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Increase in Poison Center Reports Linked to Kratom-Containing Kava Products — National Poison Data System, United States, 2000–2025

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Abstract

Kava (*Piper methysticum*), a central nervous system depressant derived from a plant in the pepper family native to the Pacific Islands, is traditionally consumed in religious, cultural, political, and social ceremonies. In the United States, kava emerged in the late 1990s and has experienced renewed growth and product diversification since the 2010s, with increasing availability of concentrated extracts and ready-to-drink beverages. These commercial products are commonly marketed as healthy alternatives to alcohol, sold near college campuses, and increasingly being combined with kratom, a psychoactive botanical with opioid-like effects, raising safety concerns. Data on kava-related use during January 2000–December 2025 that resulted in a report to the National Poison Data System (i.e., kava exposure report) were analyzed to assess trends by users' demographic characteristics, exposure type, and outcomes. Kava-related exposure reports declined sharply after a 2002 Food and Drug Administration advisory on kava-associated severe liver injury but have risen steadily since 2011, reaching 203 reported exposures in 2025. Reports primarily involved adults aged ≥20 years, but demographic characteristics have changed over time. During 2000–2001, reports primarily involved females and included more children aged ≤12 years, whereas exposure reports since 2013 have predominantly involved men; reports involving children have been rare. Since 2017, reports involving combined use of kava and kratom have increased, reaching 30% (61) of all kava reports in 2025. These increases have coincided with higher rates of serious reported clinical outcomes in recent years (32% in 2025 compared with 12% in 2000). These data indicate a resurgence of overall kava exposure reports to poison centers, as well as an increase in kratom-related kava reports, which has coincided with higher rates of serious clinical outcomes. The findings in this report suggest the need for enhanced surveillance for, clinical awareness of, and public education regarding commercial products containing kava.

Introduction

Kava (*Piper methysticum*) is a psychoactive plant native to the Pacific Islands, where its root traditionally has been prepared as a water-based beverage consumed in cultural and social settings, with relatively low reported health risk (*1*). Since the 1990s, commercial kava products have become increasingly available in the United States, including concentrated extracts, capsules, and recreational beverages sold through retail outlets and dedicated kava bars, which are often promoted as alcohol-free social venues (*2*,*3*). These commercial products are unregulated and differ substantially from traditional aqueous preparations in terms of plant material, extraction methods, and alkaloid concentration (*1*,*4*,*5*). For example, kavalactones, the primary active constituents of kava that exert sedative and anxiolytic effects, can be present in commercial products at 2–10 times the concentrations present in traditional preparations (*1*). In addition, although some clinical trials support short-term anxiolytic efficacy of traditional preparations, commercial products are often consumed without medical oversight and have been associated with gastrointestinal and neurologic adverse effects, hepatotoxicity, and drug interactions via cytochrome P450 inhibition and additive central nervous system depressant effects (*1*,*4*,*6*).

In 2002, after reports of acute liver failure and liver transplantation temporally associated with kava use, the Food and Drug

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Administration (FDA) warned that kava-containing dietary supplements might be associated with severe liver injury (*4*). In 2020, FDA further concluded that indiscriminate kava use is not safe for use as a recreational or relaxation beverage for human consumption (*5*). Despite these cautions, the commercial kava market has continued to expand and diversify, including the emergence of combination products including kava and kratom, a psychoactive plant with opioid-like effects (*7*). The growing availability of commercial kava products with limited available safety data underscores the need to characterize national patterns of kava use reported to U.S. poison centers to identify groups at high risk for serious clinical outcomes and guide public health practice. This report analyzes characteristics of kava-related exposures, defined as actual or suspected substance ingestion, as reported to the National Poison Data System (NPDS), for exposures during January 2000–December 2025, stratified by age, sex, and outcome.

Methods

Data Source and Study Design

NPDS is the national database that aggregates deidentified exposure data from all 53 U.S. poison centers. Each exposure is defined as a reported actual or suspected substance ingestion for which a poison center was consulted, regardless of toxicity or clinical manifestation. Data are submitted in near real-time after consultative services are provided to members of the general public and health care providers.

For this retrospective review, NPDS was queried for all human exposures to kava during January 1, 2000–December 31, 2025. Each exposure could involve kava alone (single-substance exposure) or in combination with other substances (multiple-substance exposure). Patient demographic data (age and sex), exposure characteristics (substances and reason for use), level of care received, clinical effect, and medical outcome were included in the analysis. The analysis was conducted on deidentified and publicly available data, and the University of Virginia Institutional Review Board determined that the research did not require human subjects review.

Analysis

Data were descriptively analyzed. Numbers and percentages of all kava exposure reports were calculated to assess temporal trends, and kava exposure reports were stratified by sex, age, clinical effects, medical outcome, level of care received, and reported co-used substances. Age was categorized into four groups: 0–12, 13–19, 20–39, and ≥40 years. Medical outcomes were classified as serious or nonserious.[†] Level of care was categorized as hospitalized (critical care, noncritical care, or psychiatric unit admission) or not hospitalized (treated

[†] Serious outcomes: death, major effect (life-threatening effect or one that results in substantial disability or disfigurement [e.g., status epilepticus]), or moderate effect (pronounced, prolonged, or systemic effect that usually requires some form of treatment but is not life-threatening [e.g., hypoglycemia with confusion]). Nonserious outcomes: minor effect (minimal effect that resolves rapidly [e.g., sinus tachycardia without hypotension]), no effect, unrelated effect, or not followed (no follow-up based on clinical judgment that the exposure was likely nontoxic or expected to result in only minimal, trivial clinical effects).

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and released, refused referral, lost to follow-up, or managed outside a health care facility). Rates for kava exposure reports were calculated per 100,000 drug exposures.

Results

Number and Rates of Exposures

During the entire study period (2000–2025), a total of 3,101 kava-related exposures were reported. Before the 2002 FDA advisory, 298 and 331 annual case exposures were reported during 2000 and 2001, respectively, corresponding to approximately 34 kava-related exposure reports per 100,000 drug exposure reports (Figure 1). Coinciding with the advisory, annual exposure reports began to decline, reaching a low of 42 in 2010 (87% decrease during 2001–2010), before beginning to rise in 2011, increasing 383% by 2025 (from 57 to 203). Exposure report rates in 2010 declined to three per 100,000 drug exposure reports, but began to rise in 2011, increasing 220%, from five to 16 per 100,000 drug exposure reports in 2025.

Demographic Characteristics of Persons with Kava Exposures

In 2000–2001, females accounted for the majority of exposure reports (56%–57%), and a substantial proportion (25%–27%) involved children aged ≤12 years (Figure 1). During 2002–2025, the percentages of all exposures involving females and children aged ≤12 years declined, reaching 40% and 7%, respectively, in 2025. During both periods (2000–2001 and 2002–2025), adults aged ≥20 years accounted for the largest percentage of exposure reports (annual average = 66%; range = 41%–81%).

Outcomes

Across the analytic period (2000–2025), an average of 20% of exposed persons were hospitalized each year (range = 14%–30%), with no apparent temporal trends (Figure 2). In contrast, the percentage of exposures associated with serious medical outcomes increased from 12% in 2000 to a high of 39% in 2024. Eight deaths were reported during the analytic period, including one each in 2000, 2001, 2005, 2017, 2023, and 2024, and two in 2021 (fatality rate = 0.25%).

Substance Co-Exposure

During 2000–2025, a total of 1,347 (43%) kava-related exposure reports involved multiple substances. The most common co-involved substances were ethanol (annual average = 7%; range = 3%–13%) and benzodiazepines (annual average = 5%; range = 2%–14%) (Figure 3). However, in 2017, kratom emerged as a common co-exposure and, by 2019, kratom surpassed ethanol and benzodiazepines in multiple-substance kava-related exposures. This coincided with increasing availability of products containing kava and kratom (Supplementary Figure 1). In 2025, co-use of ethanol or benzodiazepines accounted for 3% of multiple-substance exposures, and kratom accounted for 30%.

