Reducing winter pressures: How primary care can lead the way and improve lung health

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Introduction

Winter brings predictable surges in respiratory illness and pressure across urgent and emergency care. This paper sets out a practical, primary care-led framework to reduce avoidable demand by acting earlier on respiratory risk. We describe seven interventions:

1. Data-driven risk stratification
2. Personalised self-management planning
3. Maximising vaccination uptake
4. Treating tobacco dependence
5. Smart safe use of chronic obstructive pulmonary disease (COPD) rescue packs
6. Linking with community teams and social prescribers
7. Coordination with community pharmacy.

Each intervention includes concrete 'Actions' for implementation and is supported by real-world case studies. Taken together, these measures offer a replicable approach to anticipatory neighbourhood-based care that can reduce exacerbations and admissions and address health inequalities over winter while improving patient experience and professional collaboration.

The power of primary care

As the cold weather returns, so too does the familiar surge in respiratory illness – and the pressure it brings to an already stretched NHS service. Accident and Emergency (A&E) departments fill up, ambulance call outs spike and hospital beds are pushed to capacity. But what if we could change the story this winter and beyond? Primary care is in a powerful position to prevent many of these winter crises. With smarter proactive approaches to respiratory disease management, we can reduce hospital demand and also deliver more sustainable care closer to home in neighbourhoods.

Intervention 1 – Let data lead the way

Let data lead the way and get ahead by knowing your 'at-risk cohorts'. COPD exacerbations have significant and lasting consequences upon individuals. Even a moderate exacerbation can increase risk of hospitalisation by 21% and the risk of death by 18% in one year.[1] They represent the second most common cause of emergency admission and hospitalisation across the UK.[2] Readmission rates are also high, with 24.4% of patients being readmitted within 30 days of discharge and 43.1% within 90 days.[3] Exacerbations also have systemic effects, with evidence of cardiovascular events following an episode.[4]

The following examples illustrate system searches that can help identify at-risk cohorts.

Condition	Example Search Criteria	Tools / Links
COPD	≥2 courses prednisolone + antibiotics in last 12 months ED attendance/admission	ARDENS COPD risk tool
Asthma	≥1 course prednisolone; SABA overuse (>3 inhalers/year) ED attendance/admission	SPECTRA suspected severe asthma UCLPartners proactive care slides
General (respiratory)	Previous admissions; smokers with long term conditions; recent respiratory discharge	EMIS/SystmOne/QOF searches; local business intelligence (BI) dashboards; HES data

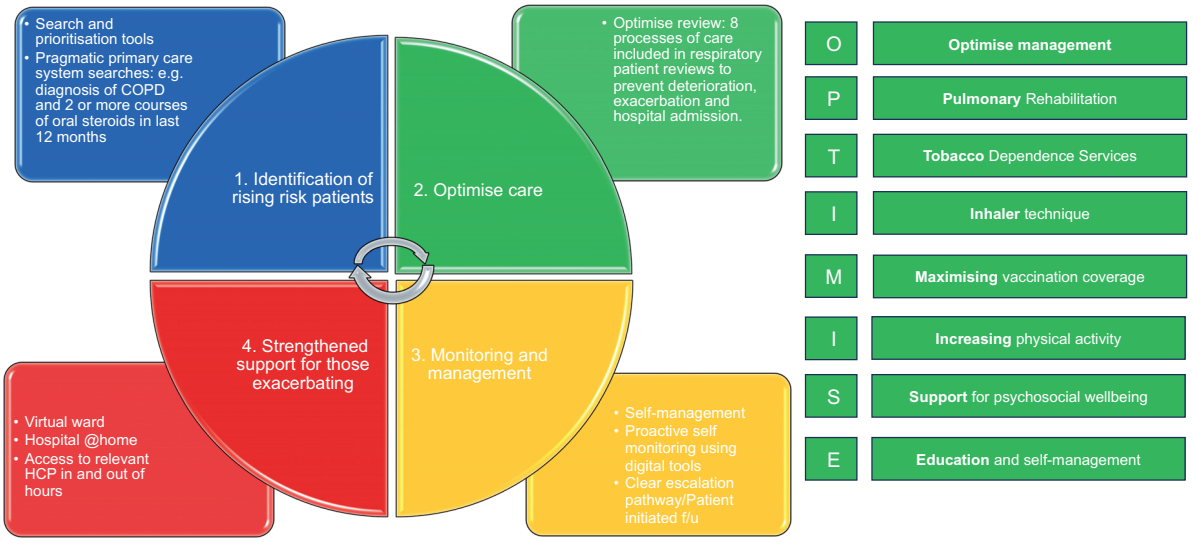
*SABA = Short-acting beta2 agonist, ED = Emergency department, QOF = Quality and Outcomes Framework, HES = Hospital episode statistics

