



IMMUNIZATION PRACTICES IN COLLEGE HEALTH: REQUIREMENTS, COVERAGE, AND DATA

A 2020 American College Health Foundation Survey

Project Team

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Introduction

Immunization against vaccine preventable diseases (VPD) is an important measure of health for adolescents and young adults, many of whom attend a U.S. college or university. Data from prior studies and surveys indicate that most post-secondary institutions mandate one or more specific immunizations as a condition of entry, via a published prematriculation immunization requirement (PIR) [1-5]. In some cases, such a requirement applies to all incoming students while at other schools it may apply only to a subset of students (e.g., students living in a residence hall or those enrolled in a health professions school). What remains largely unknown, however, is the relationship between pre-matriculation vaccine requirements and the proportion of the student population that is actually covered, or presumed to be immune, for the specified disease. While one might assume there is coverage and protection based on vaccine requirements, this is not necessarily the case. For example, coverage rates for MMR and hepatitis B vaccine are often high, even at universities without any requirements, since school-based requirements for these vaccines in children have been in place for several decades. By contrast, the meningococcal group B vaccine does not have a national recommendation for routine immunization of all adolescents or college students; nonetheless, it has been required by some schools (or in some states, by law) for their students.

Data from the U.S. Centers for Disease Control and Prevention (CDC) National Immunization Survey (NIS-Teen), conducted annually among a representative sample of U.S. adolescents aged 13-17 years, provides some additional insight into this question [6]. The study estimates the proportion of adolescents in each age cohort who have received recommended vaccines. Vaccine coverage among 17-year-olds can serve as a useful proxy for estimating coverage among first year entering college students. In 2019, for this age cohort, vaccine coverage was approximately 89% or higher for hepatitis B, MMR, meningococcal ACWY (one dose), Tdap, and varicella. Vaccine coverage was much lower for HPV (57% up to date), meningococcal ACWY (54%, two doses) and meningococcal group B (22%, one or more doses).

In early 2020, the American College Health Foundation (ACHF) appointed a workgroup of college health and wellness professionals tasked with developing a survey to assess vaccine readiness and coverage at U.S. colleges and universities. The project was underwritten by a grant from Pfizer, Inc., and coordinated by ACHF staff. The content of the survey was focused on these major topics:

- Immunization requirements and enforcement policies for the institution
- Immunization history data, to estimate vaccine coverage
- Vaccine administration at campus health centers
- Immunization data policies and practices
- Impact of the COVID-19 pandemic on the above

Methods

Survey questions were developed by the project workgroup and a draft survey was piloted with a small group of American College Health Association (ACHA) members in July 2020. The final survey instrument was coded onto a Qualtrics survey platform by ACHA staff and launched in August 2020. Survey invitations

were sent via email to all ACHA member institutions (n=932), plus an additional 1,713 institutions using a commercial mailing list that provided contacts in student affairs or student health divisions at those schools. Thus, surveys were sent to a total of 2,645 institutions. Recipients were asked to forward the survey link to the person at their institution best able to respond to the survey questions.

Surveys were completed online via a unique link provided in the invitation email. Only one response per institution was permitted. The survey remained live through October 2020. Survey responses were downloaded from Qualtrics by ACHA staff and analysis of the data was carried out using SPSS version 26 statistical analysis software.

Institutions completing the survey from August through September were entered into a random drawing to receive an incentive award of \$100. Institutions completing the survey in the month of October were entered into a random drawing for one free registration to an ACHA COVID-19 Summit meeting.

Results

Completed surveys were received from 188 institutions (overall response proportion, 7.1%), including 132 ACHA members (14.1% response) and 56 non-member institutions (3.3% response). Selected key findings are presented here in narrative form; frequency tables with full survey results are presented in the attached appendix.

Institutional Characteristics

Respondents were split almost evenly between public (52%) and private (48%) institutions. A majority (82%) are 4+ year institutions, with 57% offering graduate degrees. The mean enrollment size was 14,179 students; 27% of respondents were at small schools with fewer than 2,500 students and 23% of respondents were at large schools with more than 20,000 students.

Vaccine Requirements

Vaccine requirements reported by survey respondents are consistent with prior studies and surveys, including ACHA's Institutional Profile Survey (IPS) data [7]. MMR, meningococcal ACWY, Tdap, and varicella vaccines are the most common immunizations required for all entering students. Few schools mandate hepatitis A or human papillomavirus vaccines for their students. Hepatitis B vaccine is typically a requirement only for some students (presumably based on risk). Meningococcal group B vaccine is required at a minority of schools, for either all or some students.

A growing phenomenon in higher education is distance learning. Students who participate in distance learning may be far removed from campus and pose little threat to overall campus health. Schools therefore may choose not to require vaccines for those individuals. Survey results show that many schools (50%, n=94) do indeed forgo requirements for these students, which reflects variations in the approach that schools take towards requirements.

Survey results also provided some new insights into how schools are applying enforcement of required vaccinations. The primary enforcement action, reported by 70% of respondents, is a registration hold for a subsequent term. A much smaller proportion (28%) would block students from attending class (e.g., in the first or current term). Restrictions for residents of campus-provided housing are also common (22% of

respondents). Suspension or dismissal of a student was uncommon, with only 6% of respondents indicating they take this action. Very few schools (5.3%, n=10) report they do not enforce institutional vaccine requirements.

Summary Table: Enforcement of institutional vs state vaccine requirements (survey questions 4 & 6)

Enforcement Action	For Institutional Requirements:	For State Requirements:
	n=188	n=188
May not attend class	27.7%	26.6%
Registration hold for subsequent semester/term	69.7%	47.3%
Grade hold	8.0%	5.3%
Transcript hold	10.6%	7.4%
Housing restriction	22.3%	14.9%
Monetary fine	8.5%	7.4%
Suspension/dismissal	5.9%	5.9%
No enforcement	5.3%	9.6%
Other type of enforcement	7.4%	4.8%
Citation or other legal action	n/a	0.5%
NA / no requirement applies	10.1%	21.3%

Although these potential enforcement actions appear to be relatively infrequent, they demonstrate the full breadth of approaches being used. For the most part, there appears to be little difference in the observed proportion of a school's enforcement approaches for "institutional" requirements vs. "state law" requirements. One exception appears to be a much higher rate of registration holds for those vaccines that are institutionally required.

Schools report a wide range of vaccines that are required by law in their state, most frequently MMR. Of interest, the second most common vaccine reported as required by law is the meningococcal ACWY vaccine. Although uncommon, the overall lethality and public duress associated with meningococcal disease may underlie the increased support by state legislators.

