Excess mortality in care homes in Nottingham and Nottinghamshire, during the first and second wave of COVID-19 pandemic

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Abbreviations:

TCG-Tactical Coordinating Group

COVID-19- Coronavirus Disease 2019

SARS-CoV-2- Severe Acute Respiratory Syndrome Coronavirus 2

ONS- Office for National Statistics

PHE- Public Health England

LeDeR- Learning Disabilities Mortality Review

OVOTT- One Version of the Truth

SAGE- Scientific Advisory Group for Emergencies

IMD- Multiple deprivation

OCT- Outbreak Control Team

EoL- End of Life

LRF- Local Resilience Forum

PPE- Personal Protective Equipment

CQC- Care Quality Commission

ECRT- Enhanced Care Response Team

ED- Emergency Department

CHC- Continuing Healthcare

1. Background

At the request of Health and Social Care Tactical Coordinating Group (TCG), a multiagency working group has been established to review excess mortality in Nottingham and Nottinghamshire care homes during COVID-19 pandemic. The areas of this review have been determined by questions raised during the working group meetings commenced in February 2021.

Various reports published information on care home mortality data for different periods of time throughout the pandemic. While most of these reports covered the first wave (spring 2020) others looked at more recent mortality data during the second wave, which started in October 2020 and continued until spring 2021 (locally until April 2021). This report covers the period from March 2020 to June 2021. However, the data used for this report cover different periods of time.

1.1. Aim

The aim of this report is to collate local and national care home mortality data, conduct benchmarking and recommend suitable actions, based on the identified areas of strength and lessons learnt.

1.2. Methods

Where possible, local care home excess mortality data were compared to the relevant national data from Office for National Statistics (ONS), national reports on care home excess mortality by Public Health England (PHE) and LeDeR (Learning Disabilities Mortality Review). The local data were provided by the Nottingham and Nottinghamshire Public Health Analyst team, Public Health England COVID Network Analysis Project and the local One Version of the Truth (OVOTT) toolkit.

2. Excess mortality in care homes- National data

In their recent report, ONS included data for the first year of the pandemic in England and Wales covering March 2020 to April 2021. According to this report, there were 173,974 deaths of care home residents during this period, which was an increase of 19.5% compared to the previous five-year average. 42,341 (24.3%) of this excess mortality was related to COVID-19 [1]. Earlier reports showed 2.3 times more deaths than expected in care homes between 20 March and 7 May 2020, with deaths from this population accounting for 43% of national deaths in the week ending 8 May 2020 [2].

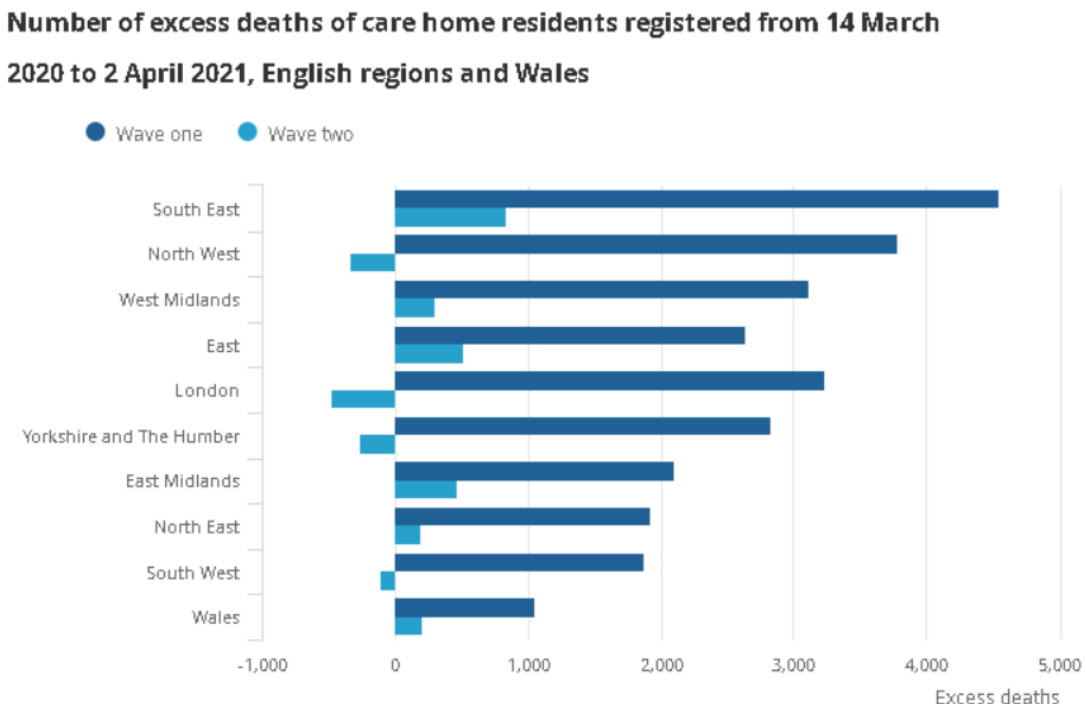
When comparing mortality between the two waves of the pandemic, a higher number of total deaths of care home residents were documented during the first wave (27,079) than the second wave (1,335). However, the proportion of documented COVID-19 related deaths were higher in the second wave (25.7%) than the first wave (23.1%) [1].

Despite this, the actual proportion of Covid-19 related deaths during the first wave could be higher as deaths could be attributed to undiagnosed Covid-19 during the first months of the pandemic. Therefore, delays in diagnosis and testing during the first wave as well as improvements in protective measures and vaccination should be considered when comparing the COVID-19 outcomes between the two waves [1, 2].

Figure 1 shows the excess mortality for first and second wave across different regions of England and Wales. According to the ONS data, all areas of England and Wales had higher mortality than the five-year average during the first wave. Some regions of England had lower mortality than five-year-average during the second wave. This was more noticeable for London (See Figure 1) [1].

Figure 1- Number of excess deaths of care home residents registered from 14 March 2020 to 2 April 2021 (compared to the five-year average), English regions and Wales.

Source: Office for National Statistics



2.1. Excess mortality by place of death

Analysis of ONS data by PHE showed an overall 22% excess mortality in general population as well as a 28% increase in care home mortality in England between 27th March 2020 to 11th February 2021. A summary of registered and expected deaths, their ratio as well as the number of COVID-19 related deaths are presented in Table 1. Figure 2 shows excess mortality in residential and nursing homes in England as well as lower mortality between the two waves during summer and autumn 2020 [3].

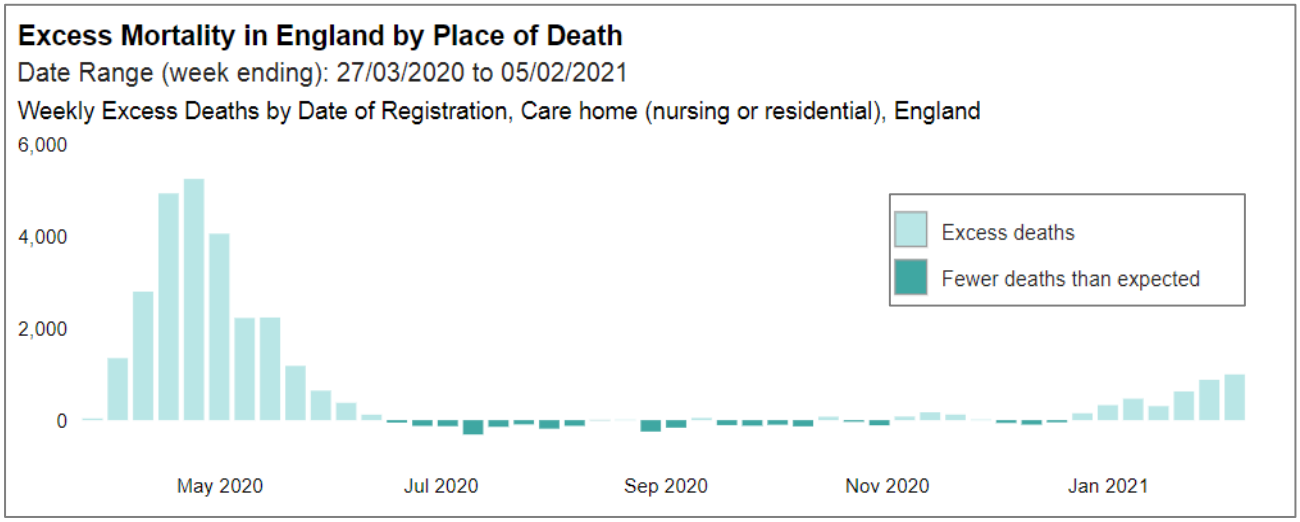
Table 1- Deaths in England, by place of death and cause, 27/3/2020 to 11/2/2021.

