

Knowledge and skills reference guide for professional development in chronic respiratory diseases

A companion to the FIP chronic
respiratory diseases handbook
for pharmacists

2022



FIP Development Goals

**Chronic respiratory
diseases**

FIP Practice
Transformation
Programme on NCDs



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Colophon

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1 Background

Chronic respiratory diseases (CRDs) are a significant cause of mortality and morbidity among the non-communicable diseases (NCDs).¹ Chronic obstructive pulmonary disease (COPD) and asthma are the most common CRD. According to the Forum of International Respiratory Societies, approximately 4% of the global population suffers from COPD, leading to 3.2 million deaths annually.¹ More than 350 million people worldwide suffer from asthma, the most common chronic condition among children.¹

The United Nations Sustainable Development Goals include a commitment to reduce the burden of CRDs and increase universal access to essential healthcare. Pharmacists are often the first point of contact within healthcare systems for patients with CRD. Thus, they are strategically positioned to initiate effective interventions in the management of CRDs.² The role of a pharmacist can extend beyond management of drug therapy into more patient-oriented activities. This can include involvement in primary prevention, early detection, patient education, referrals and comprehensive long-term health management.³ Studies have documented patient benefits from pharmacist services, such as improved disease knowledge and enhanced medication adherence.³ Studies have also reported improved quality of life, reduced hospitalisation rates, and fewer disease exacerbations. Moreover, pharmacist interventions have been shown to reduce patients' medicine expenses, a valuable benefit in resource-constrained environments.⁴

For over a decade, FIP has advocated the pharmacist's role in decreasing the global burden of NCDs. In 2006, FIP released a policy statement which explained the need to expand and consolidate the roles of pharmacists in the prevention and treatment of chronic diseases. A NCD Working Group was subsequently formed that aimed to establish global evidence to advocate an expanded role for pharmacists in NCD management. In April 2018, the working group participated in the WHO global conference in Copenhagen, "Global dialogue on partnerships for sustainable financing of NCD prevention and control 2018". One of the key messages from this conference was that all health professionals' training curricula should include NCDs competencies and social accountability.^{5, 6} Seventeen of the 21 FIP Development Goals (DGs) align with the prevention and management of NCDs. DG 15 (People-centred care), coincides with the shift towards a patient-oriented approach in the management of NCDs, including CRD care initiated by pharmacists. DG 5 (Competency development) also builds on the need to improve the knowledge and skills of pharmacists to adopt and deliver expanded roles in preventing and managing CRDs.⁷

"[Chronic respiratory diseases: A handbook for pharmacists](#)", published in 2022, provides a comprehensive outline of the roles, services and interventions pharmacists provide in CRDs. Building on the roles, services and interventions identified in the handbook, this reference guide acts as a companion to the handbook and describes the knowledge and skills pharmacists need to acquire to deliver these services effectively and efficiently. It aims to address this knowledge and skills gap in CRDs.

More specifically, and building on the need to further strengthen the competency of practising pharmacists around the world in managing CRDs, this guide aims to:

- Outline the knowledge and skills pharmacists require for the management of asthma and COPD;
- Increase familiarity with the aspects of CRD care relevant to pharmacists for the purpose of guiding their continuous professional development (CPD); and
- Provide key considerations for CPD providers around CRDs to support pharmacists' professional development.

2 FIP global competency and professional development framework

As medication experts, pharmacists are key members of a patient's healthcare team. Through CPD, pharmacists maintain and further their competence to practise and remain responsive to the increasingly complex healthcare environment. FIP defines CPD as "the responsibility of individual pharmacists for systematic maintenance, development and broadening of knowledge, skills and attitudes, to ensure continuing competence as a professional, throughout their careers".⁸ One approach to developing and maintaining competence is through embracing competency-based training, which is a structured approach to training and assessment that is directed toward achieving specific outcomes. Through such an approach, pharmacists must be assisted to acquire skills and knowledge to enable them to perform a task to a specified standard under certain conditions. In competency-based training, the outcomes to be achieved are clearly stated so that learners know exactly what they must be able to do, trainers know what training or learning is to be provided and organisations know the skill levels required of their people. The emphasis in competency-based training is on "performing" rather than just "knowing".⁹

With wide acceptance of implementing competency-based training and education in health professions, competency frameworks are deemed essential in organising educational curricula, regulating career entry, benchmarking standards of practice and facilitating expertise development.¹⁰ FIP has developed two global frameworks that describe the generic competencies for foundation and advanced pharmacy practice.

The [FIP Global Competency Framework](#) (GbCF), updated in 2020, is a set of competencies and core behavioural statements that are intended to be generally applicable for the pharmacy workforce worldwide, particularly targeting early-career (foundation-level) pharmacists. The GbCF includes 124 behavioural statements grouped under 23 competency domains and four broad competency clusters: pharmaceutical public health; pharmaceutical care; organisation and management; and professional and personal competencies.

Furthermore, the [FIP Global Advanced Development Framework](#) (GADF) is a complementary framework to the GbCF. The GADF intends to support the professional development and recognition of pharmacists and pharmaceutical scientists, and maps broad-based advanced practice stages across developmental competencies. Six developmental competency clusters are included in the GADF: expert professional practice; working with others; leadership; management; education; training and development; and research and evaluation.