Exemption policies are often established to allow some students to waive out of either an institutional or state vaccine requirement. There is much debate regarding the validity of this approach, but the overall proportion of schools allowing exemptions is not well documented. The survey demonstrates that nearly all schools allow medical exemptions and slightly fewer (but still a large proportion) permit non-medical exemptions, including those based on personal or religious belief.

Summary Table: Vaccines required by law (survey question 5)

Vaccine	Percent
Hepatitis A	5.1%
Hepatitis B	33.0%
Human Papillomavirus (HPV)	1.7%
Measles-Mumps-Rubella (MMR)	65.9%
Meningococcal (Men ACWY)	43.6%
Meningococcal B (Men B)	14.5%
Tetanus-Diphtheria (Td)	29.1%
Tetanus-Diphtheria-Pertussis (Tdap)	30.6%
Varicella	34.1%

Vaccine Coverage

Determining estimates of vaccine coverage in college student populations was one of the primary goals of this survey project. Participants were asked if their institution collected and tracked immunization history data from incoming students and then were asked to indicate the number of immunization records they had received from students for the 2019-20 academic year. This figure was used as a denominator to determine the proportion of students covered for select vaccine preventable diseases at each responding institution. The numerator was the number of students who indicated receipt of each vaccine (based on current recommendations) or were otherwise considered immune by standard criteria (e.g., documentation of disease or immune status, when appropriate).

Summary Table: Vaccine waivers or exemptions (survey question 7)

Medical exemptions permitted	97.0%
Non-medical exemptions (including religious or personal beliefs) permitted	89.1%
NA / No requirement applies	6.5%

Survey question 8 asked:

“Is the immunization history you collect reported and recorded in such a way that you can report the number of students that received each vaccine, have presumed immunity, or have submitted an exemption?”

A minority of respondents (47.3%, n=89) answered affirmatively to this question, indicating that they had immunization data available for analysis. An even smaller subset of 86 respondents provided the numerical data that could be used as a denominator (i.e., number of student records) to calculate coverage. Of these, even fewer respondents provided valid numerator data (i.e., number of students immunized) that could be used to determine vaccine coverage. Estimates of vaccine coverage were then calculated for the group of schools providing valid data (see table).

Summary Table: Estimates of Vaccine Coverage, by applicable vaccine (survey question 9)

Vaccine	# Schools providing valid data	Fiscal year undergrad enrollment (sum)	# Students with vaccine data (sum)	# Students covered (sum)	Estimated vaccine coverage (%), overall	Estimated vaccine coverage (%), mean
Hepatitis A	11	115326	53433	23162	43.3%	44.5%
Hepatitis B	36	462540	157002	100335	63.9%	79.4%
HPV	10	95569	40676	17551	43.1%	40.1%
MMR	49	584601	210054	170964	81.4%	88.0%
MenACWY	35	421224	156583	91670	58.5%	79.3%
MenB	11	100749	54983	9220	16.8%	51.1%
Tdap	36	377869	134077	96794	72.2%	87.0%
Varicella	29	296211	92620	69025	74.5%	83.3%

The ability to provide this information varied by institutional characteristics. Private schools were more likely to answer “yes” to question 8 regarding the availability of vaccine history data, compared with public institutions (68% vs. 51%, $p=.03$). Four-year institutions answered “yes” more frequently than two-year institutions (64% vs. 40%, $p=.04$). Institution size was not a factor, with both large and small schools showing about the same response (61% vs. 60% “yes”).

Vaccine Administration

Most (72%, $n=108$) respondents indicated that their institution administered a variety of vaccines on their campus during the 2019-20 academic year. Institutions both large and small, public and private, reported administering vaccinations with relatively even distribution. Schools that do not administer vaccines (25%, $n=37$) often are those that do not have a dedicated student health or wellness center. Six respondents indicated vaccine administration is not tracked. About a third of respondents indicated that there was a reminder system in place for vaccine series completion (32%, $n=45$). Four-year institutions were significantly more likely than two-year institutions (p -value, <0.01) to have a vaccine recall system and to administer vaccines.

Immunization History Data Collection

The top three ways respondents collect immunization history information are records being dropped off in-person (58%, $n=109$), mailing or faxing records (52%, $n=97$), and records submitted directly by a health care provider (47%, $n=90$). Other mechanisms included email (44%, $n=83$) or via an online tool such as a patient portal (36.7%, $n=69$). Interestingly, automatic uploads of a file directly from a repository such as a state immunization registry have the lowest but not insignificant frequency at 22% ($n=42$).

Most survey respondents indicated that they verify immunization information (75%, $n=105$), while other schools rely on student self-report (20%, $n=28$). Of those schools that verify the information, nearly all (95%, $n=100$) require documentation from a medical professional or copy of the student’s immunization record. The next most frequent type of verification is an immunization form signed or submitted by a health care provider (87%, $n=91$), followed by official, clearly identified immunization records (79%, $n=83$); documentation from a state registry (71%, $n=75$); and either an international certificate or vaccination booklet (71%, $n=75$).

Immunization Compliance Assessment

Implementing an institutional or state immunization requirement requires a dedicated effort by institutions of higher education to collect, document, verify, and ensure student compliance with the requirement. A majority of schools who responded to the survey have invested significant resources in this process, including the use of full- or part-time employees, computer systems and electronic health records, and collection and verification mechanisms for these records.

Using a full-time health center employee was the most frequently reported approach to compliance assessment (44%, $n=82$). Additionally, 14% ($n=26$) indicate they use a part-time health center employee, 11% ($n=20$) report using a full-time employee in another department, and 4% indicate they use a part-time employee in another department. Relatively few schools report use of electronic systems for compliance assessment, such as an electronic health record (21%, $n=39$) or immunization compliance software (10%, $n=19$). Fewer than two percent ($n=3$) use a third-party compliance vendor review of records.

Across all respondents, the mean full-time equivalent (FTE) personnel used for compliance was 1.8 (range, 0-20 FTE); 37% (n= 46) of schools reported they have 1.0 FTE assigned and 15 schools (12%) reported that no personnel (0 FTEs) are dedicated to immunization assessment and compliance.

Current CDC guidelines state that laboratory confirmation of prior disease is acceptable proof of immunity for measles, mumps, rubella, and varicella. In addition to vaccination records, most schools report that they also accept serologic test results (83%, n=115) or documentation of disease (65%, n=90) in lieu of vaccination. Fewer than half of respondent schools (34%, n=64) provide special vaccine clinics to help their students meet vaccine requirements.

