

# UVM ScholarWorks

## Improving Vaccination Rates at UVMHC Family Medicine, Berlin

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| Item Type     | Presentation;Presentation   |
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| Download date | 2026-05-19 09:35:42   |
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# Improving Vaccination Rates at UVMHC Family Medicine, Berlin

Emily G. Jones  
February-March, 2015  
*In collaboration with*

Tara Reil, RN, BSN, Public Health Nurse, Immunization  
Designee, Vermont Department of Health, Barre

&

Mary Helen Bayerle, RN, Immunization Nurse, UVMHC  
Family Medicine, Berlin

# Glossary

- \* **AFIX (Assessment, Feedback, Incentives, eXchange)** = CDC's continuous Quality Improvement Program to increase immunization rates
- \* **AFIX Report** = assessment of immunization coverage for your practice; in Vermont, the VT Immunization Registry
- \* **AFIX Visit** = Immunization Designee will bring an AFIX Report, discuss the results with you, discuss currently used immunization strategies, and assist in selecting do-able interventions to increase coverage
- \* **Immunization Designee** = a local resource to practices, providing education, program compliance expertise and training to primary care providers who provide patient immunization
- \* **VT IMR** = Vermont Immunization Registry

# Improving Vaccination Rates, UVMHC Family Med, Berlin

## *Identifying the Problems & Needs:*

- P- Practitioners don't know current vaccination rates for their practice
  - N- Call District Immunization Designee, ask to have an AFIX report run
- P- AFIX Report for 24-36 month olds looks incorrect according to Medical Director (see slide 2A)
  - N- Conduct chart review and correct VT IMR w/ practice immunization nurse
  - N- Re-run AFIX Report after corrections made (see slide 2B)
- P- Afix Report for MMR, HepB, & Varicella for 13-18 year olds looks incorrect according to Medical Director (see slide 2C)
  - N- Immunization Designee calls VT IMR, learns UVMHC Practices' historical data (pre-EMR) has never been uploaded into VT IMR, currently in process, complete in one week
  - N- Re-run AFIX Report after historical data uploaded
- P- VT IMR Report for HPV for 13-17 year olds better than state levels, needs improvement (see slide 2D)
  - N- Create strategy for improvement at AFIX Visit
- P- Patients no longer in the practice remain in the VT IMR and decrease rates
  - N- perform chart review of patients missing multiple vaccinations to determine if no longer in the practice
- P- Practice EMR began 2010; paper records loaded manually by persons w/o medical training
  - N- Vaccination errors likely, may require reviewing paper charts

**Berlin Family Practice**

130 Fisher Road  
 Suite 3-1  
 Berlin, VT 05602  
 Phone (802) 225-7000

**"All" AFIX Report - Practice View Vaccine Coverage**

Assessment Type: Child

Assessment Date: 02/09/2015

Patients Born Between 02/10/2012 and 02/09/2013

Report Date: 02/09/2015

| Vaccine Series   | # of Patients Up to Date | # of Patients In Age Group | % Patients Up To Date |
|------------------|--------------------------|----------------------------|-----------------------|
| Dtap             | 12                       | 13                         | 92.3%                 |
| Polio            | 12                       | 13                         | 92.3%                 |
| MMR              | 12                       | 13                         | 92.3%                 |
| Hib              | 11                       | 13                         | 84.6%                 |
| HepB             | 12                       | 13                         | 92.3%                 |
| Varicella        | 12                       | 13                         | 92.3%                 |
| Pneumococcal     | 11                       | 13                         | 84.6%                 |
| All Series Above | 11                       | 13                         | 84.6%                 |

**Please Note:**

- Accuracy of this report depends on the accuracy and completeness of records entered at your practice.
- This report excludes any 'invalid' immunizations administered outside the guidelines set by the Advisory Committee for Immunization Practices.

### "All" AFIX Report - Practice View Vaccine Coverage

Assessment Type: Child

Assessment Date: 03/04/2015

Patients Born Between 03/05/2012 and 03/04/2013

Report Date: 03/04/2015

| Vaccine Series   | # of Patients Up to Date | # of Patients In Age Group | % Patients Up To Date |
|------------------|--------------------------|----------------------------|-----------------------|
| Dtap             | 12                       | 12                         | 100.0%                |
| Polio            | 12                       | 12                         | 100.0%                |
| MMR              | 12                       | 12                         | 100.0%                |
| Hib              | 11                       | 12                         | 91.7%                 |
| HepB             | 12                       | 12                         | 100.0%                |
| Varicella        | 12                       | 12                         | 100.0%                |
| Pneumococcal     | 11                       | 12                         | 91.7%                 |
| All Series Above | 11                       | 12                         | 91.7%                 |

**Please Note:**

- Accuracy of this report depends on the accuracy and completeness of records entered at your practice.
- This report excludes any 'invalid' immunizations administered outside the guidelines set by the Advisory Committee for Immunization Practices.

