



## South Africa

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Prevalence of Infection in South Africa Intensive Care Units (PISA) study

As an active member and expert clinical microbiologist involved with The Critical Care Society of Southern Africa, a 1-day prevalence study of infection was undertaken as a first step to ascertain the national profile of sepsis among critically ill patients. One aspect of the study was to evaluate

antibiotic prescription practices in South African ICUs and to determine their relationship to patient outcome<sup>1</sup>. Proportional probability sampling was used for randomisation. The results of the PPS documented rampant over and incorrect use of antibiotics, both in the public and private sectors. As such, inappropriate antibiotics were initiated empirically in 55% of patients, duration of antibiotic use was inappropriate in 72% of patients in this study and whilst de-escalation was seldom practised (23.9%), the number of anti-infective agents prescribed concurrently to each patient ranged from 1 to 10.

Whereas accumulating evidence suggests that educational interventions are mostly ineffective and result in insignificant changes to prescribing practices, we used results from this PPS to design and implement a prospective audit and feedback stewardship model targeting “low-hanging” fruit process measures such as antibiotic duration, double or redundant antibiotic coverage, prescription of more than 4 antibiotics concurrently and to facilitate de-escalation, cultures not done before commencing empirical antibiotics<sup>2</sup>. Thus, a PPS such as ours, provided detailed data collected over a short period of time as opposed to an incidence approach, which translated subsequently using a quality improvement model, in a significant improvement in several measures of antibiotic management of our infected ICU patients.

<sup>1</sup>Paruk F, Richards G, Scribante J, Bhagwanjee S, Mer M, Perrie H. Antibiotic prescription practices and their relationship to outcome in South African intensive care units: findings of the Prevalence of Infection in South Africa Intensive Care Units (PISA) study. *S Afr Med J* 2012; 102: 613–16

<sup>2</sup>Brink AJ, Messina AP, Feldman C et al. Antimicrobial stewardship across 47 South African hospitals: an implementation study. *Lancet Infect Dis* 2016; 16: 1017–25