e-Health in Hong Kong
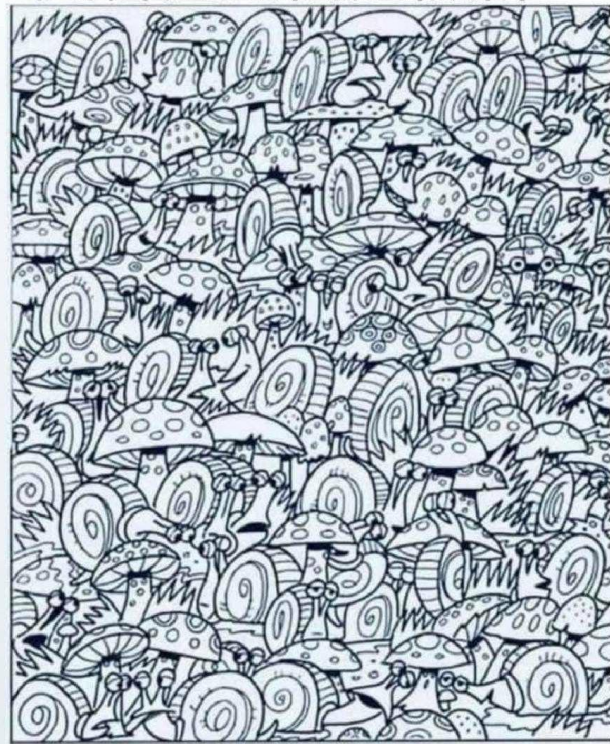## A potential game changer

行博
仁知

立

Dr Hon David T Y Lam
Member, Legislative Council HKSAR

From empty to full

1分鐘找不到車子，代表你容易患有老人痴呆失智症的高危險群

Alert, Allergy, Precautions, Warning…

Sense out of chaos, deduce & suggest

Machine Learning Trends in Data Analytics and Artificial Intelligence

https://www.knowledgenile.com/blogs/machine-learning-trends-in-data-analytics-and-artificial-intelligence/
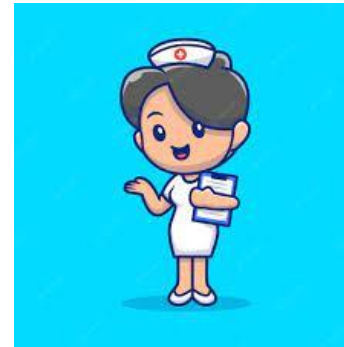
Universal Medical Record

- One man one record, anytime, anywhere
- Sourcing data and integrating into 1 place
- Vitals auto-uploading (internet of things)
- AI data analysis
- Treatment plan suggestion

醫健通

ehealth

香港特別行政區政府 HKSAR GOVT

Hurdles

- Extra liability
- Extra work
- Lost functionalities

WELL, JOE... THERE'S BEEN A COMPLICATION WHILE AMPUTATING YOUR FINGER...

www.LECTRR.COM

e-Health: one person one medical record

- To succeed, coverage must include both HA and private data

- To succeed, commercial vendors must be willing partners

- To succeed, doctors must be willing to provide data

- To succeed, doctors must not be required to make duplicate entries

- To succeed, perks of current commercial systems must be maintained

- We need a new approach to meet the challenge.

- Data can be stored in multiple clouds and servers, only to be integrated and displayed on the spot.
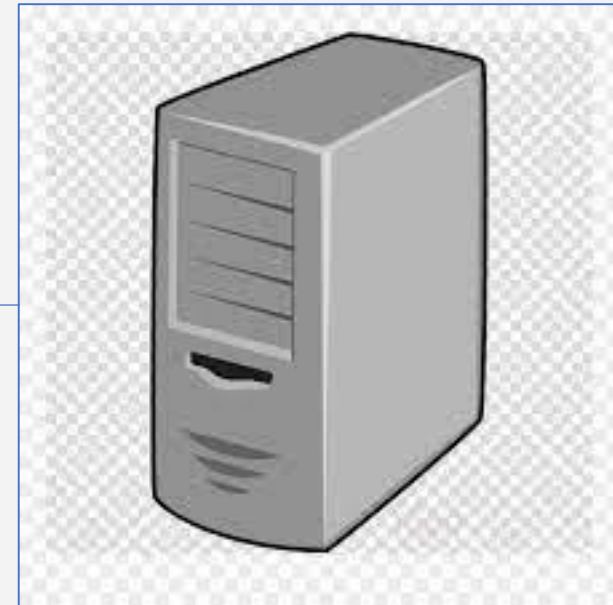
Traditional Approach

