_____

From: sue coffman
Sent: 4/6/2025 11:37:02 AM
To: DOH WSBOH
Cc:
Subject: Public Comment: Water Fluoridation??

External Email

To the entire board of the WA State Board of Health:

When will you actually give complete attention to the issue of water fluoridation?

You have been promising a deep-dive for several months, and I personally feel that you just keep pushing it away until the public gives up. In March, the board gave the fluoridation panel members until the upcoming April 9th meeting, "or soon thereafter" to provide the science on water fluoridation. Nothing has happened yet, and this coming Wednesday is the 9th of April.

Just do what you propose to do, instead of coming up with other items in order to avoid the process. The investigation into fluoride will not be a quick exploration, but you can't ignore it. Fluoride is known to cause more harm then good, and that information is coming out state by state. Be one of the better states, and do your diligence as a Board.

Obviously you must have vested interest in NOT pursuing The Truth, as one of your constituents pointed out recently: "The fluoridation lobby is merciless and have strong vested interests to protect their reputations and profits."

A very concerned citizen,

Sue Coffman

714-337-4331
CHDwa Chapter Co-Leader

https://wa.childrenshealthdefense.org/
<https://gcc02.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwa.childrenshealthdefense.org%2

ICWA Team Leader
Legislative District #24
https://informedchoicewa.org/
<https://gcc02.safelinks.protection.outlook.com/?url=https%3A%2F%2Finformedchoicewa.org%2F&data=

_____

From: Olemara Peters
Sent: 4/6/2025 9:18:12 PM
To: Foust, Chelsea S (DOH),DOH WSBOH,DOH EPH DW Info
Cc:
Subject: No to fluoridation

attachments\2CACC658E80F4B73_250316 OP-WSDOH, re fluoridation.pdf

External Email

Dear Ms. Foust and Members of the Washington State Board of Health & Department of Health,

I'm attaching comment apropos of your April 9 hearing about fluoride.

Thank you.

Sincerely,

Olemara Peters, Redmond

To: <Chelsea.Foust@doh.wa.gov>, DOH WSBOH <wsboh@sboh.wa.gov>, <DWInfo@doh.wa.gov>

April 6 2025

Dear Ms. Foust and Members of the Washington State Board of Health & Department of Health,

Thank you for giving thought to the matter of fluoridation. I'm writing in support of the testimony that Bill Osmunson DDS, MPH, will provide you on April 9. Thank you for assigning time to hear him clearly!

I have some firsthand experience I hope will contribute:

In the 70's I downspiralled in food-allergies/ intolerances, lost the use of 90% of kinds of food, nearly died — took 6 years' search to find a way out of that tailspin -- eventually regained safe use of most of the foods.

I then learned the hard way, repeatedly, that my fastest way back into that downspiral is fluoride exposure. Each incident takes me weeks or months of detox all over again, to regain my food-tolerances. (Being able to eat is a major incentive for clear observation!) I spent much of those 6 years keeping a food-diary of every bite and every effect.

I get the same ill-effects from fluoridated water supplies, filtered, as I get from unfiltered. The component that normal filters don't remove, IS FLUORIDE.

For me the signals include (some starting within an hour of exposure) headache, hayfever, —> sore throat and canker sores and cold and deep cough, disrupted sleep, muscle spasms ("charlie horses"), aching joints and muscles, digestive disruption…all persisting for months. This cascade is triggered by my drinking even a glass or two of fluoridated water, or eating one or two meals cooked with it or grown on it; or soaking in a tub of it. Filtered water doesn't help -- that's how I learned (by repeated experience) that fluoride isn't removed by normal "filters" -- requires much more costly equipment, that many households can't afford. F-removal involves expensive, voluminous, high-maintenance technologies (comparable to desalination); so a lot of people think they're defluoridating their water when they're not.

All these signals, that my system uses to protest fluoride, are widespread in society — we've only to walk into any drugstore to see the $billions scale of the industry of drugs to suppress them (thus suppress also what people could be learning from them).

People aren't taught the observation-skills to instead learn from the signals, be able to distinguish and avoid the causes. It seems unlikely that, out of all the people who get such signals (enough to support this massive industry), I'm the only one whose system uses them to object to this especially ubiquitous, cumulative, hard-to-avoid toxicant.

I was able to reduce my ills for a while, by addressing them as food-allergies/ intolerances; however, I went on to lose the use of 90% of kinds of food, and kept losing more -- despite years of 5-day food-rotation, complete food-diary, and other such preoccupying practices. Nobody should ever have to do these again -- I did enough for everybody! But I did learn a lot that I hope others can find an easier way to learn.

For 6 years I did the rounds of healthcare professionals, both medical and natural.

In 1979 I began using unfluoridated water -- at least at home, for drinking and cooking -- though I didn't yet fully realize its significance.

In 1981 I found a health-resource better-focused on metabolic/ immune balance than most. In 2 months, it knitted my biochemical downspiral back up -- gave me back safe use of 80% of those foods. For 44 years since, I've been able to eat freely -- except that each fluoride exposure knocks me back into the downspiral (so, weeks or months of stringent detox-practices all over again, to rebuild my assimilation <—> safe tolerances).

I had to learn this many times over (because avoiding fluoride, in this society where it's everywhere, is such a challenge that I really didn't want to know -- it makes it nearly impossible to travel, eat out, spend much time with family and friends or at professional meetings, etc,…). But it's taught me that — for me at least -- food allergies and intolerances (blocked assimilation, and all the resulting signals) are all just intermediate steps of causality -- fluoride is the top link in the whole chain.
I couldn't have discovered this -- or survived long enough TO discover it -- but for my household's already baseline practice of unfluoridated water. Only by getting sufficiently clear of the ubiquitous toxicant, was I able to discover the contrast with re-exposures.

I now spend, on average, 6-8 hours per month hauling and stowing the water that's safe for me, sanitizing jugs, etc. — an onerous workload-preemption such as nobody would undertake voluntarily (let alone while also paying for a "utility" I can't use!). Also, water fluoridation prevents me using public transport, as I've found that (even on supposedly-brief errands) I need to carry at least 3 days' water in case of emergency; so, fluoridation keeps me locked into driving a car. I'd <u>like</u> to use public transport — but the emergency water is more than I can well backpack, let alone on top of whatever's needed for my errands. (If, instead, municipal water supplies weren't fluoridated, a portable filter would serve me just fine, in which case I'd be much less dependent on a car. Also it would help if bottled-water labeling were required to include fluoride levels — as it already does, in Canada, but not yet here.)

