MOHT | MOH OFFICE FOR HEALTHCARE TRANSFORMATION

ENABLING BETTER CHRONIC DISEASES CONTROLS

INNOVATION, TECHNOLOGY AND FINANCING

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FIVE KEY FEATURES OF HEALTHIER SG

FAMILY DOCTORS

Family doctors will provide more holistic care, focused on prevention and improved chronic care, and build a stronger long-term relationship with residents. Our healthcare clusters – National Healthcare Group (NHG), National University Health System (NUHS), and SingHealth (SHS) – will partner with them to help residents on their Healthier SG journey.

HEALTH PLANS

Family doctors and residents will develop a health plan together, which includes lifestyle adjustments, regular health screenings and recommended vaccinations. Progress on the health plan will be monitored through regular check-ins with their family doctor.

COMMUNITY PARTNERS

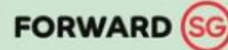
Residents will be connected to activities provided by community partners such as the Health Promotion Board (HPB), People's Association (PA), and Sport Singapore (SportSG). Seniors will benefit from additional support from Eldercare Centres.

NATIONAL ENROLMENT PROGRAMME

Residents will be invited to enrol with a clinic of their choice. They will receive benefits such as a free first onboarding health consultation at their enrolled clinic.

KEY ENABLERS

Healthcare IT and data infrastructure, manpower and financing policy are key enablers to allow the healthcare clusters, family doctors and community partners to serve residents better.



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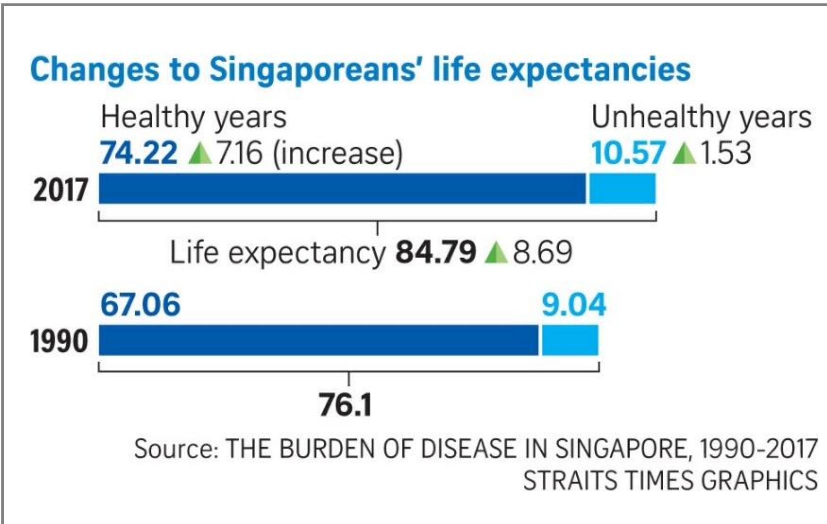
Aging Population – Shift in Burden of Disease to Chronic Illnesses

Singaporeans living longer but spending more time in ill health



High DHL[1] Prevalence among Singaporeans

DHL Prevalence among adults aged 18 to 69 years (%)

Condition	%	
Hyperlipidaemia	33.6	1 in **3**
Hypertension	21.5	1 in **5**
Diabetes	8.6	1 in **12**

Source: MOH, 2017

The need to manage chronic disease more efficiently

Hospital admissions per 100,000 population

Condition	Singapore (2015)	Netherlands (2015)	Spain (2015)	All OECD countries studied (2015)
Asthma	**102.6**	36.0	35.2	16.5-71.0
Diabetes	**414.5**	62.1	46.8	66.3-141.3

Source: stats.oecd.org

◀ Singapore's rates of hospital admissions for asthma and diabetes far exceed that in other countries.

