

The role of pharmacists in iron deficiency anaemia

Report from an international advisory roundtable, hosted by FIP

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FIP Development Goals



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International Pharmaceutical Federation (FIP)
Andries Bickerweg 5
2517 JP The Hague
The Netherlands
www.fip.org

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Authors and editors:

Dr Sherly Meilanti (FIP Data and Intelligence Specialist)
Professor Ian Bates (FIP Global Pharmaceutical Observatory Director)
Christopher John (FIP Lead for Data and Intelligence)
Dr Catherine Duggan (FIP Chief Executive Officer)

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The list of advisors participating in this roundtable can be seen in the Roundtable participants section.

FIP acknowledges the following member organisations, which recommended the list of participants:

- Indian Pharmaceutical Association
- Indonesian Pharmacists Association
- Malaysian Pharmacists Society
- Pharmaceutical Society of Singapore
- Philippine Pharmacists Association

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About this report

Anaemia is a global health problem. It is an indicator of poor nutrition and poor health, which could affect work productivity in adults and have further social and economic consequences.¹ The World Health Organization (WHO) estimates that one third of all women of reproductive age are anaemic, and has set one of the global nutrition targets related to anaemia “to achieve a 50% reduction of anaemia among women of reproductive age (15–49 years) by 2025”.² Global, regional and community leadership and collaboration are needed to reduce anaemia,³ and a data-driven approach is encouraged to enhance and maximise anaemia-related interventions.

With an increasing role in the healthcare system delivering person-centred services and as the most accessible medicines experts, pharmacists can make a valuable contribution to support the achievement of this global nutrition target. For example, with the expansion of service delivery in community pharmacies, pharmacists could provide health information on preventing and managing iron deficiency anaemia. Pharmacies are also known as a preferred place and as an accessible place for maternal health point-of-care testing; therefore, pharmacists can contribute to the screening, diagnosis and control of anaemia. Community pharmacists and their teams are well-positioned to make a significant impact on managing iron deficiency anaemia in their communities.

As the global leadership body for pharmacists and pharmaceutical scientists, FIP has a mission to support global health by enabling the advancement of pharmaceutical practice, sciences and education, which includes collating and validating global data on the pharmacy workforce, practice and pharmaceutical science. Undertaking a comprehensive analysis of global health problems, including the role of pharmacists in iron deficiency anaemia, could provide accessible, high-quality intelligence that supports pharmaceutical leadership bodies in their work.

With this background in mind, an international advisor roundtable meeting with frontline pharmacists, policy experts, educators and researchers, was held in May 2022. The meeting was organised with the support of the FIP Community Pharmacy Section and FIP member organisations. It sought to obtain a comprehensive understanding of the role of pharmacists in iron deficiency anaemia and to obtain information on:

- Best practices from various countries about pharmacists’ role in iron deficiency anaemia;
- Educational and training needs of pharmacists to support their role in iron deficiency anaemia; and
- Barriers and enablers to pharmacists’ role in iron deficiency anaemia.

This FIP roundtable is part of FIP’s Multinational Needs Assessment Programme, which allows for the assessment of needs across nations and pharmaceutical leadership bodies. The evidence gathered from this roundtable will be used to highlight pharmacists’ role in this area and provide evidence-based strategic information, a report and an advocacy message for all pharmaceutical leadership organisations worldwide that are members of FIP.

This report provides a summary of the roundtable discussion as well as the key insights that were shared. It should be noted that the views expressed during the roundtable are those of the individuals based on their extensive community pharmacy expertise and experience. They do not represent FIP policy or positions, although they may build on existing positions and statements. FIP will use these insights to consider what further support will be required by colleagues in the community setting to support evidence-based decision making and appropriate person-centred care.

