# PHARMACOGENOMICS RESEARCH, PREVENTIVE CARE AND COMMUNITY PHARMACY PRACTICE:

# A MALAYSIAN PERSPECTIVE

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# MALAYSIA

## THE CURRENT HEALTH REALITIES

- High burden of CKM disease, diabetes and obesity
- Rising multimorbidity and polypharmacy
- Fragmented primary care pathways
- Dichotomous healthcare system (public vs private healthcare)
- Low screening rates
- Lack of a coherent preventive care strategy despite mentions in MOH Health White Paper
- **Opportunity: Community Pharmacies as First-Line Connectors & Preventive Care Hubs**

## WHY PHARMACISTS MATTER

- Pharmacists are healthcare professionals.
- Pharmacists are the most accessible primary care providers.
- Pharmacists provide a wide array of health services.
- There is high public trust in pharmacists.
- The pharmacy profession proved its value to health systems during the COVID-19 pandemic and continues to do so.
- Some governments have already made changes to facilitate expansion of pharmacy services and better access to health, and others should too.

Think Health
Think Pharmacy
Professional
Available
Trusted
fip

# THINK HEALTH, THINK PHARMACY

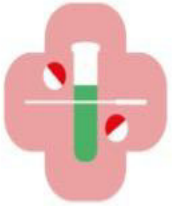

Medicines supply and advice

Medication review

Long-term conditions (e.g., asthma)

Measuring blood pressure, blood glucose, cholesterol

Disease prevention / health promotion



Test and treat (e.g., chlamydia, malaria, sore throat)

Vaccination

Mental health

Medication adherence

Smoking cessation


Prescribing

Directly observed tuberculosis treatment

Reproductive health

Opioid substitution & needle exchange

# WHY PHARMACOGENOMICS (PGx)?

- **THE MEDICATION PROBLEM WE MUST SOLVE**
  - Medication harm is common, costly; and often preventable
  - Adverse Drug Reactions (ADR) drive avoidable hospital admissions & costs
    - 4th – 6th leading cause of death worldwide
    - 6.5% hospital admission = ADRs, Costs NHS >2B/year (UK)
    - PREPARE trial shows 30% ADR reduction using PGx
  - Growing multimorbidity, polypharmacy in Malaysia
  - May ADRs are predictable if we know the patient's genetics
  - Non-responsive therapy delays treatments – PGx reduces guesswork

# WHY PHARMACOGENOMICS (PGx)?

## WHAT PGx OFFERS

- Personalised drug & dose selection
- ADR prevention / reduction
- Improving adherence
- Optimise treatment outcomes faster
- Essential to modern precision medicine

## POTENTIAL BENEFITS TO MALAYSIA

- Pre-emptive PGx - one time test for future optimisation
- Lifelong genetic data accompanies patients across care settings
- Preventive, cost-savings, population scale

### REACTIVE PGx

- Test only AFTER a reaction / diagnosis / therapy starts
- Usually SINGLE gene-drug pair
- Slower, may delay treatment
- Good for high-risk drugs
- Usually Hospital based

### PRE-EMPTIVE PGx

- Test BEFORE any issue
- Multi-gene panel
- Data reusable lifelong
- Enables automated CDSS alerts
- Backbone of national precision medicine programmes
- Potentially Community based

# A ROADMAP FOR PHARMACOGENOMICS (PGx)

## PRECISION MEDICINE INITIATIVE (2017)

- Malaysia is a “Genomic Gold Mine”
- High ethnic diversity - unique variant profiles
- Recommended - national initiative, strong legal/regulatory framework
- PGx is a scalable precision medicine component

## 2025 IMPLEMENTATION WORKSHOP IDENTIFIED 5 NATIONAL PRIORITIES

- Draft a national PGx strategy paper
- Establish a multi-sector PGx task force
- Develop ethical and regulatory guideline
- Expand lab capacity and data infrastructure
- Educate pharmacists and prescribers in PGx interpretation and usage

**THIS IS TO ADDRESS GAPS IN - Lab Standards, Governance, Clinical Workflows, Workforce Readiness & Lack of National Data**

# A ROADMAP FOR PHARMACOGENOMICS (PGx)

## WORKSHOP OUTPUTS - RECOMMENDATIONS

- Establish National PGx Steering Committee (proposed to MOH)
- Identify Tier 1 gene-drug pairs (starting point)
- Standardise reporting templates & SOPs
- Mandate ISO 15189 / CAP accreditation for laboratories
- Integrate PGx into EHR & CDSS
- Build Workforce Competencies
- Launch Public Education Initiatives

## TIER 1 GENE-DRUG PRIORITIES

- CYP2C19 - Clopidogrel
- DPYD - 5-FU
- TPMT/NUDT15 - Thiopurines
- SLCO1B1 - Statins
- HLA-B*15:02 - Carbamazepine
- HLA-B*58:01 - Allopurinol
- CYP2D6 - Codeine/Tramadol

# STUDY:
# ENHANCING PRECISION HEALTHCARE: PREEMPTIVE PHARMACOGENOMIC TESTING IN THE MALAYSIAN COMMUNITY SETTING

NUS National University of Singapore

PRECISION Diagnostics Advancing Tomorrow's Cures


## SETTING & DESIGN

- Community pharmacies: Sunway Multicare & BIG Pharmacy
- Retrospective review of pre-emptive PGx panels (one-time test → lifetime reuse)
- Intervention categories used: Consider alternative / ↓ starting dose / ↑ starting dose

