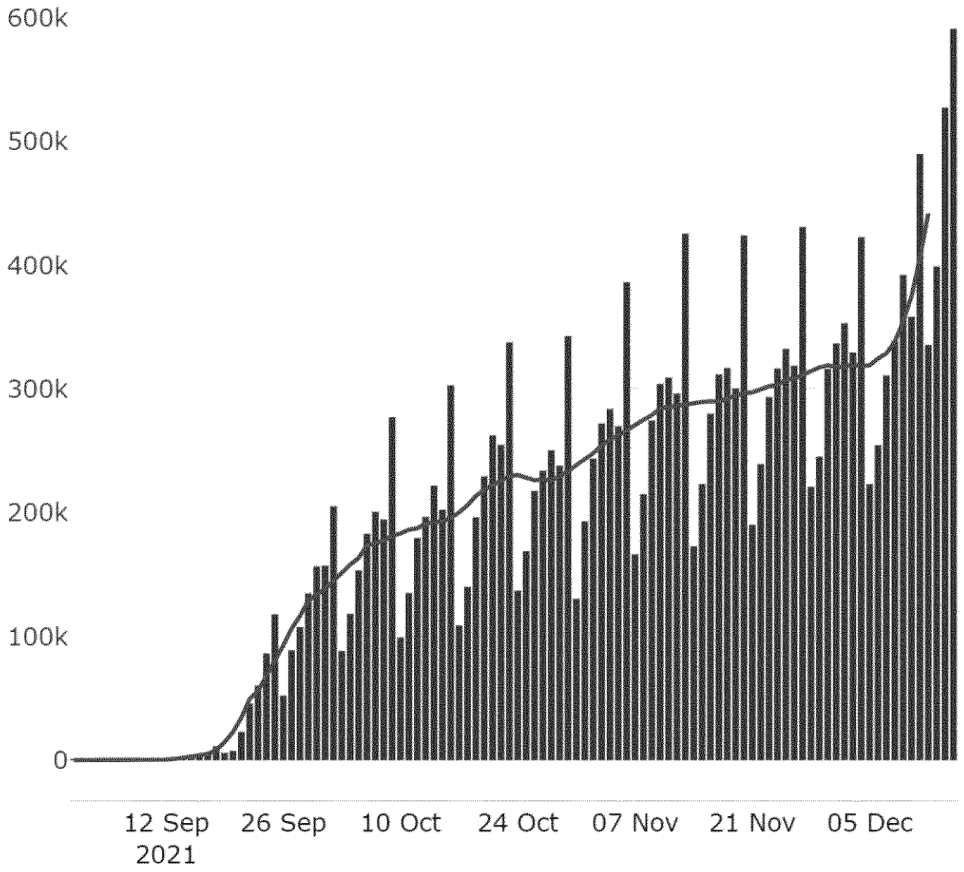
- **Peak in infections:** 600,000 - 2 million per day, between late December and Jan 2022
- **Peak in hospital admissions**: 3000 - 10,000 per day. These would Increase through December and January, declining until March 2022
- **Peak in deaths:** 600-6,000 per day between mid Jan - Mid March 2022

SPI-M models suggest early stringent action is required in order to stand a chance of constraining such a wave below January 2021 levels.

Uncertainties on assumptions are: estimated growth advantage of Omicron; severity; vaccine effectiveness assumptions; protection from previous infection; booster uptake and roll out speed.

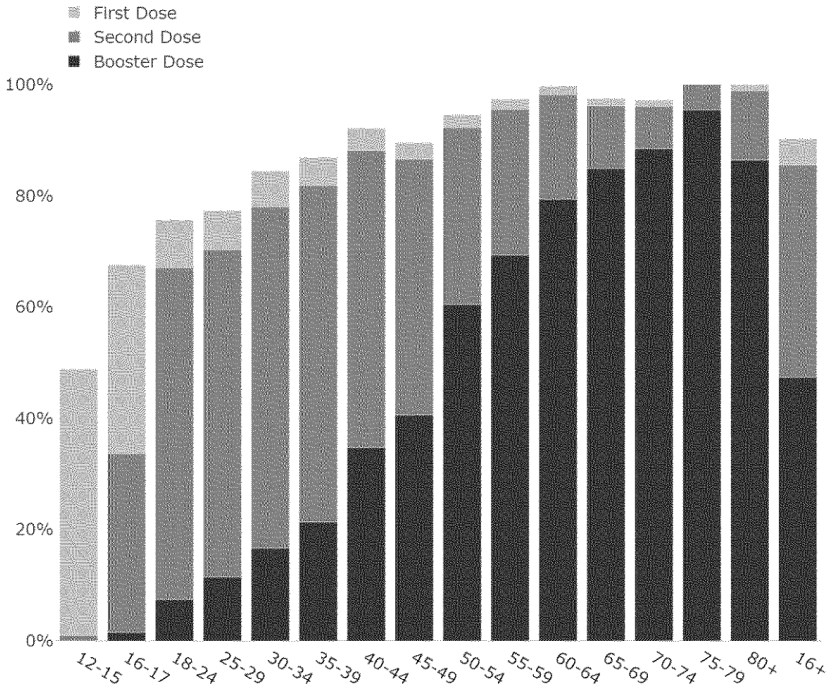
The end of the pandemic will not be brought forward by a large unconstrained wave in the UK. People can still be reinfected as immunity wanes or a new variant emerges.

