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Realizing the benefits of the EHR investments & clinical transformation

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Presentation Overview

- *Infoway*'s Business Strategies
- Clinical Adoption Team
- Benefit Realization & Quality Improvement
  - An overview of the methodology
  - A successful DI Project
- Clinical Transformation
  - Case scenario
  - The transformation and implications

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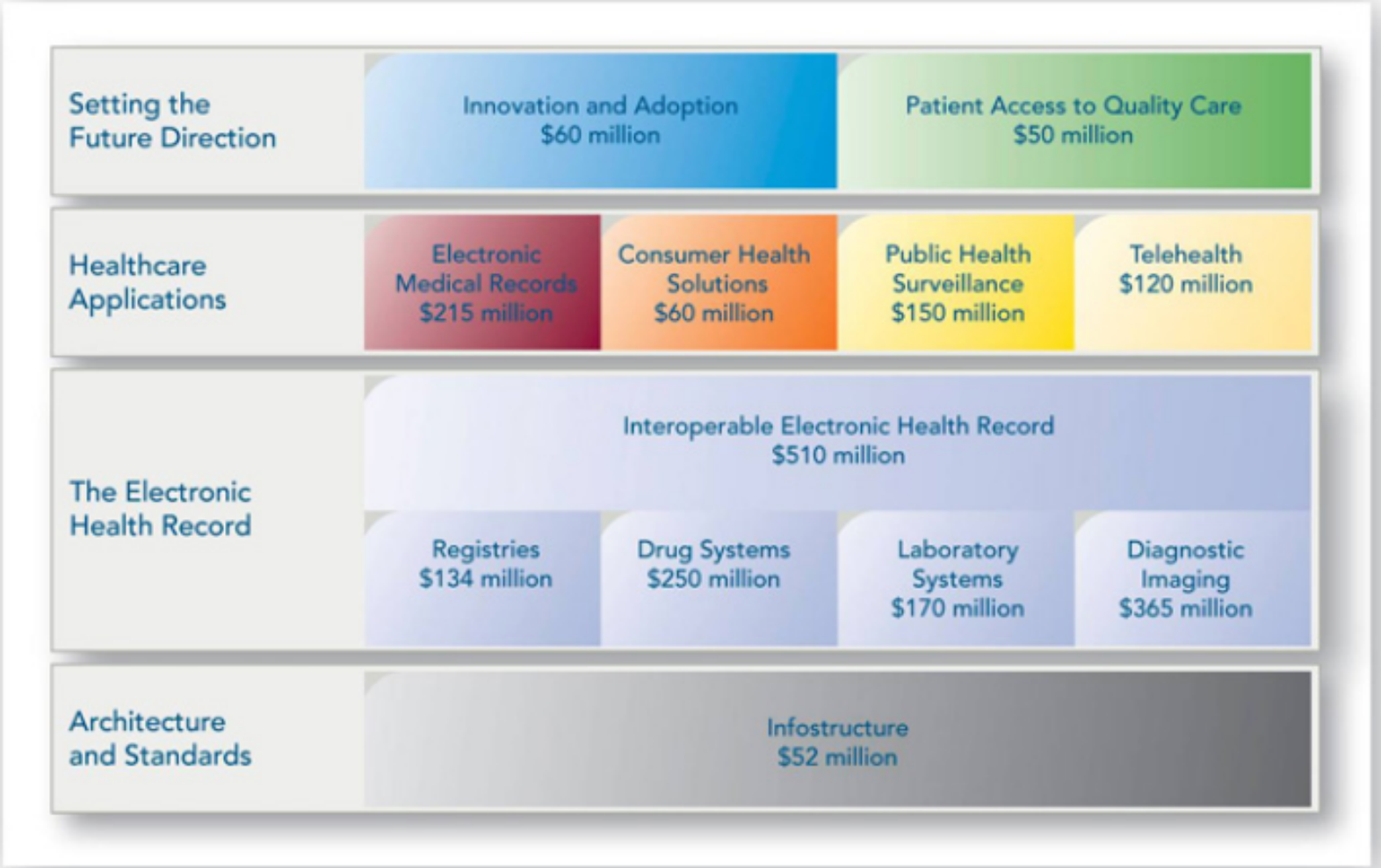
About *Infoway*

Canada Health Infoway

- Created in 2001
- $1.6 billion in federal funding
  - An additional $500 million allocated in 2009 Federal Budget
- Independent, not-for-profit corporation
- Accountable to 14 federal/provincial/territorial governments
- Goal by 2010
  - Every Canadian will benefit from modern health information systems; and, 50 per cent of Canadians will have an electronic health record accessible by authorized health care providers.

Investment model

Upon ratification of the Federal Funding Agreement, *Infoway*'s commitment will total more than $2.1 billion in 12 targeted investment programs.



