Innovating Hyperacute Stroke Workflow with Smart App Application

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Current Stroke Workflow

Hyperacute Stroke Screening

24 HOURS

Paper record

Stroke patient → Stroke Nurse → HA chat messaging

Clinical detail & treatment decision

Neurologist — Hospital Authority CMS Clinical Management System

Radiologist — RIS III HONG KONG (PRD)

Phone call

Data management

Local data registry

HA e-Form

HA Stroke Proforma

Multi-tasking Stress

Hyperacute Stroke Screening

24 HOURS

Stroke patient

Stroke Nurse

Paper record

HA chat messaging

Phone call
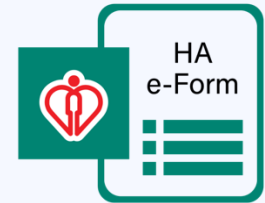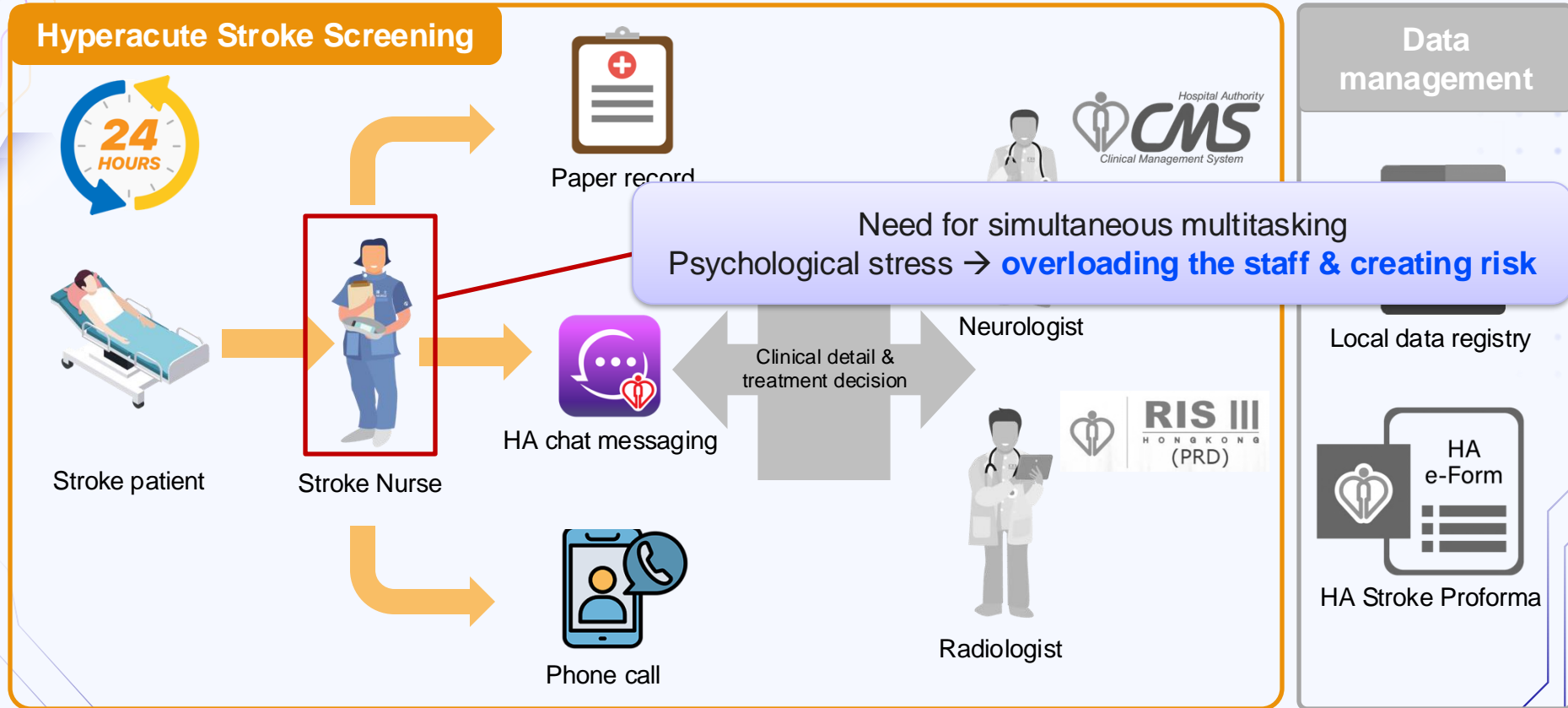
Clinical detail & treatment decision