Data from Public Health England, Excess mortality in England

Place of death	Registered deaths	Expected deaths	COVID-19 deaths	Excess deaths	Ratio: registered / expected
All	530,358	436,006	112,305	94,352	1.22
Home	145,383	107,808	5,848	37,575	1.35
Hospital	226,271	193,447	77,116	32,824	1.17
Care home	124,104	96,982	26,915	27,122	1.28
Other	13,062	11,180	764	1,882	1.17
Hospice	21,538	26,589	1,662	-5,051	0.81

Figure 2- Weekly excess mortality in care homes in England

Data from Public Health England, Excess mortality in England

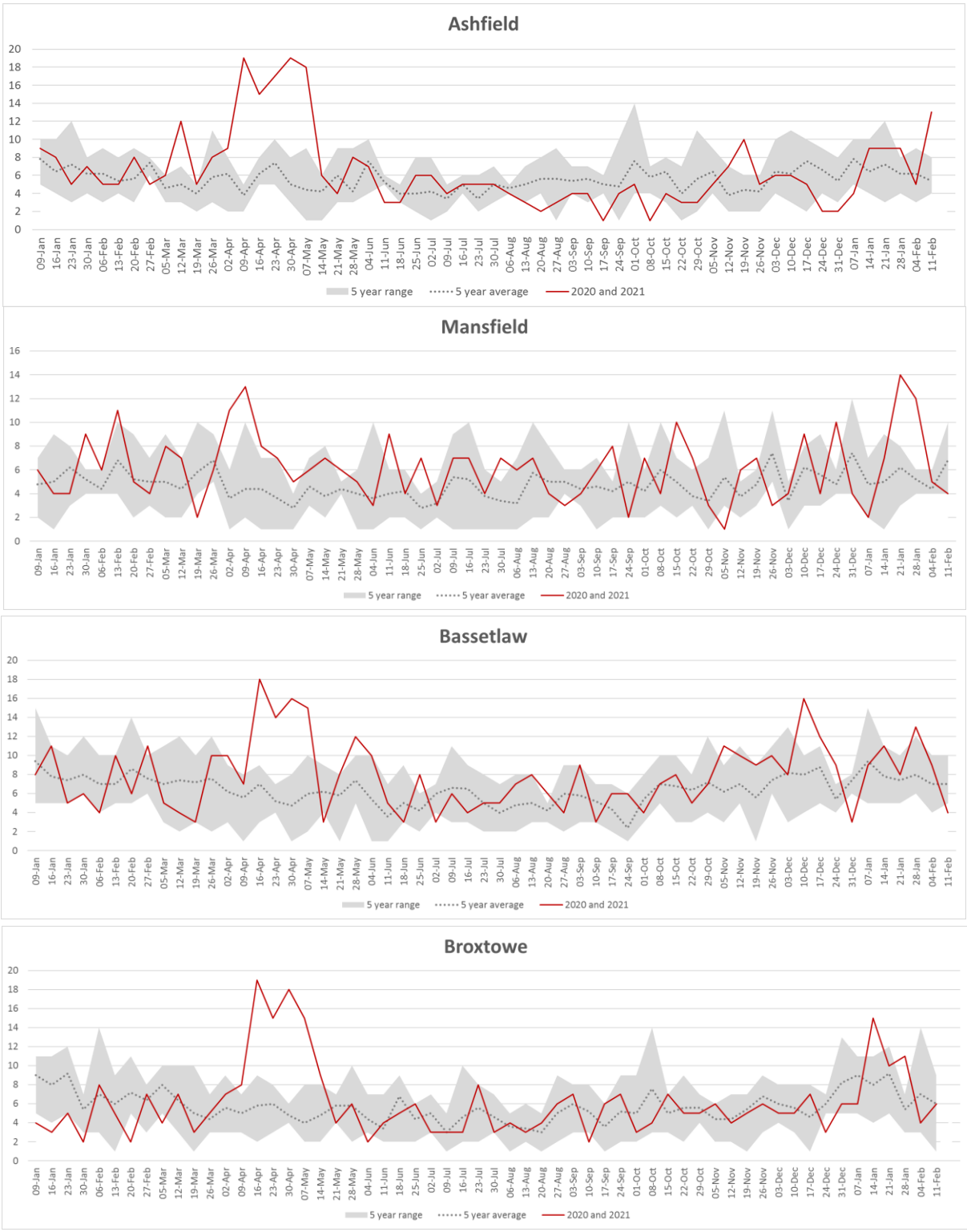


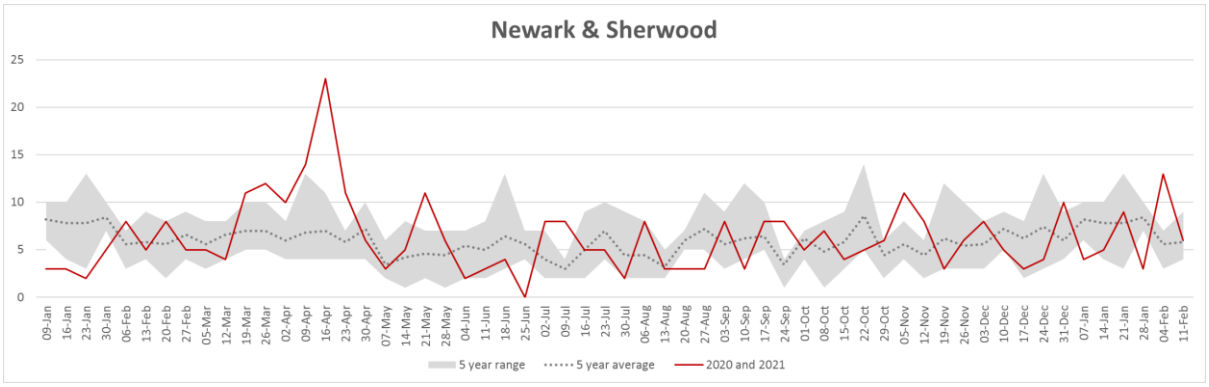
3. Excess mortality in care homes- local data

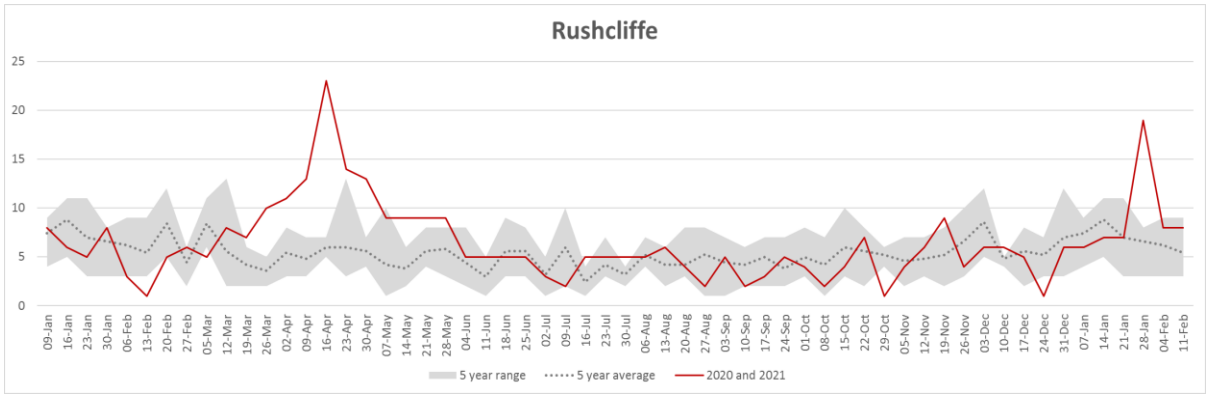
Data from ONS were used to analyse and depict mortality rates in care homes across Nottingham and Nottinghamshire for week ending 10/01/2020 to 12/02/2021. Care home mortality rates for five-year range, five-year average and 2020-2021 are presented in Figure 3 to allow visual comparison and to better identify excess mortality during this period. Apart from Mansfield, Nottingham and Nottinghamshire districts had their highest excess death during the first wave of the pandemic and lower mortality than five-year average between June and September 2020. In Mansfield, increased mortality was observed throughout the pandemic with a higher peak of excess death during the second wave.

