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16th & 17th April 2025

MTI (Modern Technology & Information University)

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key Immunizations for Healthcare Providers: Ensuring Safety and Preventing Infections

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- Healthcare workers are essential members of the infection prevention and control (IPC) programs in healthcare institutions.
- Vaccines help reduce the risk of healthcare-associated infections (HAIs), enhance workforce productivity, and ensure that HCWs do not inadvertently contribute to the spread of infections.
- Despite the strong evidence supporting the benefits of vaccination, immunization rates among healthcare workers can vary significantly depending on factors such as geographic location, workplace policies, and personal beliefs.

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Recommended vaccines for health care worker

1. Influenza

- Annual flu vaccination is recommended for all healthcare workers, not only to protect themselves but also to protect vulnerable populations such as elderly patients, immunocompromised individuals, and children.
- The CDC recommends influenza vaccination for HCWs as part of infection control strategies

MMWR

ALL HEALTHCARE WORKERS NEED FLU VACCINES

VACCINATING HEALTHCARE WORKERS

REDUCES
FLU AMONG WORKERS

REDUCES
WORK ABSENCES

PROTECTS
PATIENTS

3 OF 4 HEALTHCARE WORKERS GET FLU VACCINES

HIGHEST WHEN
EMPLOYER REQUIRED VACCINE
OR GAVE ONSITE

LOWEST FOR
LONG-TERM CARE WORKERS

WORKPLACE STRATEGIES CAN HELP!

PROMOTE
ON-SITE VACCINATION

OFFER
LOW OR NO COST VACCINES

REMEMBER
NON-CLINICAL STAFF

2. Hepatitis B

- Hepatitis B virus (HBV) poses a significant occupational risk to healthcare workers, particularly those involved in procedures that involve blood or bodily fluids
- Vaccination against hepatitis B is essential for any HCW, as the virus can be transmitted through percutaneous or mucosal exposure.
- The hepatitis B vaccine is highly effective in preventing infection and has been shown to substantially reduce the incidence of occupationally acquired hepatitis B cases.
- In many countries, the hepatitis B vaccine is included as part of standard occupational health and safety protocols for healthcare worker

Strategies of immunization include:

1: integration of hepatitis B vaccine into **routine infant immunization** programs.

2: **Vaccination of those at risk**, including health workers: including (waste disposal workers, and emergency and safety workers exposed to the risk of blood borne pathogens). They should be immunized either before training or as soon as possible when at work, unless they are already immunized**.**

3. A schedule including **three doses at 0, 1 and 6 months** is highly effective; it provides long-term protection in most individuals. The usual adult dose is 1.0 ml (twice the monovalent paediatric dose of 0.5 ml) and the vaccine is administered intramuscularly. Serological testing **at 2–6 months** after the third dose of HBV vaccine can demonstrate whether an **antibody response** has developed against **hepatitis B surface antigen**.

Post exposure prophylaxis of Hepatitis B virus exposure:

PEP for HBV can be highly effective in preventing transmission of the virus after exposure.

PEP for HBV is based on the **hepatitis B vaccine, either alone or combined with hepatitis B immune globulin (HBIG)**

In the case of exposure to Hepatitis B:

HCW's baseline HBsAg screening should be done. **History of vaccination against Hepatitis B is taken**.

In the situation of completed all three doses of vaccine (at zero, one and six months) or incomplete vaccination; HCW's anti-HBS antibody titre is tested.

