### Second Major in Health Economics and Management (HEM)

Tomoki Fujii

Associate Dean (Undergraduate Curriculum)

School of Economics, Singapore Management University

#### What's the HEM Second Major?

- ► HEM stands for "Health Economics and Management"
- Opened to students from 2019
- Offered by School of Economics, Singapore Management University
- ► The HEM 2<sup>nd</sup> centres on the healthcare industry

#### Why healthcare industry?

- ► Among the largest and fastest-growing industry both in Singapore and worldwide.
  - ▶ With ageing population, demand for healthcare services will continue to rise in the foreseeable future.
- ► Strong demand is not only for healthcare practitioners but also for healthcare administrator.
  - Operation of health establishments has become complex.
  - ► They are increasing in need of specialists in administration and management.

#### What do HEM students learn?

- Essential knowledge and skills for all high-level healthcare professionals
- ► How to apply their knowledge and skills
  - Solving real healthcare industry problems in SMU-X courses
  - ▶ Work-study program
- Develop practical understanding of the healthcare sector
  - through the internship or work-study opportunities

#### Program Structure

- ▶ 8 Credit Units
  - ▶ 4 compulsory courses
  - ▶ 4 elective courses
  - Students will have experiential learning opportunities (SMU-X course)
- ► Internship / Work-study
  - SingHealth (Singapore's largest healthcare group)
  - ► Looking to collaborate with other organisation

#### 4 Compulsory Courses

- Health Economics (SMU-X)
  - ► Learn economics approach to the healthcare sector
  - ► Partner with Sanofi (French Pharmaceutical, 5<sup>th</sup> largest in the world in sales)
- Introductory Data Analytics for Healthcare
  - Basic analytics (data visualization, extraction, management, etc.)
- Health Systems and Policy
  - Overview of the health systems and policy in Singapore and elsewhere. Co-taught with SingHealth
- Healthcare Management
  - Overview of various management issues in healthcare sector, including definition, management, and strategic planning in healthcare sector. Co-taught with SingHealth

### Sample Elective Courses [partial list]

- Economic of Ageing
- Health Law and Medical Ethics
- Health Psychology
- Smart Healthcare in Asia
- Operations and Supply Chain Management in Healthcare
- Applied Healthcare Analytics
- Work Study Elective [next]

#### **HEM Work Study Elective**

- Six months attachment with SingHealth
  - ▶ We may have other partners in the future.
- ➤ You can clear 10-week internship requirement (1 CU) and two more CU by passing WSE.
  - ➤ You will have to submit a WSE final report.
- Work four days a week and come to SMU once a week to take up to 2 CU.
  - ▶ So, you can clear up to 5 CU.
- You get hands-on experience and stipend without having to delay graduation

#### HEM is unique

- ► Currently, no undergraduate degree programmes in healthcare management amongst the Autonomous Universities in Singapore.
- ► Undergraduate healthcare management program is also rare elsewhere.
  - ► Healthcare management programs are more common at the postgraduate level.

#### Why is HEM good for you

- Suitable for those with a passion for...
  - promoting health and wellbeing
  - delivering quality healthcare
  - contributing to the saving of lives
  - ensuring graceful ageing of a society
- ► HEM opens the door to meaningful career paths in healthcare industry.
  - Government (MoH, CPF, etc.)
  - Hospitals
  - Pharmaceuticals
  - Insurance
  - ► Health enhancement service

#### Opportunities for HEM Students

- SingHealth Aspiring HEM Student Book Prize
  - ► Students who declared HEM 2<sup>nd</sup> major is eligible
  - Chosen from the students who performed best in the HEM core courses
- SingHealth HEM Outstanding Student Award
  - ► Given to best graduating student from any degree programme, who have declared second major in HEM and got a pass in either 10-week internship stint or 6-month HEM-WSE in SingHealth.
- SingHealth HEM Intern Award
  - ► Chosen from students who completed WSE.
- Ngee Ann Kongsi Scholarship

#### Housekeeping Issues

- Please keep your microphone muted and video on unless otherwise asked.
- There is a Q&A session after each speaker.
  - ▶ Please type your question in the chat box.
  - ▶ Please try to keep your question short and clear.
  - If there are too many questions to be answered within the given amount of time, I will pick some from the chat box.
- I will stay back in the room after the session.
  - ► You can ask questions relating to the HEM 2<sup>nd</sup> major.

### Brief Introduction to Health Economics (ECON215)

KIM Seonghoon 22 October 2020





#### What is health economics?

- Health economics focuses on answering the following questions
  - What determines health?
  - How do health care policies affect health and the economy?
  - How should health care policies be designed to maximize welfare?

