

relation of subsequent invasive grade to DCIS grade is known and therefore the survival of these according to grade can be calculated. This calculation shows that of every 100 cases diagnosed without screening 4 deaths would have been prevented by screening diagnosis of DCIS. Although screening has diagnosed 11% more in the best 21 prognostic groups and 11% less in the worst 2, this only increases survival by 4%.

NPI Group	Prior to screening 1980–86		Invited for screening 1993–96	
	% in Observed 10yr n surviving grp (no adjuvant therapy)		% in Expected 10yr n surviving grp (adjuvant therapy)	
E	12	10	19	16
G	19	12	23	14
MI	30	18	29	17
MI	24	10	16	7
P	15	2	12	2
Overall	100	52%	100	56%

Conclusion: Population Breast Screening in women aged 50–65 is making an absolute reduction in deaths from breast cancer of 8% (Relative risk reduction 16%). Half of this is due to earlier detection of invasive tumours and half from the diagnosis of DCIS.

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POSTER HIGHLIGHT

Increased breast cancer incidence but decreased rates of advanced disease due to mammography screening

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Background: In the period 1989–1997, a nation-wide mammography breast cancer screening programme for women aged 50–69 was implemented in the Netherlands. In this descriptive study, we analyze changes in breast cancer incidence and in tumour stage distribution in the 7 out of 9 regions in which no screening took place before 1990.

Methods: Annually, tabulated regional cancer registry data on breast cancer incidence and tumour stages were collected after linkage of records of screened women to the cancer registry. Based on population data from Statistics Netherlands, annual incidence rates were calculated for 3 age categories (40–49, 50–69 and 70–79), 3 cancer categories (screen-detected, interval cancer and breast cancers in not-screened women), and 6 tumour stages. The incidence rates are based on annual female population data from Statistics Netherlands and age-adjusted using the European standard population.

Results: In general, breast cancer incidence rates including DCIS rose strongly (14 to 42%) up to 1994, followed by a slight decrease or constant rates up to 1997, reflecting the change from predominantly prevalent screen examinations in the early nineties to predominantly incident screens after 1994. The proportion of screen-detected and interval cancers gradually increased: in 1997, 2 out of 8 breast cancers were screen-detected and one was an interval cancer; in women aged 50–69 these were 2 and 2, respectively. Incidence rates of small invasive cancers free from lymph node metastases (T1N0) showed the strongest increase, in particular in women aged 50–69. In this same age category, incidence rates of large and lymph node positive cancers (T2+N+) decreased by 13%.

Conclusion: Population-based breast cancer screening has a large impact on breast cancer incidence. In our study, the strong increase in incidence of in-situ and small invasive cancers went together with important decreasing incidence rates of advanced tumour stages.

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POSTER HIGHLIGHT

Stereotactic vacuum-assisted breast biopsy (VB) in 2874 patients: a multicenter study

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Background: Vacuum assisted breast biopsy (VB) can replace surgical biopsy for diagnosis. We evaluated accuracy and clinical utility of VB in a multi-center setting according to a strict quality assurance protocol.

Material and methods: 2874 successful Mammotome(r)174;-VB were performed at five sites. Lesions were categorized as BI-RADS IV (85%), BI-RADS V (6%), and BI-RADS III (9%) lesions. 58% of lesions were <10 mm, 70% concerned microcalcifications. For malignancies and borderline lesions, surgery was recommended. Benign lesions were verified by follow-up.

Results: 7% invasive carcinomas, 15% ductal carcinoma in-situ (DCIS), 5% atypical ductal hyperplasias (ADH), and 0.6% lobular carcinoma in-situ were identified. Operative results necessitated an upgrade of 24% ADH to DCIS or DCIS and invasive carcinoma. 12% of DCIS patients proved to have invasive carcinoma. 73% of lesions were benign. Only a single false-negative result was encountered (negative predictive value, 99.95%). Minor side effects occurred in 1.4% of cases, 0.1% required a subsequent intervention. Scarring relevant for mammography was rare at 0.3%.

Conclusions: Quality-assured VB was highly reliable. VB effectively identified patients with benign lesions and assisted therapeutic decisions. Only a single case of malignancy was missed. A close interdisciplinary approach assures optimal results.

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POSTER HIGHLIGHT

Use of intra-operative ultrasound to guide excision of impalpable breast lesions

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Purpose: The methods commonly utilized to guide surgical excision of impalpable breast lesions include preoperative placement of hookwires, carbon injections, and more recently radio-isotope injections. However, all of these techniques have disadvantages, not the least of which is the subjection of the patient to an additional stressful and often traumatic procedure preoperatively. The use of intraoperative ultrasound to guide the excision of sonographically visible impalpable lesions is a new technique which avoids the need for a preoperative localization procedure. This report describes the author's personal series of ultrasound guided breast excisions collating data collected prospectively and reviews the efficacy of this technique.

Methodology: Data in relation to 115 ultrasound guided breast excisions performed in 103 patients was reviewed. The technique of utilizing a high frequency real-time ultrasound probe intraoperatively to localize and guide excision breast abnormalities is described.

Results: There were no failed excisions as confirmed by specimen sonography, pathology findings and/or follow-up ultrasound. Breast malignancies comprised 42% of all excised lesions, and of these adequate margins of excision were achieved at the first operation in 93% of cases. Direct ultrasound localization of the lesion at the time of surgery allowed a more optimal placement of the incision and delays in theatre time were avoided as specimens did not have to be sent to the Radiology Department for confirmation of excision.

Conclusions: Intraoperative ultrasound guided excision is a safe and efficient technique in the management of impalpable sonographically breast visible lesions, and early reports in the world literature support the findings of this series which show it to have significant advantages over other current methods, particularly with respect to a reduction in patient anxiety and improved surgical resection margins.

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POSTER

The variation of process indicators between ten Finnish screening centres in 1991–2000

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The aim of this study is to assess quality of the Finnish mammography programme by estimating the individual-level process indicators of ten breast cancer screening centres and to compare these centre-specific figures to each other and to the European standards. The centres invited over 1,000,000 mainly 50–64 years old women in 1991–2000. The mean compliance was 88%, and on average 2.8% of screened women were recalled for further assessment in each round. The average breast cancer detection rate was 0.38%. The centre-specific attendance rate varied from 84% to 92%, the recall rate from 1.2% to 4.3%, the surgical biopsy rate from 0.51% to 0.73%, the breast cancer detection rate from 0.32% to 0.47%, the positive predictive value (PPV) of mammography from 10% to 26%, and the PPV of biopsy from 47% to 77%. The differences in positive predictive values of mammography between the centres were statistically significant and relevant in practice. Irrespective of variability in the PPV, the relation between the detection rate and the expected breast cancer incidence rate was, however, on the recommended level in each of the centres. The average and centre-specific figures fulfilled mainly the quality assurance criteria of the European commission (2001). The wide variation by screening