Final Report of the Pilot Projects on Mammography Screening in Germany

GMDS Leipzig 2006
September 11th 2006

Dr. Vanessa Kääb
Jan Sebastian Graebe-Adelssen
Kooperationsgemeinschaft Mammographie
Contents

- Background
  - Pilot Projects
  - Results
    - Performance indicators
    - Surrogate indicators
    - Positive predictive value
  - What happened next
Breast Cancer in Germany

Number of new cases in thousands

- Mammary gland (55150)
- Bowel (35800)
- Lung (12450)
- Uterus, body of uterus (11250)
- Ovary
- Stomach (8250)
- Melanoma (7700)
- Bladder (7100)
- Pancreas (6600)
- Cervix (6500)

Age-standardised mortality rate per 100,000

- Lung (38.1 / 26.0%)
- Bowel and rectum (18.0 / 12.3%)
- Prostate (13.8 / 9.4%)
- Stomach (8.2 / 5.6%)
- Uterus, body of uterus (7.8 / 5.2%)
- Ovary (5.7 / 3.9%)
- Oral cavity, pharynx (5.7 / 3.9%)
- Kidney (5.3 / 3.6%)
- Liver (5.1 / 3.4%)
- Bladder (4.6 / 3.1%)
- Oral cavity and pharynx (1.8 / 1.2%)
- Melanoma (1.8 / 1.2%)
- Other digestive organs (0.7 / 0.5%)
- Other (8.4 / 9.0%)

55,000 new cases per year
18,000 deaths per year

Mammography Screening

Is the only method of early detection which has been shown to achieve the goal of reducing breast cancer mortality
Quality assured mammography screening

Risk / Benefit Analysis

Greatest possible benefit
- Reduction of mortality
- Longer survival
- Less intrusive therapy
- Retention of life quality

Least possible risk
- Over-diagnosis
- Over-therapy
- False negative results
- Effects of radiation

European guidelines for quality assurance in mammography screening

International: Netherlands, UK, France, Norway, Sweden, Luxembourg…
Introduction of the mammography screening pilot projects

1. **Resolution passed by the Bundesausschuss der Ärzte und Krankenkassen (Federal Committee of Physicians and Compulsory Health Insurance Funds) on September 12th 1996:**

   Trial and specification of the conditions for integrating mammography screening into the compulsory health insurance funds’ programme for early detection of cancer

2. **Implementation of pilot projects:**

   Acquisition of knowledge about the conditions required for
   – the implementation of a population-based, quality-assured mammography screening based on the European guidelines (3rd ed.) and
   – how to integrate mammography screening uniformly into the early cancer detection programme of the compulsory health insurance funds in Germany

3. **Establishment of the Planungsstelle Mammographie (Association for Mammography Screening)**

   Scheduling, tendering, co-ordination and evaluation of the pilot projects. Inclusion of the experience and knowledge gained in the pilot projects into the recommendations of the Unterausschuss “Prävention” (sub-committee “Prevention”)

Contents

- Background
- Pilot Projects
- Results
  - Performance indicators
  - Surrogate indicators
  - Positive predictive value
- What happened next
Screening in the Pilot Projects

**Invitation**
Letter of invitation to all women between 50 and 69 with
- Appointment
- Location
- Information

**Taking mammograms**
- Case history
- Taking mammograms
- Every side in two levels

**Double reading**
- Two independent clinical diagnostics
- Supervision if necessary

**Consensus-conference**
- Consensus on clinical diagnostics between
  - PVA (Project manager)
  - both radiologists

**Assessment by further imaging**
- Clinical examination
- Ultrasound
- Additional mammograms

**Assessment Core biopsy (CNB)**
- Ultrasound guided or
- X-ray-guided

**Histo-pathological assessment**
By a cooperating institute for pathology

**Reference pathology**
provided centrally for all projects

**Pre-operative multidisc. case conference**
- once a week with
  - PVA (Project manager)
  - Radiologists
  - Pathologist
  - Co-operating surgeon

