



MINISTRY OF HEALTH
SINGAPORE

National Pharmacy Strategy Information Pack

Better Health
Better Care
Better Life

Foreword by Chief Pharmacist



Dear Pharmacy colleagues,

Singapore faces multiple challenges in healthcare like many developed countries. Evolving and increasing healthcare needs due to an ageing population, prevalence of chronic diseases and a shrinking workforce spurs the transformation in our delivery of pharmaceutical care in Singapore. As pharmacy professionals, we play a critical role and are in a timely position to contribute to the tremendous opportunities to transform the future of healthcare in Singapore.

Through the National Pharmacy Landscape study conducted in 2014, various pain points and challenges were analysed to identify opportunities and its findings motivated the conceptualisation and development of the National Pharmacy Strategy (NPS) in 2015 by the Chief Pharmacist's Office at MOH. The NPS is a 10-year visionary plan that is closely aligned with MOH's key strategic healthcare shifts of *Beyond Hospital to Community*, *Beyond Quality to Value* and *Beyond Healthcare to Health*.

The NPS envisions transformation in the delivery of pharmaceutical care and medication management to a person-centric care model. The pharmacy care model will focus on providing quality care to patients, advancing preventive care in the community, promoting safe and effective medication use, and playing an active role in care integration of the patient's journey across different healthcare settings. Five key strategic thrusts are formulated to support the NPS in its vision – *pharmaceutical care excellence*, *building a confident pharmacy workforce*, *re-designing the supply chain*, *information and technology enablement*.

The NPS information pack provides an overview of the 5 key strategic thrusts and details how people, process, information and technology can enable and empower the pharmacy profession to contribute to pharmaceutical care excellence.

Your participation in the NPS is invaluable to help transform the delivery of care. Together, let us press forward in the journey to transform the delivery of pharmaceutical care to provide good and sustainable healthcare for our community.

For queries and feedback, please connect with the National Pharmacy Programme Management Office (NPPMO) at nps@moh.gov.sg.

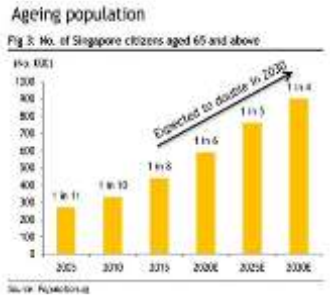
Best regards,
A/Prof Lita Chew
Chief Pharmacist, Ministry of Health, Singapore



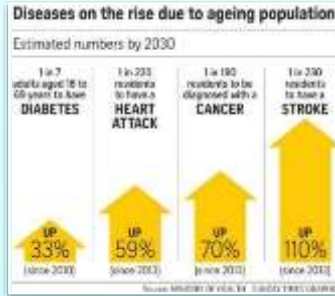
Contents

- [Introduction](#)
- [The National Pharmacy Strategy \(NPS\)](#)
- [NPS Advisory Committee](#)
- [National Pharmacy Programme Management Office](#)
- [NPS Thrust 1: Pharmaceutical Care Excellence](#)
- [NPS Thrust 2: Confident Pharmacy Workforce](#)
- [NPS Thrust 3: Re-design Supply Chain](#)
- [NPS Thrust 4: Information Enablement](#)
- [NPS Thrust 5: Technology Enablement](#)
- [Contact us](#)

The need for healthcare transformation...



We are growing old fast



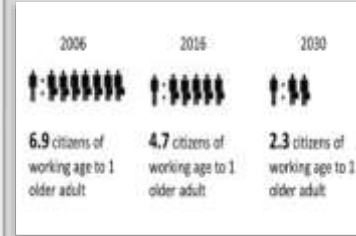
More of us are getting chronic diseases

Demand for more healthcare and social services

- Increase in demand for community-based services (*day care, nursing, befriender service*)
- Demand for trained welfare staff

More resources spent on meeting these needs, less funds for development of the nation

Health care needs will increase



But fewer people to support



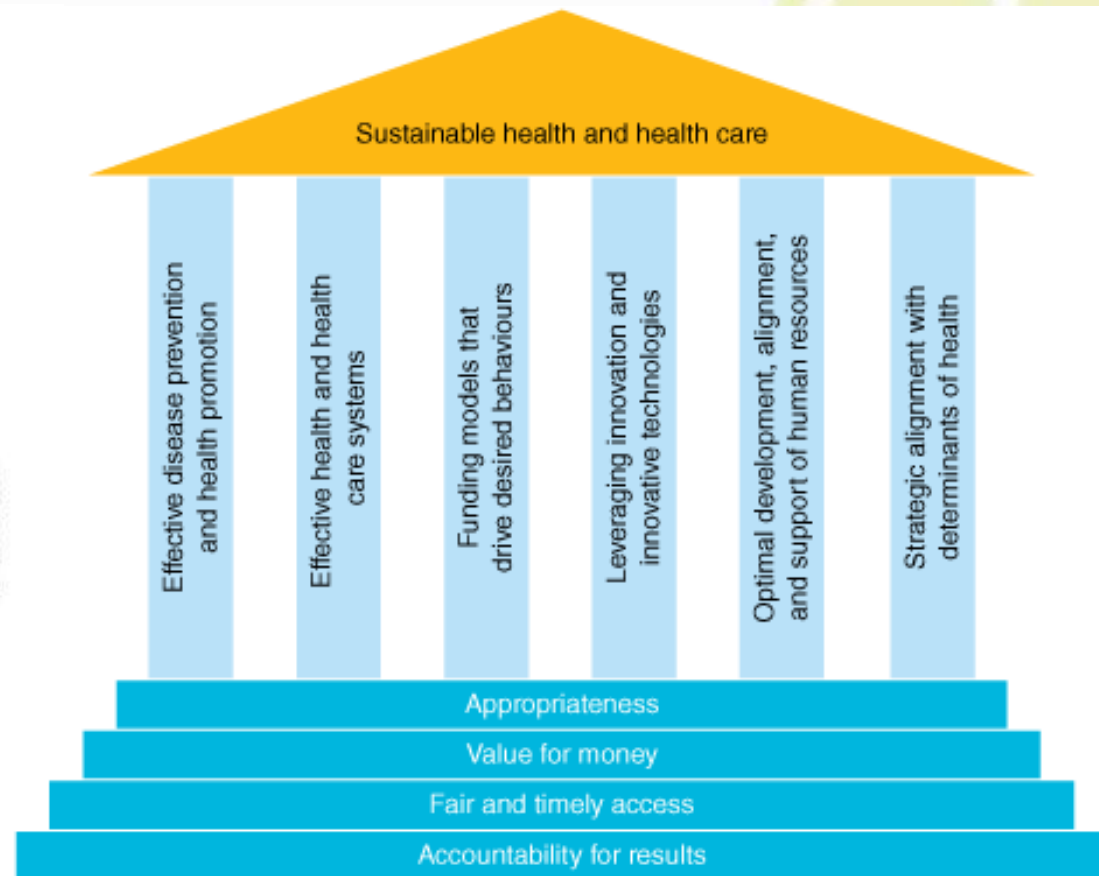
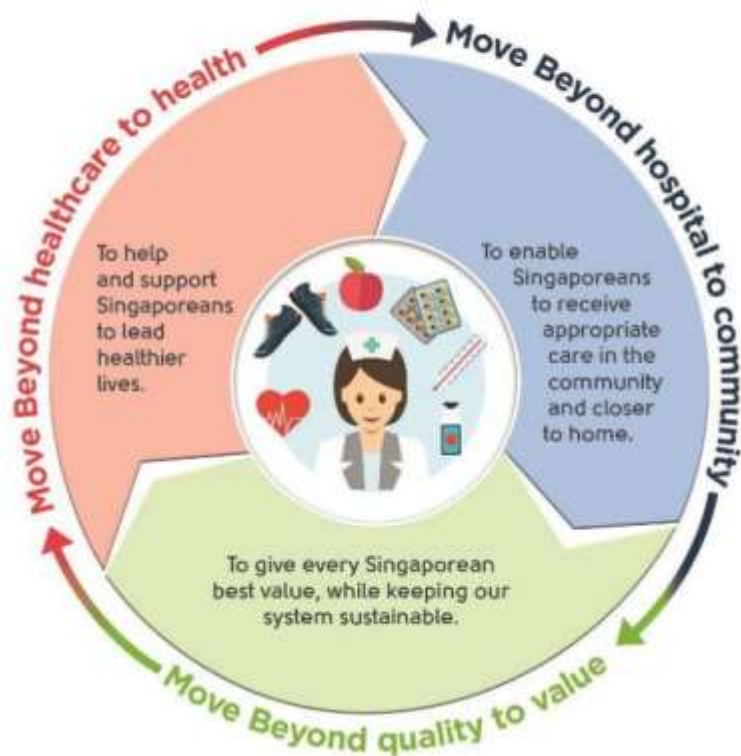
Health care shift to a H2H concept

The need for healthcare transformation...

Parliament: Key shifts needed to keep healthcare system sustainable, says Gan Kim Yong

THE STRAITS TIMES

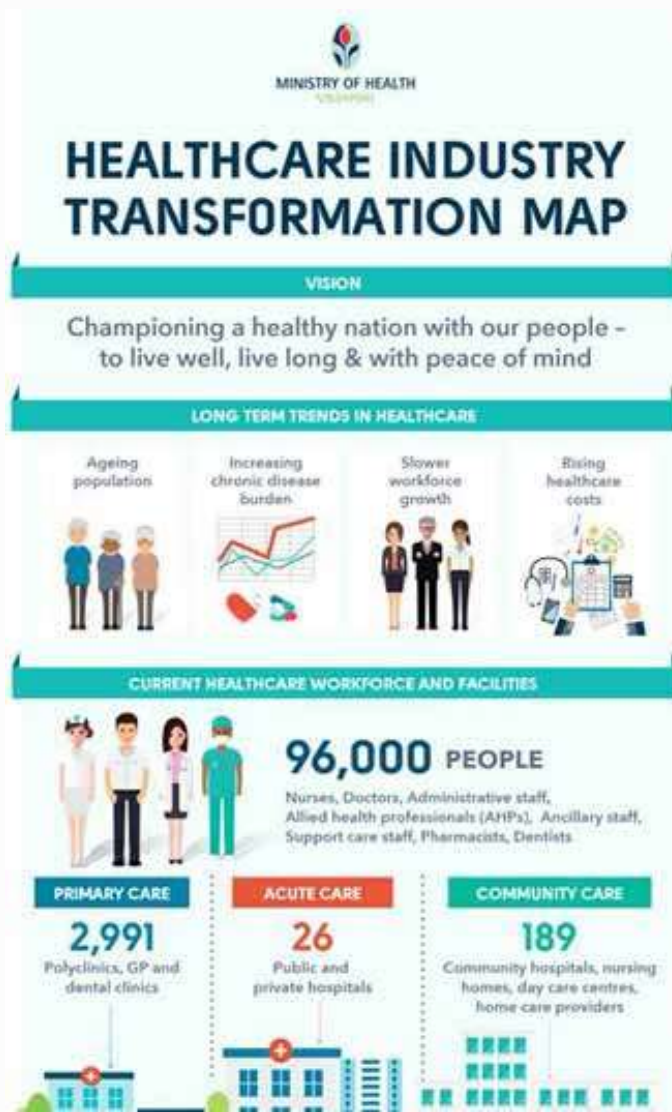
THREE KEY SHIFTS FOR A FUTURE-READY HEALTHCARE SYSTEM



Khalik S. Parliament: Key shifts needed to keep healthcare system sustainable, says Gan Kim Yong. The Straits Times 2017, Mar 9.

[Return to Contents](#)

Strategies for healthcare transformation...



Ng K. Innovation, skills upgrading part of healthcare transformation roadmap unveiled. Today News 2018, Jul 25.
The future of Singapore healthcare. NUS Medicine Insights 2017, Sep 9.

[Return to Contents](#)

Strategies for healthcare transformation...



Assoc Prof Benjamin Ong receiving a token of appreciation from Dean of NUS Medicine, Assoc Prof Yeoh Khai Guan at the Keynote Address

We will need skilled healthcare professions to lead the charge in the community. Patient care will be more complex and challenging. It is therefore even more important that you see yourselves as part of one public healthcare system. The relationships that you build in school now will allow you to have a shared goal and camaraderie. More importantly, the relationship you build with your patients will enrich your professional lives ahead.

A/Prof. Benjamin Ong
Director of Medical Services, MOH
Keynote Address at the NUS Medicine Congress

[Return to Contents](#)

Healthcare transformation journey has already started...

1) Providing care beyond hospital to community

Singapore
340 GP clinics join primary care scheme, providing better care of chronic conditions



Nurse consultant Serene Ang explains a patient's condition to Dr Lam Pin Min. (Photo: Gwyneth Teo)

Channel News Asia
2018, Jan 18.

Speedoc app lets you call the nearest doctor to your home



Dr Shrawan Verma checking a patient's blood pressure and heart rate in the comfort of her home. PHOTO: SPEEDOC

Doctor created app to cut number of people going to A&E departments in hospitals

The New Paper 2018, Apr 5.



[Return to Contents](#)

Healthcare transformation journey has already started...

2) Deepening integration within and across public healthcare institutions



Ng Teng Fong General Hospital
Jurong Community Hospital
Jurong Medical Centre



Polyclinics: Bt Batok, Bt Panjang (tbc), Choa Chu Kang, Clementi, Jurong, Pioneer, Queenstown



Community Hospitals: Yishun, Woodlands (2022)
Polyclinics: AMK, Geylang, Hougang, Sembawang Primary Care Centre (TBC), Toa Payoh, Woodlands, Yishun

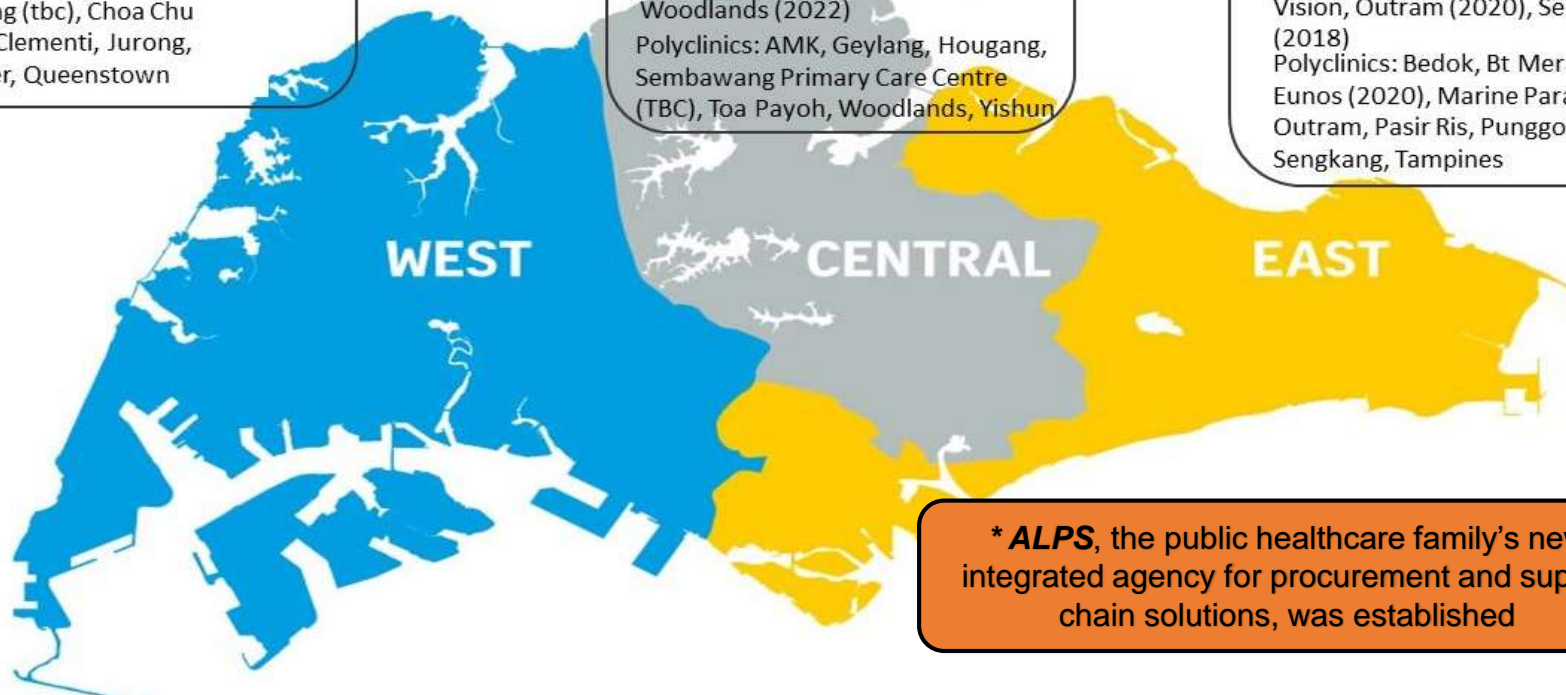


Changi General Hospital



Singapore General Hospital
SingHealth

Seng Kang GH (2018)
Community Hospitals: Bright Vision, Outram (2020), Seng Kang (2018)
Polyclinics: Bedok, Bt Merah, Eunos (2020), Marine Parade, Outram, Pasir Ris, Punggol, Sengkang, Tampines



* **ALPS**, the public healthcare family's new integrated agency for procurement and supply chain solutions, was established

Healthcare transformation journey has already started...

