Continual Service Improvement in CIS

臨床信息系統的持續服務改善–與時並進

Dr Eunise Ho

Second CIS Seminar

27 November 2010


PMH
PRINCESS MARGARET HOSPITAL
瑪嘉烈醫院
濟仁醫院
YAN CHAI HOSPITAL

ICU-025

PMH 35 ANNIVERSARY

Commemorative
Scientific Conference

Clinical Information System in Intensive Care Unit

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Introduction:

Intensive Care Unit (ICU) incorporates complex and advance technology, with which highly trained staff apply scientific therapies to manage critically ill patients. Clinical Information System (CIS) enables continuous capture and documentation of clinical parameters, patient's dynamic condition, care plan and facilitates quality assurance. PMH ICU implemented CIS since September 2007 and had major software version upgrade in 2009.

Characteristics of PMH CIS and Physiological Monitor:

PMH Infectious Disease Centre (IDC) is equipped with high standards for infection control and isolation facilities. Dual monitor features enable simultaneous display of physiological vital parameters and remote control of the monitor in inner or outer room.

Wireless technology enhanced clinical workflow. Web-based technology enabled CIS function in Clinical Management System (CMS) workstations. This enhanced CIS access in ICU clinical area, remote access in non clinical area, non ICU department and another hospital e.g. Yan Chai Hospital.

Challenges:

There were operational, technical and organizational challenges. Operationally, a dedicated team was formulated to acquire necessary skills and knowledge, modify workflow and coordinate training for implementation. Human factors were encountered including reaction to changes and frustration. Technically, intense feedback and problem reporting to vender for system enhancement could be problematic. Software upgrade, debug and data back up were maintenance processes. From an organization perspective, concerns included development of contingency plan, security consideration, system interface enhancement and collaboration with other units.

Future:

To improve quality and interoperability of electronic medical record, increased clinical data integration with CMS is recommended. Advance reporting, statistical function and clinical decision support application is expected.

Challenges

- **Service**
  - Change of workflow
  - Dedicated team
  - Co-ordinate with other parties
- **Security**
  - Confidentiality
  - Integrity
  - Availability
- **Information Technology**
  - Infrastructure and upgrades
    - Software
    - Hardware
  - Rapid development

- **Human factors**
  - Reaction related to change
  - New technology
  - Human error
- **Teamwork**
  - Acquire new knowledge and skill
  - Balance concern of stakeholders
  - Training
  - Handle feedback and incident
  - Change of configuration
- **Maintenance & Development**
  - User account
  - Database
  - New program application

Clinical Information System

IT Service Management
&
Continual Service Improvement

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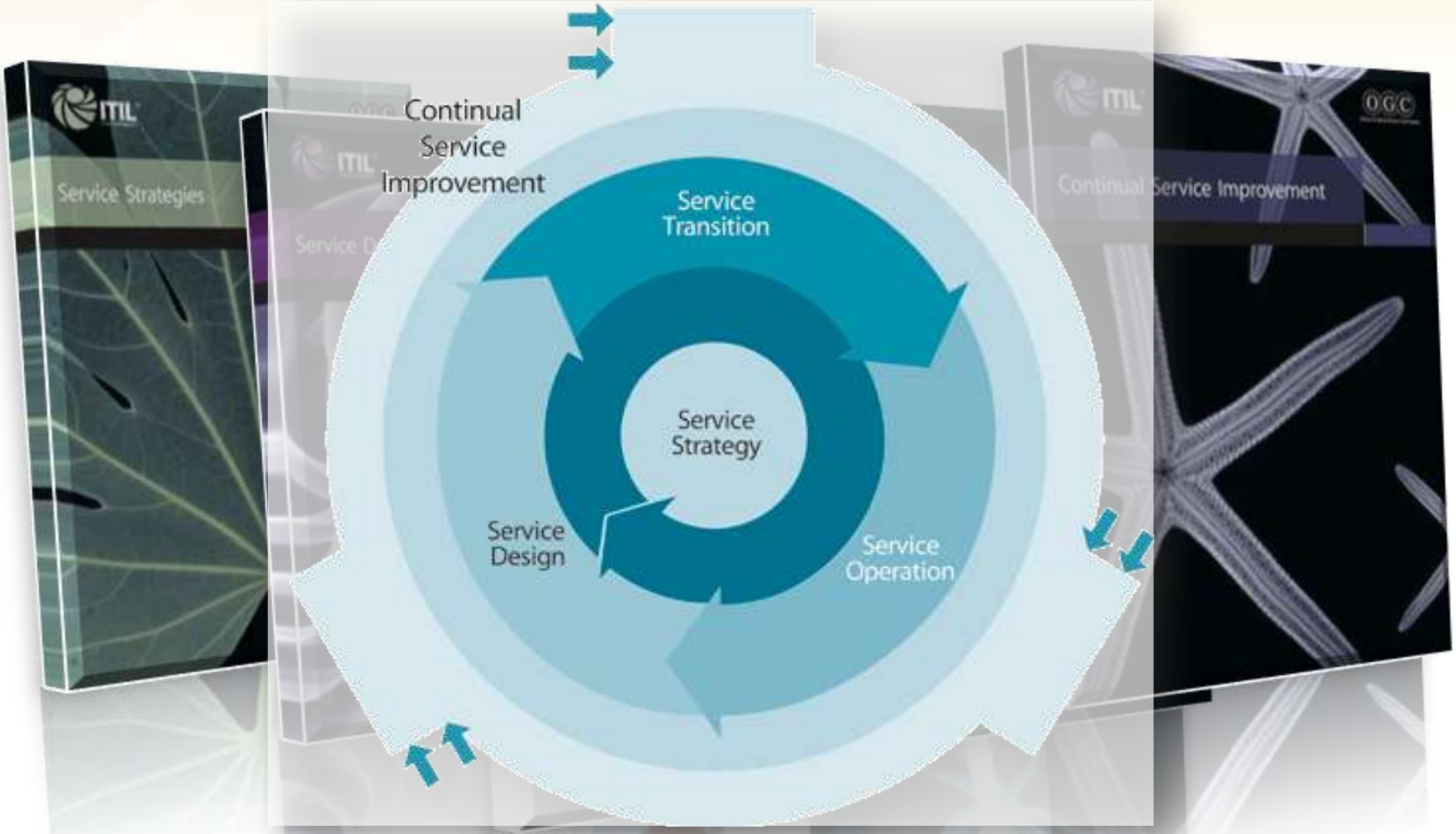


