A Tale of Two Systems – Transforming Primary Care (Singapore)

Presented by: Associate Prof Chong Phui-Nah, NHGP CEO

Advancing Family Medicine, Transforming Primary Healthcare
Singapore as an Island Nation

Regional divisions as per the divisions of Urban Redevelopment Authority, Singapore

Population: 5.5 million (Year 2014)
Land area: 718 km²
Density: 7,615 persons per km²

#1 Healthcare System in Asia
#6 in the World in Health Performance


Healthcare comparisons

<table>
<thead>
<tr>
<th>Source: WHO, 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expenditure on health % GDP</td>
</tr>
<tr>
<td>US: 17 %</td>
</tr>
<tr>
<td>France: 12 %</td>
</tr>
<tr>
<td>UK: 9 %</td>
</tr>
<tr>
<td>Singapore: 5 %</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Expenditure on health, per capita US $</th>
</tr>
</thead>
<tbody>
<tr>
<td>US: $9,403</td>
</tr>
<tr>
<td>France: $4,959</td>
</tr>
<tr>
<td>UK: $3,935</td>
</tr>
<tr>
<td>Singapore: $2,752</td>
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</tbody>
</table>
Celebrated 51 years of independence on 9 August 2016
Public Health was the Initial Focus

The Key Determinants of Health

- Putting proper sanitation procedures in place
- Controlling infectious diseases
- Providing clean water
- Providing childhood vaccination
- Access to basic medications, clean food, and more

Dahigren & Whitehead, 1991
Home visit by nurses to rural areas in 1960s

... then Bringing Primary Care Services Closer to the People

Government Clinic for School Children and Inoculation Centre

Development of satellite Maternity and Child Health Clinics to bring healthcare closer to home
A network of satellite outpatient dispensaries, including travelling dispensaries
Consolidation and Corporatization of Outpatient Clinics into Today’s Modern Polyclinics since 1980s...

In 2000s,

**18** polyclinics island-wide:

- **9** under the National Healthcare Group (NHG)
- **9** under the Singapore Health Services (SHS)
Polyclinics as One-Stop Centres that Provide Comprehensive Services to Cater to the Health Needs of All Age Groups

- Medical Services
- Nursing Services and Care Management
- Allied Health Support
- Dental Services
- Minor Surgical Procedures
- Pharmacy
- Laboratory
- Radiography
- Vaccination
Primary Care Landscape: Government-Funded Polyclinics and Private GPs

Polyclinics

<table>
<thead>
<tr>
<th>Primary Care Doctors</th>
<th>Number of Patient Attendance</th>
</tr>
</thead>
<tbody>
<tr>
<td>238 (14%)</td>
<td>11,553 (19%)</td>
</tr>
<tr>
<td>1 polyclinic doctor: 19.6 patients with chronic disease</td>
<td></td>
</tr>
</tbody>
</table>

Private GPs

<table>
<thead>
<tr>
<th>Primary Care Attendances</th>
<th>Chronic Disease Attendances</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,577 (86%)</td>
<td>48,346 (81%)</td>
</tr>
<tr>
<td>1 GP: 3.7 patients with chronic disease</td>
<td></td>
</tr>
</tbody>
</table>

Source: MOH Primary Care Survey 2010. Number of surveyed patients = 59,687
Increasing Chronic Disease Workload and Complexity in NHGP

**NHGP Chronic Attendances**
- NHGP Chronic Disease Patient Headcount
- NHGP Chronic Disease Patient Attendances

<table>
<thead>
<tr>
<th>Year</th>
<th>Headcount (No.)</th>
<th>Attendances (No.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CY2005</td>
<td>320,136</td>
<td>912,877</td>
</tr>
<tr>
<td>CY2010</td>
<td>380,681</td>
<td>963,339</td>
</tr>
<tr>
<td>CY2015</td>
<td>439,282</td>
<td>1,037,975</td>
</tr>
</tbody>
</table>

(+5.5%) (+18.9%) (+7.7%)  

**Diabetes Patient Case Mix Trend (2001 – 2015)**
- DM (+ Complications)
- DM (+ Comorbidities)

<table>
<thead>
<tr>
<th>Year</th>
<th>Visits ('000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CY2001</td>
<td>210</td>
</tr>
<tr>
<td>CY2010</td>
<td>267</td>
</tr>
<tr>
<td>CY2015</td>
<td>321</td>
</tr>
</tbody>
</table>

