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HPV Vaccination Rates Climb in Vermont

A recent CDC report shows that Vermont has made major gains in teen HPV vaccination coverage since last year. Vermont was among the states with the largest increases in HPV up-to-date status for adolescents 13-17 years. From 2016 to 2017, coverage for females and males combined rose from 55.7% to 64.5%. The findings are based on the 2017 National Immunization Survey-Teen and you can find the full report here and review the data yourself on TeenVaxView (both resources can be found on the CDC website).

Thank you for your work to protect Vermont teens from cancers caused by HPV!

2018-2019 STATE SUPPLIED PEDIATRIC INFLUENZA VACCINE BULLETIN

Routine annual influenza vaccination is recommended for all people aged 6 months and older who do not have a contraindication. The Vermont Immunization Program will provide influenza vaccine for patients age 6 months through 18 years. All vaccines supplied will be inactivated quadrivalent preservative-free formulations in prefilled syringes.

The 2018-19 quadrivalent influenza vaccines used in the United States contain an

A/Michigan/45/2015 (H1N1)pdm09-like virus, an A/Singapore/INFIMH-16-0019/2016 (H3N2)-like virus (NEW for 2018-19), a B/Colorado/06/2017-like (B/Victoria lineage) virus (NEW for 2018-19), and a B/Phuket/3073/2013-like (B/Yamagata lineage) virus.

The Advisory Committee on Immunization Practices (ACIP) voted to recommend use of live attenuated influenza vaccine (LAIV) during the 2018-19 season, after not recommending its use the previous two seasons due to concerns about effectiveness against (H1N1)pdm09 viruses during the 2013–14 and 2015–16 seasons. Providers should be aware that the effectiveness of the updated 2017-18 LAIV4 (that was not recommended for use in the United States) containing A/Slovenia/2903/2015 against currently circulating influenza A(H1N1)pdm09-like viruses is not yet known. Efficacy data for last season is expected this fall. For details see the June 8, 2018 MMWR (https://www.cdc.gov/mmwr/volumes/67/wr/mm6722a5.htm?s_cid=mm6722a5_w%20).

For the second year, state-supplied vaccine for pediatric use will include FluLaval, manufactured by ID Biomedical (distributed by GlaxoSmithKline) and licensed for use in individuals 6 months and older. Unlike Sanofi Pasteur's Fluzone, children age 6 through 35 months receive the same 0.5 ml dose as is used in older children and adults. The dose of FluLaval administered to all ages is 0.5ml.

INFLUENZA VACCINES FOR PEDIATRIC USE SUPPLIED BY THE VT DEPARTMENT OF HEALTH 2018-19

Vaccine NDC Manufacturer	Package Dose	Age	Type
Fluzone® Quadrivalent 49281-0418-50 Sanofi Pasteur	Single dose 0.5ml syringe	3 – 18 years	Preservative free IIV4
Fluzone® Quadrivalent 49281-0518-25 Sanofi Pasteur	Single dose 0.25ml syringe	6 – 35 months	Preservative free IIV4
FluLaval® Quadrivalent 19515-0909-52 GlaxoSmithKline	Single dose 0.5ml syringe	6 months – 18 years	Preservative free IIV4

Pediatric Practices

Pediatric practices will primarily receive the two Sanofi Fluzone vaccines, 0.25ml presentation for patients 6 – 35 months, and 0.5ml presentation for 3 – 18-year-olds.

Family Practices

FluLaval, 0.5ml presentation, will primarily be supplied to family practices for patients 6 months through 18 years old.

Note: Unlike Sanofi Pasteur's Fluzone, children age 6 through 35 months receive the same 0.5 ml dose as is used in older children and adults. The dose of FluLaval administered to all ages is 0.5ml.

FLU VACCINE ADMINISTRATION INFORMATION

What is the appropriate dosing and schedule for young children?

