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Optimizing Antibiotic Management of Pediatric Acute Otitis Media in an Emergency Department

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Background and Aim

- Background:**
- Acute otitis media (AOM) is the most common reason for pediatric antibiotic prescriptions
 - The updated American Academy of Pediatrics (AAP) AOM clinical practice guidelines acknowledge that many cases of AOM resolve without antibiotics and recommend offering observation in non-severe cases
 - The observation approach is underutilized with antibiotics being prescribed for 75-95% of children with AOM in the United States
- Problem:**
- Children diagnosed with AOM at the Children's Mercy Hospital Kansas Emergency Department (CMK ED) routinely get antibiotic prescriptions
 - There is rarely discussion with families about watchful waiting (WW)
 - WW defined as discussion of observation with parents + providing a safety-net antibiotic prescription (SNAP) that parents can fill if the patient is not improving or worsening over the next 48 hours

Aim Statement:
The aim of this quality improvement (QI) project is to increase watchful waiting for AOM at the CMK ED by 20% by March 2020, with an overall goal of decreasing antibiotic use for AOM

Methods

- Formed a multidisciplinary team: infectious diseases physician and pharmacist, ED physicians, advanced practice registered nurses, and nurses
 - Reviewed 400 charts from randomly selected patients diagnosed with AOM at CMK ED in the 9-month period between August 2017 and April 2018
 - Excluded any condition that would alter the natural course of AOM
- Established a baseline rate of antibiotic prescriptions for AOM and ascertained patient eligibility for watchful waiting

PDSA Cycles

PDSA Cycle 1 – August 2018:

- Developed an algorithm summarizing the treatment recommendations provided in the AAP AOM guidelines to help providers quickly identify patients that would be eligible for a watchful waiting approach
- Presented the algorithm at a monthly staff meeting and displayed it prominently in the CMK ED workroom for providers to readily see and utilize

PDSA Cycle 2 – December 2018:

Recognized providers who discussed watchful waiting with families through a monthly email

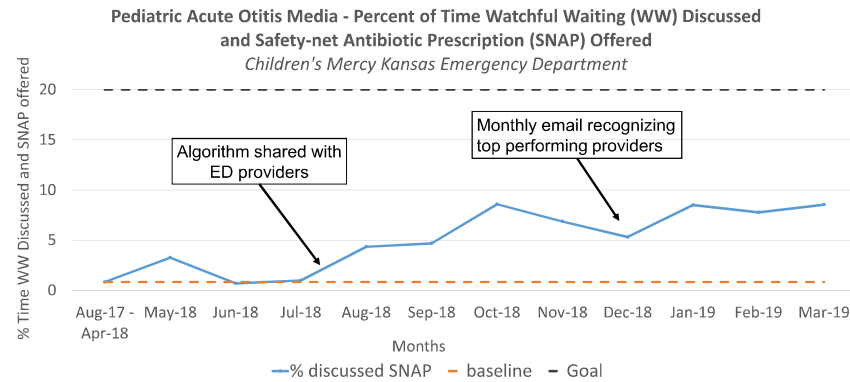


Figure: Annotated run chart depicting the percentage of time watchful waiting was discussed and SNAP was offered to all patients presenting to the CMK ED with acute otitis media

Results and Analysis

- Based on our chart review, **34%** of the 361 patients with AOM could have been offered WW
 - Providers discussed WW with only **0.8%** of those patients
- The discussion of watchful waiting with patients improved over time
 - September 2018 following first PDSA cycle = 5%
 - January 2019 after the second PDSA cycle = 7.7-8.5%
- Providers have consistently discussed watchful waiting and offered SNAP to at least 5% of patients with AOM each month since the start of the QI project
- There have been no reported ruptured tympanic membranes or increase in return visit rates within 14 days of offering watchful waiting

Conclusion

- Offering watchful waiting can reduce unnecessary use of antibiotics in children with AOM and in turn, reduce the potential of adverse events related to antibiotic use
- Acute care setting providers are sometimes concerned with the lack of follow-up; however providing SNAP along with parent education may help overcome this barrier
- Parents were receptive to a discussion regarding watchful waiting
- Clearly, there is need to increase the number of patients who can utilize the watchful waiting with SNAP treatment option

Future Goals

- Continue education and reinforce watchful waiting in future PDSA cycles to reach goal of 20% by March 2020
- Develop information sheet to provide families at discharge
- Use the knowledge gained in future QI projects