POINT PREVALENCE VS PERIOD PREVALENCE: THE BEST TIMING TO COLLECT ANTIBIOTIC PRESCRIPTIONS DATA IN A HOSPITAL SETTING USING AWARE CLASSIFICATION

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Introduction

World Health Organization (WHO) has implemented Point Prevalence Surveys (PPSs) for collecting data on antibiotics prescriptions and clinical behaviours in hospital settings [1]. The best PPS' frequency to better capture the real use of antibiotics has not yet been identified.

Objectives

This study aims to compare Point Prevalences Surveys (PPS) with the Year Period Prevalence (YPP) to determine the most sustainable and representative timing that best defines annual patterns of hospital antibiotic use.

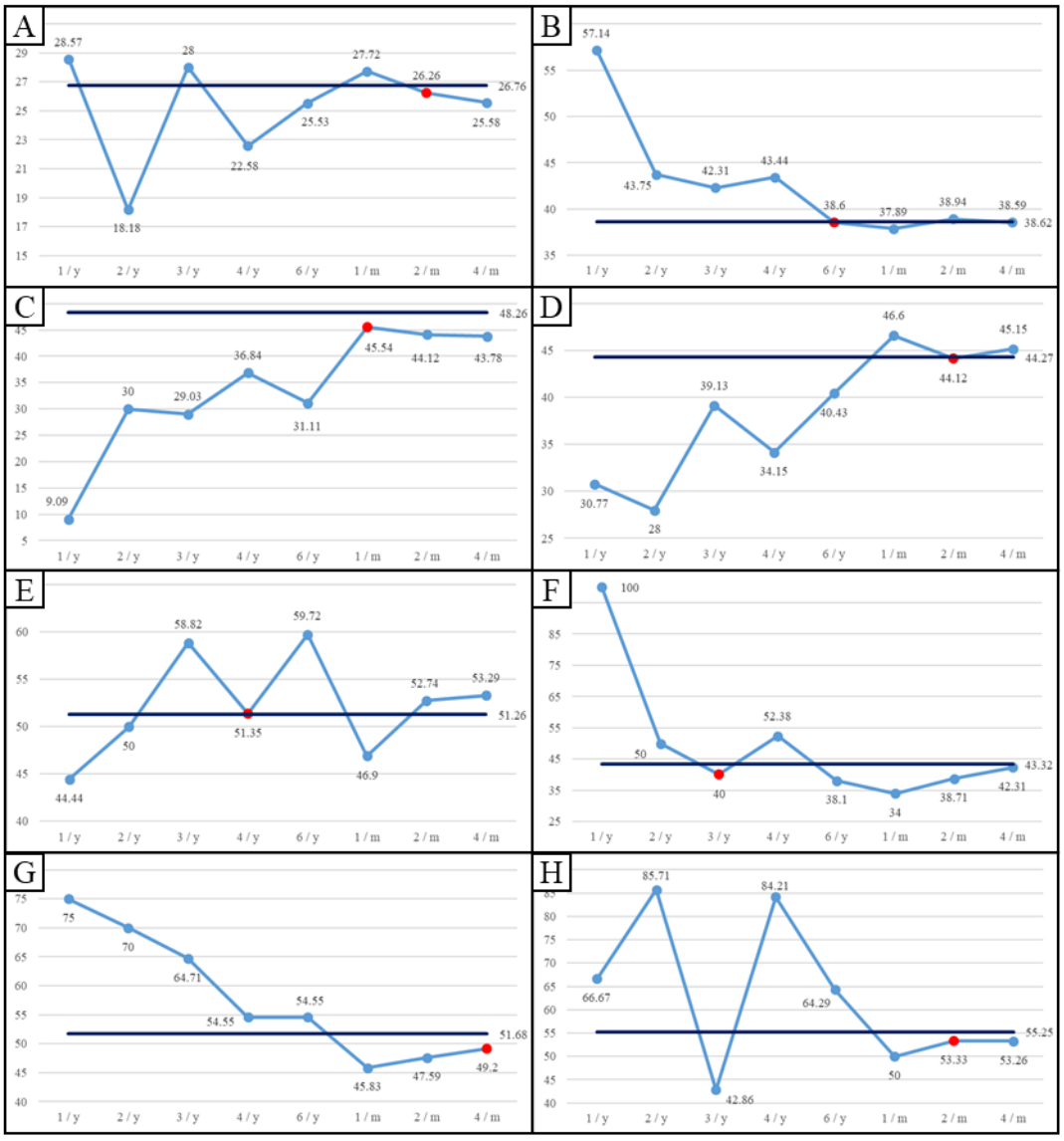
Methods

Data about children's antibiotic prescriptions admitted to the Pediatric Acute Care Unit of Padua University were collected from 01.01.2015 to 31.12.2022. Therapies were categorized following the AWARE (Access, Watch and Reserve) classification, and days of supply were used to represent the effective daily use of antibiotics. Point Prevalence was calculated for each class with different timing: from the third Monday of November for the one / year PPS to the first and third Monday and Thuresday of each month for the four / month PPS. A proportion test was used to "not" assess differences between PPS and YPP. The 8-year period was summarized using a weighted means based on the number of annual prescriptions.

Results

About 3017 children, a total of 4921 prescriptions entered the analysis: 2398 (48.76%) access and 2520 (51.24%) watch, with 10,333 and 12,791 days covered in the eight-year, respectively. Significance between differences in proportion was found only in some PPS in 2017. Overall, there is no statistical evidence that PPSs differ from the year-prevalence. Figure 1 reported the trend of PPS according to the increasing number of detections, with a red dot in the point-PPS associated with the minimum delta (|YPP – PPS|) in the year.. 8-year-weighted-delta presents a reduction trend from 18.88 in one / year to 1.75 in 4 / month. Analysis by year suggested that to find the minimum value of delta, PPS is needed at least four / year.

Figure 1. Access Point Prevalence with number of surveys from 1 to 48 per-year (light blue); horizontal line corresponding to the year prevalence and red dot referred to PPS with the minimum value of delta between PPS and YPP stratified by year.



A) 2015 B) 2016 C) 2017 D) 2018 E) 2019 F) 2020 G) 2021 H) 2022

Conclusions

The analysis of antibiotic prescriptions using PPSs 4- or 6-time per year seems a feasible and sustainable method to monitor antibiotic consumption instead of daily data collection. This is particularly relevant in low-resource settings, where continuous data collection is not possible.

References

1 World Health Organization. WHO methodology for point prevalence survey on antibiotic use in hospitals. Geneva, Switzerland: WHO/EMP/IA; 2018.