Dutch Healthcare: A Nationwide Successful Integration

December 9, 2012
1:00 PM – 4:30 PM
Presenters

- W. Schellekens, MD, strategic advisor
- Dr. Jetty (H.L.) Hoeksema, chief strategy officer Leiden UMC, coordinator consortium quality of care NFU
- Dr. R.J. Roorda MBA, executive board member Dutch Association of Hospitals
- S. Terpstra, senior policy advisor Dutch Association of Healthcare Insurers
- Dr. M.C.G. Daniëls, executive board member Dutch Association of Medical Specialists
- Prof. Dr. R. Tollenaar, chairman Dutch Institute for Clinical Auditing
- Dr. E.H. Eddes, director Dutch Institute for Clinical Auditing
- Drs. M.W.J.M. Wouters, head of scientific bureau Dutch Institute for Clinical Auditing
Session Objectives

After participating in this learning lab, participants:

• know how stakeholders in Dutch healthcare cooperate to develop clinical auditing in the Netherlands;
• have insight in successes and struggles during the process;
• have instruments to start an integrated approach nationwide.
Dutch Health Care System: 3 markets

Government: conditions by law

“Informal contract”: Competition btw of providers for patients

Trust, Care

Provider

Access, Quality

Income

Contracting: Competition between providers for contracts

Patient

Insurer

Insurance: Competition btw insurers for clients

Access, Coverage, Premium

Government - Inspectorate supervision of Q/Safety

“Informal contract”: Competition btw of providers for patients
Dutch Health Care

**Strong:**
- Access
- Coverage
- Life expectancy
- Immunisation rate
- Gatekeeper system (family physician)
- Patiënt satisfaction
- Innovation, best practices

**Concerns:**
- Costs
- Quality of care: Variation in results, complications
- Safety
- Implementation, spread
- Q/PS: extrinsic motivation
- Silos
- Patiënt involvement
- Measurement
- Patiënt experience
- Mission-driven Governance and Leadership
Measurement

Internal indicators
• Focus on improvement
• Valid, reliable
• Specific
• Measurement over time
• Registration: “simple”
• No external use
• Fast, instructive, fun
• Stimulating

External indicators
• Focus: comparing, ranking, choices
• Valid, reliable + comparable
• Aspecific
• Measures here and now
• Registration, gathering, correction, publishing: very complex
• No relevance internal
• Difficult, threatening, resistance
• Demotivating

Paradigm “good-better”

Paradigm “good-bad”
Stakeholders: need for quality data?

- NVZ: Dutch Association of Hospitals
- NFU: Dutch Federation of University Medical Centres
- ZN: Dutch Association of Healthcare Insurers
- OMS: Dutch Association of Medical Specialists
Quality of care in the Dutch university medical centres

Dr. Jetty Hoeksema
Chief strategy officer Leiden UMC
Coordinator Consortium Quality of Care NFU
Who are we?

Dutch Federation of University Medical Centres (NFU)
5 years ago
What we wanted to know about quality

- Quality of care in the UMCs was a matter of trust and respect
- We deliver quality information on request (to insurers, health care inspectorate etc..)
- We address the legal requirements (e.g. internal quality system, focus on safety issues)
- Research and innovation on quality of care started to increase (e.g. Nijmegen, Rotterdam)
5 years ago
What we did with quality information

- Doubts about the reliability of quality information
- Safety issues were addressed (analysis of complications, risk analysis)
- No explicit role for quality improvement processes
- Debate: how to develop a sustainable and reliable system for measuring the quality of care (data sources, benchmarks, responsibilities,...)
Quality information for Dutch hospitals

Dr. R. Roorda MBA
Executive board member Dutch Association of Hospitals and CEO Tergooi Hospitals
How we started

- Ambition: Dutch healthcare at the European forefront
- Several ‘polder’ initiatives concerning transparency with varying degrees of success
- Clinical audits seemed to be a solution:
  - to make quality visible
  - to support (peer reviewing among) professionals
  - to generate information for improvement
Some doubts at the beginning

- Is it too time consuming for our physicians and employees?
- Who is the owner of the data?
- Who is going to use the data? And for which purposes?
- What can be said about the effectiveness?
Why do healthcare insurers invest in clinical audits?

Sjoerd Terpstra
Senior policy advisor
Dutch Association of Healthcare Insurers
What do we want to know?

Organisation

Outcomes

Professional

“BENN
“For your hospital gown, do you prefer paper or plastic?”

