



Iowa Immunization Program

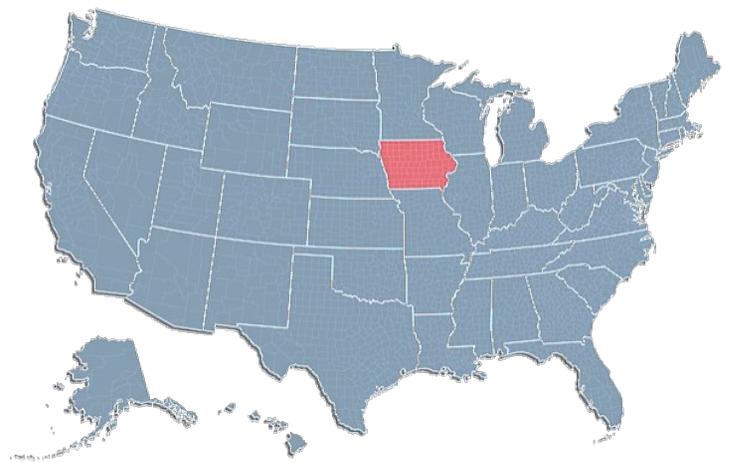
2021

State Immunization Data Report

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Introduction



Vaccines are considered to be one of the greatest public health achievements of the 20th century and one of the most economical health interventions. Vaccines teach the immune system how to recognize and fight bacteria and viruses before an infection can happen. Vaccines provide protection without a person getting sick and suffering the complications of a disease. For every \$1 spent on vaccines given routinely to children, the U.S. saves \$10.90 in medical costs by averting costs to treat diseases. A study from the Centers for Disease Control and Prevention reports vaccines administered to children and infants born between 1994 and 2018 will prevent 419 million illnesses, help avoid 936,000 deaths and save nearly \$1.9 trillion in total societal costs.

Achieving and maintaining high vaccination rates are two of the most important safeguards to prevent the spread of vaccine-preventable diseases. Many diseases are now rare due to the achievement of high immunization rates. However, the absence of these diseases no longer serves as a reminder of the severity and potential life-threatening complications of vaccine preventable diseases. Immunization rates in Iowa are consistent with or exceed national averages. **While immunization rates remain high, pockets of populations not immunized leave people and their communities more susceptible to vaccine preventable diseases.** Viruses and bacteria causing vaccine-preventable diseases still exist and can be passed to people who are not protected by vaccines. Healthcare providers are an essential stakeholder in achieving and maintaining high vaccination rates.



Iowa Immunization Registry Information System (IRIS)

The Iowa Immunization Program uses data from the **Immunization Registry Information System (IRIS)** to calculate county and state immunization rates for specific populations, including 2-year-old children and adolescents, and for specific vaccines, including HPV, influenza, and COVID-19. The Program uses school and child care audit assessment data collected in IRIS to ensure attendees receive the required immunizations.

Data Considerations and Limitations to IRIS:

The quality of data in IRIS and the calculated coverage rates are dependent upon healthcare provider participation in the registry, management of records for individuals who have moved, died, or gone elsewhere, and collection of information on doses administered prior to the launch of IRIS in 2001. The data may also include individuals that no longer reside in Iowa, but still have an active record in IRIS. These records may affect the overall immunization rate.

Additionally, IRIS does not routinely receive immunization data from other states and the Program does not maintain paper copies of immunization records. A resident can ask healthcare providers to have immunization information entered into IRIS. These limitations may affect the vaccine coverage in counties that border other states and among residents who received vaccines prior to 2001.

Iowa Public Health Tracking Portal

The **Iowa Public Health Tracking Portal** provides immunization and assessment data for Iowa healthcare providers and local partners in order to:

- Track progress towards goals
- Improve immunization practices
- Guide strategies to improve immunization service and delivery
- Identify pockets of under or unimmunized populations

What does the data tell us?

Portal data provides information regarding vaccine coverage by antigen type or series in Iowa residents. This data also allows us to identify if immunization rates are increasing or decreasing over time in order to help guide interventions and target population with low vaccination coverage.

What Immunization Data is Available?

**Childhood Immunizations
(2 Year-Old Children)**

**Adolescent Immunizations
(13-15 Years of Age)**

Influenza Vaccine

**School and Child Care
Audits**

**Human Papillomavirus
(HPV) Vaccine**

COVID-19 Vaccine

Data Note: A data summary for COVID-19 vaccine is not available due to the ongoing campaign and monthly data updates. A data summary for adult immunization is not available at the time of report publication.

2021

Iowa Public Health Tracking Portal Data Summary

Data Note: All data included is based on data from the Iowa Public Health Tracking Portal using the **IRIS population denominator**. More information regarding Census vs. IRIS population denominator can be found **here**.

Childhood Immunizations: 2-Year-Olds

Vaccines teach the immune system how to recognize and fight bacteria and viruses before an infection can occur. Vaccines provide protection without a child experiencing the complications of a disease. Some vaccines require only one dose, while others require several doses to provide complete protection.

The Advisory Committee on Immunization Practices (ACIP) develops written recommendations for the routine administration of vaccines, along with schedules regarding the appropriate timing, dosage, and contraindications. The recommended vaccines for 2-year-olds can be found [here](#).

Who is included in childhood portal data?

The data includes patients served by both public and private healthcare providers with a record in IRIS that have a zip code and are an “active” patient within a healthcare provider organization. The 2021 data includes children that turned **2 years-old** in 2021. These children were born between 01/01/2019 - 12/31/2019.

Which vaccines are included in childhood portal data?

Childhood immunization data includes the percent of children that received the recommended doses of the following vaccines by 24 months of age (2 years old):

- 4 DTaP
- 3 Polio
- 1 MMR
- 3 Hib
- 3 Hepatitis B
- 1 Varicella
- 4 PCV



4:3:1:3:3:1:4 Vaccine Series Completion

Receiving all recommended vaccines by 24 months of age.

Childhood Immunization Data: 2021

In 2021, 71% of 2-year-olds completed the 4:3:1:3:3:1:4 vaccine series in Iowa and were up to date on all recommended immunizations. **Figure 1** shows Iowa childhood vaccination rates by specific vaccine type and 4:3:1:3:3:1:4 vaccine series completion. Hepatitis B had the highest coverage rate at 87.8%, followed by Polio and MMR. PCV and DTaP had the lowest coverage rates at 76.5% and 75.9%, respectively.

71%

of 2-year-olds in Iowa completed the 4:3:1:3:3:1:4 vaccine series by 24 months of age.

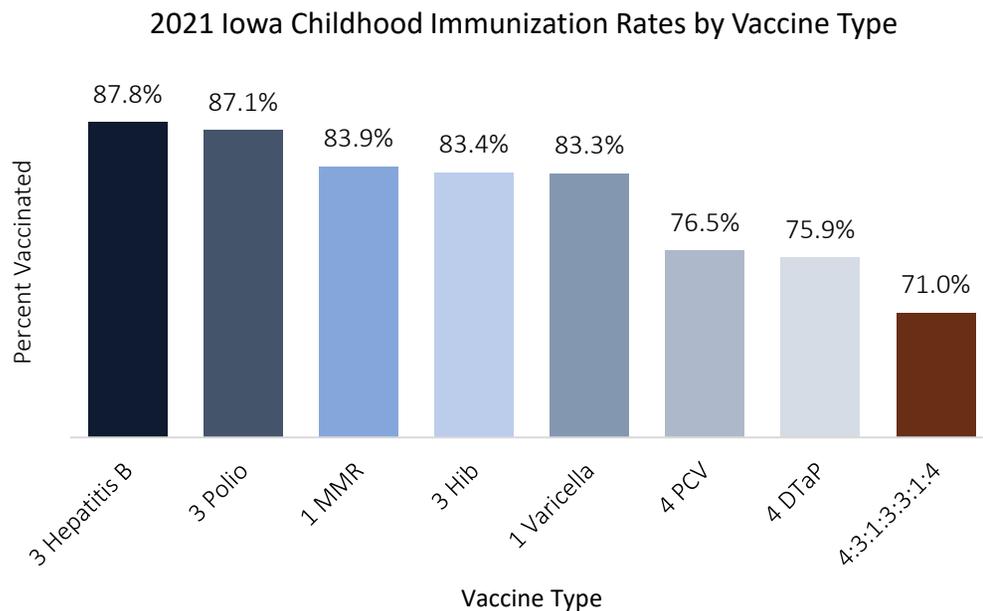


Figure 1. Childhood immunization coverage rates by vaccine type highest for Hepatitis B, lowest for PCV and DTaP.

