Evaluation of Oral Vancomycin Prophylaxis in *Clostridioides difficile* Infection

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IRB Approved

UW Medicine

Learning Objectives

- Understand how a residency project is conducted at UW Medicine
- Discuss the literature evaluating the use of vancomycin prophylaxis for *Clostridioides difficile* infection
- Evaluate the use of oral vancomycin for prophylaxis of *Clostridioides difficile* Infection at UW Medicine

1 Year Residency Research Project Process at UW Medicine

Why Prophylaxis for Clostrioides Difficile Infection?

CLOSTRIDIOIDES DIFFICILE *(formerly known as Clostridium difficile)*

Clostridioides difficile (also known as *C. diff*) is a bacterium that causes diarrhea and colitis (an inflammation of the colon). *C. diff* infection can be life-threatening.

IMPACT

C. diff infection is estimated to cause almost half a million illnesses in the United States each year, and an estimated 29,300 deaths.[1]

About **1 in 6 patients** who get *C. diff* infection will get it again in the subsequent 2–8 weeks.[1]

One in 11 people over 65 diagnosed with a healthcare-associated *C. diff* infection die within a month.[2]

RISK

People are 7 to 10 times more likely to get *C. diff* infection while taking an antibiotic and during the month after.[3]

Extended stays in healthcare settings, such as hospitals and nursing homes, also increase their risk.

More than 80% of *C. diff* deaths occur in people 65 and older.

Primary vs Secondary Prophylaxis

Primary Prophylaxis

Goal is to prevent initial CDI

Secondary Prophylaxis

Goal is to prevent recurrent CDI

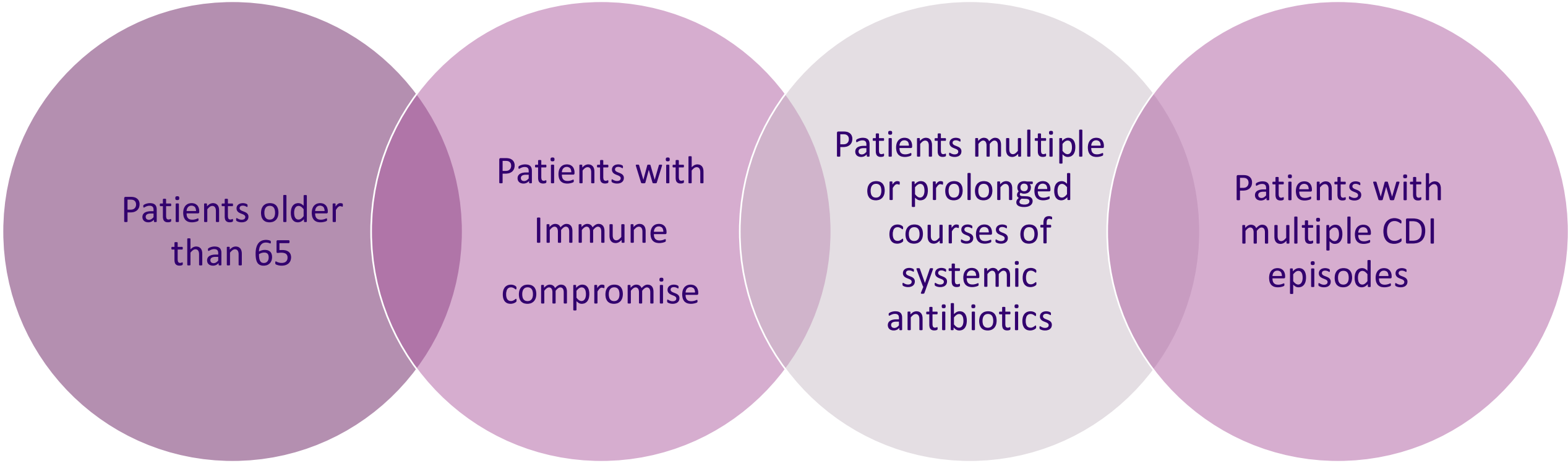
What is the Evidence for Oral Vancomycin Prophylaxis for CDI?

Current evidence is mostly based off small retrospective studies

Differing dosing, definitions, and follow-up

Overall suggest some benefit for prevention of recurrent CDI in patients receiving systemic antibiotics who have had more than 1 CDI

Who May Benefit from Oral Vancomycin Prophylaxis?