According to studies (1, 2, 3)*, humans retain 50-80% of all fluoride we take in. Even humans in the best of health accumulate 50% of fluoride intake. That means even people who don't <u>yet</u> experience any uncomfortable signals need to know that their fluoride exposures are using up their reserve capacity for F exposure, using up that seeming freedom.
Relatedly, fluoride is a medically-recognized thyroid suppressor — used to be prescribed against hyperthyroidism (Merck Index, Eighth Edition, p 959). Everyone now talks of the epidemic of obesity; people are putting in so much conscientious hard work to reverse it ! — unaware that they're drinking and cooking-with and bathing-in a thyroid suppressor (not to mention the rest of its ill-effects). Also, many grow urban gardens, unaware that they're watering them with a thyroid suppressor (etc.), which the produce accumulates and concentrates. That's a deep discourtesy to people's work for fitness and health -- a discourtesy that probably you, the members of Washington's Dept. of Health, don't knowingly intend!

Fluoride is more toxic than lead, is only slightly less toxic than arsenic.
(Clinical Toxicology of Commercial Products, 5th Edition, 1984, pp. ll -4, ll -112, ll 138, ll -129)

The level of fluoride normally found in mothers' milk is .01 ppm (even mothers drinking fluoridated water). (Institute of Medicine, 1997). Compare that to the .7 ppm currently added to water! It appears that mothers' systems are designed to protect infants from exposure to this substance (even at mothers' expense).

Meanwhile, most people take in far higher concentrations of fluoride, in-aggregate from sources <u>besides</u> drinking water directly. Fluoride (unlike chlorine) cannot be removed from water by filtration or boiling -- only by reverse osmosis, distillation, or mixed-bed ion exchange (expensive and wasteful operations, equivalent to desalination of seawater). Cooking, baking, etc. with fluoridated water just concentrates the fluoride (it doesn't evaporate, as chlorine does; it instead cooks down, as would salt or lead or arsenic). Gardening with fluoridated water does the same thing: plants, like humans, don't excrete F well — it concentrates in the leaves, fruit and roots of produce. Prepared foods, if they started with municipal water, all concentrate fluoride. Yet, the ".07 ppm" recommendation is based on drinking water only — doesn't factor-in aggregate sources (even toothpaste and other personal-care products whose <u>labels</u> include fluoride).

Many pharmaceuticals are fluoride compounds, e.g.
1) many systemic anesthetics;
2) non-cortical steroids, and
3) the fluoroquinolones -- including Cipro, and the antibiotics regularly added to poultry feed for factory-"farm" use (thus concentrated in resulting meat etc.).

Many agricultural pesticides, too, are fluoride compounds — including (e.g.) Dow Chemical's "ProFume" (sulfuryl fluoride), approved for fumigation of food-processing/ storage facilities (without removing the food), resulting in allowable fluoride residues of up to (e.g.) 130 ppm "in or on" wheat, and 900 ppm "in or on" dried eggs. (Compare 1000 ppm in fluoridated toothpaste, which we're told to use only a pea-sized piece of, and to spit out.) See http://www.fluorideaction.net/sf/index.html

Listing all the documented toxic effects of fluoridation is beyond scope of this letter, but they include suppressed/ disrupted
-- enzyme production,
-- immune system,
-- calcium metabolism (including increased bone brittleness and incidence of hip fractures),
— neurodevelopment (including impaired neurological development of infants and children),
that also merit your thought.

Dr. Osmunson will be able to tell you much better than I've done here, about fluoride's toxicity, also inefficacy.

Washington's current Code regarding fluoride — that's inevitably cited by every fluoridation proponent — is inaccurate and obsolete in all of these regards (and many more), and the walls of the fluoridation echo-chamber thicken with every such repetition. Another layer of the problem is the stereotype of fluoride whistleblowing as right-wing extremism — thus (for at least half the hearers) to be blown-off automatically. Please exempt me! — I've been voting for biodiversity/ eco-conservation, labor/ reproductive/ race/ refugee rights, gun safety, etc., for most of my life, and it's extremely frustrating to find allies in those areas inclined to dump me into the opposite basket over a matter I have direct hard-earned bodily knowledge of.

Please move to update the Health Code to clearly reflect the info that (for example) Dr. Osmunson will provide — thus, to
relieve Washington's people of enforced/ misinformed fluoride exposures, and instead afford them/ us clear accurate information and practical options.

Thank you.

Sincerely,
Olemara Peters, PO Box 222, Redmond, WA 98073
(member, Washington Action for Safe Water)

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_____

REFERENCES:
*

1) National Research Council, Health Effects of Ingested Fluoride, National Academy Press, 1993
2) Spencer, H., Fluoride Metabolism in Man, The American Journal of Medicine, 49: 807-813, 1970.
3) Zipkin, I, The effects of the absorption of fluoride: IV The deposition of fluoride in human skeletal tissues as related to fluoride in drinking water, Arch. Indust. Health, 21: 329, 1960.

From: British Martin
Sent: 4/7/2025 11:37:07 AM
To: DOH WSBOH
Subject: social work/board of health board meeting

attachments\0263A50C9014441D_transcript2.2025.pdf

attachments\28C22829EA674DB2_B. Martin - Letter of Conferral.pdf

External Email

Hello,

I am looking for assistance with an issue and would like to bring it to the boards attention at the next meeting. I am advocating for myself and my peers, who are facing the negative consequences of administrative errors and delays. I aim to uphold the social work values as well as the grand challenges specifically, 1) achieving equal opportunity, 2) reducing economic inequality, 3) and building financial capability and assests for all. At this time we are in need of the boards support. I am attempting to find a timely resolution to the issue that follows.

Due to ongoing administrative issues surrounding the transition from Howard University's legacy student information system to the new system, I, along with many others, am unable to obtain the official transcript required for licensure. As an aspiring mental health therapist, I am unemployable. After dedicating my time and effort toward completing the MSW program at Howard University, I now find myself in a difficult and frustrating situation. The program was marketed as one that would not only provide an education but also prepare individuals for licensure—a critical component for those of us pursuing careers in specific fields. We trusted that after finishing this program, we would have everything needed to become a LGSW. Instead, due to these administrative discrepancies, our futures are in limbo. We concluded the program in December, in February we were informed that we could not access our transcripts. It is estimated that it may take 12 months to resolve the issue and the process is about 6 months in. I incurred a substantial amount of student debt to attend the program and not being able to obtain a job after is incredibly distressing and detrimental to my livelihood as a single parent.

