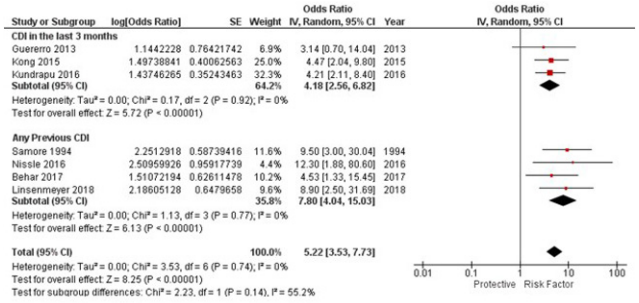

Fig. 1: Previous C. diff Infection and Risk of Colonization

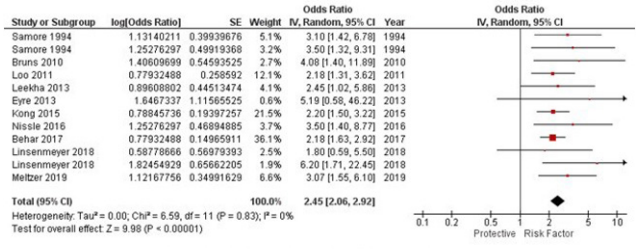

Fig. 2: Hospitalization in Previous 6 Months and Risk of Colonization

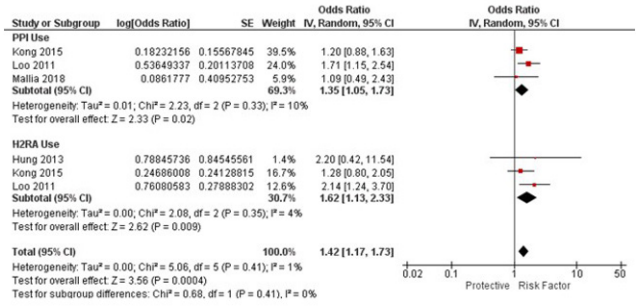

Fig. 3: Use of Gastric Acid Suppression Therapy within Previous 8 Weeks and Risk of Colonization

Disclosures. **All authors:** No reported disclosures.

2371. A Multicenter Cohort Study of the Natural History of *Clostridioides difficile* Colonization and Infection

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Background. Asymptomatic carriage of toxigenic *Clostridioides difficile* strains is common in healthcare settings. However, the natural history of *C. difficile* colonization and infection is not well understood, particularly for patients with new acquisition of carriage.

Methods. In 3 tertiary care hospitals and affiliated long-term care facilities (LTCFs), we conducted a 6-month cohort study to identify patients with new acquisition of rectal carriage of toxigenic *C. difficile* and determined the duration and burden of carriage. Asymptomatic carriage was defined as transient if only 1 culture was positive with negative cultures before and after or persistent if 2 or more cultures were positive; clearance was defined as 2 consecutive negative rectal cultures.

Results. Of 4180 patients with negative initial cultures, 144 (3%) acquired asymptomatic carriage of toxigenic *C. difficile*, and 19 (13%) of these carriers subsequently were diagnosed with CDI. Of 50 asymptomatic carriers analyzed for duration of carriage, 33 (66%) had transient carriage of toxigenic *C. difficile* and 17 (34%) had persistent carriage. For persistent carriers, the estimated median time to clearance of colonization was 76 days (range, 41 to 95 days from acquisition). Ten of 17 (59%) persistent carriers had a high burden of carriage (defined as > 25 colonies recovered from 1 or more swabs) vs. only 1 of 33 (3%) transient carriers ($P < 0.001$).

Conclusion. Acquisition of asymptomatic carriage of toxigenic *C. difficile* carriage was common among patients in healthcare facilities, but most carriers had transient low-level carriage. Additional studies are needed to determine whether a higher burden of carriage predicts subsequent risk of transmission.

Disclosures. **All authors:** No reported disclosures.

