

Covid-19 Hospital Admissions and Vaccination

01/09/2021



Overview

- A snap shot analysis of covid-19 patients admitted in one of the main Birmingham hospitals.
- Period between May and August 2021.
- Determine the distribution of admissions by ethnicity and age.
- Evaluate if receiving 2 doses of the vaccine had any impact on overall hospital admissions and types of admission.

COVID -19 Hospital
admissions between
May and August 2021

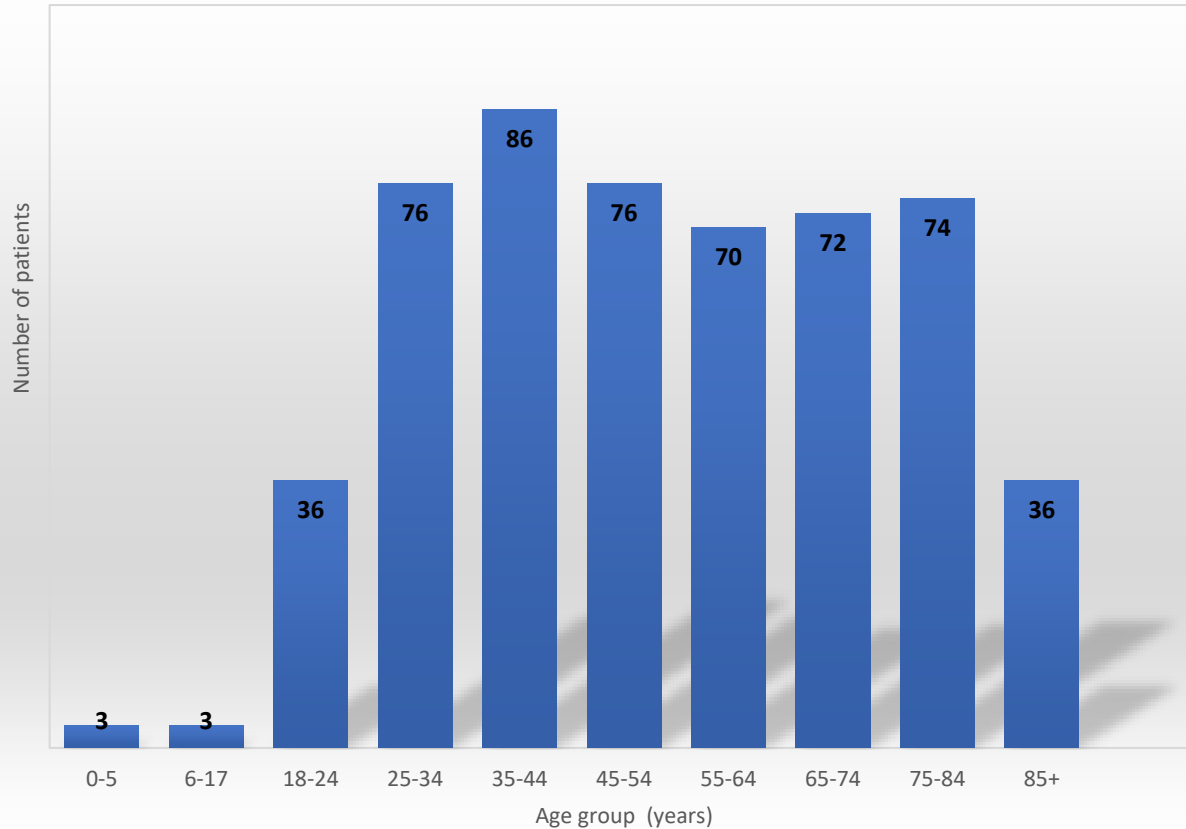
Total number of admitted
patients : 530

Number of patients admitted in
Critical care : 67 (12.6%)

Number of patients admitted in
non-critical care: 463 (87.4%)

