

A nighttime aerial photograph of Hong Kong, showing the dense urban landscape with numerous illuminated skyscrapers and buildings. The Victoria Harbour is visible in the center, reflecting the city lights. The overall scene is vibrant and modern, representing the city's technological and urban advancement.

DIGITAL HEALTH IN HONG KONG A VISION FOR THE FUTURE

Dr NT Cheung
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Consultant(eHealth), Food & Health Bureau

Hospital Authority

♥ Established 1991

♥ 43 Public Hospitals

♥ 47 Specialist Outpatient Clinics (SOPD)

♥ 73 General Outpatient Clinics (GOPC)

♥ 28,126 Beds

♥ 75,887 Staff

♥ Around 25,401 Nurses

♥ 6,466 Doctors

♥ HK\$ 60B Annual Operating Budget
(~A\$10 billion)

♥ 6.4m GOPC Attendances

♥ 9.4m SOPD Attendances

♥ 2.2m A&E Attendances

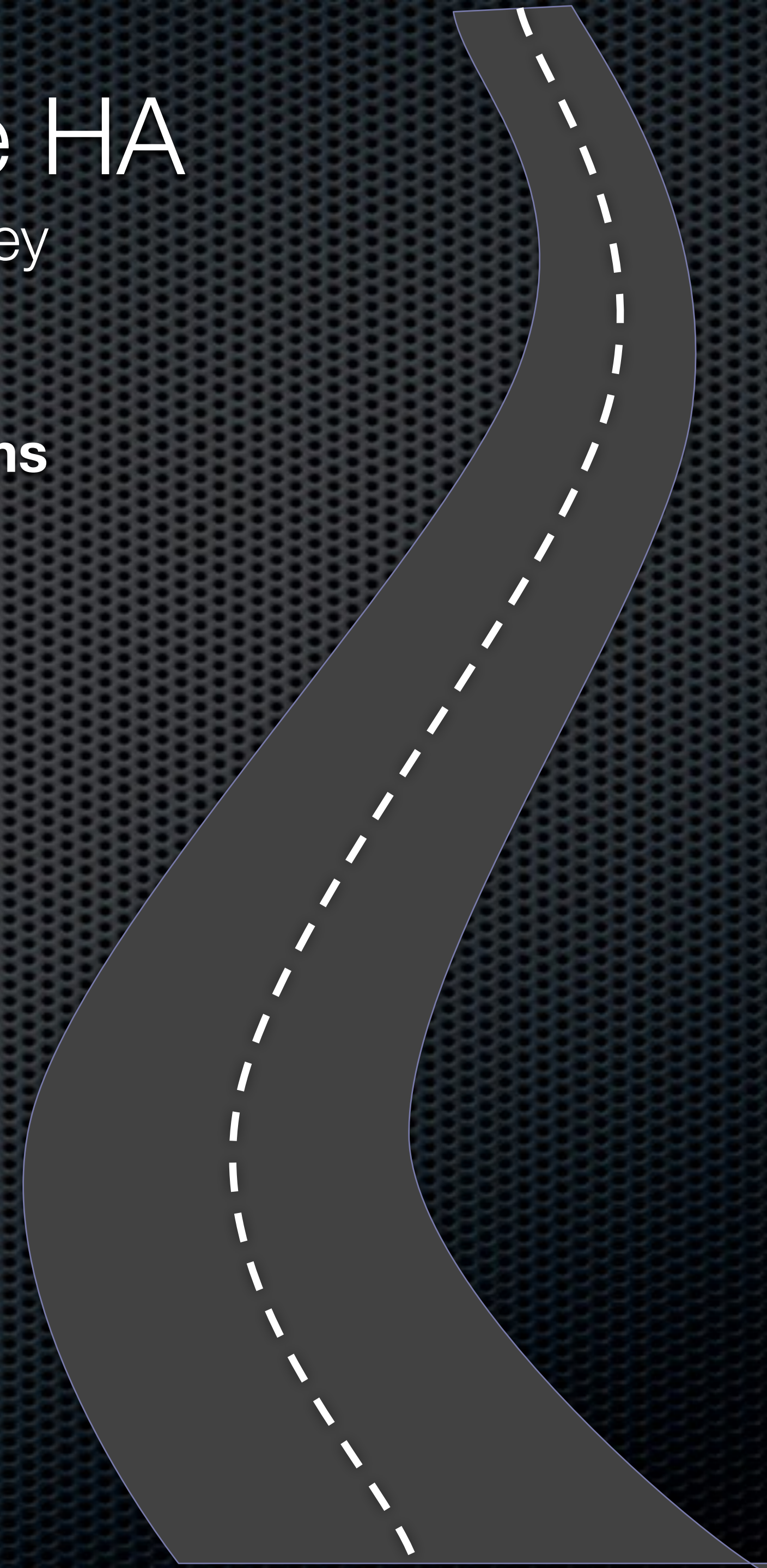
♥ 1.8m Inpatient and Day Patient Discharges



eHealth in the HA

An Ongoing Journey

- 1990** “Green fields”
Patient administration + Departmental systems
- 1995** Clinical Management System (CMS)
CMS Phase II
- 2000** • Electronic Patient Record (ePR)
- 2008** ePR Image Distribution
CMS Phase III
Filmless HA
- 2010** Inpatient MOE
HK-wide eHRSS
- 2016** Mobile CMS
CMS IV
- 2019+** HA Go
eHRSS Stage 2



