

# COVID-19 in Northern Ireland

## Vaccination Status of Deaths and Hospitalisations

Weeks 39 to 42 (27<sup>th</sup> September to 24<sup>th</sup> October 2021)

# Summary

- The COVID-19 vaccination program for Northern Ireland began in December 2020. By October 2021 approximately 2.5 million first and second doses of the vaccine have been administered, with 88% of adults receiving their first dose and 84% receiving their second dose.
- Ongoing monitoring of vaccine performance is necessary to support Public Health policy as the vaccination program progresses.
- This report presents results for Northern Ireland on the vaccination status of patients who have been hospitalised from COVID-19 and of those who have died from COVID-19 for weeks 39 to 42 (27<sup>th</sup> September to 24<sup>th</sup> October 2021).

## Hospital Admissions

- Three-quarters of adult COVID-19 inpatients aged under 50 are unvaccinated. 21% of COVID-19 inpatients aged 50 and over are unvaccinated.
- Unvaccinated individuals aged 50 and over are more than **5 times** as likely to be admitted to hospital with COVID-19 than fully vaccinated individuals.
- For adults under 50, whilst the numbers admitted to hospital are lower, an unvaccinated individual is over **15 times** as likely to need hospitalisation from COVID-19.

## Deaths

- Unvaccinated individuals aged 50 and over are more than **5 times** as likely to die.
- These results should be interpreted in the context of vaccine coverage in the Northern Ireland population (**Figures 1 and 2**). The success of the vaccination programme has resulted in a very small percentage of unvaccinated individuals, particularly for the older age cohorts. When there is a very high vaccine coverage in the population, even with a highly effective vaccine, it is expected that a large proportion of cases, hospitalisations and deaths would occur in vaccinated individuals. This is simply because a larger proportion of the population are vaccinated than unvaccinated and no vaccine is 100% effective. This is especially true because vaccination has been prioritised in individuals who are more susceptible or more at risk of severe disease. Individuals in risk groups may also be more at risk of hospitalisation or death due to non-COVID-19 causes, and thus may be hospitalised or die with COVID-19 rather than because of COVID-19. Death and admissions rates per 100,000 should therefore be interpreted with caution.

