Letters

Aseptic insertion of central venous lines to reduce bacteraemia

To the Editor: We would like to congratulate the Central Line Associated Bacteraemia in NSW Intensive Care Units Collaborative for reducing central line-associated bacteraemia (CLAB), and showing that this reduction was associated with compliance with evidence-based aseptic central venous line (CVL) insertion, which included a patient bundle and a clinician bundle, as reported by Burrell and colleagues.[1]

As part of a quality improvement program in Western Australia, we conducted a collaborative cohort study (unpublished) in two major Perth teaching hospitals with adult intensive care units (ICUs), from April 2007 to September 2008, covering 36 ICU-months and 15 459 catheter-days. Both ICUs implemented the WA Safety and Quality Investment for Reform central line bundle.[2]

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>
> Ferguson et al

Compliance was monitored by an observer with a checklist. Adherence to *all* components of the central line bundle was required for compliance to be recorded. This measure was reported monthly. CLAB and catheter-days were monitored by the hospitals' infection control practitioners. Compliance with the bundle increased from a mean of 10% to greater than 90%. Infection rates declined over the study period from more than six infections per 1000 catheter-days to zero ($P = 0.019$ for Hospital 1 and $P = 0.10$ for Hospital 2). In the final 8 ICU-months (4 months in both hospitals), there was no CLAB.

The New South Wales study demonstrated the importance of the clinician bundle components over the patient bundle components, which should inform future quality improvement initiatives. We note the comment that the hat, mask and eyewear components of the bundle were unpopular with clinicians. However, there is a risk of recontaminating disinfected skin

with aerosolised organisms from the clinician's hair and upper respiratory tract, whereas eyewear is principally intended to protect the clinician from splash injury and potential blood-borne virus infection. Maximal sterile barrier precautions are endorsed by the 2010 National Health and Medical Research Council guidelines,[3] the 2011 Centers for Disease Control and Prevention guidelines,[4] and the epic2 study in the National Health Service in England.[5]

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Competing interests: No relevant disclosures.

doi: 10.5694/mja11.10775

1 Burrell AR, McLaws ML, Murgo M, et al. Aseptic insertion of central venous lines to reduce bacteraemia. The Central Line Associated Bacteraemia in NSW Intensive Care Units (CLAB ICU) Collaborative. *Med J Aust* 2011; 194: 583-587.

2 Department of Health, Western Australia. Office of Safety and Quality in Healthcare. Safety and Quality Investment for Reform. A handbook for building a safer health care system. http://www.safetyandquality.health.wa.gov.au/docs/squire/SQuIReHandbook.pdf (accessed Sep 2011).

3 National Health and Medical Research Council. Australian guidelines for the prevention and control of infection in healthcare (2010). Canberra: NHMRC, 2010. http://www.nhmrc.gov.au/node/30290 (accessed Sep 2011).

4 O'Grady NP, Alexander M, Burns LA, et al. Healthcare Infection Control Practices Advisory Committee. Guidelines for the prevention of intravascular catheter-related infections. *Am J Infect Control* 2011; 39 (4 Suppl 1): S1-S34.

5 Pratt RJ, Pellowe CM, Wilson JA, et al. epic2: National evidence-based guidelines for preventing healthcare-associated infections in NHS hospitals in England. *J Hosp Infect* 2007; 65 Suppl 1: S1-S64. ❑