Immunization Data Sharing and Access

Many respondents (70%, n= 98) indicated that they do not report vaccine coverage to their state or local public health departments. This likely reflects that most university immunization requirements do not include or are not dependent on state requirements.

Just over half of respondents (56%, n=79) indicated they can access student immunization data in their state's immunization registry. Both large and small institutions reported the ability to view this data, but only 16% (n=23) report they import immunization data and slightly more (23%, n=32) report they export university data to their state immunization registry. Respondents who report they export data tended to be institutions with larger enrollment. Four-year institutions were significantly more likely than two-year institutions ($p < 0.03$) to import data.

COVID-19 Pandemic Impacts and Influenza Vaccine Plans

Approximately 20% (n=27) of institutions report that they altered their existing vaccine requirements in some way for the 2020-21 school year, and 25% modified the enforcement of vaccine requirements, though our survey did not request specifics on how this was done. The most common enforcement methods for required vaccines are registration holds, housing restrictions, or prohibition from on-campus classes. Data from a recent ACHA survey revealed that few schools (about 15%) operated on a fully or primarily in-person basis in the fall of 2020, and many used reduction of residence hall density as a COVID-19 mitigation strategy [8]. Thus, it seems likely that vaccine enforcement was simply not a priority for institutions this year.

As the rollout of one or several COVID-19 vaccines begins, it is important to better understand the capacity of college campuses to participate in vaccine distribution. While many details about coronavirus vaccine availability and administration were unknown at the time of this survey, 51% (n=71) of respondents



said they have the capacity to implement a mass vaccination program. Many campuses intend to utilize the student health center staff to administer COVID-19 vaccination either through appointments (16.5%, n=31), walk-in clinics (7.4%, n=14), or on-campus mass vaccination clinics (31.4%, n=59). Another 28.7% (n=54) stated that local or state health departments will operate mass vaccination clinics on campus.

To better understand how campuses would manage expectations for influenza vaccine during the COVID-19 pandemic, the survey asked campuses to report on their influenza immunization policies, in particular if schools would require influenza vaccine for the 2020-21 academic year. Approximately 17% (n=23) of respondents indicate that they would mandate flu vaccine for all students in the coming year. Another 66.7% (n=92) reported they will increase outreach efforts to encourage flu vaccine uptake.

Discussion

There are several interesting findings from the survey that characterize current immunization practices, policies, and coverage at U.S. colleges and universities.

Almost all institutions (>95%) have a prematriculation immunization requirement in place that applies to either all entering students or to a select subset of some entering students [7]. Requirements for measles/mumps/rubella, hepatitis B, meningococcal conjugate, tetanus/diphtheria/pertussis, and varicella vaccines (or documentation of immunity) are common. These results are consistent with prior studies and surveys, but variations in policy across schools are common. State laws may also dictate certain immunization requirements that are different from institutional policy.

Survey findings suggest that immunization requirements are being applied more frequently to selected subsets of students, rather than to all students, when compared with similar studies. For Tdap vaccine, this may be a result of greater compliance with newer Tdap recommendations, an emerging realization of the threat of pertussis in the college-age population, or other factors. Schools that are more likely to require vaccine for some students may also be institutions with many health profession students, for whom hepatitis B, Tdap, and varicella vaccines are usually mandated.

Meningococcal and varicella vaccines also seem to be more frequently required than previously documented [1-5, 7]. In our survey, and in the ACHA Institutional Profile Survey (IPS), schools were asked about meningococcal vaccine requirements for all students. Comparing these two studies with data collected two years apart, meningococcal ACWY mandates increased from 26.9% of schools (in IPS) to 43.9% (in the current survey), and meningococcal group B vaccination from 5.8% to 10.8% respectively, when required for all entering students. A study published in the *Journal of Adolescent Health* [4] looked at meningococcal vaccine requirements for university residence halls and reported that approximately half of schools required MenACWY for on-campus housing residents.

Despite having a vaccine requirement, many schools do not appear to collect immunization history data from students in a way that allows it to be tracked or reviewed. This has significant implications for management of vaccine preventable disease outbreaks, where there is a need to immediately identify those students who could be susceptible to a given disease.

Survey respondents were often not able to provide adequate or meaningful data showing the proportion of students at their institutions who had received a given vaccine, based on immunization history collected at matriculation. It is not clear whether this is due to a lack of ability to retrieve and process this data or

time constraints or if the data is simply not collected in an analyzable form (e.g., in paper documents). Due to the low numbers of responses in this part of the survey, it is not possible to make accurate estimates of vaccine coverage that can be applied to college students in general. Nonetheless, the data collected does tend to reflect the same patterns of coverage observed in other studies, including the CDC NIS-Teen surveys: the highest coverage rates are for those vaccines routinely administered in childhood (e.g., MMR), with lower numbers for vaccines more recently recommended for adolescents (e.g., HPV, MenB).

There was little difference in the response to the question about availability of immunization history data based on how that information is collected. Schools that use an online patient portal to collect data electronically were slightly more likely to report they could access and report on vaccine data (see summary table, appendix). Collection of immunization data via a patient portal, often integrated with the electronic health record, would facilitate the ability of institutions to collect, analyze, and report coverage data.

A more comprehensive assessment of vaccine coverage in this population is warranted, as such coverage has not been reported on before and may not necessarily align with requirements. For schools that can provide this information, having more complete data on vaccine coverage in this population would provide an important standard to achieve, and one that improves and promotes the health of students everywhere.

An institution's capacity to provide vaccinations and reminder systems for vaccine series completion may affect the overall vaccination status of college students by reducing barriers to receiving and completing vaccinations. A majority of respondents indicated they did administer vaccines on their campus although only a third had a reminder system in place for multiple dose vaccinations. There is no strong association between enrollment size or public vs. private institutions and vaccine administration. Four-year institutions were more likely to administer vaccines and have a recall system for completing vaccines than two-year institutions.

An additional consideration for assessing vaccine compliance is the ability for data sharing between state health departments and institutions. About half of respondents report access to student immunization records through a state registry. Although health care providers can usually view that data, it is often not imported into the institution's records, and any immunization data from the institution may not be exported to the state registry. This is an area for improvement across institutions that would benefit public health for the campus and the broader community.

