



PCRS Pragmatic Guidance

Diagnosing and managing asthma attacks and people with COPD presenting in crisis during the UK Covid 19 epidemic

This pragmatic guide has been written to respond to the questions that primary care colleagues are now asking, particularly around steroid use as Covid 19 cases begin to rise.

For patients with asthma, current guidelines recommend that all patients with asthma should be on an ICS except those who use <3 doses of SABA per week on average over the year. People with asthma must continue their preventive ICS according to current guidelines. There is no evidence of a relationship between the use of ICS and COVID-19 infection at present and ICS. When taken as prescribed, ICS will reduce the risk of an asthma attack being triggered by a respiratory virus such as Covid 19. For patients presenting with an asthma attack, current evidence supports up to quadrupling ICS from standard doses until symptoms improve in adults. Evidence does not support increasing ICS in children in asthma to improve asthma attack outcomes. Oral corticosteroids (OCS) should be used in people with asthma attacks according to current UK guidelines.

Prescribing of high dose ICS in people with COPD for the prevention of exacerbations has always needed to be clearly justified and the current situation should concentrate our minds further on ICS safety in COPD. Before prescribing high dose ICS in people with COPD the diagnosis should be reviewed including their history of blood eosinophil elevations. If you are not confident of their diagnosis of COPD and/or you are not able to record clear asthmatic features or blood eosinophil counts >0.3 or high exacerbation counts, then the patient should not be on a long-term ICS. If they are on high dose ICS, consider reducing this to a standard dose. OCS can be used in people with presenting with COPD exacerbation if it is possible Covid 19 is triggering it, but should not be given if the patient has a high temperature. Additionally, for those who do not have a high blood eosinophil count or a history of steroid reversibility – steroids should be withheld if the patient has a severe infection.

The Primary Care Respiratory Society UK Registered office Miria House, 1683b High Street, Knowle, Solihull B93 0LL Registered Charity 1098117 Company No 4298947 VAT Registration Number 866 1543 09 Telephone +44 (0)1675 477600 Email info@pcrs-uk.org Website <http://www.pcrs-uk.org>

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Background

This pragmatic guide has been written to respond to the questions that primary care colleagues are now asking, particularly around steroid use as Covid 19 cases begin to rise exponentially and as they try to continue to support people with asthma and COPD who may worsen because of:

- Direct cause viral pneumonia
- Airways disease worsening due to the viral trigger effect
- Other known triggers for airways disease worsening without Covid 19 infection
- Fear and anxiety
- A combination of these scenarios

All these scenarios will need thoughtful, skilled and nuanced approaches and the questions we see underlying them now are:

1. What is the evidence that oral corticosteroids make Covid 19 outcomes worse?

Current guidance from WHO issued in January 2020 advised against the use of corticosteroids unless indicated for another reason.¹

Russell et al reviewed the data for clinical outcomes of corticosteroid use in coronavirus and similar outbreaks. They found that there is no reason to anticipate that patients with 2019-nCoV infection will benefit from corticosteroids and they might be more likely to be harmed with such treatment. On this basis they concluded that corticosteroid treatment should not be used for the treatment of 2019-nCoV-induced lung injury or shock outside of a clinical trial.²

We would anticipate that a patient with acute asthma or an exacerbation of COPD may well benefit from corticosteroid as expected.

2. Should all people with asthma and COPD be issued with rescue packs?

At the present time there is no evidence to suggest that either antibiotics or corticosteroids are useful or appropriate in the early stages of Covid 19 infection and their use may delay patients seeking advice if they become increasingly short of breath. People with exacerbation action plans developed through shared decision making that include the use of rescue packs should ensure they have adequate supplies to follow the agreed plan. Do not put rescue packs on repeat prescription. Every attack needs a review to understand why before adjusting any treatment plan.

