

Clostridioides Difficile in Long-Term Care: Navigating the Economic Burden and Cost-Effective Measures



Faculty
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Residents of long-term care facilities (LTCFs) have a high incidence of *Clostridioides difficile* infections (CDI). Given the financial constraints of LTCF it is not always clear the most cost-effective strategy for treating CDIs, especially considering the financial burden of many CDI treatments. This activity will review literature in relation to cost-effective CDI treatments and evaluate the implementation processes to determine the ideal scenarios for different CDI treatment options.

Learning Objectives

Pharmacist

1. Describe the economic burden of CDI on the healthcare system
2. Review available data on the cost-effectiveness of guideline backed agents used to treat initial and recurrent CDI
3. Given LTC case examples, recognize how to navigate and align economic and patient outcome decisions with regard to medication management.

Pharmacy Technician

1. Describe the economic burden of CDI on the healthcare system
2. Review available data on the cost-effectiveness of guideline backed agents used to treat initial and recurrent CDI
3. Given LTC case examples, recognize how to navigate and align economic and patient outcome decisions with regard to medication management.

Nurse

1. Describe the economic burden of CDI on the healthcare system
2. Review available data on the cost-effectiveness of guideline backed agents used to treat initial and recurrent CDI
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Pharmacists, Pharmacy Technicians, Nurses

Universal Activity Number

Pharmacist

0798-0000-20-142-L01-P

Pharmacy Technician

0798-0000-20-142-L01-T

Nurse

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Learning Objectives

At the conclusion of this activity, participants should be better able to:

- Describe the economic burden of CDI on the healthcare system
- Review available data on the cost-effectiveness of guideline backed agents used to treat initial and recurrent CDI
- Given LTC case examples, recognize how to navigate and align economic and patient outcome decisions with regard to medication management.

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Background



- *Clostridioides* [formerly *Clostridium*] *difficile* infection (CDI) is currently listed as an urgent threat by the CDC with:
 - 453000 new CDI
 - 83000 recurrent infections
 - 29000 deaths
- CDI was associated with \$6.3 billion in the US
 - Major driver of costs is hospitalizations and recurrent CDI
 - Up to 20-35% of patients will experience a recurrent CDI
 - Patients with one recurrence have a high risk of subsequent recurrences 40-60%

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Background

- Most common healthcare-associated infection
 - Healthcare associated CDI is associated with an increase in hospitalization costs of 54% in the US
 - Associated with 1% of hospital stays
- Hospital-acquired CDI is associated with an additional length of stay in the hospital of 3-16 days



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Background



- Elderly patients are at an increased risk for CDI hospitalizations
 - Four-fold increase in patients 65-84 years of age
 - Ten-fold increase in patients ≥ 85 years of age
- Two-thirds of patients with CDI in Long-term Care Facilities (LTCF) were discharged from a hospital within the past 30 days
 - High rate of NAP1/B1/027 strains, which are associated with an increased morbidity and mortality

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Background

- The CDI rate in LTCFs compared to hospitals is lower, the absolute number of cases can be higher
 - The rate and number of recurrent infections is drastically higher in LTCFs
- Colonization rates with *C.difficile* can be as high as 50% in LTCFs



• Jump RL, Donnelly CL. *Curr Geriatr Rep*. 2015;4(1):60-69. doi:10.1007/s13670-014-0108-3

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A Review of CDI Treatment

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IDSA 2010 Treatment Recommendations

Clinical Definition	Recommended Treatment
Initial episode, mild or moderate	Metronidazole (MTZ), 500 mg 3 times per day by mouth for 10–14 days
Initial episode, severe	Vancomycin (VAN), 125 mg 4 times per day by mouth for 10–14 days
Initial episode, severe, complicated	VAN 500 mg 4 times per day by mouth or by nasogastric tube, plus MTZ, 500 mg every 8 hours intravenously. If complete ileus, consider adding rectal instillation of VAN
First recurrence	Same as for initial episode
Second recurrence	VAN in a tapered and/or pulsed regimen