-titer is less than 10 m IU/ml (NON RESPONDER),

-If titre >10 m IU/ml or equal (RESPONDER): no immediate action was taken. Repeat testing for Hepatitis B transmission is done at three months and six months for all exposures to Hepatitis B

6. Bacillus Calmette– Guérin (BCG)

- BCG vaccination is recommended for unvaccinated TST- or IGRA-negative persons at risk of occupational exposure in low and high TB incidence areas (e.g. health workers, laboratory workers, medical students, prison workers, other individuals with occupational exposure)

3. Measles, Mumps, and Rubella (MMR)

- The MMR vaccine is crucial for healthcare workers, especially those working in pediatric or public health settings, where the risk of exposure to these diseases is higher.
- Measles, mumps, and rubella can have severe complications, including neurological damage, infertility, and congenital defects.
- Vaccination against these diseases has been proven to prevent outbreaks and protect both HCWs and the patients they care for. In healthcare settings, where large numbers of people gather, the risk of transmission can be exacerbated, making the MMR vaccine a key preventive measure

4. Pertussis (Whooping Cough)

- Pertussis vaccination is crucial for HCWs who have frequent interactions with infants, elderly patients, and immunocompromised individuals.
- Healthcare workers may unknowingly transmit pertussis to vulnerable populations, resulting in severe disease outcomes, especially in neonates.
- The Tdap vaccine (which includes protection against tetanus, diphtheria, and pertussis) is recommended for HCWs to prevent outbreaks in healthcare settings and ensure the safety of at-risk individuals

5. Varicella (Chickenpox)

- Varicella immunity is critical for healthcare workers, particularly those who may work in pediatric or high-risk environments.
- Varicella is highly contagious, and HCWs who are not immune may face a higher risk of contracting and transmitting the disease. Vaccination with the varicella vaccine provides long-lasting protection and significantly reduces the risk of infection and subsequent complications

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8.Poilo

All health workers should have completed a full course of primary vaccination against polio

9.Meningococcal vaccine

One booster dose 3–5 years after the primary dose may be given to persons considered to be at continued risk of exposure, including health workers

10.SARS-CoV-2

Health workers should be included in [the highest priority group for vaccination] against COVID-19

Classification of health workers' risks

- To protect themselves, their coworkers, families, friends, and patients, it is ideal for all health workers to be completely vaccinated.
- However, compared to individuals who only sometimes interact with patients or clients, some healthcare professionals—such as those who have frequent contact with patients and/or bodily fluids—are more likely to contract or spread disease.
- To ascertain the extent of exposure to microorganisms causing VPDs from the various activities and tasks performed by health personnel, an occupational health risk assessment is necessary

- For groups of health workers who interact with particular high-risk patient groups (such as paediatric, immunocompromised, or intensive care patients), health worker vaccination policies may strongly advise, or even mandate, vaccination against specific VPDs.

- There may be difficulties with such policies (for example, the need for suitable human resource systems to identify and classify healthcare professionals and to handle problems if they disagree with the risk category they have been assigned).

- However, in situations when resources are limited or vaccine supplies are scarce, it can be necessary to first give priority to specific groups of healthcare professionals depending on their risk of infection and transmission to the patients they treat

Strategies to boost immunization rates among healthcare workers

- Even while good communications can boost self-assurance and willingness to get vaccinated, extra tactics are frequently needed to influence vaccination behaviour (or uptake), particularly if the vaccine contains several doses.
- In order to properly develop strategies to boost vaccination uptake among health workers, it is critical to comprehend the factors that influence their acceptance or rejection of vaccination, taking into account variations among health worker groups as well as drivers or hurdles in particular contexts.

- The following recommendations, which note that multi-component treatments addressing a variety of barriers are frequently more effective, have been demonstrated to boost health worker vaccine uptake with differing degrees of success .

Strategies to boost immunization rates among healthcare workers (continue)

1. Achieve accessibility and ease of use:

- Give the health professional the immunization for free.
- Promote, convey, and guarantee knowledge of the where, when, and how of vaccination for health workers in an explicit and regular manner.
- Provide easy access to immunization services, such as mobile vaccination carts, walk-in clinics, and on-site immunization in medical facilities.
- Provide flexible work schedules, including choices for employees who work weekends and after hours.
- If possible, take into account peer-to-peer vaccination campaigns
- Put in place standing order programs that allow chemists and nurses to give immunizations in accordance with a set protocol without a doctor's visit .
- Organise "festive" mass vaccination campaigns or combine them with other interventions and health education, including staff wellness and health days