“ The operation turned out better than I expected. Your insurance paid for everything.”

Patient

“MY DOCTOR SAYS I’M DOING FINE . . . “
What do we want to know?

Organisation

Outcome

Professional

Patient

"For your hospital gown, do you prefer paper or plastic?"

"The operation turned out better than I expected. Your insurance paid for everything."

"I'm doing fine..."
Why do healthcare insurers invest in clinical audits?

Sjoerd Terpstra
Senior policy advisor
Dutch Association of Healthcare Insurers
What’s our perspective
An integrated approach to the quality of care by medical specialists in the Netherlands

Marcel Daniels, cardiologist
Chairman Council for Quality, Association of Medical Specialists
The Netherlands
Where did we come from?
No clinical standards; no need to explain; no accountability
20th century: growing professionalism

**Medical specialist training**
- Implementation CANMEDS model
- Systematic review of the quality of medical specialist training programs
- Re-registration processes

**Integrated quality management**
- Medical Specialist Guidelines
- Indicators and some quality registries
- Systematic quality review of medical specialists (by their respective societies)
  - Reported to hospital management
- Reflection on the performance of individual medical specialists (IFMS)
2007 Challenge

Guidelines
Indicators

Review medical
specialist practice

Moving ahead = bridging the gap
Workshop 1

- Patients
- Healthcare Insurers
- Medical Specialists
- Hospitals

Questions:
- What do you want to know?
- How will you use the data?
Improving quality of care: Initiatives of the Dutch College of Surgeons

Prof. Dr. Rob Tollenaar
President Dutch College of Surgeons
Scherp op Kwaliteit

Strategisch Plan Heelkunde 2005-2010

Nederlandse Vereniging voor Heelkunde
Quality Assurance
an integrated approach

Evidence-based guideline
= common thread
Quality Indicators

• Are valuable..
  – Preselection

However, restraints..
• Proxy for quality
• Unadjusted
• Reliability & Definitions

Optimising results does not lead to better health care
Hospital performance traditionally in rankings

![Graph showing hospital performance from AD 2005 to AD 2008](image)

Uit: H. Pons, H. Lingsma, R. Bal; Medisch Conact 2009 nr 47 p. 1969-71
Clinical audit

To reliably collect risk-adjusted outcomes information, that can be analyzed and fed back...

..... to empower surgeons to improve quality of care!
Dataset

- Professional knowledge
- Professional societies

<table>
<thead>
<tr>
<th>case-mix</th>
<th>zorgproces</th>
<th>uitkomst</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patiënt kenmerken (leeftijd, geslacht, comorbiditeit, ASA, voorgeschiedenis etc.)</td>
<td></td>
<td>'korte' termijn (complicaties, re-interventies, radicaliteit, wel/geen stoma, ziekenhuissterfte, opnameduur etc.)</td>
</tr>
<tr>
<td>Tumor kenmerken (lokatie, grootte, doorgroei, stadium, tumorcomplicaties etc.)</td>
<td></td>
<td>'lange' termijn (recidieven, overleving etc.)</td>
</tr>
</tbody>
</table>
Auditing: measure and improve quality

1. Performance monitoring

2. Benchmarking
   *case mix adjusted information compared to other hospitals*

3. Best Practices
   *identify best practices*

4. Outcome-based referral / centralisation
   *referral of patient (groups) to specialised units with excellent results*
Need for more comparative data

→ No proxy for quality
→ Complete overview
→ Real time information
Dutch Institute for Clinical Auditing

preconditions for succesfull auditing

Dr Eric Hans Eddes

gastrointestinal surgeon
director DICA
Those were the days
Dutch Healthcare

- Aging population, obesity, cancer incidence
- Quality has to go up
- Costs are increasing
- Decreasing National Product because of disappointing economic growth
- Healthcare becomes prohibitive
Trip to the moon
Teamwork
Quality of Healthcare
homo informaticus
Management information
Quality?
Datamining
Clinical Auditing

- Bottom up registration results
- Regular feedback
- Benchmark
- Strong quality improvement tool
- Goes with cost efficacy

Ernest Amory Codman, 1910
A Tale of Two Provinces: Regionalization of Pancreatic Surgery in Ontario and Quebec

Christopher J. Sonnenday, MD, MHS and John D. Birkmeyer, MD

Simunovic, Annals of Surgical Oncology, 2010
Clinical Auditing
Clinical Auditing quality cycle