The GbCF and the GADF are intended to act as mapping tools for individuals to progress towards effective and sustained performance and to pave the way into advanced and specialist practice.

As such, FIP recommends that individuals use the knowledge and skills reference guides with the FIP competency and developmental frameworks to identify the knowledge, skills and behaviours that will be relevant to support them in developing their practice (Figure 1). It is expected pharmacists will need to harness knowledge, skills, attitudes and values previously acquired that may intersect with other competency areas to perform the tasks at hand. A FIP reference guide provides guidance on knowledge and skills on a specific topic. In this way, cross-learning and transfer of key knowledge and skills is encouraged and embedded. The tools developed by FIP provide competency frameworks and knowledge and skills reference guides that inform CPD practices, including approaches to self-assess one's practice as part of registration or licensing requirements, professional development and self-directed learning.

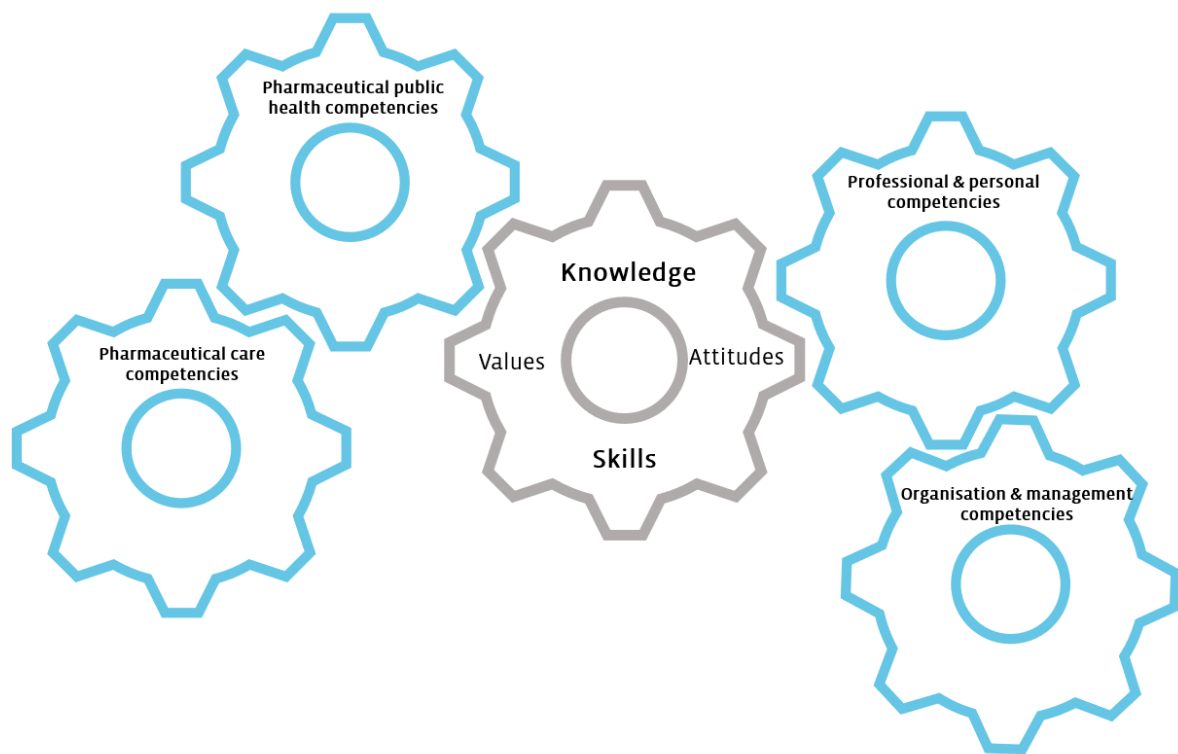


Figure 1. Competencies encompass an array of knowledge, skills, attitudes and values to enable effective performance. Competency clusters are based on the FIP Global Competency Framework.¹¹

3 Pharmacist professional development: knowledge and skills reference guide

3.1 About the guide content

This knowledge and skills reference guide provides a comprehensive list of required knowledge and skills in pharmaceutical and related care to support pharmacists to develop, upskill and refresh knowledge in CRDs and related roles in pharmacy. The guide supplements the [FIP handbook on CRDs for pharmacists](#) and was developed in consultation with a global reference group (see Acknowledgments).

Tables 1 and 2 below have built on existing FIP resources,¹² current learning and teaching tools, curricula and expert review through a reference group. The reference group, made up of educators and practitioners with experience in professional development in CRDs, reviewed the statements and agreed on the content.

3.2 How is the information organised?

The guide is organised in two parts:

The first part (Table 1) describes the knowledge required by pharmacists in CRD-related roles. In the knowledge guide, topics are grouped into three categories (Figure 2):

- Broad topic area — includes main categories such as body systems, pharmaceutical care, public health and advocacy, ethics and collaborations. Many of these categories are linked to the GbCF competency clusters.
- Core topics — identifies key topics (knowledge areas) related to the roles and services provided in the management of CRDs.
- Specific topics — describes specific topics stemming from the core topics.