# What makes health economics interesting and important?

- The large size of health sector with respect to GDP
- Many health issues are strongly related with the economic activity
- Increasing availability of "Big Data"

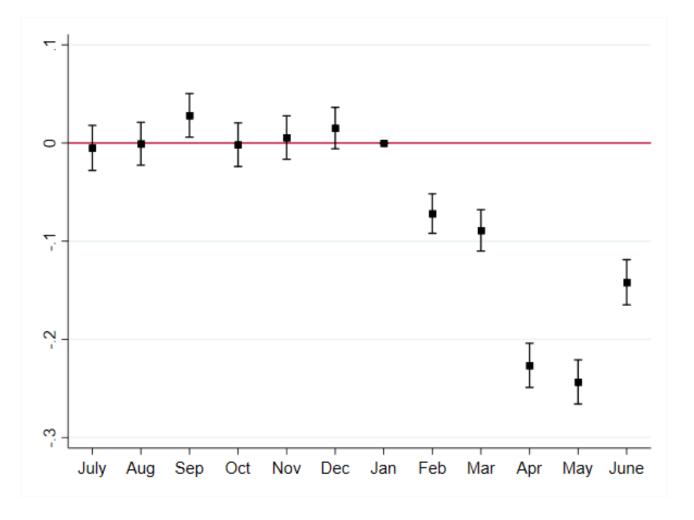
# Why is the healthcare market unique?

- Uncertainty
  - Prominence of Insurance
- Information asymmetry
  - Adverse selection, principal-agent problem
- Externality
  - Contagiousness
- Role of Equity and Need
  - Large Role of Non-profit Firms
  - Government Subsidies and Public Provision

### Special Topics in this year's ECON215

- Economics of COVID-19
- Economics of Happiness and Mental Health
- Health impact of Singapore's public policy

#### Spending Impact of COVID-19 in Singapore



#### 5% of Singaporeans suffer from depression

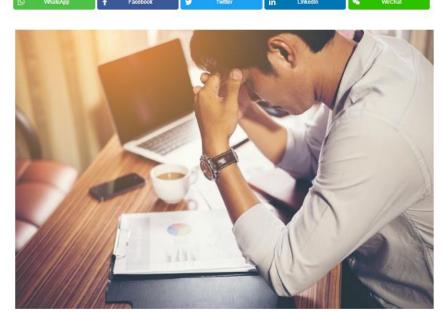
1 in 7 people in Singapore have experienced a mental disorder — and some millennials are more susceptible to mood and alcohol-related ones



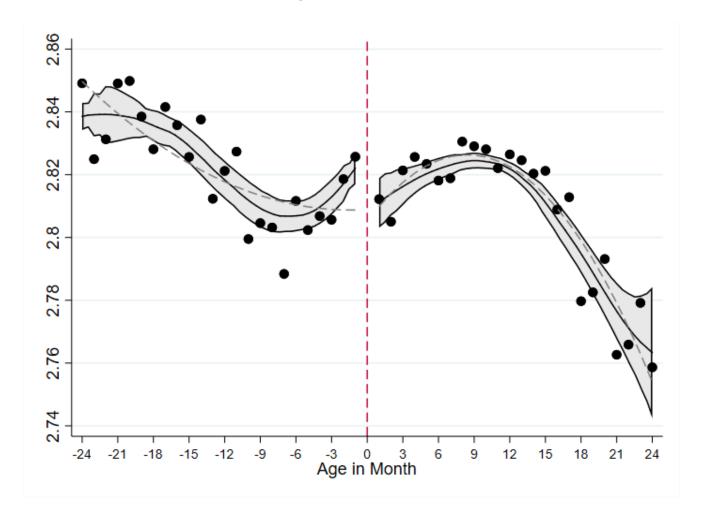
Around one in seven people in Singapore have experienced a mental disorder at some point in their lives. Singapore Press Holdings Suicide is the main cause of death for millennials in Singapore — and most of them are men

Rachel Genevieve Chia

October 16, 2018

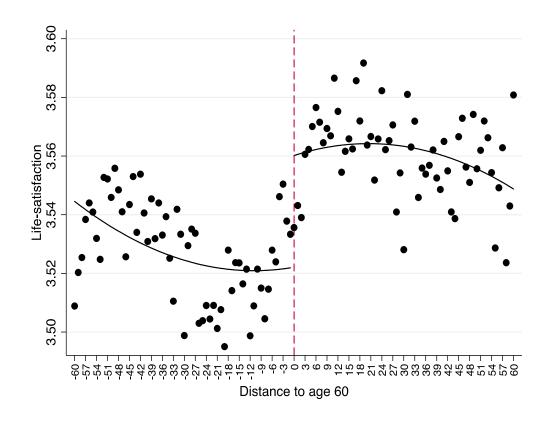


# Access to CPF Wealth at 55 and Self-reported Health



## CPF Contribution Rates and Life Satisfaction

Comparison of overall life satisfaction before and after the reduced CPF contribution rates at age 60



Source: Kim and Koh (2020)

#### **SMU-X Features**

- Industry Partner (Sanofi)
- Adjunct Teaching Mentor (CEO of Healthcare.AI)

