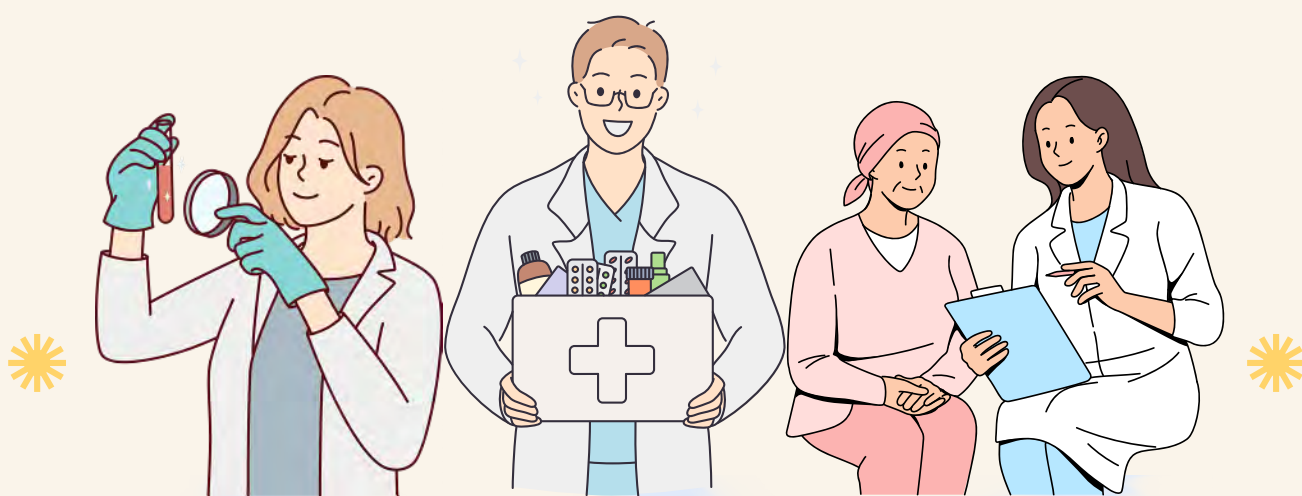
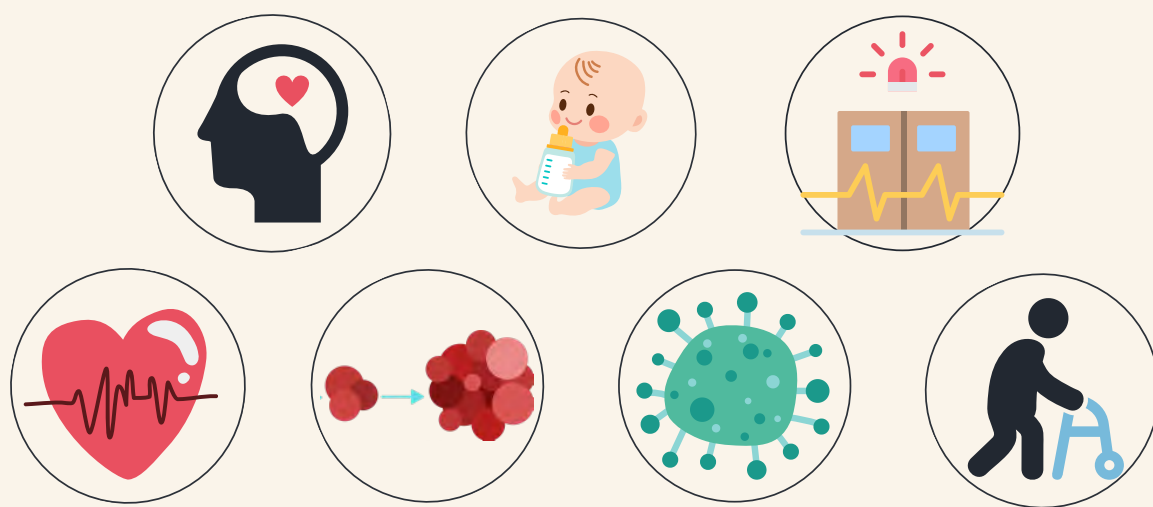


MASTERS OF THE CRAFT

THE JOURNEY OF SPECIALIST PHARMACISTS



Presenting Our Specialist Pharmacists



National Pharmacy Strategy
<https://go.gov.sg/nps>

@MOH/Healthcareprofessionals

FOREWORD

**Specialist Pharmacists
practise at the apex of their
potential!**



Director-General of Health,
Prof Kenneth Mak

“

Specialist pharmacists play an important role in the healthcare profession. This group of professionals are the ones **practicing at the apex of their potential**, constantly **pushing the boundaries** in terms of how pharmaceutical care can be practiced.

