Population-based Quality Indicators of Cancer Care: the QC₃ pilot study on colorectal cancer patients

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Ticino Cancer Registry
www.ti.ch/cancer
Incidence and mortality trends of Colorectal Cancer

Ticino versus Switzerland

<table>
<thead>
<tr>
<th></th>
<th>New cases / year</th>
<th>Deaths / year</th>
</tr>
</thead>
<tbody>
<tr>
<td>CH</td>
<td>~ 4000-4100</td>
<td>~ 1600-1650</td>
</tr>
<tr>
<td>TI</td>
<td>~ 230-250</td>
<td>~ 75-80</td>
</tr>
</tbody>
</table>
Colorectal Cancer in Ticino, 1996-2011

**Epidemiology**

<table>
<thead>
<tr>
<th>Age group</th>
<th>New diagnosis / year (e.g. 2011)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;50</td>
<td>M: 7 F: 5</td>
</tr>
<tr>
<td>50-69</td>
<td>M: 49 F: 35</td>
</tr>
<tr>
<td>70+</td>
<td>M: 77 F: 81</td>
</tr>
<tr>
<td>Total</td>
<td>133 M 121 F</td>
</tr>
</tbody>
</table>

**Graph**

- **Number of new cases**
  - **Year of incidence**
    - 1996: 190
    - 1997: 172
    - 1998: 186
    - 1999: 188
    - 2000: 178
    - 2001: 181
    - 2002: 192
    - 2003: 218
    - 2004: 234
    - 2005: 245
    - 2006: 236
    - 2007: 211
    - 2008: 218
    - 2009: 223
    - 2011: 252

- **Graph Trend**
  - Linear increase in the number of new cases over time.
Colorectal Survival in Ticino and Switzerland

<table>
<thead>
<tr>
<th>Years since diagnosis</th>
<th>TI</th>
<th>CH</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>84%</td>
<td>83%</td>
</tr>
<tr>
<td>5</td>
<td>62%</td>
<td>62%</td>
</tr>
<tr>
<td>10</td>
<td>54%</td>
<td>54%</td>
</tr>
</tbody>
</table>

Coleman MP et al., Lancet 2011
Survival Study Colorectal cancer

Advantages

- **Standardised** procedure, world wide recognised
- Regional and international **comparisons**
- Diagnostic precocity, treatment quality and follow-up **in one value**

“Disadvantage”

Long follow-up time

Additional instruments are needed: quality indicators
Some methods of QC<sub>3</sub>: defragmentation of survival determinants

STAGE AT DIAGNOSIS

NEOADJUVANT RADIOTHERAPY
Some methods of QC₃:
defragmentation of survival determinants

RESECTION MARGINS

1. R0/R1
2. Proximal, distal, radial
3. Reported by pathologist
Some methods of QC₃: defragmentation of survival determinants
Some methods of $QC_3$

Quality Indicator

Proportion of patients with a number of resected lymph nodes $\geq 12$

% OF PATIENTS THAT BENEFIT OF......

Denominator

Patients cancer undergoing primary surgery
(with the exception of patients undergoing neo-adj RT±CT)

% OF PATIENTS OBSERVED......
Why quality indicators?

Advantages
- **Defragmentation** of survival determinants
- Short follow-up time

“Disadvantage”
Less worldwide defined → PILOT STUDIES are necessary

Survival results

Quality indicators
2011 2012 2013 2014 2015……………..2020

QC³
How are the quality indicators defined?

- According to the up-to-date literature
- Through existing guidelines (NCCI, ESMO, other)
- Cancer Registry with a dedicated staff (Bianchi-Galdi V, Spitale A, Ortelli L, Bordoni A)
How are the indicators defined?

**QC₃ Working Groups**

**Lung Cancers (n=13):**
Dr. med. A. Azzola, PD Dr. med. M. Bongiovanni, PD Dr. med. A. Dutly, Dr. med. A. Franzetti-Pellanda, Dr. med. P. Frösch, Dr. med. S. Györik, Prof. Dr. med. S. Martinoli, Dr. med. F. Martucci, Prof. Dr. med. L. Mazzucchelli, Dr. med. G. Pesce, Dr. med. C. Puligheddu, Dr. med. F. Quadri, Dr. med. F. Zappa.

