2015

Improving Vaccination Rates at UVMMC Family Medicine, Berlin

Emily G. Jones
University of Vermont

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Improving Vaccination Rates at UVMMC 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, UVMMC 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
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 slide2A)
   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 UVMMC 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
"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

<table>
<thead>
<tr>
<th>Vaccine Series</th>
<th># of Patients Up to Date</th>
<th># of Patients In Age Group</th>
<th>% Patients Up To Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dtap</td>
<td>12</td>
<td>13</td>
<td>92.3%</td>
</tr>
<tr>
<td>Polio</td>
<td>12</td>
<td>13</td>
<td>92.3%</td>
</tr>
<tr>
<td>MMR</td>
<td>12</td>
<td>13</td>
<td>92.3%</td>
</tr>
<tr>
<td>Hib</td>
<td>11</td>
<td>13</td>
<td>84.6%</td>
</tr>
<tr>
<td>HepB</td>
<td>12</td>
<td>13</td>
<td>92.3%</td>
</tr>
<tr>
<td>Varicella</td>
<td>12</td>
<td>13</td>
<td>92.3%</td>
</tr>
<tr>
<td>Pneumococcal</td>
<td>11</td>
<td>13</td>
<td>84.6%</td>
</tr>
<tr>
<td>All Series Above</td>
<td>11</td>
<td>13</td>
<td>84.6%</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Vaccine Series</th>
<th># of Patients Up to Date</th>
<th># of Patients In Age Group</th>
<th>% Patients Up To Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dtap</td>
<td>12</td>
<td>12</td>
<td>100.0%</td>
</tr>
<tr>
<td>Polio</td>
<td>12</td>
<td>12</td>
<td>100.0%</td>
</tr>
<tr>
<td>MMR</td>
<td>12</td>
<td>12</td>
<td>100.0%</td>
</tr>
<tr>
<td>Hib</td>
<td>11</td>
<td>12</td>
<td>91.7%</td>
</tr>
<tr>
<td>HepB</td>
<td>12</td>
<td>12</td>
<td>100.0%</td>
</tr>
<tr>
<td>Varicella</td>
<td>12</td>
<td>12</td>
<td>100.0%</td>
</tr>
<tr>
<td>Pneumococcal</td>
<td>11</td>
<td>12</td>
<td>91.7%</td>
</tr>
<tr>
<td>All Series Above</td>
<td>11</td>
<td>12</td>
<td>91.7%</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Vaccine Series</th>
<th># of Patients Up to Date</th>
<th># of Patients In Age Group</th>
<th>% Patients Up To Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Td</td>
<td>95</td>
<td>168</td>
<td>56.5%</td>
</tr>
<tr>
<td>Pneumonia/Tdap</td>
<td>138</td>
<td>168</td>
<td>82.1%</td>
</tr>
<tr>
<td>Meningococcal</td>
<td>88</td>
<td>168</td>
<td>82.1%</td>
</tr>
<tr>
<td>HepB</td>
<td>94</td>
<td>168</td>
<td>52.4%</td>
</tr>
<tr>
<td>Varicella</td>
<td>68</td>
<td>168</td>
<td>56.0%</td>
</tr>
<tr>
<td>MMR</td>
<td>84</td>
<td>168</td>
<td>40.3%</td>
</tr>
<tr>
<td>HPV (All Patients)</td>
<td>60</td>
<td>168</td>
<td>50.0%</td>
</tr>
<tr>
<td>HPV (Females)</td>
<td>30</td>
<td>78</td>
<td>35.7%</td>
</tr>
<tr>
<td>HPV (Males)</td>
<td>30</td>
<td>90</td>
<td>38.8%</td>
</tr>
<tr>
<td>All Series Above Except HPV</td>
<td>25</td>
<td>168</td>
<td>33.3%</td>
</tr>
<tr>
<td>All Series Above</td>
<td>10</td>
<td>168</td>
<td>14.9%</td>
</tr>
</tbody>
</table>

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?