**"All" AFIX Report - Practice View Vaccine Coverage**

Assessment Type: Adolescent  
 Assessment Date: 02/09/2015  
 Patients Born Between 02/10/1997 and 02/09/2002  
 Report Date: 02/09/2015

| Vaccine Series              | # of Patients Up to Date | # of Patients In Age Group | % Patients Up To Date |
|-----------------------------|--------------------------|----------------------------|-----------------------|
| Td                          | 95                       | 168                        | 56.5%                 |
| Pertussis/Tdap              | 138                      | 168                        | 82.1%                 |
| Meningococcal               | 88                       | 168                        | 52.4%                 |
| HepB                        | 94                       | 168                        | 56.0%                 |
| Varicella                   | 68                       | 168                        | 40.5%                 |
| MMR                         | 84                       | 168                        | 50.0%                 |
| HPV (All Patients)          | 60                       | 168                        | 35.7%                 |
| HPV (Females)               | 30                       | 78                         | 38.5%                 |
| HPV (Males)                 | 30                       | 90                         | 33.3%                 |
| All Series Above Except HPV | 25                       | 168                        | 14.9%                 |
| All Series Above            | 10                       | 168                        | 6.0%                  |

**Please Note:**

- Accuracy of this report depends on the accuracy and completeness of records entered at your practice.
- This report excludes any 'invalid' immunizations administered outside the guidelines set by the Advisory Committee for Immunization Practices.

February 25, 2015

Human Papilloma Virus (HPV) Immunization coverage in Vermont is not where we'd like it to be.

This is an example of the QUARTERLY feedback from the Vermont Immunization Registry we provide to each practice. It is based on patients associated with your practice, with an age range of 13 through 17 years.

Immunization Registry Report for **UVM Medical Center-Family Medicine-Berlin** – as of the last Quarter of 2014

KEY

|                         |
|-------------------------|
| At or above state level |
| Below state level       |

HPV Series Initiation: What percent of your patients have received **at least one dose of HPV?**

| # patients | % females 1 dose HPV | % males 1 dose HPV | % patients 1 dose HPV | state level % patients 1 dose HPV |
|------------|----------------------|--------------------|-----------------------|-----------------------------------|
| 95         | 63.0%                | 47.8%              | 54.9%                 | 47.7%                             |

HPV Series Follow-up: What percent of your patients have received **at least two doses of HPV?**

| # patients | % females 2 dose HPV | % males 2 dose HPV | % patients 2 dose HPV | state level % patients 2 dose HPV |
|------------|----------------------|--------------------|-----------------------|-----------------------------------|
| 95         | 54.3%                | 38.0%              | 45.7%                 | 37.1%                             |

HPV Series Completion: What percent of your patients have **completed the HPV series?**

| # patients | % females 3 dose HPV | % males 3 dose HPV | % patients 3 dose HPV | state level % patients 3 dose HPV |
|------------|----------------------|--------------------|-----------------------|-----------------------------------|
| 95         | 33.3%                | 23.9%              | 28.3%                 | 26.6%                             |

Remember to recommend HPV immunizations for all your adolescent patients, starting at age 11.

# Public Health Cost

- \* The cost of this project was \$0.00. The work necessary for this project was included in the job descriptions of those involved
- \* Total cost of vaccines given by UVMHC Family Medicine at Berlin for 2014 = \$89,793.50 (*funded by The Vaccine for Children & Adults Program*)
- \* Improving vaccination rates, reduces illness, which reduces health care costs!
- \* Improving vaccination rates, involves improving systems, which will reduce....
  - \* Invalid doses = vaccine given at the wrong time, incorrect vaccine given, incorrect dose given
  - \* Staff resources: calling patients, correcting charts, rescheduling patients, correcting VT IMR....which reduces health care costs!

# Community Perspective

[Name Withheld], MSN, MPH, Immunization Program Manager, Vermont Department of Health (VDH)

- ❖ “My job is immunization surveillance for the state. Our vaccination rates are lower than the national averages. They’ve been gradually decreasing as opt-out has been increasing - Vermont has the 2nd or 3rd highest rate of philosophical exemption for childhood vaccinations! We created a website in 2012 called [www.OktoAskVT.org](http://www.OktoAskVT.org), targeted towards educated, female, 30-35yo’s, to address parent’s fears. A project that improves vaccination rates and educates at the same time is key. I recommend calling the VDH Immunization Specialist for your practice and having her run an AFIX report & do an AFIX visit.”