The following children will need 2 doses of influenza vaccine in the 2018-19 season, administered at least 4 weeks apart

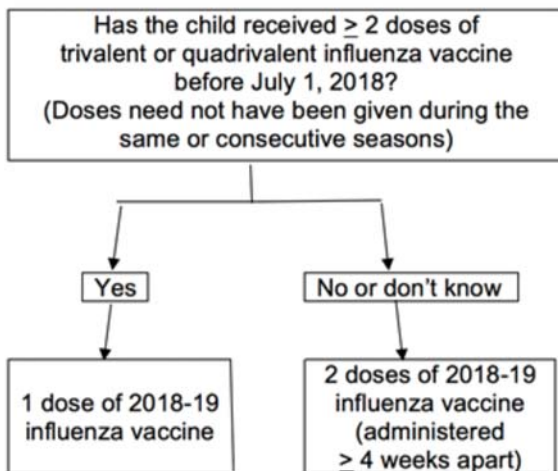
- Children aged 6 months through 8 years who have never been vaccinated against influenza or for whom vaccination history is unknown.
- Children aged 6 months through 8 years who have not received 2 or more doses of seasonal influenza vaccine (trivalent or quadrivalent) before July 1, 2018.

The following children will require only 1 dose of influenza vaccine for the 2018–19 season

- Children 6 months through 8 years who have received 2 or more doses of seasonal influenza vaccine (trivalent or quadrivalent) before July 1, 2018.
- Children 9 years of age and older.

Which children need 1 or 2 doses of flu vaccine?

Influenza vaccine dosing algorithm for children aged 6 months through 8 years — Advisory Committee on Immunization Practices, United States, 2018–19 influenza season



Vaccine Information Statement (VIS)

The Influenza VIS can be found on the CDC website: <https://www.cdc.gov/vaccines/hcp/vis/vis-statements/flu.html> The page includes links to VIS translations in many languages.

Please note: The Flu VIS is no longer updated every year. The edition dated 8/7/2015 should be used for the current flu season.

Injectable influenza vaccine dosing

Age	Dose	Number of doses
6 – 35 months	0.25 mL (Fluzone) 0.5 mL (FluLaval)	1 or 2
3 – 8 years	0.5 mL	1 or 2
9 years to adult	0.5 mL	1

Concurrent Administration of Flu Vaccine with Other Vaccines

Inactivated influenza vaccines do not interfere with the immune response to other inactivated vaccine or to live vaccines.

Full ACIP recommendations

Prevention and Control of Seasonal Influenza with Vaccines: Recommendations of the Advisory Committee on Immunization Practices—United States, 2018–19 Influenza Season <https://www.cdc.gov/mmwr/volumes/67/rr/rr6703a1.htm>

PEDIATRIC INFLUENZA VACCINE ORDERING: CHANGES AHEAD!

This year, there will be changes in how VFC practices order pediatric flu vaccine from the Immunization Program as flu vaccine ordering is incorporated into the Vaccine Inventory Management System (VIMS).

From September 6 through November 6, the process will remain the same as in years past. The Immunization Program will place an initial “bulk” order for all eligible offices the week of September 4-7. Practices with few pediatric patients may receive up to 100% of their order in this first shipment. Larger practices will receive about 25% of their expected order, in consideration of the storage space needed for these pre-filled syringes. Subsequent orders will be placed by Immunization Program staff in 3 or 4-week intervals, ending November 6.

After the last bulk order is placed, practices may order additional flu vaccine directly through VIMS! Flu vaccine can be requested concurrent with a routinely scheduled order or independently, as needed. This change will eliminate the need to contact the Immunization Program for each flu order; allow practices to check the status and track shipments; and improve data quality.

Best Practice: *Plan to place a flu order within 7 days of the submission of a VIMS Reconcile Request to avoid the necessity of having to perform a separate inventory count.*

As the implementation period approaches for this change, program staff will provide you with guidance documents and be available to answer questions

STUDY SHOWS PROVIDER RECOMMENDATION DOUBLES LIKELIHOOD OF CHILDREN RECEIVING INFLUENZA VACCINATION

New research published in *Vaccine*¹ by authors affiliated with CDC shows that children who received a provider recommendation for influenza vaccination were twice as likely to be vaccinated as those that did not.