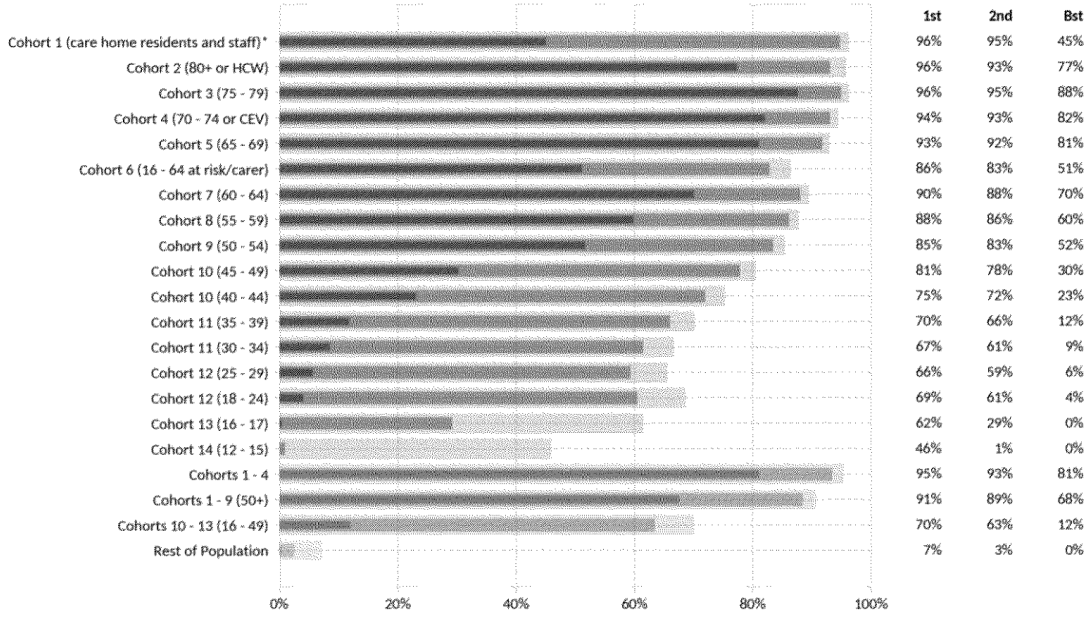
Vaccine rollout: Boosters.



- As of 16-Dec, **47% of people aged 16+** in England had received a booster dose.
- **Booster rollout**: daily average has increased by 31% from 319k on 5th December to 437k on 13th December. Over 600k boosters were reported on 15th December.
- **Booster coverage: 86% of the 80+ cohort and 88% of the 75-79 age cohort have received a booster dose**, the highest age cohort coverage, however, coverage drops to less than 45% for those under 50 years old.
- All NHS regions have a over **66-71% staff booster coverage**, except for **London (58%)**.
- **Booster effectiveness:** vaccine effectiveness of boosters for symptomatic disease is emerging, showing 70% and 75% protection following an AstraZeneca or Pfizer primary course respectively.

Vaccine rollout: Coverage by age (left) and cohort (right) [previous day's data].





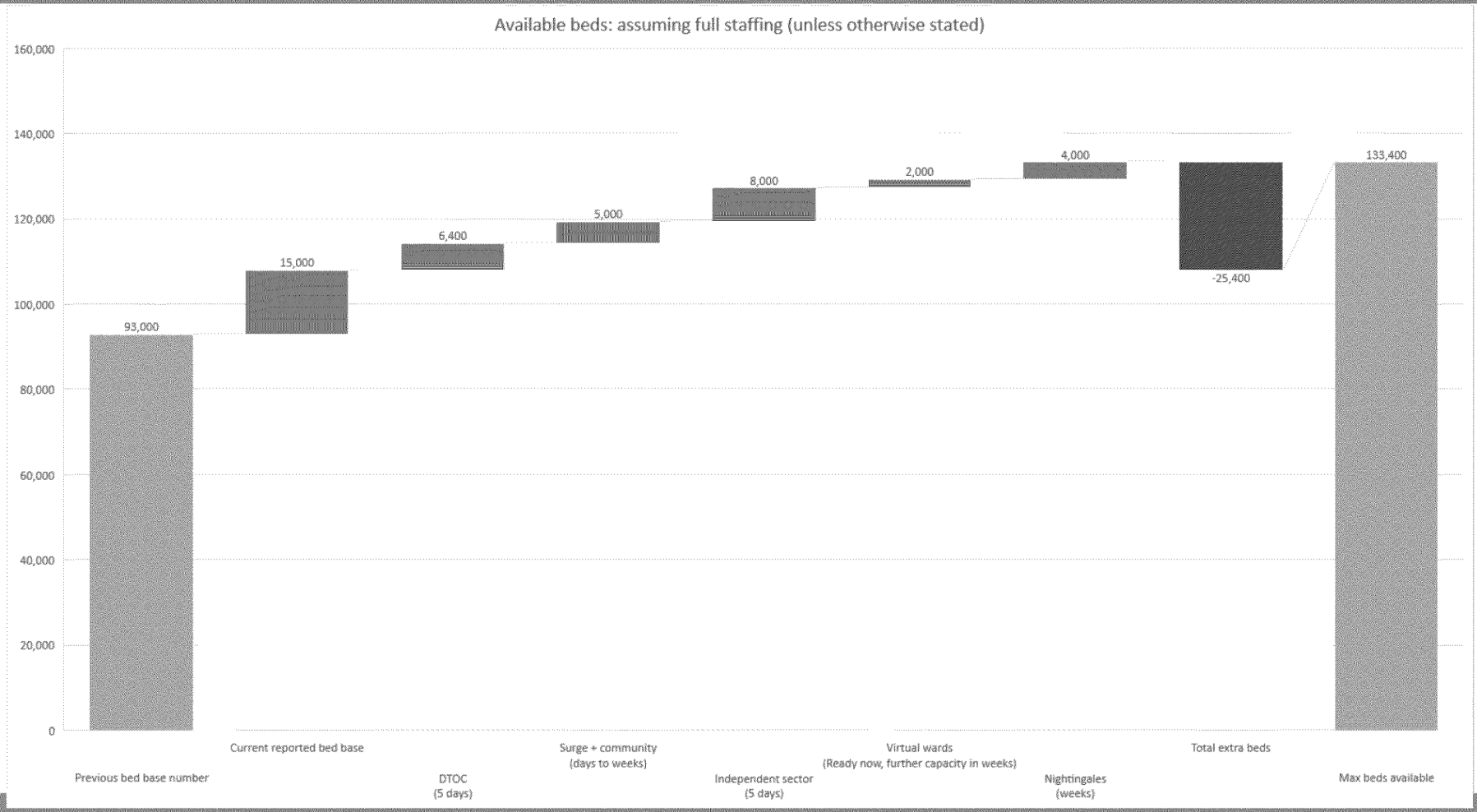
*The data for cohort 1 is from a different source to the other cohorts. It comes from DHSC Capacity Tracker which is self-reported by care homes.

Plan B impact on behaviours.