Our specialists have made **significant contributions** to our healthcare system and I encourage more of you to follow in their footsteps and take part in our national pharmacy residency programme to further yourself as well as patient care.

”

**Pursue Excellence
in Patient Care!**

Chief Pharmacist,
Dr Camilla Wong

“

Our specialist pharmacists are paramount in our healthcare systems as they **lead specialised services to manage patients with complex diseases**. They are valued members of various national hospital-wide committees and multidisciplinary teams, leading the delivery and enhancement of pharmaceutical care in their respective areas of specialty services.


Our specialist pharmacists are also **pivotal in driving innovation** in pharmaceutical care and **contributing to advancements in healthcare**. As **educators**, they also **mentor and guide** future pharmacists and healthcare professionals.

Whether you are a student or a practicing pharmacist, I hope this showcase of our specialist pharmacists' work will inspire you to **pursue excellence in patient care**.

”



CARDIOLOGY PHARMACY PIONEERING PHARMACY SERVICES IN THE COMMUNITY

Meet Our Cardiology Specialist Pharmacist!

Keep doing what you believe is in the best interest of the patient. If you have a clear goal in mind - **Just do it, the world is your oyster.**



DR WEE XUE TING
CARDIOLOGY SPECIALIST PHARMACIST
CEO/FOUNDER OF IRX CLINICAL PHARMACY

Revolutionising Primary Care

I decided to **make the switch** to the community setting despite facing a lot of resistance and having to start iRx Clinical Pharmacy from scratch as I felt that **pharmacy services are lacking in primary care**. With great resilience and the help of supportive stakeholders, I am able to build my reputation and **pioneer pharmacy care in the community**, eventually enabling me to **make an impact to population health** using the expertise I gained throughout my journey.

Insights

<p>What excites you to be a specialist pharmacist in your field?</p>	<p>What are the perks of being a specialist pharmacist?</p>	<p>What are some personality traits a specialist pharmacist should have?</p>
<p>Pioneering new approaches and addressing the numerous opportunities in primary care that hospitals often overlook.</p>	<p>Holding the title of specialist pharmacist in the private sector is a responsibility rather than a perk.</p> <ul style="list-style-type: none"> It enables patients to be more receptive and trusting of our services and advice; And aids in building a strong reputation in primary care. 	<ul style="list-style-type: none"> Good time management Empathy Bird's eye view of the healthcare system: <ul style="list-style-type: none"> Consider all stakeholders Keep an open mind Know that there is more beyond institutions and medications
<p>Providing our expertise to the underserved population in the community where GPs do not have much pharmacy support</p>		

Life as a Specialist Pharmacist

<p>Community Collaboration</p> <ul style="list-style-type: none"> Work with community partners such as Primary Care Networks and GPs to develop new initiatives (e.g. improving vaccination uptake), shaping population health Engage patients through clinics and outreach events focusing on primary prevention 	<p>Transformation Work</p> <ul style="list-style-type: none"> Assist in formulary management to optimise medication usage Plan protocols and workflow to improve efficiency while reducing cost for drug inventory 	<p>Business Development</p> <ul style="list-style-type: none"> Network and partner with key stakeholders while leading our team towards achieving business objectives
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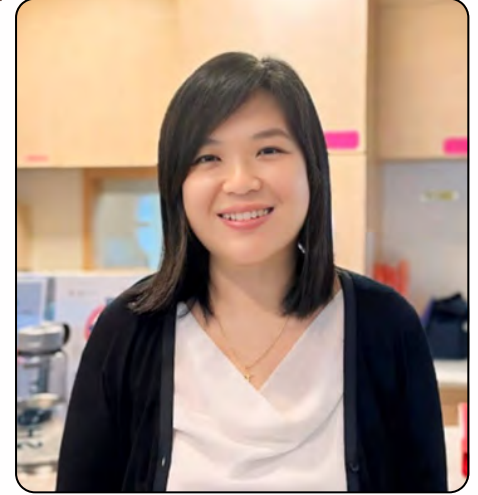
Scan to learn about the National Cardiology Pharmacy Residency Programme

CRITICAL CARE PHARMACY CHAMPIONING PATIENT CENTRIC & COLLABORATIVE CARE



Meet Our Critical Care Specialist Pharmacist!