Nationally, about 70% of children had received a provider recommendation. Children up to age twelve were more likely to have received it than teens. Additionally, children living in households with higher income (>\$75,000) were more likely to receive a recommendation than children living below poverty.

Here at the Immunization Program, we've been working to develop a strategy to increase influenza vaccination rates across the population using practices applied in both clinical and community settings. Flu vaccination coverage for children in Vermont is similar to that of the overall US population, but well below coverage for the New England region. Coverage among Vermont children 6 months to 17 years is 60%, about 10 percentage points below New England's coverage for the same age range.

Suggestions for Implementation

For your patients, providing your recommendation to children in the office during flu season is a straightforward way to promote vaccination. It can be harder to reach those that don't have a scheduled visit. Here are some options to consider:

- As children come in for physicals before the school year starts, recommend that they plan to get a flu shot when it becomes available
- If your office does advance scheduling for flu shot visits or clinics, recommend that parents make an appointment before leaving the office, so they can choose time that's convenient for their family
- If flu shot clinics will be offered, provide parents with a hard copy of the schedule
- In the early fall, consider mailing postcards recommending the flu shot to all patients
- Later in the season, mail postcards to those that remain unvaccinated (let us know if we can help with running an IMR report of unvaccinated patients)

¹ Find the complete article here: <https://www.ncbi.nlm.nih.gov/pubmed/29764679>

FLU VACCINATION FOR PATIENTS ≥ 65 YEARS

High-Dose Influenza or Adjuvanted for over 65?

Adults age 65 and older have the highest risk for complications, hospitalizations and death from influenza. Yearly influenza vaccination is recommended.

There are five flu vaccine options for adults 65+ years:

- inactivated influenza trivalent vaccine (IIV3)
- inactivated quadrivalent vaccine (IIV4)
- high dose IIV3 (HD-IIV3)
- adjuvanted IIV3 (aIIV3)
- trivalent recombinant influenza vaccine (RIV3) (Flublok®-considered egg free)

The ACIP has not stated a preference among these vaccines, but two vaccines may provide improved protection for people 65 and older. Fluzone® High-Dose (Sanofi Pasteur) and Flud® (Seqirus), both IIV3, address the decreased immune response in older people.

Fluzone® High-Dose IIV3 contains four times the amount of hemagglutinin. A large study showed that high-dose IIV3 was 24.2% more effective than standard dose (IIV3) in preventing laboratory confirmed symptomatic influenza in adults ≥65 years. This trial also showed that HD-IIV3 was associated with a 7% relative reduction in all-cause hospitalizations, an 18% relative reduction in cardiorespiratory events potentially related to flu, and a 40 percent relative reduction in pneumonia (ref).

Flud® aIIV3 contains a standard dose of 15 mcg hemagglutinin (HA) for each strain with squalene (MF59) as an adjuvant. In clinical studies, aIIV3 was more effective than unadjuvanted vaccine in preventing laboratory confirmed influenza in those 65 and older. The vaccine is associated with more injection site reactions compared to standard-dose vaccine. In a large cohort study conducted in Italy over three seasons, the risk of hospitalization from influenza or pneumonia was 25 percent lower in patients who received adjuvanted vaccine compared with standard vaccine (ref).

Action: Encourage vaccination by the end of October and continue vaccinating through the season. A second dose of SD influenza vaccine later in the season is not recommended.

The National Foundation for Infectious Diseases Call to Action: Reinvigorating Influenza Prevention in U.S. Adults 65 Years and Older provides excellent information <http://www.nfid.org/flu-older-adults> .

VERMONT IMMUNIZATION REGISTRY –A GO-TO SOURCE FOR FLU SHOT DATA

It's long been the standard resource for assessing childhood immunizations. But did you know the Vermont Immunization Registry can be helpful in assessing whether your patient has received a flu shot this season?