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[1] Definitions: Hyperlipidaemia: LDL-Cholesterol ≥ 4.1mmol/l, Hypertension: Blood pressure ≥ 140/90mmHg, Diabetes: Fasting plasma glucose ≥ 6.9 mmol/l

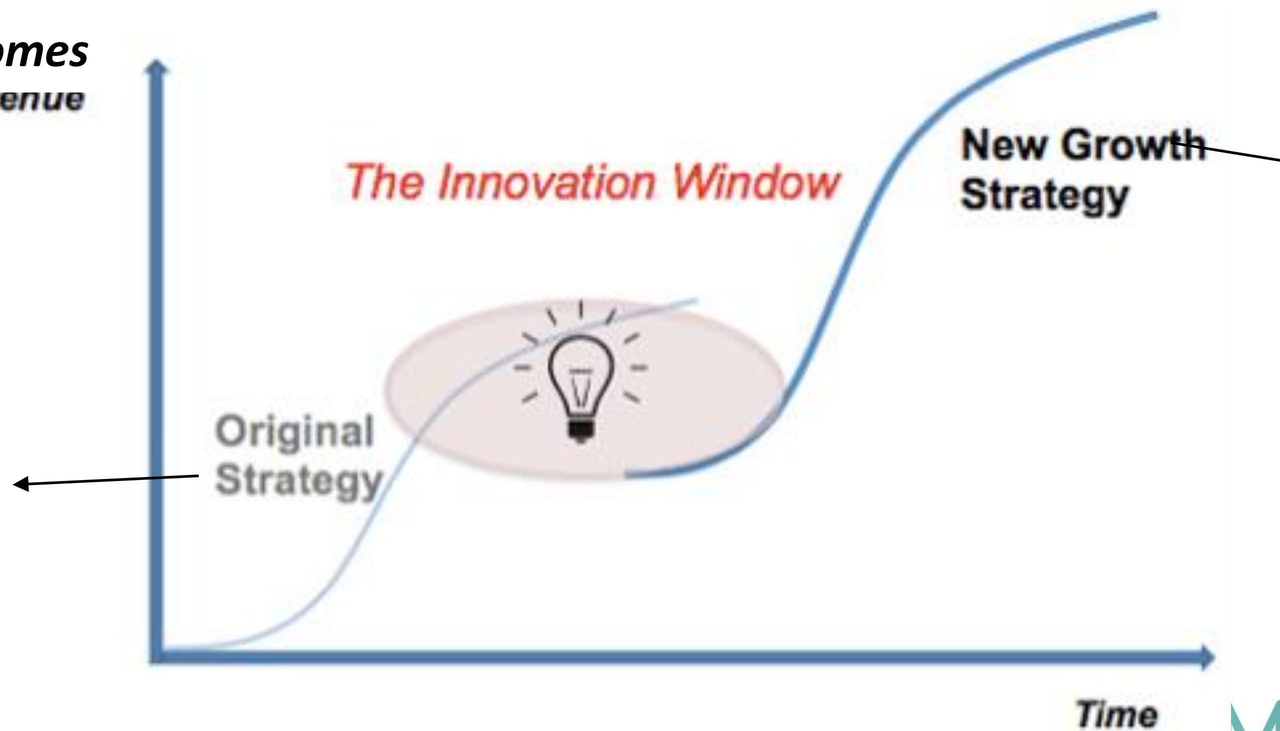
PRIMARY CARE AS THE ANCHOR

Preventive Care & Chronic Illnesses Management Anchored by Primary Care in the Community – the Next Leap for Healthcare in SG

Primary Care is at an inflexion point, driven by fast growing demand created by the rise of chronic diseases and ageing population and the rise of scalable digital healthcare technologies

Outcomes

Traditional Primary Care in Singapore has served us well, but is manpower intensive and ill-suited to deal with the growing burden of chronic diseases



Telehealth Pilots, e.g. **Primary Tech-Enhanced Care (PTEC),** effectively leverages technology, data and analytics to deliver better care outcomes with less use of resources

