

More detailed information to be shown on the JLA website for the questions discussed at the final workshop.

PSP Name	Total number of verified uncertainties identified by the PSP	Uncertainty (PICO formatted indicative uncertainty where possible. Advised minimum requirements are 'Population' and 'Intervention'. Not all submissions may be suitable for PICO structure, but they should be in a format that will ultimately be of value to the research community)	Explanatory note (a plain language summary of up to 150 words, explaining key points of the uncertainty and why it is important, for research funders to begin working on. PSPs may wish to include examples of the original survey submissions here)	Date of the priority setting workshop	Rank of the uncertainty at the final workshop. (If no rank was agreed, please indicate)	Evidence (reference, and weblink where available, to the most recent relevant systematic review identified by the PSP, plus a maximum of 2 other systematic reviews, including protocols for future systematic reviews, that the PSP considers relevant.)
COPD Exacerbation PSP	51	What can prevent exacerbations of COPD?	<i>Exacerbations of COPD cause a significant burden of ill health to people living with COPD, and burden on health services. Preventing exacerbations is therefore a key aim of treatment. Current options to prevent exacerbations are not completely effective, even when optimally used, and there is real need to identify new ways to better prevent exacerbations.</i>	01-Apr-21	1	This question has been partially addressed in the evidence base. https://www.nice.org.uk/guidance/ng115/evidence/e-predicting-and-preventing-exacerbations-pdf-6602768754; https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD009764.pub3/full
COPD Exacerbation PSP	51	What is the best way to tell the start of an exacerbation from day-to day variation in symptoms?	<i>An exacerbation of COPD is associated with a worsening of symptoms. However, people living with COPD often have symptoms which vary from day to day. Helping people to be able to tell the difference between the start of an exacerbations, and day-to-day variation in symptoms would be a big step forward.</i>	01-Apr-21	2	The question has not been addressed in the evidence base

COPD Exacerbation PSP	51	What is the best way to tell the difference between an exacerbation and a different cause of changing symptoms in a person with COPD?	Not every change in symptoms in a person with COPD represents an exacerbation - there can be other causes too, for example pneumonia, blood clots on the lung or a problem with the heart. This question addresses how best to tell the difference between an exacerbation and changes in symptoms due to these other causes.	01-Apr-21	3	The question has not been addressed in the evidence base
COPD Exacerbation PSP	51	What is the optimal combination of treatments at COPD exacerbations and what is the best way to decide this for individual patients?	Most exacerbations are treated with a combination of 'bronchodilator' drugs to help make breathing easier and anti-inflammatory 'steroids', with or without antibiotics. This treats all exacerbations as similar yet there is evidence that exacerbations differ. This question addresses how best to know which combination of treatments are best for which exacerbation. Doing so would make sure people get the treatments they need, whilst avoiding unnecessary side-effects (and the cost of) treatments not likely to help.	01-Apr-21	4	This question is an area of uncertainty.
COPD Exacerbation PSP	51	What are the associations between co-morbidity (other medical conditions) and risk of COPD exacerbations?	People living with COPD often have other medical conditions too. These are called 'co-morbidities'. This question seeks to better understand the relationship between co-morbidities and exacerbations. For example, is someone with anxiety and depression, or heart problems, likely to develop and/or experience exacerbations in a different way, that might lead to different outcomes or the need for different treatments?	01-Apr-21	5	This question is an area of uncertainty. https://www.ncbi.nlm.nih.gov/pubmed/20843247 ; https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4049804/ ; https://www.ncbi.nlm.nih.gov/pubmed/25297724

COPD Exacerbation PSP	51	Which palliative care regimes should be used to treat an exacerbation, in which circumstances, and what are the potential benefits? ('Palliative care' is defined by the World Health Organisation as an approach that improves the quality of life of patients and their families facing the problem associated with life-threatening illness, through the prevention and relief of suffering).	People living with COPD often have symptoms such as breathlessness and cough which can be difficult to treat, especially in more severe disease. This question aims to address this by thinking about treatments that might help these symptoms, rather than focusing on treatments designed specifically for COPD.	01-Apr-21	6	This question is an area of uncertainty.
COPD Exacerbation PSP	51	Why do some exacerbations recur (happen again) following treatment?	There is evidence to suggest that in the period after a person has recovered from a first exacerbation, they are at higher risk of developing a second one. Related to this, almost one in four patients who have been discharged from hospital after an exacerbation will be re-admitted to hospital with a month. This question aims to understand why this happens, and find new ways to better prevent exacerbations from happening again in this 'high risk' period following recovery from the previous exacerbation.	01-Apr-21	7	The question has partially been addressed in the evidence base. https://www.nice.org.uk/guidance/ng115/evidence/e-predicting-and-preventing-exacerbations-pdf-6602768754
COPD Exacerbation PSP	51	What are the risks and benefits of 'rescue packs' used to prevent COPD exacerbations, and how should they be best used?	People with COPD may be given a 'rescue pack' of medicines to have at home that they can start at the first sign of an exacerbation. However, both under-use and over-use of these can cause problems. This question aims to better understand the pros and cons of using rescue packs, and work out the best way to support people to use them in the most effective way.	01-Apr-21	8	This question is an area of uncertainty.

COPD Exacerbation PSP	51	How does the presence of anxiety and depression affect the prevention, diagnosis, and treatment of COPD exacerbations?	People living with COPD often have anxiety and depression. This question seeks to better understand the relationship between anxiety, depression and exacerbations. For example, is someone with anxiety and depression more likely to develop and/or experience exacerbations in a different way, that might lead to different outcomes or the need for different treatments?	01-Apr-21	9	<p>Anxiety and depression are important comorbidities in COPD and both are associated with a poor prognosis younger age, female sex, smoking, lower FEV1, cough, higher SGRQ score, and a history of cardiovascular disease.</p> <ul style="list-style-type: none"> • https://www.ncbi.nlm.nih.gov/pubmed/20889909 • https://www.ncbi.nlm.nih.gov/pubmed/15821196 • https://www.ncbi.nlm.nih.gov/pubmed/17210879 • https://www.ncbi.nlm.nih.gov/pubmed/20335292 <p>In summary there is no clear answer for this question.</p>
COPD Exacerbation PSP	51	What are the risks and benefits of long-term antibiotics to prevent COPD exacerbations, and how should they be best used?	Antibiotics are sometimes used long-term in COPD not to treat, but to prevent exacerbations. This is called 'prophylaxis'. However, long term use might cause side-effects, or problems because the bacteria become resistant to the antibiotics. This question aims to understand the pros and cons of using antibiotics in this way, how to use them best and therefore to understand which patients are most likely to benefit from them.	01-Apr-21	10	<p>The question has partially been addressed in the evidence base.</p> <p>https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD009764.pub3/full</p> <p>https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD010257.pub2/full</p>
COPD Exacerbation PSP	51	What is the best way to treat breathlessness during a COPD exacerbation?	Breathlessness is a common symptom for people having a COPD exacerbation. Current treatments don't work perfectly, and take time to be effective. This question aims to find new ways to treat breathlessness during an exacerbation. These treatments would not necessarily be medicines.	01-Apr-21	11	<p>This question is an area of uncertainty.</p>

COPD Exacerbation PSP	51	When should a COPD exacerbation be treated with steroids alone, antibiotics alone or both?	Most exacerbations are treated with a combination of anti-inflammatory 'steroids', with or without antibiotics. This treats all exacerbations as similar yet there is evidence that exacerbations differ. This question addresses how best to know which combination of treatments are best for which exacerbation. Doing so would make sure people get the treatments they need, whilst avoiding unnecessary side-effects (and the cost of) treatments not likely to help.	01-Apr-21	12	The question has not been addressed in the evidence base
COPD Exacerbation PSP	51	What is the value of integrated respiratory teams (health-care professionals working across organisations, and/or professions) in preventing COPD exacerbations and COPD admissions?	People with COPD may have care from many different clinicians, including their GP team, community based specialists and those based in hospital. Ideally this care should be joined up as an 'integrated respiratory team'. Whilst this is commonplace in some areas, it is not in others and so understanding the benefit of working in this way, particularly in relation to preventing COPD exacerbations and admissions to hospital, would increase the available evidence to support such ways of working.	01-Apr-21	13	There is no specific evidence base to this question. https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD009437.pub2/full
COPD Exacerbation PSP	51	What is the role of nutrition in the prevention and treatment of exacerbations?	This question seeks to understand whether making alterations to diet and nutrition might be associated with better prevention and more effective treatment of exacerbations.	01-Apr-21	14	There is no specific evidence at exacerbation. https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD000998.pub3/full
COPD Exacerbation PSP	51	What factors determine whether someone with a COPD exacerbation can be managed at home or needs admission to hospital?	People with more severe COPD, or more severe exacerbations may need hospital care when they are unwell. This question seeks to better understand which factors are important in deciding whether or not someone should be assessed at hospital when having an exacerbation, compared to being managed at home.	01-Apr-21	15	This is an area of uncertainty. https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD003573.pub2/full
COPD Exacerbation PSP	51	Does regular exercise reduce the risk of having an exacerbation (and to what level of exercise)?	This question seeks to understand whether regular exercise might be associated with better prevention of exacerbations. There is good evidence that an education and exercise programme called 'Pulmonary Rehabilitation' is effective, but less evidence on what level of exercise in daily life would be required to maintain this benefit.	01-Apr-21	16	Limited evidence at COPD exacerbations. https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD011434.pub2/full

Data management spreadsheet for use by Priority Setting Partnerships for all questions received. Spreadsheet to be published on the JLA website at www.jla.nihr.ac.uk on completion of the PSP.

