Getting CHI ready for an EHR

(and all the other stuff needed for a digital hospital!)

Prof. Neil O'Hare
Chief Information Officer (CHI) /
Prof. Health Informatics (UCD)

Sláinte Leanaí Éireann
CHI
Children's Health Ireland

CHI | Crumlin | Temple Street | Tallaght | Connolly

World-class Design

Daylight, social interaction, safe, age appropriate, homely yet exciting

100% inpatient single rooms, en-suite, family area

Children's Research & Innovation centre

Paeds OPD & UCC at Tallaght & Connolly Hospitals approx. 4,500m² & 5,000m²

- 160,000m² total floor area, approx., including basement. (size of Dundrum Shopping Centre)
- 473 beds (380 In-patient & 93 day care), 22 theatres
- 110 OPD rooms, 12 SSOU beds & 36 assessment bays
- Advanced diagnostics, intervention and theatre facilities
- Play areas, external gardens and courtyards
- Hospital School
- Paediatric Academic Centre
- Adjacent parent / family accommodation (RMcDHC)

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Jan 2021

Apr 2021

Camera Name: BAM NCH 2 | Edited On: Wed, Apr 14, 2021, 14:04 | By: Jack Curley

EVERCAM

Sept 2022

Jan 2023

Sept 2023

Integrated Clinical Network Paediatric Services

The HSE National Clinical Strategy includes the development of a National Model of Care for Paediatric Healthcare Services. The vision of care designates the new children's hospital as the central component of an integrated clinical healthcare system for Ireland's children, young people and their families. This system will be based on a national clinical network including home-based, primary care and local health centres, through local and regional hospitals, connecting into the national paediatric tertiary and quaternary hub – the new children's hospital.

Care Close to Home

- Clinical care and treatment provided as near to the child's home as possible depending on their clinical needs
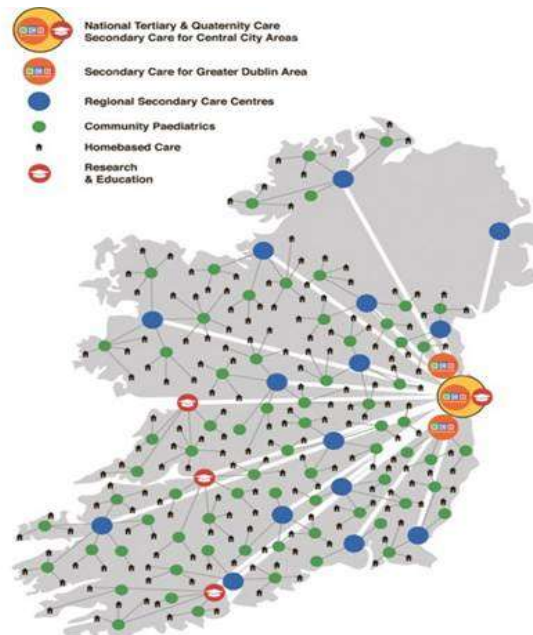
Network of Services

- Local paediatric services as clinically appropriate
- Most services delivered locally on same day basis (OPD / Emergency / Urgent or Day Care)
- National specialty services consolidated in a single hospital, some on an all-island basis

National Tertiary & Quaternity Care
Secondary Care for Central City Areas

Secondary Care for Greater Dublin Area

Regional Secondary Care Centres

Community Paediatrics

Homebased Care

Research & Education

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CHI's Digital Health Programme

The **CHI Digital Health Programme** (formerly the ICT programme) aims to transform patient care and staff experience across CHI.

CHI's **digital transformation** is a fundamental part of the wider HSE's digital transformation, **using technology to manage and deliver health services**, moving from old paper-based systems to digital systems.

EHR
EHR is one of the key clinical ICT enablers needed to fulfil the digital hospital vision.

Infrastructure
Modern ICT infrastructure is an essential foundation for the digital hospital.

Corporate & Non-Clinical
Corporate and non-clinical systems will support the function of the new hospital.

CxIOs
The CxIO team represent & engage clinicians across the digital health programme.

Operational Readiness
ICT business readiness including patient experience, training, change management.

