NHS RESET
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NHS CONFEDERATION

# Exploring referral-to-treatment waiting trajectories in 2021

This briefing explores recent trends in waiting times and considers how waiting patterns may unfold in 2021. It accompanies Building Back Elective Care, an NHS Confederation briefing on what the NHS needs to clear backlogs of planned care as the immediate pressures of COVID-19 start to subside.

## Key points

- 2020 saw unprecedented disruption to elective activity. This produced the largest official waiting list on record, with 4.52 million incomplete patient pathways in December 2020, up from 4.3 million a year before. Yet despite setting records, this official number is far short of where it could be.
- There were 5.9 million fewer new referral-to-treatment (RTT) pathways in 2020 compared to 2019, representing a 30 per cent fall. This number represents a hidden waiting list of people yet to join the official queue.
- The specialties most disrupted have been trauma and orthopaedics, and ophthalmology – areas with many conditions that will steadily worsen if left untreated. Not all patients among this hidden group will eventually join the official list. However, it is reasonable to assume that many will eventually find their way onto it.
- In addition to increased numbers of people waiting, most can expect to wait far longer for care. The number of people waiting for over a year now stands at over 224,000 compared to below 1,500 a year ago, according to figures published by NHS England and NHS Improvement. But a closer look at the distribution of time spent waiting shows that 21 per cent of patients (970,000) have waited longer than half a year and 15 per cent of patients (700,293) have already waited 40 weeks or longer.
- By considering likely changes in future rates of admissions and outpatient activity, we have created three models of future waiting numbers, which serve to demonstrate the scale of the challenge ahead for the NHS.
- The models, all of which take 2019's activity levels as a template for normal provision, show that to maintain any sense of control over the waiting list, the NHS will need to increase capacity considerably above levels than have previously been sustained.

# Introduction

During 2020, elective activity fell sharply in response to COVID-19.[1] There were 1.4 million fewer completed admitted pathways and 3.3 million fewer non-admitted pathways compared to 2019. These represent falls of 39 per cent and 25 per cent respectively.

Patients also waited considerably longer, with one-third of all patients already waiting longer than 18 weeks by the end of 2020. This contrasts with the 18-week standard that says no more than 8 per cent of pathways should exceed an 18-week wait.

Given this sharp reduction in activity – 4.7 million fewer completed pathways in 2020 than in 2019 – it is somewhat surprising that by the end of 2020, the official waiting list had reached *just* 4.52 million. While this represents the largest waiting list on record, there were 5.9 million fewer referrals onto referral-to-treatment (RTT) pathways in 2020 than the year before. Many of these patients will still need treatment and therefore represent a hidden waiting list.

This paper explores these figures in more depth and looks at how waiting patterns may unfold in 2021.

# Waiting-time definitions

Before launching into a detailed discussion about waiting times, it is worth briefly explaining the four key metrics:

- **Admitted pathways:** relates to day case and overnight inpatient admissions.
- **Non-admitted pathways:** covers all patients whose pathway has ended for any reason other than an admission. Treatment delivered through outpatient appointments falls into this category, but it is important to note it covers more than outpatient care.

[1] All referral-to-treatment waiting-time data referenced in this paper is sourced from https://www.england.nhs.uk/statistics/statistical-work-areas/rtt-waiting-times/

- **Incomplete pathways:** refers to those patients who are currently waiting for their treatment to begin.
- **New periods:** refers to those patients who begin their RTT pathways during a given time.

Full definitions and rules on the management of RTT pathways are available on NHS England and NHS Improvement's website.

# Recent trends in waiting times

To put the impact of 2020 into context, it is important to consider recent waiting-time trends.

Figure 1 shows how the key waiting metrics have changed since September 2016, the first point from which we can calculate a 12-month rolling average for all four metrics.

**Fig 1: Waiting-time trends since September 2016**

Between September 2016 and December 2019, there was:

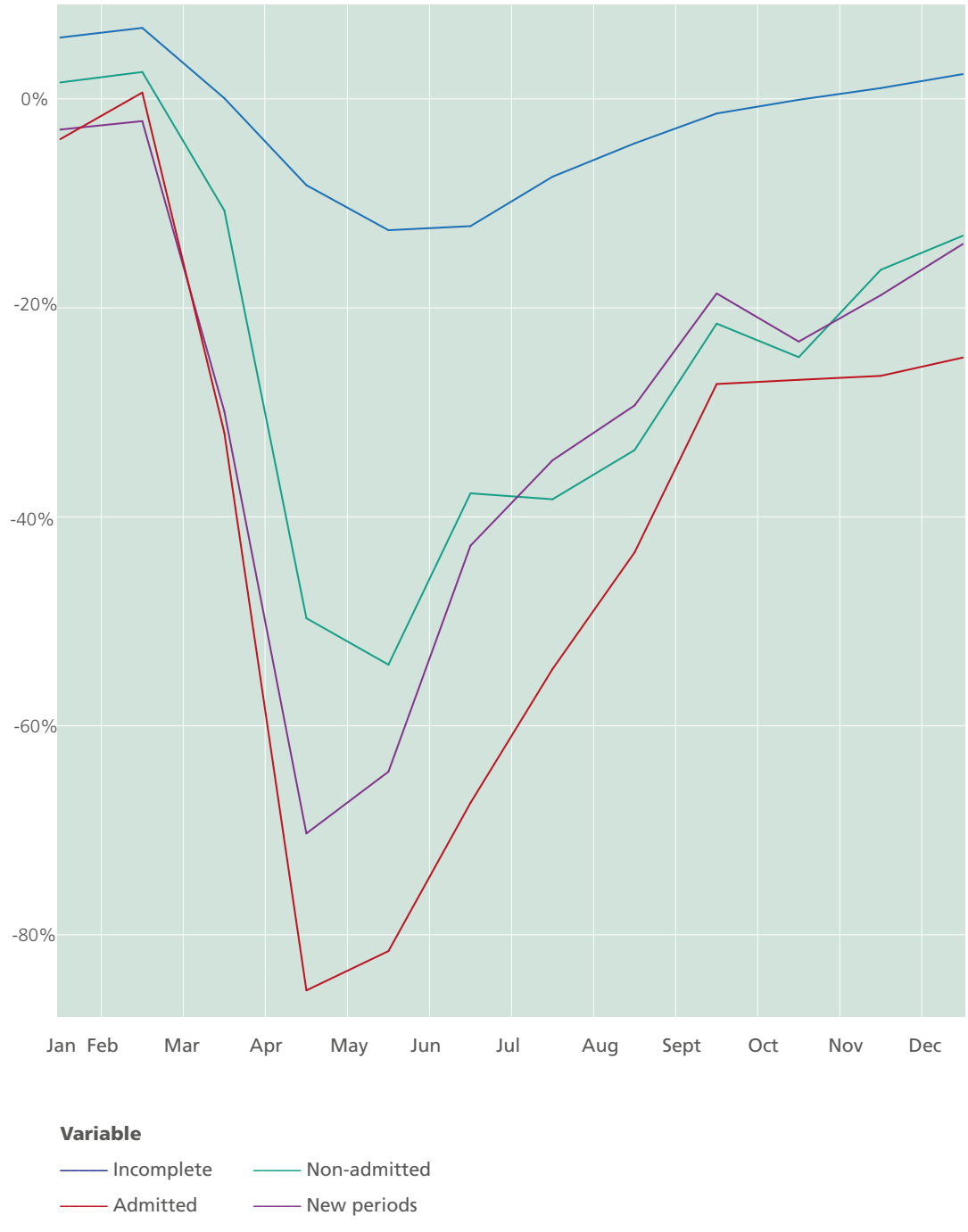
- **an increase in demand** – the number of new starts rose from a rolling average of 1.51 million in September 2016 to 1.68 million by the end of 2019
- **a reasonably steady increase in the number of completed non-admitted pathways** – from a rolling 12-month average of around 952,000 in September 2016 to 1.09 million by the end of 2019)
- despite the increasing demand, **a fall in the monthly rolling average for completed admitted pathways** – from around 304,000 per month to 294,000 over the same period
- **the imbalance in supply and demand therefore led the number of incomplete pathways to grow** – the 12-month average of the total number of people waiting rising from 3.50 million in September 2016 to 4.34 million by the end of 2019.

It is therefore clear that even before the pandemic, the service's ability to keep pace was outstripped by increased demand.

# 2020: a year like no other

Figure 2 shows how 2020's waiting-time metrics compare to those in 2019 and the percentage change for each metric on a month-by-month basis.

**Figure 2: Year-on-year percentage change in RTT activity – 2019 and 2020 compared**



The total number of incomplete pathways in 2020 began at around 6 per cent higher than a year earlier, with other waiting-time metrics being broadly in line with 2019's levels.

By March, this pattern changed dramatically. Activity and referrals plummeted at unprecedented rates, reaching their lowest levels between April and May. These corresponded with the urgent requirements in the letter from Sir Simon Stevens of 17 March 2020 to 'free up 30 per cent or more of the country's 100,000 general and acute beds by April'.

