Cancer Registries in Germany and Evaluation of the Mammography Screening Program

Wolf Ulrich Batzler

Epidemiologisches Krebsregister NRW gGmbH
Outline

• Mammography screening in Germany
• Current status of cancer registration
• Aspects of cooperation between registries and screening - current situation in Germany
Mammography-Screening Program

Characteristics of the German Program

- Based on European Guidelines for Quality Assurance
- Target population: - women 50-69 yrs - nationwide (approx. 10,5 Mio. target pop.)
- Responsible for implementation: - National Association of Statutory Health Insurance Physicians - Federal Association of Health Insurance Funds
- Contractual base: - Program for Early Detection of Cancer
- 2004 MX Screening part of the Program for Early Detection
Mammography-Screening Program:

Program specific institutions

- Coordination Office Mammography Screening
  (Kooperationsgemeinschaft)
  - Organization & program evaluation
  - federal level

- 94 Screening Units
  (with 376 mammography units)
  - regional level

- 17 Central Units  invitation, 2 yrs. interval

- 5 Reference-Centers (inter-regional)
  - Quality assurance & training
Mammography-Screening Program:

Organizational Structure

Federal level

State level

Regional level

SE: Screening unit

ME: Mammography unit

AE: Assessment unit

KV: Association of Statutory Health Insurance Physicians

KK: Statutory Health insurance

Wolf Ulrich Batzler

GEKID - Symposium
16.09.2009
Mammography-Screening Program

Implementation process

- Pilot projects in three regions, 2001/2 - 2004
  - Wiesbaden, Hessen (target pop. ≈ 60,000)
  - Bremen (target pop. ≈ 70,000)
  - Weser-Ems, Lower Saxony (target pop. ≈ 22,000)

- Since January 2004 nationwide build-up; first Screening Units took up service end of 2005.
Mammography-Screening Program

Routine Screening

Wolf Ulrich Batzler

GEKID - Symposium
16.09.2009
Epidemiological Cancer Registration in Germany

- 11 epidemiological cancer registries
- Association of German Epidemiological Cancer Registries (GEKID) as national cooperation

- Nation wide: German Childhood Cancer Registry
Cooperation: Responsibilities
Evaluation of Mammography-Screening:
Contributions of Cancer Registries

- Basic information on
  - Incidence rates
  - Incidence rate trends
  - Tumor stage distribution

- Surrogate indicator: interval cancer rate

- Impact Evaluation: mortality reduction
Evaluation of Mammography-Screening: Contributions of Cancer Registries

• Basic information on
  - Incidence rates
  - Incidence rate trends
  - Tumor stage distribution

• Surrogate indicator: interval cancer rate

• Impact Evaluation: mortality reduction
First results of routine screening in the region of Münster

- Cancer Registry of North Rhine-Westphalia in cooperation with the Reference Center Münster
- 2 screening units in the Münster region (target pop. ≈ 89,000)
- Start of MX screening in October 2005
First results of routine screening in the region of Münster

Method:

- Data of screen detected breast cancer cases made available through Reference Center Münster
- Data status: December 31, 2008
- Record-Linkage with registry’s routine data
- Identification of non-screen detected cases
- Analysis of incidence trend by age group and stage distribution
First results of routine screening, Münster region

Incidence trend, invasive BC (C50)

Incidence rates (per 100,000) of invasive breast cancer (C50) in women aged 30-49, 50-69 (= target population of mammography screening, fat line), and 70+ years, in the Muenster, Coesfeld, Warendorf region, from 1993 to 2007.
First results of routine screening, Münster region

Incidence trend, invasive BC (C50)

Incidence rates (per 100,000) of invasive breast cancer (C50) in women aged 30-49, 50-69 (= target population of mammography screening, fat line), and 70+ years, in the Muenster, Coesfeld, Warendorf region, from 1993 to 2007.
First results of routine screening, Münster region

Incidence trend, in situ (D05)

Incidence rates (per 100,000) of ductal carcinoma in situ (DCIS, D05) in women aged 30-49, 50-69 (= target population of mammography screening, fat line), and 70+ years, in the Münster, Coesfeld, Warendorf region, from 1993 to 2007.
First results of routine screening, Münster region

**Tumor stages (T categories)**

<table>
<thead>
<tr>
<th></th>
<th>Screen detected</th>
<th>Non-screen detected</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td><strong>DCIS (D05)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>84</td>
<td>24.1</td>
</tr>
<tr>
<td><strong>Invasive Cancers (C50)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>265</td>
<td>75.9</td>
</tr>
<tr>
<td>Tmic</td>
<td>1</td>
<td>0.3</td>
</tr>
<tr>
<td>T1a</td>
<td>27</td>
<td>7.7</td>
</tr>
<tr>
<td>T1b</td>
<td>69</td>
<td>19.8</td>
</tr>
<tr>
<td>T1c</td>
<td>116</td>
<td>33.2</td>
</tr>
<tr>
<td>T1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>T2</td>
<td>45</td>
<td>12.9</td>
</tr>
<tr>
<td>T3</td>
<td>5</td>
<td>1.4</td>
</tr>
<tr>
<td>T4</td>
<td>2</td>
<td>0.6</td>
</tr>
<tr>
<td>Tx</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Missing</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
Further cooperation between Cancer Registries and Screening in Germany

- CR Bremen: Basic evaluation of pilot project Bremen
- CR Lower-Saxony: Continuing evaluation of pilot project Weser-Ems (e.g. Urbschat I, Kieschke J: Onkologie 2008)
- GEKID: Definition of background incidence (registry specific) in close cooperation with the Coordination Office Screening Mammography
Cancer Registries and Mammography Screening

- Basic information on
  - Incidence rates
  - Incidence rate trends
  - Tumor stage distribution

- Surrogate indicator: interval cancer rate

- Impact Evaluation: mortality reduction
Ascertainment of Interval Cancers:

Regulations

- First concept of data exchange in 2004 proved impracticable
- Since 2004 revision with support of GEKID
- Final version to become effective in October 2009
Ascertainment of Interval cancers:

Next steps

- Adoption of new regulations in states cancer registry laws
- Implementation of data exchange in
  - Screening software
  - Cancer registries software
- First routine linkage between screening data and registries expected in near future
Evaluation of Mammography-Screening:
Contributions of Cancer Registries

- Basic information on
  - Incidence rates
  - Incidence rate trends
  - Tumor stage distribution

- Surrogate indicator:
  interval cancer rate

- Impact Evaluation:
  mortality reduction
Impact evaluation: mortality reduction

- Long term evaluation not further specified in EU guidelines (and in Germany)
- Program specific concept required
- Evaluation concept has to account for specific implementation process in Germany
- Recent call for conceptual proposals by the National Board for Radiation Protection
Summary

- The German mammography screening program successfully implemented nationwide ✓
- German cancer registries provide data for program evaluation in most regions of the country ✓
- German cancer registries contributed already to the initial evaluation process ✓
- Ascertainment of interval cancers as routine procedure of cancer registries expected in the near future ✓
- Concept for mortality evaluation under consideration ✓
Thanks to ...

- Dr. Martin Meyer, Cancer Registry of Bavaria
- Dr. Stefanie Weigel, Prof. Walter L. Heindel Reference Center Münster
- Peter Rabe, Coordination Office Mammography Screening

www.krebsregister.nrw.de
www.gekid.de