¹ Clinical management of severe acute respiratory infection when novel coronavirus (nCoV) infection is suspected. World Health Organization, Geneva, Jan 28, 2020 Available at: [https://www.who.int/publications-detail/clinical-management-of-severe-acute-respiratory-infection-when-novel-coronavirus-\(ncov\)-infection-is-suspected](https://www.who.int/publications-detail/clinical-management-of-severe-acute-respiratory-infection-when-novel-coronavirus-(ncov)-infection-is-suspected)

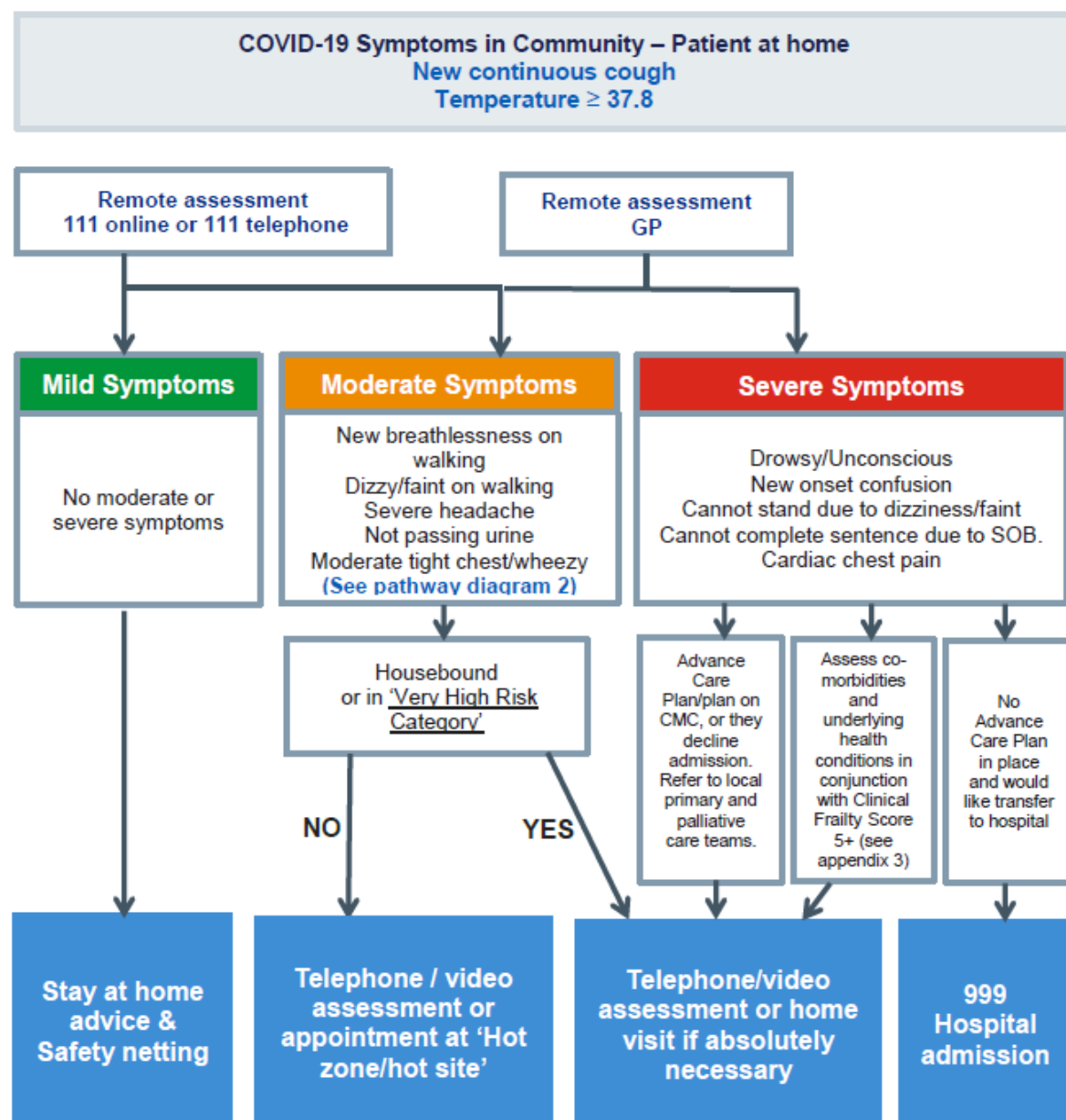
² Russell CD, et al. Clinical evidence does not support corticosteroid treatment for 2019-nCoV lung injury. Lancet 2020;395:473-475. Available at: [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(20\)30317-2/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)30317-2/fulltext)

