Conclusions: The MSAC service provides for individualised evidence based multidisciplinary management in an important area of cancer survivorship. In addition it also allows for unique educational and research opportunities and should be considered for replication in other health settings.

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Follow-up after breast cancer by primary care physicians in the Ile-de-France region

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Background: Due to the increase in new breast cancers and the improvement in long-term prognosis, follow-up (F/U) of patients (pts.) cannot be carried out entirely in specialized cancer centres. The Réseau Gynécomed was created to transfer the follow-up of patients to primary care physicians (PCP).

Material and Methods: Between July 1998 and October 2009, 1703 pts. with either early stage breast cancer, including DCIS, who did not received adjuvant chemotherapy, or with any non-metastatic breast cancer with at least 5 years event-free survival, were offered to be entirely followed by their PCP. Following informed consent, patients were regularly followed according to protocol with a bi-annual clinical examination during the first 5 years, and yearly thereafter, and annual uni/bilateral mammograms. The protocol required the PCP to address a F/U form to the referring centre at each consultation. The referring centre was required to see the patient for any new occurring event. Breast cancer events were regularly recorded, and patients satisfaction studies were performed.

Results: Nine centres in Paris and its region included 1703 pts. who were followed by 170 PCP, mostly medical gynaecologists. Six hundred twenty-four pts. (43%) were included at the end of treatment, and 825 pts. (57%) after 5 years of event-free F/U in the referring centre. As per October 2009, the median F/U was 28 months (range 0–129) and 42 events were diagnosed: 24 loco-regional recurrences, 5 distant metastases, 13 controlateral breast cancers. In addition, 9 non-breast cancers occurred. Seventy-two pts. were lost to F/U (5%). The mean delay between two 6-months scheduled F/U visit was 7.3 months; it was 11 months between two 1-year planned F/U. Average excellent satisfaction score measured on 1245 pts. was 83%.

Conclusions: This study showed that follow-up of early stage breast cancer pts. by their PCP was feasible. Compliance to follow-up protocol by PCPs was excellent, and patient satisfaction score was above 80%. Therefore, complete transfer of F/U to PCP of pts. with early breast cancer could represent a good alternative to F/U in cancer centres.

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Multidisciplinary training for Senologists: experience of the Piedmont region

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Background: The guidelines on breast cancer recommend the establishment of "Multidisciplinary Breast Units". Therefore it is necessary that cases of breast disease are followed by a team consisting of specialists properly trained.

The training projects for Senologists must be able to provide 1) the ability to access, critically, to the scientific literature 2)the ability to participating in research trials 3) the most recent and updated technical skills within its own discipline and knowledge of other professionals involved in the team 4)to monitor its business practice through software, as such SQTM that measures the indicators of quality of diagnosis and treatment 5)councelling with the patient and within a working group 6)the ability to teach and pass on their experience.

Material and Methods: In Piedmont region is in the process of testing a draft training (FIM) funded by the Regional Oncology Network and with the Master's degree in Senology, in which participants, mentoring teachers, discuss clinical cases accompanied by illustrations for the verification of the correct diagnosis–treatment. During period 2006–2009 were held 50 monthly meetings and were presented 92 cases. From these have emerged the need to deepen and/or updates that have generated a series of training events.

Results: To evaluate the usefulness of the FIM were analyzed 1) the indicators of quality and 2) has been verified, through a questionnaire, the effective compliance of the requirements of the Breast Units. The results have been associated with the centres that have completed the training (FIM+) and compared with the volume of activity centres (low volume <50 new cases per year, medium 50–150, high >150). Analysis of the results showed that the FIM+ significantly affected the achievement of targets and, for some important indicators, irrespective of the level of activities. Instead multidisciplinarity was correlated with the volume and discussion of all clinical cases are regularly conducted in most FIM+ centres and at all centres with high volume and FIM+.

Conclusions: Preliminary analysis of data shows the effectiveness of training conducted under this model since it gave the possibility to change the way we work by encouraging group interaction and allowing the improvement of individual indicators.

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High prevalence of BRCA1/2 mutations in female breast cancer (BC) patients with family history and triple negative phenotype (TNBC)

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Background: The prevalence of *BRCA1*/*BRCA2* mutations has classically been analyzed based on personal and family history of breast and ovarian cancer. It is important to know the prevalence of *BRCA1/2* mutations in patients with TNBC phenotype since germline status might be predictive of chemosensitivity.