ENTERPRISE-WIDE ELECTRONIC PATIENT RECORD (EPR) FOR ALL HA PATIENTS



The Digital Health imperative



Healthcare service
transformation

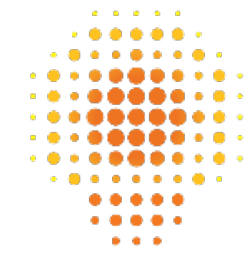


Technology &
industry evolution



Internal IT transformation

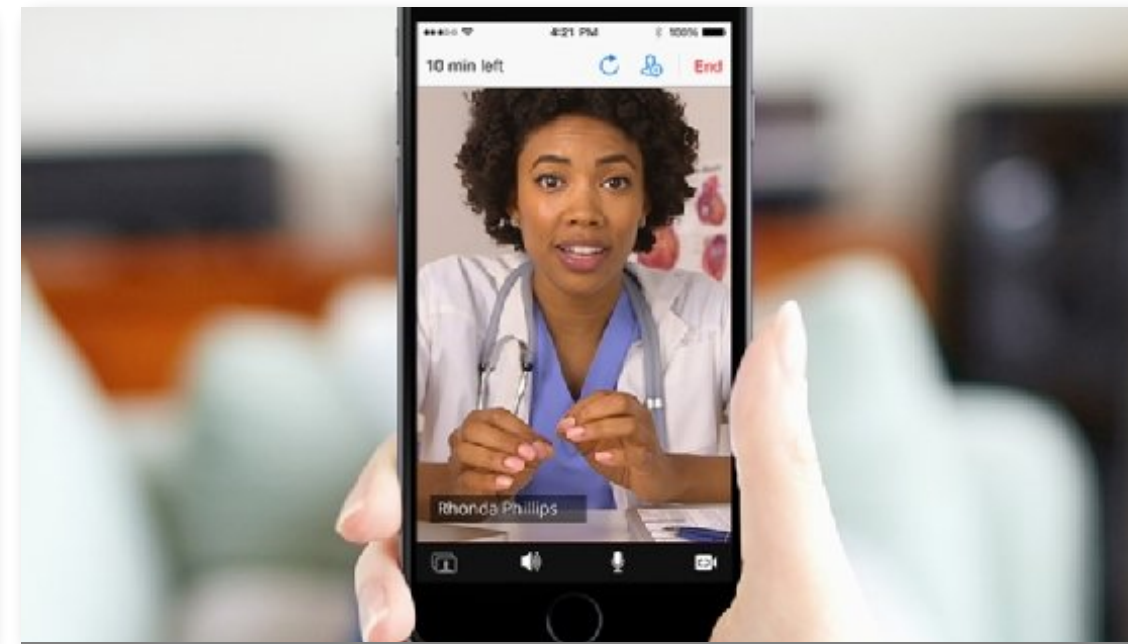
An Urgency for **More Agile Integration** of IT Innovation into HA's Services



IT.INNOVATION
CENTRE



Robotics



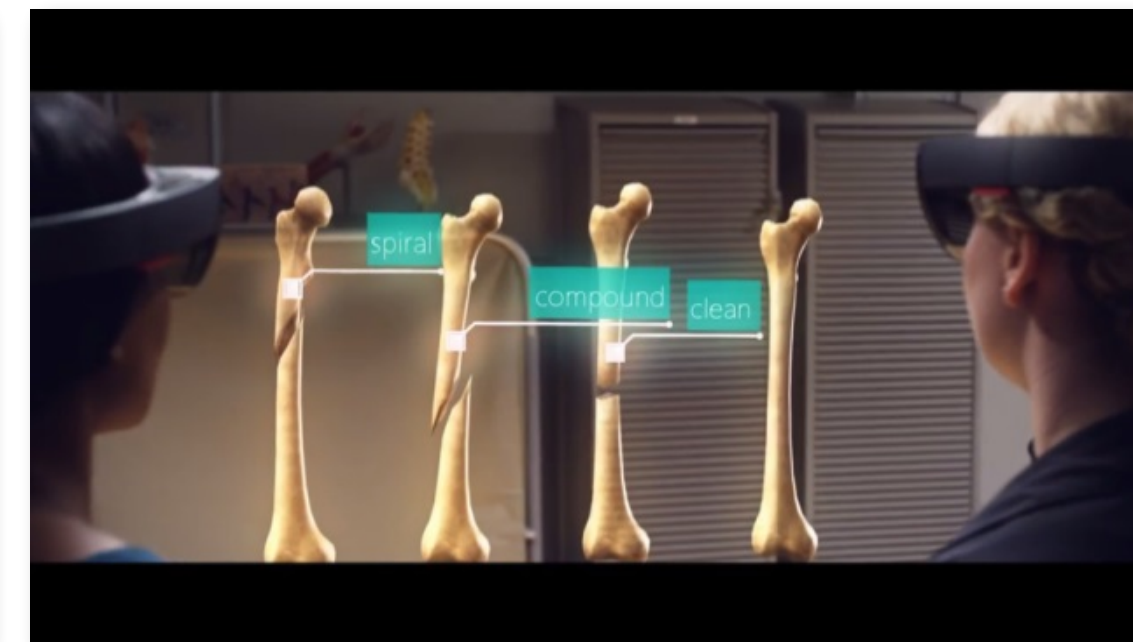
Telemedicine



Mobile & IoT



Big Data Analytics &
Artificial Intelligence



Virtual Reality &
Augmented Reality

Our Response: IT Strategy for a Digital HA



3 Demand Strategies: Transforming HA Service Provision

1 Next Generation Clinical Management

- HA's care model transformation
- Efficiency improvement
- Clinical quality and risk management