The effect of the COVID-19 pandemic on institutions in 2020 is profound, with many schools closing down for long periods in the spring and implementing extensive use of distance or virtual instruction in the fall. Thus, it is not surprising to see that schools had modified the implementation of immunization requirements for students during the fall 2020 term.

At the time of the survey administration in summer and fall 2020, a vaccine for COVID-19 had not yet been approved for use in the United States. However, colleges and universities were clearly anticipating that a vaccine would become available and began to develop plans for immunizing their students, faculty, and staff. Whether or not mass vaccination of college students becomes feasible, it appears that there is capacity to do this at many institutions, and campus health centers should be considered as potential partners in the distribution planning process.

While influenza vaccines are always considered an essential part of any campus public health program, their importance has been elevated since the onset of the COVID-19 pandemic. This is especially relevant for campuses that house students in congregate settings. Student health center personnel are often stretched thin as they manage SARS-CoV-2 testing, isolation and management of infected or exposed students, and the use of new telehealth systems. Adding seasonal influenza to the mix is a concern at many institutions. It is not surprising that nearly half of survey respondents indicate they will ramp up influenza vaccination efforts this year. Although no published studies have assessed mandatory influenza vaccination in college and university settings, survey results suggest that this too may be increasingly common.



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Standardized Vaccine Abbreviations Used in this Report

HepA: hepatitis A vaccine

HepB: hepatitis B vaccine

HPV: human papillomavirus vaccine

MMR: measles, mumps, and rubella combination vaccine

MenACWY: quadrivalent meningococcal conjugate vaccine

MenB: serogroup B meningococcal vaccine

Tdap: tetanus, diphtheria, and cellular pertussis combination vaccine

Var: varicella vaccine

Appendix 1: Descriptive Data Frequency Tables

American College Health Foundation – Vaccine Coverage Survey

n=188 respondents (institutions), dataset version 11/30/2020

Section 1: Institutional Characteristics of Respondents

Institutional information as sourced from IPEDS

Sector of Institution (detail)		
	Frequency	Percent
Public, 4-year or above	65	34.6
Private not-for-profit, 4-year or above	89	47.3
Private for-profit, 4-year or above	1	0.5
Public, 2-year	33	17.6
Total	188	100.0

Level - 2-yr vs. 4-yr		
	Frequency	Percent
4-year or above institution	155	82.4
2-year institution	33	17.6
Total	188	100.0

Control - public vs. private		
	Frequency	Percent
Public	98	52.1
Private	90	47.9
Total	188	100.0

Institution Is a Historically Black College or University		
	Frequency	Percent
Yes	7	3.7
No	181	96.3
Total	188	100.0

Institution Is a Tribal College		
	Frequency	Percent
No	188	100.0

Institution Is Faith-Based or Has a Religious Affiliation		
	Frequency	Percent
Yes	52	27.7
No	136	72.3
Total	188	100.0

Land Grant Institutions		
	Frequency	Percent
Land Grant Institution	12	6.4
Not a Land Grant Institution	176	93.6
Total	188	100.0

Institution Has a Hospital		
	Frequency	Percent
Not applicable	33	17.6
Yes	12	6.4
No	143	76.1
Total	188	100.0

Institution Grants a Medical Degree		
	Frequency	Percent
Yes	34	18.1
No	154	81.9
Total	188	100.0

Institution Provides On-Campus Housing		
	Frequency	Percent
Yes	159	84.6
No	29	15.4
Total	188	100.0

Collapsed Locale		
	Frequency	Percent
Urban	98	52.1
Suburban	48	25.5
Town	35	18.6
Rural	7	3.7
Total	188	100.0

Degree of Urbanization (Urban-Centric Locale)		
	Frequency	Percent
City: Large	38	20.2
City: Midsize	28	14.9
City: Small	32	17.0
Suburb: Large	38	20.2
Suburb: Midsize	5	2.7
Suburb: Small	5	2.7
Town: Fringe	5	2.7
Town: Distant	20	10.6
Town: Remote	10	5.3
Rural: Fringe	3	1.6
Rural: Distant	2	1.1
Rural: Remote	2	1.1
Total	188	100.0

HHS U.S. Region		
	Frequency	Percent
Northeast	51	27.1
Midwest	33	17.6
South	67	35.6
West	37	19.7
Total	188	100.0

Institution Carnegie Category		
	Frequency	Percent
Associates	33	17.6
Baccalaureate-Associates	2	1.1
Baccalaureate	35	18.6
Masters	51	27.1
Doctoral	56	29.8
Special Focus	11	5.9
Total	188	100.0

ACHA Affiliate		
	Frequency	Percent
Central College Health Association	6	3.2
Mid-America College Health Association	13	6.9
Mid-Atlantic College Health Association	31	16.5
New England College Health Association	15	8.0
New York College Health Association	18	9.6
North Central College Health Association	11	5.9
Ohio College Health Association	3	1.6
Pacific College Health Association	30	16.0
Rocky Mountain College Health Association	7	3.7
Southern College Health Association	35	18.6
South West College Health Association	19	10.1
Total	188	100.0

Recruitment Source		
	Frequency	Percent
ACHA Institutional Member	132	70.2
Higher Ed mailing list	56	29.8
Total	188	100.0

Institution Enrollment Size Category		
	Frequency	Percent
Less than 2,500	50	26.6
2,500-4,999	29	15.4
5,000-9,999	29	15.4
10,000-19,999	37	19.7
20,000 or more	43	22.9
Total	188	100.0

Institution Enrollment Statistics				
		Enrollment Total	Enrollment: Graduate Students	Enrollment: Undergrads
N	Valid	188	133	186
	Missing	0	55	2
Mean		14179.31	4004.14	11468.60
Median		7614.50	1541.00	6412.00
Minimum		343	13	210
Maximum		162762	43752	162762
Sum		2665710	532550	2133160

Section 2: Vaccine Requirements, Enforcement, and Waivers

Question 1 – Vaccines that are required by the institution for ALL entering students (multiple answer permitted)

Q1_1 Hep A vaccine – required for all students		
	Frequency	Percent
Yes	7	3.7
No	180	95.7
Total	187	99.5

Q1_2 Hep B vaccine - required for all students		
	Frequency	Percent
Yes	59	31.4
No	129	68.6
Total	188	100.0

Q1_3 HPV vaccine - required for all students		
	Frequency	Percent
Yes	3	1.6
No	184	97.9
Total	187	99.5

Q1_4 MMR vaccine - required for all students		
	Frequency	Percent
Yes	143	76.1
No	45	23.9
Total	188	100.0

