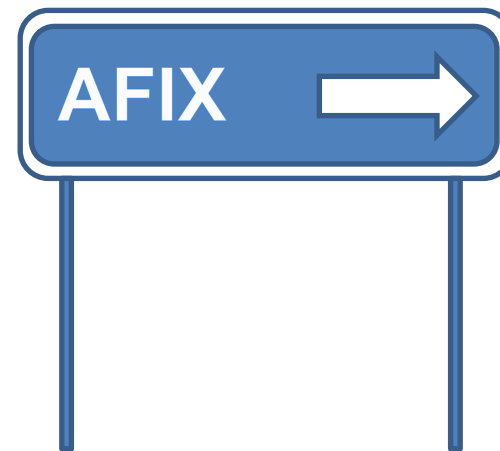


# Implementation of IIS Support for AFIX Assessments



*Bridget Ahrens MPH, Wanda Cosman BSN*  
October 2013

# Where Are We Going?

- Vermont specifics
- Planning
- Challenges
- Results

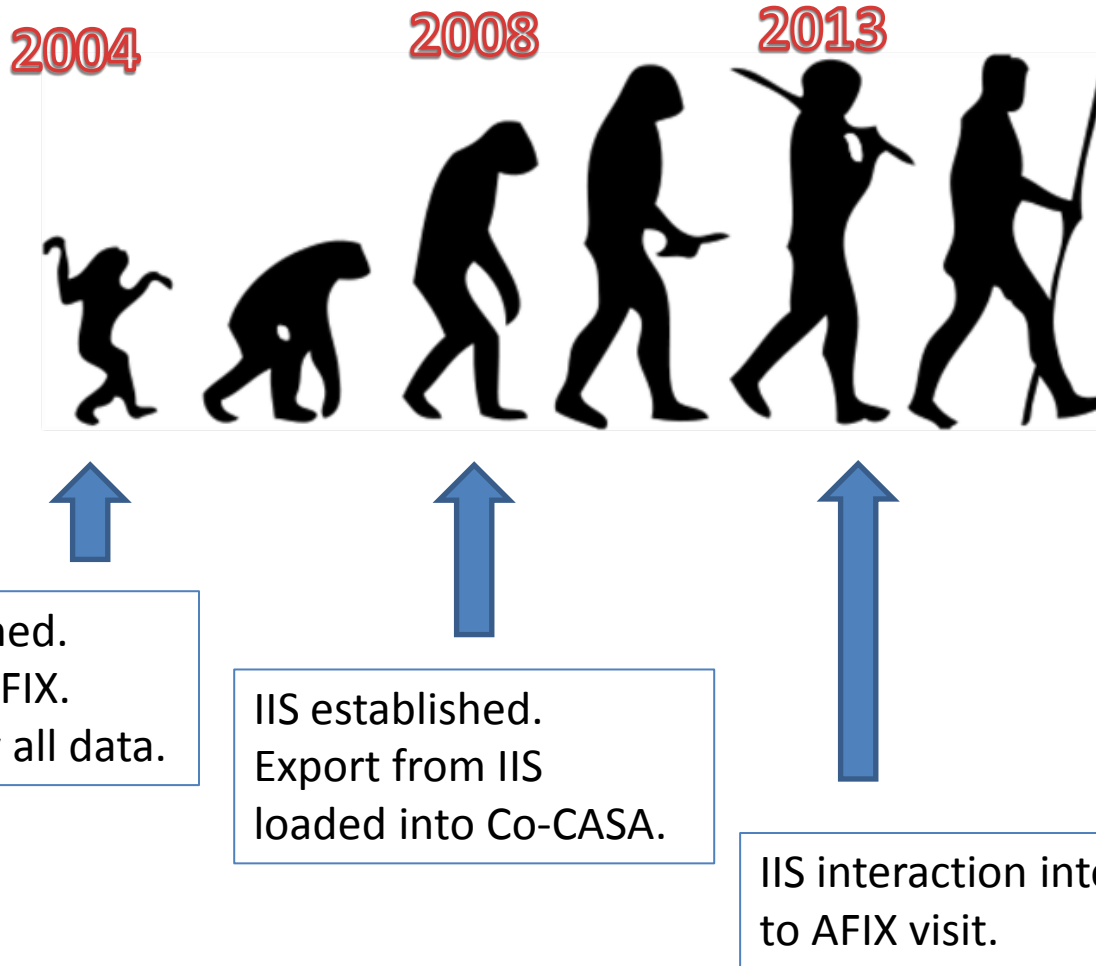
# Assumption: AFIX Assessment

- AFIX is a quality improvement strategy used by Immunization Programs to increase vaccine coverage and promote best practices around immunization.

# Vermont Immunization Registry

- IMR Application developed in-house.
- IMR live since 2004.
- AFIX conducted by **Immunization Designees** (PH Nurses) at local Health Offices.
- IMR active participation close to 75%.

# Vermont Department of Health



# Planning

## **AFIX Requirements**

- Coverage Assessment
- Invalid Dose Assessment
- Missed Opportunities

## **IMR Can Provide**

- Coverage Report
- Invalid Doses Report
- Missing Series Report

# IMR Reports and AFIX Assessment

ASSESSMENT	IMR report	IMR individual	not in IMR
Complete and Up to Date	x		
Complete but Late Up to Date		x	
Up To Date in One Visit		x	
Missed Oppty last Imm Visit		x	
Missed Oppty All Imm Visit		x	
Missed Oppty non-Imm Visit			x
Eligible for Immunization		x	
Last Visit >= 12 months ago		x	

# Close, but No (?) Cigar

## PROS

- IMR reports **exclude invalid doses** automatically from coverage rates.
- IMR reports clearly indicate **missed series** and **invalid doses**.
- Providers can immediately run **recall reports** based on the assessment.

## CONS

- Precise information about **missed opportunities** not easily available.
- Providers need to look at individual records to assess problems.
- Forecaster does not display **reason** for invalid doses.



IMR Reports - Windows Internet Explorer

## All AFIX Report

Practice:

Assessment Date:

Assessment Type:

☒ Child Assessment (intended for ages 24 months through 35 months )

☐ Adolescent Assessment (intended for ages 13 years through 17 years )

Patient Birth Date Start:

Patient Birth Date End:

**Auto-calculates age range**

Local intranet | Protected Mode: Off 125%



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

Assessment Type: Child

Assessment Date: 11/01/2013

Patients Born Between 11/02/2010 and 11/01/2011

Report Date: 09/20/2013

Vaccine Series	# of Patients Up to Date	# of Patients In Age Group	% Patients Up To Date
Dtap	4	5	80.0%
Polio	4	5	80.0%
MMR	3	5	60.0%
Hib or Hib 1 Dose	4	5	80.0%
HepB or Pediarix-HepB	4	5	80.0%
Varicella	1	5	20.0%
Pneumococcal	4	5	80.0%
All Series Above	1	5	20.0%

### 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.

# Vermont Department of Health

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*Securely, Accurately, Confidentially*

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## "All" AFIX Report - Missing Series

Assessment Type: Child

Assessment Date: 11/01/2013

Patients Born Between 11/02/2010 and 11/01/2011

Report Date: 09/20/2013

Patient Name	Date of Birth	Vaccines Due	Address	Phone
CAKE, CARROT	02/15/2011	MMR Varicella	1 School St Burlington, VT 05401	
PIZZA, PESTO	04/15/2011	Varicella	2 Gnome St Burlington, VT 05401	
LASAGNA, LARRY	09/01/2011	Varicella	19 Western Ave Albany, VT 05820	
COOKIE, SNICKERDOODLE	10/20/2011	DTP/aP HepB Hib MMR Pneumococcal Polio Varicella	15 Brigham Hill Norwich, VT 05055	

**ID Potential MOGE**

### Please Note:

- This record reflects only those immunizations recorded in the Vermont Immunization Registry.
- This record may not reflect the complete immunization history of the patient.
- Accuracy of this report depends on the accuracy and completeness of records entered at the practice.