**Colo-Rectal Cancers (n=16):**
Dr. med. J. Barizzi, Dr. med. F. Bihl, Dr. med. D. Christoforidis, Dr. med. A. Franzetti-Pellanda, PD Dr. med. L. Giovanella, Dr. med. J. Heinkel, Dr. med. M. Maffei, Prof. Dr. med. L. Mazzucchelli, Dr. med. B. Miazza, Dr. med. A. Pelloni, Dr. med. C. Quattropani, Prof. Dr. med. R. Rosso, Dr. med. P. Saletti, Dr. med. M.C. Valli, Dr. med. M. Varini, PD Dr. med. R. Wyttenbach.

**Prostate Cancers (n=11):**
Dr. med. G. Ballerini, Dr. med. G. Casanova, Dr. med. S. Crippa, Dr. med. A. Lladò, Prof. Dr. med. L. Mazzucchelli, Dr. med. G. Pesce, Dr. med. A. Pedrazzini, Dr. med. E. Roggero, Dr. med. F. Stoffel, Dr. med. S. Suriano, PD Dr. med. R. Wyttenbach.

**Ovarian/Uterine Cancers (n=12):**
Dr. med. G. Ballerini, Dr. med. L. Bronz, Dr. med. A. Calderoni, Dr. med. L. Ceriani, Dr. med. C. Cannizzaro, Dr. med. T. Gyr, Dr. med. M. Manganiello, Dr. med. C. Marini, Prof. Dr. med. L. Mazzucchelli, Dr. med. A. Richetti, Dr. med. T. Rusca, Prof. Dr. med. C. Sessa
Process used to select QC₃ quality indicators

1. Extract Indicators from Literature
2. In-person Working Groups Meeting
3. Questionnaires (Delphi Round 1)
4. Questionnaires (Delphi Round 2)
5. Advisory Board

<table>
<thead>
<tr>
<th>N</th>
<th>Colo-Rectal</th>
<th>Prostate</th>
<th>Ovary</th>
<th>Uterus</th>
<th>Lung</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>149</td>
<td>131</td>
<td>104</td>
<td>109</td>
<td>54</td>
</tr>
<tr>
<td>2</td>
<td>104</td>
<td>100</td>
<td>56</td>
<td>48</td>
<td>?</td>
</tr>
<tr>
<td>3</td>
<td>89</td>
<td>83</td>
<td>56</td>
<td>52</td>
<td>?</td>
</tr>
<tr>
<td>4</td>
<td>74</td>
<td>65</td>
<td>30</td>
<td>31</td>
<td>?</td>
</tr>
</tbody>
</table>
**QC₃ Colo-Rectal Cancer Advisory Board**

**Pathology:** Prof. Dr. med. Phil Quirke, Director, Leeds Institute of Molecular Medicine (LIMM), Section of Pathology, Wellcome Trust Brenner Building, St James’s University Hospital, Leeds (UK)

**Oncology:** Prof. Dr. med. Roberto Labianca, Director, Oncology and Haematology Dept., Ospedali Riuniti, Bergamo (I)

**Gastroenterology:** Prof. Dr. med. Gian Dorta, Director, Digestive Endoscopy Dept., Centre Hospitalier Universitaire Vaudois (CHUV), Lausanne (CH)

**Surgery:** Prof. Dr. med. Emmanuel Tiret, Director, Pôle Digestif des Hôpitaux Univesitaires Paris Est, Chef Service de Chirurgie Générale et Digestive, Hôpital Saint-Antoine, Paris (F)

**Radiology:** Prof. Dr. med. Dominik Weishaupt, Director, Radiology Dept., Stadtspital Triemli, Zürich (CH)

**Radiation Therapy:** Prof. Dr. med. Vincenzo Valentini, Director, Unità Operativa Complessa Radioterapia 1, Policlinico Universitario Agostino Gemelli, Rome (I)