1 Existing intelligence on anaemia

Anaemia occurs when the number of red blood cells or the haemoglobin concentration in the blood is lower than normal. Haemoglobin's function is to carry oxygen to the body's tissues. Therefore, when there is not enough haemoglobin, some common anaemia symptoms will appear, such as fatigue, weakness, dizziness, drowsiness and shortness of breath.¹ Anaemia is an indicator of poor nutrition and poor health, and it has implications for work productivity in adults.⁴ In addition, it has been shown to impact cognitive and physical development in children⁴ and increases the risk of maternal and neonatal adverse outcomes for pregnant women,¹ all of which may have further social and economic consequences for individuals and families.¹

Anaemia is one of the global health problems that mainly affects young children and pregnant women. The World Health Organization (WHO) estimates that 42% of children under five years of age and 40% of pregnant women worldwide are anaemic.¹ Also, it affects half a billion women of reproductive age worldwide.² The WHO has set one of the global nutrition targets related to anaemia "to achieve a 50% reduction of anaemia among women of reproductive age (15–49 years) by 2025".² Although anaemia prevalence has been reduced significantly in some areas, the overall improvement has been slow.² Leadership and coordination mechanisms for anaemia reduction are required at the global, regional and community levels, particularly with stakeholders heavily involved in women's health care.³ A data-driven programme is essential to determine how best to strengthen and maximise the effectiveness of anaemia-related interventions.

It is important to accurately characterise anaemia and to understand its burden and epidemiology before planning any anaemia-related interventions.¹ While the causes of anaemia are variable, it is estimated that half of the global burden of anaemia⁵ is due to iron deficiency. In addition to iron deficiency, other common causes of anaemia include: deficits in folate, vitamin B12 and vitamin A; haemoglobinopathies; and infections such as malaria and tuberculosis.¹ Iron deficiency anaemia is relatively straightforward to treat through dietary modifications. Community pharmacy teams are well-positioned to make an impact on managing the condition in their communities. With the increasing role of pharmacists in the healthcare system and the expansion of service delivery in community pharmacies, pharmacists could provide health information on preventing and managing iron deficiency anaemia. Pharmacies are also a preferred place and an accessible place for maternal health point-of-care testing; therefore, pharmacists can contribute to the screening, diagnosis and control of anaemia.

A rapid search for evidence for the role of pharmacists in managing anaemia patients was undertaken using the PubMed Database. The search found that most studies investigated the pharmacist's role in therapy management of anaemia in chronic kidney disease patients and how the involvement of pharmacists can bring potential clinical⁶⁻¹⁰ and economic¹¹⁻¹⁴ benefits. Many studies found that pharmacists' involvement and collaborative agreement with other healthcare professionals had an impact on the decreased cost of therapy in the management of anaemia in patients with malignant disease who took erythropoiesis-stimulating agents.¹¹⁻¹³ Few studies addressed the role of pharmacists in iron deficiency anaemia, especially in community settings. In a study conducted in Tanzania, it was found that private pharmacies were physically closer and more accommodating than government clinics, showing the potential role of pharmacists in maternal iron supplementation in rural settings.¹⁴ A study in Peru evaluated the feasibility and acceptability of pharmacy workforce training to provide point-of-care testing for chronic diseases, including anaemia. The results presented an opportunity for the pharmacy workforce to be trained to conduct early detection and screening of the disease.¹⁵ Two studies, in Jordan¹⁶ and Thailand,¹⁷ investigated how clinical pharmacist interventions improved outcomes for patients with iron deficiency anaemia. The evidence suggested a pertinent role for pharmacists. Therefore, FIP proposed gathering evidence on the role of pharmacists in this area across a cohort of nations (India, Indonesia, Malaysia, Philippines and Singapore) to highlight pharmacists' contribution as part of FIP's Multinational Needs Assessment Programme.

A roundtable discussion was organised on 25 May 2022 to obtain information on:

1. Pharmacists' role in iron deficiency anaemia;
2. Education and training needed to support pharmacists' role in iron deficiency anaemia; and
3. Barriers and enablers to expanding or developing pharmacists' role in iron deficiency anaemia.

2 Roundtable participants

Participants, with the support of our member organisations, from India, Indonesia, Malaysia, Philippines and Singapore were invited to take part in the roundtable discussion (see below).