**Hypertension Patient Case Mix Trend (2001 – 2015)**
- HPT (+ Complications)
- HPT (+ Comorbidities)

*No. of visits ('000)*

*Annual attendances based on Primary Diagnosis – Type 2 Diabetes*
The Call for Primary Care Transformation to Prepare for Future Profiles and Their Related Needs

Population Health

<table>
<thead>
<tr>
<th>Health Status</th>
<th>Community</th>
<th>Primary Care</th>
<th>Hospital</th>
<th>Palliative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mostly Healthy</td>
<td>Automated/reminders at set intervals</td>
<td>Self-management, regular monitoring, telecare</td>
<td>Care coordination &amp; case management</td>
<td></td>
</tr>
<tr>
<td>Serious Acute illness</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stable Chronic illness</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Complicated Chronic Condition</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>End of life</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Led by

- Community
- Primary Care
- Hospital
- Palliative

Supported by

- Automated/reminders at set intervals
- Self-management, regular monitoring, telecare
- Care coordination & case management

Care Goals

- Maintain health
- Prevent onset
- Delay Progression
- Maintain function, rationalise care (FP, SOC), pre-empt complications, avoid admission

Stabilise/restore function where possible, avoid admission
Minimise pain, avoid admission
Advanced Care Planning

Population Health
Challenges in Primary Care

- **Porous system**
- **Doctor-centric delivery model**
- **One-size-fits-all delivery model**
- **Supply and demand mismatch**

Patients are not required to sign up with a personal doctor.

Patient may choose to be referred by a family physician or go to the specialist directly.

“Doctor hopping”
Challenges in Primary Care

- Porous system
- Doctor-centric delivery model
- One-size-fits-all delivery model
- Supply and demand mismatch
Change is Imperative in an Evolving Healthcare Landscape

- Common cholera pandemics
- Malnutrition and Common Childhood Diseases in rural areas
- High Infant Mortality Rate

- Rapid population growth and post-war baby boom
- Growing number of Singaporeans moving into HDB new towns
- Birth of polyclinics

- WHO reported that the no. of adults with diabetes has quadrupled since 1980
- Singapore was ranked 2\textsuperscript{nd} worldwide for diabetes-induced kidney failure

**Population**
- Early 1900s: Population ~0.2mil, Median Age ~18
- 1960s: Population ~1.5mil, Median Age ~24
- 1980s: Population ~2.4mil, Median Age ~40
- TODAY: Population ~5.5mil, Median Age ~40
“It is a new system, and a lot of the old tools won’t work anymore. Those who cling to their old tools and allow our organisation to disintegrate will find little sense either in the burning present or in the challenging future. For them, sensemaking will have failed, and the panic of isolation will drive them up a slope that is too far and too steep for them to make it. For the rest, the possibility of invention and the opportunity to make sense – new sense – will open not just routes of escape, but vistas of achievement, that the old older could never have imagined.”

Donald M Berwick, MD, MPP, Former CEO, Institute for Healthcare Improvement, US
Primary Care Transformation is the Cornerstone of Population Health Management

Who controls the outcome?

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Source: Southcentral Foundation, Alaska
Relationship is Key

• The core product of healthcare is bigger than just tests, diagnoses, pills and procedures
• It is about human beings and relationships
• Whole-person medicine means looking at the sum of the parts

Christmas goodies for polyclinic patients

Children’s Day Celebration in Choa Chu Kang Polyclinic
Primary Care 2025

**OUR VISION**
A world-class relationship-based primary care eco-system

**OUR MISSION**
Promoting health of our population & delivering excellent, cost-effective & integrated care through high-performing motivated teams, supported by partners & stakeholders, powered by continuous learning, innovation & research

**OUR FIVE STRATEGIC OBJECTIVES**
- Expansion of Primary Care Capacity
- Care Delivery Model
- Patient Engagement and Activation
- Stewardship and Setting Standards
- Staff Engagement and Development
The Game Changers

**Patient Empannelment**

*Past/Now*
- Brief clinic encounters, majority without specific healthcare provider

*Future*
- Full spectrum of patients (including well group)
- Long-term relationships facilitate self-care and health promotion