The Registry is an important source of information for providers and long-term care facilities who are not sure if a patient had a flu shot during a hospital stay, from a pharmacy, or from another provider. More and more, those are being reported to the Registry. In fact, all Vermont hospitals except the Veterans Administration send immunizations to the Registry. Most pharmacies also report to the Registry – most often using a monthly batch process, so the records are added within 30 days of administration. Between August 1, 2017 and July 30, 2018, 230,929 flu shots were given and added to the Registry.

Figure 1

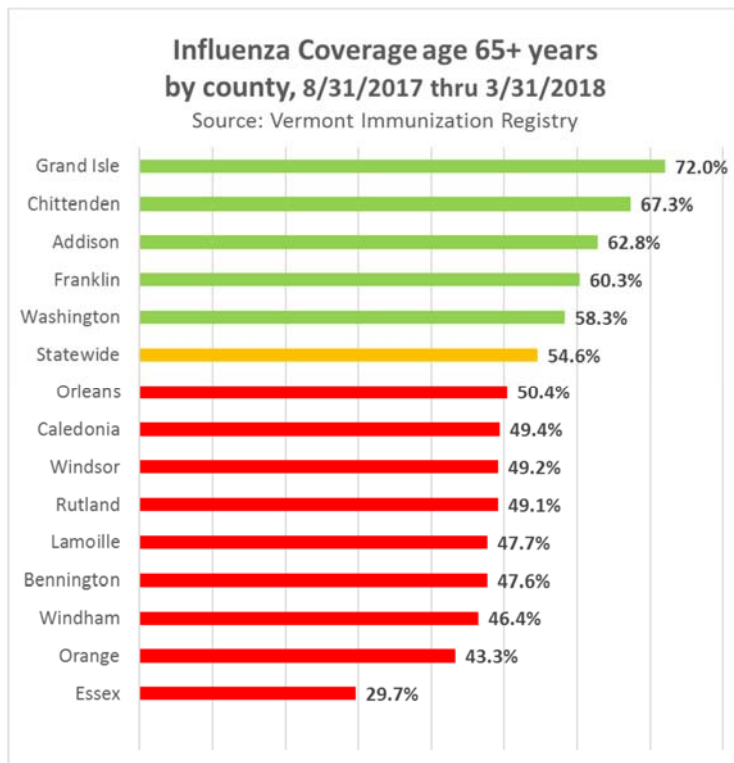
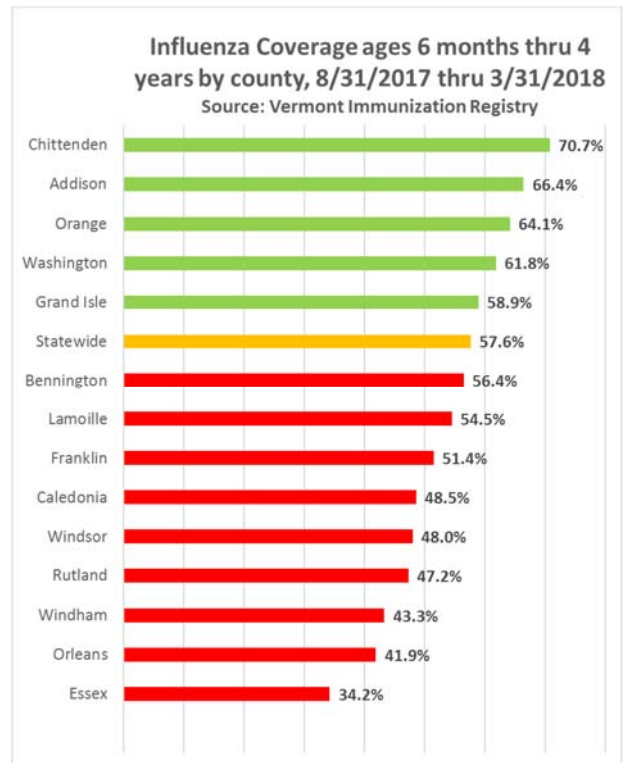


Figure 2



This information is also useful for assessing flu shot uptake in specific age groups by county. Figure 1 shows the percent of Vermonters age 65 years and older who received a flu shot this season. Nearly 55% of Vermonters in that age group were immunized, but there is wide variation by county. Figure 2 shows the percent of children 6 months of age through 4 years who received a flu shot, broken down by county. Nearly 58% of these were immunized state wide. Clearly, the more rural parts of the state have lower influenza coverage – and the Immunization Program will focus on outreach to these areas to improve protection.