Infoway business strategies

- Participate in health care renewal
- Collaborate with our partners
- Target the investments
- Support solution deployment
- Promote solution adoption and benefits realization



Infoway approach

- Strategic investor - gated funding approach
- Clinical adoption
  - Emphasis on benefits realization, quality improvement, professional practice & clinical informatics
  - Provide national & regional leadership and support to our investment programs
  - Facilitate clinical leadership & advancing of best practices in the clinical adoption of solutions
  - Support the measurement and realization of benefits through an integrated approach to change management, adoption & benefits evaluation

Knowledge management is core to our business

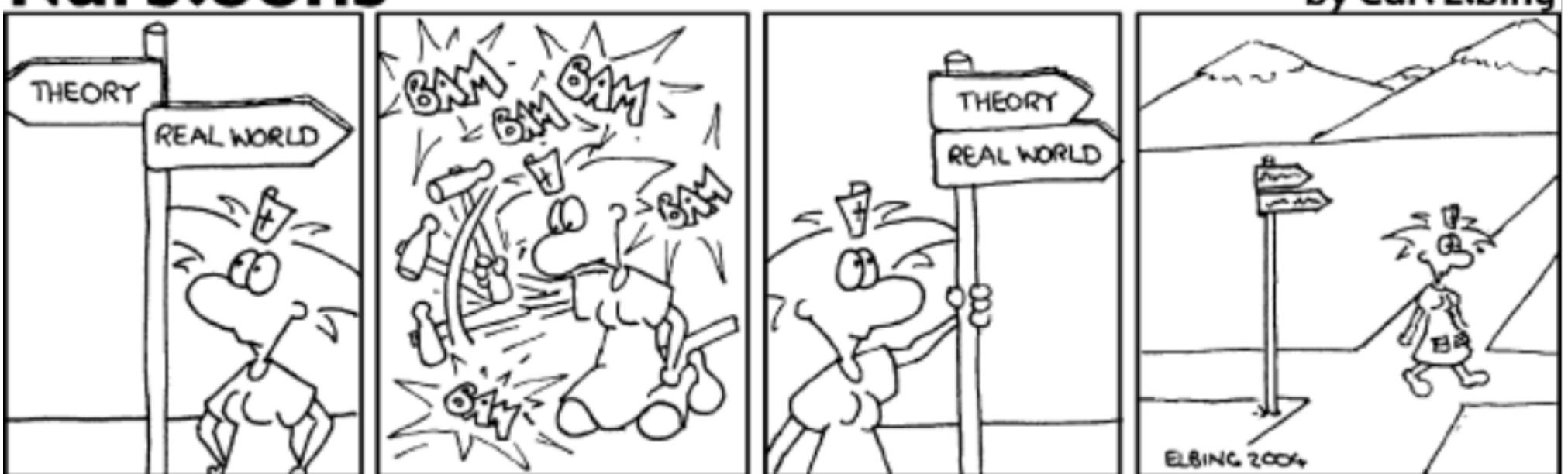
Benefits Realization & Quality Improvement Approach

- Know where you want to go
- Articulate the benefits
- Ongoing emphasis on change management activities
- Document key assumptions and action plans taken to address them
- Monitor and analyze at checkpoints along the way
- Measure against objectives
- Adjust actions as required
- Communicate