Reported Clinical Effects

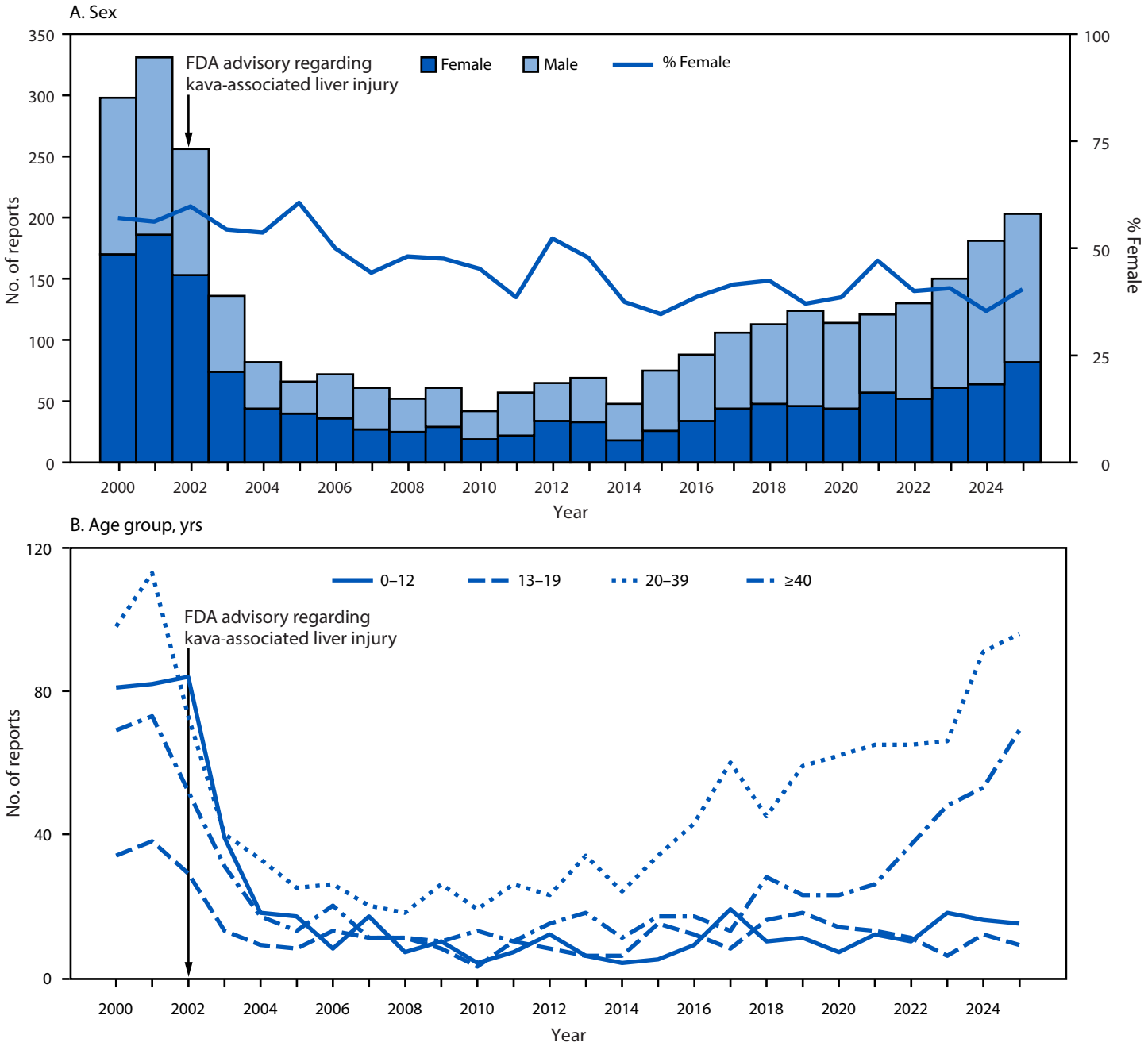
The most common clinical effects among single-substance exposures (1,754) were gastrointestinal (vomiting and nausea), neurologic (drowsiness or lethargy, dizziness or lethargy, and agitation), and cardiovascular (tachycardia) signs and symptoms (Supplementary Figure 2). Multiple-substance exposures involving only kava and kratom (128) had similar symptomatology; however, neurologic effects included seizures and tremor, and cardiovascular effects included hypertension. Liver injury was less common for both exposure types. Moderate elevations in aspartate transaminase or alanine transaminase (>100 to ≤1,000 IU/L) were reported in 29 of 1,754 (1.7%) single-substance exposures and eight of 128 (6.3%) multiple-substance exposures involving kava and kratom.

Discussion

Poison center surveillance functions as a national early warning system for emerging substance-related harm. After a sharp decline in kava-related exposures reported to NPDS after the 2002 FDA advisory on kava-associated liver injury (*4*), reported exposures have increased substantially since 2011. This increase parallels the expanded availability of commercial kava products in the United States (*2*,*7*), despite the FDA conclusion that these recreational or relaxation beverages are not safe for human consumption (*5*). Recent exposures have predominantly involved men aged ≥20 years and have been characterized by higher rates of serious medical outcomes, associated with increasing reports of co-use with kratom.

The resurgence of kava-related exposures reported to poison centers also coincides with the expansion of the nonalcoholic beverage market, as consumers increasingly seek alternatives to alcohol (*8*). These products are frequently sold online and in vape shops near college campuses (*9*), mirroring demographic patterns observed in exposure data, and are commonly marketed as a way to feel social without alcohol or a hangover. NPDS data findings are consistent with FDA reports indicating that kava ingestion can cause substantial gastrointestinal and neurologic effects, particularly when used in nontraditional preparations that contain higher doses or are combined with other substances such as kratom (*4*,*5*). In contrast to some countries where kava products are subject to regulatory dose limits (e.g., a maximum daily intake of 250 mg kavalactones from water-based extracts and 125 mg limit per individual tablet or capsule), kava and kava-kratom combination products

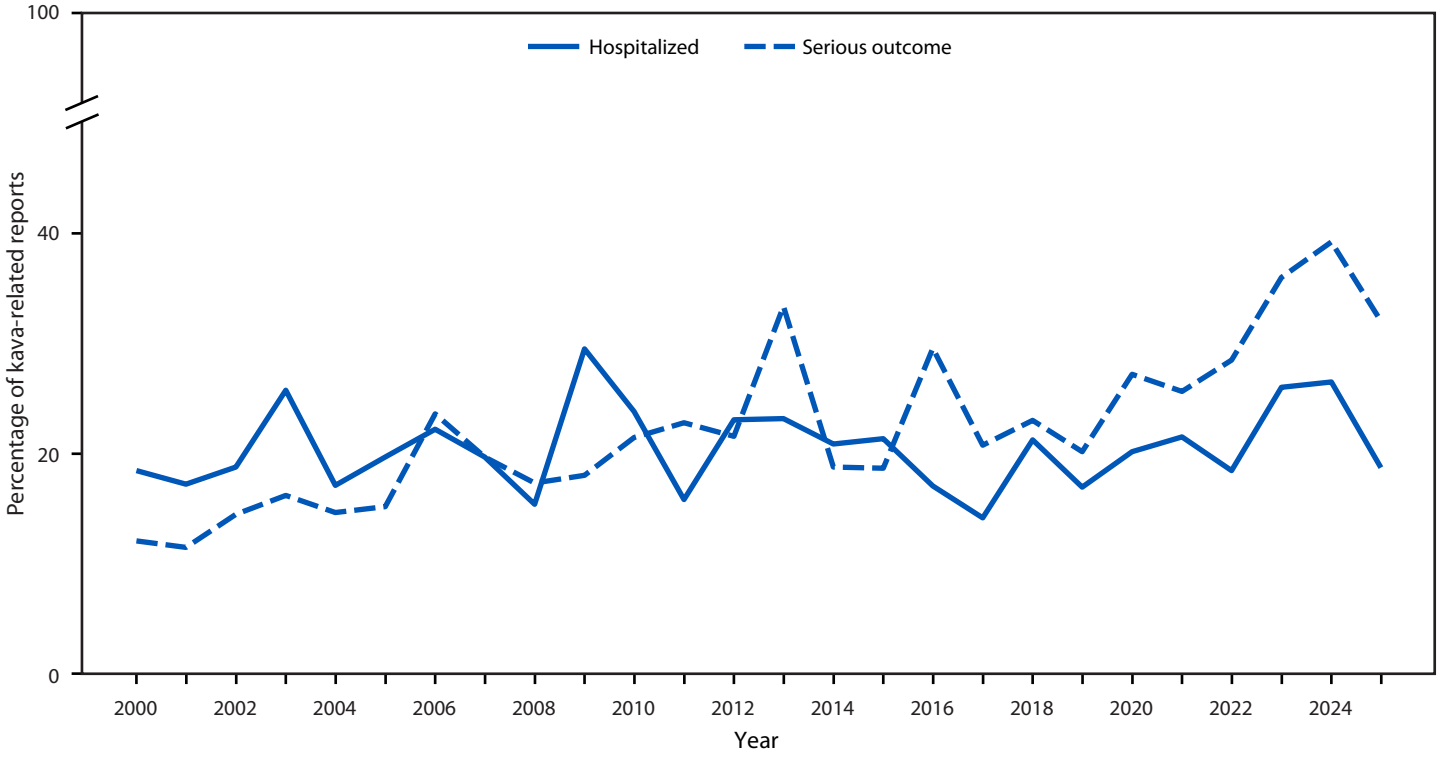
FIGURE 1. Number of kava-related reports to poison centers, by sex (A) and age group (B) — National Poison Data System, United States, 2000–2025*



Abbreviation: FDA = Food and Drug Administration.
* In 2002, FDA released a consumer advisory indicating that kava-containing dietary supplements might be associated with severe liver injury.

