WHAT ERROR?

WHERE'S MY ACK?

A STORY ABOUT
MICHIGAN CARE IMPROVEMENT REGISTRY

I BELIEVE ITS OUR JOB TO

HELP PEOPLE BE MORE AWESOME

AT THEIR JOBS

I BELIEVE

IT'S NEVER THE USERS FAULT

WHEN THEY CAN'T USE THE SOFTWARE

SO WHERE IS IT?

I NEED MORE INFORMATION

THAT'S SUPER FRUSTRATING

WHERES MY ACK?

- We've been growing our HL7 footprint.
- Staff is doing more and more with HL7
- We have lots of information about our messaging interface.
- Some of the important information was not available to our staff

WHY DON'T WE HAVE IT?

WHAT WE HAD IN THE DATABASE

- VXU Message

- Who sent it

- When we received it

- The results of processing it

- The ACK response we gave

- When we responded

WHAT WE COULD SEE

- A report showing the results of processing messages for a specific time period

ESSR REPORT

ESSR REPORT

MCIR Electronic Submission Summary Report

Site Name: ████████████████████████

Description: ███████████████

Data submission date range: 01/01/2017 - 02/28/2017

Interface PIN/Facility ID: ██████████

Date Printed: 03/14/2017   Target Date: 03/14/2017

PEOPLE

Persons Added/Updated	82
Persons Opted-Out	0
Persons Deceased	0
Multiple Persons found	0
Persons not found for Update	0
Other Persons Errors	2
Persons Rejected	2
Responsible Party Added	82
Responsible Party Rejected	2
Immunizations Added	114
Immunizations Deleted	0
Immunizations skipped having Person errors	5
Immunizations Accepted	114
Immunizations Rejected	0

ESSR REPORT

User Errors Report

Site Name: ▨▨▨▨▨▨

Description: TFR_1489518830337
Data submission date range: 01/01/2017 - 02/28/2017
Interface PIN/Facility ID: ▨▨▨▨▨
Date Printed: 03/14/2017   Target Date: 03/14/2017

▨▨▨▨	Original Value	New Value	Status
DOB: 03/05/1999 PATIENT ID: ▨▨▨			
Responsible Party last name			must be present to add a child and/or an immunization

▨▨▨▨	Original Value	New Value	Status
DOB: 08/25/2005 PATIENT ID: ▨▨▨			
Responsible Party last name			must be present to add a child and/or an immunization

ESSR REPORT

03/14/2017   **Transferred Vim Transactions**   Page 1

Site Name:

Description:

Data submission date range: 01/01/2017 - 02/28/2017

Interface PIN/Facility ID:

Date Printed: 03/14/2017   **Target Date: 03/14/2017**

Inventory Deductions

Admin Date	Product - Lot	Eligibility	Action	Inv.
	- 06/25/2016 -			
01/25/2017	PCV13 (Prevnar13) (Pfizer) - M94707	Medicaid-VFC	Add	VFC
	- 12/09/2015 -			
01/11/2017	PCV13 (Prevnar13) (Pfizer) - M94707	Medicaid-VFC	Add	VFC
	- 01/05/2014 -			
02/08/2017	PCV13 (Prevnar13) (Pfizer) - M94707	Uninsured	Add	VFC
	- 11/21/2012 -			
02/08/2017	PCV13 (Prevnar13) (Pfizer) - M94707	Uninsured	Add	VFC
	- 08/26/2016 -			
01/11/2017	PCV13 (Prevnar13) (Pfizer) - M94707	Medicaid-VFC	Add	VFC
	- 04/27/2011 -			
02/01/2017	DTaP (Daptacel) (sanofi) - C4792AA	Medicaid-VFC	Add	VFC
	- 09/19/1956 -			
02/08/2017	Hep A (adult) (Glaxo) - 23F25(P)	Medicaid-Non-VFC	Add	PRV
	- 12/18/1968 -			
02/08/2017	Influenza IIV4 (P-Free Inj) (Glaxo) - C54L3(P)	Medicaid-Non-VFC	Add	PRV
	- 11/17/1958 -			

WHAT CAN WE DO TODAY?

