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Mandatory COVID-19 vaccination for healthcare workers: A discussion paper

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A B S T R A C T

Background: The devastating effects of COVID-19 sparked debates among professionals in the fields of health, law, and bioethics regarding policies on mandatory vaccination for healthcare workers. Suboptimal vaccine uptake among healthcare workers had been implicated in the increased risk of nosocomial spread of COVID infection and absenteeism among healthcare workers, impacting the quality of patient care. However, mandatory vaccine policies were also seen to encroach on the autonomy of healthcare workers.

Aims and objectives: To synthesise the arguments for and against mandatory vaccination for healthcare workers (HCWs) and its long-term impact on the healthcare workforce, through an analysis of texts and opinions of professionals from different fields of study.

Methods: This is a systematic review of opinions published in peer-reviewed journals. After initial search in Cochrane and JBI systematic review databases to ensure no previous review had been done, five databases were searched (PsychInfo, Cumulative Index to Nursing and Allied Health Literature (CINAHL), Medline and Scopus). Inclusion criteria were: 1) focused on COVID-19; 2) healthcare workers specific; 3) specific to mandatory vaccination; 4) opinion piece with an identified author; and 5) in English. Exclusion: 1) focus on other vaccine preventable diseases, not COVID-19 and 2) discussion on mandatory vaccination not-specific to healthcare workers. The Joanna Briggs Critical Appraisal tool for Text and Opinions was used to assess quality. Data were synthesised in the summary table.

Results: The review included 28 opinion and viewpoint articles. Of these, 12 (43 %) adopted a pro-mandatory vaccination stance, 13 (46 %) were neutral or had presented arguments from both sides of the debate and only three (11 %) were against. The overall arguments among those who were pro-, neutral and anti-mandatory COVID-19 vaccination were underpinned by ethical, moral and legal principles of such a mandate on a vulnerable healthcare workforce. This review highlighted the polarised opinions concerning choices, human rights, professional responsibilities and personal risks (i.e. health risks, losing a job) with the introduction of vaccination mandate. However, the articles found in this review discussed mandatory vaccination not-specific to healthcare workers. The Joanna Briggs Critical Appraisal tool for Text and Opinions was used to assess quality. Data were synthesised in the summary table.

Conclusion: The review underscores the need to balance the rights of the public to safe and quality care with the rights and moral obligations of healthcare workers during a public health emergency. This can be achieved when policies and mandates are guided by reliable scientific evidence which are flexible in considering legal and ethical dilemmas.

Tweetable abstract: To mandate or not to mandate COVID-19 vaccination for healthcare workers: A synthesis of published opinions in health, law, and bioethics.

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1. Background

World Health Organization (WHO) surveillance data reported that since the start of the pandemic in January 2020, there had been approximately 613,410,796 confirmed cases of COVID-19 infection and 6,518,749 COVID-19 related deaths globally (to September 2022) (World Health Organization, 2021; American Library Association, 2022). Of these, healthcare workers (HCWs) represented an estimated 80,000 to 180,000 (with a population-based estimate of 115,493), recorded from January 2020 to May 2021 to World Health Organization (2021). A more recent review of cross-sectional studies showed that the global pooled prevalence of COVID-19 infection among HCWs was calculated to be 7% (using the antibody method) and 11% (using the PCR method) (Dzinamarira et al., 2021). The COVID-19 pandemic has highlighted the hazardous nature of working in healthcare not only for HCWs and their families, but also for the patients that they care for. Before the emergence of variants, on average, each infected person transmitted the disease and worsening their health is high. In fact nosocomial transmission of COVID-19 infection in early 2020 was estimated to be 15% in a London hospital with a high case fatality rate of approximately 61%. The aim of this paper is to understand mandatory vaccination for HCWs through a synthesis and critical analysis of different opinions from multiple sectors. Specifically, it seeks to answer the question: What are the moral, legal and ethical arguments regarding mandatory vaccination for healthcare workers?

2. Methods

The discussion for or against mandatory vaccination for healthcare workers was based on the integrated opinions of professionals in the field of health, bioethics and law. A systematic search of literature was undertaken in the following databases: PsychINFO, Cumulative Index to Nursing and Allied Health Literature (CINAHL), Medline and Scopus from January 2020 to November 2021. Search terms (Table 1) included healthcare workers and variations to the term including health professionals, health staff, health workers, care workers and specific health workers such as nurses, physicians and allied health professionals. This was then combined with COVID-19 or coronavirus, vaccine or vaccination and the term mandatory including similar terms such as compulsory, mandate and requirement or required. In addition, forward (those who cited the included articles) and backward (those that were cited by authors of the included articles) searches were conducted to ensure that all relevant articles were included. Articles were included if: 1) the focus was only on COVID-19 or coronavirus; 2) specific to healthcare workers; 3) centred on mandatory vaccination; 4) an opinion piece, editorial or commentary with an identified author; and 5) written in English. News articles or surveys and those that discussed other vaccine preventable diseases other than COVID-19 were excluded. Opinion pieces about COVID-19 mandatory vaccination for non-healthcare workers or the general public were likewise excluded. After full text review, backward and forward searches were carried out through Google Scholar searching to ensure comprehensiveness. All authors (DM, MG, YS, JM, LR) summarised each included article and compiled this in a table (Table 2).