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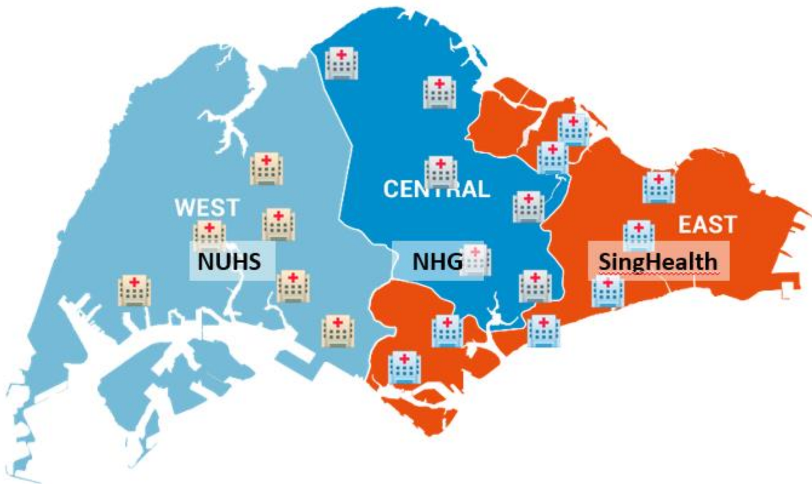
Primary Care in Singapore

20%

Public Polyclinics

- **23** polyclinics
- State-subsidised
- **3** clusters (NUHS - NUP, NHG - NHGP and SingHealth - SHP)
- **30-32** polyclinics by 2030



80%

Private GP Clinics

- **1800 GP Clinics** (medical groups or solo practices)
- Privately-owned
- **>1000 CHAS Clinics** (Community Health Assist Scheme - CHAS) [2]
- **~500 GP Clinics in 10 PCNs** (Primary Care Networks - PCN)[3]
- **8 FMCs** (Family Medicine Clinics -FMC)[4]

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1 Primary Care Pages. Primary Care Landscape [Internet]. Singapore: Agency for Integrated Care; 2019. Available from https://www.primarycarepages.sg/about-us/primary-care-landscape
2 Wong D. Jump in number of Chas card holders. The Straits Times [Internet]. 2018 [cited 22 July 2019];. Available from: https://www.straitstimes.com/singapore/health/jump-in-number-of-chas-card-holders
3 List of GP Clinics Under Primary Care Network (PCN) Scheme [Internet]. 2019 [cited 22 July 2019]. Available from: https://www.silverpages.sg/sites/silverpagesassets/SilverPages%20Assets/Content%20Images/Primary%20Care%20Network/SSP%20-%20PCN%20Clinic%20Listing.pdf
4 Family Medicine Clinics (FMCs) [Internet]. Primarycarepages.sg. 2019 [cited 22 July 2019]. Available from: https://www.primarycarepages.sg/practice-management/primary-care-model/family-medicine-clinics-(fmcs)

Our Vision to Transform Primary Care

Disease Self-management

For low risk NCD patients

HOME-BASED TECH-ENABLED SELF-MANAGEMENT

Effective care to prevent complications

For high risk NCD patients

Increasing patient risk profile

Strengthening Primary & Community Care – The Journey towards Healthier SG

Anchor gravity at Primary Care for most health needs in aging population

- "One person, One family doctor", nation wide enrollment (starting with age ≥ 60 from Jun 2023) – voluntary, with incentives