While Registry data regarding influenza is informative and clearly demonstrates areas of need, we recognize three areas where we need to improve. Many Vermonters receive flu shots at employee health clinics, and these are not always reported to the Immunization Registry, despite a state law requires anyone administering a vaccine in Vermont to submit it to the Registry. Second, not all pharmacies report their data to the Registry; hampering providers ability to determine immunizations needed for some adults. Also, we have yet to connect the Veteran's Administration Hospital to the Registry, and we recognize they are also an important source of immunizations. We are focusing on getting data from both these sources for next flu season.

IMMUNIZATION PROGRAM UPDATES

LIMITED SHINGRIX SUPPLY

The Immunization Program received notification on June 30th that CDC had implemented a limit on the availability of Shingrix (RZV) to state programs, including Vermont, due to a nationwide manufacturer shortage of the vaccine. The number of Shingrix doses available to Vermont is based on historic use of Zostavax (ZVL) vaccine and unfortunately falls far short of the current demand. The Immunization Program's goal is to equitably distribute vaccine during this period, but the number of doses allotted to each practice is very limited.

UPDATE:

Based on information from the manufacturer of Shingrix (GlaxoSmithKline), an increased supply is anticipated in 2019. In the meantime, the Vermont Immunization Program is working with CDC to increase the allocation to the state.

CDC recently addressed providers' most frequently asked question when considering the shortage:

Q: What is the clinical guidance during the Shingrix delay?

A: Shingrix is the preferred shingles vaccine. You and patients should make every effort to ensure that two doses are administered within the recommended interval. If more than 6 months have elapsed since the first dose, administer the second dose when possible. Do not restart the vaccine series, and do not substitute Zostavax (zoster vaccine live) for the second dose of Shingrix. Read the report here

VFC/VFA COMPLIANCE SITE VISITS 2018/2019

As the new grant cycle begins, Vaccines for Children (VFC) and Vaccines for Adults (VFA) compliance site visits are being scheduled by the public health specialists assigned to your area. They are looking forward to meeting with practice staff and will provide assistance with meeting the VFC/VFA program requirements and recommendations. If you are unsure who is your public health specialist, please follow this link to review the map.

VFC/VFA RE-ENROLLMENT CHANGED TO JANUARY 2019

CURRENT ENROLLMENT EXTENDED SIX MONTHS

The annual re-enrollment period for the Vaccines for Children and/or Adults (VFC/VFA) programs has been changed from June to January. The current enrollment period is being extended an additional six months. Re-enrollment will occur during January 2019, with the deadline Feb 1, 2019.

Beginning January 2019, the re-enrollment period for VFC/VFA practices has been extended by CDC to 24 months. One caveat - CDC requires that a Provider Profile form must be submitted annually.

Reenrollment will continue to be conducted online through Survey Gizmo. and will only be sent to the vaccine contact at each enrolled practice. Reenrollment is required in order to receive state-supplied vaccine.

IMMUNIZATION QUALITY IMPROVEMENT (IQI)– AFIX

Immunization Quality Improvement (AFIX) is being scheduled now. To review your practice's immunization rates and identify strategies to improve immunization rates, please contact your Local Health Office and ask for the immunization nurse (AKA "Designee").

REMINDER: DATA LOGGERS

If you received newly recalibrated data loggers, please make sure you mail back old (expired) data loggers using the pre-paid envelope provided. Send any questions regarding recalibration of data loggers to ahs.vdhimmunizationprogram@vermont.gov.