The return in activity over the early summer follows the phase two letter asking for providers to consider making provision for 'at least some non-urgent elective care'.

There is then a push in late summer/early autumn as providers respond to the phase three letter which contained specific targets for resuming elective activity, including:

- In September at least 80 per cent of their last year's activity for both overnight electives and for outpatient/daycase procedures, rising to 90 per cent in October (while aiming for 70 per cent in August), and
- 100 per cent of their last year's activity for first outpatient attendances and follow-ups (face-to-face or virtually) from September through the balance of the year (and aiming for 90 per cent in August).

Despite monumental efforts, admitted pathways have remained at around 75 per cent of 2019's levels since September 2020. And while the NHS continues to make progress on non-admitted pathways, by the end of the year the numbers were still around 14 per cent below the rate achieved a year earlier.

The appendix contains a list of key dates and links to support documentation from 2020.

Crucially, new starts on the RTT pathway also plummeted by as much as 70 per cent year on year, gradually recovering over the course of the year, but still considerably below the levels one would typically expect. In total, there were 5.9 million fewer new referrals in 2020 compared to 2019.

From this it is possible to conclude that there were:

- 1.4 million fewer completed admissions in 2020 compared to 2019 (a 39 per cent fall)
- 3.3 million fewer non-admitted pathways in 2020 compared to 2019 (a 25 per cent fall)
- in total, 4.7 million fewer completed pathways than would normally be expected.

The official total number of people waiting dipped to around 13 per cent below its 2019 levels in the summer of 2020, but this returned to pre-pandemic levels by the close of the year. This slight increase in overall waiting numbers over the last few months of 2020 happened despite new starts being considerably below 2019 levels. In other words, demand is already exceeding supply even though we are missing up to 5.9 million referrals currently hidden from the official waiting list.

## What has happened to the missing 5.9 million?

NHS England and NHS Improvement publish data relating to RTT referrals by specialty or treatment function. From this, it is possible to calculate how different types of care have been affected, as shown by the table on the following page.

**Table 1: Change in new starts by treatment function – 2019 and 2020 compared**

| Treatment function | New starts 2019 | New starts 2020 | Change | Percentage change |
|---|---|---|---|---|
| Other | 4,839,869 | 3,583,157 | -1,256,712 | -26% |
| Trauma and orthopaedics | 2,174,426 | 1,334,524 | -839,902 | -39% |
| Ophthalmology | 1,962,457 | 1,294,466 | -667,991 | -34% |
| Ear, nose and throat (ENT) | 1,296,477 | 840,569 | -455,908 | -35% |
| General surgery | 1,549,141 | 1,150,570 | -398,571 | -26% |
| Gynaecology | 1,383,820 | 1,040,822 | -342,998 | -25% |
| Dermatology | 1,165,045 | 841,108 | -323,937 | -28% |
| Gastroenterology | 1,065,181 | 785,599 | -279,582 | -26% |
| Cardiology | 922,558 | 654,847 | -267,711 | -29% |
| Urology | 979,458 | 740,849 | -238,609 | -24% |
| Oral surgery | 604,185 | 373,338 | -230,847 | -38% |
| Neurology | 487,305 | 352,704 | -134,601 | -28% |
| Thoracic medicine | 496,559 | 362,391 | -134,168 | -27% |
| Rheumatology | 416,728 | 286,416 | -130,312 | -31% |
| Plastic surgery | 270,367 | 193,566 | -76,801 | -28% |
| General medicine | 257,359 | 189,412 | -67,947 | -26% |
| Geriatric medicine | 147,216 | 97,768 | -49,448 | -34% |
| Neurosurgery | 123,626 | 96,790 | -26,836 | -22% |
| Cardiothoracic surgery | 40,118 | 30,213 | -9,905 | -25% |

We see that by volume, trauma and orthopaedics followed by ophthalmology are the treatment functions which showed the most sizeable drops in referral volumes in 2020. Typically, these are pathways that include major procedures such as joint replacements and cataract surgery. In other words, many patients yet to present on these pathways are unlikely to have simply recovered without treatment. Further, when they are eventually referred, it is a reasonable assumption that many will have considerably worsened conditions.

Some, of course, will have pursued other treatment options through private provision. However, data published by the 'Private Healthcare Information Network (PHIN)' indicates that private activity saw a similar dip during the middle of 2020. While there was strong and growing patient demand towards the end of the year, total volumes did not exceed levels seen in previous years in 2020. It is safe to assume therefore that this group has found an alternative source of treatment. Some patients will sadly have died, but even taking 2020's excess mortality into account, it remains reasonable to assume that a sizeable proportion of this 5.9 million will eventually present for treatment.