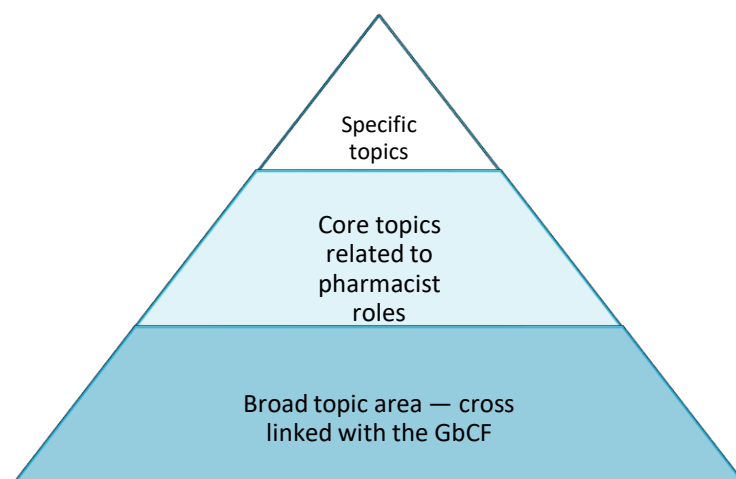


Figure 2. Hierarchy of topic grouping in the knowledge guide

The second part (Table 2) describes the skills required by pharmacists in CRD roles.

3.3 Who is it for?

This reference guide is intended to guide practice in CRD care rather than to be a prescriptive list that has to be adhered to in all cases. It is relevant to pharmacists focusing on a specific area(s) of practice and may be

relevant at any stage of professional development, depending on the pharmacist's role. It is intended to support pharmacists in performing CRD-related services and interventions safely and effectively.

3.4 How to use it?

This reference guide can be used:

- To support pharmacists as they upskill in the area of CRD and as part of their course of career development;
- To help pharmacists with an interest in providing CRD-related services in their area of practice; and
- To inform the design and delivery of education and training programmes by CPD providers.

3.5 Contextualisation, and regulatory and training requirements

It is crucial to recognise that pharmacists will have to follow their local, national and jurisdictional requirements for training, certification and regulatory/professional and ethical standards to fulfil their specified roles. These may include:

- Appropriate training relevant to their scope of practice and level of specialisation in the management of CRDs;
- Codes of conduct;
- Nationally developed certificate training programmes or board certification;
- Registration or licensure status;
- Professional affiliations; and
- Healthcare jurisdictions (laws) regarding the education, competencies and responsibilities of pharmacists and other healthcare professionals.

Table 1. Knowledge guide for pharmacists in the area of chronic respiratory diseases^{13–26}

Asthma	
Therapeutic area	
Body system	Demonstrate knowledge and understanding of:
Respiratory system	- The basic anatomy and function of the respiratory system. - The complications that can occur in the respiratory system. - The physiology of pulmonary gas exchange. - The key principles of breathing, ventilation and respiration.
Disease particulars	Demonstrate knowledge and understanding of:
Pathophysiology	- The causes, signs and symptoms, risk factors and exacerbating factors of asthma (acute and chronic). - The key parameters of lung function (e.g., peak expiratory flow, forced expiratory volume in 1 second). - Asthma control and classifications according to, e.g., Asthma Control Test (ACT) or Asthma Control Questionnaire (ACQ).^{27, 28}
Public health	
Prevention and screening strategies	Demonstrate knowledge and understanding of:
Advocacy	- The various ways of advocacy in pharmacy practice, including reducing stigma about CRDs and the use of inhaled medicines; dispelling myths about use of inhaled medicines; and avoidance of trigger factors. - Health promotion initiatives, public health campaigns, disease prevention programmes and disease state management services. - Relevant patient charity programmes.
Modifiable risk factors	Risk factors and comorbidities, such as obesity and anxiety.
Primary prevention	- The methods of detecting asthma at an early stage. - The importance and place of diagnostic tools at the pharmacy level, e.g., spirometry.
Carbon literacy	Carbon literacy and links between climate change and health.
Pharmaceutical care	
Medicines	Demonstrate knowledge and understanding of:
Common medicines in asthma: Inhaled corticosteroids; systemic corticosteroids; systemic beta 2 agonists; short and long-acting beta 2 agonists; muscarinic antagonists; leukotriene receptor antagonists; and biologicals.	- Treatment goals for patients with asthma according to international and national guidelines. This usually includes monitoring of symptoms, control, frequency of use of reliever medication as a sign of lack of control, exacerbations, impact of physical activity and lung function tests. - All aspects of medicines, including place in therapy of each drug with regard to guidelines/evidence, usual doses and routes of administration including different inhalers, spacers and nebulisers, mechanism of action, pharmacology, pharmacokinetics, pharmaceutical aspects, proper medicines use, adverse effects, contraindications, precautions, interactions; and monitoring requirements. - The aspects of medication adherence, that is, intentional and non-intentional non-adherence, the behaviours, health beliefs and psychology that affect adherence, and inhaler techniques.
Vaccines	- Common recommended vaccines, including influenza, COVID-19, Tdap, pneumococcal and zoster. - All aspects of common vaccines, including indications, mechanism of action, pharmacology, pharmacokinetics, pharmaceutical aspects, adverse effects,

