

Quality Improvement; healthcare professional oriented interventions

Hub Wollersheim



ZonMw

What stuck most in my mind?

1) Unsafety: in 30 years:

- 3 deaths: bleeding after a liverbiopsy everbiopt in a patiënt with trombopenia; ascites puncture followed by an E Coli sepsis; toxic dose of cyclofosfamide
- at least 30 patients with lasting physical damage: failed to diagnoseprostatic cancer, malignant lymph node in the groin, testicular cancer, mistaken Janssen, from hyper- to hypoglykemia, Sengstaken Blakemore tube...

2) But also the most inspiring: quality improvement

- to work together with patients, meaning something to somebody
- teamwork (ED, vascular, surgery, Parkinson, with primary care,...)
- QIR: showing that something really works and is beneficiary to patients

My lecture

- QI? What does that mean?
- At the professional oriented interventions
- Some examples
- Professional behaviour
- What does (not) work?
- How do we know what is effective?

Which implementation strategy is most successful in care providers?

Successful implementation strategies

- 1)
- 2)
- 3)

Does the profession make a difference?

Conclusion?

Facilitated reflection based on objectified comparison (with others, optimum or past) of individualised real time (and case load corrected) multi source feedback (also by patients) of (EB-) process and outcome indicators, combined with

Intensive education

Reminders (cognitive weakness)

Stimuli (compliments, career, money)

.....

Where are talking about?

- Quality of care: what does that mean?
- Quality of patient care or quality management?
- Quality improvement and prevention of unsafe care: reason by analogy?
- Professional behaviour: what does that mean?

Quality of Care?

Paul van Tongeren (Socrates, Plato) : ‘we do not know’

An adjective that specifies superiority

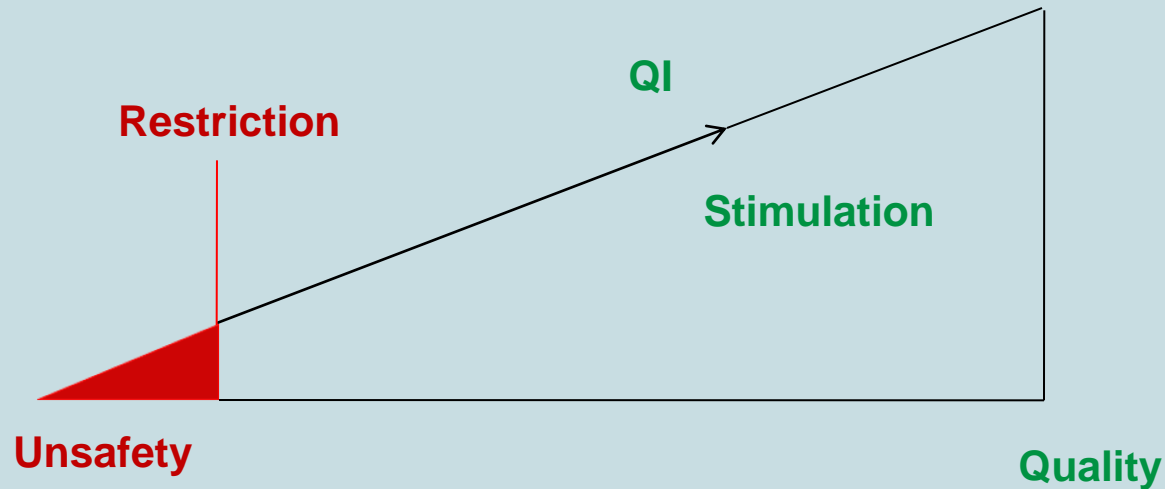
Like a ‘productive’ marriage, a ‘talented’ researcher or a ‘seductive’ woman

But we do know what is more or less (or better or worse)

So it is easier just to talk about QI

1978: Kansas conference/ Don Berwick: do your job and improve it?