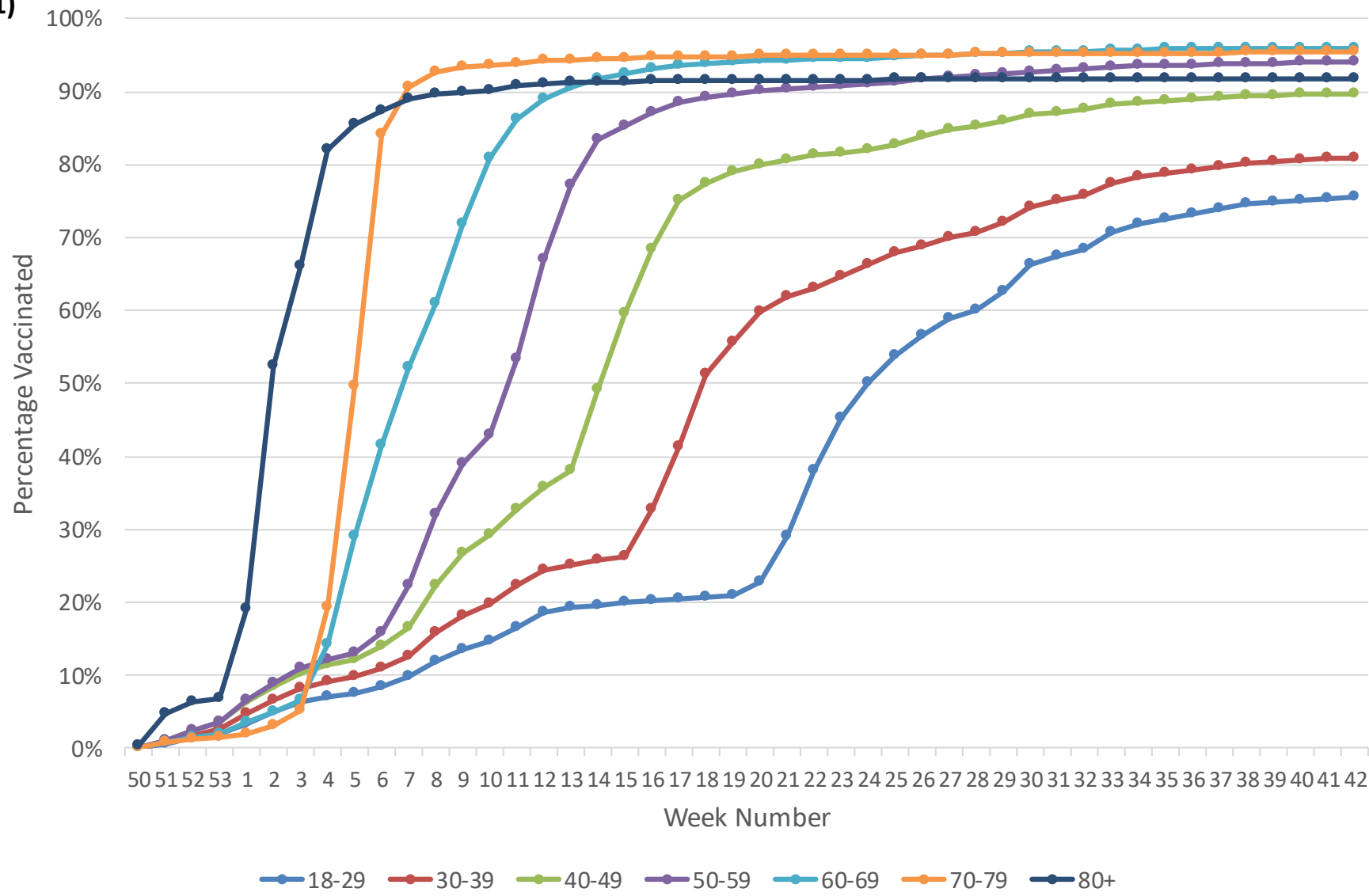
# Vaccination Status

## Methods

- Patients admitted to hospital with COVID-19 are identified using specific Method of Admission Codes. Transfers between hospitals are counted as one admission. Patients are allocated to an age cohort based on their age at date of admission. Patient records are continually updated by HSC Trusts and thus historical data is subject to revision. Further technical guidance on COVID-19 admissions is [appended](#).
- The number of deaths is as reported to the Public Health Agency where the deceased has had a positive test for COVID-19 and dies within 28 days, whether or not COVID-19 was the cause of death. Patients are allocated to an age cohort based on their age at date of death.
- Further details on the definition of admissions and deaths is provided on the Department of Health COVID-19 [dashboard](#).
- The vaccination status of each patient is determined by matching the admission and deaths cases with the vaccination status of the Patient as recorded on the Northern Ireland Vaccine Management System (VMS). If it is not possible to match an admission or death against the vaccination status of the patient on the VMS then the individual is recorded as 'Missing'.
- A person is deemed vaccinated, with a first or second dose, if the date of vaccination is greater than or equal to 14 days before date of admission, or for deaths, if the date of vaccination is greater than or equal to 14 days before date of specimen. In the charts and tables below, 'Partially Vaccinated' refers to those individuals who have received one dose, 'Fully Vaccinated' refers to those individuals who have received two doses.
- The number of vaccinated individuals in the population is taken from the VMS with age cohorts calculated at date of vaccination.
- The calculation of the number of unvaccinated individuals in the population requires an estimate of the total population in each age cohort. This was provided by NISRA based on their 2021 [mid year population projections](#).