Need for simultaneous multitasking
Psychological stress → **overloading the staff & creating risk**

Neurologist

Hospital Authority
CMS
Clinical Management System

RIS III
HONG KONG
(PRD)

Radiologist

Data management

Local data registry

HA e-Form

HA Stroke Proforma

Data management issues

Data management

Local data registry
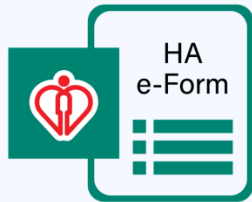
HA Stroke Proforma

Fragmented data system

Local tPA call log

Stroke Proforma

Thrombolysis Proforma

Variance in input format

e.g. date & time format
hh:mm
DD/MM/YY hh:mm
DD/MM hh:mm

Transcription error from paper record to electronic system

1.5 man-hour per day
Need of transcribing & verifying data to electronic record

Time for New Solution

中風中心｜國家認證中風中心選址屯門醫院　院方：去年起已開始籌組

港聞
發布時間：2025/01/20 00:00

A+ A⁻ 關注文章 儲存文章　　　　　　分享：

熱門　緬甸地震　啟德七欖2025　DSE2025　啟德體育園　超市大搜查　結業潮　金像獎2025　名校專區　會員有獎

▲ 屯門醫院新手術大樓。(醫管局圖片)

中国卒中急救APP

I 优秀的卒中救治流程管理工具
I 基于移动信息的院前院内一体化协同救治、分级诊疗示范工程

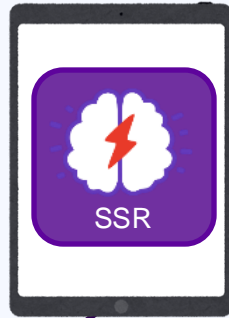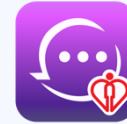Developing localized version of smart stroke app

Timeline of Development

Dec 2024
Clinical application and ongoing improvement

May 2024
2 rounds of user acceptance tests

March 2024
Design blueprint of SSR

Early 2024
Formation of inter-disciplinary development workgroup
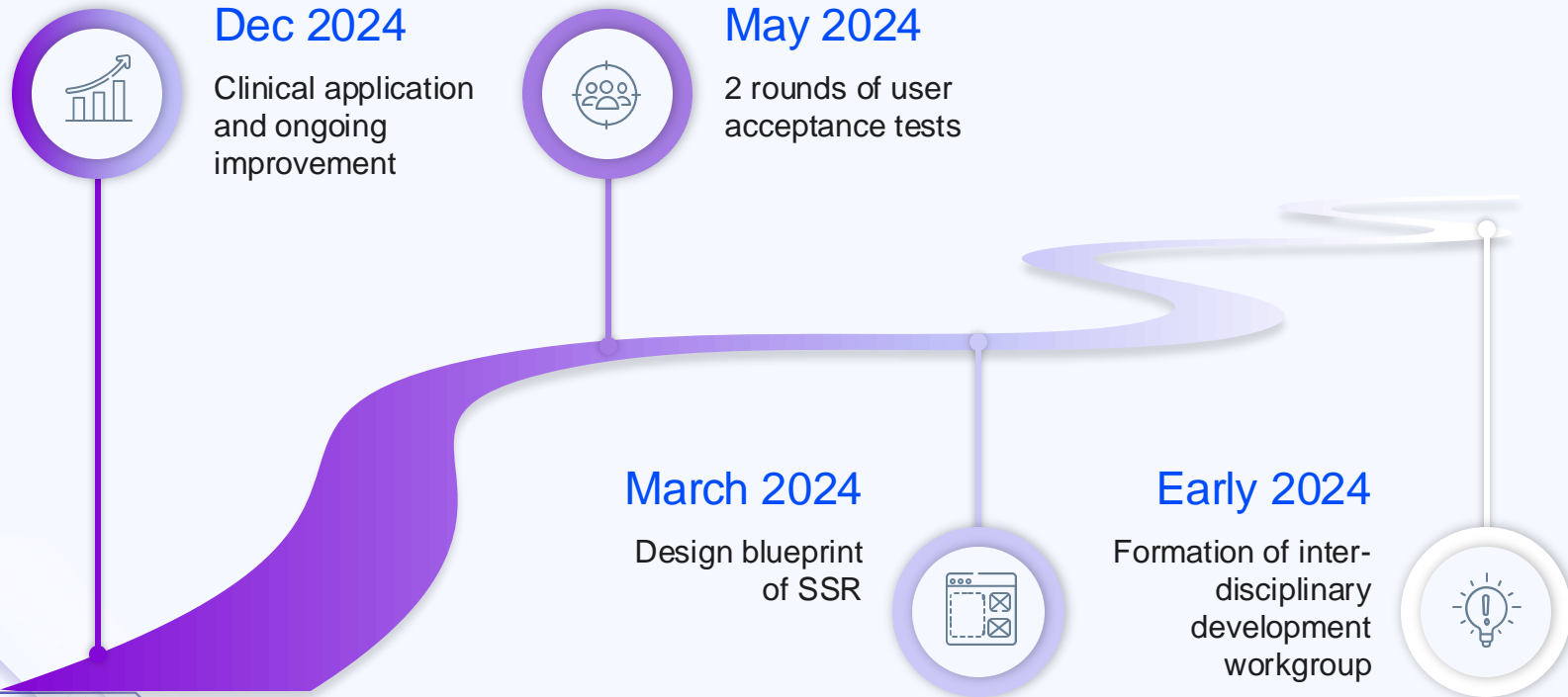
Goal for Our Stroke App