RESOURCES

PINK BOOK UPDATE

The Centers for Disease Control and Prevention (CDC) publishes *Epidemiology and Prevention of Vaccine-Preventable Diseases*, more commonly referred to as the *Pink Book*, every few years. The most recently published version was the 13th Edition, released in 2015. On July 1, 2018 the CDC released a series of updates to the Appendices. To view a complete list of updates and clarifications since the 13th edition's publication; other parts of the book; or to learn more about the book and its contents visit the Pink Book section of the CDC's website: <https://www.cdc.gov/vaccines/pubs/pinkbook/index.html> . The entire book can be printed or referenced online. Hard copies are also available for purchase from the site.

HAVE YOU HEARD OF THE PURPLE BOOK?

The Pediatric Infectious Diseases Society recently announced the availability of a new edition of The Vaccine Handbook App. This mobile App for iOS devices contains the 2018 (7th) edition of *The Vaccine Handbook: A Practical Guide for Clinicians* (also known as "*The Purple Book*"), by Dr. Gary S. Marshall, professor of pediatrics at the University of Louisville School of Medicine.

This comprehensive guide provides information related to each vaccine and the disease it prevents including vaccine recommendations, immunology, development and history, infrastructure, standards, implementation, special circumstances and vaccine safety concerns. It is available free of charge from the Apple iTunes App Store (purchase of the print edition is not required). The App may be found by searching the App Store for "The Vaccine Handbook App" or clicking on the following link: <https://itunes.apple.com/us/app/the-vaccine-handbook-app/id1043246009?mt=8>.

Additional information about The Purple Book is available through the publisher, Professional Communications, Inc. at <https://pcibooks.com/books/view/49>.

VFC-ENROLLED PRACTICE SATISFACTION EVALUATION

Given the strong reliance on the medical home in Vermont, the Immunization Program recognizes that high provider participation in the VFC program is essential to maintaining high childhood vaccination rates. This past January, Vermont Immunization Program staff worked collaboratively with MPH students from Harvard School of Public Health to design a plan to evaluate VFC-enrolled practices' levels of satisfaction with the Vermont Immunization Program. The work was facilitated through our participation in a program jointly run by the Centers for Disease Control and Prevention (CDC) and Harvard T.H. Chan School of Public Health.

This summer, Title V Maternal and Child Health Interns from Drexel University Dornsife School of Public Health and Johns Hopkins Bloomberg School of Public Health joined us to conduct the evaluation. They used a mixed-methods approach, combining a web-based quantitative survey with qualitative phone interviews to assess provider and vaccine coordinator satisfaction with the Program.

Thirty-four percent (96 of 283) of providers and vaccine coordinators responded to the web-based survey and 31 providers and vaccine coordinators were interviewed. Respondents represented practices from all local health districts.

Respondents noted satisfaction with all components of the Immunization Program and the Immunization Registry, while offering valuable insight into improving program components. Ninety-six percent of respondents to the web-based survey were satisfied or very satisfied with the Immunization Program and 87% were satisfied or very satisfied with the Registry. Particular strengths were the responsiveness of Program staff and timely communication about new vaccines and recommendations.

Challenges described included difficulty with transferring vaccines, predicting the practice's vaccine needs, and implementing AFIX quality improvement practices while managing multiple roles and administrative requirements. Some practices also had difficulty transferring data to the Immunization registry via their electronic health record system and many were not fully confident that the Registry accurately reflected their practice's immunization rate data.

Following the collection and analysis of the data, integration of quantitative and qualitative findings led to recommendations for program improvement. These recommendations include improving information technology aspects of both the Program website and the Immunization Registry, expanding continuing education on vaccine hesitancy, increasing utilization of the new user guides for the vaccine ordering system (VIMS), and helping to support practices' efforts to conduct targeted immunization projects or set up school-based clinics.

Thank you to all the practices that participated in the survey, interview, or both!

