



BAHAGIAN PERANCANGAN

Kementerian Kesihatan Malaysia



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ICT PLANNING, IMPLEMENTATION AND PROCUREMENT IN DEVELOPMENT PROJECTS



Outline of Presentation

1. Synopsis of Current ICT systems in MOH
2. PSTM KKM 2016-2020
3. ICT Scope in Development Projects
4. Challenges in ICT implementation
5. Conclusion



20 Years of ICT implementation



Appointment of consortium for THIS

Roll-out of SPPD Legacy System for Patient Billing



Pandan Ampang Sg Buloh

1994

2000

2001

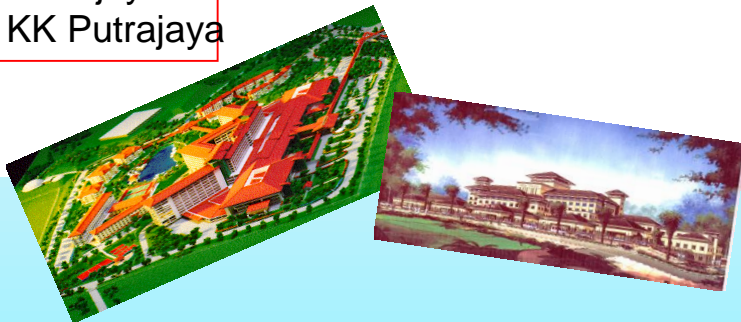
2002

2003

2004

2005

Selayang Putrajaya KK Putrajaya

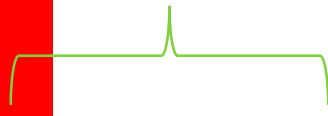


Mid-term Review RMK-8

