

6th ESNO
CONGRESS

MILAN- ITALY

ESNO
EUROPEAN SPECIALIST
NURSES ORGANISATION



CLINICAL EVIDENCE IN HEALTHCARE: SCIENCE AND ARTIFICIAL INTELLIGENCE

SYLVIA FUNG

VICE PRESIDENT, THE HONG KONG ACADEMY OF NURSING

7 JUNE 2024



Evolution of Digital Technologies in Healthcare



Mainframe computer:

- Little application in healthcare

1950-1960's

1970-2000

2000-2020

2020 onward

Health Informatics:

- Health records
- Statistics for service utilization & epidemiology

IT enterprise systems were adopted

E-Health:

- Prevalence of chronic diseases made data essential for quality and safety of care.
- E-Health Record for sharing of patient information. Use of internet for access of information

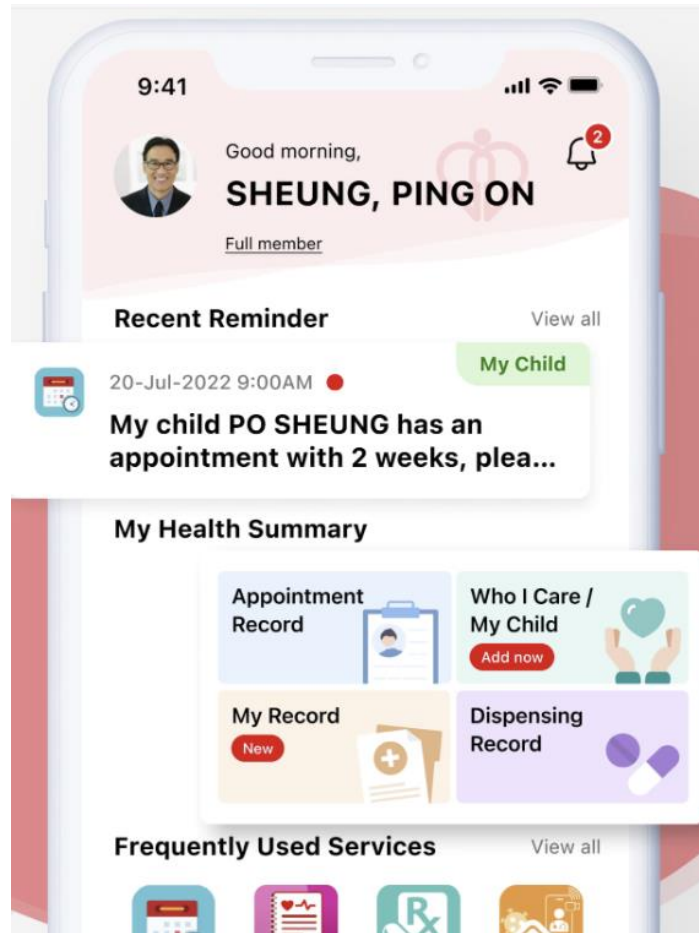
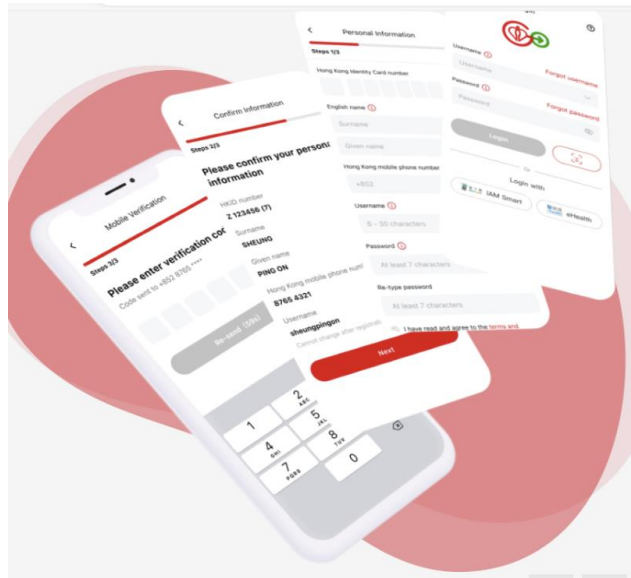
Digital Health:

- Use of robotics, analytics, AI, machine learning, IoT
- Digital Medicine
Digital Therapeutics



**120,000 episodes
(delivered in 2023/24)**

HA Go Mobile App



4

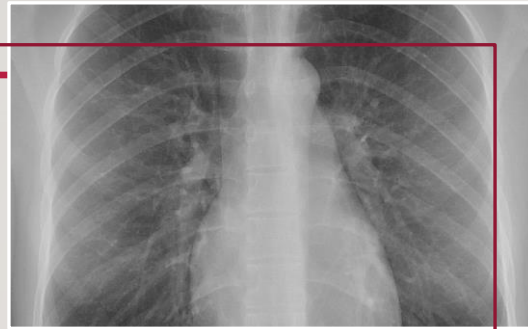
MOBILE APPS FOR CONVENIENCE & ACCESSIBILITY

> 2.5 Mn
registered
users

5 **BIG DATA** (Data Collaboration Lab, established in 2019)



Clinical Records



Radiological Findings



Medications



Immunization



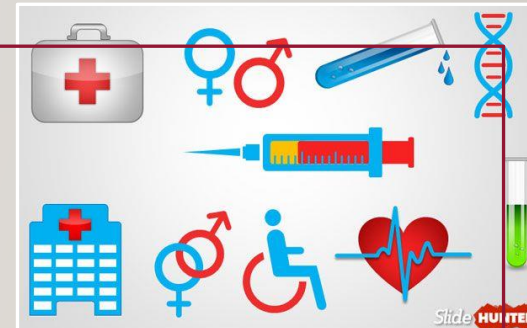
Medical Procedures



Diagnosis



Laboratory Tests



Healthcare Utilization

**Collaborate with universities
for 60+ impactful research projects**

6 E-VITALS SYSTEM

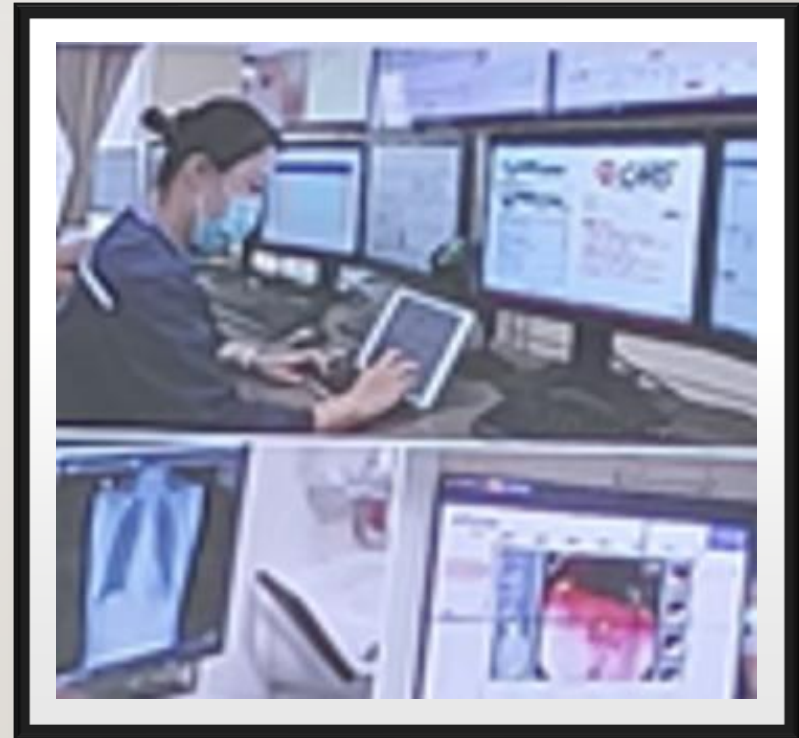


>665 wards
of
36 Hospitals
(out of 42
hospitals)

- **Early detection & early intervention**
- **For big data analysis**
- **Streamline workflow**

7 AI APPLICATION AT ACCIDENT & EMERGENCY UNIT

- eAED
- AI-assisted diagnosis
- Crisis Command Centre



CHEST X-RAY AI

The Hospital Authority has developed and rolled out a chest X-ray AI [CXR AI] tool to various selected clinical settings for prioritising CXR cases, providing real-time decision support to clinicians, and detecting/localising abnormalities on CXR images.