ID	Uncertainty (PICO formatted indicative uncertainty where possible. Advised minimum requirements are 'Population' and 'Intervention'. Not all submissions may be suitable for PICO structure, but they should be in a format that will ultimately be of value to the research community)	Original uncertainty	Evidence (reference, and weblink where available, to the most recent relevant systematic review identified by the PSP, plus a maximum of 2 other systematic reviews, including protocols for future systematic reviews, that the PSP considers relevant.)	Source of Uncertainty (if there are multiple sources, a PSP may wish to show them e.g. 1 x patient, 19 x clinician, 4 x research recommendations)
DQ1	<p>What is the best way to tell the start of an exacerbation from normal symptom variation? (122)</p>	<p>How to get recognition of a flare up, with no specialist input from any hospitals (discharged after diagnosis) What is the best way to differentiate the start of an exacerbation from a 'bad day'? How do we best identify exacerbation? How do I know if I have one. GPs regrettably don't seem to understand them & tend to prescribe antibiotics without knowing if needed. What criteria are used to identify a COPD exacerbation (I don't know if I've ever had one, but I have been in distress breathing) how to identify them sooner, especially when first diagnosed How patients self-report recognising an exacerbations as opposed to daily variation There are significant differences between clinicians as to how exacerbations are diagnosed so clear definitions are important Why can it not be diagnosed sooner more and more exacerbations have led to bronchiectasis Best markers for identifying an exacerbation. What are the key symptoms/points in diagnosing a flare up? How do we know if its flare up or just a cold or severe asthma attack How does a doctor know its COPD flare or not. When to recognise the start of flare ups How can I tell if I have an imminent infection sometimes it seems to come on without my knowing and it is harder to get rid of? How to recognise the signs how to be sure it is an exacerbation and not just "a bad day" How is this diagnosed How do you know if you're having an exacerbation or a chest infection what are the differences? Is there always chest tightness? Is there always a rise in temperature? What are the symptoms they look at Is there a biomarker that helps diagnose COPD exacerbation? Is there a biomarker that predicts COPD exacerbation? How to know when having flare up if always coughing up load of phlegm. What are the red flags for HCP to look out for in an exacerbation How mild do symptoms need to be before it is classed as a flair up or exacerbation. What are the earliest markers to an exacerbation How to separate exacerbation from disease progression or psychological/anxiety effect. It is not obvious to me when a flare up is starting - is there an optimum point for taking rescue med pack.</p>	<p>This question is an area of uncertainty.</p>	<p>Patient/Carer/Relative/HCP</p>
DQ2	<p>Are there different types of exacerbations, and what is the best way to classify exacerbations into different types? (30)</p>	<p>What are the different types of exacerbations and how can they be diagnosed? I think I have exacerbations but put them down to virus or cold how do I tell the difference? How can we identify better viral vs bacterial infection (not just change in sputum as lots of patients sputum is variable anyway) How to robustly differentiate between infective and non-infective exacerbations. How to promptly & accurately identify non infective exacerbations in primary care to reduce antibiotic prescribing. What differentiates an exacerbation of COPD from a 'normal' viral infection / common cold? What is the difference between a flare up and a chest infection? How best to differentiation between an infection that requires emergency meds and a viral infection that does not require antibiotics. Is a flare up a cold or flu or a chest infection How do doctors tell the difference between exacerbations and other chest infections? How to tell the difference between a flare-up and a chest infection. Can we be better at diagnosing the cause of an exacerbation and treating that, rather than everyone getting the same treatment Are there tests that separate out which type (viral/ bacterial/ inflammatory/ pollution related) of exacerbation? Can we be better at diagnosing the cause of an exacerbation and treating that, rather than everyone getting the same treatment COPD is the umbrella for various lung conditions. How does each condition vary when defining exacerbations? How do I identify an exacerbation if no infection appears to be present? I cannot identify exacerbations that are without infection, sometimes exposure to fumes etc cause phlegm to turn yellow and I'm not sure if I should take just steroids to treat this. How to know when to take steroids for exacerbations without infection, how to identify when it is worth taking them or just wait for lungs to recover. How to tell if it's bacterial or viral Home tests for us to know if it's bacterial or viral so we can limit rescue meds till needed. Yes. Is it possible at all, to find some sort of home test kit, that could be used at the stages of flare ups, which would indicate a bacterial infection. To help in deciding if it is totally necessary to start a course of antibiotics, given that when used wrongly and frequently they do not work correctly. Can we encourage diagnosis of COPD exacerbations to include all causes other than just bacteria? The patient is experiencing a problem but we need to better identify the underlying cause (not give abx/steroids multiple times) Can we define which patients are 'frequent exacerbator' phenotypes? Simple approach to phenotype exacerbations Why is that the DIAGNOSIS of COPD exacerbations is always treated with antibiotics and steroids that causes other health and whole body issues. Can we phenotype these exacerbation? eosinophilic exacerbation or not and how does this affect treatment What causes the flare ups is it my condition getting worse</p>	<p>This is an area of uncertainty. https://www.ncbi.nlm.nih.gov/pubmed/31355690 https://www.ncbi.nlm.nih.gov/pubmed/?term=papi%2C+belletatto+infections+and+airway+inflammation https://www.ncbi.nlm.nih.gov/pubmed/22447964</p>	<p>Patient/HCP</p>

DQ3	What is the best way to tell the difference between an exacerbation and a different cause of symptoms in a person with COPD? (4)	How can a COPD exacerbation be differentiated from other causes of breathlessness? how do we tell if someone is exacerbating with infection/ bacteria or if symptoms are driven by anxiety How can patients be assisted in identifying COPD exacerbation when they have multi-morbidity that may give similar symptoms? How do we distinguish between anxiety and an exacerbation?	This question is an area of uncertainty.	HCP
DQ4	What is the value of a sputum sample at exacerbation of COPD? (20)	How to tell if chest infection or just irritation. Would sputum sample be useful? How is an exacerbation diagnosed without a sputum specimen? National 'colour chart' for sputum Is it worth sending sputum samples? Should patients with COPD be screened for NTM infection Should we be offered sputum tests so that treatment is targeted? Is point of care sputum testing viable? My sputum samples invariably come back "clear" even when I am really unwell. Is there anything else that could be used to identify the "bug"? is a sputum sample the best or a blood test Should sputum samples be taken when exacerbating if possible? Is purulent sputum a true indicator- what about those who don't expectorate? Does your sputum have to become greenish or can there just be an increase in the amount of sputum produced. Should a sputum sample always be taken and if so do we wait for the results before providing treatment Should sputum be sent off routinely for culture before treating unless time won't allow? Sputum samples identify the "bug" and appropriate antibiotic but no attention is given to why the patient has yet another infection. When I have an exacerbation I get increased cough, SOB and sputum and generally feel unwell but my sputum specimen often comes back clear. By this time I have already started my rescue pack. Should I wait for sputum results before starting my antibiotics? Am I increasing my risk of becoming resistant to the antibiotics? I have a standby pack of antibiotics and steroids to last for one week. Should I have a sputum test at the same time? Does treating patients with positive sputum cultures for typical colonisers (e.g. haemophilii) but low procalcitonin or CRP improve or worsen long term outcomes? Sputum samples should they be done before treatment Does amoxicillin help in a rescue park or is it better to have an antibiotic prescribed after sputum sample result?	There is some recommendation in GOLD 2020 and NICE 2019 to do it if the sputum is purulent. But still there is no evidence. https://www.clinicalmicrobiologyandinfection.com/article/S1198-743X(19)30336-2/fulltext	Patient/HCP
DQ5	What is the benefit of earlier diagnosis of a COPD exacerbation? (5)	Will earlier diagnosis of exacerbations help the patient or lead to unnecessary treatment Does early diagnosis improve outcomes? Wouldn't earlier diagnosis of exacerbations be better for treatment outcomes, it seems very hit and miss when I contact the nurses as to the advice I am given. How do I try to eliminate early symptoms of a 'flare up' Is it possible to predict/prevent the onset of exacerbations? To the extent that a person could book a cruise with some degree of certainty?	1- https://erj.ersjournals.com/content/51/1/1701612 2- https://erj.ersjournals.com/content/51/1/1701567 3- https://www.nice.org.uk/guidance/ng115/evidence/c-selfmanagement-interventions-education-and-telehealth-monitoring-pdf-6602768752 4- https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD005074.pub4/full 5- https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD011682.pub2/full 6- https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD002990.pub3/full	Patient/HCP
DQ6	Which biomarkers can be used to help diagnose a COPD exacerbation and how reliable are they? (25)	How useful are CRP, neutrophils and eosinophil blood tests? When is a CXR indicated? Are there any useful blood tests or breath tests Apart from Sputum tests, why isn't there a blood test to determine an infection which could make results quicker so as to receive treatment. Are there any changes in exhaled gases that might be able to be measured easily to detect exacerbations? Is there a role for personalised point of care testing - and if so which biomarker - hsCRP? Which test is best for lung function during exacerbation? What better tests are there to help diagnose Is there a medical test I can take to diagnose when I'm having a flare up? What composite bedside testing can confirm an exacerbation eg CRP and peak flow fall from baseline? Are there any other tests that can be done apart from a chest x ray or blow tests? Use of inflammatory markers Is there a role for point of care testing in community to determine nature of the exacerbation? How near are point of care testing for biomarkers for exacerbation, Is there a blood test that can show you have a chest infection as I font always produce sputum Are there any other indicators to identify when to use rescue medications such as the urine test by Prof Brightling Do breathomics/ urine testing help? 2. Many patients I see discharged from hospital with an infective exacerbation of COPD have normal infection markers such as WCC and CRP or slightly elevated CRP. Should we rely on infection markers? what biomarkers can be used to predict an impending exacerbation How important is the CRP in reality for diagnosing a chest infection? What medical tests are effective in determining best line of treatment, sputum tests take over a week to be tested in my area? Is there simple blood test to aid diagnosis Use of crp Measurement of eosinophilsrole of air pollution / PM10 When are home testing kits going to be available to the ordinary patient, ie, to identify when to recognise or predict an exacerbation? Is there a novel way to define frequent exacerbators? e.g. using imaging (e.g. MRI or CT), or a biomarker (blood tests for example) Can exacerbations be predicted using simple monitoring?	No evidence to support a single biomarker to better diagnose AECOPD. • https://www.ncbi.nlm.nih.gov/pubmed/25186260 • https://www.ncbi.nlm.nih.gov/pubmed/23221507 7; https://www.ncbi.nlm.nih.gov/pubmed/30880285 5; https://www.ncbi.nlm.nih.gov/pubmed/31291514 ; https://www.ncbi.nlm.nih.gov/pubmed/28143877	Patient/Carer/Relative/HCP
DQ7	Is tele-health effective in supporting the diagnosis of a COPD exacerbation? (9)	How can digital technology be used here e.g. wearable devices to monitor Sats, symptom scores, biomarker testing for CRP/eosinophils. Can regular pulse oximetry measuring by a Pt at home increase pts recognition of exacerbations? Can there be a simple test to do at home? What tools can professionals use to identify a true exacerbation? Can you measure if a flare is coming using a home device? Can a test be done sooner to see if you are going to get it Is there a way we can pick up unreported exacerbations which may coincidentally lead to future and potentially more severe events? Does self-monitoring with smart phone apps +/- video consultations help to diagnose exacerbations? What is the role of telehealth in COPD exacerbation management?	https://www.ncbi.nlm.nih.gov/pubmed/2957669 https://www.nice.org.uk/guidance/ng115/evidence/c-selfmanagement-interventions-education-and-telehealth-monitoring-pdf-6602768752	Patient/Carer/Relative/HCP
DQ8	Is the best approach to diagnosis of exacerbations to use combinations of, for example, symptoms, biomarkers and physiology? (1)	Best combination of predictive-diagnostic(verifying) approach: combining PRO, IOT physiology and EHR data sources	There is some recommendations in GOLD 2020 and NICE 2019 to do diffrent clinical assessment. But still there is no evidence.	HCP