HA HCP

Family doctor

e-Health

Data input into e-Health
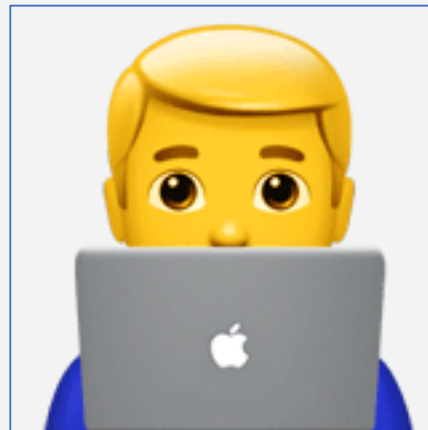
Data retrieval from e-Health

Community nurse

Private Specialist

Traditional approach:

All data in 1 server / system
1 System serves all users

Traditional approach: why doesn't it work?

One system doesn't fit all:

- e-Health apps unlikely to come with perks useful to clinic doctors:
  - Billing system / clinic I&E report / doctor I&E report
  - Drug stock balance
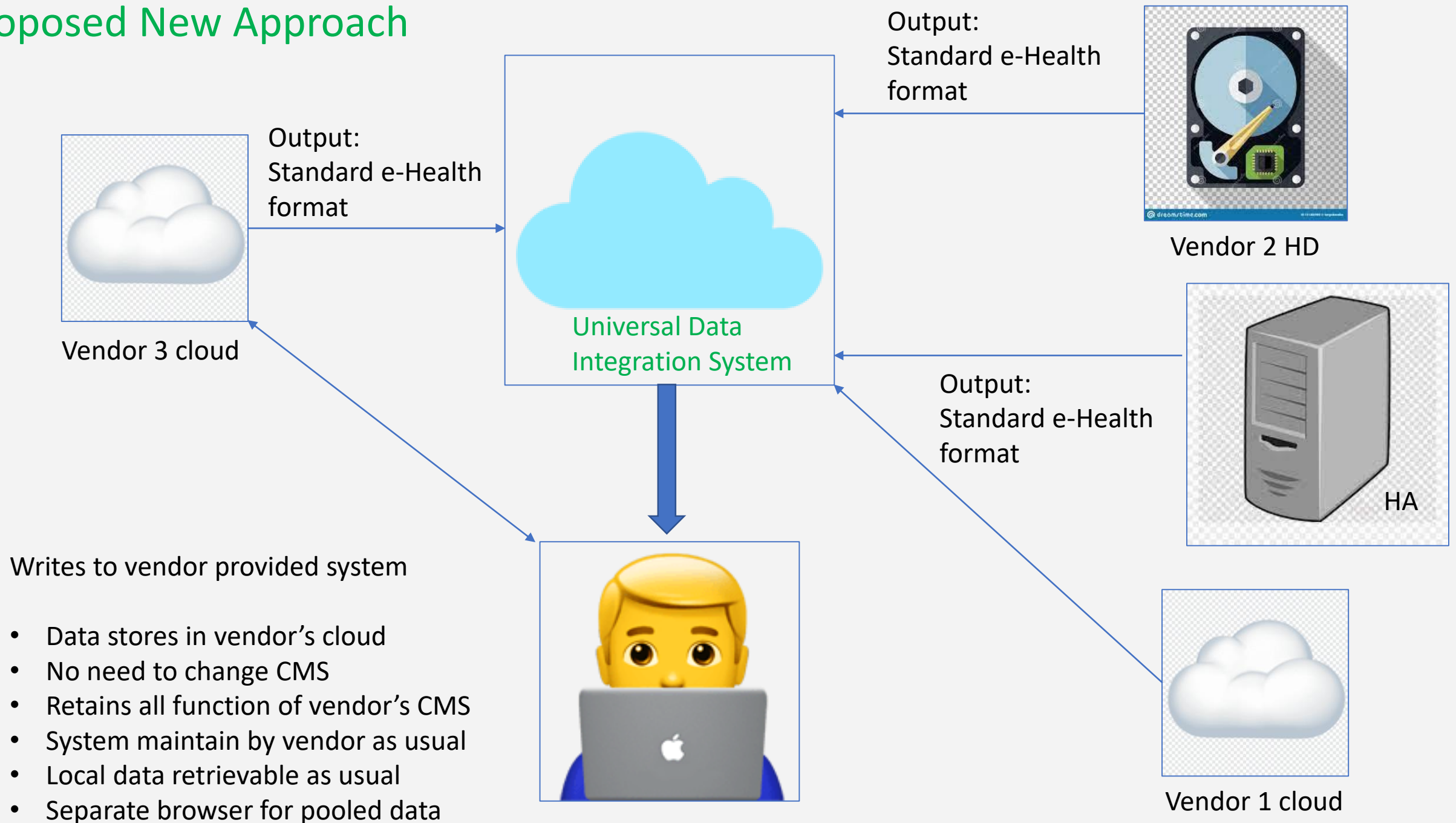 - Tailormade sick leave, medical certificates

