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COVID-19 vaccines in older adults with cancer: a Young International Society of Geriatric Oncology perspective



As of March 3, 2021, 115 million COVID-19 cases and 2.6 million COVID-19-related deaths had been reported. Although older adults (aged ≥ 65 years) are no more susceptible to SARS-CoV-2 infection than younger adults, they are more likely to develop serious illness and die after they become infected.¹ In addition to age, patients with cancer also have worse outcomes compared with those without cancer.² Therefore, these groups of patients should ideally be prioritised for receipt of COVID-19 vaccines.

Several COVID-19 vaccines have been developed extremely quickly, with the first vaccine developed in 11 months. However, it has been noted that older adults continue to be under-represented in vaccine trials. For example, in the interim analyses of 11 636 participants enrolled in the AstraZeneca vaccine trials, only 8.4% of participants were aged 56–79 years and 3.8% were aged 70 years or older.³ Among the 30 351 patients enrolled in the Moderna vaccine trial, 25% of participants were younger than 65 years.⁴ Most countries do not exclude older adults from receiving the vaccine; however, there are a few exceptions. In Germany, the Standing Committee on Vaccination initially recommended against the use of the AstraZeneca vaccine in adults aged 65 years and older due to paucity of data in this age group.⁵ However, this recommendation was later changed to allow routine use in people aged older than 60 years. On March 30, 2021, routine use in people younger than 60 years was no longer recommended due to concerns about the risk of blood clots.⁶ In China, it is recommended that vaccination is postponed for people older than 59 years pending additional safety and efficacy data in this age group.⁷ Vaccine trials focusing on older adults are ongoing.⁸

The WHO Strategic Advisory Group of Experts on Immunization provided a prioritization roadmap to guide countries in developing public health and prioritisation strategies based on vaccine availability (very limited, limited, moderate) and epidemiological settings (widespread transmission, localised or limited transmission, countries with no reported cases but at risk for an outbreak).⁹ New Zealand, for example, uses this strategy when prioritising groups for vaccine. In the

context of widespread community transmission, adults older than 65 years and adults younger than 65 years with underlying conditions and disabilities are prioritised first (table; appendix).¹⁰ However, in the context of low or no community transmission or clusters of cases, the priorities change. Most countries use a stepwise approach based on chronological age with prioritisation of certain groups (eg, people living in long-term care facilities, health-care workers, frontline workers) irrespective of comorbidity during initial vaccine rollout. Older adults are generally prioritised before or shortly after health-care workers. Comorbidity, rather than cancer specifically, is prioritised in younger adults.

Prioritisation of vaccination using age groups represents a practical approach that is easier to organise and to effectively communicate to the public according to other criteria such as comorbidities.¹¹ Although targeting individuals with medical conditions that might predispose them to severe COVID-19 infection could be an even more efficient way to reduce hospital admissions and mortality, prioritising one comorbidity over another is difficult and controversial. Up to two-thirds of all adults aged 70 years and older have at least one condition associated with worse COVID-19-related outcomes.¹² The 2017 Global Burden of Disease (GBD) study estimated that, among patients aged 60–90 years worldwide, a third of patients have cardiovascular diseases, 30% have chronic kidney failure, 20% have diabetes, 18% have chronic obstructive pulmonary disease, and approximately 15% have a cancer diagnosis.¹² Therefore, vaccinating all older adults, regardless of their medical history, seems to be the most efficient strategy. Additionally, many countries or territories do not have appropriate registration systems, which means that a significant proportion of patients with comorbidities might not be detected or traced, and therefore vaccination could become inefficient.¹¹

It is important to note that while eligibility might open for older adults or those with cancer, it remains challenging for any given individual to receive vaccine. In the USA, varying eligibility across states has caused confusion. Older adults also face problems such as

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For the Global Health data Exchange GBD results tool see <http://ghdx.healthdata.org/gbd-results-tool>