WHAT'S THE MOST BASIC THING THAT WOULD BE HELPFUL?

WE WANT TO SEE THE ACK

AND THE MESSAGE

- Share the info you have
- Don't make people do the job of computers
- Get to the root of the workflow
- Start with the minimum viable solution

PRINCIPLES

These are the practical expressions of the foundational beliefs

WORKFLOW

- Solving mysteries about who sent what when
- Discussing what was sent in the VXU (disputes with providers)
- Discussing what we sent as an ACK
- Looking at activity over time
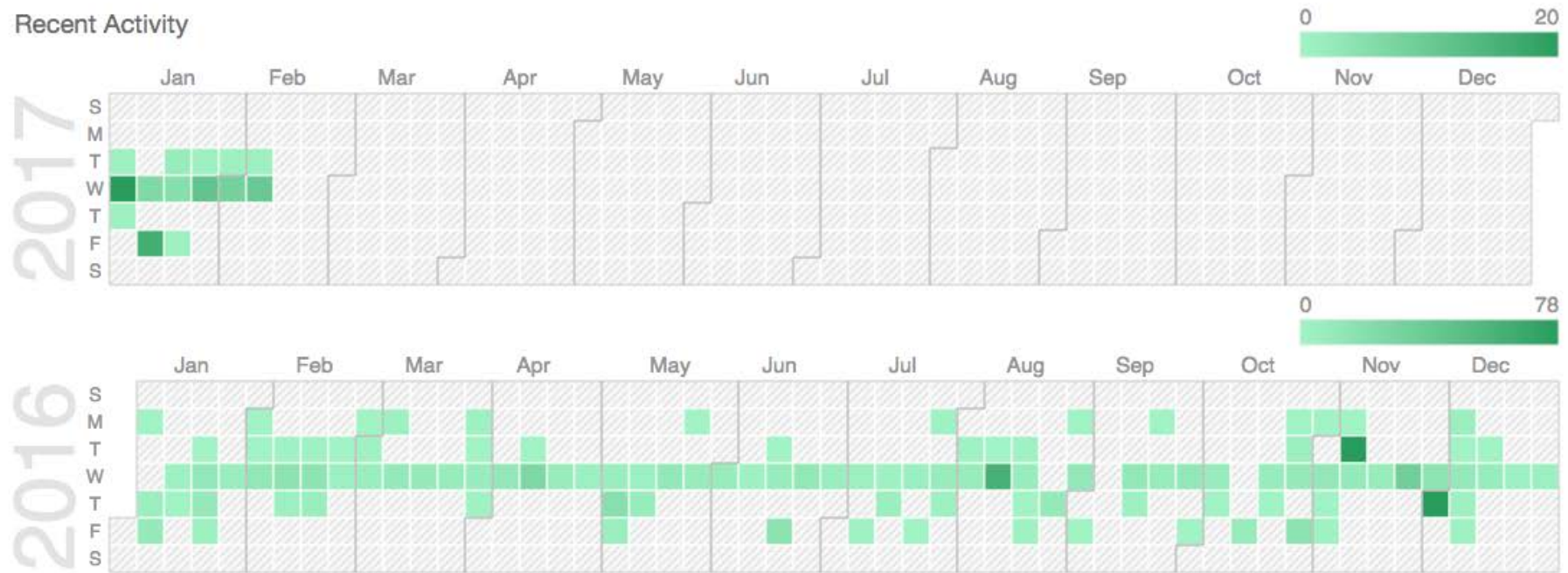- Random questions and concerns.