Quality versus Safety: the two edges of a continuum



QI versus prevention of unsafety

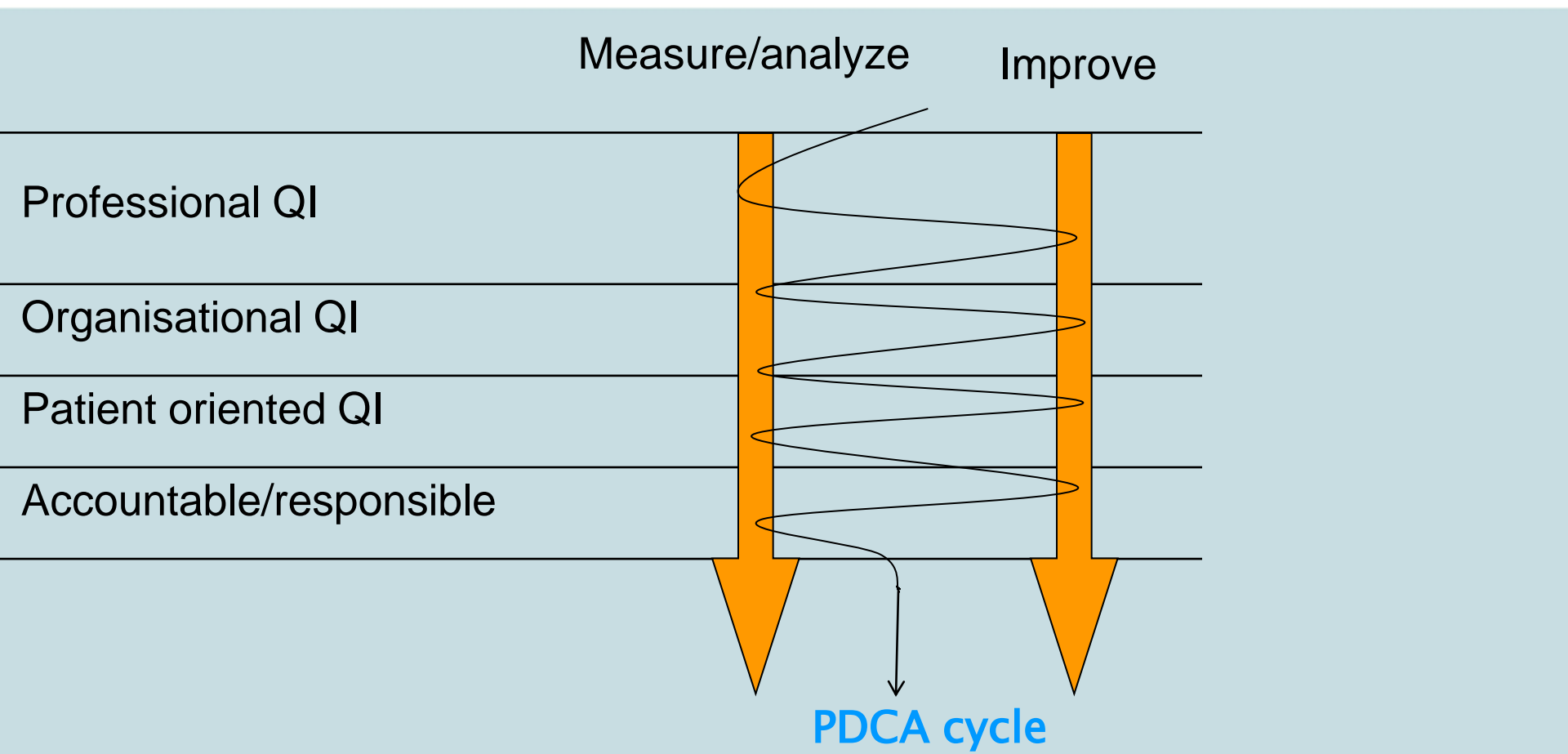
- **POUS**
- **Negative**
- **Punishment**
- **Control**
- **Minimum**
- **Norms, law**
- **Standaardisation**
- **QI**
- **Positive**
- **To stimulate, be an example/ champion**
- **To educate and learn**
- **Getting better and better**
- **Pleasure**
- **Innovation**

Is QI important?

- 1) 30-50% of patients does not receive optimal care (>122 studies and 9 SR's): under-, over- and misuse: everywhere and anywhere
- 2) Enormous variation in procedures (CABG's, uterus extirpations, appendectomies, prostatectomies, paracentesis etc; some by 30; John Wennberg: the Dartmouth Atlas) and in care outcomes (cancer treatment, high risk surgery, hip replacement etc)
- 3) 10% of hospitalized patients are damaged by the care process, half preventable, 1740-1950 preventable deaths by incidents (Netherlands); up to 98.000 deaths in US (IOM report)
- 4) Scandals: anytime, everywhere and anywhere: the Radboud case
- 5) Increase in healthcare costs: 7 to 10% BNP; **if unwarranted variation in the healthcare system were eliminated, the quality of care would go up and healthcare costs would go down by as much as 30%.**