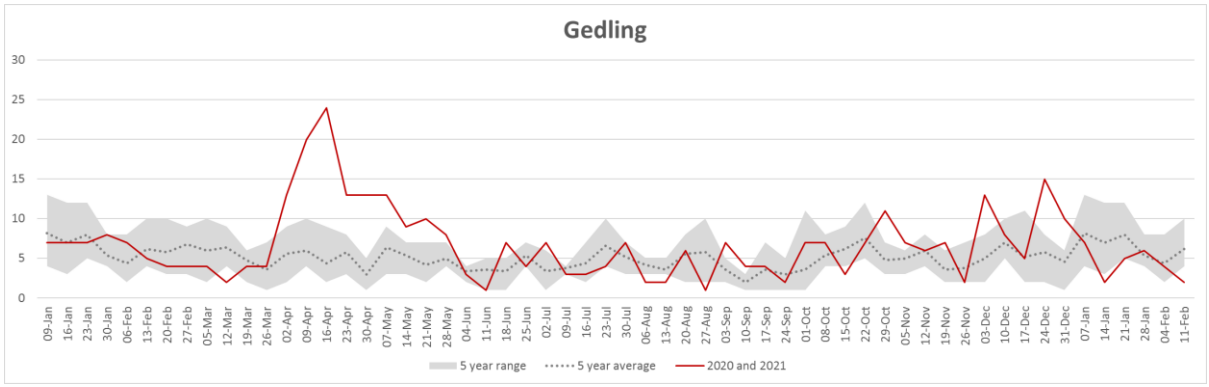
Table 2 presents the excess mortality in care homes for England, Nottingham and Nottinghamshire, with a breakdown of data for Nottinghamshire districts. The figures show the excess care home mortality for the period of 21/03/2020 to 12/02/2021, compared to the five-year average. Nottingham City had higher mortality (38%) and Nottinghamshire had lower overall excess mortality (26.2%) than the national average of 28%. Amongst the County districts, Gedling had the highest care home excess mortality rate (41.4%) than other districts of the County and Nottingham City. Bassetlaw and Mansfield care homes with 37.9% and 34% more deaths than the five-year average, respectively, had the second and third highest care home excess mortality in the County during this period.

Figure 3- Excess mortality in care homes in Nottingham and Nottinghamshire.




Newark & Sherwood
5 year range
5 year average
2020 and 2021


Rushcliffe
5 year range
5 year average
2020 and 2021


Gedling
5 year range
5 year average
2020 and 2021

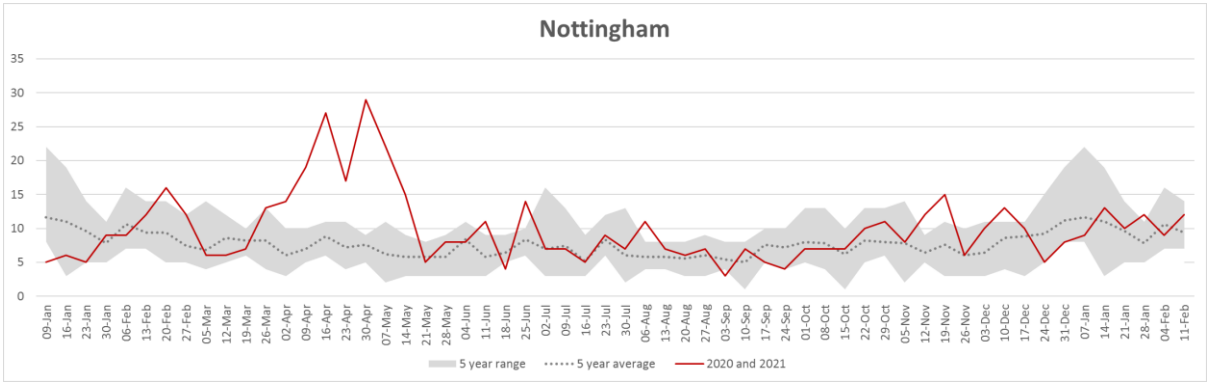

Nottingham
5 year range
5 year average
2020 and 2021

Table 2- Total excess deaths in care homes, 21/03/2020 to 12/02/2021, compared to 5-year average

Local authority	Excess compared to 2015 - 2019 average (number)	% excess
Ashfield	49	*19.6*
Bassetlaw	95	*37.9*
Broxtowe	49	*19.7*
Gedling	95	*41.4*
Mansfield	72	*34.0*
Newark & Sherwood	33	*12.5*
Rushcliffe	61	*25.3*
Nottinghamshire	**454**	***26.2***
Nottingham City	**130**	***38.0***
England	**27,511**	***28.0***

4. Exposure and transmission routes- Local data

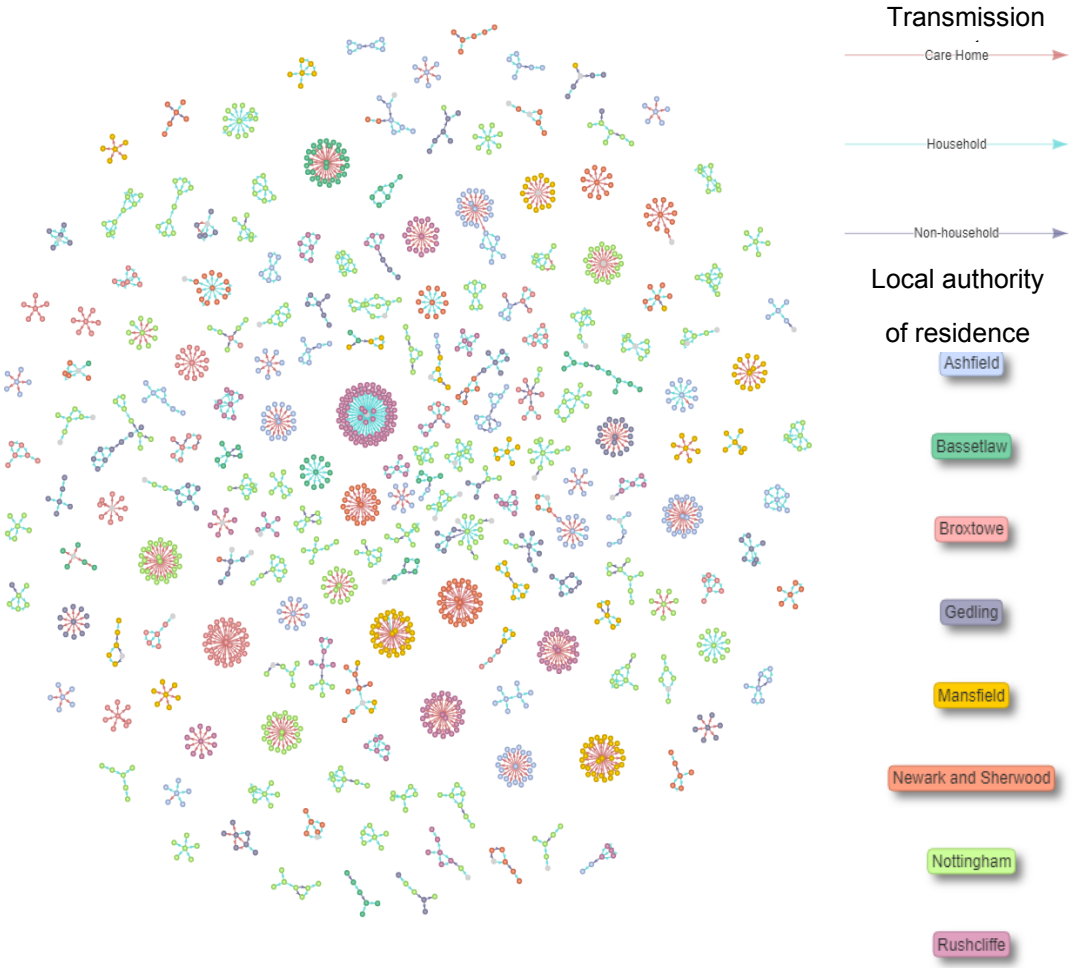
Figure 4 shows a visualisation of the transmission routes in care homes, household, and non-household areas, based on the local authority of residence data for 1/12/ 2020 to 31/1/2021