**Operation**
- Performed by office-based specialists or at co-operating hospitals

**Pathology**
- Reference pathology provided centrally for all projects

**Post-operative multidisc. case conference**
- once a week with
  - PVA (Project manager)
  - Radiologists
  - Pathologist
  - Co-operating surgeon
### Bremen
- Urban region
- 540,000 inhabitants, 70,000 eligible
- Managing director: Dr. Hans Junkermann
- Operative unit: Klinikum Bremen-Mitte (Bremen Central Hospital)
- Organised with several locations:
  - 2 mammography units
  - 1 assessment unit
  - administration
- 1 co-operating institute for pathology
- Public invitation office at the Bremen Central Public Health Office
- Launch: July 2001

### Wiesbaden/Rhein-Taunus-Kreis
- Urban/rural region
- 456,000 inhabitants, 58,000 eligible
- Managing director: Dr. Reichel
- Operative unit: Dr. Reichel
- Organised in a single location
  - 1 Mammography unit
  - 1 assessment unit
  - administration
- 1 co-operating institute of pathology
- Own public invitation office
- Launch: July 2001

### Weser-Ems
- Rural region
- 200,000 inhabitants, 22,000 eligible
- Clinical director: Dr. Gerold Hecht
- Managing director: Prof. Jensch
- Operative unit: Tumorzentrum Weser-Ems and OFFIS
- Organised with several locations:
  - 1 mobile mammography unit
  - 3 assessment units
  - administration
- 2 co-operating institute of pathology
- Public invitation office at OFFIS
- Launch: April 2002
Further common structures

**Administrative office for the issuing of invitations**
- Data imported from the municipal registration office
- Generation and mailing of the invitations (in batches to smaller sub-regions)
- Rearranging of appointments and venues
- Evaluation of participation rate

**Software and Archive**
- Invitation software
- Standardised electronic documentation of the examination data
- Archiving of the mammograms including client files

**Technical quality assurance**
- Standardised controls on the basis of the “European protocol for the quality control of the physical and technical aspects of mammography screening (EPQC, Dutch version)
- Under the leadership of the Director of the Physics Group at the RZ Nijmegen (and a medical physicist in Bremen)

**Regional advisory committee**
- Composition: Association of Statutory Health Insurance Physicians, Public Health Office, Chamber of Physicians, professional associations, various women’s associations and self-help groups, politicians, various institutes…
- Information campaigns
- Development of the information booklet
Contents

- Background
- Pilot Projects

Results

- Performance indicators
- Surrogate indicators
- Positive predictive value

What happened next
Invitation rates

<table>
<thead>
<tr>
<th>Location</th>
<th>1st Round Invites</th>
<th>2nd Round Invites</th>
<th>1st Round Self-Reg</th>
<th>2nd Round Self-Reg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bremen</td>
<td>46%</td>
<td>25%</td>
<td>34,4%</td>
<td>12%</td>
</tr>
<tr>
<td>Wiesbaden</td>
<td>17,1%</td>
<td>27,5%</td>
<td>82,3%</td>
<td>10%</td>
</tr>
<tr>
<td>Weser-Ems</td>
<td>11%</td>
<td>0,1%</td>
<td>97,9%</td>
<td>0,4%</td>
</tr>
<tr>
<td>Total</td>
<td>8,9%</td>
<td>90,3%</td>
<td>90,3%</td>
<td>25,6%</td>
</tr>
</tbody>
</table>

Invited and self-registered rates for different locations and rounds.
Participation rate

<table>
<thead>
<tr>
<th></th>
<th>1st round</th>
<th>2nd round</th>
<th>1st round</th>
<th>2nd round</th>
<th>1st round</th>
<th>2nd round</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bremen</td>
<td>47.1%</td>
<td>64.1%</td>
<td>33.3%</td>
<td>56.1%</td>
<td>60.4%</td>
<td>63.5%</td>
<td>66.3%</td>
</tr>
<tr>
<td>Wiesbaden</td>
<td>17.2%</td>
<td>4.3%</td>
<td>4.3%</td>
<td>1.4%</td>
<td>8.9%</td>
<td>2.4%</td>
<td></td>
</tr>
</tbody>
</table>