What do the Guidelines Say?

Not currently recommended by the IDSA

The American College of Gastroenterology (ACG) has a conditional recommendation for specific patient populations

Internal guidance at UW Medicine do not routinely recommend

My Research Project

Study Objective

To evaluate the utilization and appropriateness of oral vancomycin prophylaxis for *Clostridioides difficile* Infection (CDI) at UW Medicine

Research Methods

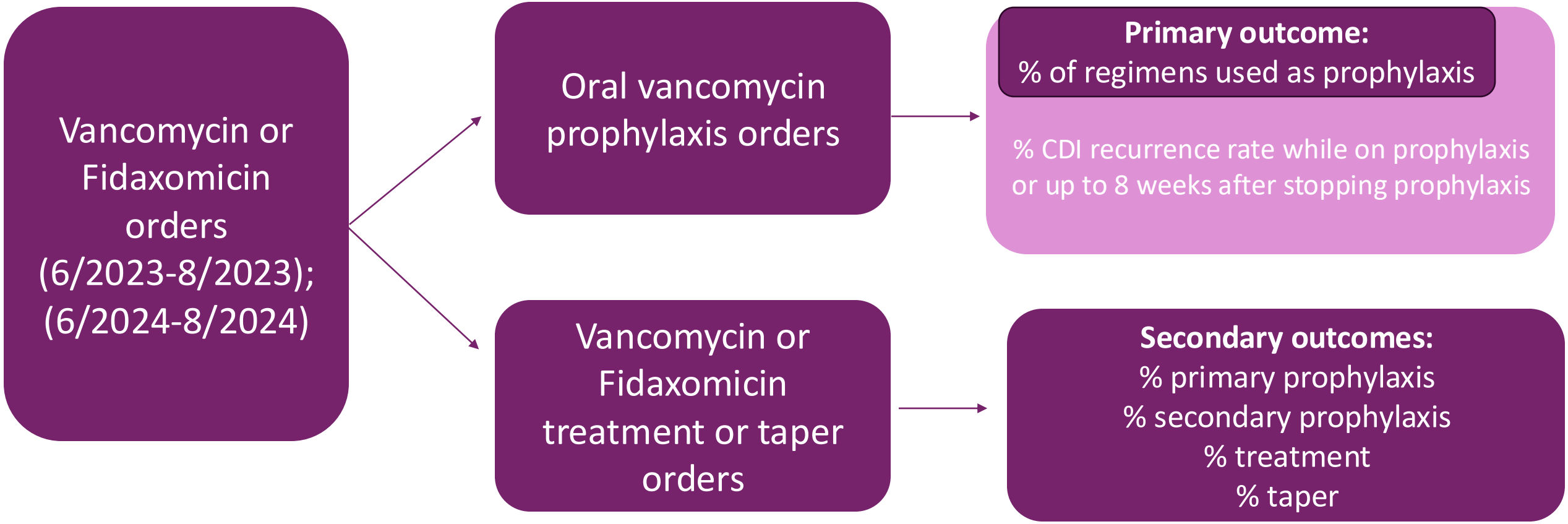
Retrospective single center study conducted using the UW Medicine electronic medical record

Inclusion:

- Adult inpatients treated in June- August 2023 and 2024
- Prescribed fidaxomicin or oral vancomycin and received more than one dose of medication.

Exclusion: Treatment and taper regimens were excluded from analysis of prophylactic regimens