While we cannot predict exactly how many will return, or precisely when, it is sensible to anticipate their eventual arrival. As such, we can plausibly model several scenarios.

## Changes in waiting times in 2020

Before looking forward to 2021, we should also consider how the length of time that people are waiting has changed.

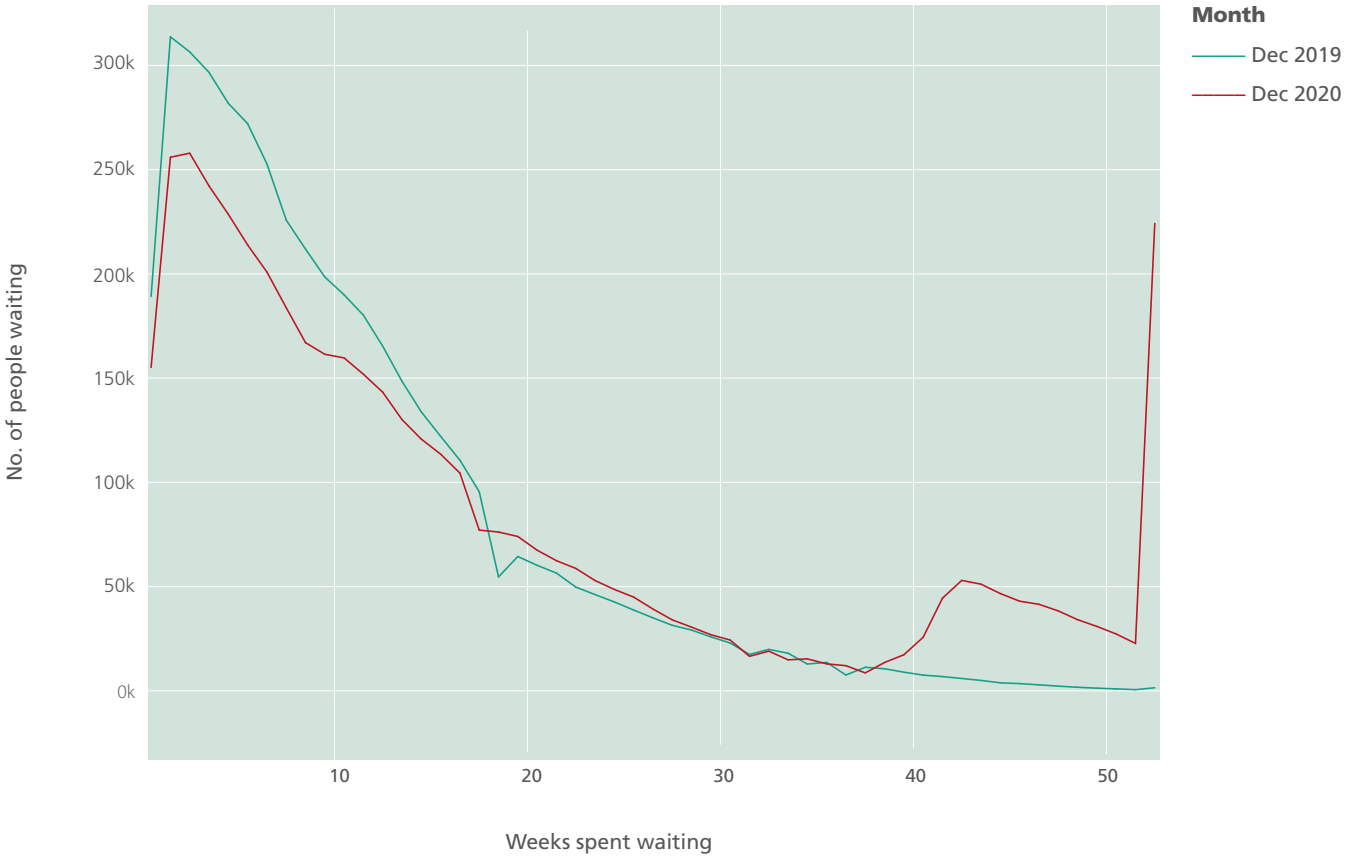
The headline figures published by NHS England and NHS Improvement focus on median waiting times, the proportion of patients whose treatment begins within 18 weeks and the number of people waiting over a year. These metrics generally show lengthening waits:

**Table 2: Standard waiting duration metrics – December 2019 and December 2020 compared**

| | | December 2019 | December 2020 | Percentage change |
|---|---|---|---|---|
| Incomplete RTT pathways | Median wait (weeks) | 8.3 | 11.2 | 35% |
| | 92nd percentile (weeks) | 24.9 | 47.4 | 91% |
| | No. within 18 weeks | 3,695,063 | 3,067,658 | -17% |
| | % within 18 weeks | 84% | 68% | -19% |
| | No. > 18 weeks | 721,521 | 1,453,675 | 101% |
| | No. > 52 weeks | 1,467 | 224,205 | 15183% |
| | % > 52 weeks | 0.03% | 4.96% | 14829% |
| Admitted (un-adjusted) RTT pathways | Median wait (weeks) | 9.6 | 9.2 | -4% |
| | 95th percentile (weeks) | 37.7 | 52+ | ? |
| | No. within 18 weeks | 183,762 | 125,807 | -32% |
| | No. > 52 weeks | 806 | 16,773 | 1981% |
| Non-admitted RTT pathways | Median wait (weeks) | 6.0 | 5.2 | -13% |
| | 95th percentile (weeks) | 27.5 | 45.5 | 65% |
| | No. within 18 weeks | 830,636 | 678,102 | -18% |
| | No. > 52 weeks | 914 | 21,463 | 2248% |
| New RTT periods | No. of new RTT periods | 1,462,659 | 1,259,426 | -14% |

Almost all the metrics above moved in the 'wrong' direction during 2020. Yet we see further causes for concern when we examine changes in the distribution of waiting times.

## Figure 3: Duration of time spent waiting – December 2019 and December 2020 compared




The dramatic increase in the number of people waiting over one year – from 1,467 to over 224,000 between December 2019 and December 2020 – has been widely discussed in the media. However, figure 3 also shows a wave of long waiters who are less widely reported but who have already waited well over 40 weeks.

The bump at around 43 weeks is the remnant of a wave of people who were referred shortly before March 2020 and who have been waiting ever since. In normal times, most would have reasonably expected to have been seen by May or June, but they continue to wait. With each week that passes, that group gets increasingly close to waiting over a year.

We see from this that 21 per cent of patients (970,000) are waiting longer than half a year and 15 per cent of patients (700,293) have already waited 40 weeks or longer. While providers work hard to reduce this number, a list of this size cannot easily be tackled even at the best of times. With continued reduced capacity, this challenge is even greater.

# Expectations in 2021

## Methodology to model likely numbers in 2021

By examining the different components of the waiting list metrics in the context of a hidden waiting list of up to 5.9 million, it is possible to model what future waiting lists may look like. It is important to remember that the total number of people waiting is not just a product of the number of people joining the queue. The rate at which people are treated is also key.

As noted elsewhere, the total number of people waiting at any given time is simply those already in the queue plus those joining the queue, less those leaving it.

In terms of waiting-list figures, that means the total number of people waiting (that is, the number of people on the incomplete waiting list) is the previous month's incomplete waiting list figure plus the number of new periods less the sum of the admitted and non-admitted pathways, taking into account any patients whose pathways have been nullified.[2]

total incomplete pathways in month 2
=total incomplete pathways in month 1+new periods
-(non-admitted+admitted pathways+other removals)

By making sensible assumptions about likely behaviour and, crucially, the capacity of the system to return to normal levels, we can model different scenarios. This is informed by known activity levels in 2020 and the continued requirements for social distancing and constraints arising from COVID-19. These are detailed below.

For all models we take 2019 as our default 'normal' year. As noted earlier, there has been a historic trend towards increased demand that exceeds supply, leading to a growing waiting list. Taking 2019 levels as 'normal' is therefore already an optimistic assumption.

