Value Based Health Care in Colorectal Cancer Surgery

Improving quality, reducing costs

Opleiden in DOELMATIGHEID VAN ZORG 2017

Mini Symposium OOR Leiden
Maandag 26 juni 2017
- Korte introductie
- Onderzoek en opleiding
- Value Based Healthcare in Colorectal Cancer Surgery
Definitie

Patient Value = \frac{\text{Health Outcomes}}{\text{Cost}}
Definitie

Patient Value = \frac{\text{Health Outcomes}}{\text{Cost}}

Healthcare costs

Low quality
High costs
Low costs
High quality

Healthcare quality

Low quality
Low costs
High quality
High costs
Redefining Health Care
Creating Value-Based Competition on Results

HARVARD BUSINESS SCHOOL PRESS
The Strategy That Will Fix Health Care

Providers must lead the way in making value the overarching goal by Michael E. Porter and Thomas H. Lee
The Value Agenda
The strategic agenda for moving to a high-value health care delivery system has six components. They are interdependent and mutually reinforcing. Progress will be greatest if multiple components are advanced together.

1. Organize into integrated practice units (IPUs)
2. Measure outcomes and costs for every patient
3. Move to bundled payments for care cycles
4. Integrate care delivery across separate facilities
5. Expand excellent services across geography
6. Build an enabling information technology platform
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1. Organize into Integrated Practice Units (IPUs)

Diabetes Care - Joslin

Existing Model: Organize by Specialty and Discrete Service

New Model: Organize into Integrated Practice Units (IPUs)
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**Time-Driven Activity-Based Costing**

by Robert S. Kaplan and Steven R. Anderson

<table>
<thead>
<tr>
<th>Resource</th>
<th>Surgeon</th>
<th>Nurse</th>
<th>PA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weeks per year</td>
<td>52</td>
<td>52</td>
<td>52</td>
</tr>
<tr>
<td>Less: Vacation &amp; Holidays</td>
<td>6</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Less: Training and Leave</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Available weeks per year</td>
<td>44</td>
<td>46</td>
<td>46</td>
</tr>
<tr>
<td>Hours per day</td>
<td>10</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Less: Breaks, training, meetings</td>
<td>1,2</td>
<td>1,5</td>
<td>1,5</td>
</tr>
<tr>
<td>Available hours</td>
<td>8,8</td>
<td>6,5</td>
<td>6,5</td>
</tr>
<tr>
<td>Less: Estimate of Research &amp; Education time (%)</td>
<td>25%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Clinical Hours per day</td>
<td>6,6</td>
<td>6,5</td>
<td>6,5</td>
</tr>
<tr>
<td>Clinical minutes available per day</td>
<td>396,00</td>
<td>390,00</td>
<td>390,00</td>
</tr>
<tr>
<td>Clinical minutes available per year</td>
<td>87516,00</td>
<td>90090,00</td>
<td>90090,00</td>
</tr>
<tr>
<td>Annual Cost per person</td>
<td>$522,720</td>
<td>$89,700</td>
<td>$134,550</td>
</tr>
<tr>
<td>Capacity cost rate ($ per minute)</td>
<td>$5.97</td>
<td>$1.00</td>
<td>$1.49</td>
</tr>
</tbody>
</table>
**Bundled Reimbursement**

- A single price covering the **full care cycle for an acute medical condition**
- Time-based reimbursement for overall care of a **chronic condition**
- Time-based reimbursement for **primary/preventive care for a defined patient segment**
The Value Agenda
The strategic agenda for mining has six components. Progress will be greatest if...
The Value Agenda

The strategic agenda for most health care systems has six components. They are:

1. **Expand Excellent Services Across Geography**

2. **Integrate Care Delivery Across Separate Facilities**

3. **Build an Enabling Information Technology Platform**

Progress will be greatest if:

- **Delivering the Right Care at the Right Location**
  - **Rothman Institute, Philadelphia**
  - Ambulatory Surgery Center
    - Cost of Total Hip Replacement: ~$12,000 USD
  - Rothman Orthopaedic Specialty Hospital
  - Bryn Mawr Community Hospital
  - Jefferson University Academic Medical Center
  - Cost of Total Hip Replacement: ~$45,000 USD
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Doen we het dan zo slecht?
Doen we het dan zo slecht?