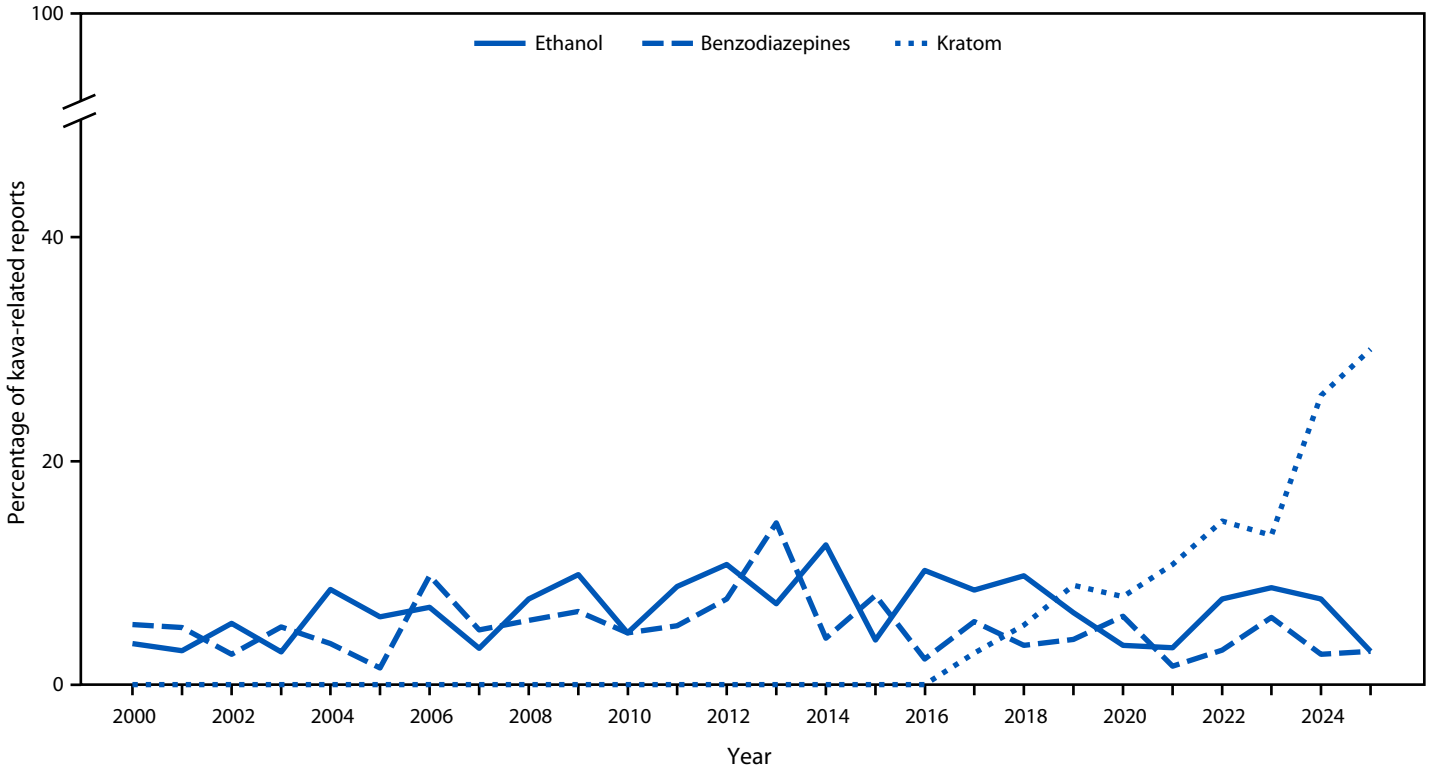
sold in the United States are unregulated and advertised to contain >250 mg kavalactones per serving (30 ml), often with multiple servings per container (*5*). Actual kavalactone content might be even higher, because these products are not subject to standardized manufacturing or content verification as is alcohol. Furthermore, hepatotoxicity and other adverse effects have been linked to the chronic consumption of high-potency commercial products (*4,5*). In this analysis, transaminase elevations were reported in a small proportion of cases; however, no cases of acute liver failure were identified. These findings are consistent with rare reports of idiosyncratic hepatotoxicity associated with kava use. Continued promotion of these

FIGURE 2. Percentage of kava-related poison center reports involving hospitalization or other serious medical outcomes* — National Poison Data System, United States, 2000–2025



* Death, major effect (life-threatening effect or one that results in substantial disability or disfigurement [e.g., status epilepticus]), or moderate effect (pronounced, prolonged, or systemic effect that usually requires some form of treatment, but is not life-threatening [e.g., hypoglycemia with confusion]).

FIGURE 3. Percentage of kava-related poison center reports involving ethanol, benzodiazepines, or kratom use — National Poison Data System, United States, 2000–2025



Summary

What is already known about this topic?

Kava, a plant native to the Pacific Islands, is traditionally consumed in religious and cultural ceremonies. In the United States, it is sold as unregulated concentrated extracts and ready-to-drink beverages and commonly marketed as a healthy alternative to alcohol. Reports of liver toxicity and co-use with kratom, a psychoactive plant with opioid-like properties, have raised safety concerns.

What is added by this report?

Analysis of 2000–2025 National Poison Data System exposure data identified a resurgence of kava-related exposure reports since 2011, with recent exposures primarily involving men aged ≥20 years. Rates of serious medical outcomes have approximately doubled, coinciding with rising co-use of kava with kratom.

What are the implications for public health practice?

Enhanced surveillance, increased clinical awareness, and targeted education might help reduce risks from kava and its emerging co-use with kratom, particularly among U.S. men.

products without adequate verification of product content, consumer education regarding potential adverse health effects, and clinical awareness of evolving exposure patterns represents an ongoing public health concern.

Limitations

The findings in this report are subject to at least four limitations. First, NPDS is subject to reporting bias, with the accuracy of data being subject to correct input and coding of medical outcomes and the highest level of care received. Second, because reporting to poison centers is voluntary, NPDS likely does not include all kava-related exposures, particularly those that are mild or self-managed. Third, poison centers upload deidentified data to NPDS; therefore, it is not possible to distinguish between first-time and repeat exposure reports. Finally, NPDS generic codes do not permit distinction among product types. Therefore, it was not possible to capture information on product type, including preparation method or dose, limiting conclusions about formulation- and dose-specific risk.

Implications for Public Health Practice

The reemergence of kava-related exposures with clinical effects reported to poison centers in the United States, coinciding with increased availability of commercial products with high kavalactone content and co-use with kratom, represents a public health concern. Continued surveillance and increased clinical awareness could improve recognition, reporting, and characterization of high-risk product formulations and use patterns. Targeted public health education might help inform consumers that commercially available kava products are not regulated and are not recognized as safe for use as recreational beverages by FDA, and that the formulations commonly sold in the United States have been associated with adverse health effects, especially when used in large quantities. These efforts are particularly important for young men, who represent a disproportionate share of recent exposures.

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Influenza and COVID-19 Vaccination Coverage Among Health Care Personnel — United States, 2024–25 Respiratory Virus Season

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Abstract

The Advisory Committee on Immunization Practices (ACIP) recommends that all health care personnel (HCP) receive an annual influenza vaccination to reduce the risk for influenza and influenza-related morbidity and mortality among themselves and their patients. For the 2024–25 respiratory virus season, ACIP also recommended that all HCP be vaccinated against COVID-19. During March 26–April 17, 2025, CDC conducted a nonprobability opt-in internet panel survey of 2,650 U.S. HCP to estimate influenza and COVID-19 vaccination coverage during the 2024–25 respiratory virus season. Overall, 76.3% of HCP reported having received an influenza vaccine and 40.2% reported receiving the 2024–25 COVID-19 vaccine. Influenza vaccination coverage was highest among pharmacists (94.6%), physicians (92.6%), and HCP who worked in hospital settings (88.3%). COVID-19 vaccination coverage was highest among physicians (46.7%), assistants or aides (46.7%), and HCP who worked in long-term care and home health care settings (44.5%). Both influenza and COVID-19 vaccination coverage rates were highest among HCP whose employer required or recommended the vaccines or offered them on-site. A multipronged approach, including educating HCP about benefits of vaccination and implementing workplace strategies (such as employer vaccination recommendations or offering on-site vaccination) might improve vaccination coverage and reduce influenza- and COVID-19–related morbidity among HCP.