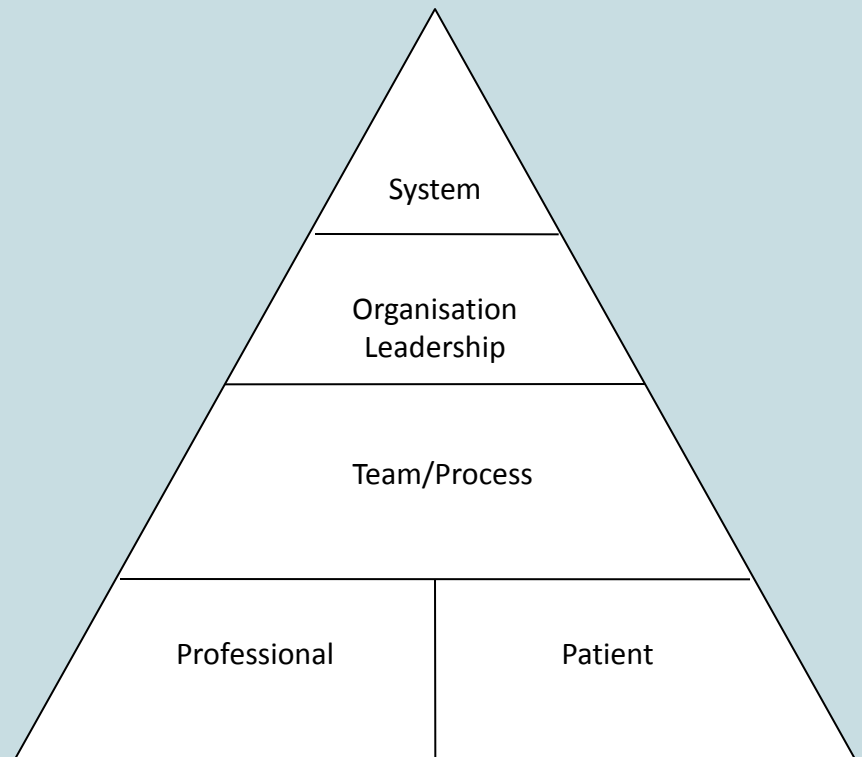
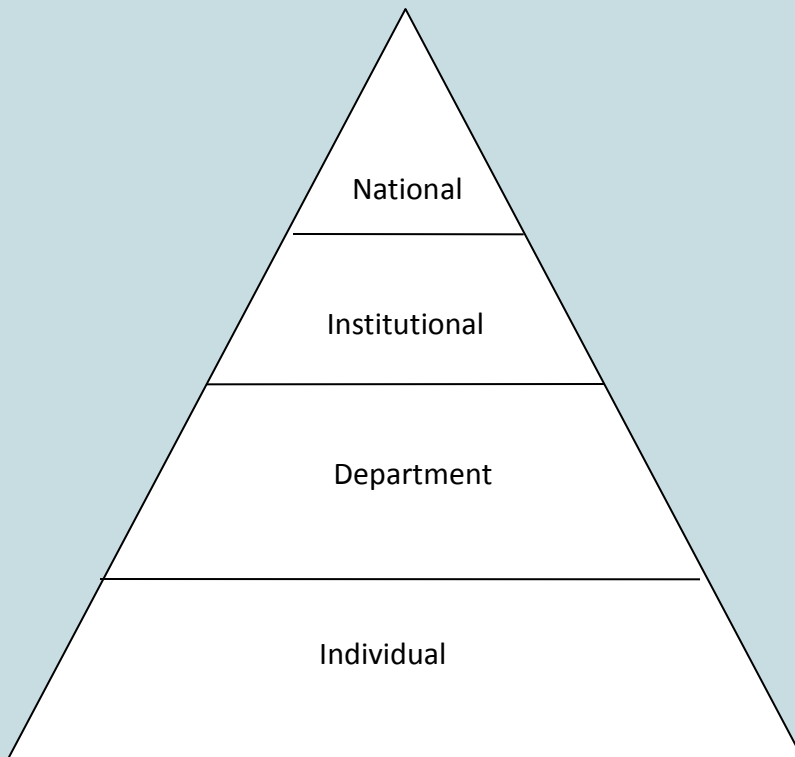
History of QI

- Grand rounds: 1950
- Autopsies: 1965; in 30% relevant new findings
- ‘Visitaties’: resident training/quality: 1980
- MIP: 1988
- Cochrane, EBM: eighties
- Guidelines, protocols: NHG, CBO, NICE: 1989
- Doctor-patient communication (CIC: 1989)
- Quality systems: ISO; HKZ; NIAZ: 1990
- Laws BIG 1993; WGBO 1995; ‘Kwaliteitswet’ 1996; patient rights: 2012
- Transmural and pathway care (CPA): 2001
- Transparency: IGZ; public-indicators: 2003; ZIZO: 2009
- KNMG Handvest ‘professioneel gedrag’: 2003
- Patient satisfaction survey: 2003
- Negotiations with Health Insurance Companies (“pfp”): 2004
- IFMS; regulation for dysfunctioning: 2006
- Safety programme: VMS: 2008; (H)SMR: 2011



Betere en veiligere zorg

Healthcare Pyramid



Healthcare pyramid

Measure, analyse, improve directed at:

- a) Individual patient: information and SDM, self management
- b) Individual care provider: clinical indicators, guidelines, education, decision aids, IFMS
- c) Network of care providers (department, specialty, team, professional association): 'visitatie', audit, WV's, Orde, NHG, KNGF, V&VN
- d) Patient groups: process mapping, BPR, joint care, chat rooms, GMA, Parknet, CRAZ, NPCF
- e) Institute: NIAZ, certification, hospitality officer, hotelfunction, NVZ, NFU
- f) System: law, PI's, IGZ, VWS, Regieraad, Gezondheidsraad, Commonwealth, WHO