Methods Schematic

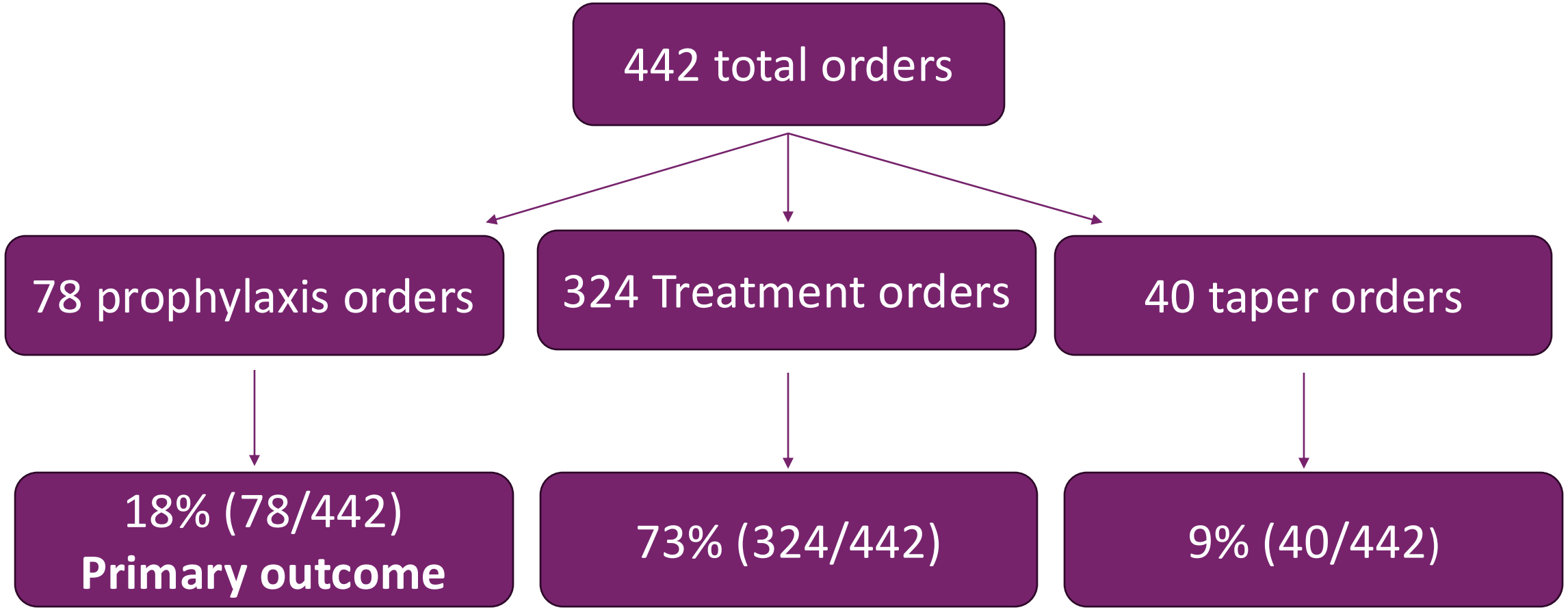


Results

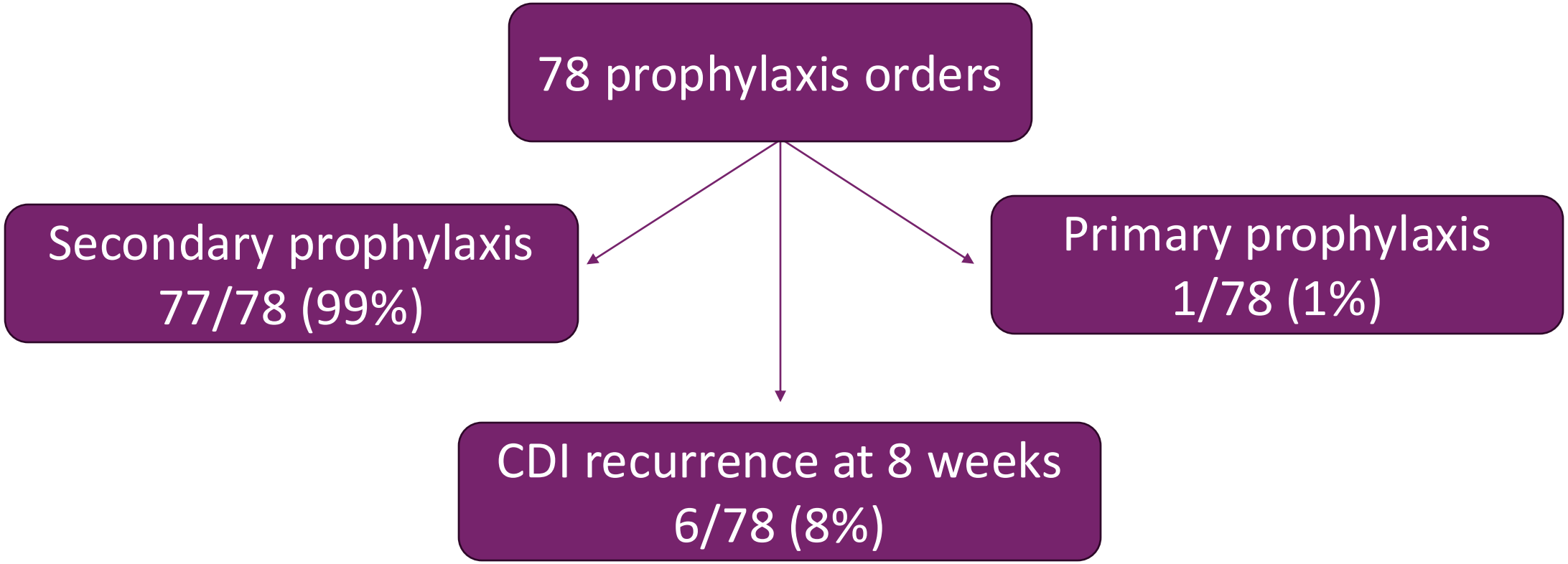
Baseline Characteristics

	Prophylaxis cohort n=78	Full cohort n=442
Age, mean, y	55	59
Female, no. %	43/78 (55)	215/442 (48)
White, no. (%)	63/78 (80)	351/422 (80)
Facility		
Tertiary hospital, no. (%)	37/78 (48)	207/442 (47)
Community hospital, no. (%)	29/78 (37)	101/442 (23)
Safety-net hospital, no. (%)	12/78 (15)	134/442 (30)

Primary Outcome

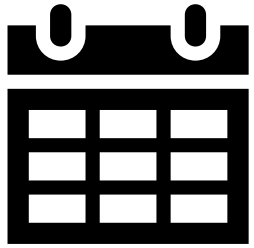


Secondary outcomes

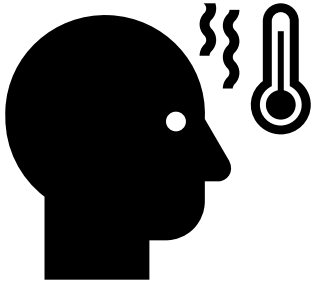


Observations from the Prophylaxis Cohort

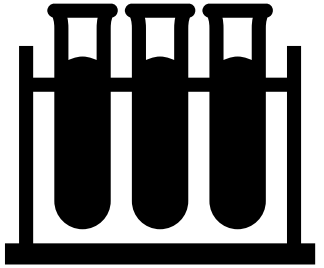
92% of patients received vancomycin 125 mg orally daily



Median duration of prophylaxis was 15 days



59% of patients had ID consult within 48 hours



Patients had a median of 1 prior CDI

78 prophylaxis orders in 72 patients

Observations from the Prophylaxis Cohort Continued

78 orders in 72 unique patients	
Immune Status	
Immunocompetent, no. (%)	45/72 (62.5)
Received a solid organ or islet cell transplant, no. (%)	13/72 (18)
Active treatment of solid tumor or hematologic malignancy, no. (%)	10/72 (13.9)
Received chimeric antigen receptor T cell (CAR T-cell) therapy or hematopoietic cell transplant (HCT), no. (%)	3/72 (4.2)
High dose corticosteroids, no. (%)	1/72 (1.4)

American College of Gastroenterology Criteria