2 Enhanced Patient Experience and Outcome

- Data-driven insights for better outcome
- Patient engagement
- Community collaboration

3 Digital Workplace and Collaboration

- Mobile tools
- Staff collaboration
- Enhanced resource management
- Value-adding process

4 Advanced Process and Infrastructure

- Smarter IT services
- Advanced infrastructure
- More reliable and secure platform

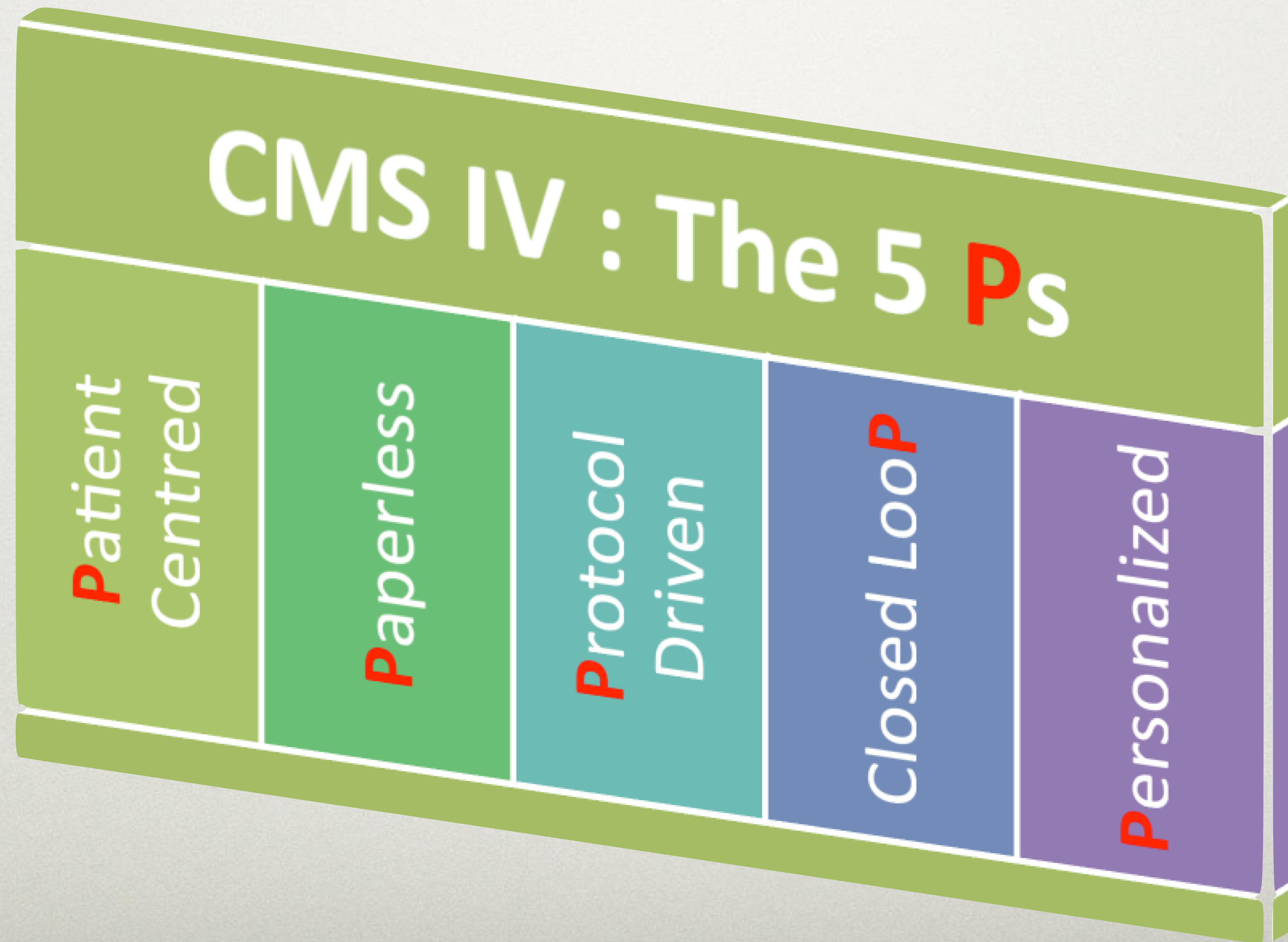
5 Resource Centralization and Specialization

- Talent specialisation
- Learning culture
- IT for IT
- Better business alignment

