# A New Frontier in eHealth: Patient & Doctor's Portal

Mr Pascal Tse
Chief Information Technology Officer
St Teresa's Hospital

#### WHAT'S HAPPENING NOW?

### Life expectancy comparison 2018

	Woman		Man	
<	Hong Kong	88	Hong Kong	82
	Japan	87	Japan	81
	Spain	86	Spain	81
	South Korea	86	South Korea	81
	Switzerland	85	Switzerland	81

Source: Health ministry

# Battling with sickness



# Hospital are packed



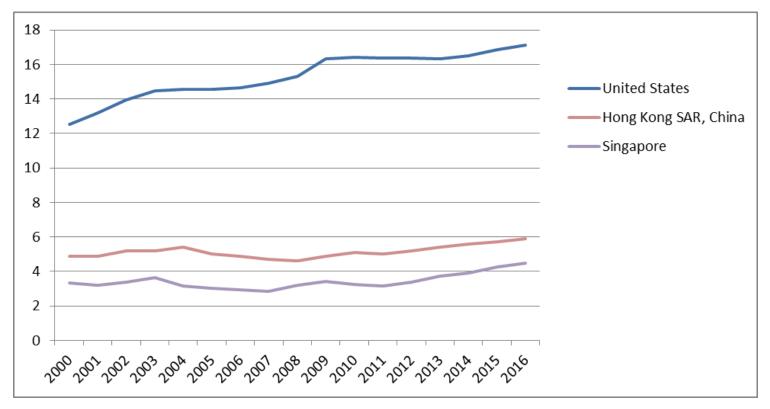
### Silver Tsunami



## Our frontline



### Current Healthcare Expenditure (% of GDP)



#### Sources:

- 1) World Health Organization Global Health Expenditure database
- 2) Food and Health Bureau: Estimates of Health Expenditure: 1989/90 2017/18

#### WHAT TO DO?

000

#### **Choose with Confidence**

- Guaranteed renewal up to the age of 100
- No lifetime benefit limit
- Coverage of unknown pre-existing conditions
- Day case surgical procedures
- Premium is tax deductible
- Implementation on 1 April 2019

LEARN MORE >



#### 調查:每月儲蓄中位數五千微升7%坐擁五百萬港人方

#### 安心退休















Average HK\$5,000,000 per capital is required to retire in Hong Kong

#### **Emphasise** on

- Exercise
- 2) Mental health
- -> Reduce medical expenses
- -> Have a healthy retirement

#### Wealth Health Organisation (WHO) report

# THE GLOBAL STRATEGY ON DIET, PHYSICAL ACTIVITY AND HEALTH

#### FACTS:

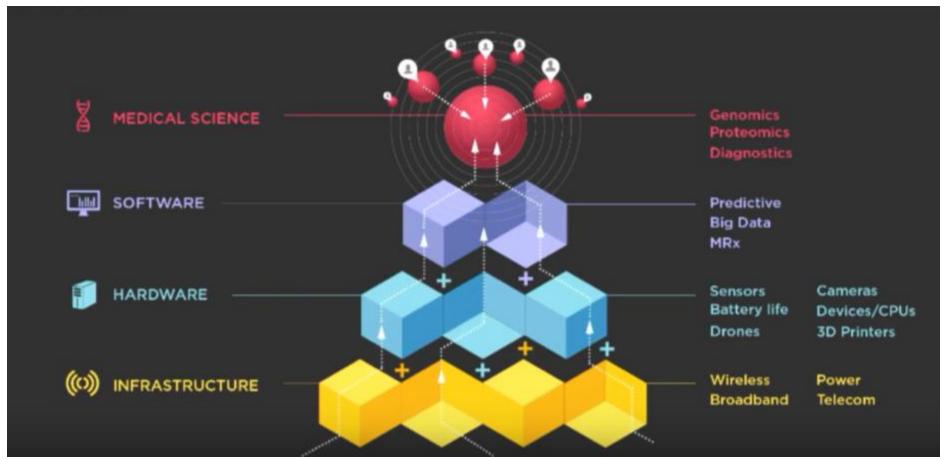
- Chronic diseases are now the major cause of death and disability worldwide.
   Noncommunicable conditions, including cardiovascular diseases (CVD), diabetes, obesity, cancer and respiratory diseases, now account for 59% of the 56.5 million deaths annually and 45.9% of the global burden of disease.
- A relatively few risk factors high cholesterol, high blood pressure, obesity, smoking and alcehol - cause the majority of the chronic disease burden.
- A change in dietary habits, physical activity and tobacco control, have a major impact in reducing the rates of these chronic diseases, often in a relatively short time.