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2. Engagement of the Hospital Teams;
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Digital Health Programme Team – Leadership Team
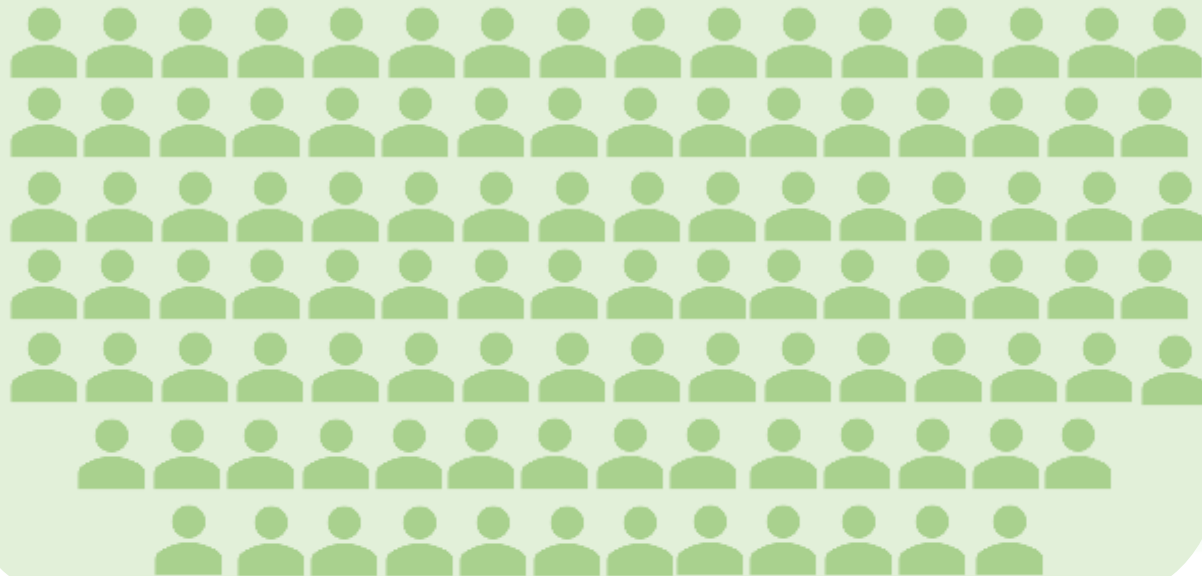
Leadership x 3

Deirdre (Dee) O'Connor
Digital Health Director
Commissioning Programme

Adrian Carroll
EHR Programme Director

Adrian Rath
Chief Technology Officer

CxIO Team

Dual Reporting to Professional Areas

Emer O'Shea
CHIO

Emma Cooney
CNIO

Markus Hesseling
CMIO

Moninne Howlett
CPIO

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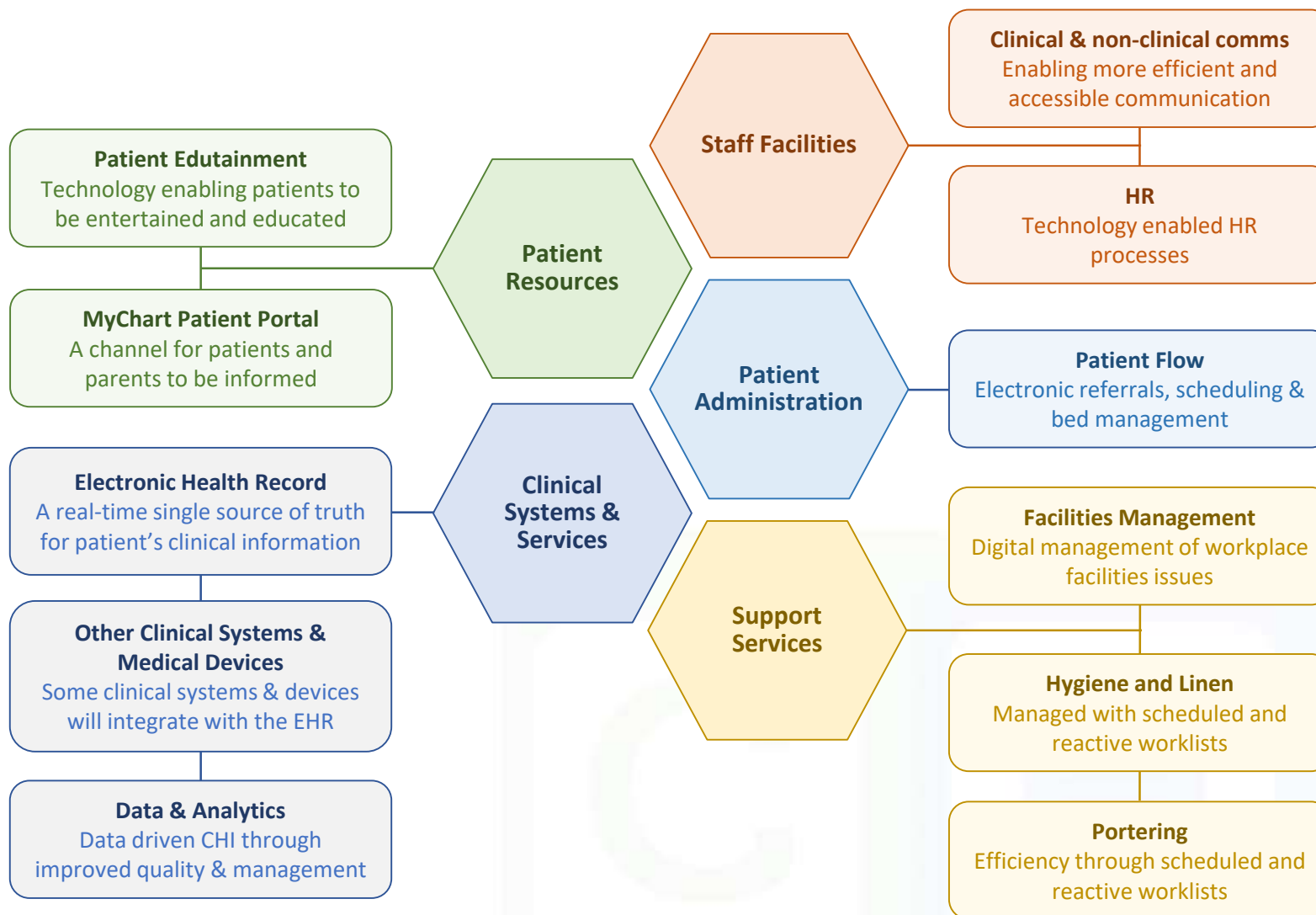
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What will the Digital Hospital do for me?