Critical care is one of the best places to learn and understand drug behaviour due to its **dynamic environment** and **to build clinical experience.**



DR CAROLINE TEE
SENIOR PRINCIPAL CLINICAL PHARMACIST
CRITICAL CARE SPECIALIST PHARMACIST
NATIONAL UNIVERSITY HOSPITAL

Leading Change in a Multidisciplinary Team

We had a patient who experienced complications with Heparin and scheduled for cardiac surgery. Given the challenging case, I initiated a discussion among the **multidisciplinary healthcare team** on the peri-operative and intra-operative drug of choice and dosing strategies for the patient. I also attended the operative procedure to adjust the non-Heparin parenteral anticoagulant dosing based on the patient's specific clinical condition. The surgery was successful. I was pleased to apply my **expertise in critical care and broad-based clinical skills** to **optimise therapeutic care** through **interprofessional collaboration.**

Insights

What excites you to be a specialist pharmacist in Critical Care?

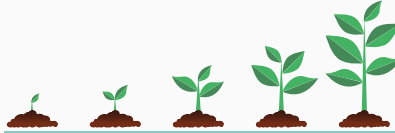
I want to know the **best possible ways to help patients** with **complex conditions**, who often are at their sickest and weakest when admitted to ICU



Working with a **multidisciplinary team**, where **different perspectives** are brought to the table, **optimising care** holistically

What are the perks of being a specialist pharmacist?

Getting the opportunity to **train and mature in my craft** in an area that I am highly passionate in



Having **autonomy to start, stop, or modify a drug** in the ICU setting, **with support from the team**

Do you have any advice for pharmacists aspiring to be specialists?



Have the time and space to **explore different opportunities** and discover your true interests

No man is an island. Reach out to your mentors and peers so you have a **network** to bounce off ideas and receive advice

Keep in mind your **original conviction** in your journey to be a pharmacy specialist



Life as a Specialist Pharmacist



Address Toxicology Cases

Manage **overdose** and **poisoning cases**, advising the team on treatment modalities and monitoring parameters



Nutrition Expert

Design **nutrition regimens** for ICU patients on parenteral nutrition



Manage Dynamic Changes

- Manage **rapid PKPD changes** in the ICU setting
- Therapeutic drug monitoring** considering the impact of various confounding variables on drug levels and regimens



Scan to learn about the National Critical Care Pharmacy Residency Programme



GERIATRIC PHARMACY ADVOCATING FOR THE SILVER GENERATION



Meet Our Geriatric Specialist Pharmacist!

If you are **passionate about caring for the elderly in Singapore and providing them a voice**, pursuing a career as a geriatric specialist pharmacist would be a fulfilling as will equip you with the essential skills to address their health needs



MS CHIA HUI SHAN
GERIATRIC SPECIALIST PHARMACIST
NHG PHARMACY

Applying Theory to Practice

We received feedback from nursing homes about a medication with friable tablets. When dosed twice a day (as a quarter tablet), the packing center couldn't cut them and instructed the nursing homes to do it themselves. Leveraging my **advanced pharmacokinetics expertise** from my residency and specialist training, I resolved this by suggesting a switch to once-daily dosing (half a tablet). I also **shared this insight** with colleagues encountering similar challenges.

Insights



What encouraged you to specialise in geriatrics pharmacy?

My exposure to the geriatric field ignited my passion for **enhancing the well-being of older adults** through compassionate care



What motivates you to daily to practise at top of your licence?

Singapore is facing a **silver tsunami**. This drives me to utilise my expertise in **advocating for elderly patients**, ensuring that they receive the care and support they need in our rapidly ageing society.



Do you have any advice for pharmacists aspiring to be specialists?