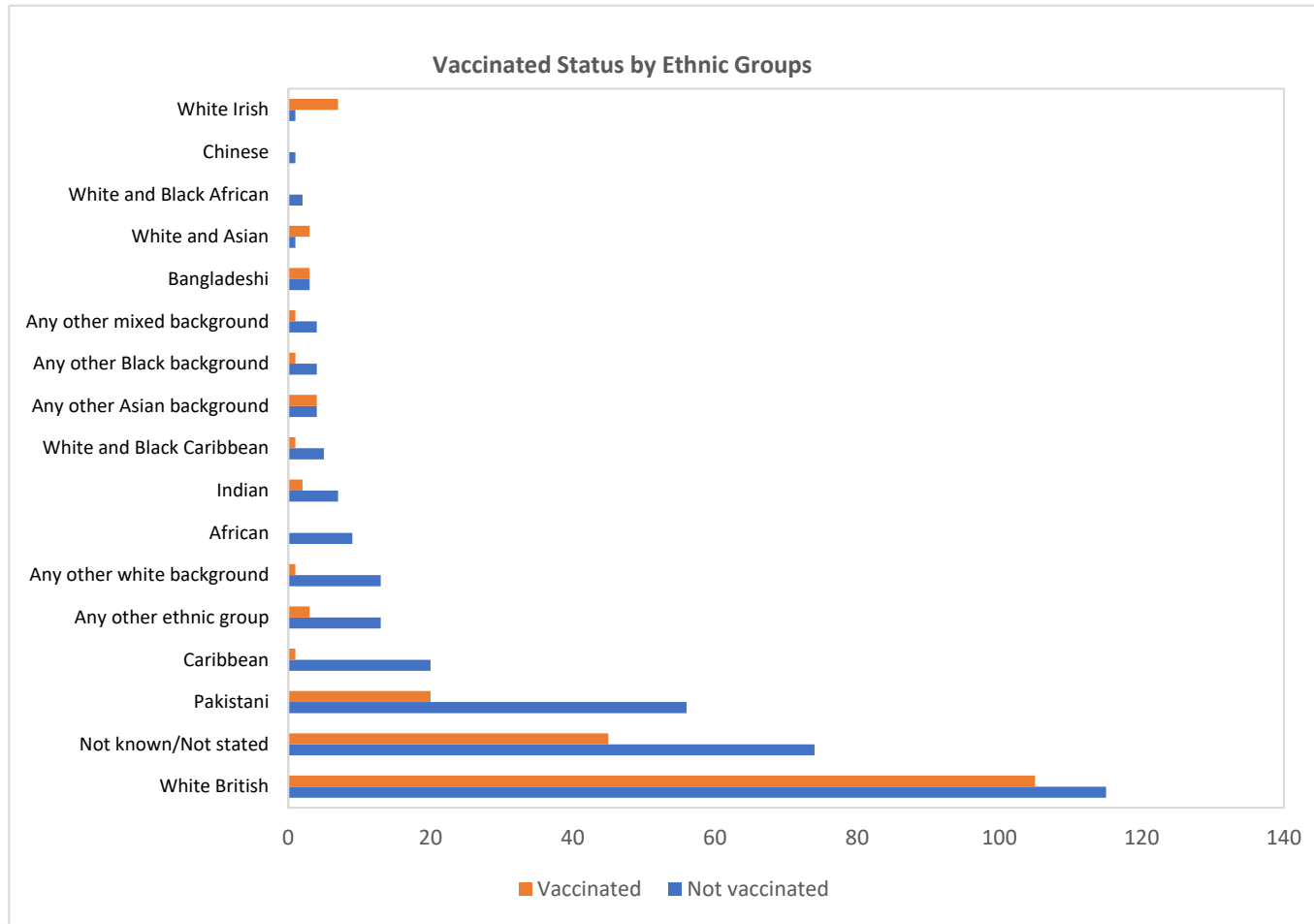
Covid-19 Hospital Admissions by Age Group