Strategies to boost immunization rates among healthcare workers (continue)

2. Provide incentives.

- Provide token rewards, such as buttons, stickers or pencils
- If at all possible, provide time off for vaccinations and in the event of any subsequent slight illness or pain.
- Take into account extending the vaccination program to cover households and families of health workers.
- Give teams or departments that meet specific vaccination goals leadership awards or public recognition

Strategies to boost immunization rates among healthcare workers (continue)

3. Educate

- Provide clear and **fair information on the risks of disease**, the safety profile of the vaccines and **advantages of vaccination t**o enable health workers in making an informed decision and to address uncertainties.
- Address any issues or misunderstandings and reaffirm immunization as the standard by facilitating small group discussions and/or one-on-one conversations as necessary.

- Stress the part that **health professionals play in spreading illness**, as well as how vaccinations can promote a healthier clinic or community at large.
- Make sure that **information on the significance** and justification for vaccination (including safety), as well as the location and time, is included in communications materials (**such as emails, posters, and newsletters).**

Strategies to boost immunization rates among healthcare workers (continue)

4. Use reminders frequently.

- Use nudge-based interventions or cues to action (such as emails, social media messaging, screen savers, posters, loudspeaker announcements, stickers worn by vaccinated healthcare professionals, or text message reminders).
- Include messages about vaccinations in other daily activities, such as staff meetings or supervisory visits.

Strategies to boost immunization rates among healthcare workers (continue)

5. Exhibit great responsibility and leadership.

- Set a good example by making sure management encourage and take part in the immunization campaign.
- Recruit reputable employees in all positions to serve as "vaccine champions" and encourage peer-to-peer campaigning.

Involve middle **managers in the creation and implementation of the immunization program** to help close knowledge gaps and have a positive impact on their employees.

• Assign management staff to supervise immunization campaigns, including responsibility for coverage rates.

Make the idea official.

• **Include vaccination in health workers' and students' training and orientation to the workforce.**

• Make vaccination a **crucial part of IPC,** in addition to using PPE and practicing good hand cleanliness.

• Make vaccination against specific diseases mandatory or require proof of immunity as a prerequisite for medical education or employment.

Strategies to boost immunization rates among healthcare workers (continue)

6. Put in place soft mandates

- **Use signed declination forms** to keep track of refusals (for non-medical reasons); this can also aid with compliance statistics.
- **Implement restrictions on non-vaccination,** such as restricting the use of surgical masks or prohibiting unvaccinated personnel from handling patients who are extremely vulnerable.

Precautions for healthcare professionals who are unable to receive vaccinations

- vaccination policy should address the implications for healthcare professionals who are unable or unwilling to get vaccinated.
- In addition to circumstances where a health worker could be momentarily unable to receive specific vaccinations **(for example, because of pregnancy or lactation)**, the policy should take into account people who have a legitimate medical contraindication to vaccination.
- Systems should be in place to guarantee confidentiality regarding any medical contraindications or pregnancy status, just like with any other personal or medical records.

- Health professionals who are not immune or vaccinated may be obliged to wear personal protective equipment (PPE), such as face masks, while providing patient care
- or they may be temporarily (or permanently) moved to places where they are less likely to come into contact with high-risk patients.
- Certain policies include penalties for health workers who choose not to get vaccinated for non-medical reasons, such as required unpaid leave during outbreaks or times of high transmission, or even having to appear before a committee to defend their decision.
- If a refusal/opt-out option is going to be made available, it is important to consider the
- feasibility

and resources needed to enforce the consequences

MONITORING

Progress indicators

- **Vaccine uptake: The number of people vaccinated with a certain dose of the vaccine in a certain time period (e.g. during a month or year).**
- **Vaccination rate: The proportion of people in a target population vaccinated with a certain dose of the vaccine in a certain time period (e.g. during a month or year).**
- **Vaccination coverage: The vaccinated proportion of a target population. Coverage can be estimated by accounting for vaccination in previous time periods (weeks, months, years). For the first year of a new vaccine introduction, or for annual vaccinations (e.g. seasonal influenza), rate and coverage can be used interchangeably**

Case study
Immunization of health workers in Egypt

In recognition of the hepatitis burden in Egypt and the country's aim to eliminate hepatitis as a part of a multipronged campaign, the Ministry of Health and Population (MoHP) **undertook vaccination of health workers in 2014**.