## PLATFORM

- GeneTitan MC + Axiom PMDA array (ADME-rich, CPIC/PharmGKB-aligned variants) (~100k markers)
- Structured output → star-allele → phenotype → action

## KEY TARGETS / GENES (13)

DPYD, NUDT15, TPMT, UGT1A1, CYP2D6, CYP2C9, CYP2C19, CYP3A5, CYP2B6, CYP4F2, G6PD, SLCO1B1, VKORC1

## COHORT

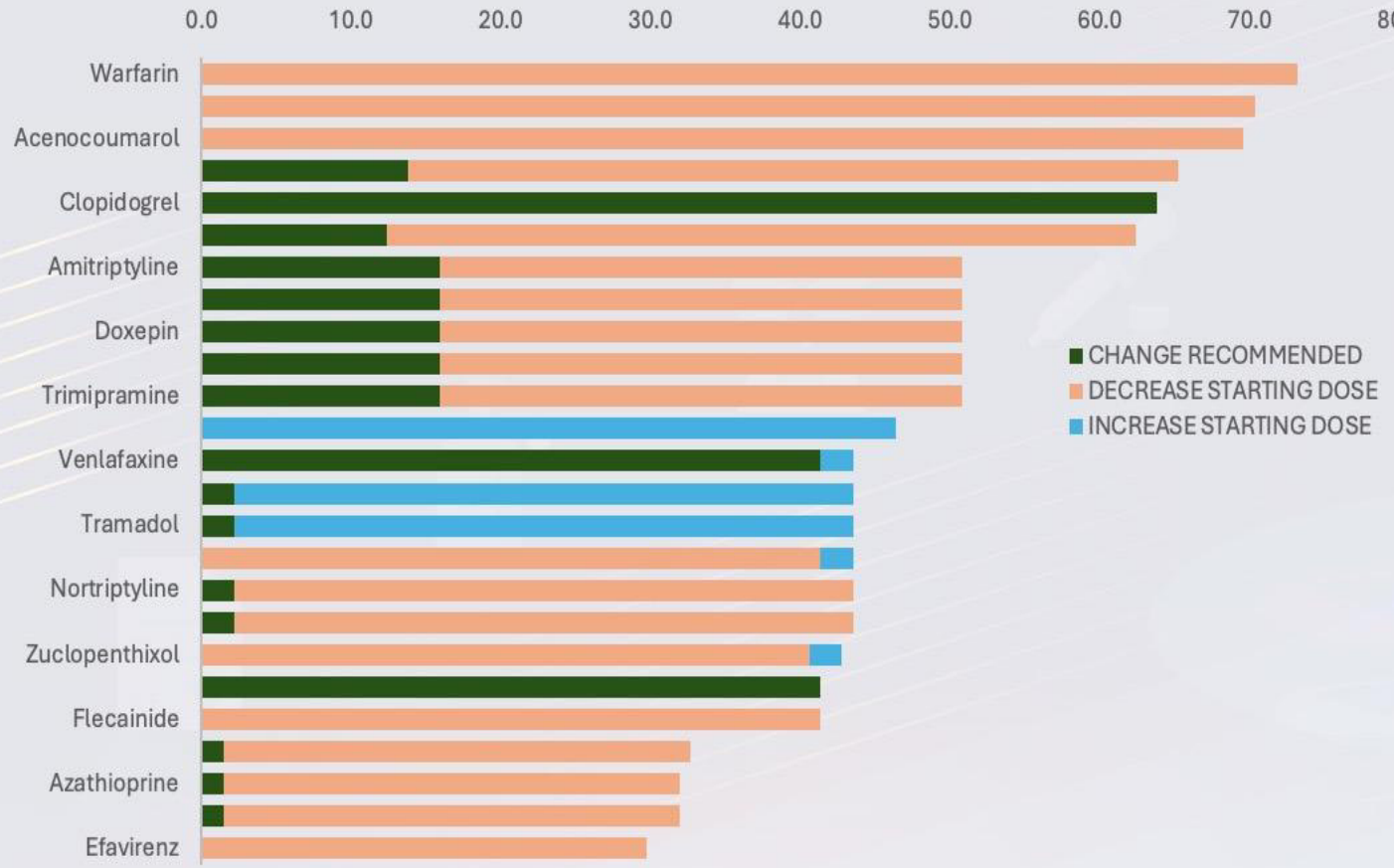
- n = 138 | Age ~55 (range 4-91) | 78 M / 60 F
- Real-world pre-prescribing capture at the pharmacy front door