#### **THANK YOU!**

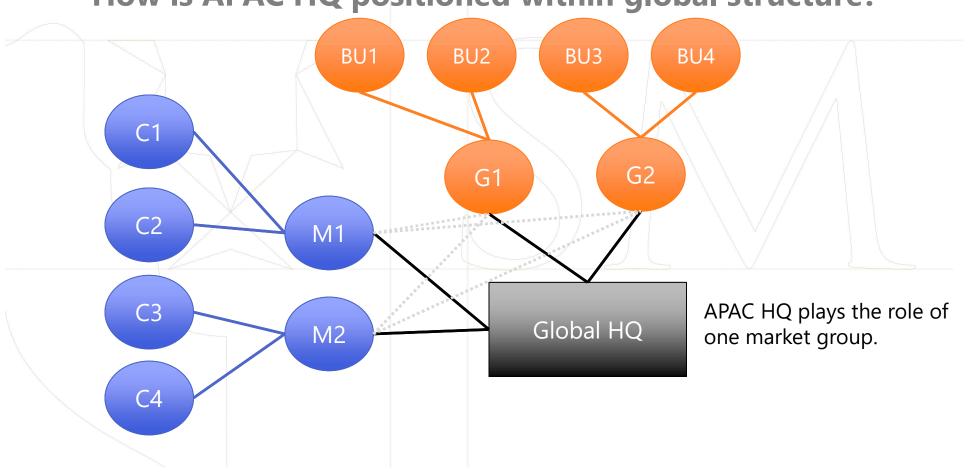


#### Healthcare MNCs: Job Skill Sets

**HEM Info Session** 

Cortilia Lin





### Building business cases is the key role for SMU SINGAPORE MANAGEMEN Market Group – Health economics

Every single function within APAC HQ would require the skill of building business cases

- Negotiate Annual Target
- Allocate Annual Budget
- Plan inventory and spare parts
- Initiate country specific innovations
- Localize product portfolio
- Sales/Marketing campaign
- Medial affairs and Market Access
- Service/Support personnel planning
- Distributor/ASP management





### Healthcare

More than a programme - A major part of life

Sia Kheng Hong Group Chief Financial Officer Singapore Health Services









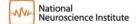


















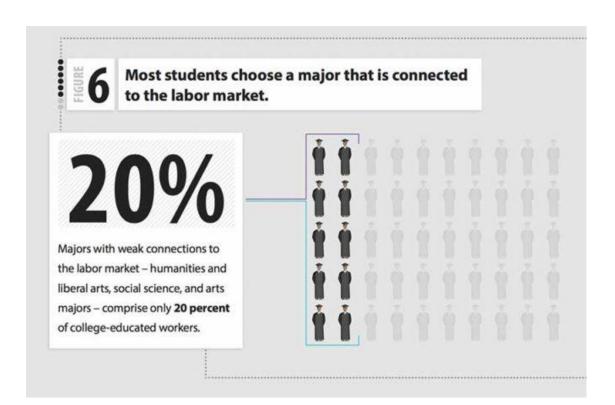


Navigating the road ahead

Why Healthcare?

Shape the future with us







### Flexible Pathways







# Making a living, making a difference





#### Healthcare is a sunrise industry

- 1. Meaningful Careers Healthcare requires a diverse range of talents
  - 2. <u>"Recession Proof"</u> Everyone needs healthcare. Singapore Healthcare needs you.
  - 3. Forefront of Innovation but you can't be replaced by a robot





## Besides doctors, nurses and allied health.... We need diverse talents

- Accountants
- Economists
- Lawyers
- Analysts
- Strategists
- Data Scientists
- Technopreneurs
- Operations Mgt

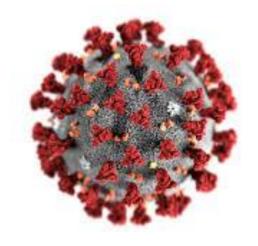
- Engineers
- Educators
- Designers
  - Communications
- Web & App Creators
  - **Business Management**
  - **Programme**
  - Management...





#### **Meaningful Careers**

Healthcare management requires diverse expertise

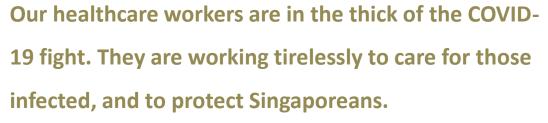


**C** VID-19





#### **Keeping Singaporeans Safe**



I applaud the many community initiatives to show our appreciation — mass singing events, priority queues at food centres, free meals, and thank you cards.







#### **Meaningful Careers**

Healthcare management requires diverse expertise



**Keeping our Community Safe - Important Messages in various languages for Migrant Workers** 



"It's a difficult time for our migrant workers. The majority are in isolation, and many are recovering from Covid-19. "

SingHealth



#### **Meaningful Careers**

Healthcare management requires diverse expertise



New Innovations –

#### **Meet Temi**

### A familiar face at the Community Care Facility @ EXPO

Coronavirus pandemic

Coronavirus: Temi reduces exposure of healthcare staff to patients

As the Covid-19 outbreak continues to cause disruptions, organisations here have had to adapt to 'business as usual' in a pandemic world. From robot cleaners to remote physiotherapy sessions to digital management platforms, Timothy Goh looks at five different types of technology that have been adopted here in the fight against Covid-19, and what the future might look like.