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IDSA 2018 Treatment Recommendations

Clinical Definition	Recommended Treatment
Initial episode, non-severe	- Vancomycin (VAN) 125 mg given 4 times daily x 10 days, OR - FDX 200 mg given twice daily for 10 days
Initial episode, severe	- VAN, 125 mg 4 times per day by mouth x 10 days, OR - FDX 200 mg given twice daily x 10 days
Initial episode, fulminant	VAN, 500 mg 4 times per day and IV Metronidazole (MTZ) 500mg IV 3 time daily
First recurrence	- VAN 125 mg given 4 times daily for 10 days if MTZ was used for the initial episode, OR - Tapered & pulsed VAN if a standard regimen was used for the initial episode OR - FDX 200 mg given twice daily for 10 days if VAN was used for the initial episode
Second or subsequent recurrence	- VAN in a tapered and pulsed regimen, OR - VAN, 125 mg 4 times per day x 10 days then rifaximin 400 mg 3 times daily x 20 days, OR - FDX 200 mg given twice daily x 10 days, OR - Fecal microbiota transplantation (FMT)

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Cost of Medications

Medication	Dose	Cost/dose AWP
Bezlotoxumab	40ml	\$4560
FDX	200 mg	\$243.55
Fecal Microbiota Transplant	na	\$1500**
Metronidazole	500mg	PO \$0.9 IV \$5
Vancomycin	125mg	\$4.10

* AWP per Lexicomp pulled May 2020

**Cost estimated by Rajasingham et al. 2020 CID

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What Agent Is the Most Effective Agent to Use for the Treatment Of C.Diff in LTCFs?

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CDI in LTCFs

- Data for the treatment and management of CDI inside of a LTCF is very limited
 - Treatment recommendations are inferred from other treatment settings
- Limits of these analyses
 - Single payer/health system perspective
 - Cost for medications can vary drastically
 - Hospital days (major driver of cost) may be less significant to LTCF



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Gallagher et al.

Gallagher et al compared FDX to VAN PO for the treatment of CDI

Patients were included if they were either in recurrence or met two of the following criteria:

- Age > 64 years
- Concomitant antibiotics
- Immunocompromised
- WBC >15,000 per/mm3 OR SCr 1.5 x baseline OR Albumin <3mg/dl

Primary outcome was readmission 90 days after discharge

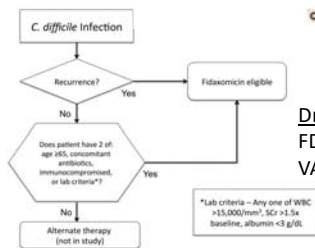
Financial outcomes were assessed by drug costs and insurance reimbursement rates

Gallagher JC et al. Antimicrob Agents Chemother. 2015;59(11):7007-7010. doi:10.1128/AAC.00939-15

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Gallagher et al.



Drug Costs:
FDX \$92/dose
VAN \$5.12/dose

*Lab criteria – Any one of WBC
>15,000/mm³, SCr >1.5x
baseline, albumin <3 g/dl

Gallagher JC et al. Antimicrob Agents Chemother. 2015;59(11):7007-7010. doi:10.1128/AAC.00939-15

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Gallagher et al. 2015

- Over a two-year period, 95 patients were enrolled
 - 49 treated with FDX
 - 46 treated with VAN
- Fewer patients (20.4% [10/49] vs 41.3% [19/46]) were readmitted within 90 days when treated with FDX vs VAN
 - No patients treated with FDX for initial CDI were readmitted
- When accounting for all costs, FDX saves \$3,047/patient



Gallagher JC et al. Antimicrob Agents Chemother. 2015;59(11):7007-7010. doi:10.1128/AAC.00939-15

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Should All CDI Be Treated with FDX?