Empowering patients towards more self–management

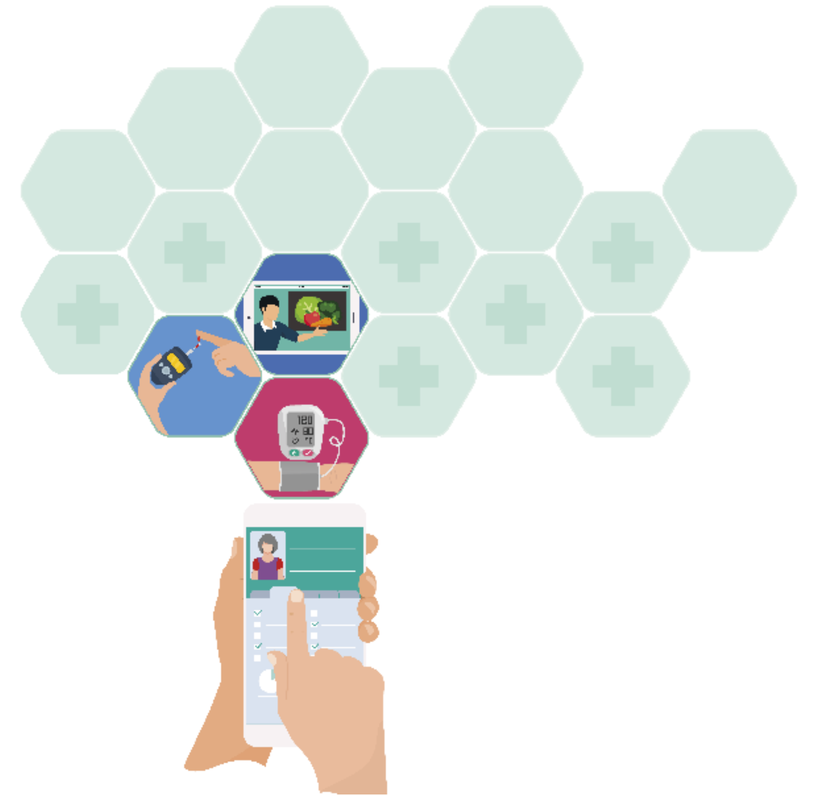
- Achieve good control of chronic diseases to avoid complications

Responding to the needs of the population:

- Growing patient load (from 2005 to 2014): 23% increase in the total primary care visits
- Disproportionately large number of patients with chronic conditions
- Complex medical and social issues

INNOVATIONS IN PRIMARY CARE:

PRIMARY TECH-ENHANCED CARE (PTEC)



Primary Tech-Enhanced Care (PTEC)

- Chronic disease requires lifelong management and active patient participation
- PTEC is a series of initiatives with simple-to-use technologies that allows:

Our PTEC Projects

GPII (GPs) | PTEC (Polyclinics)

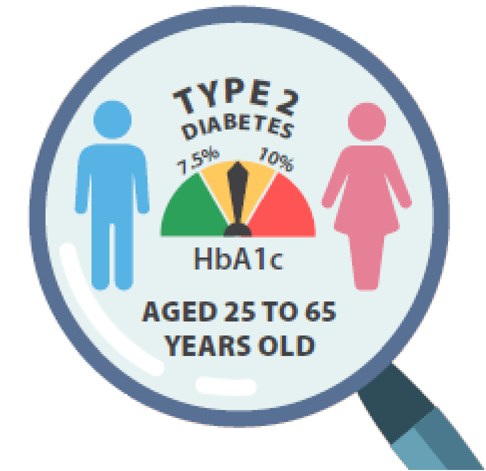
	Home-based self-management				Effective care of high risk NCD patients		Community Service	
	GPII CCT-PCN	GPII Thrust[1]	PTEC-HT	PTEC-HAT	PTEC-OPTIMUM	PTEC-C3PICO	PTEC-PACE-IT	GPII DMP
Simple [Defined as D, H &/or L only and no SFA issues]	CDMP Conditions (one or multiple)	Hypertension (controlled, BP>140/90)	Hypertension (controlled, BP>140/90)	HT+ Diabetes (controlled HbA1c <8)	Diabetes (Uncontrolled, HbA1c 7.5%-10%, BGM*)	Diabetes (Uncontrolled, HbA1c>8%, CGM*)		Diabetes Screening
Complex [Defined as MM and Social (S), Functional (F) or Activation (A) Issues]	CDMP Conditions (one or multiple)						Complex (MSFA* issues) (HbA1c >9%)	