#### **Meaningful Careers**

Healthcare management requires diverse expertise

### Early-stage coronavirus vaccine trial begins in Singapore

By Audrey Tan

8 Aug 2020 | Tomorrow's Medicine, The Straits Times





Associate Professor Jenny Low, deputy clinical and scientific director at the SingHealth unit

More than 250 volunteers have stepped forward for the trial. Around 100 people will take part in the trial. The volunteers are in their 20s to 50s.





## **Meaningful Careers**

#### Healthcare management requires diverse expertise



Enny is a research dynamo. Her three years in SingHealth has been filled with excitement for the work she has been doing.

"It is impossible not to be passionate about what I am doing. In healthcare, every day is different and interesting, and I enjoy working with the people, especially my team of very committed administrators," she says.

"We operate in a very dynamic environment where we need to constantly change, adapt and be proactive in supporting the growing needs of research which ultimately aims to improve the lives of our patients."

Ms Enny Kiesworo, Chief Operating Officer (Research), SingHealth





Ms Jamie Low, Deputy Director Office of Strategy Management, SingHealth

"I'm currently working with my HR and Finance colleagues to improve our planning and budgeting processes. It's very exciting to be part of a project that looks at how to change for the better. There is immense satisfaction when stakeholders give feedback that the implemented changes have benefitted them and made a real difference."



Ms Katheryn Maung,
Deputy Director, SingHealth Duke-NUS
Joint Office of Academic Medicine

"The impact of Academic Medicine became real to me when doctors discovered a hole in my heart and I became a patient myself - excellent care and access to advanced robotic surgery greatly improved my recovery time. It is a privilege to be in a place with good people committed to discovering new ways to improve care and patients' lives."



## **Meaningful Careers**



"It makes me happy to know that our efforts have paid off. The experience has also enabled me to be more aware of what we need to do for the next 10 to 15 years. I hope that in future, if I need it, I will set to use the facilities that have been designed based on the suidelines."

- Beatrice Low

#### Vivian Lee

Deputy Director, Leadership & Organisation Development, SingHealth

get most re-engaged to what I'm doing when at the end of the leadership programmes, I hear participants telling the class that they've renewed their passion for healthcare. They were thinking of leaving but after the course, they're once again reminded of their reasons for joining healthcare and decided to stay and make a difference,



#### Gerard Joseph Tang

Manager, Operations, General Services, SGH

Quitting did cross my mind when I first joined, as I had zero knowledge about healthcare and the learning curve was quite steep. But over time, the patients and visitors gave me strength and inspiration - simple thank-you notes from them make my work worthwhile.

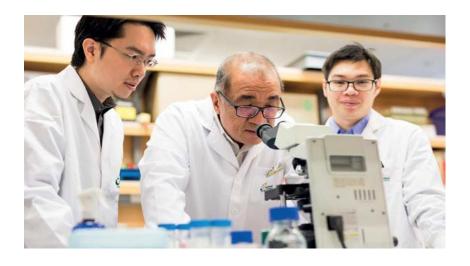
I once came across a patient who had a fall along the walkway. I quickly grabbed a wheelchair and wheeled him to the clinic, where I ensured that he got the attention he needed before leaving. A few days later, I bumped into the same patient. He thanked me and we chatted for a while. Since then, we have become friends. That was a memorable and fulfilling encounter,





# Improving Patients' Lives in Different Ways

- ✓ Compassion
- ✓ Commitment
- ✓ Creativity
- ✓ Spirit of Inquiry





#### "I save lives"



"To ensure that volunteers know how to take care of our patients during activities, I will brief them thoroughly on the patients' profiles, importance of hand hygiene as well as train them on handling wheelchairs."

Mr Yang Zhong Qi, Ace (centre, in white), Executive, Community Engagement, Bright Vision Hospital





## **Meaningful Careers**

Our healthcare eco-system needs diverse talents.

## Become your best self











#### Our population is ageing...





#### > Elderly consume more healthcare

- Hospital admission rate 5x that for persons aged 45-54 years
- Inpatient stay is 1.6x that for persons aged 45-54



## Everyone needs Healthcare

#### **LONGER Life Expectancy**

(YEARS)

2013: **82.4** 1990: **75.3**  30,000
ADDITIONAL
HCW REQUIRED
(From 2015 - 2020)



The word of the state of the st

**460,000** IN 2015

Projected
610,000
BY 2020

960,000 BY 2030

Projected

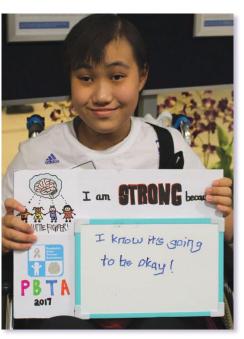
SINGAPORE RESIDENTS Aged 65 Years & Above

2

Everyone needs healthcare. Even more so in a crisis.