Introduction

Health care personnel (HCP) are at risk for exposure to respiratory infections, including influenza and COVID-19 (*1*,*2*). Receipt of influenza and COVID-19 vaccination by HCP helps reduce morbidity among HCP as well as workplace absenteeism (*3*,*4*). In addition, preventing influenza among HCP through vaccination might help prevent influenza among patients in health care settings by reducing their exposure (*4*). The Advisory Committee on Immunization Practices (ACIP) recommends annual influenza vaccination for all HCP (*5*). During the 2024–25 respiratory virus season, ACIP also recommended that all HCP be vaccinated against COVID-19 (*6*). Data from a nonprobability opt-in internet panel survey of 2,650 U.S. HCP were analyzed to evaluate workplace vaccination requirements and estimate influenza and COVID-19 vaccination coverage during the 2024–25 respiratory virus season.

Methods

Data Source

An internet panel survey of U.S. HCP was conducted during March 26–April 17, 2025, to provide estimates of influenza and COVID-19 vaccination coverage among HCP during the 2024–25 respiratory virus season. Similar annual surveys have been conducted since the 2010–11 influenza season (FluVaxView | CDC) (*7*). For each annual survey, respondents were recruited from two preexisting national opt-in internet sources: Medscape,* a medical website managed by WebMD Health Professional Network, and general population internet panels operated by Dynata.† Panel respondents were eligible to participate based on screening questions related to health care work setting and occupation. Respondents could select one or more work settings, and, based on their selections, were categorized into four work settings: 1) hospital, 2) ambulatory care, 3) long-term care (LTC) (including nursing homes, assisted living facilities, other long-term care facilities, home health agencies, and home health care settings), and 4) other (dentist's offices or dental clinics, pharmacies, emergency medical services, and other settings where clinical care or related services are provided to patients).

Data Analysis

Responses were weighted to the distribution of the U.S. population of HCP§ by occupation,¶ age, sex, race and ethnicity, work setting, and U.S. Census Bureau region. A poststratification weight for each respondent in the survey was calculated by fitting a generalized exponential model and estimating the

* Physicians, nurse practitioners, physician assistants, nurses, dentists, pharmacists, allied health professionals, technicians, technologists, emergency medical technicians, paramedics, and students in a medical-related field were recruited from the current membership roster of Medscape.

† Assistants, aides, and nonclinical personnel (e.g., administrators, clerical support workers, janitors, food service workers, and housekeepers) were recruited from general population internet panels operated by Dynata.

§ Population control totals of U.S. HCP by occupation and work setting were obtained from the U.S. Department of Commerce Bureau of Labor Statistics' occupational employment and wage statistics. Population control totals by other demographic characteristics were obtained from the Bureau of Labor Statistics' labor force statistics from the current population survey.

¶ Major occupational categories included physicians and dentists, nurse practitioners and physician assistants, nurses, pharmacists, other clinical personnel (including allied health professionals, technicians and technologists, and emergency medical technicians and paramedics), assistants and aides, and nonclinical personnel (including administrative support staff members and managers and nonclinical support staff members).

model parameters using calibration equations, which calibrate the sample to the target population and minimize the unequal weighting effect.

Weighted influenza and COVID-19** vaccination coverage for the 2024–25 and 2023–24 seasons (and corresponding 95% CIs) were estimated for each work setting, occupation, and demographic characteristic. Each participant was asked four separate questions to ascertain employer vaccination recommendations or requirements and on-site influenza and COVID-19 vaccination.††

To examine trends in HCP influenza coverage over time, annual influenza vaccination coverage for all work settings from the previous 10 seasons from similar annual surveys conducted since the 2015–16 influenza season were examined. The Korn-Graubard method was used to calculate CIs around coverage estimates, assuming that the weighted estimates were unbiased. CDC's reliability criteria for proportions were applied to the coverage estimates in the descriptive analyses of HCP characteristics (*8*). T-tests were used to determine differences in estimated influenza and COVID-19 vaccination coverage among subgroups. Rao-Scott chi-square testing was used to calculate differences in estimated influenza vaccination coverage between seasons; p-values <0.05 were considered statistically significant. SAS/STAT survey procedures (version 9.4; SAS Institute) were used to conduct all analyses. This activity was reviewed by CDC, deemed not research, and was conducted consistent with applicable federal law and CDC policy.§§

Results

Among 2,807 initial participants in the 2024–2025 survey, 2,702 (96.3%) completed the survey¶¶; among these, 52 participants were excluded because they reported working in a setting other than those listed, and the description did not qualify as a health care setting. The final analytic sample included 2,650 respondents.

Influenza Vaccination Coverage

During the 2024–25 respiratory virus season, 76.3% of HCP received an influenza vaccination, similar to the 2023–24 season (Table). Among all HCP, influenza vaccination coverage remained stable from the 2015–16 season through the 2019–20 season (average = 79.5%; range = 78.4%–80.6%) (Figure 1). Coverage declined to 75.7% during the 2020–21 season, increased slightly to 80.6% in 2021–22, declined the following season, and remained stable in subsequent seasons, although these differences were not statistically significant. Influenza vaccination coverage during the 2024–25 season was highest among HCP working in hospital settings (88.3%) and lowest among HCP working in LTC settings (70.5%) (Table).

** Respondents were considered to have received a 2024–25 COVID-19 vaccine if they responded "Yes" to the question, "The 2024–25 COVID-19 vaccine became available on August 22, 2024. Have you received a COVID-19 vaccine since August 22, 2024?"

†† Employer-related vaccination questions included, "Since July 1, 2024, has your employer recommended or required that you be vaccinated for flu?" and "Has your employer recommended or required that you be vaccinated with the 2024–25 COVID-19 vaccine?" Responses for both questions included "recommend," "require," "neither," or "unsure." Respondents could only select one option for each setting where they worked. Questions for on-site vaccination questions included, "Since July 1, 2024, has your employer offered flu vaccination on-site?" and "Does your employer offer the 2024–25 COVID-19 vaccine on-site?"

§§ 45 C.F.R. part 46; 21 C.F.R. part 56; 42 U.S.C. Sect. 241(d); 5 U.S.C. Sect. 552a; 44 U.S.C. Sect. 3501 et seq.

¶¶ A survey response rate requires specification of the denominator at each stage of sampling. During recruitment of an online opt-in survey sample, such as the internet panels described in this report, these data are not available; therefore, a response rate cannot be calculated. Instead, the survey completion rate is provided.

TABLE. Influenza and COVID-19 vaccination* coverage among health care personnel, by selected demographic and workplace characteristics—internet panel surveys,† United States, 2023–24 and 2024–25 respiratory virus seasons

Characteristics and vaccine received	2023–24 season		2024–25 season		Percentage point change in weighted % vaccinated 2023–24 to 2024–25 (95% CI)
	No. (weighted %)	Weighted % vaccinated (95% CI)§	No. (weighted %)	Weighted % vaccinated (95% CI)§	
Influenza vaccine, total	**2,750**	**75.4 (72.4 to 78.3)**	**2,648**	**76.3 (73.1 to 79.3)**	**0.9 (−3.3 to 5.1)**
Age group, yrs					
18–29 (Ref)	167 (12.7)	72.5 (61.5 to 81.8)	125 (13.7)	73.2 (61.1 to 83.2)	0.7 (−13.6 to 15.1)
30–44	1,071 (45.5)	74.8 (69.9 to 79.3)	1,018 (44.1)	75.2 (69.9 to 80.0)	0.4 (−6.4 to 7.1)
45–59	985 (27.9)	74.9 (70.0 to 79.5)	998 (28.5)	78.1 (73.1 to 82.6)	3.2 (−3.3 to 9.8)
≥60	525 (13.8)	80.7 (72.4 to 87.4)	507 (13.7)	79.3 (72.0 to 85.4)	−1.4 (−11.0 to 8.3)
Race and ethnicity¶					
White, non-Hispanic (Ref)	1,701 (58.9)	75.9 (72.6 to 79.0)	1,641 (56.3)	74.2 (70.2 to 77.9)	−1.7 (−6.7 to 3.2)
Asian, non-Hispanic	220 (6.7)	89.2 (80.7 to 94.8)**	210 (7.0)	89.2 (72.7 to 97.5)**	0 (−12.8 to 12.9)
Black or African American, non-Hispanic	322 (16.9)	70.5 (59.9 to 79.7)	338 (17.5)	76.5 (68.8 to 83.2)	6.0 (−5.7 to 17.8)
Hispanic or Latino	420 (14.5)	74.5 (64.4 to 82.9)	344 (14.9)	75.0 (62.6 to 84.9)	0.5 (−13.3 to 14.3)
Other, non-Hispanic	81 (3.0)	66.4 (49.2 to 80.9)††	114 (4.3)	85.2 (72.9 to 93.4)**	18.9 (1.0 to 36.7)§§

See table footnotes on page 167.