[1] Thrust has additional lifestyle & coaching component, e.g. stress management, exercise/diet

* BGM = Blood Glucose Monitoring; CGM = Continuous Glucose Monitoring; MSFA = Medical, Social, Functional, Activation

PTEC - DM (OPTIMUM)

Objective:
Evaluate **effectiveness of tele-monitoring** and asynchronous **tele-counselling** on glycemic control of diabetic patients



Partners:
SingHealth Polyclinics, MOHT, Philips, RGA

Approach:
Randomised Controlled Trial (RCT) involving 330 patients

Eligibility Criteria:

- Patients living with Type 2 DM (≥ 7.5% HbA1c ≤ 10%), aged 26 to 65 years, With or without:
  - Mild non-proliferative diabetic retinopathy without any macular or retinal involvement;
  - Chronic Kidney Diseases up to stage 3

PTEC - OPTIMUM

Intervention *(provided over and above usual care):*

1. **Loan of Bluetooth-enabled medical devices**
    1. Glucometer (1-4x a week)
    2. Blood pressure monitor (1x a day)
    3. Weighing scale (1x a month)

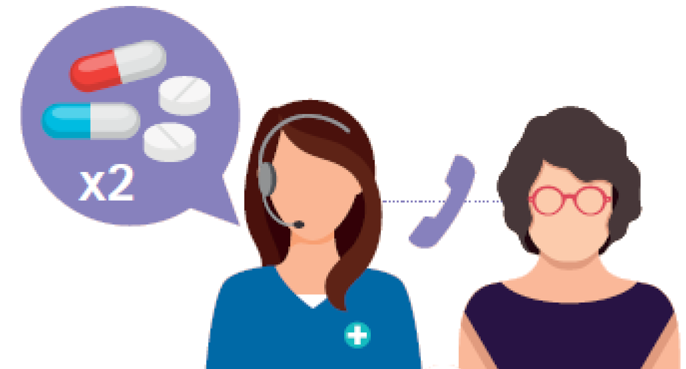
2. **Subscription to Vital Signs Monitoring (VSM) system**
    - Automatically records patients' blood glucose, blood pressure and weight, and immediately alerts patients on irregular readings
    - Shares readings with polyclinic nurses
    - Links patients to educational videos about diabetes and how to manage it

PTEC - OPTIMUM

Intervention *(provided over and above usual care):*

3. Telehealth support from the polyclinic

Taking into consideration data submitted by patients, polyclinic nurses will initiate tele-consultations with patients on how to manage their condition better