The university’s legal obligation under FERPA (Family Educational Rights and Privacy Act) is clear: they must provide accurate, timely, and truthful transcripts upon request. We relied on the university to fulfill its end of the bargain, and right now, it is failing to do so.

With no where left to turn I am pleading for your help. As a mother, future social worker, and advocate for those in need, including myself, I am requesting the boards assistance in implementing a temporary solution to this problem. The school has offered to submit unofficial transcripts and letters of completion. We are in desperate need of provisions to accept unofficial transcripts, with the understanding that official transcripts will follow upon release. I have attached the preliminary documents for review along with contact information for Altaf Husein, Associate Dean for Academic and Student Advancement. Any assistance that you can provide is immensely appreciated.

Kind regards,

British Martin

Howard University MSW graduate and perspective licensee.

Unofficial Transcript

Howard University

Student Name:	British Martin	Prepared On:	February 25, 2025
Student ID:	003150174		
Date of Birth:	April 3, 1980		

Academic Level:	Graduate	**Academic Unit:**	School of Social Work
Program of Study:	Online Master of Social Work	**Honor/Award:**	
		Expected Completion Date:	December 6, 2024
Degree Awarded:		**Conferral Date:**	

Unofficial Transcript

Student Name: British Martin
Student ID: 003150174
Date of Birth: April 3, 1980

Howard University

Prepared On: February 25, 2025

2023 Fall

SUBJ	NO.	Course Title	Credits	Grade	Quality Points	Repeat
SWFI	204	Agency-Based Education I	3.00	A	12.00	
SWDS	101	Social Work with Individuals, Families & Groups	3.00	A	12.00	
SWHB	330	Race, Class and Gender	3.00	A	12.00	
SWHB	205	Human Behavior & Social Environment I	3.00	A	12.00	
SWPS	318	Soc Welfare Policy Blk Perspec	3.00	A	12.00	

Term Credits Attempted	15.00	Term Credits Earned	15.00	Term GPA Credits	15.00	Term GPA	4.00	Quality Points	60.00
Cumulative Credits Attempted	15.00	Cumulative Credits Earned	15.00	Cumulative GPA Credits	15.00	Cumulative GPA	4.00	Cumulative Quality Points	60.00

2024 Summer

SUBJ	NO.	Course Title	Credits	Grade	Quality Points	Repeat
SWHB	303	Diff. Diag: Beyond Psychopatho	3.00	In Progress	0.00	I
SWPS	303	Organ. Mgmt. & Leadership	3.00	In Progress	0.00	I
SWPS	432	Beyond Diag:Behav. Hlth Acr L	3.00	A	12.00	
SWHB	303	Diff. Diag: Beyond Psychopatho	3.00	A	12.00	I
SWDS	309	Intervention Planning & Strategies	3.00	A	12.00	
SWRS	305	Practice Evaluation	3.00	A	12.00	
SWFI	338	Agency-Based Education III	3.00	A	12.00	

Term Credits Attempted	21.00	Term Credits Earned	15.00	Term GPA Credits	15.00	Term GPA	4.00	Quality Points	60.00
Cumulative Credits Attempted	45.00	Cumulative Credits Earned	45.00	Cumulative GPA Credits	45.00	Cumulative GPA	4.00	Cumulative Quality Points	180.00

2024 Spring

SUBJ	NO.	Course Title	Credits	Grade	Quality Points	Repeat
SWRS	205	Research Methods/Data Analysis	3.00	A	12.00	
SWPS	316	SW Prac w/Communitiies & Orgs.	3.00	A	12.00	
SWDS	306	Direct Practice Assessment	3.00	A	12.00	
SWPS	216	Advocating for Oppressed & Marginalized Communities	3.00	A	12.00	
SWFI	205	Agency-Based Education II	3.00	A	12.00	

Term Credits Attempted	15.00	Term Credits Earned	15.00	Term GPA Credits	15.00	Term GPA	4.00	Term Quality Points	60.00
Cumulative Credits Attempted	30.00	Cumulative Credits Earned	30.00	Cumulative GPA Credits	30.00	Cumulative GPA	4.00	Cumulative Quality Points	120.00

2024 Fall

SUBJ	NO.	Course Title	Credits	Grade	Quality Points	Repeat
SWPS	312	Socially Just Policy Practice	3.00	A	12.00	
SWDS	317	Intervention Strategies with Selected Clinical Problems	3.00	A	12.00	
SWFI	339	Agency-Based Education IV	3.00	B	9.00	
SWPS	421	Seminar in Advanced Social Policy Analysis	3.00	A	12.00	
SWPS	303	Organ. Mgmt. & Leadership	3.00	A	12.00	I

Term Credits Attempted	15.00	Term Credits Earned	15.00	Term GPA Credits	15.00	Term GPA	3.80	Term Quality Points	57.00
Cumulative Credits Attempted	60.00	Cumulative Credits Earned	60.00	Cumulative GPA Credits	60.00	Cumulative GPA	3.95	Cumulative Quality Points	237.00

Unofficial Transcript

Student Name: British Martin
Student ID: 003150174
Date of Birth: April 3, 1980

Howard University

Prepared On: February 25, 2025

	Earned Credits	GPA Credits	Quality Points	GPA
Total Institution	60	60		3.95
Total Transfer	0	0		0.00
Overall	60	60		3.95

End of Unofficial Transcript

HOWARD UNIVERSITY

School of Social Work

Date: February 20th, 2025

To: Whom it May Concern

From: Altaf Husain, PhD, MSW
Associate Dean for Academic and Student Advancement for the School of Social Work

Re: British Martin
Student ID# :003150174

Program of Study: Master of Social Work

Degree Certification

This is to verify that **British Martin** has successfully completed the degree requirements for a Master of Social Work on December 14th, 2024.

If you have any additional questions, contact the Office of the Registrar at: 202-806-2705.