[Name Withheld], RN, BSN, Public Health Nurse, Immunization Designee, VDH, Barre District Office

- ❖ “I would love to do an AFIX for Berlin. I’ve never done a site visit for that practice. I’ll run a report from the VT IMR of their current vaccination rates, present the #'s, and you can generate a discussion about ways to improve, what the current ACIP guidelines are, and get them to commit to 1-2 goals. Then I’ll follow-up in 6 months with a new report, and see how they’ve done!”

[Name Withheld], RN, Immunization Nurse, UVMHC Family Medicine, Berlin

- ❖ “This is my passion... there are so many ways I’d like to improve vaccinations in this practice and I don’t have any time to work on this! We clean up the numbers, identify problems, offer training, review the guidelines, and identify what we’re doing well and what we’re NOT doing well!”

# Intervention & Methodology

02/26/15

Dear Berlin Family Health,

As you may know, part of my FM rotation involves doing a community/public health project.

I decided to look at the immunization rates for young children and adolescents in your practice.

I have been working with **Tara Reil, the Vermont Department of Health, Barre District Office, Immunization Specialist**, and your very own **Mary Helen**, to obtain updated, accurate numbers for your practice! Please join us:

**Thursday March 5<sup>th</sup>  
12:30-1pm  
Lunch Room**

- **Review updated vaccination rates for your practice**
- **Discuss the rates, ask questions, express opinions**
- **Review current guidelines for specific vaccines**
- **Brainstorm strategies for improvement**
- **Plan how to implement 1-2 strategies!**

We may have to plan a 2<sup>nd</sup> meeting, but we'll do what we can! Thank you for your time and support. I hope you'll consider coming to this session!

Sincerely,  
Emily Jones, UVM COM MSIII

**P.S. Please fill out the attached AFIX Questionnaire before the meeting if you can! This will help us generate Quality Improvement strategies!  
(see Slide 5A)**

## 2015 AFIX Site Visit Questionnaire



### SITE VISIT QUESTIONNAIRE INSTRUCTIONS

|  |  |
|--|--|
| * Indicates a REQUIRED field. Must be completed for the questionnaire to be considered complete. |  |
| The questionnaire may be filled out prior to the AFIX visit or during the visit.                 |  |
| <b>ANSWERS:</b>  | All questions are YES or NO answers according to the behaviors CURRENT at this provider office.  |
| <b>QI PLAN:</b>  | The assessor along with the provider is to select 2-3 strategies to incorporate into the Quality Improvement (QI) Plan for implementation and follow up. |

| 1. STRATEGIES TO IMPROVE THE QUALITY OF IMMUNIZATION SERVICES  |   |   |                          |
|--|---|---|--------------------------|
| QUESTIONS  | CHILD   | ADOL  | Selected QI Strategy     |
| 1. Do you have a reminder/recall process in place for pediatric/adolescent patients?   | <input type="checkbox"/> YES<br><input type="checkbox"/> NO | <input type="checkbox"/> YES<br><input type="checkbox"/> NO | <input type="checkbox"/> |
| 2. Do you offer walk-in or "immunization only" visits?   | <input type="checkbox"/> YES<br><input type="checkbox"/> NO | <input type="checkbox"/> YES<br><input type="checkbox"/> NO | <input type="checkbox"/> |
| 3. Do you routinely measure your clinic's pediatric/adolescent immunization coverage levels and share the results with your staff?                           | <input type="checkbox"/> YES<br><input type="checkbox"/> NO | <input type="checkbox"/> YES<br><input type="checkbox"/> NO | <input type="checkbox"/> |
| 4. Do you schedule the next vaccination visit before the patients/parents leave the office?  | <input type="checkbox"/> YES<br><input type="checkbox"/> NO | <input type="checkbox"/> YES<br><input type="checkbox"/> NO | <input type="checkbox"/> |
| 5. Do you contact patient/parents within 3-5 days when a "well-child" or "immunization only" visit is a "no show" and reschedule it for as soon as possible? | <input type="checkbox"/> YES<br><input type="checkbox"/> NO | <input type="checkbox"/> YES<br><input type="checkbox"/> NO | <input type="checkbox"/> |
| 6. Do you have a system in place to schedule wellness visits for patients at 11-12 years of age?   | <input type="checkbox"/> YES<br><input type="checkbox"/> NO | <input type="checkbox"/> YES<br><input type="checkbox"/> NO | <input type="checkbox"/> |
| 7. Do you have an immunization champion at this practice that focuses on QI measures, reducing barriers and improving coverage levels?                       | <input type="checkbox"/> YES<br><input type="checkbox"/> NO | <input type="checkbox"/> YES<br><input type="checkbox"/> NO | <input type="checkbox"/> |