Table 1

| Search terms                                      |
|--------------------------------------------------|
| Population                                      |
| Healthcare workers, health professionals, health staff, care workers and specific healthcare workers (nurses, doctors, physicians, allied health professionals); hospital staff, health staff |
| Interest                                        |
| Mandatory vaccination, compulsory vaccination, vaccination requirement |
| Context                                         |
| COVID-19, coronavirus, COVID-19 (MESH) OR SARS-CoV-2 (MESH) OR COVID-19 Vaccines (MESH) OR vaccines (MESH) OR vaccination (MESH) OR immunization (MESH) OR Immunization programs (MESH) OR COVID-19 OR COVID OR "COVID-19 pandemic" OR "Severe Acute Respiratory Syndrome Coronavirus 2" OR "2019 nCoV" OR SARS-CoV-2 |
### Table 2
Summary table.

| No | First author, month & year of publication; country of study; type of publication | Credentials & qualifications of first author | Position on mandatory vaccine | Key points/key questions | Findings/considerations/recommendations | Comments |
|----|-----------------------------------------------------------------------------|---------------------------------------------|--------------------------------|--------------------------|-----------------------------------------|----------|
| 1  | Ayukekbong, 2021 Canada Published in: Canadian Journal of Infection Control, editorial Summer (June-August) 2021 | BMLS, MSc, PhD, CIC, Editor-in-Chief | Pro mandatory vaccine especially among HCWs | o Refers to previous bioethical analysis justifying public health coercion when necessary | o Take measures to boost confidence in vaccine | Nuanced bioethical look into the topic. Carefully articulates and weighs other side of the argument |
| 2  | Baker, N., 2021 USA Published in: Alabama Nurse, opinion piece Aug, Sept, Oct 2021 | INP, CRNP, GS-C, CNE, FAANP, University of Alabama at Birmingham School of Nursing | Neutral | o Legality of mandatory vaccinations for HCWs discussed | o They argue debate will not end quickly in US | They don’t directly state their opinion on mandatory vaccination, so it may not fit the criteria |
| 3  | Bowen, 2020 USA Published in: Clinical Chimica Acta; letter to the editor Aug 2020 | PhD, MHA, MLT, Clinical Professor of Pathology, Stanford Medicine | Yes, but only after an extensive review and careful consideration | o Refers to deontological, utilitarian, and bioethical theories and principles to analyse ethics of mandate | o They argue debate will not end quickly in US | o Develops meticulous criteria for how an ethical and effective mandatory vaccine policy can be created | |
| 4  | Bradfield, 2021 Australia Published in: Clinical Ethics, opinion piece May 2021 | Medical Practitioner, Health Ethics and PhD Candidate, Melbourne School of Population and Global Health, The University of Melbourne, Melbourne, Victoria, Australia | Pro conditional vaccination (a form of mandatory vaccination) | o Vigorously defends mandatory vaccination for HCWs from a bioethical perspective | o They argue debate will not end quickly in US | o They argue debate will not end quickly in US | o Repeased before vaccine safety and efficacy known, so provides a unique and interesting perspective |
| 5  | Dean, 2021 UK Published in: Nursing Management, opinion piece June 2021 | Freelance health writer | Neutral | o Discusses overview of proposed policy as well as precedence for it abroad and domestically within England | o They argue debate will not end quickly in US | o Argument for conditional mandatory vaccination for HCWs (intermediate approach) is fairly unique | |
| 6  | Emmanuel, 2021 USA Published in: Annals of Internal Medicine, opinion piece July 2021 | MD, PhD; Department of Medical Ethics and Health Policy, University of Pennsylvania | Pro-mandatory vaccination | Key points: Mandatory vaccination is an ethical issue. It covers two aspects: o General ethical duty of HCPs to protect others when threat from vaccine harm to oneself is very minimal. o HCps have ethical and professional responsibility | Consideration in mandating COVID vaccination: Mandating vaccination is an ethical obligation that employers should fulfill in healthcare and long-term care settings. | A joint statement was created on mandatory vaccination endorsed and supported by 88 organisations. |
Mandatory vaccination as a legal issue will need to be justified in the existing laws using scientific and legally justifiable evidence of vaccine benefits. Consideration in mandating COVID vaccination:

| Position on mandatory vaccine | Findings (considerations) recommendations |
|------------------------------|-------------------------------------------|
| Pro mandatory vaccine        | Mandatory COVID-19 vaccine is ethically and legally justifiable in Italy. |
| Pro mandatory vaccine        | Structure and Goals of the piece were a little more difficult for me to decipher in this one versus others ones. |
| Mandatory COVID-19 vaccine   | Argues least restrictive/intrusive policy/intervention. |
| Mandatory COVID-19 vaccine   | Support from peak bodies and professional organisations is important in the implementation of vaccine mandate. |
| Mandatory COVID-19 vaccine   | Shared common obligation for all who work in the NHS and care homes to be fully vaccinated. |
| Mandatory COVID-19 vaccine   | At the time of this letter, compulsory vaccination apply to only ‘frontline care workers’. |
| Mandatory COVID-19 vaccine   | Mandatory COVID-19 vaccination among HCPs as proposed in the UK aimed at protecting the public and the health system to those who are vaccine hesitant. |
| Mandatory COVID-19 vaccine   | Should mandatory vaccination be required in the NHS it should be decided at a local level according to whether only ‘frontline staff’ in the NHS and care homes to be fully vaccinated. |

Credentials & qualifications

7 Flood, 2021
SJD; MD, Faculty of Law, Victoria University of Wellington, School of law, Victoria University of Wellington, Wellington, New Zealand

8 Fral, 2021
Department of Anatomy, Histological, Forensic and Orthopaedical Sciences, Sapienza University of Rome, Italy

9 & 10 Glasper, 2021
Emeritus Professor of Nursing, University of Sheffield, UK

11 Green, 2021
Honorary Professor of International Health, Liverpool John Moores University, UK

12 Gras, 2021
PhD, Bernard Hospital of Bordeaux, John Hopkins Hospital, USA
Ethical considerations for mandatory COVID-19 vaccination among healthcare staff