Sincerely,

Altaf Husain, PhD, MSW
Associate Dean for Academic and Student Advancement

601 Howard Place, NW
Washington, DC 20059

Telephone 202 806 7300
Facsimile 202 387 4309
www.howard.edu

_____
From: Bob Runnells
Sent: 4/9/2025 9:38:06 AM
To: DOH WSBOH
Cc:
Subject: Effectiveness of Flu Vax during 2024-25 season (n=53,402)

attachments\05FF7F8EF2FE48BA_Cleveland Clinic workers flu vax_PRDTOOL_NAMETOOLONG.pdf

External Email

Dear Washington state BOH,

Please share the attached study (preprint) with Board Members, especially the Department of Health Representative Dr. Kwan-Gett.

Results summary:

Among 53402 employees, 43857 (82.1%) had received the influenza vaccine by the end of the study. Influenza occurred in 1079 (2.02%) during the study. The cumulative incidence of influenza was similar for the vaccinated and unvaccinated states early, but over the course of the study the cumulative incidence of influenza increased more rapidly among the vaccinated than the unvaccinated. In an analysis adjusted for age, sex, clinical nursing job, and employment location, the risk of influenza was significantly higher for the vaccinated compared to the unvaccinated state (HR, 1.27; 95% C.I., 1.07 – 1.51; P = 0.007), yielding a calculated vaccine effectiveness of -26.9% (95% C.I., -55.0 to -6.6%).

In the spirit of informed consent, the DOH page on flu vaccination should be updated to provide accurate information. We think clinics, doctors and prospective recipients will all want to know this information.

Sincerely,

Bob Runnells

Director, Informed Choice WA

Effectiveness of the Influenza Vaccine During the 2024-2025 Respiratory Viral Season

Nabin K. Shrestha,[1] Patrick C. Burke,[2] Amy S. Nowacki,[3] Steven M. Gordon[1]

[1]Departments of Infectious Diseases, [2]Infection Prevention, [3]Quantitative Health Sciences, Cleveland Clinic, Cleveland, Ohio, USA.

Keywords: influenza; vaccine effectiveness; vaccines;

Running Title: Influenza vaccine effectiveness

Correspondence: N. K. Shrestha, 9500 Euclid Avenue / G-21, Cleveland, OH 44195, USA (shrestn@ccf.org)

Alternate corresponding author: S. M. Gordon, MD, 9500 Euclid Avenue / G-21, Cleveland, OH 44195, USA (gordons@ccf.org)

Summary: Among 53402 working-aged Cleveland Clinic employees, we were unable to find that the influenza vaccine has been effective in preventing infection during the 2024-2025 respiratory viral season.

ABSTRACT

Background. The purpose of this study was to evaluate the effectiveness of the influenza vaccine during the 2024-2025 respiratory viral season.

Methods. Employees of Cleveland Clinic in employment in Ohio on October 1, 2024, were included. The cumulative incidence of influenza among those in the vaccinated and unvaccinated states was compared over the following 25 weeks. Protection provided by vaccination (analyzed as a time-dependent covariate) was evaluated using Cox proportional hazards regression.

Results. Among 53402 employees, 43857 (82.1%) had received the influenza vaccine by the end of the study. Influenza occurred in 1079 (2.02%) during the study. The cumulative incidence of influenza was similar for the vaccinated and unvaccinated states early, but over the course of the study the cumulative incidence of influenza increased more rapidly among the vaccinated than the unvaccinated. In an analysis adjusted for age, sex, clinical nursing job, and employment location, the risk of influenza was significantly higher for the vaccinated compared to the unvaccinated state (HR, 1.27; 95% C.I., 1.07 – 1.51; $P = 0.007$), yielding a calculated vaccine effectiveness of -26.9% (95% C.I., -55.0 to -6.6%).

Conclusions. This study found that influenza vaccination of working-aged adults was associated with a higher risk of influenza during the 2024-2025 respiratory viral season, suggesting that the vaccine has not been effective in preventing influenza this season.

INTRODUCTION

Influenza is a common respiratory viral infection with potential for substantial mortality and morbidity, and was estimated to be responsible for 145 000 deaths worldwide among all ages in 2017 [1]. The mortality could be much higher when there are pandemics of illness, which occur periodically, the most devastating recorded one being the influenza pandemic of 1918 which was estimated to have a case fatality rate of 2.5% and was considered to be responsible for more than 50 million deaths worldwide [2]. There is a seasonal pattern to illness, with most infections occurring during the winter months [3]. The influenza virus evolves over time [4], and as this happens an increasingly larger proportion of the population becomes susceptible to the newly evolved strains.

Influenza is also a vaccine-preventable illness. However, influenza vaccines do not induce long-lasting antibody titers, and annual influenza vaccination is recommended at the beginning of each respiratory viral season in the autumn months in the northern hemisphere. Additionally, the effectiveness of the vaccine in any given year depends on how similar the strains contained in the vaccine are to the strains causing infection that year. The most widely used seasonal influenza vaccine is the trivalent inactivated vaccine (TIV), which is composed of two influenza A virus types (H3N2 and H1N1) and an influenza B virus type [5]. A new vaccine is produced each year in an attempt to match the vaccine strains to the strains projected to be most prominent in the upcoming influenza season. Since the current process of developing the vaccine typically takes a few months, a decision on which strains to include in the vaccine must be made several months in advance. In years where there is a good match between the vaccine strains and the infecting strain, vaccine effectiveness is expected to be good. In years where there is a poor match between vaccine strains and the circulating infecting strain, vaccine effectiveness is expected to be poor.

Given the high morbidity and mortality burden of influenza, universal annual vaccination against the infection is recommended by the Advisory Committee on Immunization Practices [6]. Over the last

66 couple of decades, policies of mandatory annual vaccination of healthcare personnel have been
67 increasingly adopted across healthcare institutions [7].

68 Healthcare resource utilization, including hospitalizations, and resource needs such as quantity of
69 antiviral medications needed, are strongly affected by how effective the vaccine is during any respiratory
70 viral season. Early estimates of vaccine effectiveness of the influenza vaccine during any respiratory viral
71 season can provide information that can help healthcare institutions and pharmacies prepare for the
72 remainder of the season.

73 The purpose of this study was to evaluate the effectiveness of the influenza vaccine during the
74 2024-2025 respiratory viral season in North America.

75

METHODS

Study design

This was a prospective cohort study conducted at the Cleveland Clinic Health System (CCHS) in the United States.

Patient Consent Statement

The study was approved by the Cleveland Clinic Institutional Review Board as exempt research (IRB no. 23-625). A waiver of informed consent and waiver of HIPAA authorization were approved to allow the research team access to the required data.

