



Information Technology & Patient Records

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Agenda

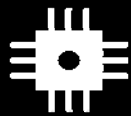
- IBM's Smarter Healthcare
- Why we need to move to Electronic Patient Records
- Some definitions....
- Approaches to creating EHR's
- Global and Local Examples
- IBM's positioning with EHR for employees
- What does this mean for the system.. Smarter Healthcare





**A smarter health system
forges collaborative partnerships
to deliver better care and predict and prevent disease
and activates individuals to make smarter choices**

**An opportunity for health systems
to think and act in new ways.**



Our world is becoming
INSTRUMENTED

**Improve
operational
effectiveness.**



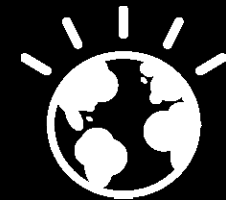
Our world is becoming
INTERCONNECTED

**Deliver collaborative
care for prevention
and wellness.**



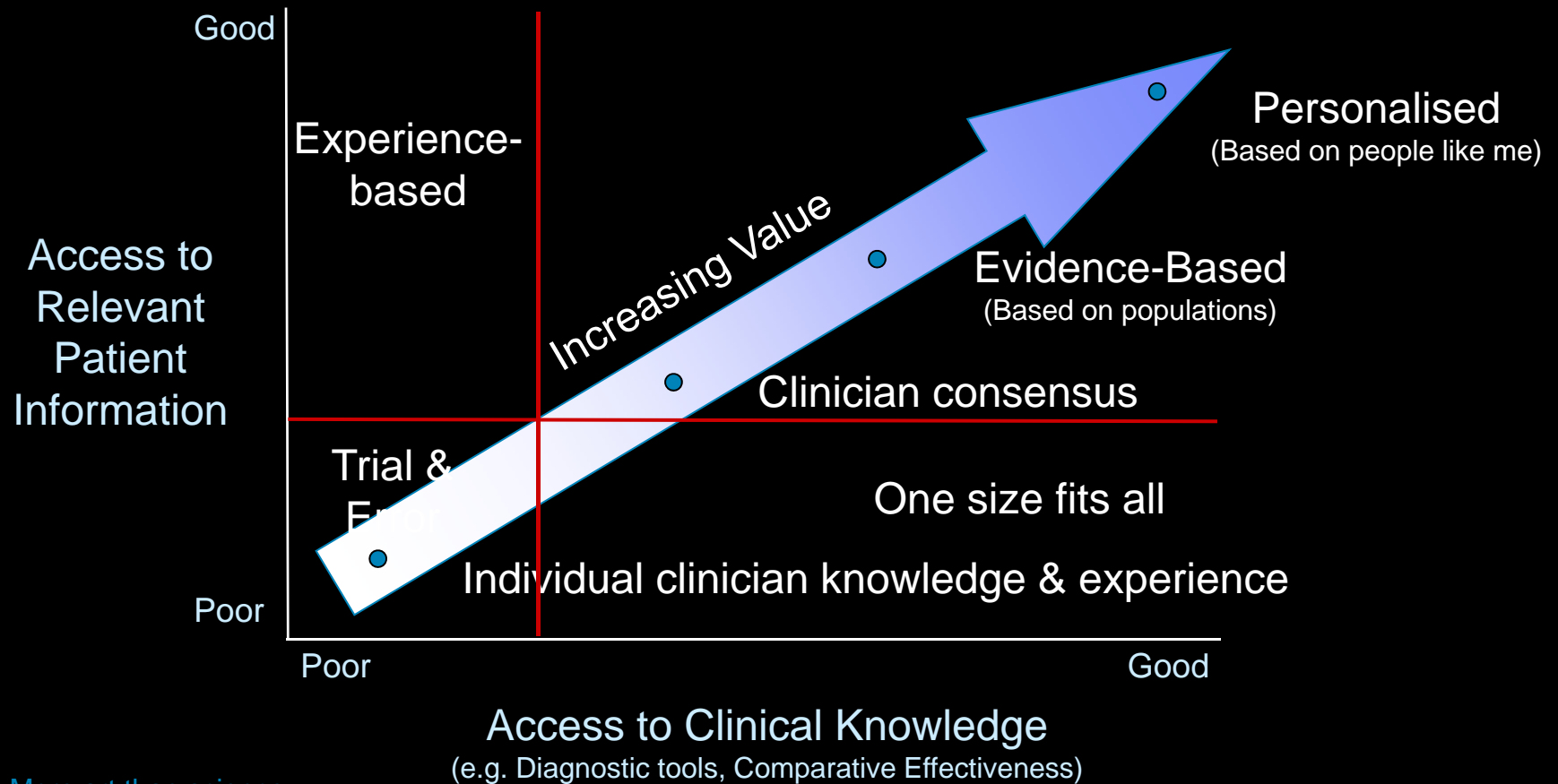
Virtually all things, processes and ways
of working are becoming
INTELLIGENT