Q1_5 MenACWY vaccine - required for all students		
	Frequency	Percent
Yes	82	43.9
No	105	56.1
Total	187	100.0

Q1_6 MenB vaccine - required for all students		
	Frequency	Percent
Yes	20	10.8
No	166	89.2
Total	186	100.0

Q1_7 Td vaccine - required for all students		
	Frequency	Percent
Yes	54	28.7
No	134	71.3
Total	188	100.0

Q1_8 Tdap vaccine - required for all students		
	Frequency	Percent
Yes	76	40.4
No	112	59.6
Total	188	100.0

Q1_9 Varicella vaccine - required for all students		
	Frequency	Percent
Yes	68	36.2
No	120	63.8
Total	188	100.0

Question 2: Vaccines that are required by the institution for SOME students (multiple answer permitted)

Q2_1 Hep A vaccine - required for some students				
		Frequency	Overall Percent	Within Category Percent
	Yes	15	8.0	8.7
	No	158	84.0	91.3
	Total	173	92.0	100.0
Missing		15	8.0	

Q2_2 Hep B vaccine - required for some students				
		Frequency	Overall Percent	Within Category Percent
	Yes	60	31.9	47.6
	No	66	35.1	52.4
	Total	126	67.0	100.0
Missing		62	33.0	

Q2_3 HPV vaccine - required for some students

		Frequency	Overall Percent	Within Category Percent
	No	176	93.6	100.0
Missing		12	6.4	

Q2_4 MMR vaccine - required for some students

		Frequency	Overall Percent	Within Category Percent
	Yes	26	13.8	60.5
	No	17	9.0	39.5
	Total	43	22.9	100.0
Missing		145	77.1	

Q2_5 Men ACWY vaccine - required for some students

		Frequency	Overall Percent	Within Category Percent
	Yes	24	12.8	24.2
	No	75	39.9	75.8
	Total	99	52.7	100.0
Missing		89	47.3	

Q2_6 Men B vaccine - required for some students

		Frequency	Overall Percent	Within Category Percent
	Yes	20	10.6	12.7
	No	138	73.4	87.3
	Total	158	84.0	100.0
Missing		30	16.0	

Q2_7 Td vaccine - required for some students

		Frequency	Overall Percent	Within Category Percent
	Yes	26	13.8	20.3
	No	102	54.3	79.7
	Total	128	68.1	100.0
Missing		60	31.9	

Q2_8 Tdap vaccine - required for some students

		Frequency	Overall Percent	Within Category Percent
	Yes	55	29.3	50.5
	No	54	28.7	49.5
	Total	109	58.0	100.0
Missing		79	42.0	

Q2_9 Varicella vaccine - required for some students

		Frequency	Overall Percent	Within Category Percent
	Yes	51	27.1	43.2
	No	67	35.6	56.8
	Total	118	62.8	100.0
Missing		70	37.2	

Question 3 – Institutional Vaccine Requirement Exceptions
Q3 Does the institution exempt distance/online students from vaccine requirements?

	Frequency	Percent
Yes	94	50.3
No	34	18.2
Varies	22	11.8
Not applicable/no requirement	37	19.8
Total	187	100.0

Question 4 – Institutional Enforcement of Vaccine Requirements

Q4 How are your institutional requirements enforced? (multiple answer permitted)		
	Frequency	Percent
May not attend class	52	27.7
	Frequency	Percent
Registration hold for subsequent semester/term	131	69.7
	Frequency	Percent
Grade hold	15	8.0
	Frequency	Percent
Transcript hold	20	10.6
	Frequency	Percent
Housing restriction	42	22.3
	Frequency	Percent
Monetary fine	16	8.5
	Frequency	Percent
Suspension/dismissal	11	5.9
	Frequency	Percent
No enforcement	10	5.3
	Frequency	Percent
Other type of enforcement	14	7.4
	Frequency	Percent
Not applicable/no requirement applies	19	10.1

Question 5 – Vaccines required by state law (multiple answer permitted)

Q5_1 Vaccine required by state law - Hep A			
		Frequency	Percent
	Yes	9	5.1
	No	169	94.9
	Total	178	100.0
Missing		10	

Q5_2 Vaccine required by state law - Hep B			
		Frequency	Percent
	Yes	60	33.0
	No	122	67.0
	Total	182	100.0
Missing		6	

Q5_3 Vaccine required by state law - HPV			
		Frequency	Percent
	Yes	3	1.7
	No	175	98.3
	Total	178	100.0
Missing		10	

Q5_4 Vaccine required by state law - MMR			
		Frequency	Percent
	Yes	120	65.9
	No	62	34.1
	Total	182	100.0
Missing		6	

Q5_5 Vaccine required by state law - Men ACWY			
		Frequency	Percent
	Yes	79	43.6
	No	102	56.4
	Total	181	100.0
Missing		7	

Q5_6 Vaccine required by state law - Men B			
		Frequency	Percent
	Yes	26	14.5
	No	153	85.5
	Total	179	100.0
Missing		9	

Q5_7 Vaccine required by state law - Td			
		Frequency	Percent
	Yes	52	29.1
	No	127	70.9
	Total	179	100.0
Missing		9	

Q5_8 Vaccine required by state law - Tdap			
		Frequency	Percent
	Yes	55	30.6
	No	125	69.4
	Total	180	100.0
Missing		8	

Q5_9 Vaccine required by state law - Varicella			
		Frequency	Percent
	Yes	61	34.1
	No	118	65.9
	Total	179	100.0
Missing		9	

Question 6 – Enforcement of State Requirements (multiple answer permitted)

Q6: How are your state requirements enforced (check all that apply)?		
	Frequency	Percent
May not attend class	50	26.6
	Frequency	Percent
Registration hold for subsequent semester/term	89	47.3
	Frequency	Percent
Grade hold	10	5.3
	Frequency	Percent
Transcript hold	14	7.4
	Frequency	Percent
Housing restriction	28	14.9
	Frequency	Percent
Monetary fine	14	7.4
	Frequency	Percent
Suspension/dismissal	11	5.9
	Frequency	Percent
Citation or other legal action	1	0.5
	Frequency	Percent
No enforcement	18	9.6
	Frequency	Percent
Other type of enforcement	9	4.8
	Frequency	Percent
Not applicable/no requirement applies	40	21.3

Question 7 – Are Vaccine Requirement Waivers Permitted? (multiple answer permitted)

