



Public Health
England

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Weekly Care Homes Evidence Digest

Prevention and control of COVID-19 in home care/care homes settings
3rd September 2020

Summary

This weekly digest contains a selection of evidence published in the last 7 days, in relation to the prevention and control of COVID-19 in home care/care home settings. We search a number of Covid-19 review repositories, an existing PHE Covid-19 evidence digest, Ovid Medline and Embase, Social Care Online, medRxiv (pre-print server) and various websites. We select peer reviewed and non-peer reviewed publications (pre-prints), as well as systematic reviews, guidance and evidence summaries.

The digest is produced by PHE [Knowledge and Library Services](#) (KLS), in conjunction with a small editorial team.

We do not accept responsibility for the availability, reliability or content of the items included in this resource and do not necessarily endorse the views expressed within them. Our intent is to highlight early emerging research findings as well as research that has been subject to peer review and wider scrutiny.

This week's digest includes: further international evidence of the impact of COVID-19 on residents, their families and carers in care homes, including both quality as well as quantity of life; the potential value of machine learning in developing predictive tools to understand drivers of transmission of COVID-19 in US care homes; and evidence of aerosol transmission of COVID-19 in a poorly ventilated Dutch care home. From the UK, further evidence of the value of serology in understanding the full extent of transmission of COVID-19 in care homes; and a reassuring report that, after adjusting for care home size, hospital discharges may not be associated with a significantly increased risk of outbreaks of COVID-19 in care homes. Finally, a summary of recent published reports, guidance and statistics; including a report of a rapid learning initiative into the transmission of COVID-19 in care homes from Northern Ireland.

Peer-Reviewed Articles

Publication date	Title / URL	Journal / Article type	Digest
25.08.2020	The impact of COVID-19 on residents, relatives and staff in care homes	Nursing and Residential Care / Article	<ul style="list-style-type: none"> Investigates the long-term implications of social distancing guidelines and restricted visitation on care homes.
25.08.2020	Care homes, COVID-19 and legal liability	Nursing and Residential Care / Article	<ul style="list-style-type: none"> The UK response to the pandemic has been characterised by a focus on the NHS, to the detriment of the adult social care sector and official guidance has often been muddled and opaque. Legal action regarding duty of care and equipment provision may be on the horizon.
26.08.2020	High rates of SARS-CoV-2 seropositivity in nursing home residents	Journal of Infection / Article	<ul style="list-style-type: none"> During March-April 2020 we investigated outbreaks in four UK nursing homes where 40% of 394 residents tested positive on RT-PCR, including 43% who had no identifiable symptoms in the preceding two-week period. The first COVID-19 case was confirmed on 25 March, with the final new case on 17 April. Part of the initial control strategy was to implement complete testing all nursing home residents with nasal swabs, with re-testing one week later in residents testing negative, which was completed on 23 April. Ongoing infection prevention and control included strict training and adherence to personal protective equipment (PPE) wearing, and weekly resident RT-PCR testing which started mid-May. Testing was carried out with the aim of detecting any new infections in staff or residents early, so that they could be immediately isolated for 14 days. We have since assessed SARS-CoV-2 seroprevalence in the same four nursing homes using assays for IgG antibodies. Serum samples were collected in June 2020 and analysed using the Abbott Architect nucleocapsid IgG assay. Samples with binding ratios near to the cut-off were confirmed on an in-house receptor binding domain double antigen bridging assay to determine final status. 72% of nursing home residents were anti-SARS-CoV-2 IgG antibody positive, representing 173 of 241 residents available and consenting to testing. This includes 93% of those tested who were previously RT-PCR positive and 59% of those who were previously RT-PCR negative. 35% of antibody positive residents had been asymptomatic in the two-week