|  |   |   |                          |
|--|---|---|--------------------------|
| 8. Do you regularly document vaccine refusals and the reasons for the refusal (parent choosing to delay, parent has vaccine safety concern, medical contraindication, etc.)? | <input type="checkbox"/> YES<br><input type="checkbox"/> NO | <input type="checkbox"/> YES<br><input type="checkbox"/> NO | <input type="checkbox"/> |
|--|---|---|--------------------------|

| 2. STRATEGIES TO DECREASE MISSED OPPORTUNITIES   |   |   |                          |
|--|---|---|--------------------------|
| QUESTIONS  | CHILD   | ADOL  | Selected QI Strategy     |
| 1. Does your immunization staff educate parents about immunizations and the diseases they prevent, even when the parents refuse to immunize?                                   | <input type="checkbox"/> YES<br><input type="checkbox"/> NO | <input type="checkbox"/> YES<br><input type="checkbox"/> NO | <input type="checkbox"/> |
| 2. Do you have immunization information resources to help answer questions from patients/parents?  | <input type="checkbox"/> YES<br><input type="checkbox"/> NO | <input type="checkbox"/> YES<br><input type="checkbox"/> NO | <input type="checkbox"/> |
| 3. Is your immunization staff knowledgeable and comfortable with current ACIP recommendations, including minimum intervals, contraindications, etc.?                           | <input type="checkbox"/> YES<br><input type="checkbox"/> NO | <input type="checkbox"/> YES<br><input type="checkbox"/> NO | <input type="checkbox"/> |
| 4. Do you train front desk/scheduling staff so they know when it's appropriate to schedule immunization appointments?  | <input type="checkbox"/> YES<br><input type="checkbox"/> NO | <input type="checkbox"/> YES<br><input type="checkbox"/> NO | <input type="checkbox"/> |
| 5. Do you have standing orders for registered nurses, physician assistants, and medical assistants to identify opportunities to administer all recommended pediatric vaccines? | <input type="checkbox"/> YES<br><input type="checkbox"/> NO | <input type="checkbox"/> YES<br><input type="checkbox"/> NO | <input type="checkbox"/> |
| 6. Is your immunization staff knowledgeable and comfortable with administering all recommended vaccinations to patients at every visit?  | <input type="checkbox"/> YES<br><input type="checkbox"/> NO | <input type="checkbox"/> YES<br><input type="checkbox"/> NO | <input type="checkbox"/> |

| 3. STRATEGIES TO IMPROVE IIS FUNCTIONALITY AND DATA QUALITY   |   |   |                          |
|---|---|---|--------------------------|
| QUESTIONS   | CHILD   | ADOL  | Selected QI Strategy     |
| 1. Does your staff report all immunizations you administer at your practice to your state/ city IIS?  | <input type="checkbox"/> YES<br><input type="checkbox"/> NO | <input type="checkbox"/> YES<br><input type="checkbox"/> NO | <input type="checkbox"/> |
| 2. Does your staff report immunizations previously administered to your patients by other providers to the IIS (e.g. official shot record, other IIS report, copy of medical record)? | <input type="checkbox"/> YES<br><input type="checkbox"/> NO | <input type="checkbox"/> YES<br><input type="checkbox"/> NO | <input type="checkbox"/> |
| 3. Do you inactivate patients in the IIS who are no longer seen by your practice?   | <input type="checkbox"/> YES<br><input type="checkbox"/> NO | <input type="checkbox"/> YES<br><input type="checkbox"/> NO | <input type="checkbox"/> |
| 4. Do you use your IIS to determine which immunizations are due for each patient at every visit?  | <input type="checkbox"/> YES<br><input type="checkbox"/> NO | <input type="checkbox"/> YES<br><input type="checkbox"/> NO | <input type="checkbox"/> |

# Results & Response

- \* Practice impressed by improvement in vaccination rates already seen due to chart review in progress! (see Slides 2A, 2B)
- \* Practice generated list of multiple strategies for Quality Improvement at AFIX Visit
- \* Agreed to send list out by email and vote for top 2 (see Slide 6A)
- \* Follow-up meeting in two weeks with Immunization Designee, Immunization Nurse, +/- Med Student to plan implementation of top 2 Quality Improvements
- \* Group will email plan for Quality Improvements, start date, & end date with follow-up AFIX Visit & Report to entire practice