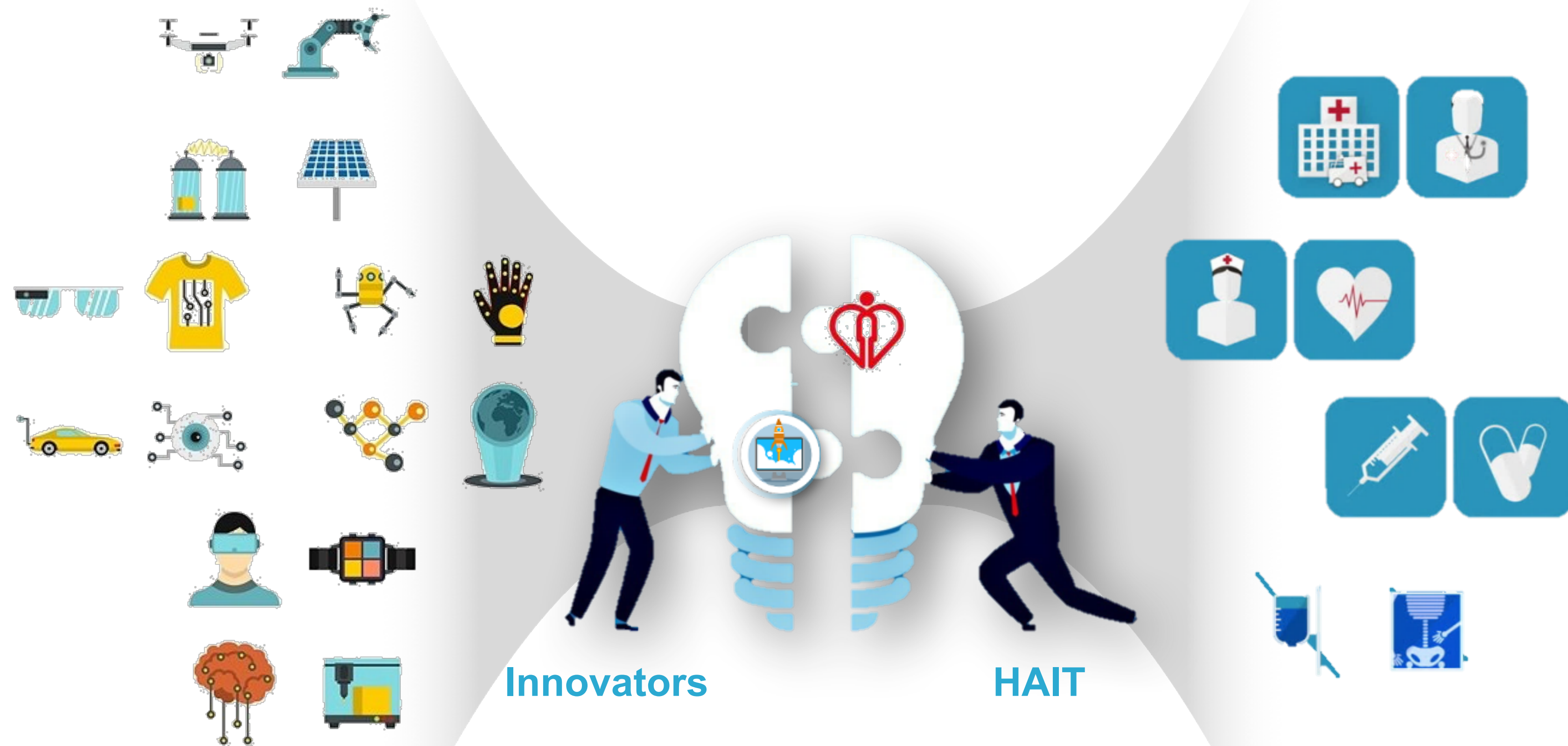
5 Portfolios
20 Strategies
100+ initiatives

2 Supply Strategies: Uplifting IT Capability

THE 5 PILLARS OF THE NEXT-GENERATION CMS

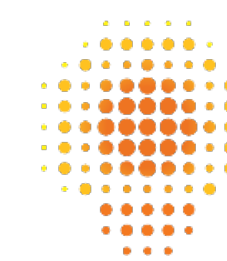


Our Positioning in IT Innovation Collaboration



*HA as a **converter** of innovation technology into real-life solutions for **better healthcare***