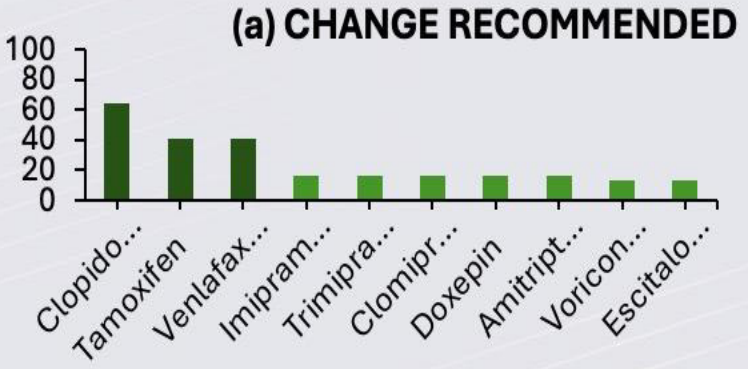
## WHY THIS DESIGN

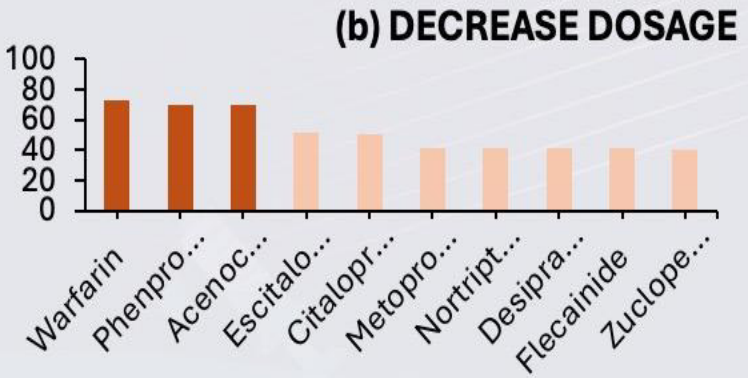
- Meets patients upstream of prescribing decisions
- Results can be coded once and reused across care episodes

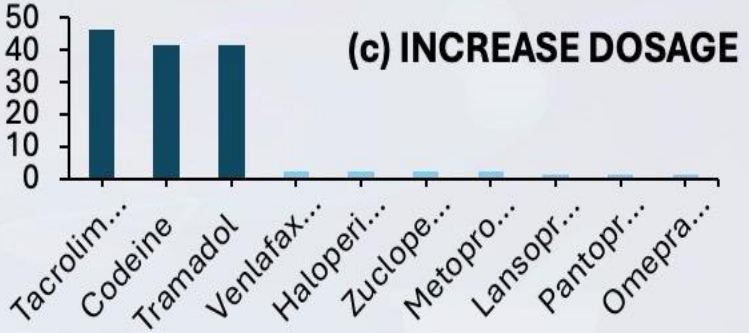
# STUDY:
# ENHANCING PRECISION HEALTHCARE: PREEMPTIVE PHARMACOGENOMIC TESTING IN THE MALAYSIAN COMMUNITY SETTING

## RESULTS – TOP 25 MEDICATIONS



| THERAPEUTIC GROUP | MEDICATION | DRUG CLASS / MECHANISM | GENES | GENOTYPE VARIANTS |
|---|---|---|---|---|
| **CARDIOVASCULAR** | METOPROLOL | Beta-1 adrenergic blocker (antihypertensive) | CYP2D6 | CYP2D6_*1/*1x2, CYP2D6_*1/*36, CYP2D6_*1/*36x2, CYP2D6_*1/*5, CYP2D6_*10/*10, CYP2D6_*10/*36, CYP2D6_*10/*36x2, CYP2D6_*10/*49, CYP2D6_*2/*5, CYP2D6_*5/*10 |
| | FLECAINIDE | Class Ic antiarrhythmic agent | CYP2D6 | CYP2D6_*1/*36, CYP2D6_*1/*36x2, CYP2D6_*1/*5, CYP2D6_*10/*10, CYP2D6_*10/*36, CYP2D6_*10/*36x2, CYP2D6_*10/*49, CYP2D6_*2/*5, CYP2D6_*5/*10 |
| | CLOPIDOGREL | P2Y12 platelet inhibitor (antiplatelet) (PRODRUG) | CYP2C19 | CYP2C19_*1/*2, CYP2C19_*1/*3, CYP2C19_*2/*2, CYP2C19_*2/*3, CYP2C19_*2/*6, CYP2C19_*2/*17, CYP2C19_*3/*17 |
| | WARFARIN | Vitamin K antagonist (anticoagulant) | CYP2C9, VKORC | VKORC_TT(rs9923231), VKORC_CT(rs9923231), CYP2C9_*1/*3, CYP2C9_*1/*55, CYP2C9_*2/*3 |
| | PHENPROCOUMON | Vitamin K antagonist (anticoagulant) | CYP2C9, VKORC | VKORC_TT(rs9923231), CYP2C9_*1/*1, CYP2C9_*1/*3 |
| | ACENOCOUMAROL | Vitamin K antagonist (anticoagulant) | CYP2C9, VKROC | VKORC_TT(rs9923231), CYP2C9_*1/*1, CYP2C9_*1/*3, CYP2C9_*1/*55 |
| **ONCOLOGY** | THIOGUANINE | Antimetabolite (purine analog) | NUDT15, TPMT | NUDT15_*1/*1, NUDT15_*1/*3, NUDT15_*3/*3, TPMT_*1/*1, TPMT_*1/*3C |
| | MERCAPTOPURINE | Antimetabolite (purine analog) | NUDT15, TPMT | NUDT15_*1/*1, NUDT15_*1/*3, NUDT15_*3/*3, TPMT_*1/*1, TPMT_*1/*3C |
| | TAMOXIFEN | Selective estrogen receptor modulator (SERM) (PRODRUG) | CYP2D6 | CYP2D6_*1/*36, CYP2D6_*1/*36x2, CYP2D6_*1/*5, CYP2D6_*10/*10, CYP2D6_*10/*36, CYP2D6_*10/*36x2, CYP2D6_*10/*49, CYP2D6_*2/*5, CYP2D6_*5/*10 |
| **PAIN MANAGEMENT** | CODEINE | Opioid analgesic (PRODRUG of Morphine) | CYP2D6 | CYP2D6_*1/*1x2, CYP2D6_*1/*36, CYP2D6_*1/*36x2, CYP2D6_*1/*5, CYP2D6_*10/*10, CYP2D6_*10/*36, CYP2D6_*10/*36x2, CYP2D6_*10/*49, CYP2D6_*2/*5, CYP2D6_*5/*10 |
| | TRAMADOL | Opioid analgesic and SNRI (PRODRUG) | CYP2D6 | CYP2D6_*1/*1x2, CYP2D6_*1/*36, CYP2D6_*1/*36x2, CYP2D6_*1/*5, CYP2D6_*10/*10, CYP2D6_*10/*36, CYP2D6_*10/*36x2, CYP2D6_*10/*49, CYP2D6_*2/*5, CYP2D6_*5/*10 |
| **IMMUNOSUPPRESSANT** | TACROLIMUS | Calcineurin inhibitor (immunosuppressant) | CYP3A5 | CYP3A5_*1/*1, CYP3A5_*1/*3 |
| | AZATHIOPRINE | Immunosuppressant (PRODRUG of 6-mercaptopurine) | NUDT15, TPMT | NUDT15_*1/*1, NUDT15_*1/*3, NUDT15_*3/*3, TPMT_*1/*1, TPMT_*1/*3C |