- IDSA guidelines do not preferentially chose FDX over VAN
- The study cost of FDX (\$92/dose) does not reflect current market cost
 - AWP for FDX 243.55/dose
- FDX may be less effective in treating NAP1/B1/027 strains

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A Brief Review of Economic Analysis

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Economic Evaluations –Key Concepts

- When reviewing economic evaluation studies important factors to consider:
 - Who bears the cost?
 - Who enjoys the benefit?
 - What costs and outcomes are included?
 - Are the costs generalizable to patient populations?
 - How long costs and outcomes are measured?



Integrating Pharmacoeconomic Principles and Pharmacy Management. In: Chisholm-Burns, MA Pharmacy Management, Leadership, Marketing and Finance
Introduction to Economic Evaluation in Public Health. <https://www.train.org/tem/course/10792437/activeTab=about>

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Cost Minimization Analysis

- An analysis where the outcomes of various alternatives are assumed to be equal and only costs related to the therapies are compared

Medication	Dose	Cost per dose
FDX	200 mg	\$220.90
MTZ PO	500 mg	\$0.73
MTZ IV	500 mg	\$0.94
VAN	125 mg	\$0.88

CDI cure rates: VAN≠ MTZ ≠ FDX

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Cost-Effectiveness Analysis (CEA)

- An analysis where costs and outcomes between competing alternative treatments are assessed and compared, with the outcomes being valued in natural limits
 - Cost Effectiveness Ratio= Net Cost/ Effect (Change in health outcomes)
 - Multiple cost-effective ratios for a given treatment depending on outcome measured
- When comparing multiple outcomes net benefit between treatment an Incremental Cost-Effectiveness Ratio (ICER) should be used
 - ICER= (Cost Treatment 1-Cost treatment 2)/(Effect Treatment 1 –Effect Treatment 2)

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Cost-Effectiveness Analysis

	Drug A	Drug B
Total Cost	\$750	\$550
Effect	85% cure rate	70% cure rate
Cost –effectiveness ratio	(\$750/0.85)= \$882.35	(\$550/0.7)= \$785.71
Incremental Cost-effectiveness ratio	(\$750-\$550)/(0.85- 0.7)=\$1,333.33 per additional cure with Drug A relative to Drug B	

To determine if \$1,333.33/cure is an acceptable cost, a Willingness-to-Pay threshold is often utilized

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Willingness-to-Pay Threshold



- Assessment of the maximum amount that a subject is willing to pay for a product or service
- Subjects are surveyed asking the amount of money they would pay to avoid a given scenario (i.e. death, recurrence, etc.)
- Historical standard has been \$50,000/Quality Adjusted Life Year (QALY)

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Introduction to Economic Evaluation in Public Health. <https://www.train.org/tem/course/10792437/activeTab=about>

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Cost-Utilization Analysis (CUA)

- Similar to a CEA
- Evaluates outcomes between competing alternative treatments, where the outcome encompasses the quantity and quality of life
- A standardized analysis between interventions that could produce multiple cost –effectiveness ratios
 - Often standardized to a Quality Adjusted Life Year (QALY)



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Introduction to Economic Evaluation in Public Health. <https://www.train.org/tem/course/10792437/activeTab=about>

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Quality Adjusted Life Years

- A weighting of an outcome (life years gained) and the relative quality of the gain
- A patient with fulminant CDI may require a colectomy as a life-saving intervention
 - Intervention does not return patients to full health and each additional year lived would be discounted in analysis



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Pharmacoeconomics (2017) 35:1123–1140
DOI 10.1007/s40273-017-0540-2



SYSTEMATIC REVIEW

A Systematic Literature Review of Economic Evaluations of Antibiotic Treatments for *Clostridium difficile* Infection

Hannah E. Burton¹ · Stephen A. Mitchell¹ · Maureen Watt²

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Burton et al. in 2017

Reviewed the existing economic evaluations for VAN, MTZ, FDX

- FMT was only included for recurrent CDI evaluation

Systematic review of articles between 2013 and August 2016

- Utilized Cochrane guidance for systematic reviews
- Articles assessed by NICE Single Technology Appraisal Specification for submission of evidence
- Included data presented at scientific conferences

Burton HE et al. Pharmacoeconomics. 2017;35(11):1123–1140. doi:10.1007/s40273-017-0540-2