SSR = Paper record + HA chat messaging + Phone call

1 App for All
From Pre-hospital to Post treatment

Smart time Capture
Reduce hurdle in manual recording

Automate Database
Facilitate service review analysis

One App for All

One-click activation of stroke Green Channel

AED Nurses

Smart Stroke Registry (PRD)

HKID / AE No. / HN No.

📷 SCAN

TMH Stroke Alert
28 Members

Fri, 14 Feb

NTWC Smart Stroke Registry

*** [AED Initiate Case] ***

Rank / Hospital: tmhaedmo/TMH
Site of Stroke call: TMH AED
Pre-hospital notification: Yes
* Pre-Case ID: SSR0000782
HKID:
Sex / Age: M/81

Case Acknowledge

9:54 AM

NTWC Smart Stroke Registry

*** [AED Initiate Case] ***

Case Acknowledge
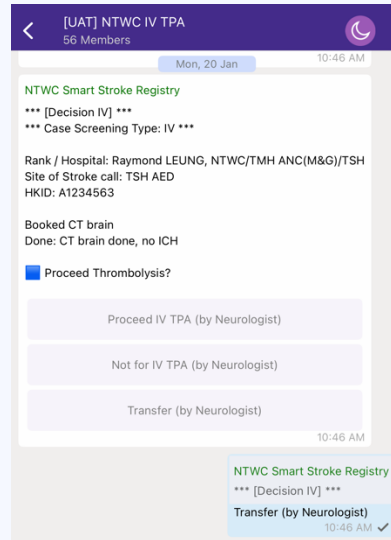
9:55 AM ✓

One App for All

AED Nurses

Stroke Team

One App for All

AED Nurses

Stroke Team

Neurologist / Neuro-interventionist

Confirm treatment decision on HA Chat

One App for NTWC

屯門醫院
TUEN MUN HOSPITAL

博愛醫院
Pok Oi Hospital
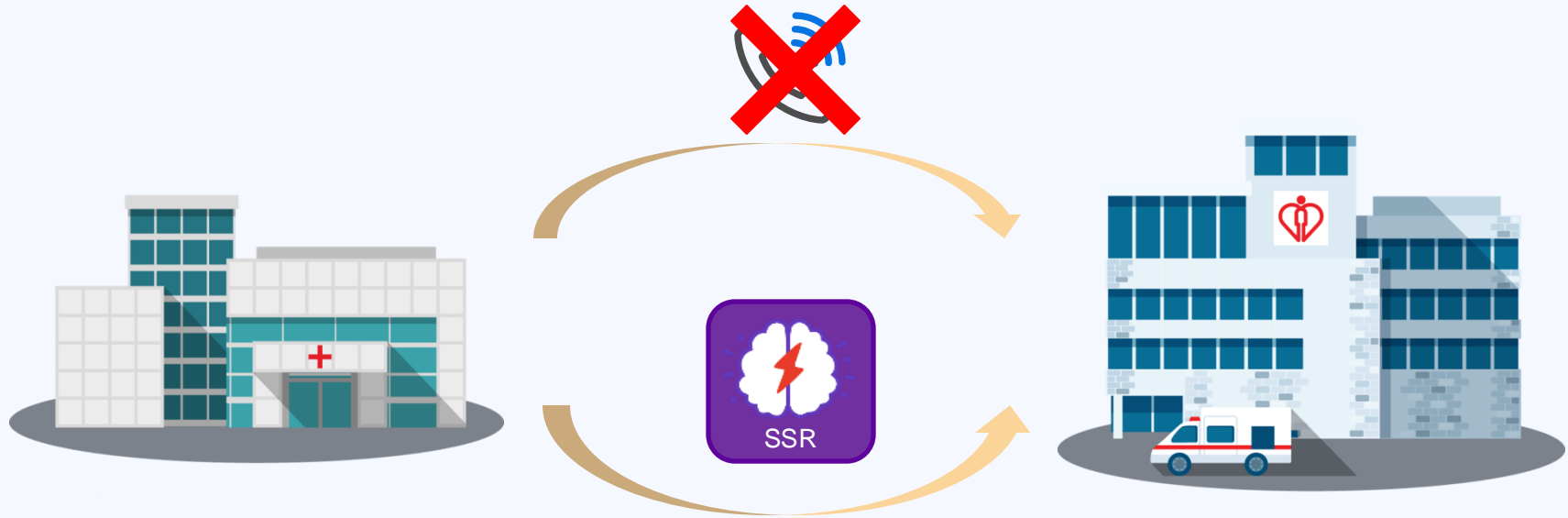
天水圍醫院
TIN SHUI WAI HOSPITAL

SSR

Centralizing data registry for cluster management

Unified cluster workflow

Facilitating **interhospital** communication

Inter-hospital Transfer Support

All transfer details recorded and alerted whole team
Saved up to 2-3 phone calls per cases

Seamless Database Entry

SSR

Stroke Nurse

✓ All predefined timestamps captured
✓ Database building at same time for clinical management
✓ Well formatted data for immediate analysis

Facilitate Interventional Reporting

Radiologist

SSR

✓ Clinical details input to SSR
✓ Database & intervention reporting in one-go


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Plain CT brain:
- ASPECTS: 6