2372. PCR Ribotype and Antimicrobial Susceptibility of *Clostridioides* (Formerly *Clostridium*) *difficile* in Korea

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Background. *Clostridioides difficile* infection is a leading cause of healthcare-associated diarrhea. The epidemiology and characteristics of *C. difficile* vary geographically. We performed toxin enzyme immunoassay (EIA), toxigenic gene analysis, antimicrobial susceptibility tests (AST), and PCR ribotyping to elucidate the characteristics of *C. difficile* in Korea.

Methods. Between July 2017 and June 2018, *C. difficile* was prospectively isolated in 128 specimens from the culture of 1,182 unduplicated specimens. Seventy-five stool specimens with a positive toxin EIA between July 2016 and June 2017 were also included. We performed PCR for the tcdA and tcdB genes on these isolates, and AST and PCR ribotyping on the isolates with a positive toxin EIA.

Results. Older patients tended to have a higher rate of positive toxin EIA and positive cultures than did younger patients. Ribotype 018 was predominantly identified (48.6%), followed by ribotype 014/020 (9.9%), and ribotype 002 (8.3%). All of A-B+ isolates were either ribotype 017 or B-2. Ribotypes 017, 018, and B-2 showed high resistance to various antibiotics. In contrast, ribotypes 002, 014/020 and C-4 demonstrated low resistance rates, except that to moxifloxacin in ribotype 002. Clindamycin and erythromycin showed a positive correlation. Most of the isolates resistant to rifampicin or tetracycline showed a high MIC to both erythromycin and clindamycin.

Conclusion. Ribotype 018, which is highly transmissible and resistant to various antimicrobial agents, is predominant in Korea. Ribotype 002 has also been increasing in prevalence in Korea.

Disclosures. **All authors:** No reported disclosures.

2373. Impact of a Change in Testing Strategy for *Clostridioides difficile* Infection on a Publicly Reported Metric and Treatment Days of Therapy

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Background. In an effort to optimize diagnostic testing for *Clostridioides difficile* infection (CDI) our health system changed from stand-alone PCR testing to a "2-step" approach wherein all positive PCR results reflexed to an EIA. We report the effects of this change on publicly reported CDI metrics and treatment days of therapy (DOT).

Methods. The setting includes 10 Cleveland Clinic Health System hospitals in northeast Ohio and one in Florida. On June 12, 2018, 9 NE Ohio hospitals changed from PCR alone to PCR followed by EIA. Stand-alone PCR testing remained at one and GDH / EIA / PCR for discordant for another. Testing volumes were obtained from the microbiology laboratory. *C. difficile* LabID event SIRs were obtained from NHSN. Public reporting interpretative categories were identified based on SIR for second half of 2018. DOT for CDI agents were obtained from an antimicrobial stewardship database.

Results. Among hospitals that changed strategy the volume of PCR testing and the percent PCR + was similar between time periods. EIA positivity ranged from 23% to 53%. 4/11 hospitals improved their public reporting category: 3/9 that changed testing strategy and 1/2 that did not (Table 1). Two of 3 that changed strategy and improved public reporting also had a decrease in DOT. DOT increased in the 2 hospitals that did not change strategy.

Conclusion. Six months after adopting a 2-step CDI testing strategy 7 of 9 hospitals had a lower SIR with 3 also demonstrating an improvement in public reporting category favorably impacting reputational and reimbursement risk for our healthcare system. CDI agent DOT was similar before and after the change. The impact of choice of test on publicly reported metrics demonstrates the difficulty of utilizing a proxy for hospital onset CDI, the CDI LabID event, as a measure of quality of care provided.

Hospital	1/1-6/30/18				7/1-12/31/18					
	Total # of PCRs	PCR Positive % (n)	SIR	DOT	Total # of PCRS	PCR Positive % (n)	% PCR + / EIA +	SIR	Improvement in Reporting Category	DOT
A	2724	13 (346)	0.948	216.27	2700	15 (415)	32%	0.556	Y	300.62
B	123	15 (19)	1.481	220.82	123	25 (31)	42%	0.351	N	242.12
C	788	18 (138)	1.322	206.58	710	16 (115)	33%	0.268	Y	162.95
D	213	16 (35)	1.297	255.16	214	24 (52)	23%	0.429	N	235.85
E	241	22 (53)	1.099	213.1	173	21 (36)	39%	0.567	N	169.54
F*	950	18 (170)	0.93	254.48	790	19 (152)	N/A	0.581	Y	279.37
G	383	16 (61)	0.636	416.55	302	22 (65)	45%	0.927	N	369.79
H	734	13 (99)	0.518	181.25	658	17 (112)	26%	0.293	N	163.44
I	86	19 (16)	0	83.97	75	23 (17)	53%	1.828	N	96.61
J	288	17 (49)	0.758	382.39	244	16 (38)	42%	0	Y	339.81
K*	54	63 (34)	0.515	345.09	43	60 (26)	N/A	0.635	N	353.21