13 Hayes, 2021
UK
Published in BMJ
8 July 2021

Against mandatory vaccination

- Mandating vaccination was seen as coercive and impinging on the civil liberties of its citizens (“Liberty of Non-Vaccination” principle in UK Law since 1898)
- Vaccination was not a “panacea for safety”
- Care home workers who are unvaccinated against COVID-19 face loss of job
- By law, care homes can only permit vaccinated staff, visitors into the premises

14 Hughes, 2021
USA
Published in: Current Medical Research and Opinion (commentary)
April, 2021

Neutral-ethical analysis, although commentary suggests pro-mandatory vaccination may be necessary for healthcare workers

- Addresses questions of fair prioritisation and sub-prioritisation among various groups
- Ethical considerations for mandatory COVID-19 vaccination among healthcare staff

15 Kates, 2021
USA
Published in: Open Forum Infectious Diseases (perspectives)
March 2021

MD, Division of Allergy & Infectious Diseases, University of Washington, Seattle, Washington
Vaccine and Infectious Diseases Division, Fred Hutchinson Cancer Research Centre

Neutral-ethical analysis, although commentary suggests pro-mandatory vaccination may be necessary for healthcare workers

- Should health care institutions mandate SARS-CoV-2 vaccination for staff?
- Healthcare workers prioritised for vaccination but hesitancy is limiting uptake
- Hesitancy = novelty and mRNA-based mechanism, accelerated development, side-effects, scepticism: low transmission and seriousness, safety and utility
- Pro-mandates: favour balance of harms and benefits for individuals and communities (beneficence vs maleficence) plus moral imperative of health workers and organisations to provide a safe environment, reduce transmission and role model behaviour. Precedent set with influenza vaccine.
- Against mandates: violation of personal autonomy, vaccine still “experimental” (limited evidence), alternate strategies to prevent transmission, mandate may lead to redeployment and shortages, financial burdens and relationship breakdown between employer/employee. Minority groups may be more affected by mandates.

16 Kevat, 2021
Australia
Published in: The Medical Journal of Australia

MD, Endocrinologist

Pro-mandatory vaccination. It also outlined restriction the types of law that can be made by the Federal Parliament, defined within the Australian

- Under the Australian law, is mandatory vaccination of healthcare workers permissible?
- At the time of this paper publication, the aged care workforce had yet to be mandated to be vaccinated
- Pay compensation secondary to effects of vaccination as a condition of employment

Authors contend that increasing stricter sanitation and infection control measures in care homes and funding for PPEs, in addition to providing access to vaccination, training, paid leave for vaccination and decent wages are more effective measures. Mandatory vaccination in care homes is “unnecessary, disproportionate and misguided.”

Healthcare systems could partially mandate for higher exposure risk personnel and those who work with vulnerable populations.
| No | First author, month & year of publication; country of study; type of publication | Credentials & qualifications of first author | Position on mandatory vaccine | Key points | Key questions | Findings [considerations] | Recommendations | Comments |
|---|---|---|---|---|---|---|---|---|
| pre-print 22 April 2021 | | Constitution. Public health legislation is primarily the responsibility of Territories and States governments. | | | | has been considered by New South Wales government | | reasonable, except for medical exemptions. |
| 17 | Khunti, 2021 UK Published in: Journal of the Royal Society of Medicine (commentary) May 2021 | CBE, FRCP, FRCP, MD, PhD, FMedSci University of Leicester, UK Chair of the SAGE Ethnicity sub-panel, Professor of Primary Care Diabetes & Vascular Medicine | Against mandatory COVID-19 vaccination, that is, to avoid mandate, until all concerns of healthcare workers were addressed. | | Issue of concern raised in this commentary: low uptake of COVID-19 vaccine among healthcare workers in UK and USA due to perceived vaccine hesitancy | Reasons for mandatory vaccination considerations also discussed | More acceptable alternatives than mandatory vaccination: | |
| 18 | Klompas, 2021 USA Published in: Annals of Internal Medicine Ideas and opinions September 2021 | MD, MPH, Department of Population Medicine, Harvard Medical School & Brigham and Women's Hospital, Boston, USA | For mandatory COVID-19 vaccination of healthcare workers. | | Justifications of why HCWs should be vaccinated | Mandatory vaccination is a common policy for healthcare workers, example mandating influenza vaccination | | |
| 19 | Leask et al 2021 Australia Published in: Medical Journal of Australia 13 September 2021 | Professor of Nursing University of Sydney Neutral - may be justified for HCWs. | The mandate for vaccination for HCWs may be justified depending on the situation where employees are at high risk of getting COVID or infecting vulnerable groups of people as part of the work | | | | |
Opting out of vaccination would restore autonomy of HCWs making them feel empowered.

Views of patient regarding mandatory vaccine for healthcare workers

Looking at the issue through the lens of mandatory vaccine for healthcare workers, nurses and other HCWs, through the lens of beneficence, non-malefice, autonomy and justice.

Supporting those who might not be able to access vaccination or removing all barriers, such as providing on-site workplace vaccination and allowing staff to ask questions about vaccines (addressing health literacy issues).

Support plan for the mandate (i.e. allowing medical exemptions and policies in consultation with the concern groups (HCWs and peak bodies)).

Patients especially those who are immunocompromised must be able to trust their healthcare and support workers; to be protected "by and from staff".

Healthcare workers must support staff to have vaccination through paid time off.