	contraindications, precautions and interactions, usual doses and routes of administration, place in therapy and monitoring requirements.
Adjunct medicines: Antihistamines; antibacterials; nicotine replacement therapy for smoking cessation; proton pump inhibitors; and nasal steroids.	All aspects of adjunct medicines, including place in therapy with regard to guidelines and evidence, usual doses and routes of administration, mechanism of action, pharmacology, pharmacokinetics, pharmaceutical aspects, adverse effects, contraindications, precautions, interactions and monitoring requirements.
Monitoring	- The monitoring parameters used in therapy, including lung function and patient reported outcomes. - The monitoring equipment used within the context of the treatment and clinical management plan, such as peak flow meters. - Patient follow-up strategies and personal asthma action plans.
Asthma emergencies/acute treatments	The management and communication plan for emergencies or acute treatment of asthma.
Secondary prevention	- Structured review using tools such as SIMPLES (Smoking, Inhaler technique, Monitoring, Pharmacotherapy, Lifestyle, Education, Social support) to prevent asthma exacerbations.^{29, 30} - The importance of reassessment of asthma diagnosis, inhaler technique and adherence to medication.
Complications	- The future risk of a patient developing asthma complications based on patient factors. - The comorbidities that could worsen symptom control or lead to medication interactions, including COVID-19, allergic rhinitis, rhinosinusitis, gastro-oesophageal reflux disease, nasal polyps, obesity, obstructive sleep apnoea, food allergies, COPD, and anxiety and depression.
Non-pharmacological support	Demonstrate knowledge and understanding of:
Non-pharmacological treatments	- Avoidance strategies, including smoking cessation (e.g., behavioural therapy, physician advice, telephone-based interventions, group/peer or individual programmes), and avoiding environmental exposure to smoke, indoor allergens, occupational exposure and medicines that may worsen asthma. - The importance and place of lifestyle interventions, including physical activity, healthy diet and weight reduction. - The importance and place of supplemental therapies, including physiotherapy, breathing exercises; and coping strategies for emotional stress.
Personalised asthma action plans.	Asthma action plans.
Digital tools in asthma	Evidence-based digital interventions that can help people with asthma manage their condition, such as smart inhalers or electronic adherence monitors.³¹
Special population groups or cases	Demonstrate knowledge and understanding of:

Local populations	Asthma prevalence among specific race/ethnic groups or rural and urban geographic locations.
People with asthma who smoke	The risks associated with having asthma and smoking, including worsening asthma, increased frequency of asthma episodes and developing COPD or lung cancer.
Children and adolescents	- Childhood asthma risk factors spanning genetic and environmental risk factors to features, such as child's sex and presence of atopy. - Presentation of asthma in children and adolescence (e.g., primary symptoms of asthma in early childhood include cough, both dry and productive), remission and mortality. - The rapid physical, emotional, cognitive and social changes that occur during adolescence that could negatively impact adherence to asthma treatment. - Exploratory and risk-taking behaviours that could worsen control of asthma symptoms, such as smoking.
Pregnancy	- The potential causes of asthma exacerbations in pregnancy, including mechanical and hormonal changes, non-adherence to asthma medication due to concerns by a parent or healthcare practitioner, susceptibility to effects of viral infections such as influenza. - The treatment options of severe asthma in pregnancy (with biological therapies like omalizumab). - The treatment options of asthma exacerbations in pregnancy (with short-acting beta-2 agonists (SABAs), oxygen, early administration of systemic corticosteroids). - The aspects of asthma and its treatment during labour and delivery, including the place of controller medicines, management of bronchoconstriction, potential for neonatal hypoglycaemia after administering high doses of beta agonists before delivery.
Occupational asthma	- The main diagnostic features of occupational asthma, occupational rhinitis, occupational allergens and key screening questions. - The need for referral of patients to doctors to flag up if there are problems related to missed diagnosis, mistreatment, e.g., overprescribing of SABAs, under prescription of inhaled corticosteroids. - The evidence-based guidelines of the management of occupational asthma.
Older adults	- The reasons for poor asthma control among the elderly, including decreased lung function, attributing asthma symptoms to ageing and other comorbidities, difficulty in using medical devices (such as inhalers) due to old age or comorbid arthritis. - The factors to consider when preparing asthma management plans for elderly patients, including symptom control, minimisation of future risk, concurrent medication, self-management skills, and medication safety. - The need for a caregiver among patients with cognitive impairment.
Aspirin-exacerbated respiratory disease (AERD)	- The main clinical features of AERD. - The key diagnostic indicators of AERD, including, aspirin challenge test (oral, bronchial, nasal), history of exacerbation after taking aspirin or other NSAIDs. - The management strategies of AERD, such as avoidance of aspirin and NSAIDs, mainstay therapy of asthma in AERD, and possibility of aspirin desensitisation as a treatment option.
Patient education	Demonstrate knowledge and understanding of:

Asthma self-management	The self-management interventions of asthma, including a personal asthma action plan,³² correct use of inhalers and medical devices, medication adherence, self-monitoring of symptoms, when to seek help and asthma information.³³
Acute asthma and asthma first aid	- The basic steps of asthma first aid. - The use of nebulisers and inhalers (used with a spacer) for the administration of bronchodilators during an exacerbation.
Asthma action plan	Asthma action plans which provide information on medicines and their dosage, how to recognise symptom worsening and steps to be followed in the case of an emergency.
Communication skills	- The barriers of effective communication, such as disability, language barriers and sociocultural diversity. - The range of consultation models used to engage patients in discussion. - The principles of good written and verbal communication when responding to patients' enquiries. - The local procedures for handling complaints. - The principles of effective negotiation and conflict resolution.
Inhaler devices	- The main classes of asthma inhaler devices: small-volume nebulisers, pressurised metered-dose inhalers, breath-actuated inhalers, dry powder inhalers, soft mist inhalers and nebulisers. - All aspects related to inhaler devices, including advantages and disadvantages, coordination required between actuation and inhalation, breath-actuated, patient and age groups, reservoir (single vs multi dose) and storage.
Organisation and management	
Improvement of services in asthma	Demonstrate knowledge and understanding of:
	Quality improvement initiatives for pharmacist-led services in asthma, including medication management systems, budget and drug costs.
Professional	
Multidisciplinary care	Demonstrate knowledge and understanding of:
Aspects of multidisciplinary care	- The practical and operational challenges encountered in delivery of healthcare within an interprofessional team. - The roles and responsibilities of each healthcare professional in the management of an asthma patient. - The process of conducting referrals.
Communication	- The relevant medical information to be given to other health professionals in the context of asthma management. - Effective communication skills when interacting with other healthcare professionals.
Ethical practice	Demonstrate knowledge and understanding of:
	The pharmacy code of ethics in the context of all aspects of managing patients with asthma.
Policies, regulations and guidelines	Demonstrate knowledge and understanding of:
National and local health policies	Local needs, evidence-based policies and procedures to ensure they are integrated into clinical practice.

Regulatory affairs	- The national regulatory framework governing pharmacy practice. - The principles of pharmacovigilance in the context of asthma medication.
Chronic obstructive pulmonary disease (COPD)	
Therapeutic area	
Body system	Demonstrate knowledge and understanding of:
Respiratory system	- The basic anatomy and function of the respiratory system. - The complications that can occur in the respiratory system. - The physiology of pulmonary gas exchange. - The key principles of breathing, ventilation and respiration.
Disease particulars	Demonstrate knowledge and understanding of:
Pathophysiology	The causes, signs and symptoms, risk factors, and exacerbating factors of COPD.
Public health	
Prevention and screening strategies	Demonstrate knowledge and understanding of:
Advocacy	- The various ways of advocacy in pharmacy practice. - Health promotion, public health, disease prevention and disease state management services.
Modifiable risk factors	Modifiable risk factors and comorbidities, such as smoking or exposure to environmental tobacco smoke, exposure to fumes and smoke, occupational hazards (e.g. exposure to pollutants and chemicals), and poor nutrition.
Primary prevention	- The methods of detecting COPD at an early stage (e.g., targeted case finding strategies). - The importance and place of diagnostic tools at the pharmacy level (e.g., spirometry).
Carbon literacy	Carbon literacy and links between climate change and health.
Pharmaceutical care	
Medicines	Demonstrate knowledge and understanding of:
Nicotine replacement therapy (NRT) antimuscarinic bronchodilators; beta 2 agonists; carbocysteine; inhaled steroids; oxygen; theophylline and aminophylline.	- The treatment goals for COPD patients. - Pharmacological treatment of tobacco dependence if the person smokes, with medicines such as NRT, varenicline, bupropion. - All aspects of commonly used medicines, including place in therapy of each drug with regard to guidelines/evidence, usual doses and routes of administration including different inhalers, spacers and nebulisers, mechanism of action, pharmacology, pharmacokinetics, pharmaceutical aspects, proper medicines use, adverse effects, contraindications, precautions and interactions, and monitoring requirements. - The aspects of medication adherence, that is, intentional and non-intentional non-adherence, the behaviours, health beliefs and psychology that affect adherence, and inhaler technique.
Vaccines	- Common recommended vaccines, including influenza, COVID-19, Tdap, pneumococcal and zoster. - All aspects of common vaccines, including indications, mechanism of action, pharmacology, pharmacokinetics, pharmaceutical aspects; adverse effects, contraindications, precautions and interactions, usual doses and routes of administration, place in therapy and monitoring requirements. More information about knowledge and skills for pharmacists in vaccination can be found here

Monitoring	- The monitoring parameters used in therapy, including patient-reported outcomes (e.g., The COPD Assessment Test, Clinical COPD Questionnaire, Medical Research Council Dyspnoea Scale) and lung function.^{34–36} - The monitoring equipment used within the context of a clinical management plan. - Patient follow-up strategies using written action plans for managing exacerbations, measuring body mass index in patients on long-term, high-dose inhaled corticosteroids.
COPD emergencies/acute treatments	- The management plan for emergencies or acute treatment of COPD symptoms. - The use of nebulisers and inhalers (used with a spacer) for the administration of bronchodilators during an exacerbation. - The role of antimicrobials.
Secondary prevention	The strategies used to prevent COPD exacerbations, such as education (including smoking cessation, diet and exercise) and vaccinations (influenza and pneumococcal vaccines).
Non-pharmacological support	Demonstrate knowledge and understanding of:
Non-pharmacological management	- Avoidance strategies, including: smoking cessation (e.g. behavioural therapy, physician advice, telephone-based interventions, group/peer or individual programmes); avoiding occupational exposures; avoiding environmental and household air pollution exposure. - The importance and place of lifestyle interventions, including: 1. physical activity; 2. healthy diet; 3. adequate sleep. - The importance and place of supplemental therapies, including: long-term domiciliary oxygen therapy; pulmonary rehabilitation; end-of-life and palliative care. - The importance and place of surgical interventions (e.g., lung volume reduction, coils, one-way valves) in the management of severe COPD cases.
Complications	- The future risk of a patient to develop COPD complications based on patient factors. - The comorbidities that could worsen symptom control or lead to medicine interactions, including cardiovascular disease, osteoporosis, anxiety and depression, lung cancer, metabolic syndrome and diabetes, gastro-oesophageal reflux disease, bronchiectasis, obstructive sleep apnoea and asthma.
Digital tools in COPD	The latest evidence-based developments in electronic inhalers.
Special population groups or cases	Demonstrate knowledge and understanding of:
Older adults	The importance of screening older adults for COPD to capture cases as early as possible.
Gender differences	Gender-dependency of comorbidities and differences in risk factors for COPD between men and women.
Patient education	Demonstrate knowledge and understanding of:
COPD self-management	The self-management interventions of COPD, including smoking cessation, correct use of inhalers and medical devices, medication adherence, self-monitoring of symptoms, breathing techniques, increasing physical activity, when to seek help, decision-making and taking action.³⁷