- All health workers in publicly funded hospitals and clinics were offered three doses of HepB free of charge through the MoHP.
- The programme was well accepted by health workers.
- An evaluation of the programme conducted in **2019 found that 76% of health workers had received three doses of HepB.** This programme will continue for new employees, and the MoHP intends to continue to monitor uptake.

Egypt is implementing a comprehensive plan for hepatitis elimination, and hepatitis B vaccination is envisioned as one of the core preventive elements in reaching the goal of eliminating hepatitis by 2022.

COVID 19 as acase study

The WHO recorded about 400 million confirmed cases of COVID-19 as of February 9, 2022, including over 5,75 million deaths.

- For health care professionals around the world, the COVID-19 epidemic presents a unique physical and mental challenge.
- Because they work on the front lines and treat COVID-19 patients, healthcare
- professionals are more likely than the general public to be exposed to the virus
- at work.
- In fact, during the COVID-19 pandemic, there were significant rates of infection,
- patient transmission, and absenteeism among HCP.
- It is anticipated that the availability of COVID-19 vaccines that are both safe and
- efficacious will alter the environment in healthcare facilities.

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- Some HCP are also reluctant to get vaccinated, despite the fact that they were instantly recognised as a high priority group for COVID-19 immunization.

Concerns about the safety and effectiveness of the COVID-19 vaccination were the primary cause of the considerable variation in acceptance rates and HCPs' readiness to receive it overall.

As a result, variations in the HCP's decision to get the vaccine affected vaccination rates.

16th & 17th April 2025

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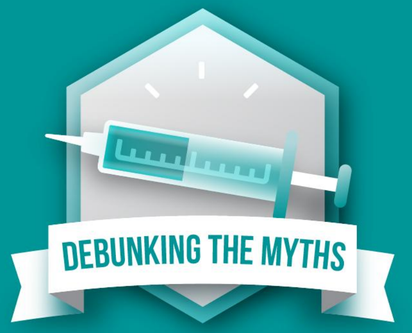
Atrium Health

