Integrating Medical and Social Support for Elderly – System & Technology Enabled Service Innovations

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Hospital Authority (HA) of Hong Kong

• A statutory body responsible for managing Hong Kong's public hospitals services

• **Key provider of public-funded healthcare services for > 7 million population in all districts of Hong Kong**

• Providing 90% hospital services, around 30% primary care services
  
  • **41** public hospitals and institutions
  
  • Provide **> 27,000** beds
  
  • **47** Specialist Outpatient Clinics
  
  • **73 (Primary Care)** General Outpatient Clinics
Hong Kong: Rapidly Ageing Population

Elderly patients (>= 65 years): Major users of HA services

- > 50% HA Hospital Bed-days
- > 65% Emergency unplanned admissions to HA hospitals
Increasing Number of HA Patients with Chronic Diseases

1.35M patients in 2014

2.4M patients in 2034

Top 5 Cancers: CRC, Breast, Lung, Liver and Prostate
Hospital Authority (HA) Strategic Service Framework for Elderly People

• Provide appropriate level of care based on **stratified risk & needs**

- **Case management** – Reduce avoidable hospitalisation & improve community support
- **Chronic disease management** – Better manage chronic conditions & prevent further deterioration
- **Supported self-care** – Maintain well-being & improve disease control

- **High Risk Complex Conditions**
- **Chronic Diseases, with Comorbidities and / or Require Rehabilitation**
- **Majority Well but Many Have Stable Chronic Conditions or Mild Episodic Illnesses**
Identification of High Risk Elderly Patients: Hospital Admission Risk Reduction Program for the Elderly (HARRPE) Score

14 Predictors:

Socio-demographics
- Gender (Male/Female)
- Age (in years)
- On Comprehensive Social Security Allowance (Yes/No)

Prior utilization in past 1 year
- No. of A&E attendances (medical) without admission
- No. of 28-day unplanned readmissions (medical)
- No. of emergency admissions (medical) other than unplanned readmission
- No. of acute patient days (medical)
- No. of non-acute patient days (medical)

Comorbidities
- Chronic obstructive pulmonary disease (Yes/No)
- Heart failure (Yes/No)
- Cancer (Yes/No)
- Ever undergo renal dialysis in past 1 year (Yes/No)
- Number of diagnosis groups (Yes/No)

Type of index episode
- The 4 types as shown in the diagram above

The probability of A&E admission (MED) in 28 days ahead

14 Predictors
- Socio-demographics
- Prior utilization in past 1 year
- Comorbidities
- Type of index episode

Risk Prediction Model

Index episode

Discharge alive

Look backward period
Day 0

Look forward period
Day 28

1. Emergency admission to medical ward (including those transferred from EM ward)
2. Attendance at emergency department for medical conditions (without admission)
3. Elective admission to medical ward
4. Attendance at medicine specialist outpatient clinic (SOPC)
Integrated Care and Discharge Support for High Risk Elderly Patients

- Led by Geriatricians
- Integrated teams of Doctors, Nurses, PTs, OTs, Social Workers
- Partner with NGOs for home & personal care in the community

Formulate

A&E attendance 16%
Emergency admission to medical ward 16%
Acute patient days (MED) 15%

Discharge planning
Community Health Call Centre service
NGOs – personal & social care services

Comprehensive (medical, functional & social) needs assessment
Rehabilitation at outpatients or day hospitals
Community Outreach Nursing /Allied Health services to home

Hospital
Community
Community Health Call Centre (CHCC) for High Risk Elderly Patients

Target Patient List (High Risk based on HARPPE)

Proactive Outbound Call within 48 Hrs upon Discharge: All year round services, extended service hours

A&E attendance / Emergency Admission of Target Patients ~25%

Electronic Patients Records

Protocol-guided advice (92 clinical protocols)

Clinical Response Teams

Clinic

Documentation

Referrals: E.g. Outreach services, NGOs
Outreach Geriatric Services to Elderly Patients in Old Age Homes

- **Hong Kong Elderly:** ~7% live in Old Age Homes (OAH)
  - ~700 OAHs – Subvented & Private; ~65,000 elderly, vast majority frail + multiple morbidities
  - Accounted for 30% All Deaths in Hospitals

- **Outreach Geriatric Teams to OAH**
  - Outreach medical, nursing & rehabilitation support
  - Care supported by electronic patient record system
  - Training to OAH staff: Skill transfer, infection control
  - Covering > 95% OAH in Hong Kong

- Started “End-of-life Care” program in OAH since 2015
  - “Tripartite collaboration”: Healthcare – Patients/ Relatives - OAH
  - Advance Care Planning, Support care-in-place
  - Engagement & training of staff
E.g. Risk Factor Assessment and Management Programme (RAMP) for diabetic mellitus (DM) and hypertension (HT) patients

- Proactive, Protocol-driven Care + Multidisciplinary Team + Emphasizing Patient Empowerment
- Partner with NGOs & Volunteers + Clinical Information System support

Strengthen Chronic Disease Management: Adopted Wagner’s Chronic Care Model

Patient recruitment by Doctor / Nurse

Comprehensive assessment
(e.g. Lab tests, basic parameters, eye & foot assessments)

Risk Stratification
Risk factors & self-management problems review

Target Interventions
by multidisciplinary team management
Positive Clinical Outcomes of “RAMP” E.g. DM

- Improve Disease Control
  - Glycaemic control (HbA1c ≤ 7%)
    - 16% (72%)
  - Blood pressure control (BP ≤ 130/80 mmHg)
    - 14% (53%)
  - Lipid control (LDL-C ≤ 2.6 mmol/L)
    - 22% (67%)

- Patients detected with sight threatening diabetic retinopathy (9.8%) were referred to ophthalmology service for follow up and early treatment

- Favorable patient feedback

- Long term effectiveness in risk reduction of CVD, CHD, Heart Failure, Stroke, ESRD, STDR, all-cause mortality
Preventive Care for Elderly Patients in HA

• **Vaccination**
  • Influenza, Pneumococcal vaccination programme

• **Patient Empowerment**
  • Support practice of healthy lifestyle
  • Partnering with the Community

• **Smoking Counselling and Cessation Programme**
  • Multidisciplinary team
  • All counsellors (nurses, pharmacists, occupational therapists) received special training
  • Protocol-driven service
  • Counselling + Nicotine Replacement Therapy
Patient Resource Centres: Patient Empowerment & Volunteer Services:

- Currently **41 Patient Resource Centres** (PRCs) in HA
- **Platform** for patient and community engagement & partnership

4 Core Elements

- Patient/ carer empowerment and support
- Support to patient groups
- Volunteer services & development
- Community engagement & partnership
Smart Patient Website

- One-stop web-based platform (http://www21.ha.org.hk/smartpatient)
  - Disease management information + community resources
  - Specific sub-site “Smart Elders” for elders and their caregivers
  - Tips on disease information & management, community resources

> 8 Million hit counts in 2015
Way Forward

• Strengthen the **mechanism to identify elderly patients** at higher risks
  - Revise the HARRPE score / Develop model for chronic diseases

• Further develop **integrated care model** for elderly patients
  - Extend the coverage to surgical & orthopedics patients
  - Strengthen collaboration with social/ welfare services sectors

• Enhance **ambulatory & community-based** services
  - Especially on chronic disease management & rehabilitation

• **Palliative and end-of-life care** : developing a HA strategic framework

• Strengthen **patient and caregivers empowerment**

• Develop strategies to enhance **volunteer development** & community engagement