The first QI diagnostic and therapeutic studies

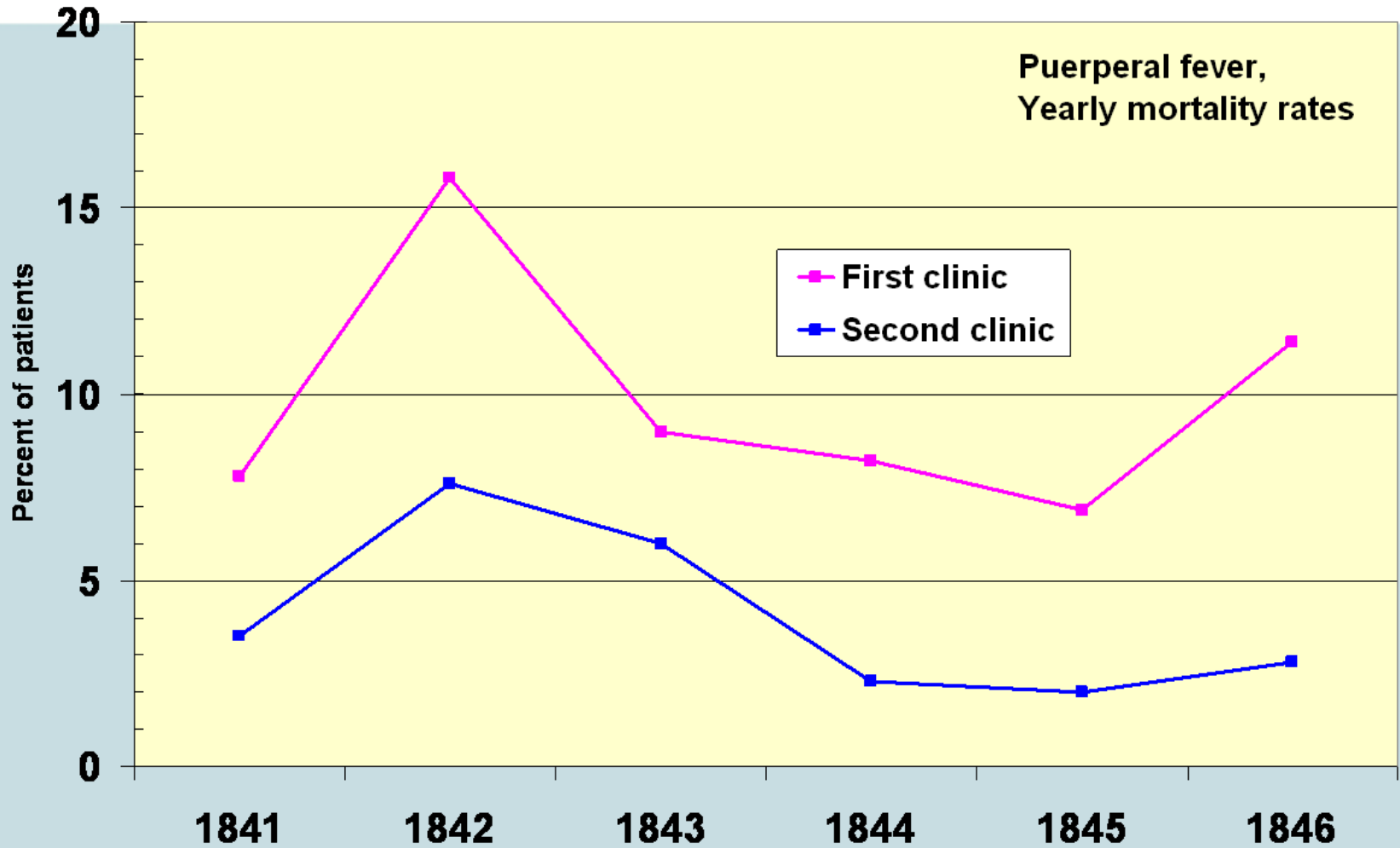
Code Hammurabi: 'if a surgeon makes a mistake his hand will be cut off'

1700 BC



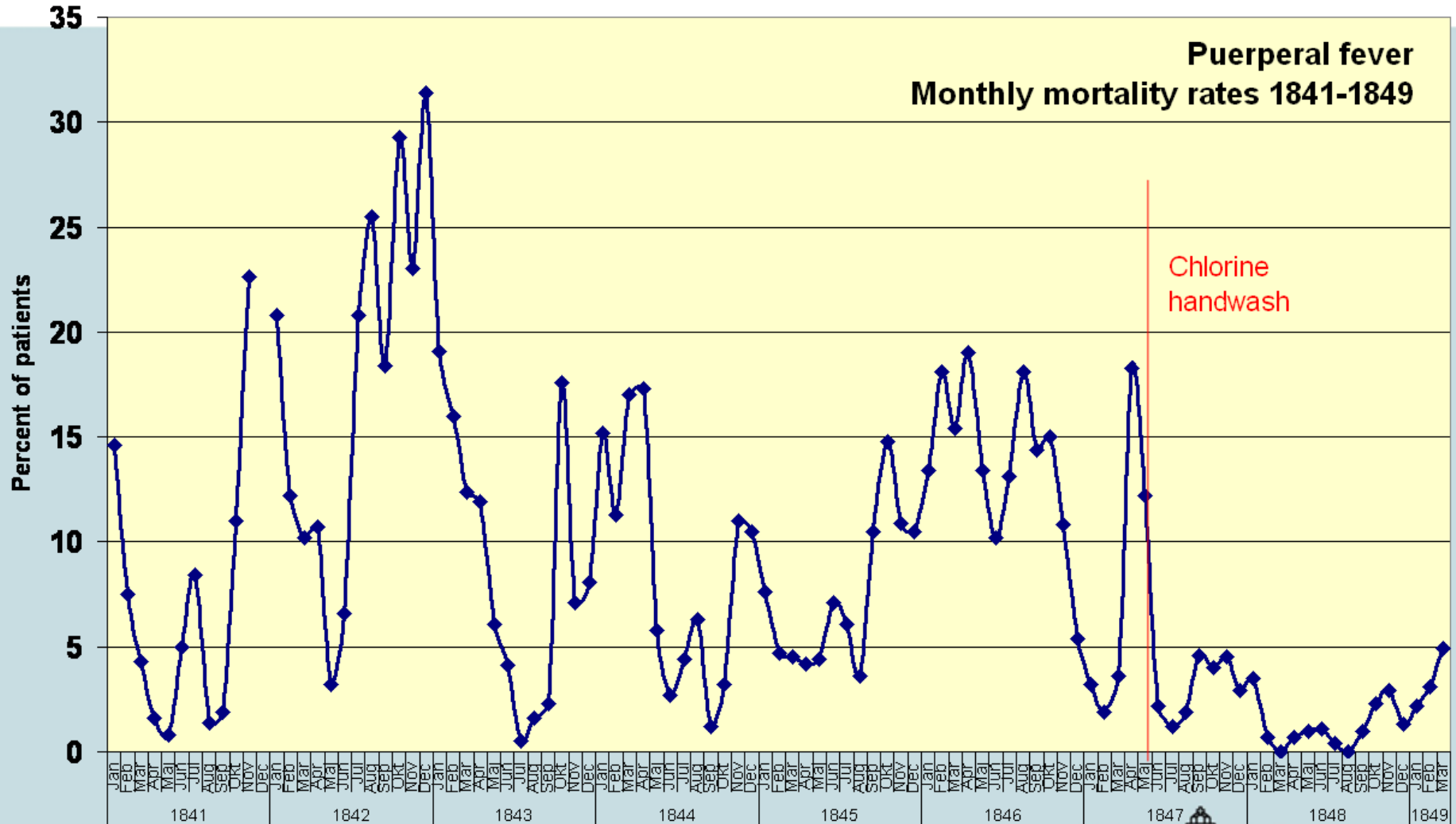
Ignaz Semmelweis: infection prevention (Florence Nightingale)





