Estimating the number of COVID-19 vaccinations during the 2022 autumn/winter booster campaign administered to residents of older and younger adult care homes

21 December 2022, Version 1

Background

This publication outlines how the NHS England vaccine deployment programme has used operational management information to track the number of COVID-19 boosters administered to residents of all adult care homes in England during the 2022 autumn/winter campaign. Operational management information has been used to supplement information from the Capacity Tracker data collection tool, following changes to the general frequency of reporting requirements in Capacity Tracker, to ensure that there is a focus on protecting residents in care homes.

Capacity Tracker

Capacity Tracker was originally developed by NHS England and the Better Care Fund team to enable better management of hospital discharges by identifying available capacity in care homes.

The Capacity Tracker was identified by DHSC as a suitable system to support national and local planning during the COVID-19 pandemic and its repurposing was announced via the government's Action Plan[1] (15 April 2020) and joint letter[2] (17 April 2020) from DHSC and NHS England, together with the Care Quality Commission and the Care Provider Alliance.

The data collection covers several areas: vaccination, visiting, Personal Protective Equipment availability, workforce, Infection Prevention Control training and wider support. Questions for care home providers capturing COVID-19 vaccination monitoring were added in December 2020 and updated in 2021.

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[1] https://www.gov.uk/government/publications/coronavirus-covid-19-adult-social-care-action-plan
[2] https://content.govdelivery.com/bulletins/gd/UKCQC-286ff51

Until 31 March 2022, care home providers received a financial incentive to submit data on Capacity Tracker. Since 31 July 2022, providers have been mandated, through a provision in the Health and Care Act 2022, to update Capacity Tracker with a specified subset of data on a monthly basis within a designated 7-day reporting window. Providers are still encouraged to update some data on a weekly basis, or more frequently where possible, to aid local operational support.

In line with all previous campaigns, since September 2022, Capacity Tracker has been used to collect data on COVID-19 autumn 2022 booster doses, defined as any booster delivered under the autumn 2022 booster campaign from 5 September 2022. DHSC[3] and NHS England[4] have continued to publish weekly figures for autumn boosters from Capacity Tracker, despite the changes to the requirements for care providers to report data, because weekly data updates are encouraged. However, response rates are likely to be higher during the mandatory reporting window and lower in other weeks of the month and, as a result, weeks which coincide with this window may see a bigger increase in vaccination rates.

Only three mandatory reporting windows for Capacity Tracker fall within the period during which autumn 2022 boosters are delivered to care home residents. Therefore, there is a need to supplement information from Capacity Tracker with additional operational management information to oversee progress of vaccination delivery in care homes, identify gaps and inform deployment of NHS resources.

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[3] https://www.gov.uk/government/collections/monthly-statistics-for-adult-social-care-england
[4] https://www.england.nhs.uk/statistics/statistical-work-areas/covid-19-vaccinations/, see 'Weekly COVID-19 vaccinations' section

Operational sources used to supplement Capacity Tracker

NHS England uses two operational data sources to supplement the Capacity Tracker information on the number of autumn boosters delivered to care home residents:

1. **Live Time survey data from local immunisation teams**

    Between 5 September and 23 October 2022, immunisation teams attending care homes were eligible for an outcomes-based incentive if they submitted a Live Time survey return within a week of delivering vaccinations. The form[5] collected information on the vaccination activity completed at the care home, including the number of residents who received a COVID-19 vaccination.

