The benefits of inpatient contact tracing and the illustration of social inequalities and their relation to increasing risk of hospitalisation by COVID-19

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BACKGROUND

Strategies implemented to control COVID-19 transmission rates and reduce hospitalisation, include vaccinations and contact tracing. Vaccinations are effective in reducing COVID-19 related hospital admissions.[1] Vaccine hesitancy, which rises to 21% in BAME communities,[2] may adversely affect this. Additionally, social inequalities negatively affect hospitalisation risk by COVID-19. Mortality rate increases in BAME communities and with social deprivation.[3]

NHS Test and Trace (NHSTT) aimed to reduce transmission through contact tracing. Following a pilot study at Sheffield Teaching Hospitals (STH) identifying 65% of inpatients failing to engage with NHSTT, an inpatient contact tracing team (IPCT) was established.[4]

METHODOLOGY

Between September and November 2021, 305 STH inpatients with COVID-19 were interviewed by IPCT. An electronic form was completed for each patient, which included close contact details, vaccination status, NHSTT engagement, and recent locations visited. The form was sent to Sheffield City Council who uploaded relevant details to Contact Tracing and Advisory Service. A student team compiled the data forms into an anonymised database looking for underlying factors associated with patient hospitalisation.

FINDINGS

Index interviews were conducted during the time of which the delta variant was dominant, harbouring a high transmissible rate in the community. Of 305 patients, 155 (50.8%) are male and 150 (49.2%) are female. 63.6% of patients are above the age of 65 and 41% over 75. The largest cohort (29.2%) are in the age group 75–84.

Comparing patient distribution by Index of Multiple Deprivation (IMD) deciles within Sheffield showed that 32% came from the most deprived first decile, and that 56% (171 patients) came from the three most deprived deciles (fig 1). Younger patients (<65) were also more likely to reside in more deprived areas (IMD deciles 1–4) (fig 1).

Vaccination uptake based on IMD deciles showed that the mean uptake was 72% (fig 2), with the first decile having the lowest vaccine uptake rate (57%), and the eighth decile having the highest (81%) (fig 2). 21.4% of these patients have been vaccinated within the last 150 days prior to admission, and 78.6% over 150 days, indicating waning vaccine effectiveness.

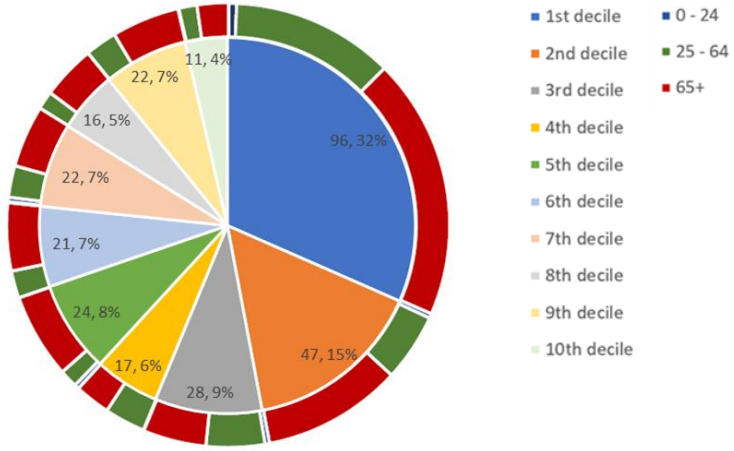

Figure 1 - Patient distribution based on IMD deciles (inner ring) and age (outer ring)

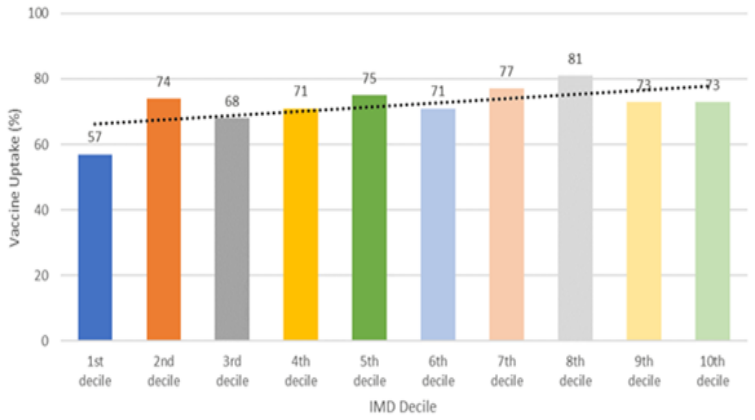

Figure 2 - Vaccine uptake (%) based on IMD deciles

BENEFITS OF CONTACT TRACING

- ❖ Many patients could not be reached by NHSTT due to accessibility and health constraints. The IPCT team were able to accommodate these patients.
- ❖ The service was well-received as the face-to-face interactions allowed for patients to feel at ease, build a rapport with them and reduce misunderstanding. The team also addressed the patient's worries and concerns, and signposted them to appropriate support.
- ❖ The conversational interview technique allowed for additional infection control information to be gathered and essential feedback passed to the local council.

DISCUSSION

Fir Vale, one of the most deprived districts in Sheffield, has many residents from ethnic minorities such as Roma and Pakistani displaying feelings of hesitation and mistrust towards the COVID-19 vaccine. Members of the Muslim community expressed anxiety towards AstraZeneca and Pfizer-BioNTech vaccines as their contents were reportedly haram. However, the British Islamic Medical Association stated both vaccines are halal.[5,6] This highlights issues of poor healthcare knowledge and communication in deprived communities.[7]

Those living in most deprived areas are subject to higher levels of air pollution, significantly lower life expectancy and greater burden of ill physical health, which would lead to a higher risk of severe Covid-19 infection and hospitalisation.[5,7]

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