Participants		
Lisa Aditama	Pharmacist at Rumah Diabetes Ubaya; head of community pharmacy at the Faculty of Pharmacy, University of Surabaya	Indonesia
Shen Hui Chuang	Principal pharmacist (clinical) at Tan Tock Seng Hospital	Singapore
Imelda Ferendina	Community pharmacist and owner, Keshia Farma	Indonesia
Priscilla How	Principal clinical pharmacist, Division of Nephrology, Department of Medicine, National University Hospital; associate professor at the University of Singapore	Singapore
Neha Jain	State government pharmacist at Madhya Pradesh Public Health Services Corporation Limited Bhopal	India
Rosalynn L. Pangan	Associate director for planning & supplier relationship, Supply Chain Management Group of St. Luke's Medical Centre, Global City and Quezon City	Philippines
Aileen Salvador Noel	Corporate pharmacist at Threesixty Pharmacy	Philippines
Yip Sook Ying	Community pharmacist at Allday Pharmacy; Malaysian Pharmacists Society	Malaysia
Susan Tang Siew Chin	Community pharmacist and owner, Sonshine Pharmacy; Malaysian Pharmacists Society	Malaysia
Gwen Teoh Shu Yu	Community pharmacist at IJ Pharmacy	Malaysia
Keerti Tiwari	Consultant clinical pharmacist at GHS Pharmacy; clinical pharmacologist and clinical research coordinator	India
Reenu Yadav	Principal, Department of Pharmacy, IES University, Bhopal	India

Moderator		
Leonila M. Ocambo	Pharmacist; executive board member of Western Pacific Pharmaceutical Forum; executive committee member of Community Pharmacy Section FIP and member of the FIP Global Pharmaceutical Observatory Data and Intelligence Commission	Philippines

Facilitator		
Sherly Meilianti	FIP data and intelligence specialist	United Kingdom

Observers (Procter & Gamble Health representatives)		
Jass Liew		
Chitralekha Hariharan		
Witty Raina		

It should be noted that the views expressed during the roundtable are those of the individual opinions based on their expertise and experience. They do not represent the views of member organisations or FIP policy or positions, although they may build on existing positions and statements.

3 Pharmacists' role in iron deficiency anaemia

Roundtable participants indicated that pharmacists could contribute to many aspects of iron deficiency anaemia management. Participants described the types of patients with anaemia that they regularly see in their scope of practice (Figure 1).

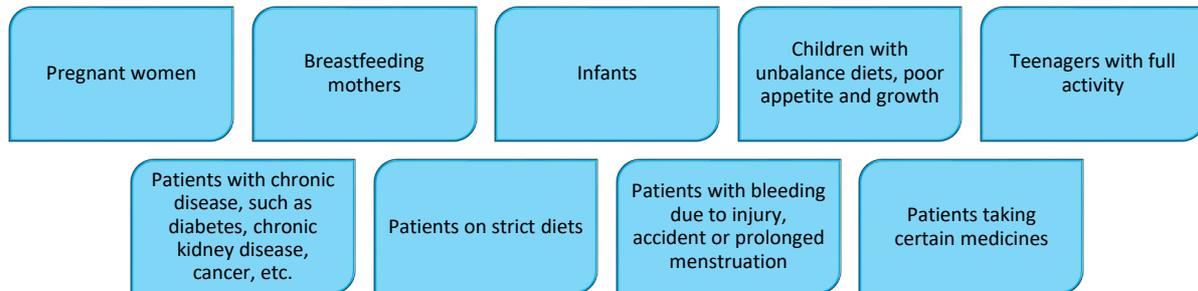


Figure 1. Types of patients with anaemia that participants see in their scope of practice

During the discussion, participants agreed that the prevalence of patients with anaemia recorded should be higher because many patients were not aware that they were anaemic. Patients were diagnosed and recorded when the anaemia was already moderate or severe, or patients were diagnosed when they had a regular follow up with clinicians, such as patients with chronic kidney disease. It was argued that patients with anaemia could be underdiagnosed in the community setting. Therefore, screening for early detection of anaemia in community practice is encouraged, and this is where the role of pharmacists and pharmacies is crucial.