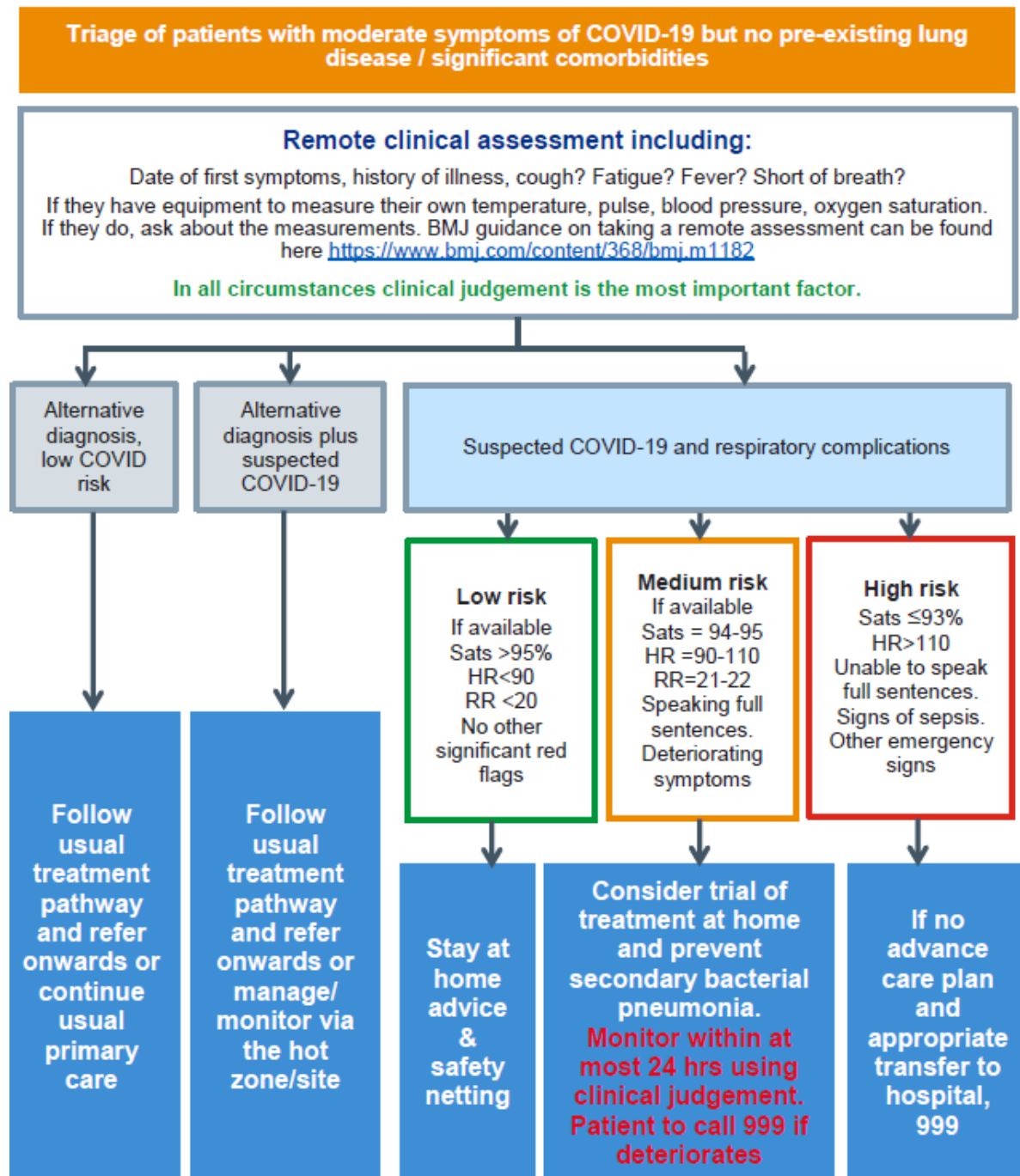
3. What are the acceptable parameters that I should currently be using to decide whether to escalate care from telephone or video to a hot Covid 19 assessment site, GP surgery, home visit or emergency transfer?

