Effects of Implementing a Best Practice Advisory on Compliance with Recommendations for Antipsychotic Monitoring

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BACKGROUND

Mental illness affects approximately 14-20% of American children and adolescents[1], with an estimated annual cost of $247 billion in the US[1]

Antipsychotic agents are used to treat psychotic and certain mood and behavior disorders

- Adverse effects include weight gain, metabolic derangements, increased risk of diabetes, dyslipidemia, metabolic syndrome

Samaritan's Best Practice Advisory (BPA):

- Addresses key recommendations issued by AACAP[2] for monitoring BMI, blood glucose or hemoglobin A1C, lipids
- Implemented on 5/30/2019 following a prior Samaritan study[3]
- Fires in the outpatient setting for patients age 2-18 years with an active medication of pharmaceutical class "Antipsychotic"

OBJECTIVE

To determine the impact of implementing the Best Practice Advisory (BPA) on antipsychotic monitoring compliance

METHODS

Study design: quality improvement project

Study subjects: Children prescribed antipsychotic medication(s) who currently have an identified PCP within the Samaritan system and/or have been seen by a Samaritan psychiatric provider

Inclusion criteria:

- Age: at least 2 years old and younger than 18 years old
- Must meet criteria for the BPA

Exclusion criteria:

- Subjects were excluded if the only medication that triggered the BPA to fire was lithium or carbamazepine as these have been populated by EPIC into the pharmaceutical class of "Antipsychotic" but are not targets of interest as they have different monitoring requirements, and are actually NOT antipsychotics

Measurements:

- Pre-BPA period: December 2018 – May 2019
- Post-BPA period: June 2019 – December 2019
- Distribution of antipsychotics used, and type of prescribers
- Looked at whether patients had BMI and labs (ordered/collected) at 3 months and 6 months

RESULTS

- The pre-BPA and post-BPA patient populations had similar age and gender distributions (62% male, 38% female, average age 13)
- 230 prescriptions were identified
  - Distribution of antipsychotics: risperidone 59 (37%), aripiprazole 59 (26%), quetiapine 28 (12%), lurasidone 18 (8%), olanzapine 16 (7%), ziprasidone 15 (7%), paliperidone 3 (1%), asenapine 3 (1%), cariprazine 1 (<1%) and clozapine 1 (<1%)
- None were injectable. Only asenapine was sublingual; the rest were tablets or capsules.
- 67% of the prescriptions were ordered by a provider from Behavioral Health.
- 63% of the prescriptions included refills, ranging from 1 to 11.

Figure 1. Distribution of refills for antipsychotics prescribed

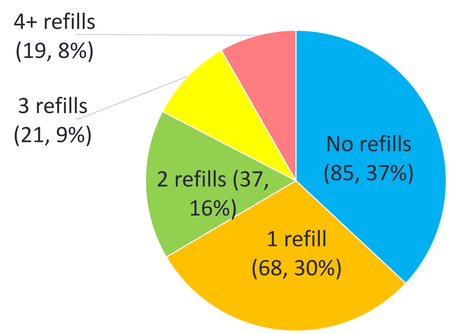
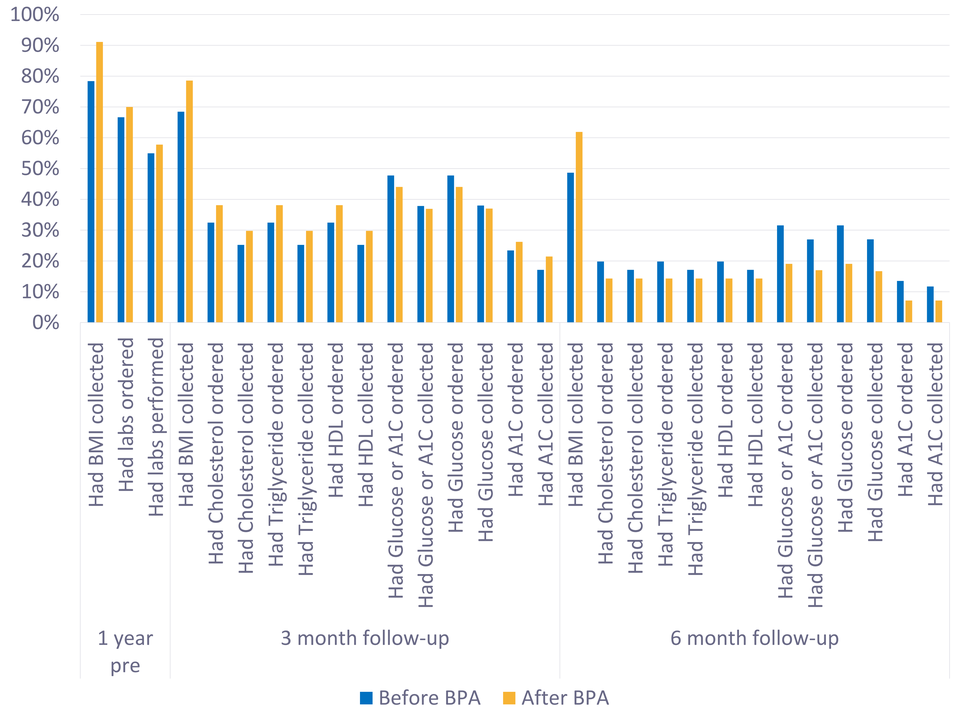


Figure 2. Timing of BMI measurements, lab orders and blood collected for lab testing



*Looked for results within 4 months of prescription date for 3 month follow-up, and within 4-8 months for 6 month follow-up. Patients were only included in a follow-up window if sufficient time had elapsed.

CONCLUSIONS

Interestingly, there was improvement in testing measures obtained within 1 year prior to the prescriptions evaluated. However, we can not attribute this to the BPA and can not call these pre-prescription values true baseline measurements as we did not determine if patients were antipsychotic naïve.

Improved after BPA implementation:

- Lipid testing at 3 month follow-up

Not improved:

- Glucose/A1c orders/results at 3 months
- Any lab orders/results at 6 months

NOTE: Although some of the prescriptions evaluated may have been renewals of prescriptions a patient had been stabilized on for greater than 1 year, and in some cases it would be reasonable to do less frequent monitoring after the first year, about every 6 months, the study period was about 8 months for each group and so should have been able to capture this monitoring in the 6 month data set.

Although ordering frequency decreased, patient compliance with some lab orders showed an improvement (equal numbers of 6 month lipid and A1C orders and results) after BPA implementation which may indicate improved patient/parent education.

FUTURE IMPLICATIONS

Implementation of the BPA alone was not sufficient to improve provider practices so implementation of supportive education on where to find the BPA may be of value.

It may be worth considering a change in how the EMR alerts the provider; perhaps a pop-up window rather than a section that appears by default at the bottom of the "Plan" window.

REFERENCES & ACKNOWLEDGEMENTS

1. Harrison, Joyce Nolan et al. "Antipsychotic medication prescribing trends in children and adolescents." *Journal of pediatric health care : official publication of National Association of Pediatric Nurse Associates & Practitioners* vol. 26,2 (2012): 139-45. doi:10.1016/j.pedhc.2011.10.009
2. American Academy of Child and Adolescent Psychiatry. Practice Parameter for the Use of Atypical Antipsychotic Medications in Children and Adolescents. Available at: http://www.aacap.org/App_Themes/AACAP/docs/practice_parameters/Atypical_Antipsychotic_Medications_Web.pdf. Accessed February 14, 2020.
3. Cardiometabolic Status of Pediatric Patients Taking Antipsychotic Medications, A Samaritan Study

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