<table>
<thead>
<tr>
<th># patients</th>
<th>% females 1 dose</th>
<th>% males 1 dose</th>
<th>% patients 1 dose</th>
<th>state level % patients 1 dose HPV</th>
</tr>
</thead>
<tbody>
<tr>
<td>95</td>
<td>63.0%</td>
<td>47.8%</td>
<td>54.9%</td>
<td>47.7%</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th># patients</th>
<th>% females 2 dose</th>
<th>% males 2 dose</th>
<th>% patients 2 dose</th>
<th>state level % patients 2 dose HPV</th>
</tr>
</thead>
<tbody>
<tr>
<td>95</td>
<td>54.3%</td>
<td>38.0%</td>
<td>45.7%</td>
<td>37.1%</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th># patients</th>
<th>% females 3 dose</th>
<th>% males 3 dose</th>
<th>% patients 3 dose</th>
<th>state level % patients 3 dose HPV</th>
</tr>
</thead>
<tbody>
<tr>
<td>95</td>
<td>33.3%</td>
<td>23.9%</td>
<td>28.3%</td>
<td>26.6%</td>
</tr>
</tbody>
</table>

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

“I would love to do an AFIIX 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!”

“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!”
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 5th  
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 2nd 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)
### 1. Strategies to Improve the Quality of Immunization Services

<table>
<thead>
<tr>
<th>QUESTIONS</th>
<th>CHILD</th>
<th>ADOL</th>
<th>Selected QI Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Do you have a reminder/recall process in place for pediatric/adolescent patients?</td>
<td>□ YES □ NO</td>
<td>□ YES □ NO</td>
<td>□ YES □ NO</td>
</tr>
<tr>
<td>2. Do you offer walk-in or “Immunization only” visits?</td>
<td>□ YES □ NO</td>
<td>□ YES □ NO</td>
<td>□ YES □ NO</td>
</tr>
<tr>
<td>3. Do you routinely measure your clinic’s pediatric/adolescent immunization coverage levels and share the results with your staff?</td>
<td>□ YES □ NO</td>
<td>□ YES □ NO</td>
<td>□ YES □ NO</td>
</tr>
<tr>
<td>4. Do you schedule the next vaccination visit before the patients/parents leave the office?</td>
<td>□ YES □ NO</td>
<td>□ YES □ NO</td>
<td>□ YES □ NO</td>
</tr>
<tr>
<td>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?</td>
<td>□ YES □ NO</td>
<td>□ YES □ NO</td>
<td>□ YES □ NO</td>
</tr>
<tr>
<td>6. Do you have a system in place to schedule wellness visits for patients at 11-12 years of age?</td>
<td>□ YES □ NO</td>
<td>□ YES □ NO</td>
<td>□ YES □ NO</td>
</tr>
<tr>
<td>7. Do you have an immunization champion at this practice that focuses on QI measures, reducing barriers and improving coverage levels?</td>
<td>□ YES □ NO</td>
<td>□ YES □ NO</td>
<td>□ YES □ NO</td>
</tr>
</tbody>
</table>

### 2. Strategies to Decrease Missed Opportunities

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

### 3. Strategies to Improve HIS Functionality and Data Quality

<table>
<thead>
<tr>
<th>QUESTIONS</th>
<th>CHILD</th>
<th>ADOL</th>
<th>Selected QI Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Does your staff report all immunizations you administer at your practice to your state city HIS?</td>
<td>□ YES □ NO</td>
<td>□ YES □ NO</td>
<td>□ YES □ NO</td>
</tr>
<tr>
<td>2. Does your staff report immunizations previously administered to your patients by other providers to the HIS (e.g. offical shot record, other HIS report, copy of medical record)?</td>
<td>□ YES □ NO</td>
<td>□ YES □ NO</td>
<td>□ YES □ NO</td>
</tr>
<tr>
<td>3. Do you inactivate patients in the HIS who are no longer seen by your practice?</td>
<td>□ YES □ NO</td>
<td>□ YES □ NO</td>
<td>□ YES □ NO</td>
</tr>
<tr>
<td>4. Do you use your HIS to determine which immunizations are due for each patient at every visit?</td>
<td>□ YES □ NO</td>
<td>□ YES □ NO</td>
<td>□ YES □ NO</td>
</tr>
</tbody>
</table>
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
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,

[signature]

and Emily

---

[Address]

Berlin Family Health
130 Fisher Rd. Suite 3-1
Berlin, VT 05602
Follow-up AFIX Visit with updated AFIX Report in 6 months to see results of Quality Improvements!

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

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!

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

* http://healthvermont.gov/hc/imm/index.aspx#about
* 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
* https://medcenterblog.uvmhealth.org/category/children-health/