The Figure shows that transmission routes in care homes (red lines) follow consistent pattern; one person being infected followed by rapid onward exposure to many other individuals (dates of onset in each cluster are typically within a week of the first individual). Similar patterns are seen in other contained environments, including prisons and apartment blocks.

The below network diagrams are generated by Nottinghamshire County Council Public Health Intelligence Team from Public Health England C0VID-19 Network Analysis Project using data for 1/12/2020 to 31/1/2021, filtered to show transmission routes for clusters with six or more individuals.

Figure 4- Exposure & transmission routes, Nottingham City & Nottinghamshire County

Data source: Public Health England COVID Network Analysis Project



5. Excess mortality in learning disability care homes- National data

According to the COVID deaths of people with learning disabilities in spring 2020, fewer outbreaks have been reported from the care homes looking after adults with learning disabilities in spring 2020, compared to other care homes. This could be due to the smaller size of learning disability care homes and fewer people they care for. Despite the lower number of outbreaks, COVID-19 deaths in this population has been much higher than the general population [4].

According to this review by PHE, the mortality rate in adults with learning disabilities has been 3.6 times higher than the general population during these first months of the pandemic (February to 5 June 2020). After adjusting for age, sex and considering underreporting, adults with learning disabilities were 6.3 times more likely to die from COVID-19, compared to the general population, during this period [4].

82% of deaths in adults with learning disabilities during this time happened in hospital, which was higher than the previous years (60%) for this population and compared to the proportion of COVID-19 deaths in the general population (63%) [4].

Compared to two previous years, the number of all-cause mortalities tripled for adults with learning disabilities during the peak 3 weeks of the pandemic while a two-fold increase was observed for the general population for the corresponding period [4].

This PHE review also reported that COVID-19 deaths in adults with learning disabilities living in residential care homes were 2.3 times higher than those with learning disabilities living elsewhere [4].

Being from black and minority ethnic background, has been acknowledged as one of the main risk factors for COVID-19 mortality. People with learning disabilities from black and minority ethnic background had 4.5 times more deaths than 2 previous years. This was much higher than the figure for people with learning disabilities from white backgrounds, which experienced a two-fold increase [4].

Excess all-cause mortality in people with learning disabilities varied across the country. In comparison with previous 2 years, London with 3.7 times more all-cause mortality had the highest excess death and South West the lowest (1.6). Midlands sat in the middle of this ranking with 2.1 times more all-cause death. This report did not provide more detailed area level figures. While the excess mortality rate is estimated to be similar to care homes in community social care settings, no clear data was available from community providers [4].

In February 2021, MenCap reported that Eight in 10 deaths of people with a learning disability are COVID related. This report also indicated that only people with sever learning disabilities have been prioritised for vaccination, which could contribute to higher mortality in this population [5].

The most recent LeDeR-policy-2021 reports a significant historical underreporting of deaths in black and minority ethnic people with learning disabilities to LeDeR. Therefore, a focused review is to be undertaken for each death in adults with learning disabilities from the black and minority ethnic communities to identify differences and reduce health inequalities [6]. According to ONS, The mortality outcomes were different based on the level of disability (more disabled or less disabled). People with learning disabilities who lived in care homes and similar settings had worse outcomes. Also, gender, deprivation and comorbidities influenced COVID- 19 outcomes in people with learning disabilities [7].

6. Excess mortality in learning disability care homes- Local data

Consistent with the national LeDeR report, the local data showed an underreporting of death from people of black and minority ethnic, with no death from these communities reported to LeDeR in 2021.

Respiratory infections such as pneumonia and aspiration pneumonia have always been a major cause of death in people with learning disabilities. 21 out of 68 deaths reported to Nottingham and Nottinghamshire LeDeR in 2020-2021 were due to COVID-19. This was higher than the number of deaths due to all other respiratory infections combined (19) [8]. In Bassetlaw, two out of six reported deaths were due to COVID-19, according to Bassetlaw LeDeR team.

The local average age at death for people with learning disabilities, during March 2020 to April 2021, was 59, which is slightly lower than the current national average of 60. Nationally, 60% of deaths reported to LeDeR were men while a higher proportion of male mortality were observed locally. The non-COVID related deaths were 63% and 66% of total reported deaths for this population in 2020 and 2021, respectively. However, the figure for male mortality was more noticeable for COVID related deaths in 2020, with 81% of those who died from COVID-19 being men. [8]

7. Vaccination uptake

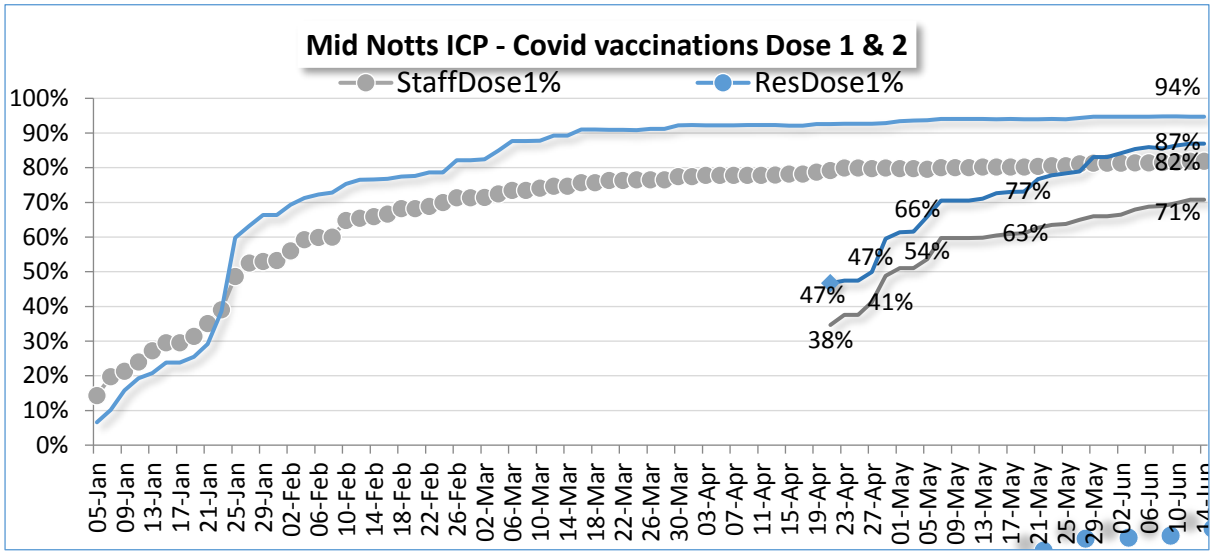
The national care home vaccination programme was launched in December 2020, following the advice from the Scientific Advisory Group for Emergencies (SAGE).