"Recession Proof"
Careers

#### **Changing Social Needs**







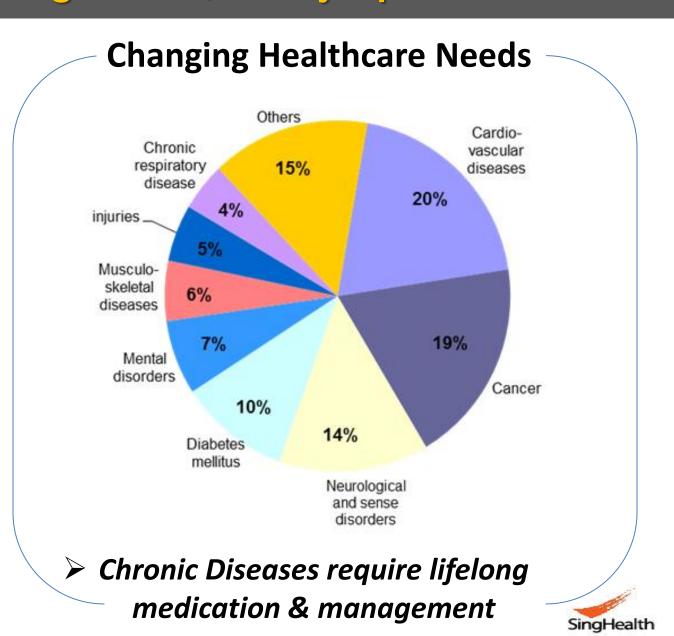
- Smaller families & More Singles
- Economic uncertainties
- Rising income inequalities
- Moving from Reactive to Preventive Care

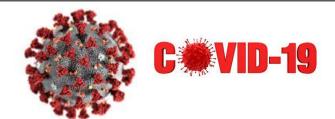




At the Forefront of Innovation, Transforming Care

Always Innovating Dynamic



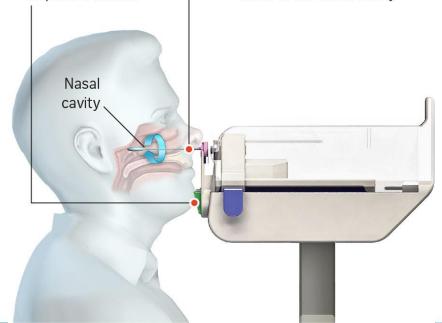


#### Activation

Patient will latch his nostril firmly onto the disposable nosepiece. When ready, he will activate the robot by using his chin to push a button.



The nosepiece moves slightly upwards to widen the nostril, and the swab will extend and rotate safely and gently through the patient's nose to the back of the nasal cavity.



The machine, was developed by clinicians from <a href="the-National">the National</a>
<a href="Cancer Centre Singapore">Cancer Centre Singapore</a> (NCCS), the Singapore General Hospital (SGH) and Duke-NUS Medical School, in collaboration with medical robotics company Biobot Surgical.

## First patient-controlled nasal swab robot

Clinicians and patients who have used SwabBot say that the machine is safe, faster and more comfortable compared with a manual swab test.

Singapore clinicians develop innovative ventilator for breathing support in COVID-19 patients

SG-Inspire is designed and custom-buil

24 July 2020



SG-Inspire is designed and custom-built by clinician innovators and clinical innovation engineers who understand local and regional clinical needs, and are familiar with the operational considerations of COVID-19 care

SingHealth

A Diva to

manage

pressure

#### A mobile buddy for asthma patients

SINGAPORE - Asthma patients now have a mobile application, Asthma-Care Buddy, at their fingertips to help them manage their condition.

Believed to be the first asthma care management mobile app created in the region, it gives asthma patients clear instructions on what to do when they experience various symptoms.

The app includes tools such as the peak flow meter record, asthma check

#### Cooling the body can 'cut risk of fatality' after cardiac arrest

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#### How therapeutic hypothermia works

KKH docs develop automatic system for use during caesarean births

mum's blood

#### Help for children with haemophilia

repeated bleeding episodes can damage joints and result in disability later

In the past five years, the proportion of young patients on prophylaxis at KKH has doubled. Today, two thirds of patients seen are on regular. on-going treatment, while the rest receive treatment when there are bleeding episodes, said Dr Lam. The young



#### Major new facility opens at KK Hospital



Robot detects prostate



cancer more accurately too livings from the time to the period and the period and

#### 'We are sure that we have a way to treat myopia'

OR 16 years, doctors at the Sincapore National Eye Centre (SNEC) have been trying to find a way to stop myopia in its trucks. They any they finally have the

pia capital of the world

#### APP FOR CARE

#### SGH's auto system cuts pharmacy 'near misses'

It also frees up staff for other work and speeds up dispensing to patients

#### **MEDICINE MACHINES** Singapore General Hospital's automated pharmacy system has helped reduce the number of incidents of wrong drugs or dosages retrieved to almost zero