IT Service Management

Service Strategy
Ensuring services meet business needs

Service Design
Designing the services

Service Transition
Moving services into production

Service Operation
Ongoing management of services

Continual Service Improvement
Ongoing improvement of services

PROCESSES

- Strategy Generation
- Financial Management
- Service Portfolio Management
- Demand Management
- Service Catalog Management
- Service Level Management
- Capacity Management
- Availability Management
- IT Service Continuity Management
- Information Security Management
- Supplier Management
- Transition Planning & Support
- Change Management
- Service Asset & Configuration Management
- Release & Deployment Management
- Service Validation & Testing
- Evaluation
- Knowledge Management
- Event Management
- Incident Management
- Request Fulfillment
- Problem Management
- Access Management
- 7 Step Improvement Process
- Service Reporting
- Service Measurement

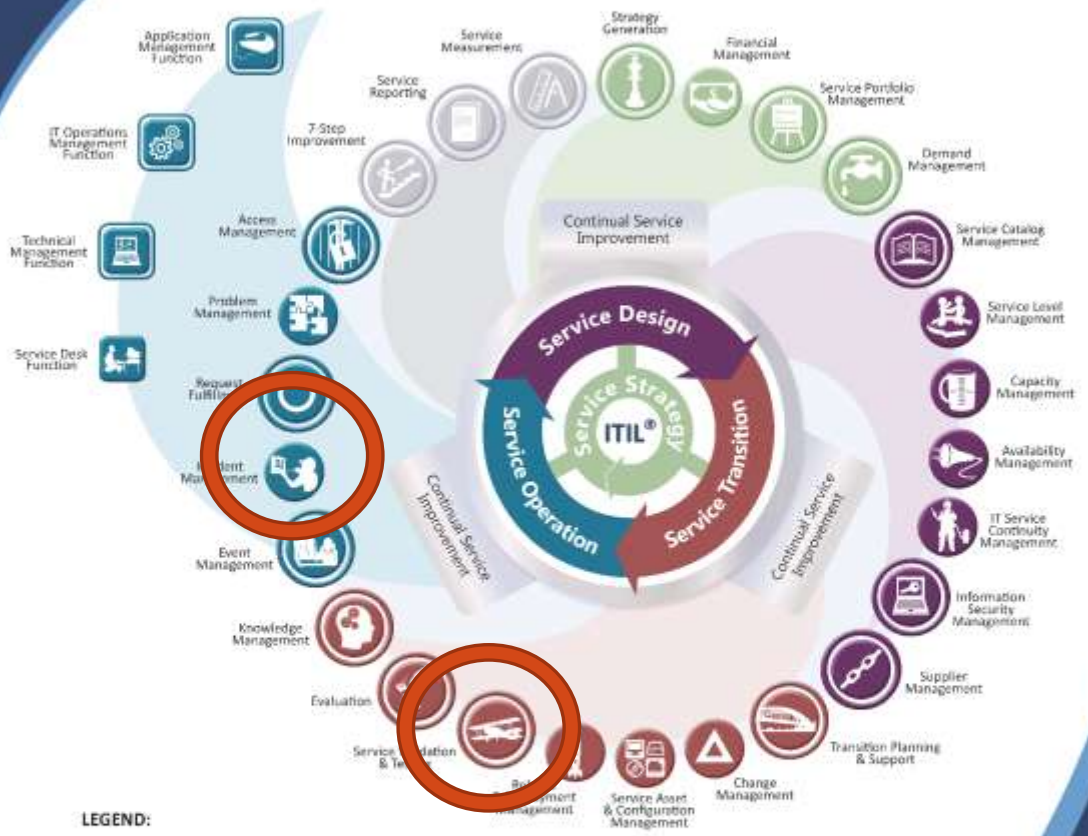
LEGEND:

- V3 — Process - New to ITIL® V3
- V2 — Process - From ITIL® V2

FUNCTIONS

- Service Desk Function
- Technical Management Function
- IT Operations Management Function
- Application Management Function

ITIL® V3 SERVICE LIFECYCLE



LEGEND:

Process - New to ITIL V3

Process - From ITIL V2

ITIL V3 Function

Service Strategy
Ensuring services meet business needs

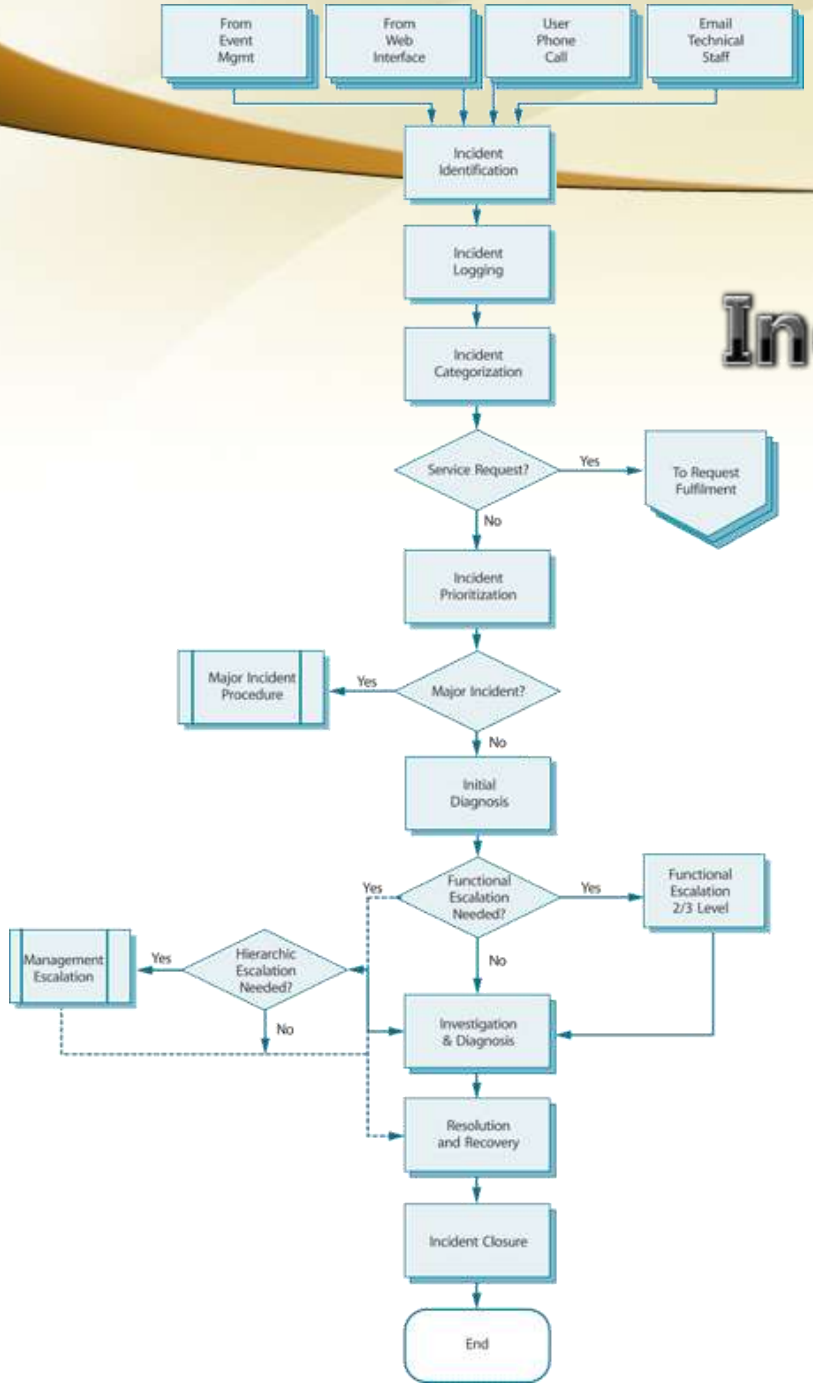
Service Design
Designing the services

Service Transition
Moving services into production

Service Operation
Ongoing management of services

Continual Service Improvement
Ongoing improvement of services

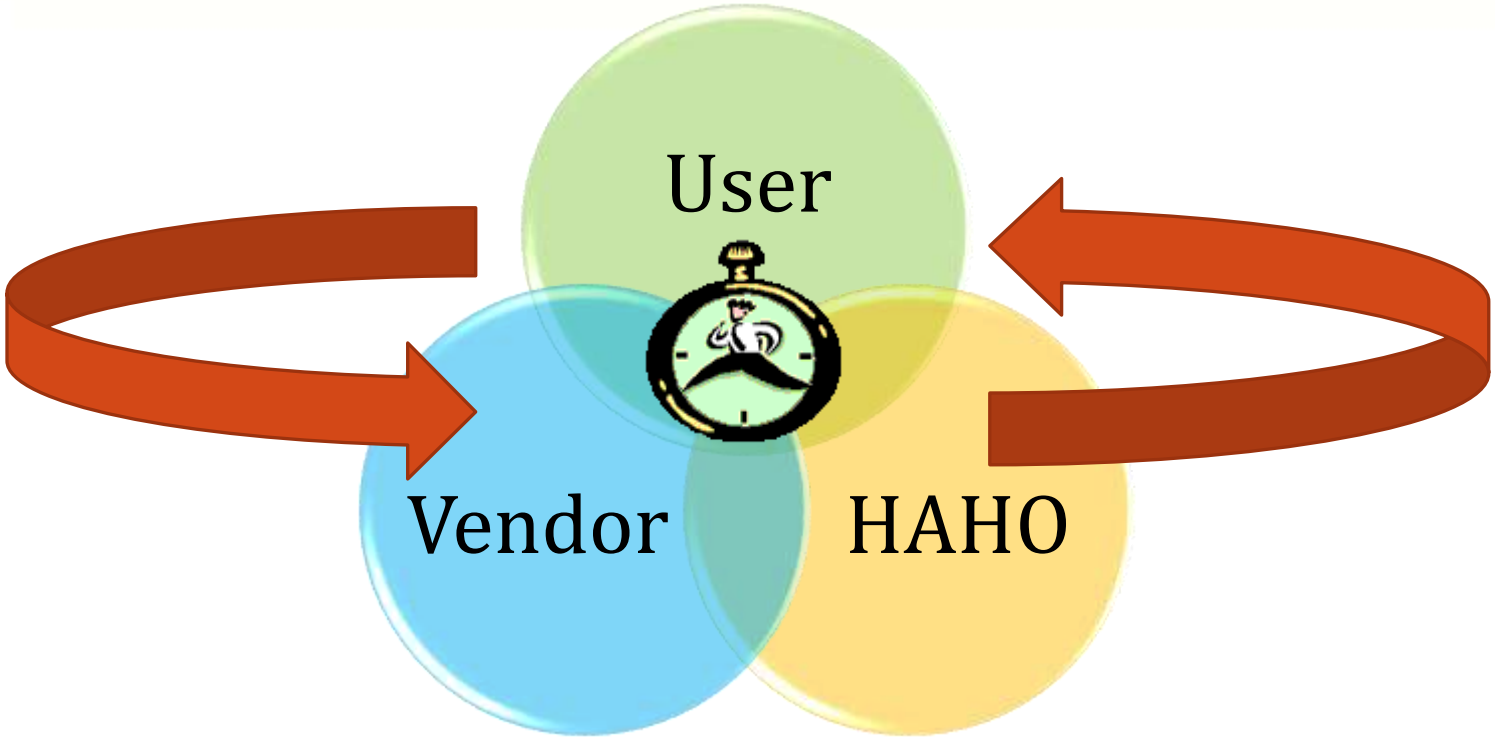
Incident Management



- **Incident Identification**
- **Logging**
- **Incident Categorization**
  - Impact and Urgency
- **Incident Prioritization and Escalation**
- **Investigation & Diagnosis**
- **Resolution & recovery**
- **Incident Closure**

Problem Management

"Problem" is defined as the cause of one or more incidents



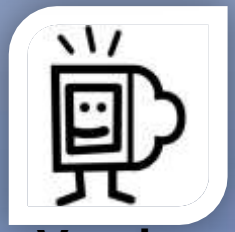
Service Transition

- **Change Management**
  - Software upgrade
  - Change of HAHO security policy
  - Workflow change e.g. Clinical round
- **Service Validation & Testing**
  - Drill
  - Configuration
- **Knowledge Management**
  - E.g SQL reporting service, ITSM