Difference in mortality (10:4%) known to the public; women refused to deliver in the First Clinic

- Semmelweis discovered one difference: the First Clinic was a teaching hospital for medical students, the Second Clinic for midwives
- A colleague died in the First Clinic due to a disease that resembled puerperal after being pierced with a scalpel during an autopsy
- Semmelweis postulated that material on the hands (before Pasteur's discovery of mo!) was transferred and that handwashing between the autopsy and the delivery rooms might help
- He performed a B/A study



Ignaz Semmelweis; pathologist and obstetrician

Enormous opposition: Do doctors kill their patients?
Deviated from the current opinion about humoral
dysbalance

Fired (1849) University of Vienna

1861: Die Ätiologie, der Begriff und die Prophylaxis
des Kindbettfiebers

It lasted more than 25 years before his concepts were
accepted

However: UMCX: only: ?%

- A lot of healthcare professionals involved: doctors, nurses, allied healthcare, with on the background: 'kwaliteitsfunctionaris', managers, lawyers
- Not: Intervention mapping, theory of planned behaviour, motivational change theory (16 theories of change)
- Soft and hard interventions and barriers; rational versus **irrational** motives (beliefs, culture, power, love)
- Evidence based interventions
- Only few excellent studies
- Many contradictory studies
- Limited effects: 10-15% improvement

New knowledge

- Medline: >15.000 new trials/ year
- Cochrane library: 500.000 excellent trials
- MD: 20 articles/ day to keep up to date; 5-20 min/ article; read and remember!
- Me:
 - NTVG; Med Contact; N Engl J Med; JAMA; Lancet; BMJ; 6 Quality/Safety Care; Journal Club; 17 memberships; 2 editorships; lecture evenings; 10 congres days/year
 - 3 children, wife, sports (running, MTB), cooking, wine making, traveling, reading....

Whom is/has been member of a guideline commission?

- **Ideal content of or process to come to a guideline**
- **AGREE/AIRE**
- **How to implement?**
- **How to develop clinical indicators?**
- **How to measure compliance?**
- **How to deal with barriers to use them or bring them into practice?**

Quality of guidelines; content quality

Evidence levels of specific recommendations

CBO (2000):

- A1: SR; >2 A2 studies; consistent
- A2: RCT of good quality
- B: RCT of moderate quality or of limited size or other research
- C: no controls
- D: expert opinion

Quality of guidelines; process quality

AGREE instrument: 23 quality criteria regarding development:

- 1) Scope and purpose
- 2) Stakeholder involvement
- 3) Rigour of development
- 4) Clarity and presentation
- 5) Applicability
- 6) Editorial independence

The medical doctor; a different species? Medical doctors; special clans?

- 1) Self-conceited/owned by?/ overestimation own knowledge and skills by 15%; knowledge $t_{1/2}$: 5 years?
- 2) Many lagards: 'we are used to do so, is that wrong?', 'we tried that before' . Resisitance towards change Weerstand tegen verandering, routines versus innovatie, kan ik dat wel (tijd/steun/veilig experimenteren)?, sociale controle
- 3) Status-punishment and reward/salary sensitive; importance of leadership; belang leiderschap
- 4) 'Harm' and incident prone; individual blaming, incidents are due to pathofysiology of diseases; externalisation of problems: time, the other, system
- 5) Clanvorming; we versus them
- 6) Biologically oriented
- 7) Sparse time for reflection; learning culture
- 8) Movement from patriarchal to matriarchal culture

Reasons for non adherence of doctors

Write down 3 reasons:

- 1)
- 2)
- 3)

