

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

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**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.

**Note:** A selection of conference abstracts: RSSA/SASPI Paediatric Imaging Congress, 03–06 November 2016, Spier Estate, Stellenbosch, South Africa. Faculty collaborators: Professor Kassa Darge (Body Imaging, University of Pennsylvania, Philadelphia, USA), Professor Edward Lee (Thoracic Imaging, Harvard University, USA), Professor Beverley Newman (Cardiac Imaging, Stanford University, California, USA), Professor Kimberly Applegate (Image Gently and Body Imaging, Emory University, Atlanta, USA) and Professor Savvas Andronikou (Thoracic Imaging, University of Bristol, UK) supported by South African Paediatric Radiologists, co-ordinated by Dr Jaishree Naidoo, President of the African Society of Paediatric Imaging and Head of Division of Paediatric Radiology, Charlotte Maxeke Johannesburg Academic Hospital.