Data Note: To be counted for the antigen specific vaccine type, an individual must have received all required doses in the vaccine series. Differences in percent vaccinated by vaccine type and completed series are due to some patients not receiving all vaccine types or recommended doses from the 4:3:1:3:3:1:4 vaccine series.

Potential reasons for differences in immunization rates by vaccine type:

- Initiation of Hepatitis B vaccine at birth may lead to higher vaccine series completion.
- Vaccine series completion impacted by number of doses and minimum interval requirements.
- Parental safety concerns and vaccine hesitancy toward specific vaccines.
- Missed opportunities to vaccinate at medical encounters.

2021 Childhood Immunization Rates Compared to Previous Years

Childhood 4:3:1:3:1:1:4 vaccine series completion in Iowa has fluctuated overtime (**Figure 2**). However, the percent of children receiving all recommended vaccines by 2 years old has been **decreasing since 2018**.

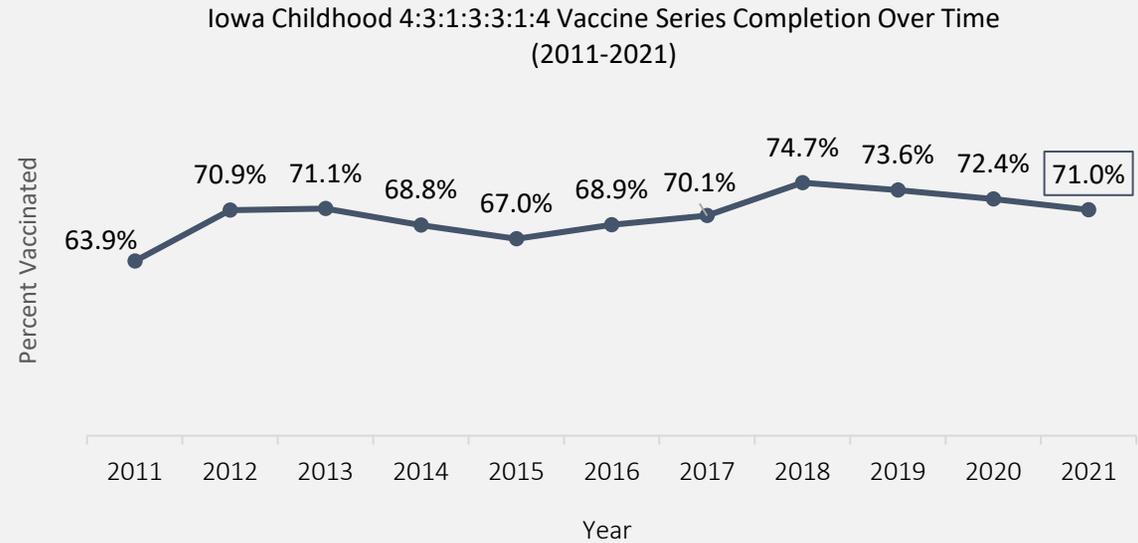


Figure 2. Decreasing childhood 4:3:1:3:1:1:4 vaccine series completion since 2018 in Iowa.

Vaccination coverage for all vaccine types **decreased** in 2021 compared to previous years (**Figure 3**). Decreases in childhood immunization rates over the last two years is likely due to the COVID-19 pandemic.

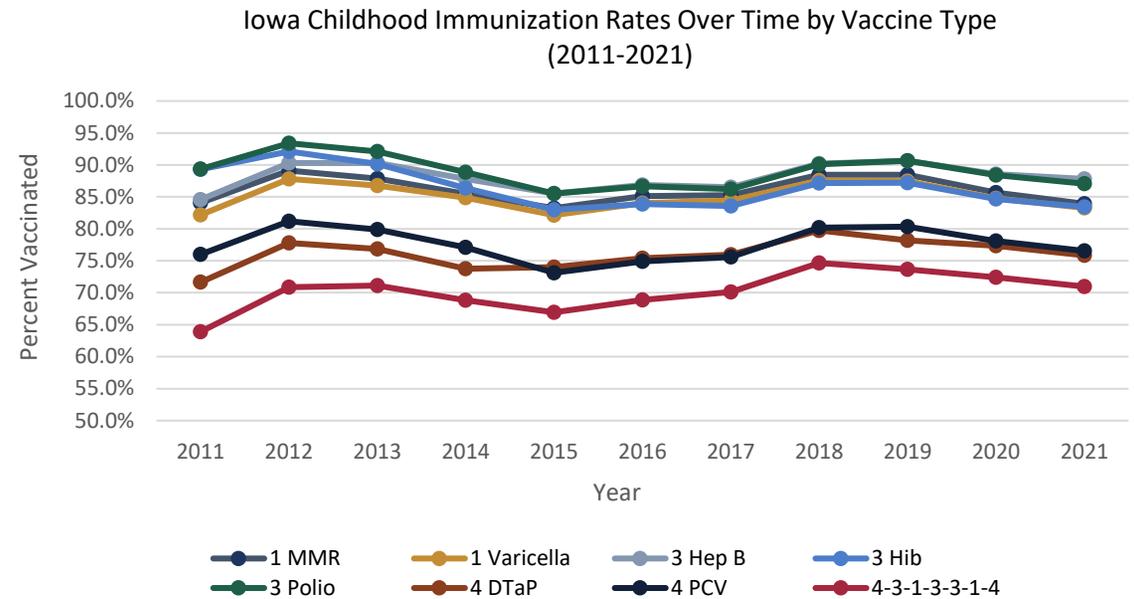


Figure 3. Decreasing childhood immunizations for all vaccine types since 2018 in Iowa.

According to the World Health Organization (WHO) and the United Nations Children's Fund (UNICEF), an estimated

25 million children worldwide

missed out on routine immunizations due to the COVID-19 pandemic in 2021.

Impact of COVID-19 on Childhood Immunization Rates

- The COVID-19 pandemic caused a dramatic decrease in well-child visits and reduction in administration of routine childhood vaccines.
- Vaccine coverage reductions were related to reduced access to and reluctance to schedule well-child appointments during the pandemic.
- Extra effort will be required to achieve and maintain pre-pandemic levels of vaccine coverage.
- Despite challenges caused by the COVID-19 pandemic, healthcare providers must remain vigilant in efforts to ensure children receive vaccines necessary to protect against serious and sometimes deadly vaccine-preventable disease.

Adolescent Immunizations: 13-15 Year-Olds

Adolescent immunizations are an important step to prevent illness and stay healthy. As kids get older, protection from some childhood vaccines begins to wear off; boosters are necessary to prolong protection. Older kids are at risk for diseases that could affect them throughout their lifetime.

Health checkups and sports or camp physicals are good opportunities for adolescents to receive recommended vaccines. Vaccines protect not only the health of adolescents but also their friends, families and communities.

Who is included in adolescent portal data?

The Iowa Immunization Program uses data from the Immunization Registry Information System (IRIS) to calculate county and state immunization rates for adolescents **13-15 years of age**. This data includes patients served by both public and private healthcare providers with a record in IRIS that have a zip code and are an “active” patient within a healthcare provider organization. The 2021 data include adolescents born between 1/1/2006 - 12/31/2008.

Which vaccines are included in adolescent portal data?

Adolescent immunization data includes the percent of adolescents (13-15 year-olds) that received the recommended doses of the following vaccines:

- 3 Hepatitis B
- 1 Meningococcal
- 2 MMR
- 1 Td/Tdap
- 2 Varicella



3:1:2:1:2 Vaccine Series Completion

Receiving all recommended vaccines by 13-15 years of age.

71.3%

of 13-15 year-olds in Iowa completed the 3:1:2:1:2 vaccine series in 2021

71.3% of 13-15 year old's in Iowa completed the 3:1:2:1:2 vaccine series in 2021. Similar to childhood vaccination rates, Hepatitis B had the highest rate of immunization at 88.9% followed by MMR and Varicella (**Figure 4**). Despite only being a 1 dose vaccine, both Td/Tdap and Meningococcal immunization rates were below 80% in 2021.

