F&P Optiflow

Flow Matters

EDITION 2

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Clinical practice guidelines

Independent organisations, including medical societies, have published clinical practice guidelines recommending the use of Nasal High Flow (NHF) therapy:

Nasal High Flow (NHF) therapy is recommended for use in several clinical practice guidelines covering various applications and clinical scenarios. Publishing guidelines is an important step in clinical practice change.

PUBLICATION	TITLE	SOCIETY	JOURNAL
Rochwerg et al. 2020.[2]	The role for high flow nasal cannula as a respiratory support strategy in adults: a clinical practice guideline.	European Society of Intensive Care Medicine (ESICM)	Intensive Care Medicine
Qaseem et al. 2021.[1]	Appropriate Use of High-Flow Nasal Oxygen in Hospitalized Patients for Initial or Postextubation Management of Acute Respiratory Failure: A Clinical Guideline From the American College of Physicians.	American College of Physicians (ACP)	Annals of Internal Medicine
Evans et al. 2021.[3]	Surviving Sepsis Campaign: International Guidelines for Management of Sepsis and Septic Shock 2021.	Society of Critical Care Medicine (SCCM): Surviving Sepsis Campaign (SSC)	Critical Care Medicine
Piraino et al. 2021.[4]	Management of Adult Patients With Oxygen in the Acute Care Setting.	American Association for Respiratory Care (AARC)	Respiratory Care
Oczkowski et al. 2022.[5]	ERS Clinical Practice Guidelines: High-flow nasal cannula in acute respiratory failure.	European Respiratory Society (ERS)	European Respiratory Journal
Barnett et al. 2022.[6]	Thoracic Society of Australia and New Zealand Position Statement on Acute Oxygen Use in Adults: 'Swimming between the flags'.	Thoracic Society of Australia and New Zealand (TSANZ)	Respirology
Tasaka et al. 2022.[7]	ARDS Clinical Practice Guideline 2021.	Japanese Society of Intensive Care Medicine (JSICM), Japanese Respiratory Society (JRS) & Japanese Society of Respiratory Care Medicine (JSRCM)	Journal of Intensive Care
WHO Guideline Development Group. 2023.[8]	Clinical management of COVID-19: Living guideline, 18 August 2023	World Health Organisation (WHO)	N/A
Grasselli et al. 2023.[9]	ESICM guidelines on acute respiratory distress syndrome: definition, phenotyping and respiratory support strategies.	European Society of Intensive Care Medicine (ESICM)	Intensive Care Medicine
Helms et al 2024.[10]	Oxygen therapy in acute hypoxemic respiratory failure: guidelines from the SRLF-SFMU consensus conference.	Société de Réanimation de Langue Française (SRLF) & Société Française de Médecine d'Urgence (SFMU)	Annals of Intensive Care
Baugh et al. 2025.[11]	Acute Care of Patients with Moderate Respiratory Distress: Recommendations from an ACEP Expert Panel.	American College of Emergency Physicians (ACEP)	Western Journal of Emergency Medicine
NICE guidelines 2025.[12]	Pneumonia: diagnosis and management (NG250).	National Institute for Health and Care Excellence (NICE)	N/A
GOLD COPD Report, 2026.[13]	Global Strategy for Prevention, Diagnosis and Management of COPD: 2026 Report & Pocket Guide	Global Initiative for Chronic Obstructive Lung Disease (GOLD)	N/A

* Joint committee from the Japanese Society of Intensive Care Medicine, the Japanese Respiratory Society, and the Japanese Society of Respiratory Care.