- Presence of evidence based guideline
- Webbased system
- **Online benchmark, strongest driver**
- Fast yearly reporting
- Consistent, thematic reporting, EBG
- Commitment professional organisations
- Property
- Privacy, TTP
Clinical Auditing
quality cycle

• Adjustment casemix
• Adjustment coincidence
• Open, verifiable; together with stakeholders
• Validity
• Completeness
Preconditions for robust data

- Convert to selected number systems
- Consistently work on
  - clear definitions
  - registration reduction
  - combining other systems
  - dashboards and feed-back
• Kwaliteit van de registraties verschilt sterk omdat beschikbare financiële middelen verschillen en centrale coördinatie ontbreekt
• Continuïteit niet gewaarborgd omdat structurele financiering ontbreekt en sterk afhankelijk van vrijwillige inspanning van slechts enkelen
• Groot gebrek aan synergie tussen de verschillende registraties, iedere registratie eigen infrastructuur voor gelijke operationele activiteiten zoals data-analyse etc
• Iedere registratie hanteert eigen ICT structuur
Dutch Surgical Colorectal Audit blueprint
Dutch Surgical Colorectal Audit
One-stop shopping
www.clinicalaudit.nl
Dutch Surgical Colorectal Audit

MIJN DSCA

Mijn DSCA geeft toegang tot rapportages die voortvloeien uit de gegevensverzameling van de Dutch Surgical Colorectal Audit.

Deze rapportages bevatten onder meer kenmerken van de chirurgische behandeling van een maligne colorectal tumor in Nederland.

De rapportages zijn ingedeeld in vier hoofdgroepen:
1. Indicatoren voor ISG en Z2o.
2. Kwaliteitsrapportages over de aanlevering van de gegevens.
3. Thematische rapportages (niet gecommuniceerd voor casemix).

De rapporten onder de nummers 1 tot en met 3 worden elk jaar update met deels in de jaarverslag op maandag. De laatste keer was in 2012.

De Jaarrapportages (4) blijven uiteraard onveranderd. Deze zijn verder onderverdeeld in behandeling, complicaties, laparoscopie en conventio, mortaliteit, opname duur en overlijden.

Inloggen
Om naar Mijn DSCA te gaan dient u in te loggen. Gebruik hiervoor de algemene DSCA Inlog van uw ziekenhuis.

Klik hier om in te loggen.

Demo
Wilt u mijn DSCA als demo bekijken of laten zien? Klik hier om naar de demoversie te gaan. Alle rapportages zijn te zien met toegestane gegevens.
Dutch Surgical Colorectal Audit

clear definitions

[Diagram of a data collection form for surgical outcomes]
### Reinterventie

**Deventer Ziekenhuis**

<table>
<thead>
<tr>
<th>Reinterventie</th>
<th>Aantal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geen reinterventie</td>
<td>115</td>
</tr>
<tr>
<td>Reinterventie vanwege nadelekage</td>
<td>2</td>
</tr>
<tr>
<td>Overige reinterventie</td>
<td>4</td>
</tr>
</tbody>
</table>

**Nederland**

<table>
<thead>
<tr>
<th>Reinterventie</th>
<th>Aantal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geen reinterventie</td>
<td>7456</td>
</tr>
<tr>
<td>Reinterventie vanwege nadelekage</td>
<td>474</td>
</tr>
<tr>
<td>Overige reinterventie</td>
<td>962</td>
</tr>
</tbody>
</table>
## Dutch Surgical Colorectal Audit

