

The way to manage a lack of negative pressure isolation room for COVID-19 patients

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Article Info

Article type:

Letter to Editor

Article History:

Received: 2020-08-12

Accepted: 2020-09-04

Published: 2020-09-12

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ABSTRACT

The number of COVID-19 infected patients around the world is currently over 9 million already. Some countries have received a sudden and direct hit of COVID-19 and thus lack of medical supplies has occurred in those countries. There is a significant shortage of negative pressure isolation rooms for COVID-19 Patients with the most serious symptoms and because of this, the death rate keeps rising at a fast pace.

Until the vaccine or cure for COVID-19 is developed, preventing COVID-19 patients from death is more realistic. The early stages of COVID-19 should be used to secure treatment for COVID-19 patients with severe symptoms as mandatory lower the death rate, also negative pressure isolation room is clearly necessary, otherwise we are likely to see a large second wave of COVID-19. We scrutinized the national medical center of South Korea's database to find a new way to manage the expected shortage of negative pressure isolation room (NPIR).

Cite this paper as:

Jeon SW, Williams LA. The Way to Manage a Lack of Negative Pressure Isolation Room for COVID-19 Patients. *Front Health Inform.* 2020; 9: 43. DOI: [10.30699/fhi.v9i1.233](https://doi.org/10.30699/fhi.v9i1.233)

DEAR EDITOR

The number of COVID-19 infected patients around the world is currently over 9 million already. Some countries have received a sudden and direct hit of COVID-19 and thus lack of medical supplies has occurred in those countries. There is a significant shortage of negative pressure isolation rooms for COVID-19 Patients with the most serious symptoms and because of this, the death rate keeps rising at a fast pace [1].

Until the vaccine or cure for COVID-19 is developed, preventing COVID-19 patients from death is more realistic. The early stages of COVID-19 should be used to secure treatment for COVID-19 patients with severe symptoms as mandatory lower the death rate, also negative pressure isolation room is clearly necessary, otherwise we are likely to see a large second wave of COVID-19. We scrutinized the national medical center of South Korea's database to find a new way to manage the expected shortage of negative pressure isolation room (NPIR). Forensic study of 1309 cases of COVID-19 infected patients who were over the age of 18, all have an official clinical record of more than 4 weeks, between 55 Healthcare facilities. One of these patients was an adult under the age of 50, who suffered within seven days of their first recorded symptom, they had no previous underlying health problems prior to the

diagnosis of COVID-19, and only 1.8% (10/556) of patients will go through the severe stage of COVID-19 in which they need extracorporeal membrane oxygenation (ECMO). Patients with respiration rate under 22 times a minute and a systolic blood pressure over 100mmHg are more susceptible to more acute stage of COVID-19, and only 0.12% (1/778) go to the severe stage. Based on this data of COVID-19, patients who have less possibility of suffering severe symptoms should be treated in their own house or Living Treatment Facility, not in NPIR. With this method alone, we could expect to secure up to 59.3% (777/1309) additional NPIR beds [1].

The patients who need priority care

Following clinical data of the treatment results of COVID-19 patients, another high-risk group (possibility of ECMO treatment more than 10%) is individuals with:

- body mass index (BMI) over 30
- quick SOFA (qSoFA) score over 1
- respiration rate under 22 times a minute
- systolic blood pressure less than 100mmhg
- age over 65 that has underlying diseases like diabetes, dementia, etc [1].

These patients will need to be hospitalized in NPIR first after they test positive for COVID-19. The simple first screening of high-risk patients and low-risk patients, following this study, we expect to cut down the death rate of COVID-19 patients, focusing on high-risk patients. Also, we think that it helps to prevent collapsing of the medical system by the lack of NPIR

AUTHOR'S CONTRIBUTION

The authors agree on this final form of the manuscript, and attested that all authors contributed

in the final draft of the manuscript.

CONFLICTS OF INTEREST

The authors declare no conflicts of interest regarding the publication of this study.

FINANCIAL DISCLOSURE

No financial interests related to the material of this manuscript have been declared.

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