Employment in the healthcare sectors should be conditional on having the vaccine. Soft mandates like weekly testing in lieu of vaccination mandate are not as effective.

Exemptions should only be considered for those who are medically ineligible.

Those who are medically ineligible to have vaccination should not be assigned to direct patient care especially those who are at high risk.

Explored ethical framework of mandatory vaccine for healthcare workers may be beneficial for patients and colleagues in the clinical setting but unethical.

Opting out of vaccination would restore autonomy of HCWs making them feel empowered.

Justice – right to make personal decisions without interference from the government; however, as mandated by law, right to choose can be restricted by government in the interest of public health concerns.

Overly coercive regulation undermined the goodwill of frontline healthcare workers, and foster resistance, resentment, and mistrust.

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Therefore, proposing principles of least restrictive alternative, the intervention ladder for COVID-19 vaccination policies for healthcare workers Bradfield and Giubilini, 2021 paper: Education campaigns or professional development activities to encourage vaccine uptake of frontline healthcare workers.

Unvaccinated healthcare workers to sign statement to explain why refusal, and low rates of vaccination groups were highlighted.

Overly coercive regulation undermined the goodwill of frontline healthcare workers, and foster resistance, resentment, and mistrust.

Government decision: Introduction of mandatory vaccination in care homes on 16 June 2021.
| No | First author, month & year of publication; country of study; type of publication |
|----|--------------------------------------------------------------------------------|
| 23 | Parker, 2021 UK Published in: BMJ August 2021 |
| 24 | Shemtob et al., 2021 UK Published in BMJ; Policymakers and Healthcare Workers Editorial August 2021 |
| 25 | Stokel-Walker, 2021 UK Published in: BMJ Feature June 2021 |
| 26 | Talbot, 2021 |

| Credentials & qualifications of first author | Position on mandatory vaccine | Key points [key questions] | Findings [considerations] recommendations | Comments |
|---------------------------------------------|-----------------------------|-----------------------------|--------------------------------------------|----------|
| BEd (Hons), MA, PhD Ethox Centre, Nuffield Department of Population Health, University of Oxford | One author for mandatory vaccination: Parker: | From a moral standpoint, vaccination poses low risk for HCWs, if their unvaccinated status poses a risk to patients then they are obliged to accept vaccination. | Duties of easy rescue: COVID-19 vaccine has been shown to have positive impact on patient safety and has low risk for adverse effects which establish the duty of healthcare professionals to protect patients. | | |
| Three authors (Bedford, Ussher and Stead) against | | | | | |
| | | | | | |
| PhD; Department of Primary Care and Public Health, School of Public Health, Imperial College London, London, UK | Against | | | | |
| | | | | | |
| Freelance journalist News and features journalist, The Times & Sunday Times, The Economist, Bloomberg, the BBC and Wired, specialising in digital culture and YouTube. | Not stated | | | | |
| | Key points: | | | | |
| | | | | | |
| MD, MPH Pro-mandatory vaccine for | Key points for mandating vaccination: | | | | |
| | | | | | |

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| | Key points: | | | | |
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| | | | | | |
HCPs higher risk of infection many with severe outcomes but mitigated by use of PPEs.
Asymptomatic infection is high among HCPs, high risk of transmission especially to immunocompromised and vulnerable patients.
COVID-19 vaccines safe and highly effective, reduced asymptomatic infection and transmission.

Healthcare professionals have an ethical responsibility to health and well-being of society and the vulnerable in the community.
Vaccination is integral to duty of care and code of conduct (particularly nurses).
Healthcare professional organisations are calling for employers to mandate vaccination among workforce (medical, nursing, pharmacy, public health, home care, hospice etc.).
Ethical responsibility among healthcare workers to abide by code and uphold ethical principles and maintain community health and safety.
All healthcare professionals have an ethical responsibility to be vaccinated in the fight against COVID-19.

Using the Prospect Theory by Tversky and Kahneman, people assess their potential to lose or gain, asymmetrically with a focus on aversion of loss.

A novel approach considered by hospitals is reframing loss aversion of those who are vaccine hesitant by increasing burden for the unvaccinated.

For example, for the unvaccinated, mandating discomfort of measures to reduce spread such as N95 mask instead of surgical masks for those who are vaccinated will magnify the benefits of vaccination.

HCWs have a clear duty to do no harm to patient. Potential of an asymptomatic COVID-19-infected caregiver transmitting the infection to vulnerable patients and co-workers have been documented and therefore mandating vaccination is an obvious step to control the pandemic.

Increasing the burden of being unvaccinated for HCWs (for example weekly testing, using N95 and extra protection will increase perception of benefits of vaccination and reduce loss aversion (loss of freedom or autonomy).
2.1. Data synthesis and analysis

Data relevant to the research question were extracted (DM, MG, YS) which included authors and their qualifications, journal, source country, date published and position on the issue of mandatory vaccines including the relevant points considered by the authors. Content analyses using an inductive approach were carried out and discussed iteratively by all the authors until consensus was achieved.

3. Overview of the included articles

The search identified 1413 articles from four databases (PsychInfo, CINAHL, Medline and Scopus). After removal of duplicates, 870 titles and abstracts were screened independently by two authors (DM and MG) of which 53 full text articles were examined further. Of these, 21 articles were considered eligible for inclusion with a further seven articles added from forward and backward searches of included articles, yielding a total of 28 articles for the review.