Data-Driven Care



IT.INNOVATION
CENTRE

280 Terabytes of
Health Data

*Millions of
Transactions
Daily*



*Valuable Data to Improve
Population Health*



2017 Medication Decision Support Alerts

**95,000 orders
changed**

Drug Allergy

		Outpatient	Inpatient	Total
	Order changed	43,461	15,889	59,350

Drug-Drug Interaction

		Outpatient	Inpatient	Total
	Order changed	15,703	15,752	31,455

G6PD Deficiency

		Outpatient	Inpatient	Total
	Order changed	2,491	467	2,958

Long Term High Dose Steroid

	Order changed			1,204
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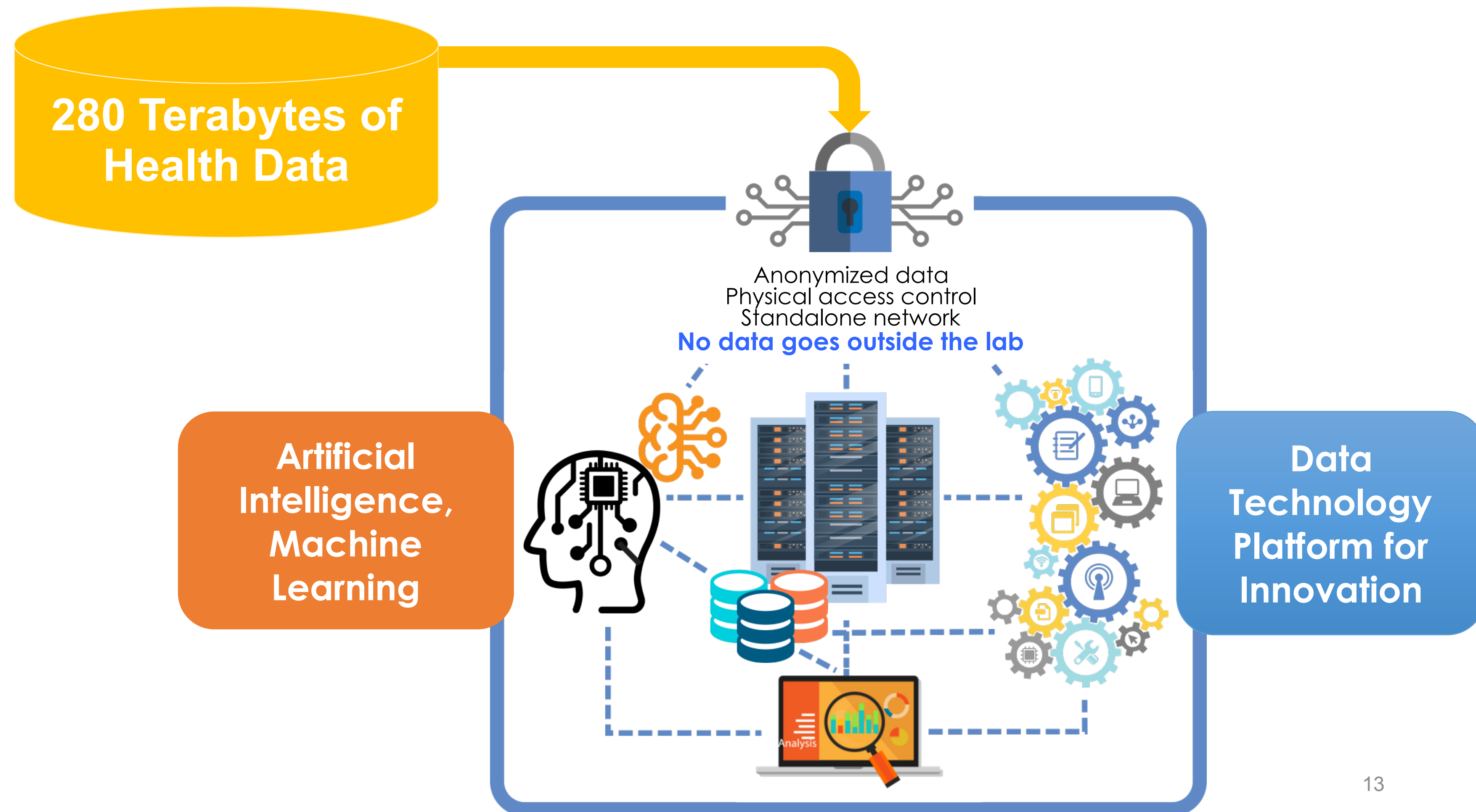
Domain	Data analyzed	Outcome
Fluid orders	52,221 IV Fluid prescriptions	Enhanced common fluid orders list and common frequencies
Duplication checking	124,240 drug items	Spurious prompts reduced
Late administration	199,912 administration events	“Late given” reason list enhanced
Free text allergies	97,343 free text entries	All valid drug allergies converted to structured entries
Allergy entry	Implemented predictive text entry	95% reduction in free text entries
Referral reasons	956,344 referral reasons	Converted to 7,231 distinct structured reasons

Data Driven System Development

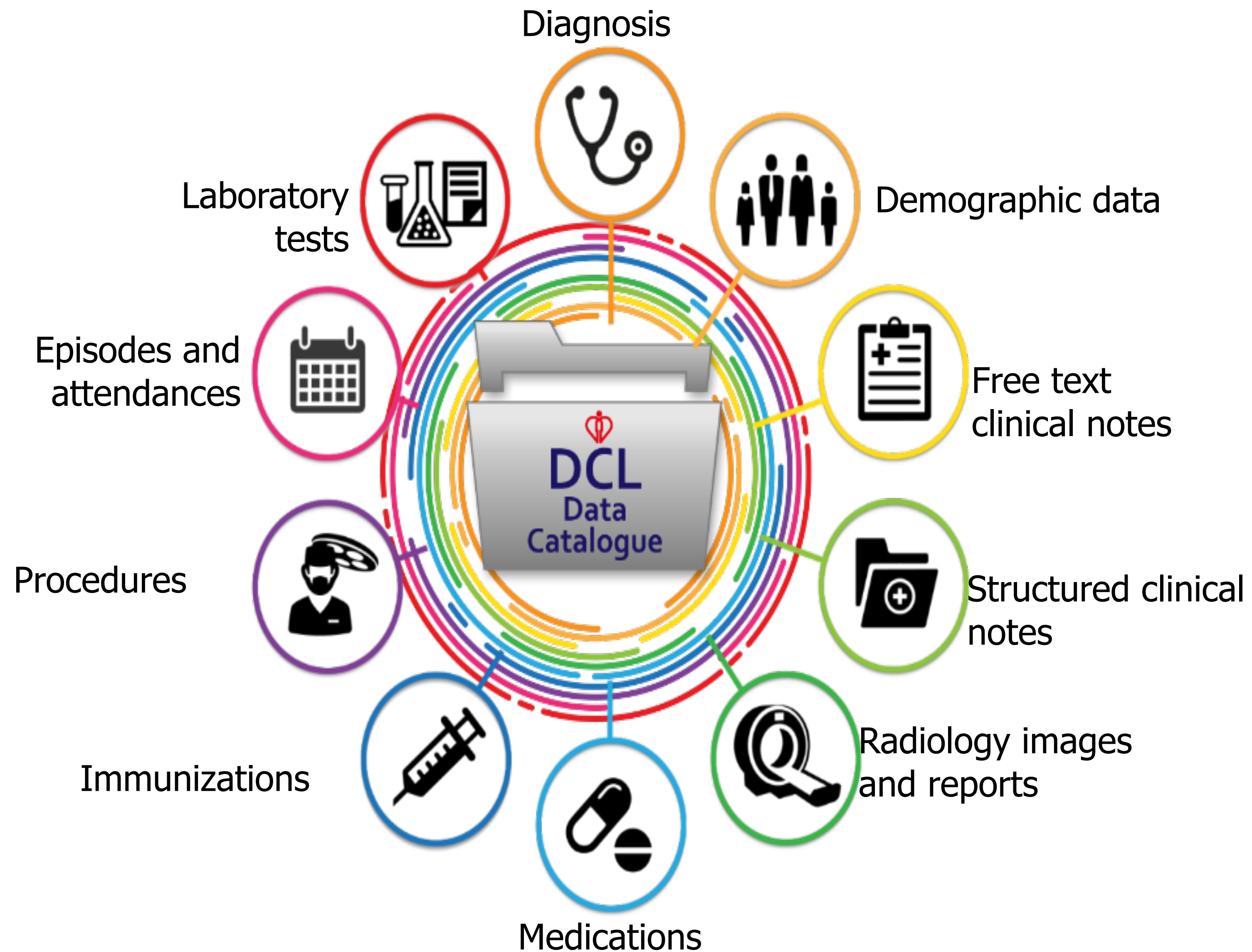
HA Data Collaboration Lab (HADCL)