HL7 Message Viewer

Site:

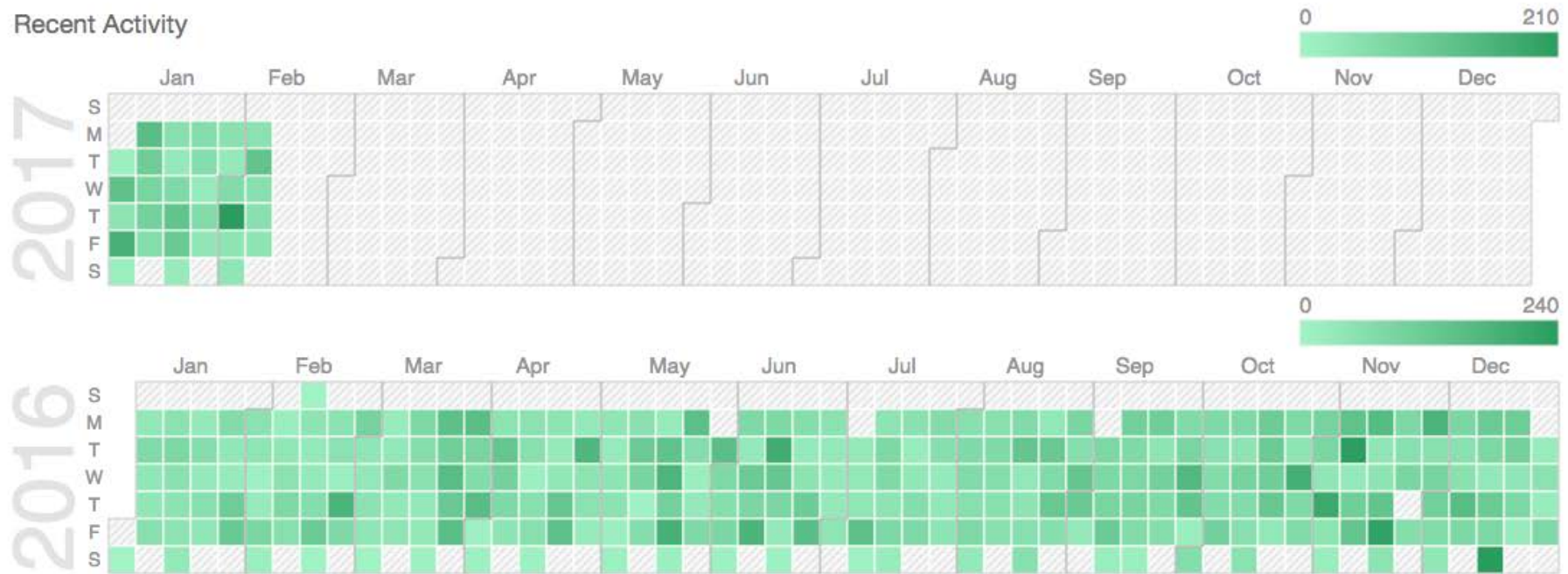[Allegan County Health Department (xxx-xx-xx)]