Number of patients admitted by age group



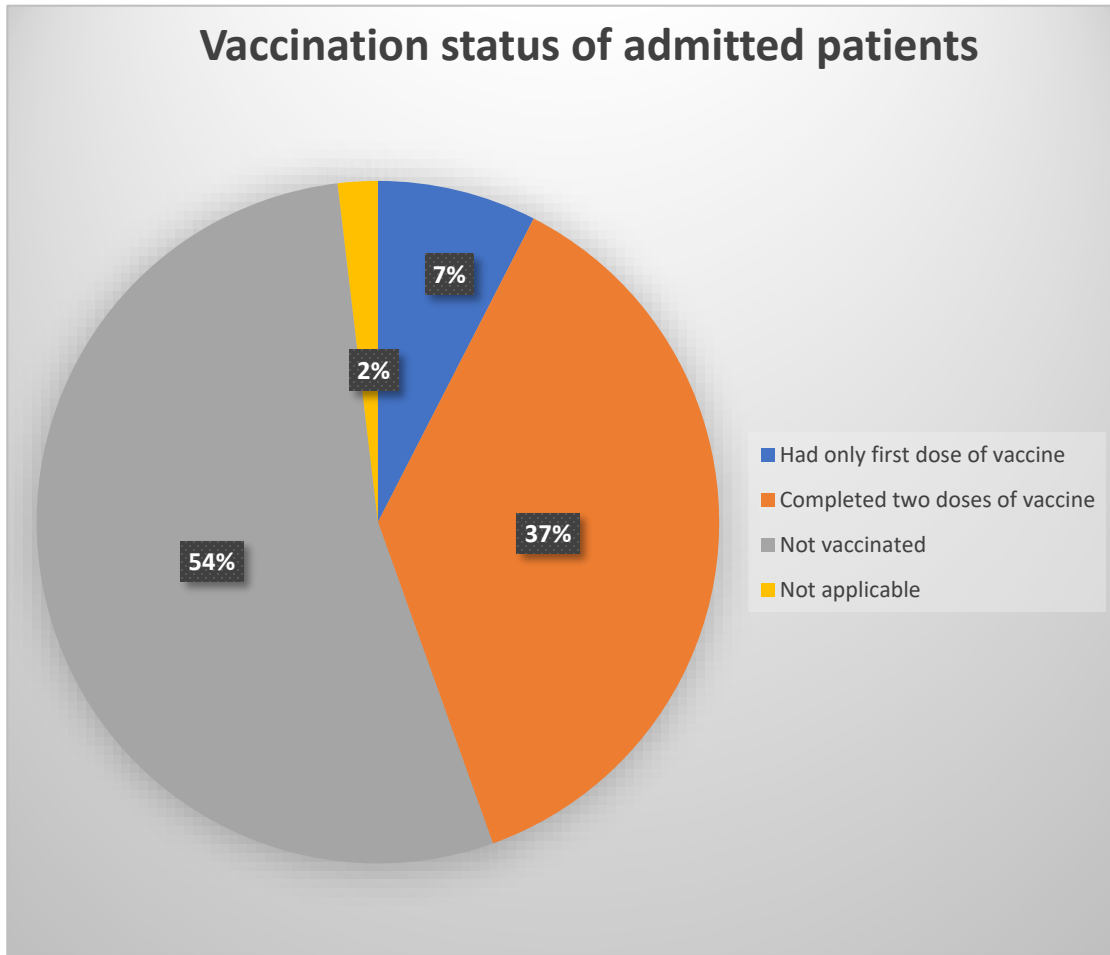
- Highest number of patients admitted (86) were in the 35-44 year age group.
- Of the 532 admitted patients, 350 (65.8%) were ≤ 64 years and 182 (34.2%) were ≥ 65 years.