At the time of writing the development of decision support algorithms is happening apace and in a number of locations across the UK.

Please see our [Covid 19](#) support page for these examples.

Below is the example that has been agreed by the London Respiratory Network in recent days. We will continue to update you as more is learned and if the situation changes.





4. What is the time course of recovery from Covid 19?

It is likely that the recovery time from Covid 19 infection will be similar to that for community-acquired pneumonia of seasonal influenza and will depend on the severity of illness. For patients requiring hospital treatment for Covid 19 the following time course is expected:

- 1 week: Fever should have resolved.
- 4 weeks: Chest pain and sputum production should have substantially reduced.
- 6 weeks: Cough and breathlessness should have substantially reduced.
- 3 months: Most symptoms should have resolved but fatigue might still be present.
- 6 months: Symptoms should have fully resolved.

Patients who have recovered following admission to ICU and mechanical intervention may require additional psychological support. Guidance on this will be provided elsewhere.

5. Should routine reviews still include spirometry?

At the present time, routine reviews should not include exhaled CO checks, spirometry or FeNO testing. Use of peak flow meters within the household only can help people keep track if they find this helpful.

6. Should nebulizers still be given if indicated?

There is some debate about this and evidence available has come from past experience of SARS outbreaks with researchers taking measurements on people needing nebulisers as well as other invasive airway interventions. The consensus currently is that it is very low risk as it is the device or cylinder driving aerosolisation of the nebule liquid and not the patient's airflow.

7. How can we support patients presenting with fear and anxiety associated with Covid 19?

PCRS has drawn together a range of resources and sources of information for patients [here](#). It is more important than ever that to support our patients effectively we take time to look after our own mental health and wellbeing. PCRS has compiled a collection of suggestions and online resources to support you [here](#).

Guidance for caring for patients with asthma

8. Should we start all people with asthma on ICS?

Asthma is an inflammation of the airway and treatment fundamentally needs to target this. New guidelines in recent years clearly make this point and have changed to ICS being the first step in asthma management plans. We know there is current underuse of ICS and over reliance on SABA. The first step should be to attend to these patients as all guidelines recommend that they should be on ICS. For the small proportion of people who use < 3 doses of SABA per week on average over the year i.e. 1.5 canisters, then current advice would not recommend starting ICS. However, if their requirement increases then they should be managed according to current guidance.

9. Is there evidence to consider stopping or reducing ICS in stable asthma?

People with asthma must continue their preventive ICS according to current guidelines. In their review of the data for the Centre for Evidence-Based Medicine (CEBM), Jamie Hartmann-Boyce and Richard Hobbs concluded that there is no evidence of a relationship between the use of ICS and COVID-19 infection at present.³ They noted that ICS are generally considered a safe and frontline treatment for controlling asthma symptoms and emphasised the point that discontinuing ICS in people with stable asthma more than doubled the risk of asthma exacerbation in a meta-analysis of 7 clinical trials (relative risk 2.35, 95% confidence interval 1.88 to 2.92, mean follow-up 27 weeks). On this basis, the

³ CEBM. Inhaled steroids in asthma during the COVID-19 outbreak. Available at: <https://www.cebm.net/covid-19/inhaled-steroids-in-asthma-during-the-covid-19-outbreak/>.

recommendation remains that ICS, when taken as prescribed, will reduce the risk of an asthma attack being triggered by a respiratory virus such as COVID-19. However, uncertainty remains over whether the prescription of higher dose ICS increases the risks of pneumonia.

Below is an excerpt from the NICE asthma pathway with regard to ICS doses. Remember that after 800 mcg BDP equivalent very few people with asthma gain additional benefit and side effects tend to exceed benefits at this dose:⁴

ICS doses and their pharmacological strengths vary across different formulations. In general, people with asthma should use the smallest doses of ICS that provide optimal control for their asthma, in order to reduce the risk of side effects.