#### One-stop centre cuts transplant patients' waiting time

No more long queues, clinic shuttling as SGH houses specialists under one roof

## WANTED

Innovators, Technopreneurs, **Data Scientists**, **Medico Legal and** IP experts, Architects, Engineers, Designers, Thinkers, **Dreamers** 



19 **Defining Tomorrow's Medicine** 

## Time to Re-define Healthcare

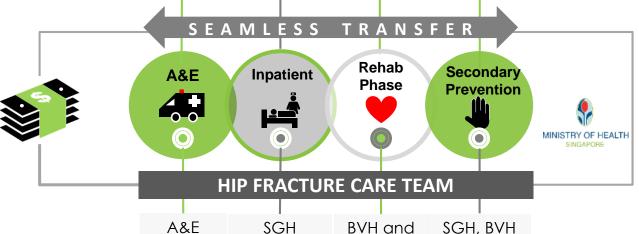


#### HIP FRACTURE BUNDLED SUBVENTION PILOT

#### **Extend to other Community Hospitals**

Identify hip Pre-op care Rehab Osteoporosis fracture patient optimisation therapy and management & initiation of and post-op care and fall pathway care transition prevention





St Luke's

Hospital

& other

community

partners

clinical

depart-

ments

**Bundled payments** support new care models, enabling the RHS to orchestrate care to improve care outcomes

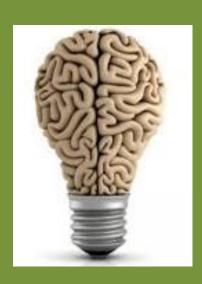








### WANTED



Problem Solvers
Strategic Thinkers
Systems Engineers
Business Process experts
Data Analyst
Business Analyst

Defining Tomorrow's Medicine

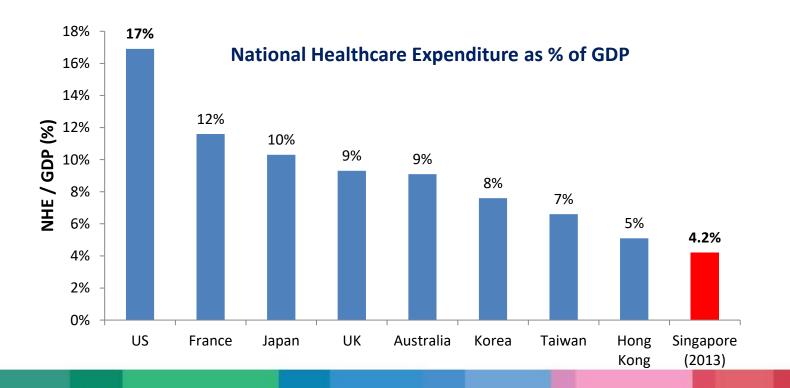
BLOOMBERG RANKINGS

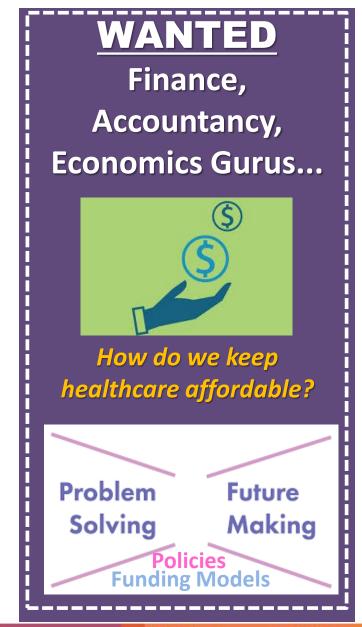
#### THE WORLD'S HEALTHIEST COUNTRIES

Ranked #1 by
Bloomberg as World's
Healthiest Country

HEALTHIEST COUNTRIES 1 to 40					
ivalik	Country	Health Grade	Total Health Score	Health RISK Penaity	
1	Singapore	89.45%	92.52%	3.07%	
2	Italy	90.07	01.01	5.54	
3	Australia	88.33	93.19	4.86	
4	Switzerland	88.29	93.47	5.17	
5	Japan	86.83	91.08	4.25	

Sources: United Nations, World Bank, World Health Organization.