Vaccinated and Non vaccinated patients by Ethnicity



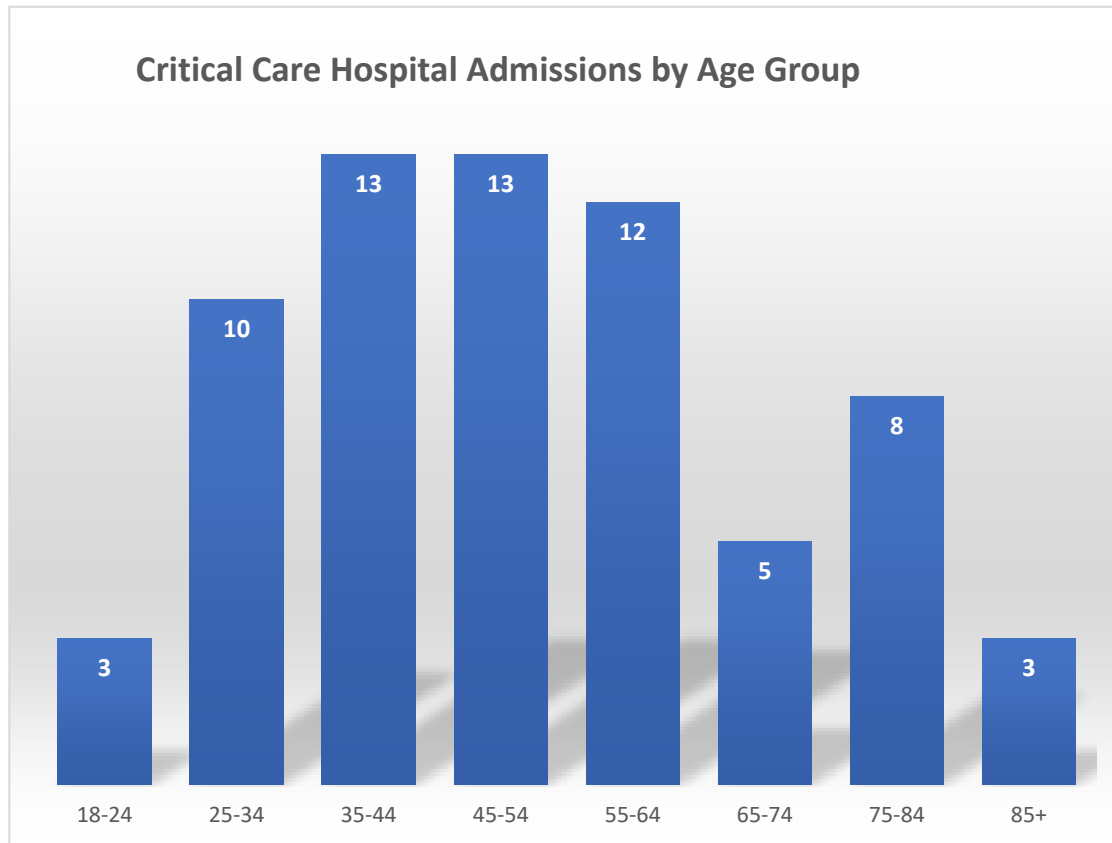
- The majority of admissions were in the White and Pakistani ethnic groups (where the ethnicity was stated).
- 105 (47.7%) of the white ethnic group and 20(26.3%) of the Pakistani ethnic group had completed two doses of the vaccine.
- In 45 (37.8%) admissions who had completed two doses of the vaccine, the ethnic groupings were not stated.