DQ9	<p>What is the value of assessing physiology at exacerbation of COPD? (9)</p>	<p>Would spirometry be valid during a patients acute illness episode of COPD is suspected but not officially diagnosed? Is IOS useful in identifying early small airways obstruction? Should spirometry be completed during an acute exacerbation? Compare subjective diagnosis with use of COPD6 or spirometry to demonstrate worse air flow obstruction What is the role of oscillometry in early diagnosis and predication of COPD exacerbations? Could they be identified by using peak flow meter regularly, and then seeing when peak flow was worse combined with phlegm change Can monitoring physiology provide early detection of exacerbations? Question use of ventliometer rather than spirometry in monitoring of COPD What is the role of EFL as marker at hospital admission due to acute exacerbations and before hospital discharge in preventing COPD exacerbations recurrence?</p>	<p>This question is an area of uncertainty.</p>	<p>Patient/HCP</p>
DQ10	<p>What is the value of medical imaging at exacerbation of COPD? (2)</p>	<p>Do i need a chest xray Will an x-ray show an exacerbation?</p>	<p>There is some recommendations in GOLD 2020 and NICE 2019 to do different clinical assessment. But still there is no evidence.</p>	<p>Patient</p>
DQ11	<p>If a patients suspects a COPD exacerbation, when should they contact a health-care professional and in what circumstances? (17)</p>	<p>How do we support patients and family members to diagnose exacerbation effectively and seek appropriate help Having attended several Respiratory Rehab courses, I feel I can now accurately diagnose an exacerbation myself and use stand by medication. Should I still consult a professional? do I need to see a Doctor for diagnosis When do you go to hospital Should I go to the Doctor when I feel early symptoms of a chest infection coming on When should I consult a doctor? how long should you wait before you seek medical assistance If you start to feel unwell it's hard to know when you will be able to cope or when you won't be able to. Any help as to when to call ambulance or at what stage it can still be rescued If I feel I may be at risk, is there anything I can do to help me prepare for an exacerbation? Is it better going into hospital if it's a bad one? If a person has an exacerbation how urgent is it to seek medical help once it has started. When should a pt who has rescue meds seek help? Should I go to see the Doctor if I think I have an Exacerbation? Should I go to the Dr. If I Think I have an exacerbation? At what stage of the exacerbation do I consult a doctor? At what stage should I go for antibiotics or steroids from my doctor? How long should patients wait after experiencing symptoms before attending their GP?</p>	<p>This question is an area of uncertainty.</p>	<p>Patient/Carer/Relative/HCP</p>
DQ12	<p>If a patients suspects a COPD exacerbation, when should they start their own treatment for exacerbation and in what circumstances? (53)</p>	<p>At what point is medical treatment necessary? Trying to manage condition without ending up in hospital. Sometimes no GP cover at weekends means a trip to emergency dept. At what point should I seek medication. How to recognise quickly enough when to start the ABs and whether to start the steroids How do I know it's time to start the rescue pack? b) Understand at what point they should use it. The reason for this is that the self-diagnosis guidelines are very vague and not always the best indication of needing medication. As someone with Alpha 1 Anti Trypsin Deficiency it is really important that I nip exacerbations in the bud, but knowing at which point to take action. Is there a more objective way to tell when you need to use a rescue pack? I have been advised that if my exacerbation symptoms extend beyond 48 hours then I should administer my steroid and antibiotic 'rescue pack'. How dangerous would it be to perhaps wait another day, or even two, if you know the exacerbation is subsiding, albeit slower than previous exacerbations? It's always knowing when I take my antibiotics How do I know if really need to take my rescue pack medications? How soon is it advisable to commence antibiotic/steroid treatment without having to speak to your GP? My respiratory nurse is not full time and consequently very busy when at the surgery. Why doesn't any GP/nurse practitioner evaluate each one for cause / treatment? Having same "rescue pack" the renewal of which is done by my request has meant it has taken 4 exacerbations , two GP visits and 2 separate nurse practitioner visits for them to ask for a sputum test. The results showed an infection which does not respond to the antibiotic I have been prescribed for years. Question- should there be a protocol about evaluation. Should you start A/B's when you have a cold? Should we really be using rescue packs When to start rescue packs of AB's/Steroids Should I start my rescue pack as soon as my chest crackles? How best to decide when to start emergency meds How can we prevent frequent treatment of exacerbations if the exacerbations are not true exacerbations? IE inappropriate and frequent courses of abx in patients with unrealistic goals/ expectations. Is it better going into hospital if it's a bad one? If a person has an exacerbation how urgent is it to seek medical help once it has started. When should a pt who has rescue meds seek help? Should I go to see the Doctor if I think I have an Exacerbation?</p>	<p>This question is an area of uncertainty.</p>	<p>Patient/Carer/Relative/HCP</p>
		<p>Should I go to the Dr. If I Think I have an exacerbation? At what stage of the exacerbation do I consult a doctor? At what stage should I go for antibiotics or steroids from my doctor? How long should patients wait after experiencing symptoms before attending their GP? How long to leave symptoms before starting treatments? 2- How can we stop A&E automatically starting steroids and antibiotics before they have any results- usually showing no infection? How long should I wait before taking rescue medication Is it best to take emergency steroids and antibiotics when you feel a flare up coming on or when it takes hold 1. How bad should a flare up get before taking my rescue medication 2. How do I know if I require the antibiotics & steroids during a flare up Difficult to decide when to take rescue meds I have rescue packs but am always unsure of when to start taking the medication. Wonder sometimes how long to leave it before starting rescue antibiotics How to help patients know when to take their rescue packs, rather than just take them when they get a bit of a cold Our Dad gets a cold & it will almost always go to his chest afterwards so we want to know at which point (say how msny dats after the cold starts) is itbest to intervene & get some either antibiotics or steroids from the G.P. When to take rescue pack How soon do I start taking my emergency medication? I.e. antibiotics, steroids When exactly to start rescue packs? How soon should I start to take the steroids and antibiotics? Is it best to wait 24hrs to take a rescue pack if you start to develop an exacerbation? How easily should patients decide to use their rescue packs rather than seek treatment from their GP? When it is time to take the antibiotics and steroids. Do I always have to take antibiotics...? What is the trigger to take them out of the cupboard please When to start taking rescue meds -getting that message across Should I just take my rescue meds and ask for a repeat prescription. When this happens .when is it the right time to start your rescue Pack I have been told When sputum Can I avoid taking medication to treat flare ups? Should you start A/B's when you have a cold? Should we really be using rescue packs ? When to start rescue packs of AB's/Steroids ? Should I start my rescue pack as soon as my chest crackles? How best to decide when to start emergency meds ? How can we prevent frequent treatment of exacerbations if the exacerbations are not true exacerbations? IE inappropriate and frequent courses of abx in patients with unrealistic goals/ expectations.?</p>		