The future growth rate is uncertain because behaviours are changing. The public are generally complying with Plan B rules. However, our focus grouping & polling suggests people may be de-prioritising social interaction now to make the most of seeing family and friends over Christmas, in case there are more restrictions in January.

- **London Underground journeys have fallen significantly since the introduction of working from home guidance.** 16 Dec saw a 26% decline in journey numbers compared to the previous week. Declines are most prominent during rush hour.
- **Footfall in city centres on 13 Dec fell by 25% compared to the previous week**, dropping to 51% of pre-COVID levels. The drop was seen relatively similarly across the day and nighttime hours.
- **Face coverings:** between 1-12 Dec, among those who travelled on public transport, **84%** wore a face covering for the whole journey.
- **However, there may be lower compliance with other rules** - e.g. from 6-9 Dec (covers period before Plan B), of those who had at least one of the official symptoms of coronavirus & did not test negative, only **21%** complied with **self-isolation**.
- **LIVE**, the live music industry body, said that as of 13 Dec, the number of 'no shows' was at 23%, according to their weekly poll.
- **UK Hospitality** data for w/c 6 Dec showed a 13% drop in business and 15% increase in cancellations compared with pre-pandemic levels.

NHS capacity chart



The NHS is preparing for a bad wave.

NHS capacity is starting this winter in a worse position than last year, with significantly higher non-COVID emergency demand (ambulance wait times are double the past 3 year average), workforce capacity diverted to boosters and staff sickness increasing.

	Action already being taken	Risks / remaining challenges
Hospital surge capacity	NHS have a plan to increase capacity by 25k beds, including: ● **Increasing oxygenated beds:** 10k extra oxygenated beds created since March 2020. NHS has purchased thousands of additional cylinders, and commissioned low flow CPAP devices. ● **Prioritising / canceling elective procedures** (would gain c.3k beds) ● **Accelerating discharge:** NHS TF has a target of clearing at least 50% (5k) delayed discharge beds pre-Christmas. ● **Activating local step-down facilities:** creating 4k of extra beds worth of capacity (same as last year) with 'Local Nightingales'. ● **Maximising use of independent sector**: Usage is currently 113% of 2019/20 levels. NHS are buying 8k beds from the independent sector - this will help protect some electives and maintain critical services.	**Electives**: Adds to waiting list of 5.9m - 313k >52w; 16k >104w. Increases risk of rise in excess deaths. **Discharges**: Social care capacity is limiting factor. **Nightingales**: Challenging to resource - draw on the same pool of hospital staff. **Independent sector**: Much the same doctor workforce as the NHS. **IPC:** May increase to manage nosocomial infections.
Workforce management & contingencies	● **Mutual aid** between trusts for more efficient use of capacity. ● Staff testing & vaccination reduces **nosocomial** infections / outbreaks. ● **Redeployment** to support critical care. ● NHSEI asking for 4.5k **military** personnel to support critical care.	Staff difficulty accessing tests as demand rises. Ongoing prioritisation of LFDs for NHS staff. Risk of staff being redeployed to positions they don't have experience in.
Remote monitoring	Home devices to monitor oxygen levels and remotely support COVID patients. 96% of Trusts use **virtual wards** to support safe and early discharge, and have been asked to maximise these. **Oximetry @home** is similarly used to ensure timely treatment.	These services still require staff to manage them.

If the numbers keep increasing, NHS patient safety and social care will be severely impacted.

Hospitalisations peaked in January 2021 with 34k COVID patients. Without intervention, SPI-M estimates a peak that is **"several times higher"** in January 2022. The **NHS is not anticipating a drop in emergency demand** as in previous waves. This would mean that the NHS is unable to adequately treat everyone that requires care (COVID and non COVID).

To cope with surging demand (>30k) the NHS would need to take a number of 'in extremis' actions.

Triage at the front door (stopping walk-in urgent care and turning away those least likely to survive) meaning patients could die at home without care

Deciding who to admit and who to discharge based on bed availability and ability to treat

Unable to test patients at the door resulting in high nosocomial infections and outbreaks

Stretch staffing ratios (staff looking after more patients than is considered safe)

Ration oxygen supply (NHS say operational max is 34k COVID patients; theoretical limit, including non-COVID, is 50k)

Face increased mortality and excess deaths

Makeshift mortuaries

Adult social care is already fragile. Quality of care will be impacted by depleted workforce and care capacity stretched.

Disruption to the economy and services.

The spread of Omicron means we will see significant workforce absence in the coming weeks, regardless of what steps we take now. COVID-O agreed areas of focus for keeping services running. (Black boxes = key sectors)

PUBLIC SERVICES	Health	Adult Social Care	Medicines + Med. Supplies	Education	Childcare	Prisons
	Statutory LA services	Early Years	Courts + CPS	Fire services + Policing	DWP services	Death management
PRIVATE SECTOR	Food	Passenger Transport	Infrastructure Transport	Essential Retail	Energy	Other CNI
	Telecoms	Construction	Manufacturing	Warehousing	Water	

CDL will chair daily COVID-Os to drive progress. Cabinet colleagues have been tasked to return:

- **by end of today**: contingency plans (tested against 10%, 20%, 30% absences), engagement plans, likelihood of MACA request.
- **by Monday:** proposals for regulatory, policy, or operational changes that can ease disruption.

Key dependencies: testing capacity and prioritisation to key forces; isolation policy (CMO exploring options to adjust 10 day isolation); booster drive in key workforces.

Additional issues and mitigations needed.

Mitigating Policy

- **Testing:** PCR labs are on track to breach capacity next week, with LFDs following shortly after. Stark rationing of tests will be needed. PCRs would need to be prioritised for those eligible for antivirals and high-risk settings. LFDs prioritised for DCT to limit disruption caused by isolating contacts.
- **Self isolation on positive test:** CMO exploring possibility & impact of reducing positive self isolation from 10 days.
- **Antivirals:** Deployed to the vulnerable on receipt of a positive LFD rather than PCR.
- Introduce **general protective guidance for the population and businesses:** To help people manage their own risk and the risk to their customers.
- **Education:** It will be hard to hold the line as absences increase, schools close due to absences, and Directors for Public Health/ parents and Unions call for restrictions. We would seek to protect education and bolster parental and student confidence by maxing mitigations in education settings.
- **Certification**: Move to booster-or-test in early 2022 when LFD availability allows.
- **Shielding guidance:** Could reintroduce for current vulnerable cohorts e.g. unvaccinated, immunocompromised instead of older and boosted. There are significant other harms from shielding and and clinical advice is not to reintroduce it.
- **Legislation**: May be required to help maintain critical public services and mitigate impact on services and sectors (like we had during the first wave) - examples: death management, food supply, local authority functions, tenancy notices, elections.