The new children's hospital will have ICT capabilities to improve the experience of both patients and staff.

Patient Resources

Patient Edutainment
Technology enabling patients to be entertained and educated

MyChart Patient Portal
A channel for patients and parents to be informed

Clinical Systems & Services

Electronic Health Record
A real-time single source of truth for patient's clinical information

Other Clinical Systems & Medical Devices
Some clinical systems & devices will integrate with the EHR

Data & Analytics
Data driven CHI through improved quality & management

Staff Facilities

Clinical & non-clinical comms
Enabling more efficient and accessible communication

HR
Technology enabled HR processes

Patient Administration

Patient Flow
Electronic referrals, scheduling & bed management

Support Services

Facilities Management
Digital management of workplace facilities issues

Hygiene and Linen
Managed with scheduled and reactive worklists

Portering
Efficiency through scheduled and reactive worklists

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Inpatient Digital Capabilities

As a staff member on a ward in the New Children's Hospital, I can…

Perform ward rounds	Organise & manage tests	Request & perform radiological imaging	Request & perform procedures	Manage medications	Manage patient & clinical comms	Manage necessary support services
✓ View round schedule ✓ View worklist ✓ View healthcare record ✓ Document notes	✓ Order ✓ Schedule ✓ Prioritise ✓ Mark sample collected ✓ Transport to lab ✓ Mark sample received ✓ Analyse ✓ Document & validate results ✓ View results	✓ Order radiology ✓ Triage requests ✓ Prioritise ✓ Document pre-imaging safety checks ✓ Perform imaging ✓ View images ✓ Dictate reports ✓ View report	✓ Order procedure ✓ Triage requests ✓ Prioritise ✓ Document consent ✓ Perform procedure ✓ Document procedure report ✓ View report	✓ Write electronic medication order ✓ Review orders ✓ Access medication via ADC ✓ View medication schedule and overdue doses ✓ Document medication preparation and administration ✓ Automatically view infusion pump data in Epic ✓ Get medication allergy alerts	✓ Send & receive clinical comms ✓ Use fixed and mobile devices ✓ Receive automated alerts from patient monitoring devices ✓ Assign patient information via patient portal	✓ Request patient transport ✓ Request clinical equipment transport ✓ Request cleaning & linen ✓ Locate clinical equipment in real time ✓ Manage patient diet order ✓ Report facilities issues

EHR Scope for CHI

Outpatients
EpicCare Ambulatory

Patient Portal
MyChart

Theatre & Anaesthetics
OpTime

Patient Administration
incl. Scheduling, Patient Flow & Registration

Cardiology
Cupid

Laboratory
Beaker

Clinical Orders
Epicare

Radiology
Radiant

Pharmacy
Willow

Clinical Documentation
Epicare

Oncology
Beacon

BI Team
Cogito

Research

Emergency Dept
ASAP

Integration
Bridges

Replace Existing Systems

Laboratory (iLab & Winpath)

ICU (ICCA)

Cardiology (MedicaPlus)

ED (Symphony)

Clinical Portal Orion

Theatre (Sapphire & Ormis)

BI Reporting (Multiple)

PAS (iPIMS)

EHR

Diabetes (Diamond)