3) Social-Health integration: Bringing social care and healthcare closer together

Singapore Budget 2018: Social, healthcare services for the elderly to fall under MOH

The Straits Times
2018, Feb 19.



The Government will also be reviewing the Eldershow scheme, with an update expected later this year. PHOTO: DUS VINCERY JR FOR THE STRAITS TIMES



Integration of health & social care



Beyond reactive to proactive care



Community Network for Seniors

What is it?

Pilot to form networks of community partners in a few areas, and coordinate local services to keep seniors active and engaged

- Connect healthy and mobile seniors to a wide range of community activities
- Help discover and manage health conditions early
- Target and coordinate health and social support for seniors to age better in place

Beyond institution to person

[Return to Contents](#)

Healthcare transformation journey has already started...

4) Closer collaborations across public, private and VWO sectors

Singapore

Social services sector aims to strengthen service delivery with two new digital initiatives



CHANNEL NEWSASIA

Channel News Asia 2018, Jul 24.



- Social Service Navigator is an interactive online platform and mobile portal that consolidates information on social service providers, programmes and resources all over Singapore.



- iShine Cloud provides a suite of integrated IT cloud services specific to the charity sector, which VWOs can enjoy at subsidised rates.

Healthcare transformation journey has already started...

5) Healthy living everyday, everywhere



- 278 out of 643 RC zones with weekly HPB exercise.
- Since Apr 2017, over 6,000 seniors in 50,000 attendances
- More than 1,400 participated more than 12 times



Every doctor, every patient...every visit

Exercise is Medicine aims to make physical activity and exercise a standard part of a disease prevention and treatment paradigm in Singapore, improving community health and reducing long-term health care costs.



[Return to Contents](#)

Healthcare transformation journey has already started...

6) Preventive care and annual preventive home visits

More help from early 2018 for people with mental health issues, who aid peers, back into workforce

The Straits Times 2017, Sep 8.



New 11 support workers (left) to a peer helper speaking to a student at a booth at Jansene's Week held at Raffles Institution in August (left). PHOTO: ST PHOTO

Regular visits a key pillar in prevention of elders' suicide

The Straits Times 2017, Jan 11.



Simple, low-key and regular visits by volunteers can be the first step in getting the isolated elderly to take part in social activities, says Mr Tan Chuan Jin. The Health Promotion Board is also teaching seniors social-emotional and self-care skills and how to seek help if necessary. ST FILE PHOTO

SINGAPORE

The Straits Times 2017, Mar 8.

Emphasis on preventive care is the way to go



having his blood pressure checked.

MOH steps up disease prevention amid ramp-up of primary care

FRID, MAR 10, 2017 - 5:50 AM

The Business Times 2017, Mar 10.

CLAIRE HUANG ✉



Along with the growth in healthcare sector comes the need for some 9,000 additional staff for new facilities and services in the public healthcare and aged care settings. ST PHOTO: ALPHAVISUS/STPH

Healthcare transformation journey has already started...

7) Providing accessible care that bridges across health settings

TODAY Opinion

MENU ▾

Integration of healthcare services paramount as Singapore ages

Today News 2018, Jul 26.

By GAN KIM YONG



Health Minister Gan Kim Yong (centre) says that with changing demographics and increasingly complex healthcare needs, care integration is paramount in providing holistic and patient-centric care. TODAY file photo

Hospital-to-Home programme has helped around 8,000 patients

The Straits Times 2018, Feb 2.



Health Minister Gan Kim Yong greeting seniors from nursing homes who performed in the opening performance of the inaugural Global Conference on Integrated Care 2018 at the Resorts World Convention Centre in Sentosa. ST PHOTO: FELICIA CHOO

Hospital-to-Home (H2H):

- Supports transitional care through discharge planning and care coordination

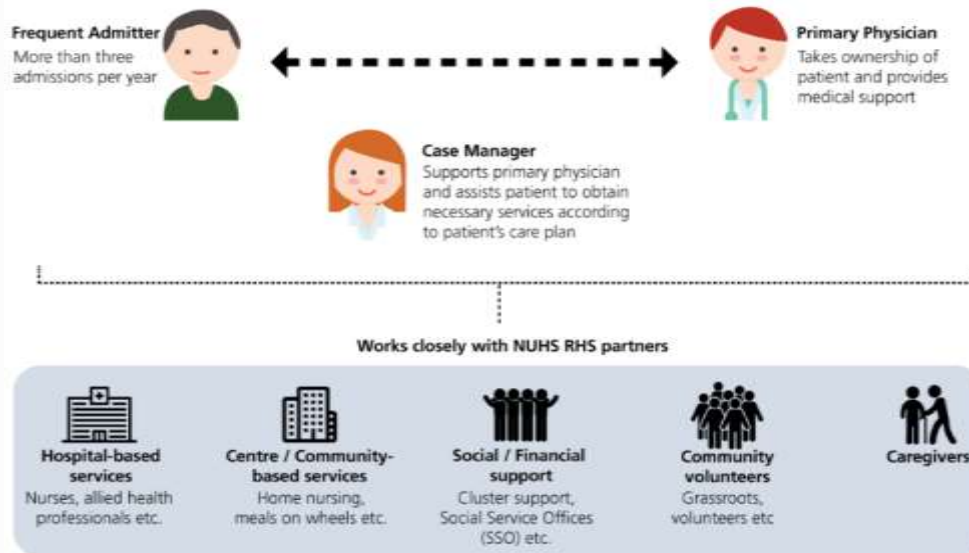
[Return to Contents](#)

Healthcare transformation journey has already started...

7) Providing accessible care that bridges across health settings

Outpatient-to-community (O2C) (as a refinement and continuation of RHS P3/P4):

- Facilitate right siting of patients from SOC to primary care (PCN, FMC, etc.)
- Promote chronic disease management in community
- Close to 15,000 patients have benefitted from RHS Right Siting & Share Care programmes between Apr 2014 – Jun 2017



NUHS-RHS Integrated Interventions and Care Extension (NICE) Programme



Community Right-Siting Programme (CRiSP)



Delivering On Target (DOT) Right Siting Programme

[Return to Contents](#)

The National Pharmacy Landscape study was commissioned to help address these challenges ...



The study shaped the **National Pharmacy Strategy (NPS)**:
*A transformation programme to make pharmacy services **accessible, affordable and quality** focused, giving patients **safer and more integrated** care*

[Return to Contents](#)

The National Pharmacy Strategy



[Return to Contents](#)

In alignment with Healthcare 2020 and beyond, the National Pharmacy Strategy envisions that:



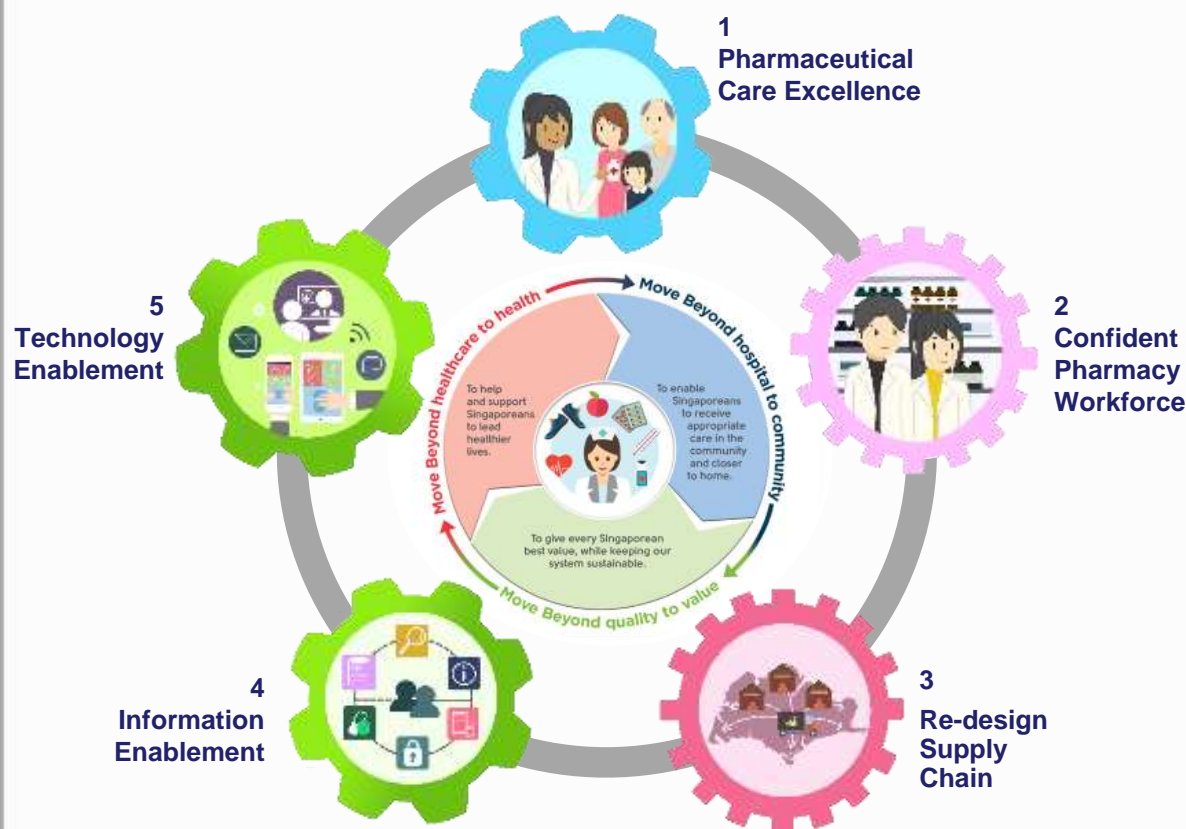
Necessary medications and services are **affordable** for all patients / consumers who require them.

Patients / consumers have **timely, accessible** medications and pharmacy expertise, at each point of care.

Pharmacy services focus on **quality** by promoting **health** and **preventive care** within the community, ensuring **safe and effective** medication use and delivering **integrated care** across all settings.

[Return to Contents](#)

The National Pharmacy Strategy (NPS) has 5 key thrusts that align to the key shifts in the healthcare transformation strategy



Pharmaceutical Care Excellence

Enhancing pharmacy services that bring health and value for everyone in our community

We Care



Confident Pharmacy Workforce

Providing a skilled, future ready and innovative pharmacy workforce

Re-design Supply Chain

Delivering seamless, convenient, accessible, affordable and safe medications at every point of care



Information Enablement

Empowering people to get the best out of their medications and achieve care goals

Technology Enablement

Delivering seamless and effective transition of care across all care settings through technology as an enabler



[Return to Contents](#)

Pharmaceutical Care Excellence

1.1 Establish the role of pharmacy in the community care setting

Patients and consumers have increased access to trusted pharmacy services within community care, from receiving guidance and support on preventive health through to managing long term conditions.

1.2 Improve drug stewardship in non-acute care settings

Community pharmacy services will ensure that medication interventions are coordinated so that patients / consumers receive safe and effective use of medications to improve their health outcomes.

1.3 Establish collaborative models of care for medication reconciliation

Healthcare teams work in partnership with patients, empowering them to actively manage their medication list to get the best health outcomes.

1.4 Implement a clinical governance framework for medication management

A clinical governance framework supports medication management services to deliver care that is patient-focused, standards driven and consistent.

1.5 Promote pharmacists as part of the multidisciplinary healthcare team

Patients receive holistic care delivered by coordinated, integrated teams, which include pharmacy professionals, to deliver a seamless experience and engage patients and families along the care journey.

Confident Pharmacy Workforce

2.1 Implement Advanced Practice Framework for pharmacists

A competency framework to define the scope of practice and the skills required for development of advanced pharmacy practitioners.

2.2 Establish pharmacy residency programmes

Training for development of specialist pharmacists to provide specialized pharmaceutical care services.

2.3 Enhance pre-registration pharmacist training programme

A holistic programme that integrates experiential learning across settings for development of pharmacists at entry-level.

2.4 Develop and train pharmacy technicians

Developmental pathway to strengthen the core competencies of pharmacy technicians from entry to advanced levels.

2.5 Build up manpower capabilities for community care setting

Manpower capabilities will be developed to support community care practices.

2.6 Build capability in collaborative prescribing

Enhance the role of pharmacists as part of multi-disciplinary team-based care.

Re-design Supply Chain

3.1 Centralise procurement, packaging, compounding and distribution

Consolidating operational functions to drive efficiencies and economies of scale, giving patients and consumers affordable and readily available medications.

3.2 Deliver medications when patients need it, where patients need it

Patients / consumers have timely, convenient access to medications supported by expertise and advice from pharmacy services.



Information Enablement

4.1 Deliver a common platform to stimulate and share clinical, practice-based research and innovation

Sharing research, innovations and new ways of working will stimulate Pharmacy to address challenges in the healthcare landscape and transform practice to deliver better standards of care.

4.2 Increase consumer and patient access to contextualised health information and education

Access to personalised health information resources will empower patients and consumers to proactively manage their medications and health.

4.3 Establish a National Drug Formulary (NDF)

A national comprehensive resource to establish standardised and safe use of medications supported by best clinical practices.

Technology Enablement

5.1 Standardise drug terminology and code structures for seamless communication and accurate transfer of information

Standardised terminology and code structures will enable care providers to communicate more easily, ensuring a safe and seamless transition between care settings for patients.

5.2 Provide a common pharmacy system for harmonised medication dispensing and implement a national charging engine to streamline the medication-related billing process

A common pharmacy system will harmonise dispensing and billing, enabling pharmacists to deliver a seamless, more cost-effective service.