Reasons non adherence

Guideline is only for 2-25% MD's reason for change of practice

- 1) Never heard, recieved, read
- 2) Not discussed
- 3) Not believed in
- 4) Unable to remember all/everything
- 5) Not available at work station
- 6) Not feasible: too difficult, time, organisation or patient will not allow them
- 7) Do not want or are unable to change. Resists any change (laggard); 'I have been doing this for years, never a problem'
- 8) Autonomy ('it is not their business')
- 9) Guidelines are cook book recipes
- 10) Could be used to lawsuit me

Characteristics of effective guidelines

Implementation already starts during the development (Grol 1998; Burgers 2003):

- The evidence based character (present the evidence and the literature behind it prominently); use clinical leaders
- Related to needs/(severe, frequent) problems in daily practice
aansluiting bij behoeften praktijk
- Accessible: dissemination plan; short, clear, summary, attractive lay out; concrete univocal recommendations
- Simple (not to many new skills or major organisational changes)
- With practical aids for care providers (ICT, decision aids, decision tree, reminders) and patients (leaflets, video's, CD's, selfmanagement education)
- Takes characteristics/preferences/compliance patients and care professionals into account (including local culture, routine activities)
- Local adaptation into care pathways and transmural or multiprofessional care agreements and into accreditation or audit activities
- With indicators (targets, monitoring), indicator feedback and an implementation plan (directed at barriers for use)

Implementationplan; SMART checklist

- 1) Target: which relevant concrete target should be reached by whom and in which realistic time frame?
- 2) Dissemination plan: target population, media, congress, training
- 3) Develop indicators: core recommendations translated in concrete care activities; definitions of (de)nominator within quotient
- 4) Diagnose target group and setting: whom is important (leader, early adapters), which role (owner, stimulator, supporter, executor); facilitating and hindering factors
- 5) Selection and prioritisation of interventions, generic and specific (gap and barrier driven) strategy
- 6) Organise implementation activities: team, coordination, budget and resources, time frame, support of management and health system
- 7) Evaluation: when, what data?: **how do we know a change is an improvement? And sustained improvement versus shortterm success**

Assignment

- A safety checklist is an evidence based improvement strategy during the operative process
- You are going to implement the checklist in your hospital
- What could be the 3 major barriers?
- How to overcome each of them?

Largely ineffective

Dissemination of written educational materials

Didactic education

Variably effective

Audit and feedback

Local consensus conferences

Opinion leaders

Patient mediated interventions

Largely effective

Reminders

Educational outreach (for prescribing)

Interactive educational workshops

Multi faceted interventions

Some effective implementation activities

Leadership?

PFP

Active learning

Clinical indicator feedback

Which characteristics has a good clinical leader?

- 1)
- 2)
- 3)
- 4)
- 5)

Leiderschap; SR by Ovretveid

First (s)he should be a clinical champion

Be an example; a role model

Be authentic

Have a clear and well communicated mission/vision

Inspire people

Delegate if possible

Reward others

Give concrete direct and honest feedback

Be a father and a mother

Evidence Based Learning: continuous professional development

E
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Educational Interventions	Outcomes
Reading	Professionals
Courses: Large scale, frontal Interactive Collaboratives/workshops	Knowledge
Practice visits: Repeated instructions 1:1 over the shoulder	Behaviour
Group reflections: Narrative Simulations Videotaped Analysed Feedback Follow-up	Patients Outcomes
Individual reflection: Facilitator Quality coach Prior objective gap assessment	

How do you recognize a good doctor?

Characteristics:

- 1)
- 2)
- 3)

MedNet Topartsenverkiezing: continuïteit en nieuw talent

[HOUTEN] In de editie 2008 van de MedNet Topartsen keren vier bekenden uit eerdere edities terug: Frans Moll, Marcel Levi en Jim van Os en Paul Brand. Paul Brand werd zelfs voor de derde keer verkozen tot MedNet Toparts.

Steeds vaker worden artsen uit de periferie genoemd. Gynaecologen uit de periferie hebben hun collega's uit de academische centra zelfs voor het eerst verdron-

gen bij de Topartsenverkiezing. Volgens hoofdredacteur Marjan Enzlin van MedNet is dat opvallend, omdat de meeste van deze artsen uit de periferie vooral hard werken en niet zoveel bekendheid genieten. Dat zij desondanks voorgedragen worden, zegt veel over de kwaliteit die zij leveren en de waardering die zij daarvoor krijgen van hun collega's. Uit de enquête blijkt verder dat Paul Brand, kinderarts in de Isala klinieken in Zwolle, nog steeds nauwelijks concurrentie onder-

vindt binnen zijn vakgebied. Volgens Obbe Norbruis, kinderarts MDL en manager van de zorggroep Ouder & Kind in hetzelfde Zwolse ziekenhuis, is dit niet verwonderlijk: "Je moet wel over uitzonderlijke kwaliteiten beschikken om te doen wat Brand doet. Dat is niet voor iedereen weggelegd." MedNet bespeurt daarnaast een toename van het aandeel vrouwen onder de topartsen, al blijft het aandeel

omgekeerd evenredig met het aantal vrouwen in de dagelijkse medische praktijk, maar dat is niet anders buiten de medische sector.