Exacerbation risk search tool: https://future.nhs.uk/connect.ti/NHSatH/view?objectID=57703600
SPECTRA: https://suspected-severe-asthma.co.uk/
UCLP proactive care: https://s42140.pcdn.co/wp-content/uploads/COPD-slide-deck-Version-2.2.pdf
There are other search tools and risk models available in UK.

ACTION **Use searches to identify your at-risk cohorts and flag on your system to enable review.**

Case study: Optimise

Optimise COPD patient identification and management pathway



The winter planning approach led by Lung health@home. The four pilot sites involved in the study, were: Hull University Teaching Hospitals NHS Trust, University Hospital Southampton NHS Foundation Trust, King's College Hospital and Guy's & St Thomas' NHS Foundation Trust, and Cornwall Partnership NHS Foundation Trust. Up to 50% of the cohort did not attend face to face reviews and were reached in different ways , for example community connectors, 'super Saturday' events (cornwall) and through smoking cessation or Drug dependency services. https://future.nhs.uk/NHSatH/view?objectID=259415973.
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Intervention 2 – Personalised self-management plans

Working with patients to co-develop a multi component self-management plan, including agreed actions that are known to decrease exacerbation frequency, reduce hospital attendances and admissions in COPD [5] and asthma. Education is a key part of these plans and should be delivered by healthcare professionals who have a good understanding of lung health. The route to excellence in care for people living with COPD is well established and the instructions are clear:

- treat tobacco dependence
- vaccinate against influenza, zoster (shingles), COVID-19 and pneumonia
- refer for pulmonary rehabilitation (PR)
- co-produce a personalised self-management plan
- optimise treatment for comorbidities

Yet these recommendations are rarely all met. Only a minority of people with COPD receive support to create a self-management plan. Data suggest only 34% have a written action plan.[6] Giving a COPD patient a rescue pack with instructions on when to use it is NOT a self-management plan – it is part of their plan.

- **Ensure your staff delivering COPD reviews are aware of the five fundamentals and know how to explain these to patients.**
- **In winter planning at-risk patients would benefit from receiving a review and development of a self-management plan (Table 1) by staff competent to do so. The optimise approach is more than an annual review it is about addressing factors that are known to increase exacerbations in an at-risk cohort.**
- **Additional tips for winter for people with respiratory conditions are to wrap up warm and avoid going outside when the temperature drops below 2°C. Signposting to the Met Office alerts[7] and, if too cold to walk outside, encourage some exercises inside the home and remind them to do breathing exercises.**
- **People with asthma and COPD should ensure they do not run out of inhalers over the festive season when pharmacies may be closed.**
- **All at-risk babies, children and those with chronic lung conditions should be encouraged to wash their hands regularly and avoid crowded places.**