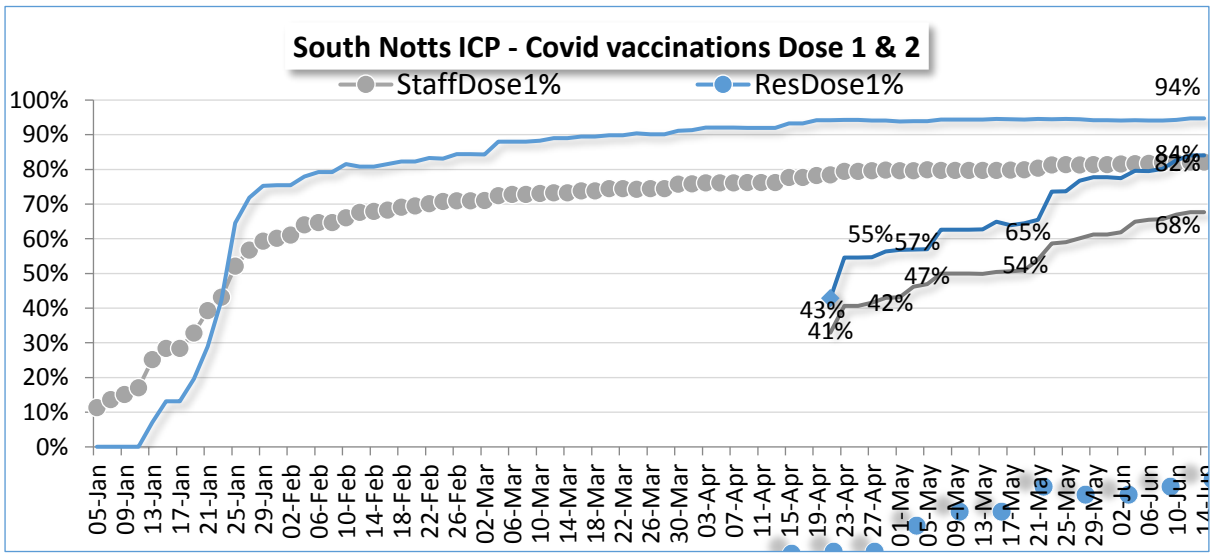
7.1 Overall local care home vaccination uptake

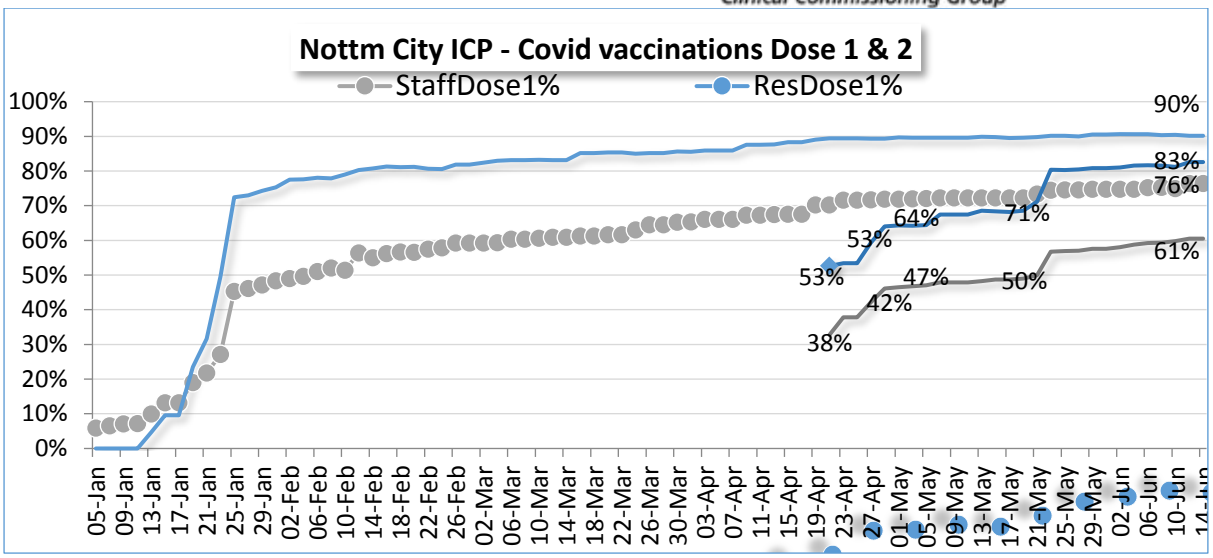
The data for local vaccination showed that the majority of care home residents and staff across Nottingham and Nottinghamshire, including learning disability homes, had received both doses of COVID-19 vaccination by mid-June 2021. The highest uptake was observed in Bassetlaw, with 94% of residents and 75% of staff having received their second dose of

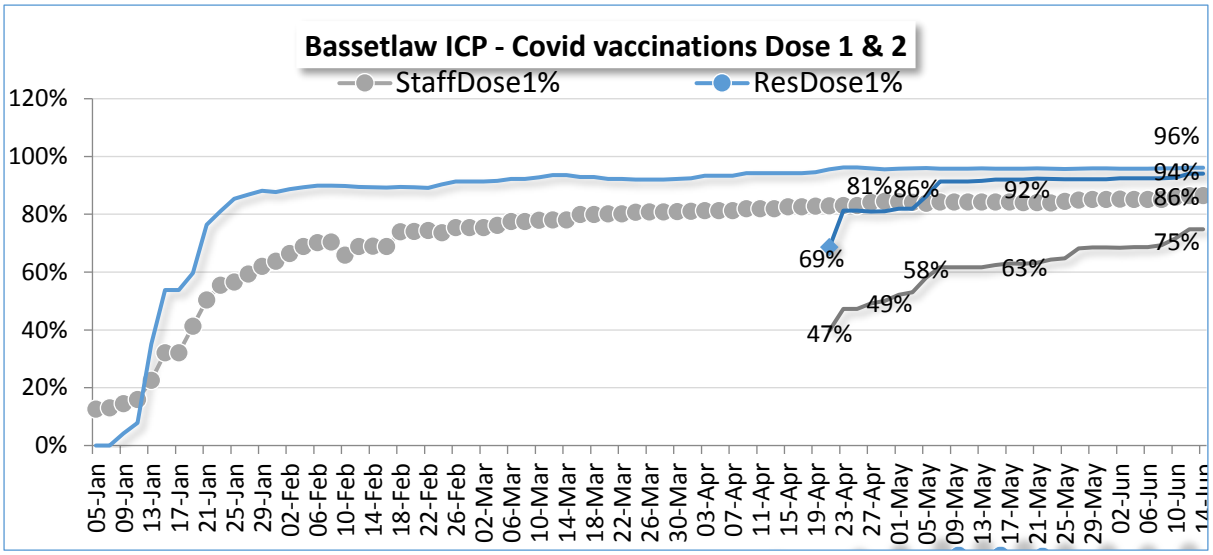
vaccine by mid-June 2021. Nottingham City had the lowest uptake amongst both residents and staff with respective 83% and 61% being fully immunised by mid-June 2021. See below graphs for more details. Vaccination uptake amongst agency workers has been lower than the permanent employees throughout the City and County care settings.

Figure 5 – One Version of the Truth toolkit









7.2. Vaccination uptake in older people care homes

According to the SAGE, 90% of residents and 80% of the staff of older adult care homes need to be vaccinated to provide a minimum level of protection against outbreaks of COVID-19 [9].

National data showed that 91% and 70% of eligible older care home residents and staff, respectively, were double vaccinated by mid-June 2021. The data for Midlands showed a similar uptake [9]. Bassetlaw had greater uptake amongst older care home residents (96%) and staff (75%) than the national and regional average. Mid-Nottinghamshire had the highest staff immunisation coverage locally (82%) and only slightly lower than the national and regional average of uptake for older care home residents (90%). Locally, only mid-Nottinghamshire had met the SAGE's expectation of the immunisation of at least 90% of residents and 80% of staff for minimising COVID-19 outbreaks in older people care homes

by mid-June 2021. However, the turn-over of residents and staff can change the figures for vaccination uptake and consequently, change the immunisation status of homes. Consistent with the overall immunisation uptake, staff in older people care homes in Nottingham City had the lowest vaccination uptake (63%) by mid-June 2021. Figures are presented in Table 3.