Target rate 70%
Participation in relation to distance

Weser-Ems

Participation rate

90,00 %
80,00 %
70,00 %
60,00 %
50,00 %
40,00 %
30,00 %
20,00 %
10,00 %

- 10,00 %
- 20,00 %
- 30,00 %
- 40,00 %
- 50,00 %
- 60,00 %
- 70,00 %
- 80,00 %
- 90,00 %

km

Response to initial invitation
Linear Response to initial invitation
Breast cancer detection rate

<table>
<thead>
<tr>
<th>Location</th>
<th>Initial screening</th>
<th>Subsequent screening</th>
<th>Target for initial screening</th>
<th>Target for subsequent screening</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bremen</td>
<td>8.7</td>
<td>5.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wiesbaden</td>
<td>9.4</td>
<td>5.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weser-Ems</td>
<td>8.3</td>
<td>5.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>8.9</td>
<td>5.7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Disease Stage Distribution

**Initial Screening**
- 80% pTis
- 11.2% pT1a
- 18.1% pT1b (≤ 15)
- 1.8% pT1b (> 15)
- 22.8% pT2
- 69% pT3
- 18.0% pT4
- 1.1% pTx

**Subsequent screening**
- 91% pTis
- 7.0% pT1a
- 7.0% pT1b (≤ 15)
- 0.0% pT1b (> 15)
- 2.0% pT2
- 30.0% pT3
- 0.0% pT4
- 29.0% pTx
Daily Technical Quality Control

Film density vs Target corridor

Target corridor

Messpunkt

Filmschwärzung [OD]
Contents

- Background
- Pilot Projects
- Results
  - Performance indicators
  - Surrogate indicators
  - Positive predictive value
- What happened next
## Performance indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Acceptable level</th>
<th>Desirable level</th>
<th>Bremen</th>
<th>Wiesbaden</th>
<th>Weser-Ems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participation rate</td>
<td>&gt; 70%</td>
<td>&gt; 75%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Initial screening</td>
<td>51,7%</td>
<td>50,5%</td>
<td>61,6%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subsequent screening</td>
<td>55,3%</td>
<td>60,4%</td>
<td>67,2%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Repeated screening examinations</td>
<td>&lt; 3%</td>
<td>&lt; 1%</td>
<td>1,4%</td>
<td>2,6%</td>
<td>2,6%</td>
</tr>
<tr>
<td>Recall rate</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Initial screening</td>
<td>&lt; 7%</td>
<td>&lt; 5%</td>
<td>5,7%</td>
<td>6,2%</td>
<td>5,9%</td>
</tr>
<tr>
<td>Subsequent screening</td>
<td>&lt; 5%</td>
<td>&lt; 3%</td>
<td>3,8%</td>
<td>3,0%</td>
<td>2,2%</td>
</tr>
<tr>
<td>Early recall following diagnostic assessment</td>
<td>&lt; 1%</td>
<td>0%</td>
<td>0,04%</td>
<td>0,10%</td>
<td>0,14%</td>
</tr>
<tr>
<td>Pre-op diagnosis of malignancy</td>
<td>&gt; 70%</td>
<td>&gt; 90%</td>
<td>94,6%</td>
<td>94,9%</td>
<td>92,5%</td>
</tr>
<tr>
<td>Benign:malignant core biopsy.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Initial screening</td>
<td>(1:1)*</td>
<td>(0,5:1)*</td>
<td>1:1</td>
<td>0,9:1</td>
<td>1,2:1</td>
</tr>
<tr>
<td>Subsequent screening</td>
<td>(1:1)*</td>
<td>(0,2:1)*</td>
<td>0,8:1</td>
<td>0,5:1</td>
<td>0,2:1</td>
</tr>
<tr>
<td>Inadequate core biopsy</td>
<td>≤ 10%</td>
<td>&lt; 10%</td>
<td>2,6%</td>
<td>0,6%</td>
<td>2,8%</td>
</tr>
</tbody>
</table>