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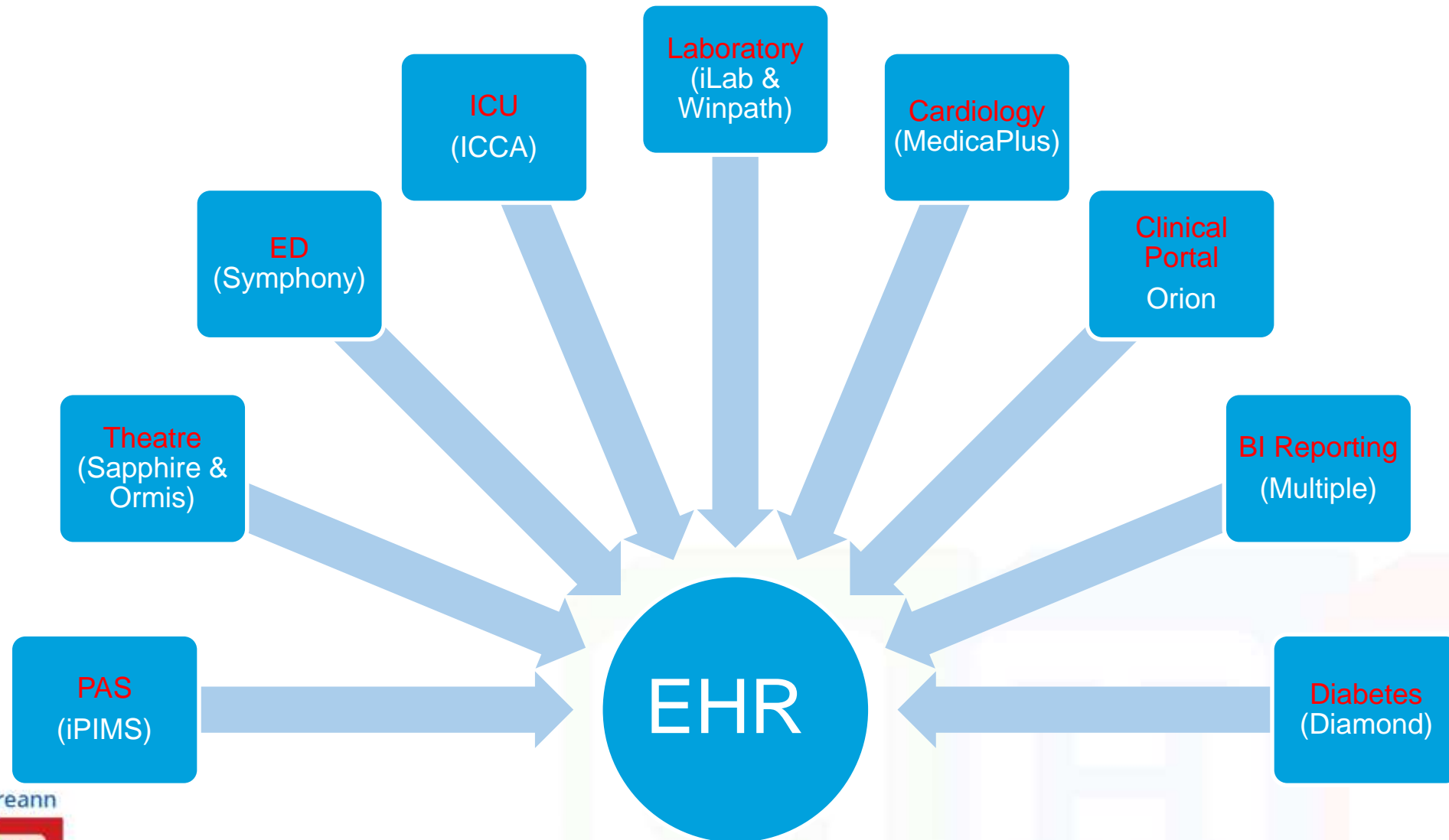
*not exhaustive list – represents the larger clinical apps in current use

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Infrastructure

The Network – The Roads!

The Servers – The Trucks..

The End User Computing – The Cars, vans and bikes!

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The Construction & Infrastructure

- Over 20,000 network datapoints / wall point in nch

- 6000 of them are dedicated to the building : CCTV, Doors, Nurse Call, Medical Gases Alarm Panels, building management system

- Up to 50 different building systems coming with the building pre substantial completion

- AGV guided vehicle testing depends on Wifi being deployed pre substantial completion

- The Infrastructure programme is required to support each of these 50+ systems being installed on the network by the construction

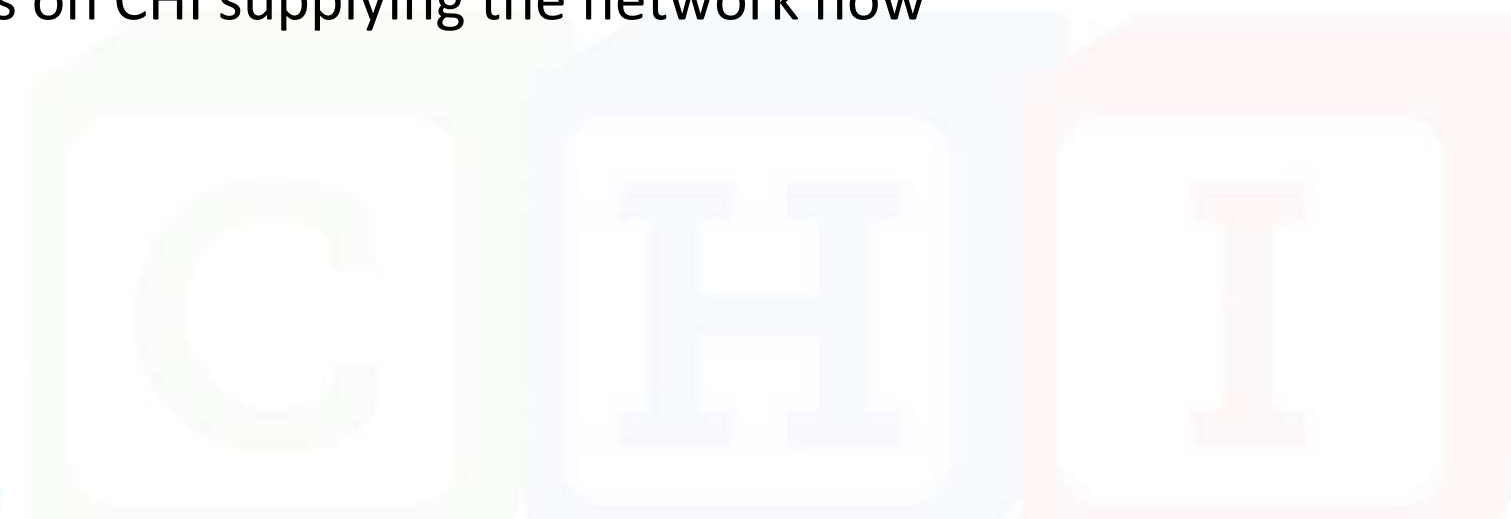- The construction of nch depends on CHI supplying the network now