CONTINUE TO SUSTAIN THE CHANGE

Nurstoons

by Carl Elbing



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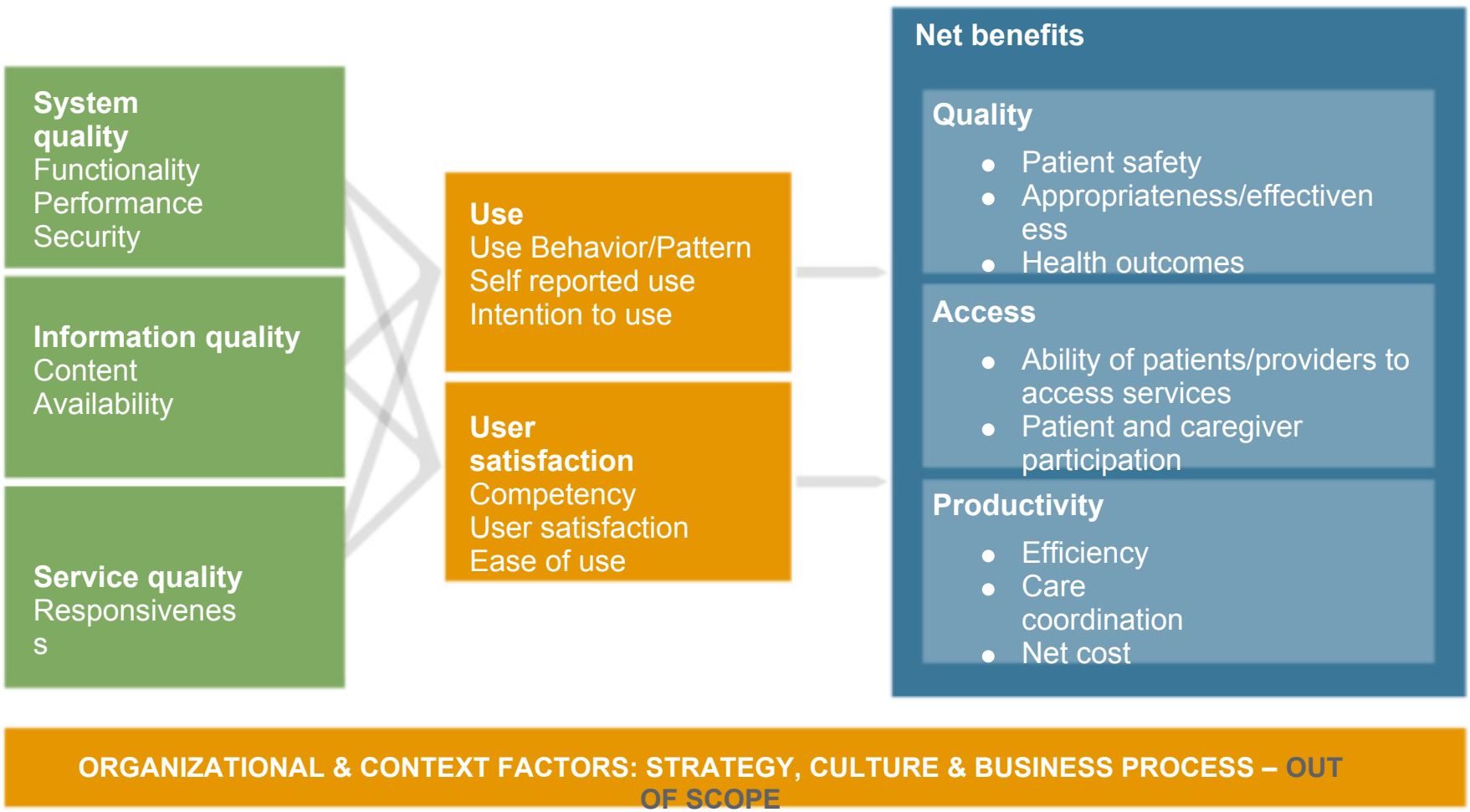
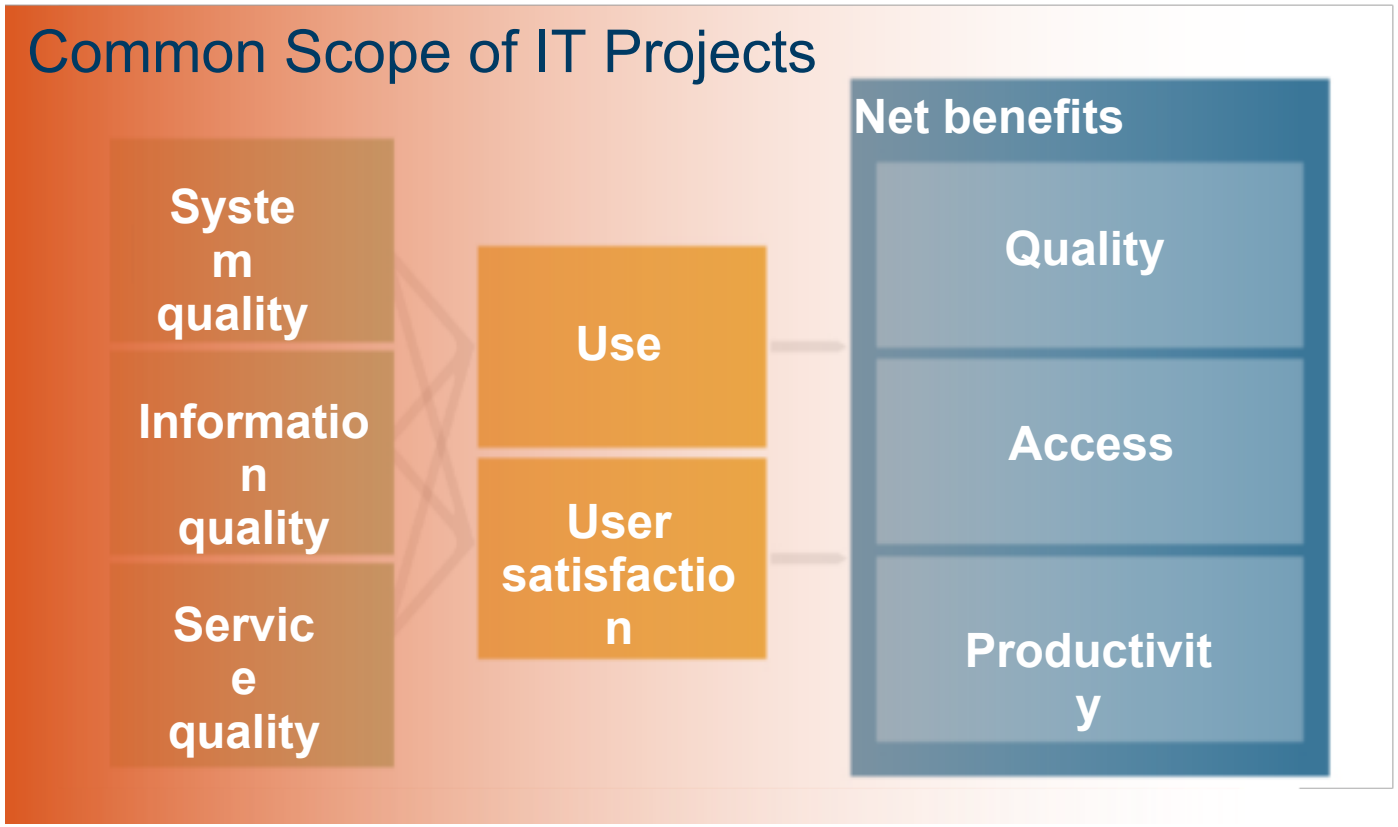
Infoway benefits evaluation framework