Vaccination Status of Admitted Patients



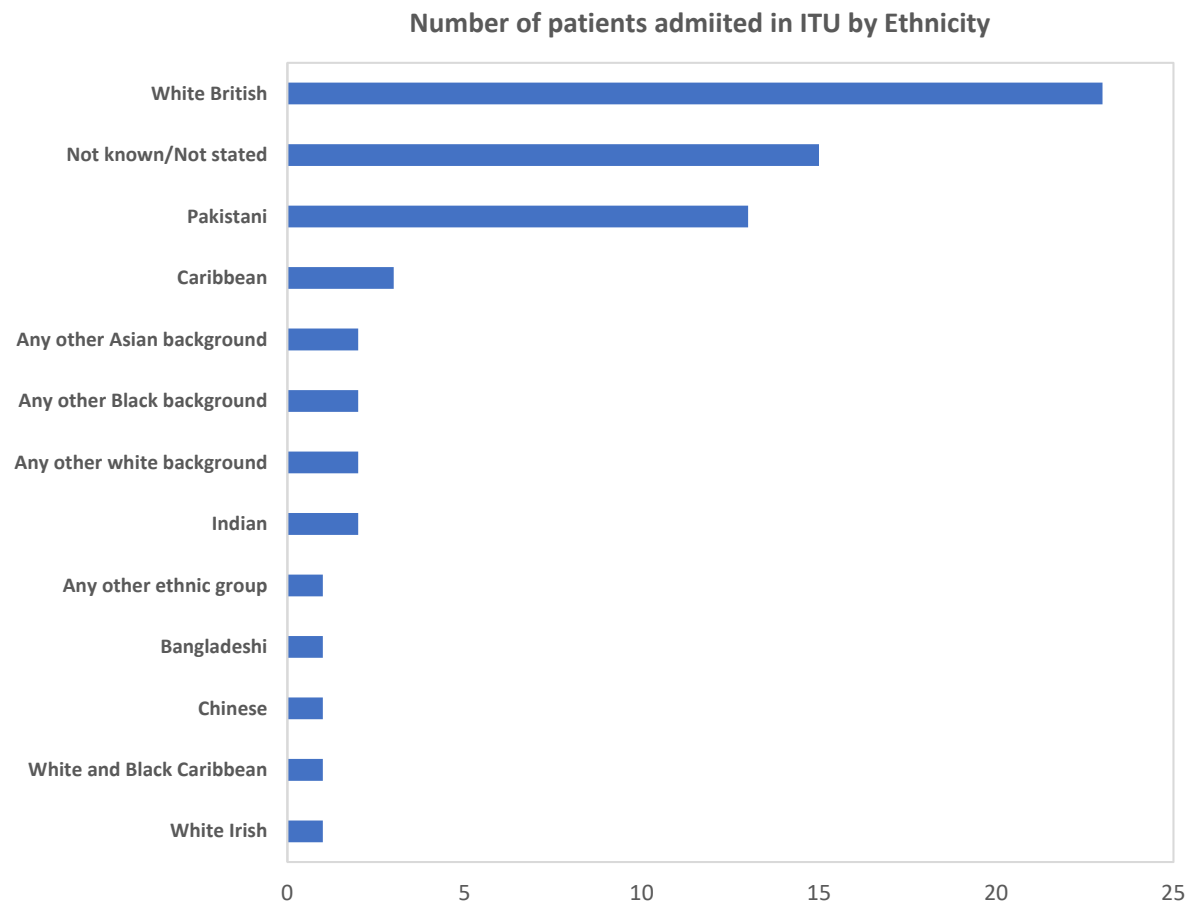
- There were 196 (37%) admitted patients who had completed two doses of the vaccine.
- 284 (54%) admitted patients had not been vaccinated.

