

Quality indicator seminar, Tartu University Hospital, 17 January 2013

Quality improvement at clinical and system level by registries in Denmark

Medical Director Paul D. Bartels



the danish
clinical registers

a national quality improvement programme

DK Clinical Registries - Mission

- Improving prevention, diagnostics, treatment and rehabilitation
Improvement
- Documentation for clinical governance and organisational priority setting
Management/Accountability
- Information for citizens and patients
Transparency
- Research infrastructure
Innovation



Danish Clinical Registries – Evolution

- A few emerged in mid seventies as professionally owned registers – mainly used for clinical science (e.g. independent trial databases for cancer)
- The first national strategy for QI in -93 introduced the concept of publicly financed dedicated quality registries – selected and owned by the medical societies
- In 2000 the National Indicator project was introduced as a trial of standardising the registries and establishing formal IT, epidemiology and QI support
- In 2003 the healthcare legislation defined and regulated the concept
- In 2011 the registries were put under one organisational umbrella



Legal definition - implications

- Registries which contain information about individual patients – exempt from patient consent to data collection
- Information can be used for surveillance and improvement of quality
- National coverage,
- Fullfillment of national criteria for functionality, data safety and methodology
- Pass appraisal in the National Health Board every 3 years
- Yerly publication of all results



DK Registries Status:

Total number 60-70 – **Now including NIP**

- 24 cancer registries including quality of palliative care and national screening programmes
- 12 non-neoplastic elective surgery/orthopedic surgery, gynecology
- 6 major chronic disease
- 5 cardiovascular disease
- 3 psychiatry
- 3 obstetrics
- 1 primary care
- 10 misc.

Parallel to S, GB



Clinical registries – effectiveness in improvement variation

- High volume cancers +++
- Stroke +++
- PCI/CB +++
- Schizophrenia+++
- Hernia +++
- Vascular surgery +
- Childhood Diabetes (+)
- Perforated gastric ulcer



DK registries: Organisation

- Each registry has a professional board appointed by the Scientific Societies.. and
- Registries supported by 3 epidemiological units and 2 units providing IT and QI support
- Support and budget governed by a secretariat referring to the 'Political Board' representing the Regions, Health Authorities, Professional and Patient organisations
- Financed by the Regions: Total budget around 6.5 mio Euro



Strategic and operational Issues

- Selection of appropriate topics for registries
- Data collection burden – smart use of available data sources
- Timing of feed-back and reporting from registries
- Usability – how, by whom, for what

- Clinical ownership versus standardisation of methods and outputs (plus structure)



How to select appropriate topics for registries (and close those who are not appropriate)

- Disease severity, incidence/prevalence, quality problems..... Improvement possibility?
- Ressources – and appropriateness?
- Coupling to implementation of national clinical guidelines/ cancer plan/ cardiovascular plan/ chronic care model?
- Political and patient preferences?
- Clinical motivation for change

*Creation of a common transparent evidence-based
framework of stratification*



The Data Challenge !

- Data collection burden – smart use of available data sources
- Timing of feed-back and reporting from registries