# Vaccine Coverage

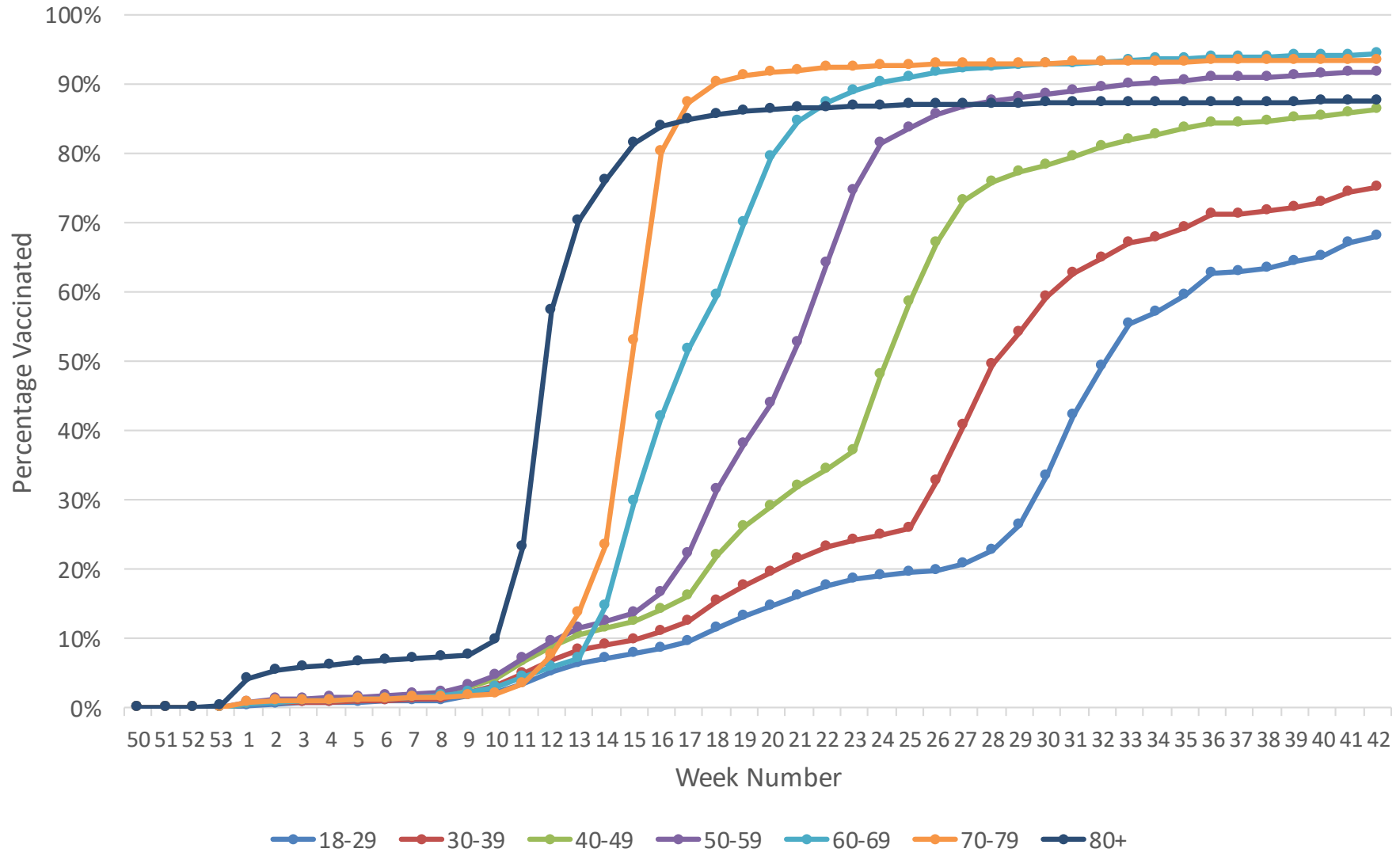
Figure 1: First dose cumulative vaccine uptake by week number and age group (December 2020 to 24<sup>th</sup> October 2021)



The percentage vaccinated is calculated using the 2021 mid-year population projections

# Vaccine Coverage

Figure 2: Second dose cumulative vaccine uptake by week number and age group (December 2020 to 24<sup>th</sup> October 2021)



The percentage vaccinated is calculated using the 2021 mid-year population projections