Becoming a geriatric specialist pharmacist equips you with **skills to care for your older family members including your parents** and address the aging population in Singapore



Life as a Specialist Pharmacist



Provide Individualised Care

Establish and develop **specialised services**, including a memory clinic and medication management therapy clinic, providing crucial support for geriatric patients with dementia



Dedicated Educator

Develop and train pharmacists in the geriatrics field by **passing on skillsets** required to provide geriatric services such as pharmacotherapy optimisation and palliative care support



Multidisciplinary Expertise in Geriatric Care

Complementing my geriatric pharmacy knowledge with **psychogeriatrics**, which I learnt during an attachment to Institute of Mental Health



Scan to learn about the National Geriatric Pharmacy Residency Programme

INFECTIOUS DISEASES PHARMACY BEYOND TEXTBOOKS: INNOVATING COMPLEX CARE



Meet Our Infectious Diseases Specialist Pharmacist!

The training I received to be a pharmacy specialist has equipped me to be a **more confident clinician**, who is able to review patients in a **more comprehensive and holistic manner**



DR NATHALIE GRACE SY CHUA
INFECTIOUS DISEASE
SPECIALIST PHARMACIST
SINGAPORE GENERAL HOSPITAL

Holistic Patient Care

At our clinic, we go beyond simply managing HIV; we work to **empower** our patients to achieve **long-term viral suppression** by addressing the unique challenges they face. Whether it's **overcoming adherence barriers** like complex medication schedules, financial constraints, or lifestyle issues, we **tailor regimens** that are both **effective and manageable**. Our specialist pharmacists play a **critical role** in identifying **niche drug-related problems** often missed by general practitioners, and nearly half of our interventions address these issues.

Insights

What are some personality traits a specialist pharmacist should have?

Innovation

Think out of the box and come up with unconventional treatment methods



Humility

Be open to learning and feedback for continuous growth and improvement

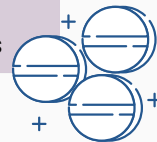


What are the perks of being a specialist pharmacist?

Our opinions are **highly sought after** and **strongly considered** by other healthcare professionals



This allows us to exert a certain level of **influence** when **implementing changes in practice** across different levels



What excites you to be a specialist pharmacist in Infectious Disease?

Infectious diseases is **constantly evolving**. Because of this, no single clinician can be an expert in everything. That is a gap that we can fill by **contributing our expertise in medications**.



Life as a Specialist Pharmacist



Pioneer Evidence-Based Solutions

- Manage **difficult to treat conditions** and those not covered by **conventional guidelines** through reading literature and exploring novel methods



Address Adherence Barriers

- Manage **HIV pharmacy services** by addressing **compliance barriers** and **polypharmacy**



Antimicrobial Stewardship

- Report results from the novel **antimicrobial combination testing service** and antimicrobial **therapeutic drug monitoring service**
- Perform audits and provide feedback** on antimicrobial prescriptions to **optimize and rationalize** their use



Scan to learn about the National Infectious Diseases Pharmacy Residency Programme

ONCOLOGY PHARMACY MAXIMISING THERAPIES, MINIMISING RISKS



Meet Our Oncology Specialist Pharmacist!

Take the time to **gain exposure** to be sure that this is the specialty for you. Always keep an **open mind** for any opportunities. Any "crisis" is an **opportunity** for **growth and development**.

Lifelong Relentless Dedication

In 2018, I established the **long-term follow-up clinic** for stem cell transplant patients at SGH and completed the National Collaborative Prescribing Practitioner course, enabling me to run the clinic **independently** as a collaborative prescriber. It was **deeply rewarding** to be part of a **multidisciplinary team**, witnessing patients return for their yearly visits, some of whom underwent transplants as long as 30 years ago, and seeing their **continued survival and health**.



MS LIM YAN JIUN
ONCOLOGY SPECIALIST PHARMACIST
SINGAPORE GENERAL HOSPITAL

Insights

What excites you to be a specialist pharmacist in Oncology?

The opportunity to **make a tangible difference** in my patients' life through **direct patient care**

Leveraging on my expertise to implement clinical services that my patients require in **collaboration** with a multidisciplinary team



What are the perks of being a specialist pharmacist?

Being a specialist gives me the **recognition** I need to **smoothly implement clinical services** because of the **trust** others in the multidisciplinary team have in me



What are some personality traits a specialist pharmacist should have?

