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.