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**Risk Stratification**

*Past/Now*
- One-size-fits-all delivery model

*Future*
- Well/At Risk, Mild, Moderate, Moderately Severe, Severe
- Customise care bundles
- Optimise resource allocation

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**Team-based Approach**

*Past/Now*
- Doctor-centric care

*Future*
- Patient-centric care supported by teams
- Matching expertise & resources to meet patients’ needs

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**Telecare & Other Support**

*Past/Now*
- Face-to-face consultations as sole mode of healthcare delivery

*Future*
- Save time and money for patients
- Free up capacity for patients who need face-to-face consults

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**GP Involvement**

*Past/Now*
- Untapped resources in private sector

*Future*
- More GPs involved in managing complex chronic diseases
- Enhancing capability and providing team support

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**Past/Now**

- Doctor-centric care

**Future**

- Save time and money for patients
- Free up capacity for patients who need face-to-face consults
New Model of Care

Better care continuity with designated Family Physician and his care team coordinating care of chronic disease patients

New Empanelled Care Delivery Model

- Dieticians
- Medical Social Workers
- Physiotherapists
- Pharmacists
- Podiatrists
- Psychologists

Promising Interim Results – Clinical Outcomes

Better BMI and blood sugar control

<table>
<thead>
<tr>
<th>Clinical Outcomes for DM Patients: Odds Ratio (OR)</th>
<th>AMK</th>
<th>TPY</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMI</td>
<td>1.00</td>
<td>1.56</td>
</tr>
<tr>
<td>LDL</td>
<td>1.00</td>
<td>1.33</td>
</tr>
<tr>
<td>SBP</td>
<td>1.00</td>
<td>0.97</td>
</tr>
<tr>
<td>HbA1c &lt;7%</td>
<td>1.00</td>
<td>1.24</td>
</tr>
</tbody>
</table>

Higher Papsmear Uptake

Higher Mammogram Uptake

Provider-patient relationship model
Multi-disciplinary team approach
Tele-care/Technology
Person Activation – Preventive Care

- Coronary Risk Screening
- Smoking Cessation Programme
- Great, Simple, Tasty (GST) Corner
- Aging-in-Place Studio
- Health Screening
- Active Day
- Fruit Day
- Fitness Class

Screening

Aging
-in-
Place Studio
Quality and IT Innovation For Better Clinical Care

- Tele-Consultation
- Tele-Development Assessment (Pilot)
- Tele-Care: Self-monitoring of blood sugar, blood pressure and weight
- Tele-Ophthalmology (TTSH)
- Tele-Dermatology (NSC)
- Tele-Electrocardiogram (TTSH)

NHGP's Telecare programme was awarded the inaugural MOH IT Excellence Award 2014 for increasing access to care.
Advancing Family Medicine Through Teaching and Training

Partnership with Medical Schools

Lee Kong Chian School of Medicine

Yong Loo Lin School of Medicine

Family Medicine Academy

Launched in September 2013

@ BBK Polyclinic

@ New AMK Polyclinic, New YIS Polyclinic

Upcoming.....

Achievements in Family Medicine Training & Development

- 310 Medical Undergraduates trained in AY2015
- 50 Family Medicine Residents trained in AY2015
- Obtained re-accreditation of ACGME-I (Family Medicine Residency Program) in 2014 for 3 years

Research Capabilities Development

- Research Discussions with Overseas Experts
- 13 papers published, 9 posters and 5 oral presentations in FY2015
- Started annual Singapore Primary Care Scientific Competition
  - For 2016, 55 abstracts from NHGP
Upcoming Polyclinics

*Clinics which will be re-developed (by 2018)
Blue fonts – new polyclinics
Collaborating with Private GPs to Catalyze Change

AMK FMC | 11 May 2013
Partner: Parkway Shenton

Unity FMC | 23 May 2014
Partner: NTUC Unity Healthcare

Hougang FMC | 17 Sep
Partner: Two solo GPs

And many more....
Our Primary Care Ecosystem
Transforming Primary Healthcare & Advancing Family Medicine

- Integrating and coordinating care as a Regional Health System – accessibility, affordability and sustainability

Better Horizontal Integration

Better Vertical Integration

RIGHT CARE
RIGHT PLACE
RIGHT TIME
RIGHT AMOUNT
RIGHT PERSON
Thank You