For adults aged 17 and over:

- ≤400 mcg budesonide or equivalent would be considered a low dose
- >400 mcg to 800 mcg budesonide or equivalent would be considered a moderate dose
- >800 mcgs budesonide or equivalent would be considered a high dose

For children and young people aged 16 and under:

- ≤200 mcgs budesonide or equivalent would be considered a paediatric low dose
- >200 mcg to 400 mcgs budesonide or equivalent would be considered a paediatric moderate dose
- >400 mcgs budesonide or equivalent would be considered a paediatric high dose

More information on ICS potency can be obtained from RightBreathe⁵ and the British Thoracic Society.⁶

10. How do I differentiate between Covid 19 disease and asthma attack when conducting a telephone consultation?

See Item 3 for algorithms to assist with the remote evaluation of patients presenting with respiratory symptoms. Evaluations for clinicians conducting a telephone consultation to determine if a face to face consultation is warranted may include the ability of a patient to complete full sentences or, for those aware of its limitations, the Roth score.

In their review of the data for the Centre for Evidence-Based Medicine (CEBM), Trish Greenhalgh, Koot Kotze and Helene-Mari Van Der Westhuizen suggest the following approach:⁷

⁴ Available at: <https://www.nice.org.uk/guidance/ng80/chapter/Recommendations#principles-of-pharmacological-treatment>

⁵ RightBreathe. Find an inhaler. Available at: <https://www.rightbreathe.com/?s=>

⁶ British Thoracic Society. Available at: <https://www.brit-thoracic.org.uk/quality-improvement/guidelines/asthma/>

⁷ CEBM. Are there any evidence-based ways of assessing dyspnoea (breathlessness) by telephone or video. Available at: <https://www.cebm.net/covid-19/are-there-any-evidence-based-ways-of-assessing-dyspnoea-breathlessness-by-telephone-or-video/>

1	Ask the patient to describe the problem with their breathing in their own words and assess the ease and comfort of their speech. Ask open-ended questions and listen to whether the patient can complete their sentences "How is your breathing today?"
2	Align with NHS111 symptom checker , which asks three questions (developed through user testing but not evaluated in formal research): "Are you so breathless that you are unable to speak more than a few words?" "Are you breathing harder or faster than usual when doing nothing at all?" "Are you so ill that you've stopped doing all of your usual daily activities?"
3	Focus on change. A clear story of deterioration is more important than whether the patient currently feels short of breath. Ask questions like "Is your breathing faster, slower or the same as normal?" "What could you do yesterday that you can't do today?" "What makes you breathless now that didn't make you breathless yesterday?"
4	Interpret the breathlessness in the context of the wider history and physical signs . For example, a new, audible wheeze and a verbal report of blueness of the lips in a breathless patient are concerning

11. How can I reassure patients with respiratory symptoms who are concerned they may be due to Covid 19?

Guidance from Asthma UK that may be helpful in reassuring patients is as follows:⁸

If you have some, or all, of these symptoms, it might be a chest infection:

- A chesty wet cough
- Lots of yellow or green phlegm that is thick, and may be smelly
- Chest pain or discomfort
- A high temperature of 38 degrees or above
- Aching muscles
- Tiredness

If you have these symptoms it might be Covid 19:

- Fever
- Continuous cough unlike previous asthma attacks

If you have these symptoms it might be an asthma attack:

- Temperature usually normal
- Cough
- Breathlessness (mainly expiratory)
- Aching muscles
- Shivering

An individualised personal asthma action plan should record what usually triggers a person's asthma and describes what the experience feels like in their language and terms. If the

⁸ Asthma UK. Available at: <https://www.asthma.org.uk/advice/triggers/chest-infections/>

presentation includes respiratory symptoms but does not feel like an asthma exacerbation to them then a different cause must be considered.

12. Can I advise people with asthma to increase their ICS if I think this is possible Covid 19 triggering it?

The risk of inadequately treating an asthma attack is highly likely to be worse than the risk from Covid 19 in most people with asthma. Current evidence supports up to quadrupling ICS from standard doses until symptoms improve in adults. Evidence does not support increasing ICS in children in asthma to improve asthma attack outcomes.⁹ However, if a patient is not responding or the situation is changing rapidly they should be safety netted.