COVID-19 Vaccines



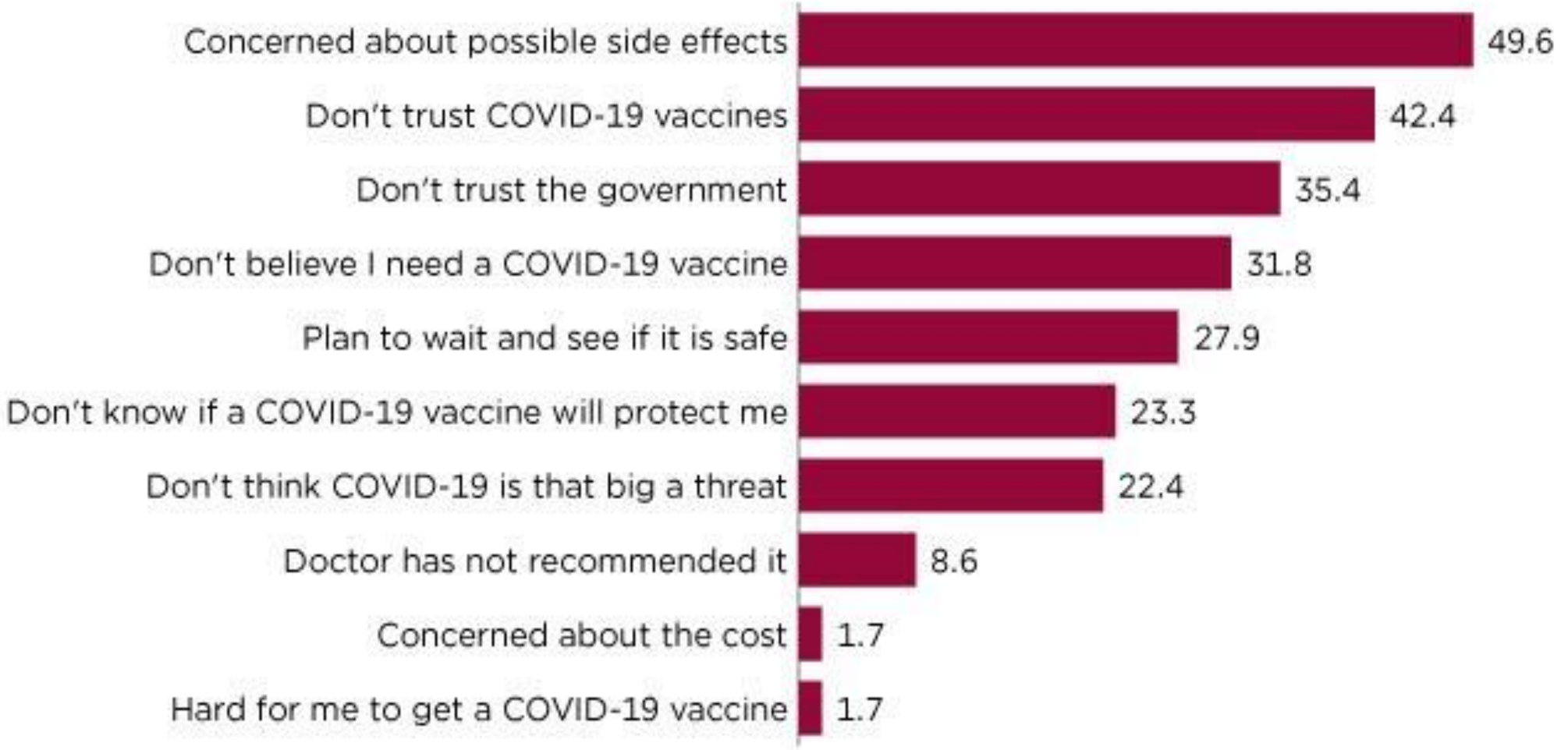
Vaccine MYTH	Vaccine FACT
It was rushed and isn't safe.	Researchers took no safety shortcuts Large studies show the vaccine is safe
It changes your DNA.	It is impossible for the vaccine to change your DNA.
It can give you COVID-19.	You cannot get COVID-19 from the vaccine. The vaccine doesn't contain a live virus strain.
It contains egg protein.	It doesn't have egg proteins and can be given to people with egg allergies.
It causes severe side effects.	Severe side effects are very rare. Mild side effects like fever and feeling achy for 24-48 hours are not uncommon.
It makes women infertile or causes concern in pregnancy.	There is no evidence that the vaccine causes infertility and the vaccine is safe in pregnancy.

Learn more and schedule: **AtriumHealth.org/COVID19Vaccine**

Source: Sanford Health

Why Adults 18 and Over Did Not Get COVID-19 Vaccine

(In percent)



Note: Responses do not sum to 100 as respondents could select more than one reason.

Source: U.S. Census Bureau, Household Pulse Survey Week 40 (December 1-13, 2021).

An Phríomh-Oifig Staidrimh
Central Statistics Office

Social Impact of COVID-19 Survey February 2021

Vaccination Attitudes and Holiday Expectations

Of respondents not yet vaccinated

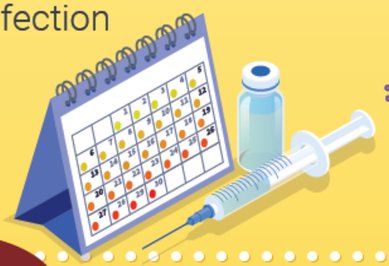
87.0% would take the vaccine next week – if possible