Changes in Healthcare

Change in Finances

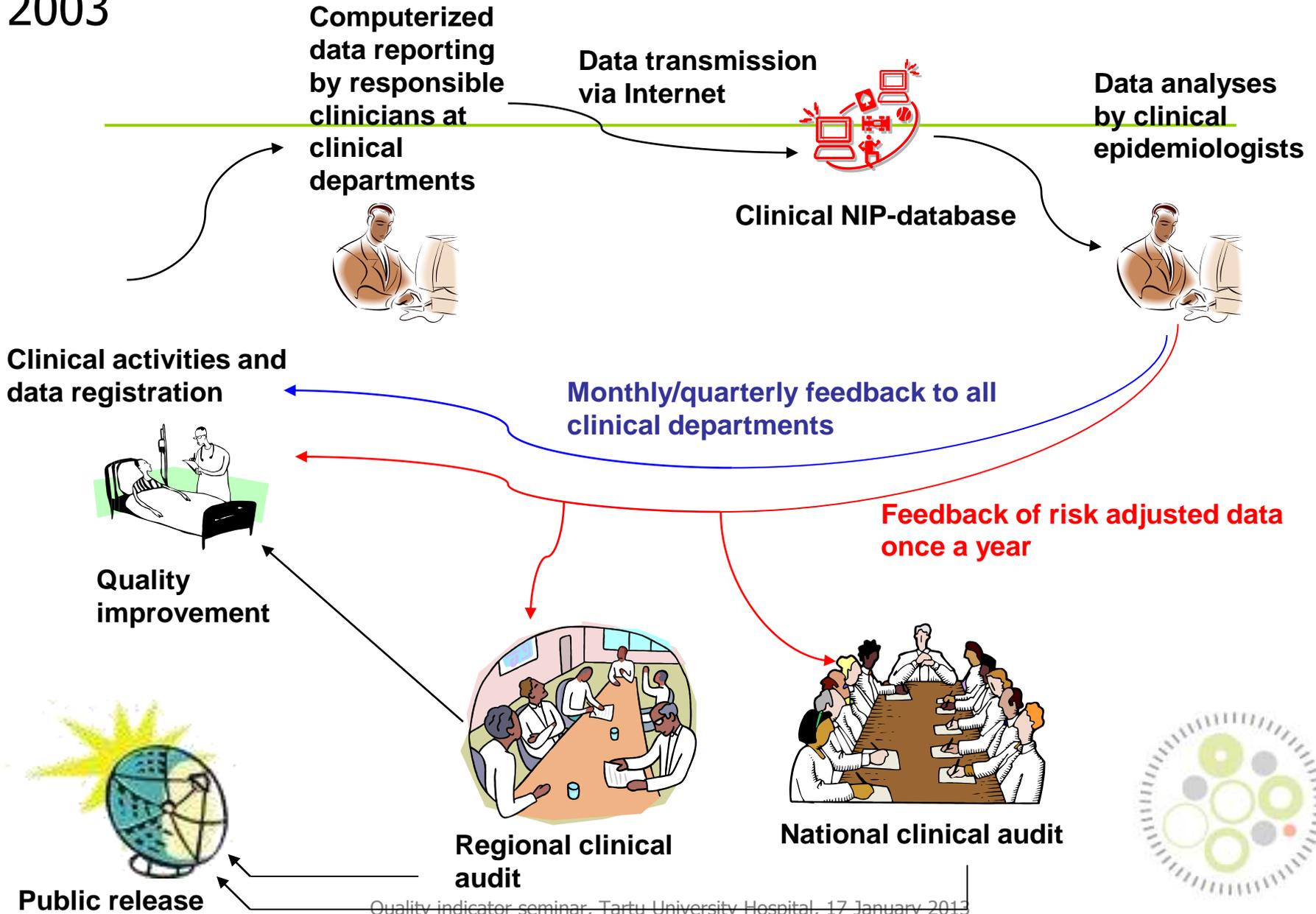
Rapid evolution of Informatics



The world of yesterday....