K. Batas

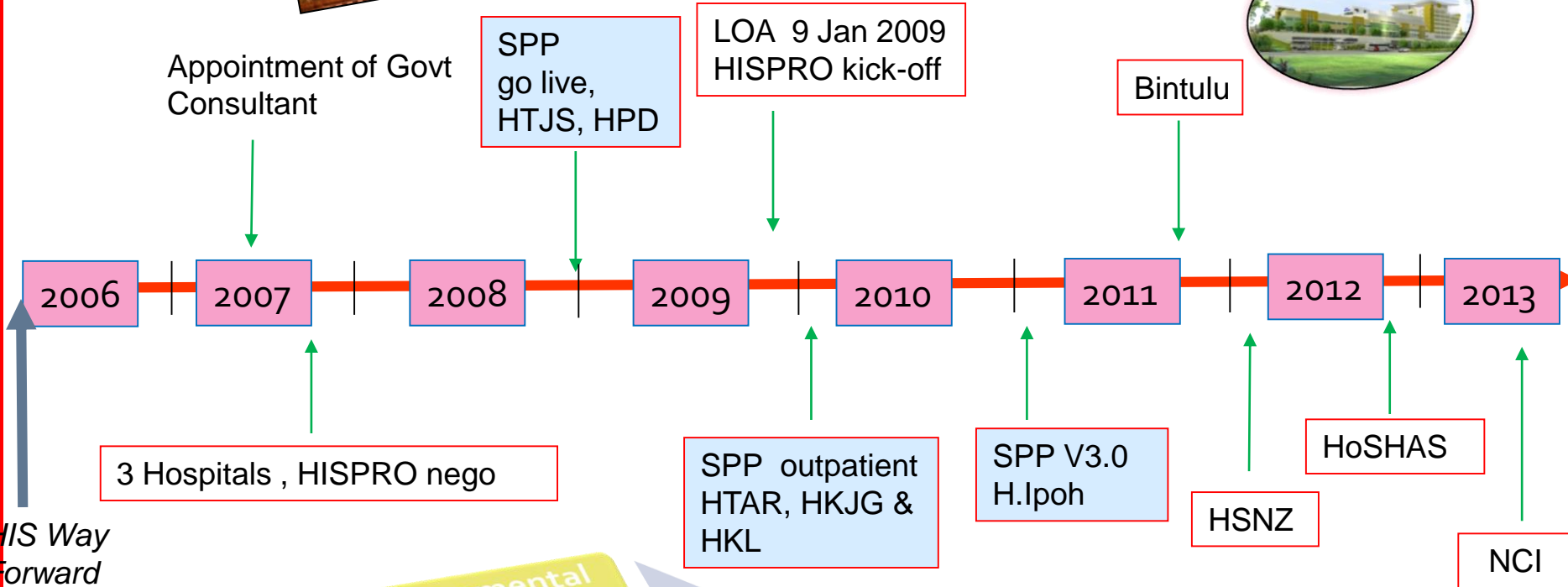
L. Datu

Serdang





20 Years of ICT implementation



HIS Way Forward





20 Years of ICT implementation and ...The Future



WCH KL



SPP V3.1 H. Bentong, HTJS & HRPZ

SPP v2.6 Hosp Taiping

HIS@KKM v1 Hosp Ipoh



2014

2015

2016

2017

2018

2019

2020

H. Shah Alam



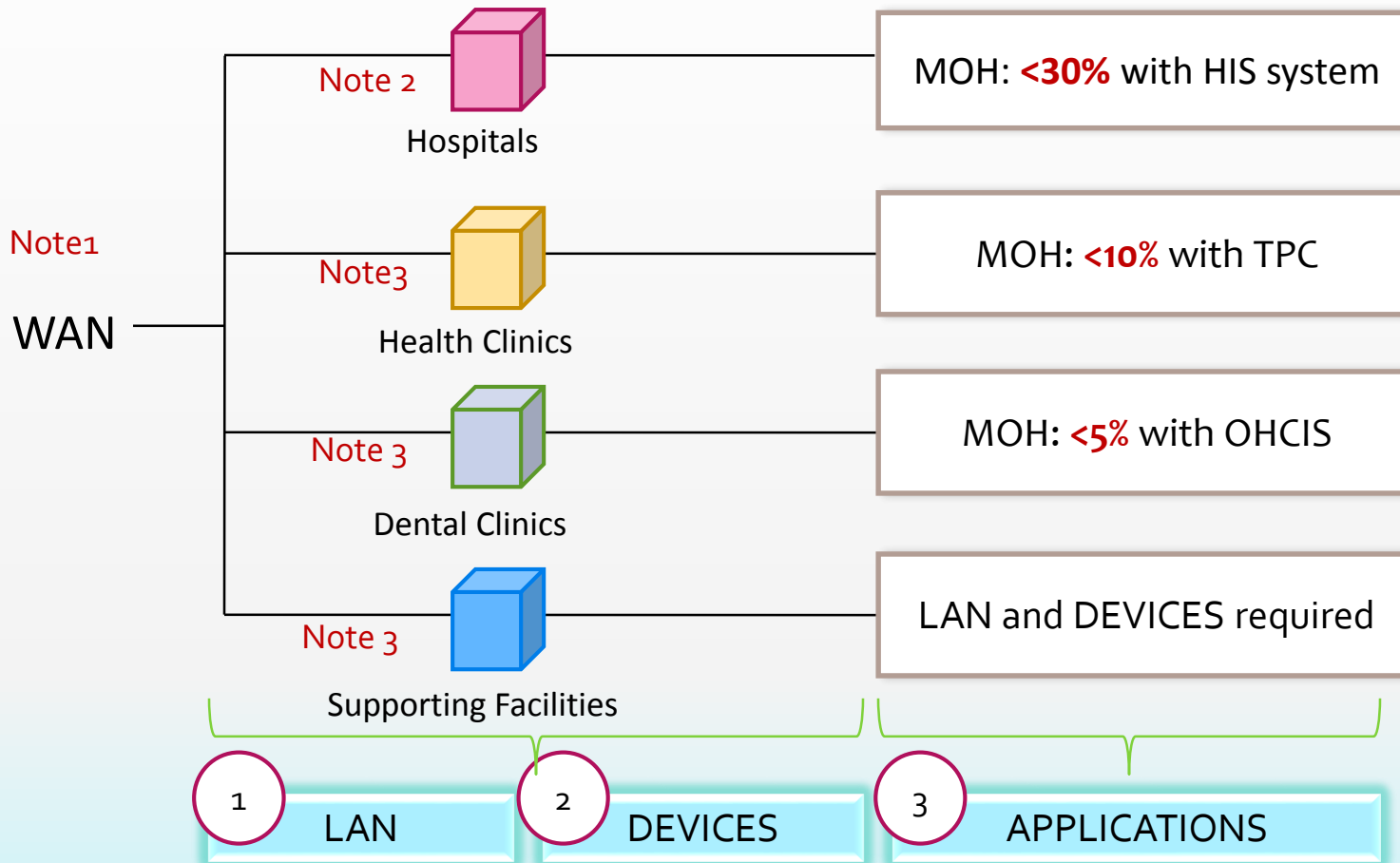
Roll-out SPP 4 hospitals

HIS Way Forward

Incremental approach



ICT implementation for MOH



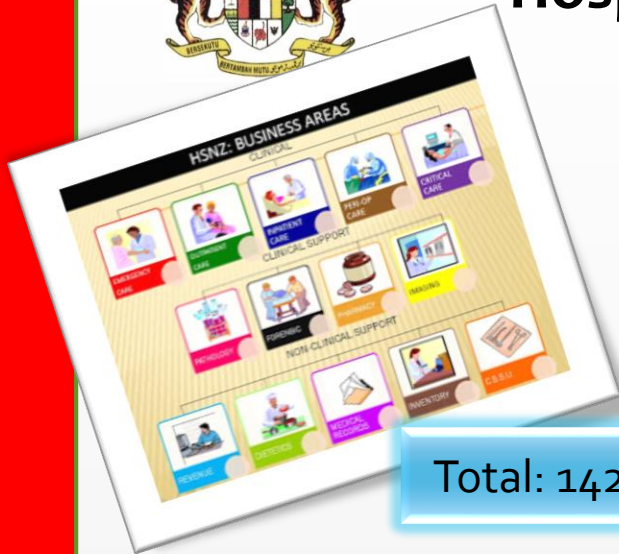
Note 1: WAN Connectivity is undertaken by MAMPU under 1Gov*Net

Note 2: SPP development/roll-out for MOH hospitals commenced
PhIS development/roll-out for MOH facilities commenced