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Burton et al. in 2017

A total of 27 economic evaluations were included in the analysis

- 11 studies were from a US perspective
- WTP thresholds varied from \$5,000–100,000

FDX was cost-effective in 58.3% (14/24) studies

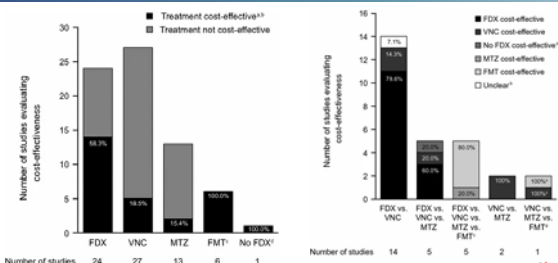
- When only including full manuscript studies FDX was cost-effective in 63.6% (7/11) studies
- When directly compared to VAN, FDX was cost-effective in 78.6% (11/14)

Burton HE et al. Pharmacoeconomics. 2017;35(11):1123–1140. doi:10.1007/s40273-017-0540-2

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Burton et al. in 2017



Burton HE et al. Pharmacoeconomics. 2017;35(11):1123–1140. doi:10.1007/s40273-017-0540-2

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EE	Interventions studied				Type of analysis and results	EE conclusion
	FDX	VAN	MTZ	FMT		
Alowayesh 2012	X	X			CEA FDX did not dominate	VAN is the preferred choice as it is less costly and only slightly less effective
Bartsch 2013	X	X	X		CUA 'No FDX' is the dominant strategy based on a cost-effectiveness threshold of US\$50,000/QALY FDX was the optimal strategy if the cost of one course was <US\$496 and NAP1/B1/027 probability <48% FDX based on strain typing, >US\$43.7 million/QALY	FDX cure rate would have to be 97% for it to be preferred FDX is not a cost-effective treatment option in the current epidemiologic CDI conditions, unless its cost is reduced to ≤US\$150 for all CDI cases or US\$160–US\$400 for patients with a non-NAP1/B1/027 strain

Burton HE et al. Pharmacoeconomics. 2017;35(11):1123–1140. doi:10.1007/s40273-017-0540-2

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EE	Interventions studied				Type of analysis and results	EE conclusion
	FDX	VAN	MTZ	FMT		
Bott 2012	X	X			CEA VAN dominated FDX FDX become more cost-effective if >25.7 days spent in hospital for relapse or if cure rate for VAN falls below 75.6%	FDX was not cost-effective compared with VAN FDX may be cost-effective in older patients, those with comorbidities, recurrent CDI or a high risk of relapse
Gallagher 2015	X	X			CEA ICER not reported	Reduced recurrence rate led to overall savings of US\$3047 per
Konijeti 2014	X	X	X	X	CUA FDX vs VAN US \$184,023/QALY FMT vs VAN US \$17,016/QALY FDX or MTZ vs FMT FMT Dominant	FMT via colonoscopy was most cost-effective If no FMT, VAN most cost-effective vs FDX or MTZ
Madkour 2012	X	X	X		CEA VAN cost-effective probability if WTP threshold US \$0/additional cure, 40% WTP threshold >US \$22,000/additional cure	VAN is the most cost-effective treatment for CDAD if WTP threshold ≤ US\$22,000/additional cure; FDX is cost-effective over this WTP threshold

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EE	Interventions studied				Type of analysis and results	EE conclusion
	FDX	VAN	MTZ	FMT		
Massachi 2014	X	X	X	X	CUA FMT was preferred for Mild-Moderate, Recurrent, and Severe CDI infections	FMT is the most cost-effective treatment option for mild-to-moderate, or severe CDI Fidaxomicin is the best alternative to FMT in mild-to-moderate CDI, and vancomycin is the best alternative to FMT in severe CDI
Patel 2014	X	X	X	X	CUA FMT most cost-effective, US\$1819/QALY (based on ICER threshold of US\$5000) Metronidazole second choice provided FMT cure rate >82% Second recurrence FMT most cost-effective, provided FMT cure rate >50%	FMT was the most cost-effective treatment strategy for recurrent CDI
Singh 2014	X	X	X	X	CEA MTZ and FMT cost effective All other interventions dominated	Only MTZ and FMT via colonoscopy were cost-effective strategies for the treatment of primary CDI in patients in the ICU