## ADDITIONAL INFORMATION:

### GENOTYPE VARIANTS DETECTED FOR THE TOP 25 MEDICATION

| THERAPEUTIC GROUP | MEDICATION | DRUG CLASS / MECHANISM | GENES | GENOTYPE VARIANTS |
|---|---|---|---|---|
| **PSYCHIATRIC** | ESCITALOPRAM | Selective serotonin reuptake inhibitor (SSRI) | CYP2C19 | CYP2C19_*1/*17, CYP2C19_*1/*2, CYP2C19_*1/*3, CYP2C19_*2/*2, CYP2C19_*2/*3, CYP2C19_*2/*6, CYP2C19_*2/*17, CYP2C19_*3/*17 |
| | CITALOPRAM | Selective serotonin reuptake inhibitor (SSRI) | CYP2C19 | CYP2C19_*1/*2, CYP2C19_*1/*3, CYP2C19_*2/*2, CYP2C19_*2/*3, CYP2C19_*2/*6, CYP2C19_*2/*17, CYP2C19_*3/*17 |
| | VENLAFAXINE | Serotonin-norepinephrine reuptake inhibitor (SNRI) | CYP2D6 | CYP2D6_*1/*1x2, CYP2D6_*1/*36, CYP2D6_*1/*36x2, CYP2D6_*1/*5, CYP2D6_*10/*10, CYP2D6_*10/*36, CYP2D6_*10/*36x2, CYP2D6_*10/*49, CYP2D6_*2/*5, CYP2D6_*5/*10 |
| | AMITRIPTYLINE | Tricyclic antidepressant (TCA) (PRODRUG) | CYP2C19, CYP2D6 | ***FOR ALL TRICYCLIC ANTIDEPRESSANTS (PRODRUG):*** CYP2C19_*1/*1, CYP2C19_*1/*17, CYP2C19_*1/*2, CYP2C19_*1/*3, CYP2C19_*2/*2, CYP2C19_*2/*3, CYP2C19_*2/*6, CYP2D6_(*1/*2)x2, CYP2D6_(*1/*2)xN, CYP2D6_*1/*1, CYP2D6_*1/*10, CYP2D6_*1/*1x2, CYP2D6_*1/*36, CYP2D6_*1/*36+*10, CYP2D6_*1/*36x2, CYP2D6_*1/*5, CYP2D6_*10/*10, CYP2D6_*10/*36, CYP2D6_*10/*36+*10, CYP2D6_*10/*36x2, CYP2D6_*10/*49, CYP2D6_*2/*10, CYP2D6_*2/*5, CYP2D6_*5/*10 |
| | CLOMIPRAMINE | Tricyclic antidepressant (TCA) (PRODRUG) | CYP2C19, CYP2D6 | |
| | DOXEPIN | Tricyclic antidepressant (TCA) (PRODRUG) | CYP2C19, CYP2D6 | |
| | IMIPRAMINE | Tricyclic antidepressant (TCA) (PRODRUG) | CYP2C19, CYP2D6 | |
| | TRIMIPRAMINE | Tricyclic antidepressant (TCA) (PRODRUG) | CYP2C19, CYP2D6 | |
| | NORTRIPTYLINE | Tricyclic antidepressant (TCA) | CYP2D6 | CYP2D6_*1/*1x2, CYP2D6_*1/*36, CYP2D6_*1/*36x2, CYP2D6_*1/*5, CYP2D6_*10/*10, CYP2D6_*10/*36, CYP2D6_*10/*36x2, CYP2D6_*10/*49, CYP2D6_*2/*5, CYP2D6_*5/*10 |
| | DESIPRAMINE | Tricyclic antidepressant (TCA) | CYP2D6 | CYP2D6_*1/*1x2, CYP2D6_*1/*36, CYP2D6_*1/*36x2, CYP2D6_*1/*5, CYP2D6_*10/*10, CYP2D6_*10/*36, CYP2D6_*10/*36x2, CYP2D6_*10/*49, CYP2D6_*2/*5, CYP2D6_*5/*10 |
| | ZUCLOPENTHIXOL | Antipsychotic (thioxanthene derivative) | CYP2D6 | CYP2D6_*1/*1x2, CYP2D6_*1/*36, CYP2D6_*1/*36x2, CYP2D6_*1/*5, CYP2D6_*10/*10, CYP2D6_*10/*36, CYP2D6_*10/*36x2, CYP2D6_*10/*49, CYP2D6_*2/*5, CYP2D6_*5/*10 |
| **ANTIVIRAL** | EFAVIRENZ | Non-nucleoside reverse transcriptase inhibitor (NNRTI) | CYP2B6 | CYP2B6_*1/*6, CYP2B6_*2/*6, CYP2B6_*4/*6, CYP2B6_*5/* |

