

Impact of COVID-19 on Asthma Control in a School-Centered Asthma Program



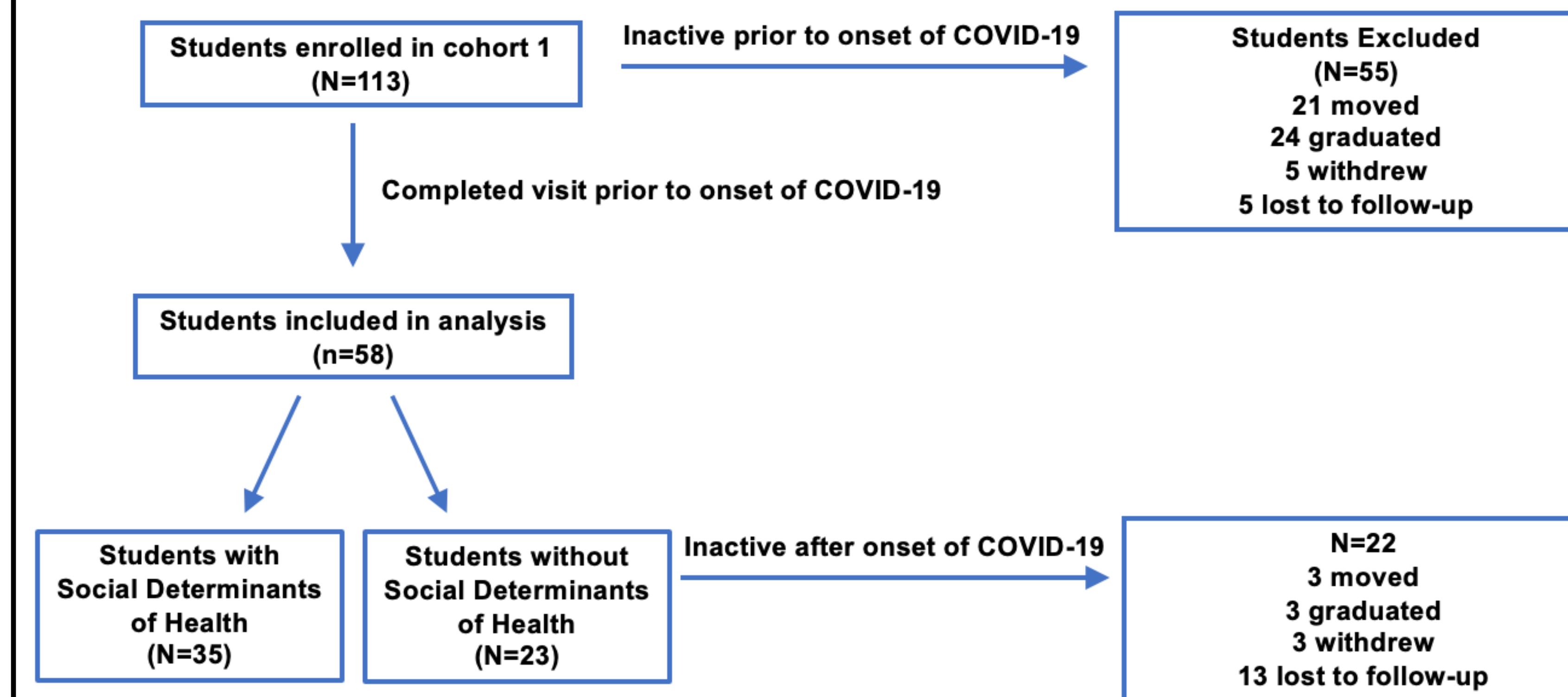
Background

- Asthma is the most common chronic respiratory disease in children and is the leading cause of ED visits in this age group.¹
- In the United States, disparities in asthma indicators persist by demographic characteristics, poverty level, and geographic location as well.²
- The Colorado Comprehensive School-Centered Asthma Program (AsthmaCOMP) utilizes asthma navigators who meet with families ~3x/year and provide asthma training, care coordination, and Social Determinants of Health (SDOH) referrals for children enrolled in the program in the Denver Metro Area.
- During March of 2020, at the onset of the COVID-19 pandemic, all 50 US states required the closure of schools in order to follow social distancing policies, impacting 57 million students.³
- Hypothesis:** Decreased contact with asthma navigators due to social distancing policies and school closures will result in worsened asthma control in children with SDOH needs due to decreased school contact resulting in decreased management of both asthma and SDOH needs.

