

## BACKGROUND

- Bacteremia is the leading cause of chemotherapy-related morbidity and mortality in children with acute leukemia.
- Antimicrobial prophylaxis reduces rates of gram-negative bacteremia and is now recommended in adults by the National Comprehensive Cancer Network.
- Levofloxacin prophylaxis in high-risk oncologic populations has been standard of care at Children's Hospital Colorado (CHCO) since 2018.
- Fluoroquinolone (FLQ) use impacts unit-wide resistance, this was not evaluated in previous FLQ prophylaxis studies, and may mitigate benefit over time.

## OBJECTIVE

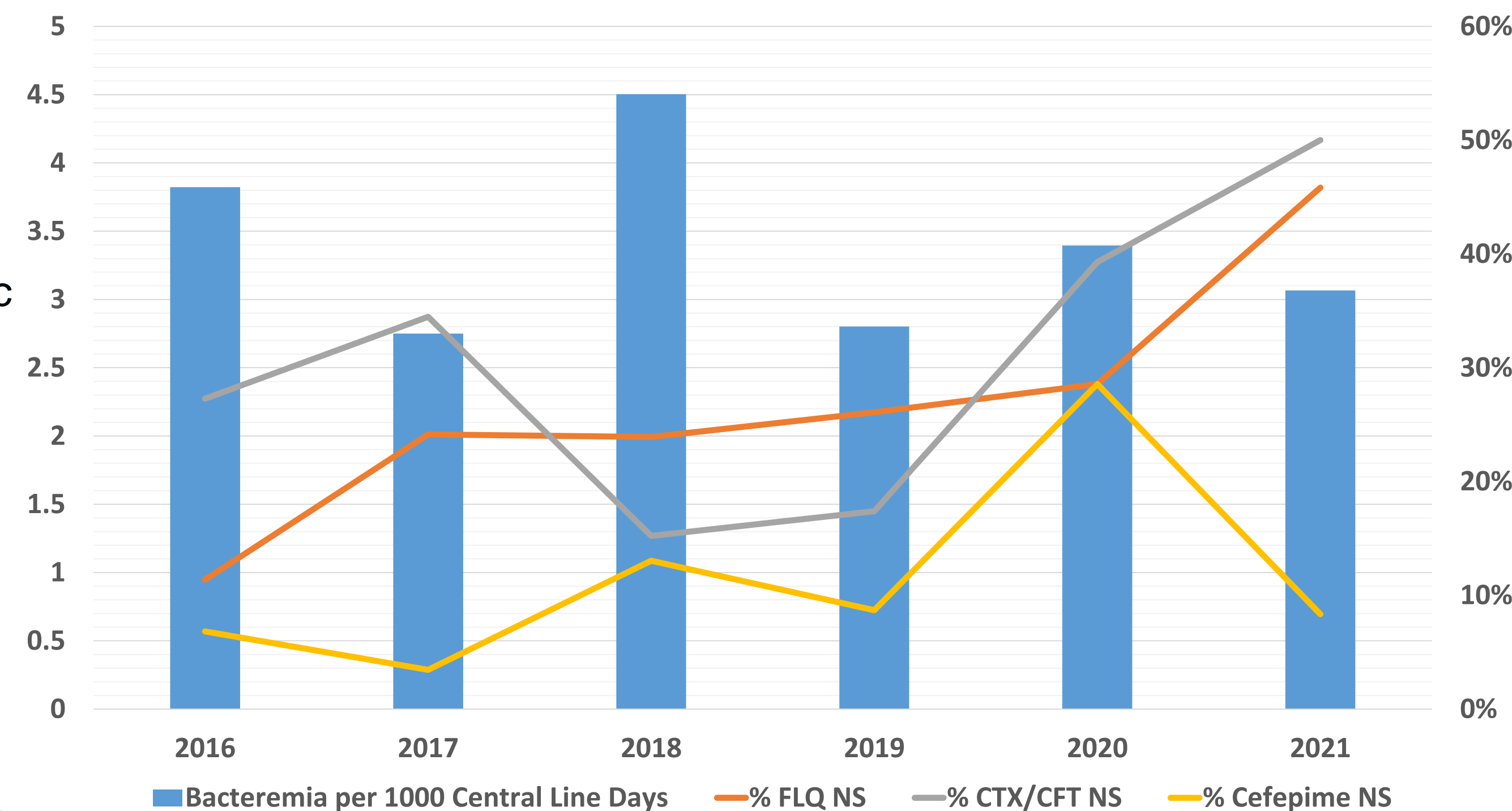
- To evaluate the unit-wide development of resistance after implementation of levofloxacin prophylaxis in our patients, and the incidence of bacteremia per 1000-line days.

## METHODS

- A single-center, retrospective review evaluated susceptibility patterns of all first positive blood cultures obtained between January 2016-December 2021 in patients hospitalized at the CHCO Center for Cancer and Blood Disorders (CCBD) unit, whether they received levofloxacin prophylaxis or not.
- Positive cultures were identified in Meditech<sup>®</sup> or EPIC Beaker<sup>®</sup> and antimicrobial susceptibility data gathered from Microscan<sup>®</sup> or Sensititer<sup>®</sup>.
- Institutional review board approval was granted, and all data was analyzed using descriptive statistics performed in Excel<sup>®</sup>.

## RESULTS

Graph 1: Total bacteremia per 1000 central line days and nonsusceptibility (NS)



- The unit-wide rate of bacteremia per 1000 central line days did not significantly decrease ( $p=0.59$ ) after initiation of levofloxacin prophylaxis.
- Unit-wide levofloxacin/ciprofloxacin nonsusceptibility increased to almost 46% of tested isolates in 2021 ( $p = 0.02$ ). Cefotaxime/ceftriaxone nonsusceptibility also rose to over 50% ( $p 0.003$ ), while cefepime nonsusceptibility appeared stable ( $p = 0.38$ )

## CONCLUSIONS

- Bacteremia amongst all CHCO CCBD patients did not decrease despite consistent levofloxacin prophylaxis in high-risk patients since November 2018.
- Antimicrobial non-susceptibility to FLQ and other agents increased over the time period.
- Closer and ongoing evaluation are warranted to weigh the benefits of use against risks.

Table 1: Bacteremia and NS results

Number of Bacteremia Episodes (N)	Bacteremia per 1000 Central Line Days	FLQ NS Total Bacteremia Episodes N (%)	FLQ NS Total Isolates Tested N (%)	CTX/CFT NS Total Bacteremia Episodes N (%)	CTX/CFT NS Total Isolates Tested N (%)	Cefepime NS Total Bacteremia episodes N (%)	Cefepime NS Total Isolates Tested N (%)
2016 (44)	3.823095	5 (11.4)	26 (19.2)	12 (27.3)	23 (52.2)	3 (6.8)	10 (30.0)
2017 (29)	2.749597	7 (24.1)	23 (30.0)	10 (34.5)	19 (52.6)	1 (3.5)	10 (10.0)
2018 (46)	4.503182	11 (23.9)	29 (37.9)	7 (15.2)	29 (24.1)	6 (13.0)	21 (28.6)
2019 (23)	2.802486	6 (26.1)	10 (60.0)	4 (17.4)	13 (30.7)	2 (8.7)	9 (22.2)
2020 (28)	3.395174	8 (28.6)	24 (33.3)	11 (39.3)	22 (50.0)	8 (28.6)	18 (44.4)
2021 (24)	3.065526	11 (45.8)	22 (50.0)	12 (50.0)	22 (54.5)	2 (8.3)	14 (14.3)

## REFERENCES/DISCLOSURES

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