Remote Vendor Support

Frontline User

Nurse In Charge



Vendor

CIS Administrator

HAHO Help Desk

Frontline User

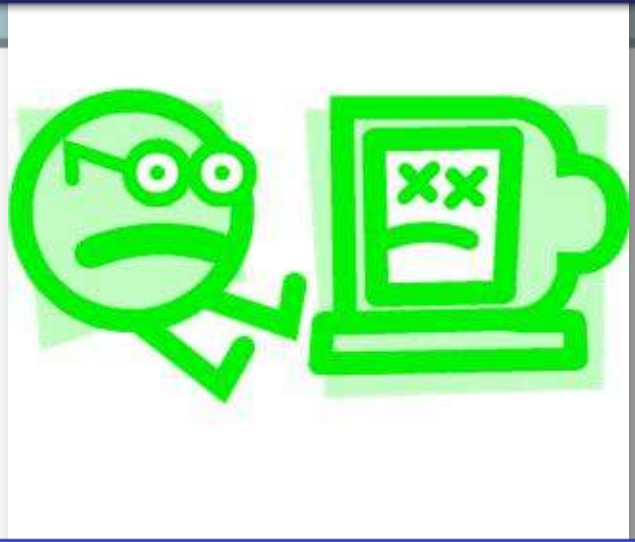
Nurse In Charge

Vendor

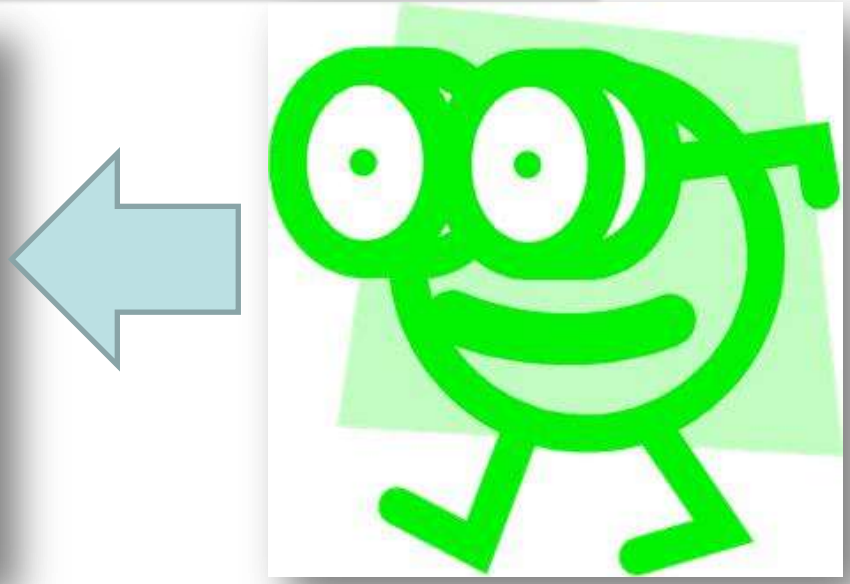
CIS Administrator

HAHO Help Desk

Frontline user experienced CIS related problem



Frontline user report to Nurse IC



Frontline User

Nurse In Charge

Vendor

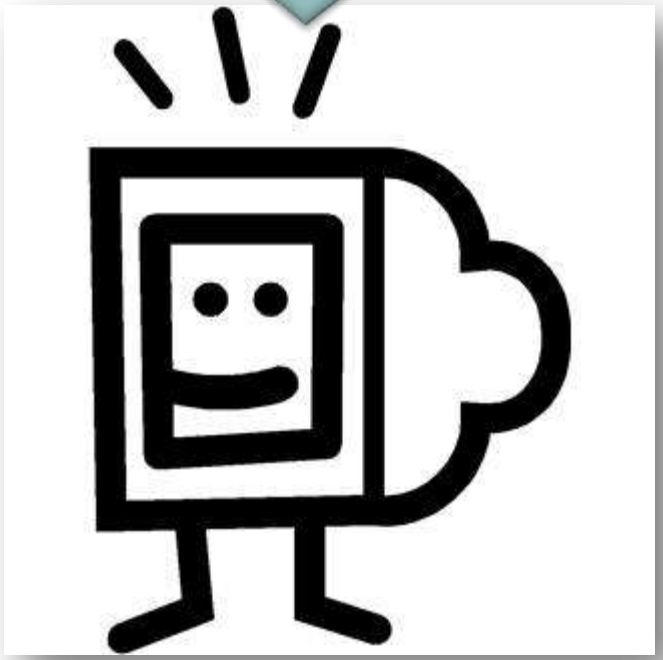
CIS Administrator

HAHO Help Desk

Nurse IC contact Vendor to solve the problem

1. Should we activate remote vendor support account through HAHO?
2. What is the username of the account?
3. What is the estimate duration of the remote vendor support service?

1. Yes
2. draegersupport
3. One hour



Frontline User

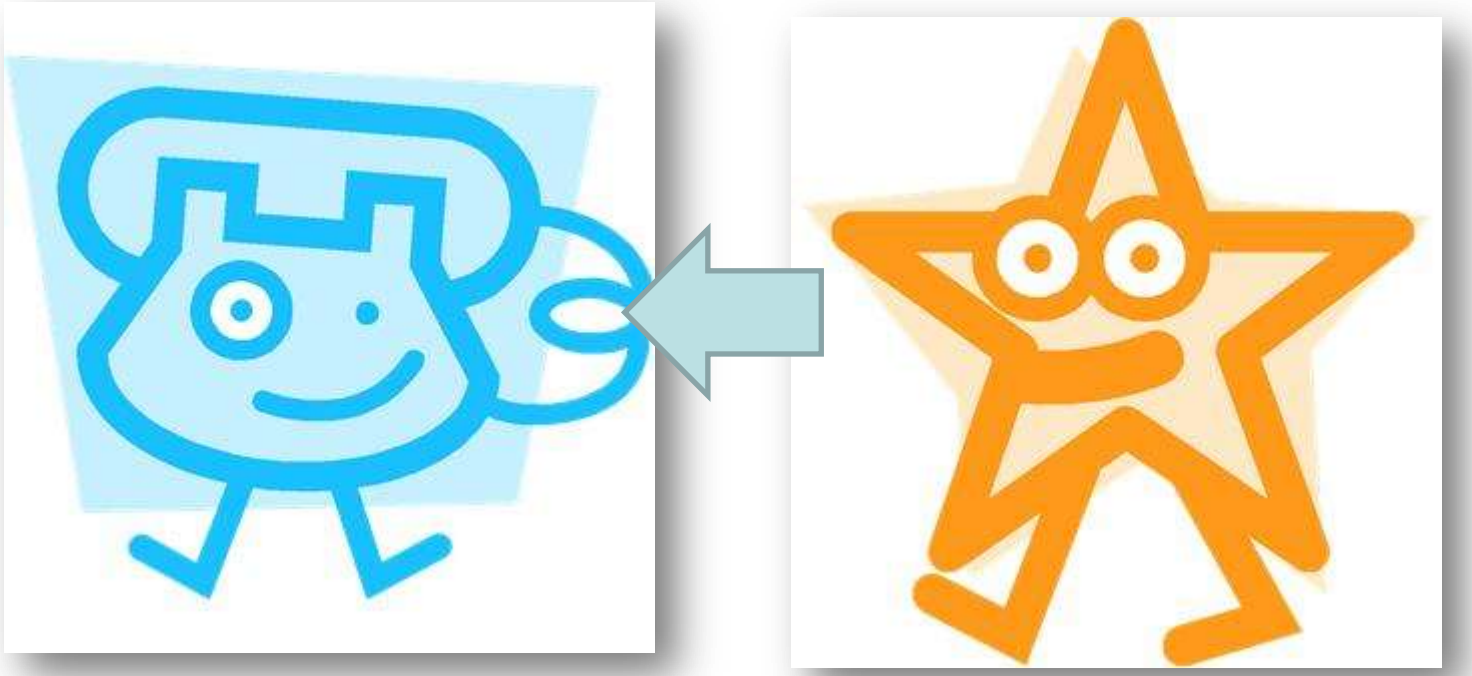
Nurse In Charge

Vendor

CIS Administrator

HAHO Help Desk

Nurse IC contact CIS administrator to provide information for activation of remote vendor support



