Population-based Quality Indicators of Cancer Care: the QC$_3$ 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><strong>CH</strong></td>
<td>~ 4000-4100</td>
<td>~ 1600-1650</td>
</tr>
<tr>
<td><strong>TI</strong></td>
<td>~ 230-250</td>
<td>~ 75-80</td>
</tr>
</tbody>
</table>

**Trends in Standardised Rates**
Colorectal Cancer in Ticino, 1996-2011

**New diagnosis / year (e.g. 2011)**

<table>
<thead>
<tr>
<th>Age group</th>
<th>M</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-49</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>50-69</td>
<td>49</td>
<td>35</td>
</tr>
<tr>
<td>70+</td>
<td>77</td>
<td>81</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>133</td>
<td>121</td>
</tr>
</tbody>
</table>
Colorectal Survival in Ticino and Switzerland

**Table: 5-year Relative Survival**

<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>55%</td>
<td>54%</td>
</tr>
</tbody>
</table>

**Graph: Years since diagnosis vs Relative Survival**

- TI: Blue line
- CH: Red line

Source: 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

5-year Relative Survival

Coleman MP et al., Lancet 2011

Additional instruments are needed: quality indicators
Some methods of QC$_3$: defragmentation of survival determinants

STAGE AT DIAGNOSIS

NEOADJUVANT RADIOTHERAPY
Some methods of QC$_3$: defragmentation of survival determinants

RESECTION MARGINS

1. R0/R1
2. Proximal, distal, radial
3. Reported by pathologist
Some methods of QC$_3$: defragmentation of survival determinants

![Colon cancer specimen diagram](image)

**LYMPH-NODES RESECTION**

![Survival probability graph](image)
### Some methods of QC$_3$

<table>
<thead>
<tr>
<th>Quality Indicator</th>
<th>Denominator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proportion of patients with a number of resected lymph nodes $\geq 12$</td>
<td>Patients cancer undergoing primary surgery (with the exception of patients undergoing neo-adj RT±CT)</td>
</tr>
</tbody>
</table>

- **% of Patients That Benefit of**: 
- **% of Patients Observed**: 

QC$_3$
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
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?

QC<sub>3</sub> 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 QC$_3$ 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>Colorectal</th>
<th>Prostate</th>
<th>Ovary</th>
<th>Uterus</th>
<th>Lung</th>
</tr>
</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., Massachussets 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, Uthecht (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\textsubscript{3} 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