Setting

For several years Cleveland Clinic has had a mandatory participation influenza vaccination program, which requires employees to either receive an annual influenza vaccine or seek an exemption on medical or religious grounds. The vaccine is provided to healthcare personnel free of charge. When healthcare personnel develop acute respiratory illnesses, they are encouraged to seek medical attention and the decision to test for influenza is made on a case-by-case basis by the treating provider either in the occupational health clinics or at their personal providers' offices.

Participants

CCHS employees in employment at any Cleveland Clinic location in Ohio on the study start date were included in the study. Those for whom age or sex data were missing were excluded.

Variables

Variables collected were influenza vaccination date, age, sex, job location, job type categorization into clinical nursing or other, and date of positive test for influenza. Institutional data governance around employee data limited our ability to collect additional clinical variables.

Influenza was defined as a positive nucleic acid amplification test for influenza A or B any time after the study start date. Only molecular (including molecular point-of-care tests) performed within Cleveland Clinic Health System were included.

Outcome

The study outcome was time to influenza. Outcomes were followed until March 26, 2025.

Statistical analysis

For the 2024-2025 influenza season, the vaccine became available on 1 October 2024. This date was considered the study start date.

To assess whether there was a difference in the propensity to get tested among the vaccinated and the unvaccinated, the ratio of the proportion of the vaccinated who got tested to the proportion of the unvaccinated who got tested on each day of the study was examined, as was the ratio of the proportion of vaccinated persons' tests that were positive to the proportion of unvaccinated persons' tests that were positive on each day of the study.

A Simon-Makuch hazard plot [8] was created to compare the cumulative incidence of influenza in the vaccinated and unvaccinated states, by treating influenza vaccination as a time-dependent covariate [9,10]. Individuals were considered vaccinated 7 days after receipt of a single dose of an influenza vaccine. Subjects who had not developed influenza were censored at the end of the study follow-up period. Those whose employment was terminated during the study period before they had influenza were censored on the

date of termination of employment. Curves for the unvaccinated state were based on data while the vaccination status of subjects remained “unvaccinated”. Curves for the vaccinated state were based on data from the date the influenza vaccination status changed to “vaccinated”.

Multivariable Cox proportional hazards regression models were fit to examine the association of various variables with time to influenza. Influenza vaccination was included as a time-dependent covariate. Variance inflation factors were evaluated to ensure that there was no multicollinearity in the models. The proportional hazards assumption was checked by examining Schonfeld residuals and there were no significant violations. Vaccine effectiveness (VE) was calculated from the hazard ratios (HR) for influenza vaccination in the models using the formula, VE = 1 - HR.

The analysis was performed by N. K. S. and A. S. N. using the *survival* package and R version 4.4.2 (R Foundation for Statistical Computing) [11].

RESULTS

A total of 53402 employees in Ohio remained after excluding 1700 subjects (3.1%) for whom age or gender were missing. These employees formed the study cohort and a total of 43857 (82.1%) were vaccinated by the end of the study. The vaccine was the inactivated 3-valent influenza vaccine in 98.7% of those vaccinated. Altogether, 1079 employees (2.02%) acquired influenza during the 25 weeks of the study. Of these, 1066 (98.8%) were influenza A infections, the remaining being influenza B infections. A total of 2740 subjects (5.13%) were censored during the study period because of termination of employment before the end of the study.

Baseline characteristics

Table 1 shows the characteristics of subjects included in the study. Notably, this was a relatively young population, with a mean age of 42 years, and 75% were female. About 20% had a clinical nursing job.

Testing differences between the vaccinated and unvaccinated

The ratio of the proportion of the vaccinated who got tested to the proportion of the unvaccinated who got tested for influenza on each day of the study was significantly higher than 1.00 for most of the study (Figure 1), suggesting that the vaccinated were more likely to be tested than the unvaccinated on any given day. After excluding outlier values (> 3 SDs away from the mean), the slope of the regression line was 0.0009 and the slope was not significantly different from zero (*P* value 0.38), suggesting that the tendency for the vaccinated to be tested more than the unvaccinated did not change significantly over time.

However, the ratio of the proportion of vaccinated persons' tests that were positive to the proportion of unvaccinated persons' tests that were positive on each day of the study was not significantly different from 1.00, during the period when most of the infections occurred (Figure 2), suggesting that the

additional testing among the vaccinated was not from a higher propensity to get tested but rather from a higher number of infections itself.

Influenza vaccine effectiveness

Very few subjects developed influenza A in the first two months of the study and the daily number of infections began to increase steadily about 70 days after the study start date. The cumulative incidence of influenza did not appear to be significantly different between the vaccinated and unvaccinated states early on, but over the course of the study the cumulative incidence of infection increased more rapidly among the vaccinated than among the unvaccinated (Figure 1). The risk of influenza was significantly higher for the vaccinated compared to the unvaccinated state on unadjusted Cox proportional hazards regression (HR, 1.27; 95% C.I., 1.07 - 1.51; $P = 0.007$). In a multivariable model which adjusted for age, sex, clinical nursing job, and primary employment location, the risk of influenza remained significantly higher for the vaccinated compared to the unvaccinated state (HR, 1.27; 95% C.I., 1.07 – 1.51; $P = 0.007$). Point estimates and 95% confidence intervals for hazard ratios for acquisition of influenza, for the various variables in unadjusted and adjusted Cox proportional hazards regression models, are shown in Table 2. Based on the multivariable model, the influenza vaccine would have had an effectiveness of -26.9% (95% C.I., -51.0 to -6.6%).

DISCUSSION

This study found a significantly higher risk of influenza among the vaccinated compared to the unvaccinated state in northern Ohio during the 2024-2025 influenza season.