There are strategic risks to continuing on current policy.

- **Future action:** We would need to be prepared to hold the course or risk the worst impacts.

- **Wide educational, business and societal impacts:** There will be widespread school closures, business closures, essential retail shortages, police and prison and fire service shortages which could erode public and business confidence.

- **Lockdown by the backdoor:** Due to the high number of cases we may inadvertently create an 'organic' but unstructured lockdown where businesses close due to workforce absences and people decrease engagement with economic activities. This could increase economic and social costs.

- **DA divergence:** Sticking with Plan B would be out of sync with the approaches currently being taken by the DAs. This may have impacts on public opinion, trust and health behaviours.

Alternatively, you could escalate the response.

<u>Objective</u>: reduce infections and admissions and the likelihood of unsustainable pressure on the NHS. Suppress growth to complete the booster campaign.

- This would require a choice on (i) how hard to act and (ii) when to act.
- Delaying any wave in the very short term would allow more time for the accelerated booster roll out to take effect. This would allow many hospitalisations to be prevented, not just delayed.
- Proposition: Five week intervention, reviewed after four weeks; stretch school holidays to three weeks; and release restrictions, using measures like certification to speed exit while managing prevalence.

Reimposing national restrictions - how hard do we act?

Objective: reduce infections and admissions and the likelihood of unsustainable pressure on the NHS. Suppress growth to complete the booster campaign.

	Softer		Harder
	Guidance only ('Swedish approach')	**Close super spreader settings**	**Close most settings**
Businesses *(not exhaustive)*	**Close:** no settings. **Open:** all settings **Working safely guidance** (e.g. recommend introducing table service and limiting capacity)	**Close:** Nightclubs, large events, indoor hospitality and indoor entertainment **Open:** outdoor hosp & entertainment; retail; personal care; leisure (gyms)	**Close:** Non-essential retail, indoor leisure, hosp, entertainment, personal care **Open:** essential retail; takeaways; outdoor leisure
Social contact	**Guidance on limiting social contact.**	**Guidance on limiting social contact.** Legal backstop to prevent large gatherings.	**Restrict social contact in law** - Rule of 6 or 2 households outdoors. Alternative: allow indoor mixing.
Schools	**Extend holidays by 1 week** to delay school & FE student return to **10 January** (use w/c 3/1 for Inset and testing). On return, reintroduce mixing restrictions within schools and colleges and online learning for HE.		
Other	**Option to** reintroduce social distancing guidance (2m / 1m+). **All options:** restrictions on visits to care homes.		

When to act?

There is a choice on when to act. The longer you wait, the less impact measures have.

w/c 20 Dec	w/c 27 Dec	w/c 3 Jan
If you act as soon as possible:	**If you act after Christmas:**	**If you act at the start of January**
- Reduces high risk Christmas mixing - Maximum impact on downstream admissions	- Aligns with DAs - Welsh acting Dec 27 - At the current rate of growth, could see **5,000+ hospital admissions per day in January**	- Allows many multiples of growth to build, likely causing significantly worse pressure than January 2021 - High risk of timing out on having **any** impact

Delivery of any regulatory intervention is dependent on:	**Parliament:** Recalling Parliament to enable a vote will add a day or two to implementation.	**Drafting regulations:** 20 December earliest if instruct today; need instructions before Xmas to act after; new/novel rules may take longer.	**Notice to public / businesses:** How much notice do we wish to give?

National restrictions - how long are restrictions in place?

Proposal:

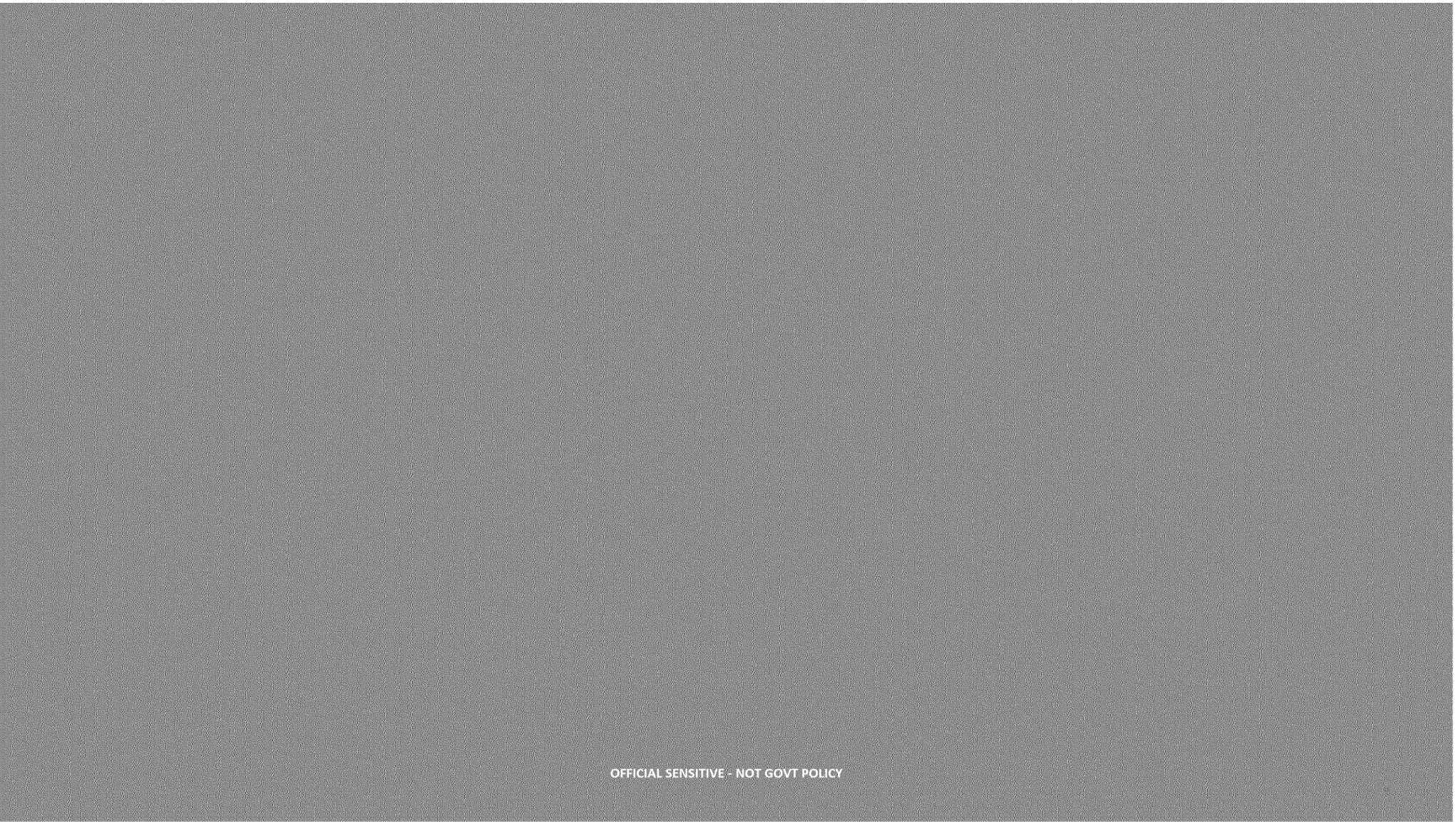
- **Five week intervention with a review after four weeks**. Broadly linked to the timing of the booster rollout.
- School holidays are stretched out to 3 weeks (consideration around additional controls required).
- **A 'roadmap style' release of restrictions to manage an exit wave.** We could look to go faster than the Roadmap - less steps; smaller gaps - potentially enabled by using large-scale testing and certification to help dampen down a wave. Antivirals could help us tolerate high levels of prevalence.