“In my experience, iron deficiency anaemia is still undiagnosed. And if somebody gets iron deficiency, so they are already at the moderate or severe stages of the disease. So I think the screening and early detection for iron deficiency anaemia are very important, and pharmacists may be involved in these areas.”

Participants shared that when patients came into a pharmacy with possible signs and symptoms of anaemia, pharmacists could notice these, could discuss possible causes of the anaemia (drug-induced, chronic underlying disease-induced), and could use a point-of-care haemoglobin test for those who complained of anaemia symptoms. Following that, pharmacists could refer those whose blood levels were below target to medical doctors or physicians for further investigation.

“For the general population, I would have to agree that it is probably underdiagnosed, and in my CKD anaemia clinic, we use the POCT [point of care testing] haemoglobin machine to check the patient’s haemoglobin. We’re able to get the finger prick and the results within seconds. If this is such a prevalent and common problem in the community, perhaps we should adopt the use of these POCT haemoglobin testing machines so that when patients come in who complain of general weakness, tiredness, lethargy, lack of appetite, poor appetite . . . we can do a very quick POCT check to potentially diagnose anaemia in the general population. At least, for a start, if we find that the haemoglobin is below target, we can then refer these individuals to their GPs or their other regular physicians for further monitoring.”

Early detection and screening of possible patients with anaemia, particularly in rural settings, was deemed necessary, considering one of the issues found was a lack of knowledge about anaemia and its symptoms among populations. Participants suggested pharmacists could provide health education to society by increasing awareness of anaemia symptoms in the population and empowering the population to get blood levels checked.

“In rural area the problem is . . . big because they do not have knowledge. They don't know the name of anaemia. What is anaemia? So in rural areas, we have to do early screening, early detection, education, motivation and many more things.”

Participants also shared that pharmacists could educate and counsel patients on iron supplements, how to take them and their side effects. This was essential, because there were possible drug and food interactions with iron supplements such that their bioavailability and pharmacokinetics could be affected. Participants said that the side effects of iron supplements can impact on patients' adherence, which has been previously reported in a study conducted in Malaysia.¹⁸ Pharmacists could also counsel patients on their dietary intake and monitor and follow up on patients' therapeutic outcomes.

Some participants shared examples of the role of pharmacists in national initiatives or programmes in their countries. For example, there are many government-run mother and child clinics in Malaysia that encourage mothers and children to attend health check-ups, including anaemia screening. Pharmacists participate in the government's programme and supply supplemental iron. There is a national programme in India called Anemia Mukh Bharat under the National Iron Plus Initiative, where pharmacists are encouraged to participate in increasing awareness of anaemia among the population.¹⁹

“In India, we have guidelines for control of iron deficiency anaemia under the National Iron Plus Initiative, Anaemia Mukh Bharat, and Weekly Iron Folic Acid Supplementation. The Pharmacy Council of India encourages clinical and community pharmacists to participate in these programmes in rural areas or at primary healthcare centres.”

4 Education and training needed to support pharmacists' roles in iron deficiency anaemia

Roundtable participants shared a variety of competencies needed to support pharmacists' role in iron deficiency anaemia. To expand pharmacists' role in community pharmacy settings, their ability to conduct patient screening was deemed important. Good history-taking skills and simple physical examination skills are needed to screen patients with anaemia. Some examples of simple examination skills are observing patients' vital signs and looking at patients' hands, eyes, skins and nails.²⁰ A roundtable participant elaborated on some questions to be asked during the history taking:

"Before we suggest any supplements or educate the patient, we first do the assessment, starting from what are they feeling? What are the symptoms, how long [have they lasted], and what supplement medicines have they taken so far? Are there any traditional herbal medicines that they have taken too? After the assessment, then we recommend the supplement to be consumed and also educate them to maintain good nutritional intake in order to balance their daily needs."

A standardised checklist or flowchart to help pharmacists in patient screening could be developed, including gathering information about patients' diets, where dietary modifications could be the initial intervention, before providing iron supplements. In addition, during the screening process, pharmacists could also identify the causes of anaemia, such as drug-induced anaemia.