5.4% do not want to take the vaccine

Respondents "Very" or "Extremely" concerned about certain aspects of getting vaccinated

46.3%[1] **Having a long wait** before getting vaccinated

21.3%[2] **Length of time the vaccine will protect** against a COVID-19 infection



20.7%[2] **Effectiveness of the vaccine** against different strains of the virus

Of respondents who do not want to get vaccinated

66.2% Worried about **long-term side effects**

17.3% Worried about **short-term side effects**

20.5% are **worried the vaccine will not protect them** from a COVID-19 infection

50.6% of respondents, in November 2020, **expected their next international flight to be in 2021.** In February 2021, **15.8%** of respondents expect this.

73.3% of respondents reported that, in a typical year **prior to the onset of COVID-19, they would take a holiday break overseas.**

15.9% of respondents **intend taking a holiday break overseas** in 2021.

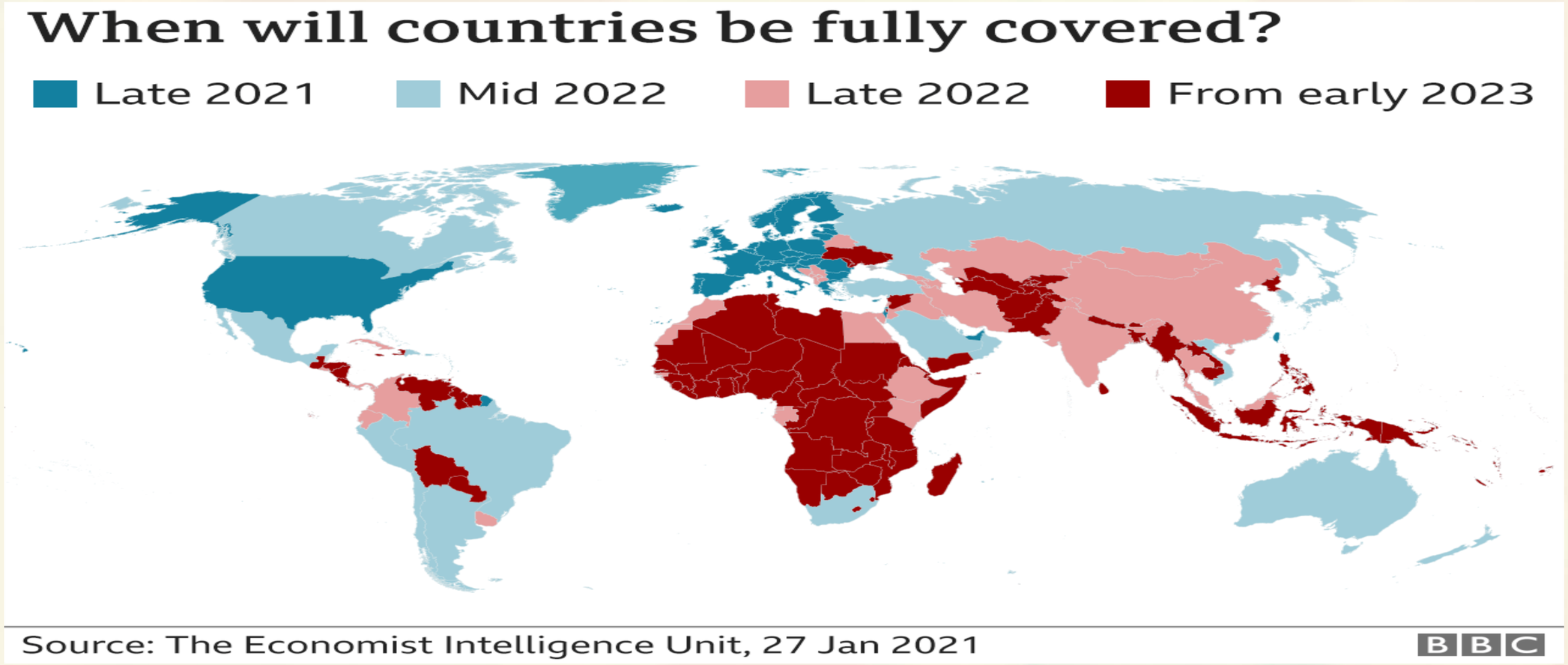
[1]of respondents who want to get vaccinated | [2]of respondents who are vaccinated or want to get vaccinated

- The median complete immunization rate among health care professionals (HCP) in 17 EU/EEA countries was **79% as of August 21, 2021,** with notable variations among nations (range: 23.3% to 100%) .