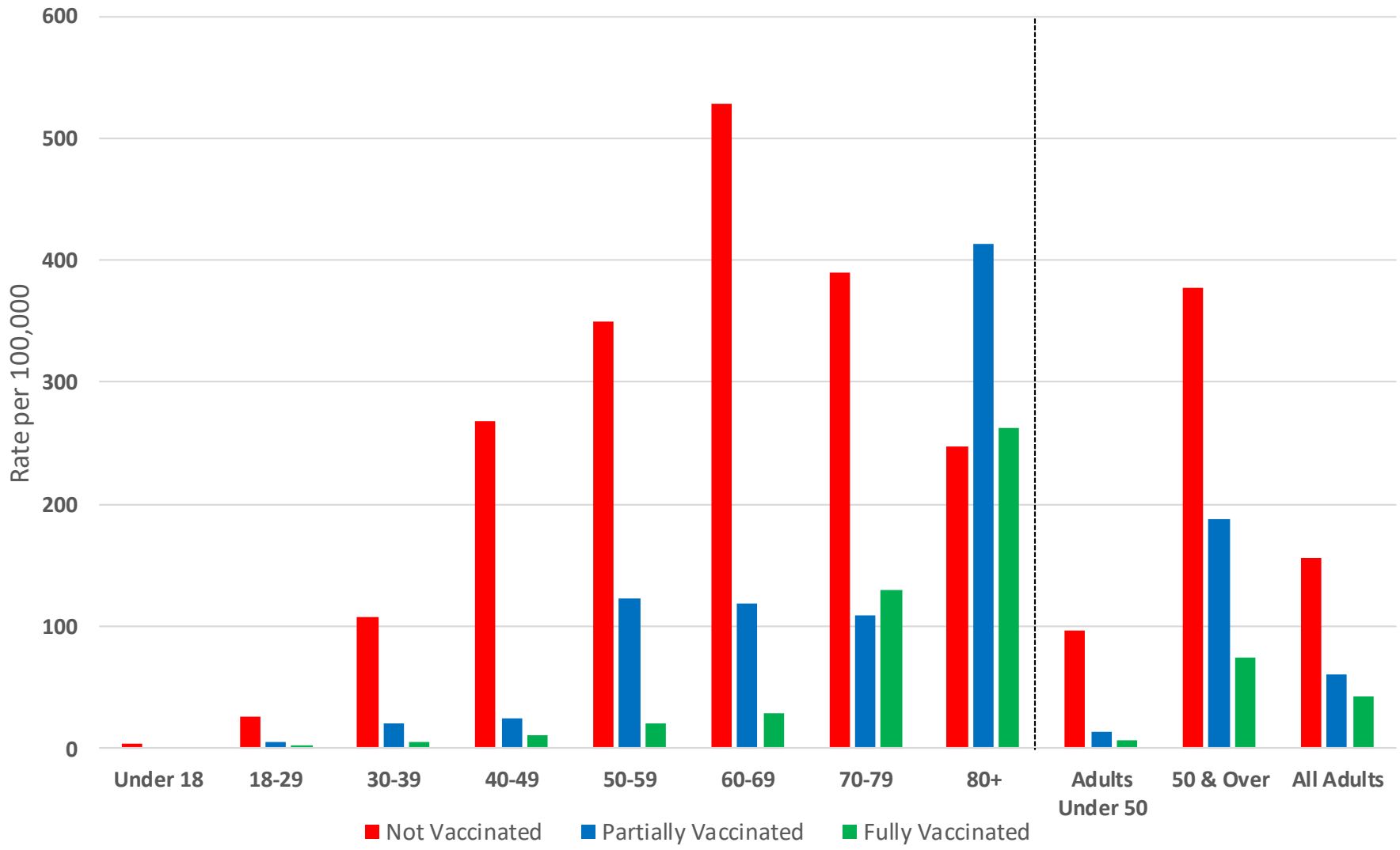
# Vaccination Status – Hospital Admissions

Table 1: COVID-19 cases admitted to hospital between 27<sup>th</sup> September and 24<sup>th</sup> October 2021