Based on the Delone & McLean IS Success Model

Increasing focus on adoption and benefits



- Governance
- Funding
- Integration with Health initiatives
- Project objectives

Pan-Canadian diagnostic imaging study

	Canada Health Infoway Benefits Evaluation Data					
	Qualitative Opinion Surveys		*Quantitative Research Studies*			
Jurisdiction	Pre-PACS	Post-PACS	Patient transfers	Duplicate exams	Cost per case	Turnaround times (TAT)
BC: Fraser Health Authority	✓		✓		✓	
Interior Health Authority		✓****				✓
ON: Thames Valley DI Network		✓		✓	✓*	
NS: Province-wide		✓				✓
NL: Province-wide		✓			✓	✓***

Response profile:

	Count	% of total	Count	% of total
Radiologists	**6**	**5**	**78**	**35**
Referring physicians	**36**	**32**	**146**	**65**
DI Technologists	**53**	**47**	**n/a**	**n/a**
Other**	**17**	**15**	**n/a**	**n/a**
	112	**100**	**224**	**100**

It should be expressly understood that the qualitative surveys combined with quantitative research studies were not designed to be representative nor the findings expected to be consistent across all PACS implementations, rather the results provide insight on where opportunities and benefits are most likely to be realized

**** Respondents include Radiologists (19) only; referring physicians excluded
*** Turnaround time data for Newfoundland and Labrador not directly comparable due to differences in methodology (and lack of transcriptionists)
** Other is defined as clerical and related support staff (e.g., DI support staff)
* Actual data for baseline Year 1 only; forecasts represented for Year 2 to Year 8
Source: Canada Health Infoway; Videre team analysis

Productivity

Benefit	Description	Annual Value	Resources	Capacity
Technologist productivity	25-30% improvement in technologists' productivity	$122-148M	2,400-2,900 equivalent technologists	8-10M exams
Radiologist productivity	25-30% improvement in radiologists' productivity	$169-203M	450-540 equivalent radiologists	9-11M exams
Duplicate exams	2-3% reduction in unnecessary duplicate exams	$47-71M	43-63 radiologists 240-358 technologists	0.8-1.3M exams
Film costs	Elimination of film-related cost of materials and operations	$350-390M	N/A	N/A

Nancy Davis, Mgr. DI, Peterborough, ON

…moral has improved, report turn around has gone from 22 days to real time, efficiency is estimated at a 30% increase and patient care has been significantly enhanced…

We've seen a significant reduction in repeated exams: we have one PACS for three distinct geographic areas….sites no-longer have to remember to transfer films with patients (either acute transfer or follow-up with specialist in another city)…images are now available [with PACS] for review at any time, at any location in the region…

Nancy Davis, Mgr. DI, Peterborough, ON

Quality

Benefit	Description	Annual Value	Resources	Capacity
Referring physicians	Efficiency improved by 50-60 minutes	$160-190M	420-500 specialists	6-7M 10-min consults
Turnaround time	30-40% improvement in exam turnaround times	N/A	N/A	TAT reduced 10-24 hrs

…PACS enables quicker access to clinical information (exams and reports) …allowing for better informed patient management…