TABLE. (*Continued*) Influenza and COVID-19 vaccination* coverage among health care personnel, by selected demographics and workplace characteristics— internet panel surveys,† United States, 2023–24 and 2024–25 respiratory virus seasons

Characteristics and vaccine received	2023–24 season		2024–25 season		Percentage point change in weighted % vaccinated 2023–24 to 2024–25 (95% CI)
	No. (weighted %)	Weighted % vaccinated (95% CI)§	No. (weighted %)	Weighted % vaccinated (95% CI)§	
Sex					
Female (Ref)	1,911 (77.1)	72.5 (68.9 to 75.9)	1,827 (76.5)	76.0 (72.3 to 79.4)	3.5 (−1.4 to 8.3)
Male	817 (22.9)	84.8 (79.0 to 89.5)**	821 (23.5)	77.4 (70.2 to 83.6)	−7.4 (−15.6 to 0.8)
Education					
Some college education or less (Ref)	635 (28.9)	59.5 (53.5 to 65.3)	520 (26.2)	66.6 (60.0 to 72.7)	7.1 (−1.3 to 15.6)
Associate or bachelor's degree	858 (43.9)	80.8 (75.6 to 85.3)**	782 (44.5)	78.5 (73.1 to 83.4)**	−2.2 (−9.1 to 4.6)
Master's, professional, or doctoral degree	1,254 (27.2)	83.7 (79.1 to 87.5)**	1,346 (29.4)	81.7 (77.0 to 85.7)**	−2.0 (−7.8 to 3.8)
Occupation¶¶					
Physician (Ref)	355 (3.8)	93.0 (88.5 to 96.2)	366 (3.6)	92.6 (88.0 to 95.8)	−0.4 (−5.6 to 4.7)
Nurse practitioner/Physician assistant***	219 (1.7)	85.7 (79.9 to 90.3)**	244 (2.1)	88.0 (83.0 to 91.9)	2.3 (−4.3 to 8.8)
Nurse	220 (17.8)	87.6 (80.7 to 92.7)	195 (17.3)	79.8 (69.2 to 88.0)**	−7.8 (−18.3 to 2.8)
Pharmacist	328 (1.4)	93.9 (90.5 to 96.3)	315 (1.3)	94.6 (91.5 to 96.8)	0.8 (−2.9 to 4.4)
Other clinical personnel†††	592 (21.4)	81.8 (76.9 to 86.0)**	579 (21.5)	76.1 (70.5 to 81.2)**	−5.6 (−12.4 to 1.1)
Assistant/Aide	698 (23.5)	63.2 (58.5 to 67.7)**	621 (23.6)	69.0 (63.5 to 74.1)**	5.8 (−1.1 to 12.6)
Nonclinical personnel§§§	307 (30.3)	69.5 (61.5 to 76.8)**	298 (30.5)	76.5 (69.0 to 83.0)**	7.0 (−3.0 to 17.0)
Work setting¶¶¶					
Hospital	929 (38.8)	89.1 (84.8 to 92.5)**	1,030 (40.1)	88.3 (83.4 to 92.2)**	−0.8 (−6.4 to 4.8)
Ambulatory care	991 (37.4)	74.6 (69.8 to 79.0)	987 (36.3)	74.2 (68.7 to 79.2)	−0.4 (−7.2 to 6.4)
LTCF/Home health care****	660 (26.5)	65.2 (58.0 to 71.9)**	611 (27.9)	70.5 (64.4 to 76.1)**	5.3 (−3.5 to 14.1)
Other clinical setting††††	573 (9.7)	68.0 (59.2 to 76.0)	508 (11.6)	73.7 (63.6 to 82.3)	5.7 (−6.4 to 17.8)
Location of primary workplace§§§§					
Rural (Ref)	370 (13.8)	70.9 (61.3 to 79.2)	359 (13.1)	71.0 (62.3 to 78.8)	0.2 (−11.5 to 11.9)
Nonrural	2,376 (86.2)	76.1 (72.9 to 79.2)	2,289 (86.9)	77.1 (73.6 to 80.4)	1.0 (−3.6 to 5.5)
U.S. Census Bureau region¶¶¶¶					
Northeast (Ref)	620 (18.0)	73.2 (64.9 to 80.5)	559 (18.7)	79.6 (71.6 to 86.2)	6.4 (−3.8 to 16.6)
Midwest	588 (24.1)	80.4 (73.0 to 86.6)	583 (22.7)	76.5 (70.1 to 82.1)	−3.9 (−12.6 to 4.7)
South	985 (35.6)	74.7 (70.3 to 78.8)	1,002 (37.2)	76.7 (71.4 to 81.5)	2.0 (−4.4 to 8.4)
West	552 (22.3)	72.9 (65.9 to 79.2)	504 (21.4)	72.6 (64.1 to 80.1)	−0.2 (−10.3 to 9.8)
Employer vaccination requirement***					
Required (Ref)	979 (39.3)	97.5 (95.9 to 98.7)	1,017 (38.7)	97.3 (95.4 to 98.6)	−0.2 (−2.2 to 1.7)
Recommended	1,089 (38.5)	74.4 (69.4 to 79.0)**	1,045 (39.8)	73.9 (68.0 to 79.3)**	−0.5 (−7.4 to 7.0)
Not required or recommended	650 (22.2)	37.8 (31.6 to 44.3)**	556 (21.4)	42.6 (35.2 to 50.2)**	4.8 (−4.7 to 14.4)
Offered influenza vaccine on-site†††††					
Yes (Ref)	967 (54.9)	74.2 (68.6 to 79.3)	977 (59.2)	73.0 (67.1 to 78.4)	−1.2 (−8.8 to 6.3)
No	773 (45.1)	45.0 (39.1 to 51.0)**	624 (40.8)	48.4 (41.5 to 55.4)**	3.4 (−5.5 to 12.3)
Receipt of COVID-19 vaccine					
Yes (Ref)	963 (31.3)	94.4 (91.8 to 96.3)	1,110 (40.2)	94.2 (91.6 to 96.2)	−0.1 (−3.2 to 2.9)
No	1,786 (68.7)	66.8 (62.8 to 70.6)**	1,536 (59.8)	64.3 (59.6 to 68.9)**	−2.5 (−8.4 to 3.5)
COVID-19 vaccine, total	**2,749**	**31.3 (28.3 to 34.5)**	**2,647**	**40.2 (36.8 to 43.7)**	**8.9 (4.3 to 13.4)§§**
Age group, yrs					
18–29 (Ref)	167 (12.7)	30.1 (19.6 to 42.3)	125 (13.7)	44.1 (31.9 to 56.9)	14.1 (−2.2 to 30.3)
30–44	1,071 (45.6)	28.5 (23.9 to 33.4)	1,016 (44.1)	38.2 (32.7 to 43.9)	9.7 (2.5 to 16.9)§§
45–59	985 (27.9)	29.8 (24.6 to 35.4)	999 (28.5)	40.3 (34.5 to 46.2)	10.5 (2.7 to 18.2)§§
≥60	524 (13.8)	45.0 (37.0 to 53.2)**	507 (13.7)	42.6 (35.0 to 50.6)	−2.3 (−13.3 to 8.6)
Race and ethnicity¶					
White, non-Hispanic (Ref)	1,700 (58.9)	29.6 (25.8 to 33.6)	1,640 (56.3)	35.5 (31.5 to 39.7)	5.9 (0.4 to 11.5)§§
Asian, non-Hispanic	220 (6.7)	53.4 (39.3 to 67.0)**	210 (7.0)	49.6 (35.5 to 63.8)	−3.8 (−22.8 to 15.3)
Black or African American, non-Hispanic	322 (17.0)	29.7 (21.9 to 38.4)	339 (17.5)	47.5 (38.5 to 56.6)**	17.8 (6.0 to 29.7)§§
Hispanic or Latino	420 (14.5)	28.7 (20.8 to 37.7)	344 (14.9)	45.8 (34.9 to 57.0)	17.1 (3.8 to 30.5)§§
Other, non-Hispanic	81 (3.0)	37.2 (19.9 to 57.2)††	113 (4.3)	40.6 (23.3 to 59.9)††	3.5 (−21.6 to 28.5)
Sex					
Female (Ref)	1,911 (77.1)	28.3 (25.0 to 31.8)	1,827 (76.5)	40.1 (36.3 to 44.0)	11.8 (6.7 to 16.9)§§
Male	816 (22.9)	40.1 (32.7 to 47.9)**	820 (23.5)	40.6 (33.4 to 48.0)	0.4 (−9.7 to 10.6)
Education					
Some college education or less (Ref)	635 (28.9)	25.4 (20.1 to 31.2)	521 (26.2)	36.2 (30.0 to 42.7)	10.8 (2.6 to 19.0)§§
Associate or bachelor's degree	858 (43.9)	30.4 (25.2 to 35.9)	782 (44.5)	37.9 (32.1 to 44.0)	7.6 (−0.2 to 15.3)
Master's, professional, or doctoral degree	1,253 (27.2)	39.1 (33.7 to 44.7)**	1,344 (29.3)	47.3 (41.5 to 53.1)**	8.2 (0.4 to 16.0)§§

See table footnotes on the next page.