Recent Activity
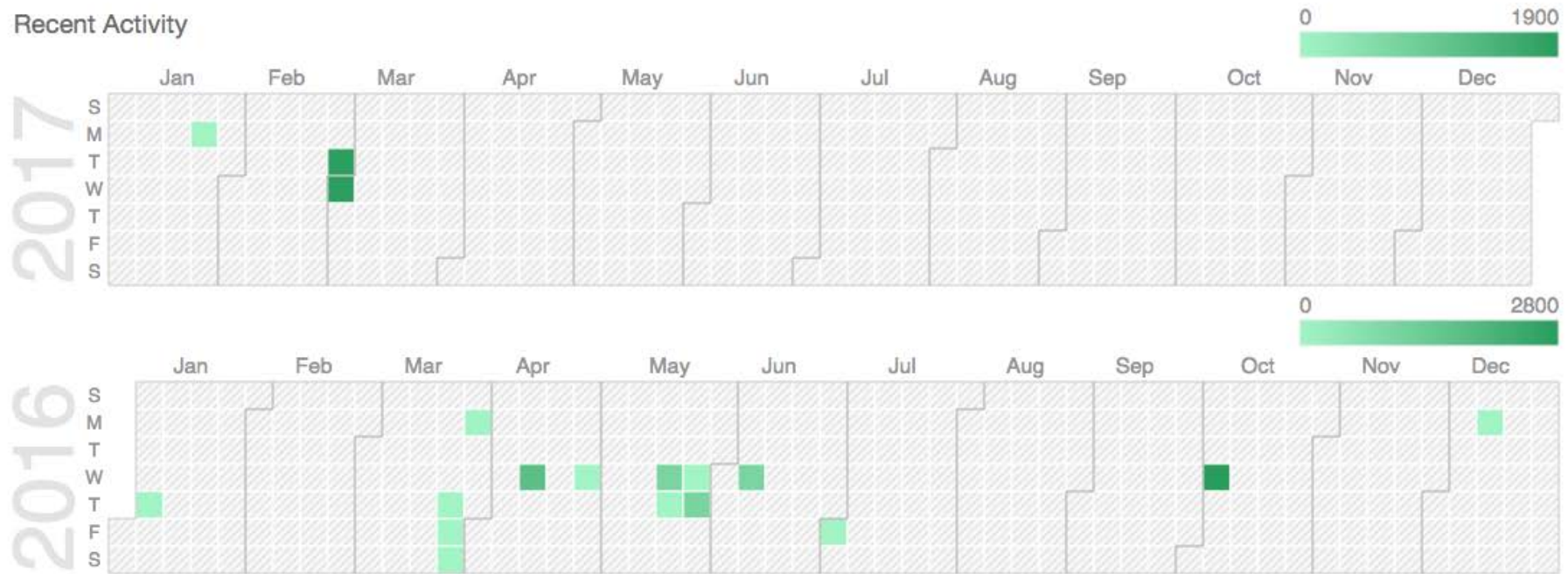
WHAT ABOUT MESSAGES?

We want to see the message control id, and the vaccination, and the patient name. And when it was received.

HL7 Message Viewer

Xfer Test (1255-60-20)

‹ **06 · 08 · 2016** ›
received date

▼ Filter

0   2800

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

2016

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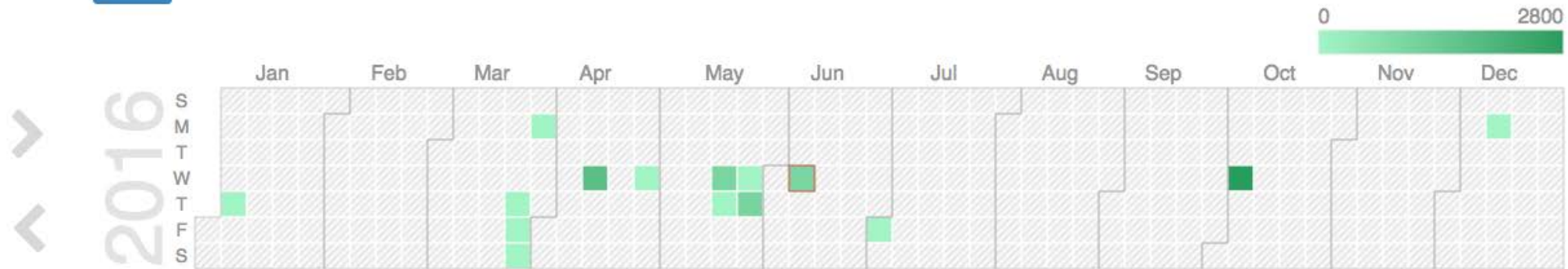
ESSR Statistics ▾

Messages (1020)