13. Can I use OCS in a more severe asthma attack if I think it is possible Covid 19 is triggering it?

Yes. Oral corticosteroids should be used in people with asthma attacks according to current UK guidelines. There is no evidence to suggest appropriate use of OCS in asthma attacks will cause a worse outcome if Covid 19 or similar viruses is suspected to be the trigger. A Cochrane review found evidence for short or long courses or dosing was poor and they were unable to conclude what was best.¹⁰ Therefore, the important factor is to stop the OCS once symptoms improve and for there to be clarity in the action plan about what this looks like so they receive the minimum amount necessary and to have clear follow up and review pathways when someone exacerbates. It is ok to give a 5 or 7-day supply but they may not need it. Again, individualised personal action plans can help because they describe 'what is usual' for them and therefore can help them and you as the HCP highlight when something different is happening.

Guidance for caring for patients with COPD

14. Is there evidence to consider stopping or reducing ICS in stable COPD?

It is well described that high dose (> 1000 mcg BDP equivalent) ICS causes excess pneumonia in people with COPD, with fluticasone propionate appearing to cause this feature to a greater extent.¹¹ Covid 19 appears to cause broncho- or lobar-pneumonia rather than the interstitial pneumonia associated with ICS-associated pneumonia in patients with COPD. Any prescribing of high dose ICS in people with COPD for the prevention of exacerbations has always needed to be clearly justified and the current situation should concentrate our minds further on ICS safety in COPD.

- Review the diagnosis of COPD. Are you sure they have all three of i) Underlying cause e.g. smoking ii) Symptoms over time that are consistent with COPD iii) Spirometric FEV₁/FVC that is <0.7

⁹ NICE. Available at: <https://www.nice.org.uk/guidance/ng80>

¹⁰ Normasell R, et al. Different oral corticosteroid regimens for acute asthma. Cochrane Database on Systematic Reviews. 2016. Available at: <https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD011801.pub2/full>

¹¹ Tashkin DP, et al. Concomitant inhaled corticosteroid use and the risk of pneumonia in COPD: a matched-subgroup post hoc analysis of the UPLOFT® trial. Respir Res 2018;19:196

- If you think they have fixed airways obstruction do they also have frequent exacerbations (>2 per year), features of asthma or have their blood eosinophils been raised >0.3 in the past?
- **If you are not confident of their diagnosis of COPD and/or you are not able to record clear asthmatic features or blood eosinophil counts >0.3 or high exacerbation counts, then the patient should not be on a long-term ICS. If they are on high dose ICS, consider reducing this to a standard dose**

Please see the PCRS Pragmatic Guide to treating COPD [here](#).

15. How do I differentiate between Covid 19 disease and COPD exacerbation without sending my patient for a CXR or blood tests?

Exacerbations of COPD and pneumonia present with similar symptoms in people with COPD. This without question provides a significant diagnostic challenge for primary care at the best of times and will be much harder because of pressure to try and maintain home therapy. If pneumonia is missed – which evidence suggests is not uncommon¹² – then a significant impact on outcomes is seen. The pneumonias we will see during this period will be Covid 19, Bacterial, other viral or a combination.

Currently many rapidly produced guides we are seeing are suggesting low thresholds for antibiotic use in suspected Covid 19 patients with higher risk of pneumonia. Please see many of these on our [Covid 19](#) support page.

The features more associated with pneumonia than AECOPD that you can determine from a video or telephone call are:

- Cough producing greenish, yellow or even bloody mucus – a change from usual is key
- Fever, sweating and shaking chills
- Sharp or stabbing chest pain that gets worse with deeper breathing or coughing
- Nausea and vomiting
- Confusion

You should have a low threshold for considering further review with imaging and bloods if these features are present as rapid antibiotic therapy can be life saving. For those with the most severe COPD – now is the time to have those difficult conversations about ceilings of care and what they would like to be treated for. A conversation in crisis may result in transfer to a stressed hospital environment where loved ones cannot be present.