Recommendations for NHF use

Clinical applications/ scenarios	ESICM[2,9]	ACP[1]	SSC[3]	AARC[4]	ERS[5]	TSANZ[6]	JSICM JRS JSRCM[7]	WHO[8]	SRLF SFMU[10]	ACEP[11]	NICE[12]	GOLD[13]
PRIMARY SUPPORT - MEDICAL												
Undifferentiated or moderate respiratory distress										•[a]		
Acute hypoxemic respiratory failure (AHRF)	•[b,c]	•[d]			•[e]	•[f]			•[g]			
Respiratory failure due to pneumonia											•[h]	
Acute respiratory distress syndrome (ARDS)	•[c]						•[i]					
Acute hypercapnic respiratory failure					•[j]							
Exacerbation of COPD												•[k]
Sepsis-induced AHRF			•[l]									
Patients with severe or critical COVID-19	•[c]							•[m]				
Patients who are immuno-compromised with AHRF				•[n]								
PRIMARY SUPPORT - SURGICAL												
Low risk post-operative patients					•[o]							
High risk post-operative patients					•[p]							
High risk post-cardiothoracic surgery patients	•[q]											
PRE-ESCALATION SUPPORT												
Pre-oxygenation for peri-intubation patients	•[r]											
DE-ESCALATION SUPPORT												
Post-extubation	•[s]	•[t]		•[u]								
Low risk, extubated patients					•[v]							
High risk, extubated patients	•[w]				•[x]							
COMPLEMENTARY RESPIRATORY SUPPORT												
Rest breaks off NIV					•[y]							
PROPHYLACTIC RESPIRATORY SUPPORT												
Patients requiring supplemental oxygen for any reason				•[z]								

[a] **ACEP:** In undifferentiated respiratory distress (elevated RR and WOB with SpO_2 <92% on maximal supplemental oxygen via standard nasal canula or facemask that does not meet immediate criteria for intubation) and if not in hypercarbic respiratory failure with pH <7.25, initiate [NHF] (Flow: 50–60 L/min and FiO_2: titrate to target SpO_2).

[b] **ESICM 2020:** We recommend using [NHF] compared to COT for patients with hypoxemic respiratory failure (strong recommendation, moderate certainty evidence).

[c] **ESICM 2023:** We recommend that non-mechanically ventilated patients with AHRF not due to cardiogenic pulmonary edema or acute exacerbation of COPD receive [NHF] as compared to conventional oxygen therapy to reduce the risk of intubation. Strong recommendation; moderate level of evidence in favor. This recommendation applies also to AHRF from COVID-19. These PICOs and their recommendation should be applicable to ARDS being managed with [NHF].

[d] **ACP:** Suggest that clinicians use [NHF] rather than non-invasive ventilation in hospitalized adults for the management of acute hypoxemic respiratory failure (conditional recommendation, low certainty).

[e] **ERS:** Suggests the use of [NHF] over COT in patients with acute hypoxaemic respiratory failure (conditional recommendation, moderate certainty of evidence).
ERS: Suggests the use of [NHF] over NIV in acute hypoxaemic respiratory failure (conditional recommendation, very low certainty of evidence)

[f] **TSANZ:** [NHF] should be considered in selected patients with severe, hypoxaemic respiratory failure (PaO_2:FiO_2 < 300) (Grade B).

[g] **SRLF-SFMU:** [NHF] should probably be used rather than standard oxygen therapy in patients with hypoxemic ARF, with an oxygen flow rate > 6L/min to achieve SpO_2 > 92% or a PaO_2/FiO_2 ratio < 200 (GRADE 2+, moderate quality of evidence, strong agreement).
In the absence of intubation criteria, [NHF] should probably be used rather than NIV in patients with de novo acute hypoxemic respiratory failure (GRADE 2+, moderate quality of evidence, strong agreement).

[h] **NICE:** In the treatment of patients with pneumonia with respiratory failure in whom standard oxygen therapy is insufficient to meet target saturation levels, consider a trial of [NHF] based on multi-disciplinary consensus, clinical trajectory and the person's preferences and ability to tolerate it.

[i] **JSICM/JRS/JSRCM:** We suggest using [NHF] over COT as an initial respiratory management for adult patients with acute respiratory failure suspected of having ARDS, if there are no contraindications for non-invasive respiratory support or if organ failure other than respiratory failure is absent (weak recommendation/moderate certainty of evidence: GRADE 2B).
We suggest conducting [NHF] over tracheal intubation as an initial respiratory management for adult patients with acute respiratory failure suspected of having ARDS if there are no contraindications for non-invasive respiratory support or if organ failure other than respiratory failure is absent (weak recommendation/moderate certainty of evidence: GRADE 2B).

[j] **ERS:** Suggests a trial of NIV prior to use of [NHF] in patients COPD with acute hypercapnic respiratory failure (conditional recommendation, low certainty of evidence).

