reports (pathology, radiology, consultation and followup notes). The project utilized access controlled Open Source Software to host and deploy the content of the database.

Materials and Methods: All breast cancer referrals with demographic data, as well as all systemic therapy delivered at the outpatient centre, all electronic outpatient lab reports and all radiotherapy treatments were abstracted from TOHCC's clinical system(s). Pathology reports including contemporary molecular prognostic markers were generated electronically from the host hospital's electronic health record and processed with the knowledge automation technology. Extracted information was imported into an Open Source content management system for display of individual clinical patient information.

Results: A total of 27,000 breast cancer referrals have been identified since 1960 at TOHCC. A sample of over 9300 patient referrals since 2000 was the initial target for retrospective and quality assurance analysis. To date, more than 5000 individual unique pathology sample reports have been electronically abstracted on 2400 unique patients, increasing by more than 600 reports for over 300 patients each day. Each pathology report has up to 50 synoptic data elements extracted automatically. There have been more than 3300 patients who have received radiotherapy treatment since 2004 and more than 5400 patients have received systemic therapy. Outcome data on all patients and individual subsets will be generated.

Conclusion: Utilizing knowledge automation technology in association with data extracts from hospital clinical systems we have efficiently created the foundation for ongoing quality assurance of breast cancer care of our patients. Modern oncologic care requires ongoing, efficient quality and outcome assessments.

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Clinicopathological features of the triple-negative tumors in Moroccan breast cancer patients

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Background: Triple-negative breast cancer (TNBC) is defined as a group of breast carcinomas that are negative for expression of hormone receptors and HER2, They tend to have a higher grade, with a poorer outcome compared to non-TN breast cancers. Thus only chemotherapy is expected to be effective because no therapeutic targets have yet been established. The aim of this study is to determine the clinicopathological features associated with this type of breast cancer.

Methods: This is a retrospective study of 2004 Breast cancer females collected at the National institute of oncology of Rabat in Morocco, between January 2007 and December 2008. Epidemiological, clinical, histological, therapeutic and evolutive data were analyzed.

Results: A total of 106 women were identified as having triple-negative breast cancer (18.9% of all breast cancer women), with a median age of 45 years (range: 27−89). 74% of women with triple-negative breast cancers were more likely to be under age 50. TNBC were associated most often with invasive ductal carcinomas (85%) and medullar carcinoma (7.5%) and also with a high grade (53% grade III, 33% grade II), vascular invasion was found in 25% of cases. For the tumor size, 13 patient s were classified T1, 64 T2, 16 T3 and 10 T4. For the lymph node involvement: 55 (51.8%) had negative lymph nodes, and 44 had positive lymph nodes. For the TNM staging 9 patients were classified stage I, 59 stage II, 28 stage III and 7 were metastatic at diagnosis.

For treatment modalities 94 patients underwent surgery (radical mastectomy in 64% of cases and 36% had conservative surgery).

Neoadjuvant chemotherapy was administered to 25 patients and adjuvant chemotherapy to 86. All patients received anthracycline based regimen and only 23% received taxanes. Radiotherapy was administered to 71% of patients.

Among the seven metastatic patients at diagnosis 2 progressed after first line chemotherapy. The others had stabilization.

Fourteen (15.4%) patients had a distant failure after adjuvant treatment and one local recurrence, median time to treatment failure was 5 months.

Conclusion: TNBC were associated with young age, high grade tumors, advanced stage at diagnosis (91.5% $\geqslant$ stage II), and short time to relapse. More details about prognosis will be presented at the next meeting.

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Knowledge, attitudes, beliefs, behaviour and breast cancer screening practice in Ghana

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Background: Ghanaian women have a low awareness and participation rates in breast cancer screening practises. As a result many patients are diagnosed with advanced disease resulting in poor outcome.

Purpose of the study: The purpose of the study was to explore various factors needed to develop socio-economic and cultural specific models to improve breast cancer care in Ghana.

Methodology: The study which was conducted in Accra and Sunyani involving 474 women, physicians and traditional healers employed both quantitative and qualitative methods. Statistical tests were done on the quantitative data whilst the qualitative data was analysed by constant comparison method.

Findings: Overall, the respondents' knowledge on breast cancer was found to very low, however, higher education levels indicated superior knowledge and a more positive attitude towards breast screening ($U= 3138$, $N = 474$, $p < 0.001$). Respondents in Sunyani performed slightly better in breast self examination than their counterparts from Accra ($= 8.890$, $df = 1$, $p < 0.003$). However no significant difference was noted in clinical breast examination and mammogram rates. The attitude towards the disease range from fear; denial; guilt and spiritual attributes of the disease and linked treatment of the disease with death as many patients die shortly after treatment because of the advanced stage of the disease at treatment. They displayed a high level of reliance on God for protection from the disease, as well as on divine intervention and healing.