Key considerations at the review point

- **What we know by mid-January:** greater certainty about **booster effectiveness** against symptomatic and severe disease; Omicron **severity** including mortality; all **NHS pressures** including COVID occupancy and length of stay; impact of changing **behaviours**. We will not have certainty about **booster waning**, or **long COVID** outcomes from Omicron.

- **We may not be able to avoid a further wave as we exit**; we will need to ensure the NHS has headroom to cope with a resurgence.

- **If the exit wave is too large, we risk having to take further action.** A gradual easing mitigates this risk.


OFFICIAL SENSITIVE - NOT GOVT POLICY

Antivirals and Therapeutics

We're already deploying antivirals - procuring more and adjusting deployment may mean we can reach more people.

- **The NHS has started making antivirals available** to infected people among the 1m cohort at greatest risk from COVID-19. The PANORAMIC trial - running now - will test whether oral antivirals are effective in a largely vaccinated population in order to allow the NHS to recommend using the treatment more widely. **Those who have tested positive and are in the highest risk category can get immediate access to treatment without participating in the trial.**
- **Antivirals are currently not approved for pre exposure prophylactic use (PrEP).**
- **ATF could work with CMO/NHSE to explore making antivirals available to a wider group of high risk patients in January** without compromising the trial - including use of LFDs instead of PCRs working with CMO / NHSE.
- The 1.1m AVs we are procuring by end Q1 2022 could prevent 91-120k hospitalisations over a winter wave.

Antibody treatments are also available to treat the most vulnerable and those who cannot be vaccinated. Some are unlikely to be effective against Omicron. The Therapeutics Task Force is working to reprofile their portfolio accordingly.

Monoclonal antibodies (mAbs):

- Ronapreve is currently being deployed but UKHSA has stated it will be severely impacted by Omicron. [In use]
- Sotrovimab have been delivered (15k now+35k in Q1) and can be used in outpatient settings - but not as PrEP. [20 Dec[
- AZ's 'Astronaut' could offer passive immunity to up to 50k with little or no response to vaccination (PrEP). But we will not know Omicron effectiveness until Jan and this programme is unfunded. [Mid Jan]

Educational disruption

Protecting education is a top priority. Implementing mitigations in schools alone is unlikely to limit disruption. Widespread closures and high levels of pupil absence are likely without wider societal restrictions to limit the spread of transmission.

Teacher shortages, widespread disruption caused by outbreaks and pupil absence will **likely lead to individual school closures and calls from DsPH / unions to introduce restrictions** - **rotas, remote learning at scale,** prioritising face-to-face learning **for vulnerable children** and **children of critical workers.**

Individual school closures and remote learning have **significant consequences for children and young people**:

- Primary-aged children are often not able to learn remotely.
- Risks viability of **exams**
- As well as educational impact, time out of school affects children's **wellbeing, mental health and development**
- **Safeguarding risks:** When children are not in school, we lose one of the most important contact points.
- **Long term life chances** will be impacted by lower levels of literacy, learning and fewer qualifications.
- **Attendance:** non-COVID absence remains higher than pre-pandemic
- **Parent productivity reduced** if children at home.
- **Substantial impact on the economy**; £350bn in lost future earnings due to missed schooling during the pandemic.

Education has already suffered significant disruption throughout the pandemic. Pupils have lost up to four months of learning, with the greatest impact on **vulnerable and disadvantaged children**. Further school closures will exacerbate the existing impacts on children's wellbeing, mental health and present safeguarding risks

Testing / Isolation

Rapid testing will be a major tool for allowing critical public services and industries to function and give people confidence.

But, if testing demand continues to grow at current pace, capacity will be regularly overwhelmed, despite planned increases, leading to constrained access. If infection rates follow the modelled scenarios, we would expect demand to exceed PCR capacity early next week and LFD stocks soon after that.

We could take extraordinary measures to maximise supply - including direct procurements, MHRA derogations, paying premium rates. But testing capacity cannot double every 2 days in line with cases so we are still likely to need to prioritise testing capacity and potentially make some policy changes.

With high infections, isolation will impact on workforce. There are options to ease requirements e.g. for critical workers - but with impact on testing capacity and transmission. Isolation could also be strengthened for non-critical workers.

Testing

- PCR capacity: prioritise PCR capacity through a formal framework; focusing testing on those most at risk; advise LFDs for others with symptoms; abolish confirmatory PCRs
- LFD capacity: prioritise LFDs for critical workers participating in DCT; potentially reduce need for DCT (e.g., not requiring it for boosted people); potentially suspend certification.