1 of 1


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Patient Profile R6 (SPHINX-TEST / dbSphinx) - Windows Internet Explorer

**VERMONT**  
DEPARTMENT OF HEALTH

Individual Profile

**VERMONT**  
DEPARTMENT OF HEALTH

User: bridget.ahrens Practice: Westfield Pediatrics Patient: Cookie, Snickerdoodle [Logout](#)

**Actions:**  
[Search Patient](#)  
[Current Patient](#)  
[Search Practice](#)  
[VAERS](#)  
[Immunization Information for Providers](#)  
[Immunization Information for Families & the Public](#)

**Programs:**  
[Immunization Registry](#)

**Patient Reports**  
[Immunization Record](#)  
[Objections and Contraindications](#)  
[Print Forecaster Results](#)  
[Vaccine Administration Record](#)  
[Licensed Child Care Report](#)

**Practice Reports**  
[Patient List by DOB](#)  
[Practice View: Vaccine Coverage](#)  
[Vaccines due by Practice](#)  
[Not up to Date Report](#)  
[Generate Labels for Recall Notices](#)

**Patient Summary**  
Patient: Cookie, Snickerdoodle Date of Birth: 10/20/2011 Patient Age: 1 years 11 months and 0 days  
Residence: Norwich (Town of) Practice Name: Westfield Pediatrics  
The Vermont Immunization Registry is a tool to assist in tracking and forecasting immunizations currently due and overdue, based on date of birth. It is not intended to replace medical expertise.


**Immunizations**  
Enter immunizations as:  
☒ Current ☐ Historical

Status	Vaccine	Dose 1	Dose 2	Dose 3	Dose 4	Dose 5
	DTaP-HepB-IPV					
	DtaP-IPV/Hib					
	Hib-PRP-T					
	PCV 7, Pneumococcal conjugate					
	PCV-13 Pneumococcal					
	DTaP					
	DTaP-IPV					
	IPV					
	HepA, ped/adol 2 dose					
	HepA-Adult					
	HepA-HepB Adult					
	HepB, pediatric or adolescent					
	HepB-Adult					
	Rotavirus (3 dose) RV5					
	Rotavirus (2 dose) RV1					
	MMR					
	Varicella					
	MCV4, Meningococcal conjugate					
	HPV, Quadrivalent					
	Influenza IIV3	10/20/2012				
	Influenza IIV3 preserv free					


Done Local intranet | Protected Mode: Off 125%

# Vermont Department of Health

Patient Profile R6 (SPHINX-TEST / dbSphinx) - Windows Internet Explorer

**VERMONT**  
DEPARTMENT OF HEALTH

Individual Profile

**VERMONT**  
DEPARTMENT OF HEALTH

User: bridget.ahrens Practice: Westfield Pediatrics Patient: Cookie, Snickerdoodle [Logout](#)

**Actions:**  
[Search Patient](#)  
[Current Patient](#)  
[Search Practice](#)

**Programs:**  
[Immunization Registry](#)

**Patient Information**

Patient ID:   
Preferred Name:   
\*First Name: Snickerdoodle  
Middle Name:   
\*Last Name: Cookie  
Suffix:   
Race:  
☐ American Indian or Alaska Native  
☐ Asian Indian  
☐ Black or African American  
☐ Chinese  
☐ Filipino  
☐ Guamanian or Chamorro  
☐ Japanese  
☐ Korean  
☐ Native Hawaiian  
☐ Other  
☐ Other Asian  
☐ Other Pacific Islander  
☐ Samoan  
☐ Unknown  
☐ Vietnamese  
☐ White

IMR Status:   
\*Primary Practice:   
\*Date of Birth:   
\*Gender:   
\*Residence:   
☐ Out of State

Ethnicity:  
Patient of Hispanic Origin? (Check the box that best describes whether patient is Spanish/Hispanic/Latino. Check the "No" box if patient is not Spanish/Hispanic/Latino.)  
  