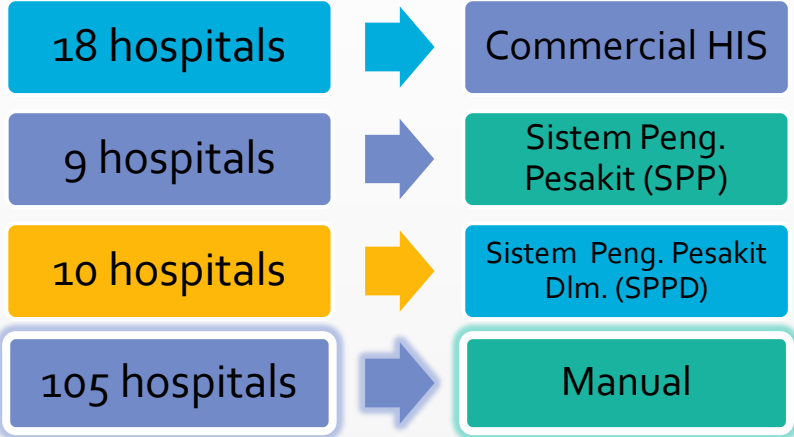
Note 3: TPC/OHCIS development & roll-out commenced



Hospital Information System



Total: 142 hospitals



Product	CERNER	FISICIEN	iSOFT	Profdoc	SPP	SPPD
Hospital	<ol style="list-style-type: none"> Selayang Sultan Ismail JB 	<ol style="list-style-type: none"> Putrajaya Sultanah Nur Zahirah KT Sultan Hj Ahmad Shah Institut Kanser Negara (IKN) 	<ol style="list-style-type: none"> Serdang Ampang Sg. Buloh Sultanah Bahiyah Sultan Abdul Halim Lahad Datu Keningau K.Batas Pekan Shah Alam WCH 	<ol style="list-style-type: none"> Bintulu 	<ol style="list-style-type: none"> Tunku Jaafar Port Dickson Kajang Tg. Ampuan Rahimah* K.Lumpur* Raja P. Bainun Bentong HRPZ KB Taiping (*OP module) 	<ol style="list-style-type: none"> HSA JB B. Pahat Melaka Kajang HKL HTAA HTAR Klang HQE KK P.Pinang Sbrg Jaya



EXISTING HIS@KKM



1. Sistem Pengurusan Pesakit (SPP)

- Currently on two version (2.6 and 3.1)
- Version 3.1 was implemented in H.Seremban, HRPZ II, H. Bentong and H. Ipoh;
- Version 2.6 was implemented in Hospital Port Dickson, Hospital Kajang, HKL and HTAR, HQE II and H. Batu Pahat
- H. Taiping is implementing SPP V.3.1 with basic functions / quick win)
- under RMK11 RP II – planning to upgrade 4 hospitals with SPPD to SPP V 3.1 (HTAR, HQE, H. Batu Pahat and Hospital Pulau Pinang)



EXISTING HIS@KKM



2. Pharmacy Information System (PhIS)

- Currently have two version – pharmacy-based and full-based PhIS;
- Full-based PhIS – **doctor will order** medication on line and pharmacist will managed the order and dispense the medication on line;
- Pharmacy-based PhIS – doctor will prescribe medication manually and patient will take prescription to the counter where **pharmacist will transcript the medications on line**, managed the order and dispense the medication. Online starts at the pharmacy counter



Lokasi Pelaksanaan PhIS



Fasa 1 (Projek Perintis)

- 6 Hospital
- 1 PKD
- 13 KK

1. Hospital Raja Permaisuri Bainun
2. Hospital Seri Manjung
3. Hospital Pakar Sultanah Fatimah
4. Hospital Raja Perempuan Zainab II
5. Hospital Tanah Merah
6. Hospital Miri

1. PKD Kinta
2. KK Greentown
3. KK Chemor
4. KK Pasir Pinji
5. KK Kg Simee
6. KK Jelapang
7. KK Tronoh
8. KK Mengelembu
9. KK Tanjung Tualang
10. KK Buntong
11. KK Manjoi
12. KK Bijih Timah
13. KK Tanjung Rambutan
14. KK Gunung Rapat