Important Phases in the Danish National Indicator Project - 2003



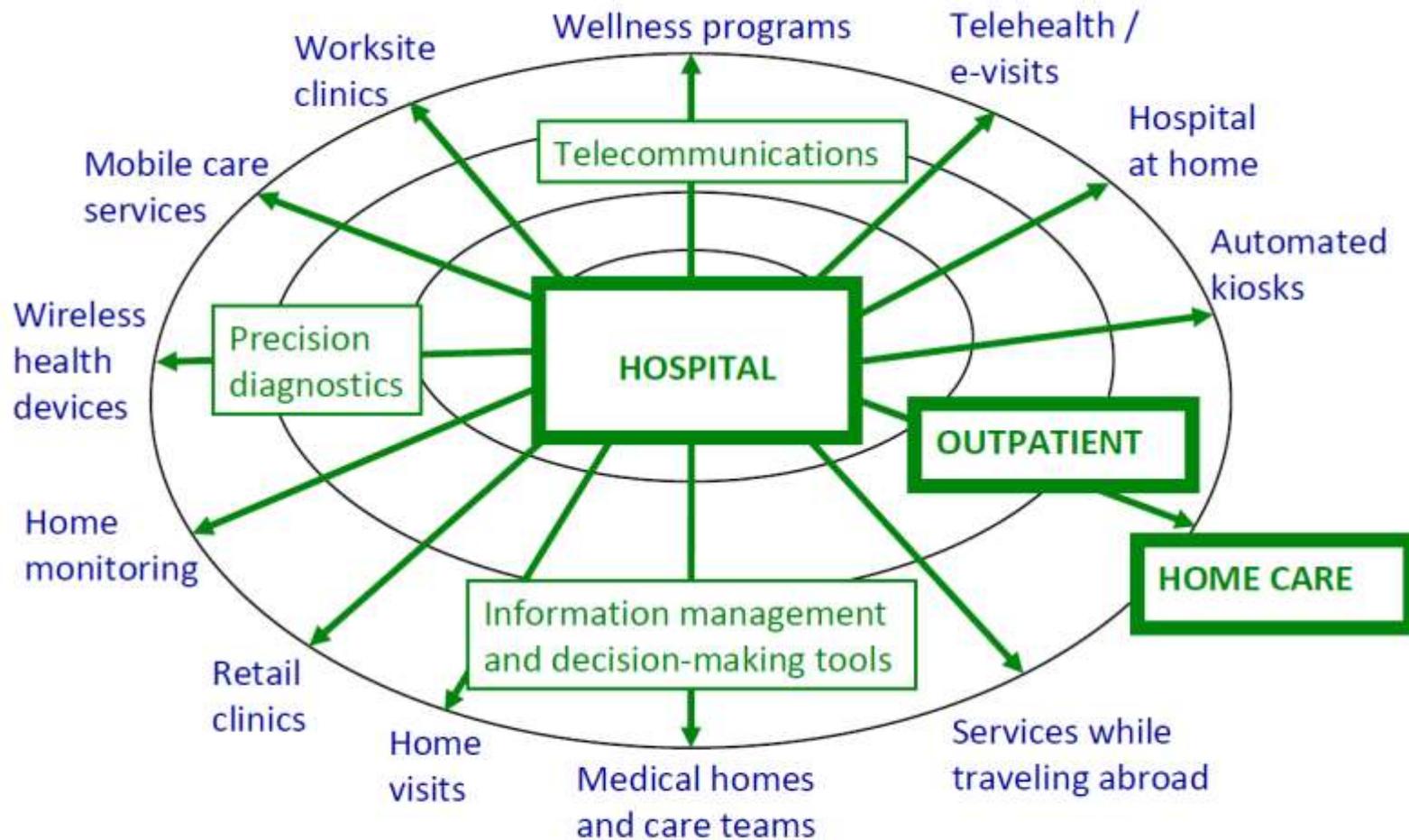


FIGURE 5-2 A new ecosystem of disruptive business models.
 SOURCE: Huang presentation (February 28, 2012).

Demands for new IT-Tech

Demands for new organisation

- Adaption to alternative sources: Simple general tech (mobile phone, .. Pads)
- Including of new actors in the professional group
 - now GPs everywhere – soon municipal nursing
 - eventually patients