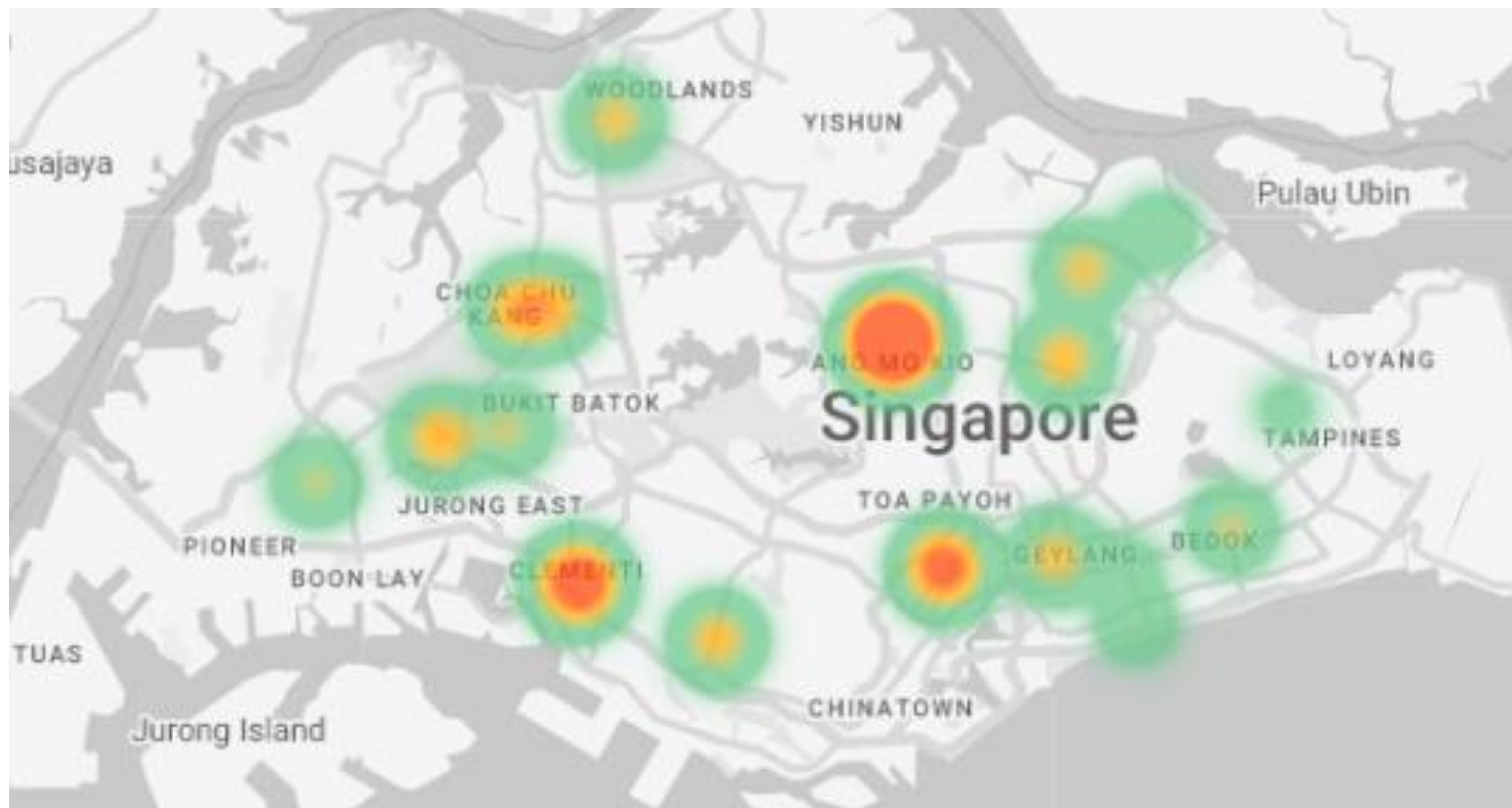


PTEC – HT (Hypertension)

Objective:

To enable patients with hypertension to **better manage their conditions** in the comfort of their home, with the help of **simple technology** and **tele-consultations** from the polyclinic

PTEC-HT Scaling – Enrolment Across All Polyclinics by Early 2023



- **Geographical heatmap** of polyclinic launches and enrolment levels
- **19** out of 23 **polyclinics** have launched PTEC HT
- 4 more to launch in Oct-Dec

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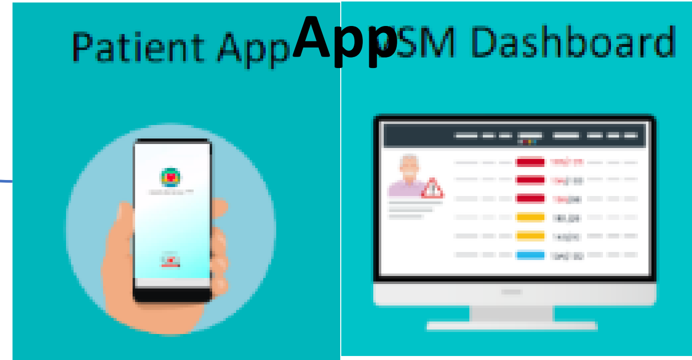
(Upcoming) PTEC-DM – Cross-cluster pilot incorporating learnings from earlier pilots