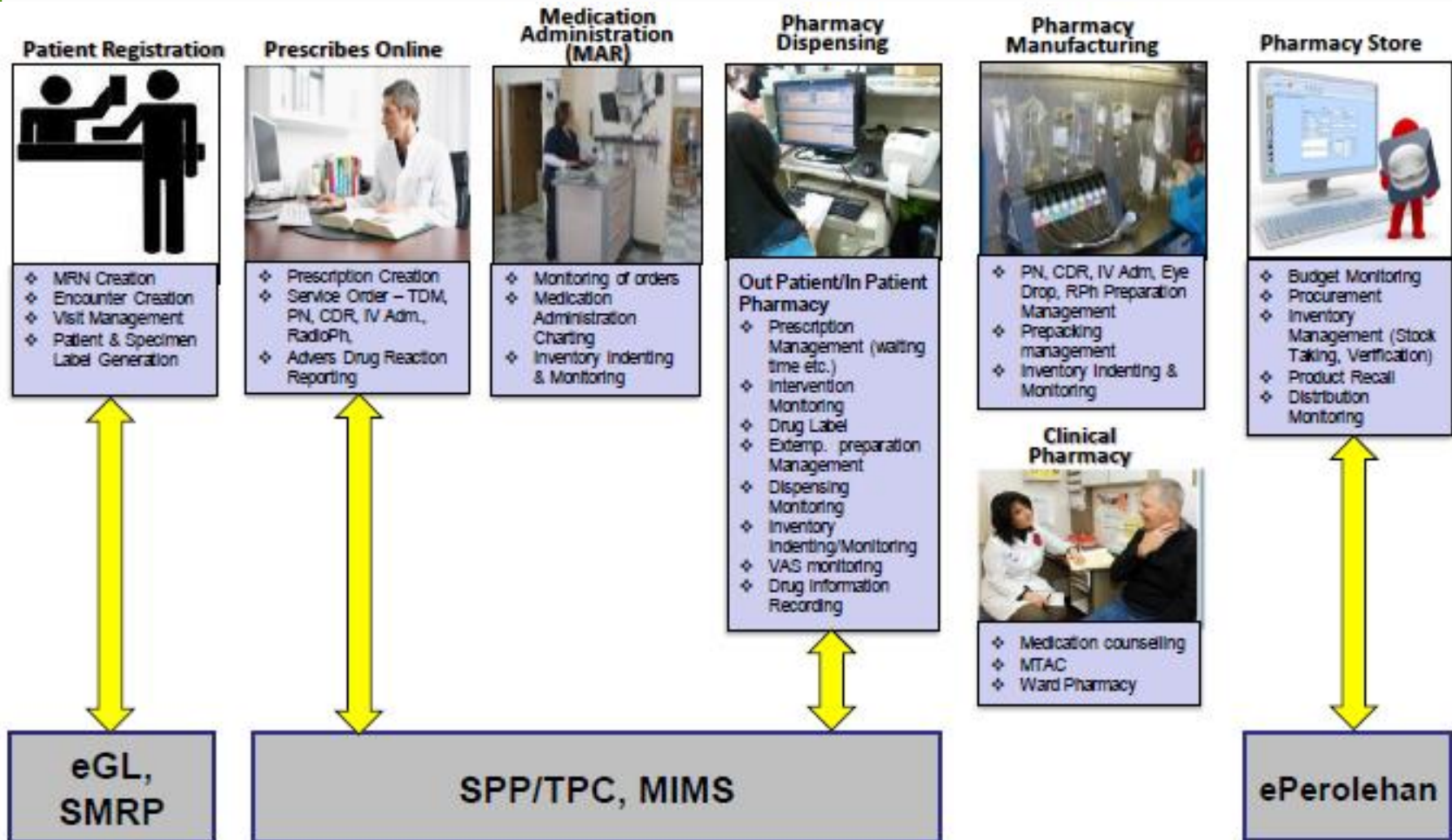
Fasa 2 (Peluasan)

- 132 hospital sedia ada + 10 hospital baru
- 15 JKN
- 140 PKD
- 793 KK sedia ada + 200 KK baru
- 8 Makmal Ubat Dan Stor

Diluluskan oleh PSC Bil.2/2012
pada 20 September 2012



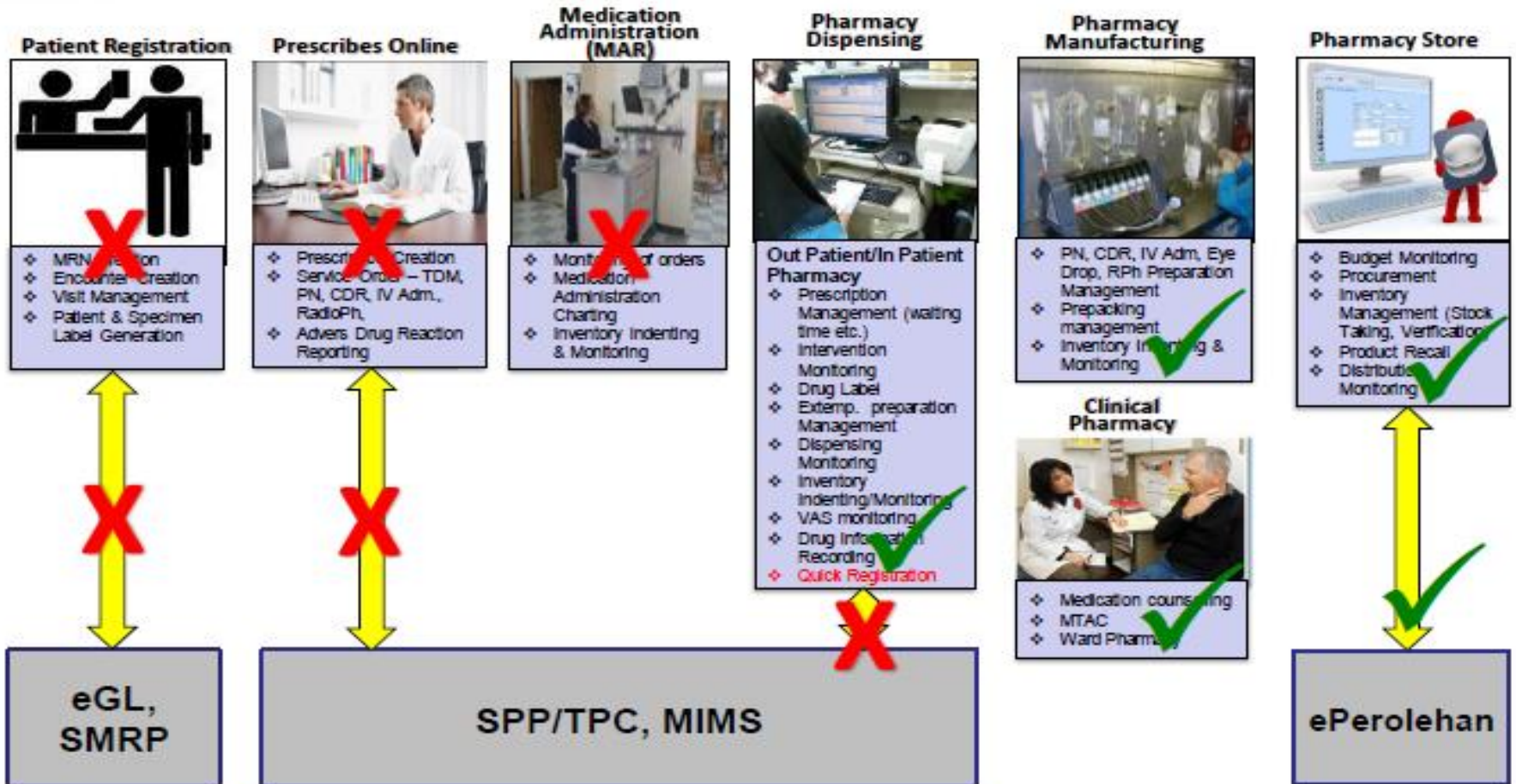
Perbandingan *Full Based* dan *Pharmacy Based* PhIS & CPS