5.3 Enhance telepharmacy services

Telepharmacy will deliver quality pharmaceutical care to patients in a manner that is convenient for them, at their point of need.

NPS Initiatives

[Return to Contents](#)

National Pharmacy Vision ● Medications and services are affordable for all ● Timely and accessible medications and expertise at each point of care ● Focus on quality health promotion and prevention through effective medication use and integrated care ● Delivering the **MOH Vision of Beyond Hospital to Community – Beyond Quality to Value – Beyond Healthcare to Health**

Affordable & accessibility to medication

Safe and effective use of medication

Quality health and preventive care



Pharmaceutical Care Excellence

People

Confident & competent Pharmacy Workforce

Process

Re-design supply chain & streamline processes

Information

Enabler to empower healthcare professionals & patients

Technology

Enabler to deliver seamless care & innovations

Enhance policy to improve model of care

[Return to NPS Initiatives](#)



NPS Advisory Committee



TERMS OF REFERENCE

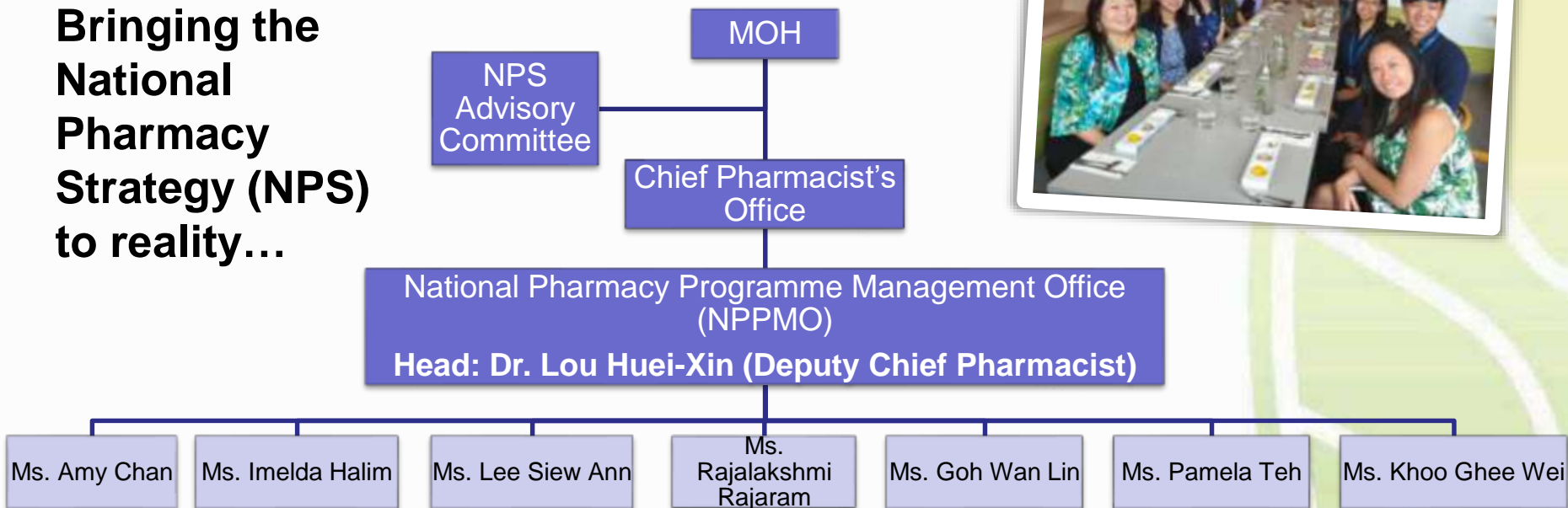
- To provide independent and objective advice to MOH on National Pharmacy Strategy, which includes:
- Overseeing the vision, mission and objectives for the National Pharmacy Strategy (NPS)
 - Ensuring alignment and synergy of NPS projects with other national policies and current healthcare needs
 - Advising and providing support on other pharmacy or medication related initiatives to achieve synergies
 - Providing overarching guidance and as advisory role to the NPPMO and the Chief Pharmacist Office

[Return to Contents](#)



National Pharmacy Programme Management Office

Bringing the National Pharmacy Strategy (NPS) to reality...



- To deliver the projects to achieve the National Pharmacy Strategy vision in a timely manner
- To ensure NPS projects maintain the business focus of aligning with the NPS vision and objectives
- To establish the appropriate control structure and governance to deliver the NPS projects using best practices across all disciplines
- Communicate and educate project teams in the NPS project lifecycle methodology from initiation to execution and evaluation, across all lines of business
- To ensure the NPS project resources, from manpower to budget, are appropriately equipped

[Return to Contents](#)

Thrust 1

Pharmaceutical Care Excellence

Pharmacy services that bring Health and Value for everyone in our Community



[Return to NPS Initiatives](#)

Affordable & accessibility to medication

Safe and effective use of medication

Quality health and preventive care



Pharmaceutical Care Excellence

People

Processes

Information

Technology

- Pharmaceutical Care Services
- Improve Drug Stewardship
- Collaborative Models of Care for Medication Reconciliation
- Clinical Governance Framework for Medication Management
- Pharmacists as Part of Multidisciplinary Healthcare Team

High quality & streamline processes

Enabler to empower healthcare professionals & patients

Enabler to deliver seamless care & innovations

Enhance policy to improve model of care

[Return to NPS Initiatives](#)



1.0 Pharmaceutical Care Services Framework

Pharmacists provide services beyond traditional medication dispensing services

Pharmaceutical Care Services (PCS)

Medication Reconciliation

Adherence and knowledge assessments

Medication Optimisation

Patient Counselling



Guidelines to promote standardised structured services

- Ensure consistent quality and value pharmaceutical care services across care settings
- Harmonised service evaluation measures to track service impact

Available at <https://www.moh.gov.sg/hpp/all-healthcare-professionals/guidelines>



ID	Medication Name	Instructions	Duration / Qty	Facility
18-Aug-2018 - Ordered - Dr. V. Lee	FRUSIPRE 40MG TABLET	80MG - ORAL - 2 TIMES A DAY	4 / 80 TABLET	NUH
	ATENOLOL 50MG TABLET	50MG - ORAL - 2 TIMES A DAY	4 / 50 TABLET	NUH
	ESALAPRI 80MG TABLET	80MG - ORAL - EVERY MORNING	4 / 80 TABLET	NUH
10-Sep-2018 - Ordered - Dr. S. Wong	FRUSIPRE 40MG TABLET	80MG - ORAL - 2 TIMES A DAY	4 / 80 TABLET	NUH
	ATENOLOL 50MG TABLET	50MG - ORAL - 2 TIMES A DAY	4 / 50 TABLET	NUH
	ESALAPRI 80MG TABLET	80MG - ORAL - EVERY MORNING	4 / 80 TABLET	NUH
10-Sep-2018 - Ordered - Dr. T. Lee	ESPERT 800.00 (INJECTION) 150/150, 150 ML	80 mg/ml - SC Injection - 2 TIMES A DAY	4 / -	NUH

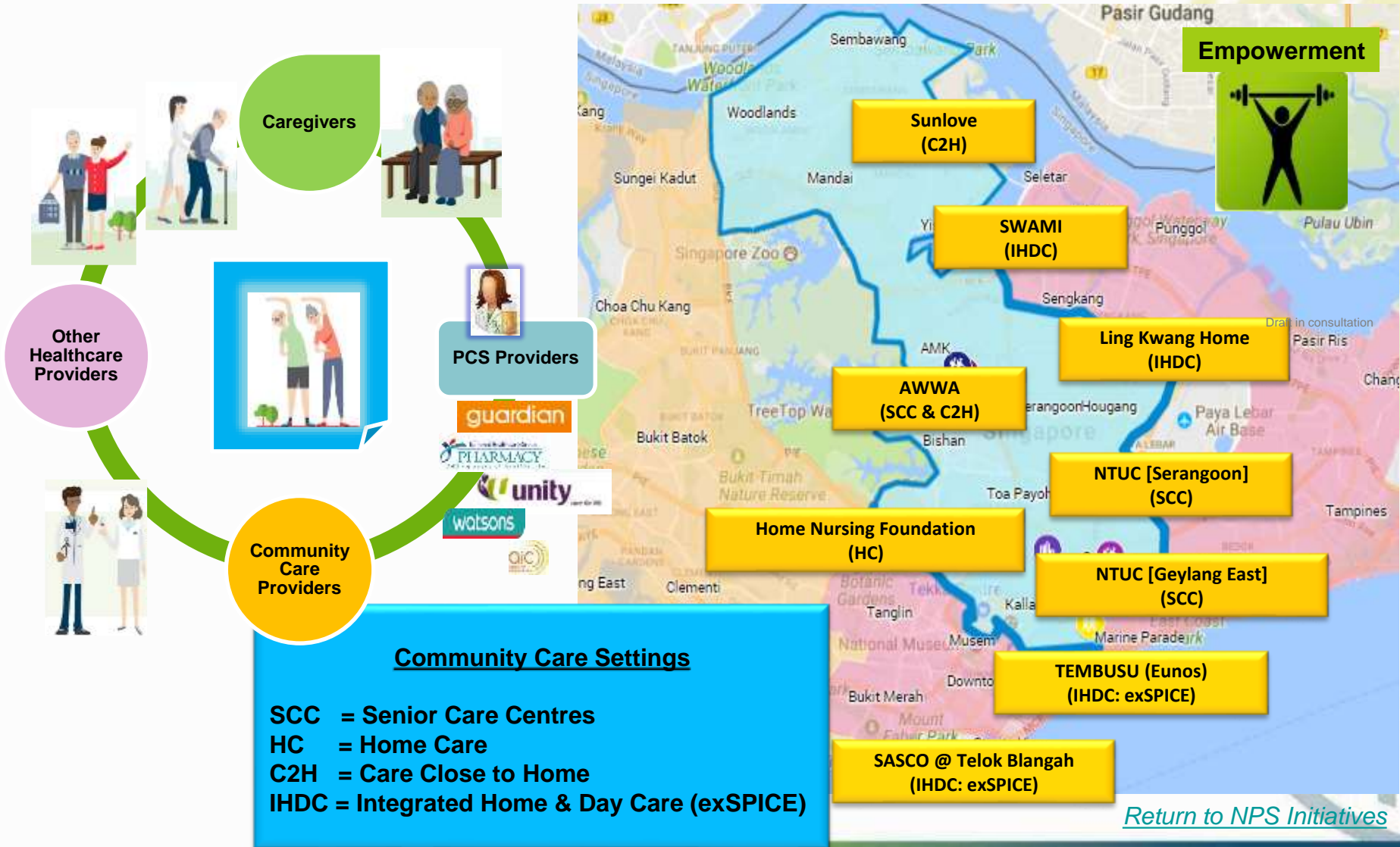
- Leverage National Electronic Health Records (NEHR) to facilitate seamless communication and transition of care
- Ensure Patient's Medication List and Pharmaceutical Care Plan are shared across healthcare settings

[Return to NPS Initiatives](#)



1.0 PCS Proof of Concept Study

The short term study addressed medication related problems in > 60% of seniors.



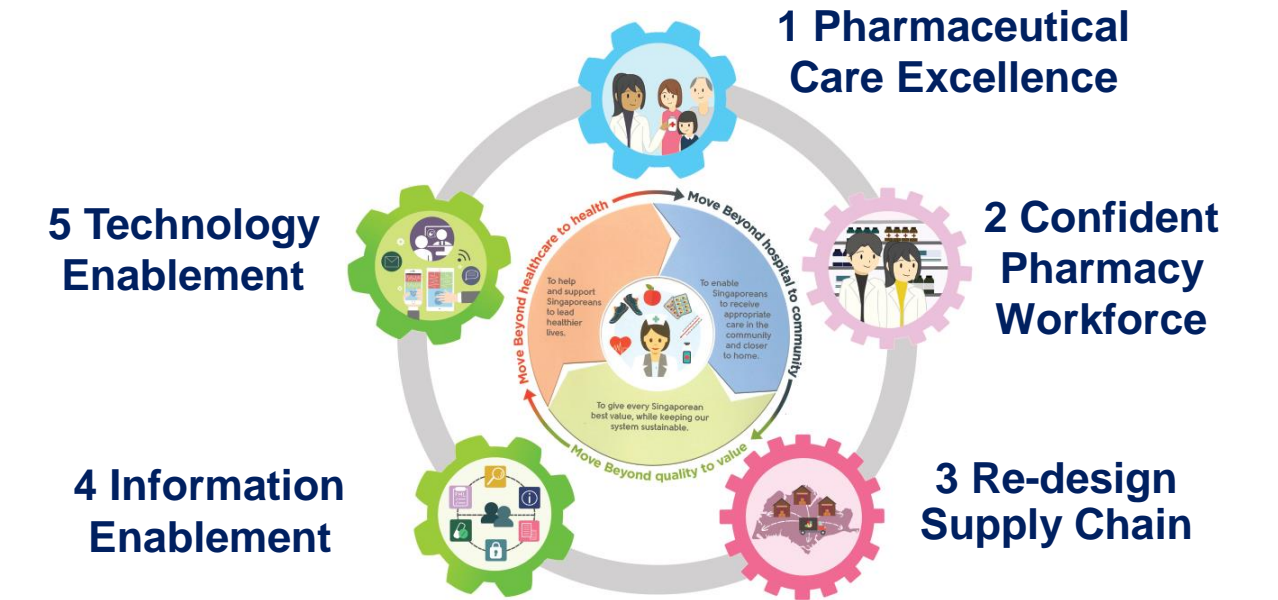


Introduction

The National Pharmacy Strategy (NPS) is a 10-year plan to transform the delivery of pharmaceutical care and medication management in Singapore. Establishing the model of person-centric pharmaceutical care in the community care setting is an approved initiative that will support MOH's Beyond Hospital to Community.

A proof-of-concept study involving community pharmacists delivering Pharmaceutical Care Services (PCS) to seniors in different community-based care service facilities within the central region was conducted.

The National Pharmacy Strategy



Objectives

The key objectives of the study were to identify medication-related issues in the community and to establish PCS workflow in empowering seniors and caregivers to manage their medications independently and safely.