Have the **determination** to go through the process of **getting accredited**

Be **willing to learn more** and **gain exposure** to managing different conditions and keep up with **continuous learning**



Life as a Specialist Pharmacist

Specialised Counselling

- Provide **specialised counselling** for patients undergoing **chemotherapy/stem cell transplant**
- Review **chemotherapy regimens** and **supportive care medicines** for patients



Collaborative Prescribing to Optimize Treatments

- Optimising pharmacologic treatments** for stem cell transplant survivors, including **immunisations, management** of long-term **complications**, chronic diseases and cancer **prevention**



Uphold Patient Safety

- Review **stem cell transplant protocols** to identify **drug-related problems** before the commencement of transplants



Scan to learn about the National Oncology Pharmacy Residency Programme

PAEDIATRIC PHARMACY TRANSFORMING PAEDIATRIC CARE THROUGH RESEARCH

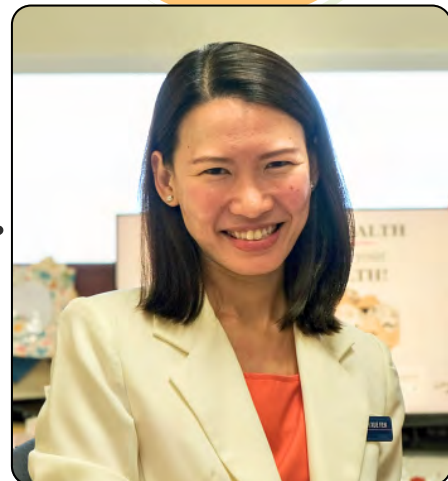


Meet Our Paediatric Specialist Pharmacist!

Stay **humble** and **curious** - there is always something new to learn. Work hard and **take pride in your work**; it's a meaningful career.

Research-Driven Intervention

I recall a patient who developed significant weakness due to a bacterial infection and became very ill. Unfortunately, first-line treatment wasn't immediately available. Through a **thorough review and analysis of the literature**, I was able to provide valuable input to the medical team using my special **expertise as a paediatric infectious disease pharmacist**, helping them deliberate on a suitable alternative treatment. I designed an infusion protocol that successfully treated the child, leading to their improvement.



DR VALERIE SEAH XUE FEN
PRINCIPAL CLINICAL PHARMACIST
PAEDIATRIC SPECIALIST PHARMACIST
KK WOMEN'S AND CHILDREN'S HOSPITAL

Insights

What are some traits/skillsets a pharmacy specialist should have?

Compassion and Empathy

- Show genuine concern for the well-being of patients and family, as well as be sensitive to their needs.



Excellent analytical and clinical reasoning skills

- Interpret literature well and apply it to individual patients accordingly



What are the perks of being a pharmacy specialist?

We can **advocate** for **policies, practices, and research** to have **better and safer** medication prescribing for children

With our **knowledge and experience**, we can help caregivers and parents **understand** and **safely** manage their children's medications **more effectively**



What excites you to be a specialist pharmacist in Paediatrics?

Paediatric Pharmacy is a very **specialised** and **complex** area of medicine, requiring **expertise** in drug usage across ages from **neonates** to **adolescents**



Unique challenges include **drug dosing** and **formulation** for children as most drug trials are conducted in adults



Life as a Specialist Pharmacist

Research-Focused Practice

- Research work in **anti-microbial stewardship** to evaluate if applied strategies are effective in improving anti-microbial use in hospitals

Drive Up-To-Date Evidence-Based Care

- Develop** and **update guidelines** based on latest evidence for neonates and paediatrics

Develop Targeted & Personalised Care Plans

- Conduct extensive literature reviews** to support **individualised treatment strategies** and to select suitable dosage forms to ensure correct dosing in children

- Compounding or selecting alternatives** may be necessary when standard forms are unsuitable



Scan to learn about the National Paediatric Pharmacy Residency Programme



PSYCHIATRIC PHARMACY

PROMOTING RECOVERY IN MENTAL HEALTH



Meet Our Psychiatric Specialist Pharmacist!

Psychiatry is a niche specialty that **never fails to surface new insights** every day in the way I reflect at life, with a **deeper appreciation of the battles and goodness** I see in individuals and societies



MR NG BOON TAT
PRINCIPAL CLINICAL PHARMACIST
PSYCHIATRIC SPECIALIST PHARMACIST
INSTITUTE OF MENTAL HEALTH

Empathy in Action

Many patients and families had struggled tremendously by the time they arrived at our doorsteps. Our services can be **life-changing** for them. It is therefore a **privilege** to be in a specialty that **directly serves and witnesses the challenging journey** of how many patients try to **recover their mental health and dignity**, with **compassionate care and treatment**.