Full-based



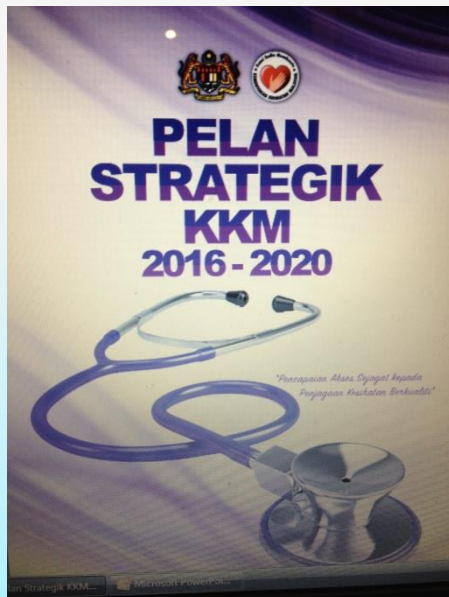
Perbandingan *Full Based* dan *Pharmacy Based* PhIS & CPS



Pharmacy-based



Moving Forward 2016-2020





Visi and Misi ICT KKM



VISI KKM

Negara menggembeng tenaga ke arah kesihatan yang lebih baik

MISI KKM

Menerajui dan berusaha bersama-sama: Untuk memudahkan dan membolehkan rakyat:

- 1 Mencapai sepenuhnya potensi mereka dalam kesihatan
- 2 Menghargai kesihatan sebagai aset paling berharga
- 3 Mengambil tanggungjawab dan tindakan positif demi kesihatan mereka

Untuk memastikan sistem kesihatan berkualiti tinggi iaitu:

- Mengutamakan pelanggan
- Saksama
- Tidak membebankan
- Cekap
- Wajar mengikut teknologi
- Boleh disesuaikan mengikut persekitaran
- Inovatif

Dengan menekankan:

- Sifat penyayang, profesionalisme dan kerja berpasukan
- Sifat menghormati maruah insan
- Penglibatan masyarakat

VISI ICT

ICT sebagai pemacu perniagaan dalam perkhidmatan penjagaan kesihatan yang berkualiti dan bersepadu

MISI ICT

Untuk menyediakan perkhidmatan IT yang menyeluruh bagi membolehkan perkhidmatan penjagaan kesihatan yang lebih efisien dan berkesan

4 TERAS STRATEGIK ICT





Pelan Strategik PSTM 2016-2020



4 Teras Pelan Strategik KKM

Mengukuhkan penyampaian perkhidmatan penjagaan kesihatan di setiap peringkat spektrum dengan penekanan ke atas penjagaan kesihatan asas

Mengukuhkan sistem tadbir urus kesihatan dan kemampuan organisasi

Memperkasakan individu, keluarga dan masyarakat dalam hal ehwal kesihatan

Mempertingkatkan kerjasama dengan orang awam, sektor swasta dan NGO

VISI ICT KKM

ICT sebagai pemacu perniagaan dalam perkhidmatan penjagaan kesihatan yang berkualiti dan bersepadu

MISI ICT KKM

Untuk menyediakan perkhidmatan IT yang menyeluruh bagi membolehkan perkhidmatan penjagaan kesihatan yang lebih efisien dan berkesan