Bill Dow, Admin Director DI, Fraser Health Authority, BC

Prior to PACS, staff struggled to keep-up with ER and Fracture Clinic (FR)…now the ER and FR have to keep-up with DI…patients are realizing reduced lengths of stay as a result of real-time reporting available through PACS…

Nancy Davis, Mgr. DI, Peterborough, ON

…the impact of better access to patient information and decreased report TAT is a real decrease in length of patient stays…the better access to images and shorter report TAT results in shorter lengths of stay…

John King, Executive V.P. of Hospital Services & Chief Administration Officer, St. Michael's Hospital, Toronto, ON

Access

Benefit	Description	Annual Value	Resources	Capacity
Patient transfers	Avoided unnecessary patient transfers	$8-14M	N/A	10,000-17,000 avoided patient transfers
Improved remote reporting	Enables 30-40% of radiologists to support care delivery and improve access for remote areas			

…prior to PACS, referring physicians would contact specialists by phone and describe the case over the phone, then transport (up to 6 hours) the patient to our main centre, and in many cases only to have the patient transported again to the appropriate centre…

…in one case, PACS may have actually saved the patient's life by avoiding a transfer to the wrong centre…

ThaliaVesterback, PACS Systems Administrator, Interior Health Authority, BC

A significant impact to locals such as Yellowknife, there are no Tertiary centres in the Territories…a valuable segment of the [Radiologist] workforce is now available…qualified Radiologists who previously left active workforce will now be willing to work part-time by tele-radiology…

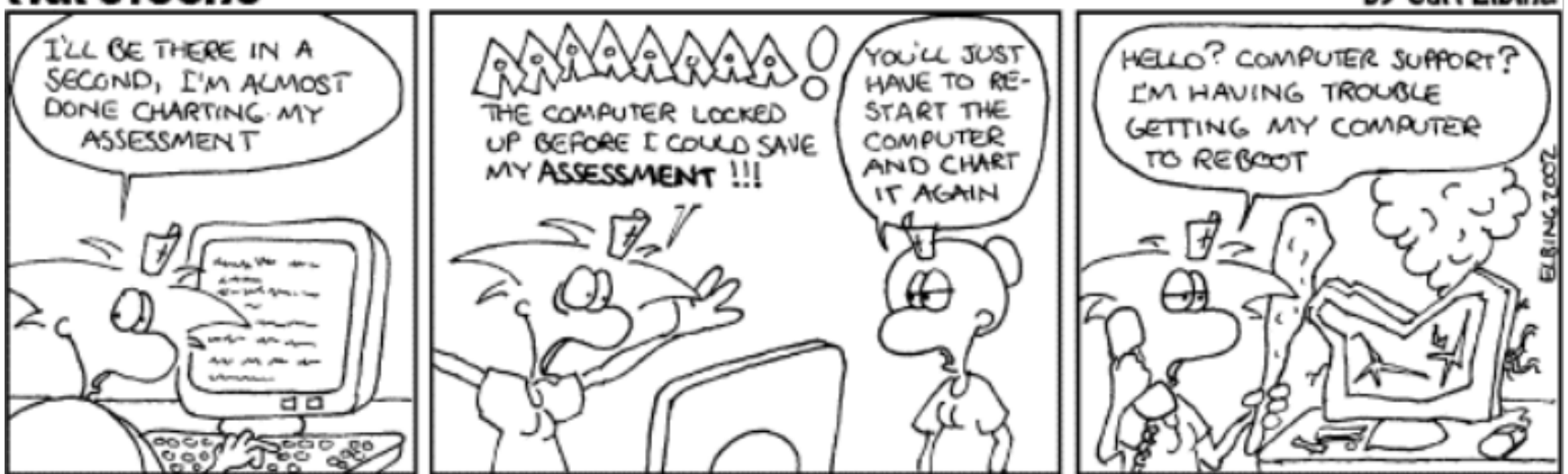
Dr. Greg Butler, KentvilleN.S.(and Chief of Radiology, Stanton Memorial Hospital Yellowknife, N.W.T.)

Missed opportunities?