Q7_1 Waivers - medical exemptions permitted				
		Frequency	Percent	Category Percent
	Yes	163	86.7	97.0
	No	5	2.7	3.0
	Total	168	89.4	100.0
Missing		20	10.6	
Total		188	100.0	

Q7_2 Waivers - personal exemptions permitted				
		Frequency	Percent	Category Percent
	Yes	147	78.2	89.1
	No	18	9.6	10.9
	Total	165	87.8	100.0
Missing		23	12.2	
Total		188	100.0	

Q7_3 Waivers - not applicable/no requirement				
		Frequency	Percent	Category Percent
	Yes	6	3.2	6.5
	No	87	46.3	93.5
	Total	93	49.5	100.0
Missing		95	50.5	
Total		188	100.0	

Section 3: Immunization Data

Q8 – Does the institution collect immunization history data? (multiple answer permitted)		
	Frequency	Percent
Yes, from undergraduate students	153	81.4
	Frequency	Percent
Yes, from post baccalaureate students	98	52.1
	Frequency	Percent
Yes, from, non-degree students	66	35.1
	Frequency	Percent
Yes, from online-only students	19	10.1
	Frequency	Percent
Yes, other types of students not classified above	38	20.2
	Frequency	Percent
No/none of the above; we do not collect or track immunization data for any vaccine	24	12.8

Q8A Is immunization history data able to be reported on, in order to estimate vaccine coverage?				
		Frequency	Percent	Category Percent
	Yes	89	47.3	60.5
	No	58	30.9	39.5
	Total	147	78.2	100.0
Missing		41	21.8	

Q9 Number of Students with Immunization History Data Available (coverage denominator)					
Descriptive Statistics – Student Immunization History Data					
	N (schools)	Minimum	Maximum	Sum	Mean
Q9 Immunization data - number of students	86	87	25000	285051	3314

Q9 Summary Table: Estimates of Vaccine Coverage, by applicable vaccine						
Vaccine	# Schools providing valid data (count)	Fiscal year undergrad enrollment (sum)	# Students with immz data (sum)	# Students covered (sum)	Estimated vaccine coverage (%), overall	Estimated vaccine coverage (%), mean
Hepatitis A	11	115326	53433	23162	43.3%	44.5%
Hepatitis B	36	462540	157002	100335	63.9%	79.4%
HPV	10	95569	40676	17551	43.1%	40.1%
MMR	49	584601	210054	170964	81.4%	88.0%
MenACWY	35	421224	156583	91670	58.5%	79.3%
MenB	11	100749	54983	9220	16.8%	51.1%
Tdap	36	377869	134077	96794	72.2%	87.0%
Varicella	29	296211	92620	69025	74.5%	83.3%

Q10A Did you administer any vaccines on your campus in 2019-20?

		Frequency	Percent	Category Percent
	Yes	108	57.4	71.5
	No, we did not administer any vaccines	37	19.7	24.5
	Unknown, vaccine administration is not tracked	6	3.2	4.0
	Total	151	80.3	100.0
Missing		37	19.7	

Section 4: Immunization History Records and Compliance**Q12 State immunization registry – can you view student data in the registry?**

		Frequency	Percent	Category Percent
	Yes	79	42.0	56.0
	No	49	26.1	34.8
	Don't know	13	6.9	9.2
	Total	141	75.0	100.0
Missing		47	25.0	

Q13 State immunization registry – can you export data to the registry?

		Frequency	Percent	Category Percent
	Yes	32	17.0	22.5
	No	100	53.2	70.4
	Don't know	10	5.3	7.0
	Total	142	75.5	100.0
Missing		46	24.5	

Q14 State immunization registry – can you import data from the registry to your EHR??

		Frequency	Percent	Category Percent
	Yes	23	12.2	16.2
	No	112	59.6	78.9
	Don't know	7	3.7	4.9
	Total	142	75.5	100.0
Missing		46	24.5	

Q15 Vaccines administered – is there a recall/reminder system in place?

		Frequency	Percent	Category Percent
	Yes	45	23.9	31.5
	No	72	38.3	50.3
	Don't know	9	4.8	6.3
	Not applicable (for schools without health services)	17	9.0	11.9
	Total	143	76.1	100.0
Missing		45	23.9	

Q16_1 Is immunization history data collected via online data entry?

		Frequency	Percent
	Yes, electronic data entry into a repository, via an online patient portal	69	36.7
Missing		119	63.3

Q16_2 Is immunization history data collected via uploaded data files?

		Frequency	Percent
	Yes, upload files into a repository (e.g., from an immunization registry)	42	22.3
Missing		146	77.7

Q16_3 Is immunization history data collected via provider records?			
		Frequency	Percent
	Yes, copies of immunization records are submitted directly by a health care provider	90	47.9
Missing		98	52.1

Q16_4 Is immunization history data collected via paper records?			
		Frequency	Percent
	Yes, by mail or fax (paper form)	97	51.6
Missing		91	48.4

Q16_5 Is immunization history data collected via email?			
		Frequency	Percent
	Yes, by email	83	44.1
Missing		105	55.9

Q16_6 Is immunization history data collected via in-person submission?			
		Frequency	Percent
	Yes, drop-off in person (paper form)	109	58.0
Missing		79	42.0

Q16_7 Is immunization history data collected via other means?			
		Frequency	Percent
	Other (specify)	17	9.0
Missing		171	91.0

Summary Table: Availability of Records vs. Collection Methods Used

	Q8A: Immunization data collected - Coverage Data Available?				
	Yes		No		Total
Q16: Data Collection Method	Count	%	Count	%	Count
Electronic data entry into a repository, via an online patient portal	37	62.7%	22	37.3%	59
Upload files into a repository (e.g., from an immunization registry)	19	52.8%	17	47.2%	36
Copies of immunization records are submitted directly by a health care provider	47	56.6%	36	43.4%	83
By mail or fax (paper form)	49	55.7%	39	44.3%	88
By email	43	56.6%	33	43.4%	76
Drop-off in person (paper form)	51	54.8%	42	45.2%	93

**Question 17 – Verification of Immunization History Data
(multiple answer permitted)**

Q17 Is immunization history data verified, or just self-report?				
		Frequency	Percent	Category Percent
	Verify in some way	105	55.9	75.0
	Rely on self-reporting	28	14.9	20.0
	Other (specify)	7	3.7	5.0
	Total	140	74.5	100.0
Missing		48	25.5	
Total		188	100.0	