Of the 28 included articles, only one was written in 2020 (Bowen, 2020), six (21 %) were published in the first four months (January to April) of 2021 (Osbourne and Clark, 2021; Flood et al, 2021; Hughes et al., 2021; Gur-Arie et al., 2021; Kates et al., 2021; Kevat et al., 2021), 18 (64 %) in the next four months (May to August 2021) (Ayukekbong, 2021; Visagie, 2021; Talbot, 2021; Stokel-Walker, 2021; Parker et al., 2021; Palmer, 2021; Mittelman, 2021; Shemtob et al., 2021; Khunti et al., 2021; Hayes and Pollock, 2021; Green, 2021; Klompas et al., 2021; Glasper, 2021b; Glasper, 2021a; Emanuel and Skorton, 2021; Bradfield and Giubilini, 2021; Dean, 2021; Frati et al., 2021) and a further three (11 %) (Baker and Blakely, 2021; Leask et al., 2021; White et al., 2021) from September to November 2021 when the search was completed. Articles were published as discussion papers, brief summaries, viewpoints or feature articles (64 %), editorials (25 %) or letters to the editor (11 %). Authors of these articles were from five countries, mostly from the USA (n = 11) (Baker and Blakely, 2021; Bowen, 2020; White et al., 2021; Visagie, 2021; Talbot, 2021; Mittelman, 2021; Klompas et al., 2021; Kates et al., 2021; Hughes et al., 2021; Gur-Arie et al., 2021; Emanuel and Skorton, 2021); and the UK (n = 11) (Dean, 2021; Stokel-Walker, 2021; Parker et al., 2021; Osborne and Clark, 2021; Shemtob et al., 2021; Khunti et al., 2021; Green, 2021; Glasper, 2021b; Glasper, 2021a; Hayes and Pollock, 2021; Palmer, 2021); with three from Australia (Bradfield and Giubilini, 2021; Leask et al., 2021; Kevat et al., 2021); two from Canada (Ayukekbong, 2021; Flood et al., 2021), and one from Italy (Frati et al., 2021). The lead author of 20 articles (71 %) had health-related credentials (doctors, nurses or allied health specialty), three (11 %) were freelance journalists, two (7 %) had qualifications in law, and two (7 %) had expertise in medical ethics and interestingly, one (4 %) was a patient advocate.

4. Pro-mandatory, neutral and anti-mandatory vaccination for HCWs

Of the 28 articles included, 12 (43 %) (Ayukekbong, 2021; Bradfield and Giubilini, 2021; Emanuel and Skorton, 2021; Frati et al., 2021; Green, 2021; Gur-Arie et al., 2021; Kevat et al., 2021; Klompas et al., 2021; Mittelman, 2021; Talbot, 2021; Visagie, 2021; White et al., 2021) took a pro-mandatory vaccination stance, 13 (46 %) (Baker and Blakely, 2021; Dean, 2021; Flood et al., 2021; Glasper, 2021b; Glasper, 2021a; Hughes et al., 2021; Kates et al., 2021; Leask et al., 2021; Palmer, 2021; Parker et al., 2021; Stokel-Walker, 2021; Osborne and Clark, 2021; Bowen, 2020) were neutral or presented both sides of the debate, and three (11 %) were against (Hayes and Pollock, 2021; Khunti et al., 2021; Shemtob et al., 2021). Seven (58 %) of the twelve authors who were in favour of mandatory vaccination were from the USA (Emanuel and Skorton, 2021; Gur-Arie et al., 2021; Klompas et al., 2021; Mittelman, 2021; Talbot, 2021; Visagie, 2021; White et al., 2021) whilst a similar number, 7 of 13 (54 %) of those who were neutral or presented both sides of the issue were from the UK (Dean, 2021; Glasper, 2021b; Glasper, 2021a; Palmer, 2021; Parker et al., 2021; Stokel-Walker, 2021; Osborne and Clark, 2021). All authors who were against mandatory vaccination for HCWs were from the UK (Hayes and Pollock, 2021, Khunti et al., 2021, Shemtob et al., 2021). The only patient advocate (Mittelman, 2021) was from the USA who supported vaccination mandate for HCWs. Among those with medical or health related credentials, nine of 12 authors (75 %) were pro-vaccination mandate (Ayukekbong, 2021; Bradfield and Giubilini, 2021; Emanuel and Skorton, 2021; Frati et al., 2021; Green, 2021; Gur-Arie et al., 2021; Kevat et al., 2021; Klompas et al., 2021; Mittelman, 2021; Talbot, 2021; Visagie, 2021; White et al., 2021), eight (67 %) were neutral (Baker and Blakely, 2021; Glasper, 2021b; Glasper, 2021a; Kates et al., 2021; Leask et al., 2021; Osborne and Clark, 2021; Bowen, 2020) and two (17 %) were against (Khunti et al., 2021; Shemtob et al., 2021). The two authors with law qualifications were either neutral (Flood et al., 2021) or against (Hayes and Pollock, 2021) mandatory vaccination. Two of those with medical ethics credentials were pro-mandatory vaccination (Bradfield and Giubilini, 2021; Emanuel and Skorton, 2021) and one was neutral (Parker et al., 2021). A summary of the characteristics of these articles is in Table 3.

4.1. Pro-mandatory vaccination: the arguments

A number of authors cited ethical and legal arguments in favour of mandatory vaccination, including those with neutral views. The three ethical principles of justice, beneficence and non-maleficence were discussed as the primary justification for mandating vaccination for HCWs.

