The yield of pathological findings from routine screening chest X-rays in a military population

**Background:** The South African Military Health Services (SAMHS) includes a screening chest X-ray (s-CXR) as part of a yearly medical examination for members over the age of 40. The yield from s-CXR programmes in resource-limited countries, such as South Africa, is mostly unknown. This data is relevant where a high burden of HIV and tuberculosis (TB) leads to significant morbidity and mortality.

**Objectives:** To evaluate the efficacy of an s-CXR programme for the detection of pulmonary tuberculosis (PTB) and other significant pathology in asymptomatic military patients.

**Method:** This retrospective descriptive study analysed s-CXRs reported between May 2011 and October 2015 at 3 Military Hospital, Bloemfontein, South Africa. The findings were categorised as either significant findings that changed patient management or insignificant findings that identified previous or possible underlying pathology.

**Results:** A total of 4137 s-CXR reports done on 2371 patients were included. Of these, 3696 (89.3%) were male and 441 (10.7%) were female reports, and the sample had a median age of 44.7 years. In total, 304 (7.4%) s-CXRs had significant findings (95% CI; 6.6%–8.2%), 464 (11.2%) had insignificant findings and 76 (1.8%) had both. Furthermore, 38 s-CXRs (0.92%) showed active PTB, 75 (1.8%) showed possible PTB and 241 (5.8%) showed previous PTB. Additional significant findings included solitary pulmonary nodules, pleural effusions, lymphadenopathy, pneumonia, interstitial lung disease, bronchiectasis, chronic obstructive pulmonary disease, pulmonary hypertension and cardiac pathology.

**Conclusion:** An s-CXR programme is a feasible method of screening asymptomatic patients for PTB and other significant pathology in resource-limited environments with a high burden of disease.