VACCINE HESITANCY: REVIEW OF THE LATEST RESEARCH AND NOTES FROM THE FIELD

This article is the first in a new series addressing vaccine hesitancy. We'll share the latest evidence-based strategies, but we'd also like to use this section to answer your questions or share your suggestions about vaccine hesitancy. If you have ideas to share with other providers or questions we can help answer, we'd love to hear from you!

Since the Vermont Legislature eliminated the Philosophical Exemption to vaccination requirements for childcare and school attendance, the percent of children in Vermont meeting requirements has risen. However, pockets with low vaccination coverage persist and addressing vaccine hesitancy remains a challenge in our state.

On our recent Practice Satisfaction Survey, many of you told us about your experiences with vaccine hesitancy and how your practice handles it. We heard that you are sometimes able to change the minds of parents who are initially skeptical about vaccines. That's consistent with the findings of a recent paper. The authors found that even when parents initially refuse vaccines for their child, many change their minds when providers recommend them again at subsequent visits.

Many of you also described particular challenges related to acceptance of HPV vaccination. It can provoke different questions for parents than early childhood vaccines. Parents sometimes raise the concern that the vaccine will cause their child to become sexually active at a younger age. Several studies have examined this and all have found that there is no relationship between receiving HPV vaccination and the time of onset of sexual activity.

A recent paper showed that for HPV vaccination, a presumptive recommendation, where providers assume that the vaccine will be accepted, was more effective than a more open-ended, conversational approach. CDC recommends a "bundled approach," where you recommend the HPV vaccine in the same way and on the same day as other adolescent vaccines.

If you are looking for printable resources to share with parents, CDC has a recently-released, one-page parent handout that describes the importance of HPV vaccination, timing, and safety.

References

1. [https://www.academicpedsjnl.net/article/S1876-2859\(17\)30367-4/fulltext](https://www.academicpedsjnl.net/article/S1876-2859(17)30367-4/fulltext)
2. <http://pediatrics.aappublications.org/content/130/5/798>
3. <http://pediatrics.aappublications.org/content/early/2016/12/01/peds.2016-1764>

VIMS PEARLS- TRACKING YOUR VACCINE ORDER

VIMS stands for Vaccine Inventory Management System; it is the Vermont Registry based tool providers use to manage their state-supplied inventory and order vaccines.

Shipment tracking and carrier information is added to an Order Request the morning after vaccine is shipped by the distributor (McKesson for refrigerated vaccines and Merck for frozen). To find this information:

1) Click on the View History link in the main VIMS Menu.

2) Look for Request Type: Order.

3) Request Status:

Incomplete, Submitted, IZ Hold, Approved, Pending Extract or Pending Shipment = shipment information unavailable

Partial Shipment or Full Shipment = shipment information available

4) If shipment information is available, click on the "View" link.

Request Type	Request Status	Created Date	Submitted Date	ExIS Id	View
Order	Full Shipment	12/1/2017	12/1/2017	ORD1793	View
Reconciliation	Completed	12/1/2017	12/1/2017		View

Once the Order Request is retrieved, the shipment information is displayed in a separate table below the order itself. It includes lot, expiration, carrier and tracking information.

Shipment Info														Order Total: \$ 37,690.050
Line	Vaccine	Brand	NDC	VFC VFA	Lot	Expiration	Ship Quantity	Shipment Carrier	Shipment Tracking #	Shipment Date	Split Line?	Line Complete?	Open Quantity	Overage Quantity
17	MMRV	ProQuad®	00006-4171-00	VFC	N023965	2/28/2019	40	UNITED PARCEL SERVIC	125R12510106972515	12/18/2017	No	Yes	0	0
23	VAR	Varivax®	00006-4827-00	VFC	N023957	9/1/2019	30	UNITED PARCEL SERVIC	125R12510106977734	12/18/2017	No	Yes	0	0

Visit the Vermont Department of Health Vaccine Ordering Page for VIMS quick guides, FAQ, and the complete VIMS User Guide: <http://www.healthvermont.gov/immunizations-infectious-disease/immunization-health-care-professionals/vaccine-ordering>