BACKGROUND
Fecal transplants have been successful in the treatment of recurrent or refractory clostridium difficile infections but there is no clear consensus on the best method of instillation.

Studies have shown greater success with lower GI tract placement but technical aspects of placement are not entirely validated. This review aims to identify common traits and procedural techniques of successful FMT therapy via colonoscopy.

METHODS
Search Strategy
An electronic search using OVID Medline and PubMed was conducted using search terms and medical subject headings (MeSH) for clostridium difficile or similarly c-diff, cdiff, c diff, ediff, were coupled with set operator “AND” fecal microbiota therapy, fecal transplant or FMT. The search was limited to the English language and to studies published between 2010-2016. All types of articles were included in the initial electronic search including reviews, meta analyses, observational studies, case reports, case series, randomized control trials, cohort studies, and retrospective analyses.

Study Selection
Studies were included in this analysis if FMT placed via colonoscopy was mentioned as the means of CDI therapy with primary outcome of clinical cure. The initial search yielded 337 studies. Eligibility assessment and data extraction were completed by two independent reviewers (N.H. and V.K.).

After initial review by title and abstract, exclusion criteria were independently applied using the following criteria: studies without original data, FMT placed for other disease processes excluding CDI, other placement method of FMT, subjects younger than 18 years of age, unrelated outcome studied, did not meet CDI criteria/endpoint or lab assessment or did not meet inclusion criteria otherwise.

RESULTS
Of the 337 articles reviewed, we included 13 studies.1-13 The result endpoint for cure of clostridium difficile infection (CDI) after fecal transplant (FMT) for patients identified as over 65 years of age (9%) was 84.6% (95% confidence interval (CI) of 0.58-0.96; <0.016).

Overall, the point estimate for cure of clostridium difficile infection (CDI) after fecal transplant (FMT) for patients identified as over 65 years of age (9%) was 84.6% (95% confidence interval (CI) of 0.58-0.96; <0.016).

For patients over the age of 18 with no upper limit specified on age (74%), point estimate for cure was 85.4% (95% CI 0.76-0.91; p<0.001) and those identified strictly as 18-65 (17%) cure estimate was 93% (95% CI 0.83-0.98; p<0.001).

Of those patients who had stopped antibiotics at least 48 hours prior to fecal transplant (37%), point estimate for cure was 86% (95% CI 0.78-0.91; p<0.001) compared to a point estimate cure of 95% (95% CI 0.90-0.98; p<0.001) in patients that stopped antibiotics at least 24 hours prior to FMT (43%) and 81% (95% CI 0.53-0.94; p<0.035) when antibiotics were stopped less than 24 hours prior to FMT (15%).

The most commonly reported antibiotic prior to FMT was Vancomycin (46%) versus a combination of antibiotics (21%).

In studies that specified use of Golytely prep prior to colonoscopy (58%); point estimate for cure was 91% (95% CI 0.85-0.95; p<0.001) while those using a split 2L prep (21%) reported 79% cure (95% CI 0.61-0.90; p=0.004).

CONCLUSION
FMT placed by colonoscopy has a significant role in the cure of recurrent or refractory CDI. Stopping antibiotics 24 hours prior to FMT results in higher percentage cure (95%). Distribution of FMT throughout the colon has better outcomes than FMT instillation at other locations although few patients were studied in this regard.

Effect of Loperamide: FMT placement is not conclusive due to the low percentage of mentioned use in studies overall but this may also play a role in retaining transplant to allow for effective colonization. Prospective studies are recommended to study these factors for confirmation of effects.

REFERENCES