Frontline User

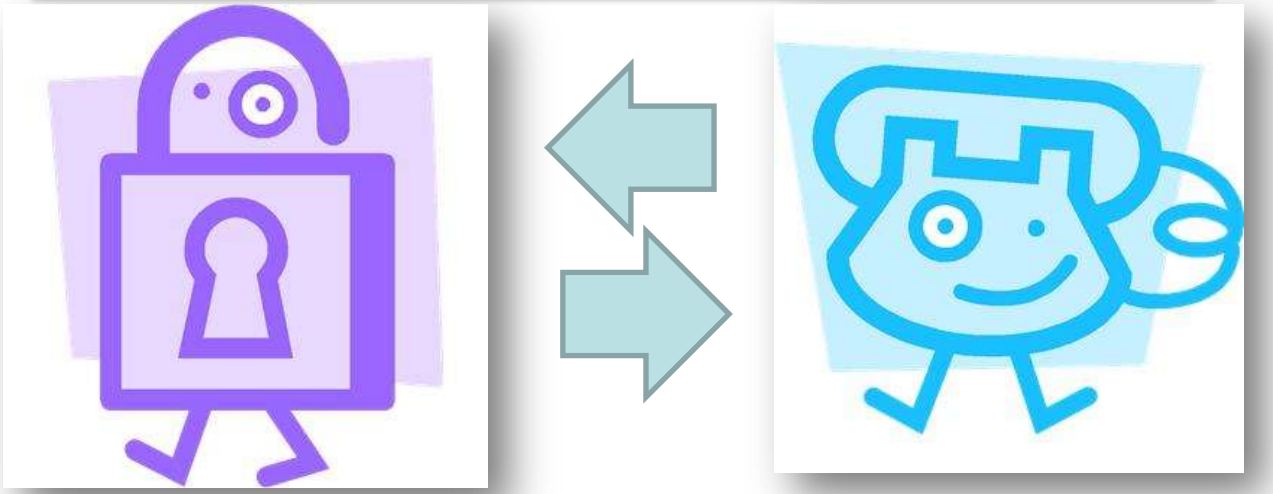
Nurse In Charge

Vendor

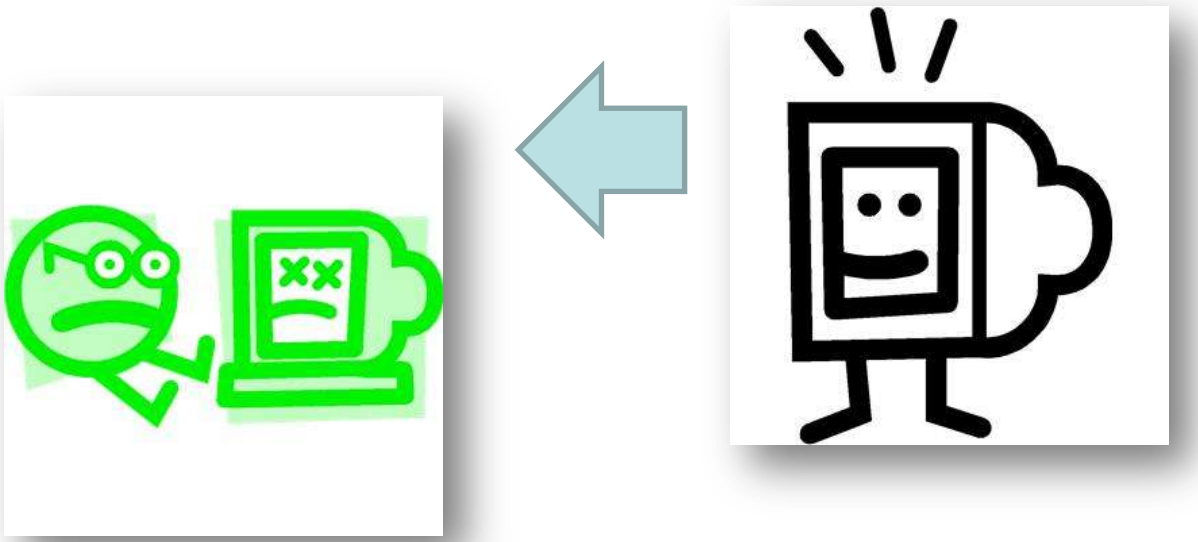
CIS Administrator

HAHO Help Desk

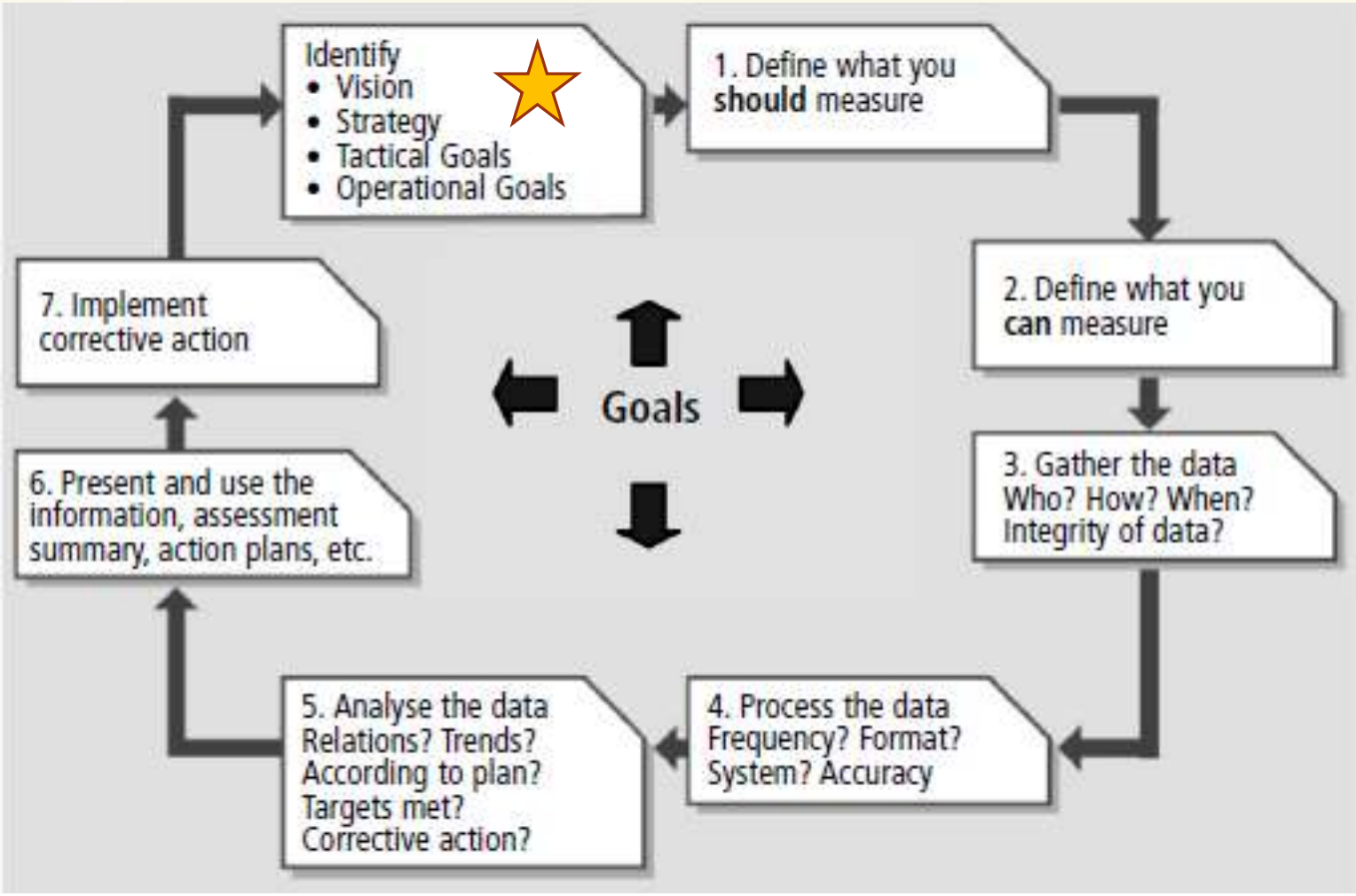