2021 Iowa Adolescent Immunization Rates By Vaccine Type

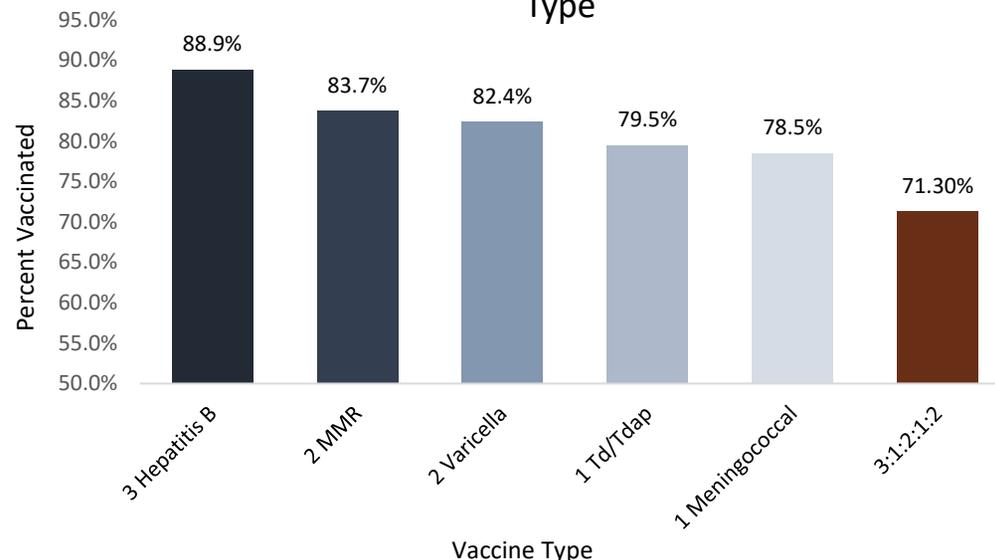


Figure 4: Adolescent immunization coverage by vaccine type highest for Hepatitis B, lowest for Td/Tdap and Meningococcal.

Data Note: To be counted for the antigen specific vaccine, an individual must have received all required doses of that vaccine type. Differences in percent vaccinated by vaccine type and completed vaccine series are due to some patients not receiving all vaccine types or recommended doses from the 3:1:2:1:2 vaccine series.

Many adolescents do not have regular preventative care visits compared to younger children. Parents may be less likely to be aware of when booster doses and adolescent immunizations are needed. In order to reduce missed opportunities to vaccinate adolescents, it is important to consider all possible opportunities to vaccinate during all medical encounters.

2021 Adolescent Immunization Rates Compared to Previous Years

Due to continued efforts and interventions to improve adolescent immunization rates, there has been a significant increase in immunization rates in Iowa since 2011 for the 3:1:3:1:2 vaccine series and by specific vaccine type (Figure 5, 6). Although adolescent immunization rates were less impacted by COVID-19 compared to childhood immunizations, 2021 did see a slight decrease in all vaccine types and the 3:1:3:1:2 vaccine series compared to 2020.

Iowa Adolescent Immunizations by Vaccine Type Over Time (2011-2021)

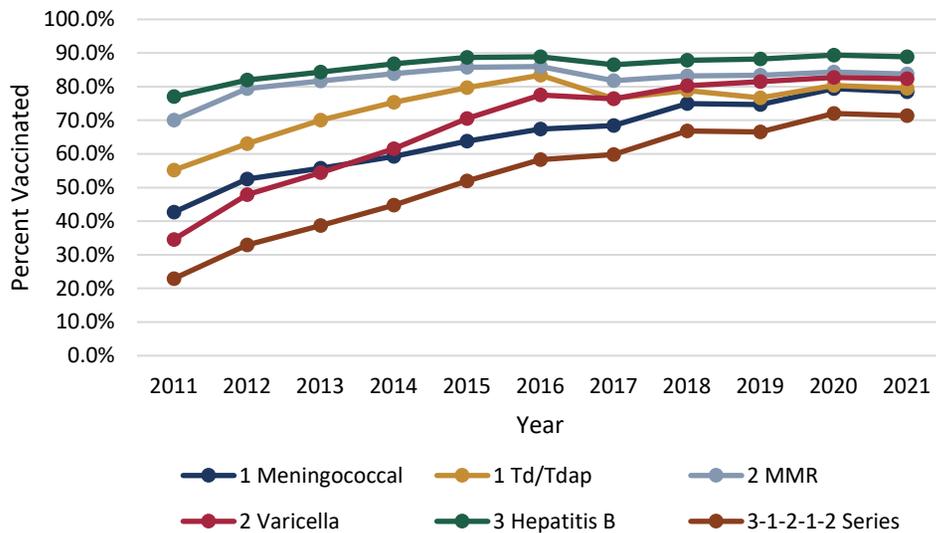


Figure 6. Increase in all adolescent immunizations in Iowa since 2011. Slight decrease in all vaccine types from 2020-2021.

Iowa Adolescent 3:1:2:1:2 Vaccine Series Completion Over Time (2011-2021)

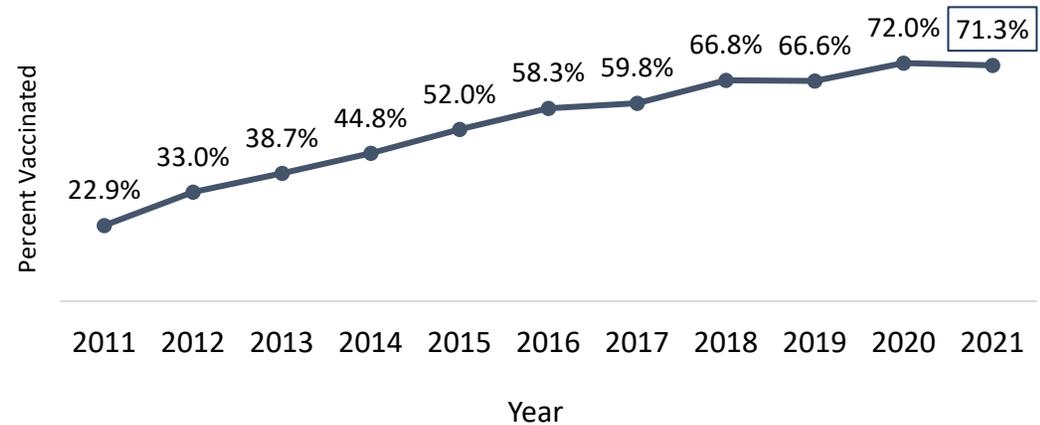


Figure 5. Increase in adolescent 3:1:2:1:2 vaccine series completion over time. Slight decrease from 2020 to 2021.

Impact of COVID-19 on Adolescent Vaccination Rates:

- The COVID-19 pandemic disrupted access to routine healthcare services and reduced immunization coverage rates.
- Increased efforts are needed to reach individuals whose routine medical care was affected by the pandemic.
- Despite challenges caused by the COVID-19 pandemic, it is important to continue to focus efforts to protect adolescents and communities against vaccine-preventable diseases and outbreaks.

Human Papillomavirus (HPV) Vaccine

Human papillomavirus (HPV) is a virus almost everyone will be infected with at some point in their lives. In most cases, HPV goes away on its own and people infected with the virus never knew they had it. However, when HPV does not go away, it can cause health problems such as genital warts and cancer. Cancer often takes years to develop after a person is infected with HPV. HPV associated cancers include six types: cervical, vulvar, vaginal, anal, penile and oropharyngeal (throat). HPV vaccination can prevent these cancers from ever developing.

Every year, HPV causes approximately 31,500 cancers in the United States, which includes an estimated 262 Iowans. In fact, HPV-related cancers kill more people every year than polio, measles, tetanus, and chickenpox (varicella) combined before vaccines for these diseases were developed. However, over 80 percent of these cancers can be prevented with the HPV vaccine. **Vaccinating adolescents now with HPV vaccine can provide protection throughout their lives.**

Who should get the HPV vaccine and when?