- Point-of-service functionality (e.g. clinical decision support)
- Interoperability
  - Shared images
  - Messaging and terminology standards including SNOMED CT, DICOM, HL7 v3.0, LOINC
- Harvesting benefits effectively

Nurstoons

by Carl Elbing



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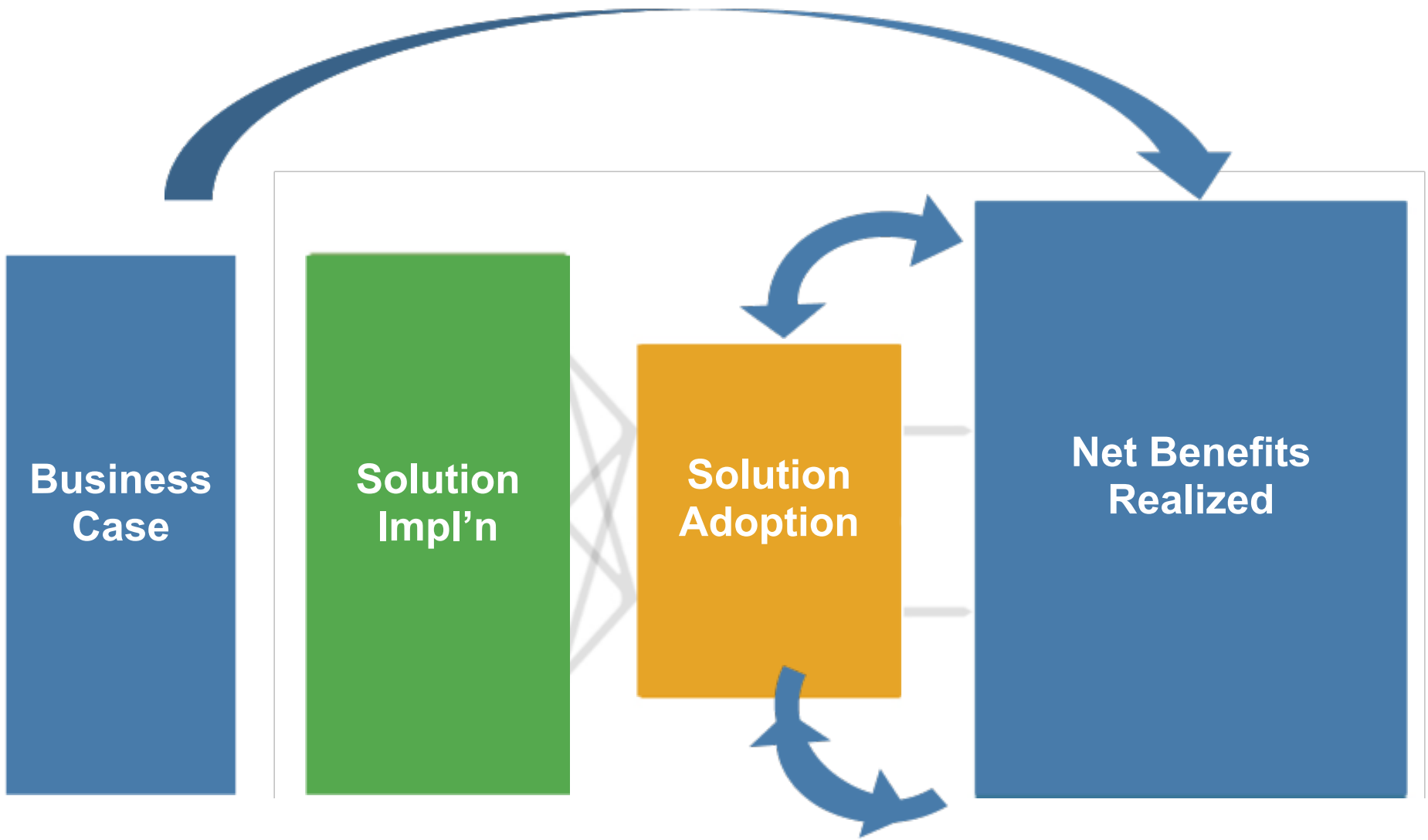
Evolution towards benefits realization



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Clinical transformation

Clinical transformation

- How information and communication technologies change the clinical environment, activities, and practice across the continuum of care.

