

## 552 Effects of Remote Patient Monitoring on Patients Prescribed Biologic Medications



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**RATIONALE:** There are no adequate remote tools for home asthma management. Patients prescribed a biologic need adequate remote monitoring for their disease.

**METHODS:** The Keva Health program was introduced to 15 patients, of which 4 were on biologic medications, in a traditional specialty care office. Patients received a spirometer and oximeter which they used to take readings over a 7 month period. The data was received through the Keva Talk app and monitored by physicians. Additionally, patients used a colored system to track symptoms: green (none), yellow (mild), and red (severe). If a patient's spirometer readings or colored check-ins were considered above a certain parameter (a red or three consecutive yellow), an allergist or pulmonologist would be in contact.

**RESULTS:** Mean age was 49 years. Data for FEV1, FEV6, PEF FEV1/FVC, as well as the best predicted & LLN values was reviewed daily. Patients completed 363 spirometry sessions and 361 oximetry sessions. 6 alerts were sent out by the care team to the physician's office. The patients on biologics made a total of 385 colored check-ins. From month 1 to month 7, on average, the patients on biologics saw a 9% decrease in mild symptom days, a 32.5% increase in no symptoms days, and no change in severe days they experienced.

**CONCLUSIONS:** Remote patient monitoring helped patients on biologic medications understand their symptoms, monitor possible medication side effects, and get rapid physician care allowing them to more efficiently manage their condition and prevent ER visits.

## 553 Variable Asthma Guideline Use Across Pediatric Disciplines



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**RATIONALE:** Asthma affects over 5 million children in the US and is treated by a variety of provider types. Recent asthma guideline (AG) updates recommends changes to common practice, raising the possibility of inconsistent care. This study sought to describe provider AG use across disciplines at a tertiary children's hospital and clinic system and to identify barriers and care decisions.

**METHODS:** A survey was sent to all asthma providers in our institution. AG utilization was grouped into three categories: Primary (PAG) (GINA, EPR-4, subspecialty guidelines), Interpreted (IAG) (institutional guides, UpToDate®), and None. Questions regarding yellow zone practice and barriers to use of AGs were also assessed. Frequency distributions were compared between provider groups.

**RESULTS:** There were 144 providers who responded to the survey. While all asthma specialists (n=18) use PAGs, every other group uses IAGs at a higher rate than PAGs (73.2% vs 39.4% acute care, 74.1% vs 66.7% primary care, 100% vs 32% trainees). The survey showed 77.08% of all providers reported barriers to guideline use. Having barriers to guideline use was associated with likelihood of using IAGs (78.4% vs. 54.6%; p=0.013). While providers reported various practices for yellow zone plans, those who used any guideline had a high proportion of doubling ICS dose in the yellow zone.

**CONCLUSIONS:** Our results indicate opportunities to improve evidence-based asthma care. Providers who reported barriers to guideline use were also more likely to use IAGs, rather than PAGs. Future work is needed to provide more context of AG use and barriers to target interventions across disciplines.



## 554 Impact of Benzodiazepine Use on Outcomes in Acute Asthma Exacerbation: Findings from the National Inpatient Sample

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**RATIONALE:** This retrospective cohort study aimed to investigate the association between benzodiazepine use and outcomes in patients with acute asthma exacerbation using the National Inpatient Sample database.

**METHODS:** Adult patients with acute asthma exacerbation or status asthmaticus were included in the 2020 Nationwide Inpatient Sample, with benzodiazepine use was identified as exposure, using specific ICD-10 codes. The primary outcome was in-hospital mortality, and secondary outcomes included invasive mechanical ventilation, length of stay, and hospitalization charges. Multivariate analysis adjusted for confounding factors. STATA 17 was used for statistical analysis.

**RESULTS:** Out of 219,854 acute asthma exacerbation cases, 830 (0.377%) involved benzodiazepine use. Patients with benzodiazepine use were older and had higher rates of intubation compared to those without benzodiazepine use. Variations in age, gender, race, Charlson score, patient income in the zip code, hospital region, hospital bedside, hospital teaching status, or tobacco use between patients based on benzodiazepine use were not statistically significant. Multivariate regression analysis showed benzodiazepine use was associated with increased odds of invasive mechanical ventilation (O.R 3.93, 2.59-5.94, p<0.001). Time to invasive mechanical ventilation was shorter in patients with benzodiazepine use compared to those without. However, benzodiazepine use was not associated with increased odds of mortality, length of stay, or hospitalization charges.

**CONCLUSIONS:** Benzodiazepine use was associated with an increased likelihood of requiring invasive mechanical ventilation in acute asthma exacerbation patients, likely related to causing dose-dependant respiratory depression, with further work needed to elucidate underlying mechanisms and guide decision making in deprescribing.