Infrastructure : CHI v NPHDB Responsibility Matrix

CHI Responsibility	Capital Build Responsibility	Capital Equipping Programme
ICT Capital Allocation and Sanctioning Scope	**Construction and delivery underway by NPHDB**	**Healthcare Technology Equipping by NPHDB**
Devices – PCs and mobile	LAN Cabling	Life sustaining equipment such as infusion pumps, ventilation and physiological monitoring
Computer on Wheels	Server room - Power/cooling	Bed side monitoring Devices
Office productivity applications (e.g. Project, Visio, SharePoint)	Energy management system	Imaging Modalities
Printers/Scanners (Managed Print Service)	Building management system	Blood fridges
Telephony / Mobile Unified Communications Devices	Building Security and Access Control/ Surveillance Infrastructure	Automated dispensing cabinets
SMS Messaging Gateways	Fire alarms infrastructure	Point of care testing Devices
Local Servers, Storage and Virtualisation	Sensors (temp., motion etc.)	
Single Sign-On	Building, Clinical and Corporate Integration (Capital Interfaces)	
Data Centres (including disaster recovery and back up)	Automatic Guided Vehicle – schedule and control system	
Network Monitoring/Management	Lift management	
Distributed Antenna System (DAS)	Car parking scheduling and payment system (through 3rd party)	
Real-Time Location System (RTLS)	Visitor management	
WAN, LAN Network – Wired and Wireless	LAN containment	
Kiosks	Master clock	
Digital patient engagement and education system	Theatre control panel	
CSAU infrastructure	Nurse call	
Emergency Radio Services – TETRA	Building information modelling system (BIM)	
Private Emergency Mobile Radio		
Red Phone Emergency Line		
Alarm Management Software		
Building, Clinical and Corporate Integration		
Loading Dock Management System		
Hospital TV/Media Centre		
Command Centre		

Epic Devices for Staff Access

Examples of devices that staff could access Epic through.
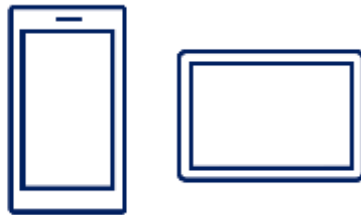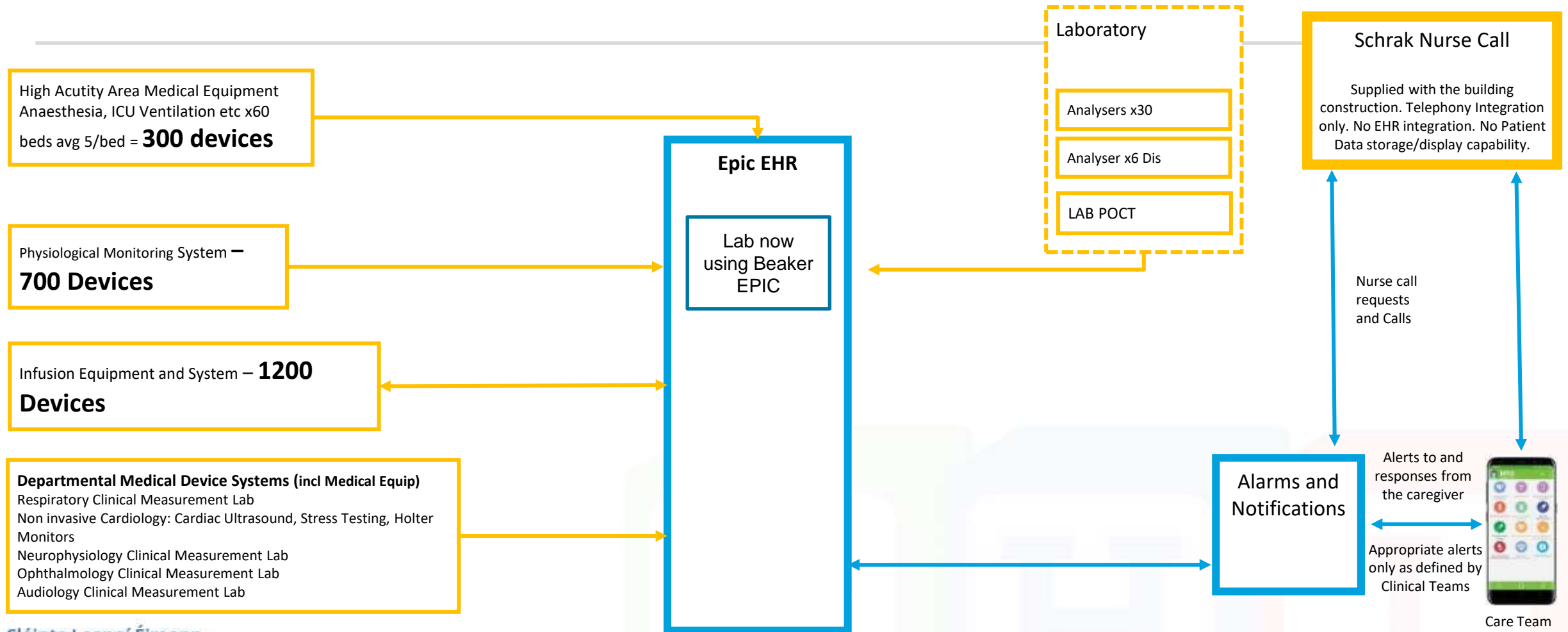