Method

1 to 1

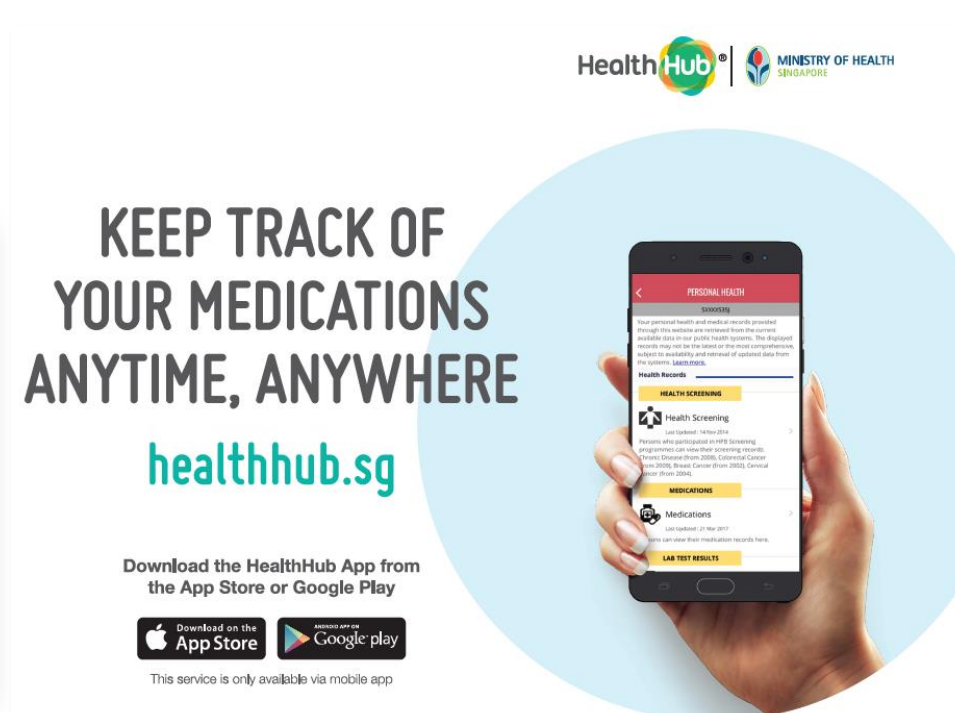
Pharmacist consultation with seniors and/or caregivers



- Understand the challenges faced by seniors and caregivers with medications given by various prescribers when they are at home
Engage seniors and caregivers to develop a personalised plan to take their medications
Coordinate with multi-disciplinary care team across care settings
Follow-up with seniors and caregivers until all medication-related problems were resolved. If no MRP, seniors were discharged from study.

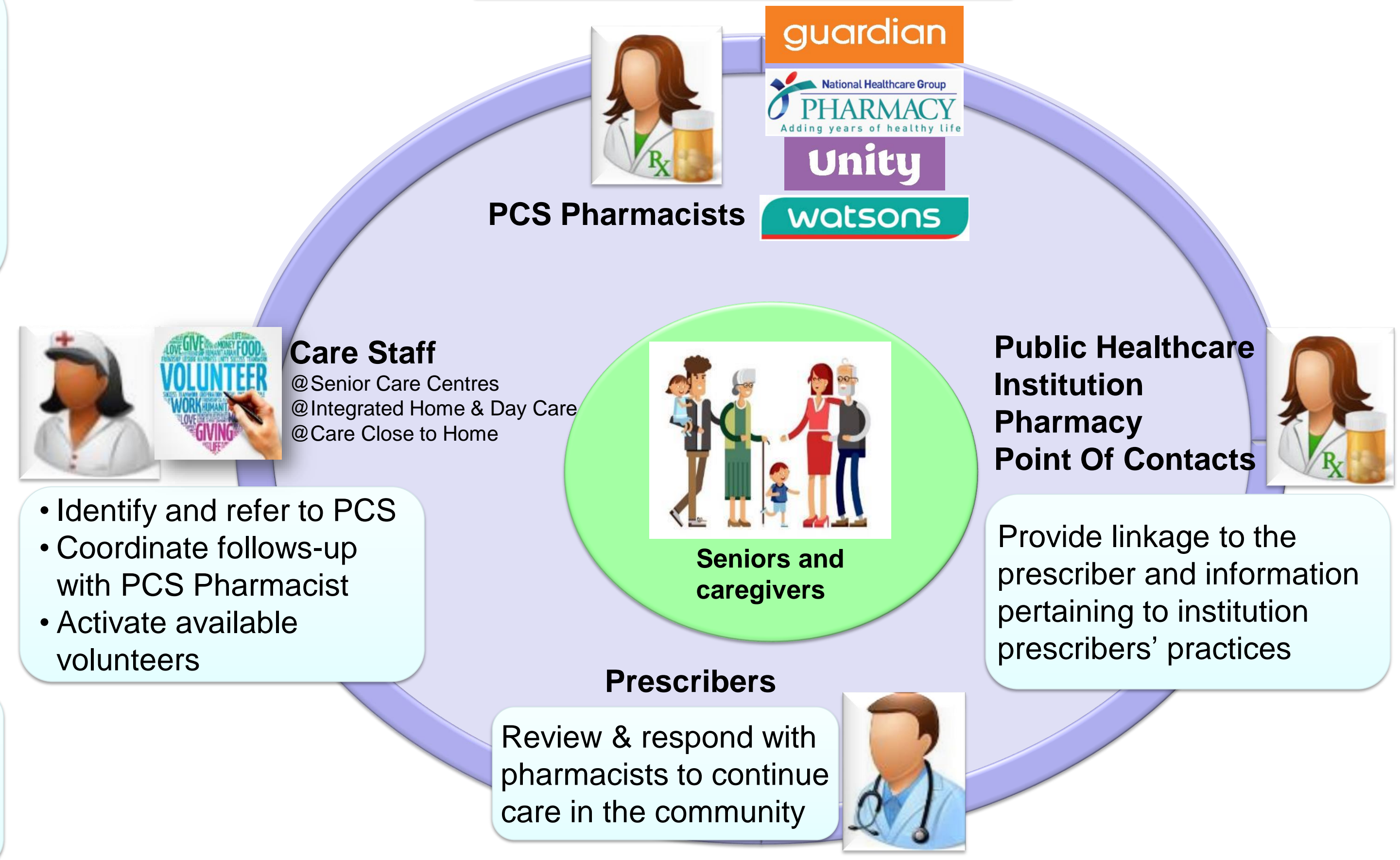
Table showing Medication History with columns for IT List, Medication Name, Instructions, Duration / Qty, and IT Facility.

Table showing Patient's Medication List with columns for Medication Name, Frequency, and other details.



- Leverage National Electronic Health Records (NEHR) to securely communicate seniors' medication list and plan with healthcare professionals across care continuum
Empower seniors and caregivers with information about their own medications (both hardcopy printout and electronic HealthHub medication list were shared)

Person-Centred PCS Model



Results

Summary of results: 155 seniors in 8 locations benefited, average age 76, 61% medication-related problems, 227 MRPs, 43% resolved by education/counseling, 17% referred to center staff, 14% referred to prescriber.

Clients' Stories

Three client stories: Uncle K (81 yr old male) with hand stretching issues, Mdm Y (72 yr old female) with eye drops, and Uncle A (82 yr old male) with high blood pressure.

Feedback

Feedback from Seniors & caregivers, Centre doctor, Centre staff, and PCS Pharmacist regarding the service.

Conclusion

The study showed that seniors and caregivers experienced challenges in handling medications which could impact medication safety. These challenges could be addressed by empowering them with tailored solutions to meet their medical-social needs and communicating with their prescribers.

Next step: A 3-year island-wide study will commence from 2020 to establish sustainable solutions in empowering seniors and caregivers to manage their medications independently and safely within the community.

Beyond Hospital to Community

Ensuring that Singaporeans receive good healthcare closer to home and support to age well in the community



Pharmaceutical Care Services (PCS)



Delivering Pharmaceutical Care Services to empower and support seniors & caregivers to manage medication independently in the community

Next step: 3-year study from 2020 - 2022

Objectives

- ✓ Develop customized and sustainable solution to address seniors' medication related problems in accordance to their medical and social needs
- ✓ Strengthen integrated care link with seniors' healthcare team across care continuum
- ✓ Create multiplier effect by involving lay extenders to help seniors with their medications

Who?

- ✓ Seniors with ≥ 5 chronic medications, or ≥ 12 doses per day; and
- ✓ Seniors who have appointments with ≥ 3 specialist outpatient clinics, polyclinic or GP; or
- ✓ Seniors and/ or caregivers who need help managing medication

Where?

- ✓ 2,000 seniors enrolled in centre-based care services island wide

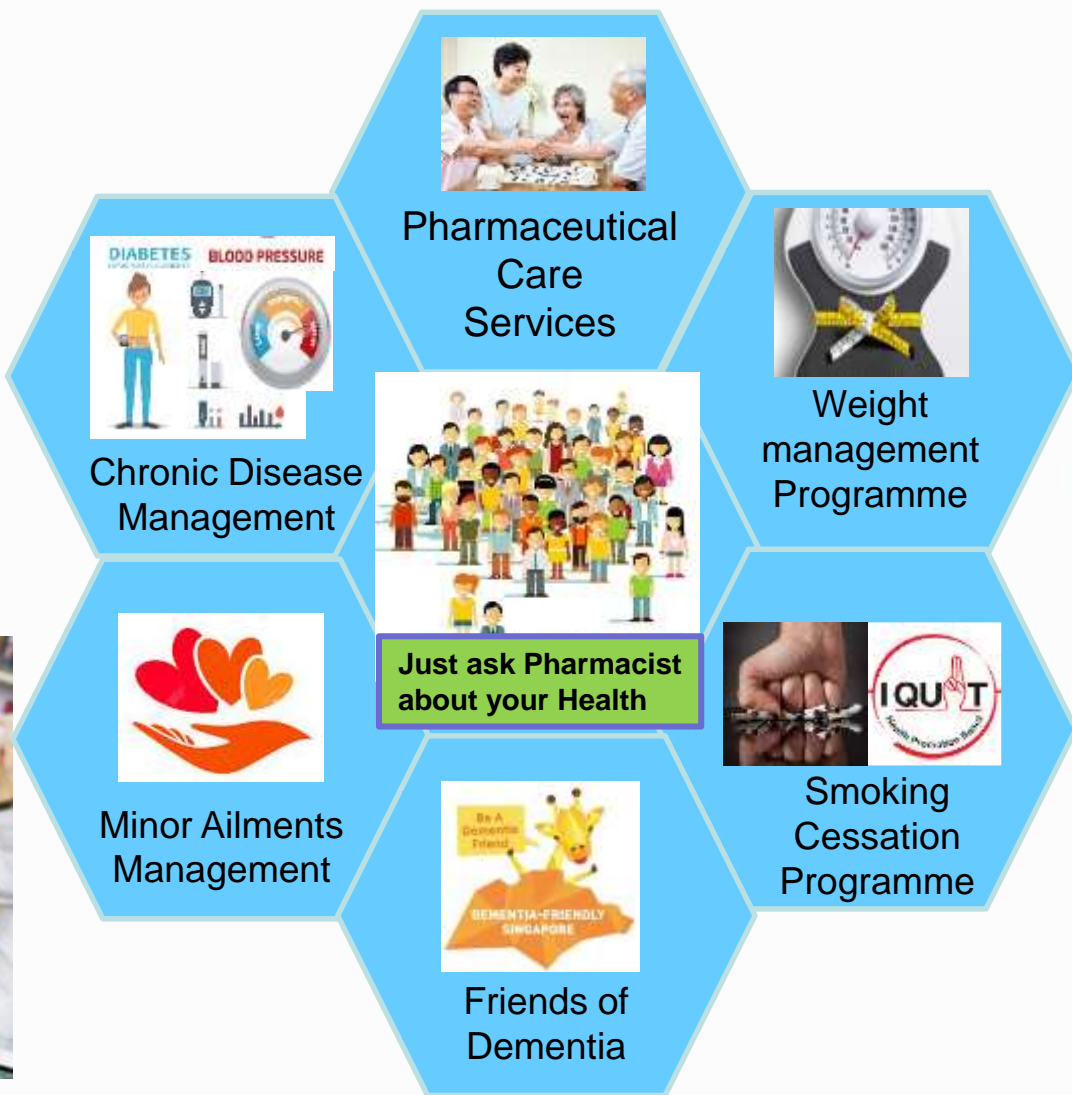


Return to NPS Initiatives



1.1 Role of Pharmacy in the Community

How may I help you?



For Consumers:

- ✓ Trusted pharmacy services
- ✓ ↑ access for community care
- ✓ Provide guidance & support on preventive health and chronic disease management

Pharmaceutical Society of Singapore



[Return to NPS Initiatives](#)



1.2 Improve Drug Stewardship in Non-acute Care Settings

Community pharmacy services ensure that medication interventions are coordinated so that patients/consumers receive safe and effective use of medications to improve their health outcomes.

Stewardship
accreditation



Across care settings, patients receive RIGHT drug, dose, time & duration



Developing Guidelines for drug stewardship programmes

Educating healthcare professionals in non-acute settings to **implement drug stewardship into daily practice**

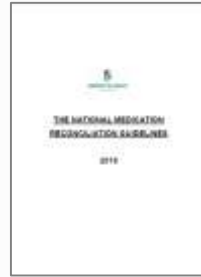


[Return to NPS Initiatives](#)



1.3 Collaborative Models of Care for Medication Reconciliation

National Medication Reconciliation Guidelines
(launched Dec 2018)



Available at
<https://www.moh.gov.sg/resources-statistics/medication-safety>



Resources to engage and empower patients to manage their medications.

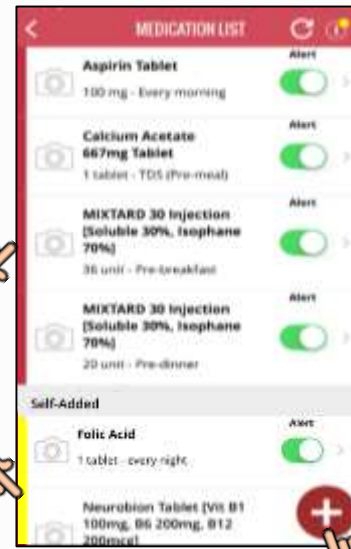


Secure IT platform for sharing patient medication information with patients, caregivers and healthcare professionals.

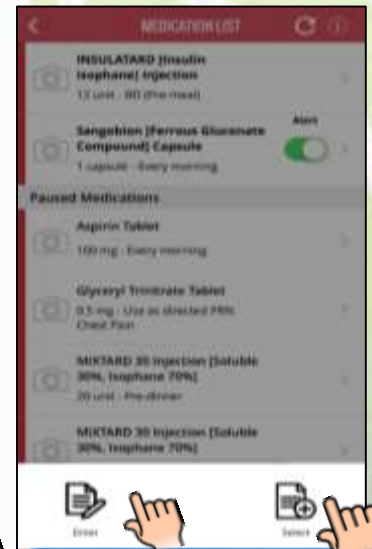
Sharing of patient medication list (PML) from NEHR PML module is now available. HCP, including pharmacy staff, can share PML with patients via the HealthHub mobile app.



Red bar indicates medication in the downloaded PML from NEHR PML module.
Yellow bar indicates medication in the Self-Added medication list.



Users can add their medications to their medication list.



Add medication(s) by self entering details or selecting from Prescription Records.

[Return to NPS Initiatives](#)



1.4 Implement a Clinical Governance Framework for Medication Management

A clinical governance framework supports medication management services to deliver care that is patient focused, standards driven and consistent.



Establishing **national policies** for medication management to ensure effective clinical governance and patient safety



Setting **national standards** for medication management to implement clinical governance and patient safety



Embedding governance and quality standards into **daily clinical practice**



Setting outcomes to achieve **positive patient experience**

[Return to NPS Initiatives](#)



1.5 Promote Pharmacists as Part of Multidisciplinary Healthcare Teams

Patients receive holistic care delivered by coordinated, integrated teams, that include pharmacy professionals, to deliver a seamless experience and engage patients and families along the care journey.