DQ13	What is the role of nutritional status and supplementation in the risk, prevention and treatment of COPD exacerbations? (27)	<p>Do I need to change my diet, do food allergies cause flare ups ?</p> <p>Does early inpatient dietician input improve patient outcomes?</p> <p>What are the best foods to give/avoid around the time of the exacerbation to assist with quicker healing?</p> <p>Should pulmonary rehabilitation, post exacerbation include identification and management of malnutrition?</p> <p>Are there any useful dietary supplements which might help to stop an exacerbation?</p> <p>Does diet affect chances of more infections</p> <p>Are there any foods that would help such as those which are anti-inflammatory or those which boost the immune system?</p> <p>Does alcohol cause an exacerbation</p> <p>How can nutrition help prevent an exacerbation?</p> <p>Can dietary changes prevent exacerbations?</p> <p>Does targeted community dietician interventions prevent COPD exacerbations?</p> <p>What role does diet/nutritional advice have in the time till next exacerbation in malnourished patients who exacerbate?</p> <p>How can nutrition help prevent exacerbations?</p> <p>Is there any diet changes that could be made to help protect me in the winter for example high dose Vit C etc?</p> <p>Is there any specific diet that can help to prevent exacerbations</p> <p>Does diet have an effect?</p> <p>Can some foods stop flare ups</p> <p>Are there foods that I should not eat?</p> <p>Does exercise, vitamins or diet help?</p> <p>Does diet or exercise help prevent flares?</p> <p>Can certain foods cause a flare-up</p> <p>Can a reaction to certain foods eaten late in the evening cause an exacerbation overnight? For example, if an intolerance to something causes much coughing, can that lead a COPD suffer to an exacerbation?</p> <p>Does muscle wasting make me more likely to get an infection?</p> <p>Is there any value in taking vitamins as a preventative?</p> <p>To what extent does Vitamin D deficiency affect the frequency or duration of exacerbations</p> <p>clarification vitamin D and exacerbation rate</p> <p>Has weight got anything to do with it</p>	There are no specific evidence on nutritional supplements at Exacerbation, only one with stable COPD. https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD000998.pub3/full	Patient/Carer/Relative/HCP
DQ14	How does the presence of anaemia affect the risk and presentation of COPD exacerbations? (1)	Is there a link between exacerbation and anaemia?	This question is an area of uncertainty.	Carer/Relative
DQ15	How does the presence of anxiety and depression affect the risk, presentation and treatment of COPD exacerbations? (1)	How to recognise the anxiety that comes with the exacerbation and how to manage it and cope with the physical illness simultaneously	This question is an area of uncertainty. • https://www.ncbi.nlm.nih.gov/pubmed/20889909 • https://www.ncbi.nlm.nih.gov/pubmed/15821196 • https://www.ncbi.nlm.nih.gov/pubmed/17210879 • https://www.ncbi.nlm.nih.gov/pubmed/20335292	Patient
PQ16	What prevents exacerbations of COPD? (52)	<p>What can I do to prevent flare ups</p> <p>how can i prevent a flare up</p> <p>How can I minimise their frequency and/or duration? How can I optimise my recovery from them?</p> <p>How to prevent COPD flare ups</p> <p>What are key tips to keep exacerbations from happening?</p> <p>Does prevention definitely get harder to do as the disease progresses?</p> <p>How best to stay safe and free of exacerbation</p> <p>What is the evidence for non- pharmacological interventions in the prevention of exacerbation</p> <p>What simple and practical everyday measure could a COPD patient take to prevent exacerbations</p> <p>What can I do to stop these flare ups</p> <p>What can I do if anything to prevent a flare up?</p> <p>How can I minimise exacerbations</p> <p>What are the best things to reduce or prevent exacerbations? Anything other than flu jab, diet, exercise, avoiding people with bugs etc</p> <p>How can I prevent exacerbations</p> <p>Do public health interventions reduce exacerbation rates?</p> <p>Is there anything I can do or take to prevent exacerbations?</p> <p>How best to avoid flare ups?</p> <p>How can I prevent flare ups?</p> <p>How to prevent flare -ups</p> <p>How to prevent flare ups.</p> <p>Had a lot of Exacerbations, I take all the Meds Prescribed I know how to Deal with my Body, I am on O2, 24/7, I was on Transplant List. I exercise both Lungs & Body, What more can I do?</p> <p>How to keep exacerbation a at bay</p> <p>How to prevent flare ups</p> <p>How best to minimise occurrences</p> <p>How can I prevent them</p> <p>Who do I contact and how can I prevent so many flare ups?</p> <p>How can I prevent exacerbations? how to prevent flare ups,? Is there anything or advice to help patients reduce number of flare ups? What is the full range of measures I can take to minimise exacerbation and damage?</p> <p>I would love you know how to prevent the 'Flare ups'. I exercise regularly (both gym and the games that I can still do) I sing twice a week, eat healthily and socialise.</p>	This question has been partially addressed in the evidence base. https://www.nice.org.uk/guidance/ng115/evidence/e-predicting-and-preventing-exacerbations-pdf-6602768754 ; https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD009764.pub3/full	Patient/HCP
PQ17	What is the best way to choose the right prevention strategy to the right person? (2)	<p>How not to have a flare up? do we know why or what causes exacerbations so we can avoid them? How can a person with COPD best avoid exacerbations and what are the most common causes of them? I'd like to know how I can be pro-active about my overall health and fitness to help prevent exacerbations. What can I do to keep my body as healthy as it needs to be to fight infections? What is best practice for avoiding chest infections?</p> <p>How to avoid getting a chest infection? More immunology trials to see if immunotherapy works for us to limit flare ups. How do I avoid infection? How best to prevent flare up's especially in the winter?</p> <p>How can you prevent an exacerbation that seems to arise out of nowhere? I had a flare up recently and had not been in touch with anyone with a cold/sore throat etc, had not been out of the house or been in contact with anyone except my husband who was healthy with no cold symptoms?</p> <p>Are there any specifically proven drugs that work better in preventing Exacerbations?</p> <p>I think research is needed into non-antibiotic preventative medications that may have similar efficacy to appropriately targeted macrolide therapy without the drawback of potentially increasing antibiotic resistance.</p> <p>What medication can be used for frequent exacerbators?</p> <p>Is there a non-pharmaceutical intervention (other than pulmonary rehab) that could improve the prevention of exacerbations?</p> <p>Can other non-pharmaceutical therapies reduce exacerbation frequency?</p> <p>Other than good diet, exercise, good hygiene and taking prescribed medication, are there any other medicines, pharmaceutical or homeopathic that can potentially help?</p> <p>Anything that should be avoided</p> <p>when they do occur how to make them last as short a time as possible</p> <p>Information on how to possibly prevent an exacerbation occurrence. Information on possible early symptoms of an exacerbation.</p> <p>As I have frequent exacerbations would it not be better to be on a lower constant, maintenance med</p>	This question is an area of uncertainty.	HCP

PQ18	Does singing prevent or reduce the severity of COPD exacerbations? (7)	Does regular singing or exercise reduce COPD exacerbations? Does regular singing reduce flare ups and cut down on GP visits and hospital admissions. What impact does Singing for Lung Health have on exacerbation frequency? Can singing prevent/reduce exacerbations? What role does regular participation in community groups (breathe easy, tai chi, singing for lung health) have in reducing GP visits and hospital admissions? What effect does Singing for Lung Health training have on management of COPD exacerbations? Does the use of the accent method in singing exercises aid longer exhalation in people with COPD thus reducing exacerbations, fewer GP visits and hospital admissions?	This question is an area of uncertainty.	Patient/public/HCP
PQ19	Why do some exacerbations recur following treatment? (13)	How can we prevent recurrent exacerbations, especially re-hospitalisation? How to prevent recurrent exacerbations. I try to do everything they say to help me not get an exacerbation but i still get one. Why is this? I try my best to do everything they say to help stop me getting an exacerbation but i still get them why is that? 1. What is the most important factor in preventing another exacerbation- many patients focus on avoiding others with cough/colds etc but is it avoiding umes/ weather, smoking cessation or just all o these in equal measures? Why do I often relapse? What are the mechanisms of exacerbations recurrence? I follow all the advice given to prevent chest infections but I still get many in a year. My question is why? why am i having flare ups constantly one after another How frequently does the average COPD patient suffer from exacerbations? I have only had my one hospitalisation with Bronchitis, but had secondary lung infection still present four months later. I am almost 'waiting' for it sometimes, but then forget about it... Am I just lucky, or are they dependent upon how advanced you are in the stages. I also work full time. To what extent does Previous hospital admission for exacerbation affect the frequency or duration of exacerbations What are the mechanisms of exacerbations recurrence? Why does an infection return within a month when the antibiotic apparently cleared the previous infection?	This question is an area of uncertainty. https://www.nice.org.uk/guidance/ng115/evidence/e-predicting-and-preventing-exacerbations-pdf-6602768754	Patient/HCP
PQ20	Does airway clearance prevent exacerbations of COPD? (7)	Does carrying out regular chest clearance prevent exacerbations? Optimal airway clearance regimes (to include pharmacology) What is the role of long term mucolytics? Does effective chest clearance reduce exacerbation rate Are PEP devices effective in promoting airway hygiene and mucus clearance in COPD and reducing flare-ups? Can chest clearance prevent exacerbations or speed recovery. How can we empower more patients to understand how adequate and effective sputum clearance is key to preventing exacerbations?	<ul style="list-style-type: none"> • https://www.ncbi.nlm.nih.gov/pubmed/26324807 • https://www.ncbi.nlm.nih.gov/pubmed/2622376 • https://www.ncbi.nlm.nih.gov/pubmed/29025888 • https://www.ncbi.nlm.nih.gov/pubmed/31133026 <p>• https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD008328.pub2/full</p> <p>• https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD001287.pub6/full</p>	HCP
PQ21	What can I do to reduce the risk of picking up an infection from other people? (23)	what is the best way to prevent a exacerbation (ie) avoiding people with colds (ect) Would wearing a mask prevent an exacerbation? Will it help to wash hands or use hand wash frequently? Will wearing a mask help prevent flare-up Is it actually possible to prevent exacerbations apart from obviously avoiding anyone with infections? How can I try to limit my exposure to the common cold, which is what causes my exacerbations. Colds nearly always develop into chest infections but colds are a difficult virus to avoid. What can be done to avoid a chest infection? does it help to try and avoid people with colds Are masks of any benefit Are there any effective strategies to avoid picking up viruses in the winter? Will isolating myself from people with colds or flu prevent me from getting bexacerbations? Why are some people more prone to infections that lead to exacerbations Is good hand hygiene beneficial? Are there proven cross infection risks similar to CF? Value of hygiene measures and diet and exercise to prevent Should I keep away from people? Should I avoid looking after my young grandchildren who always have coughs colds and runny noses ? If catching a cold is the main cause of exacerbation how can they be avoided. How can I protect myself from the general public Would it be advisable to wear a mask on public transport? How can I prevent a flare up when travelling by airplane? Are we better to have exposure to small social activities, or to remain in isolation? Does it make a difference if patient doesn't mix with others	This question is an area of uncertainty.	Patient/Carer/Relative/HCP
PQ22	Does regular exercise and to what level reduce the risk of exacerbation? (12)	Does prescribing an increased physical activity regime reduce the frequency / severity of exacerbations? We are told to exercise but this can bring on exacerbation never know how much exercise we should have Can exercise help prevent exacerbations? how much exercise is wise as to not cause an exacerbation What is the minimal important difference of physical activity improvement from Physical activity interventions aiming to reduce exacerbations? Does very regular exercise, to the point of pushing your breathing ability to the max, help maintain the lung capacity you have, or even improve it; and assist with keeping exacerbations at bay? Does exercise impact on exacerbations or reduce them What exercises can i do to prevent or should I rest? Does daily physical activity regimen prevent AECOPD? How importantly is exercise in preventing flare ups? Is exercise the best thing even though I struggle to breathe. Does exercise help	Limited evidence at COPD exacerbations. https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD011434.pub2/full	Patient/Carer/Relative/HCP
PQ23	Does pulmonary rehabilitation and to what level reduce the risk of exacerbation? (5)	What is the role of pulmonary rehabilitation in exacerbation prevention? Does Pulmonary rehab prevent exacerbations, although there are no regular ongoing classes in my area? Will regular exercise like Pulmonary Rehab help? Are there benefits of expert lead maintenance exercise programmes following on from Pulmonary Rehabilitation? Could sufferers be offered regular rehab and exercise to prevent flare ups	https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD005305.pub4/full	Patient/HCP