Established 2018 Q4



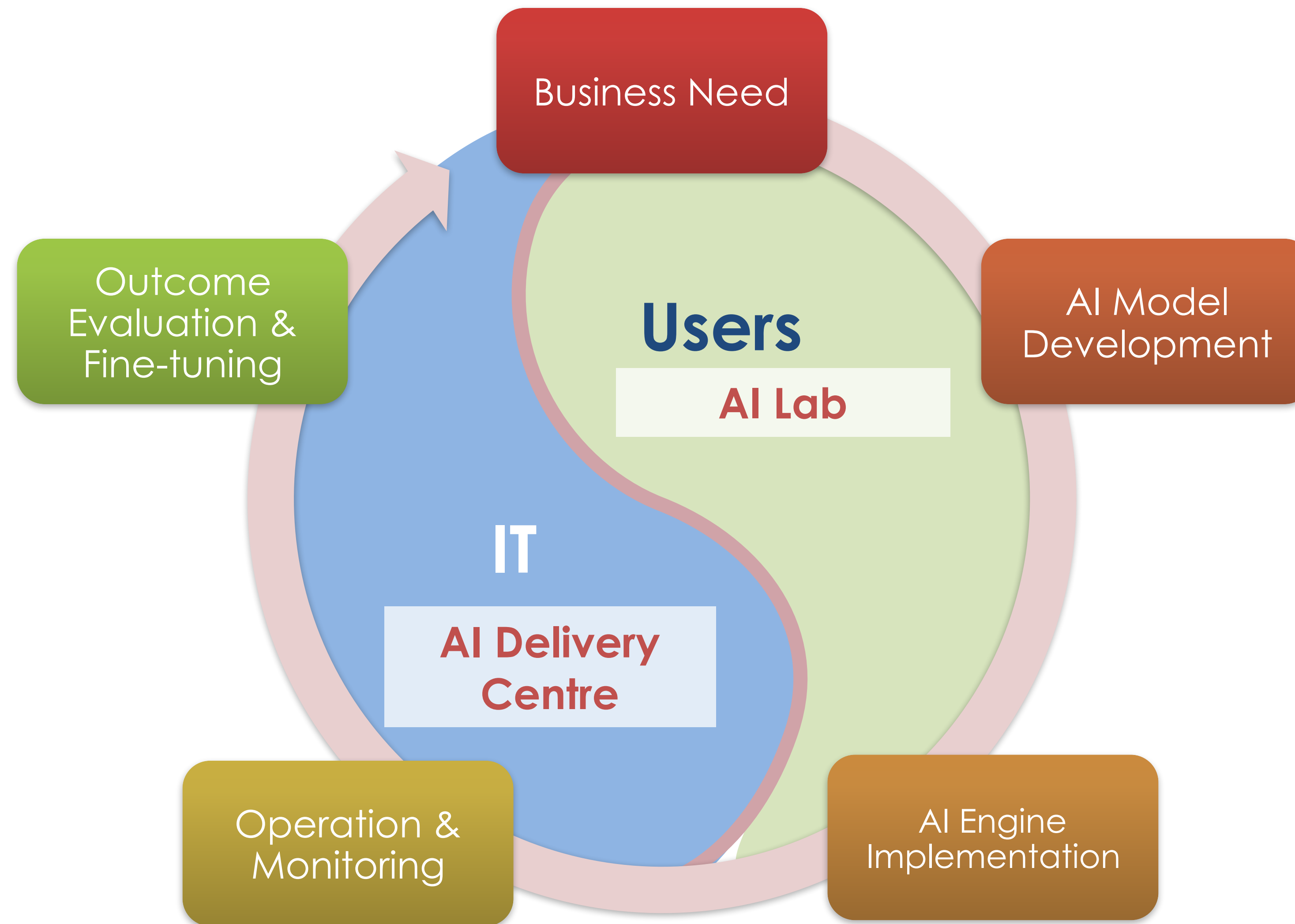
HADCL Data Catalogue



Engagement with the Ecosystem



AI Lab & AI Delivery Centre to Convert Ideas into Service Benefits



Guiding Principles for AI Adoption in HA

- AI is **decision support**, not decision making
- It must be trained and validated on **local data**
- It must integrate into **workflow**
- Needs continuous **user involvement** and monitoring
- AI opportunities exist **for all**