Conclusion: The low level of breast cancer awareness among the respondents indicates that the public educational campaigns, intended to educate women in Ghana on breast cancer, are inadequate and ineffective. The initial suggestion that cancer fatalism was a common phenomenon in Ghana was supported by the findings of the study. The study came to the realization that routine mammography screening will be very difficult to implement in Ghana at the moment due to lack of capacity and other socioeconomic factors. The study therefore proposes a model based on current socio-cultural and economic development in the country. The first approach to the model is to increase awareness and encourage the women to undertake BSE and report any suspicious findings for clinical evaluation. The second is to encourage wide spread adoption of CBE. Traditional healers can also be educated to recognize breast cancer and be encouraged to refer suspicious lesions. The few mammogram centres can then be used for diagnostic purposes and screening for high risk or symptomatic women. Provision of treatment facilities and development of an efficient early referral system are stressed.

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Individualized breast cancer follow-up; cost-effectiveness of various scenarios

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Background: More than 12.000 women are diagnosed with breast cancer annually in the Netherlands. Prognosis after primary treatment is improving. This leads to an increased number of follow-up visits and thus increasing workload to specialists. Although the treatment for breast cancer patients is individualized, national guidelines currently assign all these patients to one and the same follow-up programme: a schedule for 5 years, 4 visits in the first year, 2 visits in the second year and an annual visit in the last three years. The present study was undertaken to determine an individualized follow-up programme in order to give women the follow-up they need and to reduce workload.

Methods: Breast cancer patients were classified according to different risk groups for recurrence based on age, tumour size and lymph node status. We chose follow-up programmes with different frequency (once, twice per year), length (one, three, five years). To determine the most appropriate follow-up programme for each patient group we calculated the cost-effectiveness of current versus individualized treatment in a Markov model, where the risk of a recurrence, second primary tumour, metastases and mortality were included.

Results: Patients older than 70 year and patients with favourable tumour characteristics are served best with a minimal follow-up of one visit during one year. Patients younger than 40 years and patients with unfavourable tumour characteristics (>3 positive lymph nodes, tumour size >2.0 cm) can benefit from a more intensive follow-up of twice a year for five years.

Conclusions: There is uncertainty about how to organize cost-effective routine follow-up. This study underlines the possibility and potential for individualized follow-up in breast cancer patients. With these results we can provide schematic guidelines for specialists to select an appropriate follow-up scheme for various patient groups.

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Malignant giant breast masses in adolescent females: spectrum in a specialist unit of a developing country university hospital

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Background: Outcome of management of giant breast masses in adolescent females.

Material and Method: We retrospectively reviewed the medical records of 49 patients with giant masses of 451 patients with breast symptoms less than 30 years who had undergone surgery seen during 2006 to 2008.

Results: The mean age was 19.5 years. The mean tumor size was 73 mm (45–250). A lump in the breast was the commonest presentation. Eight patients were referred with clinical diagnosis of cancer. Three had diffuse nodularity and multiple sinuses with concomitant axillary lymph nodes. 12 patients had recurrent cystosarcoma phylloides (CP). 45 had unilateral single breast mass while 4 had bilateral mass. After investigations there were giant fibroadenoma (9), b/l multiple fibroadenoma (2), tubercular mastitis (12) with 6 clinically mimicking cancer, CP (17), cancer (6), lipoma (1), hypertrophy (2). Diagnosis of tubercular mastitis was obtained via FNAC (8 cases), core biopsy (4 cases) and none required excision. All malignant CP received adjuvant radiation. During a mean follow up of 9 months no recurrence was noted. Breast Cancer were treated according to department protocol.

Conclusion: Majority of breast mass in adolescent females are benign. We recommend simple mastectomy for recurrent malignant CP and wide excision for benign CP. Breast tuberculosis is not uncommon often mistaken for carcinoma, especially if well-defined clinical features are absent. A high index of suspicion is required because the disease can usually be treated conservatively with current antituberculous modalities.

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Patterns of care and safety profiles of adjuvant docetaxel-based chemotherapy regimens in a large breast cancer registry study in Asia Pacific

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Background: This observational, registry-based study is designed to assess patient profiles, patterns of care, and the tolerability of docetaxel-based adjuvant chemotherapy for early breast cancer patients in Asia Pacific.