PQ24	How do the family of medicines called 'macrolides' prevent exacerbations? (1)	How do macrolides prevent exacerbations?	Limited evidence at COPD exacerbations. https://www.ncbi.nlm.nih.gov/pubmed/21864166 ; https://www.ncbi.nlm.nih.gov/pubmed/24779680 ; https://www.nice.org.uk/guidance/ng114/chapter/Summary-of-the-evidence ; https://www.cochranelibrary.com/cdsr/doi/10.102/14651858.CD013024.pub2/full ; https://www.cochranelibrary.com/cdsr/doi/10.102/14651858.CD009764.pub3/full	HCP
PQ25	What are the risks and benefits of long-term antibiotics used to prevent COPD exacerbations, and how should they be best used? (21)	Is there any inhaled antibiotic long term use evidence Are long-term antibiotics helpful? Which patients benefit most from preventative antibiotics to prevent exacerbations? As people with COPD are given antibiotics more than the general population what effect does this have on their gut microbiome and could this affect exacerbations? I'm on daily antibiotics as well as doxy for flare ups. How certain is anyone that it contributes to a bad immune system and why don't we have immunotherapy as a treatment automatically to help us? What is the role of continuous vs interrupted long term macrolides? Use of anti-antibiotics for prevention. Should more patients be on prophylactic steroids and/or antibiotics to prevent exacerbations? To what extent does Long term prophylactic antibiotics affect the frequency or duration of exacerbations To what extent does Antibiotics and /oral steroids started at the onset of exacerbation. affect the frequency or duration of exacerbations I take azithromycin as a preventative daily. I'm scared of antibiotic resistance. Trials of limited periods of different antibiotics to see if dependency lessons or immunity could be beneficial. do I need to keep taking azithromycin How long is it ok to take azithromycin as a prophylactic, I take it 3times a week Does Azithromycin 3 days a week help? Why is azithromycin as a prophylactic, or any other helpful antibiotic, not tried sooner after repeated exacerbations instead of a year of rescue packs and therefore many steroids Use of long term antibiotics in COPD How effective is taking antibiotics on a fairly regular basis Does alternate day Doxycycline work as a preventative antibiotic strategy in patients unable to have Azithromycin? Patients always ask for prophylactic antibiotics to prevent exacerbation, although azithromycin is given in some cases, is there any evidence that this increases resistance? why do some patients with COPD get exacerbations and others do not? - after 1 year of azithromycin - should it be stopped, prescribed over winter, how does it work? Are long term antibiotics effective in preventing Exacerbations	The evidence addressing this question is varied in focus and quality. This question has been partially addressed in the evidence base. https://www.cochranelibrary.com/cdsr/doi/10.102/14651858.CD009764.pub3/full ; https://www.ncbi.nlm.nih.gov/pubmed/25812085 ; https://www.cochranelibrary.com/cdsr/doi/10.102/14651858.CD010257.pub2/full	Patient/HCP
PQ26	What are the risks and benefits of oral and inhaled steroids used to prevent COPD exacerbations, and how should they be best used? (8)	Do inhaled steroids really help prevent worsening situations does taking antibiotics +/- low dose Prednisolone help stop exacerbation in the winter? Do you always need steroids? Might some patients be made worse with high dose inhaled corticosteroid To what extent does ICS affect the frequency or duration of exacerbations Does the use of oral steroids impact increase the risk of recurrent exacerbations? Why are steroid tablets not prescribed in a low dose to stop exacerbations, before they start? Should steroid use be in conjunction with antibiotics as a prophylactic measure	The evidence addressing this question is varied in focus and quality. This question has been partially addressed in the evidence base. https://www.ncbi.nlm.nih.gov/pubmed/21680942 ; https://www.ncbi.nlm.nih.gov/pubmed/22447964 ; https://www.ncbi.nlm.nih.gov/pubmed/31122894 ; https://www.cochranelibrary.com/cdsr/doi/10.102/14651858.CD008532.pub3/full ; https://www.cochranelibrary.com/cdsr/doi/10.102/14651858.CD006897.pub4/full ; https://www.cochranelibrary.com/cdsr/doi/10.102/14651858.CD010115.pub2/full ; https://www.cochranelibrary.com/cdsr/doi/10.102/14651858.CD006826.pub2/full	Patient/HCP
PQ27	What are the risks and benefits, and which vaccines prevent COPD exacerbations, including how should they be best used? (4)	Can having the flu jab trigger an exacerbation? Can the pneumonia jab provide protection against exacerbations or just pneumonia specifically? To what extent does Flu / pneumonia vaccination affect the frequency or duration of exacerbations What impact do viral vaccines have?	• https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD001390.pub4/full • https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD002733.pub3/full • https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD010010.pub3/full	Carer/Relative/HCP
PQ28	What is the role of the bacteria that live on us and in us (our 'microbiome') in the lung and elsewhere in determining the risk of exacerbation? (3)	Could manipulating the gut microbiome reduce exacerbations? Is there any microbial link to flare ups? Why does a person with COPD always end up bacterial infections that affect the exacerbations?	This question is an area of uncertainty.	Patient/HCP
PQ29	Which environmental factors (such as weather, pollution, allergens and temperature) affect the risk of exacerbation and what should I do about it? (19)	Is it best not to go out when it's cold? Very often my patients seem to exacerbate right before they go on holiday or whilst they are away. Are they just more aware of the symptoms or does the stress/change in circumstances cause the exacerbation? How to avoid exacerbations in extremes of weather. Does living in a warm climate help reduce occurrences? Do patients who live with high particulate matter load in their environment exacerbate more frequently? Is there any way to stop a flare up due to high pollen or cold weather? Does cold or hot weather conditions affect it? What is the best climate or environment to live in. Does pollution make them come on? I find that I tend to have more exacerbations during hot weather. Is it better to stay in the UK and away from Mediterranean hotspots? What is more likely to cause an exacerbation? High pollution levels or high grass pollen levels. Can stress or excitement lead to an exacerbation? does the weather effect flare ups, how can i exercise if i am very breathless Have you any evidence that CoPD is correlated with household conditions (eg dust), or environmental factors (eg temp, pollen, pollution), [that could assist in avoiding these scenarios]? Role of air pollution / PM10's I gave up teaching special needs children and spend most of my time now outside gardening, often in lovely dry clean air in Pyrenees. I have fewer exacerbations there. I avoid London at all costs as I always felt poorly after being there. Is this psychosomatic? What area of UK is safest? I would like to know why my 'flare ups' seem to happen at the same time each year. Why? Is there any way to tell if one is likely to happen? Should you then stay home? Can they be caused or made worse by cleaning chemicals?	The evidence addressing this question is varied in focus and quality. This question has been partially addressed in the evidence base. https://www.ncbi.nlm.nih.gov/pubmed/26111257 ; https://www.ncbi.nlm.nih.gov/pubmed/27941160 ; https://www.thelancet.com/journals/lanph/article/PIIS2542-5196(19)30085-3/fulltext ; https://www.nice.org.uk/guidance/ng115/evidence/e-predicting-and-preventing-exacerbations-pdf-6602768754	Patient/Carer/Relative/HCP
PQ30	What are the risks and benefits of oxygen used to prevent COPD exacerbations, and how should it be best used? (1)	Is there evidence that Flu vaccination reduces frequency of exacerbation? Does oxygen reduce severity or frequency of exacerbations in slightly hypoxia patients? Some are delayed O2 therapy due to strict adherence to O2 guidelines(waiting for a 'stable' period for assessment)	This question is an area of uncertainty. https://www.cochranelibrary.com/cdsr/doi/10.102/14651858.CD005534.pub3/full	HCP