Both girls and boys should start the HPV vaccination series at age 11-12 years. All 11-12 year-olds should get a 2-shot series of HPV vaccine at least 6 months apart. The vaccination series can be started as early as age 9. All older teens and young adults are recommended to complete the HPV vaccine series if they have not already done so. A 3-dose series is needed for those with weakened immune systems and those 15 years of age and older.

HPV Vaccine Is Cancer Prevention

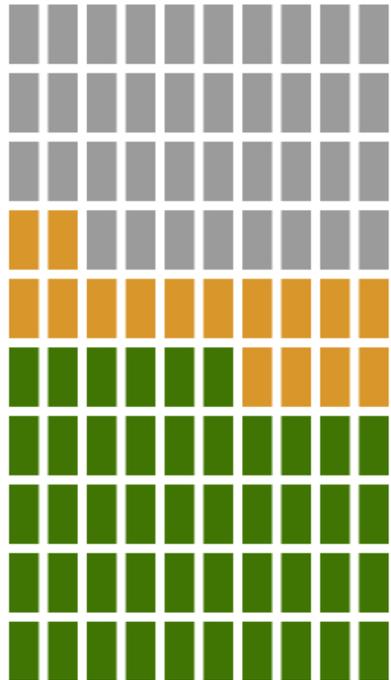
Who is included in this data?

Adolescents that were 13-15 years old during 2021. This includes adolescents born between 01/01/2006 - 12/31/2008.

Human Papillomavirus (HPV) Vaccine Data: 2021

46.2%

of adolescents in Iowa received the 2 or 3-dose HPV vaccine series and were fully protected against HPV in 2021.



- 38 out of 100** adolescents did not receive any HPV vaccine.
- 16 out of 100** adolescents started the HPV vaccine series but did not complete the series.
- 46 out of 100** adolescents completed the HPV vaccines series.

Percent of Adolescents with Completed HPV Vaccine Series by Gender

(2.9% with unknown gender)



HPV Vaccination Trends Over Time

2021 saw a slight decrease in HPV vaccination coverage with only 46.2% of 13-15 year old’s being fully protected against HPV in Iowa (Figure 7). Over the past few years, there has been an increased effort to improve HPV vaccination coverage among adolescents in order to protect against HPV related cancers and other complications related to HPV infection. Although Iowa’s HPV vaccination coverage saw a 10% increase in vaccine series completion from 2019 to 2020, the percent of adolescents fully protected against HPV in Iowa is still well below the [Healthy People 2030](#) goal of 80% of series completion.

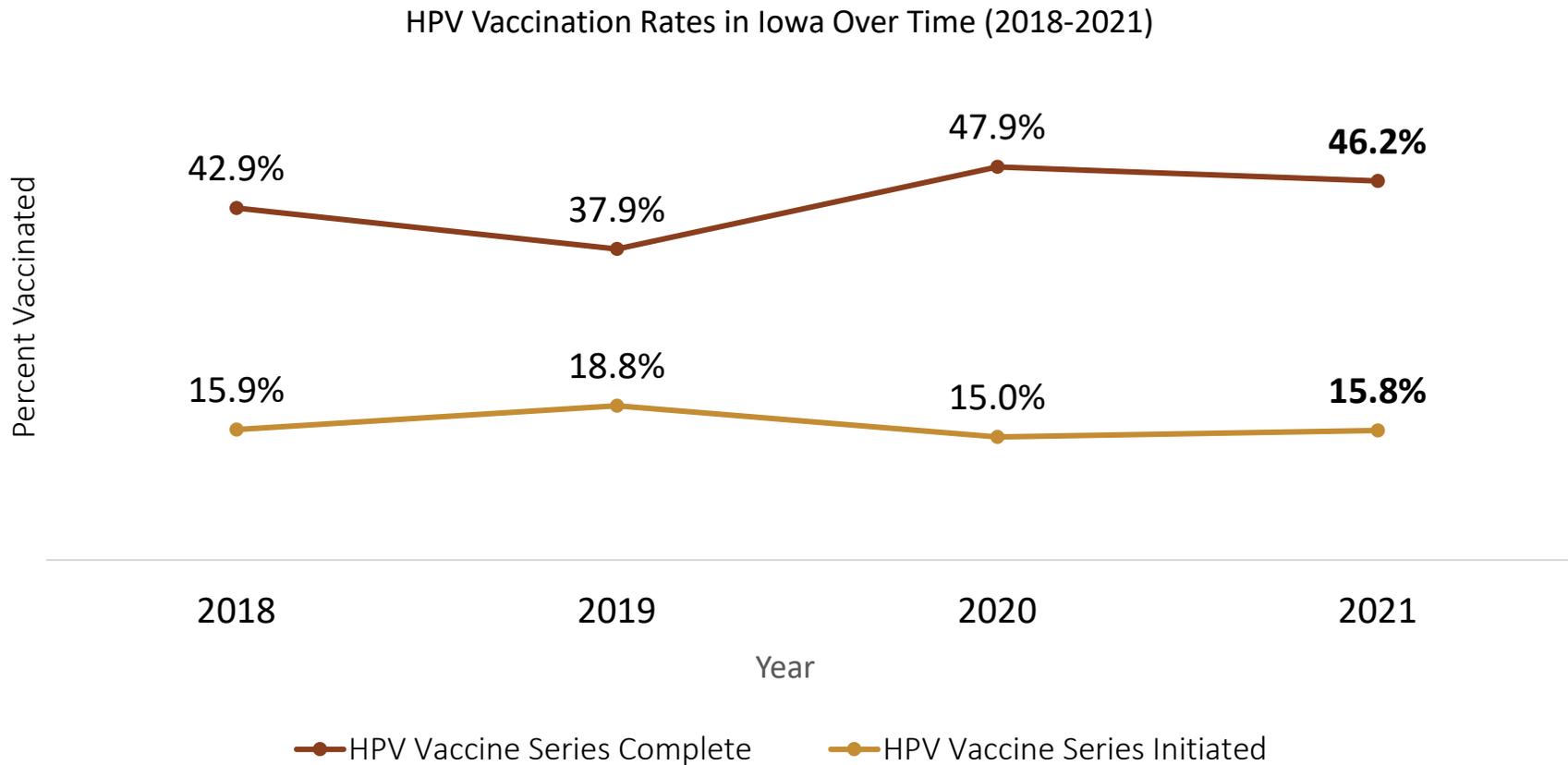


Figure 7. Fluctuations in HPV vaccination rates in Iowa over time. Increase in vaccine series initiation from 2020 to 2021 but decrease in vaccine series completion.

HPV Vaccination Rates Compared to Other Adolescent Vaccines in 2021

2021 adolescent HPV vaccination coverage in Iowa was **significantly lower** compared to other adolescent vaccines.

Only 46.2% of Iowa adolescents completed the HPV vaccine series in 2021 compared to 78.5% and 79.5% for Meningococcal and Td/Tdap vaccines series, respectively (**Figure 8**). This difference highlights the disparities between HPV and other vaccinations in the adolescent platform.