2. **National Immunisation Management System (NIMS) data**

    NIMS provides patient-level data for any COVID-19 vaccinations given in England. For the purposes of tracking vaccinations delivered to care home residents, a registry of potential care home patients is created using address matching on patient GP records from the Master Patient Index (to link residential addresses to care homes) and COVID-19 testing event data (which indicates where tests were carried out in a care home). Any testing events for residents of care homes in the last 91 days are matched with vaccination event data to identify vaccinations delivered to care home residents.
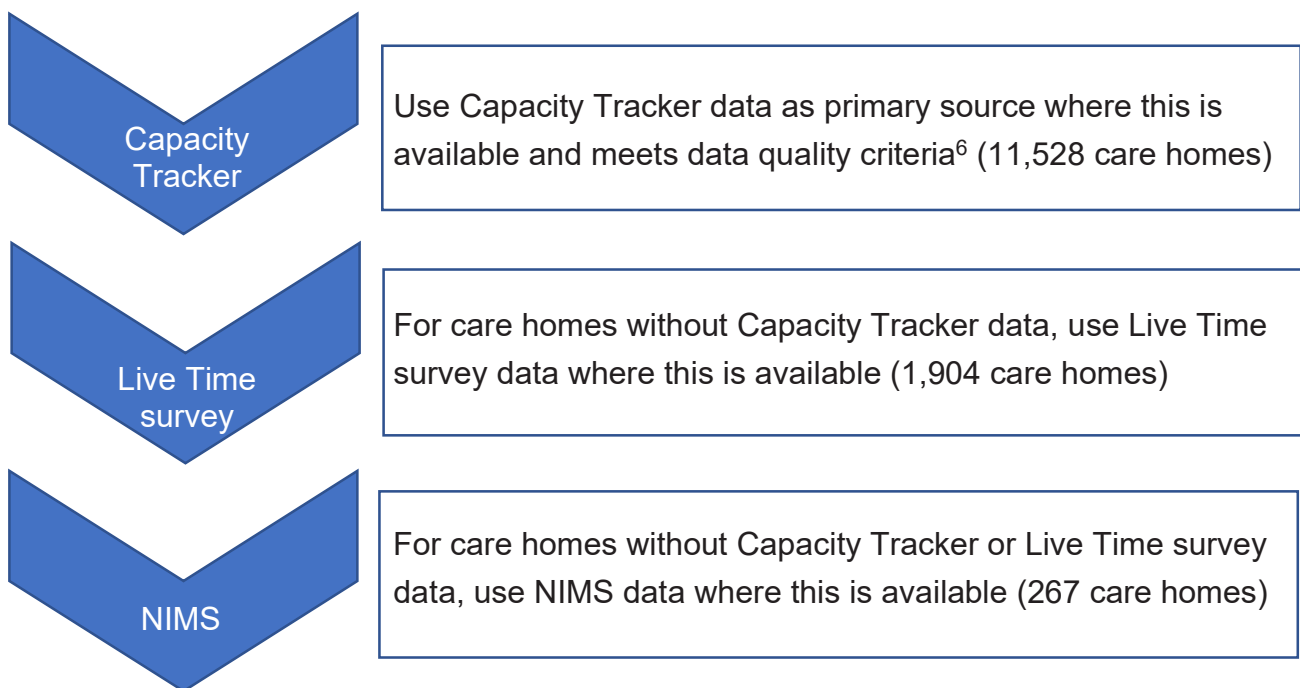
Capacity Tracker is also used to gather data on autumn boosters delivered to care home staff, and flu vaccinations to both staff and residents. The Live Time survey also collected data on autumn boosters for care home staff, and flu vaccinations for staff and residents, however, the outcomes-based incentive for submitting the survey was based around the delivery of autumn boosters for residents. As a result, these other elements of the survey data are less robust and have not been used as part of the additional operational data in addition to the Capacity Tracker data in the same way as for care home residents.

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[5] https://forms.necsu.nhs.uk/autumn-winter-care-home-visits/

Latest data using Capacity Tracker plus operational sources

1. Methodology

Information on 15,022 care homes was reviewed, and operational data sources were used to estimate the number of autumn boosters administered to residents of 13,699 of those care homes using the following step-by-step approach:

Capacity Tracker	Use Capacity Tracker data as primary source where this is available and meets data quality criteria[6] (11,528 care homes)
Live Time survey	For care homes without Capacity Tracker data, use Live Time survey data where this is available (1,904 care homes)
NIMS	For care homes without Capacity Tracker or Live Time survey data, use NIMS data where this is available (267 care homes)

Assurance that autumn boosters had been delivered to residents was received via regional NHS England teams for the remaining 1,323 care homes.

For a small number of care homes, the number of autumn boosters reported in the Live Time survey or NIMS is greater than the number of residents recorded in Capacity Tracker. Where this is the case, the Live Time survey or NIMS figure for the number of vaccinations is adjusted down to match the number of residents in that home as recorded by Capacity Tracker, as follows:

- where Capacity Tracker records zero residents but the Live Time survey or NIMS report that autumn boosters have been delivered to residents, the autumn boosters

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[6] Capacity Tracker data is considered to meet data quality criteria where the reported number vaccinated with an autumn booster 2022 is greater than 5, or where the number vaccinated with an autumn booster is less than or equal to 5 but this is greater than half of the resident population. Capacity Tracker is available to update at any time, aside from any scheduled maintenance. This means that downloads of data will reflect the latest position at time of download and may differ from downloads taken at different times.

are excluded from the estimated total. This affects 186 care homes using Live Time survey data and 43 care homes using NIMS data.