Material and Methods: We analyzed the mutation status of 229 consecutive unrelated female BC patients from our hereditary breast cancer database that had undergone full genetic testing of *BRCA1*/*BRCA2* (direct sequencing and large rearrangement analysis). Univariate analyses were performed to compare the prevalence of mutations between TNBC and non-TNBC according to family history (breast/ovarian cancer in $1^{st}/2^{nd}$ degree relatives) and age at diagnosis (dichotomized at 50).

Results: Overall, 48/229 (21%) carried a mutation, 21 (9%) in *BRCA1* and 27 (12%) in *BRCA2.* TNBC were diagnosed in 54/229 (24%) women. 17/229 (7%) women had a TNBC and carried a *BRCA1/2* mutation *BRCA1* mutations were found in 28% (15/54) of TNBC versus 3% (6/175) of non-TNBC (Ratio 8.1, $p < 0.001$), while *BRCA2* mutations were more prevalent in non-TNBC (14% versus 4%, ratio 3.5, $p < 0.05$). All TNBC patients with a *BRCA1/2* mutation (17/54:32%, 15 in *BRCA1* (28%) and 2 (4%) in *BRCA2*), regardless of their age at diagnosis, had a family history of breast or ovarian cancer.

Conclusions: In our cohort, 32% of BC patients with TN phenotype and family history carry a mutation in *BRCA1/2*, regardless of their age at diagnosis. At the time of designing clinical trials *BRCA1/2* germline status should be considered in patients with TNBC and family history of breast/ovarian cancer.

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Enhancing the quality of care in patients with breast cancer: seven years experience with a regional audit system

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Background: In order to increase the insight into the breast cancer care and to initiate care improvement initiatives, between 2002 and 2008, the

hospitals in the region of the Comprehensive Cancer Centre West (CCCW) have participated into two audit projects (KIM-1 and KIM-2) and one intervention project (MZSB). We investigated to what extend the hospitals succeeded in improving the given care and in maintaining the quality over the years.

Methods: Patients diagnosed with either DCIS or breast cancer within either one of nine hospitals in the region of the CCCW between January 2002 and December 2008 were included into the study. Information was collected about the primary treatment: surgery, radiotherapy, and systemic therapy. Quality indicators were evaluated over the years. In 2006, the multidisciplinary mamma team (MMT) within each hospital received expert advice and feedback to initiate care improvement initiatives. Between 2006 and 2008, the MMT's within each hospital yearly discussed the hospital scores of each indicator and compared those with the highest, the lowest and the mean scores within in the region.

Results: Between 2002 and 2008, an increasing number of patients had been discussed within the multidisciplinary mamma team (MMT) before surgery (69% in 2002, 71% in 2008), or had been discussed within the MMT after surgery (95% in 2002, 96% in 2008). Between 2006 and 2008 almost all patients had had a meeting with a breast cancer-nurse before surgery (on average 92% of the patients). An increasing number of patients visited the outpatient clinic, within 5 working days after admittance (63% in 2002, 81% in 2008), received surgical treatment within 15 working days after diagnosis (46% in 2002, 55% in 2008), and left the hospital within 5 working days after treatment (79% in 2002, 98% in 2008). The number of patients with a successful sentinel node procedure (90% in 2002, 95% in 2008), and with more than 10 lymph nodes after axillary lymph node resection (76% in 2002, 85% in 2008), had been improved over the years. The number of patients with only one surgical intervention varied over the years (between the 85% and the 95%).

Conclusion: The process and the competence of the breast cancer care are of high quality and have been slightly improved. Most of the waiting times have been gradually improved over the years, though need to be further improved. This audit project has increased the insight into the quality of the breast cancer care and contributed to the improvement of this care.

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Cost-effectiveness and budget impact of the 70-gene signature for node-negative breast cancer

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Background: The 70-gene signature (MammaPrint®) is a prognostic test used to guide adjuvant treatment decisions in patients with node-negative breast cancer. In order to decide upon its use, a systematic comparative analysis of the effects of the 70-gene signature, the Sankt Gallen guidelines and the Adjuvant Online Software for these patients on survival, quality of life and costs is warranted.

Methods: A Markov decision model was used to simulate the 10-year costs and outcomes (survival and quality-of-life adjusted survival (QALYs)) in a hypothetical cohort of node-negative, estrogen receptor positive breast cancer patients. Sensitivity and specificity of the three tools were based on 5 and 10 years breast cancer specific survival and distant metastasis as first event, derived from a pooled analysis consisting of 305 tumour samples from 3 previously reported validation studies.