Table 1: SIR and DOT compared before and after PCR/EIA two-step testing introduction, *J and K did not change their testing

Disclosures. **All authors:** No reported disclosures.

2374. Healthcare Resource Use, Costs, and Recurrences in Patients with *Clostridioides difficile* Infection: A Real-world Data Analysis

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Background. *Clostridioides difficile* infection (CDI), especially recurrent CDI (rCDI), is associated with high morbidity and resource use and imposes a significant burden on the US healthcare system. The objective of this study was to evaluate the burden of rCDI on healthcare resource utilization.

Methods. A retrospective study analyzed commercial claims data from patients aged 18–64 years old in the IQVIA PharMetrics Plus™ database. CDI episodes required an inpatient stay with CDI diagnosis code (ICD-9-CM 008.45; ICD-10-CM A04.7, A04.71, A04.72), or an outpatient medical claim with CDI diagnosis code plus a CDI treatment, and index episodes occurred from January 1, 2010 to June 30, 2017. Only patients who were observable 6 months before and 12 months after the index CDI episode were included. Each CDI episode was followed by a 14-day claim-free period after the end of treatment. rCDI was defined as another CDI episode within an 8-week window immediately after the claim-free period. Number of CDI and rCDI episodes, healthcare resource use, and costs were calculated over 12-month follow-up and stratified by number of rCDI episodes. Costs were adjusted to 2018 dollars.

Results. 46,571 patients with an index CDI episode were included, with 3,129 (6.7%) who had 1 rCDI, 472 (1.0%) who had 2 rCDI, and 134 (0.3%) who had 3+ rCDI episodes. Mean age was 47.4 years, and 62.4% were female. In the 12-month follow-up, the mean (SD) numbers of inpatient visits were 1.4 (2.1) for those with no rCDI, 2.7 (3.4) for those with 1 rCDI, 3.7 (3.9) for those with 2 rCDI, and 5.8 (6.0) for those with 3+ rCDI episodes. Emergency department (ED) visits had a similar trend, with mean (SD) number of visits of 1.5 (3.5), 2.5 (6.0), 3.7 (7.0), and 4.6 (13), respectively for the four study groups. All-cause costs after the index CDI were $71,980 for those with no rCDI, $131,953 for those with 1 rCDI, $180,574 for those with 2 rCDI, and $207,733 for those with 3+ rCDI.

Conclusion. CDI and rCDI are associated with substantial healthcare resource utilization and direct medical costs. During the 12 months after an index CDI episode, the number of inpatient admissions and ED visits increased substantially for patients with an rCDI episode. Direct medical costs for patients with rCDI also increased with number of recurrences.

Disclosures. **All authors:** No reported disclosures.

2375. Association Between *Clostridium difficile* Colonization and Inflammatory Bowel Disease Activity

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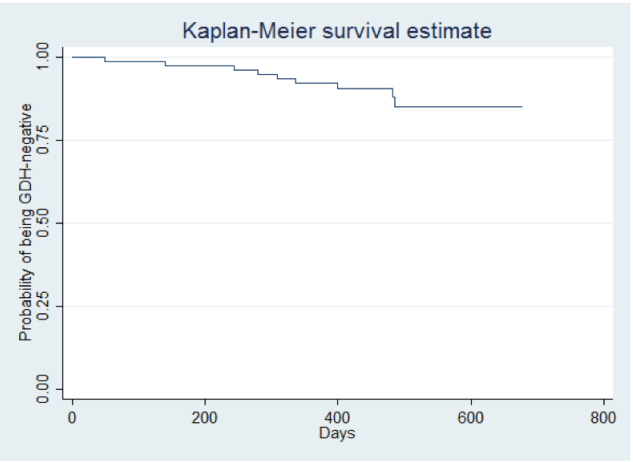
Background. *Clostridium difficile* (CD) is a frequent cause of nosocomial infectious diarrhea. Despite no clear evidence has linked CD colonization (CDC) or CD infection (CDI) with inflammatory bowel disease activity (IBDA), data in our setting has suggested the contrary.