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EE	Interventions studied				Type of analysis and results	EE conclusion
	FDX	VAN	MTZ	FMT		
Stanges 2013	X	X			CUA FDX US \$ 67,576/QALY Mild-to-Moderate US \$32,020/QALY Severe CDI \$352,994/QALY NAP1/B1/027 strain FDX dominated	FDX was cost-effective in most scenarios compared with VAN for treatment of CDI based on a WTP threshold of US\$100,000/QALY, and was shown to be robust in sensitivity analyses
Varier 2014		X	X	X	CUA FMT vs. metronidazole \$124,964/QALY FMT dominant At a WTP threshold of US\$100,000/QALY, metronidazole was favored in ~55% of model iterations and FMT in 38%	FMT and vancomycin are more effective than metronidazole, but are also more costly FMT is only considered cost-effective with a high WTP threshold

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Clinical Infectious Diseases
MAJOR ARTICLE

Cost-effectiveness of Treatment Regimens for *Clostridioides difficile* Infection: An Evaluation of the 2018 Infectious Diseases Society of America Guidelines

Rutha Rajasingham,^{1*} Eva A. Ems,² Alexander Khramov,³ and Bryan P. Young¹

¹Division of Infectious Diseases and International Medicine, Department of Medicine, University of Minnesota; ²Division of Health Policy and Management, University of Minnesota School of Public Health; and ³Division of Gastroenterology, Department of Medicine, University of Minnesota, Minneapolis

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Rajasingham et al. 2020

Elucidated the best treatment combination given the multiple treatment modalities listed in the 2018 IDSA guideline

Model constructed to evaluate every possible combination of the IDSA treatment algorithm

- Willingness-to-Pay threshold \$100,000
- ICER <\$100,000 was considered cost-effective

Multiple sensitivity analyses performed for varying medication costs

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Rajasingham et al. 2020

Medication	Cost per dose
FDX	\$220.90
Rifaximin	\$9.20
Metronidazole PO	\$0.73
Metronidazole IV	\$0.94
Vancomycin	\$0.88

Total cost of FMT estimated \$1503.04

Figure 1. State transition diagram of patient progression through initial *Clostridioides difficile* infection (CDI) and ...

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Rajasingham et al. 2020

- Model evaluated 48 unique treatment algorithms
 - 42 of the possible algorithms were dominated and removed from the model
- Most effective strategy
 - Non-severe initial: FDX
 - Severe: VAN
 - First Recurrence FDX
 - Second Recurrent: FMT



Rajasingham R, et al. Clin Infect Dis. 2020;70(5):754-762. doi:10.1093/cid/cia318

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Rajasingham et al. 2020

Table 4. Cost-effectiveness of *Clostridioides difficile* Infection Treatment Strategies

Strategy No.	Nonsevere	Severe	First Recurrence	Second or Later Recurrence	Cost	Incremental Cost	Effectiveness, QALYs	Incremental Effectiveness, QALYs	ICER, \$/QALY
3	Metronidazole	Vancomycin	Vancomycin	Vancomycin	\$64 509	...	12 280	...	...
1	Vancomycin	Vancomycin	Vancomycin	Vancomycin	\$64 692	\$183	12 352	0.072	2537
25	Vancomycin	Vancomycin	Vancomycin	Vancomycin + rifaximin	\$64 917	\$225	12 406	0.054	4208
37	Vancomycin	Vancomycin	Vancomycin	FMT	\$65 125	\$208	12 426	0.020	10 363
43	Vancomycin	Vancomycin	Fidaxomicin	FMT	\$65 411	\$286	12 442	0.016	27 428
44	Fidaxomicin	Vancomycin	Fidaxomicin	FMT	\$65 889	\$478	12 451	0.009	31 751

All costs are given as US dollars.