- where Capacity Tracker records fewer residents than the number of autumn boosters reported in the Live Time survey or NIMS, the Live Time survey figure is adjusted down to match the number of residents in that home (in other words, it is assumed that all residents have received an autumn booster). This affects 383 care homes using Live Time survey data and 63 care homes using NIMS data.

2. Latest figures

Using this approach, as at 18 December 2022, there were 33,283 autumn boosters identified as being delivered to care home residents in addition to those captured in Capacity Tracker, bringing the total number of autumn boosters delivered to 300,744 and increasing the proportion of all care home residents reported to be vaccinated with an autumn booster from 74.4% to 83.7% (table 1).

Table 1: % of all residents reported to be vaccinated with an autumn booster, Capacity Tracker only and total estimate based on operational data, data to 18 December 2022

NHS Region of Residence	Total number of residents	Number of residents reported to be vaccinated with an autumn booster				% all residents reported to be vaccinated with an autumn booster	
			Additional data from:				
	Capacity Tracker	Capacity Tracker	Live Time survey	NIMS	Total (combined sources)	Capacity Tracker only	Total (combined sources)
England	**359,365**	**267,461**	**30,615**	**2,668**	**300,744**	**74.4%**	**83.7%**
East of England	42,107	31,307	3,836	318	35,461	74.4%	84.2%
London	28,475	19,154	2,527	279	21,960	67.3%	77.1%
Midlands	72,473	53,794	5,761	692	60,247	74.2%	83.1%
North East and Yorkshire	60,346	45,278	4,446	584	50,308	75.0%	83.4%
North West	47,883	35,382	4,178	317	39,877	73.9%	83.3%
South East	65,107	48,256	7,075	349	55,680	74.1%	85.5%
South West	42,974	34,290	2,792	129	37,211	79.8%	86.6%

The assumption that all residents have been vaccinated in the 446 care homes where fewer residents are recorded in Capacity Tracker than autumn boosters reported in the Live Time survey or NIMS may result in the total estimated number of autumn boosters being slightly overestimated. For example, if it was assumed that 74.4% of residents had been vaccinated in these care homes (the figure from Capacity Tracker data only), the total estimate of residents vaccinated from the combined sources would decrease from 83.7% to 83.4%. However, the estimated number of residents vaccinated with an autumn booster excludes autumn boosters delivered in care homes where data is not available but regional NHS

England teams have confirmed that residents have been vaccinated (1,323 care homes) and therefore it is likely the total number of residents vaccinated is underestimated overall.

Table 1 presents coverage as measured against the total number of care home residents and includes people who are not yet due to have their autumn booster. Table 2 presents data for only those care home residents that are reported to have completed a full primary course of COVID-19 vaccination doses[7]. For the purposes of this analysis, these residents are considered to be eligible for an autumn booster. In practice, some residents may have completed a primary course less than 3 months ago and hence not yet be eligible for an autumn booster.

For eligible residents, there were 31,547 autumn boosters identified as being delivered to care home residents in addition to those captured in Capacity Tracker, bringing the total number of autumn boosters delivered to 299,008 and increasing the proportion of eligible care home residents reported to be vaccinated with an autumn booster from 79.5% to 88.9% (table 2).

Table 2: % of eligible residents reported to be vaccinated with an autumn booster, Capacity Tracker only and total estimate based on operational data, data to 18 December 2022

| NHS Region of Residence | Number of residents vaccinated with a full primary course | Number of residents reported to be vaccinated with an autumn booster | | | | % all eligible residents reported to be vaccinated with an autumn booster | |
| | | | Additional data from: | | | | |
	Capacity Tracker	Capacity Tracker	Live Time survey	NIMS	Total (combined sources)	Capacity Tracker only	Total (combined sources)
England	**336,388**	**267,461**	**28,979**	**2,568**	**299,008**	**79.5%**	**88.9%**
East of England	39,725	31,307	3,704	301	35,312	78.8%	88.9%
London	26,012	19,154	2,394	264	21,812	73.6%	83.9%
Midlands	67,573	53,794	5,497	687	59,978	79.6%	88.8%
North East and Yorkshire	56,907	45,278	4,328	551	50,157	79.6%	88.1%
North West	44,883	35,382	4,062	312	39,756	78.8%	88.6%
South East	61,201	48,256	6,471	343	55,070	78.8%	90.0%
South West	40,087	34,290	2,523	110	36,923	85.5%	92.1%

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[7] A full primary course does not include COVID-19 boosters. For most people, a full primary course is defined as 2 doses of COVID-19 vaccination. For a small number of people, however, including people who are severely immunosuppressed, a full primary course may mean a different number of doses.