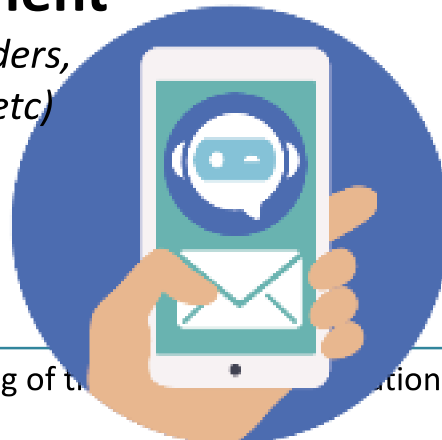
Perform Home tests
(Improve ease of readings submission)

Health Discovery+ (HD+)



Tele-health monitoring *(Support from care teams)*

Self-Management
(Automated reminders, educational links etc)



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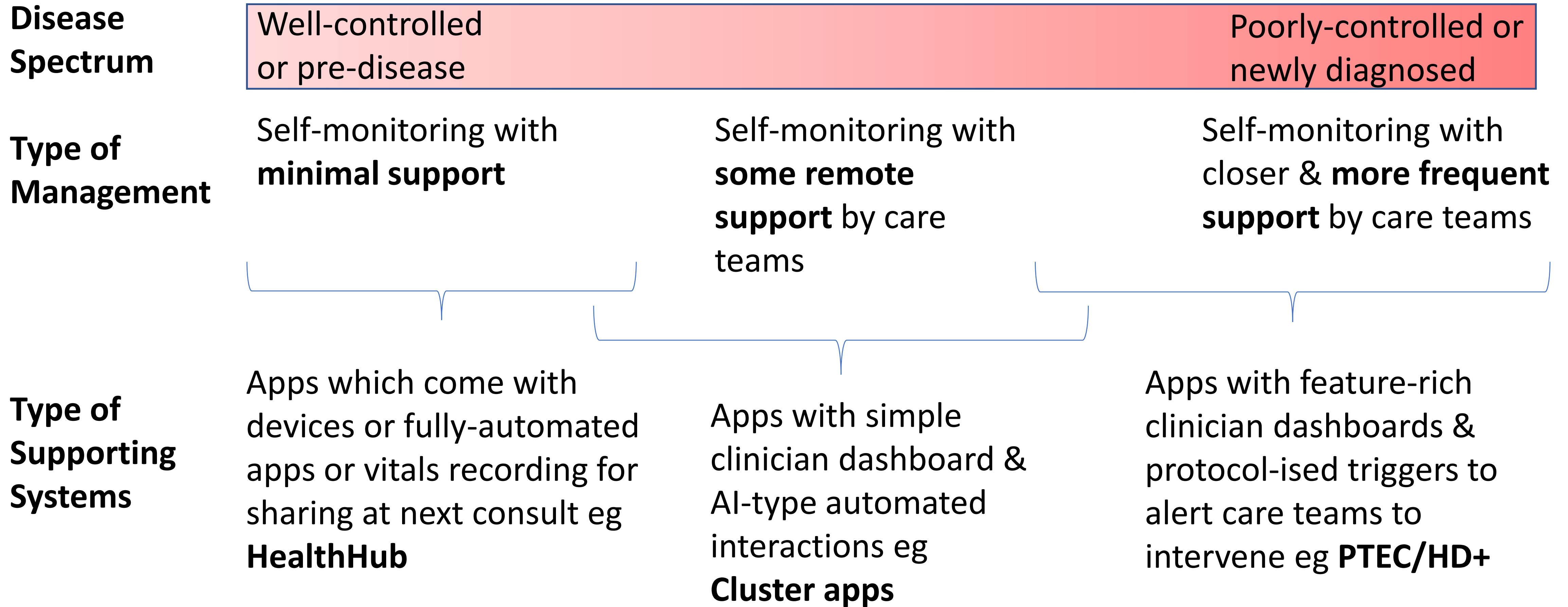
Complementary systems to support spectrum of chronic patients



Q & A