			ascertainment window prior to PCR testing during the outbreak. Seropositivity was not associated with the presence of comorbidities.
27.08.2020	It's Time to Resolve the Direct Care Workforce Crisis in Long-Term Care	The Gerontologist / Article	<ul style="list-style-type: none"> • Outlines the direct care workforce challenges in LTC including low wages, limited training and career development opportunities, and high turnover. • The Covid-19 pandemic catalyzed short-term actions such as higher compensation for workers, new recruitment sites, streamlined hiring and onboarding protocols, and technology-based training. • Broader trends—including the shifts toward managed care and value-based payment—have generated new opportunities to invest in direct care jobs and elevate the workforce in both policy and practice.
27.08.2020	Predicting COVID-19 infection risk and related risk drivers in nursing homes: A machine learning approach	Journal of the American Medical Directors Association / Article	<ul style="list-style-type: none"> • This retrospective cohort study utilized a gradient boosting algorithm to evaluate risk of COVID-19 infection (i.e., presence of at least one confirmed COVID-19 resident) in NHs. • The model was trained on outcomes from 1,146 NHs in Massachusetts, Georgia, and New Jersey, reporting COVID-19 case data on April 20th, 2020. Risk indices generated from the model using data from May 4th were prospectively validated against outcomes reported on May 11th from 1,021 NHs in California. • The strongest predictors of COVID-19 infection were identified as the NH's county's infection rate and the number of separate units in the NH; other predictors included the county's population density, historical Centers of Medicare and Medicaid Services cited health deficiencies, and the NH's resident density (in persons per 1,000 square feet). Additionally, the NH's historical percentage of non-Hispanic White residents was identified as a protective factor.
28.08.2020	Nursing Home Resident Weight Loss during COVID-19 Restrictions	Journal of the American Medical Directors Association / Research Letter	<ul style="list-style-type: none"> • A Chicago area 2 nursing home ceased all non-essential visitors on March 14, 2020 and replaced group meals with in-room delivery. • There was a reduction in appetite and consumption when meals were closer together than usual. • The restrictions also reduced mealtime conversation and social interactions among residents that are known to support consumption during meals. • Finally, family visits ceased so residents did not receive outside food

			<ul style="list-style-type: none"> Analysed nursing home resident body weight data before and after COVID restrictions were implemented. Results showed statistically significant decreases in body weight and highlight an area of urgent attention in long-term care.
28.08.2020	Using Serologic Testing to Assess the Effectiveness of Outbreak Control Efforts, Serial PCR Testing, and Cohorting of Positive SARS-CoV-2 Patients in a Skilled Nursing Facility	Clinical Infectious Diseases / Article	<ul style="list-style-type: none"> Authors characterized serology following a nursing home outbreak where residents were serially tested by RT-PCR and positive residents were cohorted. When tested 46-76 days later, 24/26 RT-PCR-positive residents were seropositive; none of the 124 RT-PCR-negative residents had confirmed seropositivity, supporting serial SARS-CoV-2 RT-PCR testing and cohorting in nursing homes.
28.08.2020	Outbreak of COVID-19 in a nursing home associated with aerosol transmission as a result of inadequate ventilation	Clinical Infectious Diseases / Correspondence	<ul style="list-style-type: none"> Authors comment on an outbreak in a Dutch nursing home that was likely to be the result of aerosol transmission in a setting of inadequate ventilation. In total, 17 (81%) residents from one of the seven wards in a nursing home with psychogeriatric residents were diagnosed with COVID-19 as confirmed by RT-PCR. Subsequently, 17 (50%) healthcare workers (HCWs) of the same ward were also tested positive. In contrast, all tests of the 106 HCWs or 95 residents in the 6 other wards were negative. Because of the remarkable increase of COVID-19 infections in a very short time period despite the use of surgical masks, the ventilation system of the outbreak ward was investigated in addition to routine source and contact tracing. Our data suggest that this outbreak is caused by aerosol transmission of COVID-19 in a situation of inadequate ventilation for several reasons. First, the near simultaneous detection of COVID-19 infections of almost all residents HCWs within a ward in which care was provided with surgical masks. Second, the limitation of the outbreak to this particular ward with a deviating ventilation system that recirculated unfiltered inside air in combination with the detection of COVID-19 on the filters of this system. Finally, the outbreak in this nursing home emerged in a period of low background prevalence of COVID-19 infections in the community.
28.08.2020	COVID-19 in long-term care facilities for the elderly: laboratory screening and disease	Ciência & Saúde Coletiva / Article	<ul style="list-style-type: none"> Proposes strategies for the investigation of this infection in LTCF residents and workers using laboratory tests available in Brazil.