TABLE. (*Continued*) Influenza and COVID-19 vaccination* coverage among health care personnel, by selected demographics and workplace characteristics— internet panel surveys,† United States, 2023–24 and 2024–25 respiratory virus seasons

Characteristics and vaccine received	2023–24 season		2024–25 season		Percentage point change in weighted % vaccinated 2023–24 to 2024–25 (95% CI)
	No. (weighted %)	Weighted % vaccinated (95% CI)§	No. (weighted %)	Weighted % vaccinated (95% CI)§	
Occupation¶¶					
Physician (Ref)	354 (3.8)	52.7 (45.5 to 59.8)	366 (3.6)	46.7 (40.0 to 53.5)	−6.0 (−15.6 to 3.5)
Nurse practitioner/ Physician assistant***	219 (1.7)	29.4 (23.1 to 36.3)**	244 (2.1)	32.4 (26.0 to 39.3)**	3.0 (−6.1 to 12.1)
Nurse	220 (17.8)	29.8 (21.6 to 39.0)**	195 (17.3)	26.8 (18.6 to 36.4)**	−2.9 (−14.9 to 9.1)
Pharmacist	328 (1.4)	39.8 (33.5 to 46.5)**	314 (1.3)	41.3 (34.4 to 48.5)	1.5 (−7.8 to 10.8)
Other clinical personnel†††	592 (21.4)	34.1 (28.0 to 40.6)**	578 (21.5)	34.7 (28.4 to 41.4)**	0.6 (−8.1 to 9.4)
Assistant/Aide	698 (23.5)	27.7 (23.5 to 32.3)**	622 (23.6)	46.7 (41.1 to 52.3)	19.0 (12.1 to 25.9)§§
Nonclinical personnel§§§	307 (30.3)	30.1 (23.2 to 37.7)**	298 (30.6)	46.1 (38.3 to 54.0)	16.0 (5.6 to 26.3)§§
Work setting¶¶¶					
Hospital	929 (38.8)	33.9 (28.6 to 39.6)	1,029 (40.1)	44.1 (38.2 to 50.2)	10.2 (2.2 to 18.1)§§
Ambulatory care	990 (37.4)	26.1 (21.7 to 30.8)**	985 (36.3)	39.1 (33.4 to 44.9)	13.0 (5.8 to 20.1)§§
LTCF/Home health care****	660 (26.5)	34.8 (28.4 to 41.6)	612 (27.9)	44.5 (38.7 to 50.4)	9.7 (1.1 to 18.3)§§
Other clinical setting††††	573 (9.7)	28.1 (20.1 to 37.3)	507 (11.6)	40.6 (30.3 to 51.5)	12.4 (−0.7 to 25.6)
Location of primary workplace§§§§					
Rural (Ref)	370 (13.8)	25.7 (17.2 to 35.8)	359 (13.1)	30.3 (21.7 to 40.1)	4.6 (−7.9 to 17.2)
Nonrural	2,375 (86.2)	32.2 (28.9 to 35.6)	2,288 (86.9)	41.7 (37.9 to 45.6)**	9.5 (4.5 to 14.5)§§
U.S. Census Bureau region¶¶¶¶					
Northeast (Ref)	620 (18.0)	32.8 (26.1 to 40.1)	560 (18.8)	37.5 (30.1 to 45.3)	4.7 (−5.3 to 14.7)
Midwest	588 (24.1)	33.3 (26.0 to 41.1)	582 (22.7)	37.1 (30.5 to 44.2)	3.9 (−6.0 to 13.7)
South	984 (35.6)	27.7 (23.1 to 32.7)	1,001 (37.2)	42.0 (36.2 to 47.9)	14.3 (6.9 to 21.6)§§
West	552 (22.3)	33.7 (26.9 to 41.0)	504 (21.4)	42.7 (34.3 to 51.5)	9.0 (−1.8 to 19.8)
Employer vaccination requirement***					
Required (Ref)	265 (12.5)	55.6 (45.0 to 65.7)	277 (14.1)	82.8 (73.3 to 90.0)	27.3 (14.5 to 40.0)§§
Recommended	1,293 (47.9)	38.0 (33.0 to 43.3)**	1,205 (44.7)	46.0 (40.6 to 51.6)**	8.0 (0.6 to 15.4)§§
Not required or recommended	1,160 (39.6)	15.5 (12.3 to 19.0)**	1,135 (41.3)	19.1 (15.2 to 23.6)**	3.7 (−1.5 to 8.8)
Offered COVID-19 vaccine on-site†††††					
Yes (Ref)	712 (26.1)	40.8 (33.8 to 48.2)	1,106 (46.2)	42.9 (37.0 to 49.0)	2.1 (−7.0 to 11.2)
No	1,741 (73.9)	23.2 (19.9 to 26.8)**	1,234 (53.8)	24.7 (20.7 to 29.1)**	1.5 (−3.8 to 6.8)
Receipt of influenza vaccine					
Yes (Ref)	2,158 (75.4)	39.2 (35.4 to 43.1)	2,135 (76.4)	49.6 (45.6 to 53.7)	10.4 (4.9 to 15.9)§§
No	591 (24.6)	7.2 (4.7 to 10.5)**	511 (23.6)	9.8 (6.4 to 14.2)**	2.6 (−2.0 to 7.2)

Abbreviations: LTCF = long-term care facility; Ref = referent group.

* Respondents were considered to have received a 2024–25 COVID-19 vaccine if they responded "Yes" to the question, "The 2024–25 COVID-19 vaccine became available on August 22, 2024. Have you received a COVID-19 vaccine since August 22, 2024?" Two respondents for influenza vaccination analysis and three respondents for COVID-19 vaccination analysis were removed due to unknown vaccination status.

† Respondents were recruited from two preexisting national opt-in internet sources: Medscape, a medical website managed by WebMD Health Professional Network, and Dynata for general population internet panels.

§ Modified Clopper-Pearson 95% CI according to the approach of Korn and Graubard.

¶ Race and ethnicity were self-reported. Respondents who identified as Hispanic or Latino might be of any race. The "other" race category included persons who identified as American Indian or Alaska Native, Native Hawaiian or Pacific Islander, or Middle Eastern or North African, and persons who selected multiple races.

** Statistically significant ($p<0.05$) difference compared with Ref.

†† Estimates do not meet the CDC standards of reliability and should be interpreted with caution.

§§ Statistically significant ($p<0.05$) difference across seasons.

¶¶ Excluded students.

*** For the 2025 survey, nurse, midwife, and nurse anesthetist were separated from the nurse occupation and regrouped with nurse practitioner and physician assistant for weighting purposes.

††† Includes dentists, allied health professionals, technicians and technologists, emergency technicians, emergency medical technicians, and paramedics.

§§§ Includes administrative support staff members, administrative managers, and nonclinical support staff members.

¶¶¶ Respondents could select more than one work setting. Each work setting is represented by a separate variable with two values (yes and no; no is the Ref).

**** Nursing home, assisted living facility, other LTCF, home health agency, or home health care.

†††† Includes dentist office or dental clinic, pharmacy, emergency medical services, and other settings where clinical care or related services were provided to patients.