Frans Moll, chirurg in het UMC Utrecht, is voor de tweede keer verkozen tot beste chirurg. Omdat hij een bruggenbouwer en een echte teamspeler is, meent zijn collega-chirurg Van Reedt Dortland.

Marcel Levi keert na een jaar afwezigheid terug als beste internist. Hij wordt genoemd als een 'briljant clinicus', een gedreven man van de wetenschap en bovendien een stimulerende coach. Psychiater Jim van Os keert dit jaar terug op het hoogste podium, nadat hij in 2007 de tweede plaats bezette. Hij wordt een doorgewinterd onderzoeker genoemd en een vertrouwenwekkend clinicus. Volgens Rutger Jan van der Gaag van de Nederlandse Vereniging voor Psychiatrie.

De nieuwe namen van MedNet Topartsen zijn gynaecoloog Martina Porath uit het Maxima Medisch Centrum in Eindhoven, uroloog Pieter Dik, werkzaam in het UMC Utrecht, cardioloog Aggy Balk uit het Erasmus MC en plastisch chirurg Maarten Fechner van de regionale maatschap plastische chirurgie te Eindhoven.

Lees meer over de MedNet Topartsen vanaf pagina 9 in dit blad of kijk op www.mednet.nl.



Gynaecoloog Martina Porath is door vakgenoten gekozen vanwege haar betrokkenheid en patiëntvriendelijkheid

- Collegial evaluation: discussion of professional behaviour with trained colleague regarding the portfolio
- Physicians creates his own portfolio and fills in a survey regarding his own functioning
- Environmental surveys (8 colleagues, 8 co workers, 25 patients)
- Example (patient survey): 'The surgeon has explained me clearly about my condition: (dis)agree'
- Physician writes SMART- improvement plan
- Periodic follow-up

The diagnosis and treatment of suboptimal patient care in the quality cycle of William Edwards Deming:

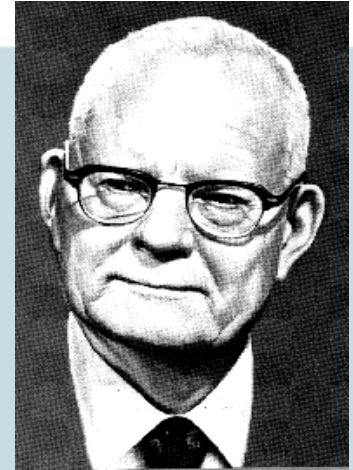
plan-do-check-act

The diagnostic phase: check

The therapeutic phase: plan do act

With in the diagnostic phase: measurements regarding the problems (identification/severeness of suboptimal care by indicators) and qualitative analysis (interviews, focusgroups, process mapping, RCA, observations, chart analysis etc) of the causes and barriers

And in the therapeutic phase: prevention of unsafety and improveent of suboptimal care



William Edwards Deming (1900-1993) **Yale/Columbia professor of statistics**

The PDCA cycle: result feedback

Bell Telephone Cie: Walther Shewhart: SPC
Ford

Japan: “Out of the crisis” (MIT; 1986)

Avedis Donabedian (1919-2000)

- >How can you tell if you have good quality health care?: structure; process and outcome
- >Love



In God we trust, all others should show data

Data problems:

- Can we quantitate all relevant aspects of quality? (compassion, communication, respect etc): **paralysis by ethics**
- Measurement is threatening: **paralysis by fear**
- Measurement is time-costly: **paralysis by bureaucracy**
- The desire for precision: **paralysis by analysis**
- Limited knowledge of statistics and considering data as the truth (an indication to analyse): **paralysis by stupidity**

Hub against colleagues



Each January survey on patient satisfaction by medical students at outpatient clinic; in around 1600 subsequent controls

10 items (information, expertise, ..., aftercare)

Department of Internal Medicine: 7.8

Hub Wollersheim: 8.3

Petra van Gurp: 8.6; the most patient centred?

Relevance?

Validity?

Sample size? Confidence intervals?

Discriminatory value?



Tevredenheid gepeld (2005)
De tevredenheid van de patiënten van de ACHT Universitaire Medische Centra