The Netherlands is the only country which has consistently been among the top three in the total ranking of any European Index the Health Consumer Powerhouse has published since 2005. The 2012 NL score of 872 points was by far the highest ever seen in a HCP Index. The 916 points in 2015 are even more impressive, as it becomes increasingly difficult to reach a very high score on many indicators – no country is superbly good at everything.
Moet het allemaal tegelijk?
The Value Agenda
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Dutch Value Based Healthcare Study
Klinische gegevens

- **DSCA** 2010 t/m 2012

- Primaire colorectaal carcinoom waarvoor operatie en geregistreerd in de DSCA (dekking >97%)

- Exclusie criteria
  - Ontbreken informatie over
    - Tumor locatie
    - Operatie datum
    - Sterfte

- Klinische uitkomsten tot 30 dagen na operatie en/of duur van opname
Financiële gegevens

- Time-Driven Activity-Based Costing
- Ziekenhuis kosten tot 90 dagen na ontslag

Exclusie:
  - Specialisten honorarium
  - Kosten medicatie
  - Kosten dialyse
Dutch Value Based Healthcare Study
5% of the most expensive patients are responsible for 23% of the total costs.
Patients with complications are accountable for 31% of the total costs.

Identification of ‘best practice’ hospitals (A)

Identification of ‘best practice’ hospitals (B)

- **Best performing hospitals**: 12 hospitals, 3880 patients
- **Improve potential hospitals**: 9 hospitals, 3540 patients

Identification of ‘best practice’ hospitals (C)


- Severe complication rate: -40%
- Mortality rate: -36%
- Average costs per patient: -25%
Differences in costs between different risk groups should create awareness for healthcare providers and/or payers.

Cost difference between laparoscopic and open resections stratified by sub-group

Oudere geopereerde patiënt kost niet meer dan jongere patiënt

Source: Hospital Costs of Colorectal Cancer Surgery for the Oldest Old: A Dutch Population-Based Study. Govaert et al. JSO 2016
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Gedifferentieerd belonen?

Gedifferentieerd belonen mogelijk door registratie
EERSTE STAP NAAR UITKOMSTENBEKOSTIGING

Johannes A. Govaert, Wouter A. van Dijk en Michel W.J.M. Wouters
Lange opname loont

**TABEL 1** Landelijke verkoopprijzen van behandeling van colorectaal carcinoom in 2014

<table>
<thead>
<tr>
<th>zorgproductnummer</th>
<th>beschrijving</th>
<th>opnameduur in dagen</th>
<th>verkoopprijs in €; gemiddelde</th>
</tr>
</thead>
<tbody>
<tr>
<td>29199032</td>
<td>uitgebreide operatie aan maag-darmkanaal met maximaal 28 verpleegdagen bij kanker van dikke darm of endeldarm</td>
<td>≤ 28</td>
<td>10.310</td>
</tr>
<tr>
<td>29199033</td>
<td>uitgebreide operatie aan maag-darmkanaal met meer dan 28 verpleegdagen bij kanker van dikke darm of endeldarm</td>
<td>&gt; 28</td>
<td>30.175</td>
</tr>
</tbody>
</table>
85% verschil in kostprijs tussen verschillende risicogroepen