**Achieve better
quality and
outcomes.**





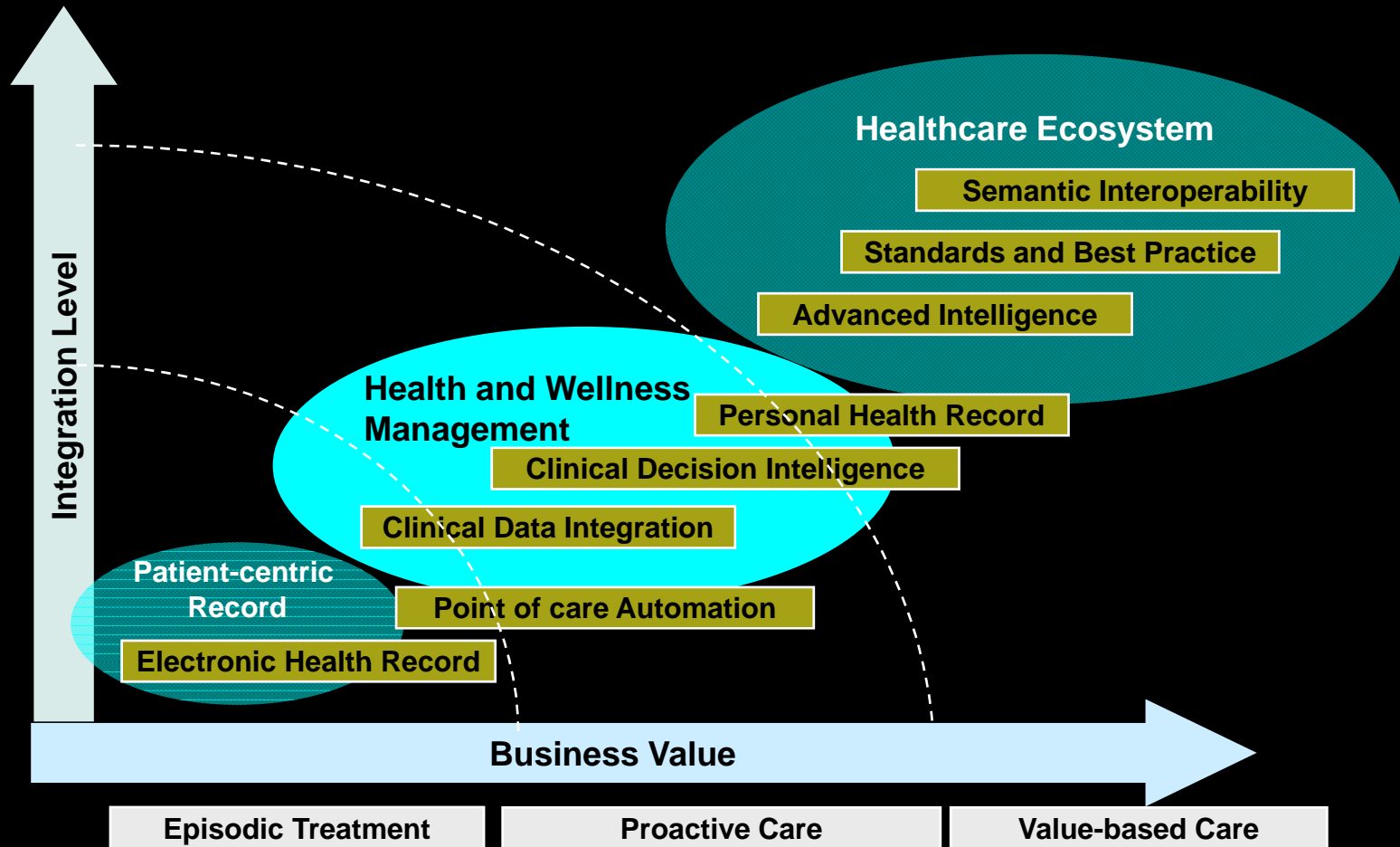
Ability to consistently deliver value improves with access to relevant patient information & knowledge of what works for that patient