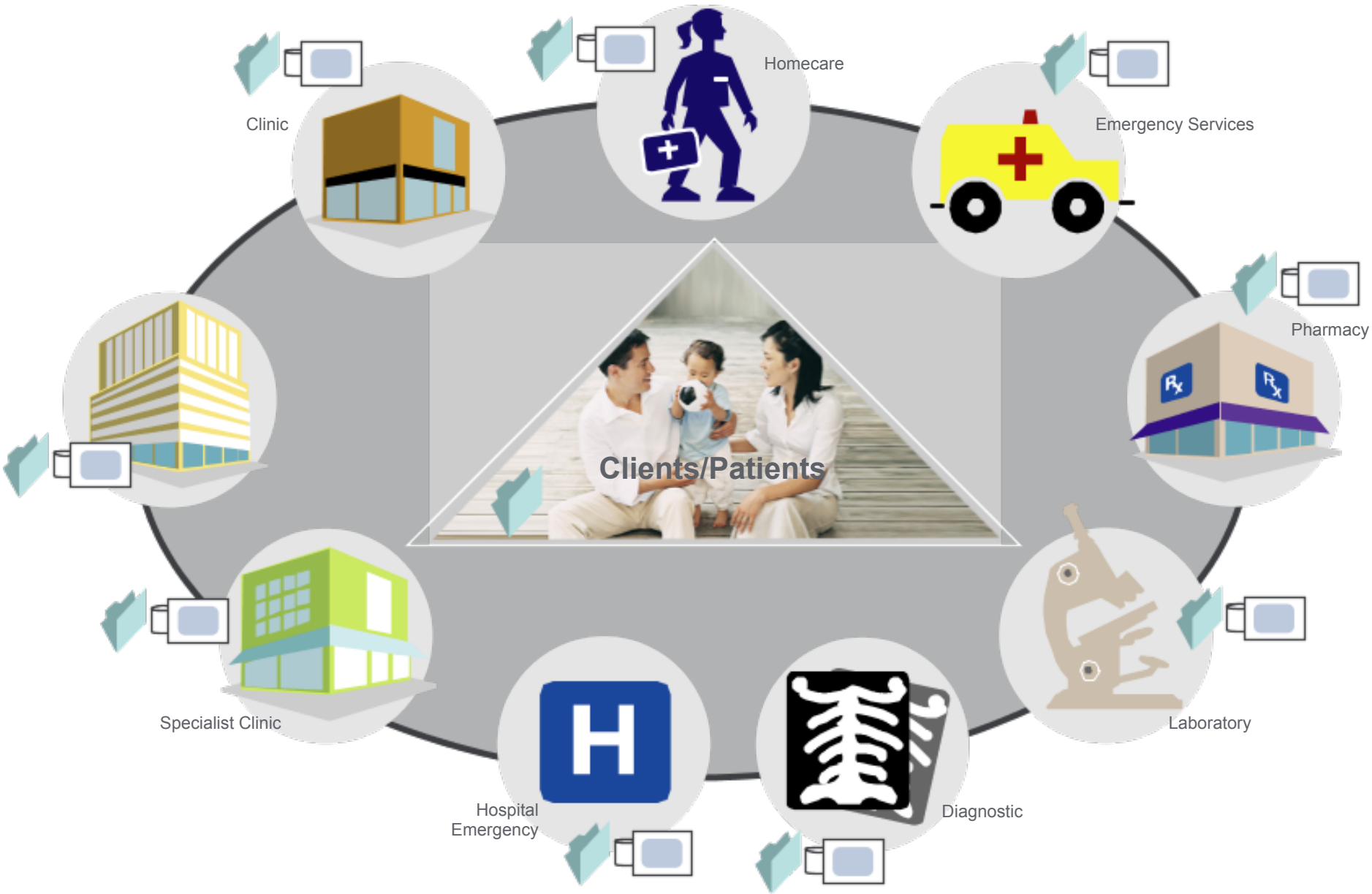
A patient case before health information

- Semi-comatose patient sent to ER of a community hospital by ambulance
- Had CT scan of head done, sent to ICU for observation
- Unable to breath, intubated, ventilated, multiple IVs
- CT scan verbal report confirmed bleeding stroke
- ICU MD requested neurosurgical consult from another hospital
- Neurosurgeon on-call accepted consultation
- Patient Transfer
  - Ambulance
  - Photocopy of chart
  - MD Transfer Note,
  - Nursing Transfer Report
  - DI library release CT film
  - Standby medications, IVs, supplies
  - Additional RN and RT called in
  - Switch bedside equipment to portable ones
  - Family and belongings
  - Patient bagged on route
  - Etc……
- Patient arrived receiving hospital, seen by Neurosurgeon, deemed not a surgical candidate, transferred back to sending hospital, placed on palliative care

The same patient case after health information

- Semi-comatose patient sent to ER of a community hospital by ambulance
- Had CT scan of head done, sent to ICU for observation
- Unable to breath, intubated, ventilated, multiple IVs
- Radiology reviewed CT Scan with ICU MD, confirmed bleeding stroke
- ICU MD requested neurosurgical consult from another hospital
- Neurosurgeon on-call accepted consultation, reviewed CT scan with ICU MD
- Telehealth equipment used to assess patient
- Neurosurgeon reviewed patient's other electronic medical records
- Patient deemed not a surgical candidate and placed on palliative care