Define role of pharmacists and their expertise within multidisciplinary teams

Educate and train pharmacists on roles and responsibilities

Develop outcome measures for pharmaceutical care to help establish clinical priority models of care

Execute models of care (cross-cluster) and evaluate outcomes

“Seamless patient experience”



[Return to NPS Initiatives](#)

Thrust 2

Confident Pharmacy Workforce

Skilled, future ready and innovative pharmacy workforce



[Return to NPS Initiatives](#)

Affordable & accessibility to medication

Safe and effective use of medication

Quality health and preventive care



Pharmaceutical Care Excellence

People

Process

Information

Technology

Confident & competent Pharmacy Workforce

- Advanced Practice Competency Framework
- National Pharmacy Residency Programmes
- Enhanced Pre-registration Training
- Developing and Training Pharmacy Technicians
- Build Up Manpower Capabilities for Community Care Setting
- Collaborative Prescribing Practice



Enhance policy to improve model of care

[Return to NPS Initiatives](#)



Overview: Pharmacist Workforce Development

**2.1
Advanced
Practice
Framework**

**Entry Level
Framework**

C **Advanced Generalist Practitioner**

- Wide variety of patients and diseases with complex healthcare issues

A **Generalist Practitioner**

- Wide variety of patients and diseases
- Minor ailments to more complex conditions

D **Advanced Focused Practitioner**

- Focused patient population with medically complex therapies and/or technology

B **Focused Practitioner**

- Wide variety of diseases in unique setting or population or a narrow disease focus

**2.2
Pharmacy
Residency
Programmes**

**Entry Level
Framework**

**2.3 Enhance Pre-Registration
Pharmacist Training Programme**

[Return to NPS Initiatives](#)



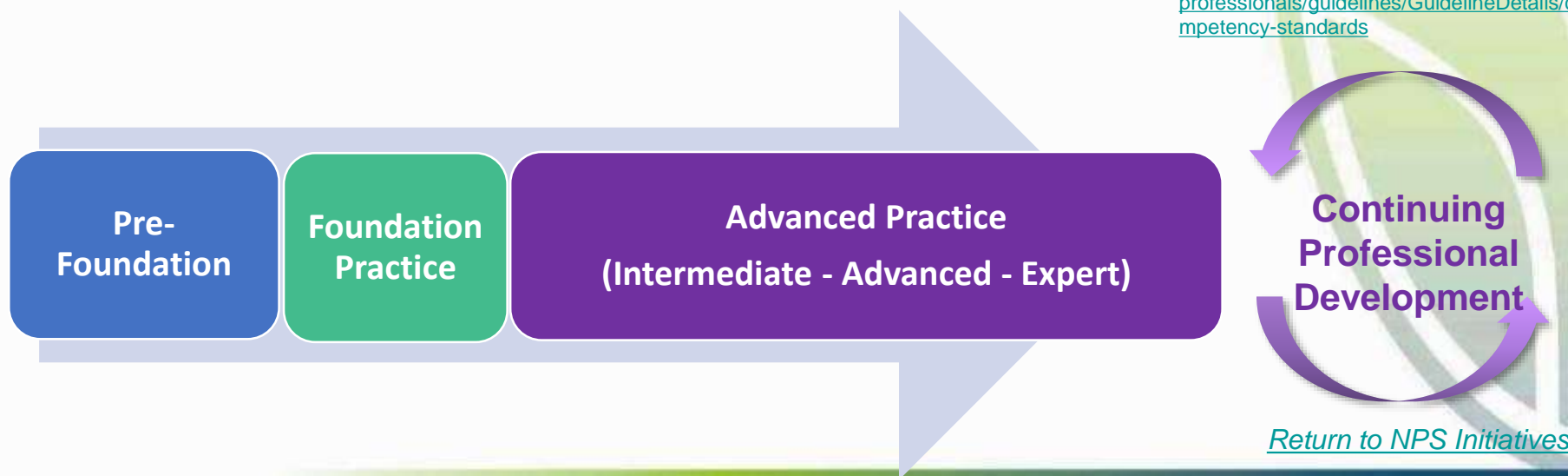
2.1 Advanced Practice Competency Framework

Empowering pharmacists to take charge of their professional development

- Provide clarity on scope of practice and the knowledge, skills and attributes required for advanced pharmacy practitioners
- Facilitate effective use of resources for training and development of advanced pharmacy practitioners
- Empower pharmacists to take greater responsibility for their own development and to promote a culture of life long learning



Available at
<https://www.moh.gov.sg/hpp/all-healthcare-professionals/guidelines/GuidelineDetails/competency-standards>





2.1 Advanced Practice Competency Framework

Enabling pharmacists to use APF for professional development

Portfolio training workshops

- For pharmacists to use portfolio for competency-based learning and assessment
- To equip healthcare institutions with capabilities to develop and implement a coherent portfolio framework for development of pharmacist workforce



Portfolio Building Toolkit

- To help pharmacists to effectively prepare a practice portfolio
- Shares examples of blueprint for portfolio building and evidence across competency domains



[Return to NPS Initiatives](#)



2.2 National Pharmacy Residency Programmes

R1 RESIDENCY

- **Broad-based residency** to develop professional and clinical competencies in the delivery of patient-centred and high quality pharmaceutical care

R2 RESIDENCY

- **Specialty residency** to develop accountability, practice patterns and expert knowledge, skills, attitudes, and abilities in the specialised areas of pharmacy practice

At least
One Year
of
Specialty
Practice
Experience

SPECIALIST ACCREDITATION

Cardiology Pharmacy

Geriatric Pharmacy

Infectious Diseases Pharmacy

Oncology Pharmacy

Psychiatric Pharmacy

NEW

Critical Care Pharmacy

NEW

Paediatric Pharmacy

Of the 28 enrolled pharmacists, **8 R1** and **11 R2** residents across 5 different specialties have completed training as at June 2019.

Additionally, the **portfolio-based R2 exit assessment framework** has been implemented for the July 2018 cohort and a total of three R2 residents have successfully passed the exam as at August 2019.



[Return to NPS Initiatives](#)



2.2 National Pharmacy Residency Programmes

Quality Training & Assessment Framework

- **NEW** Training Standards to guide training and assessment in 4 competency domains



- In-training workplace-based assessments and portfolio-based exit assessment
- Nationally funded multi-site programmes with experienced preceptors

Robust Residency Accreditation Framework

- **NEW** Programme Standards to ensure high quality training delivery and resident's well-being



[Return to NPS Initiatives](#)



2.3 Enhanced Pre-registration Training

Pre-Registration Pharmacist Training Programme

In-course training (PECT*)

Community Care

- Retail pharmacy or
- Polyclinic pharmacy

Ambulatory Care / Indirect Patient Care

- Specialty centre or intermediate and long-term care (ILTC) facility
- Pharmaceutical industry or regulatory body

Acute Care

- Hospital inpatient pharmacy

Ambulatory Care

- Specialty centre or Hospital outpatient pharmacy

Post-course training

** Pre-registration Pharmacist Training Programme consists of 4 x 12-week rotations conducted at various accredited training sites, with the 2 x 12-week Pre-Employment Clinical Training (PECT) conducted during the 4th year of NUS pharmacy undergraduate programme*

[Return to NPS Initiatives](#)



2.3 Enhanced Pre-registration Training

Enhancement of Pre-Registration Training Programme through development of Entrustable Professional Activities (EPA) framework

- Formation of Pharmacy EPA Workgroup in Jan'18 to develop standards/ guidelines for education and training for entry-to-practice pharmacists.
- To align with local and global workforce development strategies through EPA-directed education and training.



EPA Workshop on 1 March 2018



2.4 Developing and Training Pharmacy Technicians

Developing pharmacy technicians entry-to-practice to advanced level

- Ensuring minimum practice standards of entry-level Pharmacy Technicians through Entry-to-Practice Assessment Framework (in transition period since September 2018)
- Launch of Skills Framework Development for Pharmacy Support Workforce in April 2019

Skills Framework as developmental tool:

- ✓ 3 career tracks for Pharmacy Support workforce:
 - i. Patient Care Service
 - ii. Pharmacy IT and Supply Chain
 - iii. Drug compounding and Quality Management
- ✓ Understand career pathways and plan for career progression
- ✓ Choose relevant training programmes to close skills gaps



[Return to NPS Initiatives](#)



2.5 Build Up Manpower Capabilities for Community Care Setting

Development plan for community practice

- Equip pharmacists with broad-based knowledge and skills to practice community care
- Strengthening community care capabilities from preventive care to end-of-life care
- Develop community of practice for sharing of best practices and sector-wide peer support networking



[Return to NPS Initiatives](#)



2.6 Collaborative Prescribing Practice

National Collaborative Prescribing Programme



Graduation of Inaugural Cohort of the National Collaborative Prescribing Programme on 2 July 2018

Experienced public healthcare sector pharmacists, nurses to be allowed to prescribe medicines from July

They will first undergo a three-month Collaborative Prescribing Programme organised by the National University of Singapore. The inaugural intake of 38 will undergo the course on Mar 19.

A first batch of 38 people has been selected to go for training, made up of 19 pharmacists and 19 advanced practice nurses from National Healthcare Group, National University Health System and Singhealth, an MOH spokesperson said.

These pharmacists and advanced practice nurses have a minimum five years' experience - three of which are in their respective areas of practice.

Channel News Asia 2018, Mar 7.

TIME FOR NURSES, PHARMACISTS TO SHINE



From July, qualified senior pharmacists and advanced practice nurses (APNs) in the public sector will be legally empowered to prescribe medicines and order tests without the need to obtain a doctor's counter-signature, said Dr Khor. For instance, they may order a blood test for a diabetic patient.

Safeguards will be put in place to ensure safe and effective prescribing services, which will be within a "collaborative framework overseen by doctors", said the MOH.

Today Online 2018, Mar 7.

[Return to NPS Initiatives](#)



Available at <https://www.moh.gov.sg/hpp/all-healthcare-professionals/guidelines/GuidelineDetails/collaborative-prescribing>



Thrust 3

Re-design the Supply Chain

Supporting us to deliver seamless, convenient, accessible, affordable and safe medications at every point of care.



[Return to NPS Initiatives](#)

Affordable & accessibility to medication

Safe and effective use of medication

Quality health and preventive care



Pharmaceutical Care Excellence

People

Process

Information


Technology

Confident & competent Pharmacy Workforce

Re-design supply chain & streamline processes

healthcare professionals & patients

seamless care & innovations

- Centralise procurement, packaging, compounding and distribution
 - Deliver medications when patients need it, where patients need it
- 

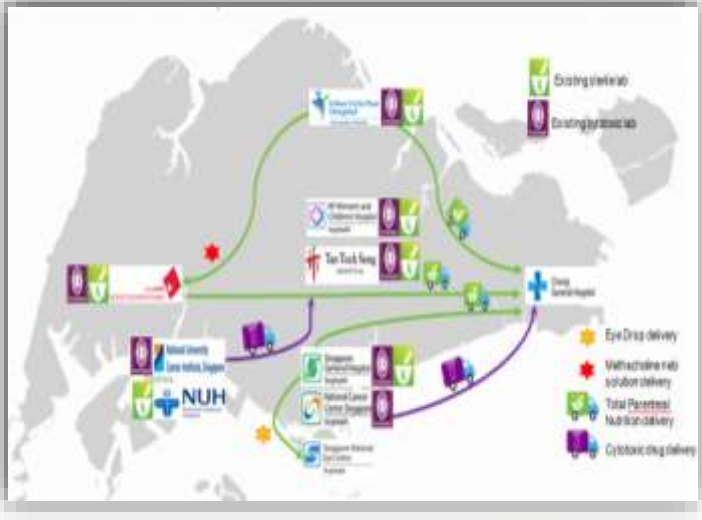
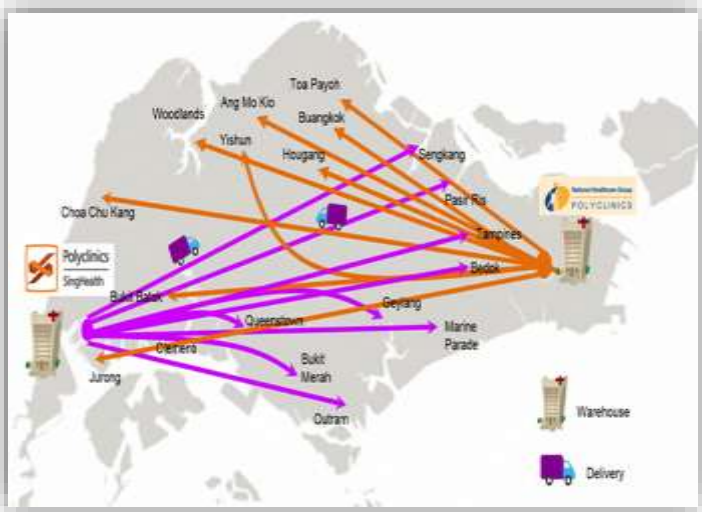
Enhance policy to improve model of care

[Return to NPS Initiatives](#)