Source: IBM Global Business Services and IBM Institute for Business Value



Healthcare is focused on solutions across three main areas: core interactive clinical automation, healthcare analytics, & interoperability





Challenges driving the healthcare industry towards having an EHR

■ The Challenge

- **Incomplete information** – *Physicians were unaware of 1 in 4 prescriptions that a patient had been given*
- **Lack of communication across the continuum of care** – *Of all the patient treatment errors in hospitals "it's been estimated that as many as 75% involve some breakdown in communication"*
- **Clinical data required for many key clinical and business processes is often out of reach**

■ The Reason

- **Patients' medical information is stored in inaccessible silos within and across organisations** – *It is estimated that US healthcare organisations will be managing as many as 30,000 electronic "silos of information" that cannot be shared*

■ The Outcome

- **Decreased patient safety**
- **Longer care-cycle**
- **Lower quality patient care**
- **Increased cost of healthcare**





What is an Electronic Health Record (EHR)? - EMR vs EHR

EMR

- **Specific to an facility (institution, private office);**
- Equivalent of its paper predecessor
- Has “depth” but lacks “breadth”.

EHR

- **Specific to an individual;**
- Captures key subset of health information from multiple systems.
- Available electronically to authorised healthcare providers/ individual anywhere.
- Designed to facilitate the sharing of data across the continuum of care.

ePHR

- **Specific to an individual**
- Individuals can *access, manage and share* their health information in a secure and confidential environment.



Approaches to EHR's

▪ The Suite Approach

- Involves replacing all information systems used by the participants of a network with a system from a single vendor
- Allows for connectivity and full synchronisation between different parties, as well as uniform workflow for all participants.

▪ A Portal

- Involves the creation of a presentation layer that can work with information from different sources & manipulate the way it is presented.

▪ Virtual Patient Record

- This solution creates a single, unified patient record from data from different information systems, formats, organisations & sites – not affecting systems in which information is stored, and without centralising data
- A medical information sharing solution that enables the design, implementation, operation & management of a web-based, federated health information exchange (HIE).

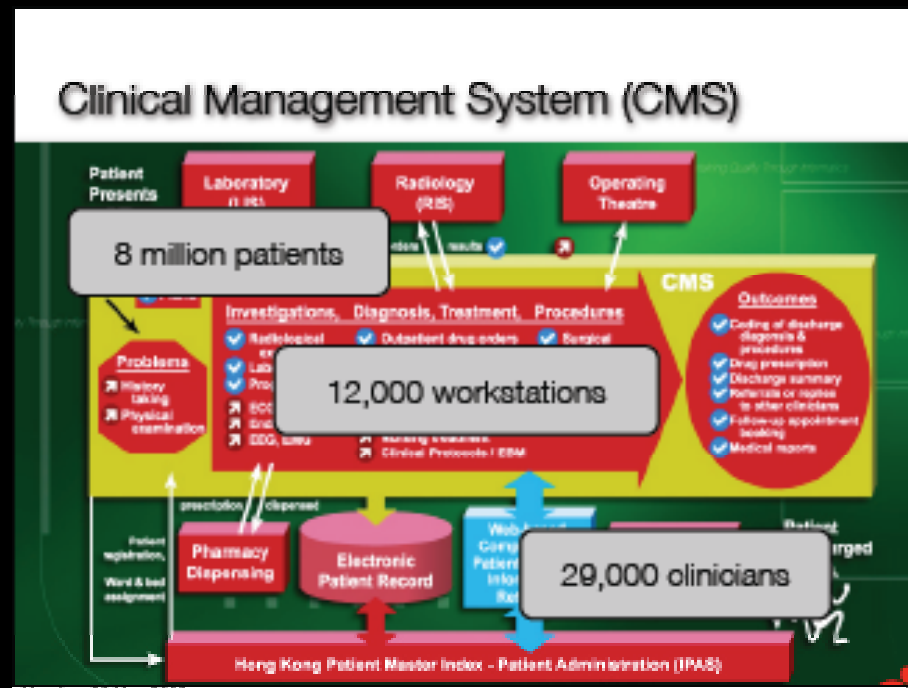
▪ Health Information Exchange Customised Solution

- A set of standards-based, software components that support the secure exchange of healthcare information between constituents of localised, regional, national & perhaps global healthcare communities.
- Core HIE components provide a community-wide Record Locator Service (or Registry).