* Acceptable level according to EU Guidelines for open biopsies
Contents

- Background
- Pilot Projects
- Results
  - Performance indicators
  - Surrogate indicators
  - Positive predictive value
- What happened next
## Surrogate indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Acceptable level</th>
<th>Desirable level</th>
<th>Bremen</th>
<th>Wiesbaden</th>
<th>Weser-Ems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breast cancer detection rate</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Initial screening</td>
<td>7,5</td>
<td>&gt; 7,5</td>
<td>8,7</td>
<td>9,4</td>
<td>8,3</td>
</tr>
<tr>
<td>Subsequent screening</td>
<td>3,75</td>
<td>&gt; 3,75</td>
<td>5,6</td>
<td>5,9</td>
<td>5,3</td>
</tr>
<tr>
<td>Proportion of carcinoma in situ</td>
<td>10 %</td>
<td>10 – 20%</td>
<td>20,2%</td>
<td>17,5%</td>
<td>20,5%</td>
</tr>
<tr>
<td>Proportion of invasive Ca ≤ 10mm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Initial screening</td>
<td>≥ 20%</td>
<td>≥ 25%</td>
<td>36,0%</td>
<td>37,9%</td>
<td>25,8%</td>
</tr>
<tr>
<td>Subsequent screening</td>
<td>≥ 25%</td>
<td>≥ 30%</td>
<td>37,1%</td>
<td>38,9%</td>
<td>50,0%</td>
</tr>
<tr>
<td>Proportion invasive Ca &lt; 15mm</td>
<td>&gt; 50%</td>
<td>&gt; 50%</td>
<td>62,5%</td>
<td>70,3%</td>
<td>58,1%</td>
</tr>
<tr>
<td>Proportion of node-negative Ca</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Initial screening</td>
<td>70%</td>
<td>≥ 70%</td>
<td>80,8%</td>
<td>83,9%</td>
<td>85,7%</td>
</tr>
<tr>
<td>Subsequent screening</td>
<td>75%</td>
<td>≥ 75%</td>
<td>87,2%</td>
<td>91,5%</td>
<td>100,0%</td>
</tr>
<tr>
<td>Proportion of stage II+ Ca</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Initial screening</td>
<td>25%</td>
<td>&lt; 25%</td>
<td>28,0%</td>
<td>24,8%</td>
<td>30,0%</td>
</tr>
<tr>
<td>Subsequent screening</td>
<td>20%</td>
<td>&lt; 20%</td>
<td>21,3%</td>
<td>8,5%</td>
<td>0,0%</td>
</tr>
<tr>
<td>Interval cancer rate</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Month 0-11</td>
<td>30%</td>
<td>&lt; 30%</td>
<td>30,3%</td>
<td>33,1%</td>
<td>22,8%</td>
</tr>
<tr>
<td>Month 12-23</td>
<td>50%</td>
<td>&lt; 50%</td>
<td>n/a</td>
<td>n/a</td>
<td>44,4%</td>
</tr>
</tbody>
</table>
Contents

- Background
- Pilot Projects
- Results
  - Performance indicators
  - Surrogate indicators
  - Positive predictive value
- What happened next
Stages of Diagnosis

Screening examination including documentation of clinical abnormalities or insufficient diagnostic image quality

Interpretation of the mammograms (Double reading and consensus decision where necessary):

a) Mammographic abnormality  
b) Clinically abnormal or flaws in the diagnostic imaging quality  
c) No mammographic or clinical abnormalities and no flaws in the diagnostic imaging quality

Assessment based on additional imaging:

a) Image abnormal, biopsy indicated (core needle biopsy or diagnostic open biopsy)  
b) Image abnormal, further assessment (other than biopsy) required  
c) No imaging abnormality

Further Assessment: Biopsy (core needle biopsy or diagnostic open biopsy):

a) Malignant lesion (B5), therapy required  
b) Lesion not definitely malignant, further assessment or therapy required  
c) No further diagnostic or therapeutic measures required
Positive Predictive Value (PPV)

Initial screening
- Positive results as a proportion of all examinations

Subsequent screening
- Positive results as a proportion of all examinations

1. Result of consensus conference: mammogram abnormal
2. Result of image assessment: biopsy (core needle biopsy or open biopsy) recommended
3. Result of biopsy: result malignant (core needle biopsy B5, open biopsy positive)

False-positive results
Contents

- Background
- Pilot Projects
- Results
  - Performance indicators
  - Surrogate indicators
  - Positive predictive value
- What happened next
Introduction of Mammography Screening in Germany

1. **Resolution by the Bundestag (German Federal Parliament) on June 21\textsuperscript{st} 2002:**
   - Introduction of population-based, nation-wide mammography screening.