Table 3- COVID-19 vaccination uptake for elderly homes based on ICP

Source- Local One Version of the Truth

	Covid vacs Dose 1 & 2 reporting	Total reporting	Bassetlaw	Nottm City	South Notts	Mid Notts	Nottm & Notts CCG
Residents	Dose 1 residents vaccinated	5894	872	1251	2069	1702	5022
	% Dose 1 residents vaccinated	95.0%	97.5%	91.1%	95.4%	96.3%	94.6%
	Dose 1 CHs reporting res vacs >= 80%	93%	100%	86%	94%	95%	92%
	Dose 2 residents vaccinated	5491	856	1183	1855	1597	4635
	% Dose 2 residents vaccinated	88.5%	95.7%	86.2%	85.5%	90.3%	87.3%
	Dose 2 CHs reporting res vacs >= 80%	81%	96%	76%	83%	78%	79%
Staff	Dose 1 staff vaccinated	7528	1043	1527	2765	2193	6485
	% Dose 1 staff vaccinated	83.9%	85.6%	76.6%	83.3%	89.9%	83.7%
	Dose 1 CHs reporting staff vacs >= 80%	72%	80%	55%	72%	84%	71%
	Dose 2 staff vaccinated	6498	908	1262	2338	1990	5590
	% Dose 2 staff vaccinated	72.4%	74.5%	63.3%	70.5%	81.6%	72.1%

8. Local support for care homes

At the height of the Coronavirus pandemic, Nottingham and Nottinghamshire's care homes were supported by partners across the system to provide a pioneering response to the changing environment and the pressures faced to the health and care sector.

The successful initial system-wide approach in supporting Nottinghamshire care homes is now being extended in order to support care homes into the future.

As a system, stakeholders from across health and social care, very quickly began working in collaboration and developed the following in relation to the changing needs of the sector.

8.1. What has been done differently during COVID-19 pandemic?

8.1.1. Task Force

A daily Task Force meeting was established, with the aim of delivering a proactive, multi-agency coordinated approach to support Nottingham and Nottinghamshire Care Providers. The frequency of Task Force meetings is revised regularly, based on the number of cases and active outbreaks. This is a targeted approach that has a focus on those providers that have critical issues and demand during the COVID response. These issues include quality as well as COVID-19 outbreaks and would take into account the impact on staffing, the delivery of care and their ability to manage a COVID outbreak. It also has a remit to use lessons learnt to support the wider provider market.

Objectives of the taskforce

- **Reactive and proactive approach in the management of:**
    - Outbreak management– System wide approach in the oversight of current outbreaks in the County/ City that are causing significant issues for care providers.
    - Workforce issues– System partners working with services to ensure that the business contingency plans can be utilised to remain safe. If plans fail, then the Task Force would support in looking at alternative options where possible.
    - Escalation of quality concerns– System partners maintain quality monitoring processes to ensure that the Task Force responds where needed.
    - Visits to services– The Task Force process will determine if a visit is required and by whom.
    - Others**–** Other market issues, in particular for services we do not have a contract with but still may need support.

- **Incident response–** A dedicated incident control centre remains in place which enables all care home concerns to be correctly logged, prioritised and actioned upon.

- **End of Life (EoL) Support–** The purpose of the group is to ensure a consistent and coordinated system approach to COVID-19 EoL care bringing in all system partners to respond at pace to implement best practice for high quality end of life care. The system has always had an End of Life Strategic Group but the focus at this time has also included the care homes sector.

- **NHS Capacity Tracker–** This has been a priority for the system. Partners have worked with care homes to ensure they are completing the tracker in a timely way. This information is then used by the system for assurance and support. This ensures there is one version of the truth for all partners to utilise.

- **IPC–** The IPC team continue to work with all care homes to ensure they are supported, and they have the latest IPC guidance. IPC teams support with targeted IPC training and provide webinar support and local guidance, including additions to the care home Toolkit. The team provides outbreak management support, management of pillar 1 testing results, monitoring of new cases,

symptoms, and vaccination status, from closure to reopening. The team developed processes for homes on zoning/ cohorting, admissions and discharge guidance as well as advice on use of COVID funds. This team provides bespoke support to homes with infection control advice as well as risk assessment for new patients being placed.

- **Swabbing/testing–** Swabbing and testing the care home staff and residents has been a priority since the beginning of the pandemic. Although SARS-COV-2 testing was launched in March 2020 the routine testing is care homes did not start until July 2020. Locally, practical support was provided for care homes to ensure the guidance is clear and the routes for testing are communicated. Urgent swabbing (Pillar 1 testing) for symptomatic patients has been conducted in the Health sector. The Local Resilience Forum (LRF) Testing Cell, in collaboration with the Care Home Cell, has developed a supportive approach for care homes. This ensures we can facilitate local co-ordination support throughout the whole testing process, whilst flexing to accommodate the national policy guidance.

- **Communication–** At the beginning of the pandemic and prior to using Teams for meetings and OCTs, a WhatsApp group was established by health and care sector with open invitation to all the stakeholders across Nottingham and Nottinghamshire health and social care, particularly care setting providers. The aim of this group was to inform and support colleagues as well as provide support for care sector staff and providers with interpreting fast changing government guidance.

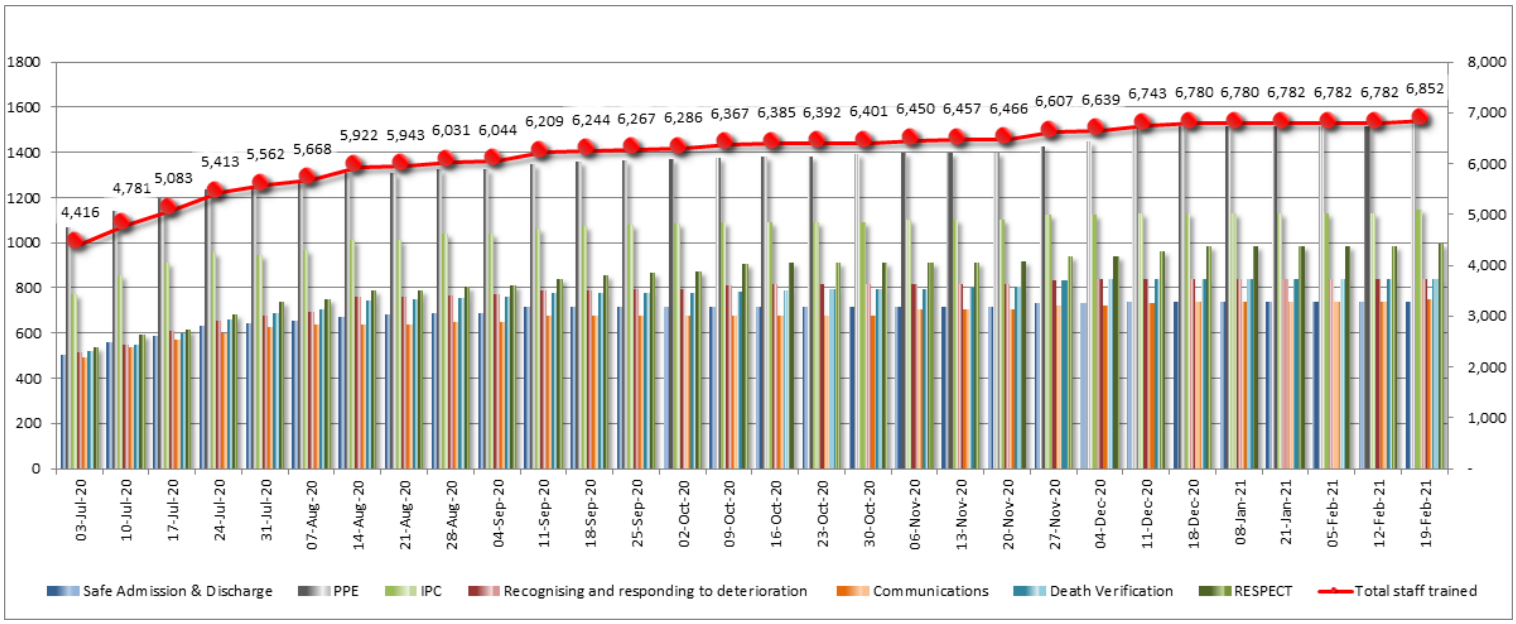
- **PPE (Personal Protective Equipment)–** A PPE Cell has been developed following the issues with PPE provision and uptake at the beginning of the pandemic. These issues were rectified after the provision of sufficient PPE for all the care homes and similar settings as well as disseminating relevant guidance with these settings. Care homes and home care providers were provided with the latest guidance.