Suite Approach (one vendor solution)

Hong Kong Hospital Authority – 41 hospitals, 45 specialist clinics, 74 general clinics



Electronic Patient Record

- A web-based lifelong longitudinal record of all healthcare transactions for all Hong Kong citizens
- Many data formats including multimedia and digital radiology
- Patients privacy protected with access control and full audit logs
- Available at all 162 facilities in the Health Authority
- Now expanding to external providers



Portals

Creation of a presentation layer that works with information from different sources & manipulates the way it is presented.

Key Features

- Online Bill Payment
- Work with your Appointments, Payment History, Insurance, and Demographic Information
- Access to Outpatient Lab Results/ Clinical Information
- Manage family/ custodial account relationships
- List of Past Appointments
- List of Patient Allergies
- Appointment Reminders
- Real-time Scheduling
 - Online appointments for clinics
- Express check-in
 - Allowing pts. to complete registration & forms prior to their visit
- Services Access
 - Kiosk (pilot) for quick check-in
- Patient Education



In Production : the Duke Integrated Portal © 2009 IBM Corporation





Recent work and next steps at Duke...

Other Features being introduced:

- Password Expiration / Administration Enhancements
- Referral Management
- Medical record export in CCR/CCD format
- Secure doctor to patient communication including eVisits
- Patient education
- Medical History question list to create History of Present Illness as part of express check-in
- Prescription renewal
- Prescription List
- eStatement
- Kiosk rollout for patient registration & check-in

The screenshot shows the DukeHealth.org patient portal. At the top, there is a navigation bar with the Duke logo and the text "DukeHealth.org" and "Connect with your health care at Duke Medicine". Below this is a "Log Out" link. The main content area is divided into several sections: a left-hand navigation menu with categories like Home, Appointments, Clinical, Billing, Profile, and Preferences; a central "Welcome back to HealthView" message with a "Log Out" button; a "New Features" section with links for "Add children to account" and "View appointments"; a "Most Requested" section with links for "Request an Appointment" and "Pay a Bill"; and a footer with various links and copyright information. The interface is clean and professional, with a blue and white color scheme.



Virtual Patient Record

Local Health Information Networks with a decentralised architecture; are patient-centric; have sufficient safeguards to protect privacy of health information

■ University of Pittsburgh Medical Centre (UPMC)

- 19 hospitals and a network of other care sites across Western Pennsylvania

■ Issue

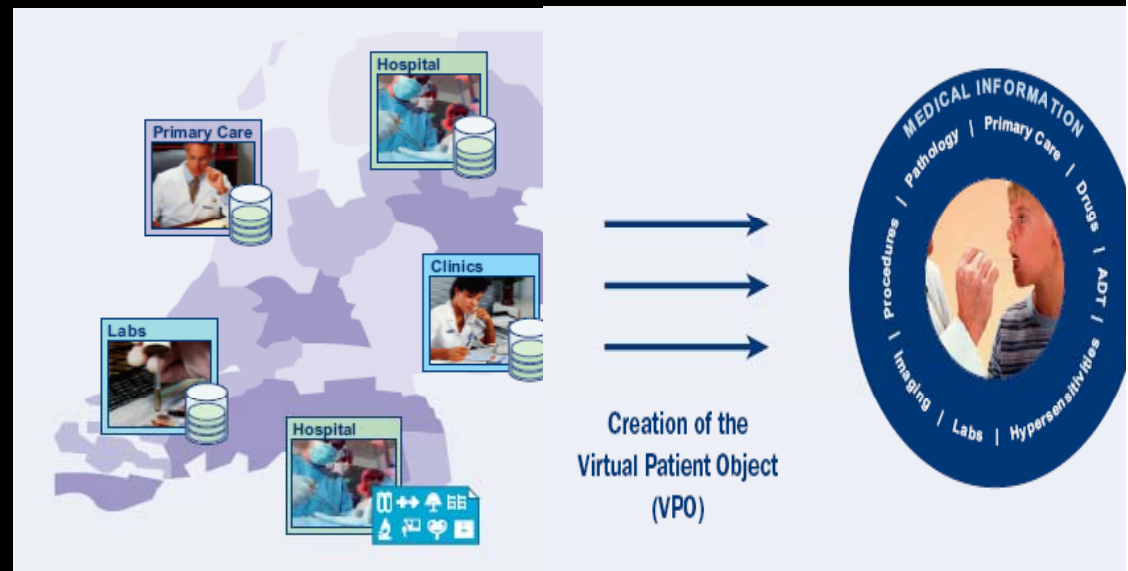
- Rising IT Costs
- Need to deliver highly integrated, efficient care in the face of their rapid growth and Health industry pressures