#### ROBIN FARMANFARMAIAN



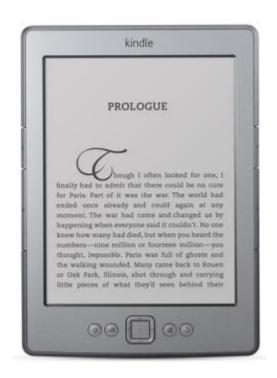
#### Tech Advances Enable the Era of Patients



Sources: The Patient as CEO - Robin Farmanfarmaian from Genius Network

# Reading books





# Finding jobs





# Payment





# Taxi





# disruption

```
noun
/dɪsˈrʌpʃən/
an <u>interruption</u> in the <u>usual</u> way that
a <u>system</u>, <u>process</u>, or <u>event works</u>
```

#### HOW TO DO?



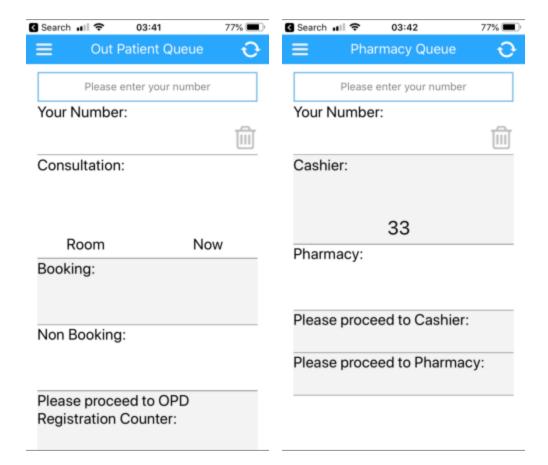
# Digital transformation

Pascal Tse Chief Information Technology Officer St Teresa's Hospital



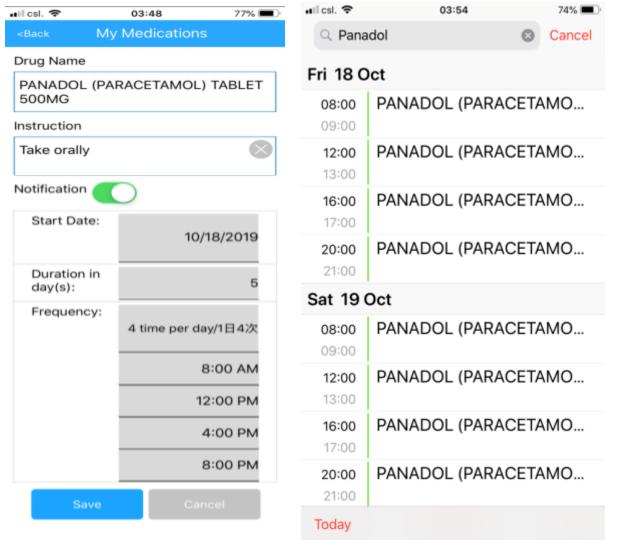
03:41

# **Waiting Status**



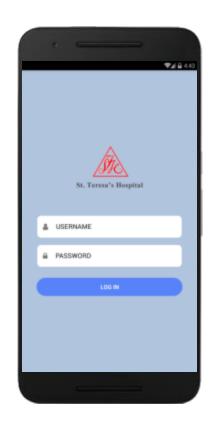
# Drug Monograph





# Medication reminder

#### **STAGE 2: DOCTOR PORTAL**



### Clinical Information



Patient List



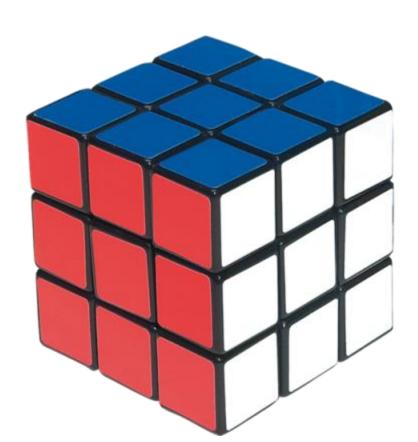
Laboratory Results



Radiology Results

#### **STAGE 3: PATIENT PORTAL V2**

# Design concept



## My Clinical Information



Appointment

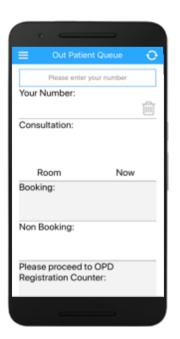


Laboratory Results

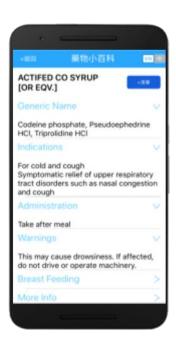


Radiology Results

#### Non Clinical Information



Queueing Information



Drug Information



Financial Information

#### **MORE TO COME**





# Communication among all stakeholders



### Adverse Drug Reaction to Immunisation



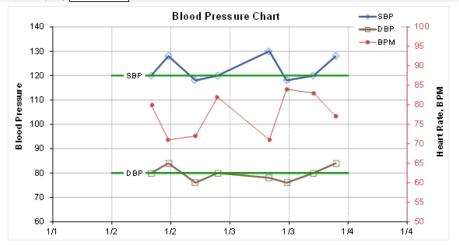
## Communication should be

- Instant and secured in protected platform
- Multimedia like Text, Photos, Voice
- Available in Mobile and Desktop platform



```
85
```