## ADDITIONAL INFORMATION:
## GENOTYPE VARIANTS DETECTED FOR THE TOP 25 MEDICATION

**STUDY:**

# ENHANCING PRECISION HEALTHCARE: PREEMPTIVE PHARMACOGENOMIC TESTING IN THE MALAYSIAN COMMUNITY SETTING

## LIMITATIONS

- Ethnicity / Gender was self-indicated
- Recruitment / Sampling Process:
  Convenience Sampling - Participants were recruited through the walk-in out-of-pocket purchase of the PRECISE Pharmacogenomics (PGx) tests, wherein individuals who entered community pharmacies (BIG Caring Group or Sunway Multicare) and made a purchase were invited to participate in the study.

- Inclusion
  1. All Malaysians regardless of health condition
  2. Provides consent to being part of the study
- Exclusions
  1. Non-Malaysians
  2, Did not provide consent to being part of the study

## CONCLUSIONS / NEXT STEPS

- The findings reveal a high prevalence of clinically actionable variants among Malaysians at the community level (even amongst healthy individuals) that requires intervention, highlighting significant pharmacological response variability.
- Highlights the importance of pre-emptive pharmacogenomics as the driving force in precision medicine for reducing side effects & ADRs.
- Community Pharmacists are uniquely positioned to do pre-emptive pharmacogenomics to screen before prescribing starts.
- The current sample is predominantly Chinese (85%) due to the out-of-pocket payment model. To consider public-private partnership model with the Ministry of Health to improve sample demographics to reflect Malaysia's ethnic makeup.
- Expanding the sample size in future will enhance representation of Malaysia's ethnic diversity and to further elucidate how pre-emptive PGx can optimize medication use in this population.

# PREVENTIVE CARE FRAMEWORK

**Community Pharmacies are the BEST Healthcare Facilities for the initiation of**

- PROMOTIVE HEALTH - Improving health literacy
- PREVENTIVE HEALTH - Promote health seeking behaviour
- SELF-CARE - Building a resilient healthcare system

**The Malaysian Pharmacists Society (MPS) Preventive Care Framework is**

- Anchored by the FIP Development Goals
- To fulfill the aspirations of the Malaysian Ministry of Health's Health White Paper
  - Decongest the healthcare system and improving equitable
  - Improve the health of the populace, creating a healthy nation
  - Create an Ecosystem connecting both the public and private sectors


PREVENTIVE CARE PHARMACISTS

# BUILDING SUSTAINABLE HEALTHCARE

## THE FRAMEWORK IS ANCHORED BY THE FIP DEVELOPMENT GOALS

3 main approaches identified for community pharmacists: -

- Promotion & Education of Self-based approaches to Care (Self-Care)
- Prevention & Management of Non Communicable Diseases (NCDs)
- Mitigating Health Risk Factors including the need of lifetime immunisation