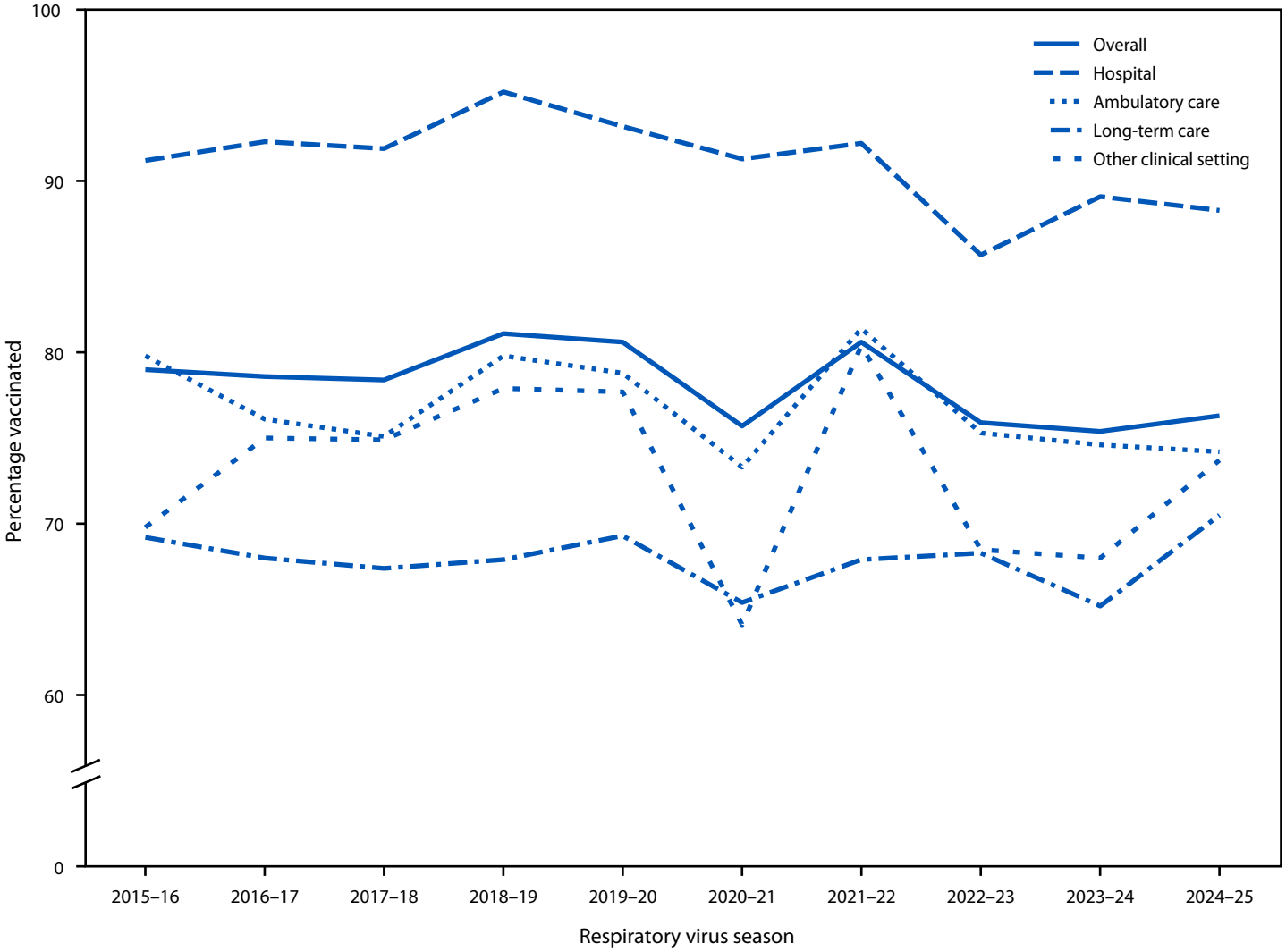
§§§§ Rurality was defined using zip code areas in which >50% of the population lives in a nonmetropolitan county, a rural U.S. Census Bureau tract, or both, according to the Health Resources and Services Administration's definition of rural population.

¶¶¶¶ U.S. Census Bureau Regions and Divisions of the United States

***** Students were not asked workplace vaccination policy questions and were excluded.

††††† Excluded students and those with employer vaccination requirement.

FIGURE 1. Percentage of health care personnel who received an annual influenza vaccination,* by work setting† — internet panel surveys,§ United States, 2015–16 through 2024–25 respiratory virus seasons



* Before the 2020–21 influenza season, weights were calculated based on the known population control totals of the U.S. population of health care personnel, controlling for the main effects (occupation, age group, race and ethnicity, sex, work setting, and U.S. Census Bureau region); for 2020–21 and later seasons, interaction terms between occupation and the other main effects were added in the weighting model (Influenza Vaccination Coverage Among Health Care Personnel — United States, 2020–21 Influenza Season | FluVaxView | Seasonal Influenza (Flu) | CDC).

† Respondents could select more than one work setting. Long-term care included nursing home, assisted living facility, other long-term care facility, home health agency, or home health care settings. The other clinical setting category included dentist office or dental clinic, pharmacy, emergency medical services, and other settings where clinical care or related services were provided to patients.

§ Respondents were recruited from two preexisting national opt-in internet sources: Medscape, a medical website managed by WebMD Health Professional Network, and Dynata, for general population internet panels.

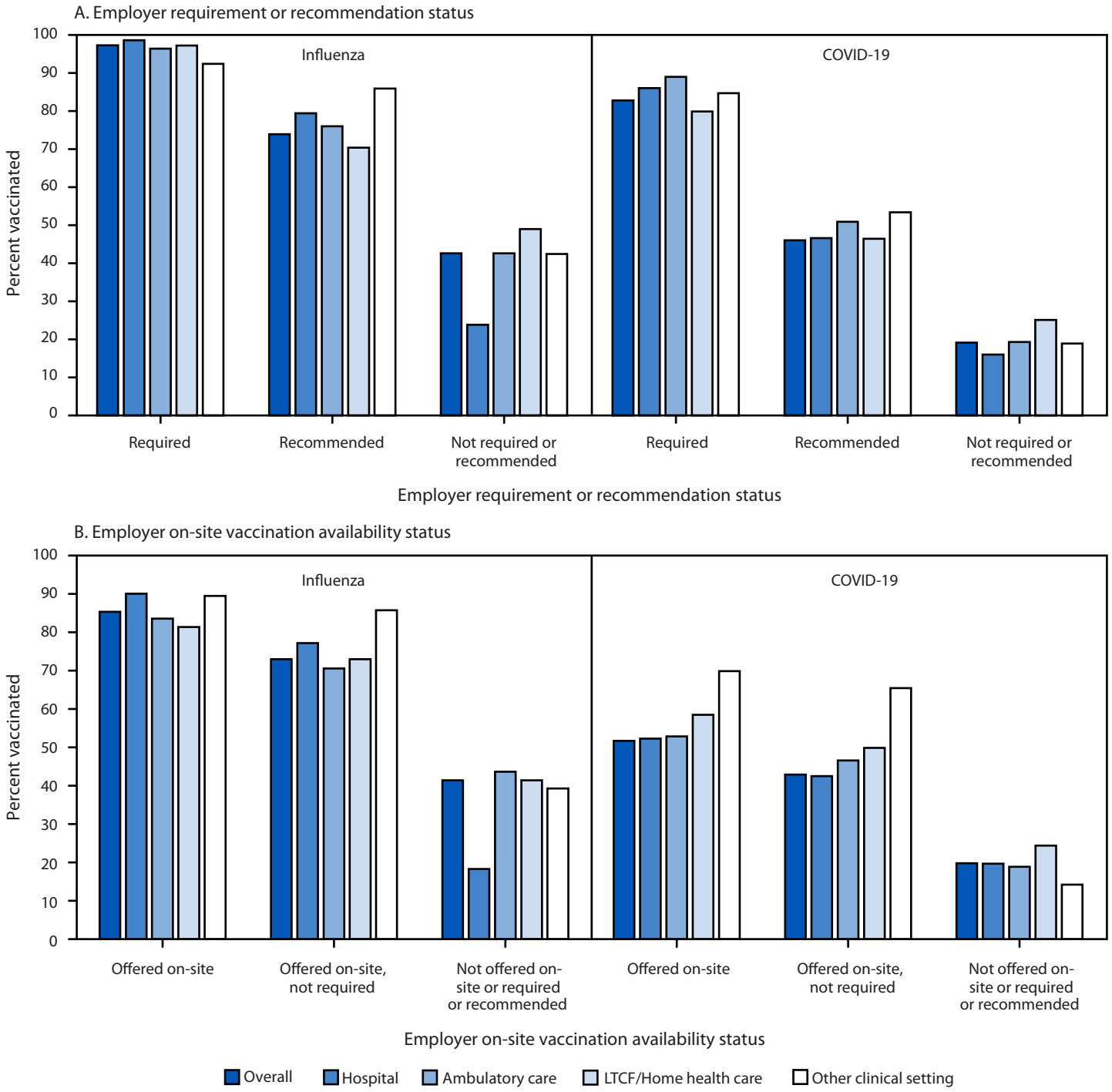
Coverage among assistants and aides (69.0%), other clinical personnel (76.1%), nonclinical personnel (76.5%), and nurses (79.8%) was lower than that among physicians (92.6%).