- **Online Toolkit–** This Toolkit which was developed by system partners and is in line with new guidance by the subject matter experts, has been of great value to the care sector. It contains guides on IPC, PPE, admissions and discharges, recognising deterioration, vaccination and is a source of advice for training (figure 6) as well as up to date guidance.

- **Care home clinical support–** Our providers are supporting care homes on a daily basis with specialist nurses and community teams. Alongside pre-existing training, an Enhanced Care Response Team (ECRT) was developed. This team provided face to face and virtual training. The graph below shows that 6,852 staff have received training in safe admission and discharge, PPE, IPC, recognising and responding to the deteriorating patient (mini or restore2), communication, death verification, and respect (figure 6).

- **Outbreak Control Cells–** Daily multiagency outbreak control meetings have been held during the pandemic. These meetings were chaired by Public Health and included partners from PHE, IPC, Local Authorities including district councils as well as NHS providers.

Figure 6- The update of enhanced training from July 2020 to February 2021



- **Finances–** The CCG and local authorities worked together to agree a pricing structure for care homes during the pandemic. This successful collaboration led to the establishment of a data collection system and the completion of all the deferred Continuing Healthcare (CHC) assessments by the end of March 2021. All outstanding assessments have been completed in June 2021.

- **Medicines Management–** Currently, care homes are receiving medications in the original packaging, and not in dosette boxes. The Medicines Management team supported care homes to ensure safe medication management processes are in place.

- **GP consultations–** Most care homes are now familiar with and supportive of remote consultations. Additional pulse oximeters have been provided to most care homes along with instructions for their use. Weekly check-ins and multidisciplinary team meetings are also in place.

- **Outbreak Control Team–** During this time care homes and home care providers with a significant outbreak are discussed and Outbreak Control Team (OCT) meetings arranged in conjunction with Public Health as necessary. Common themes are pulled together and discussed at the Care Home Incident Management Team meetings to identify further actions and lessons learnt.

- **Workforce–** A workforce group have developed an emergency staffing model for both health and social care. This is a partnership with NHS professionals to ensure registered nurses are available to work in care homes. Also, a discharge project has been initiated, which involves care home nurses working in hospital discharge teams to improve discharge to the care sector, focusing on care planning and quality. There is also work underway to develop a Social Care Faculty.

- **Providers Forums–** Various Forums aimed at empowering the sector by connecting the providers and staff from across care sector, reinforcing public health messages, sharing best practice stories and promoting collaborative learning.

- **Providers Bulletins–** These Bulletins were sent to all care settings across City and County as frequently as needed to provide them with consistent and comprehensive information, including the latest guidance. These bulletins were well used by the staff in care sector and improved collaboration between Local Authorities and Health and Social Care sector.

8.2. Building on what the system had prior to the COVID-19 pandemic?

There have always been information sharing meetings between health and social care in relation to care home intelligence. These have been made stronger during the pandemic with joined up meetings across health and social care and CQC (Care Quality Commission). The pandemic has enabled people to build relationships and work across boundaries in a seamless way.

8.3. Quality Assurance

Quality assurance has always been conducted by the relevant organisations in terms of care homes. The pandemic has enabled greater and earlier sharing of information between organisations and has led to reduced duplication and added assurance. Proactive information has been gathered electronically when possible. If reactive visits were required teams have completed a risk assessment and visited care homes to ensure patient safety concerns have been addressed.

8.4. What impact/outcomes have been seen?

There has been greater communication at every level across the system. Early conversations about future joint appointments across health and social care has already begun. The care home sector profile, as a whole, has increased. Data has been enriched and used for support. More frequent communication with owners and managers has taken place to the benefit of all. Webinars have been attended by over a hundred organisations and providers and provider-led meetings have been developed within health and social care. Care homes have been provided with training, financial support, PPE and psychological support. They have helped to shape the agenda and have been instrumental in articulating their needs and support required. The main impact has been that all providers have received tremendous support from the system to remain safe during the pandemic.

8.4.1. Feedback from the care sector

The online training toolkit was accessed over 3000 times by care homes in Mid-Nottinghamshire, Nottingham North East and Rushcliffe, between May and December 2020. In a webinar on 23/07/2020, 97% of the attendees from care home sector found the ECRT provision helpful and 94% believed that the enhanced training would improve care delivery. Also, the homes that received ECRT were more likely to have seen a reduction in ED (Emergency Department) attendance and hospital admissions in excess of the average for 2020-2021 compared to 2019-2020. A case study from Mid-Nottinghamshire area showed a 54% reduction in ED attendances and 64% reduction in non-elective hospital admissions in a care home after the provision of specialist nursing support.

83% of 88 participants in a care sector survey found the regular Providers Forum useful. However, in the same survey, the Providers Bulletins was voted as the most helpful communication measure, compared to direct contact, online toolkits, support from IPC, support from CCG, providers forum and support with capacity tracker.

8.5. How will this practice be sustained/built on beyond March 2021?

There is no doubt that the care sector has changed during the pandemic. There have been new ways of working and support as discussed above. The new ways of working and system collaboration will continue to grow and develop as the pandemic eases.

9. Inequalities and care home mortality

According to Disparities in the risk and outcomes of COVID-19 (publishing.service.gov.uk) old age, gender, ethnicity, co-morbidities, region and being born outside the UK are the main risk factors for increased mortality from COVID-19 [2].

Older people are more likely to die from COVID-19 at the presence of comorbidities such as dementia, heart disease and diabetes. However, dementia and Alzheimer's disease were the most common pre-existing conditions that increased the risk of dying from COVID-19 in this group of population. While COVID-19 was the main cause of death in male care home residents during the first year of the pandemic, the female residents mainly died of dementia and Alzheimer's disease during this period. The 2020 PHE report stated that the mortality rates from COVID-19 in the most deprived areas were more than double the least deprived areas [1, 2].

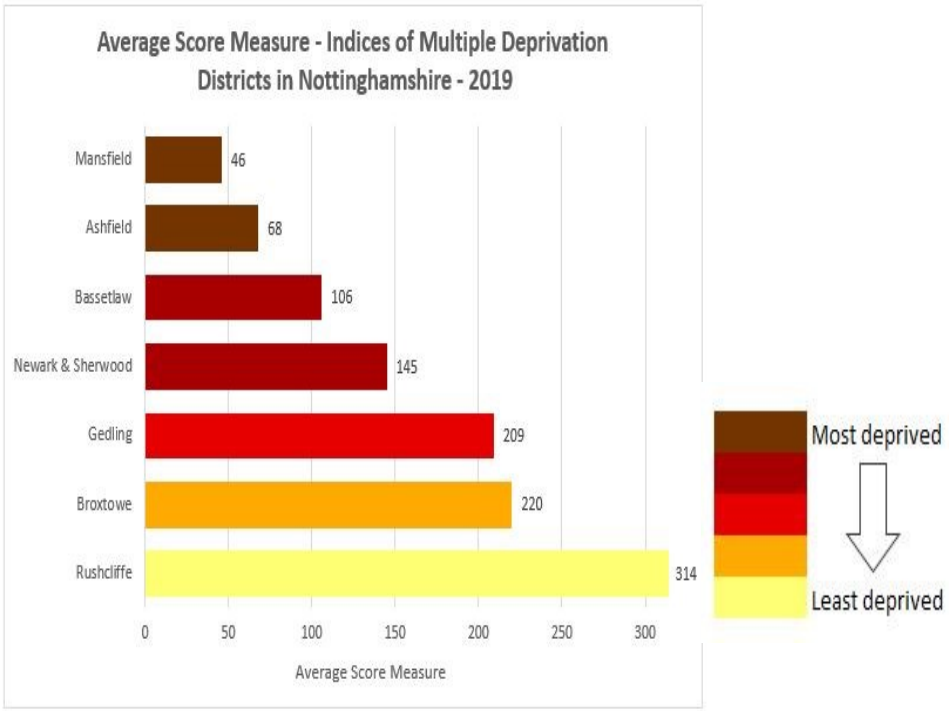
Based on the figures from The Health Foundation Deprivation and excess deaths | The Health Foundation, there were 77,000 excess premature deaths in poorest areas of England, in 2018. The figure is estimated to be higher during 2020-2021 as the pandemic has increased the inequalities between the most and least disadvantaged communities [10].