# THE AIM: REDUCE PROGRESSION

## MANAGING DISEASES: STRATEGIC PILLARS

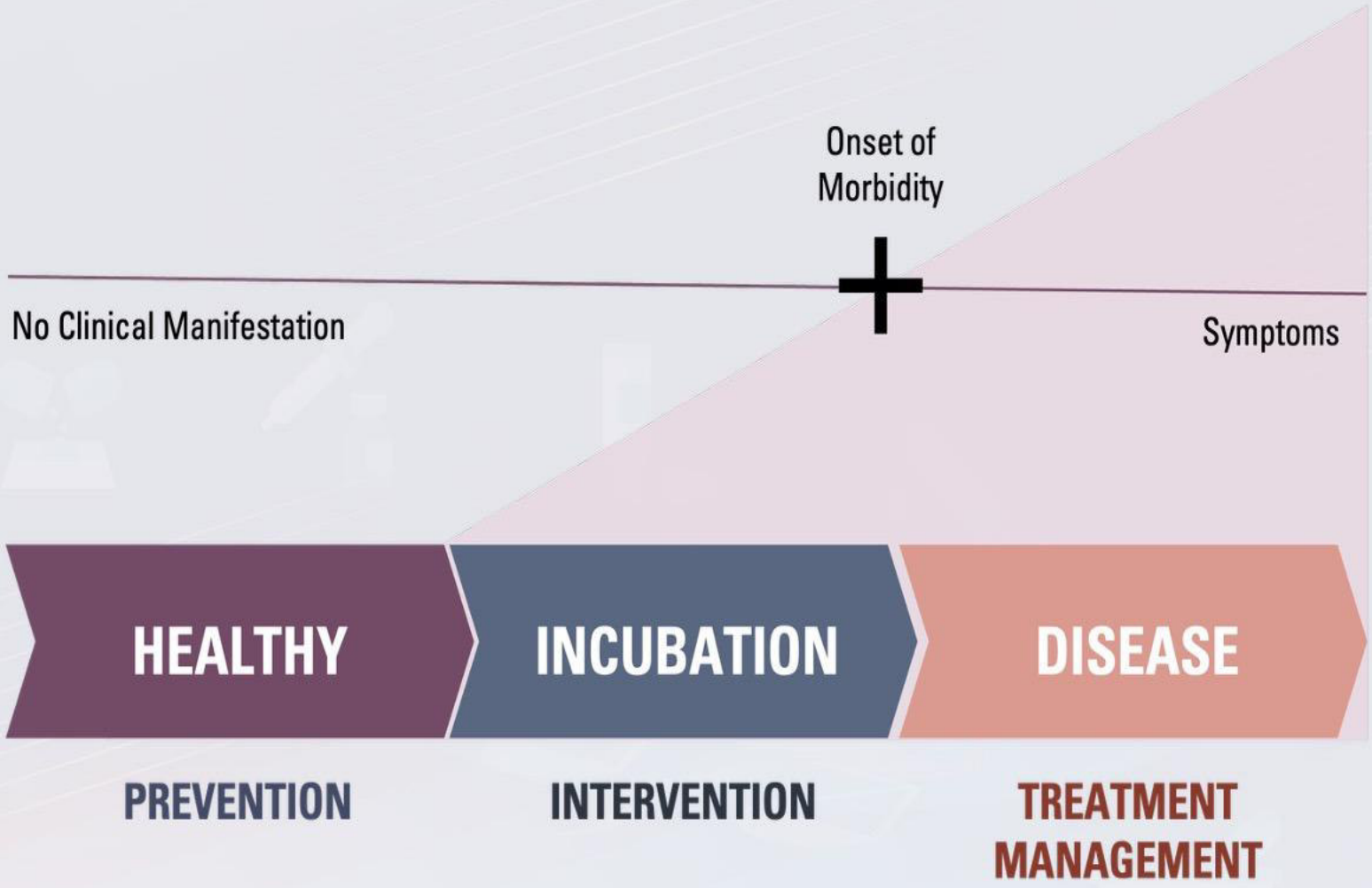
PROMOTIVE SERVICES

PREVENTIVE SERVICES

CURATIVE SERVICES

REHABILITATIVE SERVICES

PALLIATIVE SERVICES



# FIVE PILLARS FOR A HEALTHY FRAMEWORK

Training & Accreditation of Pharmacists

Management Algorithm & Guidelines for Standard Operating Procedures

Service Fees & Pharmacist Engagement

Stakeholder Engagement & Ecosystem Building

Patient Advocacy & Public Engagement

# BUILDING SUSTAINABLE HEALTHCARE

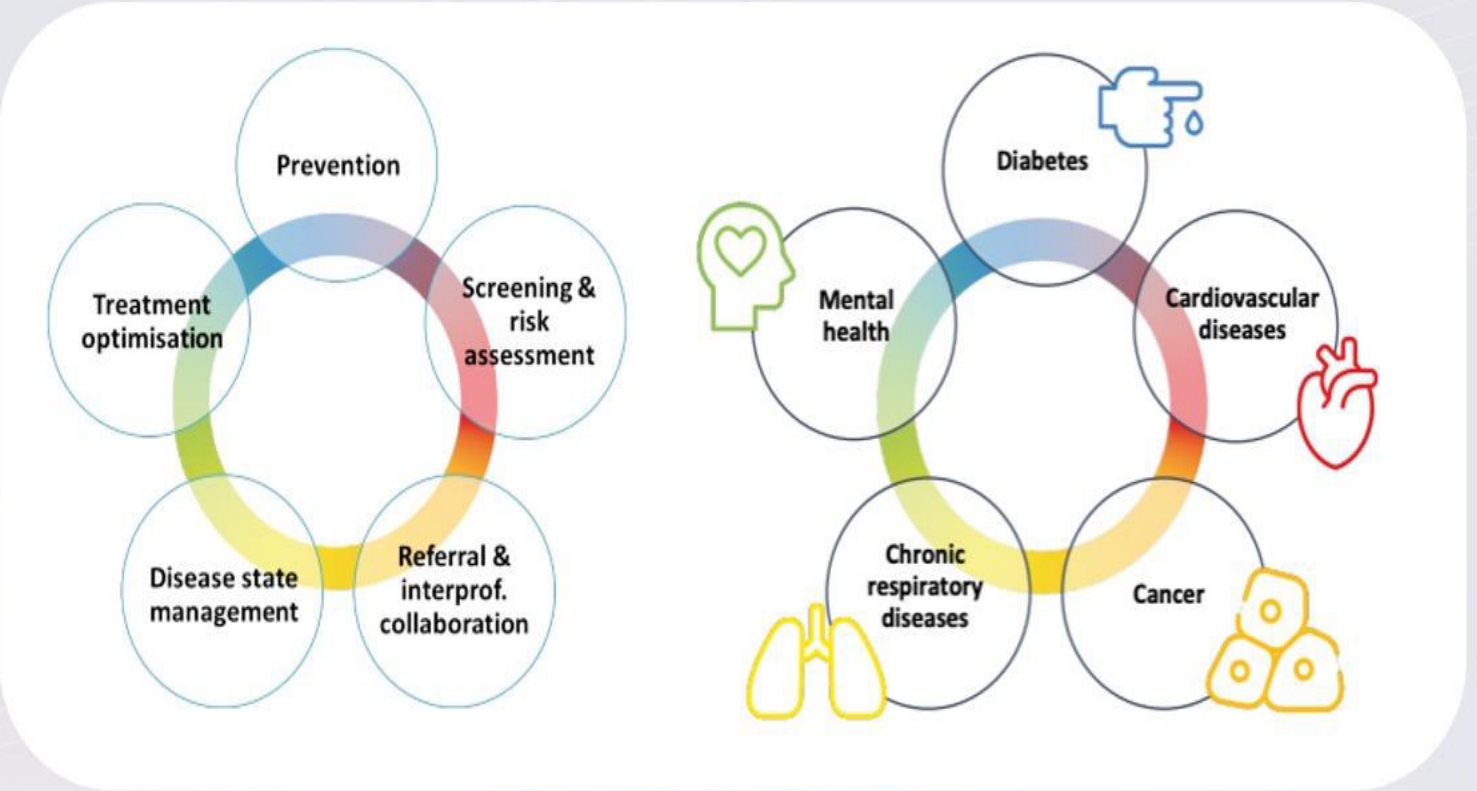
## MODULAR APPROACH

- The Implementation of the Framework will be on a modular approach with each module covering a specific therapeutic area or service.
- Each module will be supported by FIVE Pillars that will provide the required resources for a Community Pharmacist to initiate, execute and monitor the Service provided.
- The proposed rollout of the modules will be 1 Self-Care, 1 NCD and 1 Health Risk module.
- Current rollout - AMR & Common Ailments, Diabetes and Tobacco Cessation

# NON-COMMUNICABLE DISEASES

## FIP: 5 CONDITIONS & 5 AREAS OF INTERVENTION

- Disease prevention, including health education and support to adopt healthier lifestyles
- Screening and risk assessment, namely through point-of-care tests (see the FIP Statement of Policy on the role of pharmacy professionals in point-of-care testing).
- Referral and interprofessional collaboration, which is a key element of any patient-centred approach to NCD management.
- Disease-state management, including patient follow up and support to prevent disease progression.
- Treatment optimisation, such as adherence, medicines use reviews and medicines reconciliation.



# Caring for chronic disease patients in the pharmacy

What steps can pharmacists and their teams take every day to identify and care for chronic patients? They can recognise and identify patients, start a conversation and motivate patients to take action, and collaborate with primary care.

## STEP 1
### Recognise and Identify

Positively impacting a specific chronic disease patient starts with accurate identification and driving earlier diagnosis and timely treatment.

Detection requires a good understanding of the specific disease, its risk factors, and the current international and/or local guidelines.

Increasing public awareness at point of care can help trigger conversations with the pharmacy team.

## STEP 2
### Start a Conversation and Take Action

Motivating patients to take action involves a continuous and conscious effort by the entire pharmacy team.