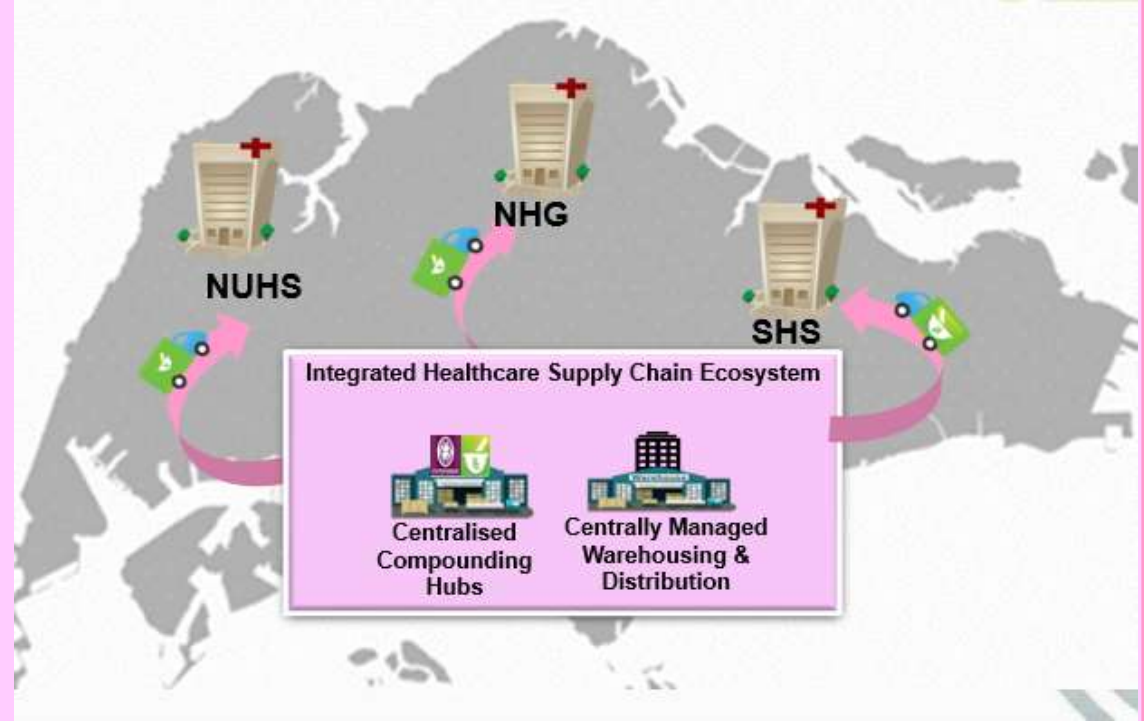


3.1 Centralised procurement, packaging, compounding and distribution

Current Landscape



Future Integrated Landscape



System-wide Benefits

Improve cost savings, efficiency & productivity

Scalable to meet increasing demands & resiliency

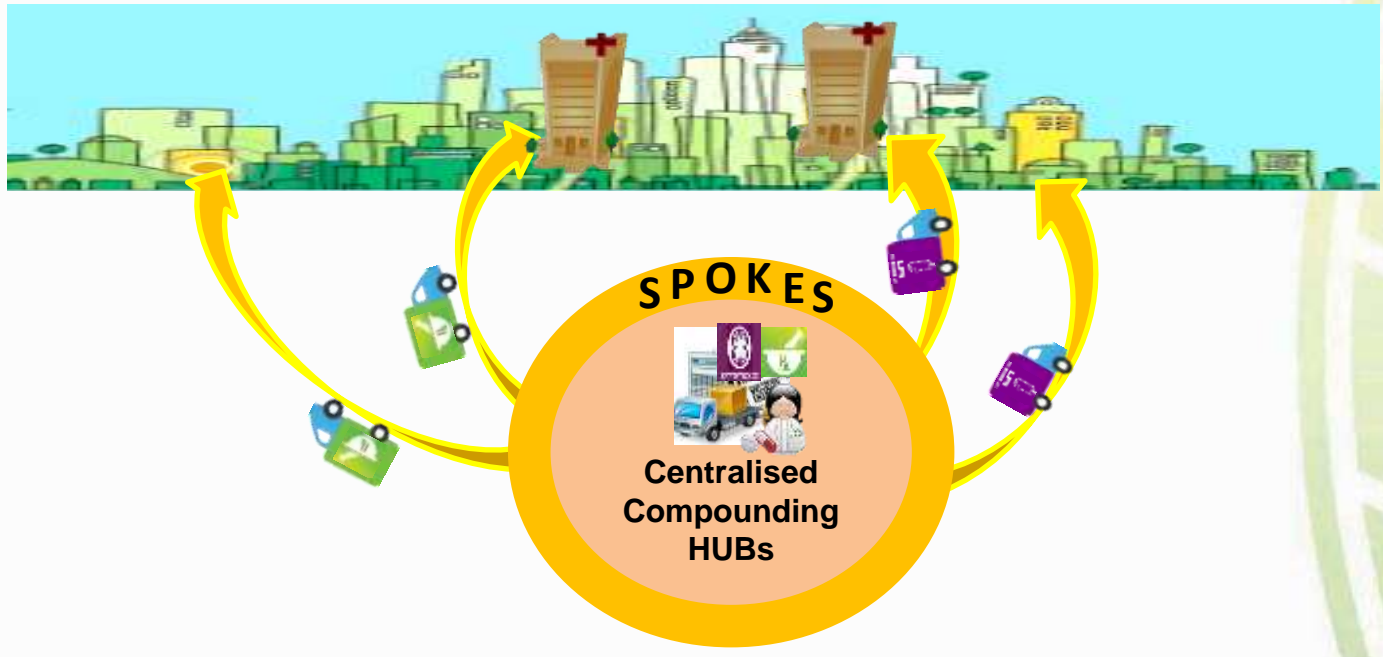
Improve overall safety, patient satisfaction & confidence




Return to NPS Initiatives






3.1 Centralised Sterile Drug Compounding Hub-and-Spoke Model

A “Hub-and-Spoke” business model to achieve **system benefits** ...



-  Improved **Medication Safety**
-  Improved **Staff Safety**
-  Build System **Resiliency & Continuity**

-  Build **National Compounding Capability**
-  Enable **Pandemic Preparedness**
-  **Cost Savings**

[Return to NPS Initiatives](#)

ESTABLISHING A CENTRALISED STERILE COMPOUNDING SERVICE

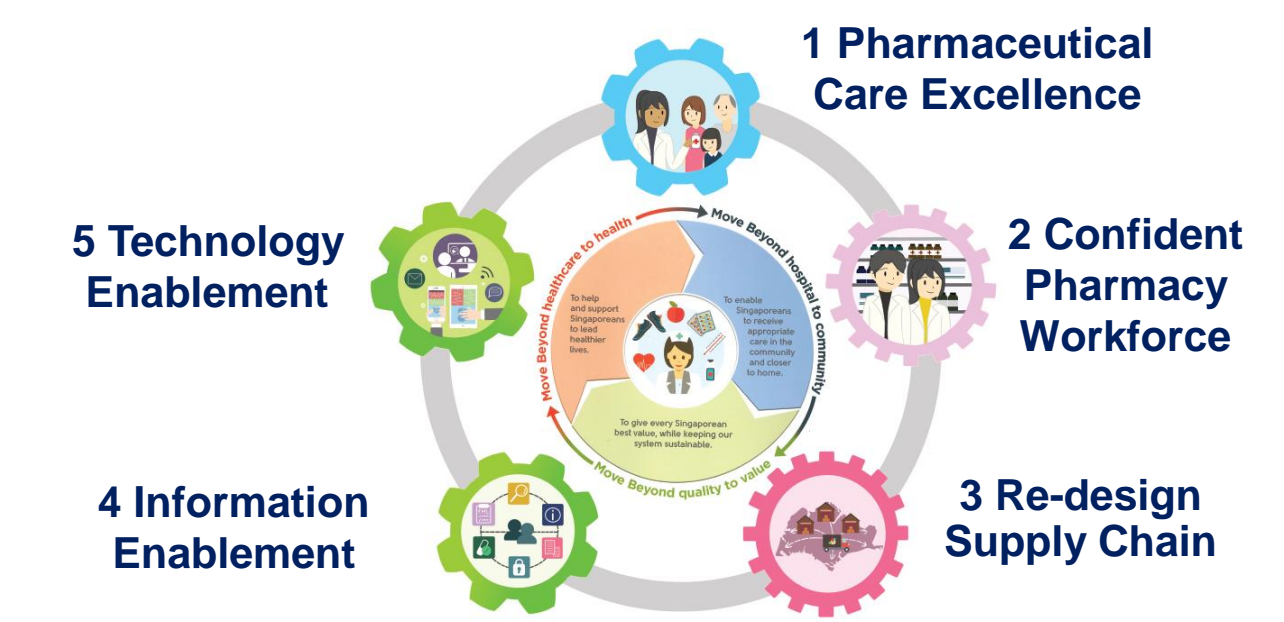
National Pharmacy Programme Management Office

Introduction

The National Pharmacy Strategy (NPS) is a 10-year plan to transform the delivery of pharmaceutical care and medication management in Singapore that was approved by the Ministry of Health (MOH).

In 2017, MOH approved the implementation of the Hub-and-Spoke compounding and distribution model to provide centralised sterile drug compounding service in the Singapore public healthcare sector. Establishing a centralised sterile compounding service is an initiative under the NPS Thrust 3, Re-design Supply Chain.

The National Pharmacy Strategy



Objectives

- Maximise economic benefits by leveraging on technology / robotics to address key concerns such as medication and staff safety, productivity, shrinking local workforce, quality assurance and evolving models of care
- Strengthen the public healthcare sector's system-level resilience to achieve continual supply of sterile compounded drug products

Method

Hub-and-Spoke Sterile Drug Compounding Model

A total of three non-cytotoxic (Fig. 1) and two cytotoxic hubs (Fig. 2) are proposed to cater to the needs of public healthcare institution. The hubs will be developed to Good Manufacturing Practice (GMP) standards to protect the interests of patients, reduce the level of risk inherent in large-scale production of drugs and achieve consistent high quality manufacturing standards.

The Pharmaceutical Inspection Co-operation Scheme (PIC/S) GMP standards is an internationally recognised quality assurance system in drug manufacturing to ensure the quality of drug products.

Risk Assessment

Sterile drug compounding is a known high risk activity. Failure Mode Effect Analysis (FMEA) has been undertaken to determine potential points of failure to the sterile compounding process and to identify possible measures to prevent/mitigate these failures. Table 1 shows the possible failure modes in the sterile compounding process and the risk priority number assigned. The continuous risk assessment approach is central to the principles of GMP.

Competency Building

In parallel, to build competency in sterile compounding, a Centralised Drug Compounding Workgroup was formed in 2017, helmed by the Chief Pharmacist of Singapore. This workgroup has also been working on the harmonisation of various components of sterile drug compounding (Fig. 3).

Fig. 1: Proposed three non-cytotoxic hubs

Fig. 2: Proposed two cytotoxic hubs



Fig. 3: Functions of the Centralised Drug Compounding Workgroup

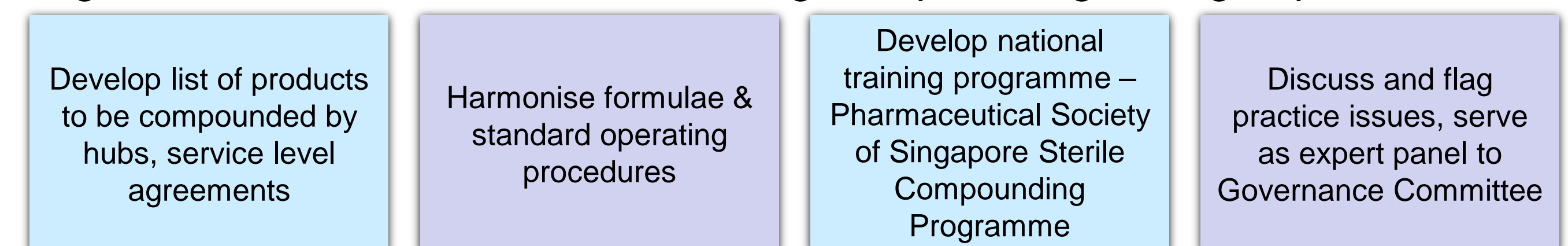


Table 1: Application of FMEA in the sterile compounding process

Processes & Sub processes	Current Practice	Failure Modes	Proximate Causes	Effects (Negative impact on patient safety)	Severity	Probability	Likelihood of Detection	Risk Priority Number
1. Handling of starting materials	<ul style="list-style-type: none"> Drugs/ infusion solutions are received by compounding lab and used with assumption that registered products meet quality standards Items are picked according to order without explicit requirement to inspect material 	<ul style="list-style-type: none"> Specifications (e.g. formulation and tolerance limits) may have been changed by the manufacturer Inconsistent quality such as batch to batch variability Material defects not detected by staff 	<ul style="list-style-type: none"> Specifications changed without notification to users No robust routine verification of incoming material quality No requirement for systematic check of starting materials. No requirement to document checks 	<ul style="list-style-type: none"> Inconsistent quality of compounded sterile preparations (CSP): potency and sterility affected 	5	1	5	25
2. Selection and handling of packaging materials	<ul style="list-style-type: none"> Packaging materials (e.g. final containers for products, over pouches for light protection) of final product are ordered from supplier based on historical practice 	<ul style="list-style-type: none"> Quality of packaging materials may vary from batch to batch Packaging materials may be changed without proper authorization 	<ul style="list-style-type: none"> No requirement to control packaging material or establish specifications for packaging material 	<ul style="list-style-type: none"> Inconsistent packaging materials may affect quality of final products, e.g. compromised container integrity may affect sterility and stability of final product, substandard over pouches may compromise light protection and hence stability 	5	2	5	50
3. Documentation control	<ul style="list-style-type: none"> Procedures are reviewed/ revised as per institutional practice Varying degrees of documentation control/ change control 	<ul style="list-style-type: none"> Procedures may be changed without established authorization process Inadequate version control Poor documentation practices e.g. erasable records, use of liquid paper 	<ul style="list-style-type: none"> No guidance for documentation control befitting manufacturing at institutional level No emphasis on traceability Lack of change control 	<ul style="list-style-type: none"> Superseded versions of protocols/procedure may still be in circulation and cause errors in production procedures Inconsistent/poor in-process documentation practices hamper investigations into faulty / substandard final products 	5	3	3	45
4. Management of outsourced services/ subcontractors	<ul style="list-style-type: none"> Services procured based on best price and fulfillment of specifications e.g. laundry and sterilization services, outsourced microbiology 	<ul style="list-style-type: none"> Specifications of the service may change by provider without notification or agreement 	<ul style="list-style-type: none"> Lack of control over service providers. Lack active monitoring service quality of service providers 	<ul style="list-style-type: none"> Substandard services (particularly services involving sterilization) will negatively compromise quality of final CSPs 	5	1	5	25
5. Validation of aseptic technique/ processes	<ul style="list-style-type: none"> Validation of operator aseptic technique or aseptic processes are conducted as per institutional requirements (if any) (validation is a "stress test" that serves to prove that compounded products made are sterile even when compounded under worst-case-scenarios (e.g. when there are more than the usual number of people in the cleanroom (increased contaminants), or when the compounding session has been particularly long and operators are fatigued) 	<ul style="list-style-type: none"> Varying standards of validation protocols No validation of operators' processes 	<ul style="list-style-type: none"> Sterile compounding facilities are not required to conduct operator or process validations Lack guidance on how validation should be performed and how to interpret results 	<ul style="list-style-type: none"> No objective indication that CSPs made are sterile when compounding activities are carried out under worst-case-scenarios 	5	3	5	75
6. In-process controls/ monitoring	<ul style="list-style-type: none"> In-process controls/ monitoring applied as per institutional requirements (if any), e.g. particle count monitoring during compounding session, swab of operator gloved hands, work counter top and settle plates at end of session) 	<ul style="list-style-type: none"> Varying frequencies of in-process controls/ monitoring No in-process controls/ monitoring 	<ul style="list-style-type: none"> In-process controls/ monitoring not mandatory Lack of guidance on how monitoring should be performed and how to interpret results 	<ul style="list-style-type: none"> No means of detecting excursions in critical parameters such as particle counts during the critical activity of sterile compounding Efficacy of disinfection compromised No surveillance: contaminated CSPs may be produced and distributed 	5	3	5	75

Conclusion

The hub-and-spoke model will operate on a harmonised compounding workflow, leverage on technology, a well-trained work force and a reliable and efficient distribution network. The harmonised workflow and adherence to GMP standards will address the anticipated risks and identified failure modes to improve patient and staff safety, work productivity and support new models of care. This project is the first in Southeast Asia and the success hinges on the dedication and support from the stakeholders.

A special acknowledgement to the members of the Centralised Drug Compounding Workgroup, public healthcare institutions, regulatory, infrastructure, finance groups from MOH and MOH Holdings and the Pharmaceutical Society of Singapore for their contribution to this national initiative.