**Epic Haiku, Canto & Rover
Mobile Applications**

**Epic Desktop
Application and Fixed Devices**

*Note these are examples only
Actual device/model in use in nch may vary*

Huge Growth of connected Medical Devices reducing staff time on documenting

High Acutity Area Medical Equipment Anaesthesia, ICU Ventilation etc x60

beds avg 5/bed = **300 devices**

Physiological Monitoring System **–**
700 Devices

Infusion Equipment and System – **1200 Devices**

Departmental Medical Device Systems (incl Medical Equip)
Respiratory Clinical Measurement Lab
Non invasive Cardiology: Cardiac Ultrasound, Stress Testing, Holter Monitors
Neurophysiology Clinical Measurement Lab
Ophthalmology Clinical Measurement Lab
Audiology Clinical Measurement Lab

Epic EHR

Lab now using Beaker EPIC

Laboratory

Analysers x30

Analyser x6 Dis

LAB POCT

Schrak Nurse Call

Supplied with the building construction. Telephony Integration only. No EHR integration. No Patient Data storage/display capability.

Nurse call requests and Calls

Alerts to and responses from the caregiver

Alarms and Notifications

Appropriate alerts only as defined by Clinical Teams

Care Team Collaboration

BYOD + Role Dedicated Devices Crash Call and Paging

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How will we get there?

Current
systems/ applications
across 3 hospitals
and 2 UCCs

ICT programme assessment to determine...

Retain *or* replace

Integration *or* no integration

Day one *or* post go live optimisation

Future
1 digital NCH working
together with 2 urgent
care centers
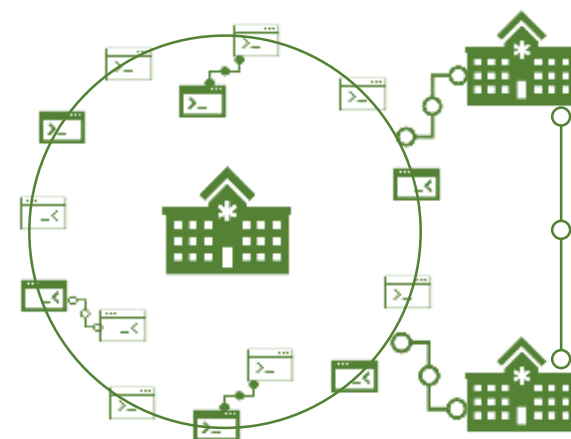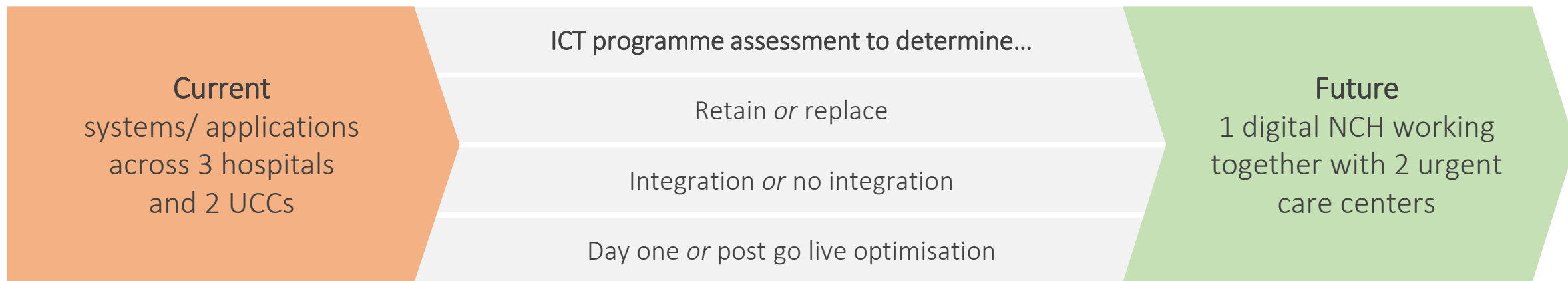
✓ **1 done**
in the last 7 days 🎉