☐ No, not Spanish/Hispanic/Latina/Latino  
  
☐ Unknown  
  
☐ Yes, Cuban  
☐ Yes, Mexican, Mexican American, Chicana/Chicano  
☐ Yes, other Spanish/Hispanic/Latina/Latino  
☐ Yes, Puerto Rican

**Person Contact Information**

Address Loc.:   
Address Type:   
\*Street:

Done

Local intranet | Protected Mode: Off 125%

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## "All" AFIX Report - Missing Series

Assessment Type: Child

Assessment Date: 11/01/2013

Patients Born Between 11/02/2010 and 11/01/2011

Report Date: 09/20/2013

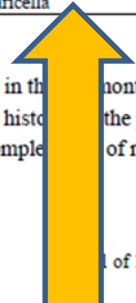


Patient Name	Date of Birth	Vaccines Due	Address
CAKE, CARROT	02/15/2011	MMR Varicella	1 School St Burlington, VT 05401
PIZZA, PESTO	04/15/2011	Varicella	2 Gnome St Burlington, VT 05401
LASAGNA, LARRY	09/01/2011	Varicella	19 Western Ave Albany, VT 05820
COOKIE, SNICKERDOODLE	10/20/2011	DTP/aP HepB Hib MMR Pneumococcal Polio Varicella	15 Brigham Hill Norwich, VT 05055

**ID Problem Patterns**

### Please Note:

- This record reflects only those immunizations recorded in the Vermont Immunization Registry.
- This record may not reflect the complete immunization history of the patient.
- Accuracy of this report depends on the accuracy and completeness of records entered at the practice.



1 of 1

User: bridget.ahrens

Practice: Westfield Pediatrics

Patient: Lasagna, Larry

[Logout](#)

### Actions:

[Search Patient](#)  
[Current Patient](#)  
[Search Practice](#)

### VAERS

[Immunization Information for Providers](#)

[Immunization Information for Families & the Public](#)

### Programs:

[Immunization Registry](#)

### Patient Reports

[Immunization Record](#)

[Objections and Contraindications](#)

[Print Forecaster Results](#)

[Vaccine Administration Record](#)

[Licensed Child Care Report](#)

### Practice Reports

[Patient List by DOB](#)

[Practice View: Vaccine Coverage](#)

[Vaccines due by Practice](#)

[Not up to Date Report](#)

[Generate Labels for Recall Notices](#)

### Patient Summary

Patient: Lasagna, Larry  
 Residence: Albany

Date of Birth: 9/1/2011

Patient Age: 2 years 0 months and 19 days

Practice Name: Westfield Pediatrics

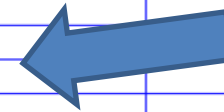
The Vermont Immunization Registry is a tool to assist in tracking and forecasting immunizations currently due and overdue, based on date of birth. It is not intended to replace medical expertise.

### Immunizations

Enter immunizations as:

☒ Current ☐ Historical

Status	Vaccine	Dose 1	Dose 2	Dose 3	Dose 4	Dose 5
	DTaP-HepB-IPV					
	DtaP-IPV/Hib	11/15/2011	9/1/2012	12/1/2012		
	Hib-PRP-T					
	PCV 7, Pneumococcal conjugate					
	PCV-13 Pneumococcal	11/15/2011	1/15/2012	3/20/2012	9/1/2012	
	DTaP	6/1/2013				
	DTaP-IPV					
	IPV	2/1/2013				
	HepA, ped/adol 2 dose	9/1/2012				
	HepA-Adult					
	HepA-HepB Adult					
	HepB, pediatric or adolescent	11/15/2011	9/1/2012	1/9/2013		
	HepB-Adult					
	Rotavirus (3 dose) RV5					
	Rotavirus (2 dose) RV1					
	MMR	10/1/2012				
	Varicella					
	MCV4, Meningococcal conjugate					
	HPV, Quadrivalent					
	Influenza IIV3					
	Influenza IIV3 preserv free					





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## "All" AFIX Report - Invalid Doses