Beyond Quality to Value

Enabling Singaporeans to get affordable healthcare at the best value

For more information about NPS, visit <https://www.moh.gov.sg/hpp/pharmacists/national-pharmacy-strategy>

Miko_THUM@moh.gov.sg
NG_Cheng_Li@moh.gov.sg

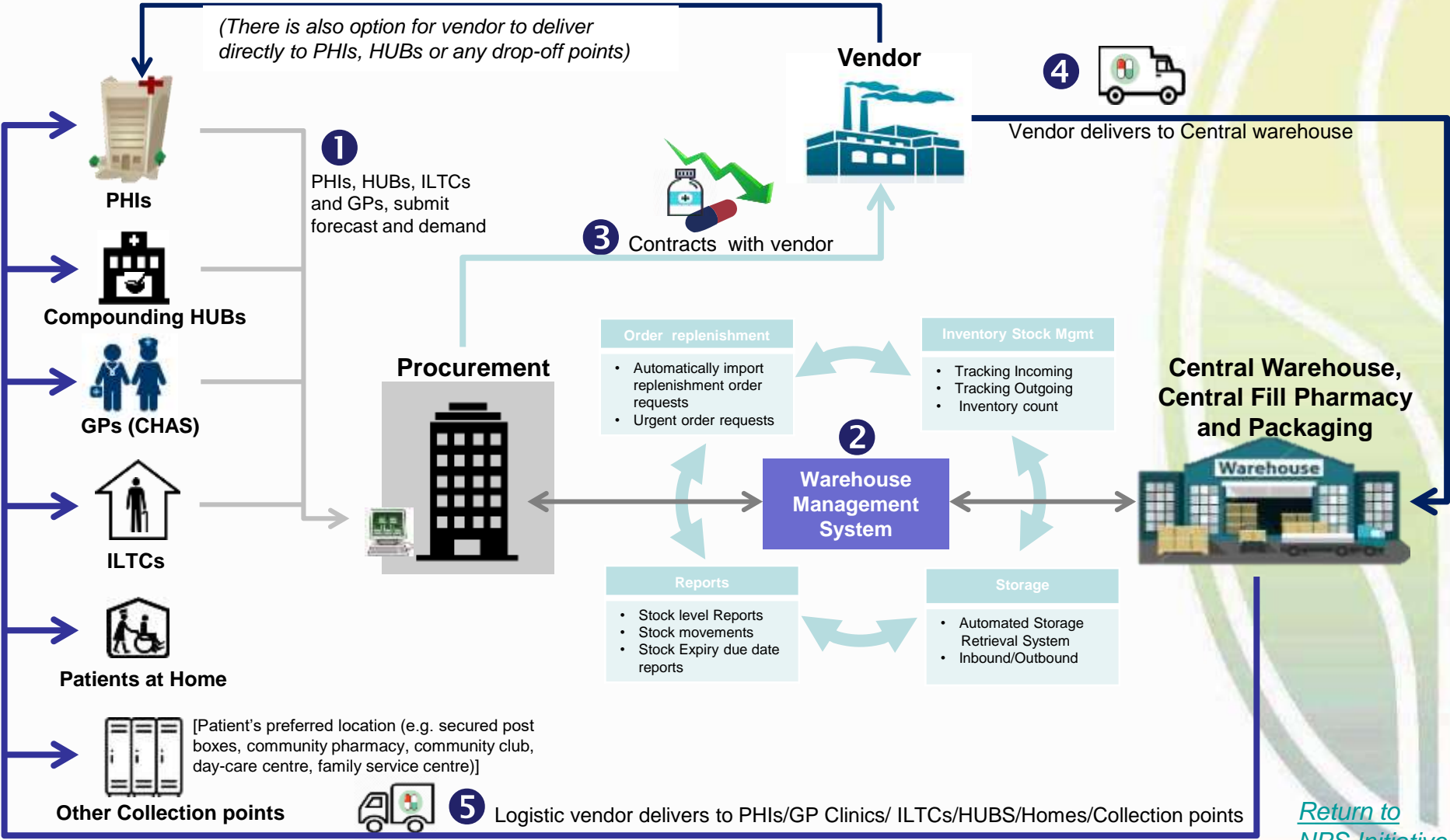




3.1 Centralised procurement, packaging and distribution

'Re-designed Supply Chain' in Future

- ✓ Support new model of care;
- ✓ Deliver medication when & where patients/consumers need it.



[Return to NPS Initiatives](#)



3.1 Formation of ALPS



Formed in **Jul 2018** by pooling all procurement & supply chain functions from the three public healthcare clusters: **NHG, NUHS & SHS**



Short term goals

- ✓ Provide **cost effective and reliable procurement**, warehousing, supply chain and site operation services
- ✓ **Reap system level gains** for patients, providers and staff through economies of scale, stronger procurement capabilities and integrated supply chain management

Long term goals



- ✓ Develop **strategic and innovative capabilities**, to optimise procurement and supply chain models, and lower costs at the system level
- ✓ Provide **more development and opportunities** for procurement and supply chain staff
- ✓ Enable **new services and partnerships**, and drive **care transformation** to achieve our vision of shifting care out of our institutions into the community (e.g. GPs, VWO nursing homes, other community based providers)

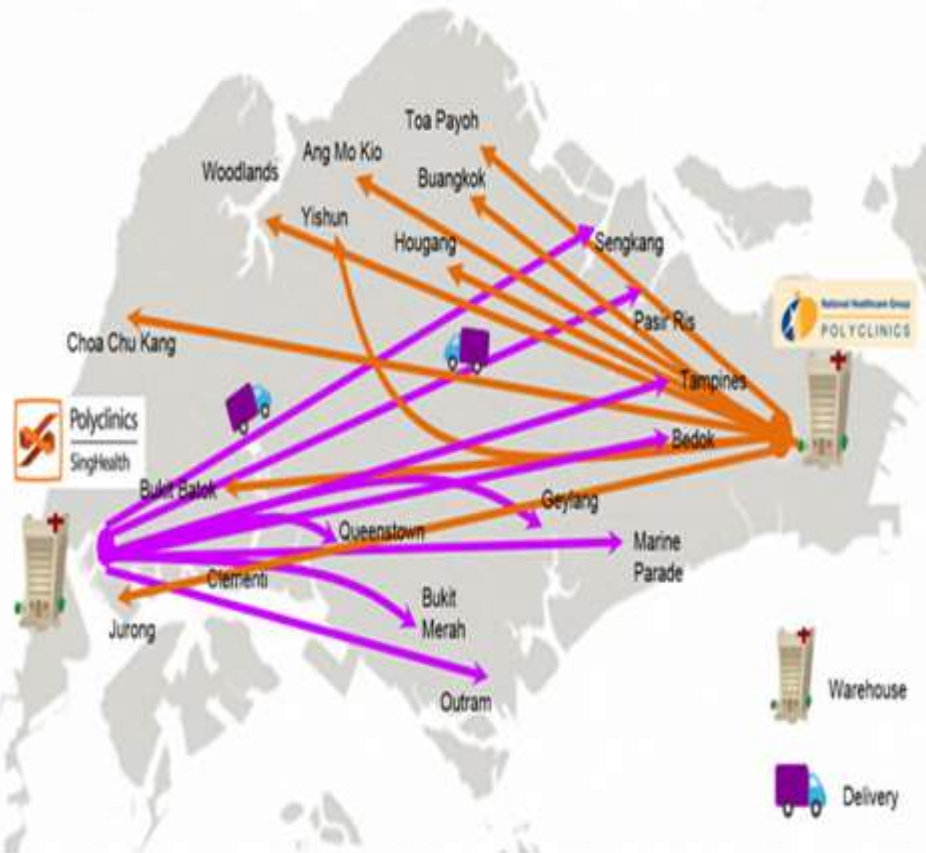
[Return to NPS Initiatives](#)



3.1 Centrally Managed Warehousing and Distribution for Polyclinics

Current polyclinics supply chain landscape: Fragmented

2019 Centrally Managed Warehousing and Distribution for Polyclinics – Managed by ALPS



NHGP NUP SHP

1. Stocks owned by ALP to optimise stock holding and manage associated risk e.g. inventory obsolescence.
2. Provide End-to-End services
 - Procurement
 - Warehouse Management
 - Supplier Management
 - Logistics Management
 - ± Central Re-Packaging

[Return to NPS Initiatives](#)



3.2 Deliver Medication When Patients Need It, Where Patients Need It

Patients/consumers have timely, convenient access to medications supported by expertise and advice from pharmacy services.

Current
Home Delivery
Services

Hospital, pharmacy and polyclinic

Future
More choices for
self-collection, with
access to expertise
and advice.

Community Pharmacy
Day-care / Family Service Centre
Community Centre
Secured Post-box

[Return to NPS Initiatives](#)

Thrust 4

Information Enablement

Empowering people to get the best out of their medications and achieve care goals



[Return to NPS Initiatives](#)

Affordable & accessibility to medication

Safe and effective use of medication

Quality health and preventive care



Pharmaceutical Care Excellence

People	Process	Information	Technology
<ul style="list-style-type: none">• Common Platform to Stimulate and Share Clinical, Practice-based Research and Innovation• National Drug Formulary• Increased Access to Contextualised Health Information		Enabler to empower healthcare professionals & patients	Enabler to deliver seamless care & innovations



Enhance policy to improve model of care

[Return to NPS Initiatives](#)



4.1 Platform to Stimulate and Share Clinical, Practice-based Research and Innovation

Sharing research, innovations and new ways of working, stimulates Pharmacy to address challenges in the healthcare landscape and transform practice to deliver better standards of care.

Establish a platform to **share** and **promote** research, best practice guidance, standards and innovations.



Create **awareness** and incentivise **participation**

Stimulate **new** and further **pharmacy practice research** and **innovations**

[Return to NPS Initiatives](#)



Pharmacy Innovations in Practice (PhIP) Programme – Mainstreaming Innovations in Alignment with MOH and NPS visions

Embedding Pharmacists Into the Practice



PhIP Programme

- **Objective:** To translate innovative services into mainstream practices.
- Consists of:
 - 2 innovation tracks
 - 3 environments
- **Logo** to show that their innovative practice/service is being trialled and monitored by MOH.



TT environment

Think Tank (TT)

- i) Practice-focused innovations
- ii) Telepractice innovations

Aim: To generate ideas & actionable solutions for problems/ issues in practice

Target audience:

- Organisations who need help in solving a problem or conceptualising their ideas.

Help provided:

- Connect with suitable leaders/ partners for guidance and sharing of perspectives.
- Provide a suitable environment for ideas generation.
- Facilitate work on key ideas to generate actionable insights for implementation.



DI environment

Design & Implementation (DI)

- i) Practice-focused innovations
- ii) Telepractice innovations

Aim: To develop a methodology for implementing innovation in actual practice

Target audience:

- Organisations who need help in implementing their innovations in practice.

Help provided:

- Connect with expertise/ resources for help and advice in methodological design of feasibility studies.
- Co-create new practice workflows, policy and implementation plans, as needed.



VM environment

Verification & Mainstreaming (VM)

- i) Practice-focused innovations
- ii) Telepractice innovations

Aim: To support innovation into an efficient and sustainable practice model

Target audience:

- Organisations who intend to roll out their innovations into mainstream practice.

Help provided:

- Connect with relevant authorities for discussion and fulfillment in accordance to regulatory requirements, guidelines and standards.
- Co-create new practice workflows, policy and implementation plans, as needed.

[Return to NPS Initiatives](#)



4.2 Increased Access to Contextualised Health Information

Starting with provision of medication related information on HealthHub

Access to harmonised medication information

Ability to share medication information with loved ones



Ability to keep a medication list including allergy information

Ability to set reminder to take medication

Salmeterol xinafoate / Fluticasone propionate Accuhaler
by National University Hospital

It is used to control and prevent symptoms (wheezing and shortness of breath) caused by asthma or chronic obstructive pulmonary disease (COPD). Salmeterol is a long-acting bronchodilator that relaxes muscles in the airways to improve breathing. Fluticasone is a steroid that reduces inflammation in the lungs.

What is this medication used for

It is used to control and prevent symptoms (wheezing and shortness of breath) caused by

MEDICATION LIST

- Seretide Accuhaler (Salmeterol 50mcg/ Fluticasone 100mcg)**
1 puff - 2 times a day
Alert:
- Salbutamol Inhaler**
2 puff - 4 times a day when necessary
- Cetirizine 10mg**
1 tablet - Every morning when necessary

+ (Add button)

[Return to NPS Initiatives](#)



4.2 Increased Access to Contextualised Health Information

Public education through on medication-related topics on “Quiz Time”



Intended topics:

- Self care
- Medication management
- Travel medicines
- Anti-diabetes medicines
- Smoking cessation

[Return to NPS Initiatives](#)



4.3 National Drug Formulary

Vision

- **Reference of choice** for healthcare practitioners practicing in Singapore when they need drug related information

Strategy

- Establish a national comprehensive resource to **influence** healthcare professionals in providing harmonised, safe use of medications and best clinical practice

Beyond Quality to Value

- Support Appropriate Utilisation of Drugs



[Return to NPS Initiatives](#)

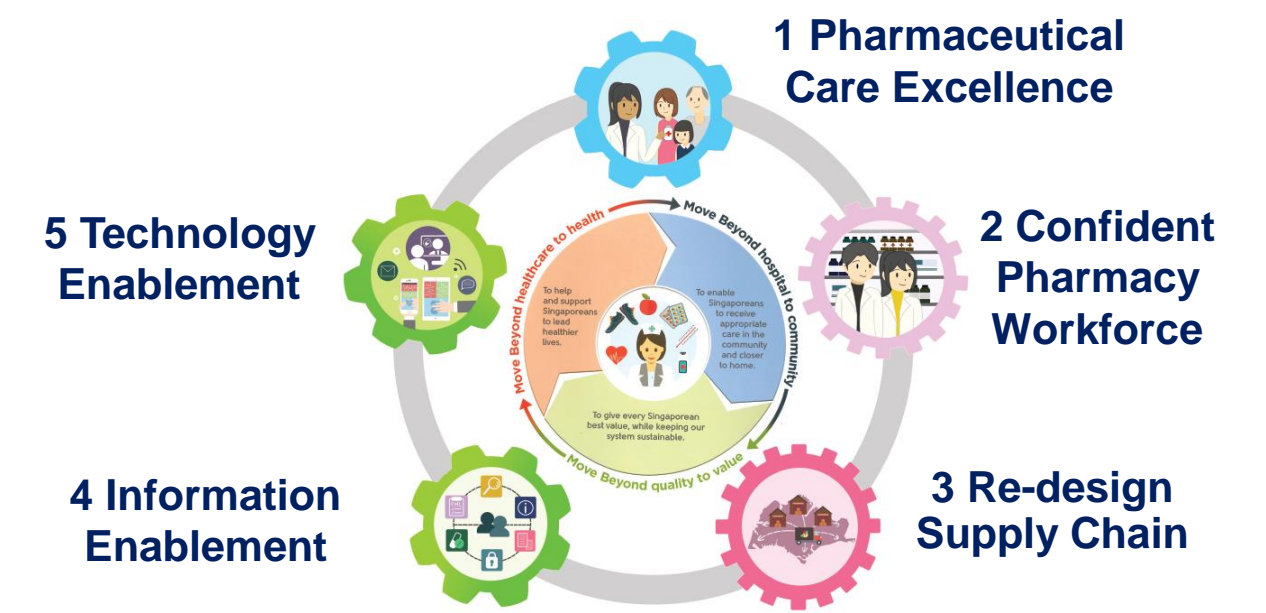


Introduction

The National Pharmacy Strategy (NPS) is a 10-year plan to transform the delivery of pharmaceutical care and medication management in Singapore that was approved by the Ministry of Health (MOH).

Establishing a national drug formulary (NDF) is an initiative under Thrust 4 Information Enablement.

The National Pharmacy Strategy



Issues in Singapore

- ❑ Currently no single integrated directory for clinical and drug-related information exists in Singapore and local healthcare professionals (HCPs) need to access multiple sources of information
- ❑ A lack of systematic adoption and publication of a standardised drug vocabulary limits exchangeability of medication records
- ❑ No visibility of drug availability across institutions poses challenges in the transition of patient care across settings

Objective

The NDF initiative aims to establish a Singapore-specific and authoritative national reference to guide evidence-based best practices for medication prescribing, dispensing and administration by consolidating clinical and drug related information.



