***Clostridium difficile* period of increased incidence in hospitals**

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Based on guidance published in 2008 “*Clostridium difficile* infection: How to deal with the problem, best practice guidelines, Gateway Reference 9833” (DH, 2008), a period of increased incidence (PII) for *Clostridium difficile* (CD) is defined and/or declared based on clinical evidence of CD infection in two or more new cases of positive toxin regardless of culture results (occurring >48 hours post admission, not relapses) in a 28-day period on a ward.

The current national protocols for testing and diagnosing CD infections, published in March 2012, advise that organisations adhere to a two stage approach (DH, 2012). However, to our knowledge the definition of PIIs for CD infection has not been updated since the availability of additional diagnostics for *C. difficile*, i.e. PCR, GDH which are often used as first line “screening” tests in most if not all UK hospitals.

We were interested to know how various hospitals define PIIs based on these new diagnostics and multi-test algorithms, and an anonymised survey monkey questionnaire was conducted by contacting microbiologists within 12 hospitals (10 in the Wessex region, UK, representing different NHS trusts, one in London and one in the north east of England) questioning how PIIs for *C. difficile* are currently defined in respective hospitals.

Replies were received from 11 hospitals. Although all hospitals declare a PII based on the 2008 definition, there is

noticeable variation when it comes to positive PCR or GDH results particularly when CD toxin test result is negative (Figure 1).

Results of this small cohort suggests that there is lack of clarity in how PIIs are being defined, particularly when only the screening test (PCR or GDH) is positive in two cases within 28 days on the same ward. It appears that a number of NHS hospitals have lower thresholds for declaring PIIs than others. While this low threshold is potentially better for avoiding missing any possible instances of CD transmission, it has undoubtedly larger impact on NHS resources e.g. staffing time, audits, meetings and potentially higher costs of care.

From local experience, we have found that the epidemiology of *C. difficile* infection is becoming more complex with no links between the vast majorities of hospital cases based on ribotyping results. Additionally we found rates of failure to culture in CD PCR positive only cases is noticeably higher than failure to culture rates when both CD PCR and toxin are positive, 22% vs. 4% respectively. We believe learning from individual cases with the *C. difficile* disease is of value to further improve patient safety and outcome. However, we also believe that if policy-makers agree that PIIs are good practice for preventing further transmission of *C. difficile* in hospitals,

Figure 1. Percentage of hospitals (NHS trusts) and how PII is defined.

then we urge them to provide an updated definition and clearer guidelines in light of the availability of GDH and PCR tests, so that patients get the same or similar quality of care throughout the NHS.

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