Locally, the excess mortality rate differed across the districts of County and Nottingham City. The data from Table 2 and Figure 7 were used to determine whether there is an association between excess death and the score of deprivation, based on the Indices for Multiple deprivation (IMD). Having had the 15th place in the national IMD ranking, Nottingham City is the most deprived local area. Although Nottingham care home excess mortality (38%) was much higher than the national figure of 28% and Nottinghamshire figure of 26.2%, excess death did not correlate with the IMD scoring for Nottinghamshire districts. As demonstrated in Figure 7 and Table 2, Ashfield is the second most deprived area of Nottinghamshire and had 19.6 % excess death, which is the second lowest locally. However, Rushcliffe which is one of the least disadvantaged districts of the UK, had higher excess mortality rate (26.2%) than Ashfield (19.6%), Broxtowe (19.7%), and Newark& Sherwood (12.5%). The lowest and highest care home excess death were observed for Newark and Sherwood (12.5%) and Gedling (41.4%). Therefore, no clear association between care home excess death and deprivation could be drawn. This could be because the care home location may not reflect the degree of deprivation at individual or population level.

Table 2- Total excess deaths in care homes, 21/03/2020 to 12/02/2021, compared to 5-year average

Local authority	Excess compared to 2015 - 2019 average (number)	% excess
Ashfield	49	*19.6*
Bassetlaw	95	*37.9*
Broxtowe	49	*19.7*
Gedling	95	*41.4*
Mansfield	72	*34.0*
Newark & Sherwood	33	*12.5*
Rushcliffe	61	*25.3*
Nottinghamshire	**454**	***26.2***
Nottingham City	**130**	***38.0***
England	**27,511**	***28.0***

Figure 7- Ranking of Nottinghamshire districts based on Indices of Multiple Deprivation (Indices of Deprivation (2019) - Nottinghamshire Insight)



10. Summary of main findings

- All areas of Nottingham and Nottinghamshire had higher care home mortality than the five-year average during the first year of the pandemic.
- Locally, excess mortality in care homes was more noticeable during the first wave of the pandemic, except for Mansfield.
- Overall care home excess mortalities were higher than national average (28%) in Bassetlaw (37.9%), Gelding (41.4%), Mansfield (34%) and Nottingham City (38%).
- Similar to other closed settings, outbreaks in care homes usually happened within the first week of the initial exposure.
- Nationally, people with learning disabilities had the highest COVID-19 mortality compared to the general population, especially those living in a care home.
- The underreporting of deaths of people with learning disabilities from black and minority ethnic backgrounds to LeDeR is evident nationally and locally and continued to worsen during the pandemic.
- According to the local LeDeR report, COVID-19 was the leading cause of death in people with learning disabilities in 2020-2021.
- The majority of care home residents and staff across Nottingham and Nottinghamshire had received two doses of COVID-19 vaccine by June 2021.
- Only Mid- Nottinghamshire had met the SAGE's target of the vaccination coverage of 90% of residents and 80% of staff for mitigating outbreaks in older people care homes by mid-June 2021.
- Bassetlaw care homes had the highest vaccination uptake for both residents and staff in mid-June 2021.
- At the beginning of the pandemic, all the health and social care stakeholders joined and established a multiagency Task Force to provide a broad system-wide support for outbreak control in care homes. This joint approach has been successful for effective communication with care sector and feedback received from the care sector confirmed this.
- Nationally, COVID-19 mortality was more than twice as high in most deprived areas compared to least deprived areas.
- Locally, no association could be drawn between area-level deprivation and care home excess death.

11. Lessons learnt

- Outbreak control in learning disability care homes have been challenging and the mortality rate in this group has been the highest. A focused outbreak management approach and provision of further support in case of COVID-19 exposure may prevent outbreaks and reduce mortality in these care settings.
- Training on 'death verification' and 'recognising deterioration' have been quite difficult for care home staff. However, the feedback form care homes indicate that these training have improved patient care and reduced 999 calls, ED attendance and hospital admissions. Addressing these training earlier could be beneficial to patients as well as health and social care sector.
- Fragmented service provision and approaching care settings from different organisations led to inconsistency in data reporting and duplication of work at the beginning of the pandemic.
- Joint city and county health and social care approach has been effective in improving communication and consistency and could continue in the future.
- Fast hospital discharge to care homes prior to routine testing contributed to outbreaks during the first wave. Advanced discharge planning for future waves and ahead of winter pressure could mitigate outbreaks and reduce mortality.
- Many care home buildings do not have appropriate structure for cohorting and isolating infected patients. This could be considered for future care home application approval.
- Turning complex national guidance to simplified local guidance through the Toolkit and other methods improved communication with care settings and was deemed to be helpful.
- Improvement in IPC measures (PPE, social distancing, etc.), testing, especially before discharge from hospital, and vaccination could have contributed to a lower mortality during the second wave of the pandemic. However, social distancing remains challenging in learning disability homes and homes looking after patients with dementia.
- Clear local escalation plans, financial support for care homes, enhanced response team, a memorandum for mutual aid, involving military and a bank of nurses for staffing coverage, providers forum and bulletins are examples of successful initiatives that were devised during the first weeks of the pandemic.
- COVID-19 pandemic led to innovative ways of working, particularly with utilising technology for improved communication.
- Good hand hygiene, enhanced cleaning (such as high touch point cleaning) and PPE helped with the control of other outbreaks like flu and norovirus during the pandemic. These measures could continue for outbreak and infection prevention and control.

- The online Toolkit has provided an overview of key areas care home and home care staff should be familiar with. This Toolkit could continue to be used as a single platform for communicating simplified guidance and information to staff in care sector.
- Gaps in IPC commissioning for services such as extra care and supported living could have a negative impact on outbreak control management in these settings.

12. Recommendations

- Adopting a more focused approach for outbreak control in learning disability care homes and providing further support in cases of exposure to prevent outbreaks and mitigate further morbidity and mortality in this population.
- Training on 'recognising deterioration' and 'death verification' to be offered to all the staff in care settings as part of their mandatory training in preparation for winter pressure.
- Structure of care homes to be considered when reviewing and approving applications for new homes. All new care homes should have suitable space and structure for infection prevention and control.
- Continuing with simplifying complex national guidance to clear local guidance when possible.
- Joint health and social care activities across City and County to be continued for tackling other health threats.
- Innovative communication to be continued to improve flexibility and access to information across health and social care sector.
- Enhanced infection prevention and control measures to be continued to prevent and control other common infections and outbreaks such as flu and norovirus.
- Online platforms, such as the Toolkit, should be used as a single platform with useful materials for infection prevention and control during the pandemic and beyond.
- Using Google Analytics for understanding the public accessibility to our online Toolkit and involving staff in care sectors and providers in developing and improving this platform.
- The providers and staff in care sector continue to be involved in decision making through conducting regular surveys and forums and their feedback to be heard and acted upon.
- Closing gaps in IPC commissioning to improve infection prevention and outbreak management in extra care and supported living settings and to improve early

outbreak reporting, timely IPC advice and support to reduce transmission in these settings.

- Further care home mortality reports to investigate COVID-19 and non-COVID-19 mortality and stratify data based on age, gender and place.

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