Table 1. OPTIMISE Framework (O–P–T–I–M–I–S–E) for frequent exacerbation cohort

Element	Assessment/action	Referral/intervention
O – Optimal management	Review prescriptions; consider triple therapy; manage comorbidities	Consider maintenance and reliever therapy (MART) for asthma; step-up per guidelines
P – Pulmonary rehabilitation (PR)	Assess suitability and explain PR benefits	Refer to PR
T – Tobacco dependence	Ask–Advise–Act on smoking status	Refer to cessation services; prescribe nicotine replacement therapy (NRT)/Varenicline as appropriate
I – Inhaler technique	Directly observe technique; device alignment	Train and switch to similar devices where helpful
M – Maximise vaccination	Check and update vaccine status	Offer flu, COVID-19, pneumococcal, respiratory syncytial virus (RSV) (as eligible)
I – Increase physical activity	Advise regular activity tailored to ability	Social prescribing; local activity schemes
S – Support psychosocial wellbeing	Assess anxiety, isolation, financial stres	Refer to wellbeing, social or housing support
E – Education and self-management	Check understanding; reinforce action plan use	Provide written action plans and follow-up

Intervention 3 – Maximise vaccinations

Getting vaccinated against pneumococcal disease and flu can help lower the risk of exacerbations and even death in people with COPD.[8,9] However, vaccination rates in the UK are still not optimal. In 2021–22 only 56% of adults under 65 with long-term breathlessness received a flu vaccine and a similar number (56.8%) had a pneumococcal vaccine.[10] For 2025-26 up to the end of week 45 (09/11/205) 65.1% of over 65 years have received a flu vaccine.[11, 12]

People living in more deprived areas are generally less likely to get vaccinated. Ethnicity also plays a role – for example, black or black British-Caribbean people have some of the lowest flu vaccination rates.[13] Smokers are also less likely to get their vaccines.[14]

People with COPD in particular, should receive all recommended vaccinations in line with the relevant local guidelines. This should include:

- Yearly influenza vaccination,
- SARS-COV-2 (COVID-19) vaccinations,
- One dose of either 21-valent pneumococcal conjugate vaccine or PCV20,
- RSV vaccination, and
- Zoster vaccination to protect against shingles.[15]

They should be considered also, where appropriate, to people with respiratory disease who are considered at risk.

There are many reasons why people might not get vaccinated including concern about side effects, time pressures, confusion about eligibility and lack of social support.[16]

When educating a patient about the flu vaccine, always acknowledge the person's concerns, educate them on simple facts such as the vaccine cannot cause flu (it is not a live vaccine), that benefits for them outweigh the mild side effects (mild aches and fatigue for a few days), encourage them to rest afterwards and keep hydrated. Link the vaccine to their goals of staying out of hospital and offer ease of access.

- **Lead by example and get your flu vaccine and use this for staff communication campaign[17]**
- **Expand clinic hours – offer evening and weekend appointments**
- **Simplify the booking system**
- **Training of local pharmacies to deliver flu and COVID vaccines**

Case study: Blackburn and Darwen

An additional 250 children living in Blackburn and Darwen were vaccinated against flu after the NHS South, Central and West (NHS SCW) immunisation support team identified the reasons why families weren't responding to call-ups. From analysing the operational data, the team was able to identify that the area was highly deprived and also ethnically diverse. Contact centre staff were engaged to call families registered with practices who hadn't taken up the offer of a flu vaccine for their child to understand the reasons why. It soon became apparent that, rather than being worried about the vaccine, the issues were largely logistical. Clinics were only available on weekdays and at limited times. Locations were often difficult to get to, particularly by public transport. Many people, including those whose first language may not have been English, also found the standard letter confusing. The North West regional team used this insight to recommend two simple but effective interventions. Firstly, weekend clinics were arranged in locations with better transport links to increase accessibility for working parents. Secondly, an easy-to-read letter and vaccine benefits leaflet was sent out to over 2000 families in their first language, which was informed by the SCW reporting. The letter also went out from the local GPs in multiple languages. Not only did this format enable recipients to understand the information but, by sending the letter from local GPs, the information was reassuringly also reassuringly coming from someone known to them.