The strengths of our study include a sample size that was large enough to find a significant difference in incidence of influenza between the vaccinated and unvaccinated states, and a study design that allowed for actual calculation of risk rather than an extrapolation from odds ratios obtained from “test-

negative" design studies as has become the trend in recent vaccine effectiveness studies. "Test-negative" design studies are case-control studies, and one cannot obtain relative risks from case control studies. One can obtain odds ratios, but odds ratios always exaggerate the size of the effect compared with relative risks and when the event is not rare, as is usually the case in published "test-negative" design studies, this difference can be substantial [12]. That is why estimates of vaccine effectiveness from "test -negative" design studies, which treat odds ratios as if they are relative risks in order to estimate vaccine effectiveness, systematically overestimate true vaccine effectiveness. An important strength of the study was its consideration of the possibility that testing behavior might differ between the vaccinated and unvaccinated. This analysis found that over the course of the study, despite people in the vaccinated state being more likely to get tested for influenza than those in the unvaccinated state, the proportion of tests positive among the vaccinated was not different from the proportion of tests positive among the unvaccinated, suggesting that the excess tests among the vaccinated were from an excess of infections rather than from differences in testing behavior. The study methodology of treating vaccination as a time-dependent covariate also allowed for determining vaccine effectiveness in real time, which provided us with very early signals about the magnitude of vaccine effectiveness within a few weeks of the first cases of influenza being diagnosed.

The study has several limitations. The vaccine was the 3-valent inactivated influenza vaccine in about 99% of our study cohort. The possibility that other influenza vaccines might have been more effective cannot be excluded. Infections diagnosed on the basis of home testing kits alone would have been missed. The study was not designed to compare the risk of influenza-associated hospitalization or mortality, or to examine if the vaccine decreased severity of illness, because these outcomes were not expected to occur in numbers large enough to allow for a meaningful analysis. Our study of healthcare personnel included no children and few elderly subjects and primarily consisted of individuals who were healthy enough to be employed. A minority would have been expected to have been severely immunocompromised.

The results are generalizable to relatively healthy adults in the USA, which is a major target of adult influenza vaccination efforts. Although the study was done in northern Ohio, there is little reason to assume that the effectiveness of the vaccine would have been different in a different geographic region within the continental USA.

Given all the variables that can influence the effectiveness of the influenza vaccine in any given year, and our current processes for developing the vaccine, it may be asking for too much to expect the vaccine to be highly effective year after year. It therefore becomes important to evaluate the effectiveness of the vaccine every year. This study found that influenza vaccination was associated with a higher risk of influenza among adults in the healthcare workforce in northern Ohio, USA, during the 2024-2025 winter season, suggesting that the vaccine has not been effective in preventing influenza this season.

Notes

Author contributions. N. K. S.: Conceptualization, methodology, validation, investigation, data curation, software, formal analysis, visualization, writing- original draft preparation, writing- reviewing and editing, supervision, project administration. P. C. B.: Resources, investigation, validation, writing- reviewing and editing. A. S. N.: Methodology, formal analysis, visualization, validation, writing- reviewing and editing. S. M. G.: Resources, writing- reviewing and editing.

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TABLES

Table 1

Table 1. Baseline characteristics of 53402 employees of Cleveland Clinic in Ohio

Characteristics	Overall[a]
Age in years, mean (SD)	42.0 (13.4)
Sex	
Female	40 130 (75.1)
Male	13 272 (24.9)
Primary work location	
Cleveland Clinic Main	20 536 (38.5)
Regional hospitals[b]	21 880 (41.0)
Ambulatory centers	9351 (17.5)
Administrative centers	1635 (3.1)
Job type	
Clinical nursing job	10 840 (20.3)
Not clinical nursing job	42562 (79.7)

[a]Data are presented as no. (%) unless otherwise indicated.

[b]Includes Akron General, Ashtabula, Euclid, Fairview, Hillcrest, Lodi Community, Lutheran, Marymount, Medina, Mentor, Mercy (Canton), Southpointe, and Union, hospitals, all part of the Cleveland Clinic Health System.

Table 2

Table 2. Unadjusted and Adjusted Associations with Time to Influenza in Cox Proportional Hazards Regression Models

Characteristics	Unadjusted model		Adjusted model	
	HR (95% CI)[a]	*P*	HR (95% CI)[a]	*P*
Vaccinated state[b]	1.27 (1.07-1.51)	.007	1.27 (1.07-1.51)	.007
Age	1.003 (.998-1.007)	.22	1.003 (.998-1.008)	.20
Male sex[c]	.69 (.59-.80)	<.001	.71 (.61-.83)	<.001
Clinical nursing job[d]	1.18 (1.03-1.36)	.02	1.15 (.99-1.33)	.07
Primary work location[e]				
Administrative centers	.78 (.52-1.17)	.23	.80 (.53-1.20)	.28
Ambulatory centers	1.37 (1.17-1.61)	<.001	1.32 (1.12-1.55)	.002
Regional hospitals	.95 (.83-1.09)	.48	.92 (.80-1.06)	.26

Abbreviation: CI, confidence interval; HR, hazard ratio; COVID-19, Coronavirus Disease 2019;

[a]From multivariable Cox-proportional hazards regression models with bivalent vaccinated state treated as a time-dependent covariate.