PQ31	What are the risks and benefits of the family of medicines called 'bronchodilators', alone and in combination, used to prevent COPD exacerbations, and how should they be best used? (6)	<p>is there evidence to suggest that the newer inhalers available lower the risk of exacerbations? Which inhalers are most effective at preventive exacerbations? Does triple therapy work in very high risk groups (3-4 exacerbations per year) that have not typically been included in larger trials? 4. I think further trials on home nebuliser therapy needed Can inhalers make things worse ? I have had many chest infections since being on them Are the 3 in 1 pumps any better to use than individual pumps.</p>	<p>The evidence addressing this question is varied in focus and quality. This question has been partially addressed in the evidence base. https://www.nice.org.uk/guidance/NG115; https://erj.ersjournals.com/content/23/6/932; https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD011826/full; https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD012620/full; https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD002984/full</p>	Patient/HCP
PQ32	What is the value of integrated respiratory teams (health-care professionals working across institutions, and/or professions) in preventing COPD exacerbations and COPD admissions? (3)	<p>What is the role of integrated respiratory teams in supporting people in prevention of hospital admission related to COPD exacerbation? How does integrated respiratory team working impact on admissions and Readmissions. Research providing quantitative data on what aspects of nursing or physiotherapist roles prevent admissions</p>	<p>Limited evidence. https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD009437.pub2/full</p>	HCP
PQ33	What are the risk factors for having COPD exacerbations? (9)	<p>What identifies people most likely to exacerbate. Who is at greatest risk for an exacerbation? What causes them and how to avoid I would like to know what causes the flare ups. There does not seem to be any pattern or trigger. Often I feel as if it is as much in my head as in my lungs. Staying calm means I can get over it much more quickly. When I do get an attack I can do nothing, I am afraid to move a muscle in case it gets even worse. As long as I am safe I just stay rooted to the spot until it passes. Previously these attacks could last for a few hours but if I stay calm I can get back in control in a few minutes. Why do some people get more exacerbations than others? Why do exacerbations occur? Factors impacting on adherence to self-management strategies Why some people exacerbate more frequently than others. Do patients who have frequent exacerbations have a poor mental understanding?</p>	<p>The evidence addressing this question is varied in focus and quality. This question has been partially addressed in the evidence base. https://www.ncbi.nlm.nih.gov/pubmed/16319346; https://www.ncbi.nlm.nih.gov/pubmed/20843247; https://www.ncbi.nlm.nih.gov/pubmed/30630893; https://www.ncbi.nlm.nih.gov/pubmed/21788524; https://www.ncbi.nlm.nih.gov/pubmed/22938715</p>	Patient/HCP
PQ34	What are the risks and benefits, and which complementary/alternative medicine approaches prevent COPD exacerbations, and how should they be best used? (6)	<p>I want to know if there are any alternative Therapies ie herbal medicine or homeopathic remedies which would help prevent exacerbations. Would cbd cannabis oils help?? Do anti-cold sprays such as 'First Defence' work? Are there any natural remedies to help prevent flare ups? Is there any value in using Himalayan Salt lamps? What is your opinion about use it the salt pipe seems to be a lot of advertising for its use</p>	<p>This question is an area of uncertainty.</p>	Patient/HCP
PQ35	What are the risks and benefits of the family of medicines called 'phosphodiesterase inhibitors' (e.g. aminophylline) used to prevent COPD exacerbations, and how should they be best used? (1)	<p>Does theophylline in the typical target range 10-20 reduce wheeze and thus hospital admissions?</p>	<p>This question is an area of uncertainty. https://www.ncbi.nlm.nih.gov/pubmed/19716960; https://erj.ersjournals.com/content/50/1/1700158.long; https://www.ncbi.nlm.nih.gov/pubmed/24779680</p>	HCP
PQ36	What are the risks and benefits of the family of medicines called 'statins', alone and in combination, used to prevent COPD exacerbations, and how should they be best used? (1)	<p>The role of statins on exacerbation rate?</p>	<p>The evidence addressing this question is varied in focus and quality. This question has been partially addressed in the evidence base. https://www.nejm.org/doi/full/10.1056/NEJMoa1403086; https://thorax.bmj.com/content/70/1/33; https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD011959.pub2/full</p>	HCP
PQ37	What are the risks and benefits of the family of medicines called 'monoclonals', alone and in combination, used to prevent COPD exacerbations, and how should they be best used? (1)	<p>what is the role of using mepoluzimab in preventing exacerbations in eosinophilic copd</p>	<p>Limited evidence. https://www.nejm.org/doi/full/10.1056/NEJMoa1708208; https://www.nejm.org/doi/full/10.1056/NEJMoa1905248</p>	HCP
PQ38	What are the associations between co-morbidity (other medical conditions) and risk of COPD exacerbations? (12)	<p>What type of gastro-oesophageal reflux associates with exacerbations and how can treating reflux prevent exacerbations? Should we, and if so how can we reduce the risk of heart attack and stroke around the time of an exacerbation? Does dysphagia increase exacerbation risk? Is there a role for SLT in preventing COPD exacerbations? Can controlling gastro-oesophageal reflux disease reduce the risk of copd exacerbation does better management of cardiovascular disease reduce 'exacerbation' frequency 1. Impact of dental hygiene on copd exacerbations 2. Impact of cardiovascular therapies on copd exacerbations i would like someone to research people who are frequent exacerbators and screen for silent reflux (LRP). There is more of an emphasis on GORD these days and this is picked up if they have heartburn but still people are missing people with silent reflux. From my experience I have found the patients that exacerbate a lot have silent reflux that can be identified by completing http://www.issc.info/HullCoughHypersensitivityQuestionnaire.html this is mostly corrected by gaviscon advance regular and diet and lifestyle advice. I have also found that some people who have frequent exacerbations have h.pylori once treated exacerbations stop. I think this is a fascinating area to look into. Do patients who have a high incidence of exacerbations have swallowing problems which predisposes them to repeated exacerbations? Identifying those patients and addressing their swallowing problems could prevent exacerbations I want to know the link with sleep apnea and cpap machines in reducing exacerbations and underwater swimming Role of multi morbidity in COPD exacerbations</p>	<p>This question is an area of uncertainty. https://www.ncbi.nlm.nih.gov/pubmed/20843247; https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4049804/; https://www.ncbi.nlm.nih.gov/pubmed/25297724</p>	Patient/HCP
PQ39	How does smoking affect the risk of exacerbations? (4)	<p>To what extent does Smoking affect the frequency or duration of exacerbations Clear evidence if risk of COPD exacerbation has a positive association with increasing tobacco smoking The use of e cigs in COPD in general but for preventing exacerbations specifically, are they helpful? How well do we facilitate smoking cessation during/after exacerbations?</p>	<p>https://www.nice.org.uk/guidance/ng115/evidence/e-predicting-and-preventing-exacerbations-pdf-6602768754</p>	HCP
PQ40	Which psychological support regimes should I use to prevent an exacerbation, in which circumstances, and what are the potential benefits? (3)	<p>What is the role of Cognitive behavioural therapy in preventing avoidable COPD admissions How does fear relate to copd exacerbations What can I do to prevent panic attacks during a flare up</p>	<p>Limited evidence. https://www.nice.org.uk/guidance/ng115/evidence/c-selfmanagement-interventions-education-and-telehealth-monitoring-pdf-6602768752; https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD010673.pub2/full; https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD012347.pub2/full</p>	Patient/HCP
PQ41	What is the relationship between loneliness and COPD exacerbations? (2)	<p>Relationship between social isolation and copd exacerbations Does community activity with social connections prevent AECOPD?</p>	<p>This question is an area of uncertainty.</p>	HCP
TQ42	What is the best way to treat cough during a COPD exacerbation? (1)	<p>how to reduce the coughing</p>	<p>This question is an area of uncertainty. https://www.ncbi.nlm.nih.gov/pubmed/16625602</p>	Patient