Critical Care Hospital Admissions by Age group



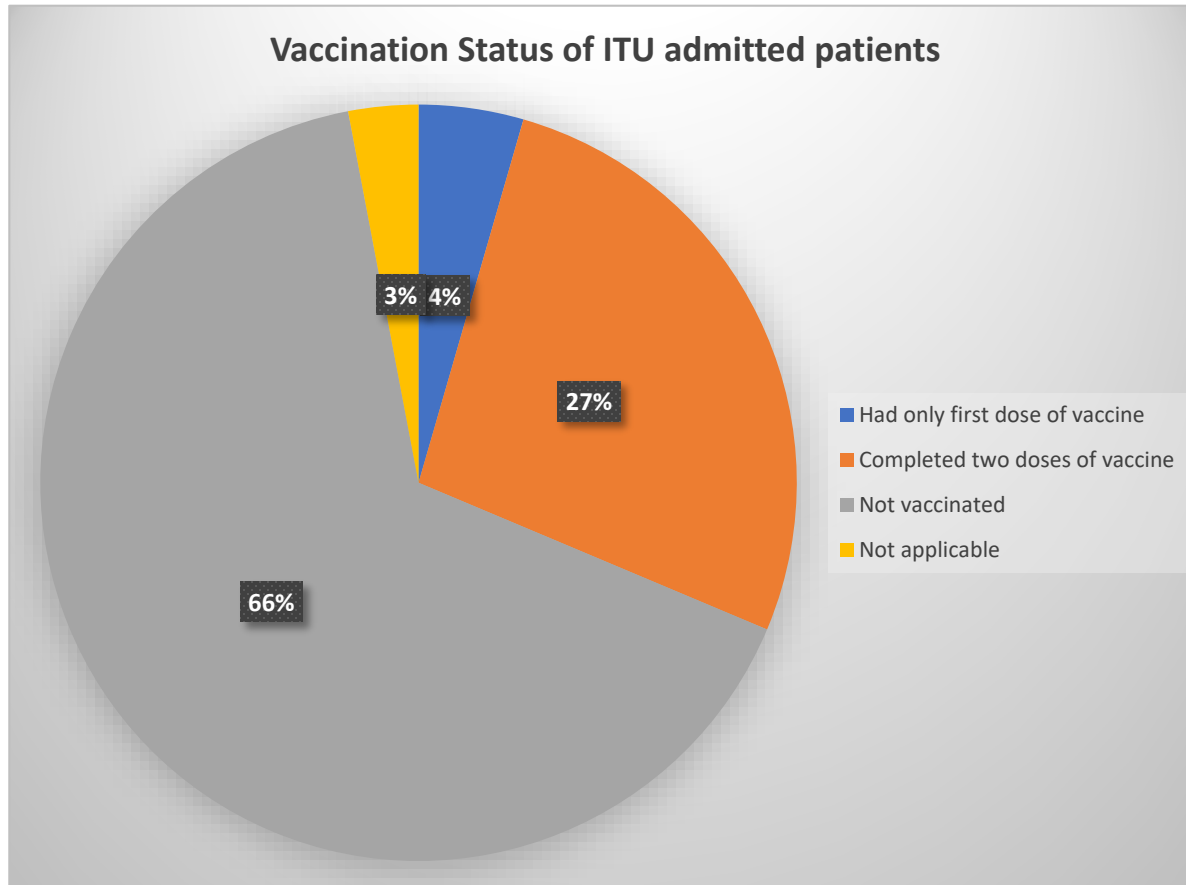
- 67 patients were admitted in ITU.
- The highest numbers of ITU admissions were ≤ 64 years.

Critical Care Admission by Ethnicity



- The majority of ITU admissions were in the following ethnic groups:
 - White (34.3%)
 - Those whose ethnicity was not stated (23.4%)
 - Pakistani (19.4%)

Vaccination Status of ITU admissions



- The majority of patients admitted to the ITU (66%) were unvaccinated.
- 27% of patients admitted to the ITU had completed two doses of vaccine.