**Nuclear Medicine:** Prof. Dr. med. Stefano Fanti, Director, PET Center, Policlinico S. Orsola-Malpighi, Bologna (I)

**Cancer Registry:** Prof. Dr. med. Jean Faivre, Director, Registre Bourguignon des Cancers Digestifs, Dijon Cedex (F)

**Local Experts:** Prof. Dr. med. Franco Cavalli, Scientific Director, Oncologic Institute of Italian Switzerland (IOSI), Bellinzona (CH)
Prof. Dr. med. Sebastiano Martinoli, Director, General Surgery Dept., Clinica Luganese, Lugano (CH)
**QC₃ Prostate Cancer Advisory Board**

**Pathology:** Prof. Dr. J.R. Srigley, McMaster University, Credit Valley Hospital, Mississauga (CDN)

**Oncology:** Prof. Dr. Ian Tannok, Director, Medical Oncology and Medical Biophisics Dept., Princess Margaret Hospital, Toronto (CDN)

**Urology:** Prof. Dr. Peter T. Scardino, Director, General Surgery Dept., Memorial Sloan-Kettering Cancer Center, New York (USA)

**Radiology:** Prof. Dr. Harriet Thöny, Diagnostic Radiology Dept., Inselspital, Bern (CH)

**Radiation Therapy:** Prof. Dr. Raymond Miralbell, Director, Radiation Oncology Dept., Hôpitaux Universitaires Genève, Genève (CH)

**Cancer Registry:** Dr. Renée Otter, Director, Comprehensive Cancer Center North Netherlands, Groningen (The Netherlands)

**Local Experts:** Prof. Dr. Michele Ghielmini, Medical Director, Medical Oncology Dept., Oncologic Institute of Italian Switzerland (IOSI), Bellinzona (CH)
QC₃ Gynaecologic Cancer Advisory Board

**Pathology:** Prof. Dr. Eshter Oliva, Pathology Dept., Massachusetts General Hospital, Boston (USA)

**Gynaecology - Oncology:** Prof. Dr. René H.M. Verheijen, Director, Surgical and Oncological Gynaecology Inst., Reproductive Medicine and Gynaecology Dept., University Medical Center, Utrecht (The Netherlands)

**Radiation Therapy:** Prof. Dr. Akila N. Viswanathan, Director, Gynaecologic Radiation Oncology Dept., Dana-Farber Cancer Institute, Boston (USA)

**Cancer Registry:** Prof. Dr. Hélène Sancho-Garnier, Scientific Director, Epidaure - Pôle prévention du CRLC Val d'Aurelle, Montpellier (France)
Aims of quality indicator cancer care study?

- Aim is **not** to control doctors! Aim is to additionally stimulate the **discussion based on data** (cultural process)
- To understand/realize if there is still **room for additional increase** of quality on cancer care
- To in **deeper analyse** at the regional level survival results
- To produce up-to-date quality indicators **without waiting for survival data** (ideally yearly produced) that could be translated in a short-term benefit for patients
Aims of quality indicator cancer care study?

- The study is population-based (Cancer Registry, **no selection bias**) and concerns public and private settings, ensuring a real description.
- **Results should be compared** with other national and/or international initiatives
- The QC<sub>3</sub> study is based on expertise and active involvement of local health care providers representing all major disciplines (epidemiology, statistic, and clinical experts in pathology, radiology, surgery, radio-oncology, oncology), thus **increasing quality, acceptance and translation of results into the daily clinical practice**
Open questions on quality indicator cancer care study…..

- Are all the proposed indicators through the Delphy process **detectable** in the real world? We are now in a “pilot-phase”….

- Are the proposed indicators **useful for other reality in Switzerland**?

Discussion should go on…
Open questions on the quality indicator cancer care study.....

- Is it possible to *promote* similar studies in other region/cantonal cancer registries of Switzerland?
- Who will pay such kind of studies, long-term studies, so permitting *trend analysis* of quality indicators and/or the *evaluation of other cancer sites*?
- Will this type of studies be compatible with the scheduled *new law on cancer registration* in Switzerland?
We are really grateful for the support of the study sponsors:

- Ricerca Svizzera Contro il Cancro
- Zonta Club Locarno
- Accademia Svizzera delle Scienze Mediche
- Ente ospedaliero cantonale
- Repubblica e cantone Ticino