## Jones, Emily G

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**From:** [REDACTED] <[REDACTED]@uvmhealth.org>  
**Sent:** Thursday, March 05, 2015 4:28 PM  
**To:** Family Medicine Berlin Prov; Family Medicine Berlin Staff  
**Cc:** Jones, Emily G  
**Subject:** Ideas for Vaccine Process Improvement

Hello,

Emily and I have come up with some ideas for Process Improvement Projects. We would like your input. Please let us know if there is something you feel should be included. Please let us know which 2 of the ones listed you feel are most important. Thank you for taking the time to come to today's AFIX presentation and thanks for your ideas.

1. Providing information and tools for office staff, Providers and Nurses to help avoid administering vaccines too soon.
2. Determine how many patients have incomplete HPV series and develop a process for improving completion rates.
3. Improve utilization of visits in between Well Child Visits to administer vaccines when appropriate.
4. Improve rate of initiating HPV series at 11 yr WCC along with Tdap and Meningococcal administration.
5. Figure out a process for addressing pt's late for WCC and WCC NOS.
6. There will be an ongoing process of cleaning up vaccination records-removing inactive patients, correcting errors.

Thank you,  
[REDACTED] and Emily

[REDACTED] RN  
Berlin Family Health  
130 Fisher Rd. Suite 3-1  
Berlin, VT 05602  
[REDACTED]

6A

# Evaluation of Effectiveness & Limitations

**E-** Follow-up AFIX Visit with updated AFIX Report in 6 months to see results of Quality Improvements!

**L-** Initial AFIX Reports incomplete due to historical data in the process of being uploaded

**L-** Historical Data for this practice full of errors due to manually loading into EMR by untrained persons

# Future Interventions/Projects

- \* Immunization nurse can continue chart review & send corrections biweekly to Immunization Designee to make corrections in the VT IMR
- \* Immunization nurse can hold ongoing monthly practice meetings to review vaccination Quality Improvements, discuss issues, answer questions, etc.
- \* Continue to hold AFIX Visits every 6 months to reassess vaccination rates and review goals, discuss problems, review updated vaccination guidelines
- \* Continue to rely on VDH Immunization Program Manager & District Immunization Designee for help!  
(see Slide 8A)

To All VFC/VFA Providers;

The Immunization Program will hold a Provider Conference call **Tuesday, March 17 from 12:30-1:00.**

Call-in number: 1-877-273-4202

Conference room number: 5942158

Agenda

- ↓ Update from the ACIP meeting
  - Review of HPV9 vaccine recommendations
  - Review of Meningococcal serotype B vaccine
- ↓ Immunization Registry HPV reports for provider practices (you should receive these soon)
- ↓ Opportunity for practices to have an AFIX (quality improvement) visit with the local PHN Immunization nurse
- ↓ Q and A's on any aspect of the Immunization Program.

We hope you will be able to join us!

[Redacted]

[Redacted] MSN, MPH  
Immunization Program Manager  
Vermont Department of Health  
P.O. Box 70  
Burlington, VT 05402  
PH: [Redacted]  
NEW Email: [Redacted]

# References

- \* [http://healthvermont.gov/hc/imm/documents/annual\\_report\\_2014.pdf](http://healthvermont.gov/hc/imm/documents/annual_report_2014.pdf)
- \* <http://healthvermont.gov/hc/imm/index.aspx#about>
- \* <http://healthvermont.gov/hc/IMR/index.aspx>
- \* <http://healthvermont.gov/hc/imm/provider.aspx>
- \* <http://healthvermont.gov/hc/imm/public.aspx>
- \* [www.oktoaskvt.org](http://www.oktoaskvt.org)
- \* [http://vtdigger.org/2015/02/10/sarah-donegan-immunization-evolution/?utm\\_source=VTDigger+Subscribers+and+Donors&utm\\_campaign=a0128370a9-Weekly+Update&utm\\_medium=email&utm\\_term=0\\_dc3c5486db-a0128370a9-405527857](http://vtdigger.org/2015/02/10/sarah-donegan-immunization-evolution/?utm_source=VTDigger+Subscribers+and+Donors&utm_campaign=a0128370a9-Weekly+Update&utm_medium=email&utm_term=0_dc3c5486db-a0128370a9-405527857)
- \* <https://medcenterblog.uvmhealth.org/category/children-health/>