■ Benefits

- Improved quality of care for patients, employee satisfaction & IT costs

■ Solution

- Optimised IT Infrastructure
- Project to establish enterprise wide integrated systems to deliver an EHR for the management of their patients.
- Key components of UPMC's current applications portfolio include clinical and ERP software products from Cerner, Epic, Misys, Oracle/PeopleSoft, Phillips, and GE.





Health Information Exchange



Client Challenges

- Vision for Central Virginia to be the most electronically connected medical community in the U.S.
- Accelerate disability claims processing.
- Provide secure sharing and exchange of healthcare data among physicians, patients, hospitals, laboratories & pharmacies, regardless of the location or application.

Actions

- First Electronic Health Records Exchange for a U.S. Government Agency.
- Securely connect MedVirginia and the U.S. Social Security Administration.
- Integrate clinical results, medication history, allergies & lab reference data.

HIE Solution

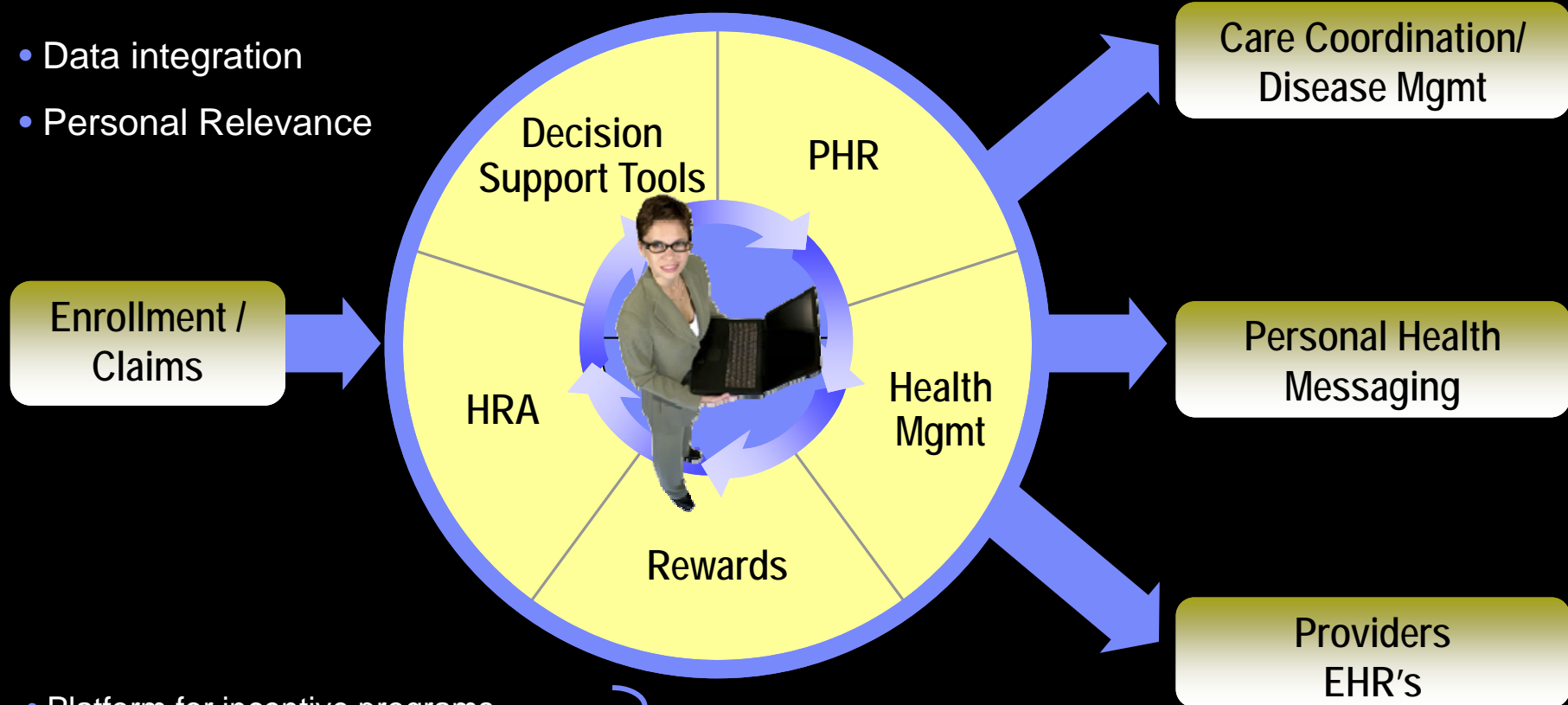
- Secure exchange of healthcare information across local, regional, national, & international healthcare communities.
- Based on Integrating the Healthcare Enterprise (IHE) profiles
- Document registry & repository services
- Record locator services
- Fine grained access & consent management
- Collaborative messaging services
- Real-time monitoring & feed of topical information for bio-surveillance or public health