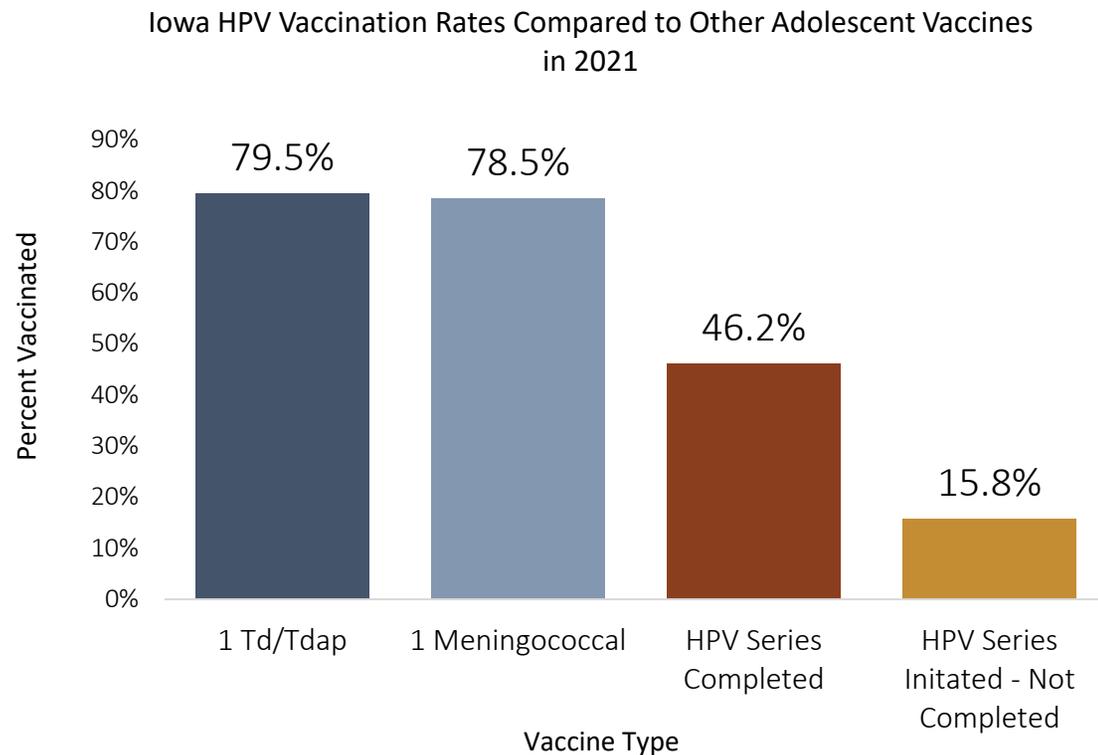


Figure 8. 2021 Iowa HPV vaccination rates significantly lower than both adolescent Td/Tdap and Meningococcal vaccination rates.

Why are HPV vaccination rates lower than other adolescent vaccines?

- HPV vaccine is not required to attend school or child care compared to the other adolescent vaccines.
- Limited public knowledge and understanding of HPV infections and the vaccine.
- Misinformation surrounding the safety and efficacy of HPV vaccine.
- Missed opportunities to administer HPV vaccine at the same time as Td/Tdap and Meningococcal vaccine.

“Over **80%** of HPV-related cancers can be prevented with the HPV vaccine”

Current Status of HPV Vaccinations

- There are **key disparities** between HPV and other vaccinations in the adolescent platform.
- Adolescents who are unvaccinated or not up-to-date on their vaccinations are at a **significantly higher risk of getting sick from vaccine-preventable diseases.**
- Increased HPV vaccination efforts in Iowa are needed to protect adolescents throughout their lives and prevent HPV-related cancers.

School and Child Care Audits

What are school and child care audits?

School and child care audits are conducted annually and are assessments of children attending licensed child care centers or elementary or secondary school to ensure attendees have received the required vaccines. Local public health agencies (LPHA) perform annual assessments of immunization records for children in licensed child care centers, and students enrolled in public, private, and parochial K-12 schools.

Why vaccinate child care and school-aged kids?

Achieving and maintaining high vaccination rates are the most important safeguards to prevent the spread of vaccine-preventable diseases. Studies have found individuals claiming exemptions from immunization are at a greater risk of contracting vaccine-preventable diseases. States with lower immunization rates have higher rates of vaccine-preventable diseases.

Iowa School and Child Care Immunization Requirements

Data Note: Audit data represents a snapshot in time and is subject to change as students with provisional certificates complete required vaccinations and students with invalid or no certificates provide appropriate documentation. Antigen specific data not available. Data as of 5/2/2022.

Types of School and Child Care Immunization Certificates

- **Certificate of Immunization:** Issued when the applicant has a record of age-appropriate immunizations that meet the requirement for licensed child care or school enrollment.
- **Provisional Certificate of Immunization:** Issued when the applicant has received at least one dose of each of the required vaccines but has not completed all required immunizations or is a transfer student from another U.S. school system.
- **Certificate of Immunization Exemption-Medical:** Iowa law allows for medical exemption to immunization when required immunizations would be injurious to the health and wellbeing of the applicant or any member of the applicant's family or household or required vaccine would violate minimum interval spacing.
- **Certificate of Immunization Exemption- Religious:** Iowa law allows for religious exemption to immunization when immunizations conflict with a genuine and sincere religious belief, and is not based merely on philosophical, scientific, moral, personal or medical opposition to immunizations.
- **Invalid or No Certificate:** Total number of students not compliant with Iowa law (does not have a valid Certificate of Immunization, Provisional Certificate of Immunization, or Certificate of Immunization Exemption [Medical or Religious]).
- **Valid Immunization Certificates:** Total number of students compliant with Iowa law. This value is calculated by adding the number of valid Certificate of Immunization, Provisional Certificate of Immunization, and Certificate of Immunization Exemption [Medical or Religious]).

During the 2021-2022 School Year:

94.3% had a Certificate of Immunization

2.3% had a Religious Exemption

0.3% had a Medical Exemption

1.9% had a Provisional Certificate

1.2% had an Invalid or No Certificate

29,650

students were under or un-immunized in 2021.

Under or un-immunized: Number of students that are not fully protected against vaccine-preventable disease. This includes students with a religious or medical exemption, a provisional certificate, invalid certificate, or no certificate of immunization.

Changes Over Time: Under or Un-Immunized Students

The percent of under or un-immunized students has increased 1.3% from last year and has steadily been increasing since 2011 (Figure 9).

Changes Over Time: Under or Un-immunized Students by Type of Exemption or Certificate

The large increase in individuals under or unimmunized in 2021 was primarily fueled by an increase in religious exemptions and provisional certificates (Figure 10). The percent of students with religious exemptions has been increasing since 2011.

The increase in provisional certificates is most likely caused by the COVID-19 pandemic. Students with provisional certificates who were in the process of completing their required vaccines may have been limited due to decreased access to routine healthcare services. A similar trend was seen in childhood and adolescent immunizations rates.

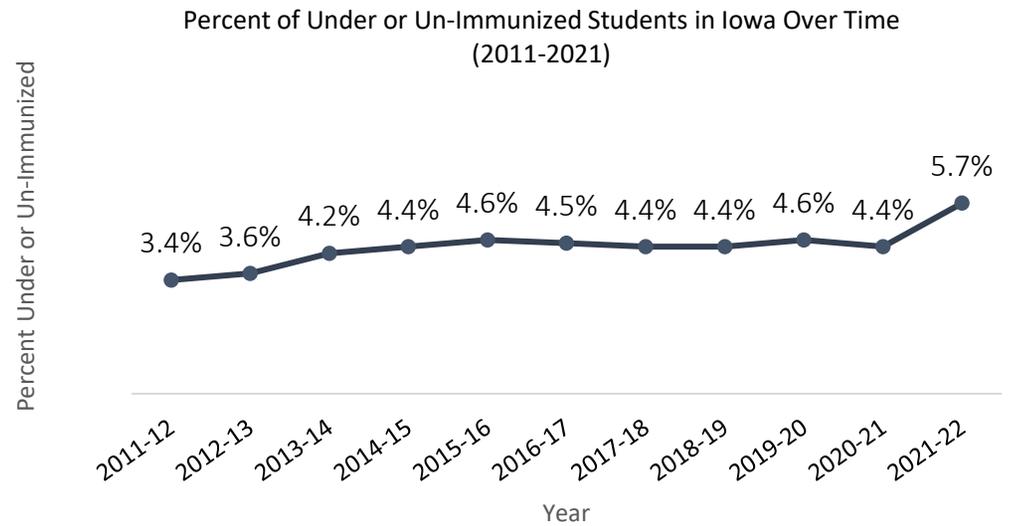


Figure 9. Increase in the percent of under or un-immunized student over time. Large increase from 2020-21 to 2021-22.