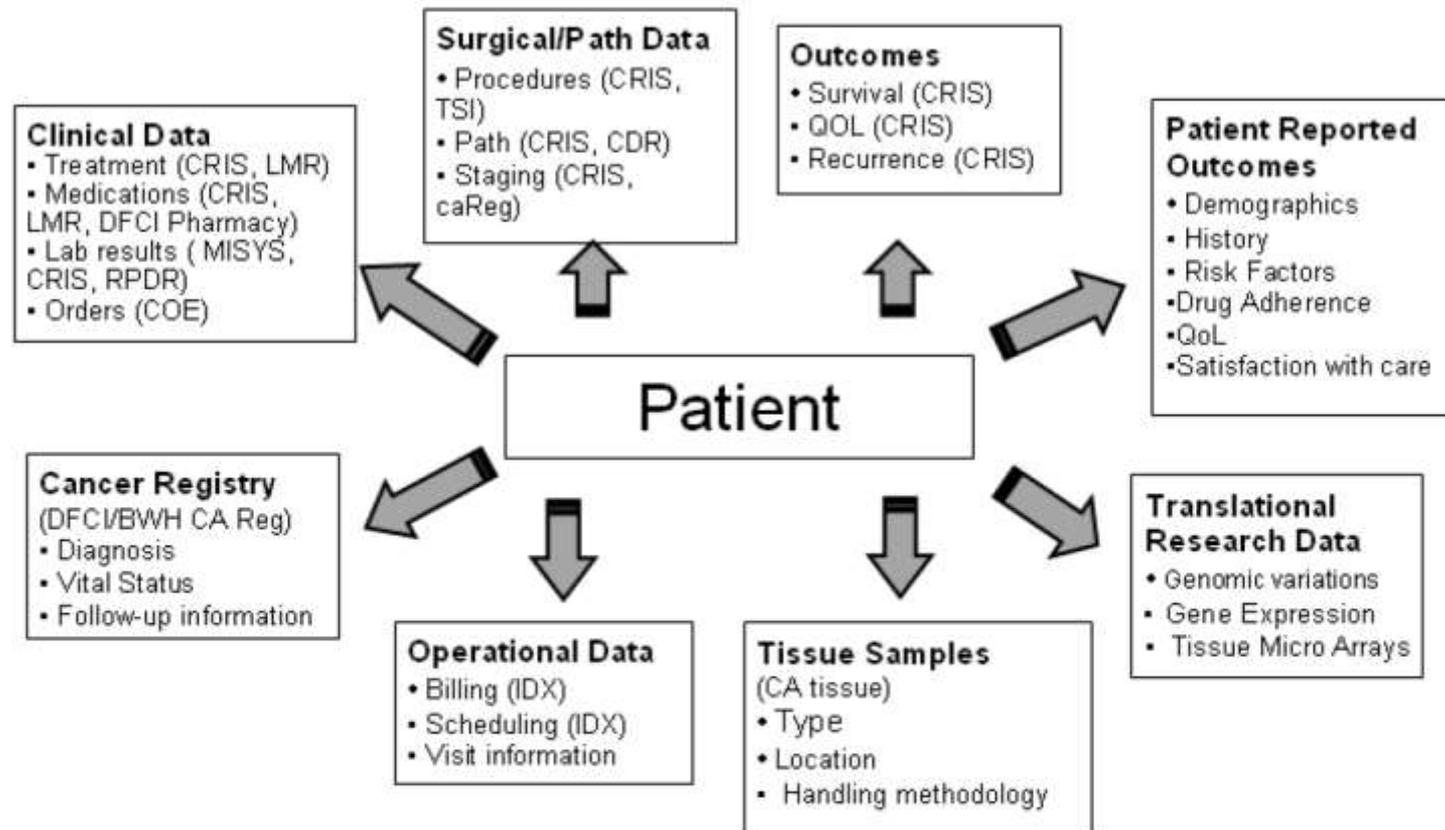


Figure 2-2 Dana Farber Synergistic Patient and Research Knowledge Systems (SPARKS)

Note: BWH = Brigham and Women's Cancer Center; CA = cancer; CDR = Clinical Data Repository; COE = computer order entry; CRIS = Clinical Research Information System; DFCI = Dana-Farber Cancer Institute; IDX = IDX operating system; LMR = longitudinal medical record; Path = pathological; QOL = quality of life; Reg = registry; RPDR = Research Patient Data Registry.

SOURCE: Shulman presentation (February 27, 2012).

Data capture - reporting

- Demand DK: 1. Use of multiple data sources
- Demand DK2 Minimal clinical workload

A recent project in the Lung- and Colorectal Cancer Registries shows that 80 % of variables can be captured in existing central registries – *total correspondence with clinician reporting*

- But requirement for advanced datamanagement/epidemiology
- But requirement for standardised **CLINICAL** code definitions
- But requirement for new competencies in data quality surveillance
- And IT-investment !



GETTING
CONTROL
OF

DATABIG

How vast new streams of
information are changing
the art of management

PAGE 59

U.S. \$16.95



10



Feed-back – New demands

- Frequency: **Real time !!! ? for** – at least some indicators in the majority of registries. Expressed in form of trend analysis
- Running information on data-quality
- Formats adapted to the receiver

BUT also exploitation of the Increasing ability to perform – comparative effectiveness/early warning/appropriateness diagnoses:

E.G

- Diagnosing effects of different Regional strategies in Lung Cancer diagnosis-treatment
- Metal-Metal hip-prosthesis
- Exit strategy for expensive biologic drug treatment (Rheumatoid Arthritis)



And the medical revolutions ! Demands flexibility

- Ability (Scientific, clinical, technical) to adapt to changing environments
- With limited resources