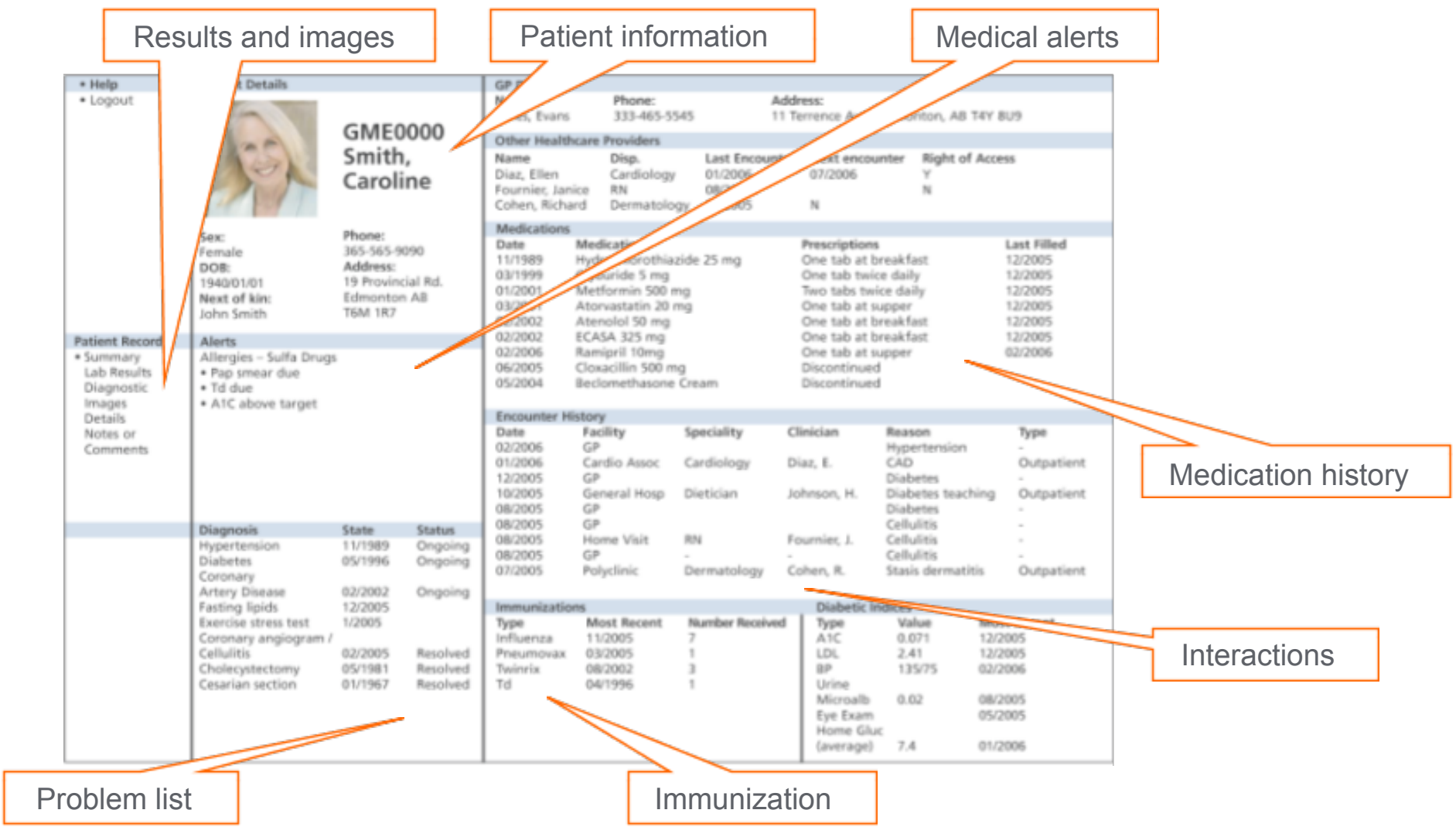
Patient / client centered care



Patient-provider relationship

ePractice and clinical decision makings

Inter-professional interactions & information flow



Data management

The more…

- POS devices
- telehealth
- sharing of information
- efficient healthcare services
- standardized practice and documentation
- timely feedback and reports
- collaboration among healthcare providers
- resources materials for patients
- patient involvement/decision in own care
- meaningful outcomes
- patient and provider satisfactions

The less…

- paper
- wait time
- duplicate services
- duplicate documentation
- chart competition
- “same story-telling” from patients
- medical errors related to miscommunications
- complications related to delayed treatment
- time spent on settling patient complaints/incidents

Implications

- Global partnership
- Jurisdictional alliance
- National/centralized leadership
- Collaboration and alignment
- Inter-professional Practice
- Patient provider relationship & interactions
- Workload changes
- Workflow optimization
- Privacy and security
- Legislations
- Human factor engineering
- ICT Human Resources
- Patient centered
- Patient expectation
- Provider competency
- Education and curriculum

Questions and discussion

Thank you

Contact information

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- For more information on the Clinician Peer Support Network:
  - Contact: peernetwork@infoway-inforoute.ca / 416-595-3449 ext. 3063
- Online: www.infoway-inforoute.ca