INCIDENCE OF HOSPITAL-ONSET DIARRHEA AND FREQUENCY OF *CLOSTRIDIODES DIFFICILE* TESTING IN MÜNSTER-COESFELD, GERMANY

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BACKGROUND AND AIMS:

Diarrhea in hospital, particularly *Clostridioides difficile* (*C. difficile*) infection (CDI), are a frequent complication in inpatients and associated with significant morbidity and healthcare costs. Nevertheless, the CDI disease burden has not been fully described in Germany.

METHODS:

During a 10-day period between October 2019 until February 2020, data were collected on 6,197 patients admitted to 7 hospitals in the Münster-Coesfeld region. The Münster-Coesfeld region is representative for Germany in regards to its number of inhabitants per km^2. The 7 hospitals of our study have demographics comparable to German hospitals (**Table 1**).

Table 1: Local demographics

	size	inhabitants
Germany	349,000 km^2	81,800,000
Münster **Coesfeld**	300 km^2 1,100 km^2	310,000 220,000

Ward nurses were interviewed daily to identify patients with new onset diarrhea (≥ 3 loose stools ≤ 24 hours). Information on stool specimen collection, testing and results was recorded by chart review or nurse interviews.

RESULTS:

Among the 20,005 patient-days of surveillance, 401 patients were identified with diarrhea (6.5%). The median age of patients with diarrhea was 70 years (IQR 61-80). Of the 401 patients with diarrhea, 166 (41%) received antibiotics and 254 (63%) had a presumed diarrhea cause recorded; 73 (18%) had a presumed infectious and 181 (45%) a presumed non-infectious etiology. Only 216 (54%) of diarrhea patients had diarrhea recorded in their charts, including only 41 (56%) of diarrhea patients with a presumed infectious etiology.

Stool samples were collected from 178 (44%) of diarrhea patients; 65 samples from patients with a presumed infectious and 53 samples from a presumed non-infectious etiology. Of these samples, 133 (75%) were tested for *C. difficile*; 15 were positive for *C. difficile* with 5 community-onset infections (≤ 48 hours of admission) (**Table 2**). Among the remaining stool samples the most frequently detected pathogens were EPEC and Norovirus.

Table 2: Pathogen identification

pathogens	positive test result (n)
C. difficile - community onset - hospital onset	15 5 10
other bacterial enteropathogens - EPEC - EHEC - Campylobacter spec. - Salmonella spec. - Shigella spec. - Yersinia spec.	 4 0 2 0 0 0
viral enteropathogens - Norovirus - Rotavirus - Adenovirus - Astrovirus	 4 0 0 0

CONCLUSION:

While a common symptom, diarrhea was frequently not recorded in patients' charts; nurse interview was the most reliable method for identifying patients with diarrhea. Furthermore, stool specimens were often not collected from diarrhea patients, and were not always tested for *C. difficile*, indicating that CDI may be under-diagnosed. Further studies are needed to understand the extent of CDI under-diagnosis and to quantify CDI burden.