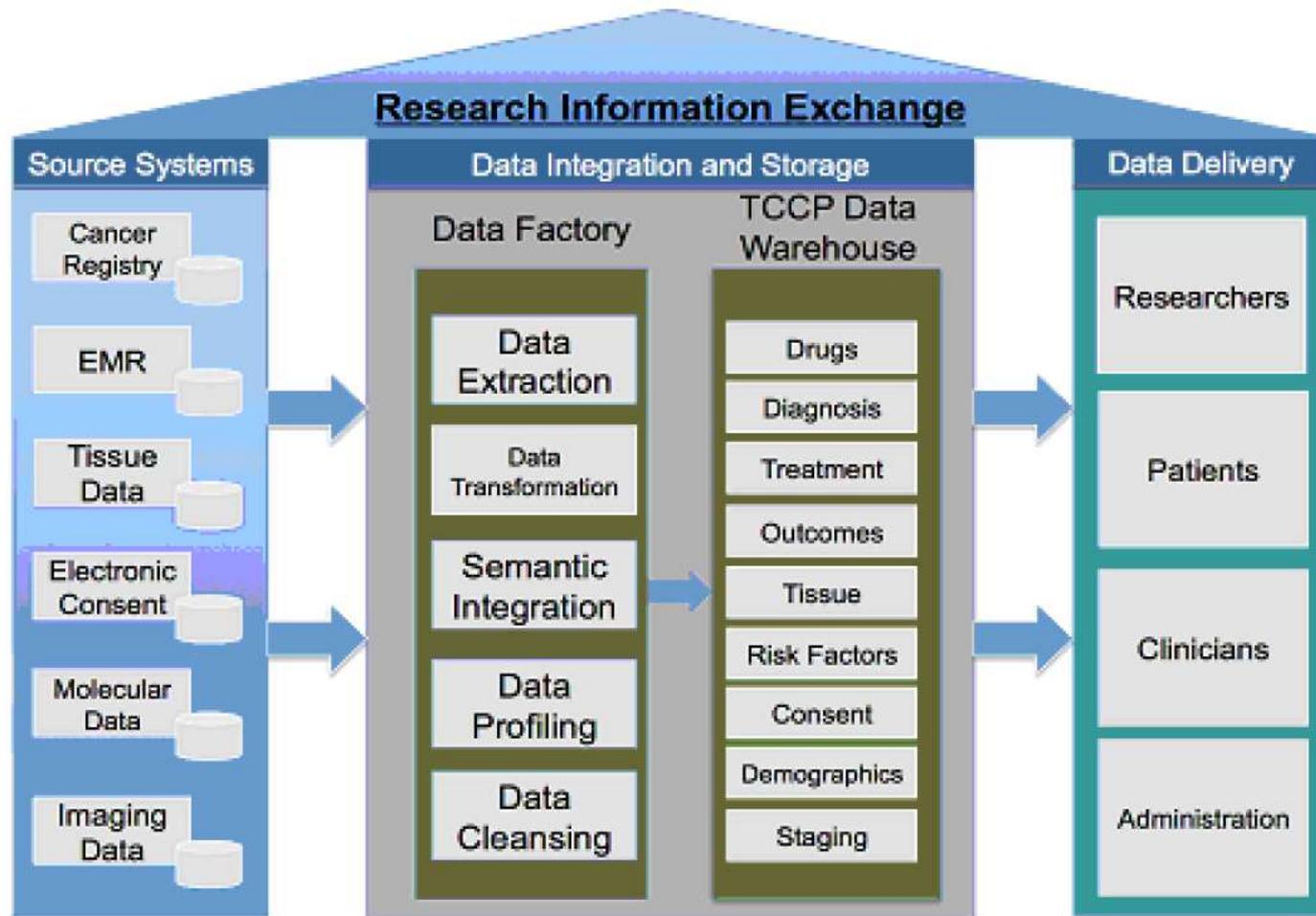


FIGURE 2-3 Example of a research information exchange system integrating data from multiple sources and providing them to diverse stakeholders.

NOTE: EMR = electronic medical record; TCCP = Moffitt’s Total Cancer Care Protocol.

SOURCE: Fenstermacher et al., 2011.

The coming definition of a clinical registry!

A group of experts who defines

- A clinically meaningful patient population
- A group of algorithms (indicators)
- A group of relevant clinical and epidemiological – and social variables
- A framework for interpretation (Standards...)
- And use whats *usable* out there in the cloud !