Using effective counselling techniques and an integrated plan can help streamline engagement with patients, from initiation through to the monitoring phase of the journey.

## STEP 3
### Collaborate with Primary Care

Communicating and collaborating with primary care can optimise care for patients at risk of chronic disease.

Effectively and efficiently documenting an assessment and key recommendations can help build a strong collaborative care partnership and promote a seamless experience for at-risk patients.

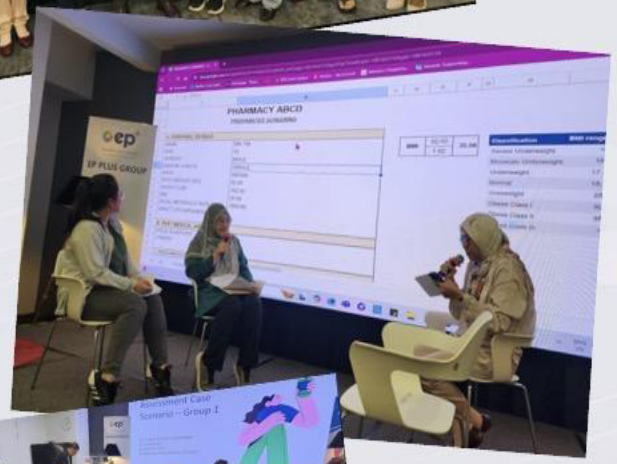
# NCD SERVICES TO BOOST UTILISATION

The Chronic Disease Service Framework can be integrated into, including but not limited to, the following:

- Dispensing and counselling
- Chronic disease diagnostic testing (eg, blood pressure and blood glucose monitoring)
- Medication reviews
- Well-being and lifestyle services

# PHARMACIES AS WELLNESS HUBS

# PCF ROLLOUT 2025: TRAINING & CAPACITY BUILDING


## DIABETES

- Pre-diabetes training module with practical skills in screening & interpretation
- MPS developed protocols based on MOH expertise
- Next steps: expanding to regional, development of algorithm

## AMR & COMMON AILMENTS

- MPS-CPA joint workshop on AMR & URTIs at the MPS NPC
- Strengthening clinical decision-making - structured assessment, red flags, differential diagnosis
- Next steps: rollout of algorithm, expansion to SSTIs, UTIs and others

COMMONWEALTH
PHARMACISTS
ASSOCIATION

# COMMUNITY PHARMACY INNOVATIONS

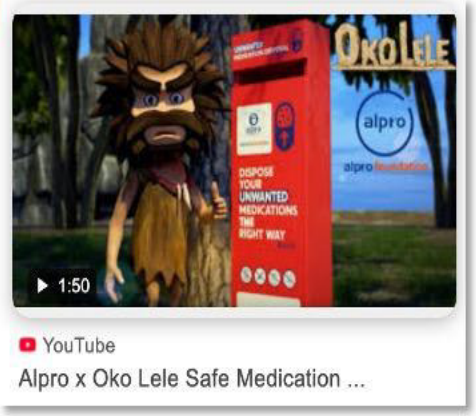
## BIG CARING GROUP: RIBBON OF HOPE

- A holistic initiative to achieving healthcare equity by providing integrated, accessible and compassionate end-to-end cancer navigation and support, powered by our community ecosystem.
- Target Audience: Cancer patients and their caregivers / public
- USP/Novelty: Early detection of cancer, personalized patient education & support, integrated public health engagement
- Progress
  - Colon cancer Awareness at Pharmacy outlets - reach out to 300 people on colon cancer screening test kits
  - Smoking cessation service - more than 100 pharmacists certified to provide the service in pharmacy
  - Collaboration with National Cancer Society Malaysia, Rotary Club of KL DiRaja on Prostate Cancer Screening to reach out to 3000 men.
- Next Steps
  - Reach out to cancer patients and caregivers on mental support, dietitian advice and pharmacists counselling
  - Promotion & Education of Self-based approaches to Care (Self-Care)
  - Prevention & Management of Non Communicable Diseases (NCDs)
  - Mitigating Health Risk Factors including the need of lifetime immunisation