Q17A_1 Is immunization history verified via a provider record?			
		Frequency	Percent
Yes	Documentation from a medical professional (copy of immunization record)	100	53.2
Missing		88	46.8
Total		188	100.0

Q17A_2 Is immunization history verified via state registry?			
		Frequency	Percent
Yes	Documentation from a state registry	75	39.9
Missing		113	60.1
Total		188	100.0

Q17A_3 Is immunization history verified via signed form?			
		Frequency	Percent
Yes	Immunization form signed or submitted by a health care provider	91	48.4
Missing		97	51.6
Total		188	100.0

Q17A_4 Is immunization history verified via official record?			
		Frequency	Percent
Yes	Official, clearly identified immunization records	83	44.1
Missing		105	55.9
Total		188	100.0

Q17A_5 Is immunization history verified via international certificate of vaccination?			
		Frequency	Percent
Yes	International Certificate of Vaccination booklet	75	39.9
Missing		113	60.1
Total		188	100.0

Q17A_6 Is immunization history verified by other means?			
		Frequency	Percent
Missing		188	100.0

Q18: How does your institution assess student immunization compliance? (multiple answer)

Q18_1 Via full time health center staff			
		Frequency	Percent
	Using a full-time health center employee	82	43.6
Missing		106	56.4
Total		188	100.0

Q18_2 Via full time other staff			
		Frequency	Percent
	Using a full-time employee in another department	20	10.6
Missing		168	89.4
Total		188	100.0

Q18_3 Via part time health center staff			
		Frequency	Percent
	Using a part-time health center employee	26	13.8
Missing		162	86.2
Total		188	100.0

Q18_4 Via part time other staff

	Frequency	Percent
Using a part-time employee in another department	7	3.7
Missing	181	96.3
Total	188	100.0

Q18_5 Via student staff

	Frequency	Percent
Using a student employee	6	3.2
Missing	182	96.8
Total	188	100.0

Q18_6 Via EHR

	Frequency	Percent
Electronically through an EHR	39	20.7
Missing	149	79.3
Total	188	100.0

Q18_7 Via immunization compliance software

	Frequency	Percent
Through immunization compliance software	19	10.1
Missing	169	89.9
Total	188	100.0

Q18_8 Via a third-party vendor

	Frequency	Percent
Through third-party compliance vendor review	3	1.6
Missing	185	98.4
Total	188	100.0

Q18_9 Via none/not applicable

	Frequency	Percent
None/not applicable	20	10.6
Missing	168	89.4
Total	188	100.0

Q19_1 Institutional personnel assigned to immunization compliance, # of FTE

Descriptive Statistics					
	n (# schools)	Minimum	Maximum	Sum	Mean
# FTE assigned	125	0.00	20.00	227.75	1.8

Q20 Compliance assessment – is vaccine coverage reported to public health?

	Frequency	Percent	Category Percent
Yes	34	18.1	24.3
	98	52.1	70.0
	8	4.3	5.7
	140	74.5	100.0
Missing	48	25.5	
Total	188	100.0	

Q21 Compliance assessment – does your institution accept serologic tests in lieu of vaccines (when appropriate)?

	Frequency	Percent	Category Percent
Yes	115	61.2	82.7
	12	6.4	8.6
	12	6.4	8.6
	139	73.9	100.0
Missing	49	26.1	
Total	188	100.0	

Q22 Compliance assessment – does your institution accept documentation of disease in lieu of vaccines (when appropriate)?

	Frequency	Percent	Category Percent
Yes	90	47.9	64.7
	41	21.8	29.5
	8	4.3	5.8
	139	73.9	100.0
Missing	49	26.1	
Total	188	100.0	

Q23 Does the institution provide special vaccine clinics to assist students in meeting vaccine requirements?

		Frequency	Percent	Category Percent
	Yes	64	34.0	46.0
	No	73	38.8	52.5
	Don't know	2	1.1	1.4
	Total	139	73.9	100.0
Missing		49	26.1	
Total		188	100.0	

Q26 Does your institution have the capacity to implement mass vaccination program for a COVID-19 vaccine?

		Frequency	Percent	Valid Percent
	Yes	71	37.8	51.4
	No	27	14.4	19.6
	Unsure	40	21.3	29.0
	Total	138	73.4	100.0
Missing		50	26.6	
Total		188	100.0	

Section 5: COVID impact and Influenza Plans

Q24 Did your institution alter any vaccine requirements this year due to COVID-19?

		Frequency	Percent	Category Percent
	Yes	27	14.4	19.7
	No	110	58.5	80.3
	Total	137	72.9	100.0
Missing		51	27.1	
Total		188	100.0	

Q25 Did your institution alter any vaccine enforcement this year due to COVID-19?

		Frequency	Percent	Valid Percent
	Yes	34	18.1	24.8
	No	103	54.8	75.2
	Total	137	72.9	100.0
Missing		51	27.1	
Total		188	100.0	

Q27: How do you anticipate that a COVID vaccine will be administered to students at your institution? (multiple answer permitted)

	Frequency	Percent
The health center will offer vaccine by individual appointment	31	16.5
	Frequency	Percent
The health center will offer vaccine on a walk-in basis	14	7.4
	Frequency	Percent
The health center will operate mass vaccination clinics	59	31.4
	Frequency	Percent
A local or state health department will operate mass vaccination clinics on campus or in the community	54	28.7
	Frequency	Percent
Students will be referred offsite to the health care provider or local pharmacy of their choice	39	20.7
	Frequency	Percent
Undetermined at this time	37	19.7
	Frequency	Percent
Other	11	5.9

Q27_7_ vaccine will be offered by other means – specific text	
	Frequency
Closed Pod through state health dept	1
combination of the above, but mass clinics would be collaborated among the student health center, our Health Science Center, and the Dept of Health	1
Coordination with local health s to offer a student clinic	1
Local pharmacy will run clinic on campus	1
outsourced	1
partner with PH agency to provide vaccine in drive thru clinic	1
planning to have mass vaccination clinic using health center staff working with public health dept	1
The health center in collaboration with the state health department and other resources on campus such as police and fire department would set up a mass drive through vaccination clinic	1
third party vendor	1
We are also considering offering vaccination clinics	1
We will have medical staff on campus to administer this. Everything is in place to do so when the time is here.	1