Intervention 4: Offer treatment and support for tobacco dependence

Smoking is strongly linked to an increased risk of respiratory infections, both acute (such as influenza, pneumonia and COVID-19) and chronic (such as chronic bronchitis and COPD exacerbations). Evidence from UK and international research consistently shows that smoking weakens respiratory defences and increases susceptibility to infection.18 Smokers are up to 2–3 times more likely to develop symptomatic flu and related complications such as pneumonia. A 2010 *BMJ* meta-analysis found that current smokers had more than double the risk of community-acquired pneumonia compared with non-smokers.[19] More recent research has also shown that smoking is associated with more severe outcomes from viral infections such as COVID-19. A study published in *Thorax*[20] found that smokers faced higher risks of severe disease and hospitalisation. Children exposed to second-hand smoke are also more likely to develop bronchiolitis, bronchitis and ear infections.[18] Ongoing smoking increases the risk of exacerbation in COPD[21] and is associated with poorer outcomes in asthma.[22]

The mechanisms appear to be:

- Impaired mucociliary clearance – cigarette smoke paralyses and destroys cilia that clear mucus and pathogens from the airways.[18]
- Inflammation and tissue damage – chronic irritation inflames the airway linings, creating easier entry points for bacteria and viruses.[18]
- Reduced immune function – smoking suppresses macrophage and neutrophil activity, weakening the immune response.[20]
- Altered airway microbiome – smokers' airways host more harmful bacteria, increasing the likelihood of infection.[19]

Smoking cessation reduces infection risk within months, as airway cilia begin to recover within weeks.
Effective treatments include combination nicotine replacement therapy (NRT) and Varenicline, both of which can be prescribed in primary care.

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- **Make every contact count – ask, advise and act (Very Brief Advice) at every appointment**
- **Consider embedding smoking services with your flu vaccination programme**
- **Know how to prescribe dual NRT, Varenicline and Cytisine**

Intervention 5: Rescue packs: smart use, not overuse

In patients experiencing exacerbations of COPD, systemic steroids and antibiotics can improve lung function and shorten recovery time including duration in hospital. However, frequent or inappropriate use of rescue packs may lead to adverse outcomes, particularly due to risks associated with systemic oral corticosteroids and growing concern of antibiotic resistance. The side effects of oral corticosteroids are well documented and can include pneumonia, osteoporosis, cataracts, weight gain, sleep disturbances and anxiety.

There is growing evidence that patients are overusing rescue packs, either because they don't understand when to use them or because they equate small changes in their day-to-day condition with an exacerbation. This has potentially harmful consequences for the patient, including antibiotic resistance. A trial of self-management with rescue packs showed increased mortality in the treatment group,[23] so they should only be prescribed with caution and by healthcare workers who understand how to explain usage, side effects and route of escalation.

Previous exacerbation is the largest risk factor for future exacerbations.[24] If a patient has had more than one rescue pack, emergency department attendances with exacerbations or admissions over the last 12 months, they are your 'at-risk' patients. These patients should be reviewed and their care optimised.

- It is essential that individuals are educated on when and how to use the rescue packs and given a number to contact for support should they exacerbate. Do not put rescue packs on repeat prescriptions. Ensure that patients have a contact number to inform someone when they have started their rescue pack, and that they can be seen at the next available urgent appointment. This is because patients with COPD may develop other life-threatening illnesses (eg, heart failure, pulmonary embolism, acute coronary syndrome)
- Use care navigators or reception triage to offer same day appointments with competent clinicians for those rising risk individuals with acute wheeze or worsening cough. Offer respiratory slots during peak days (Mondays in winter). Spread the workload to benefit the patient. If you have a community respiratory team, work with them and ensure patient initiated follow-up is embedded in their service
- If exacerbations are frequent, ensure all appropriate investigations have been done (for example: full blood count, HBA1C, sputum MC&S, CXR +/- HRCT thorax if bronchiectasis suspected) ensure all care is optimised and refer to specialist respiratory services in the community or secondary care for further review, imaging and for consideration of prophylactic antibiotics
- In patients with frequent exacerbations and elevated blood eosinophils, the addition of inhaled corticosteroids to dual bronchodilator (triple therapy) should be prescribed.