IBM Health Management Centre

Providing a single web portal that allows IBM employees to proactively manage & monitor their health

- Data integration
- Personal Relevance



- Platform for incentive programs
- Information sources
- Alerts/Clinical Messaging
- Medical & treatment claims data import

= personal relevance & action



Precedence Healthcare

Chronic Disease Management Network (CDM-Net), for assisting with evidence-based practice, care coordination, wellness monitoring, patient self management & performance analysis.

■ eHealth Solution

- CDM-Net is a care coordination/ planning system that has the capability to develop individualised care plans based on evidence-based practice for Chronic Disease Management.
- Care plans are managed via the patients General Practitioner (GP) & enable dynamic sharing of key aspects of the plan with all relevant care providers.
- Care providers are able to update the plan as care is delivered enabling the GP to have an up to date view of the patients progress.

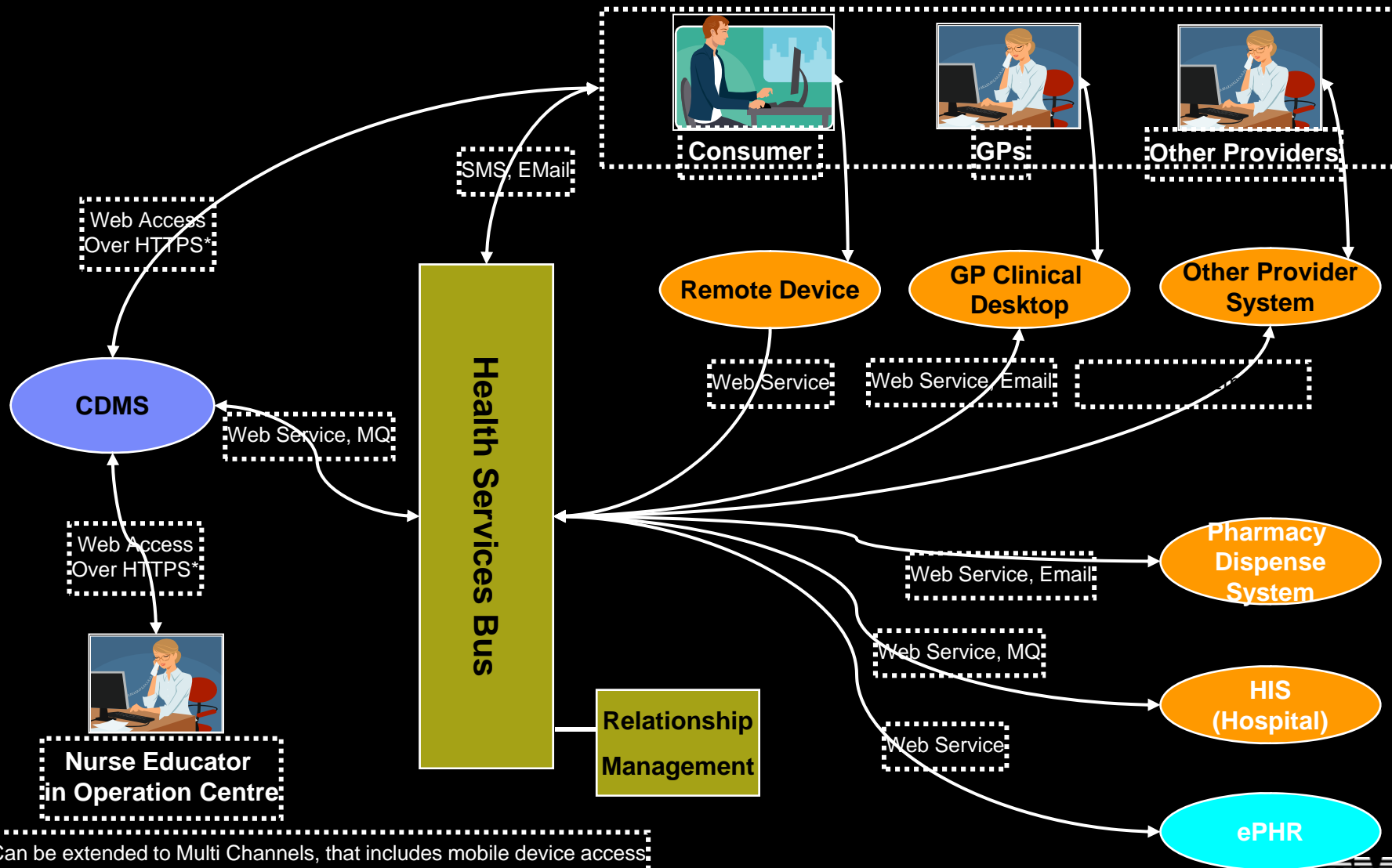
■ Benefits

- Streamlining Coordinated Care for Chronic Disease Patients
 - “The initial trial data is showing a doubling of evidence-based care getting into practice. There is a 60% increase in the use of managed care plans & a 140% increase in team collaboration. Follow up and review of the care plan has gone up more than 500%.”
- Access to accurate timely information for all the care team involved with patient care

precedence
healthcare



Integration Ecosystem for Precedence Healthcare



* Can be extended to Multi Channels, that includes mobile device access.





BioGrid Australia (led by Melbourne Health)

Driving to improve patient care by opening up access to research data across Australia

Business challenge

- Melbourne Health was looking to drive improved patient care outcomes by opening up access to research data to bolster its research efforts. Previously, as each new physician began a study, they recorded their findings locally, making it difficult for colleagues to share research—especially for colleagues at different hospitals. Wanting to increase the quality of care that it could deliver, Melbourne Health began looking for a means to better share its research data.

Solution

- Melbourne Health launched BioGrid Australia, a research initiative that enables users to pull data from various hospital systems to analyse and compare roughly 25 million medical records. A virtual repository was established for federate patient and clinical data residing across hospital databases and public data sources from across the globe. Researchers can now compare their findings across multiple studies to analyse disease patterns and compare complex treatment interactions. And in the future, the solution will draw medical data directly from patients.

Benefits

- Yields greater insight from research studies by enabling staff to increase average sample size from 250 patients to 1,000 patients
- Equips physicians with complex analysis tools that help them choose more effective treatment plans for patients
- Has establishes BioGrid Australia as a research leader, with 20 hospitals & research organisations as members.
- Ability to secure research funding

