Sequencing of COVID-19 Vaccination of Frontline Healthcare Workers

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This document is subject to regular review and update as required in the context of changing evidence, circumstances and feedback

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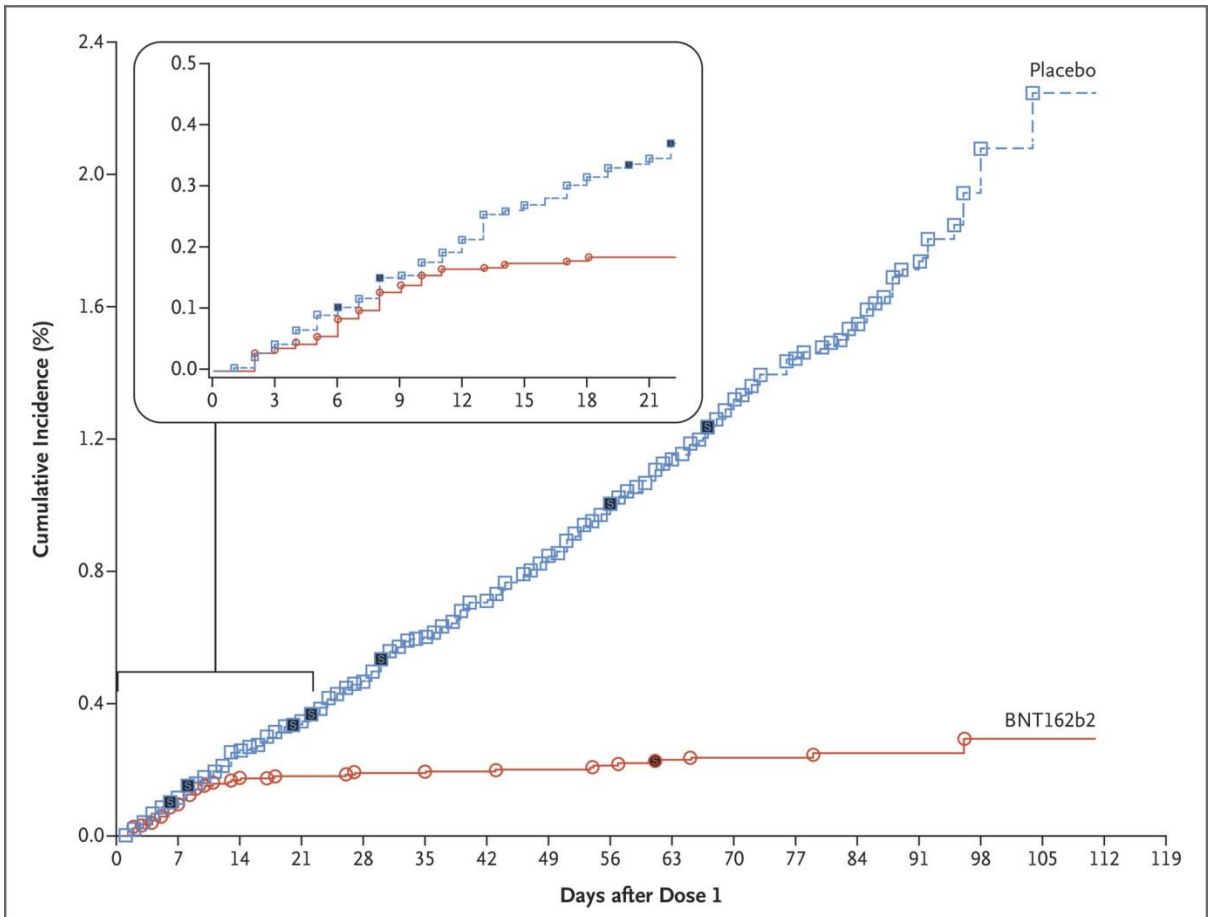
Context

There is sound scientific evidence that COVID-19 vaccine is safe and effective in protecting people against infection with COVID-19. Vaccination is based on administration of "*two doses (0.3 mL each) at least 21 days apart*" as the evidence for efficacy is based on this two dose schedule (Summary of Product Characteristics available at the link below).

https://ec.europa.eu/health/documents/community-register/2020/20201221150522/anx_150522_en.pdf

The published evidence indicates that substantial protection is afforded to many people from about 12 days after the first dose of vaccine.