A roundtable participant added that pharmacists should have the ability to conduct appropriate referrals and escalation protocols, i.e., refer patients to other healthcare providers for immediate evaluation. Patient screening could also be accompanied by the ability to order basic anaemia test panels and interpret laboratory results, particularly haemoglobin trends.

In terms of patient education and counselling, participants stated that pharmacists should be confident in managing patients and display good communication skills. To support their practice in this area, they should possess sufficient knowledge about anaemia (Figure 2).

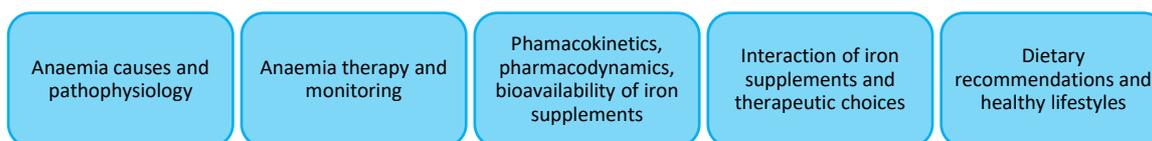


Figure 2. Knowledge that pharmacists should have related to anaemia

One participant highlighted the importance of including nutrition knowledge in pharmacy undergraduate curricula since most patients with anaemia had insufficient diets. This is particularly important because, in the private sector, pharmacists need to be independent and ready to manage patients, so knowledge and skill about anaemia management and nutrition have to be taught from undergraduate level onwards. Professional programmes, such as workshops, self-directed learning or continuing professional development courses related to anaemia, were recommended.

5 Enablers and barriers to expanding or developing pharmacists' role in iron deficiency anaemia

Roundtable participants identified enablers and barriers to expanding pharmacists' role in iron-deficiency anaemia. One of the enablers is collaboration between pharmacists and physicians in anaemia reduction programmes. For example, if physicians encourage pharmacists to be involved in patient screening in the community setting, this could support pharmacists' role in this area. A participant stated that highlighting the role of pharmacists in iron deficiency anaemia to primary care physicians can promote community pharmacies as an accessible first point of contact for screening patients followed by collaboration with physicians for patient referral. In addition, pharmacists could also supply iron supplements under an agreed protocol.

“One area that’s perhaps still lacking is fostering collaboration with physicians. I don’t know how we’re going to do this, but maybe it is, again, highlighting to the physician community in our respective countries what pharmacists can do. What we’re capable of doing. What can we do as a first-line or first-responder? Being the first touch point for a lot of our community or patients. And then let there be some type of collaboration for referral of suitable patients, and if there should be escalation to the physicians for a more serious problem. Some type of partnership with GPs.”

Another enabler is pharmacist access to patients' health records, which would support the pharmacists' role in monitoring patients with anaemia in the community setting. Barriers highlighted by participants were related to limited recognition of pharmacists' role in their countries, limited involvement of pharmacists in government programmes for reducing the prevalence of anaemia, and also funding or remuneration to equip community pharmacies with point-of-care testing machines to detect anaemia early.

“If we can request funding, and if we feel that the POCT machines are going to be useful, then we should start to equip our community pharmacies with one such machine at every store so that we can do early detection of anaemia and the necessary follow up.”

6 Suggested ways forward for expanding and developing pharmacists' role in iron deficiency anaemia

The majority of participants highlighted a need to develop guidelines or toolkits for individual pharmacists on the topic of iron deficiency anaemia. It was suggested that guidelines could be in the form of an educational manual to guide pharmacists in screening and counselling patients, which could include the following information:

- Anaemia diagnoses and severity assessment;
- Proper medication with proper administration, including information on iron preparations and their bioavailability and pharmacokinetics to support with the choice of supplement and appropriate formulation;
- Common side effects of medicines and supplements; and
- Dietary guidelines.

One specific counselling point highlighted by a participant was related to the risk of iron deficiency anaemia in patients using birth control.