Target audience: HCPs practicing in Singapore in both public and private sectors

- ✓ Doctors
- ✓ Dentists
- ✓ Pharmacists
- ✓ Nurses

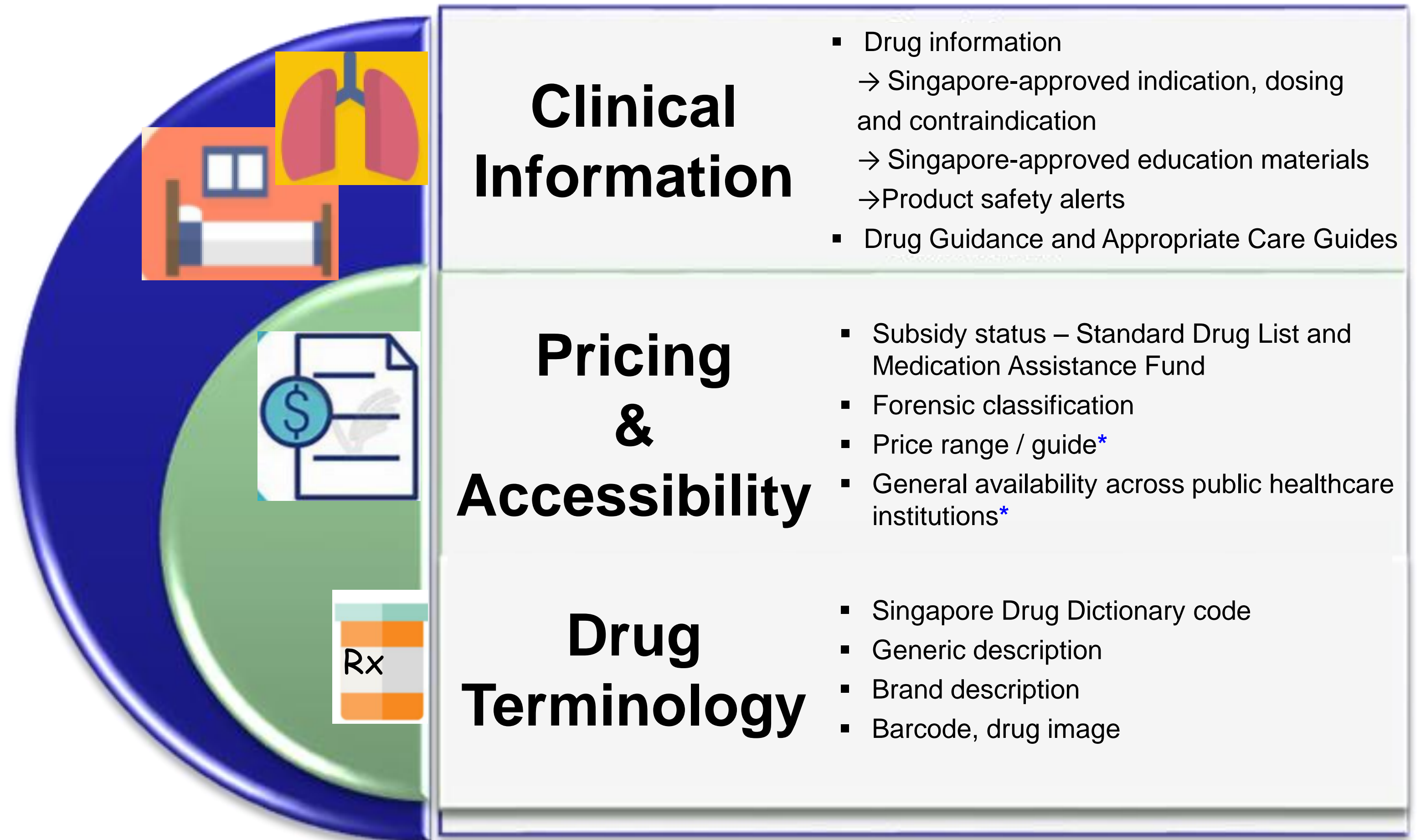
The general public can also have access to NDF, thereby promoting patient empowerment.

Method

Web based version targeted to be launched in Q2 2021



Content Overview of the NDF



*Selected components will be available at a later stage when the databases are established

Conclusion

By providing localised up-to-date drug and clinical information via a single source, the NDF will gel and complement the existing initiatives of Drug Guidance and Appropriate Care Guides, group purchasing etc to influence the appropriate use of drugs in Singapore. NDF will support HCPs to make better-informed decisions in a confident manner enabled by evidence-based best practices and value-added information. NDF will facilitate the appropriate utilisation of drugs, which is aligned with MOH's key shifts to better health- Beyond Quality to Value.



Thrust 5

Technology Enablement

*Delivering seamless and effective transition of care
across all care settings*



[Return to NPS Initiatives](#)

Affordable & accessibility to medication

Safe and effective use of medication

Quality health and preventive care



Pharmaceutical Care Excellence

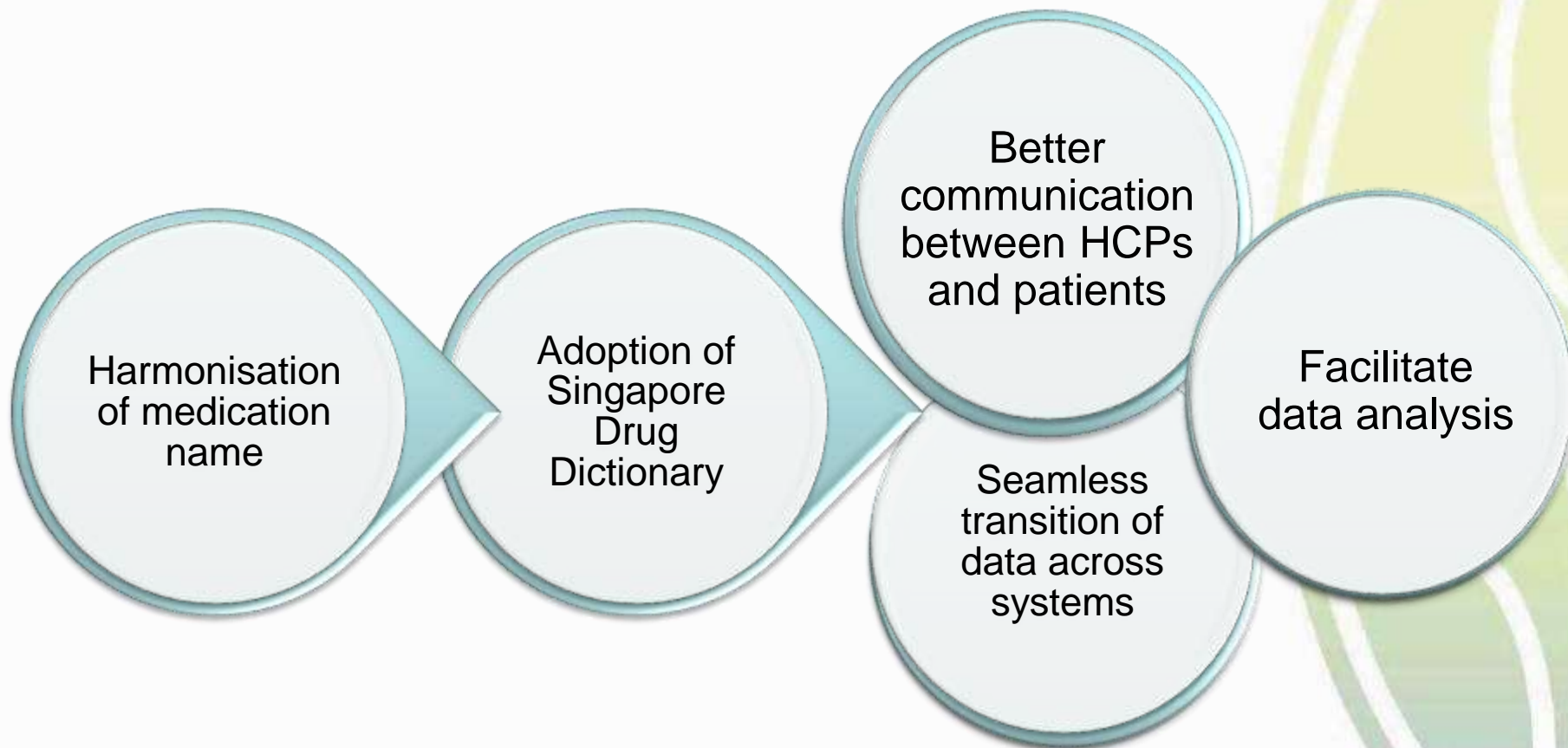
People	Process	Information	Technology
<ul style="list-style-type: none"> • Singapore Drug Dictionary • National Harmonised Integrated Pharmacy Solution • Enhancing Telepharmacy Services 			
Workforce	processes	professionals & patients	Enabler to deliver seamless care & innovations

Enhance policy to improve model of care

[Return to NPS Initiatives](#)



5.1 Singapore Drug Dictionary



[Return to NPS Initiatives](#)



5.2 National Harmonised Integrated Pharmacy Solution

NHIPS Key Capabilities

Patients and Caregivers



Pharmacy Reception



Medication Collection



Patient Empowerment



eServices (Online, Apps, Kiosk)



Service Provider



Prescription/Order Processing



Dispensing, Counselling



Med Supply Tracking



Compounding/Repackaging



Medication Support Services



Supply & Med Reconciliation



Business Rules Medication Translation



Business Intelligence



National Program Enablers



Prescription Cross Fill



Central Compounding



SDD



Platform for harmonised outpatient, discharge and A&E medication dispensing

Will be supported by national charging platform

Designed for both public and private pharmacies... 1st site from 2021

Enable cross filling and facilitate on-line refill

[Return to NPS Initiatives](#)

How NHIPS enhance Patient care & Pharmacy process



Meet Anna,
a patient newly diagnosed
with chronic disease

1. E-prescription

created into national
prescription repository



2. Medication collection

Anna can find out
where “best” to collect
medication.

She can see her meds, opts to
collect meds at neighbourhood
pharmacy or delivery services
through Health Hub.



3. Medication information

Patient medication information
is “pushed” to Anna.

She can interact with personalised
medication Information
eg: scan bar code on medication.



4. Smart Monitoring

Post discharge, NHIPS has identified
Anna as at-risk patient, follow-up with
her for new medication and generates
follow-up list for pharmacist.



Enhancing Pharmacy process



Amy the Pharmacist
“identifies” patient.



Prescription is
translated to available
products and charges
computed.



Amy sees the new
medication that are
prescribed and
conducts medication
reconciliation.



Amy counsels Anna
on-site or remotely via
telepharmacy.

[Return to NPS Initiatives](#)



5.3 Enhancing Telepharmacy Services

MOH launches regulatory sandbox to support development of telemedicine



Channel News Asia
2018, Apr 18.

What's up, iDoc? Giving a virtual consult at a pharmacy



The Straits Times
2018, Jun 25.



Pharmaceutical Society of Singapore

Guidelines for Telepharmacy & Tele-Pharmaceutical Care Services

Adoption of technologies

Professional Guidelines

New model of practice

Facilitation - NPPMO

Pharmacy Innovations in Practice (PiP) Programme – Mainstreaming Innovations in Alignment with MOH and NPS visions

- **Objective:** To translate innovative services into mainstream practices.
- **2 innovation tracks:**
 - Practice-focused innovations
 - Telepractice innovations
- **3 environments:**
 - **Think Tank (TT):**
 - To generate ideas & actionable solutions for problems/ issues in practice
 - **Design & Implementation (DI):**
 - To develop a methodology for implementing innovation in actual practice
 - **Verification & Mainstreaming (VM):**
 - To support innovation into an efficient and sustainable practice model



Your Guardian Pharmacist is now on MyDoc md

Ask health-related questions and get expert advice from our qualified Guardian Pharmacists.



[Return to NPS Initiatives](#)

Keep in Touch with Us and the National Pharmacy Strategy!



**Connect with
National Pharmacy Programme Management Office
(NPPMO)**

Email: nps@moh.gov.sg

[Return to NPS Initiatives](#)

Keep Updated on What's Happening in the Profession!

SPC Connect
(<https://www.moh.gov.sg/hpp/pharmacists>)



MINISTRY OF HEALTH SINGAPORE

Singapore Government Integrity · Service · Excellence

A - A + About MOH | Careers | News Highlights | Feedback | Forms | Contact

For Public For Healthcare Professionals

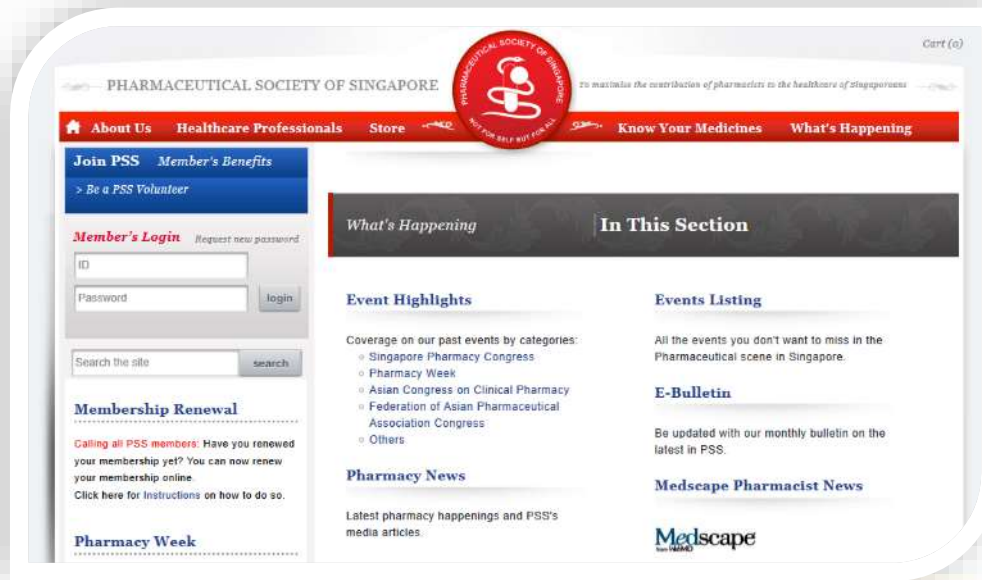
E-Licensing (EJS) Health Professionals Portal Policies & Guidelines Search

Home > Pharmacists

PHARMACISTS

The portal contains information relevant to pharmacy practice in Singapore. We hope that this website will be informative and helpful to you. Pharmacists registered with the Singapore Pharmacy Council (SPC) can login to the secure pages of this Portal to access various information resources and e-services, including SPC e-services and the Continuing Professional Development System (CPDS).

News (9) NEWS



PHARMACEUTICAL SOCIETY OF SINGAPORE

to maximize the contribution of pharmacists to the healthcare of Singaporeans

About Us Healthcare Professionals Store Know Your Medicines What's Happening

Join PSS Member's Benefits

> Be a PSS Volunteer

Member's Login Request new password

ID

Password login

Search the site search

Membership Renewal

Calling all PSS members: Have you renewed your membership yet? You can now renew your membership online. Click here for instructions on how to do so.

Pharmacy Week

What's Happening

In This Section

Event Highlights

Coverage on our past events by categories:

- Singapore Pharmacy Congress
- Pharmacy Week
- Asian Congress on Clinical Pharmacy
- Federation of Asian Pharmaceutical Association Congress
- Others

Pharmacy News

Latest pharmacy happenings and PSS's media articles.

Events Listing

All the events you don't want to miss in the Pharmaceutical scene in Singapore.

E-Bulletin

Be updated with our monthly bulletin on the latest in PSS.

Medscape Pharmacist News

Medscape

PSS News & Events
(<https://www.pss.org.sg/whats-happening>)



[Return to NPS Initiatives](#)

THANK YOU

[Return to NPS Initiatives](#)