Figure 1: From Polack FP et al. Safety and Efficacy of the BNT162b2 mRNA Covid-19 Vaccine. https://www.nejm.org/doi/full/10.1056/NEJMoa2034577



Efficacy End-Point Subgroup	BNT162b2, 30 μg (N=21,669) No. of participants	BNT162b2, 30 μg (N=21,669) Surveillance time *person-yr (no. at risk)*	Placebo (N=21,686) No. of participants	Placebo (N=21,686) Surveillance time *person-yr (no. at risk)*	VE (95% CI) *percent*
Covid-19 occurrence					
After dose 1	50	4.015 (21,314)	275	3.982 (21,258)	82.0 (75.6–86.9)
After dose 1 to before dose 2	39		82		52.4 (29.5–68.4)
Dose 2 to 7 days after dose 2	2		21		90.5 (61.0–98.9)
≥7 Days after dose 2	9		172		94.8 (89.8–97.6)

"Shown is the cumulative incidence of Covid-19 after the first dose (modified intention-to-treat population). Each symbol represents Covid-19 cases starting on a given day; filled symbols represent severe Covid-19 cases. Some symbols represent more than one case, owing to overlapping dates. The inset shows the same data on an enlarged y axis, through 21 days."

Provisional Vaccine Allocation Groups developed by the National Immunisation Advisory Committee (NIAC) were published by Government on 8 December at the following link https://www.gov.ie/en/publication/39038-provisional-vaccine-allocation-groups/

Under that strategy "*people aged 65 years and older who are residents of long-term care facilities (likely to include all staff and residents on site)*" are the highest priority therefore this paper will not address healthcare workers in long-term residential care facilities as they are accorded the highest priority as per Government policy.

There are various definitions of a healthcare worker. The WHO defines a healthcare worker (HCW) "as one who delivers care and services to the sick and ailing either directly -- or indirectly"-- [1]. This includes both frontline healthcare workers and other healthcare workers not in direct patient contact.

Under the Government policy "*frontline healthcare workers*" are listed as second in order of priority for vaccination while "*other healthcare workers not in direct patient contact*" are listed as fourth in order of priority. The category of "other healthcare workers not in direct patient contact" are a lower priority than "*people aged 70 and older*" in the provisional vaccine allocation groups. This document primarily addresses the sequencing of vaccination of frontline healthcare workers in accordance with that order of priority.

Healthcare workers, like all members of society are at risk of acquiring COVID-19 infection in the course of everyday life. In general, it is accepted that the nature of their work places many healthcare workers at a higher risk for acquiring infection with COVID-19 compared with the general population who do not work as healthcare workers. Protecting healthcare workers is also essential to ensure that healthcare services can be sustained for all members of society who need those services during the pandemic. Now that a safe and effective vaccine is available the ideal would be to offer the vaccine to all healthcare workers (and indeed all members of society) immediately however this is not possible because of practical challenges of acquiring and administering the vaccine.

As defined above healthcare worker is a broad category. It includes people at very different levels of increased risk related to their work. In the context of the available volumes of vaccine and the practicalities of administration it is necessary to consider

[1] WHO-2019-nCoV-SAGE_Framework-Allocation_and_prioritization-2020.1-eng (1).pdf

the sequencing of vaccination of frontline healthcare workers. This is inevitably disappointing and frustrating for those who see colleagues have the benefit of vaccine while they have to wait. The purpose of this paper is to outline an approach that can be accepted by most healthcare workers as consistent with Government policy and based on principles that are reasonable and fair.

Although it would be ideal that the order in which healthcare workers have access to vaccination should be based entirely on the sequencing outlined below this may not always be achievable because administration has to be organised in a practical way.