Self isolation

- To manage testing capacity and transmission: all contacts and anyone with symptoms to isolate if they can't test.
- To manage the impact on workforce: we could shorten the length of isolation for some, possibly based on LFD testing (capacity permitting). We could allow unvaccinated critical workers access to DCT.

Insight from polling and focus groups

Limited public concern about Omicron, although focus groups have reflected increased engagement through the week as case numbers have risen, matched with experience from personal contacts. Belief in personal jeopardy is low, with spontaneous commentary of 'mild symptoms' in conversation.

- 29% think that new COVID variants are a major or significant risk to them personally (+3% pts on last week), and almost half (48%) think that new COVID variants are a major or significant risk to the UK, up 5% pts on last week

Little change in the plans made for the Christmas period, with signs from focus groups that contact is being scaled back now in order to prioritise Christmas activities. Over two thirds say they will spend Christmas with 1-3 households.

- 20% say they will spend Christmas with their own household, 25% say two households, and 23% three households, unchanged on two weeks ago
- 48% say they will limit their contact with people they don't live with, unchanged on two weeks ago and down from 63% last year.

There is appetite for additional government guidance for Christmas. 25% think Government is providing information to help people make the right choices when deciding how to celebrate Christmas, a fall (-3% pts) on two weeks ago.

- 23% are confident that the Government has a clear plan for living safely with coronavirus, the lowest score recorded this year

Despite considerable COVID-fatigue and disengagement, there is support for additional restrictions, with those which come at low personal cost (e.g. face coverings, work at home) prioritised over close/personal social contacts and education.

- 63% in England support Plan B, although only 21% think it will be effective in controlling the spread of COVID
- 66% think that the new restrictions will have to be reintroduced over the Christmas period in response to the Omicron variant (e.g. limits on household mixing), up 6% pts on last week

Source: YouGov polling for Cabinet Office, 13-15 December 2021, sample size c. 2500 weighted to represent the UK

Vaccine Effectiveness: Early data suggest significant loss of protection against symptomatic disease, even after a booster, and some loss of protection against severe disease.

Comparison of vaccine effectiveness against the Delta variant compared to the Omicron variant.

		Symptomatic Disease		Hospitalisation
		AstraZeneca	Pfizer	Pfizer
Second Dose: 0-3 months	Delta	65% (60-75%)	90% (80-95%)	99% (90-99%)
	Omicron	**0% (no range)**	**65% (40-85%)**	**Insufficient Data**
Second Dose: 4-6 months	Delta	45% (20-60%)	65% (50-70%)	90% (85-95%)
	Omicron	**0% (no range)**	**35% (no range)**	**70% (no range)**
Second Dose: 6+ months	Delta	40% (20-60%)	60% (50-75%)	85% (75-90%)
	Omicron	**0% (no range)**	**35% (no range)**	**Insufficient Data**
Booster Dose: All Periods	Delta	90% (85-95%)	90% (85-95%)	95% (90-99%)
	Omicron	**70% (40-85%)**	**75% (55-85%)**	**Insufficient Data**

Source: vaccine effectiveness expert panel, 16 December (not yet cleared by dCMO):

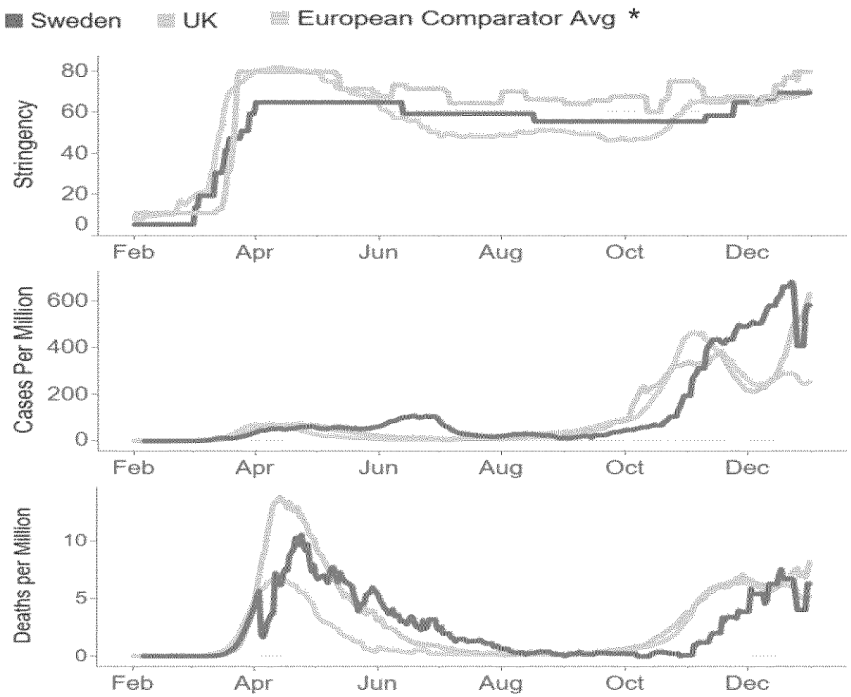
International comparators

Many comparators have tightened domestic and border restrictions, both in response to the Delta (D) wave, and the emergence of Omicron (O):

