

# **MICROBIOLOGY QUALITY AIR SPACE IN ISOLATION COVID-19 HOSPITAL dr. R. KOESMA DISTRICT TUBAN**

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## **ABSTRACT**

VIP treatment room of dr. R. Koesma Tuban has functioned as a Covid-19 isolation room which requires sterile conditions. Air quality that is clean is very necessary to support the health of the patient and to reduce the possibility of poor for patients who have the power resistant body that is weak . The Covid-19 isolation room has been equipped with a High Efficiency Particulate Air (HEPA) Filter which is expected to reduce the number of air germs in the Covid-19 isolation room. Since the installation of the HEPA Filter, the hospital has never measured the microbiological quality of the air in the Covid-19 isolation room. The purpose of research it is for clicking etahui quality of the microbiology of air space insulation Covid-19 before and after using a HEPA filter.

This research is a descriptive analytic study with one group pre-post design and cross sectional approach . The research was carried out in all the Covid-19 isolation rooms at RSUD Dr. R Koesma Tuban . Intake sample in doing in the 14 room isolation Covid-19 with treatments before using a HEPA filter and after 3 hours using a HEPA filter. The variables were studied include temperature , humidity , lighting and the number of germs . Data analysis using Multiple Regression Test and Wilcoxon test .

The results of the study stated that the HEPA filter no effect on temperature , humidity , lighting and the number of germs in the room isolation Covid-19. The results of multiple regression tests showed that temperature , humidity and lighting did not affect the number of germs before and after the use of HEPA filters.

In conclusion, HEPA Filters are less effective in reducing the number of air germs in the Covid-19 isolation room . The Hospital advised to organize back in order of air space by mounting exhouser so that the air chamber pressure negative so that the function of HEPA filter can be maximum and the number of germs are measured in accordance with the Health Minister Regulation No. 7 of the year 2019.

**Keywords :** HEPA Filter, Quality Microbiology Air, Space insulation Covid-19, Hospital

# KUALITAS MIKROBIOLOGI UDARA RUANG ISOLASI COVID-19 DI RSUD dr. R. KOESMA KABUPATEN TUBAN

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## ABSTRAK

Ruang perawatan VIP RSUD dr. R. Koesma Tuban telah berfungsi menjadi ruang isolasi Covid-19 yang membutuhkan kondisi steril. Kualitas udara yang bersih sangat dibutuhkan untuk menunjang kesehatan pasien dan untuk mengurangi kemungkinan buruk bagi pasien yang memiliki daya tahan tubuh yang lemah. Ruang isolasi Covid-19 telah dilengkapi dengan High Efficiency Particulate Air (HEPA) Filter yang diharapkan mampu menurunkan angka kuman udara di ruang isolasi Covid-19. Sejak pemasangan HEPA Filter, pihak rumah sakit belum pernah melakukan pengukuran kualitas mikrobiologi udara ruang isolasi Covid-19. Tujuan penelitian ini adalah untuk mengetahui kualitas mikrobiologi udara ruang isolasi Covid-19 sebelum dan sesudah menggunakan HEPA Filter.

Penelitian ini merupakan penelitian deskriptif analitik dengan *one group pre-post design* dan pendekatan *cross sectional*. Penelitian dilakukan di seluruh ruang isolasi Covid-19 RSUD dr R Koesma Tuban. Pengambilan sampel dilakukan di 14 ruang isolasi Covid-19 dengan perlakuan sebelum menggunakan HEPA Filter dan sesudah 3 jam menggunakan HEPA Filter. Variabel yang diteliti meliputi suhu, kelembaban, pencahayaan dan angka kuman. Analisa data menggunakan Uji *Regresi Berganda* dan uji *Wilcoxon*.

Hasil penelitian menyatakan bahwa HEPA Filter tidak berpengaruh terhadap suhu, kelembaban, pencahayaan dan angka kuman di ruang isolasi Covid-19. Hasil uji regresi berganda menunjukkan bahwa suhu, kelembaban dan pencahayaan tidak mempengaruhi angka kuman sebelum dan sesudah penggunaan HEPA Filter.

Kesimpulannya HEPA Filter kurang efektif dalam menurunkan angka kuman udara ruang isolasi Covid-19. Pihak rumah sakit disarankan menata kembali tata udara ruang dengan pemasangan *exhouser* agar udara ruang bertekanan negatif sehingga fungsi HEPA Filter dapat maksimal dan angka kuman yang terukur sesuai dengan Permenkes No 7 tahun 2019.

Kata Kunci : HEPA Filter, Kualitas mikrobiologi udara, Ruang isolasi Covid-19, Rumah sakit