Communication	• The barriers of effective communication, such as disability, language barriers and sociocultural diversity. • The range of consultation models used to engage patients in discussion. • The principles of good written and verbal communication when responding to patients' enquiries. • The principles of effective negotiation and conflict resolution.
Inhaler devices	• The main classes of asthma inhaler devices, including pressurised metered-dose inhalers, dry powder inhalers, soft mist inhalers and nebulisers. • All aspects related to inhaler devices, including advantages and disadvantages, coordination required between actuation and inhalation, breath-actuated, patient and age groups, reservoir (single vs multi dose) and storage. • Supplemental oxygen devices.
Professional	
Multidisciplinary care	Demonstrate knowledge and understanding of:
Aspects of multidisciplinary care	• The practical and operational challenges encountered in delivery of healthcare within an interprofessional team. • The roles and responsibilities of each healthcare professional in the management of a COPD patient. • The process of conducting referrals.
Communication	• The relevant medical information to be given to other health professionals in the context of COPD management. • Effective communication skills when interacting with other healthcare professionals.
Ethical practice	Demonstrate knowledge and understanding of:
	• The pharmacy code of ethics in the context of all aspects of managing COPD patients
Policies, regulations and guidelines	Demonstrate knowledge and understanding of:
National and local health policies	• National and local health policies, priorities and initiatives in the context of COPD management.
Regulatory affairs	• The national regulatory framework governing pharmacy practice. • The principles of pharmacovigilance in the context of COPD medication.

Table 2. Associated skills for pharmacists in the area of chronic respiratory diseases^{13–26}

Role/service	Skills, techniques, quality assurance, and procedures underpinned by the knowledge reference guide (see Table 1)
Asthma and COPD	
Public health	
Advocacy	• Build trust with the community/clients and establish the benefits of asthma/COPD medicines. • Design a public health assessment of a local group or community in the context of asthma/COPD. • Develop strategies to address public health needs of asthma/COPD, such as conducting and participating in public awareness campaigns. • Pursue continued professional education on climate issues to address the gap in knowledge around climate change, how to communicate this to patients and other stakeholder groups, and how to take climate action within healthcare systems.
Primary prevention	• Recognise and respond to common signs and symptoms that are indicative of airway obstruction, such as coughing, wheezing and dyspnoea. • Utilise common diagnostic aids for assessment of patients' airway function, including spirometers and stethoscopes. • Take patient history and assess their risk status regarding the development of asthma/COPD.
Digital tools/ interventions	• Have an awareness of the emerging digital tools and interventions utilised in the management of respiratory diseases, and the drivers and enablers of their use. • Critically examine the challenges pertinent to the development and implementation of digital health interventions in the management of respiratory diseases. • Appraise the evidence supporting digital health interventions in the management of respiratory diseases with a view to assessing their suitability for implementation into clinical practice.
Pharmaceutical care	
Treatment plans	• Advocate individualised treatment decisions following consideration of patient- and disease-related factors. • Discuss and agree personalised asthma/COPD action plans with patients and healthcare providers. • Individualise medication therapy by dose adjustment or selection of alternate medicines based on the influence of patient factors on the pharmacokinetics of each drug. • Advise patients on the proper use of medicines and medical devices, taking into consideration the needs, abilities and preferences of each patient. • Build patients' trust in adherence to asthma/COPD medication. • Identify barriers to medication adherence and recommend strategies for overcoming barriers to adherence.
Monitoring	• Critically assess clinical indicators relating to patient response to, and the adverse effects of, asthma/COPD therapy. • Identify and prioritise monitoring parameters. • Teach and monitor effective inhaler technique. • Evaluate asthma/COPD treatment plans and review prescriptions. • Assess responses to treatment against the objectives of the treatment plan. • Conduct follow-up procedures effectively to monitor therapeutic efficacy.
Asthma/COPD emergencies or acute treatments	• Apply asthma first aid.