[b]Time-dependent covariate

[c]Reference is female sex

[d]Reference is not clinical nursing job

[e]Reference is Cleveland Clinic Main Campus

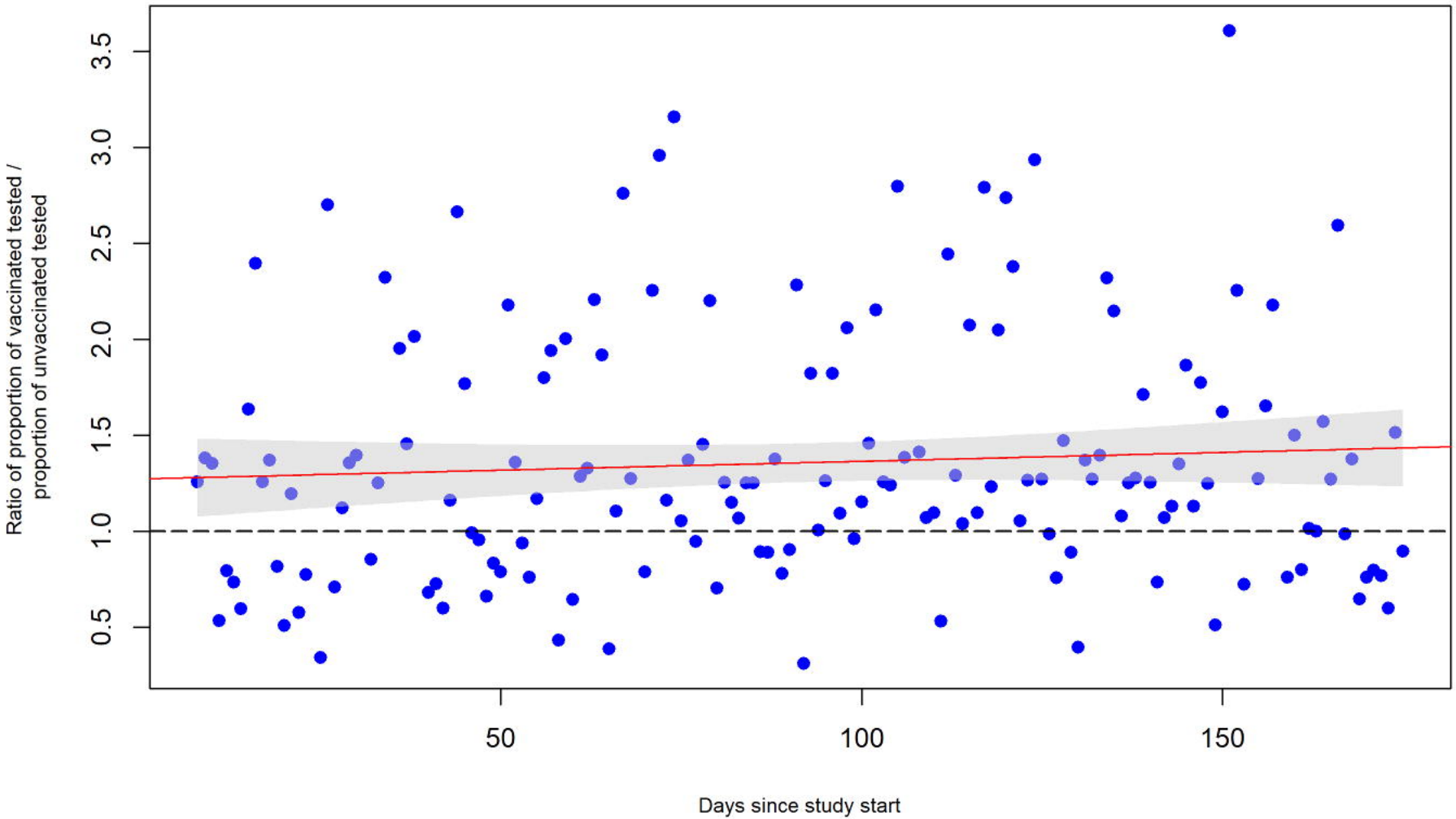
[f]Reference is low

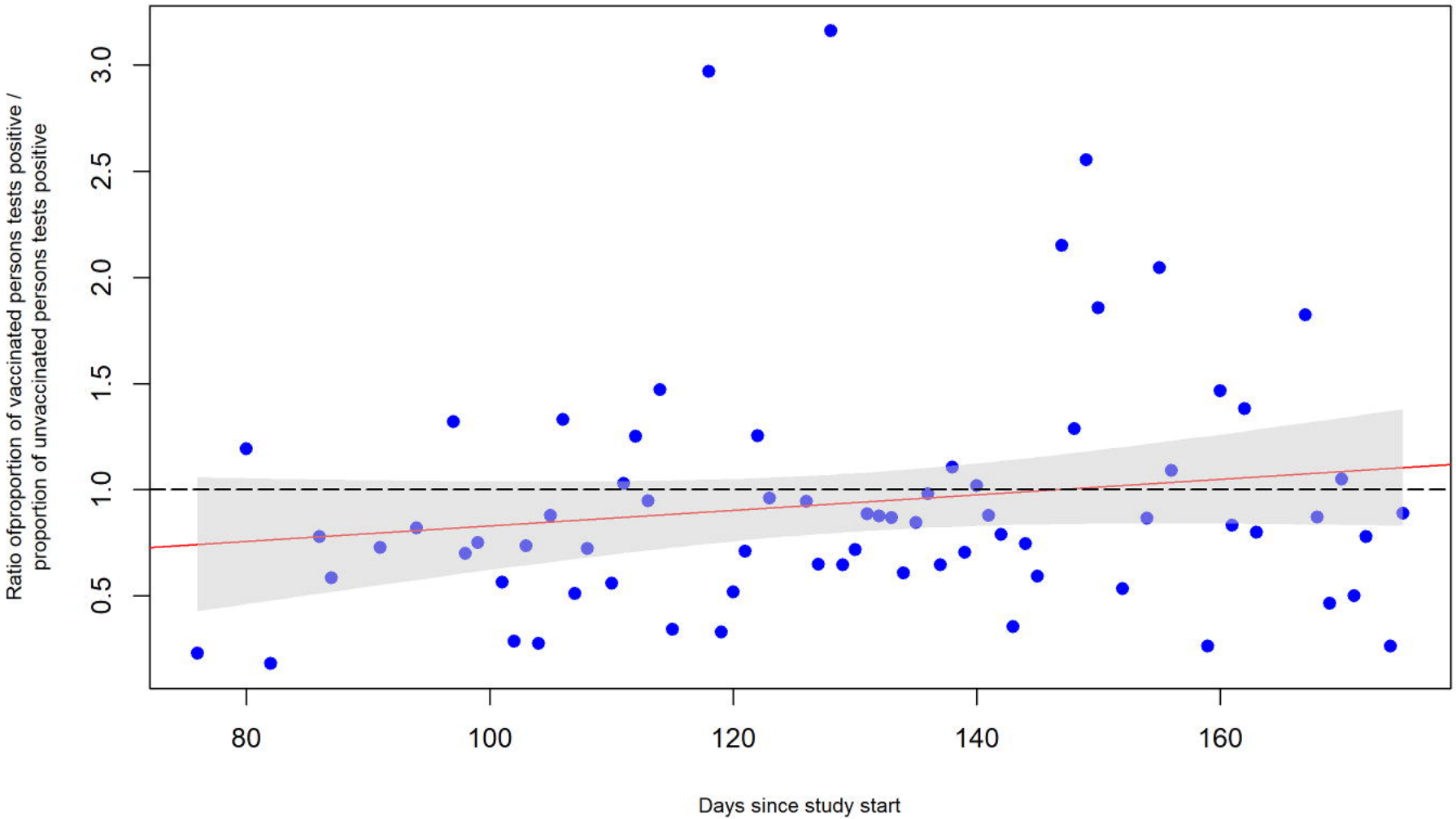
FIGURE LEGENDS

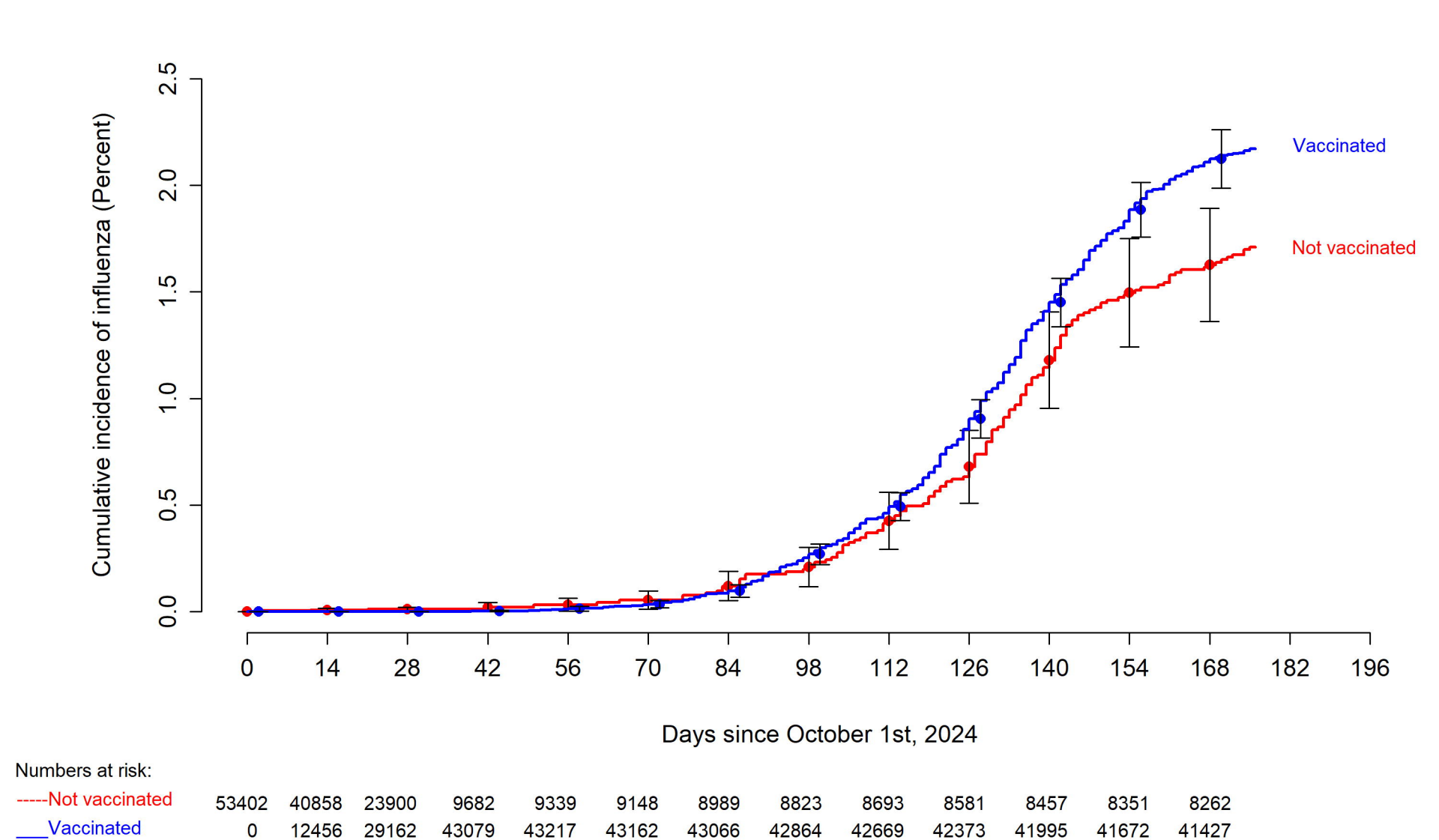
Figure 1. Comparison of the ratio of the proportion of the vaccinated who got tested to the proportion of the unvaccinated who got tested for influenza on each day of the study. Each day is represented by a dot. The dashed line represents the reference line where the testing proportions are the same for those vaccinated and unvaccinated. Dots representing days on which a higher proportion of vaccinated than non-vaccinated individuals were tested for influenza will fall above the reference line, and dots for days on which a lower proportion of vaccinated than non-vaccinated individuals were tested for influenza will fall below the reference line. The red line represents the best fit line for the above ratio by linear regression, after excluding outliers (values >3 standard deviations from the mean ratio), with the shaded areas representing its 95% confidence interval.

Figure 2. Comparison of the ratio of the proportion of vaccinated persons' tests that were positive to the proportion of unvaccinated persons' tests that were positive on each day of the study. Each day is represented by a dot. The dashed line represents the reference line where the proportion of tests positive are the same for those vaccinated and unvaccinated. Dots representing days on which the vaccinated had a higher proportion of tests