Best Practices: Antibiotic Stewardship and Evidence-Based Guidelines During Upper Respiratory Infections Among Rural, Primary Care Patients

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Introduction

The misuse of antibiotics has led to antibiotic resistance (AR), which is a challenging clinical issue seen in the treatment of upper respiratory infections (URIs). When an antibiotic's effectiveness is reduced, untreatable infections arise, illnesses reoccur, and more difficult to treat complications can follow (United States Department of Health and Human Services [HHS] & Centers for Disease Control and Prevention [CDC], 2019).

The CDC and the National Center for Emerging and Zoonotic Infectious Diseases (2021) illustrate 30% of the antibiotics prescribed annually in the United States (U.S.) are unnecessary.

AR is a global health concern and each year in the U.S. AR is responsible for approximately:

- 2.8 million infections (HHS & CDC, 2019).
- 35,000 deaths (HHS & CDC, 2019).
- $20 billion in healthcare costs (Walsh et al., 2020).

Walsh et al. (2020) describes most antibiotics are prescribed in primary care settings and approximately 60% of them are ordered for viral, upper respiratory-related illnesses (URRIs).

Problem Statement

The primary care clinic does not have a standardized, evidence-based guideline used in the treatment of URIs.

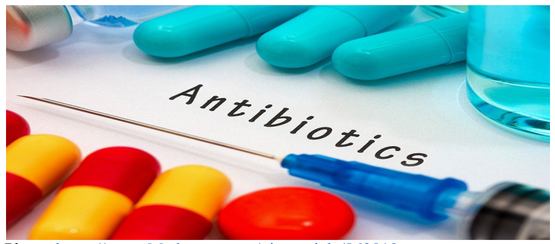

Photo: https://www.Medscape.com/viewarticle/863819

Purpose/Aims

The purpose of this Quality Improvement (QI) initiative is to increase antibiotic stewardship during URIs in a primary care practice.

The following are aims for this QI project:

1. Provide clinic-wide AS education.
2. Implement the American Academy of Family Physicians' (AAFPs') evidence-based, antibiotic-prescribing guidelines for URIs.
3. Reduce inappropriate antibiotic prescribing.
4. Adoption of AS that focuses on improving antibiotic prescribing practices—the use of antibiotics when appropriate and per current, clinical practice guidelines.

BE ANTIBIOTICS AWARE
SMART USE, BEST CARE

Photo: https://www.cdc.gov/patientsafety/features/be-antibiotics-aware.html

Measurable Outcomes

1. The rate of pre- and post-intervention antibiotic prescriptions written for URIs.
2. The rate of pre- and post-intervention, non-guideline concordant and guideline concordant antibiotic prescriptions written for URIs.
3. Comparison of the providers' knowledge of AS before and after education and presentation of antibiotic-prescribing guidelines.

Photo: https://sitespsu.edu/siowfa15/2015/11/19/animals-and-antibiotic-resistant-bacteria/

Processes

This QI project, determined by ETSU IRB review, is being conducted at a rural, family practice clinic. Participants include nurse practitioners and office staff. The target population includes adult patients, ages 18 and up, who present with upper respiratory symptoms.

Step 1: Pre-intervention data will be collected by the project coordinator (PC) through the retrospective review of EMRs.

Step 2: Pre-intervention, the PC will introduce educational interventions and administer anonymous, provider questionnaires.

Step 3: Pre-intervention, the PC will post AS patient education in each exam room and begin airing the educational video in the waiting area. The brochures will be printed for distribution.

Step 4: Post-intervention, the PC will administer anonymous, provider questionnaires.

Step 5: Post-intervention, the PC will present the rate of antibiotic prescriptions and the rate of adherence to the antibiotic guidelines to the Project Director (PD).

Step 6: The PD will prepare an Excel spreadsheet that will be used to analyze data and illustrate pre- and post-descriptive statistics.

Results

Preliminary results suggest patient preferences, outside of guidelines, may influence prescribing behaviors.

Limitations

The sample of providers is small and may not be characteristic of a larger group.

Conclusion

This QI project is driven by a need to develop a sustainable AS program, improve practice, and educate clinical staff and patients regarding AS for URIs. The project is presently ongoing and preliminary evidence shows interventions such as patient education, implementation of antibiotic-prescribing guidelines, and identification of barriers and facilitators are all vital components of AS.

Photo: https://www.physiciansweekly.com/guidance-on-implementing-antibiotic-stewardship/

References

United States Department of Health and Human Services and the Centers for Disease Control and Prevention. (2019). *Antibiotic resistance threats in the united states 2019*. https://doi.org/10.15620/cdc:82532

Walsh, T. L., Taffe, K., Sacca, N., Bremmer, D. N., Sealey, M. L., Cuevas, E., Johnston, A., Malarkey, A., Behr, R., Embrescia, J., Sahota, E., Loucks, S., Gupta, N., Shields, K. J., Katz, C., & Kapetanos, A. (2020). Risk factors for unnecessary prescribing for acute respiratory tract infections in primary care. *Mayo Clinic Proceedings: Innovations, Quality, & Outcomes*, 4(1), 31-39.

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