✏️ **118 updated**
in the last 7 days

+ **0 created**
in the last 7 days

📅 **0 due**
in the next 7 days

Status overview

Get a snapshot of the status of your items. View all items

0%
AITB Closed
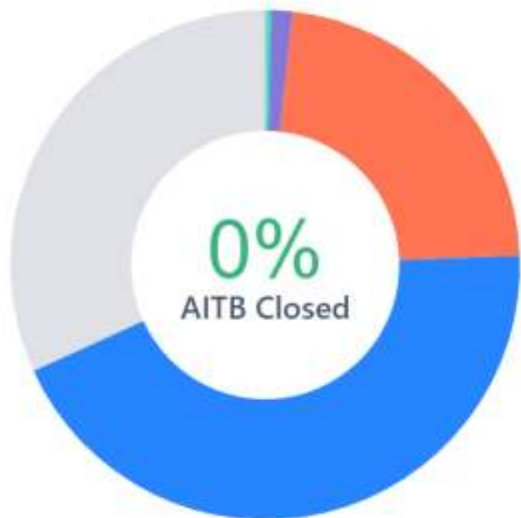
Status	Count
To be Started (AITB)	240
Future State Analysi...	330
In Progress (Upgrade...	171
Oh Hold (AITB)	10
Pre-requirement work ...	1
AITB Closed	2
Decommissioned/Closed...	0
Migrated to NCH (AITB)	0
Total	**754**

Recent activity

Stay up to date with what's happening across the project.

YESTERDAY

SF Seamus French updated the Specialty (Department) of ◎ AITB-150 - Syngo.via (MRI / CT / PET Imaging Software)
1 day ago

SF Seamus French updated the Hosted Approach of ◎ AITB-151 - AW Server (Radiology Imaging Software)
1 day ago

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Integration and Migration and the EHR
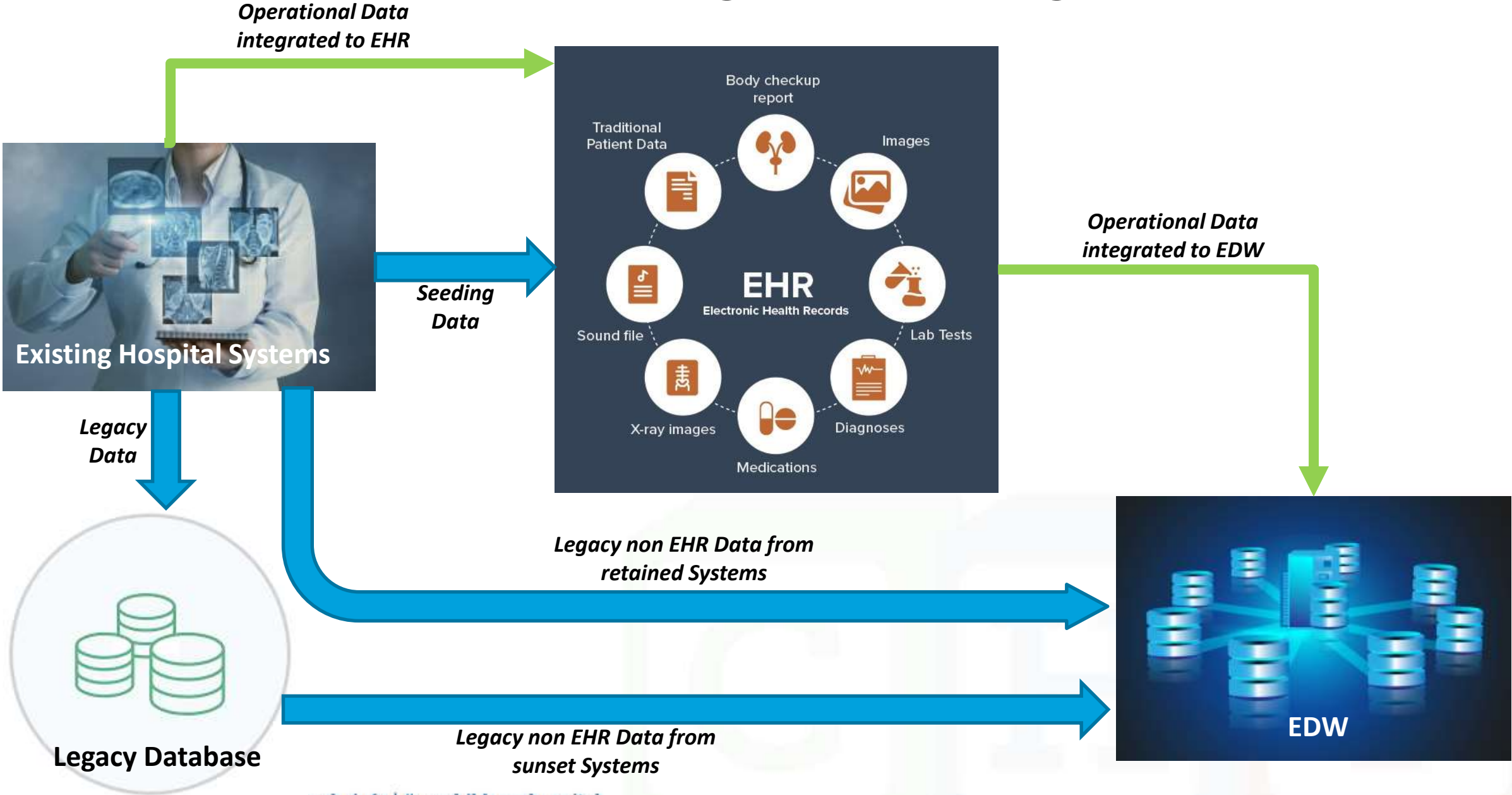
Operational Data integrated to EHR