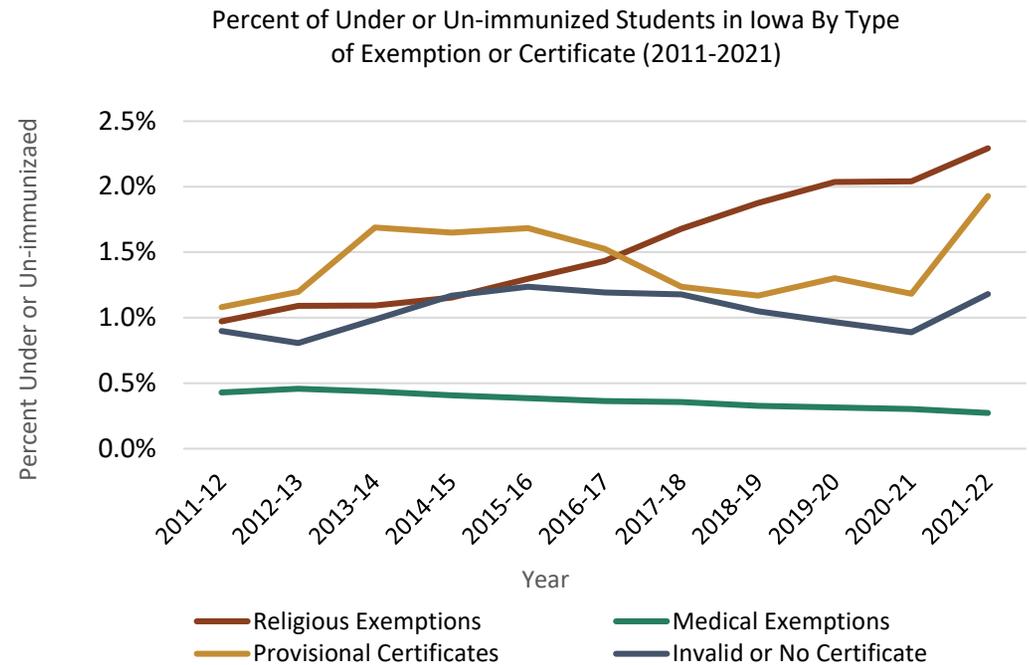


Figure 10. Increase in religious exemptions and provisional certificates over time. Large increase in provisional certificates from 2020-21 to 2021-22.

During 2021-2022 School Year:

93.3% had a Certificate of Immunization

1.7% had a Religious Exemption

0.1% had a Medical Exemption

1.4% had a Provisional Certificate

3.6% had an Invalid or No Certificate

6,045

children in licensed child care were under or un-immunized in 2021.

Under or un-immunized: Number of children in licensed child care that are not fully protected against vaccine preventable diseases. This includes students with a religious or medical exemption, a provisional certificate, invalid certificate, or no certificate of immunization.

Changes Over Time: Under or Un-Immunized Children

Although the percent of under or un-immunized children in licensed child care has decreased over the last 10 years, there was a 0.8% increase from last year. These changes are most likely caused by the COVID-19 pandemic (Figure 11).

Changes Over Time: Under or Un-immunized Children by Type of Exemption or Certificate

There was a slight increase in under or un-immunized children in licensed child care for religious exemptions, provisional certificates, and invalid or no certificates in 2021 (Figure 12). Invalid or no certificate made up the largest percent of under or unimmunized children at 3.6%. Similar to the school audit data, religious exemptions for children in licensed child care has been increasing since 2011.

Data regarding under or un-immunized children provides an understanding of the barriers to achieving complete vaccination and disease protection at schools and child care facilities. The Immunization Program continues to monitor immunization exemption rates, identify clusters of unimmunized children and provide education and information to address vaccine safety concerns.

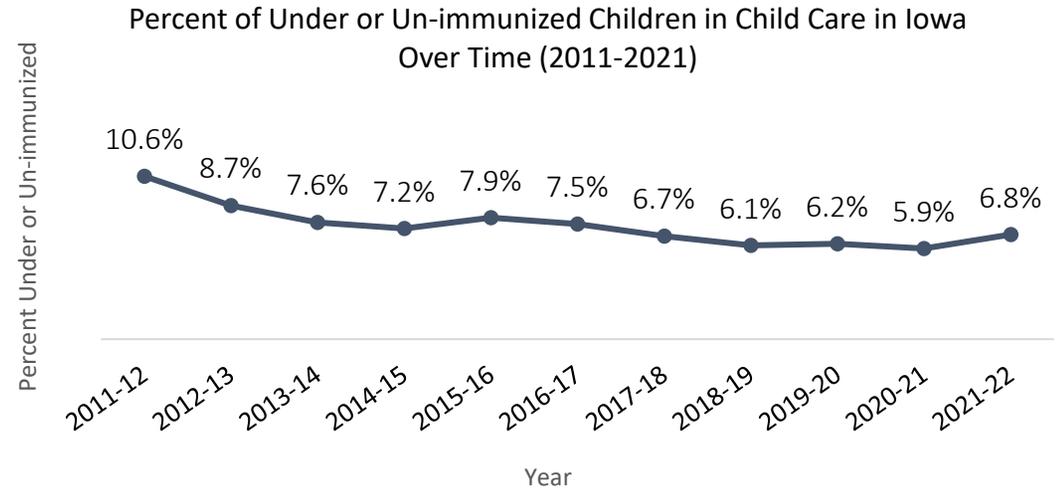


Figure 11. Decreasing rate of under or un-immunized children in child care over-time. Increase compared to last year.

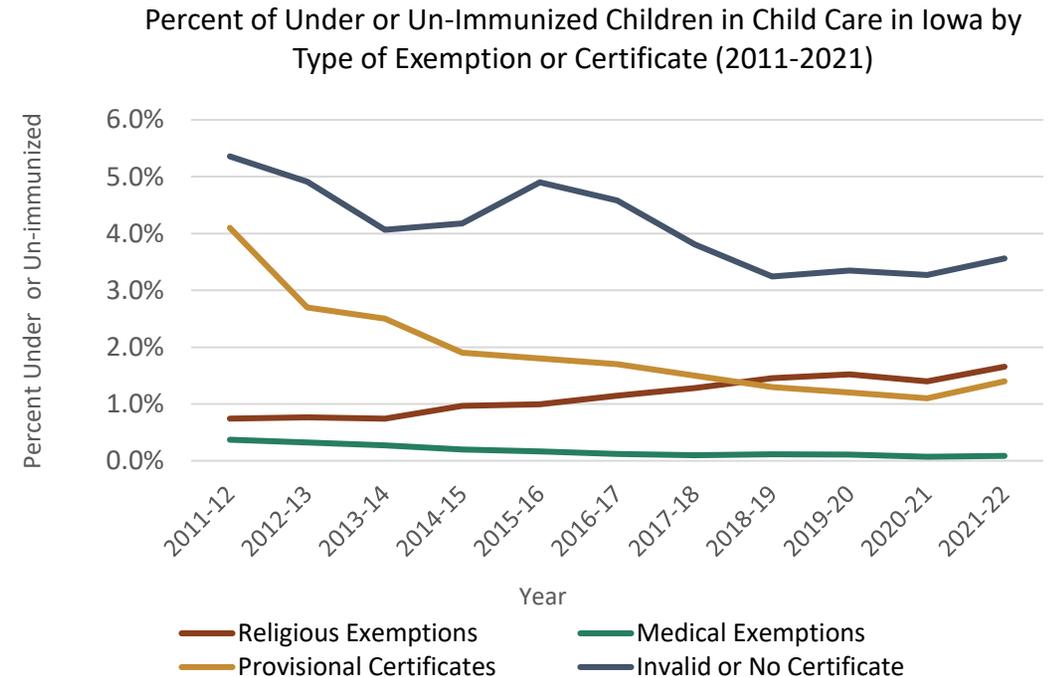


Figure 12. Religious exemptions increasing over time. Increase in all but medical exemptions from 2020-2021 to 2021-2022.

Missed Immunizations

When a child does not receive all the recommended immunizations, they are at **greater risk** of vaccine-preventable diseases throughout the years and into adolescents and adulthood. It is never too late to catch up on missed immunizations. The CDC provides a recommended catch up schedule for children and adolescents whose vaccinations have been delayed.

[Catch-up Immunization Schedule for Children and Adolescents](#)

Immunization Exemptions

In 2019, 1,274 cases of measles were confirmed in the United States, with the majority of cases being among people not vaccinated against measles.¹ This is the greatest number of cases reported in the U.S since 1992. Areas with higher rates of immunization exemptions are more likely to have vaccine-preventable disease outbreaks. Studies demonstrate children with exemptions were **22 times more likely to have had measles and 5.9 times more likely to acquire pertussis** than children who had not been exempted from vaccination.²

Vaccine Hesitancy

In 2019, the World Health Organization (WHO) included vaccine hesitancy as **one of the ten threats to global health**. This reluctance or refusal to vaccinate threatens the progress made to reduce and eliminate vaccine-preventable diseases. As misinformation regarding immunizations and vaccine safety continues to spread, it is more important than ever to ensure clear and effective communication of immunization information.