Similarly, as of September **15, 2021, 30% of HCP in US hospitals were still unvaccinated**

In order to reduce the effects of the COVID-19 pandemic on healthcare professionals and healthcare facilities, the topic of requiring HCPs to get vaccinated against the virus has come up in public health talks. Italy, France, Greece, Australia, and Canada are among the nations that have enacted or intend to enactad hoc regulations requiring mandatory COVID-19 vaccination or severely restricting the work of unvaccinated health care professionals

When will countries be fully covered?

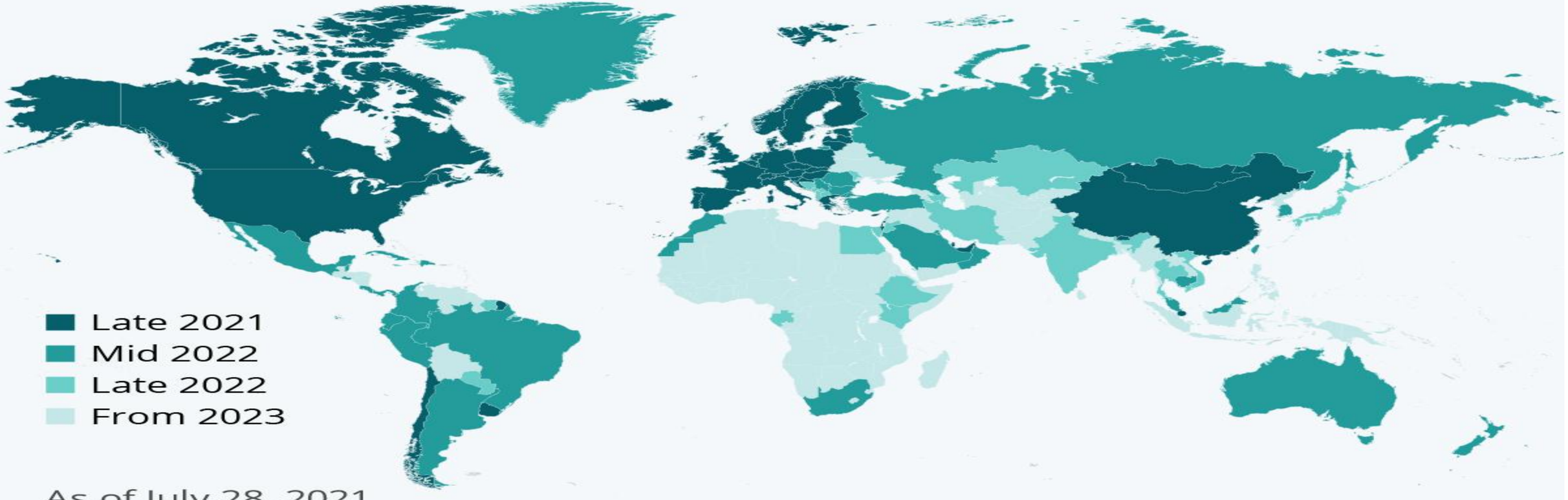


Source: The Economist Intelligence Unit, 27 Jan 2021

BBC

Global Vaccine Timeline Stretches Beyond 2023

Countries by when they are expected to have vaccinated 60 percent of their population