[k] **GOLD:** [NHF] is the first mode of ventilation used in COPD patients with acute hypoxemic respiratory failure. For patients with hypercarbic respiratory failure or those who do not respond to [NHF], use non-invasive mechanical ventilation (NIV) unless absolutely contraindicated (Evidence A). Indications for NHF* are at least one of the following: persistent hypoxemia, unable to tolerate NIV, contraindication for NIV, weaning patient off supplemental oxygen following NIV, preventing reintubation in patients requiring intubation and positive pressure ventilation, treatment of patients with stable COPD at risk of exacerbations. *Local resources need to be considered.

[l] **SSC:** For adults with sepsis-induced hypoxemic respiratory failure, we suggest the use of [NHF] over noninvasive ventilation (weak recommendation, low quality of evidence).

[m] **WHO:** In hospitalized patients with severe or critical COVID-19 and acute hypoxaemic respiratory failure not needing emergent intubation, we suggest [NHF] rather than standard oxygen therapy (conditional recommendation).

[n] **AARC:** Either [NHF] or conventional oxygen therapy may be used with patients who are immunocompromised, (Level B).

[o] **ERS:** Suggests the use of either COT or [NHF] in post-operative patients at low risk of respiratory complications (conditional recommendation, low c ertainty of evidence).

[p] **ERS:** Suggests the use of either [NHF] or NIV in post-operative patients at high risk of respiratory complications (conditional recommendation, low certainty of evidence).

[q] **ESICM 2020:** In high risk and/or obese patients undergoing cardiac or thoracic surgery, we suggest using [NHF] compared to COT to prevent respiratory failure in the immediate postoperative period.

[r] **ESICM 2020:** For patients who are already receiving [NHF], we suggest continuing NHF during intubation.

[s] **ESICM 2020:** We suggest [NHF] as compared to COT following extubation for patients who are intubated more than 24 h and have any high-risk feature (conditional recommendation, moderate certainty evidence).

[t] **ACP:** Suggest clinicians use [NHF] rather than conventional oxygen therapy for hospitalized patients with post-extubation acute hypoxemic respiratory failure (conditional recommendation; lower-certainty evidence).

[u] **AARC:** [NHF] is preferred to COT immediately post-extubation in patients who require supplemental oxygen. (Level B).

[v] **ERS:** Suggests the use of [NHF] over COT in nonsurgical patients after extubation (conditional recommendation, low certainty of evidence).

[w] **ESICM 2020:** For patients who clinicians would normally extubate to NIPPV, we suggest continued use of NIPPV as opposed to [NHF] (conditional recommendation, low certainty evidence).

[x] **ERS:** Suggests the use of NIV over [NHF] for patients at high risk of extubation failure, unless there are absolute or relative contraindications to NIV (conditional recommendation, moderate certainty of evidence).

[y] **ERS:** [NHF] should be preferred over COT during breaks off NIV (conditional recommendation).

[z] **AARC:** In patients requiring supplemental oxygen, the commitee supports early initiation of [NHF] versus late initiation of [NHF] based on the clinical condition of the patient. (Level C).
Consider humidification for oxygen flows > 4 L/min to improve patient comfort. (Level C).
[NHF] is preferred to avoid escalation to NIV or invasive ventilation in patients who require supplemental oxygen. (Level C).

For further information, please visit www.fphcare.com/hospital/adult-respiratory/optiflow/nhf-clinical-practice-guidelines/ or click on the hyperlinked reference below.

1. Qaseem A, Etxeandia-Ikobaltzeta I, Fitterman N, et al. Appropriate Use of High-Flow Nasal Oxygen in Hospitalized Patients for Initial or Postextubation Management of Acute Respiratory Failure: A Clinical Guideline From the American College of Physicians. Ann Intern Med. 2021 Jul;174(7):977-984.
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4. Piraino T, Madden M, Roberts KJ, Lamberti J, Ginier E, Strickland SL. AARC Clinical Practice Guideline: Management of Adult Patients With Oxygen in the Acute Care Setting. Respir Care. 2022 Jan;67(1):115-128.
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12. Pneumonia: diagnosis and management (NG250). London: NICE; 2025. Available from: https://www.nice.org.uk/guidance/ng250 [Accessed 12 November 2025].
13. Global Initiative for Chronic Obstructive Lung Disease (GOLD). Global Strategy for Prevention, Diagnosis and Management of COPD: 2026 Report & Pocket Guide. Fontana, WI: GOLD; 2025. Available from: https://goldcopd.org/2026-gold-report-and-pocket-guide/ [Accessed 20 November 2025].

Guidelines webpage

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