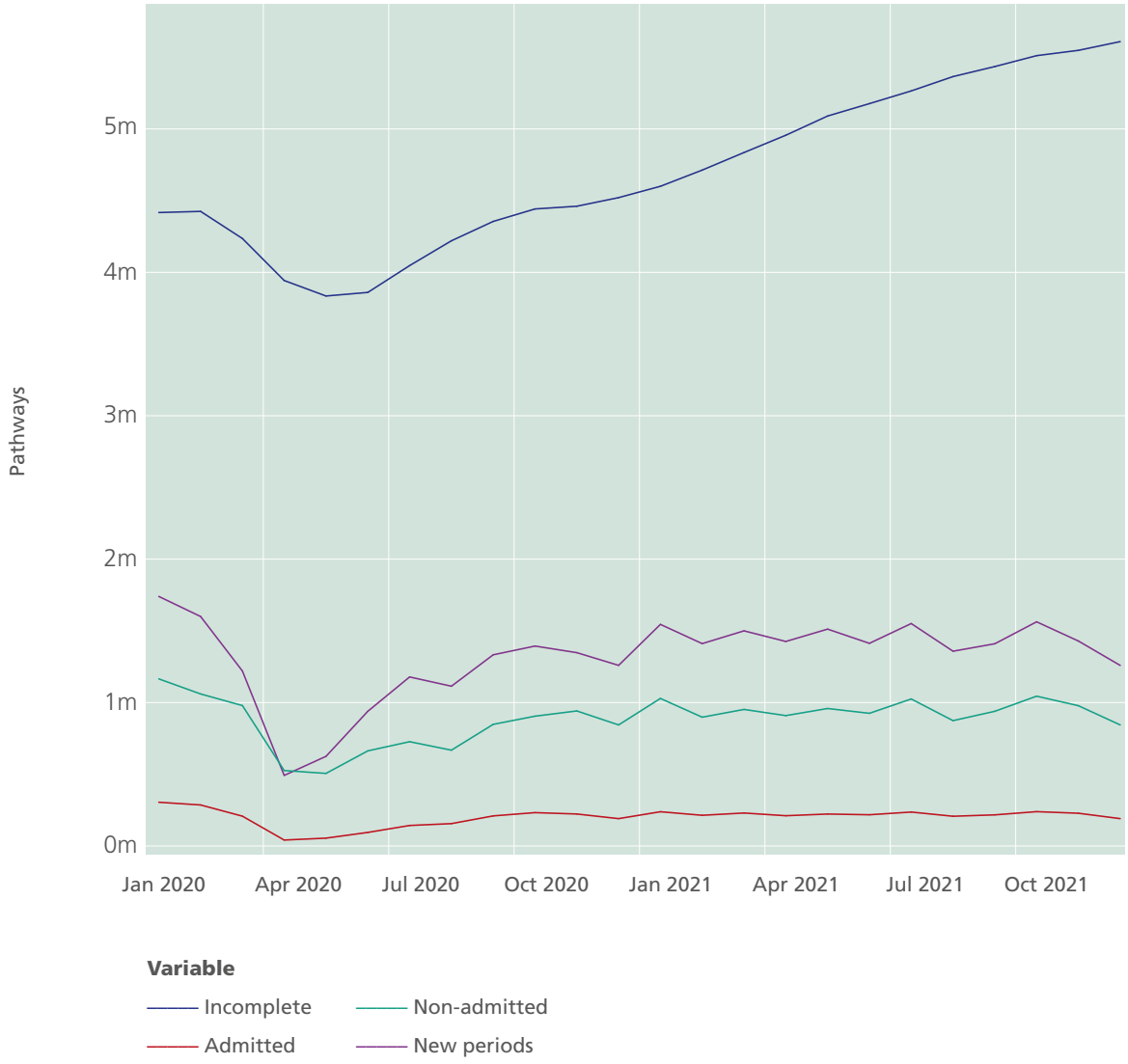
[2] For example, patients who did not attend their first outpatients appointment. See the RTT rules suite for more information. Historically, between 2016 and the end of 2019, this ran at around 16 per cent of new periods for each given month. Since July 2020, it has risen steadily from 10.3 per cent to 13.0 per cent by December 2020.

## Model 1: our baseline assumption

In this model, we assume that all levels of activity remain at the same proportions achieved in December 2020 as December 2019's activity.

In that month, completed admitted pathways were 25 per cent lower than in December 2019, non-admitted pathways were 13 per cent lower and new periods 14 per cent lower. Applying those proportions to the volumes seen in each month during 2019, we could expect waiting figures in 2021 along the lines set out in figure 4.

**Figure 4: Forecast waiting numbers assuming metrics stay at current proportions of normal activity**



Even from this quite conservative forecast, we see that at current activity and referral levels, we could expect to see a waiting list exceeding 5.6 million by the end of the year.

Because referral levels would remain at a lower rate than in 2019, rather than reduce the number of patients on the hidden waiting list, we would see 2.8 million fewer new periods in 2021 compared to 2019. In total therefore, we would end up with a hidden waiting list of 8.7 million by the end of 2021 in addition to a record 5.6 million official waiting list.

This soaring number is the effect of the waiting list being a cumulative sum of all those referred but not yet treated. If referrals exceed completed pathways, then the list will grow, even if referrals are lower than normal.

To be clear, we do not believe that activity and referral levels will stay precisely at the proportions seen at the end of 2020. Rather, we have included this model to illustrate the impact of continuing as we are.