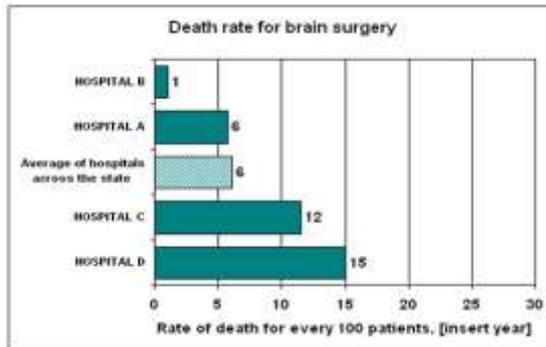
Clinical ownership – and engagement

Determinants

- Clinical control of content (areas for indicators)
- Coupling to clinical guidelines
- Possibility of research applications
- Plus coherence to.....



Multiple offers for the quality-ambitious boss



Surgical Safety Checklist

World Health Organization Patient Safety

| Before induction of anaesthesia <small>(both at least nurse and anaesthetist)</small> | Before skin incision <small>(both nurse, anaesthetist and surgeon)</small> | Before patient leaves operating room <small>(both nurse, anaesthetist and surgeon)</small> |
|--|--|---|
| <p>Has the patient confirmed his/her identity, the procedure, and consent?</p> <ul style="list-style-type: none"> <input type="checkbox"/> Yes <input type="checkbox"/> No <p>Is the site marked?</p> <ul style="list-style-type: none"> <input type="checkbox"/> Yes <input type="checkbox"/> Not applicable <p>Is the anaesthesia machine and medication check complete?</p> <ul style="list-style-type: none"> <input type="checkbox"/> Yes <input type="checkbox"/> No <p>Is the pulse extensor on the patient and functioning?</p> <ul style="list-style-type: none"> <input type="checkbox"/> Yes <input type="checkbox"/> No <p>Does the patient have a:</p> <ul style="list-style-type: none"> Known allergy? <ul style="list-style-type: none"> <input type="checkbox"/> No <input type="checkbox"/> Yes Difficult airway or aspiration risk? <ul style="list-style-type: none"> <input type="checkbox"/> No <input type="checkbox"/> Yes, and equipment/assistance available Risk of a fitted blood line (red by in children)? <ul style="list-style-type: none"> <input type="checkbox"/> No <input type="checkbox"/> Yes, and has fit-checked alarm and tube secured | <p>Confirm all team members have introduced themselves by name and role.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Yes <input type="checkbox"/> No <p>Confirm the patient's name, procedure, and where the incision will be made.</p> <p>Has antibiotic prophylaxis been given within the last 60 minutes?</p> <ul style="list-style-type: none"> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable <p>Anticipated Critical Events</p> <p>To Surgeon:</p> <ul style="list-style-type: none"> <input type="checkbox"/> What are the critical or non-routine steps? <input type="checkbox"/> How long will the case take? <input type="checkbox"/> What is the anticipated blood loss? <p>To Anaesthetist:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Are there any patient specific concerns? <p>To Nursing Team:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Has sterility (including indicator results) been confirmed? <input type="checkbox"/> Are there equipment issues or any concerns? <p>Is essential imaging displayed?</p> <ul style="list-style-type: none"> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not applicable | <p>Nurse Verbalize Confirms:</p> <ul style="list-style-type: none"> <input type="checkbox"/> The name of the procedure <input type="checkbox"/> Completion of instrument, sponge and needle counts <input type="checkbox"/> Specimen labelling (label specimen labels aloud, including patient name) <input type="checkbox"/> Whether there are any equipment problems to be addressed <p>To Surgeon, Anaesthetist and Nurse:</p> <ul style="list-style-type: none"> <input type="checkbox"/> What are the key concerns for recovery and management of this patient? |

The checklist is not intended to be comprehensive. Additions and modifications to fit local practice are encouraged. Revised 1/2009 © WHO, 2009



And Insist on **CLINICAL IMPROVEMENT** as the objective

IT is a tool !



Our Areas for future development

- Cross-sectorial registries
- Advanced IT-support:
 - online
 - utilisation of existing info
 - EMR
 - interactive interfaces
- Special indicators
 - aggregated indicators
 - lead indicators (prognostic)
 - patient safety indicators
 - PROM = patient reported outcomes
- Risk-adjustment?
 - formats
 - customisation
 - publication
- Quality organisations – development or back to the clinicians



Thank you for your attention

