Evaluation of a Pediatric Initiative to Improve Outpatient Asthma Management

UnityPoint Health Des Moines

Alliance of Independent Academic Medical Centers

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GOAL

To decrease the number of recurrent Emergency Department (ED) encounters for pediatric patients with asthma symptoms by increasing follow-up office visit rates, decreasing time to follow-up visits, and improving visit content.

BACKGROUND

The control of asthmatic symptoms in pediatric patients is an important medical concern. Without proper managed care children are at risk for repeated exacerbations and repeated medical encounters.

VISION STATEMENT

Develop a health system-based initiative to target children with an ED encounter related to asthma symptoms, in order to improve outpatient engagement with patients using a multi-disciplinary team of ED and clinic personnel.

METHODS

Design: A prospective study was conducted targeting pediatric patients with an ED encounter related to asthma symptoms.

Time Period: 2/2016 - 1/2017

Location: Midwestern children's hospital

Inclusion criteria: Age 2-12 years
English speaking
ED presentation for acute asthma exacerbation
Primary care physician within health system

Study Procedure: Patient guardian contacted by ED manager after encounter and encouraged to have a follow-up outpatient clinic visit within 7 days.

At clinic visit patient evaluated using questionnaires, barriers, and goals.

Subsequently clinic telephone contacts made to patient as needed.

If suspected eligible, patient referred to community partner for home assessment and renovation.

A historic control group (prior year' clinic and ED data) was collected to serve as a comparative reference group.

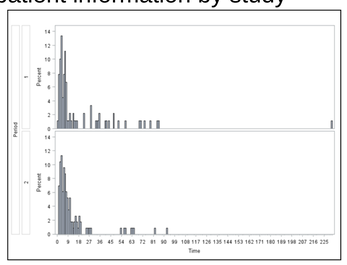
RESULTS

The were 765 (n=553 unique patients) ED encounters reviewed from the historic and prospective time periods, with 148 (136 unique patients) and 176 (130 unique patients) respectively eligible.

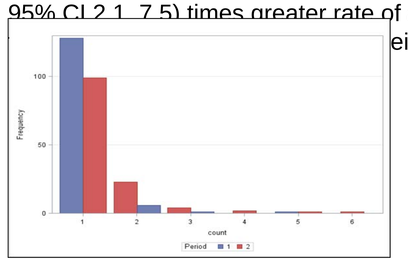
Excluded patients included: 228 non-network provider
61 non-English language (Spanish (32), Karen (6), Burmese(3), Arabic (2), Somali (2), Other (16)

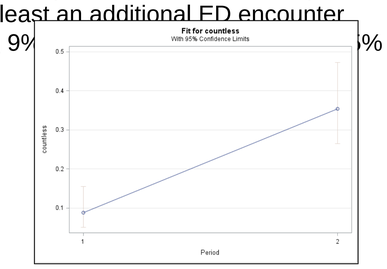
Table and Figure (time to follow-up visit) of patient information by study period

CHARACTERISTIC	TIME PERIOD	
	Historic (1) n=136	Prospective (2) n=130
Family Medicine Pediatric	31(23%) 105(77%)	31(24%) 99(76%)
Admitted from ED	40(27%)	24(14%)
Letter Sent	0(0%)	90(69%)
Follow-Up Visit	97(59%)	117(66%)
Median Days to Follow-Up	6 (IQR:4-22)	7 (IQR: 3-13)

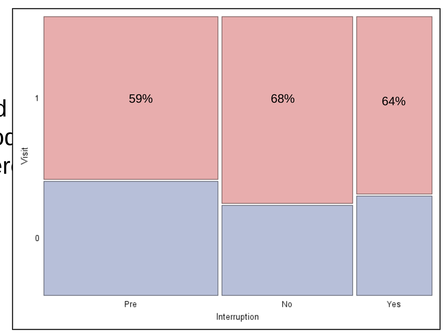


Figures display the number of ED encounters by study period and rate for subsequent ED encounters. The Prospective period patients had a 4 (RR: 95% CI 2.1, 7.5) times greater rate of at least an additional ED encounter eing 9% %





A personnel interruption occurred during the Prospective time period (i.e., two key study members were not in their roles).This change is visible in the third column of the figure to the right. Hypothetically removing the interruption would have meant a 63-72% clinic follow-up rate in the Prospective time period.



RESULTS, cont.

Of referrals made to the community health partner, 59% were from the study's health system, which represented 3.5 and 62 times more referrals than the other health system and the county hospital, respectively.

Program eligibility based on nebulizer/inhaler prescription, Medicaid eligible and at 80% or less of area median income. Below are services rendered to referred families (some counts represent families not exclusively within are presented study):

- Families provided education only: **7**
- Families provided education and supplies only: **6**
- Homes repairs (e.g., moisture repairs): **13**
- Non-qualifying homes: **11**
- Families declining services: **23**
- Families in the process of being contacted/initial home visit: **5**

LESSONS LEARNED

- Real-life application of planned protocol confounded by reality.
- Return on investment very difficult to quantify.
- Study components need to be embedded into personnel job descriptions.

BARRIER/LIMITATONS

- Difficult to control for possible dependence of patient observations within and between study periods..
- Difficult to attributing outcomes to interventions in a non-randomized study.
- Patients could have been seen at EDs or clinics outside of our health system, limiting accuracy of documented outcomes.

CONCLUSIONS

Management of asthmatic symptoms in pediatric patients is a very dynamic problem. The present study focused on creating a greater