### Model 2: A realistic model based on a return in line with vaccination progress

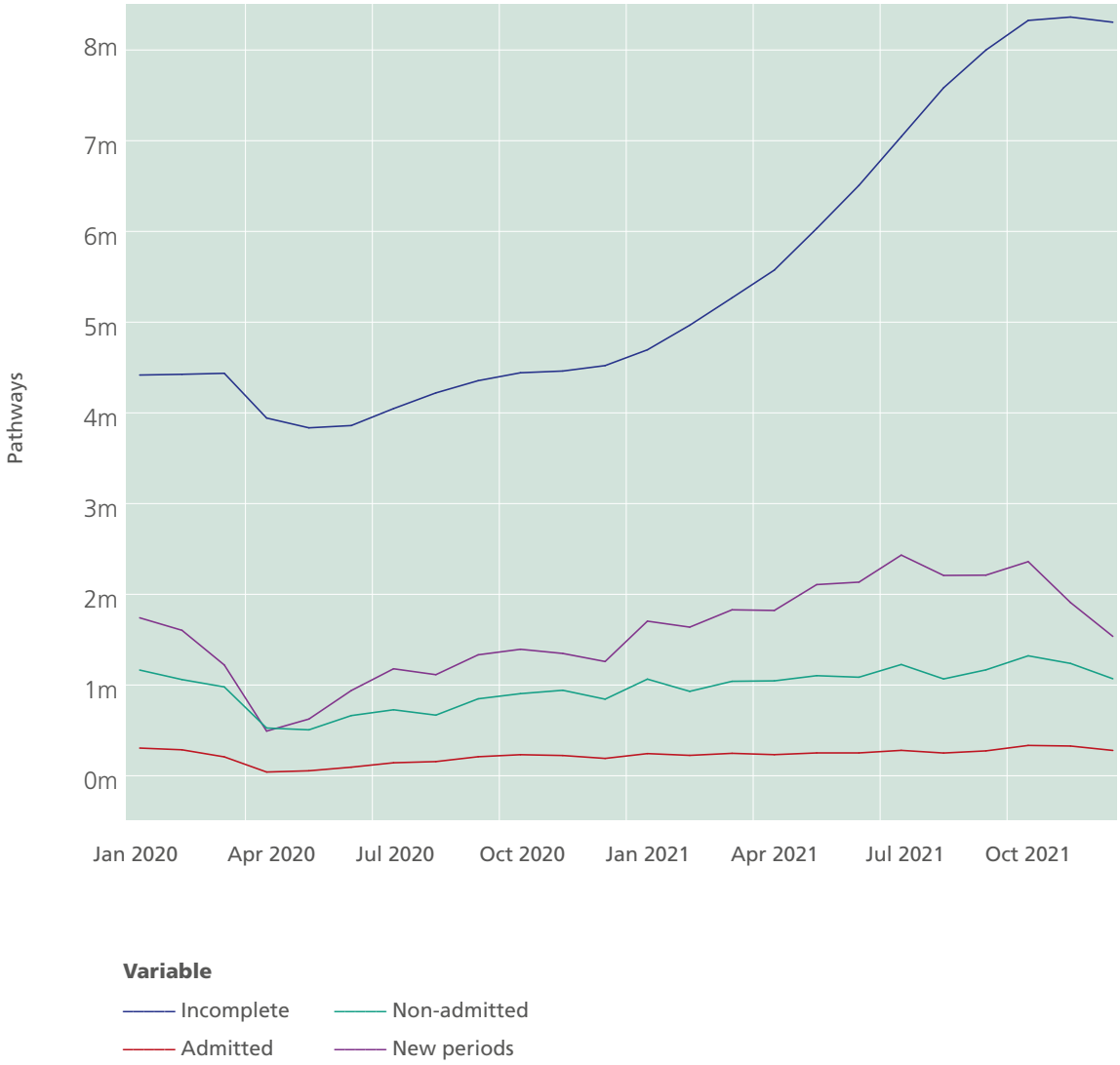
The rapid and accelerating vaccination programme is clearly welcome. It is reasonable to expect that staff absences due to suspected COVID-19 will be reduced, and while infection control measures remain likely for some time, there should soon be benefits in terms of increased capacity. Conversely, patients currently on the hidden waiting list may present in greater numbers as they become more willing to seek care following vaccination.

In this model, we assume the following:

- Completed admitted care pathways, which have been stubbornly around 75 per cent of 2019 levels since the autumn, increase at a modest but steady rate, eventually reaching 2019 levels in the autumn of 2021 and then begin to exceed 2019 levels by 10 per cent by the end of the year.
- Non-admitted completed pathways increase at a faster rate, reaching 2019 levels by late spring and then gradually rise to 10 per cent above 2019 levels by the autumn.