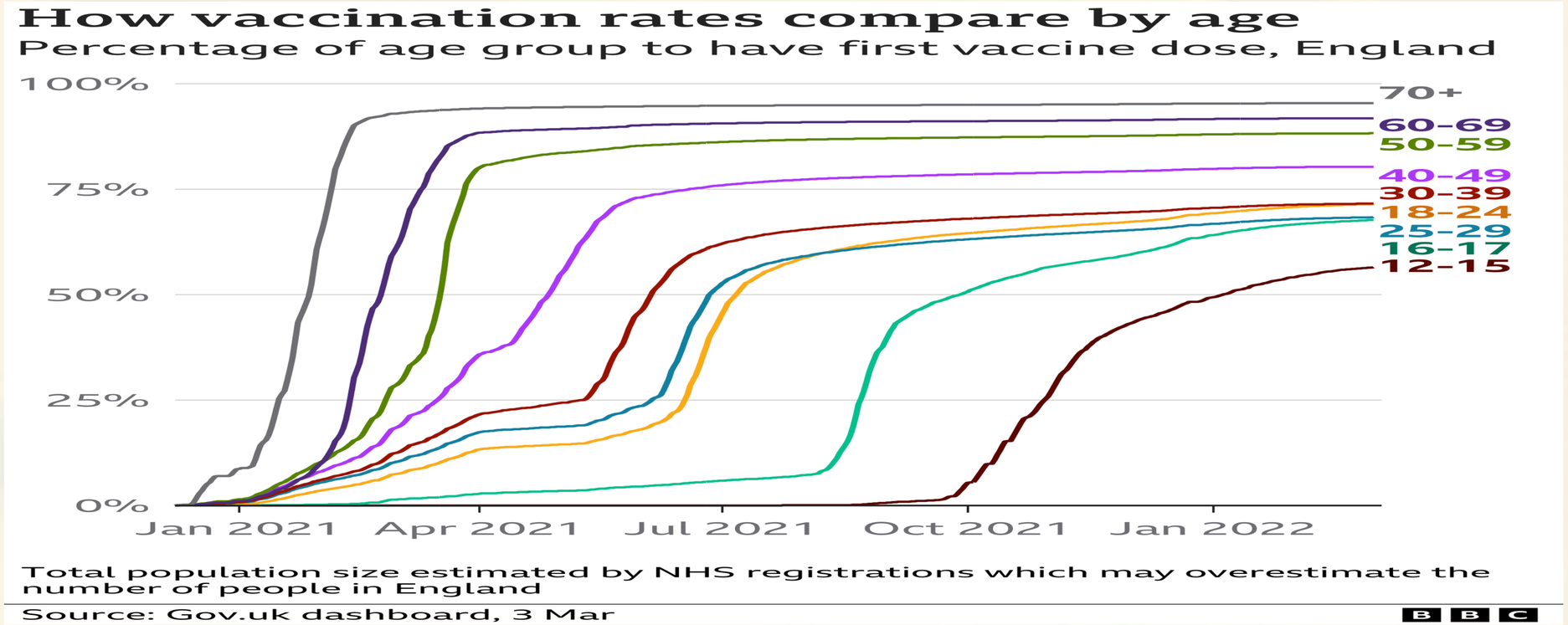
As of July 28, 2021

Source: Economist Intelligence Unit

statista

Less than three months after mandatory vaccinations for health care professionals were implemented, Italy's national figures show exceptional results: as of August 2021, 94.42% of 1,958,461 HCP had received all recommended immunisations, while only 35,691 HCP (1.82% of the total) remained unvaccinated .

The first mRNA COVID-19 vaccine was licensed by the U.S. Food and Drug Administration on August 23, 2021, for the prevention of COVID-19 in those aged 16 and up.



Take Home Meassages

- Immunization is a critical component of infection control for healthcare workers.
- Challenges such as vaccine hesitancy and access to vaccines persist, robust immunization programs and policies can greatly enhance the safety of healthcare workers and the patients they care for.
- Future efforts should focus on improving vaccine coverage among healthcare workers through education, accessibility, and institutional support to ensure that vaccination becomes an integral part of healthcare safety.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