Assessment Type: Child

Assessment Date: 11/01/2013

Patients Born Between 11/2/2010 and 11/1/2011

Report Date: 08/20/2013

Last Name	First Name	DOB	Invalid Immunizations	Date of Invalid Immunization
CAKE	CARROT	02/15/2011	MMR	01/09/2012
CAKE	CARROT	02/15/2011	Varicella	01/09/2012

### Please Note:

- Invalid doses are doses administered that are in direct conflict with ACIP recommendations.
- For questions about Invalid Immunizations, see individual's Immunization History for details,

## ID Schedule Errors



## Individual Profile

Practice: Westfield Pediatrics

Patient: Cake, Carrot Walnut

[Logout](#)

### Immunizations

Enter immunizations as:

DOB 2/5/2011

☒ Current ☐ Historical

Status	Vaccine	Dose 1	Dose 2	Dose 3	Dose 4	Dose 5
	DTaP-HepB-IPV	4/15/2011	6/20/2011	8/15/2011		
	DtaP-IPV/Hib					
	Hib-PRP-T	4/15/2011	6/20/2011	8/15/2011	2/20/2012	
	PCV 7, Pneumococcal conjugate					
	PCV-13 Pneumococcal	4/15/2011	6/20/2011	8/15/2011	2/20/2012	
	DTaP	6/1/2012				
	DTaP-IPV					
	IPV					
	HepA, ped/adol 2 dose	2/20/2012				
	HepA-Adult					
	HepA-HepB Adult					
	HepB, pediatric or adolescent					
	HepB-Adult					
	Rotavirus (3 dose) RV5					
	Rotavirus (2 dose) RV1	4/15/2011	6/20/2011			
	MMR	1/9/2012				
	Varicella	1/9/2012				
	MCV4, Meningococcal conjugate					
	HPV, Quadrivalent					
	Influenza IIV3					
	Influenza IIV3 preserv free					
	Influenza, LAIV4 (Intranasal)					
	Influenza, IIV4 preservative free					
	PPV 23, Pneumococcal polysaccharide					
	Tdap					

Prev Next

Recommendations
☒ Include Vaccination Record

Save Historical Dates

Add a New Vaccine to the Immunization Record

Vaccination Record		
Vaccine Group	Date Administered	Status
DTP/aP	4/15/2011	1 of 5
DTP/aP	6/20/2011	2 of 5
DTP/aP	8/15/2011	3 of 5
DTP/aP	6/1/2012	4 of 5
HepA	2/20/2012	1 of 2
HepB	4/15/2011	1 of 3
HepB	6/20/2011	2 of 3
HepB	8/15/2011	3 of 3
Hib	4/15/2011	1 of 4
Hib	6/20/2011	2 of 4
Hib	8/15/2011	3 of 4
Hib	2/20/2012	4 of 4
MMR	1/9/2012	Not Valid
Pneumococcal	4/15/2011	1 of 4
Pneumococcal	6/20/2011	2 of 4
Pneumococcal	8/15/2011	3 of 4
Pneumococcal	2/20/2012	4 of 4
Polio	4/15/2011	1 of 5
Polio	6/20/2011	2 of 5
Polio	8/15/2011	3 of 5
Rotavirus	4/15/2011	1 of 2
Rotavirus	6/20/2011	2 of 2
ROTIX	4/15/2011	1 of 2
ROTIX	6/20/2011	2 of 2
Varicella	1/9/2012	Not Valid

Vaccines Recommended by Tracking Schedule				
Vaccine Group	Earliest Date	Recommended Date	Overdue Date	Latest Date
DTP/aP	2/15/2015	2/15/2015	2/15/2017	2/14/2018
HepA	8/20/2012	8/20/2012	8/20/2012	

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IMR Reports - Windows Internet Explorer

## All AFIX Report

Practice:

Assessment Date:

Assessment Type:

☐ Child Assessment (intended for ages 24 months through 35 months )

☒ Adolescent Assessment (intended for ages 13 years through 17 years )