- Presence of haemorrhage:

CT angiogram of brain and neck:
- Site of large vessel occlusion: Yes (Left MCA M1, Left MCA Proximal M2)

Other significant findings:
Local anaesthesia
IV-tPA before the endovascular procedure: N/A

CT brain perfusion:
- CBF<30% volume: 0.0 mL
- Tmax>6.0s volume: 82.0 mL
- Mismatch volume: N/A
- Mismatch ratio: Infinite

ASITNR collateral grade: 1

Total number of thrombectomy passes: 1
1st pass: Combined technique
Other intervention: N/A
Final mTICI score: 3
Associated tandem lesion: No

Associated intracranial atherosclerotic disease: No

Angiosuite entry time: 15:46
Femoral puncture time: 15:46
1st DSA run time: 17:45
1st persistent mTICI 2b (or above) reperfusion time: 16:20
Intra-arterial blood pressure: 182/95 mmHg (highest); 124/86 mmHg (lowest)
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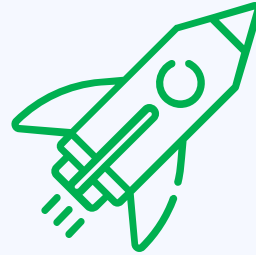

RIS III HONG KONG (PRD)

Impacts of SSR Implementation

SSR

>800
Clinical cases
handled via SSR

~7.5
Nursing man-hours
saved per week

>100
Reperfusion treatments
ordered

Road to Broader Horizon

*Leveraging experience of SSR to benefit **ALL** stroke patients in HA*

Acknowledgement

The project can be successfully implemented with the support of the following parties

- TMH Neuroscience Centre Management Committee
- NTWC Comprehensive Stroke Management Coordinating Subcommittee
- NTWC Information Technology Service
- HA HOIT
- Dr. Michael FU, TMH Consultant Neurologist
- Dr. Jimmy SIU, TMH Consultant Radiologist
- Dr. Kelvin TSOI, TMH Associate Consultant Neurologist
- Dr. Justin LAM, TMH Associate Consultant Radiologist
- NTWC Neurologists, Radiologists, and Stroke Nurses

Thank You!