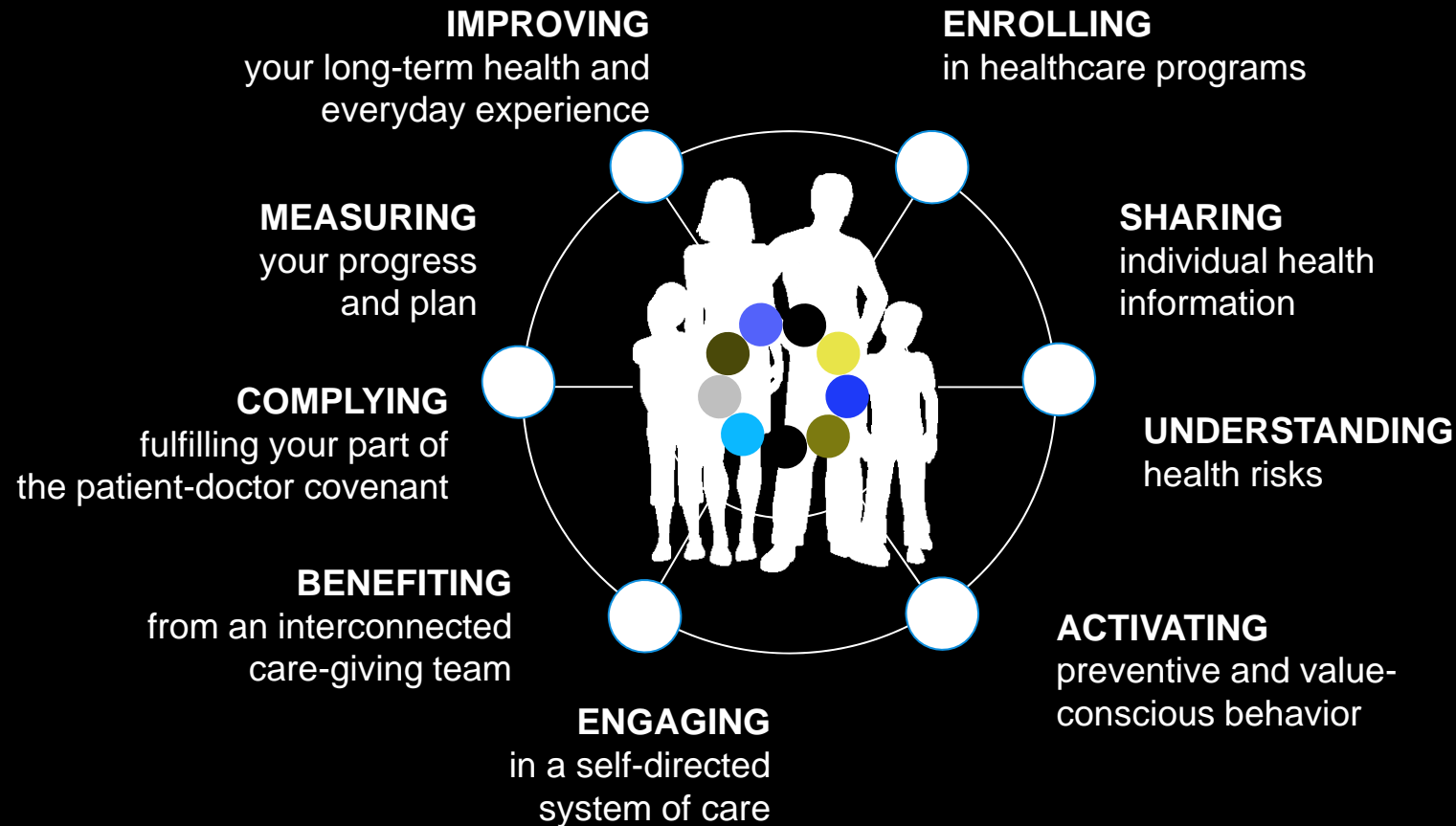


Let's build a smarter planet: Healthcare





Smarter healthcare enables a more collaborative care process centered around the wellness of the individual



**GOVERNMENTS
COMMUNITIES
PHARMACEUTICALS & DEVICE MANUFACTURERS**

**CARE DELIVERY ORGANISATIONS
DOCTORS AND OTHER CAREGIVERS
PRIVATE HEALTH FUNDS**





Smarter Healthcare is:

- Introducing of **a person-controlled electronic health record for each Australian** to improve the quality and safety of health care, reduce waste and inefficiency, and improve continuity and health outcomes for patients.
- Making the patient the focus around which health information flows which is increasingly delivered via the internet.
- Supporting **clinicians and health care providers to 'get out of paper'** and adopt electronic information storage, exchange and decision support software.
- Support an agile, self improving system that is the **smart use of data, information and communication.**



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