TQ43	<p>When should I treat a COPD exacerbation with steroids alone, antibiotics alone or both? (44)</p>	<p>When should I use steroids? what is the threshold for antibiotics/steroids How do i know when i need antibiotics Would like to be clearer about when and when not to use antibiotics How do we decide when to instigate antibiotics & or steroids in a more timely and more accurate way in the community. Rescue medication how can we give better guidance to patients on the optimum time to start them, and reduce the inappropriate taking of steroids When should I start antibiotics? At what stage do you need to take steroids if it is an exacerbation without infection? How to reduce unnecessary antibiotic prescribing. Is antibiotics always the treatment? Are anti biotics and steroids the only way to cure exacerbations? some patients are unable to tolerate oral steroids eg causes confusion - what to do then - give antibiotics alone? Do you always need antibiotics for an exacerbation? Length of antibiotic and steroid treatment? When are antibiotics necessary Is it possible to avoid antibiotics during a flare up? I now have frequent exacerbations. Is it necessary to ALWAYS take steroids with antibiotics? How often is too many? Can we limit the use of oral steroids in treating exacerbation? Should you always take the steroids as well as the antibiotics? Should steroids only be given for breathlessness How best to target oral steroid therapy appropriately and minimise unnecessary use Are steroids first step for exacerbation when I don't think there is infection present. Can we avoid steroids? Do I have to Take steroids? Why are steroids the only treatment? Should steroids be included in emergency pack for emphysema flare up?</p>	This question is an area of uncertainty.	Patient/Carer/Relative/HCP
		<p>Do we really need to take steroids Steroids I suffer badly with side effects, how best to reduce them? 5 vs 7 day antibiotics When to use steroids Would steroids be better for cases of COPD rather than Antibiotics? The best antibiotics and steroids and I find if I over do exercise when having exacerbation makes it worse. Which is the best type to do As previous about duration of steroids and antibiotics Comparison of steroid only rescue packs v steroids and antibiotics. How do I know if I need antibiotics and steroids or only steroids? Can I take antibiotics without steroids and vice versa and in what circumstances? What factors are involved in deciding whether patients have antibiotics, oral steroids, or both in treating COPD exacerbation? We are understanding more about phenotypes in COPD but treat exacerbations in the same way. Can we understand more about which patients no and do not need steroids and also do or do not need antibiotics. I feel we give both without enough thought/ information and may be doing harm not good It would be fantastic to be able to stratify if both antibiotics and steroids are needed or if we can use only one safely and which one. How to better decide who will benefit from non-pharmacological management vs abx vs steroids vs both vs other - for an exacerbation Confused on whether exacerbation is requiring antibiotics and steroids or just steroids. Best rescue. Packs steroids and antib s or just steroids why Who needs steroids, nebs, antibiotics? . Biomarker directed treatment Stratification of exacerbations into those which will respond to different treatments.</p>		
TQ44	<p>What is the value of starting exacerbation treatment as soon as possible? (5)</p>	<p>Does early treatment reduce hospitalisation? In a time where antibiotic use is being questioned is there a benefit from early antibiotics in COPD exacerbation that may start viral but develop secondary infection? Is delayed antibiotic prescribing safe in this group Should we be trying to restrict use of antibiotics to avoid resistance, or should we be treating ASAP Should I take my rescue pack at the first sign of a flare up or wait to see if it gets worse</p>	<p>This question is an area of uncertainty. https://www.ncbi.nlm.nih.gov/pubmed/27990628 ; https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858</p>	Patient/HCP
TQ45	<p>What are the risks and benefits of rescue packs used to prevent COPD exacerbations, and how should they be best used? (16)</p>	<p>Should everyone with copd (I have been told I have mild Copd and have not suffered an "exacerbation") have a rescue pack of antibiotics or other drugs? Should we be supplying rescue packs to all patients? Education regarding self-management and an advice is paramount how can we ensure all patients have access to pulmonary rehabilitation 1- Should we still provide rescue packs? Should there be an overall policy on prescribing a rescue pack? Some GPs will some won't I have heard that some GP's still refuse to issue rescue packs, why? Should we give rescue packs to all COPD patients Rescue packs friend or foe? Do patients with rescue packs (regardless of how appropriately they use them) use GP and / or ED or other urgent care services less than those who don't have them? Benefits of rescue packs. Efficacy of rescue packs/overuse Any studies on use of rescue medication and compliance and use of antibiotics and resistance to antibiotics Emergency packs are sometimes used frequently - are these being used appropriately and do patients have enough information to decide when they should be taken? What would be the reasons for some patients not having a rescue pack? Should all patients be prescribed rescue packs or should this be at the GP/ consultants discretion? I would be interested to know what I would need in my rescue pack? Self-management plans - do they work in practice, IE does A&E ask about them??</p>	This question is an area of uncertainty.	Patient/Public/HCP

TQ46	<p>Which antibiotic regime (drug, dose, length; first line, second line) should I use to treat an exacerbation and what are the potential benefits and side-effects? (30)</p>	<p>Is Amoxicillin the best antibiotic to use? What is the best way to guide use and duration of antibiotics at exacerbation? If on amoxicillin five days a week permanently to avoid infection but you still have a flare up, what other antibiotics can you take to recover. Length of antibiotic course- should we reduce it to prevent antimicrobial resistance. Is there another antibiotic apart from amoxicillin (as advised in rescue pack) that can be used as soon as a flare up is suspected? What is the best antibiotics When you need a second lot of antibiotics is it because you didn't start the first lot soon enough. what side effects can there be with antibiotics What evidence is there that a standard course of antibiotics for an exacerbation should be 7 days as often patients come back several times what are the best antibiotics for this How long should the antibiotic course be? if you have a standby rescue pack how long should the course of antibiotics be for Role of sputum analysis in guiding best standby antibiotics? Which eradication protocols work for PSA? Which antibiotics is the best and safest I have CKD What is minimal duration antibiotics required as "standard" if antibiotics needed? .. Should all patients be discharged on 6 weeks of macrolides? Are antibiotics of any use during exacerbation? Antibiotics how do the prescribers know to give you the right one for you! Is 5 days of antibiotics enough? (Without the presence of Co-existing bronchiectasis) How can we best select patients who will benefit from antibiotic therapy? Will the regular use of antibiotics diminish their effectiveness over time Should rescue pack antibiotics cover a two week course of treatment? I am allergic to penicillin and need two courses of doxycycline. What other antibiotics could be used? Which antibiotics work best? I've had them all. When rescue antibiotics are on repeat prescription, how often does this lead to overuse of the same antibiotic and thus being less effective Which antibiotic is the most effective? What length of course of antibiotics should patients have as rescue and when should they be advised to start rescue meds I'm usually given antibiotics but would like to know if there are other ways of clearing the infection which is the optimum antibiotic</p>	<p>The evidence addressing this question is varied in focus and quality. This question has been partially addressed in the evidence base. https://www.ncbi.nlm.nih.gov/pubmed/30880285; https://www.ncbi.nlm.nih.gov/pubmed/31291514; https://www.nice.org.uk/guidance/ng114/evidence/evidence-review-pdf-6602627485; https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD010257/full; https://www.ncbi.nlm.nih.gov/pubmed/23235687</p>	Patient/Carer/Relative/HCP
TQ47	<p>Which oral/inhaled steroid regime (drug, dose, length; first line, second line) should I use to treat an exacerbation and what are the potential benefits and side-effects? (27)</p>	<p>In patients with eosinophilia would a higher dose e.g. 60mg of prednisolone be more effective? should the use of oral Prednisolone be targeted to specific patients? 1. what does Prednisolone should we give for treatment of an exacerbation and how long for? 2. what about weaning of Prednisolone- we often wean when patients have had repeated courses but then when they are frequent exacerbators they end up on high dose again and subsequently on Pred most of the time. What is the best way to guide use and duration of steroids at exacerbation? 3- Reducing courses of steroids- are they effective? I have osteoporosis so would like to find an alternative to steroids used during examinations and in inhalers Why do steroids not offer symptomatic relief for some people despite them having the symptoms that would indicate having steroids. The effects of steroids any way to prevent Can I take smaller dose of steroids for three days Steroids - 3 or 5 or 7 days? How do you know if you need a second course of steroids? Can steroids be avoided in patients without eosinophilia? Does increased inhaled steroid help? What dose of steroid tablets and for what duration Is there a way to limit the side effects of repeated courses of steroids? Are coated steroids kinder to the stomach than uncoated? Steroids what strength how long to be on steroids Are steroids effective? What type of steroids are best and why so many? How do you decide which patients require a slow wean from a course of steroids? How do you decide on a weaning plan (i.e. how many days to take each dose for)? Current recommended duration of treatment and doses of steroids. Different guidelines say different things what. value does taking steroids give in the rescue pack Do the steroids in inhalers or the rescue pack affect my skin or bones? when having lots of flare ups why do some Dr give you calcium tablets to counter the effects of the steroid tablets duration in a rescue pack</p>	<p>The evidence addressing this question is varied in focus and quality. This question has been partially addressed in the evidence base. https://www.cochrane.org/CD001288/AIRWAY_S_do-systemic-corticosteroids-improve-treatment-outcomes-in-flare-ups-of-chronic-obstructive-pulmonary-disease; https://www.cochrane.org/CD006897/AIRWAY_S_are-shorter-courses-systemic-steroids-effective-conventional-longer-courses-treatment-patients-flare</p>	Patient/Carer/Relative/HCP
TQ48	<p>Which mucolytic regime (drug, dose, length; first line, second line) should I use to treat an exacerbation and what are the potential benefits and side-effects? (1)</p>	<p>Would carbocisteine be useful as a rescue drug and at what dose?</p>	<p>This question is an area of uncertainty. https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD001287/full</p>	HCP
TQ49	<p>What is the best way to treat breathlessness during a COPD exacerbation? (5)</p>	<p>After antibiotics the main symptoms go but I am left breathless for weeks. What should I do. How best to breath when having an attack The exercises I see on U/Tube called "Buteyko breathing exercises "seem to help a lot of people. Is it really beneficial to do them???? Do singing for lung health breathing techniques reduce the severity of breathlessness during exacerbation Given that a large part of exacerbation is driven by anxiety and disordered breathing pattern, Would a short admission to a local community 'Hospital' (comfortable chair, hot tea and nursing care) be an effective second line option?</p>	<p>This question is an area of uncertainty.</p>	Patient/HCP
TQ50	<p>This section includes risks and benefits of miscellaneous other interventions in the treatment of COPD exacerbations. (23)</p>	<p>In the past I have been given a course of Doxycycline to treat infections and also have them as a rescue pack. I'm lead to believe that every infection I suffer has an overall effect on worsening my long term suffering from Emphysema, is this true? What else would benefit me beyond taking a course of antibiotics? I suffer extremely severe side effects with steroids - both physical and mental - is there any other medication I can take to avoid them? is there an alternative to steroids Is there any alternative to the current treatment of steroid medication to treat exacerbations, as the side effects have led to me becoming diabetic I would like information or research development on alternatives to taking steroids during a flare up which have less side effects Is there an alternative to steroids and antibiotics? Use salt pipe also is that ok Is the salt inhaler of any value? More research into alternative treatment forms like salt pipes/ aerosure devices to stop patients buying unnecessary/untested devices OTC Are the use of devices useful in the management of copd exacerbations? Does steam inhalation help? At the moment I just take inhalers. What is on the market that would help a lot better I would like to know if there are any inhalers that do not have steroids in them as the inhalers I use leave ugly bruise like marks on my hands and arms. (very unsightly especially at this time of year) At what stage is best to have a care plan in place . Role of Tai Chi post exacerbation What non-pharmacological treatment works and how? What non-medical things can I do to help? Fresh air, reduced cardio exercise, something else? Would some sort of anti-inflammatory help calm lungs? I'm on fostar seebree and sabutomal inhailors they do help but is there any natruel products Has any progress been made in finding less aggressive potentially toxic medication currently available, 4) What "OTC" products are the most supportive, post an exacerbation? Diuretic therapy in copd exacerbations. I take all the medication prescribed but have no knowledge of alternative therapies or medication. le salt inhalation. Homeopathy?. Diet. Best ways to avoid bloating. Nutrition.</p>	<p>This question is an area of uncertainty.</p>	Patient/HCP

