Reviewer's report

Title: Epidemiology and impact of a multifaceted approach in controlling Central Venous Catheter Associated Blood Stream Infections outside the intensive care unit.

Version: 5 Date: 3 April 2013

Reviewer: François L'Hériteau

Reviewer's report:

The authors corrected errors in numbers and typing mistakes, which remained in the previous version. They improved the paper which is now almost suitable for publication. However, a few problems remain.

Major compulsory revisions

They still compare CVC-ABSI incidence densities with the chi-square test (see page 8, statistical analyses paragraph, and footnote in table 1). Again, this test is appropriate only when the numerator is a portion of the denominator. The authors argue in their response that “the decrease achieved in Internal Medicine ward in 2009 has a clear statistical significance”. As requested in the previous review, they should compare Poisson 95%CI (which are not provided), in order to check that the lower bound of the former and the upper bound of the latter do not overlap.

The authors do not completely answer to the question about the reduction of CVC-ABSI incidence:

Is it possible that the reduction (in CVC-ABSI) was observed because of a shorter duration of CVC exposure between 2008 and 2011 (as suggested by the reduction in the estimated number of CVC-days)?

In their response, they show that the device utilisation ratio (DUR) decreased by 42% (from 0.026 to 0.015) between 2008 and 2011. Since the DUR were measured on the total sample of patients (i.e. with or without CVC), they are quite low. These DUR poorly reflect the actual exposition of patients with a CVC (because since the denominator includes patient-days for the patients without CVC, it is overestimated). It is therefore difficult to evaluate a variation in CVC exposure.

A comparison of DUR measured only in patients with a CVC would perhaps reflect more accurately a diminution of CVC exposure in these patients. In addition, the variation in duration of CVC exposure should be discussed in the discussion section

The authors argue that the impact of a bundle implemented in ICU on CVC incidence outside ICU could be explained because 65% of CVC inserted by ICU physician were followed there. However, this response is little convincing since
we do not know the proportion of CVCs inserted by ICU physician. Among the CVCs with a CVC-ABSI, only 19.1% were inserted by ICU physicians. If the proportion of CVC inserted by an ICU physician was the same for all CVCs (data not provided), then the bundle implemented in ICU would have an impact on 12.4% (i.e. 65% x 19.1%) of CVC at best. On the other hand, if the proportion of CVC inserted by an ICU physician was higher among CVCs without CVC-ABSI, it would be in favour of the role of the bundle implemented in ICU.

Level of interest: An article of limited interest

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

I declare that I have no competing interests