Radboud case

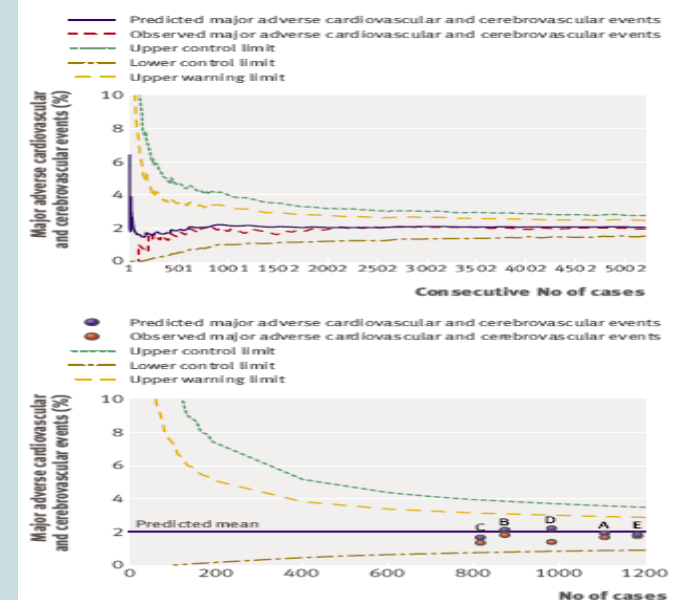
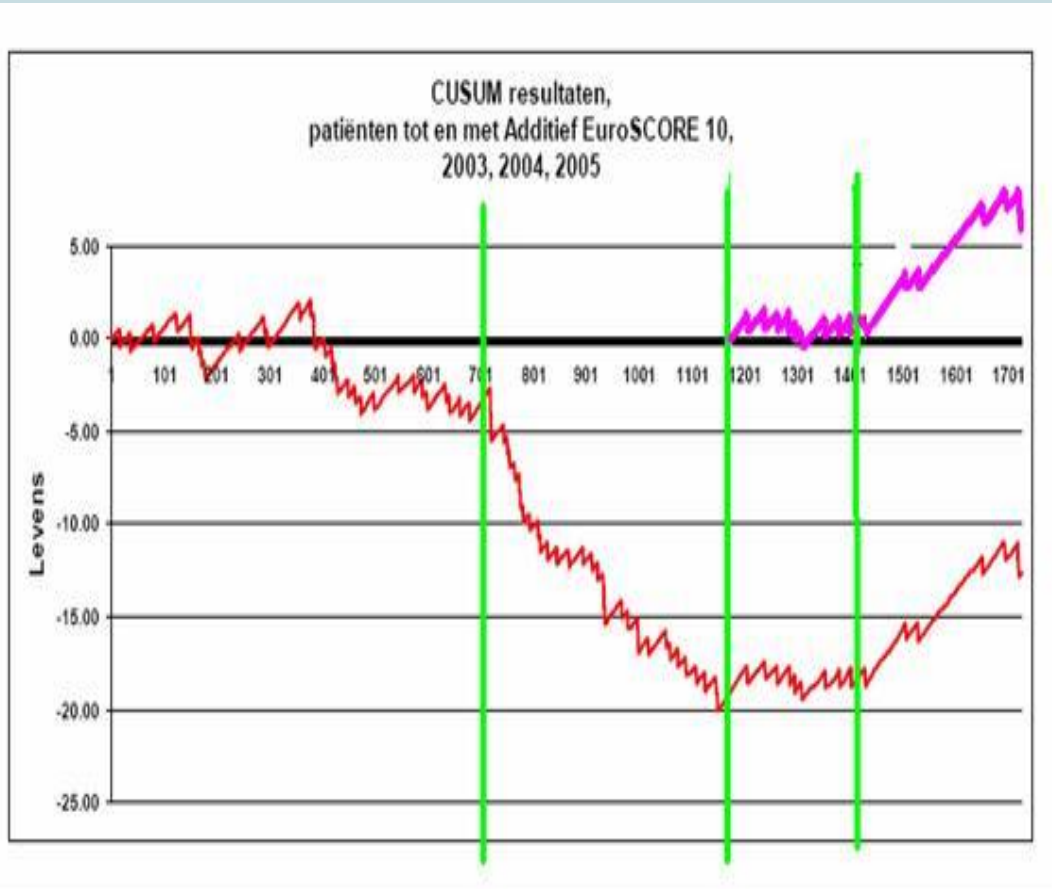


Fig 1 | (Top) Cumulative funnel plot displaying observed major adverse cardiovascular and cerebrovascular events for whole unit compared with mean predicted events (logistic north west quality improvement programme model) from 2003-6, with binomial funnel plot calculated around cumulative mean for unit's case series. (Bottom) Funnel plot displaying observed and predicted major adverse cardiovascular and cerebrovascular events, with denominator for that percentage (number of cases for each operator A-E) displayed as a scatter plot and compared with binomial funnel plot around mean predicted events for all cases

How do you know if an QII works?

What is typical about a QII?: SQUIRE

- 1) Care provider instead of patient is often target of the intervention (more contamination bias, different ethics?)
- 2) Multicomponent interventions (no tablet); exact description
- 3) Multitarget interventions
- 4) Different intensity of exposure
- 5) Different content (per care provider and in time)
- 6) Control situation = mostly 'usual care' (no inactive placebo)
- 7) Many external influences that may change (system, situation, culture,...., determinants)
- 8) Complicated randomisation procedure and blinding
- 9) Often unreliable designs with overestimation effects
- 10) Delicate relationship between intervention and effect

QI truth; levels

A) Non designs:

Descriptive without measurements or theory concept

Descriptive with measurements of experiences

Descriptive with (supposed) correlations

B) Designs

From before/after to RCT

C) Combined studies

Systematic review(s)

Meta analyses

Or the guidelines that are based on them

Designs

a) Non randomised:

- 1) Before/ after (B/A); SPC
- 2) Controlled before/after (CBA)
- 3) Time series analyses (TSA); 3 before/ 7 after; correction for trends
- 4) Case controlled: intervention case(s) vs best match(es)

b) Randomised:

- 1) Stepped wedge design (time of intervention)
- 2) Cluster controlled trial (practice)
- 3) Randomised controlled trial (patient)

Conclusion?

Facilitated reflection based on objectified comparison (with others, optimum or past) of individualised real time (and case load corrected) multi source feedback (also by patients) of (EB-) process and outcome indicators, combined with

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