IMPROVING THE USAGE OF ASTHMA ACTION PLANS: A QUALITY IMPROVEMENT PROJECT

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BACKGROUND

- Asthma Action Plans (AAPs) are an integral portion of asthma education. One guideline to preventing asthma exacerbations and risk of asthma related death is providing an AAP. Many hospitals (including ours) have shown AAP compliance rates below national average. Quality improvement (QI) project evaluated pediatric asthma electronic healthcare records (EHR) and monitored AAPs included within hospital discharge instructions. PDSA cycle 1 (winter 2017) demonstrated increase in AAPs at hospital discharge increased from 58% to 70%. The use of electronic AAPs to assist in patient education is associated with a 40% reduction in ED visits annually. AAPs assist in decreasing asthma-related ED visits, hospitalizations, and promote self-management skills. Given the above, the following questions were generated:

**PURPOSE & PICOT QUESTION**

- **P** In children 0 to 17 years of age hospitalized for asthma exacerbation in a mid-Missouri Children’s Hospital’s pediatric/adolescent unit
- **I** how does an EHR alert coupled with medical staff education compare to current AAP processes
- **C** affect utilization and documentation of an AAP at hospital discharge
- **O** over a three month time frame?

**PRIMARY OBJECTIVES**

1. There will be a 10% increase in the provision of AAPs at hospital discharge
2. There will be a 5% reduction in the number of asthma-related acute care visits (hospitalization, ED, urgent care) within 30 days post-discharge

**STUDY DESIGN**

Longitudinal, descriptive, QI project evaluating asthma actions plans through chart reviews, post-hospital asthma related admissions from December 2017 through February 2018. Setting: Academic medical center, not-for profit, 43-bed pediatric/adolescent floor. Target population: A convenience, purposive sample of children age ≤17 years with a primary or secondary discharge diagnosis of asthma or wheezing with the following ICD codes: J45.2X, J45.3X, J45.4X, J45.5X, J45.901, J45.902, J45.903, J45.909, and R06.02.

**MATERIALS AND METHODS**

- For the chart review, the Enterprise Analytics Department- Clinical generated a report with the number of patients with the aforementioned ICD codes.
- Sample size calculated by Raosoft: 95% CI, 5% margin of error, population = 60, 50% response distribution = 60 charts at baseline and follow up. Yield: 32 charts available at baseline and 29 at follow-up.
- Nominal level data was analyzed with Chi-square of Independence, level of significance at p ≤ .05.
- Clinical significance determined using Odds Ratio (OR) and the phi coefficient (Φ) with values .10, .30, and .50 corresponding to small, medium, and large
- IBM SPSS statistics version 23 (Chicago, IL)

**RESULTS**

Baseline group: n = 32 Follow-up group: n = 29

Demographics

- Predominant age groups: 2 years old (16.4%, n = 10); 4 years olds (16.4%, n = 10)
- Males (63.9%, n = 20) and females (36.1%, n = 12)
- Caucasian (70.5%, n = 23), African-American (21.3%, n = 5)

Predominant specialty group was general pediatrics (63.9%, n=39), Pediatric Pulmonary/Critical Care (14.8%, n=9), and third General Internal Medicine (13.1%, n=8)

AAPS at discharge = no statistically significant difference between groups: (83%, n = 24), χ²(1) = 2.308, p = .13

Baseline: 66% of hospital discharges received an AAP, n = 21

Follow-up: 83% of hospital discharges received an AAP, n = 24

Clinically significant increase in AAP at discharge is .2, small to moderate increase in use of AAPS at hospital discharge in follow-up group with OR ≥ 1.7, 95% CI [.79 – 3.71]

Patient department summary provided to family did not match the AAP 100% of the time

Poor documentation of asthma severity on AAP (44.8%, n = 13)

**OUTCOME:**

- Improve AAP Provision at Hospital Discharge to ≥90%

**DISCUSSION**

- AAPs must be recognized as a standard of care for hospitalized asthma patients.
- Continue education to providers on asthma action plans.
- Monitor the discharge summary.
- Medications on patient departure summary should match the medications on the AAP.
- Even though most patients were given an AAP, many medications were not correct (dose, route, equipment used, wrong medication for diagnosis)

**REFERENCES**