Consider CDI prophylaxis if these risk factors are present

High risk for CDI recurrence: 65 years or older or with significant immunocompromise who were hospitalized for severe CDI within the past 3 months	
Patients above 65, no. (%)	23/72 (32)
Immunocompromised, no. (%)	27/72 (37.5)
CDI within 3 months, no. (%)	43/72 (60)
Patients meeting at least 1 criteria, no. (%)	58/72 (80)

Conclusions

Approximately 20% of CDI therapeutics were ordered as prophylaxis

20% of patients did not meet ACG risk factors for consideration of secondary prophylaxis

C.*diff* recurrence rate was low and comparable to previous literature (0-10%)

Most providers used a dose of oral vancomycin 125mg orally daily for prophylaxis

Discussion

Limitations:

- Retrospective nature of the study
- Data was limited to those data available at UW Medicine affiliated patient care sites
- Study did not include a comparison arm
- Study did not assess harms of prophylaxis (e.g., VRE colonization)

Next Steps

- Investigate further the patients who received secondary prophylaxis who did not meet the ACG criteria for high-risk of recurrence and understand their risk factors

- Update internal guidance to a more specific risk factor-based approach

- Conduct an additional study evaluating patients who received and did not receive oral vancomycin as secondary prophylaxis and evaluate effectiveness of oral vancomycin in preventing CDI recurrence

QUESTIONS?