### performance indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Tellier</th>
<th>Ziekenhuis noemer</th>
<th>%</th>
<th>Nederland %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antal en percentage patiënten, bij wie een re-interventie is verricht</td>
<td>15</td>
<td>119</td>
<td>13%</td>
<td>12%</td>
</tr>
<tr>
<td>Percentage geopereerde patiënten, bij wie een re-operatie is verricht</td>
<td>12</td>
<td>119</td>
<td>10%</td>
<td>9%</td>
</tr>
<tr>
<td>Percentage geopereerde patiënten met primair colon carcinom, waarbij postoperatief 10 lymfeklieren zijn beoordeeld</td>
<td>76</td>
<td>89</td>
<td>80%</td>
<td>84%</td>
</tr>
<tr>
<td>Geopereerde patiënten met rectumcarcinom die preoperatief in een multidisciplinair team worden besproken</td>
<td>27</td>
<td>27</td>
<td>100%</td>
<td>96%</td>
</tr>
<tr>
<td>Effectief geopereerde patiënten bij wie preoperatief het colon geheel in beeld is gebracht</td>
<td>100</td>
<td>112</td>
<td>92%</td>
<td>77%</td>
</tr>
<tr>
<td>Patiënten &lt;75 jaar met stadium III coloncarcinoom die aanvullende chemotherapie hebben gekregen</td>
<td>15</td>
<td>16</td>
<td>94%</td>
<td>88%</td>
</tr>
<tr>
<td>Patiënten 75 jaar of ouder met stadium III coloncarcinoom die aanvullende chemotherapie hebben gekregen</td>
<td>3</td>
<td>9</td>
<td>32%</td>
<td>41%</td>
</tr>
<tr>
<td>Patiënten met een rectumcarcinom waarbij de Circumferentielä Resectie Marge bekend is.</td>
<td>19</td>
<td>27</td>
<td>70%</td>
<td>80%</td>
</tr>
<tr>
<td>Patiënten met een rectumcarcinom waarbij de Circumferentielä Resectie Marge positief is</td>
<td>1</td>
<td>19</td>
<td>5%</td>
<td>9%</td>
</tr>
<tr>
<td>Patiënten met een klinisch T3 of T4 rectumcarcinom die preoperatief een vorm van radiotherapie hebben ontvangen</td>
<td>6</td>
<td>6</td>
<td>100%</td>
<td>92%</td>
</tr>
</tbody>
</table>
Dutch Institute for Clinical Auditing
quick thematic reporting
Dutch Surgical Colorectal Audit
No naming, no shaming, no ranking
Dutch Institute for Clinical Auditing
central “docking station”

• General applicable quality system
• Facilitating central organisation
• Separate registrations “in the lead”
• Neutral, platform
• Together with stakeholders
• Plug and play in 6 months
• Fast upscale and development
Dutch Institute for Clinical Auditing
“one stop shopping”

- 1 portal
- Simple, consistent
- Recognizable, robust
- Linkage with nationwide dBases
- Tooling systems
- POC, scrum
- Transparancy
Dutch Institute for Clinical Auditing
one stop shopping – continuous development
Dutch Institute for Clinical Auditing

- Formal agreement with stakeholders
- 2012-2013, upscale 10 registrations
- Multidisciplinary extension
- Acceptance matrix defined
- Extension towards PROM’s/CQ index
- Combining financial and quality data
- Effectiveness expensive medication
- Stepwise finance towards regular finance
Dutch Institute for Clinical Auditing
integrated quality system

- Customer intimacy
- PROM, CQ index

- Product Leadership
- Quality

- Operational Excellence
- Cost efficacy
Working together
Dutch Institute for Clinical Auditing

Results of 3 years of auditing

Michel WJM Wouters
Surgical Oncologist
Netherlands Cancer Institute
Head of Scientific Bureau DICA
Dutch COLORECTAL CANCER Audit

Since 2009
## Participation & Completeness

<table>
<thead>
<tr>
<th>Colorectal</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOSPITALS</td>
<td>84</td>
<td>91</td>
<td>92</td>
</tr>
<tr>
<td>participation</td>
<td>89%</td>
<td>99%</td>
<td>100%</td>
</tr>
<tr>
<td>PATIENTS</td>
<td>7758</td>
<td>9192</td>
<td>9620</td>
</tr>
<tr>
<td>completeness</td>
<td>81%</td>
<td>93%</td>
<td>96%</td>
</tr>
</tbody>
</table>
Detailed Clinical Data

>30,000 patients in the database!
Process- and Outcome-indicators

**Patients**
- 3000 patients/year
- 85% resectible, 15% irresectable/inoperable
- Detection via screening/symptoms

**Diagnostic**
- Colonoscopy, CT scan with indications
- MRI/CT scans
- Echography
- CT scan of abdomen/echography liver
- Biopsy (including CEA)
- Pathological examination of biopsy
- Discussion in MDO

**Pre-treatment**
- Neoadjuvant radiotherapy, short
- Neoadjuvant radiotherapy, long
- Neoadjuvant chemotherapy

**Operation**
- Preoperative care, preoperative preparation
- Consultation with anesthesiologist
- Consultation with other specializations (stoma care, etc.)
- Low anterior resection, APR
- Open or laparoscopic resection
- Stoma care

**Pathology**
- Histology, grade, radicality of the tumor
- Lymph node examination
- CRM (radical, non-radical, or unknown)

