

Self-management and action plans for preventing acute exacerbations due to COPD: evidence summary

Key Policy Considerations

Chronic Obstructive Pulmonary Disease (COPD) contributes significantly to health systems burden in terms of primary care consultation, emergency visits and in-patient admissions. The public health systems are under strain due to COVID-19, across the world. Preventing acute exacerbations of COPD is crucial to ensure the health system is not burdened further. Key policy considerations are:

1. Patients with COPD should be oriented to use self-management strategies with written action plan for worsening of symptoms. There is evidence that it **improves health related quality of life** (high quality evidence) and **reduces hospital admissions due to respiratory problems** (moderate quality evidence).
2. Self-management and action plans might be delivered **by primary healthcare team during follow-up home visits for** (as mandated by MoHFW, India guidance note on delivery of essential health services during COVID-19). **Primary healthcare teams should be trained** for this purpose.
3. Self-management plans should be individualised with assessment of COPD and developed based on discussions with patients. **Self-management action plans may be delivered in writing** (hard copy or digital), **verbally or through audio-visual media. Action plans should** include guidance and instructions on **smoking cessation**, self-recognition of COPD exacerbations, and structured education regarding COPD. For safety reasons, action plans should **consider co-morbidities and ability to access care rapidly** on further exacerbations.

What is an evidence summary?

An evidence summary provides a summary of global research on a particular topic from a single high quality systematic review to **inform decision-making contextualised to a particular setting**.

Why was this evidence summary developed?

The State Health Systems Resource Centre, Chattisgarh **requested evidence to improve diagnosis and quality of care for Asthma & COPD** in the state. The evidence summary is part of the **Ensuring Health Systems Capacity for COVID-19 and beyond: Evidence Series**

Suggested citation

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Self-management and action plans for preventing acute exacerbations due to COPD: rapid policy brief

Chronic Obstructive Pulmonary Disease (COPD) contributes significantly to health systems burden in terms of primary care consultation, emergency visits and in-patient admission. Acute exacerbations of COPD (AECOPD), lead to functional impairment and increases the risk of death in people with COPD. Globally, public health systems are under strain due to COVID-19, which may have an impact in the short to medium term on provision of non-COVID health care services. The Ministry of Health & Family Welfare (MoHFW), Government of India realising the need for maintaining essential services has released a guidance note¹ for addressing service delivery of non-COVID health conditions including COPD. Strategies used to prevent acute exacerbations of COPD would ensure health systems do not get overburdened.

Self-management interventions for individual with COPD are structured but personalised interventions aimed at improving health behaviours and self-management skills. Action plans incorporated as part of COPD self-management interventions could be used to train patients to manage worsening respiratory symptoms and seek healthcare.

Methodology

The document provides a summary of evidence from a single high-quality systematic review.² A systematic review is a type of research which uses reproducible, systematic and robust methods to summarise evidence from multiple research studies (in this case randomised controlled trials) to inform decision making. We summarise effect estimates but also the quality of evidence using the WHO recommended GRADE criteria (Table 1 at the end of the report).

Summary of evidence on self-management and action plans for preventing acute exacerbations due to COPD

The high-quality systematic review by Lenferink et al² on self-management and action plans for COPD included 22 randomised controlled trials (RCTs) with a total of 3,854 COPD patients, with follow-up ranging from 2-24 months in different studies. Included RCTs were conducted in hospitals, outpatient clinics, in-patient settings, primary care physiotherapy practices, general practices, and primary health care clinics. The mean age of the participants in the RCTs included in the systematic review ranged between 57-74 years, with majority being older adults and male.

Self-management interventions included: self-recognition and self-treatment of exacerbations, use of maintenance treatment, smoking cessation, avoiding situations in which viral infection might be prevalent, contacting healthcare providers for support, and reinforcement of the logistics for treatment of comorbidities. Self-management interventions did not include any rewards and threats, scheduled consequences or covert learning. Key findings from the systematic review are summarised below:

- Self-management with written action plans significantly **improves health related quality of life in patients with acute exacerbations of COPD (high quality evidence)**. The mean difference (MD) in health related quality of life scores measured by the St. George's Respiratory Questionnaire (SGRQ) was lower (indicating better) in the self-management intervention group than in the usual care group [MD -2.69 (95% CI: -4.49 to -0.90)].
- Self-management interventions that included written action plans in consultation with patients led to a **31% decrease in odds of respiratory-related hospitalisations (moderate quality evidence)** compared to the usual care group [Odds Ratio (OR) 0.69, 95% CI: 0.51 to 0.94].
- There was **no statistically significant difference in all-cause mortality (moderate-quality evidence)** [Risk Difference (RD) 0.002, 95% CI -0.022 to 0.026]. However, a **very small but statistically significant, increase in mortality due to respiratory reasons (very low-quality evidence)** was found in the self-management intervention group compared to the usual care group [RD 0.028, 95% CI 0.0049 to 0.0511].
- Patients with acute exacerbations of COPD who participated in a **written smoking cessation plan showed an improvement** [95% CI, 0.27 to 2.94] in

SGRQ scores of 4.98 points [MD -4.98, 95% CI -7.17 to -2.78], compared to those who did not participate in a written smoking cessation plan who showed an improvement of only 1.33 points [MD -1.33, 95% CI: -2.94 to 0.27].

- There was no significant difference in dyspnoea scores [MD -0.63, 95% CI -1.44 to 0.18] between the two groups in a meta-analysis of three studies.
- Meta-analysis of results from four studies did not show any significant differences on the mean number of exacerbations per participant [MD 0.01, 95% CI -0.28 to 0.29].

Table 1: What GRADE Working Group grades of evidence implies

221	What It Means
High Quality	We are very confident that the true effect lies close to that of the estimate of the effect
Moderate Quality	We are moderately confident in the effect estimate: The true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different
Low Quality	Our confidence in the effect estimate is limited: The true effect may be substantially different from the estimate of the effect
Very Low Quality	We have very little confidence in the effect estimate: The true effect is likely to be substantially different from the estimate of effect

References

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2. Lenferink A, Brusse-Keizer M, van der Valk PDLPM, et al . Self-management interventions including action plans for exacerbations versus usual care in patients with chronic obstructive pulmonary disease. Cochrane Database of Systematic Reviews 2017, Issue 8. Art. No.: CD011682. <https://doi.org/10.1002/14651858.CD011682.pub2.1>

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