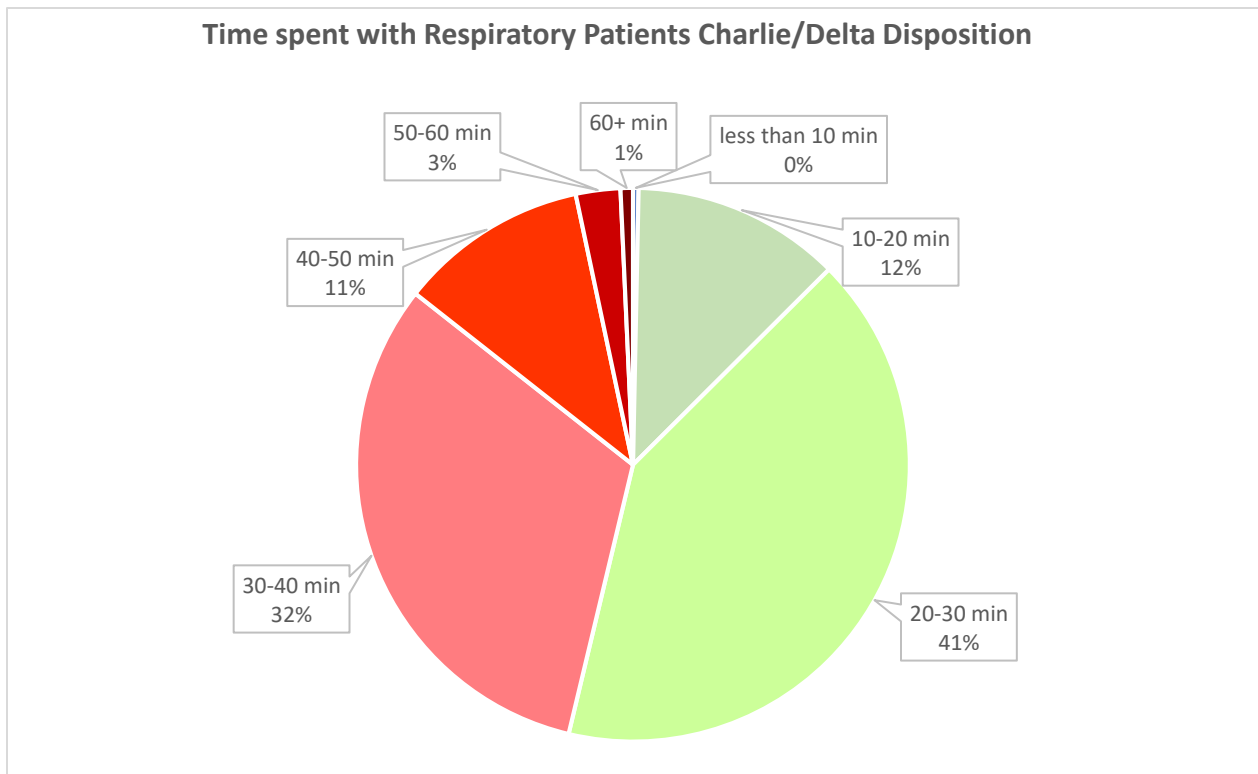


2017 CEMS Respiratory Calls Analysis

Total calls coded as respiratory:	11,922 (12% of 102,700 total calls)
Calls with disposition of Charlie or Delta Medical: (ALS but not Cardiac Arrest)	6,768 (9% of 76,536 total transports)
Average time from on-scene to at-hospital:	30 min
Median time from on-scene to at-hospital:	29 min



Key Takeaways:

- On 47% of respiratory calls with an in-service disposition coded as Charlie or Delta (ALS care provided) CEMS crews spent over 30 minutes with the patient.
- Possible reasons for this could include patient extrication, traffic, weather, and providing other ALS care such as 12 lead ekgs and IV access.
- There may be a role for 2nd and 3rd line respiratory treatments within Cleveland EMS, because of the high percentage of patients that spend over 30 minutes in the care of CEMS paramedics.

Albuterol and CEMS

In 2017, CEMS medics administered Albuterol 9,486 times to 3,241 patients. This suggests that most patients got all three treatments allowed by protocol.

Studies have found that with as little as two weeks use patients can develop a [tolerance to albuterol](#). With home albuterol use [steadily increasing](#), and other studies showing that [48% of patients overuse their nebulizers](#), it is reasonable to conclude that the three Albuterol treatments delivered by EMS personnel may not be effective therapy. Anecdotally, CEMS medics have reported that albuterol is ineffective when the patient has taken many doses of home albuterol prior to EMS arrival.

While CEMS medics do have the option to administer IM Epi as a standing order, only a single dose is currently authorized, and this therapy is not appropriate for patients with cardiac comorbidities. In addition, while CPAP with in-line nebulizer is available, it is often not tolerated well by the critical asthma patient, may also lead to CO₂ retention unlike in-hospital treatments such as BiPAP.

As such, there is a potential role for additional pharmacological options, such as IV steroids, or Mag Sulfate within the CEMS spectrum of care. While these treatments are included in the [draft countywide protocols](#) (in addition to the current [CCF](#) and [UH](#) protocols), currently CEMS does not carry either of these medications on the ambulance.