positive than the unvaccinated will fall above the reference line, and dots for days on which the vaccinated had a lower proportion of tests positive than the unvaccinated will fall below the reference line. The red line represents the best fit line for the above ratio by linear regression, after excluding outliers (values >3 standard deviations from the mean ratio), with the shaded areas representing its 95% confidence interval. This was based on data for days where both vaccinated and unvaccinated had at least one test done. Data were inadequate to obtain data points prior to day 76 of the study.

Figure 3. Simon-Makuch plot comparing the cumulative incidence of influenza for subjects stratified by vaccination status. Day zero was 1 October 2024, the day the influenza vaccine began to be offered to employees for the respiratory viral season. Point estimates and 95% confidence intervals are jittered along the x-axis to improve visibility.


Ratio of proportion of vaccinated tested / proportion of unvaccinated tested
0.5
1.0
1.5
2.0
2.5
3.0
3.5
50
100
150
Days since study start


Ratio ofproportion of vaccinated persons tests positive /
proportion of unvaccinated persons tests positive
0.5
1.0
1.5
2.0
2.5
3.0
80
100
120
140
160
Days since study start


Cumulative incidence of influenza (Percent)
0.0
0.5
1.0
1.5
2.0
2.5
Vaccinated
Not vaccinated
0
14
28
42
56
70
84
98
112
126
140
154
168
182
196
Days since October 1st, 2024
Numbers at risk:
-----Not vaccinated
___Vaccinated
53402 40858 23900 9682 9339 9148 8989 8823 8693 8581 8457 8351 8262
0 12456 29162 43079 43217 43162 43066 42864 42669 42373 41995 41672 41427