	- Recommend the most appropriate treatments for emergencies and acute management of COPD symptoms. - Collaborate with a multidisciplinary team in the management of COPD emergencies in a clinical setting.
Non-pharmacological management	- Support lifestyle modification plans with the patient to help mitigate the symptoms of asthma/COPD. - Develop effective avoidance strategies that patients can use to prevent environmental exposure to triggers of asthma/COPD. - Identify patients requiring supplemental therapies and refer them to relevant healthcare professionals. - Identify patients requiring surgical interventions and refer them to relevant healthcare professionals.
Secondary prevention	- Educate patients on effective lifestyle interventions aimed at preventing asthma/COPD exacerbations. - Build patients' confidence on the importance of vaccination as a prophylaxis for asthma/COPD exacerbations, e.g., influenza and pneumococcal vaccines. - Administer (when lawfully permitted in the jurisdiction) vaccines safely to asthma/COPD patients who require vaccinations.
Digital tools/ interventions	Support and educate patients with digital tools, such as smart phone applications.
Complications	- Identify patients with comorbidities that could complicate symptom control or lead to adverse drug interactions. - Optimise therapeutic outcomes when treating asthma/COPD and concurrent comorbidities.
Special population groups or cases	
Children and adolescents	- Develop asthma self-management strategies tailored to the patient's stage of psychosocial development and desire for autonomy. - Discuss with the patient the importance of avoiding smoking. - Review medication regimens regularly to adjust for the changing needs of the patient.
Pregnancy	- Educate patients that the benefits of treating asthma in pregnancy outweigh the potential risks of usual controller and reliever asthma medicines. - Monitor asthma in pregnancy on a regular schedule (such as monthly) in collaboration with a treating doctor. - Monitor adequate treatment of respiratory infections during pregnancy. - Recommend suitable therapy for acute asthma exacerbations and severe asthma in pregnancy.
Occupational asthma	- Identify patients with occupational asthma and refer them to experts for further assessment and advice. - Educate patients about the elimination of occupational sensitisers. - Recommend the management of occupational asthma according to evidence-based guidelines.
Older adults	- Recommend effective management plans after carefully considering patient factors, such as comorbidities, concurrent medication, medication safety, ability to use medical devices and cognitive function. - Monitor patients regularly for therapeutic efficacy, safety and adherence. - Advise caregivers on how to give asthma/COPD medicines to the patients. - Develop written asthma/COPD action plans that are suitable for elderly patients, e.g., large print versions.

Aspirin-exacerbated respiratory disease (AERD)	- Identify patients who may have AERD and refer them to specialists for further assessment and advice. - Educate patients to avoid NSAIDs, NSAID-containing products, and any other COX-1 inhibitors. - Recommend appropriate management therapies for both asthma and severe asthma in AERD according to evidence-based guidelines. - Recommend alternative medicines for conditions that require NSAIDs, such as paracetamol or COX-2 inhibitors (celecoxib, etoricoxib).
Patient education	- Identify patients' need for information about asthma/COPD medicines. - Educate patients on the principles of asthma/COPD self-management, including correct use of medicines and medical devices, medication adherence and self-monitoring of symptoms. - Develop, customise and evaluate self-management interventions based on unique patient needs, such as cultural beliefs, social status and financial capabilities. - Develop written asthma action plans in consultation with patients. - Demonstrate awareness of barriers to communication with the patient and adjust communication appropriately in situations where there may be, for example, physical disability or language-barriers. - Use an appropriate consultation model to engage patients in discussion. - Listen to patients' enquiries and respond appropriately using good verbal and written communication skills. - Negotiate with patients regarding behavioural change to ensure they adhere to lifestyle interventions. - Apply local complaints procedures to effectively handle patient complaints and resolve conflicts.
Professional	
Multidisciplinary care	- Identify the practical and operational challenges encountered in the delivery of healthcare within an interprofessional team and be able to give recommendations to overcome these challenges. - Identify patients requiring the services of other healthcare professionals and refer them to the relevant personnel. - Communicate effectively relevant medical information to other members of a multidisciplinary team involved in the care of an asthma patient.
Ethical practice	Apply the principles of the pharmacy code of ethics in all aspects of delivering health services to asthma/COPD patients.
National and local health policies	- Apply latest national and local health policies when managing asthma/COPD patients. - Advocate the integration of the prevention and control of CRDs into national health policies.
Regulatory affairs	- Conduct pharmacy operations in compliance with regulatory requirements. - Participate in national pharmacovigilance programmes for asthma/COPD medication, by reporting any identified incidences of adverse events or poor-quality medicines encountered in the market. - Identify new medicines coming into the market after regulatory approval.

4 Considerations for CPD providers of courses and programmes in CRDs for pharmacists

Pharmacists are valuable professionals in managing and preventing NCDs, including CRDs. Currently, pharmacists seek to take a holistic, patient-centred approach that consists of primary prevention, screening, referral, advocacy, collaboration, disease surveillance and patient education. Evidence from best practice around the world justifies an expanded role for pharmacists in managing CRDs. The scope of practice and regulatory infrastructures of pharmacist interventions against CRDs varies between nations (including jurisdictions often within nations) and regions. Pharmacists, however, remain critical players in tackling the global burden of CRDs by establishing primary prevention measures and improving the quality of life of their patients. Ongoing advocacy is required to achieve adequate recognition and remuneration of pharmacists' expanded roles in the multidisciplinary healthcare team. It is, therefore, necessary to empower pharmacists through developing and maintaining competence and workforce development.⁶

The following vital considerations, derived from various resources^{8, 10, 38–44} will support the development and implementation of robust training, guidelines and transformative CPD programmes focused on improving pharmacists' competence and capacity in managing CRDs. While these considerations are not an exhaustive list of recommendations, they provide guidance to pharmacists, educators and CPD providers.