**Postoperative course**
- Fast track recovery program
- Complications, mortality
- Surgical mortality

**Results in DSCA**

**Results DSCA**
- % of patients with preoperative
  - MRI scan
  - % of patients preoperatively discussed in MDO

**Results**
- 89% MRI
- 88% MDO

**Results**
- 87% preoperative

**Results**
- 43% within 5 weeks of surgery
  - Laparoscopic resections
  - % of blood transfusions
  - % of stoma

**Results**
- 58% known CRM

**Results**
- 28% complicated course
  - 2% mortality
  - 10% unplanned reoperations
  - Average: 13.8 days, median: 9 days
Casemix-adjusted Outcomes
severe complications

DUTCH SURGICAL COLORECTAL AUDIT
DSCA

Your hospital
Results
Improved guideline adherence

Rectal cancer patients
Discussed in pre-operative MDT
‘classic’ QI model
Determining ‘the norm’

>10 lymph nodes examined after colon resection for cancer
Targets for improvement 2012

- Identify patients at risk
- Increase ‘ awareness ‘
- Knowledge transfer reports / workshops / conferences
- Targeted feedback MyDSCA
- Best practices
- Input for Evidence-based guideline
- Initiate scientific research

www.clinicalaudit.nl
Awareness
- Targets for improvement -

Patients at risk

Anastomotic leakage

figuur 2: Incidentie van 30-dagen mortaliteit naar leeftijdsgroep uitgesplitst voor urgentie, comorbiditeitsscore en ernstige complicaties

figuur 5a: Funnelplot voor verschillen in gecorrigeerd percentage patiënten met naadlekkage tussen ziekenhuizen na resectie voor coloncarcinoom. Ziekenhuizen met meer dan 15 procent ontbrekende casemixgegevens zijn roze weergegeven.
‘Failure to rescue’

‘The percentage of patients that dies after severe postoperative complications’

‘FTR measures the capability of the (surgical) team to identify and treat postoperative complications adequately’

Few complications, low mortality!
Audit - cycle

from registration of detailed clinical data
to continuous quality improvement!
# Outcomes

## Colon resections

<table>
<thead>
<tr>
<th></th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>RR reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Severe complications</td>
<td>23 %</td>
<td>23 %</td>
<td>20 %</td>
<td>- 14 %</td>
</tr>
<tr>
<td>Re-interventions</td>
<td>14 %</td>
<td>15 %</td>
<td>11 %</td>
<td>- 21 %</td>
</tr>
<tr>
<td>Hospital days</td>
<td>12 d</td>
<td>12 d</td>
<td>11 d</td>
<td>- 8 %</td>
</tr>
<tr>
<td>30d mortality</td>
<td>4.5 %</td>
<td>4.1 %</td>
<td>3.4 %</td>
<td>- 24 %</td>
</tr>
<tr>
<td>Hospital mortality</td>
<td>4.7 %</td>
<td>4.4 %</td>
<td>3.6 %</td>
<td>- 23 %</td>
</tr>
</tbody>
</table>

*P values < 0.001*
MyHospital
- Multiple dashboards -

myBreastcancercare

myLungcancercare

myPancreaticsurgery

myColorectalcancercare

myUpperGIsurgery

myPediatricsurgery
MyHospitals
- Insurance company control room -
Conclusion

• We have detailed, hospital-specific clinical data on a growing number of treatments

• We use these data for quality improvement, through:
  • Continuous feedback to participating hospitals
  • Identifying ‘best practices‘ and ‘targets for improvement‘

Should we do more?
Workshop 2

- Patients
- Healthcare Insurers
- Medical Specialists
- Hospitals

Quality data (similar to DICA-data) are available.
Questions:
- How will you use the data?
- How can you use the data?
- Need for more data?
NFU: Where are we now?

- There has been a tremendous shift in the UMCs’ vision on quality of care
  - We want to compare our quality with (Dutch and international) hospitals
  - We aim for quality improvement (PDSA)
  - We are about to make quality part of the planning & control cycle

- We want actively contribute to the development of the “science of quality of care”
  - most UMCs appointed a professor of QoC
  - most UMCs incorporated QoC in the curriculum
  - clinical auditing
  - the NFU established a collaboration on QoC
The NFU Collaboration on quality of care (NFU-consortium QoC)

- All UMCs participate
- We work on transparancy, research, teaching & education, exchange of best practices
- Clinical auditing / disease-oriented registries are regarded as essential – for professionals, for hospital boards
- Measuring quality is not the final target: we have to close the quality circle
- There is a need for further development (use of administrative data, finance, integrated care,..) and the NFU is contributing to and collaborating on these issues
The future

Dutch hospitals are transparent about their quality of care

Necessary conditions:
• Agreement about when clinical auditing is useful/indicated
• Agreement about ownership of the data
• Establish synergies between the agenda of physicians and Executive Board
• Structural finance
• Good balance between investments and revenues
Realization

We will concentrate on realizing transparency for specific target groups:

- Patients (information to choose a hospital)
- Professionals (information to improve care)
- Government (accountability information)
- Health insurance companies (information to “buy” care)
- Health Care Inspectorate (information to monitor and check)

Combinations between these types of information should produce interesting insights!
Why do healthcare insurers invest in clinical audits?