Age Cohort	Not Vaccinated	Missing	Partially Vaccinated	Fully Vaccinated	Total Admissions	Rates Admitted to Hospital per 100,000		
						Not Vaccinated	Partially Vaccinated	Fully Vaccinated
Under 18	15	0	0	0	15	3.7	0.0	0.0
18-29	18	0	1	4	23	26.7	4.9	2.1
30-39	52	0	3	10	65	108.2	20.6	5.3
40-49	66	2	2	23	93	267.7	24.3	11.1
50-59	54	1	7	50	112	349.9	123.3	21.0
60-69	43	2	4	56	105	528.8	118.8	28.9
70-79	27	1	3	182	213	390.6	109.6	129.6
80+	17	0	15	194	226	247.4	413.7	262.0
Adults Under 50	136	2	6	37	181	97.0	14.0	6.3
50 & Over	141	4	29	482	656	377.5	188.2	74.6
All Adults	277	6	35	519	837	156.1	60.0	42.2

# Vaccination Status – Hospital Admissions per 100,000

Figure 3: COVID-19 cases admitted to hospital between 27<sup>th</sup> September and 24<sup>th</sup> October 2021



# Vaccination Status – Deaths

Table 2: COVID-19 deaths within 28 days of a positive test between 27<sup>th</sup> September and 24<sup>th</sup> October 2021

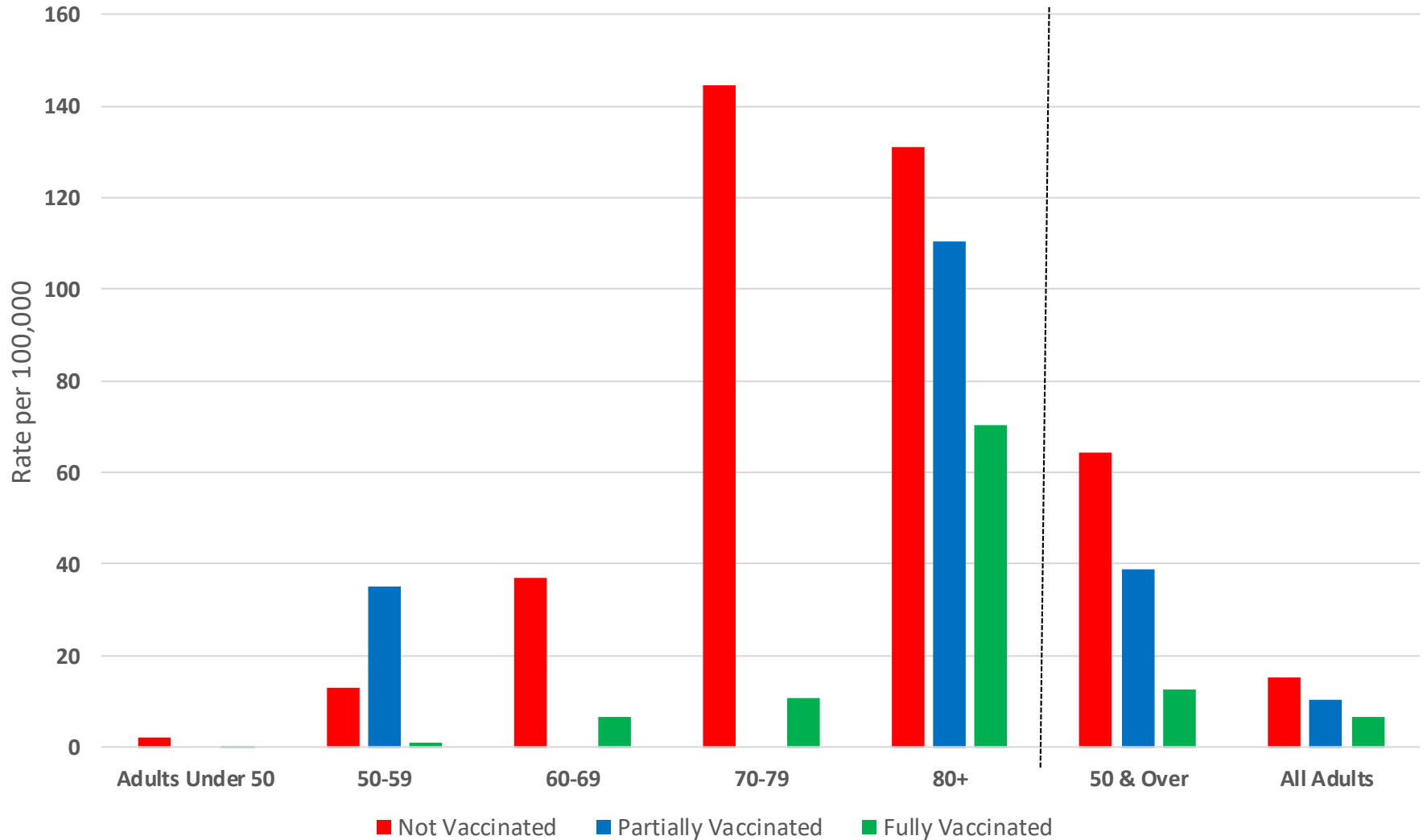
Age Cohort	Not Vaccinated	Missing	Partially Vaccinated	Fully Vaccinated	Total Deaths	Death Rates per 100,000		
						Not Vaccinated	Partially Vaccinated	Fully Vaccinated
Adults Under 50	3	0	0	1	4	2.1	0.0	0.2
50-59	2	0	2	2	6	13.0	35.2	0.8
60-69	3	0	0	13	16	36.9	0.0	6.7
70-79	10	1	0	15	26	144.7	0.0	10.7
80+	9	1	4	52	66	131.0	110.3	70.2
50 & Over	24	2	6	82	114	64.3	38.9	12.7
All Adults	27	2	6	83	118	15.2	10.3	6.7