Q28 Influenza vaccine plans for 2020-21			
		Frequency	Percent
	We are requiring all students to be vaccinated	23	12.2
	We will not mandate influenza vaccine but are increasing outreach efforts to encourage more students to be vaccinated for influenza	92	48.9
	We have no plans to take action to increase influenza vaccine uptake	9	4.8
	We are undecided about our plans regarding influenza vaccine at this time	14	7.4
	Total	138	73.4
Missing		50	26.6
Total		188	100.0

Select Item Crosstab Tables

American College Health Foundation – Vaccine Coverage Survey

Crosstab: Q10A Vaccines administered on campus, by institution enrollment size

		Enrollment Size Category					Total
		Less than 2,500	2,500-4,999	5,000-9,999	10,000-19,999	20,000 or more	
Q10A Vaccines administered – available on campus?	Yes	25	9	17	24	33	108
	No, we did not administer any vaccines (for schools without health services)	16	8	5	6	2	37
	Unknown, vaccine administration is not tracked or reported	2	1	1	1	1	6
Total		43	18	23	31	36	151

Crosstab: Q12 State immz registry–can view student data, by institution enrollment size

		Enrollment Size Category					Total
		Less than 2,500	2,500-4,999	5,000-9,999	10,000-19,999	20,000 or more	
Q12 State immz registry - view student data	Yes	20	12	12	11	24	79
	No	13	5	10	13	8	49
	Don't know	6	1	1	3	2	13
Total		39	18	23	27	34	141

Crosstab: Q13 State immz registry-can export student data, by institution enrollment size

		IPEDS_ENROLLED Enrollment Category					Total
		Less than 2,500	2,500-4,999	5,000-9,999	10,000-19,999	20,000 or more	
Q13 State immz registry - export student data	Yes	7	2	5	4	14	32
	No	30	16	18	17	19	100
	Don't know	3	0	0	6	1	10
Total		40	18	23	27	34	142

Crosstab: Q14 State immz registry-can import student data to EHR, by institution enrollment size

		IPEDS_ENROLLED Enrollment Category					Total
		Less than 2,500	2,500-4,999	5,000-9,999	10,000-19,999	20,000 or more	
Q14 State immz registry - import student data to EHR	Yes	8	3	2	2	8	23
	No	29	15	21	21	26	112
	Don't know	3	0	0	4	0	7
Total		40	18	23	27	34	142

Crosstab: Q15 Vaccine recall/reminder system, by institution enrollment size

		IPEDS_ENROLLED Enrollment Category					Total
		Less than 2,500	2,500-4,999	5,000-9,999	10,000-19,999	20,000 or more	
Q15 Vaccines administered - recall/reminder system	Yes	10	4	2	11	18	45
	No	20	13	16	10	13	72
	Don't know	2	0	1	4	2	9
	Not applicable (for schools without health services)	8	1	4	3	1	17
Total		40	18	23	28	34	143

Crosstab: Q10A Vaccines administered on campus, by institution level (2 year vs. 4 year)

		4-Year or above Institution	2-Year Institution	Total
Q10A Vaccines administered - available on campus?	Yes	94	14	108
	No, we did not administer any vaccines (for schools without health services)	22	15	37
	Unknown, vaccine administration is not tracked or reported	5	1	6
Total		121	30	151

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	13.205 ^a	2	0.001
Likelihood Ratio	11.891	2	0.003
Linear-by-Linear Association	7.302	1	0.007
N of Valid Cases	151		

note: 2 cells (33.3%) have an expected count less than 5.

Crosstab: Q12 State immz registry-can view data, by institution level (2 year vs. 4 year)

		4-Year or above Institution	2-Year Institution	Total
Q12 State immz registry - view student data	Yes	67	12	79
	No	36	13	49
	Don't know	10	3	13
Total		113	28	141

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	2.537 ^a	2	0.281
Likelihood Ratio	2.509	2	0.285
Linear-by-Linear Association	1.722	1	0.189
N of Valid Cases	141		

note: 1 cell (16.7%) has an expected count less than 5

Crosstab: Q13 State immz registry-can export data, by institution level (2 year vs. 4 year)

		4-Year or above Institution	2-Year Institution	Total
Q13 State immz registry - export student data	Yes	27	5	32
	No	79	21	100
	Don't know	8	2	10
Total		114	28	142

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	0.443 ^a	2	0.801
Likelihood Ratio	0.461	2	0.794
Linear-by-Linear Association	0.291	1	0.590
N of Valid Cases	142		

note: 1 cell (16.7%) has an expected count less than 5

Crosstab: Q13 State immz registry-can export data, by institution level (2 year vs. 4 year)

		4-Year or above Institution	2-Year Institution	Total
Q14 State immz registry - import student data to EHR	Yes	23	0	23
	No	85	27	112
	Don't know	6	1	7
Total		114	28	142

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	7.142 ^a	2	0.028
Likelihood Ratio	11.539	2	0.003
Linear-by-Linear Association	3.840	1	0.050
N of Valid Cases	142		

Note: 2 cells (33.3%) have an expected count less than 5

Crosstab: Q8A Vaccine Data Availability by Institution Control (public vs. private)

			Public	Private	Total
Q8A Immunization data collected - Coverage Data Available?	Yes	Count	33	56	89
		% within control public vs private	50.8%	68.3%	60.5%
	No	Count	32	26	58
		% within control public vs private	49.2%	31.7%	39.5%
Total		Count	65	82	147

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	4.661	1	0.031

Crosstab: Q8A Vaccine Data Availability by Institution Level (4-year vs. 2-year)

			4-Year or above Institution	2-Year Institution	Total
Q8A Immunization data collected - Coverage Data Available?	Yes	Count	81	8	89
		% within sector - 2-yr v 4-yr	63.8%	40.0%	60.5%
	No	Count	46	12	58
		% within sector - 2-yr v 4-yr	36.2%	60.0%	39.5%
Total		Count	127	20	147
		% within sector - 2-yr v 4-yr	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	4.090	1	0.043

Crosstab: Q8A Vaccine Data Availability by Enrollment Size

			IPEDS_ENROLLED Enrollment Category					Total
			Less than 2,500	2,500-4,999	5,000-9,999	10,000-19,999	20,000 or more	
Q8A Immunization data collected - Coverage Data Available?	Yes	Count	26	18	11	12	22	89
		% within Enrollment Category	57.8%	72.0%	52.4%	48.0%	71.0%	60.5%
	No	Count	19	7	10	13	9	58
		% within Enrollment Category	42.2%	28.0%	47.6%	52.0%	29.0%	39.5%
Total		Count	45	25	21	25	31	147
		% within Enrollment Category	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	5.160 ^a	4	0.271