Insights

What are the perks of being a pharmacy specialist?

It is a **privilege** to review and manage **challenging cases**, with **sharpening of expertise** through learning with patients and colleagues

What are some traits/skillsets a specialist pharmacist should have?

Beyond **agency, reliability, integrity, and humility**, one should also demonstrate **advanced mastery of knowledge and skills** in psychiatric therapeutics, and ensure appropriate quality of holistic care

Do you have any advice for pharmacists aspiring to be specialists?

The relentless pursuit of clinical excellence **demands continuous hard work and sacrifice**, but the deepest satisfaction lies in **alleviating profound suffering** with the best of your abilities, and **inheriting valuable learnings** to pass on to others

Life as a Specialist Pharmacist

Evaluate Patient Needs

- **Assess and address** the immediate and longer-term needs of **persons with severe psychiatric conditions, including aggression and suicidality**

Manage Complex Cases

- Participate in the multidisciplinary **review and management of complexities, including clinical dilemmas, treatment-resistance, and challenging comorbidities**

Improve Medication Use

- **Advocate** for evidence-based best practices and good clinical judgement
- Refine **higher order systemic processes** in medication management and use



Scan to learn about the National Psychiatric Pharmacy Residency Programme



HEAR WHAT OTHERS SAY ABOUT SPECIALIST PHARMACISTS



Picture: Dr Caroline Tee (middle) with her ICU team, with Dr Graeme on the right



Caroline is an **essential and irreplaceable member** of the ICU team. Specialist Pharmacists have a **greater awareness** of the differences in pharmacokinetics and pharmacodynamics in clinical patients, and are also more attuned to drug interactions. They are hence able to **provide valuable inputs** on drug dosing and interactions to our dynamic patient population.



DR GRAEME MACLAREN
DIRECTOR OF CARDIOTHORACIC ICU
NATIONAL UNIVERSITY HOSPITAL



In our large pediatric hospital, Valerie's expertise as a pediatric infectious disease pharmacist is **invaluable, especially in complex cases** where medicine blends art and science. I recall a patient who became severely ill due to a bacterial infection, and the first-line treatment was unavailable. Xue Fen's **thorough literature review** and **carefully designed infusion protocol** led to the successful treatment and recovery of the child. Her contributions are critical to our medical team's success.



DR KAREN DONCERAS NADUA
CONSULTANT, PEDIATRIC INFECTIOUS DISEASE
KK WOMEN'S AND CHILDREN'S HOSPITAL



Picture: Dr Valerie Seah (left) and her team of pharmacists



Our clinic patients appreciate Xue Ting's approachable nature and often rely on her for guidance on managing their health and general well-being. Xue Ting has been a competent, trustworthy colleague and the **go-to person** for drug information, chronic disease management, and complex decisions in pharmacotherapy. She ensures **alignment to guideline-directed therapies** whenever the circumstances allow.



DR ONG GUAN HONG
MEDICAL DIRECTOR
PANCARE MEDICAL



Picture of Dr Wee Xue Ting

INSPIRED TO BECOME A SPECIALIST PHARMACIST?

GET STARTED



Registered Pharmacist

ADVANCE YOUR TERTIARY QUALIFICATIONS

Obtain postgraduate qualifications such as Master of Pharmacy or Doctor of Pharmacy



Pharmacy Residency

GROW YOUR PRACTICE PORTFOLIO FOR SPECIALIST ACCREDITATION

Gain minimally 1 year of specialty practice experience and build up your portfolio for specialist pharmacist accreditation

BUILD YOUR FOUNDATION



Gain direct patient care experience practicing as a pharmacist in a public healthcare institution

Postgraduate



ENHANCE YOUR CLINICAL SKILLS BY COMPLETING THE NATIONAL RESIDENCY PROGRAMMES

Residency Year 1* (R1): Broad-based pharmacotherapy training

**Available as a 52 weeks or 26 weeks programme*

Residency Year 2 (R2): Continue training from one of the 7 specialty programmes



Become a Specialist Pharmacist!

To learn about the National Pharmacy Residency Programmes



To learn about the Specialist Pharmacist Accreditation and Registration