Methods. Prospective cohort study in a tertiary care hospital in Mexico City. Patients aged ≥18 years with IBD in clinical remission were included between April 2017 and April 2019. Demographic, clinical and laboratory variables, as well as three fecal samples, were collected at inclusion and during follow-up. CDC was defined as a positive GDH test without diarrhea. CDI was defined as diarrhea (as per IDSA criteria) plus positive GDH and PCR tests. IBDA was defined as bloody diarrhea plus a negative GDH test. The primary outcome was the association between CDC and IBDA. Secondary outcomes were incidence rates of CDC and CDI, including risk factors associated with CDC. Univariate and multivariable analyses were performed considering $P < 0.05$ as statistically significant.

Results. Out of 250 IBD patients, 101 cases met inclusion criteria and 85 completed follow-up (median = 420 days, IQR = 243–511 days). Twenty-three cases (27%) had IBDA during follow-up, eight cases had new CDC (incidence of 8.2/100 person-years), and one case developed CDI (incidence of 1.0/100 person-years). Figure 1 shows the cumulative percentage of cases without CDC during follow-up. In univariate analysis, the following were associated with CDC: decreasing age, decreasing age when IBD was diagnosed, residence in Mexico City or the State of Mexico, and hospitalization during follow-up. In Cox regression analysis, a decreasing age when IBD was diagnosed (HR = 0.92, CI95% = 0.87–0.98, p = 0.009) and residence in the State of Mexico (HR = 5.88, CI 95% = 1.21–28.60, p = 0.028) remained significantly associated with CDC. However, we did not find a statistically significant association between new CDC events and IBDA during a median follow-up period extending beyond 1 year.

Conclusion. We found no association between CDC and IBDA. Risk factors associated with CDC were residence in the State of Mexico and a decreasing age when IBD was diagnosed.



Disclosures. **All authors:** No reported disclosures.

2376. Incidence of *Clostridioides difficile* Infection Among United States Medicare Advantage Enrollees

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Background. *Clostridioides difficile* infection (CDI) may be life-threatening, and individuals aged ≥ 65 years are at increased risk. CDI burden among Medicare fee-for-service enrollees and nursing home residents in the United States have been characterized previously. The present study aimed to describe the incidence of CDI among Medicare Advantage Enrollees (MAEs), who account for 34% of all Medicare beneficiaries with enrollment increasing annually since 2004.

Methods. De-identified claims data for this retrospective cohort study were collected from the Optum® Clinformatics® Data Mart and included MAEs aged ≥ 65 years with continuous enrollment for ≥ 1 year before January 1, 2016, followed through death or disenrollment. CDI incidence was defined using the International Classification of Diseases 9th Revision diagnosis code of 008.45 or 10th Revision code of A04.7 (other than admitting diagnosis) or by treatment with nontopical metronidazole, oral vancomycin, or fidaxomicin within 14 days of CDI test. Incident CDI cases were identified from January 1 to December 31, 2016, and required that no CDI occurred within the previous 60 days in 2016. Incidence in 2016 was calculated as CDI cases and CDI patients per 100,000 person-years (PY) of observation time.

Results. Of 2,542,341 MAEs analyzed, 15,201 patients (0.6%) experienced a total of 18,842 incident CDI episodes. Overall, incidence rates were 762.8 CDI cases and 616.5 CDI patients per 100,000 PY. Incidence increased with age (539.6, 847.3, and 1259.6 cases per 100,000 PY in patients aged 65–74 years, 75–84 years, and ≥ 85 years, respectively). Most episodes (50.9%) were community acquired; the remaining 37.7% and 11.4% of episodes were hospital acquired and indeterminate, respectively. CDI