



CLINICAL GUIDELINE

Advice for Management of Covid-19 Infection in Nursing Homes – Use of Oxygen and Dexamethasone

A guideline is intended to assist healthcare professionals in the choice of disease-specific treatments.

Clinical judgement should be exercised on the applicability of any guideline, influenced by individual patient characteristics. Clinicians should be mindful of the potential for harmful polypharmacy and increased susceptibility to adverse drug reactions in patients with multiple morbidities or frailty.

If, after discussion with the patient or carer, there are good reasons for not following a guideline, it is good practice to record these and communicate them to others involved in the care of the patient.

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Important Note:

The Intranet version of this document is the only version that is maintained. Any printed copies should therefore be viewed as 'Uncontrolled' and as such, may not necessarily contain the latest updates and amendments.

Management of Covid-19 Infection in Nursing Homes- Use of Oxygen and Dexamethasone

Background	<p>Recent publications have suggested that dexamethasone reduces mortality in patients who are hospitalised with proven Covid-19 Infection and who require oxygen support.</p> <p>Although these studies were performed only on hospitalised patients it should be noted that a large population recruited into the trial had significant morbidity and were in the same age category as nursing home residents. After reviewing these publications it is assumed that some Nursing Home residents may therefore benefit from dexamethasone prescription. It should be noted that there was evidence of harm for patients with no oxygen requirement.</p> <p>When considering the possible use of dexamethasone and oxygen it is important that the decision is discussed early with patients and their families. A review of their current presentation and recent level of frailty should take place and also take into account their Anticipatory Care Plan. It is important to discuss what their wishes regarding treatment and admission are as well as speaking to their family member if they are unable to be part of this conversation. Once the decision regarding admission has taken place a pragmatic discussion should be had both in terms of potential benefits- number needed to treat=25, so 25 patients would need to be treated for 1 to benefit and potential risks including limitations of oxygen delivery in Nursing Homes (maximum delivery of 5L/min) and potential side effects of steroids.ⁱ</p> <p>This advice will not apply to all Nursing Homes. It will require a nursing home to have staff with the relevant skill set and also have access to necessary resources to be able to follow this guidance and implement it safely. It is expected that a small number of nursing home patients to be suitable for this form of treatment after considering the inclusion and exclusion criteria below, the Anticipatory Care Plan (ACP) and following a discussion about the potential risks and benefits.</p> <p>Nursing Homes that cannot implement this guidance and offer dexamethasone treatment to their patients with COVID-19 and a new oxygen requirement should consider admission or provide supportive management.</p> <p>Additional Information</p> <p>Medicine for the Elderly consultant advice is available via consultant connect Monday-Sunday 9am-6pm. Outwith these times an on call Medicine for the Elderly consultant can be contacted via hospital switchboard</p> <p>Medicine for the Elderly consultant would be happy to advise/discuss hospital admission for nursing home patients with Covid-19, and concerns regarding dexamethasone/hyperglycaemia.</p> <p>See GGC Medicines Adult Therapeutics Handbook https://handbook.ggcmedicines.org.uk/guidelines/covid-19-coronavirus/covid-19-coronavirus-infection/</p>
Intended Users	General Practice and Advance Nurse Practitioner prescribers.

Target Population	<p>Nursing Home residents with Covid-19 infection (confirmed or highly suspected) with a new oxygen requirement - O₂ sats <94% on room air; <88% if at risk of hypercapnoeic respiratory failure (e.g. existing COPD, severe frailty) and respiratory rate >24</p> <ul style="list-style-type: none"> - who are felt not to be suitable for hospital admission (e.g. because of frailty, co-morbidity, ACP), or - who do not wish hospital admission. <p>It is important that those patients felt to be suitable for hospital admission should continue to be admitted.</p>
Inclusion criteria	<ol style="list-style-type: none"> 1. Not for admission to hospital due to co-morbidity / frailty / treatment escalation plan or patient wishes 2. Proven Covid-19 Infection (or highly suspected) 3. New oxygen requirement with O₂ sats <94% on room air (<88% if at risk) <p>See GGC Medicines Adult Therapeutics Handbook for additional information https://handbook.ggcmedicines.org.uk/guidelines/covid-19-coronavirus/covid-19-coronavirus-infection/</p>
Exclusion criteria	<ol style="list-style-type: none"> 1. No requirement for oxygen 2. High dose steroid likely to cause harm 3. Nearing end of life <p>See GGC Medicines Adult Therapeutics Handbook for additional information https://handbook.ggcmedicines.org.uk/guidelines/covid-19-coronavirus/covid-19-coronavirus-infection/</p>
Dosing information	<p>Start oxygen, via nasal cannula, (simple masks should not be used for flow rates below 5 L/min) starting at 2 L/min, titrating up to a maximum of 4 L/min, aiming for the following:</p> <p>in patients who are NOT at risk of hypercapnoeic respiratory failure</p> <ul style="list-style-type: none"> • aim for target O₂ sats 94–96% <p>in patients who are at risk of hypercapnoeic respiratory failure (e.g. existing COPD, severe frailty)</p> <ul style="list-style-type: none"> • aim for target O₂ sats 88–92% <p>Nursing home staff or GP to contact Respiratory Nurse Specialist Team (North 0141 201 5436, South 0141 451 6073 / 0141 451 6074, Clyde 0141 314 7400 / 0147 550 5047) to arrange delivery of further oxygen concentrator.</p> <p>Commence oral dexamethasone at 6mg once daily in the morning for maximum of 10 days and consider PPI cover e.g. omeprazole 20mg once daily or lansoprazole 15-30mg once daily. If there are significant side effects with dexamethasone consider stopping or shortening the duration of therapy.</p> <p>This should be prescribed in your usual way and dispensed by your usual pharmacy. If there are anticipated delays in the time to prescribe and dispense check if held by GP Out of Hours Service. Also Palliative Care Network Pharmacies may also have oral dexamethasone formulations (they will hold stock of dexamethasone injection for palliative care).</p> <p>Dexamethasone 2mg tablets are the most common formulation; a 10 day course of 6mg (3 x 2 mg) each morning is 30 tablets. Tablets can be crushed and dispersed in</p>

