What works to prevent COVID-19 in ‘care at home’ settings?

HIS Evidence were asked to search for evidence on what works to prevent COVID-19 in ‘care at home’ settings. This is to support the work of the Scottish Government Clinical Cell. In line with the HIS Evidence rapid response process, a search of the relevant evidence sources from the McMaster University Health Forum COVID-19 resource list was undertaken and the findings summarised in this report.

**HIS Evidence Conclusion:** No systematic reviews of studies, nor primary studies, which directly examined the effectiveness of interventions to prevent COVID-19 in ‘care at home’ settings were identified. Limited evidence from other settings and for other respiratory infections is available and this may help to guide practice, but the different context to which it is being applied should be taken into account. UK and Scottish guidance is available, but evidence and information sources are not discussed within these.

**Introduction**

‘Care at home’, which can be referred to by a variety of terms such as domiciliary care and homecare is broadly defined as supportive care provided in the home environment. It may be provided by licensed healthcare professionals who provide medical care needs, or by professional caregivers who provide daily care to help to ensure the activities of daily living are met. Many aspects of infection prevention and control that apply in other health and care settings, apply to the home care setting also. However, there are some differences that may mean that different approaches are required. In particular, the home environment is usually much less controlled than other healthcare settings, it is likely to be have limited space and resources available, and formal care is usually intermittent in nature, with additional care often being given by informal carers with little formal training in infection prevention and control[1]. The individual being cared for may move in and out of the home care setting, and receive care from other providers. This evidence review therefore sought in the


^ https://www.careinfoscotland.scot/topics/care-at-home/α
first instance to identify information on preventing infection which was specific to ‘care at home settings’, with a focus on COVID-19.

**Published evidence**

No systematic reviews of studies, nor primary studies relating to preventing COVID-19 infection, specifically, in ‘care at home’ settings were identified by the literature search conducted. Health Protection Scotland (HPS) conducted a rapid review of the evidence on infection prevention and control measures for the prevention and management of COVID-19 in health and care settings in general in early March 2020. They are updating this on an ongoing basis as new studies become available[2]. This HPS review also did not identify any evidence specific to ‘care at home’ settings.

Two papers[3, 4] describing experiences which the authors of these papers felt useful to share in relation to the COVID-19 situation were identified, but these are discursive in nature rather than based on research. One paper[3] recounts an approach to managing infection risk in an oncological home care service in central Italy, based upon lessons learned in running the service during the 2009 earthquake in that area. It discusses the application of a double triage protocol in which oncology patients and members of their household, prior to scheduled home care appointments, receive an initial telephone call from a nurse to establish whether they have even mild symptoms of possible COVID infection. Those with symptoms are advised to follow national guidance, and those without symptoms then receive a second telephone call to schedule access. During this second call a prognostic scoring system is used to establish if the visit is required, to avoid any unnecessary contact. The second paper from Taiwan[4], describes the approach being followed by ‘Home Care Aides (HCAs)’ who deliver care and support to people in their homes in Taiwan. These include daily body temperature checking and reporting by the staff, re-organising the grouping and scheduling of HCA’s visits, and wearing of personal protective equipment. The authors suggest further to this, there is a need for notification of homes where there is a particular risk of infection to HCAs, prioritisation of services such that those that are less essential can be cancelled if required, and telehealth temperature monitoring of care recipients.

In the absence of research evidence specifically relating to COVID-19, searching then also sought studies undertaken within the last 3 years, relating to infection prevention in general within the specific ‘care at home’ setting. Again very few papers relating to the setting of interest were retrieved. A study carried out in north-eastern USA[5], used a questionnaire to explore the knowledge and attitudes of 359 nurses, employed by two home healthcare agencies, towards infection prevention and control. It also examined the factors that may impact upon these. Attitudes were found to be significantly correlated with compliance with hand hygiene practices (based on self-reported data), but no association was observed for knowledge of infection control practices, and compliance. Based on these findings, the authors suggest that efforts to improve compliance should focus on changing perspectives on risk.

Given the limited literature on ‘care at home’ settings, research on infection prevention and control in other healthcare settings may provide some guidance on what might be effective. For example,
the literature discussed in the related HIS Rapid Response on prevention of COVID-19 in care homes (Hyperlink to be added) may be of relevance. There are also a number of additional Cochrane systematic reviews, not specifically mentioned in that rapid review, but which consider various aspects of infection prevention and control and may be helpful. These include a review on improving adherence to standard precautions for the control of health care-associated infections[6], a review on behavioural interventions to promote workers’ use of respiratory protective equipment[7] and a review on physical interventions to interrupt or reduce the spread of respiratory viruses[8]. Brief summaries of these reviews, taken from the Evidence Aid website are provided in Annex 2.

Guidelines

United Kingdom

Although the available research evidence is limited, there is UK and Scottish guidance available on infection control practices to be followed in ‘care at home’ settings. In most instances, the guidance does not state the evidence on which it is based. It therefore is likely to reflect expert views and extrapolation of evidence from other settings.

Public Health England have produced guidance on home care provision in relation to COVID-19[9], aimed at local authorities, clinical commissioning groups and registered providers, who support and deliver care to people in their own homes, including community health services.

Public Health England also provides guidance on the use of personal protective equipment (PPE) for care workers delivering homecare (domiciliary care) during sustained COVID-19 transmission in the UK[10]. It explains how PPE guidance applies to the homecare setting and is drawn from full UK government infection prevention and control (IPC) and PPE guidance[11]. It includes some case studies of people working in care at home settings.

A UK Department for Health policy paper[12] has a chapter on infection prevention and control and includes three case studies. The first describes the setting up of a provider hub by Hertfordshire District Council to support its 800 social care providers. The second details the systems approach followed by Nottinghamshire County Council and which includes ensuring urgent deliveries of PPE. The final example discusses joint working in London between local authorities and health to support the increased need for infection control advice and expertise.