4.1.1. Ethical considerations (justice, beneficence and non-maleficence)

Arguments in favour of mandatory vaccination for healthcare workers prioritised two key professional responsibilities based on fiduciary duty: to uphold the bioethical and utilitarian principles of beneficence and non-maleficence. Many authors spoke of the expectation HCWs had to act in the best interests of the patient (beneficence) and their duty within codes of conduct to minimise the risk on the public (Ayukekbong, 2021; Emanuel and Skorton, 2021; Klompas et al., 2021; Parker et al., 2021; Visagie, 2021; Osborne and Clark, 2021) and themselves (Frati et al., 2021; Klompas et al., 2021) through vaccination. Both Emanuel and Skorton (2021) and Parker et al. (2021) added that vaccination had a limited burden of risk to HCWs themselves hence there was a moral imperative. Others discussed making judgements based on vaccine efficacy (Bowen, 2020) and implementing least restrictive measures first but did not rule out mandatory vaccination (Gur-Arie et al., 2021; Kevat et al., 2021), although alternative options should be offered to those who refuse or had medical

Table 3: Characteristics of pro-, neutral and anti- mandatory vaccination articles for HCWs.

| Parameters | Pro (n = 12) | Neutral (n = 13) | Anti (n = 3) |
|------------|-------------|-----------------|-------------|
| Country    |             |                 |             |
| Australia  | 2 (17 %)    | 1 (8 %)         | 0           |
| Canada     | 1 (8 %)     | 1 (8 %)         | 0           |
| Italy      | 1 (8 %)     | 0               | 0           |
| United Kingdom | 1 (8 %) | 7 (54 %)        | 3 (100 %)   |
| United States | 7 (58 %) | 4 (31 %)        | 0           |
| Credentials |            |                 |             |
| Medical/health-related | 9 (75 %) | 8 (62 %)        | 2 (67 %)    |
| Medical ethics | 2 (17 %) | 1 (8 %)         | 0           |
| Health writer/journalist | 0      | 3 (23 %)        | 0           |
| Legal/Law  | 0           | 1 (8 %)         | 1 (33 %)    |
| Patient advocate | 1 (8 %) | 0               | 0           |
| Date of publication |     |                 |             |
| Mid-year, 2020 (n = 1) | 0      | 1 (8 %)         | 0           |
| Jan–April 2021 (n = 6) | 0      | 2 (15 %)        | 0           |
| May–August 2021 (n = 18) | 9 (75 %) | 6 (46 %)        | 3 (100 %)   |
| Sep–Dec 2021 (n = 3) | 1 (8 %) | 2 (15 %)        | 0           |
exemptions (Kevat et al., 2021; Mittelman, 2021; Talbot, 2021) including leave or redeployment to non-clinical roles or areas (Bradfield and Giubilini, 2021; Mittelman, 2021) prior to termination (Bradfield and Giubilini, 2021).

Similarly, the importance of not doing harm (non-maleficence) and weighing the risks against benefits was reported by authors in favour of mandatory vaccination. Without mandates, patients were seen to be at risk of harm (Bradfield and Giubilini, 2021). Mittelman (2021), the patient advocate, explained that HCWs had an obligation to protect people who were vulnerable and immunocompromised from any harm and their employment should be conditional on vaccination. HCWs might be asymptomatic but were seen to be vectors for high transmission to people who were vulnerable so should be vaccinated to fulfil the duty of ‘do no harm’ (Talbot, 2021; White et al., 2021). Furthermore, Hughes et al. (2021), when arguing for mandatory vaccination, stated that healthcare facilities and HCWs should be held accountable in providing a safe environment for patient care. Overall the benefits were seen to outweigh the risks, and the vaccine was considered more effective than influenza vaccines (Klompas et al., 2021) and therefore generally safe and effective for HCWs (Talbot, 2021).

Three authors discussed justice and fair and equitable distribution of risks and benefits (Bowen, 2020; Green, 2021; Osbourne and Clark, 2021), with Green (2021) maintaining that all staff in the UK (not only frontline) in the National Health Service (NHS) and care homes should be vaccinated for equity.

4.1.2. Legal rights of patients vs legal rights of HCWs (right to autonomy)

Legislation regarding the legal rights of HCWs and the occupational health and safety legislation governing employers in different countries varied. For example, Canadian legislation required employers to ensure safety and protect employees from occupational hazards (Ayukekbong, 2021) which placed mandatory vaccination as fulfilling this decree. The legality of the employers’ requirement for vaccination from their employees must be evaluated based on “reasonableness” and challenged under the Canadian Charter of Rights and Freedom specifically for employees with medical or cultural reasons to refuse vaccination (Flood et al., 2021). In Australia, the Biosecurity Act 2015, required employers to implement appropriate measures to prevent and reduce the spread of diseases which could include mandatory effective vaccination (Kevat et al., 2021). The Amendments to the Vaccination Act of 1898 and 1907 in the UK, in the wake of protests against compulsory smallpox vaccination, legally recognised the rights of those who were “honestly opposed to vaccination” (Hayes and Pollock, 2021).

Whilst mandating vaccination was seen as a violation of the rights of choice and autonomy of HCWs, caregiving that might potentially put patients at risk, was also seen as a violation of the patient’s rights to safe care (Ayukekbong, 2021). Flood et al. (2021), on the other hand, discussed a case ruling which found that mandatory policy encroached upon the rights of a person, stating that “forced medical treatment (flu vaccination in this case) is an assault if there is no consent” (p. E219). In the United States, Baker and Blakely (2021) argued that whilst private employers might enforce mandatory vaccinations, legal exemptions should be granted on religious and disability-related reasons, however, should unvaccinated employees threaten the health of others, then termination should be considered. On the other hand, Klompas et al. (2021) cited the efficacy of the vaccine and impending approval (at the time of review) of the United States Food and Drug Administration and precedent US court ruling in favour of healthcare organisations, as the legal basis for mandating COVID-19 vaccination for healthcare workers.