	<p>water. There are also other tablet strengths (0.5mg, 4mg), soluble tablets (2mg and 4mg) and liquid formulations (2mg/5mL or 10mg/5mL).</p> <p>Patients who are not for escalation to secondary care and who have increasing oxygen requirements despite these treatments may require a more palliative approach.</p> <p>See GGC Medicines Adult Therapeutics Handbook for additional information https://handbook.ggcmedicines.org.uk/guidelines/covid-19-coronavirus/covid-19-coronavirus-infection/</p>
<p>Review / escalation considerations</p>	<p>We would advise the use of dexamethasone if all inclusion criteria are met and if the family agree that they would like to try this form of medication, understanding the risks and benefit laid out in the background information. A systematic review of corticosteroid use for sepsis/shock found incidence of acute hyperglycaemia was increased from 46% to 52% in patients treated with corticosteroids.ⁱⁱ The incidence of acute hyperglycaemia in patients requiring hospitalisation appears to be about 50%ⁱⁱⁱ and it is expected that corticosteroids will increase this.</p> <p>Close monitoring of blood sugars in the Nursing Home setting may not be possible but the potential complication of hyperglycaemia should be born in mind when making a decision on initiation of dexamethasone.</p> <p>If the patient deteriorates despite this treatment then it should be stopped. Similarly if significant side effects are noted or the medication is not tolerated then consider stopping or shortening the duration of therapy.</p> <p>Patients who are not for escalation to secondary care and who have increasing oxygen requirements despite these treatments may require a more palliative approach.</p> <p>Dexamethasone and blood glucose monitoring^{iv} Dexamethasone and Covid-19 can independently cause severe insulin resistance and impaired glucose metabolism. Combined, there is therefore a risk to people with and without known diabetes of significant hyperglycaemia and possible Hyperosmolar Hyperglycaemic State (HHS) or Diabetic Ketoacidosis (DKA).</p> <p>In the Nursing Home setting checking capillary blood glucose four times a day may not be feasible. Please check capillary blood glucose once a day between 1600-1800 (4pm-6pm) and if capillary blood glucose is >12mmol/L then consider stopping (or withholding) next day dose of dexamethasone or seeking advice from the Medicine for the Elderly consultant on call through CC or switchboard for advice about possible corrective management of the side effects, which may include gliclazide.</p> <p>In NHSGGC it is recommended that healthcare professionals monitor blood glucose using equipment that can be validated and quality assured (this is not possible with patient-own meters). If the Nursing Home does not have suitable equipment to monitor capillary blood glucose levels then the Care Home Liaison Nurse can arrange supply of a suitable meter (Freestyle Optium Neo H) to the Nursing Home and for a Community Diabetes Specialist Nurse to demonstrate this with the Nursing Home staff.</p>

To arrange delivery of a Freestyle Optium Neo H Blood Glucose/Ketone meter Care Home contact the Care Home Liaison Nurse. They will:

- supply the meter and sundries
- arrange for a Community Diabetic Specialist Nurse to visit and demonstrate the meter

ⁱ <https://www.recoverytrial.net/news/low-cost-dexamethasone-reduces-death-by-up-to-one-third-in-hospitalised-patients-with-severe-respiratory-complications-of-covid-19>)

ⁱⁱ Annane D, Bellissant E, Bollaert P, et al. Corticosteroids in the Treatment of Severe Sepsis and Septic Shock in Adults: A Systematic Review. *JAMA*. 2009;301(22):2362–2375. doi:10.1001/jama.2009.815

ⁱⁱⁱ Ceriello A. (2020). Hyperglycemia and COVID-19: What was known and what is really new?. *Diabetes research and clinical practice*, 167, 108383. <https://doi.org/10.1016/j.diabres.2020.108383>

^{iv} https://www.diabetes.org.uk/resources-s3/public/2020-06/COvID_Dex_v1.4.pdf