2. **Establishment of the Kooperationsgemeinschaft Mammographie (Coordination Office Mammography Screening) on August 1\textsuperscript{st} 2003:**
   - Evaluation of the pilot projects
   - Supporting the nation-wide introduction of mammography screening
   - Establishment of national reference centres for the technical monitoring and quality assurance of the mammography units
   - Certification and re-certification of the mammography units
   - Evaluation of the quality assurance indicators and of the programme

3. **Passing of the corresponding changes to the guidelines on December 15\textsuperscript{th} 2003 to take effect on January 1\textsuperscript{st} 2004:**
   - Krebsfrüherkennungsrichtlinien (Section B, no. 4)
   - Bundesmantelvertrag-Ärzte und –Ärzte/Ersatzkassen (Appendix 9.2)

4. **Transfer of the pilot projects into the regular health care system**
   - Bremen and Weser-Ems in April 2005
   - Wiesbaden in March 2006
Kooperationsgemeinschaft (KoopG)

Beirat der Kooperationsgemeinschaft
Vorsitzender Dr. W. Aubke (KBV)
Stelv. Vorsitzender Dr. B. Metzinger (SpiV)

GF & Ltg. J.S. Graebe-Adelssen

REFERENZZENTRUM MAMMOGRAPHIE BERLIN
Ltq. Dr. L. Regitz-Jedermann

REFERENZZENTRUM MAMMOGRAPHIE BREMEN
Ltq. Dr. G. Hecht

REFERENZZENTRUM MAMMOGRAPHIE MÜNCHEN
Ltq. Prof. Dr. S. Heywang-Köbrunner

REFERENZZENTRUM MAMMOGRAPHIE MÜNSTER
Ltq. Prof. Dr. W. Heindel

REFERENZZENTRUM MAMMOGRAPHIE SÜDWEST
Ltq. Dr. K. Bock

REFERENZZENTRUM MAMMOGRAPHIE WIESBADEN
Ltq. Dr. M. Reichel
Makrostrukturen im deutschen Mammographie Screening

Bundesebene (KoopG + 5 RZ)

überregional (15-20 SE)

Referenzzentrum (RZ)
Evaluation, Fortbildung, Betreuung

Kooperationsgemeinschaft (KoopG)
Evaluation, Organisation, Koordination

Landesebene

Zentrale Stelle (ZS)
Einladungszensten

Krebsregister
Meldeämter

KV / KK

Regionalebene

93 SE (ca. 1 Mio Einwohner; 120 Tausend anspruchsberechtigte Frauen)

Screening Einheit (SE)
Organisation, Controlling, QS

Abklärungseinheit (AE)
bildgebende Abklärung & Biopsie

Pathologie
koop. KH-Ärzte

Mammographie-Einheit (ME)
Erstellung Mammographien

SE...

AE
Path. KHÄ

ME

SE...

AE
Path. KHÄ

ME

ME
<table>
<thead>
<tr>
<th>Zentrale Stelle</th>
<th>Lädt ein nach</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZS Berlin</td>
<td>Berlin 01</td>
</tr>
<tr>
<td>ZS Bremen</td>
<td>Bremen</td>
</tr>
<tr>
<td></td>
<td>Nie Nordwest</td>
</tr>
<tr>
<td></td>
<td>Hannover</td>
</tr>
<tr>
<td></td>
<td>Nie Nord</td>
</tr>
<tr>
<td>ZS Düsseldorf</td>
<td>Düsseldorf</td>
</tr>
<tr>
<td></td>
<td>Köln linksr.</td>
</tr>
<tr>
<td></td>
<td>Köln rechtsr.</td>
</tr>
<tr>
<td>ZS München</td>
<td>Mit. Franken-Ld.</td>
</tr>
<tr>
<td>ZS Münster</td>
<td>Münster Nord</td>
</tr>
<tr>
<td></td>
<td>Münster Süd</td>
</tr>
<tr>
<td></td>
<td>Dortmund</td>
</tr>
<tr>
<td></td>
<td>Bielefeld</td>
</tr>
<tr>
<td></td>
<td>Gelsenkirchen</td>
</tr>
<tr>
<td></td>
<td>Steinfurt/Borken</td>
</tr>
<tr>
<td>ZS Schwerin</td>
<td>Greifswald</td>
</tr>
<tr>
<td>ZS Wiesbaden</td>
<td>Wiesbaden</td>
</tr>
<tr>
<td></td>
<td>Darmstadt</td>
</tr>
</tbody>
</table>