Patient Birth Date Start:

Patient Birth Date End:

Done

Local intranet | Protected Mode: Off 125%



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

Assessment Type: Adolescent

Assessment Date: 11/01/2013

Patients Born Between 11/02/1995 and 11/01/2000

Report Date: 09/12/2013

Vaccine Series	# of Patients Up to Date	# of Patients In Age Group	% Patients Up To Date
Td	5	5	100.0%
Pertussis/Tdap	5	5	100.0%
Meningococcal	5	5	100.0%
HepB	3	5	60.0%
Varicella	3	5	60.0%
MMR	5	5	100.0%
HPV (All Patients)	3	5	60.0%
HPV (Females)	1	1	100.0%
HPV (Males)	2	4	50.0%
All Series Above Except HPV	2	5	40.0%
All Series Above	2	5	40.0%

### 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 on Immunization Practices.



Page 1 of 1

**Bird's Eye View**

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## "All" AFIX Report - Missing Series

Assessment Type: Adolescent

Assessment Date: 11/01/2013

Patients Born Between 11/02/1995 and 11/01/2000

Report Date: 09/12/2013

Patient Name	Date of Birth	Vaccines Due	Address	Phone
SPUMONI, SAM	01/09/1997	HepB HPV	55 Swift St Burlington, VT 05401	
APPLE, RHODE ISLAND	06/28/1998	HepB Varicella	22 Main St Apt 3D Burlington, VT 05402	
CAPELLINI, CAMERON	10/01/1999	HPV Varicella	202 Plate Rd Addison, VT 05491	

**ID Potential MOGE**

### Please Note:

- This record reflects only those immunizations recorded in the Vermont Immunization Registry.
- This record may not reflect the complete immunization history for the patient.
- Accuracy of this report depends on the accuracy and completeness of records entered at the practice.

**ID Problem PATTERNS**

User: bridget.ahrens

Practice: Westfield Pediatrics

Patient: Spumoni, Sam

[Logout](#)

### VACCIS

[Immunization Information for Providers](#)

[Immunization Information for Families & the Public](#)

### Programs:

[Immunization Registry](#)

### Patient Reports

[Immunization Record](#)

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[Licensed Child Care Report](#)

### Practice Reports

[Patient List by DOB](#)

[Practice View: Vaccine Coverage](#)

[Vaccines due by Practice](#)

[Not up to Date Report](#)

[Generate Labels for Recall Notices](#)

[Invalid Doses](#)

[Objections and Contraindications for Practice](#)

[Immunizations Given by Practice](#)

[Patients Immunized By](#)

### Immunizations

DOB 1/9/1997

Enter immunizations as:

☒ Current ☐ Historical

Status	Vaccine	Dose 1	Dose 2	Dose 3	Dose 4	Dose 5
	DTaP-HepB-IPV					
	DtaP-IPV/Hib					
	Hib-PRP-T	12/15/1997	2/19/1998			
	PCV 7, Pneumococcal conjugate					
	PCV-13 Pneumococcal					
	DTaP	12/15/1997	4/13/1998	4/26/1999	10/21/2002	
	DTaP-IPV					
	IPV	12/15/1997	2/19/1998	4/13/1998		
	HepA, ped/adol 2 dose					
	HepA-Adult					
	HepA-HepB Adult					
	HepB, pediatric or adolescent	12/15/2012	2/9/2013	4/1/2013		
	HepB-Adult					
	Rotavirus (3 dose) RV5					
	Rotavirus (2 dose) RV1					
	MMR	10/23/1998	10/21/2002			
	Varicella	4/26/1999	10/21/2002			
	MCV4, Meningococcal conjugate	8/10/2013				
	HPV, Quadrivalent	2/1/2008	5/1/2008			
	Influenza IIV3					
	Influenza IIV3 preserv free					
	Influenza, LAIV4 (Intranasal)					
	Influenza, IIV4 preservative free					
	PPV 23, Pneumococcal polysaccharide					
	Tdap	8/10/2013				





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## "All" AFIX Report - Invalid Doses

Assessment Type: Adolescent

Assessment Date: 11/01/2013

Patients Born Between 11/2/1995 and 11/1/2000

Report Date: 09/12/2013

Last Name	First Name	DOB	Invalid Immunizations	Date of Invalid Immunization
SPUMONI	SAM	01/09/1997	HepB	04/01/2013

### Please Note:

- Invalid doses are doses administered that are in direct conflict with ACIP recommendations.
- For questions about Invalid Immunizations, see individual's Immunization History for details.