Abbreviations: FMT, fecal microbiota transplantation; ICER, incremental cost-effectiveness ratio; QALY, quality-adjusted life-year.

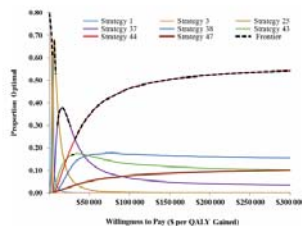
Rajasingham R, et al. Clin Infect Dis. 2020;70(5):754-762. doi:10.1093/cid/cia318

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Rajasingham et al. 2020



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Rajasingham et al. 2020

- Sensitivity analysis
 - Non-severe CDI
 - FDX was cost-effective if drug cost was <\$5100
 - >\$5100, vancomycin was preferred
 - Recurrent CDI
 - FDX was cost-effective if drug cost was <\$4590
 - >\$4590, vancomycin was preferred
 - FMT is cost-effective for second recurrence up to \$14,806
- No sensitivity analysis for vancomycin cost was performed



Rajasingham R, et al. Clin Infect Dis. 2020;70(5):754-762. doi:10.1093/cid/cia318

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Diagnostic Stewardship



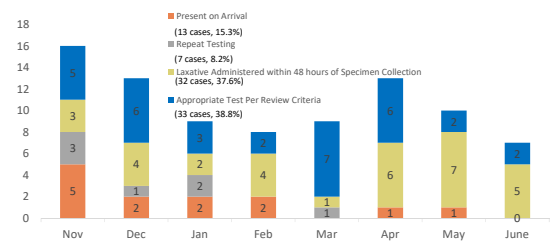
- Given the high rate of *C.diff* colonization (up to 50%) in LTCF laboratory stewardship needs to be considered
- Instance in which CDI testing could be questioned:
 - Stool is formed
 - Laxative use within the past 48 hours
 - Repeat testing for CDI
- Testing should follow IDSA multistep algorithm instead NAAT
 - NAAT will detect colonization in addition to true infection

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Diagnostic Stewardship



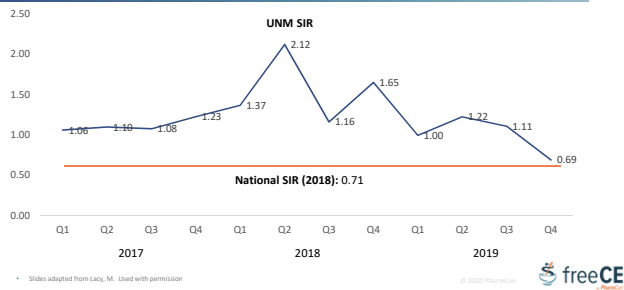
Slides adapted from Lery, M. Used with permission.

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Zoom Out to Last 3 Years: Hospital Onset *C. Difficile* SIR Trends To Below National SIR



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Conclusion/Key Takeaways

- CDI are associated with a significant financial burden to the healthcare system
- While data is heterogeneous for cost effectiveness, FDX may be a reasonable agent for patients if the acquisition cost <\$5,100
- Patients with recurrence may benefit from FMT
- Laboratory stewardship to decrease the number of inappropriately treated CDIs may be a cost-effective strategy

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Thank You

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Activity Test

Clostridioides Difficile in Long-Term Care: Navigating the Economic Burden and Cost-Effective Measures

Activity tests must be completed online at www.freeCE.com.

A passing grade of 70 or higher and completion of an online activity evaluation are required to earn credit.