<p>| TABEL 2 Kostprijzen van behandeling van colorectaal carcinoom per hoofd- en subgroep* |
|---------------------------------|----------------|-------------|----------------|----------------|----------------|----------------|</p>
<table>
<thead>
<tr>
<th>tumorlocatie</th>
<th>leeftijd; in jaren</th>
<th>ASA-klasse</th>
<th>n</th>
<th>sterfte; %</th>
<th>gecompliceerd beloop; %</th>
<th>opnameduur &gt; 28 dagen; %</th>
<th>kostprijs in €; gemiddelde</th>
</tr>
</thead>
<tbody>
<tr>
<td>hoofdgroep</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>colon</td>
<td>–</td>
<td>–</td>
<td>4202</td>
<td>3,1</td>
<td>18,2</td>
<td>5,0</td>
<td>12.040</td>
</tr>
<tr>
<td>rectum</td>
<td>–</td>
<td>–</td>
<td>2328</td>
<td>1,8</td>
<td>25,3</td>
<td>7,8</td>
<td>15.034</td>
</tr>
<tr>
<td>subgroep</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>colon</td>
<td>&lt; 75</td>
<td>I-II</td>
<td>2072</td>
<td>0,6</td>
<td>14,1</td>
<td>3,8</td>
<td>10.960</td>
</tr>
<tr>
<td>colon</td>
<td>≥ 75</td>
<td>I-II</td>
<td>1048</td>
<td>3,8</td>
<td>18,5</td>
<td>5,3</td>
<td>11.388</td>
</tr>
<tr>
<td>rectum</td>
<td>&lt; 75</td>
<td>I-II</td>
<td>1511</td>
<td>0,5</td>
<td>21,7</td>
<td>5,8</td>
<td>13.638</td>
</tr>
<tr>
<td>colon</td>
<td>&lt; 75</td>
<td>III-IV</td>
<td>358</td>
<td>3,4</td>
<td>21,8</td>
<td>6,1</td>
<td>14.687</td>
</tr>
<tr>
<td>colon</td>
<td>≥ 75</td>
<td>III-IV</td>
<td>724</td>
<td>9,3</td>
<td>27,6</td>
<td>7,2</td>
<td>14.767</td>
</tr>
<tr>
<td>rectum</td>
<td>≥ 75</td>
<td>I-II</td>
<td>422</td>
<td>2,1</td>
<td>27,7</td>
<td>10,2</td>
<td>15.731</td>
</tr>
<tr>
<td>rectum</td>
<td>&lt; 75</td>
<td>III-IV</td>
<td>210</td>
<td>8,6</td>
<td>36,7</td>
<td>14,3</td>
<td>19.094</td>
</tr>
<tr>
<td>rectum</td>
<td>&lt; 75</td>
<td>III-IV</td>
<td>185</td>
<td>3,2</td>
<td>35,7</td>
<td>11,4</td>
<td><strong>20.242</strong></td>
</tr>
</tbody>
</table>

ASA = American Society of Anesthesiologists

* Gegevens verkregen uit de ‘Dutch value-based healthcare’-studie. Ziekenhuiskosten van electieve colorectale ingrepen zijn gemeten vanaf operatie tot en met 90 dagen na ontslag, exclusief specialistenhonorarium en kosten van medicatie of dialyse.
Gedifferentieerd belonen?

### TABEL 3  Relatief verschil in kost- en verkoopprijs tussen de 2 hoofdgroepen en tussen de duurste en goedkoopste subgroep

<table>
<thead>
<tr>
<th>tumorlocatie</th>
<th>leeftijd; in jaren</th>
<th>ASA-klasse</th>
<th>op basis van gemiddelde kostprijs</th>
<th>op basis van gemiddelde verkoopprijs</th>
</tr>
</thead>
<tbody>
<tr>
<td>hoofdgroep*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>colon</td>
<td></td>
<td></td>
<td>12.040</td>
<td>11.303 (95.0% x € 10.310) + (5.0% x € 30.175)</td>
</tr>
<tr>
<td>rectum</td>
<td></td>
<td></td>
<td>15.034</td>
<td>11.859 (92.2% x € 10.310) + (7.8% x € 30.175)</td>
</tr>
<tr>
<td>verschil</td>
<td></td>
<td></td>
<td>25%</td>
<td>5%</td>
</tr>
<tr>
<td>subgroep</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>colon</td>
<td>&lt; 75</td>
<td>I-II</td>
<td>10.960</td>
<td>11.065 (96.2% x € 10.310) + (3.8% x € 30.175)</td>
</tr>
<tr>
<td>rectum</td>
<td>&lt; 75</td>
<td>III-IV</td>
<td>20.242</td>
<td>12.575 (88.6% x € 10.310) + (11.4% x € 30.175)</td>
</tr>
<tr>
<td>verschil</td>
<td></td>
<td></td>
<td>85%</td>
<td>14%</td>
</tr>
</tbody>
</table>

* Uitkomsten zijn berekend door de uitkomsten van tabel 1 en 2 te combineren.
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Conclu...
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Vragen?