Not all data are to be shared:

- Patient may wish to retain sensitive data only with the chosen HCP

Requiring commercial vendors to give up their database

- Data is treasure, not way to give up
- No incentive to comply

Proposed New Approach

Output:
Standard e-Health
format

Vendor 2 HD

Output:
Standard e-Health
format

Vendor 3 cloud

Universal Data Integration System

Output:
Standard e-Health
format

HA

Writes to vendor provided system

- Data stores in vendor's cloud
- No need to change CMS
- Retains all function of vendor's CMS
- System maintain by vendor as usual
- Local data retrievable as usual
- Separate browser for pooled data

Vendor 1 cloud

Universal Data Integration System: why it should work?

HCP retain their usual system with perks they are happy with

**Vendors retain their business and data**

Patients may consent for all data or non-sensitive data only

Vendor's system generates:

- Standard data set:
  - Clinic name & code, HCP name & code
  - Date & time of encounter / admission & discharge dates
  - Medical alert (incorporate into system's medical alert)
  - Diagnosis list
  - Drug list
  - Procedure list
  - Optional notes
  - Lab & imaging results to be uploaded by labs and imaging centres / hospitals
  - Discharge summaries to be uploaded by hospital

1 Universal e-Health identification number per patient across all HCP / institutions

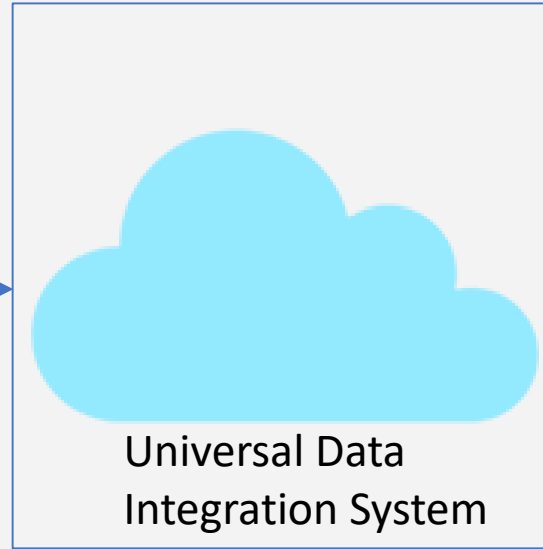# UDIS generates 1 e-Health # for each patient
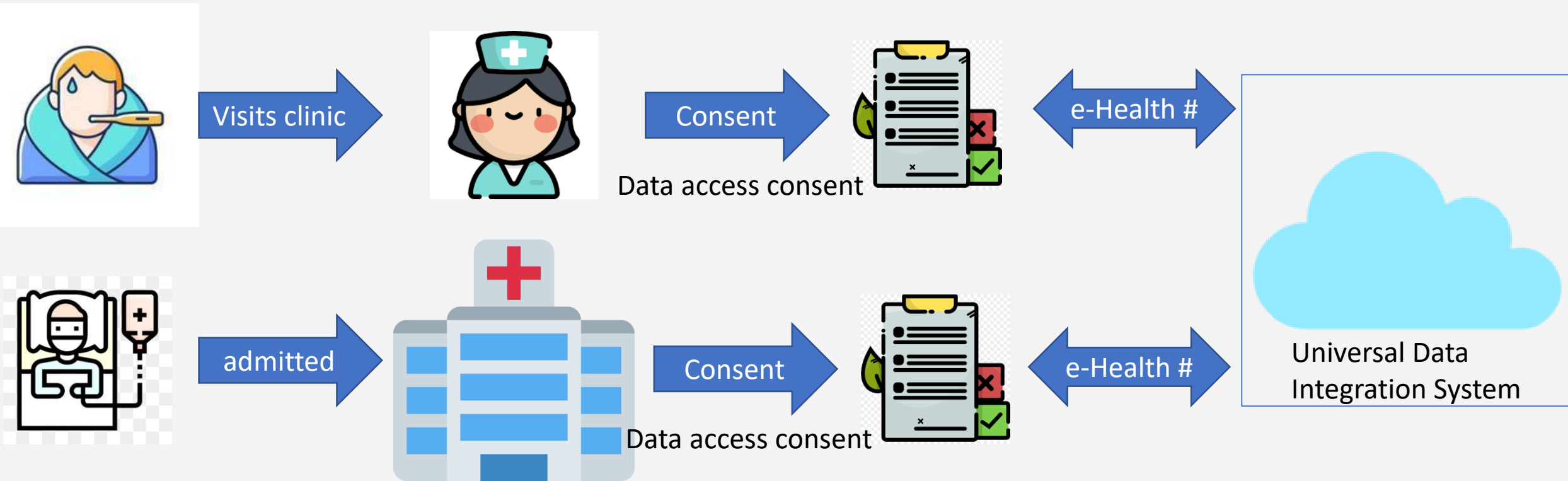
System recognizes universal E-Health #

Output: Standard e-Health format

Output: Standard e-Health format

Vendor 2 HD

Universal Data Integration System
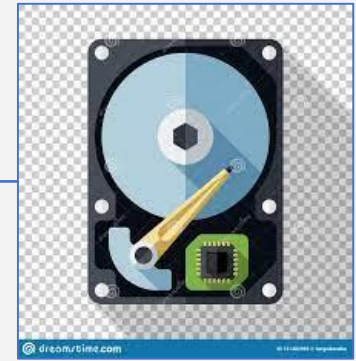
Vendor cloud

Output: Standard e-Health format

HA

Enter Universal e-Health#

System displays Clinical data

Writes to vendor provided system

- Usual data input
- Optional text data to upload

Other vendors' cloud

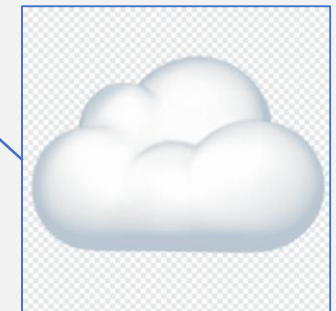Patient as end-user

- Search Healthcare Providers by Discipline
- Patient Record Viewer
- Referral to Selected Healthcare Provider
- Request for early FU at SOPC
- Teleconsultation
- Claims for services provided
- Order vaccines / medicines
- Patient apps