# COMMUNITY PHARMACY INNOVATIONS

## ALPRO SAFE MEDICATION DISPOSAL

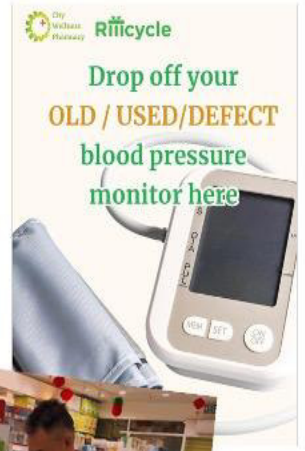
- Malaysians dispose of medicines incorrectly – flushing them, throwing them into household bins, or storing them at home. This contributes to antimicrobial resistance (AMR), accidental poisoning, environmental contamination, and misuse. Community pharmacists are the most accessible professionals to provide safe disposal access and public education.
- Available across all 300 Alpro Pharmacy outlets, providing convenient, pharmacist-supervised collection points for medicines, insulin needles, lancets and sharps.
- Over 14,000 kg of pharmaceutical waste collected to date, including ~9,000 kg of unused/expired medicines and ~5,500 kg of sharps, preventing them from entering the environment or being misused.
- Community pharmacists conducted nationwide education efforts, reaching 600+ schools and more than 300,000 students, promoting responsible medication use and disposal from a young age.
- Alpro x Oko Lele Animation: A unique collaboration using a nationally recognised 3D animated character to teach children and families about proper medicine disposal in an engaging, memorable, and culturally relevant format – amplifying pharmacists' public health impact. To date, we have achieved more than 1 million views.

# COMMUNITY PHARMACY INNOVATIONS

## CITY WELLNESS - USED BLOOD MACHINE RECYCLING

- This Recycling Program is an ESG-driven public health and environmental sustainability initiative, led by Gina Koay, the Founder and Community Pharmacist of City Wellness Pharmacy.
- This program encourages the community to safely dispose of old, faulty or unused BP monitor so that the components can be responsibly recycled, preventing electronic waste (e-waste) from entering landfills.
- This initiative also helps raise awareness about proper BP home monitoring and importance of accurate and functioning BP devices ,responsible consumer behavior in healthcare.
- Objectives: to reduce e-waster in the healthcare segment by recycling point at City Wellness pharmacy; to align community pharmacy practice with ESG and UN SDG goals (SDG 3,12,13); to foster partnerships with recycling organizations such as Riiicycle and Revo Healthcare.
- Progress of the Initiative/Service: Rolled out since April 2024, over 200 BP monitors collected. Public engagement via social media reels, posters, community events. City Wellness Pharmacy received the ESG Pioneer Award in 2024
- Next Steps/Future : Expand the program to include thermometers, glucometers, and small medical electronic devices; integrate this initiative into corporate wellness packages; create more story-based reels to educate the public and inspire others to participate.

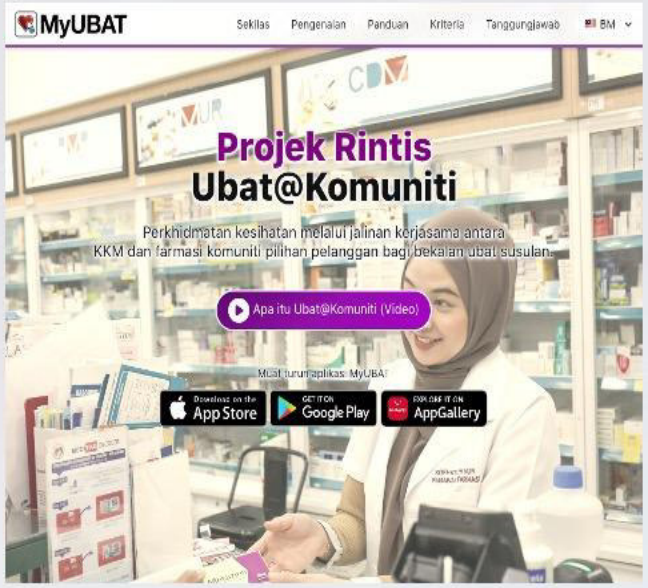



# A PILOT: MyUBAT@Community

## PILOT PROJECT BY MINISTRY OF HEALTH (MOH) MALAYSIA

- Digital App driven collection of medications at community pharmacies
- Objective is to reduce congestion at government clinics and hospitals (for repeat medications)
- Allows the community pharmacist to assist in the management of medicines






我们已经前进了多远...


**Sebarang pertanyaan berkaitan perkhidmatan ini, sila berhubung dengan pegawai farmasi di kaunter.**

| | |
|---|---|
| **4** Fasiliti KKM pelaksana | **45** Komuniti Farmasi yang terlibat |
| **1,356** Pelanggan sertai projek rintis | **4,227** Janji temu telah dipenuhi |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# TERIMA KASIH
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