CURRENT SCOPE OF AI CXR

Pathologies/ Abnormalities	Inclusion
Suspicious Mass/ Nodule with Localisation	<ul style="list-style-type: none"> Frontal CXR Age 16 or above
Suspicious Pleural Effusion	
NG tube recognised to be above diaphragm	

1. Clinical • 2. Investigation • 3. Enquiry • 4. Booking • 5. L

Clinical Inbox
Clinical Dashboard (CDB) Input
Smart Care Center
e-Documentation (e-Doc)
Nursing Care Organizer
Personal Memo Viewer
AI Result(s)

AI, PATIENT 20
M 60y DOB: 01-May-1962 A230020(9) A&E AE01 Adm: 08-Mar-2023 AE23001104(2)

AI Result(s) Retrieve

AI radiology prediction and localisation is intended for decision support only. The healthcare professional shall bear the duty of care to patient.

CXR [Suspicious Mass/Nodule] on 08-Mar-2023 11:10 in VH by AI.

Hip X-Ray [Suspicious fracture, femoral neck and trochanter region] on 06-Mar-2023 12:30 in VH by AI.

AI INDICATOR

AI
Suspicious abnormality
is detected

Patient-specific Function(s)

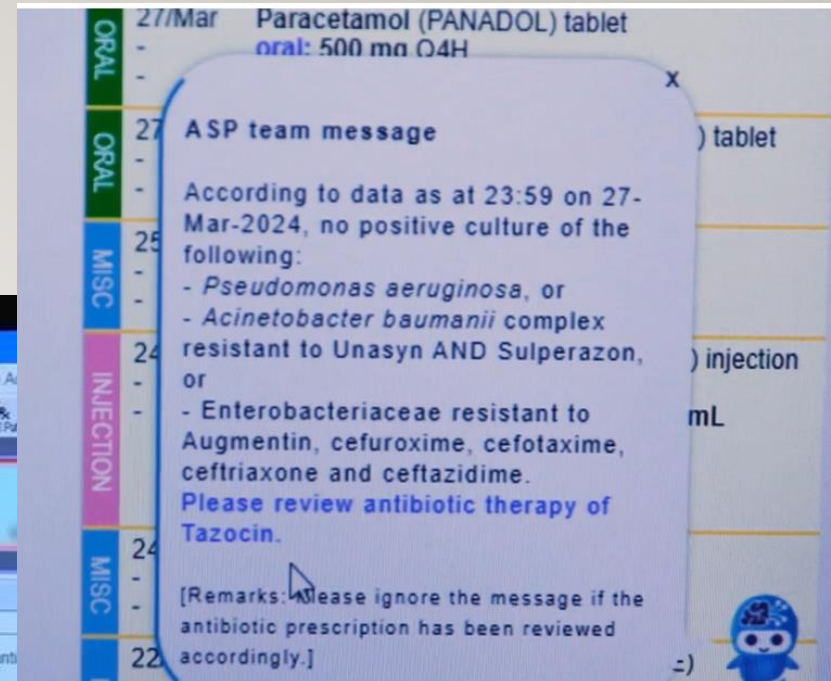
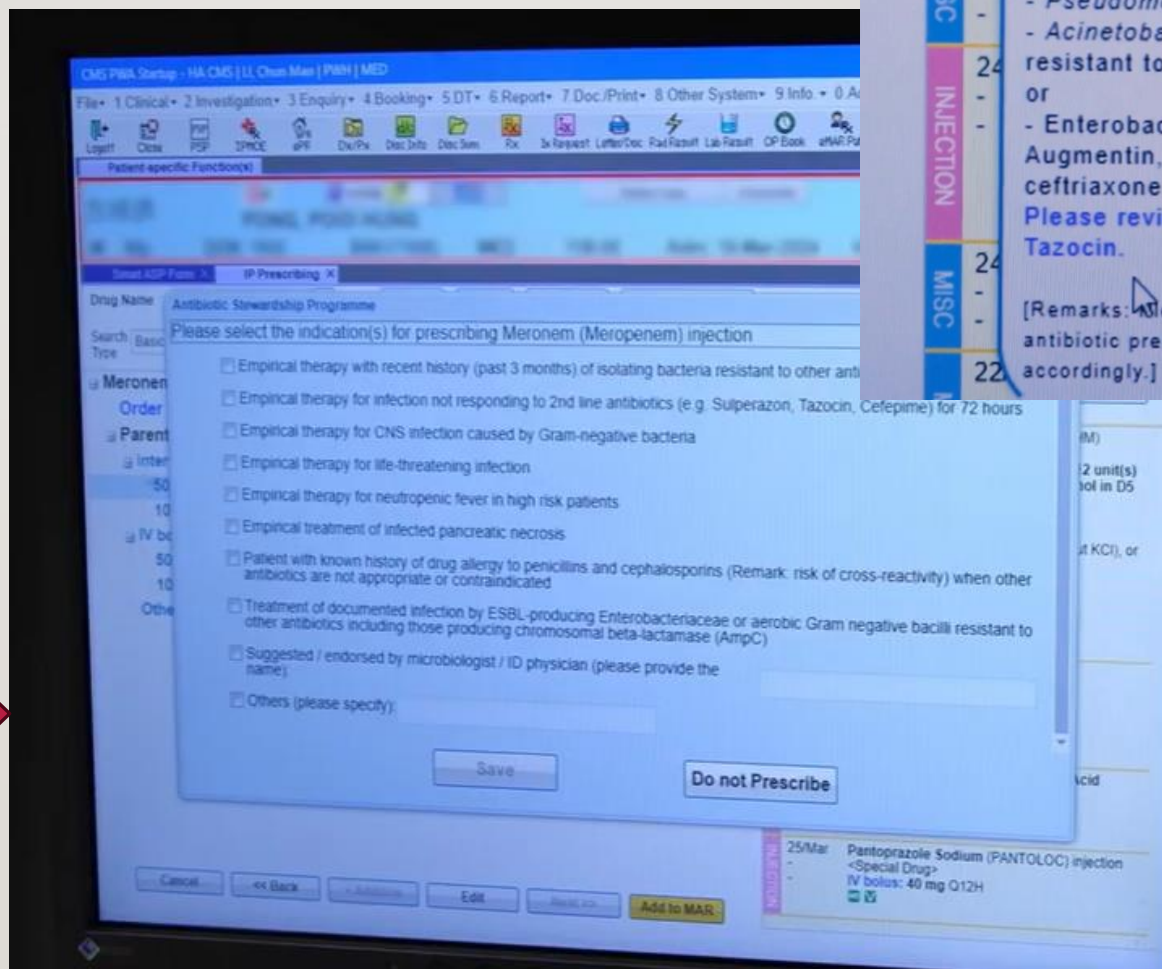
假病人五 AI, DUMMY PATIENT 5
M 23y DOB: 01-Jul-1999 A200005(1)

THE FINAL DIAGNOSIS IS YOURS: AI'S ROLE AS A
INSIGHTFUL ASSIST, NOT STANDALONE SOLUTION

9

AI DRUG MANAGEMENT SYSTEM ASP

Prince of Wales Hospital, Hong Kong 2024



10 ROBOTICS IN ORTHOPAEDIC SURGERY

- **The ROSA® Robotic System at Hong Kong Adventist Hospital**
- **utilizes 3D images of the knee joint to create a comprehensive preoperative plan**
- **automatically corrects the displacement during the surgery, ensuring accurate implant placement**



|| CHALLENGE OF USING AI IN HEALTHCARE

Data Issues : Accuracy, comprehensiveness, consistency, transferability,, etc.

Workflow / Change Processes : learning curve, resistance to change, data collection process

Contextual variance: Demographic / Epidemiological diversity

Patient Acceptance : trust,

Legal & Ethical Issues : accountability, transparency, privacy, fairness

12 PRIME EVALUATIVE CRITERION FOR ADOPTING AI

“AI models must be carefully validated against HA (Hospital Authority) data in HA’s AI Lab to ensure they perform well locally...”



Dr. NT CHEUNG, Head of Information Technology & Hospital Informatics, HK Hospital Authority.

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Thank You