Europe	**EU Cion**	Called for Member States to consider mandatory vaccination (**O**).
	Austria	Unvaccinated can only leave homes for essential reasons (**D**). Planning mandatory vaccinations for all from February (**D**). Considering UK travel ban (**O**)
	Belgium	Closing kindergartens/ primary schools early and placed restrictions on large indoor events (**D**)
	Denmark	12am curfew for nightclubs, bars and restaurants, no alcohol after 2200; closed theatres, cinemas museums; remote education above 10th grade (**O**)
	France	Closed nightclubs for 10 weeks (**D**). Bespoke restrictions on UK (preventing all but essential travel, 24hr PDT, Day 2 test) (**O**).
	Germany	Unvaccinated only access essential venues (**D**). Considering mandatory vaccinations for all from Feb (**D** / **O**). Considering UK travel ban (**O**)
	Greece	Has introduced mandatory vaccines for over-60s (**D** / **O**). PDT for all arrivals including from EU and UK (**O**).
	Ireland	Closed nightclubs; limited indoor hospitality (table service, max 6, 50% event cap); 3 household mix limit, extended vaccine certification (**D**). PDT for all arrivals including from EU and UK (**O**).
	Italy	Only vaccinated/recovered can access most public settings (**D**). PDT for all arrivals including from EU and UK (**O**)
	N'lands	Evening lockdown in place, almost all public places shut after 5pm (**D**)
Rest of World	**Israel**	Ban on all international travel to at least 29 December. Israelis barred from travelling to red list countries, including UK and many European countries. Green pass required for gatherings of 50+. Mask-wearing encouraged outside home.
	S Africa	At lowest level of five-tier system: masks mandatory in public settings; nighttime curfew, organisers *encouraged* to cancel large events.
	S Korea	Social distancing reinstated; hospitality, entertainment venues required to close by 2100. Social gatherings of no more than 4 people (vaccinated). Certification used to access public venues for anyone aged 12+.
	USA	Tightened pre-departure testing. Strengthened messaging on vaccination and boosters. California and NY: mask mandates and certification indoors.

Sweden's initial Covid-19 response was less stringent than comparators. Cases fell over summer, but it ended 2020 with the highest cases in Western Europe

Top: NPI stringency[2]; Mid: Cases per million; Bottom: Deaths per million[1]
1 February – 31 December 2020



Note: *European comparators: Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, Netherlands, Norway, Portugal, Spain, Switzerland

Note: Sweden recorded relatively low testing rates in 2020 - 383 tests per thousand from 1 February – 31 December compared with 640 in the UK. Among European comparators, only Switzerland (367), the Netherlands (352) and Poland (173) did fewer.

Initial Response

- Sweden initially introduced **fewer restrictions than any other European comparator.** In the first wave stringency scores stayed well below those of the UK and the European comparator average (max 65 compared to 80 in the UK and 81 comparator average during the first wave). The government relied on recommendations rather than mandatory guidance on most issues including face coverings and social distancing.
- **It avoided implementing a lockdown and schools remained open throughout** (except for ages 15+), but did limit public gatherings to 50 people, implement table service only, restrict travel and ban visits to care homes.
- **Deaths in Sweden were above the European comparator average** during the first wave. An academic study of all cause mortality from mid-February to May 2020 found that Sweden had one of the longest durations of excess mortality.[3]

Summer and Second Wave

- Between 1 – 31 July new Covid-19 cases fell by 80% and remained at a relatively low level until mid-September. Restrictions were gradually reduced between June and September but remained higher than the European average. However, by November the second wave had clearly arrived and **cases spiked, reaching the highest level amongst European comparators by December.**
- In response the government reduced the limit on public gatherings to eight people, banned alcohol sales after 10pm and closed schools early in December. All but one of the regions also introduced tighter guidance, including on working from home and avoid indoor environments like shopping centres and gyms.
- Overall, Sweden saw **higher total deaths per million in 2020** than the European average and significantly higher than Nordic counterparts. Sweden had recorded a total 859 deaths per million in 2020, compared to 223 in Denmark, 101 in Finland and 80 in Norway. Only the UK (1,079), Spain (1,088), Italy (1,228) and Belgium (1,679) saw more among European comparators.

Continuing with Plan B - impacts

Economic **Overall** **MEDIUM negative**	A 'no further restrictions' option is likely to have a **medium macroeconomic impact** overall. The additional macroeconomic cost of the booster package will be limited. If boosters provide consumers and businesses with more confidence to continue spending and investing, there could be an economic benefit in the short-run. Self-adjusted behaviours - such as voluntary social distancing - could negatively affect economic activity during the winter period. However, if the growth in cases continues to be exponential, there is a **significant risk of greater workforce absences** through people self-isolating. This could create **shortages and sector specific issues**, particularly in critical sectors, for example, ambulance and police services, or specialised trained units (e.g. air traffic controllers).
Social **Overall** **HIGH negative**	**Ethnic minority groups and deprived communities have had disproportionately high hospitalisation** and death rates in all previous waves. Current measures are designed to protect those who can WFH and who already have the vaccine - many of these vulnerable communities fall outside of both categories. It is therefore likely that **further protective measures would be required to reduce hospitalisations and deaths amongst these communities**.
Behaviours and compliance	Messaging and coverage of the risk of Omicron may affect individual behaviour as people begin to voluntarily avoid high risk settings - for example hospitality and retails settings.

If additional boosters are **not sufficient to stop exponential growth in cases**, hospitalisations and deaths, more stringent measures could be required to stop unsustainable pressure on the NHS. This could mean l**onger and more severe restrictions which limit economic activity to a greater degree than relatively early measures** which could act to flatten the infection curve before cases and hospitalisations spiral. The nature and scale of the socioeconomic impacts is determined by the length and severity of measures. Extensive periods of harsher restrictions have been detrimental to people's mental health and to victims of domestic abuse.

Harder restrictions - impacts

Health **Overall LOW-MEDIUM positive**	SAGE/SPI-M modelling shows that without soon and stringent restrictions, there is a high risk of exponential growth. In an optimistic scenario, hospitalisations will surpass the January 2021 peak. Anticipate sustained high pressure on an already stretched healthcare system: NHS bed capacity is currently at 93%; COVID-19 admissions in Jan-22 will likely exceed Jan-21 levels exacerbated by higher non-COVID emergency demand than in previous waves, when NPIs reduced demand. This also gives us more time to provide people with more boosters, and gives time for immunity to be realised.
Economic **Overall MEDIUM negative**	Of some of the hardest hit sectors, GVA in the transportation and storage and other service activities (which includes personal care) sectors are still well below levels seen in Q4 2019. Over the course of 2020 hospitality revenue was down 54%, a loss of £72 billion in sales. However, acting early could save further economic disruption in the longer, potentially reducing the long term risk of economic scarring.
Social **Overall HIGH negative**	Restrictions on socialising will likely negatively impact mental health and wellbeing, as well as personal and familial relationships. Ethnic minority groups and young people will be affected by the closure of certain sectors. There will be a high impact on frontline, public sector workforces undercutting progress to reduce and potentially increasing public service backlogs.
Behaviours and compliance **Overall POSITIVE**	Implementation of this results in a visible step change of expected behaviours that enables other safe behaviours to be enacted. However, a strong scientific rationale and messaging to educate how these measures will help is needed to land this with the public. Focus groups suggest the public perception of severity will be led by the introduction of clear and decisive government interventions. Although not welcomed, it indicates the severity of threat, and the need to take things seriously. Shutting certain sectors of the economy sends a strong signal to comply and also provides a framework to which the public can behave (in certain settings). Close social/family contacts will be prioritised, and feel lower risk to people. Compliance is likely to be highest when the guidance is clear, consistent and directive, but is likely to be lower than previously seen, due to lower levels of engagement with Covid in the news, and reduced trust in government.