Missed immunizations, immunization exemptions, and vaccine hesitancy increase the risk of resurgence in vaccine preventable infections. Following ACIP's recommended routine vaccine schedule, catching up on missed immunizations, and addressing vaccine safety concerns help to protect individuals and communities from vaccine-preventable diseases.

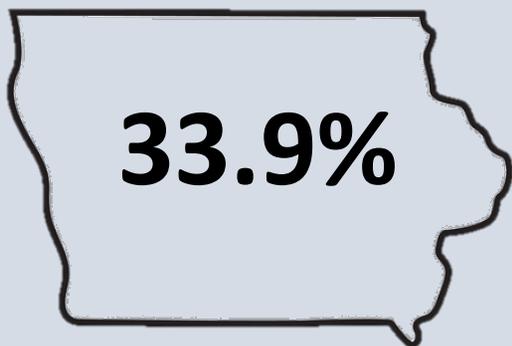
Influenza Vaccine

The annual influenza vaccine is the best way to protect against the flu and its potentially severe complications. It is recommended for everyone 6 months and older to receive the flu vaccine each year. The flu vaccine causes antibodies to develop in the body approximately two weeks after vaccination. These antibodies provide protection against infection when the viruses are circulating. The flu vaccine can protect against influenza and its potentially serious complications. Vaccination of high-risk persons is especially important to decrease the risk of severe flu illness. Getting vaccinated not only protects the individual, but also prevents spread of the disease to family, friends, and co-workers.

Influenza: a contagious infection of the nose, throat and lungs caused by a virus. The typical influenza season lasts from August to May. The flu is generally spread to others when an infected person coughs or sneezes. It can cause mild to severe illness and in some circumstances, can lead to death. Flu symptoms include a cough, fever, chills, sore throat, muscle or body aches, runny or stuffy nose, headache and fatigue.

Data Note: Seasonal influenza vaccination data in Iowa is based on doses reported to the Iowa Immunization Registry Information System (IRIS) for Iowans and includes data reported between August 2021 – May 2022. Data as of 6/10/2022.

Influenza Vaccine Data Summary: 2021



of Iowans received influenza vaccine during the 2021-2022 season.

During the 2021-2022 Flu Season

1,072,588

Iowans received the flu vaccine.

October

Month with greatest number of flu vaccine administrations.

6 months to 8 years

had the highest percent of population vaccinated by age group.

Flu vaccination rates are the

lowest

since the 2016-2017 influenza season.

Time Trend: Iowa Influenza Vaccine Administration by Month

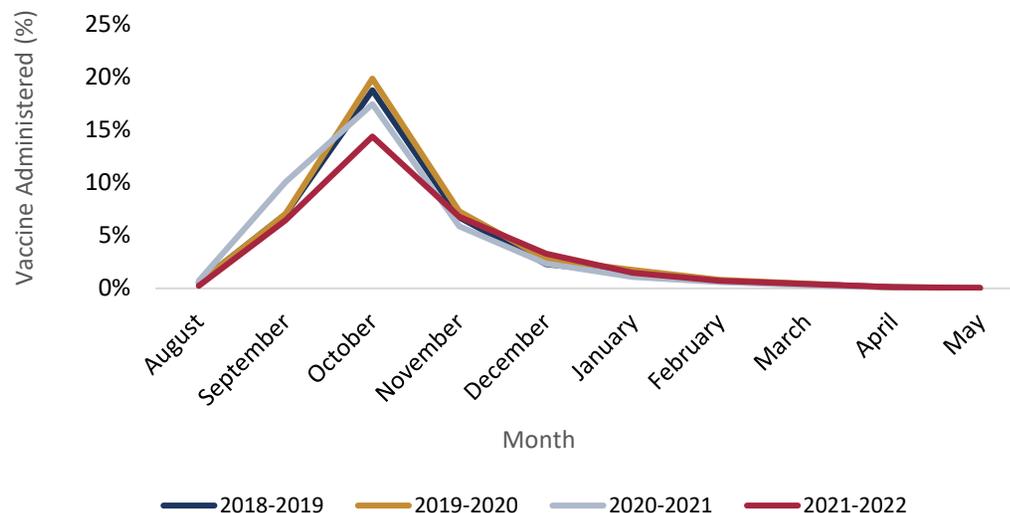


Figure 13. Highest percent of influenza vaccine administered during the 2021-2022 flu season was in October. Similar trend to previous years.

2021 Influenza Immunization Rates in Iowa Compared to Previous Years

Influenza vaccination rates are the lowest they have been since the 2016-2017 influenza season and have been declining for the last two years (**Figure 14**). The [Healthy People 2030](#) goal is to increase the proportion of persons who are vaccinated annually against seasonal influenza to 70% coverage. Increased vaccination efforts in Iowa are necessary to reach this goal.

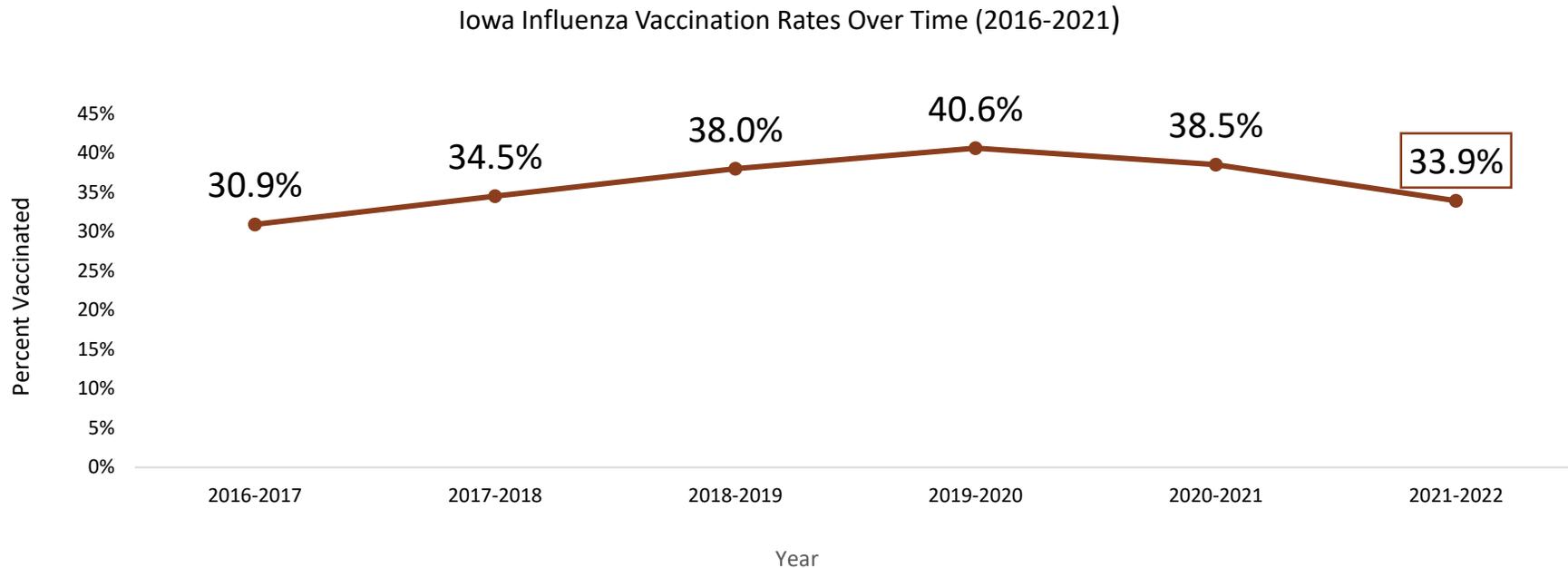


Figure 14. Decreasing influenza vaccination rates for past two years in Iowa. 2021 had the lowest coverage rate since the 2016-2017 influenza season.

Impact of COVID-19 on Influenza Vaccination Coverage

Since the start of the COVID-19 pandemic, influenza vaccination rates have declined. While the flu vaccine does not protect against COVID-19, it can protect against another contagious respiratory illness, the flu. The annual flu vaccine is the best way to protect against the flu and its potentially severe complications.