The following are guiding principles for the sequencing of vaccination of healthcare workers by the HSE

1. The sequencing process needs to be practical and transparent
2. Sequencing should be based on the best practical estimate of exposure risk
3. Sequencing should not be based on where people work (community or acute hospital), who they work for (public sector or private sector), category of worker or grade.
4. Vaccine allocated to frontline healthcare workers should be administered as promptly as possible to ensure that the maximum possible number of frontline healthcare workers are protected as quickly as possible
5. The vaccination programme has to be practical to administer
6. No dose should be wasted

High level sequencing for vaccination is outlined below. Please note that examples are illustrative and are not comprehensive lists. The sequencing makes no distinction between healthcare workers based in the community and those in the acute hospital system.

Sequence group 1 (provisional vaccine allocation group 2 frontline healthcare workers)

Healthcare workers whose work involves direct physical contact with people who use healthcare services (frontline healthcare workers)

Sequence group 1a Healthcare workers who are working in a congregated care setting (unit/ward/service) where there is current active transmission of COVID-19

Sequence group 1b healthcare workers who deal with unscheduled care patients on a daily basis in an uncontrolled environment (for example paramedics and others who respond to emergency calls to deliver healthcare to non-triaged individuals in non-healthcare settings)

Sequence group 1c healthcare workers who deal with unscheduled care patients in a semi-controlled environment on a daily basis (for example patient facing staff who

work in COVID-19 assessment hubs or who work in or are called to attend to patients in an emergency department or similar setting)

Sequence group 1d healthcare workers who deal with unscheduled care patients in a controlled environment on a daily basis (for example patient facing staff who work in in-patient/residential care areas that provide care for unscheduled care patients and community settings providing walk in access for patients)

Sequence group 1e healthcare workers who occasionally deal with unscheduled care patients (for example GPs/Practice Nurses who mainly see patients by appointment but who may from time to time need to see urgent unscheduled patients or hospital staff who are occasionally called to attend to people in an Emergency Department)

Sequence group 1f healthcare workers who deal with scheduled care patients in an uncontrolled environment on a daily basis (for example delivery of care by appointment in a patient/service user's home)

Sequence group 1g healthcare workers who deal with scheduled care patients in a controlled setting on a daily basis (for example deliver scheduled care by appointment in a clinic, GP surgery or hospital)

Sequence group 1 h all other priority 1 healthcare workers

Sequence group 2 (provisional vaccine allocation group 2 frontline healthcare workers)

Healthcare workers that whose work does not involve direct contact with people but does involve contact with potentially infectious blood or body fluids or human remains in a controlled environment.

If healthcare workers have to deal with infectious material in uncontrolled environment such workers should be considered as sequence category 1c).

Sequence group 3 (provisional vaccine allocation group 4)

"*Other healthcare workers not in direct patient contact*"

Practical Considerations

The vaccination programme needs to be organised around locations where the vaccine can be received, safely stored and administered. In the early stage of the vaccination programme, to reach high numbers of healthcare workers quickly the vaccination centres were based at locations that have access to sufficient numbers of staff to ensure that the vaccine is used (no doses wasted) and use of vaccinators time is efficient. This raises issues of geographical equity and equity of access for people who work do not work at large centres.

Every effort should be made to ensure that vaccine should be made available to frontline healthcare workers in order of sequencing (as above) rather than given primarily to people later in the sequence who work in the institution that hosts the vaccination centre.

If a vaccination centre has the vaccine and the capacity to administer 200 vaccines per day (for example) they should administer the vaccine to the 200 frontline healthcare workers earliest in sequence order who are able to attend on the day. If frontline healthcare workers earlier in the sequence order are not available to attend they should proceed to frontline healthcare workers later in the sequence order (no dose should be wasted).

Centres should establish standby lists of frontline healthcare workers later in the sequence order that are available at short notice and that are randomly selected from the lists for vaccination in the event that frontline healthcare workers earlier in the sequence order do not attend or cannot receive the vaccine.

Centres should consider establishing standby lists of other healthcare workers (provisional vaccine allocation group 4) who are available at short notice and are randomly selected from the lists for vaccination if for any reason frontline healthcare workers are not available and the alternative is that vaccine dose expires.

ENDS