## ID Schedule Errors

Recommendations

☒ Include Vaccination Record

Save Historical Dates

Add a New Vaccine to the Immunization Record

## Vaccination Record

Vaccine Group	Date Administered	Status
DTP/aP	12/15/1997	1 of 4
DTP/aP	4/13/1998	2 of 4
DTP/aP	4/26/1999	3 of 4
DTP/aP	10/21/2002	4 of 4
HepB	12/15/2012	1 of 3
HepB	2/9/2013	2 of 3
HepB	4/1/2013	Not Valid
Hib	12/15/1997	1 of 2
Hib	2/19/1998	2 of 2
HPV	2/1/2008	1 of 3
HPV	5/1/2008	2 of 3
Meningococcal	8/10/2013	1 of 1
MMR	10/23/1998	1 of 2
MMR	10/21/2002	2 of 2
Polio	12/15/1997	1 of 5
Polio	2/19/1998	2 of 5
Polio	4/13/1998	3 of 5
Td	8/10/2013	Booster
Tdap	8/10/2013	1 of 1
Varicella	4/26/1999	1 of 2
Varicella	10/21/2002	2 of 2

## Vaccines Recommended by Tracking Schedule

Vaccine Group	Earliest Date	Recommended Date	Overdue Date	Latest Date
DTP/aP	Complete			
HepA	1/9/1998	1/9/1998	1/9/1999	
HepB	5/27/2013	8/1/2013	10/1/2013	



# Challenges

- Lots of possible reports – how to streamline?
- Changes cost money and effort.
- AFIX Assessments often coincide with VFC visits. With the addition of new VFC requirements, decreased time for AFIX.

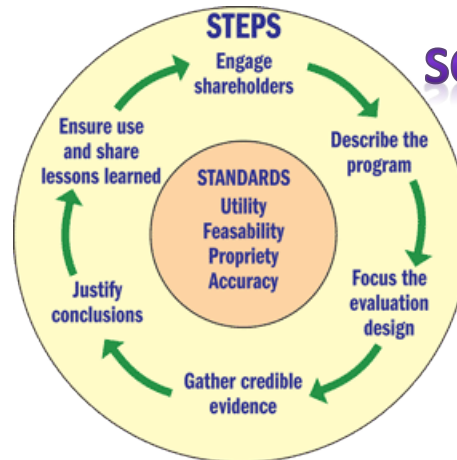
# Results

- AFIX reports give useful information.
- Puts EVALUATION into provider hands
  - “Just enough” information.
  - Provider can choose area of focus.
  - Measurable Improvements.
  - Useful for other QC projects.
    - E.g. AAP licensing

# AFIX fits Evaluation Model!

**ALLOW USER TO  
USE REPORTS TO  
MEASURE PROGRESS!**

**USE REPORTS AS  
EDUCATIONAL TOOL**



**SCHEDULE VISIT**

**PULL REPORTS**

- “I think our AFIX reports are terrific. Showing providers the problems is one thing – but **putting a way to measure progress in solving those problems** right into their hands is just great!”

-Sarah Orr, RN

VDH Springfield District Office

# Contact Information

Bridget Ahrens, MPH  
Immunization Registry Manager  
Vermont Department of Health  
[bridget.ahrens@state.vt.us](mailto:bridget.ahrens@state.vt.us)

Wanda Cosman, BSN  
AFIX Coordinator, Immunization Program  
Vermont Department of Health  
[wanda.cosman@state.vt.us](mailto:wanda.cosman@state.vt.us)