4 Teras Strategik ICT KKM



Standard dan
Rangka Kerja eHealth



Kepakaran ICT Kesihatan



Ketersediaan
Data Berkualiti



Solusi ICT yang
Komprehensif

Langkah Strategik ICT MOH

Memantapkan standard dan rangka kerja eHealth ke arah integrasi sistem secara menyeluruh

Mempertingkatkan kemahiran dan kepakaran serta kapasiti dalam bidang ICT kesihatan

Mempertingkatkan ketersediaan data kesihatan yang berkualiti untuk *outcome* kesihatan yang lebih baik

Memperkuatkan pembangunan serta pelaksanaan sistem ICT yang menyeluruh

Standard dan Rangka Kerja eHealth

Pengukuhan dan
Perluasan Infrastruktur ICT

Pengukuhan Tadbir Urus

Pembangunan
Modal Insan
ICT Kesihatan

Pemantapan
Data Kesihatan

Perluasan Sistem

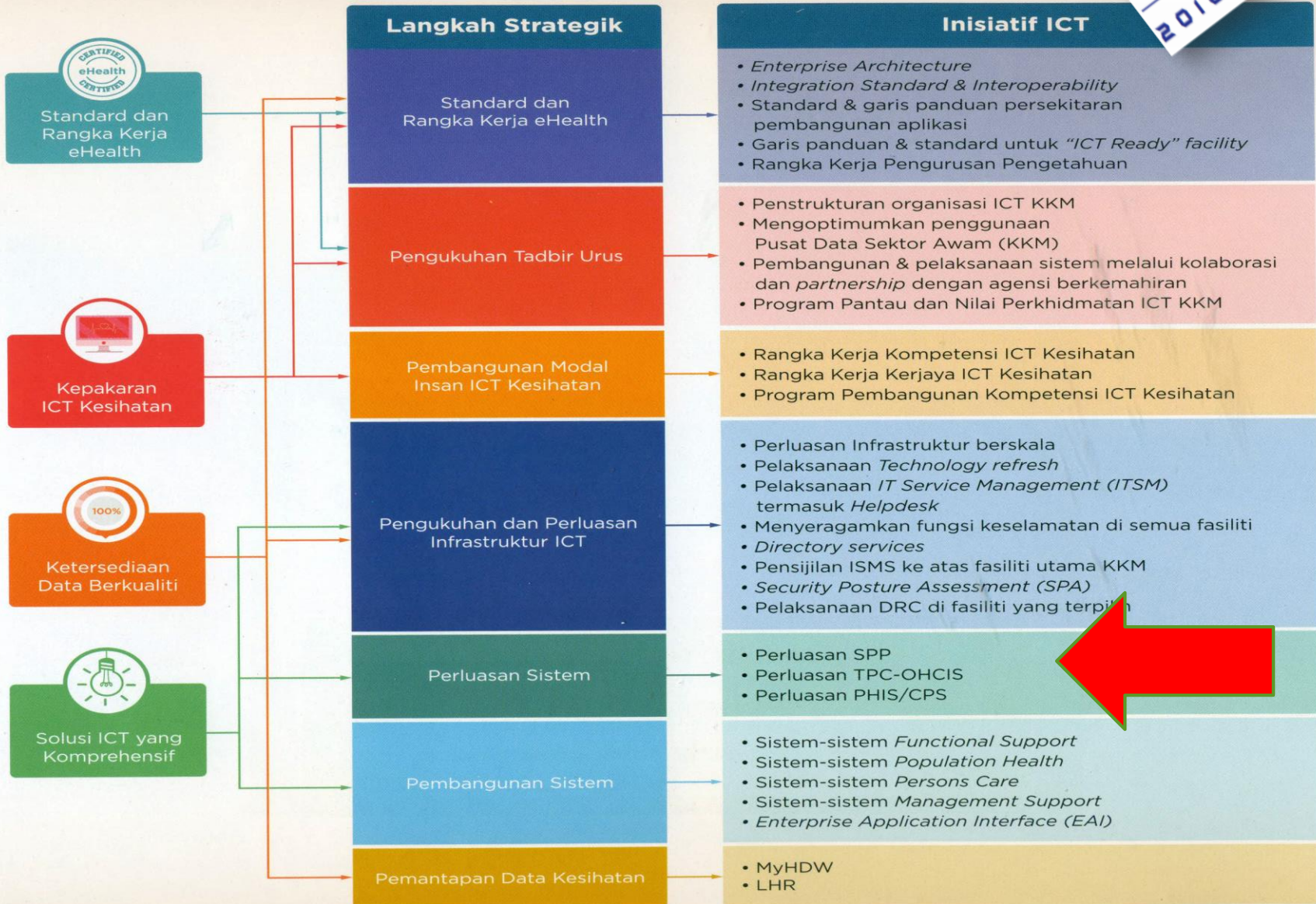
Pembangunan
Sistem



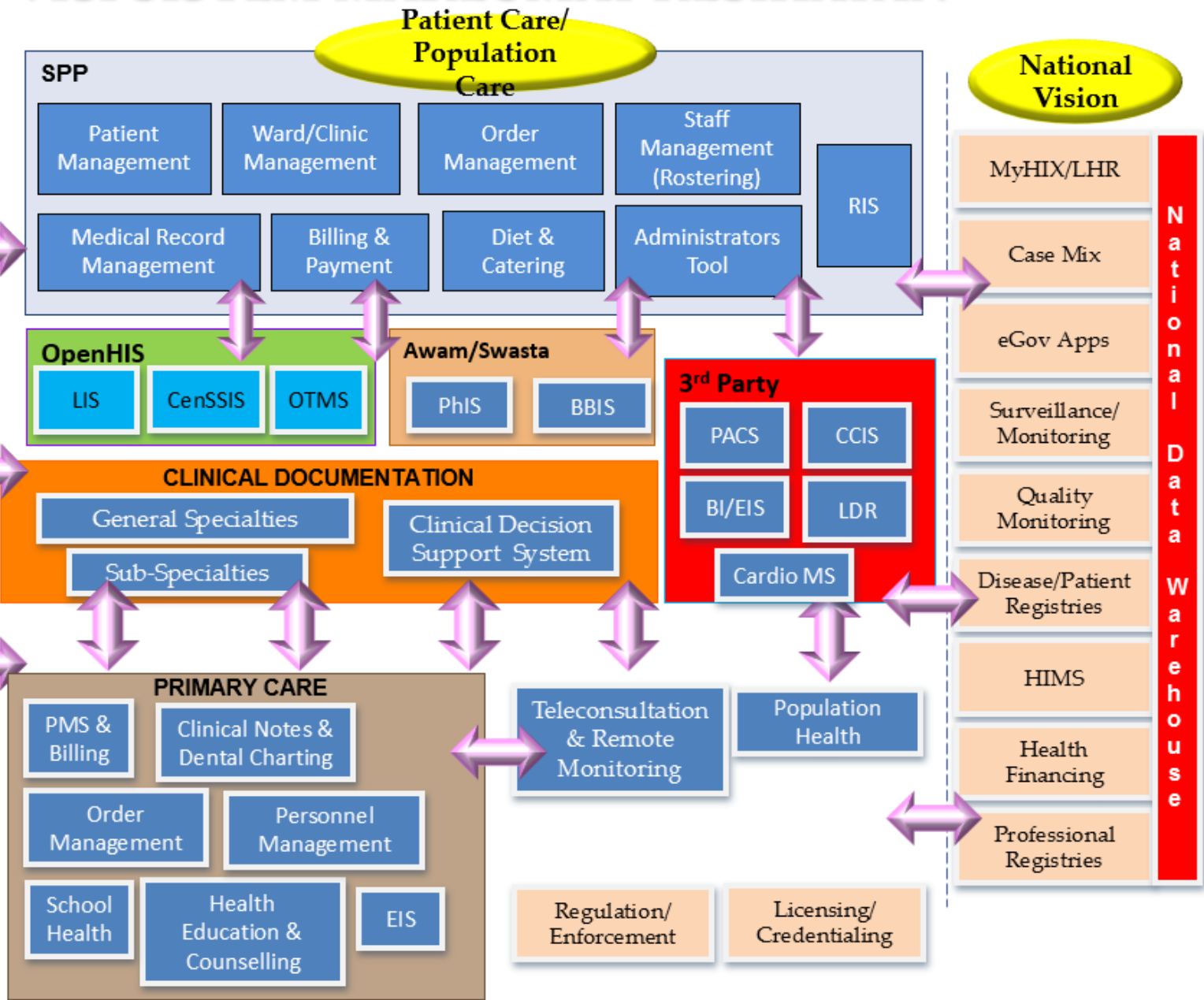
Langkah2 Strategik PSTM 2016-2020



ISPMOH
2016 - 2020



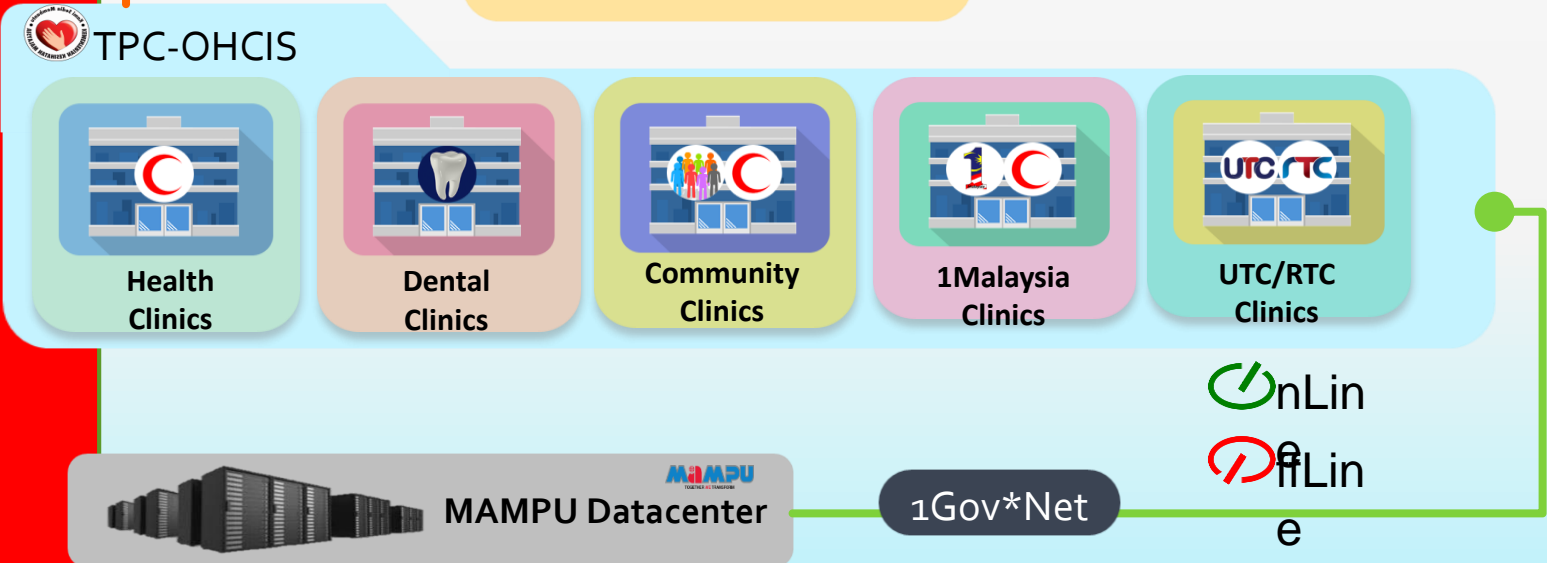
VISI SISTEM MAKLUMAT KESIHATAN



Note:
 1. Integration
 2. Integration to external systems is also required; however not reflected here



TPC-OHCIS System Overview



Pilot 12 sites 2016; nationwide rollout in phases over RMK11 (1061 Health Clinics & 629 Dental Clinics)

Source: Pasukan TPC-OHCIS KKM



Planning of ICT scope RMK-11



1. New Hospitals

- a) Infrastructure of the hospital should be ready for full HIS system which includes server room, active trunking to all work stations such as all counters, admin area, CE rooms, sisters' rooms, doctors' rooms, specialist offices, meeting rooms etc.
- b) All network point should be properly terminated and ready to use;