Results: Small differences in survival, but substantial differences in quality-adjusted survival between the prognostic tools were observed. St. Gallen showed the highest survival rates compared to the 70-gene signature, but leads to a substantial larger amount of adjuvant chemotherapy and lower cost-effectiveness, thus demanding a high willingness to pay to save a life year. The budget impact (restricted to the mean costs multiplied by the target population) calculated for the Dutch health care with an incidence of 6500 early breast cancers for the St Gallen versus the 70-gene resulted in cost savings of 46.1 million per year. Quality-adjusted survival was highest when using the 70-gene signature, compared to both Adjuvant Online and the St Gallen guidelines. Based on costs per QALY, the 70-gene has the highest probability of being cost-effective for a willingness to pay for a QALY higher then € 15.000.

Conclusions: When deciding upon the cost-effectiveness of the prognostic tests, the 70-gene signature improves quality-adjusted survival and has the highest probability of being cost-effective.

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A pilot randomised controlled trial comparing day surgery and inpatient surgery in breast cancer

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Aim: Surgical management of breast cancer has become less invasive over the past decade, making these procedures potentially more suitable for day surgery. The aim of the present study was to establish in a pilot randomised controlled trial whether day surgery improved physical and quality of life outcomes in patients undergoing breast conserving surgery with axillary sampling or sentinel node biopsy compared with inpatient surgery.

Methods: Patients with invasive breast cancer were randomised to day surgery or standard inpatient care. The primary outcomes were physical (wound related, pain, physical activity, nausea and vomiting) and the secondary outcome was quality of life. The physical outcomes were assessed using a surgical site infection (SSI) validated questionnaire and a daily patient diary for the first postoperative week. The quality of life was assessed using a validated Functional Assessment of Cancer Therapy (FACT B) form which was scored at baseline, Day 7 and Day 30 postoperatively. All patients had a 30-day postoperative follow-up. Ethical approval was obtained from the Research Ethics Committee for this trial.

Results: Of the 31 patients randomised, 29 were analysed at the end of the study. There was no significant difference in the physical outcomes (SSI, nausea and vomiting scores, pain scores and physical activity). The quality of life scores for the day group were significantly better compared to the inpatient group on postoperative Day-7, with equivalent results for both groups by Day-30 (Table 1).

Table 1: Changes in FACT B scores 7 and 30 days postoperatively

	Inpatient group (n = 14)	Day patient group (n = 15)	p value
Baseline scores (preoperative)			
FACT G	96.4 (73 to105)	90 (69.6 to 108)	0.458
FACT B	126.2 (104.5 to 138)	118 (89.1 to 143)	0.106
Difference between Day-7 baseline scores			
FACT G	−12.0 (−41.0 to 11.0)*	−3.0 (−20.4 to 11.0)	0.036
FACT G	−15.4 (−44.0 to 10.0)*	−2.9 (−35.3 to 12.0)	0.045
Difference between Day-30 baseline scores			
FACT G	−2.5 (−13.3 to 9.0)	2.0 (−25.6 to 10.0)	0.505
FACT B	−2.5 (−16.3 to 10.7)	5.9 (−40.6 to 13.0)	0.397

*$p < 0.01$ when compared with baseline values within the same group.
FACT G: Functional Assessment of Cancer Therapy − General.
FACT B: Functional Assessment of Cancer Therapy − Breast.

Conclusions: This pilot study showed that day surgery is feasible and safe in patients undergoing breast conserving surgery. When compared to inpatients, day surgery patients had equivalent physical outcomes and a better quality of life outcome by the end of the first postoperative week. A larger randomised controlled trial may be planned based on the results of this pilot study to confirm these results.

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Development of a clinical breast cancer database application for the ongoing quality assurance of breast cancer care

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Background: The evolution of new therapies for breast cancer coupled with individualized treatments has led to the need to ensure that evidence based therapies produce desired outcomes. In 2007 the Ottawa Hospital Cancer Centre (TOHCC) Breast Cancer Disease Site Group embarked upon a process of developing and implementing a comprehensive clinical database for all breast cancer patients referred to this academic facility. This database consists of retrospective and prospective (real-time) information derived from both electronic and physical patient records. With over 1000 new breast cancer patients and an ongoing population of over 6000 treatment or follow up visits per year this is clearly a complex, potentially time consuming and expensive undertaking. In order to address these issues the project developed and engaged proprietary knowledge automation technologies to increase the productivity and accuracy of data extraction from electronic