CIS administrator contact 25152653 to provide information for activation of account and receive verification from HAHO



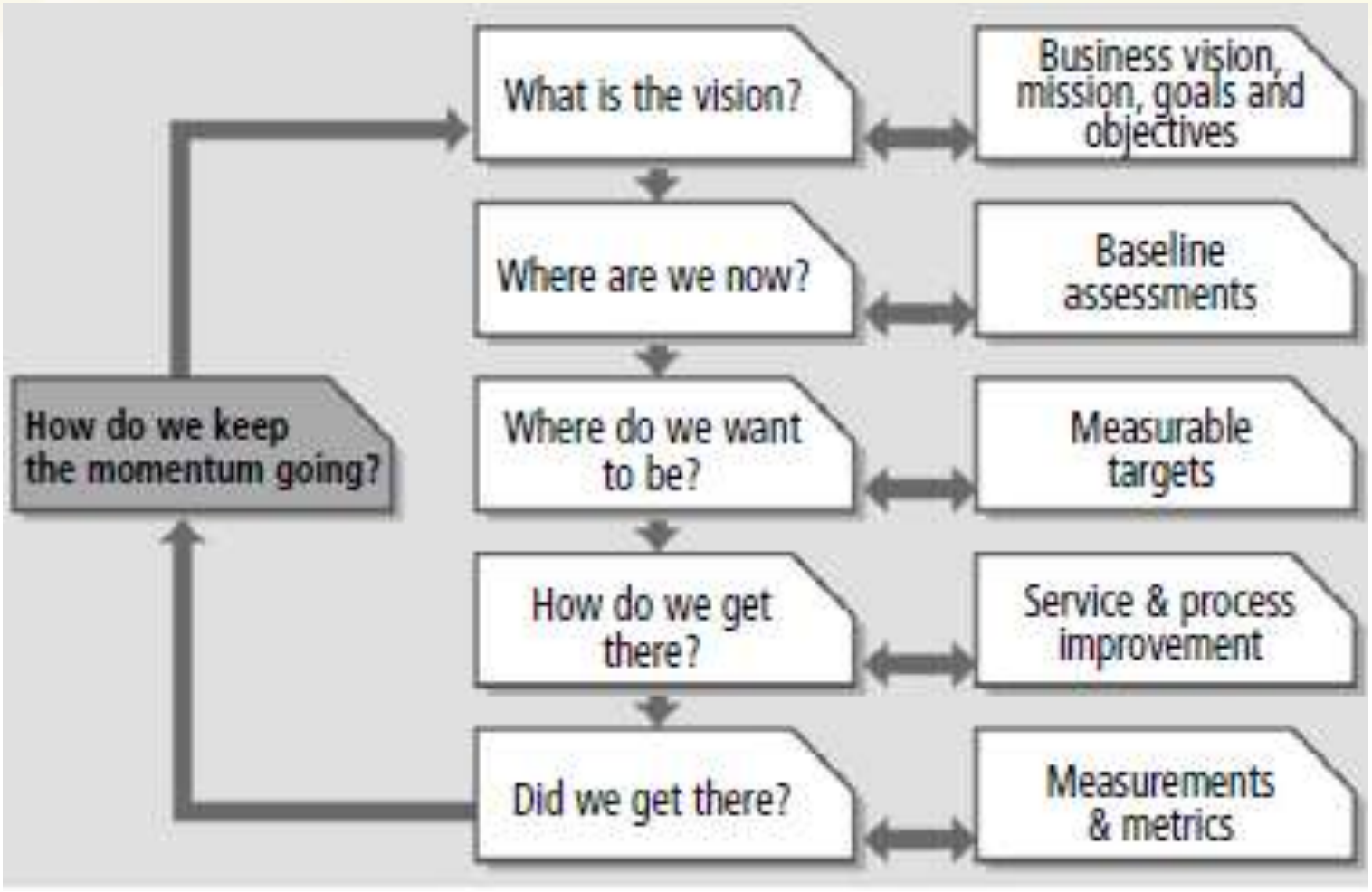
Vendor remote access to solve the problem