During the 2024–25 season, significantly higher influenza vaccination coverage was reported among non-Hispanic Asian HCP (89.2%) and non-Hispanic other HCP (85.2%); among those with a master's, professional, or doctoral degree (81.7%); and those with an associate or bachelor's degree (78.5%) compared with their respective reference groups. Coverage was higher among HCP who reported an employer requirement for influenza vaccination (97.3%) than among those who reported an employer recommendation (73.9%) or no employer recommendation or requirement for vaccination (42.6%) (Figure 2).

COVID-19 Vaccination Coverage

Overall, 40.2% of HCP reported receiving the 2024–25 COVID-19 vaccine, a significantly higher percentage than the 31.3% who reported receiving it during the 2023–24 season (Table). Increases in COVID-19 vaccination coverage during

FIGURE 2. Percentage of health care personnel who received influenza and COVID-19 vaccinations,* by employer requirement or recommendation for vaccination (A) and offer for on-site vaccination† (B), by work setting§ — internet panel surveys,¶ United States, 2024–25 respiratory virus season



Abbreviation: LTCF = long-term care facility.

* Respondents were asked, "Since July 1, 2024, has your employer recommended or required that you be vaccinated for flu?" and "Has your employer recommended or required that you be vaccinated with the 2024–25 COVID-19 vaccine?" Respondents who reported working in more than one location were asked separately for each work location.

† Respondents were asked, "Since July 1, 2024, has your employer offered flu vaccinations on-site?" and "Does your employer offer the 2024–25 COVID-19 vaccine on-site?" Respondents who reported working in more than one location were asked separately for each work location.

§ Respondents could select more than one work setting. Long-term care and home health care includes nursing home, assisted living facility, other LTCF, home health agency, or home health care. The other clinical setting includes dentist office or dental clinic, pharmacy, emergency medical services, and other settings where clinical care or related services were provided to patients.

¶ Respondents were recruited from two preexisting national opt-in Internet sources: Medscape, a medical website managed by WebMD Health Professional Network, and Dynata for general population internet panels.

the 2024–25 season ranged from 9.7 to 13.0 percentage points by work setting, compared with coverage during the 2023–24 season. Receipt of the COVID-19 vaccine was higher among non-Hispanic Black or African American (47.5%) HCP; those with a master's, professional, or doctoral degree (47.3%); physicians (46.7%), assistants, and aides (46.7%); HCP who worked in nonrural settings (41.7%); and HCP in work settings where employers required COVID-19 vaccination (82.8%) and offered on-site vaccination (42.9%), compared with their respective reference groups.

Employer Requirement for Vaccinations

Employer requirements for receipt of influenza and COVID-19 vaccination were reported by 38.7% and 14.1% of HCP, respectively (Supplementary Figure) (Figure 2). HCP working in other clinical settings and LTC settings were less likely to report requirements for influenza vaccination (17.1% and 24.7%, respectively) than were HCP working in ambulatory care settings (35.8%) and hospitals (59.1%). However, HCP working in ambulatory care settings were less likely to report requirements for COVID-19 vaccination (9.7%) than were those working in hospitals (15.5%) and LTC settings (19.3%).

In all work settings, coverage with both vaccines, by work setting, was higher among HCP who reported an employer requirement for vaccination (influenza: range = 92.4%–98.6% and 2024–25 COVID-19: range = 79.9%–89.0%) than among those whose employer neither recommended nor required vaccinations (influenza: range = 23.8%–49.0% and COVID-19: range = 16.0%–25.1%) (Figure 2). Coverage rates with influenza and 2024–25 COVID-19 vaccines were 73.0% and 42.9%, respectively, among HCP whose employer offered the vaccines on-site but did not require HCP vaccination; in contrast, among those HCP whose employers did not require, recommend, or offer these vaccines on-site, influenza and COVID-19 vaccination coverage rates were 41.4% and 19.8%, respectively.

Discussion

During the 2024–25 respiratory virus season, influenza vaccination coverage among HCP was similar to that during the 2023–24 season; however, compared with coverage before the COVID-19 pandemic, influenza vaccination coverage has remained persistently low for the past three seasons. Influenza has been reported as a substantial cause of HCP absenteeism and disruption of health care services (*9*) and carries a risk for transmission to patients, coworkers, and others in the health care setting (*1*,*4*). Continued monitoring of influenza vaccination coverage among HCP is important for identifying causes for lower coverage since the 2018–19 season, and, among those HCP groups at higher risk for being unvaccinated, to help guide the development and implementation of evidence-based strategies to encourage vaccination, increase coverage, reduce influenza incidence among HCP and their patients, and limit strain on the health care system.

COVID-19 vaccination coverage among all HCP during the 2024–25 season increased significantly compared with coverage during the 2023–24 season. The 2024–2025 COVID-19 vaccine became available in August 2024, 1 month earlier than the 2023–24 COVID-19 vaccine became available the preceding year (*3*). Early availability of the vaccine might have given HCP more exposure to workplace vaccination policies and campaigns and permitted them more time to receive a COVID-19 vaccine. Aligning COVID-19 vaccine delivery, communication, and promotion with those for influenza vaccine has the potential to increase coverage with both vaccines during peak respiratory virus season (*10*).

Employer vaccination requirements, recommendations, and offers for on-site receipt of influenza and COVID-19 vaccination were strongly associated with influenza and COVID-19 vaccination coverage among HCP. Whereas requirements for COVID-19 vaccination were infrequently reported in all work settings, coverage with both influenza and COVID-19 was significantly higher when the vaccines were provided on-site, even in the absence of a vaccination requirement. These findings support the recommendations found in The Guide to Community Preventive Services, which include active promotion of on-site vaccination to increase influenza vaccination coverage among HCP.

Influenza vaccination coverage among HCP working in LTC settings is consistently lower than that among those working in other settings; however, during the 2024–25 season, influenza vaccination coverage among HCP working in LTC settings increased 5.3 percentage points compared with that during the 2023–24 season. Continuing to prioritize strategies and increasing activities to educate HCP about the benefits of vaccination might further increase influenza vaccination coverage among HCP in LTC settings (*1*,*2*,*4*).

In contrast to findings related to influenza vaccination coverage, COVID-19 vaccination coverage was highest among HCP working in LTC settings. The final rule published by the Centers for Medicare & Medicaid Services (CMS) requires CMS-certified nursing homes to offer COVID-19 vaccine to staff members as well as residents and to educate them about benefits and potential side effects, which might continue to increase vaccination coverage in these settings. A multipronged approach, including educating HCP about vaccination recommendations, coupled with employer vaccination requirements, recommendations, or on-site offer for vaccinations, might increase influenza and COVID-19 vaccination coverage.

Summary

What is already known about this topic?

Influenza and COVID-19 cause considerable morbidity, including among health care personnel (HCP). For the 2024–25 respiratory virus season, the Advisory Committee on Immunization Practices recommended influenza and COVID-19 vaccination for all HCP.

What is added by this report?

During the 2024–25 respiratory virus season, HCP influenza and COVID-19 vaccination coverage rates were 76.3% and 40.2%, respectively. Among HCP whose employer offered on-site influenza and COVID-19 vaccination, coverage was higher (73.0% and 42.9%, respectively) than it was among those whose employer did not offer on-site vaccination (41.4% and 19.8%, respectively).

What are the implications for public health practice?

Increasing vaccination coverage by implementing workplace policies including offering on-site vaccination might increase coverage and reduce influenza- and COVID-19–related morbidity among HCP.

Limitations

The findings in this report are subject to at least five limitations. First, the study used a nonprobability sample of volunteer members of Medscape and Dynata internet panels. Responses were weighted to be representative of the U.S. population of HCP; however, results might not be generalizable to other HCPs. Second, the self-selection of respondents to the panels and to the survey might have introduced selection bias if participation in the panel or survey is associated with vaccination status. Third, vaccination status was self-reported and might be subject to recall or social desirability bias. Fourth, formal statistics that rely on the assumption of random sampling were used to identify differences in vaccination coverage among groups in this nonrandom sample, and results should be interpreted with caution; statistical organizations recommend transparency in methods when making inferences from nonprobability surveys. Finally, limited sample size resulted in coverage estimates in some subgroups that did not meet CDC reliability criteria for reporting proportions.

Implications for Public Health Practice

Influenza and COVID-19 continue to cause considerable morbidity and mortality, and vaccination coverage among HCP remains low, increasing HCPs' risk for illness, as well as the risk for persons under their care. Increasing vaccination coverage among HCP by offering on-site vaccination, especially ensuring that opportunities for influenza and COVID-19 vaccinations are aligned, and improving vaccine knowledge through provider education might lead to increased vaccination coverage, decreases in disease incidence among HCP, and subsequent decreased transmission to patients, particularly during the respiratory virus season and in LTC settings (Preventing Transmission of Viral Respiratory Pathogens in Healthcare Settings | CDC).

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