Centralized healthcare information systems at state level – yes or no?

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Terminology & disambiguation

“Centralized healthcare information systems at state level”

centralized….?

healthcare information systems…?

state level…?

Centralized System: Economy point of view

Same system for logistics, accounting ... and clinical documentation:

- lower purchasing cost
- lower maintenance cost
- easy adaptation to changing procedures, reimbursement alterations
- integrated systems - all in one/one for all - are available
- transparency
- complex reporting including clinical data
- cost control
- transfer of personnel

Centralized system: Operating point of view

Central Data Center

- Server infrastructure and data storage
- Redundancy & emergency power supply
- Specialists for operating and maintenance of the system

Infrastructure

- National networks
- Redundancy

Centralized system: Point of view Data

Patient

- improved patient security
- reduction of double examinations (e.g. radiology, laboratory by 25%)
- reduction of hospital stay length by 30%

Physician

- data from all other healthcare providers is available
- reduction of double data input
- improved treatment efficiency
- data for scientific questions available

Healthcare information system

Umbrella term for:

- Hospital information system
- Radiology information system
- Laboratory information system
- Pharmacy information system
- Family doctors documentation system
- ...

State level

State level as

- for the whole country - “national” state level
- for the federal state - “country” state level

What do we have?

What do we have?

Technic is available or could be purchased:

- Hardware
- Software
- Infrastructure and networks

The challenge to win people:

- healthcare professionals
- hospital managers
- political decision
- patients/voters

Where are the others?

Stories from others - national state level

Denmark - Sundhed.dk (2001 - 2003 - *2009)

England - NHS “Spine” (2002- 2009 - +2013)

Lithuania - National electronic health system (2009 - * ..... 2016)

Germany - EFA “elektronische Fallakte” (2006 - 2013 - +??)

Austria - ELGA “elektronische Gesundheitsakte” (2006- 2012 - *2022)

Stories from others - country state level

Spain - Extremadura (all in one/one for all)

Finland - Helsinki Area (Appotti) (all in one/one for all)

Austria - all 9 federal states (5 all in one/one for all - 4 heterogenous information system)

Austria - private hospital providers (heterogeneous information system)

KAGes - Styria, Austria

Road to openMEDOCS:

- Project “NEW System Structure”
  - 1998 - 1999; Result: Vendor selected via Tender
- Project “MEDOCS” Pilot implementations - one “country hospital” and one department of a university hospital, Radiology, Billing, Research and Data Mining
  - 1999 – 2002; Result: Decision for Rollout
- Programm “openMEDOCS”
  - 2003 - 2005; Result: Operation of the new system in all 23 Hospitals

KAGes: 13 hospitals on 22 locations, 4 nursing homes; 17.500 employees
ca. 6.000 beds, ca. 1 mio. outpatients and 270.000 inpatients/year

Steps to a centralized healthcare information system

Step 1

Analyze

- actual infrastructure (data centers, network, redundancy, client infrastructure)
- current software used (primary + secondary - tertiary healthcare)
- processes and standards of the healthcare providers (patient management flow)
- stakeholders (who is affected? not only primary + secondary - tertiary healthcare - all affected professional groups)

Step 2

Discuss

- politically - is the project possible with current laws? discuss financing, operation, organisation, coarse roadmap
- with the hospital management - dimension of the project, coarse roadmap
- with the stakeholders - what are the possibilities, what are the pitfalls, motivational factors - keep the motivation high
- with the patients - act, do not react - start earliest possible with information of the patients
- ethical aspects - data breach, second opinion, confidentiality

Step 3

Plan

- Plan the approach
  - examine scenarios - stepwise vs. regional rollout
- Plan time and resources
- Plan occuring problems - Murphy's law!
- Plan the cost of the project in the different scenarios

Step 4

Check and Decide

- decide politically on the results of the analysis, the scenarios, the coarse roadmap and timeline, the cost coverage
- check if the legal prerequisites are fulfilled
- decide on standards for communication in your healthcare system
- decide on what is to be centralized, what stays locally

Step 5

Seek

- partners for the hardware and software rollout
- professionals for the detailed analysis and rollout directly at the end users
- the right software for your needs
- the right hardware for your needs
- the right infrastructure for your needs

and all the time

Keep in mind

- data security - avoid data breaches
- access control - most granular possible
- ethical aspects - confidentiality, “right to forget”
- keep motivation of all players high - this includes all healthcare profession groups and also patients

Centralized healthcare information system?

YES

Benefit - for the patients

less double treatments (radiology and labs by 25%)

shorter treatments (30%)

efficient communication between primary and secondary care

efficient healthcare system

-> shorter waiting time for critical procedures

Benefit - for the healthcare professionals

availability of patient data → treatment security, support for decision making

motivated personnel due to efficient and functional system

more cases (data) for clinical research and investigation - “clinical” data warehouse

less administration activity -> more time for patients

specialisation and optimal distribution of the patients → motivation

Benefit - for the management

transparency → comparability → cost control → steering tools

quality management reporting and as a long term goal: prognosis and modeling of different scenarios

lower operating cost

transferable personnel

increasing of efficiency due to data availability

capacity distribution, steering patient flow, maximizing utilisation

Benefit - for the ministry of health

transparency and comparability of healthcare providers

-> identification of the best point of care

data analysis for demographic and epidemiologic questions

population health/public health

-> Control of the effect of taken measures in prevention

tackling human threats

-> Antibiotic resistance

A journey of a thousand miles begins with a single step.

Confucius

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