Intervention 6: Link with community teams and social prescribers

The wider determinants of health such as deprivation, poor housing and employment status strongly influence the ability of clinicians to deliver care to people. Cold or damp homes, fuel poverty, outdoor pollution, indoor pollution and substance abuse can all be silent contributors to repeated exacerbations. Lack of support, including financial barriers to attending appointments and inability to pay for medication, need to be recognised and support enabled. While it must be acknowledged that structural issues with equity in COPD care cannot be addressed by individual health professionals in their clinical encounters, action can be taken by a wider neighbourhood team to mitigate some harms.

- Know how to refer into your warm home schemes
- Utilise your social prescribing link workers or community connectors to support people from more deprived areas and those who are harder to reach or do not engage
- Link with hostels and drug dependency units
- Link in with third sector, local authority and mental health teams
- Co-manage complex patients within a multidisciplinary team (MDT) with specialist input/integrated respiratory teams and extended support

Case study: Cheshire and Merseyside

In 2022, around 468,829 households were estimated to be in fuel poverty in Cheshire and Merseyside. Winter presents significant challenges for this population, particularly as cold temperatures are known to exacerbate respiratory conditions. Graphnet developed a Fuel Poverty Dashboard using the CIPHA (Combined Intelligence for Public Health Action) data platform. CIPHA links health and social care data across Cheshire and Merseyside, supporting NHS and partner organisations to understand and map population health data for service design and improvement. The dashboard stratified the fuel-poor population using factors such as risk of admission, mortality risk and living circumstances (eg, living alone). Identified patients were contacted by phone and booked into a face-to-face clinic session. Clinics were held once a week, with each patient allocated a 30-minute slot. Administrative staff used three days per week for triage and booking appointments. The intervention was delivered collaboratively by the Community Respiratory Team and Family Hub, bringing together clinical, social and community resources to address the combined challenges of respiratory health and living conditions. The intervention decreased ED attendance by 5% and referred 82% of those seen to local authority support services for fuel support. The project has led to high-risk children being reviewed and monitored by the respiratory nurse. Once the patient is stable on medication, care is transferred back to the GP.

Intervention 7: Pharmacy

Make full use of our brilliant pharmacy colleagues. For minor infections and acute symptoms, they can be the first port of call. Neighbourhood pharmacists can also support with stop smoking, deliver vaccines and can demonstrate inhaler technique.

Pharmacies in some areas are actively participating in public health campaigns in collaboration with the Public Health Agency (PHA) and other bodies. These campaigns involve providing advice and information on managing common winter ailments such as coughs and colds, promoting good hygiene practices ("catch it, bin it, kill it"), encouraging eligible people to get their winter vaccines and offering general health promotion messages about staying warm and eating well.

- **Hold a joint GP–pharmacy winter planning meeting via primary care networks (PCNs)**
- **Share campaigns "think pharmacy first this winter"**

Pharmacists can:

- Reinforce self-management for asthma/COPD during prescription dispensing
- Check inhaler technique
- Ensure not overusing rescue packs
- Signpost to flu/COVID vaccines
- Offer support for tobacco dependency

Summary Box – Key Messages

This paper outlines a proactive data-driven approach to reducing winter pressures through improved management of respiratory disease in primary care. It highlights seven practical interventions covering population risk stratification, personalised self-management, vaccination, smoking cessation and collaboration across integrated respiratory teams and pharmacy networks. Drawing on real-world case studies from across England, including the OPTIMISE model and fuel poverty initiatives, the paper demonstrates how integrated anticipatory care can prevent exacerbations, reduce admissions and improve patient outcomes. It emphasises early identification of risk, practical self-management support and coordination between general practice, pharmacy and local authority services. The approach aligns with national priorities for winter resilience and health inequality reduction, offering an evidence-informed framework for sustainable respiratory care in neighbourhood settings.

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