1646. Evidence of hospital-associated *Clostridium difficile* transmission between patients with asymptomatic carriage and patients with *Clostridium difficile* infection

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Background. Despite strategies to reduce transmission, *Clostridium difficile* (CD) remains a leading cause of morbidity in health care settings. The aims of our study were (1) to determine if asymptomatic inpatient CD carriers can be liked by molecular epidemiology to other inpatients with CD infection (CDI) and (2) to determine if active surveillance testing (AST) criteria to identify inpatients at risk for vancomycin-resistant *Enterococcus* (VRE) colonization are sufficiently sensitive to capture asymptomatic CD carriage.

Methods. Over a 5 day period, all inpatients at University of Pittsburgh Medical Center – Presbyterian Hospital (UPMC) were targeted for one-time AST for CD via perirectal sampling. Archived stool specimens were obtained from (1) clinical CDI cases 7 weeks prior to AST for CD, (2) clinical CDI cases during AST for CD, and (3) clinical hospital-associated CDI (HA-CDI) cases 12 weeks after AST for CD. CD carriage was defined as AST positivity in the absence of clinical CDI during or +/- 3 months from AST; clinical CDI was defined as clinician-requested, nucleic stool test positivity for toxigenic CD. Specimens were cultured for CD using broth enrichment. CD isolates were typed using *tcdC* and multilocus variable number tandem repeat (MLVA) genotyping. Isolates whose MLVA genotypes had a summed tandem-repeat difference of ≤ 2 were considered highly related. "Probable" transmission events were inferred when patients exhibited simultaneous occupancy of the same inpatient ward and their isolates were highly related. "Possible" transmission events were inferred when patients exhibited simultaneous occupancy of the hospital, but not the same inpatient ward, and their isolates were highly related. AST for VRE was performed according to UPMC policy throughout.

Results. 53 (10%) inpatients were identified as CD carriers. 123 clinical CDI cases were identified; isolates from 101 (83%) of these episodes were obtained. 6 (5.9%) clinical CDI isolates were highly related to CD carrier isolates, 4 of which were HA and could be linked epidemiologically to CD carriers – 2 by probable and 2 by possible transmission events. None of the CD carriers implicated in transmission events underwent VRE AST.

Conclusion. Hospital-wide AST for CD carriage may identify a reservoir of CD involved in CDI.

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