Materials and Methods: Patients with newly diagnosed operable breast cancer were enrolled in Taiwan, Korea, China, Hong Kong, Vietnam, Philippines, Singapore, Pakistan, Bangladesh, and India. No experimental intervention was imposed except that patients had to have a high risk of recurrence and to receive docetaxel-based chemotherapy as adjuvant treatment. Assessments included demographics, disease stage and biologic characteristics, surgery and chemotherapy plans, and adverse events (AEs). Patients are being followed up to determine treatment efficacy. Data presented are from the second interim analysis performed 3 years after the start of the study.

Results: The median age of participants (N = 1,537) was 47 years (range: 23−83); 57.8% had AJCC Stage I/IIA/IIB disease. Immunohistochemistry showed 62.0% were ER positive and 43.1% were HER2 positive. Total mastectomy was the most common surgical intervention (72.6% of patients). Sequential docetaxel therapy (mean 7.4 cycles) was used in 56.5% of patients, with AC → T and FEC → T being the most commonly used regimens (in 30.5% and 17.7% of patients, respectively) [docetaxel (T); doxorubicin (A); cyclophosphamide (C); 5-fluorouracil (F); epirubicin (E)]. Combination therapy was used in 38.9% of patients overall (mean 5.6 cycles), with TEC and TAC the most common regimens (12.2% and 10.2% of patients, respectively). Growth factor support was used in 5.1% of sequential therapy patients (mean 4.3 cycles) and 16.9% of combination therapy patients (mean 3.4 cycles). The most common haematological AEs were neutropenia and anaemia (in 55.7% and 48.8% of sequential therapy patients and 73.4% and 39.2% of combination therapy patients, respectively; 40.6% overall had Grade 3/4 neutropenia). Febrile neutropenia was reported by 11.8% on sequential therapy and 23.3% on combination therapy. The most common non-haematological AEs with sequential treatment were nausea (83.6%), alopecia (73.8%), myalgia (63.0%), stomatitis (60.5%) and vomiting (60.0%).

Conclusions: Sequential regimens are the most commonly used docetaxel-based adjuvant chemotherapy for Asian early breast cancer patients having a high risk of recurrence. Data from this study will enable comparisons of patient profiles, disease characteristics, and efficacy and tolerability of different docetaxel-containing regimens to be made between Asian and western women.

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Changes of breast cancer incidence and trend among Japanese young women for the period 1972–2007

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Background: Many young breast cancer patients hope childbirth after treatments, however childbirth is harmfully influenced by chemo-endocrine therapies of breast cancer. The age of marriage and first childbirth has been older in Japan. The aim of this study was to investigate the changes of breast cancer incidence and trend among 35 and younger women in Japan and also investigate the rate of undelivered and unmarried women.

Materials and Methods: We analyzed trends in breast cancer incidence at Gunma University hospital, Gunma Prefecture, Japan, for the period 1973–2007. To distinguish the trends of breast cancer patients, we picked the central 5 years of the decades.

Results: Total number of breast cancer patients was 258 between 1973−77, 413 between 1983−87, 390 between 1993−97, and 621 between 2003–2007, respectively. The number and rate of age 35 years and under breast cancer patients was 25 (9.7%) between 1973−77, 33 (8.0%) between 1983−87, 30 (7.7%) 1993−97, and 36 (5.8%) 2003–2007, respectively. Among those young patients, the rate of unmarried women was 12%, 33%, 37% and 33%; the rate of undelivered women was 12%, 36%, 50% and 47%, respectively. The rate of patients who hope childbirth was 72% for the period 2003–2007. The rate of Tis or Stage? breast cancer patients was 16%, 30%, 50% and 44%. The rate of breast conserving therapy underwent patients was 43% for the period 1993–1997 and 66% for the period 2003–2007.

Conclusions: The incidence in age 35 years and under young breast cancer patients was decreased over the 40-year period. The rate of unmarried and undelivered patients was increased and most of them hope childbirth.

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Is 'Two-week rule for all breast referrals' in UK justified?

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Background: In December 2009 a UK government target will demand all new breast referrals are seen within 2 weeks. Currently fast-track patients are seen within two weeks and non-urgent five weeks. We aimed to assess the breast clinic referral pattern according to pathology in fast-track, non-urgent and tertiary groups.

Materials and Methods: A prospective data collection of all patients referred to a one-stop breast clinic under a single consultant from 15th September 2008 to present.

Results: 1792 patients were seen, 117 (6.5%) breast cancers were diagnosed.

91.5% of all cancer diagnoses (107 out of 117) were seen within two weeks as fast-track or tertiary referrals. This was significantly more ($p < 0.05$) than the number of cancers diagnosed in non-urgent group (10 patients). Cancer ratio in fast-track & tertiary groups together was 1 in 7.6 whereas in non-urgent group it was 1 in 97.7.