- New periods continue to increase, reaching 2019 levels by February 2021. At this point we begin to eat into the hidden waiting list, and the numbers grow over the summer to a peak of 40 per cent above 2019 levels before falling back to a relatively typical year-on-year growth of +5 per cent by the end of the year. On average, this would be 18 per cent higher than 2019's levels throughout 2021.

**Figure 5: Forecast RTT figures based on realistic improvement**



With these assumptions, the considerable improvement in the rate of activity compared to our 'baseline' model is far outweighed by the increased number of patients moving off the hidden waiting list and seeking care.

With these assumptions, we would see a peak waiting list in October approaching 8.4 million people. Despite that high number, it is worth noting that only 3.7 million of the 5.9 million hidden waiting list (that is, just over 63 per cent), will have joined the official waiting list. It is therefore possible that this could represent a sizeable underestimate of the eventual total.

Given that there were typically one referral for every 15 GP appointments in 2019,[3] we would need to see the rate of referrals increase to around 1 in 12 or 13 appointments on average between March and December 2021 to realise this rate of growth in referrals.

### Model 3: A rapid resumption of activity rising to 15 per cent above that seen in 2019 by late summer

With this model, we have assumed similar rises in the number of new RTT pathways as in model 2, but have modelled much more aggressive activity levels. We assume we return to 2019 admission levels by May, followed by sustained rises that build to 15 per cent above 2019 levels by August. Completed non-admitted pathways would also return to 2019 levels by February before rising quickly to 15 per cent above 2019 levels by May.

If achieved, these activity rises would be unprecedented in scale, but would still result in a waiting list peak at around 6.9 million by late 2021.

Because this model focuses on different activity levels but keeps the number of referrals at the same rate as model 2, we would see better control of the official number of people waiting, but the proportion of the hidden waiting list that presents would be exactly the same: 63 per cent.

[3] NHS Digital GP appointment data showed 303,501,765 appointments in 2019; total RTT pathways over same period: 20,181,895. Ratio: 1:15

## Figure 6: Forecast RTT figures based on rapid improvement of activity levels

## NHS Confederation viewpoint

Short of changing referral thresholds, or placing new restrictions on referral practices, there are clear limits on what can be done to manage the timing and rate at which those on the hidden waiting list seek referrals and in turn join the official waiting list. Indeed, these models show that there is good reason to believe that a successful vaccination programme that calms concerns among the public may quickly lead to greater pressures on the system as patients feel confident to seek care.

We can see that the size of that hidden waiting list – even if 65 per cent return over the course of the year – dwarfs the system's ability to keep reasonable control of the total number of people waiting. We also see that without considerable increases in activity – well above historic levels – the hidden waiting list could easily rise alongside unprecedented growth in the official waiting list.

# Appendix: COVID-19 timeline during 2020

| | |
|---|---|
| **16 March 2020** | Matt Hancock announces advice to reduce unnecessary social contact. |
| **17 March 2020** | Notice of elective freeze to come into force by 15 April to free up 30,000 or more of the country's 100,000 general and acute beds. |
| **23 March 2020** | First national lockdown begins. |
| **29 April 2020** | Phase two letter from Sir Simon Stevens and Amanda Pritchard asks the service to 'make judgements on whether you have further capacity for at least some routine non-urgent elective care' among other measures. |
| **17 July 2020** | Phase three letters published with specific targets for resuming elective activity. |
| **18 September 2020** | The National Clinical Validation programme is announced with the aim to review all patients on admitted care pathways by 23 October to prioritise those needing care, identify those waiting to delay beyond COVID-19 and remove patients who may no longer wish to have the procedure. |
| **31 October 2020** | Second national lockdown announced to begin on 5 November 2020. |
| **26 November 2020** | Regional tiers announced to replace national lockdown on 2 December 2020. |
| **19 December 2020** | Announcement of tighter restrictions around Christmas following the identification of a new variant strain. |

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## About NHS Reset

COVID-19 has changed the NHS and social care, precipitating rapid transformation at a time of immense pressure and personal and professional challenge. One message from leaders and clinicians across the UK has been clear: we must build on the progress made to chart a new course.

NHS Reset is an NHS Confederation campaign to help shape what the health and care system should look like in the aftermath of the pandemic. Recognising the sacrifices and achievements of the COVID-19 period, it brings together NHS Confederation members and partners to look at how we rebuild local systems and reset the way we plan, commission and deliver health and care.

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