Methods

- School-school aged children enrolled in AsthmaCOMP in 2018 who completed the visit prior to the onset of COVID-19 were included in analysis.
- Asthma navigators screened caregivers for SDOH needs during initial visits using a modified version of the psychosocial screener developed by Children's Hospital Colorado.
 - "SDOHrep+" group:** 1+ SDOH need reported
 - "SDOHrep-" group:** 0 SDOH needs reported
- Asthma control domain: cACT scores
- Risk domain: ED visits, hospitalizations, systemic steroid use
- Paired t-tests compared data at baseline to aggregated data for one-year pre-COVID and one year during COVID follow-up visits for each group, respectively.

Study Population



Results

Table 1a- Students with Social Determinants of Health Needs Reported (SDOHrep+)

	Baseline	Number	One Year Pre-COVID	Number	One Year During COVID	Number
cACT Score (Mean)	19.66	35	22.11**	35	22.60**	25
% cACT≤19	48.60		25.7		12.00	
Steroid Courses (Mean/year)	0.69	35	0.74	34	0.14*	21
ED Visits (Mean/year)	1.14	35	0.59*	34	0.14*	21
Hospitalizations (Mean/year)	0.14	35	0.18	33	0	21

Table 1b- Students without a Social Determinants of Health Need Reported (SDOH rep-)

	Baseline	Number	One Year Pre-COVID	Number	One Year During COVID	Number
cACT Score (Mean)	20.86	22	21.65	23	22.73	11
% cACT≤19	36.40		26.10		0	
Steroid Courses (Mean/year)	0.83	23	0.38	21	0.38	8
ED Visits (Mean/year)	0.74	23	0.24*	21	0.50	8
Hospitalizations (Mean/year)	0.04	23	0	21	0.13	8

Data recorded at 3 time points: baseline visit (the year prior to enrollment in program), pre-COVID (the year prior to the onset of COVID), and during COVID (the year after the onset of COVID).
Baseline study visit compared to follow up visits using paired t-test ($p \leq 0.05^*$ and $p \leq 0.01^{**}$).

Conclusions/ Future Directions

- Asthma control improved in both the SDOHrep+ and SDOHrep- groups after the onset of the COVID-19 pandemic as indicated by improvement in cACT scores and decreased exacerbations; however, those with SDOH needs experienced a greater benefit.
- More children were retained in the SDOHrep+ group (71%) compared to the SDOHrep- group (47%), possibly due to closer relationships with the asthma navigators as these students were receiving additional visits and assistance with SDOH needs.
- We are currently expanding this program beyond the Denver Metropolitan area including rural Colorado through a National Heart, Lung and Blood Institute research award to address health disparities in heart and lung disease.

Limitations

- Low numbers in our study groups due to the need to exclude those that had completed engagement with the program prior to the onset of the COVID-19 pandemic.
- Decreased participant engagement as a result of the pandemic (virtual rather than in-person visits).

Disclosures

Stanley J. Szeffler has consulted for Astra Zeneca, Boehringer-Ingelheim, GlaxoSmithKline, Moderna, OM Pharma, Propeller Health, Regeneron and Sanofi and has received research support from the National Institutes of Health National Heart, Lung and Blood Institute, Propeller Health, and the Colorado Department of Public Health and Environment (CDPHE) Cancer, Cardiovascular and Pulmonary Disease Program. Melanie Gleason has received funding support through the National Institutes of Health National Heart, Lung and Blood Institute, GlaxoSmithKline and the CDPHE Cancer, Cardiovascular and Pulmonary Disease Program. Arthur McFarlane II has received funding support through the National Institutes of Health National Heart, Lung and Blood Institute and CDPHE Cancer, Cardiovascular and Pulmonary Disease Program. Elizabeth Konon has received funding through the Graduate Experience for Multicultural students and the K. Louis Coulter Pulmonary Research and Health Sciences Fellowship. She has no examples of conflicts of interest to disclose.

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