## What keeps a Healthcare CFO up at night?

## Financial Challenges in the Public Healthcare Landscape

#### **Demand**

1 Aging Population



Rising Expectation of Care



3 Medical Advances





New Infrastructure

#### Supply

Salary
Increases for
Healthcare
Workers



5 Improved Staff-Patient Ratios



Ramp-up
staffing for
New Facilities



Rigorous
Review of
Infection
Control
Practices



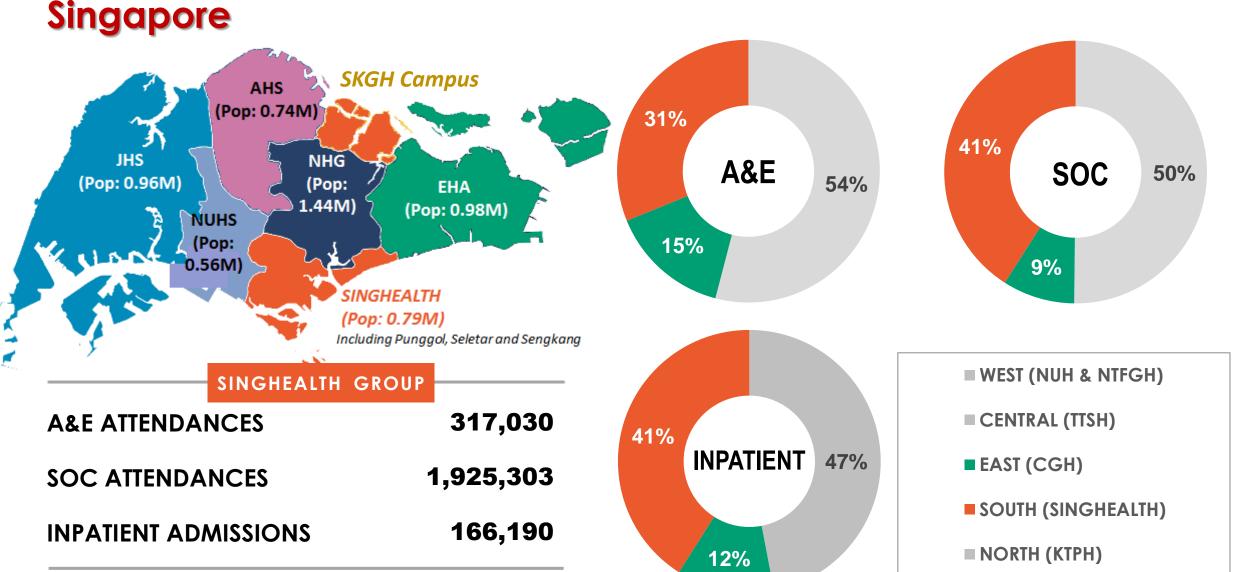


### Playing a part in the larger Public Healthcare Delivery Network



## SingHealth Group is a Major Health Services Provider in



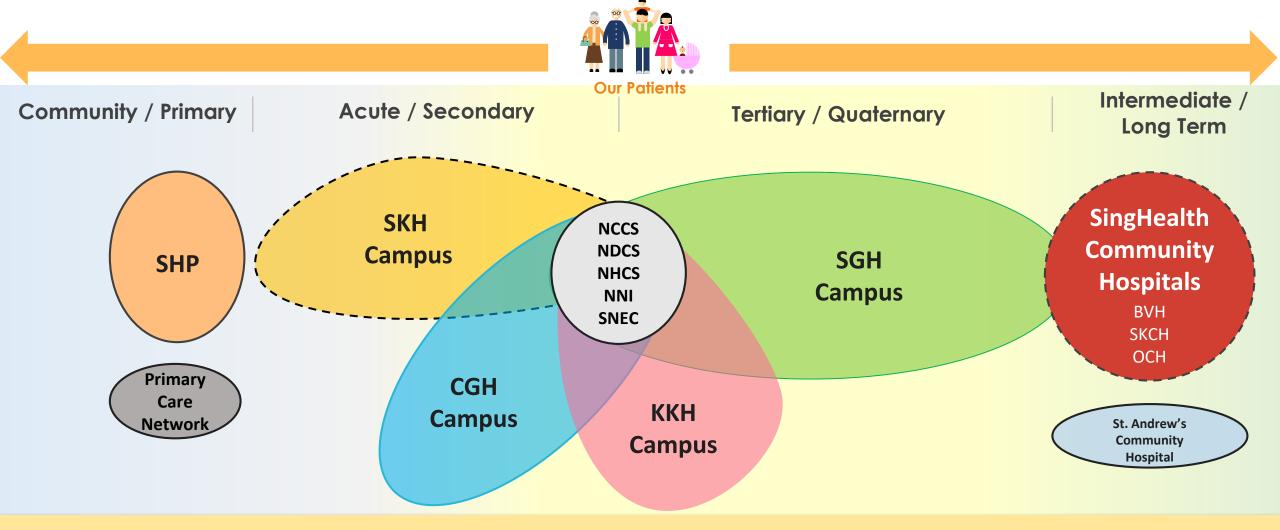


<sup>\*</sup> Based on Oct 15 - Sep 16 data

## We need a diversity of talents to advance Singapore Health



## Healthcare management across the continuum of care



One SingHealth Regional Health System (RHS), Multi Operating Sites [CGH, KKH, SGH and SKH Campuses]

