# DECREASING THE USE OF AEROSOL-GENERATING PROCEDURES IN PEDIATRIC BRONCHIOLITIS PATIENTS DURING THE COVID-19 PANDEMIC

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Disclosures: Ms. Burr has a relationship with Hill-Rom, as a patient contract trainer, no other authors have relationships to report.

## Original Abstract

**DECREASING THE USE OF AEROSOL-GENERATING PROCEDURES IN PEDIATRIC BRONCHIOLITIS PATIENTS DURING THE COVID-19 PANDEMIC**

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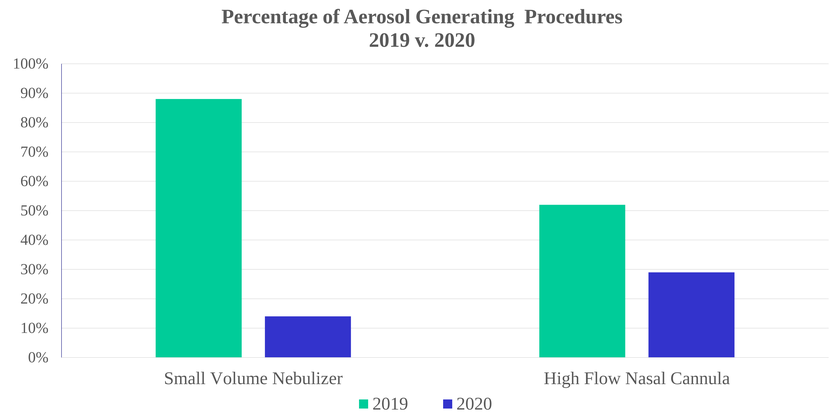
**Background**: COVID-19 brought rapid changes in practice due to the early uncertainty of transmission of the virus during aerosol-generating procedures (AGPs). During a season when bronchiolitis is frequently seen in the pediatric population, alternative therapies to AGPs were preferred to decrease risk of viral transmission. Preference to treatments not considered AGPs was communicated via enterprise-wide email communication to all health care providers. In our facility care of bronchiolitis patients is guided by a pathway. We aimed to assess the impact of COVID-19 with regards to AGPs in our pediatric bronchiolitis population.
**Methods:** After IRB approval was obtained, a retrospective chart review was completed comparing bronchiolitis pathway patients' therapies (HiVNi use, Respiratory Treatments and Viral Testing) and outcomes (LOS, RRT/Code prevalence and Readmission rate). For the purpose of this study, only patients admitted to the limited stay unit (LSU) with bronchiolitis diagnosis were included. Descriptive statistics and the student's t-Test were used for data analysis. See Figure 1 for pathway details.
**Results:** Bronchiolitis patients admitted to the LSU in 2019 (n=638) were compared to 2020 (n=217) before and during the COVID-19 pandemic. Average age of patients in 2019 was 8 months (4wks-23mo) and 8 months in 2020 (4wks-22mo). Prevalence of viral testing increased from 2019 (81%) to 2020 (84%) by 3%. In 2019 36% (n=227) of patients on the pathway received respiratory treatments. Of those 88% (n=200) were delivered via small volume nebulizer (SVN) and 14% (n=27) were delivered by metered dose inhaler (MDI). In 2020, 27% (n=59) of patients received respiratory treatments, 7% n=(4) via SVN and 93% (n=55) via MDI. Use of HiVNI decreased from 2019 (52%/n=330) when compared to 2020 (29%/n=64) by 23%. Mean LOS in 2019 was 48.73 hours (~2.03 days) and 2020 LOS was 41.85 (~1.74 days) ($p < 0.03$). Readmission rates for bronchiolitis patients was 6% in 2019 (n=39) and 3% in 2020 (n=6). The prevalence of RRTs/code response when compared year to year was not statistically significant.
**Conclusion:** The COVID-19 pandemic brought about rapid changes in practice due to the uncertainty of transmission during aerosol-generating procedures. Our institution was able to reduce AGPs by 52% for pediatric bronchiolitis patients. LOS was also reduced while readmission rates for this population were not affected by this change.

**BACKROUND:** COVID-19 brought rapid changes in practice due to the early uncertainty of transmission of the virus during aerosol-generating procedures (AGPs). During a season when bronchiolitis is frequently seen in the pediatric population, alternative therapies to AGPs were preferred to decrease risk of viral transmission. Preference to treatments not considered AGPs was communicated via enterprise-wide email communication to all health care providers. In our facility care of bronchiolitis patients is guided by a pathway. We aimed to assess the impact of COVID-19 with regards to AGPs in our pediatric bronchiolitis population.

**METHOD:** After IRB approval was obtained, a retrospective chart review was completed comparing bronchiolitis pathway patients' therapies (HiVNi use, Respiratory Treatments and Viral Testing) and outcomes (LOS, RRT/Code prevalence and Readmission rate). For the purpose of this study, only patients admitted to the limited stay unit (LSU) with bronchiolitis diagnosis were included. Descriptive statistics and the student's t-Test were used for data analysis. See Figure 1 for pathway details.




Graph 1: Displays the comparison of Aerosolized Generating Procedures from 2019 to 2020.

**RESULTS:** BP admitted to the LSU in 2019 (n=638) were compared to 2020 (n=217) before and during the COVID-19 pandemic. Average age of patients in 2019 was 8 months (4wks-23mo) and 8 months in 2020 (4wks-22mo). Prevalence of viral testing increased from 2019 (81%) to 2020 (84%) by 3%. In 2019 36% (n=227) of patients on the pathway received respiratory treatments. Of those 88% (n=200) were delivered via small volume nebulizer (SVN) and 14% (n=27) were delivered by metered dose inhaler (MDI). In 2020, 27% (n=59) of patients received respiratory treatments, 7% n=(4) via SVN and 93% (n=55) via MDI. Use of HiVNI decreased from 2019 (52%/n=330) when compared to 2020 (29%/n=64) by 23%. Mean LOS in 2019 was 48.73 hours (~2.03 days) and 2020 LOS was 41.85 (~1.74 days) ($p < 0.03$). Readmission rates for bronchiolitis patients was 6% in 2019 (n=39) and 3% in 2020 (n=6). The prevalence of RRT/code responses when compared year to year was not statistically significant.

## Table 1

| | 2019 | 2020 |
|---|---|---|
| **Total # BP pts admitted to LSU** | **638** | **217** |
| **Total # Viral tests** | **517** | **183** |
| **# Pts placed on HiVNI** | **330** | **64** |
| **# Pts received Albuterol via SVN** | **200** | **4** |
| **# Pts received Albuterol via MDI** | **27** | **55** |
| **Avg. Patient Age (months)** | **8** | **8** |
| **Avg. LOS (Hrs.)** **(p-value 0.03)** | **48.73** | **41.85** |
| **# Pts readmitted within 30 days** | **39** | **6** |

Table 1: Displays summary of data collected for bronchiolitis patients.

**CONCLUSIONS:** The COVID-19 pandemic brought about rapid changes in practice due to the uncertainty of transmission during aerosol-generating procedures. Our institution was able to reduce AGPs by 52% for pediatric bronchiolitis patients. LOS was also reduced while readmission rates for this population were not affected by this change.

## References

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