	<p>dissemination prevention strategies</p>		<ul style="list-style-type: none"> • While rRT-PCR is a “gold standard” for the diagnosis of infection, its routine use is limited, particularly in asymptomatic individuals. Immunological tests, including RLTs or rapid tests, can be used as feasible and supplementary alternatives in the laboratory screening of COVID-19, depending on the access of Brazilian LTCFs to such options. • LTCFs should be able to implement COVID-19 prevention strategies, based on the following principles: • Traditional disease control and prevention measures; immediate removal of any worker with flu-like symptoms until the criteria to discontinue home isolation are met; immediate transfer of symptomatic older adults, even with a mild flu-like symptom, to a health care facility with isolation units; performing rRT-PCR on all older adults and workers of the institution where SARS-CoV-2 circulation has been confirmed; weekly screening of asymptomatic individuals with immunological testing, given the difficulty in accessing the rRT-PCR.
<p>28.08.2020</p>	<p>Estimates of the impact of COVID-19 on mortality of institutionalized elderly in Brazil</p>	<p>Ciência & Saúde Coletiva / Article</p>	<ul style="list-style-type: none"> • Estimates of the percentage of elderly deaths occurring in care homes were calculated for Brazil, States and Regions using estimates for the total number of deaths. The estimation was based upon information available for other countries. • The weighted percentage was 44.7% and 107,538 COVID-19 deaths were estimated for the elderly in these institutions in Brazil in 2020. • Higher numbers of deaths were expected in the Southeast Region (48,779 deaths), followed by the Northeast Region (28,451 deaths); São Paulo was the most affected State (24,500 deaths). • The strong impact of COVID-19 on the elderly population living in long-term care facilities is clear. Estimates for the country exceeded 100,000 elderly people, potentially the most fragile and vulnerable, and are based upon a conservative number of total deaths.
<p>28.08.2020</p>	<p>Notes from the Field: Universal Statewide Laboratory Testing for SARS-CoV-2 in Nursing Homes - West Virginia, April 21-May 8, 2020</p>	<p>Morbidity and Mortality Weekly Report (MMWR)</p>	<ul style="list-style-type: none"> • During April 21–May 8, universal testing was conducted in all 123 West Virginia nursing homes. Among the 8,911 residents and 13,687 staff members who were tested, 42 COVID-19 cases were identified in 28 (23%) nursing homes, none of which had previously experienced an