- Referenzzentrum
- Zentrale Stelle
Zuordnung der Referenzzentren

Referenzzentrum Bremen
– Dr. med. Gerold Hecht

Referenzzentrum Berlin
– Dr. Lisa Regitz-Jedermann

Referenzzentrum Münster
– Prof. Dr. med. Walter Heindel

Referenzzentrum Süd-West
a) Wiesbaden – Dr. med. Margrit Reichel
b) Marburg – Dr. med. Karin Bock

Referenzzentrum München
– Prof. Dr. med. S. H. Heywang-Köbrunner
### Stand Einführung

| KV Westfalen-Lippe | 13 | 3 | 4 | 3 | 1 | 1 | 1 | WL |
| KV Bremen + Niedersachsen | 1+8 | 2 | 1 | 2 | 1 | | | N |
| KV Bayern | 14 | 1 | - | - | 1 | 7 | 5 | BAY |
| KV Nordrhein | 9 | 1 | 3 | 2 | 3 | | | NO |
| KV Hessen | 6 | 1 | 2 | 2 | 1 | | | H |
| KV Meck.-Vorpom. | 4 | 1 | 1 | 2 | | | | MV |
| KV Berlin | 4 | 1 | 1 | 1 | 1 | 1 | | BER |
| KV Baden-Württemberg | 10 | 3 | 2 | 5 | | | | BaWü |
| KV Thüringen | 2 | 1 | 1 | | | | | T |
| KV Rheinland-Pfalz | 4 | 3 | | 1 | | | | RLP |
| KV Schleswig-Holstein | 4 | | 4 | | | | | S-H |
| KV Hamburg | 2 | | | 2 | | | | HH |
| KV Saarland | 1 | | | 1 | | | | SAA |
| KV Brandenburg | 2 | | | | 2 | 5 | 4 | BBG |
| KV Sachsen | 5 | | | | | | | S |
| KV Sachsen-Anhalt | 4 | | | | | | | S-A |
| **Zuwachs SE** | 93 | 6 | 7 | 11 | 7 | 20 | 23 | 8 | 6 | 4 | **Zuwachs in Prozent** | 100% | 6,45% | 7,53% | 11,83% | 7,53% | 21,51% | 24,73% | 8,60% | 6,45% | 4,30% |
| **SE kummuliert** | [6] | [13] | [24] | [32] | [51] | [75] | [82] | [88] | [93] |
| **Flächendeckung** | 6% | 14% | 26% | 33% | 55% | 80% | 88% | 95% | 100% | *(optimistisch geschätzt)* |
Flächendeckendes Screening

Westfalen-Lippe – ab IV. Quartal 2006
Mecklenburg-Vorpommern – ab IV. Quartal 2006
Bayern – ab I. Quartal 2007
Niedersachsen – ab I. Quartal 2007
Nordrhein – ab I. Quartal 2007
Hessen – ab I. Quartal 2007
Thüringen – ab I. Quartal 2007
Rheinland-Pfalz – ab I. Quartal 2007
Saarland – ab I. Quartal 2007
Berlin – ab II. Quartal 2007
Baden-Württemberg – ab II. Quartal 2007
Schleswig-Holstein – ab II. Quartal 2007
Brandenburg – ab II. Quartal 2007
Sachsen – ab III. Quartal 2007
Sachsen-Anhalt – ab IV. Quartal 2007
Thank your for your attention