Quality indicators for the diagnosis and treatment of lung cancer

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* BELGIAN CANCER REGISTRY
Background

Quality Improvement Cycle

Guideline development
Guideline implementation
Quality indicators
Feedback
Actions

Integrative quality system

Source: KCE report 152
In the past, KCE reports:
- Rectum cancer - PROCARE (2008)
- Breast cancer (2010)
- Testis cancer (2010)
- Oesophageal cancer (2013)
- Stomach cancer (2013)

Current:
- Lung cancer

On-going:
- Head and neck cancer
- Ovarian cancer
## Research questions

1. Develop set of QI for lung cancer diagnosis and treatment, and evaluate variability between centres
2. Identify comorbidities based on reimbursed pharmaceutical data (for case-mix adjustment)
3. Evaluate volume-outcome relationship

## Methods

- Review of literature for existing indicators
- **Data analysis**: Linkage of databases:
  - Belgian Cancer Registry (diagnosis in 2010-2011)
  - AIM - IMA
  - BCSS - KSZ (vital status)
- **Pilot study** in 6 hospitals
Selected QIs: 23

- Outcomes: Survival (2)
- Quality of data reporting to BCR (1)
- Diagnosis and staging (12)
- Treatment NSCLC (4)
- Treatment SCLC (1)
- Outcomes: short term mortality after treatment (2)
- End-of-life (1)
Results

- Poor prognosis:
  1-year observed survival 43.9%
  (stage I 88.4%, stage IV 28.2%)

- Good results for outcomes:
  - 5-year relative survival higher than European mean (and similar to Central Europe)
Results

- Room for improvement:
  - Reporting to Belgian Cancer Registry suboptimal (e.g. 23% clinical stage missing)
  - Large variability
Results (1)

- Excellent results for:
  - Histological confirmation of diagnosis
  - PET-CT before curative treatment

- Room for improvement:
  - Brain imaging before treatment cIII pts
  - Variability in time « diagnosis to treatment »
Results (2)

- No evaluation, but informative for centre:
  - EGFR: old data 2011, change in guidelines
  - Mediastinal staging: no target
  - MOC-COM: target +- 100%, but problem billing data
Results

- Guideline concordant treatment: no target (similar or even higher than other countries), but informative for centres
- Good results: appropriate use of adjuvant chemotherapy
Results

- Good results for outcomes:
  - Post-operative mortality < 5%

- To be investigated further:
  - Short-term mortality after end radiotherapy (9%). Limited variability. Patient selection?
Results

- Chemotherapy near the end of life (« aggressiveness of treatment »):
  - relatively low (10%) but higher than other types of cancer (5%)
  - In international comparison (6 countries, all cancers), Belgium highest rate chemo near the end-of-life (all cancer types)
Second research question: comorbidities based on pharma billing data

- **4 main comorbidities studied:**
  - Cardiovascular disease
  - Respiratory disease
  - Diabetes
  - Renal insufficiency

- But shortcomings: no specific diagnosis and no disease severity

- Conclusion: when possible, use Charlson score based on RHM-MZG data
Third research question: volume-outcome (surgery)

DISPERSION OF SURGICAL EXPERTISE

89 hospitals in analysis

50% of the hospitals are very-low volume centres (<10 patients operated /year)

9 are high-volume centres (at least 40 patients operated per year)
Volume-outcome (surgery):

- **Conclusions:**
  - Post-operative mortality: very low-volume centres have worse outcomes
  - 1-year survival: volume-outcome confirmed
  - 3-year survival: smaller impact of volume on survival

- **Limitations in analysis:**
  1. Complexity of surgery not taken into account
  2. Case-mix adjustment: only a selection of comorbidities (use of proxies)
  3. Some high-volume centra are a fusion of low/medium-volume centra
Recommendations to:

the Ministers of Health

- follow-up of the quality system
- centralise surgery (minimum 10/year)

the clinical teams

- evaluate their results (feedback)
- improve reporting to BCR

the BCR

- further develop case-mix correction (link with RHM-MZG)
- explore collection of PROMs

the pathological laboratories

- provide pathological reports in synoptic format
Colophon

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Colophon

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