			<p>outbreak. The 42 cases occurred in 11 residents (0.1% of residents tested) and 31 staff members (0.2%).</p> <ul style="list-style-type: none"> • Universal testing identified eight outbreaks with 17 staff members and five residents who tested positive for SARS-CoV-2, including six staff members and two residents who were asymptomatic. • The testing likely prevented the occurrence of ongoing transmission and larger outbreaks, had the asymptomatic infections gone undetected.
29.08.2020	Sentenced to life: what the Italian COVID-19 pandemic could teach us (if we were willing to learn)	European Geriatric Medicine / Letter	<ul style="list-style-type: none"> • A comment lack of dignity in death and emphasis on quantity rather than quality of life amongst those in long-term care which the Covid-19 pandemic has highlighted.
29.08.2020	Nursing Home Social Workers Perceptions of Preparedness and Coping for COVID-19	The Journals of Gerontology. Series B / Article	<ul style="list-style-type: none"> • This study employed a cross-sectional survey to nursing home social workers via social media on feelings of preparedness for COVID-19, what has been most professionally helpful for social workers during these times in their role in COVID-19, as well as demographic questions. • Data are based on a sample of 63 (N=63) nursing home social workers. • Findings revealed that while some social workers felt prepared for the coronavirus, many respondents stated that they were unprepared to meet the demands and challenges they were facing. Moreover, participants shared that professional support was critically important to get through COVID-19. • Findings suggest that additional support for nursing home staff ought to include peer mentoring and mutual support.
29.08.2020	Tall Pines Healthcare COVID-19 Outbreak Experience in Rural Waldo County, Maine, April 2020	Journal of Ambulatory Care Management / Article	<ul style="list-style-type: none"> • Describes a COVID-19 outbreak at long-term care facility, which involved 32 patient cases, 11 staff cases, 19 recovered cases, and 13 deaths over 34 days in April 2020. • Lists the many lessons learned from dealing with that outbreak that may inform and guide others or help prevent facilities from facing some predictable challenges.
31.08.2020	Telehealth: Opportunities in Geriatric Patient Care During COVID-19	Geriatric Nursing / Article	<ul style="list-style-type: none"> • Discusses the history of telehealth, national policy changes that have facilitated the uptake of telehealth during the COVID-19 pandemic, telehealth logistics, limitations, and future implications.

02.09.2020	Bedside wireless lung ultrasound for the evaluation of COVID-19 lung injury in senior nursing home residents	Monaldi Archives for Chest Disease / Article	<ul style="list-style-type: none"> • Aimed at evaluating presence lung injury among senior nursing home residents by LUS performed with portable wireless scanner echography. • Study population consisted of 150 residents with a mean age of 88 years (85% female) residing in 12 nursing homes in Northern Italy. • Subjects had to have a history of recent onset of symptoms compatible with COVID-19 pneumonia or have been exposed to the contagion of patients carrying the disease. • 63% had positive NP testing and 65% had LUS signs of pulmonary injury. LUS had a sensitivity of 79% in predicting positive NP testing. Sixteen percent of residents tested negative for SARSCoV-2 carried the signs of COVID-19 lung injury at LUS. There were 92 patients (61%) with current or recent symptoms. Positivity to LUS scanning was reported in 73% of residents with symptoms, while it was 53% in those without (P=0.016). A positive NP testing was observed in 66% of residents with symptoms and in 57% of those without (P=0.27). • Concludes that assessment of LUS by portable wireless scanner echography can be profitably utilized to diagnose lung injury among senior nursing home residents with or without symptoms compatible with COVID-19 pneumonia.
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Preprints (non-peer reviewed)

Publication date	Title / URL	Journal / Article type	Digest
26.08.2020	Risk factors for outbreaks of COVID-19 in care homes following hospital discharge: a national cohort analysis	MedRxiv / Article	<ul style="list-style-type: none"> • We examined the number of hospital discharges to all Welsh adult care homes and the subsequent outbreaks of COVID-19 occurring over an 18-week period 22 February and 27 June 2020. • A total of 1068 care homes were monitored; 330 homes experienced an outbreak of COVID-19, and 511 homes received a discharge from hospital over the study period.