- c) Application – SPP and PhIS should be included plus application for office automation.
- d) Hardware for SPP; PhIS and Office automation should be included;
- e) Telecommunication System



Planning of ICT scope RMK-11



2. Upgrading of hospitals

- a) Must analyse current ICT system available in the hospital plus existing manpower and infrastructure;
- b) Must analyse the needs of upgrading ICT Unit;
- c) Must include connectivity between old block and new block;

Scope ICT.....

- a) Infrastructure Active;
- b) Connectivity;
- c) Existing application available + Office Automation;
- d) Perkakasan / Perisian follow application
- e) Telecommunication



Planning of ICT scope RMK-11



3. Scope ICT for Health Clinics
 - Keperluan perancangan ICT di KK hanya bermula setelah adanya Task Force ICT diwujudkan bagi melihat keperluan skop ICT dimasukkan di dalam perancangan pembinaan KK
 - Sejak tahun 2013, Skop ICT untuk Klinik Kesihatan telah dimasukkan di dalam pelan piawai dan semua KK yang dirancang;



Planning of ICT scope RMK-11



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Planning of ICT scope RMK-11



3. Scope ICT for Health Clinics

- Infrastruktur aktif
 - Aktif untuk office automation, TPC-OHCIS dan PhIS
- Perkakasan minima untuk *office automation*
- manakala dari segi infrastruktur, bilik ICT di sediakan yang boleh menempatkan server untuk ICT dan PABX.



Contoh MBOR ICT Units



■ Chapter Introduction / SON

- Scope ICT – Infrastructure active and all the application mentioned – HIS / SPP / PhIS dan Office Automation