5. Anti-mandatory vaccination: the arguments

Three authors expressed views against mandatory vaccines for HCWs (Hayes and Pollock, 2021; Khunti et al., 2021; Shemtob et al., 2021). Authors who had neutral views also presented negative sides of the argument but balanced it with a discussion on the perceived benefits. The anti-mandatory vaccination arguments centred on the ethics of mandating vaccination, contending that: i) the benefits of vaccination were not significant enough to override the right of healthcare workers to choose; ii) mandating vaccination was discriminatory and might cause stigmatisation, isolation and mistrust in those who refused to be vaccinated; and iii) mandating vaccination deprived healthcare workers of the right of choice (Osbourne and Clark, 2021; Shemtob et al., 2021; Khunti et al., 2021; Kates et al., 2021; Gur-Arie et al., 2021). Hayes & Pollock (2021) believed that mandating vaccination for HCW was unnecessary as the vaccination rates among HCW in the US were already high. Further, like other medical interventions, vaccination should be offered as a choice, providing recipients with accurate information on which to base their decision (Kates et al., 2021; Shemtob et al., 2021). Mandatory vaccination was argued to take away HCWs’ right to choose treatment preferences including vaccination (Hughes et al., 2021).

Parker et al. (2021) and Palmer (2021) expressed the opinions that mandating vaccination for HCWs was an easy solution to a more complex issue of vaccine hesitancy and did not adequately address the underlying problem. Other strategies were proposed by some authors (Parker et al., 2021; Palmer, 2021; Leask et al., 2021; Kates et al., 2021; Gur-Arie et al., 2021) including use of masks, stringent testing and improving policies in relation to a stepwise approach to vaccination strategies, including redeployment to non-clinical areas.

Valid and legitimate reasons for vaccination exemptions, such as medical conditions and religious beliefs, were also discussed (Ayukekbong, 2021; Baker and Blakely, 2021). Medical conditions included those conditions in which the person believed that their risk of serious illness or death would be increased should they receive the vaccination (Baker and Blakely, 2021; Mittelman, 2021). Therefore, based on their non-vaccinated status, some authors proposed that these HCWs should not be assigned to provide care to patients who are at high risk (Kates et al., 2021; Shemtob et al., 2021). Whilst this could be an option for health services to explore, a concern raised was redeployment of essential non-vaccinated care workers to non-clinical roles will further decimate the HCW workforce in critical areas of healthcare such as aged care and emergency (Glasper, 2021b; Kevat et al., 2021; Parker et al., 2021; Shemtob et al., 2021). In addition, pressure from employers for staff to get vaccinated may push essential health staff to leave employment or be dismissed (Palmer, 2021; Parker et al., 2021).

6. Recommendations from articles reviewed

Authors of the articles reviewed discussed four core recommendations. First, public health authorities should consider less intrusive public health strategies before implementing a mandatory vaccination policy (Bradfield and Giubilini, 2021; Palmer, 2021), including stricter monitoring of infection control measures, adequate supplies of personal protective equipment and resources and appropriate COVID-19 testing. Secondly, mandatory vaccination policies should be implemented equitably, consistent with broader public health safety measures (Flood et al., 2021; Hughes et al., 2021; Kates et al., 2021; Klompas et al., 2021), ensuring that education on vaccine safety was provided as well as, timely and transparent information on vaccine effectiveness. Thirdly, these policies should clearly communicate any medical-based or religious exemptions (Baker and Blakely, 2021; Kevat et al., 2021; Leask et al., 2021), reasons for redeployment to non-clinical roles (Palmer, 2021; Parker et al., 2021; Shemtob et al., 2021) and compensation to healthcare staff who developed adverse symptoms post COVID-19 vaccination (Bowen, 2020; Flood et al., 2021). Lastly, logistical and financial barriers to vaccination must not be overlooked, and any mandatory vaccination policy should be accompanied by support for HCWs to get paid time off to receive the vaccination and to have access to on-site vaccination options (Mittelman, 2021; Hayes and Pollock, 2021; Leask et al., 2021; Khunti et al., 2021).
7. To mandate or not to mandate

This review has identified that there are polarised opinions on mandatory vaccination for HCWs that centre on weighing the risks versus benefits, ethical and legal responsibilities as well as rights for personal autonomy. Those who expressed views in favour of mandatory vaccination for HCWs primarily cited ethical and legal rights and duties to protect themselves and the public, justifying the safety profile of the vaccine. There is evidence that COVID-19 is serious, with high morbidity and mortality rates (Piroth et al., 2021; Zylke and Bauchner, 2020; Chang et al., 2022), notwithstanding the latest reports of long-covid symptoms (Evans et al., 2022; Brown et al., 2022). Yet understandably there will be ‘vaccine refusal’ and ‘vaccine hesitancy’ (Wiysonge et al., 2022; Al-Amer et al., 2022), a term defined by healthcare professionals, journalists, and policymakers, as the research evidence is limited with this being a relatively new viral infection with novel vaccines (Karafillakis et al., 2022). Furthermore, those presenting arguments against a mandate emphasised that mandatory vaccination for HCWs impinged on and violated the human right of personal autonomy, culminating in fear and mistrust of health authorities, stigma, and isolation. Making legislation and laws more stringent does not address the issue of hesitancy (Drew, 2019), although education and authoritative and reliable information can make an impact (Al-Amer et al., 2022).