4.1 Embarking on a needs-based approach to addressing education, CPD and training gaps

CPD on CRDs should address local and national needs and reflect individual professional development needs and learning endeavours considering:⁴⁴

- CPD is lifelong and must be relevant to one's area of practice. As such, CPD on CRDs should focus on addressing individual professional needs and provide a holistic approach to gaining knowledge, learning skills and embracing attitudes and values that allow pharmacists to execute their roles.⁸
- To develop CPD programmes that focus on the specific learning and practice needs of the target audience, CPD developers may seek to leverage the support and collaboration of multiple stakeholders, including but not limited to: (i) regulatory bodies that mandate the completion of stipulated annual CPD activities necessary for access to professional registers; (ii) the academic community who hold expertise in the design, administration and analysis of approaches to learning needs assessment, teaching and learning and programme evaluation; (iii) practice-based colleagues, including senior management and line managers who act as gatekeepers of multiple data sources that can be utilised to assess competence, performance and practice outcomes; and (iv) healthcare professionals who may champion the need for CPD activities that are specifically targeted to improving patient care and health outcomes.
- Pharmacists are appropriately positioned in healthcare systems to respond to supply chain issues and update practice guidelines. The diversity of health systems and contexts may hinder access to recommended first-line therapies due to costs and supply chain problems. Pharmacists should play a critical role in adequately managing CRDs in the context of their local and national needs.⁴²
- Addressing national or organisational barriers to providing pharmacists with the support and training opportunities in CRD, which can include:
 - Lack of support and investment in primary care services, including GPs and community pharmacists, and the right to diagnose and prescribe for CRDs.
 - Lack of support from policymakers on the importance of facilitating training for pharmacists on climate change, sustainability and carbon literacy.
 - Lack of priority to delivering high value care, such as improving adherence and inhaler use (a more complex challenge than adherence to oral medication).
 - Lack of availability of consultation skills training programmes and behavioural change skills teaching including motivational interviewing.
 - Lack of availability of essential medicines, e.g., pharmacotherapy for tobacco dependence.⁴⁵

4.2 Fostering the pharmacist's role in multidisciplinary and CRD primary care teams

Pharmacists are vital members of multidisciplinary teams and CRD primary care teams. Through training and development, pharmacists provide integrated respiratory care that is patient-centred and proactive and coordinated care that is delivered through clinical leadership and a multidisciplinary team. Working with doctors and other members of the healthcare team builds trusting relationships develops communication skills and, ultimately, enhances patient outcomes.

4.3 Fostering national and international collaborations on training projects in CRDs

Collaboration on training projects in CRDs for pharmacists allows for:

- Reduction in skill gaps in the management of CRDs between countries of differing economic status;
- Sharing of resources, knowledge and expertise;
- Increasing the inclusion of relevant international organisations, such as the WHO, UN, and FIP, in lobbying key decision-makers to facilitate the inclusion of pharmacists well-equipped with the knowledge and skills within multidisciplinary healthcare teams to manage patients with CRD; and
- A collective effort to promote the pharmacist's role in reducing the carbon impact arising from medicines and to raise awareness among the public, healthcare providers and policymakers on the links between climate change and health.⁴⁵

4.4 Quality assurance and accreditation of training programmes

CPD programmes on CRDs require accreditation to demonstrate that the learning activities have achieved the required standards and benchmarks set by regulatory or professional bodies. Accreditation ensures that the learning value is of high quality and meets the expectations of pharmacists, employers and the community. Certification of training courses and programmes facilitates the standardisation of crucial knowledge and skills required to upskill.¹⁰

5 CPD providers and the FIP Seal for programmes

The FIP Provision and Partnerships Programme provides a global platform to help FIP members address professional support and development of the pharmaceutical workforce according to local and national needs and priorities.

By offering a global platform for collaboration and partnerships among members and partners, FIP provides an opportunity to bridge training and professional development gaps. FIP can identify with members transformative opportunities to accelerate the advancement of pharmacy across all sectors and roles.

In 2021, following expert consultation and an iterative process, FIP developed criteria to assure the quality of professional development and training programmes and their alignment with FIP's mission, vision and the 21 development goals. The FIP Seal recognises the overall quality and alignment of a programme.

Application forms and details of the process to be followed are available to interested parties to undertake self-assessment for the FIP Seal upon request (email Dr Dalia Bajis at dalia@fip.org) and in the FIP handbook for providers of programmes.⁴³

The expanded and comprehensive knowledge and skills outlined in this guide provide pharmacists with a baseline against which they can measure their capacity in CRD-associated roles. Combined with the FIP Global Competency Framework, it is a reference point for CPD programme design, delivery and standardisation. As comprehensive as this guide is, we acknowledge that it may not be entirely relevant to all areas of pharmacy practice. As such, we encourage pharmacists and CPD providers to individualise their programmes to fit the roles and needs of practising pharmacists.

As ever, FIP remains an unequivocal supporter and advocate of CPD in CRDs for practising pharmacists.

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