			<ul style="list-style-type: none"> • The exposure to discharge from hospital was not associated with a significant increase in the risk of a new outbreak (hazard ratio 1.15, 95% CI 0.89, 1.49, p = 0.28), after adjusting for care home size, which was by far the most significant predictor. Hazard ratios (95% CI) in comparison to homes of <10 residents were: 3.4 (2.0, 5.8) for 10-24 residents; 8.3 (5.0, 13.8) for 25-49 residents; and 17.3 (9.6, 31.1) for homes of 50+ residents. • Large homes were at considerably greater risk of outbreaks throughout the epidemic, and after adjusting for care home size, a discharge from hospital was not associated with a significant increase in risk.
01.09.2020	A world apart: levels and factors of excess mortality due to COVID-19 in care homes. The case of Wallonia - Belgium	MedRxiv / Article	<ul style="list-style-type: none"> • Used data from Wallonia (Belgium) to characterize the distribution of death rates among care home institutions, to compare the dynamics of deaths in and outside care homes, and to analyse how age and sex affected COVID-19 death rates inside and outside care homes. • Concludes that the 130x higher COVID-19 mortality rate found in care homes compared to the outside population can be attributed to the near multiplicative combination of: (1) a 11x higher mortality due to the old age of its residents, (2) a 3.8x higher mortality due to the low average health condition of its residents, and (3) probably a 3.5x higher infection rate (1.6x in homes for elderly people) due to the transmission by its staff, a problem more acute in large institutions.
02.09.2020	Asymptomatic cases and limited transmission of SARS-CoV-2 in residents and healthcare workers in three Dutch nursing homes	MedRxiv / Article	<ul style="list-style-type: none"> • Aimed to assess the contribution of a- and presymptomatic residents and healthcare workers in transmission of SARS-CoV-2 in three Dutch nursing homes. • 297 residents and 542 healthcare workers participated. • Nasopharyngeal and oropharyngeal testing, including reverse-transcriptase polymerase chain reaction (rRT-PCR) was conducted with reporting of cycle threshold (Ct). Participants were categorized as symptomatic, presymptomatic or asymptomatic with standardized symptom assessment. • At the first point-prevalence survey, 15 residents tested positive of which one was presymptomatic (Ct value>35) and three remained asymptomatic (Ct value of 23, 30 and 32). At

			<p>the second point-prevalence survey one resident and one healthcare worker tested SARS-CoV-2 positive (Ct value >35 and 24, respectively) and both remained asymptomatic.</p> <ul style="list-style-type: none"> This study confirms a- and presymptomatic occurrence of Covid-19 among residents and health care workers. Ct values below 25 suggested that these cases have the potential to contribute to viral spread. However, very limited transmission impeded the ability to answer the research question.
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Reports and other publications

Publication date	Title / URL	Author(s)	Digest
01.09.2020	Review of adult social care: Speech by Cabinet Secretary for Health and Sport	Jeane Freeman, Cabinet Secretary for Health and Sport	<ul style="list-style-type: none"> Announcement to Scottish Parliament of this independent review.
01.09.2020	Independent review of adult social care: terms of reference	Scottish Government	<ul style="list-style-type: none"> The principal aim of the review is to recommend improvements to adult social care in Scotland, primarily in terms of the outcomes achieved by and with people who use services, their carers and families, and the experience of people who work in adult social care.
02.09.2020	The Rapid Learning Initiative into the Transmission of Covid-19 into and within Care Homes in Northern Ireland	Northern Ireland Department of Health	<ul style="list-style-type: none"> This Report provides the findings of the Rapid Learning Initiative with regards to the transmission of Covid-19 into and within Care Homes during the first surge of the pandemic, and makes recommendations on the way forward prior to further potential surges of infection.

Guidance

Publication date	Title / URL	Author(s)	Digest
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<p>Updated 28.08.2020</p>	<p>COVID-19: how to work safely in domiciliary care in England</p>	<p>Public Health England</p>	<ul style="list-style-type: none"> • This resource is primarily for care workers and providers delivering care in the following settings: • visiting homecare; extra care housing; live-in homecare • It provides guidance on the use of personal protective equipment (PPE) during sustained COVID-19 transmission in the UK, and explains how PPE guidance applies to the homecare (domiciliary care) setting.
<p>Updated 28.08.2020</p>	<p>COVID-19: how to work safely in care homes</p>	<p>Public Health England</p>	<ul style="list-style-type: none"> • Advice to those working in care homes on how to work safely during this period of sustained transmission of COVID-19. • The guidance includes: PPE recommendations for care home staff; frequently asked questions on the use of PPE in care homes; examples which help to identify the correct use of PPE when undertaking activities that require physical contact or activities which do not require physical contact but are carried out in close proximity to residents; guide to putting on PPE for care homes; guide to taking off PPE for care homes.
<p>28.08.2020</p>	<p>Coronavirus (COVID-19): adult care homes visiting guidance</p>	<p>Care Homes Clinical and Professional Advisory Group (CPAG) on behalf of the Scottish Government</p>	<ul style="list-style-type: none"> • This guidance sets out how care home visiting may be re-introduced while minimising the risks to residents, staff and visitors. • It sets out how relaxation of visiting restrictions takes place in three further stages, moving through outdoor visiting, indoor visiting by one designated person and eventually to a controlled programme of outdoor and indoor visiting. It sets out what precautions will be taken to safeguard resident, visitor and staff safety. • From 10 August care home residents will be able to have up to 3 outdoor visitors at one time from no more than 2 households. We also want to introduce indoor visiting to residents by designated individuals once care homes have developed a plan that must meet certain criteria to allow this to happen as safely as possible.
<p>Updated 28.08.2020</p>	<p>Visits to care homes: guidance for providers</p>	<p>Welsh Government</p>	<ul style="list-style-type: none"> • The guidance provides advice for care home providers on facilitating:

			<ul style="list-style-type: none"> • outdoor visits; indoor visits when the level of COVID-19 at a local or national level allows; indoor visits in exceptional circumstances including end of life; people going out into the community and visiting family and friends. • The guidance sets out an ethical framework to support people living and staying in care homes to reconnect safely with families, friends and professionals, consistent with the requirements of the wider coronavirus restrictions.
28.08.2020	Preventing and managing COVID-19 across long-term care services: web annex	World Health Organization	<ul style="list-style-type: none"> • This publication forms part of the WHO policy brief 'Preventing and managing COVID-19 across long-term care services' (24 July). • It presents a comprehensive set of actions for policy-makers, national and local decision-makers and other actors.
Updated 02.09.2020	Coronavirus (COVID-19): admission and care of people in care homes	Department of Health & Social Care; Care Quality Commission; Public Health England; NHS England	<ul style="list-style-type: none"> • This guidance is for care homes, local health protection teams, local authorities, clinical commissioning groups (CCGs) and registered providers of accommodation for people who need personal or nursing care. It sets out how to admit and care for residents safely and protect care home staff.
Updated 02.09.2020	Coronavirus (COVID-19): providing home care	Department of Health & Social Care	<ul style="list-style-type: none"> • The document brings together guidance for social care staff, registered providers, local authorities and commissioners who support and deliver care to people in their own homes in England. It covers: <ul style="list-style-type: none"> • personal protective equipment; • clinically extremely vulnerable people and care groups; • hospital discharge and testing; • government support for social care; • information collection and governance.

Statistics

Publication date	Title / URL	Author(s)	Digest
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02.09.2020	Number of deaths in care homes notified to the Care Quality Commission, England	Office for National Statistics & Care Quality Commission	<ul style="list-style-type: none"> Provisional counts of deaths in care homes caused by the coronavirus (COVID-19) by local authority up to week ending 28 August.
02.09.2020	Coronavirus (COVID-19): adult care homes - additional data	Scottish Government	<ul style="list-style-type: none"> Weekly data on COVID-19 in adult care homes in Scotland, including: Testing for COVID-19 in adult care homes in Scotland split by care homes with confirmed Covid-19 and without confirmed Covid-19, presented by NHS Health Board; Deaths reported to Care Inspectorate - the number of deaths reported by adult care homes, including COVID-19 and non-COVID-19 related deaths.

Editorials and News

Publication date	Title / URL	Author(s)	Digest
29.08.2020	Hard-Hit Nursing Homes Face Catch-22 to Reopen	American Journal of Nursing / News	<ul style="list-style-type: none"> As federal and state governments issue guidelines for the phased reopening of nursing homes, the facilities find themselves in a bind. To reopen, they must demonstrate that they have adequate supplies of personal protective equipment (PPE) and diagnostic tests as well as no new COVID-19 cases. But their pleas for government assistance to acquire these supplies have been largely ignored, leaving some nursing homes unable to qualify for reopening.