Evaluating relationship between all Covid hospital admissions and vaccine status

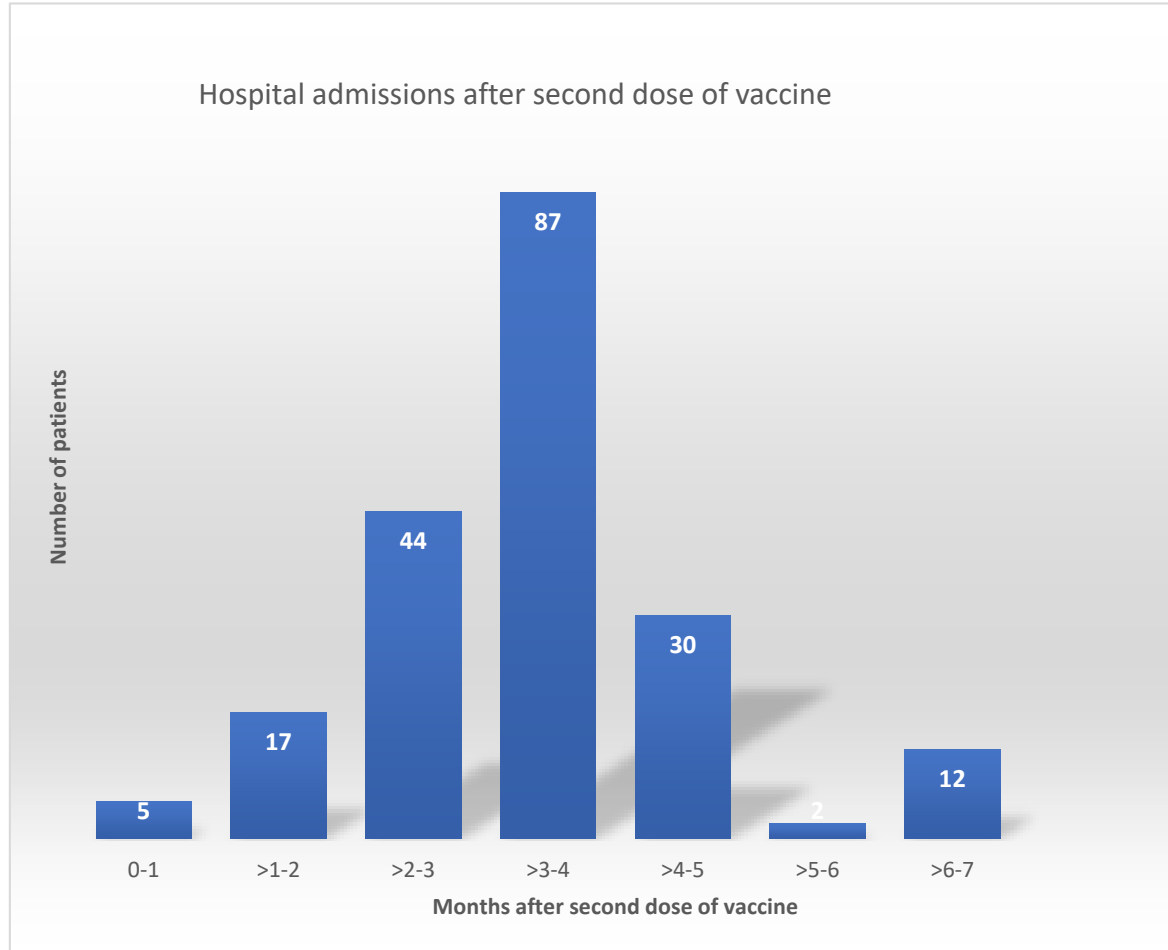
	All Covid hospital admissions
Vaccinated 2 Doses	197
Non-vaccinated	333
Total	530

$X^2 = 16.13$ $df=1$, $p < 0.00005$ (statistically significant)

- Admissions included both ITU and Non-ITU patients.
- The data suggests there was a statistically significant difference in admissions between vaccinated and non-vaccinated patients.

Patients who had only one dose of vaccine were not included in the analysis because they were not considered to be fully vaccinated.

Interval Between Second Dose of Vaccine and Admissions



- Most infections occurred within 4 months of receiving the 2nd dose of the vaccine.

Evaluating Relationship Between ITU Admissions and Vaccine Status

	ITU admissions	Non ITU admissions	Total
Vaccinated 2 Doses	16	181	197
Non-vaccinated	51	282	333
Total	67	463	530

$\chi^2 = 5.80$ $df = 1$, $p < 0.016$ (statistically significant)

- ITU admissions were significantly less in patients who had completed two doses of vaccine, compared with unvaccinated patients.

Patients who had only one dose of vaccine were not included in the analysis because they were not considered to be fully vaccinated.

Summary

- Hospital admissions are predominantly in the younger population.
- The majority of admissions were in the White ethnic group, the Pakistani ethnic group and in the group where the ethnicity was not stated. There is a need to make adequate provision to ensure the completion of data on ethnicity.
- There was statistically significant difference in the overall hospital admissions between vaccinated (completed two doses) and non-vaccinated patients. There were fewer admissions in those who had completed two doses of the vaccine.
- In patients who had completed two doses of the vaccine, most infections occurred within 4 months of the 2nd dose of the vaccine for reasons which are not yet clear.
- ITU admissions were statistically significantly less in patients who had completed two doses of the vaccine, compared with unvaccinated patients.
- The ITU admissions were predominantly in those less than 65 years.
- Continuous monitoring of Covid-19 hospital admission and vaccination status is recommended, in particular to determine the efficacy of the vaccine with time.

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