## Shaping the Future in the SGH Campus Master Plan





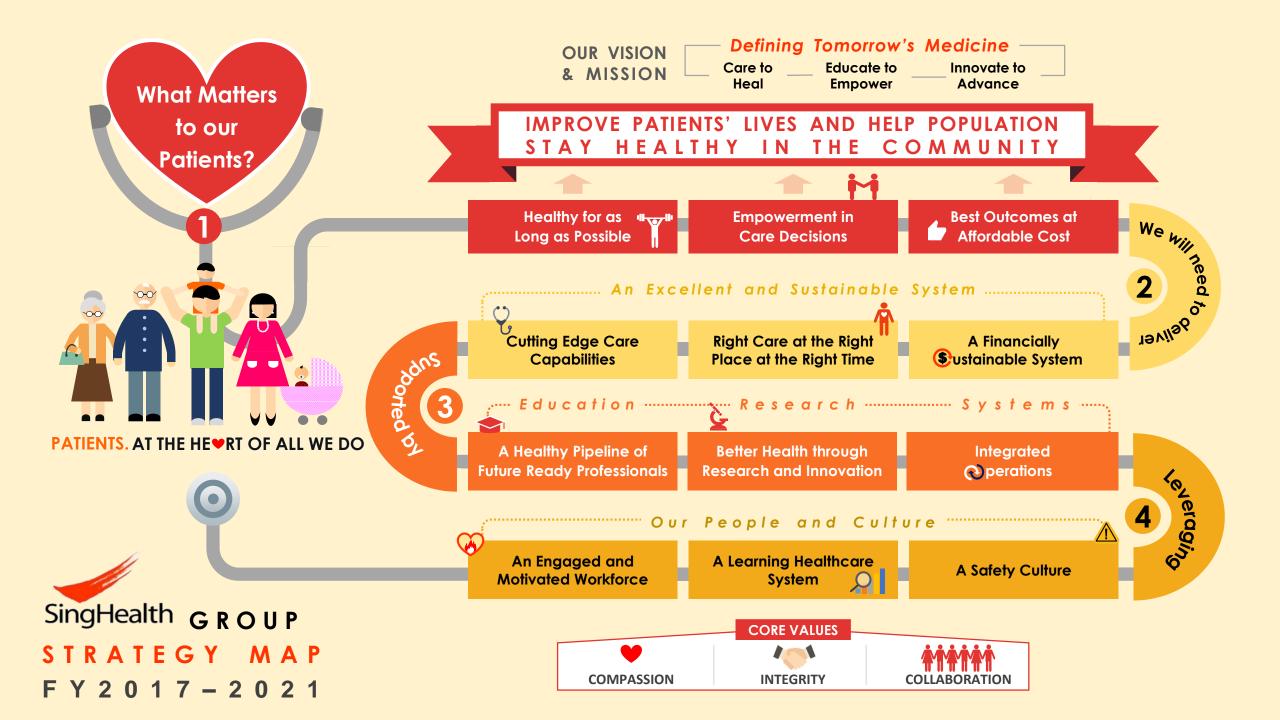
## Making a positive impact beyond Singapore



"By working with regional collaborators, our healthcare professionals will gain valuable insights to hone their clinical skills and research expertise to address emerging health challenges and disease threats."

Singapore

SingHealth





Are you ready to embark on this exciting journey?





# What is in for you as an Intern?

- A better understanding and appreciation of public healthcare administration and operations
- Work on projects and participate in national/cluster-wide initiatives
- Shadowing opportunities



## **Number of Internship Positions**

<u>Institutions</u>	Programme 1 - 10 Wks	Programme 2 - 6 Mths
ALPS Pte Ltd	1	1
Changi General Hospital	1	2
KK Women's and Children's Hospital	1	2
National Cancer Centre Singapore	1	1
National Dental Centre Singapore	1	1
National Heart Centre Singapore	1	1
National Neuroscience Institute	1	1
SingHealth Community Hospitals	1	1
Singapore General Hospital	1	2
SingHealth Polyclinics	1	1
Sengkang General Hospital	1	2
Singapore National Eye Centre	1	1
SingHealth HQ	2	2
SingHealth HQ - Finance	1	1
Total	<u>15</u>	<u>19</u>



## What qualities are we looking for in an Employee?

- ✓ Passionate about the Healthcare Industry
- ✓ Highly Motivated with a Desire to Learn
- ✓ Positive, Enthusiastic, and Resilient
- ✓ Good Interpersonal and Communication skills
- **✓** Forward-thinker with a Curious mindset





## SingHealth Healthcare Management Executive Programme

#### **Objective**

The HME Programme is designed for young executives with high-potential and passion to build a successful career in the healthcare industry.

#### **Approach**

To offer talents a well rounded and hands-on exposure to take on administrative leadership roles in SingHealth.

#### **Programme Highlights:**

- Structured rotation to SingHealth institutions
  - Line departments for exposure to operational competencies
  - HQ departments to gain higher level perspectives
- Professional and Leadership Development
  - Training programmes to develop technical and leadership capabilities
  - Mentoring and coaching
  - Networking opportunities with colleagues and leaders across the cluster



**Inter-Dept/Division** 

#### We look for individuals with...

- willingness to learn and embrace challenges in a dynamic healthcare environment
- humility, resilience and a collaborative spirit
- good honours degree in any discipline with leadership experience

alth

## Shape the future with us, and let us shape your future