■ Chapter Unit ICT (cth Brif)

- Ambil perhatian keperluan bilik server; training room dan bilik stor serta keperluan-keperluan lain seperti dalam MBOR Unit ICT hospital baru.
- Tidak digalakkan Server room berasingan daripada Unit ICT.



Implementation and Procurement of ICT scope in Development Project

- JKR
 - Infrastructure actives and connectivity (NT)

- KKM (BPM)
 - Implementation and Procurement of SPP, PhIS dan OA projek-projek hospital baru dan NT yang berkaitan.



Case Study - 1

- NT Hospital Tanah Merah
 - Scope NT adalah pembinaan ward, specialist clinics, OT, ICU, NICU, Lab, Radiologi dll;
 - Existing hospital implementing PhIS@KKM;
 - **What Is the ICT Scope for this hospital....**
 - -----??????



ICT Challenges in MOH



Policy & Procedures

- Standardization
- Healthcare information sharing
- Governance



Infrastructure

- Limitation of infrastructure availability e.g. LAN & Devices
- Obsolescence



System

- Integration & Interoperability
- Performance
- Scalability
- Future readiness
- Support & Maintenance



Cost

- High CAPEX for implementation of systems
- High OPEX for O&M&S of these systems
- Ongoing CAPEX for continuous upgrade
- Benefit realisation in monetary terms



People

- Clinical Leadership
- Skills & Expertise
- Change and adoption

Significant budget constraint;
ICT ~5% of total MOH CAPEX

KEY AREAS TO BE ADDRESSED



Thank you

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- (Lampiran PhIS)
- (Lampiran SPP)
- (Garis panduan Peralatan ICT)
- (Scope ICT Projek2 Rolling Plan 1)