#### **Blood Pressure Chart**



Date	Time	SBP	DBP	BPM	Notes
1/2/2019	8:00 AM	120	80	80	Before blood pressure medication
1/2/2019	11:30 AM	128	84	71	Walked one mile
1/2/2019	5:00 PM	118	76	72	
1/2/2019	9:30 PM	120	80	82	
1/3/2019	8:00 AM	130	78	71	Feeling a little stressed
1/3/2019	11:30 AM	118	76	84	
1/3/2019	5:00 PM	120	80	83	
1/3/2019	9:30 PM	128	84	77	Took a walk in the afternoon

## Patient Information material

- Reminders before endoscopy procedures
- Post operation care
- After delivery check list
- Physiotherapy pamphlets

## WHAT'S THE CHALLENGES

### Data Breach Incident Investigation Report

published under Section 48(2) of the Personal Data (Privacy) Ordinance, Chapter 486, Laws of Hong Kong

#### Cathay Pacific Airways Limited

and

Hong Kong Dragon Airlines Limited

Unauthorised access to personal data of passengers

Report Number: R19 - 15281

Date Issued: 6 June 2019

#### **Detected in March and disclosed in October 2018**

# Key points

- Has not taken reasonable practical steps X 4
- Vulnerability scan is too lax
- Should have applied multi-factor authentication
- Should have personal data inventory
- Should encrypt database backup

# PUBLIC REPORT OF THE COMMITTEE OF INQUIRY INTO THE CYBER ATTACK ON SINGAPORE HEALTH SERVICES PRIVATE LIMITED'S PATIENT DATABASE ON OR AROUND 27 JUNE 2018

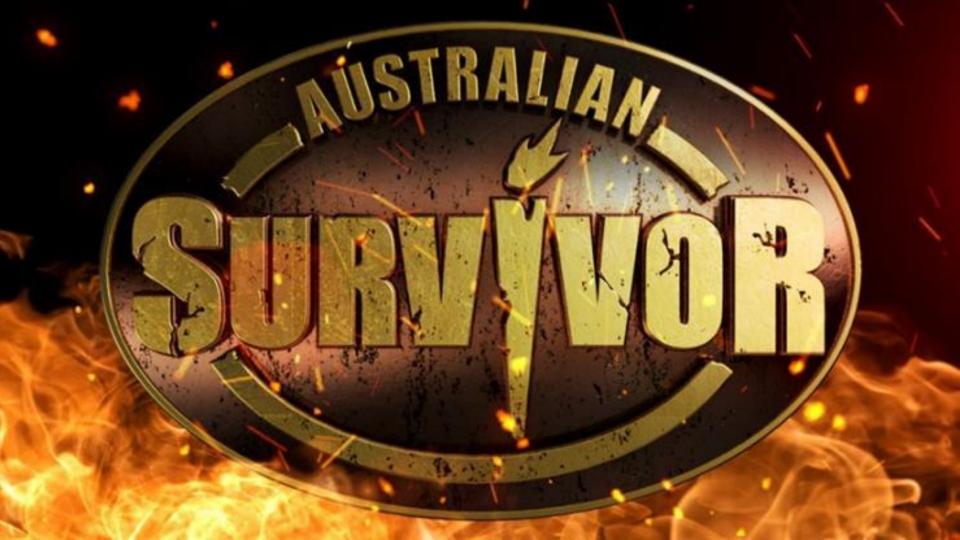
#### 10 JANUARY 2019

# Key points

- Has not taken reasonable practical steps X 3
- Do not have adequate levels of cybersecurity awareness, training, and resources
- Attackers are like Advance Persistent Threat group



## **WAY FORWARD**



## Survival kits 1

#### 1) Do your IT job professionally

- Cathay: 4 of 8 and SingHealth: 3 out of 5 are PEOPLE issue
- Improve risk awareness
- Think about consequences
- Review development cycle
- Build application with security mind set
- Put in place security procedures and guidelines

#### 2) Minimise your exposure

- Flexibility vs Security
- Need to know vs Need to expose

## Survival kits 2

- 3) Build vigilance culture in your organisation
  - Educate Cyber Security concept to ALL end users: Not just yearly drill
  - Conduct Phishing Test on users
- 4) Engage external parties
  - Review architecture design and infrastructure
  - Conduct Penetration Test
  - Conduct Security Risk Audit & Assessment and take corrective measures
  - Conduct security drill with external parties

## Share among healthcare providers like today

# The ball is in YOUR court.

~ He Vniverse



Simple Reminders