Economic impacts of roadmap steps

Step 1: reopening of schools, colleges and care homes (one visitor/resident); return of outdoor activity, removal of 'stay home' comms. [8 Mar – 11 Apr]
Step 2: many sectors reopened (incl. non-essential retail, indoor leisure, outdoor hospitality and personal care) and the end of 'stay local' comms. [12 Apr – 16 May]
Step 3: reopening of hospitality & accommodation. Mass events (with capacity restrictions) and international travel also returned (subject to country traffic light restrictions). [17 May – 18 Jul]
Step 4: events, hospitality and other businesses allowed to operate fully – removal of capacity caps, 'table service only', social distancing restrictions and WfH guidance. [19 July onwards]

Please note this is not an assessment of the macroeconomic impact of each roadmap step, nor should the trends described be considered as applying to a future scenario if the UK reintroduced roadmap steps. The economic impact of further restrictions is uncertain and depends on variables such as the epidemiological context and the duration of restrictions.

	Step 1 (compared to third lockdown)	Step 2 (compared to Step 1)	Step 3 (compared to Step 2)	Step 4 (compared to Step 3)
GDP	GDP **4% below pre-pandemic levels** [during Step 1b, 29 Mar – 11 Apr]	GDP **3.1% below pre-pandemic levels** [12 Apr – 16 May]	GDP **1.2% below pre-pandemic levels** [17 May – 18 Jul]	GDP **0.4% below pre-pandemic levels** (as of Sept 2021).
Furlough	Furlough usage across all sectors during Step 1 fell by 2ppts. Total employments furloughed: **4.3m**	Furlough usage across all sectors during Step 2 fell by 3ppts. Total employments furloughed: **3.2m.**	Furlough usage across all sectors during Step 3 fell by 3ppts. Total employments furloughed: **2m.**	Furlough usage across all sectors fell by 2ppts at the end of furlough. Total employments furloughed: **1.7m** on 19 July **(fell to 1.1m at the end of furlough).**
Business trading levels	% of firms trading increased by 3ppts to **75%.** % firms that had paused trading decreased to **22%.**	% of firms trading increased by 8ppts to **83%.** % of firms that had paused trading continued to fall (to **13%**).	**%** of firms trading increased by 5ppts to **88%.** % of firms that had paused trading continued to fall (to **9%**).	% of firms trading increased by 5ppts to **91%.** % of firms that had paused trading continued to fall (to 5%).
Consumption and consumer confidence	Card spending growth (Wo2Y) increased by 6ppts to **1.3%.** Consumer confidence increased by 6ppts (to **77**).	Card spending growth (Wo2Y) increased by 12ppts to **13.2%.** Consumer confidence increased by 5 points (to **82**).	Card spending fell by 3ppts in Step 3, although remained over 10% above 2019 levels. Consumer confidence increased by 2ppts (to **84**).	Card spending growth remained broadly flat at 10%. Consumer confidence fell by 1ppts to **83** in August.

Notes: GDP estimates use monthly ONS GDP data, taken as an average over the months within each step. Furlough estimates use HMRC furlough data, taken as an average over the months within each step.

Sources: ONS (GDP), HMRC (Furlough), BICS (Business trading), ONS Project Mercury (Card spend), Morning Consult (Confidence)

Alternatives to social & economic restrictions

We have considered alternative options including using new capabilities or following the approach of comparators. Alternatives are very unlikely to be effective in managing the current wave, due to deliverability, impact or implementation challenges.

Options we have considered and ruled out for now:

- **Segmentation or differential restrictions for the unvaccinated** (e.g. stringent social contact limits for the unvaccinated): Requires novel primary legislation and would be extremely contentious. Given low overall proportion of unvaccinated; scale of growth and implementation timelines, *would have no impact on current wave.*
- **Further incentivising vaccine uptake:** for instance through paying people to take the booster. Evidence from focus groups and polling suggests this could further reduce public trust in this cohort.
- **Going further on certification:** for example expanding to more settings (e.g. hospitality). This is unfeasible in the short term due to pressures on testing demand. There is an option to move to vaccine-only certification, however this was ruled out by the health secretary earlier this week.
- **Mandating vaccination:**

LPP

We also do not recommend including 'stay in the UK' and 'minimise travel' as part of any intervention, given the rapid national and international dispersion of Omicron.

The Roadmap Steps (Spring 2021)

Step 1a

- Stay at home (+ recreation with 1 other person)
- Schools and colleges are open for all students
- Practical Higher Education Courses are open
- Wraparound childcare
- Funerals (30), wakes and weddings (6)

Step 1b

- Rule of 6 or two households outdoors.
- No household mixing indoors
- Outdoor sports and leisure facilities
- Organised outdoor sport allowed (children and adults
- Minimise travel. No holidays.

Step 2

- Indoor leisure open for use individually or within households
- Rule of 6 or two households outdoors. No indoor mixing.
- Outdoor attractions such as zoos, theme parks and drive-in cinemas
- Libraries and community centres open.
- Personal care and all retail open.
- Outdoor hospitality
- All children's activities, indoor parent and child groups (up to 15 parents)
- Domestic overnight stays and self-contained accommodation (household only)
- Funerals (30), wakes, weddings, receptions (15)
- Minimise travel. No international holidays

Step 3

- 30 person limit outdoors. Rule of 6 or two households indoors.
- Indoor entertainment and attractions
- Domestic overnight stays
- Organised indoor sport
- Most significant life events (30)
- All outdoor entertainment
- All accommodation open
- Capacity limits for large events
- International travel allowed.

Step 4

- No legal limits on social contact
- Nightclubs and other settings open.
- Large events open with capacity caps
- No legal limits on all life events.