Scotland

In Scotland, guidance is available from the Scottish Government on the management of clients accessing care at home, housing support and sheltered housing[13].
Annex 1 Search strategy

Medline

Database: Ovid MEDLINE(R) ALL <1946 to April 28, 2020>

Search Strategy:

---------------------------------------
1 exp Coronavirus/ (12748)
2 (coronavirus or "corona virus").tw. (13363)
3 (covid19 or covid-19 or "covid 19").tw. (6261)
4 "2019 nCoV".tw. (561)
5 or/1-4 (22361)
6 exp Home Care Services/ (46918)
7 exp Home Nursing/ (9340)
8 exp Nursing Homes/ (38857)
9 exp Residential Facilities/ (51962)
10 ("care home*" or "care at home" or "community care" or "home care" or "residential care" or "nursing home*" or "sheltered housing" or "domiciliary care").tw. (55847)
11 or/6-10 (119000)
12 exp communicable disease control/ or exp infection control/ (337487)
13 prevent*.tw. (1393270)
14 (infect* adj2 control*).tw. (38444)
15 exp Cross Infection/ (58785)
16 or/12-15 (1751964)
17 5 and 10 and 16 (11)

Web search examples:
covid OR covid19 OR coronavirus OR covid-19 "prevention"
care home coronavirus prevention
"care home*" or "care at home" or "community care" or "home care" or "residential care" or "nursing home*" or "sheltered housing" or "domiciliary care"

### Annex 2 Potentially relevant Cochrane Systematic reviews

<table>
<thead>
<tr>
<th>Reference</th>
<th>What is this?</th>
<th>What works:</th>
<th>What doesn’t work:</th>
<th>What’s uncertain:</th>
</tr>
</thead>
</table>
| Luong Thanh BY, Laopaiboon M, Koh D, Sakunkoo P, Moe H.  
Behavioral interventions to promote workers’ use of respiratory protective equipment. Cochrane Database of Systematic Reviews 2016; (12): CD010157 | Respiratory protective equipment (RPE) is worn by a variety of workers to protect them from hazards they encounter in their workplace. However, RPE can only be effective if worn properly, removed safely and maintained regularly. Behavioral interventions might be used to help with this and evidence on their effects may provide useful information for COVID-19. | Nothing noted. | There is very low quality evidence that education and training to promote workers’ use of respiratory protective equipment (RPE) do not have a considerable effect on the frequency or correctness of their use of RPE. | There were no studies on incentives or organization-level interventions. |
Improving adherence to Standard Precautions for the control of healthcare-associated infections. Cochrane Database of Systematic Reviews 2018; (2): CD010768 | Standard precautions, including using personal protective equipment (PPE) or adhering to safe handling of needles are essential for the prevention and spread of infections, such as COVID-19, in healthcare settings (e.g. hospitals and nursing homes). | | | |

In this Cochrane systematic review, the authors searched for comparative effectiveness studies of behavioral interventions to promote RPE use by workers. They did not restrict by date, type or language of publication and did their searches in August 2016. They identified 8 randomized trials and 6 controlled before-and-after studies (total: 2052 participants) in a wide range of settings, with 4 studies in healthcare.

What works: Nothing noted.

What doesn’t work: There is very low quality evidence that education and training to promote workers’ use of respiratory protective equipment (RPE) do not have a considerable effect on the frequency or correctness of their use of RPE.

What’s uncertain: There were no studies on incentives or organization-level interventions.

In this Cochrane systematic review, the authors searched for research evaluating educational interventions to improve adherence to Standard Precautions by healthcare workers. They did not restrict by date, type or language of publication and did their searches in February 2017. They identified 4 individual randomized trials, 1 individual randomized trial with a crossover design, 2 cluster-randomized trials and one non-randomized trial (total: 673 participants), but there was considerable variation in interventions and outcome measures used, and in the certainty of the evidence.

What doesn’t work: Nothing noted.

What’s uncertain: Education with additional infection control support may slightly improve healthcare workers’ adherence to Standard Precautions.


What is this? The arrival of a new respiratory virus, such as COVID-19, is followed by a lead-time for the development of vaccines and treatments, and these may have a limited effect in containing or interrupting spread of the virus. Therefore, physical interventions that might interrupt or reduce its spread are particularly important.

In this Cochrane systematic review, the authors searched for research (randomized trials and observational studies) into physical interventions that might prevent respiratory virus transmission. They did not restrict by language of publication and did their searches in October 2010. They identified 67 eligible studies, spread across many different interventions.

What works: Frequent handwashing reduces the spread of respiratory viruses. Normal handwashing with soap appears to be as effective as virucidal or antiseptics. Containment of transmission by isolation in hospital wards or at home can be instituted rapidly and be effective in reducing the spread of respiratory virus epidemics. Containment of transmission by wearing masks, gloves and gowns can be instituted rapidly and be effective in reducing the spread of respiratory virus epidemics.

What doesn’t work: Nothing noted.

What’s uncertain: There is little evidence to support the benefit of N95 respirators over simple surgical masks. There is insufficient evidence to support routine screening at entry ports or social distancing (spatial separation of at least one metre between those infected and those non-infected) as methods to reduce virus spread during epidemics.

References


10. COVID-19: how to work safely in domiciliary care


12. Coronavirus (COVID-19): adult social care action plan

13. Coronavirus (COVID-19): clinical guidance for the management of clients accessing care at home, housing support and sheltered housing

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This report has been prepared in line with the HIS Evidence rapid response process. It has not been peer reviewed, and does not constitute recommendations. It should be considered alongside existing guidance applicable to NHS Scotland.