Classification of Community Acquired Pneumonia severity and management was updated by the British Thoracic Society in 2015.¹³

16. Can I use OCS in people with COPD if I think it is an exacerbation and it is possible Covid 19 is triggering it?

¹² Finney LJ, et al. Validity of the diagnosis of pneumonia in hospitalised patients with COPD. Eur Respir J 2019;5:00031-2019. Available at: <https://openres.ersjournals.com/content/5/2/00031-2019>

¹³ BTS. Available at: <https://www.brit-thoracic.org.uk/document-library/guidelines/pneumonia-adults/annotated-bts-cap-guideline-summary-of-recommendations/>

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Yes, but do not give if the patient has a high temperature. The positive impact of OCS on COPD exacerbations does not compare to that seen with asthma exacerbations so it is important to consider whether you have enough evidence to be sure they definitely have COPD (see point 13) and that this crisis is most likely to be AECOPD. When given, the course should be for as short a period as possible. NICE currently recommends 30mg prednisolone for 5 days.¹⁴ For COPD exacerbation with those who do not have a high blood eosinophil count or a history of steroid reversibility – steroids should be withheld if the patient is having a severe infection.

¹⁴ NICE. Available at: <https://www.nice.org.uk/guidance/ng115/chapter/Recommendations#managing-exacerbations-of-copd>

PCRS pragmatic guidance in summary

- **Oral corticosteroids:** Current guidance from WHO issued in January 2020 advised against the use of corticosteroids in patients with Covid 19 infection unless indicated for another reason. We would anticipate that a patient with acute asthma or an exacerbation of COPD may well benefit from corticosteroid as expected.
- **Rescue packs:** At the present time there is no evidence to suggest that either antibiotics or corticosteroids are useful or appropriate in the early stages of Covid 19 infection and their use may delay patients seeking advice if they become increasingly short of breath.
- **Spirometry/FeNO testing:** At the present time, routine reviews should not include exhaled CO checks, spirometry or FeNO testing.
- **Nebulisers:** The consensus currently is that it is very low risk as it is the device or cylinder driving aerosolisation of the nebule liquid and not the patient's airflow.
- **Starting ICS for patients with asthma:** ICS is the first step in asthma management plans. For the small proportion of people who use < 3 doses of SABA per week on average, then current advice would not recommend starting ICS.
- **Stopping/reducing ICS use in stable asthma:** People with asthma must continue their preventive ICS according to current guidelines.
- **Increasing ICS in case of asthma attack with suspected Covid 19:** Current evidence supports upto quadrupling ICS from standard doses until symptoms improve in adults. Evidence does not support increasing ICS in children in asthma to improve asthma attack outcomes.
- **OCS in case of severe asthma attack with suspected Covid 19:** Oral corticosteroids should be used in people with asthma attacks according to current UK guidelines. There is no evidence to suggest appropriate use of OCS in asthma attacks will cause a worse outcome if Covid 19 or similar viruses is suspected to be the trigger.
- **Stopping or reducing ICS in stable COPD:** Any prescribing of high dose ICS in people with COPD for the prevention of exacerbations has always needed to be clearly justified. If you are not confident of their diagnosis of COPD and/or you are not able to record clear asthmatic features or blood eosinophil counts > 0.3 or high exacerbation counts, then the patient should not be on a long-term ICS. If they are on high dose ICS, consider reducing this to a standard dose.
- **Differentiating Covid 19 disease and COPD exacerbation:** Exacerbations of COPD and pneumonia present with similar symptoms in people with COPD. You should have a low threshold for considering further review with imaging and bloods if cough producing greenish, yellow or even bloody mucus – a change from usual is key, fever, sweating and shaking chills, Sharp or stabbing chest pain that gets worse with deeper breathing or coughing, nausea and vomiting or confusion are present as rapid antibiotic therapy can be life saving.
- **OCS in case of COPD exacerbation with suspected Covid 19:** OCS can be used but do not give if the patients has a high temperature, normal blood eosinophil count or without a history of steroid reversibility.