Influenza Vaccination Rates by Age Group

Individuals in the 6 months to 8 years age group had the highest vaccination coverage in 2021 at 45.6%, followed by 50 to 64-year-olds (41.7%).

Only a quarter (25.2%) of 18-49 year-olds in Iowa were vaccinated against the flu in 2021-2022 despite being the most active and social group (Figure 15). Focusing on improving vaccination rates in this population will help reduce the spread of annual influenza and protect other vulnerable populations from severe illness.

2021-2022 Iowa Influenza Vaccination Coverage by Age Group

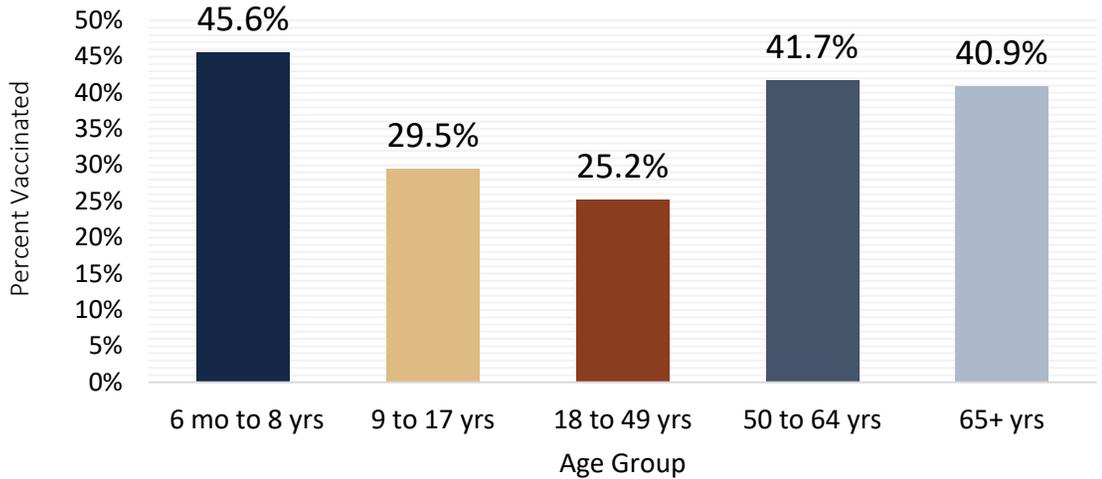
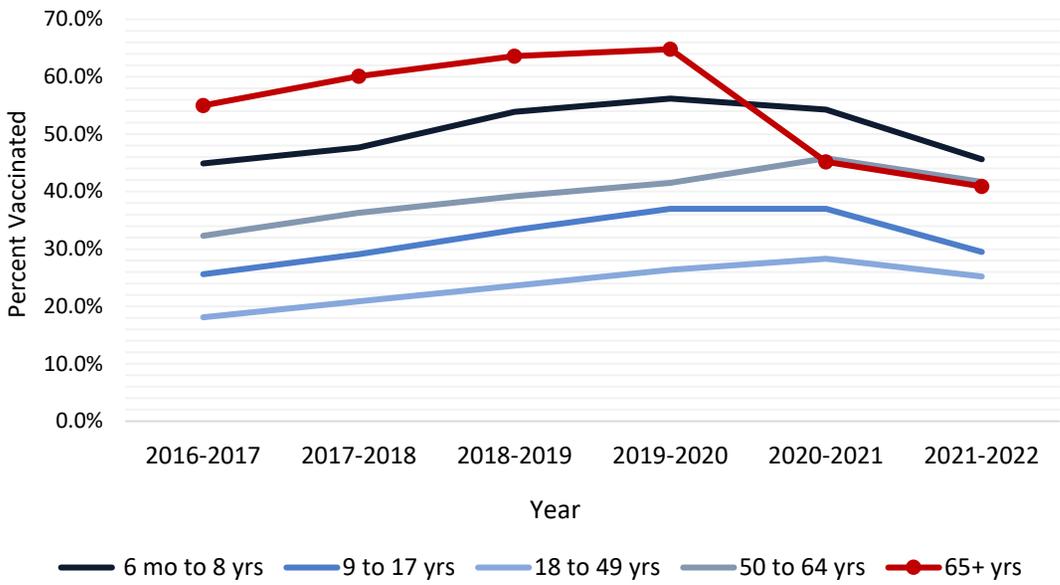


Figure 15. All age groups in Iowa below 50% coverage for influenza vaccine. 18-49 year-olds with lowest coverage.

Time Trend: Iowa Influenza Vaccination Rates By Age Group (2016-2021)



Individuals **65 years and older** are at greater risk for severe illness from the flu. This vulnerable population has seen a 23.9% decrease in flu immunization rates over the last two years (Figure 16). It is important to focus efforts in getting influenza immunization rates back up to pre-COVID-19 pandemic levels for this population.

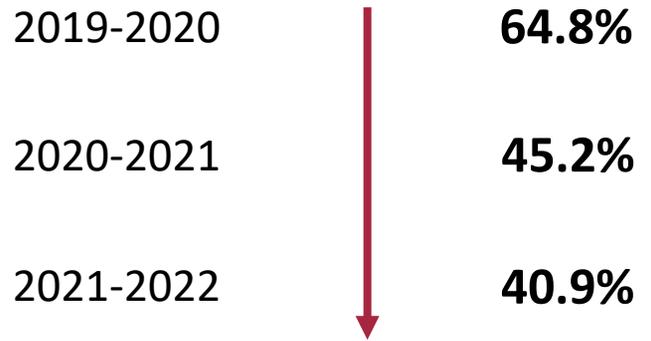


Figure 16. 65 and older age group with greatest decrease in influenza coverage over the last two years in Iowa.

Portal Data Summary and Future Directions

Childhood Immunizations & School and Child Care Audits:

Childhood immunization rates have been decreasing for the last four years and if children do not receive missed vaccines, they will continue to be at increased risk for vaccine preventable disease in adolescence and adulthood. Healthcare providers should use any visit as an opportunity to administer vaccinations that are due or might have been missed as a result of COVID-related disruptions. Additionally, schools and child care facilities have seen an increase in students with religious exemptions which is contributing to the increase of under and unimmunized students. . Individuals claiming exemptions from immunizations are at a greater risk of contracting vaccine-preventable diseases and increase the risk of disease outbreak at schools and child care facilities.

Adolescent Immunizations:

Adolescent immunizations decreased slightly in 2021 but overall, have been increasing over the past 10 years. However, HPV vaccination rates continue to remain significantly lower than other adolescent vaccines with only 46.2% of Iowa adolescents being fully protected against HPV in 2021. It is important to continue to identify barriers and implement strategies to reduce missed opportunities to vaccinate adolescents as well as continued education regarding the safety and effectiveness of the HPV vaccine.

Influenza Immunizations:

2021-2022 influenza vaccinations rates have declined since the start of the COVID-19 pandemic and are the lowest they have been since 2016. Only 25% of 18-45 year-olds in Iowa received the annual influenza vaccine and the 65 years and older age group saw a 24% decrease in influenza vaccinations when compared to 2019. Annual influenza vaccination is recommended since the flu strains may change each year, and the vaccine changes to match the current strains. The annual flu vaccine is the best way to protect against the flu.

The COVID-19 pandemic has disrupted access to routine healthcare services and reduced immunization coverage rates across all vaccine and age groups. It is important to continue efforts in identifying strategies to improve vaccination rates in order to protect the health of Iowans.

Childhood Immunizations

[Childhood Immunization Information and Resources](#)

Adolescent Immunizations

[Adolescent Immunization Information and Resources](#)

HPV Vaccine

[HPV Vaccine Information and Resources](#)

School and Child Care Audit

[School and Child Care Audit Information and Resources](#)

Influenza Vaccine

[Influenza Vaccine Information and Resources](#)

References

1. Measles cases and outbreaks. Centers for Disease Control and Prevention. <https://www.cdc.gov/measles/cases-outbreaks.html>. Published September 6, 2022.
2. Feikin DR, Lezotte DC, Hamman RF, Salmon DA, Chen RT, Hoffman RE. Individual and community risks of measles and pertussis associated with personal exemptions to immunization. JAMA 2000; 284:3145-50.)