Seeding Data

Existing Hospital Systems

Legacy Data

Legacy Database

Operational Data integrated to EDW

Legacy non EHR Data from retained Systems

Legacy non EHR Data from sunset Systems

EDW

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A Comms Lesson – start now with 1 at least.

1. Digital First

2. Mobile First

3. Epic First

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A Good Peer Group…

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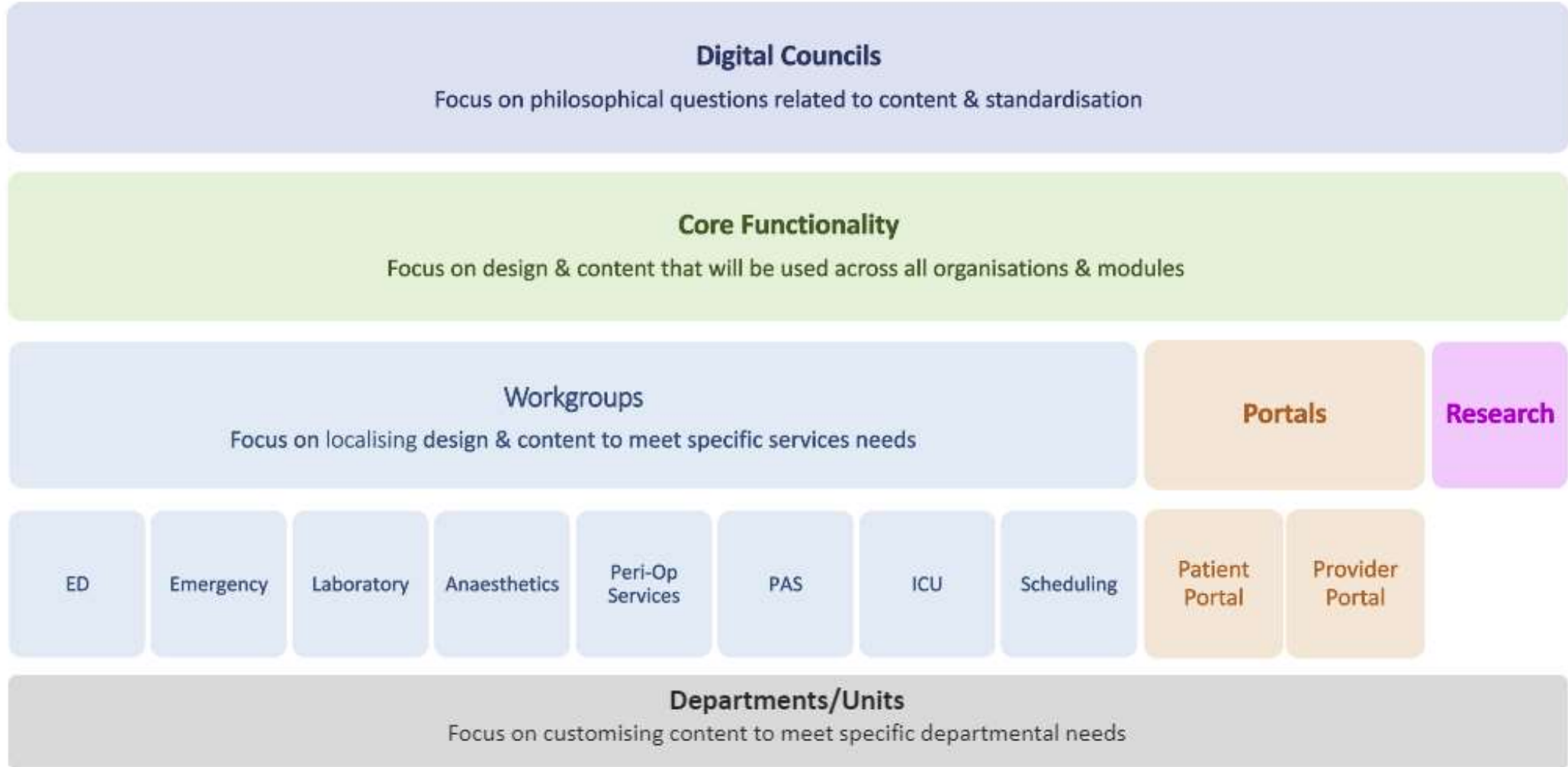
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Cascading Design of the EHR

The Cabinet…

Less of this…..

And more of this…..

Governance Groups…

…reporting monthly / quarterly.

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Freedom of Action…..

And finally…..