“May we consider adding counselling points on effects of birth control on decreasing or increasing the risk of iron deficiency anaemia? For example, hormonal birth control can decrease the risk, but non-hormonal birth control [such as] intrauterine devices may increase menstrual blood flow and increase the risk. Iron deficiency anaemia may also occur post-partum [and] mothers may ask about the effect of taking iron supplementation while breastfeeding.”

Such an educational manual could be used to support early-career pharmacists when managing patients with iron deficiency anaemia.

Approaches to patient education and counselling differ according to a nation's health system's policies and procedures, environment and practice setting. The American Society of Health-System Pharmacists developed a guideline to describe the four steps for pharmacists conducting patient education and counselling, which include (i) establishing a relationship with patients, (ii) assessing patients' knowledge, (iii) providing information to fill gaps in patients' knowledge and understanding, and (iv) verifying patients' knowledge and understanding of medicines use.²¹ Procter and Gamble Health developed a counselling guide for pharmacists to equip pharmacists to detect high-risk patients and engage and counsel patients on iron deficiency anaemia.²² A nutrition report developed by FIP addressed dietary considerations for anaemia according to a person's deficiency of nutrients.²³ This could be used or adapted to provide some dietary recommendations and modifications for people with iron deficiency anaemia. In addition, there are WHO guidelines on daily iron supplementation in adult women and adolescent girls⁴ and on haemoglobin concentrations for the diagnosis of anaemia and assessment of severity.²⁴

A participant also highlighted a need to develop an anaemia risk calculator to grade anaemia severity, which could support pharmacists in motivating and educating patients to change their lifestyles and diets.

“FIP can give us tools like a risk calculator, which can be used for grading the severity of anaemia based on [patients'] haemoglobin level, iron level, erythropoietin hormone level, bleeding risk, disease history, history of miscarriage in pregnancy, and level of consumption of iron sources. This grade can be used as a way to evaluate therapeutic needs of patients and motivating them to comply with their treatment. The risk calculated can be based on the amount of risk that patients have and [could include] risk factors that cannot be modified.”

Participants recommended training to support competency development for pharmacists on iron deficiency anaemia to accompany the tools and guidelines. This could be done in collaboration with national professional leadership bodies in the form of workshops, self-directed learning and sharing best practice.

Finally, a participant highlighted that it is also important to monitor the success of anaemia programmes. The outcomes need to be monitored and evaluated to demonstrate how these programmes can resolve anaemia challenges in the community. Monitoring and evaluating programmes helps practitioners to learn from prior experience, make data-driven decisions, and lead and adjust programme activities based on intended results.²⁵

“Another thing that can be helpful is that if we are given a chance to establish programmes to support the anaemia management community, it’s also important to look at monitoring outcomes. . . . How often should these patients be followed up in the community? And then, of course, the resolution of anaemia [should be assessed] when such a programme is actually established in the community.”

7 Summary and conclusions

Pharmacists can contribute to achieving the WHO global nutrition targets related to anaemia. As accessible health professionals, pharmacists can contribute to the screening, diagnosis, and control of anaemia and provide trusted health information on preventing and managing anaemia, particularly iron-deficiency anaemia.

Incorporation of anaemia management and nutrition in pharmacy curricula and pharmacy training programmes as a basis for developing competencies for pharmacists is recommended. Pharmacists should have the necessary skills and knowledge to support their role in iron deficiency anaemia. Participants requested that national pharmaceutical professional leadership organisations develop programmes for continuing education on anaemia to support the development of pharmacists' competencies up to advanced level practice.

Comprehensive guidelines and toolkits on the pharmaceutical care needed for anaemia management should be developed. It is also important to monitor the success and outcomes of pharmacists' involvement in reducing the prevalence of anaemia and supporting the achievement of the WHO global targets on anaemia.

FIP will draw on the views, findings and conclusions of this international roundtable meeting to evaluate the next steps in terms of further meetings and policy development.

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International
Pharmaceutical
Federation

Fédération
Internationale
Pharmaceutique

Andries Bickerweg 5
2517 JP The Hague
The Netherlands

T +31 (0)70 302 19 70

F +31 (0)70 302 19 99

fip@fip.org

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