

# Airborne protection for staff is associated with reduced hospital-acquired COVID-19 in English NHS Trusts

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## Abstract

### Introduction

Hospital-acquired infection with COVID-19 (HAI) has reduced from 14.3% to 4.2% over the last year, but substantial differences still exist between English NHS trusts.

### Methods

We assessed rates of HAI, comparing trusts using airborne respiratory protection (RPE, eg FFP3 masks) for all staff, as a marker of measures to reduce airborne spread, against those using mostly droplet precautions (eg surgical masks).

### Results/Discussion

RPE use was associated with a 33% reduction in HAI odds in the Delta wave, and 21% in the Alpha wave ( $p < 0.00001$ ). We recommend all hospitals make airborne mitigations a priority.

### Hosted file

Airborne protection for staff is associated with reduced hospital-acquired COVID-19 in English NHS Trusts available at <https://authorea.com/users/422244/articles/538125-airborne-protection-for-staff-is-associated-with-reduced-hospital-acquired-covid-19-in-english-nhs-trusts>

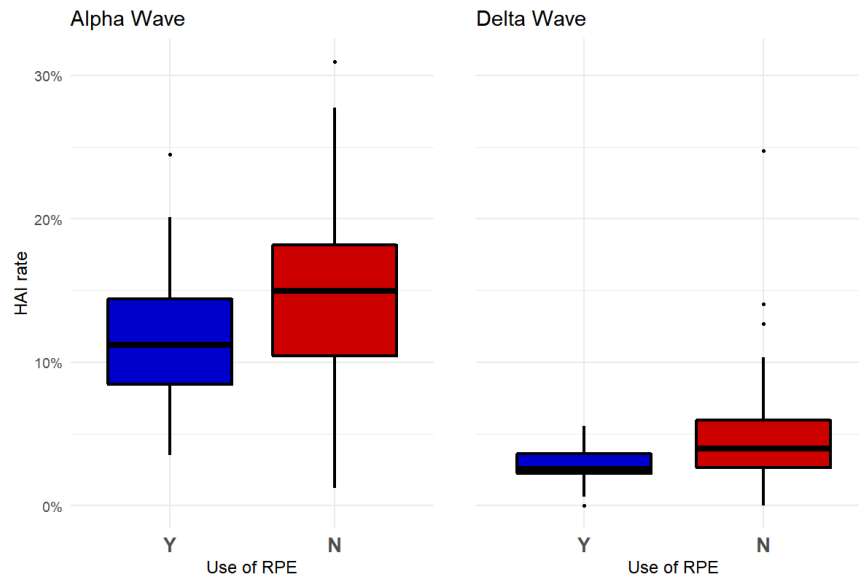


Figure 1: Boxplot of HAI rates by NHS trust during Alpha and Delta waves

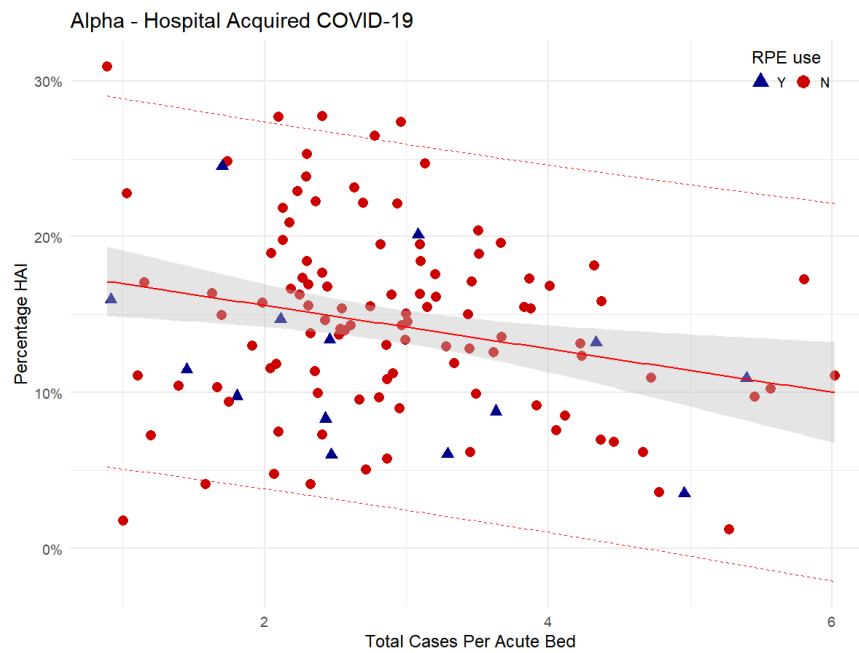


Figure 2: HAI rates against trust COVID-19 pressure, Alpha wave

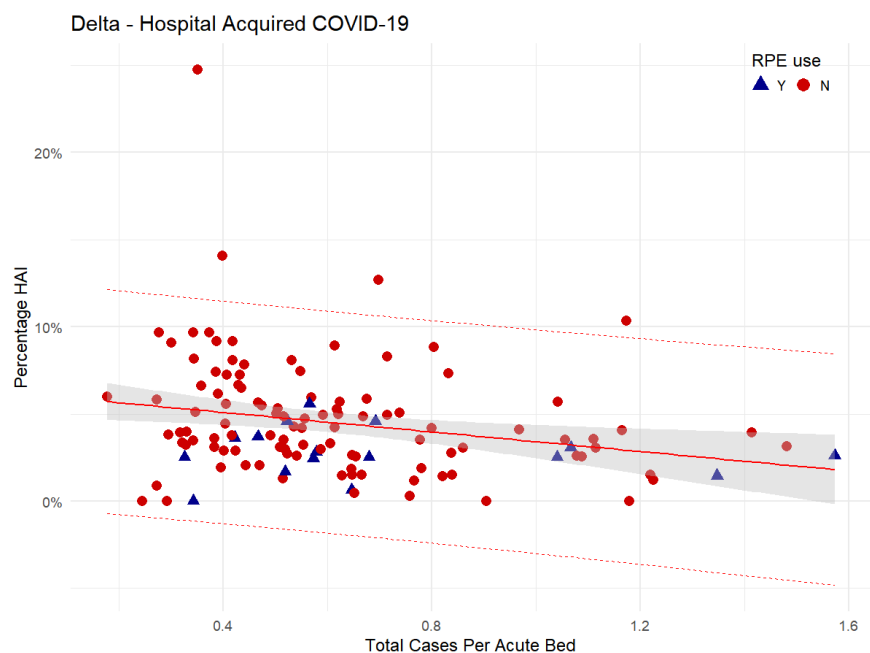


Figure 3: HAI rates against trust COVID-19 pressure, Delta wave

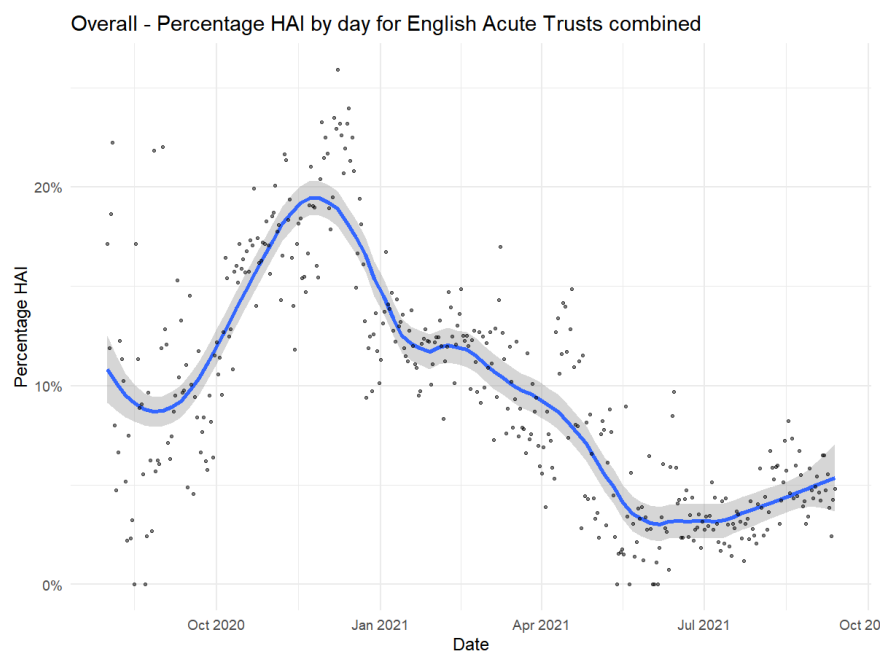


Figure 4: Time series of HAI rates in English trusts combined by day

### Hosted file

RPE Data.csv available at <https://authorea.com/users/422244/articles/538125-airborne->

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