	Available vaccines	Date of first dose	Priority groups*	Inclusion of patients with cancer?
USA	Pfizer/BioNTech, Moderna, Johnson & Johnson	December, 2020	Health-care workers; residents of long-term care facilities; people aged ≥75 years followed by those aged 70–79 years; non-health care frontline essential workers; people aged 65–74 years; people aged 16–64 years with high-risk medical conditions (including cancer)	Prioritised among people aged 16–64 years
UK	Pfizer/BioNTech, AstraZeneca, Moderna	December, 2020	Residents in a care home for older adults and staff working in care homes for older adults; people aged ≥80 years and frontline health and social care workers; people aged ≥75 years; people aged ≥70 years and clinically extremely vulnerable individuals; people aged ≥65 years; people aged 16–65 years in an at-risk group (including cancer)	Prioritised among people aged 16–65 years; people with haematological malignancies; patients receiving chemotherapy or targeted anticancer treatments; patients receiving radiation for lung cancer
Australia	Pfizer/BioNTech, AstraZeneca	February, 2021	Frontline health-care worker subgroups at high risk; nursing home care staff and disability care staff; nursing home care residents and disability care residents; people aged ≥80 years followed by younger adults; younger adults with underlying medical condition (including cancer and those with disabilities)	Prioritised among younger adults; patients receiving chemotherapy or radiotherapy; patients with haematological cancers diagnosed within the past 5 years; patients with non-haematological cancers diagnosed in the past 12 months; patients who have had a bone marrow transplant in the past 24 months
New Zealand	Pfizer/BioNTech	February, 2021	People older than 65 years and those younger than 65 years with underlying conditions and disabilities†	Not specified
Brazil	Instituto Butantan, AstraZeneca	January, 2021	People aged 60 years and older living in long-term care facilities; indigenous populations; health-care workers; people aged ≥60 years living in the community; younger adults with comorbidities	Patients aged <60 years who received chemotherapy or radiotherapy in previous 6 months
Mexico	AstraZeneca, Pfizer/BioNTech, Sputnik V, Sinovac	December, 2020	Frontline health-care workers; people aged ≥60 years regardless of comorbidities; people aged <60 years with comorbidities (including cancer)	Prioritised among people aged <60 years
India	Covaxin, Covishield (AstraZeneca/Serum Institute of India)	January, 2021	Health-care workers; frontline workers (police, prison staff, municipal workers); people aged ≥50 years and people aged <50 years with comorbidities (including cancer)	Prioritised only among people aged <50 years
Russia	Sputnik V, EpiVacCorona, CoviVac	December, 2020	Social and health-care workers; people aged ≥60 years; people aged <60 years with comorbidities (including cancer)	Prioritised only among people aged <60 years
China	Sinovac, Sinopharm	December, 2020	No prioritisation for older adults (it is recommended that vaccination is postponed for people aged >59 years, those with cancer, and those who are on immunomodulators such as anticancer drugs)	Excluded
Hong Kong	Sinovac, Pfizer/BioNTech	February, 2021	Residents and staff of residential care homes for older people and people with disabilities and other institutional facilities; workers in health-care settings, workers in other essential services who are at increased risk of exposure to COVID-19, and people aged ≥60 years; people aged 16–59 years with chronic medical conditions	Not specified (potentially prioritised among people aged 16–59 years)

Data sources are provided in the appendix. *Listed in order of prioritisation. †In the context of widespread community transmission but not in the context of low or no community transmission or clusters and controlled outbreaks (as of March 2, 2021, prioritisation is based on low or no community transmission).

Table: Available vaccines and priority groups in various countries as of March 1, 2021

scheduling appointments (due to the need to be familiar with technology), knowing vaccination sites, reluctance to wait in long lines due to concerns about COVID-19 exposure, and inability to travel due either to physical limitations or lack of transportation. Additionally, as a result of low vaccine availability, a large majority of older adults and patients with cancer have yet to be vaccinated.

In conclusion, older adults with or without cancer, a high-risk and under-studied group, have generally been prioritised to receive the COVID-19 vaccine, although barriers remain at the individual and health-care system levels. Ongoing efforts to study the safety of vaccines in older adults and more importantly,

to ensure equity and justice in COVID-19 vaccine distribution, are of paramount importance.

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