15 HA Public Apps...Demand for More



2018
體健通



2018
HK Blood



2018
九龍醫院一鍵通
Kowloon Hospital Guide



2017
糖訊通
DM Care



2017
喜程
HApi Journey



2015
造口護理通
Stoma Care



2015
依時
i-Easy



2016
預約通
BookHA



2017
威院急症先 Phone
PWH AE Aid



2017
家居防跌錦囊
Fall Prevention



2015
醫管局與你
HA Touch



2014
威院一路通
PWH easyGo



2014
e藥通
TouchMed

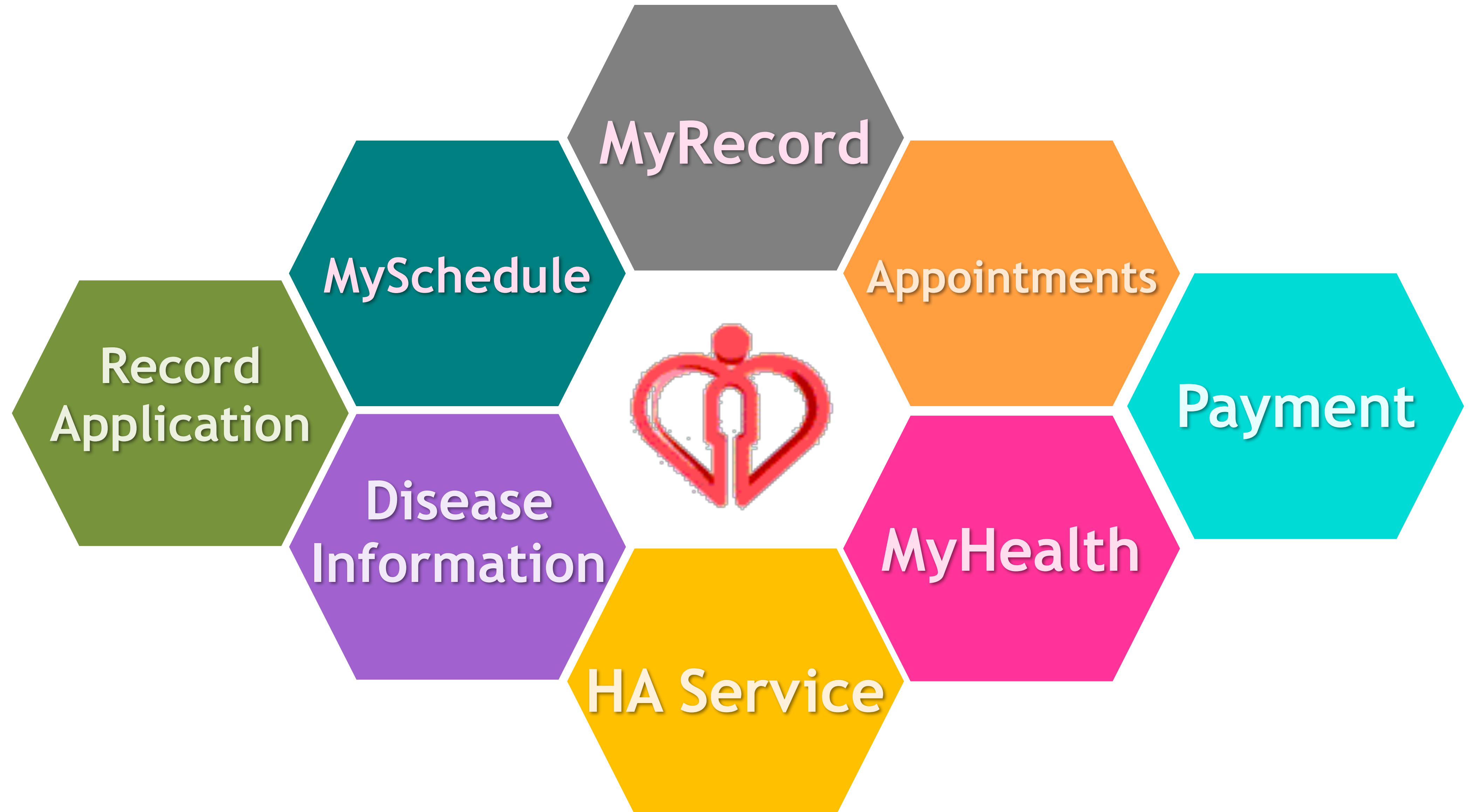


2012
病人組織一覽
Finding Patient Groups

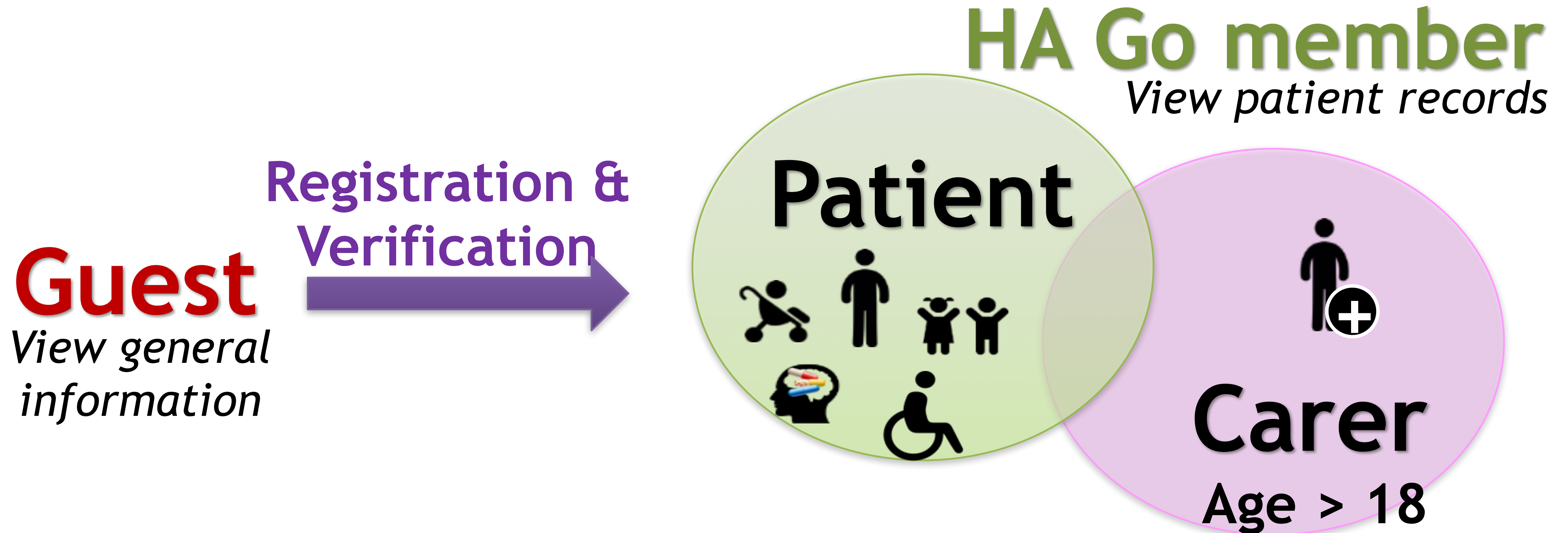


2011
減壓情識

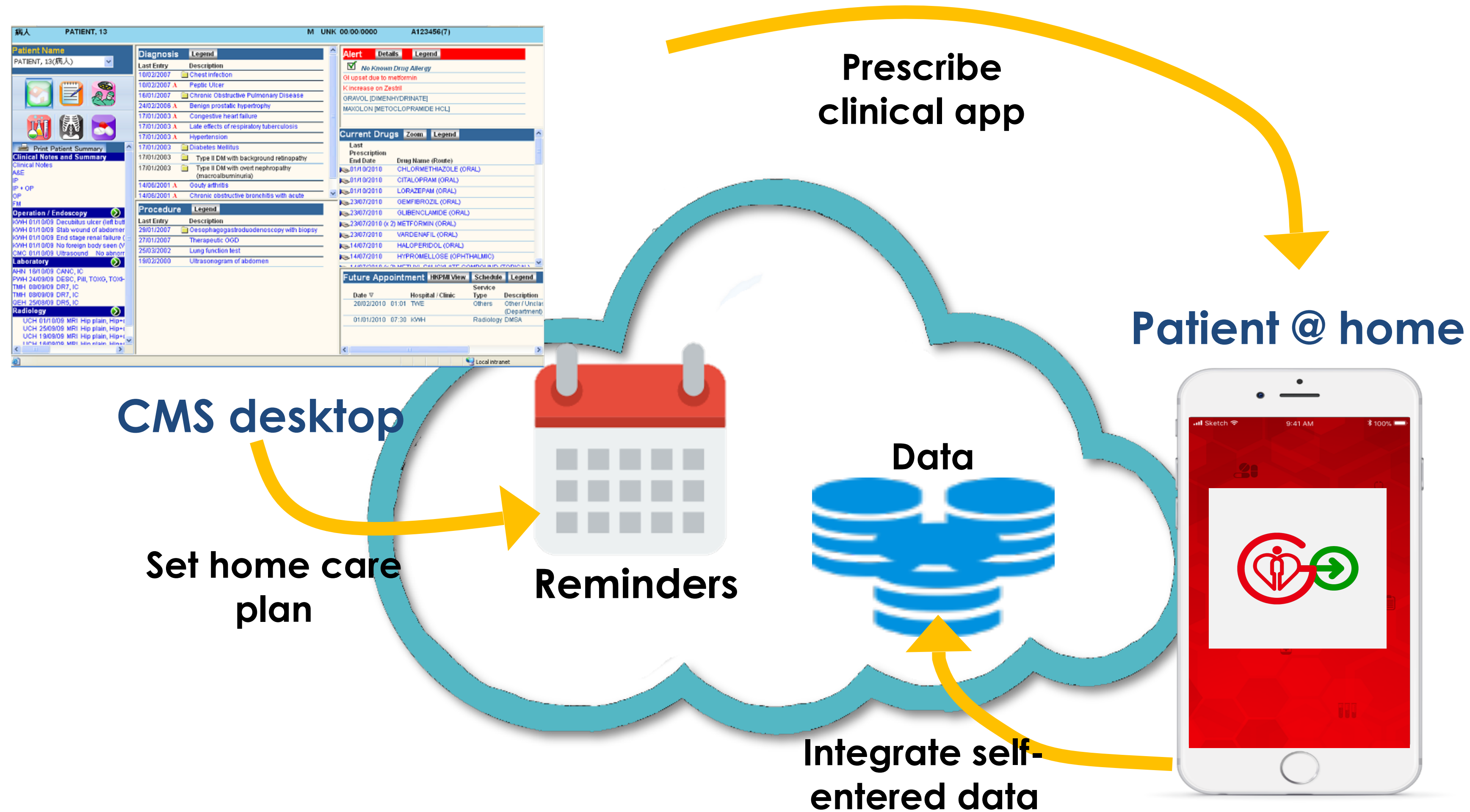
HA Go - Engaging Patients Digitally



Membership System to Protect Patient Privacy



HA Go integration with CMS



Build HK Healthcare Cloud Ecosystem