Sjoerd Terpstra
Senior policy advisor
Dutch Association of Healthcare Insurers
What’s our perspective
2012

- Guidelines
- Indicators
- Review medical specialist practice
- Quality registries
New challenges (1)

Beware of overenthusiasm...

Guidelines
Norms
Indicators

(Aids for)
implementation

Patientcare

Systematic
quality
review

Individual
improvement

Measurement
and improvement

Frank and Ernest

OH WOW! PARADIGM SHIFT!

Beware of overenthusiasm..
New/continuous challenges(2)

Keeping the quality wheel turning!

- Defeating scepticism
- Canalyzing enthusiasm of professional societies
- Preventing demotivation of enthusiastic improvers/forerunners
- ICT problems
  - ICT infrastructure
  - Standardization
- Financing
- Ownership of data
- Balance improvement versus accountability
- Transparancy/responsibility (patients, society, insurers)
Improving quality of care: Initiatives of the Dutch College of Surgeons

Prof. Dr. Rob Tollenaar
President Dutch College of Surgeons
Transparency?
Stairway to transparency

Participation in the Audit
% cases included

• Draagvlak
• Privacywaarborging
Stairway to transparency

Performance indicators process / structure

Participation in the Audit
% cases included

• Basis-set
  • Patient characteristics
  • Case-mix
  • Results
  • Indicators
  • Guideline adherence
Stairway to transparency

- Results
- Casemix adjusted
- Validated
- Feedback

- Standards and guidelines
- Policy

Outcome measures

Performance indicators proces / structure

Participation in the Audit
% cases included
Stepwise approach to transparency

Algemene Leden Vergadering NVvH 3 december j.l.

Approval for transparency

Prerequisite: data verification
QI initiatives

Figure 2a: Funnel plot for differences between hospitals in corrected mortality for patients with colon cancer. Data over 2009 to 2011.
‘Bad Apple’ or ‘Best Practice’ Program

- Verification of hospital-specific data and analyses
- Consultation by ‘Quality Improvement Committee’
- Identification of Quality Issues
- Development of ‘Quality Improvement Program’ (‘best practices’)
- Implementation of ‘Quality Improvement Program’
- Monitoring outcomes
Redefining Health Care
Creating Value-Based Competition on Results

Operational excellence based on competition
Hospital variation in Costs
Colorectal cancer resections

<table>
<thead>
<tr>
<th>Ziekenhuis</th>
<th>Kosten (euro)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>€ 11.941</td>
</tr>
<tr>
<td>B</td>
<td>€ 12.813</td>
</tr>
<tr>
<td>C</td>
<td>€ 7.762</td>
</tr>
<tr>
<td>D</td>
<td>€ 11.895</td>
</tr>
<tr>
<td>E</td>
<td>€ 10.788</td>
</tr>
<tr>
<td>F</td>
<td>€ 13.133</td>
</tr>
<tr>
<td>G</td>
<td>€ 15.238</td>
</tr>
<tr>
<td>H</td>
<td>€ 19.255</td>
</tr>
<tr>
<td>Total</td>
<td>€ 88.294</td>
</tr>
</tbody>
</table>
Hospital variation in Costs

Complications

![Graph showing hospital variation in costs with complications.](image)
Hospital variation in Value
Complications vs Costs
EXHIBIT 1 | Value-Based Health Care Delivers Improved Health Outcomes at a Given Level of Cost

Collect and share transparent, high-quality outcome data

Generate feedback and learning

Enhance value

Identify current best practices

Change behaviors

Analyze variations

Virtuous improvement cycle

Source: BCG analysis.
The Merits of Clinical Audit....

- Monitoring performance and guideline adherence
- Benchmarking
- Identification of ‘Best Practices’
- Knowledge transfer
- Quality assurance
- Outcome-based referral / concentration of care
- Increase value of care

...as an integrated part of Dutch QI program!