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Breast imaging at Chris Hani Baragwanath Academic Hospital: a clinically relevant audit

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Manuscript title	Breast imaging at Chris Hani Baragwanath Academic Hospital: A clinically relevant audit
Manuscript abstract	**Background:** Breast cancer is a major cause of morbidity and mortality worldwide. From experience, we have found that the disease burden at Chris Hani Baragwanath Academic Hospital (CHBAH) is unique with an advanced stage at presentation. **Purpose:** To perform a breast-imaging audit at CHBAH, focused on interpretive performance and disease burden. **Materials and methods:** Demographic and imaging data were retrospectively collected over a 6-month period. Data collected and derived followed the audit-definitions and rules described within the ACR–BI-RADS atlas (5th edition). A comparison was made to benchmark values published by the Radiological Society of North America (RSNA). **Results:** A total of 1549 mammography examinations were analysed. The screening subgroup (n = 808) revealed 11 cancers with a cancer detection rate (CDR) of 13.6 per 1000 studies and a recall rate of 5.94. The diagnostic subgroup (n = 741) revealed 130 cancers with a CDR of 175.4 and an abnormal interpretation rate (AIR) of 39 per 100 studies. Along with the positive predictive values, these performance measures for diagnostic mammography were significantly larger than the RSNA-benchmarks ($p < 0.0001$). In addition, the cancer characteristics showed a greater histological mean tumour length, a lower percentage of minimal cancers (defined as ductal carcinoma *in situ* [DCIS] and invasive cancers $\leq$ 1 cm) and fewer nodal-negative cancers ($p < 0.0001$), in keeping with a more advanced loco-regional stage at presentation. **Conclusion:** The study illustrates the challenges faced by a South African breast-imaging unit confronted with advanced loco-regional disease. The cancer burden is highlighted within a community where there is a lack of national screening mammography. The process of performing a basic, clinically relevant audit is simple and should be a routine practice in breast-imaging units.