TQ51	Which bronchodilator regime (drug, dose, length, and route) should I use to treat an exacerbation and what are the potential benefits and side-effects? (10)	<p>If admitted to hospital, should people use SAMA or LAMA? Would a nebulizer not be a good help during an exacerbation? I find it very hard to inhale medication when i have one. Should LAMA be stopped when ipratropium nebs are started? Is there a 'Real benefit' in using nebulisers over inhalers in most exacerbations (most pts admitted to hospital automatically get put on nebs as routine) inhalers and what sorts are best ,do nebulisers help Does inhalers really help n Nebuliser therapy - should it's place be only in hospital or where does it fit in Reducing doses of steroids Who needs nebulizers Why aren't nebulizers provided so that patients can treat themselves when they feel an exacerbation coming on rather than having the situation worsened and having to go to the hospital only to have them utilize a nebulizer? Should I increase my Trimbrow medication during an exacerbation?</p>	<p>The evidence addressing this question is varied in focus and quality. This question has been partially addressed in the evidence base. https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD011826/full; https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD012620/full; https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD002984/full</p>	Patient/Carer/Relative/HCP
TQ52	Which airway clearance regimes should I use to treat an exacerbation and what are the potential benefits and side-effects? (6)	<p>Optimal airway clearance regimes in relation to type of exacerbation What are the benefits of IMT? Does review of airway clearance techniques during exacerbation of COPD affect resolution of exacerbations? Would chest physio help clear the lungs during an exacerbation? Does chest physio in COPD have any similar evidence base compares to CF or bronchiectasis? Should Flutter valves be available on px from Nurses to aid sputum clearance</p>	<p>Limited evidence. https://www.ncbi.nlm.nih.gov/pubmed/22748085; https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD008328/full</p>	Patient/HCP
TQ53	Which ventilatory support regimes (including oxygen, NIV, IV) should I use to treat an exacerbation, in which circumstances, and what are the potential benefits and side-effects? (3)	<p>Which patients derive the greatest benefit from non-invasive ventilation? Patient experiences of treatment interventions- especially NIV and physio therapy NIV do we use it quick enough in severe exacerbations</p>	<ul style="list-style-type: none"> • https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD004104.pub4/full • https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD005534.pub2/full • https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD003571/full • https://www.ncbi.nlm.nih.gov/pubmed/31291880 	HCP
TQ54	Which psychological support regimes should I use to treat an exacerbation, in which circumstances, and what are the potential benefits? (6)	<p>Is there a role for CBT as standard treatment in all COPD exacerbations? How does emotional support/yoga exercises/holistic care enhance recovery from exacerbation Role of CBT and mindfulness in exacerbations How to deal with the awful anxiety and fear, despite knowing very well what I should be doing. I have attended 2 pulmonary rehab courses, which were brilliant and I would do one every week and pay to do so if it were ever possible. Is there anything I can do to reduce the fatigue and low mood during an exacerbation? Does symptoms of anxiety impact on COPD exacerbations?</p>	<p>This question is an area of uncertainty. https://www.nice.org.uk/guidance/ng115/evidence/c-selfmanagement-interventions-education-and-telehealth-monitoring-pdf-6602768752; https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD010673.pub2/full; https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD012347.pub2/full</p>	Patient/HCP
TQ55	What is the optimal combination of treatments at COPD exacerbation and how to decide this in individual patients/exacerbations? (13)	<p>What are the key components of successful management plans? Which is the best prescribed medical treatment? Are extensive treatment regimens increasing the risk of future exacerbations given the side effects of long-term use? I often have flare ups of COPD and need to take time off work. How can I manage these flare ups? I am a smoker. Could there be a treatment carried by paramedics to administer to prevent hospital admissions. What is the impact of all the usual exacerbation treatments on duration of exacerbation? How often do exacerbations improve on usual therapy without any additional? Should a patient stop as soon as they feel better or follow traditional advice to complete the course? Best way to self-treat when you get one! What can relatives do to treat or ease exacerbations? What can relatives do to treat / ease exacerbations with dignity (specifically with a COPD patient in denial or concealing symptoms)? What is the best course of action if I was having an exacerbation What tablets should I have in case of a flare up & what are the telling signs of a flare up?</p>	<p>This question is an area of uncertainty.</p>	Patient/Carer/Relative/HCP
TQ56	Which palliative care regimes should I use to treat an exacerbation, in which circumstances, and what are the potential benefits? (1)	<p>Integrated palliative care following niv for copd exacerbations</p>	<p>This question is an area of uncertainty.</p>	HCP
TQ57	How should patients with a clinical diagnosis of COPD exacerbation be managed if there is no confirmatory spirometry? (1)	<p>Best marker/symptom to guide home community care vs admission Advice on Treatment at home rather than going to hospital Should patients be treat at home with an exacerbation if they are given treatment & are safe to stay at home and have a community nurse to re-evaluate daily Does home review by on-call community COPD nurse allow treatments at home? Which treatments prevent readmission to hospital following COPD exacerbations? Can we safely treat more patients in the community e.g. hospital at home setting?</p>	<p>This question is an area of uncertainty.</p>	Patient/HCP
TQ58	What factors determine whether someone with COPD exacerbation can be managed at home, or needs admission to hospital? (6)	<p>Best marker/symptom to guide home community care vs admission Advice on Treatment at home rather than going to hospital Should patients be treat at home with an exacerbation if they are given treatment & are safe to stay at home and have a community nurse to re-evaluate daily Does home review by on-call community COPD nurse allow treatments at home? Which treatments prevent readmission to hospital following COPD exacerbations? Can we safely treat more patients in the community e.g. hospital at home setting?</p>	<p>This question is an area of uncertainty. https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD003573.pub2/full</p>	Patient/HCP
TQ59	How can recovery from exacerbation be assessed and monitored? (3)	<p>When should you start to feel better after an exacerbation? Realistic recovery period before retreating symptoms that are stable but not resolved What speeds recovery.</p>	<p>This question is an area of uncertainty. https://www.atsjournals.org/doi/full/10.1164/ajrccm.161.5.9908022</p>	Patient/HCP

TQ60

<p>During an exacerbation, how much physical activity should I do? This includes advice on PR. (38)</p>	<p>Is it safe to exercise when you believe you are about to get ill with a chest infection To what extent does Previously attended PR affect the frequency or duration of exacerbations What is the effect of social prescribing (Gym, Walking, Air Quality, Dust y environment etc.? Does early mobilisation of in-patients with exacerbation of COPD affect outcomes? Broad spectrum antibiotic in rescue pack, plus steroids should be held by patient. Should gentle exercise be encouraged to prevent muscle wastage? Non hospital admissions miss out on aftercare (PR referral, physiotherapy input, mobilisation, chest clearance assistance.) OT input for adaptations/equipment is lengthy without admission. If a patient has a flare up what role can a physio play in their recovery? What are the recommendations for patients' currently attending pulmonary rehabilitation who have an exacerbation - is it safe to continue to exercise during a flare up? We generally check observations and if stable advise as long as patients feel well enough to do their normal activities they can attend but would be interest in what the research says. Alternative to formal pulmonary rehab can it work , as well as defined PR, research on the influence of recovery post exacerbation for COPD with type 2 diabetes Should patients be advised to rest to recover from exacerbations? Should I carry on as normal throughout an exacerbation, or rest? What is the best way of controlling a flare up is total rest a good idea. How can we improve the uptake and completion of post exacerbation rehabilitation? Would weekly run exercise groups be beneficial to patients and cost effective to the NHS in terms of time and finance to maintain and even prolong the fitness of patients and prevent exacerbations? Does more exercise help even if it leaves him tired and breathless? Does regular cardio exercise help? Why do patients reject pul rehab after an exacerbation? Are there any exercises to improve the lungs Why is pulmonary rehabilitation very limited, ie in my area you have to have had at least 5 exacerbations before being referred for pulmonary rehabilitation? Can an exacerbation be controlled by exercise rather than taking antibiotics or steroids How do we encourage appropriate COPD sufferers to buy into Pulmonary Rehab as a gold standard treatment and not an optional extra At what stage of an exacerbation is it safe to introduce activity? What intensities of activities should be implemented at the varying stages of recovery from exacerbation? Should you continue to exercise when you feel able to despite still having an exacerbation?</p>	<p>This question is an area of uncertainty. https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD005305.pub4/full</p>	<p>Patient/Carer/Relative/HCP</p>
	<p>Also, I have been on a course of pulmonary rehab and have been told Not to exercise when I have an exacerbation. How soon afterwards should I start trying to exercise again? Can Education re PR during exacerbation improve uptake of PR after exacerbation? When should PR be instituted post exacerbation and for how long? We know pulmonary rehab has an excellent evidence base in COPD, what about general Physical activity in the treatment of COPD? Should you continue with rehab whilst you are having an exacerbation Is it alright to exercise during flare-up Is it best to rest or stay active during an exacerbation When is the best time to offer PR post exacerbation and in what format? How soon after an exacerbation should you return to normal exercise? How long after a hospital admission should someone be recruited on to Pulmonary Rehab? What is the ideal time post exacerbation for PR? should I rest or exercise Does exercise help recovery? How much exercise is too much, and how soon can a session recommence after recovery time How can we stop the weakness I feel after a flare? (muscle wasting)</p>		