1. What is the primary driver of cost related to CDI?
 - a. Missed days of work
 - b. Costs of test
 - c. Hospitalizations and recurrent infections
 - d. Cost of the medication

2. TJ is an 85-year-old male residing in a LTCF. He has history of recurrent infections treated with antibiotics, including amoxicillin and ciprofloxacin. He also takes omeprazole, lisinopril/HCTZ, and metformin. 3 months ago, he experienced an initial CDI and over the last 4 days, has experienced a minimum of 4 loose stools daily. This is TJ's first recurrence of CDI. Based on the economic evaluations presented in the lecture what the most cost-effective IDSA guideline agent for TJ's treatment?
 - a. FMT
 - b. Fidaxomicin
 - c. Metronidazole
 - d. Vancomycin

3. Based on the economic evaluations presented in the lecture what the most cost-effective IDSA guideline agent for the treatment of SECOND RECURRENCE of CDI?
- FMT
 - Fidaxomicin
 - Metronidazole
 - Vancomycin
4. Based on the Rajasingham et al. 2020 article, when would vancomycin be a preferred agent to compared to fidaxomicin for the treatment of an initial non-severe CDI?
- When the cost of vancomycin is <\$1000 per treatment
 - When the cost of vancomycin is >\$1000 per treatment
 - When the cost of fidaxomicin is >\$5100 per treatment
 - When the cost of fidaxomicin is <\$5100 per treatment
5. TR is 93-year-old female with dementia. She recently reported pain with urination and urinary frequency. She was diagnosed with cystitis and received cephalexin for five days as treatment. She now reports a minimum of 4 loose stools daily for the last 4 days and was subsequently diagnosed with a CDI. The physician at your facility is interested in using metronidazole for the treatment of the CDI based on a recent Cost Minimization Analysis (CMA) for CDI he recently read. Which of the following statements is true regarding CMA for evaluating different CDI treatments?
- CMAs are the most appropriate economic evaluations
 - CMAs are not appropriate because cure rates between CDI treatments are different
 - CMAs are not different than cost utilization analyses (CUAs)
 - CMAs are appropriate because they encompass all cost associated with the treatment

6. Which of the following is FALSE related to CDI infections and hospitalizations?

- a. Annual cost related to CDI have been estimated as high as six billion dollars
- b. Patients hospitalized with CDI have an increased length of stay in the hospital
- c. CDI is associated with 10% of all hospital stays
- d. Most patients with CDI at LTCFs had a hospitalization within the last month

7. Which of the following is FALSE related to CDI infections and LTCFs?

- a. Patients older than 65 years of age are at decreased risk of hospitalization due to CDI
- b. About half of all residents within a LTCF are colonized with *C. diff*
- c. Recurrent CDI occurs more often in patients at LTCF than patients at home
- d. Patients in LTCF are more likely to have hyper virulent strains of CDI (i.e. NAP1)

8. Based on the economic evaluations presented in the lecture what the most cost-effective IDSA guideline agent for the treatment of INITIAL NON-SEVERE CDI?

- a. FMT
- b. Fidaxomicin
- c. Metronidazole
- d. Vancomycin

9. WP is 75-year-old male with hypertension, type 2 diabetes, hypercholesteremia, and gout. The patient medication profile consists of metformin, docusate, valsartan (due to cough with ACE inhibitor), atorvastatin, colchicine and as needed ibuprofen, and polyethylene glycol.

The patient has had unformed stools for the past 24 hours. The nurse wants to know if the patient should be screened for CDI?

- a. Yes, all patients with one or more unformed stool should be screened.
- b. Yes, the patient meets the criteria for screening as listed in the IDSA guidelines
- c. No, hold all laxatives and screen for CDI if unformed stools continue.
- d. No need to screen the patient, start oral metronidazole.

10. JP is a 63-year-old female with type 2 diabetes, and peripheral vascular disease. She was recently (within the past 2 weeks) discharged from the hospital for a diabetes-related foot infection and is currently on ceftriaxone 2 grams IV daily. Now she reports 3 days of profuse watery diarrhea with associated abdominal pain. Her stool was tested yesterday, and she was diagnosed with a CDI. The physician at your facility would like to use a new agent, known as Nalimod, for the treatment of her CDI. When evaluating if this new agent would be appropriate for your facility all of the following should be considered EXCEPT:

- a. Cost of the medication
- b. Treatment efficacy (i.e. cure rate)
- c. Quality of life after treatment
- d. Cost of testing