\* Age cohorts below 50 are not provided to avoid potential disclosure of individual details.



# Vaccination Status – Deaths per 100,000

Figure 4: COVID-19 deaths within 28 days of a positive test between 27<sup>th</sup> September and 24<sup>th</sup> October 2021



# Appendix

## Technical Guidance on COVID-19 Admissions (1)

- The Patient Administrative System (PAS) is a patient level administrative data source that provides information on patient care delivered by health and social care hospitals in Northern Ireland. Data from PAS are routinely uploaded to the Regional Data Warehouse, which is managed by the Business Service Organisation (BSO).

### Data Quality

- The Department sources data on COVID-19 admissions and inpatients from the Regional Data Warehouse. Up to the 1st December 2020, a daily download was taken at 08:30 from the Admissions & Discharges universe of the Regional Data Warehouse reflecting admissions as of midnight prior to the download date. From 2nd December 2020 two additional daily downloads are taken from; (i) Recent Admissions & Discharges universe which includes data for the two most recent days, and (ii) Admissions & Discharges Specialty universe which is used to identify a number of inpatients in the Belfast HSC Trust. Data from each of these sources are merged and duplicate records are removed from the data.
- Patients admitted with confirmed COVID-19 are identified using the specific Method of Admission Codes (CC, CE or CS) or Specialty Code (COVC). These codes are used for any patient admitted to hospital with confirmed COVID-19. If an inpatient tests positive for COVID-19 the Method of Admission code is revised to one of the confirmed coronavirus codes above. If an inpatient tests positive for COVID-19 and then subsequently tests negative the Method of Admission code remains as one of the confirmed coronavirus codes above.
- Information is constantly being revised as records are updated by HSC Trusts and therefore figures for historical dates may change. When technical issues arise or errors in the data are discovered, the HSCB email to inform DOH.

# Appendix

## Technical Guidance on COVID-19 Admissions (2)

### Admissions / Discharges

- A patient may be admitted more than once, for example:
  - Admitted on two or more separate occasions
  - Admitted to hospital A within one HSC Trust and later transferred and admitted to hospital B in a different HSC Trust. The admission to hospital B will be recorded as a new admission. Consequently, patients may also be discharged more than once and these discharges will be included in the discharge total.

### Internal Transfers

- If a patient confirmed COVID-19 is transferred between hospitals within the same HSC Trust they are admitted using the CC, CE or CS Method of Admission Codes. The Method of Discharge is recorded as ID – Internal Discharge.
- The Belfast Trust identifies confirmed COVID-19 patients by using the specialty code (COVC). Any internal transfers will be admitted using the IA Method of Admission Code.
- Internal transfers are not counted as new admissions and only the first admission record will be counted for these patients.



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