Title

The Drivers of Acute and Long-term Care Clostridium difficile Infection Rates: A Retrospective Multilevel Cohort Study of 251 Facilities

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Appendix.

The table below illustrates what days would and would not meet the cohort inclusion and exclusion criteria for a hypothetical patient with 3 facility stays in VA acute and long-term care facilities in a given month. For the purposes of this example, it is assumed that the acute and long-term care facilities themselves meet the facility level inclusion criteria (exclusion 4). Also note that days on which a person spent time in both an acute and long term care are only counted in the acute care dataset.

The exclusion are applied as follows. First, the patients' history of positive *C. difficile* tests is assessed and the person days on Jan 11 and 12 are excluded based the fact that they have a positive C. difficile test in the prior 56 days (exclusion criterion 1). Second, among the person-days without a positive *C. difficile* test and without a history of a positive *C. difficile* test in the prior 56 days, a 1% sample is selected. Person-days not in the 1% control sample are then excluded (exclusion criterion 2; Jan 1, 5 and 9). Third, person-days with <3 person-days of acute or long-term care exposure in the prior 56 days are excluded (exclusion criterion 3; Jan 2 and 6). Note that these are applied respectively to the acute and long-term care stays. This leaves us with 4 included person days out of the total 11 person days.

| Date | Facility identifier | +ve *C. difficile* test | | 1% control sample[a] | Exclusion? | | Inclusion dataset |
		Today	In prior 56 days		Yes/No	Criterion[b]	
Stay 1							
1-Jan	AC-3	No	No	No	Yes	2, 3	NA
2-Jan	AC-3	No	No	Yes	Yes	3	NA
3-Jan	AC-3	No	No	Yes	No	NA	AC control
Stay 2							
5-Jan	LTC-9	No	No	No	Yes	2	NA
6-Jan	LTC-9	No	No	Yes	Yes	3	NA
7-Jan	LTC-9	No	No	Yes	No	NA	LTC control
Stay 3							
8-Jan	AC-4	No	No	Yes	No	NA	AC control
9-Jan	AC-4	No	No	No	Yes	2	NA
10-Jan	AC-4	Yes	No	NA	No	NA	AC case
11-Jan	AC-4	No	Yes	NA	Yes	1	NA
12-Jan	AC-4	Yes	Yes	NA	Yes	1	NA

Table. E

[a] The achieved sample is unrealistic in this example. It would be quite rare for a 1% sample to yield 5/8 selections. [b] 1, recent positive *C. difficile* test in prior 56 days; 2, not randomly selected into 1% control sample; 3, < 3 inpatient days in last 56 days, 4, ineligible by facility criteria. Abbreviations: AC, acute care; LTC, long-term care.