The 7-Step Improvement Process



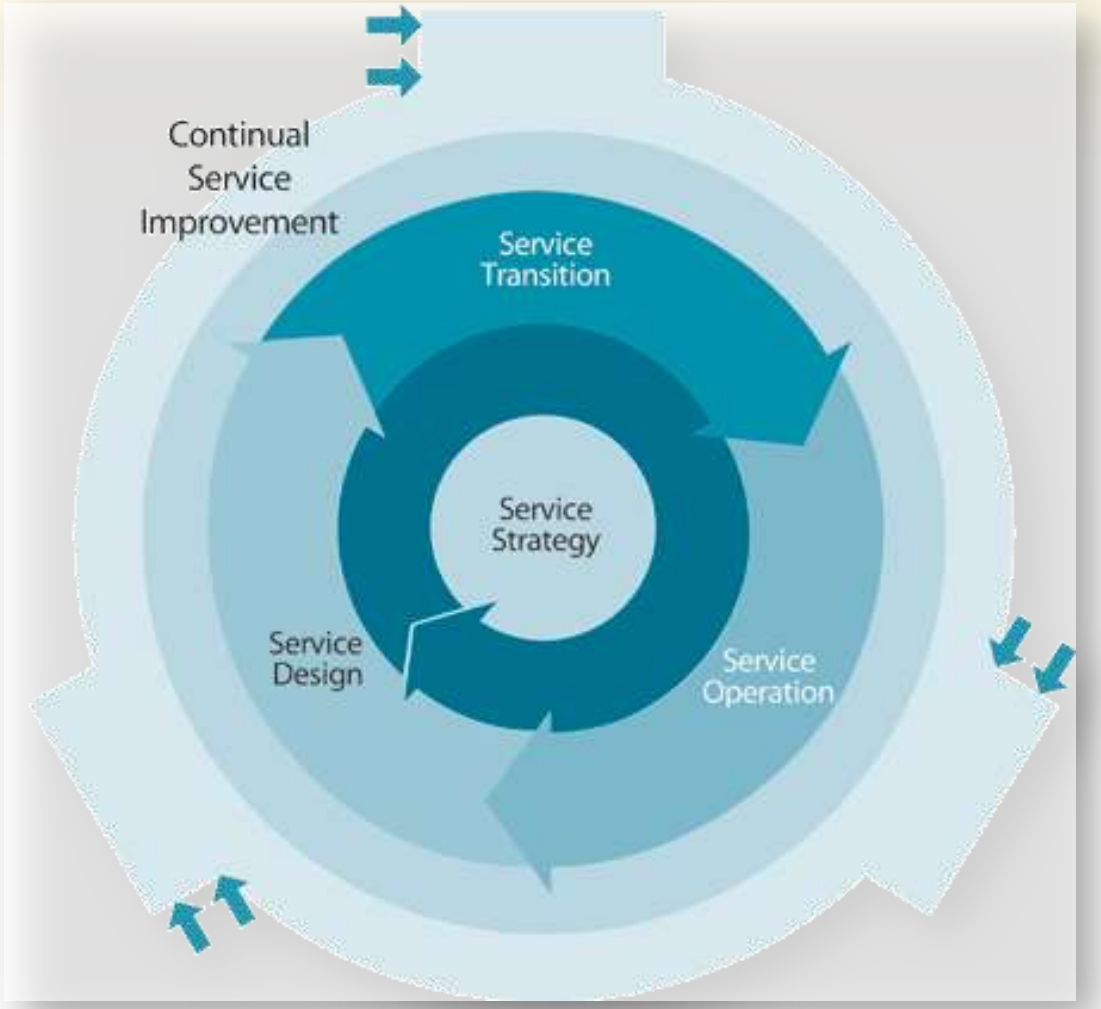
The CSI Model



Continual Service Improvement (CSI)

- **Purpose**
  - Continual evaluation and improvement of quality of service
  - Overall maturity of ITSM service lifecycle and processes
- **Processes**
  - 7-step Improvement Process
  - Service Measurement
  - Service Reporting

IT Service Management



Continual Service Improvement
CSI

Present

Past

Future

Continuous Quality Improvement
CQI

Hospital Accreditation

The Australian Council on Healthcare Standards

ACHS

Future

- **Increasing Clinical data integration**
  - To improve data quality and interoperability of electronic medical record
- **Advice for IT system management**
- **IT technical support**
  - e.g. SQL reporting service
- **CIS configuration enhancement**
- **Decision support application**

Acknowledgement

- PMH/YCH ICU staff and CIS Team
- HAHO Health Informatics and ITD
- KWC ITD
- Vendor
- CIS seminar coordination

Thank you