The complexity for healthcare workers is that they are often duty-bound in their professions to uphold bioethical and utilitarian principles as part of professional and ethical codes of practice (Bremna and Das, 2021). For instance, the Hippocratic oath crafted 2500 years ago sets out the historical and philosophical underpinning of the role of the medical profession, in that medicine should be practised to benefit the sick and protect patients against harm (Hajar, 2017). A contemporary companion to this oath is the World Medical Association’s Declaration of Geneva which outlines the values and principles of being a doctor and includes statements, among many others, such as: “I solemnly pledge to consecrate my life to the service of humanity; will practise my profession with conscience and dignity; The health of my patient will be my first consideration” (World Medical Association, 2018). Similarly the nursing profession is bound by codes and professional standards with the founder, Florence Nightingale declaring the first overriding principle to “do the sick no harm” (Nightingale, 1863). Whilst healthcare professionals are bound by a duty to these principles, the dilemma has been that professional organisations have not voiced clear and consistent messages on their position on this issue. The expectations for those who work in these professions and the health industry have also influenced the opinion that nurses are a diverse group, which might cause division rather than increased uptake of vaccines among healthcare workers (Royal College of Nursing, 2022a; Royal College of Nursing, 2022b).

More recently the International Council of Nurses released a statement highlighting nurses’ professional responsibility in making decisions to be vaccinated (Australian College of Nursing, 2021). It may be the case therefore that the variations in opinions on mandatory vaccination by professional bodies representing healthcare professions, may have some influence on the current and ongoing divergent discourse related to vaccine mandates.

Nevertheless, the COVID-19 pandemic itself has been the catalyst for a flow on effect that has impacted healthcare workers and healthcare systems. There has undoubtedly been a financial impact to services with workforce shortages due to increased sick leave and quarantine of staff during periods of the pandemic (Newham and Hewison, 2021), with concerns for redeployment and redundancy adding further pressure on a depleted and exhausted workforce (Royal College of Nursing, 2022b). The consequent workforce shortages have overburdened health systems and staff during the pandemic, with high bed occupancy rates, increased need for intensive care medical units and lack of personal protective equipment (Sen-Crowe et al., 2021) leading to high levels of HCW burnout, fatigue and stress (Tracy et al., 2020; Yamane et al., 2022) which all ultimately impact on the quality of patient care.

Despite the diverse opinions and differing standpoints on vaccination noted in this review, a considered and thoughtful review of policies, focusing on prioritising the best interests of healthcare workers and the general public whilst maintaining some flexibility is recommended. Noni MacDonald, a founding member of WHO’s Global Advisory Committee on Vaccine Safety advises that “Governments should frame their policy-making decisions around two questions: What problem are you trying to fix? And is a mandate the way to fix it?” (Drew, 2019). For this reason, whether opinion is for, against or undecided on a vaccine mandate, ultimately HCWs should consider employing means at all costs to protect their health and those in their care and continue to ‘do no harm’.

8. Strengths and limitations

The opinions of professionals from different areas of specialty including a patient advocate were analysed and discussed. However, the continuing and dynamic waxing and waning of the COVID-19 pandemic, including the differences in vaccination policies and pandemic response measures undertaken by governments, posed challenges in synthesising opinions on mandatory vaccination for HCWs. It is important to note that the opinion articles published between January 2020 and November 2021 were reviewed in this discussion paper and considering the lag time between completion of the manuscript and publication of included articles, new data may have emerged which could have influenced the opinions of authors in this review. Restricting the search to articles published in English, whilst necessary due to funding constraints, is a serious limitation of the discussion on mandatory vaccination for HCWs considering that many non-English speaking countries have experienced a high number of cases extracting more critical demands from healthcare workers. It is recommended that a review of opinions in countries whose primary language is not English be undertaken to provide a deeper insight into other cultural dimensions that may have influenced opinions regarding mandating vaccination for HCWs, as a multi-country Asia-Pacific study (Chew et al., 2021) identified that more than 95 % of HCWs self-reported a willingness to vaccinate. A strength of the review was that opinions on mandatory vaccination were diverse, with opinions from health and legal professionals as well as a healthcare user. However, the fast and evolving science behind the COVID-19 pandemic and the shifting opinions of professionals in the field warrant ongoing review, to ensure that the pulse of public opinion is considered in health policy planning and implementation.

9. Conclusion

Mandating COVID-19 vaccinations for healthcare workers is a complex issue. A careful and collaborative, participatory review by key stakeholders regarding mandatory vaccination policies is needed. This
should ensure a balance between the rights of healthcare workers for autonomy and the rights of the public to safe, quality healthcare during a pandemic. Healthcare workers’ acceptance or resistance to mandates can be influenced by policies that are based on solid scientific evidence but at the same time, these need to be flexible to consider ethical dilemmas and personal rights. As Hayes & Pollock (2021) argued, “vaccination is not a panacea for safety.” Further, professional bodies have a role to play in ensuring that members have adequate access to reliable information resources and support, as well as expert vaccination guidelines that they can refer to when required. Support for vulnerable HCWs is essential and should be part of a short- and long-term pandemic response.

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Della Manze: Conceptualization, Methodology, Data curation, Validation, Formal analysis, Writing – original draft, Writing – review & editing, Supervision, Project administration. Yenna Salamonson: Conceptualization, Methodology, Data curation, Validation, Formal analysis. Writing – original draft, Writing – review & editing, Supervision.

Maxwell Grollman: Conceptualization, Methodology, Data curation, Validation, Formal analysis, Writing – original draft, Writing – review & editing, Project administration.

Jed Montayre: Conceptualization, Methodology, Data curation, Validation, Formal analysis, Writing – original draft, Writing – review & editing, Lucie Ramjan: Conceptualization, Methodology, Data curation, Validation, Formal analysis, Writing – original draft, Writing – review & editing, Supervision.

Declaration of Competing Interest

None.

Appendix A. Supplementary data

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