Message Control ID	Patient Name	CVX	Message Received Date	Ack Status
3J0F-BASE.2ap	Tuolumne, Killian	21 (Varicella)	2016-06-08 13:28:09	AA
3J0F-I.01.00.1A4	Mackey, Pema	94 (MMRV), 21 (Varicella), 03 (MMR)	2016-06-08 13:28:26	AA
3J0F-A.01.01.2k	Greenup, Larissa	21 (Varicella)	2016-06-08 13:28:34	AA
3J0F-A.01.02.3t	Hood River, Stanbury	52 (Hep A)	2016-06-08 13:28:37	AA
3J0F-A.01.03.3W	Salzeber, Ayushi	115 (Tdap)	2016-06-08 13:28:38	AA
3J0F-A.01.04.46	Hardin, Odera	115 (Tdap)	2016-06-08 13:28:39	AA
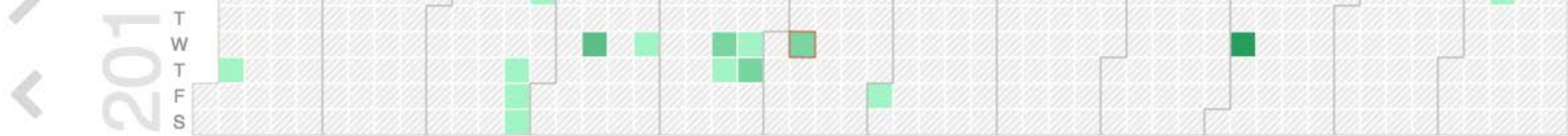
ESSR Statistics ▸

Person

Persons Added/Updated	903	▼
Persons Accepted	903	▼
Persons not found for Update	4	▼
Other Persons Errors	107	▼
Persons Rejected	111	▼
Total Persons Processed	1014	▼

Responsible Party

Responsible Party Added	903	▼
Responsible Party skipped having Person errors	96	▼
Responsible Party Accepted	999	▼
Responsible Party Rejected	11	▼
Total Responsible Party Processed	1010	▼

Immunizations

Immunizations Added	1483	▼
Immunizations skipped having Person errors	150	▼
Immunizations Accepted	1483	▼
Immunizations Rejected	78	▼
Duplicate Immunizations	8	▼
Total Immunizations Processed	1719	▼
Total Records Processed	1719	▼

Messages (1020)

Message Control ID	Patient Name	CVX	Message Received Date	Ack Status
3J0F-BASE.2ap	Tuolumne, Killian	21 (Varicella)	2016-06-08 13:28:09	AA
3J0F-I.01.00.1A4	Mackey, Pema	94 (MMRV), 21 (Varicella), 03 (MMR)	2016-06-08 13:28:26	AA
3J0F-A.01.01.2k	Greenup, Larissa	21 (Varicella)	2016-06-08 13:28:34	AA
3J0F-A.01.02.3t	Hood River, Stanbury	52 (Hep A)	2016-06-08 13:28:37	AA

Multiple Persons found	0
Persons not found for Update	3
Other Persons Errors	159
Persons Rejected	162
Total Persons Processed	**1278**

Total Responsible Party Processed	1275

Duplicate Immunizations	8
Total Immunizations Processed	2458
Total Records Processed	2458

Messages (1851)

Message Control ID	Patient Name	CVX	Message Received Date	Ack Status
M61H1.2p9	Daly, Penrose	21 (Varicella), 03 (MMR), 03 (MMR)	2017-02-28 11:57:43	AA
1cuT-A.01.01.3n	Pecos, Sawyer	94 (MMRV), 94 (MMRV)	2017-02-28 11:59:41	AA
2U7e-BASE.EK	Riley, Sigmund	03 (MMR)	2017-02-28 14:54:52	AA
2U7e-I.01.00.1R2	Love, Roshan	94 (MMRV), 21 (Varicella), 21 (Varicella)	2017-02-28 14:54:57	AA
2U7e-A.01.01.1kn	McCreary, Calixto	94 (MMRV)	2017-02-28 14:55:08	AA
2U7e-A.01.02.1ks	Vistanst, Ninian	115 (Tdap)	2017-02-28 14:55:09	AA
2U7e-A.01.03.1kv	Hancock, Xenia	115 (Tdap)	2017-02-28 14:55:10	AA
2U7e-A.01.05.1ky	Mono, Lodema	03 (MMR), 03 (MMR)	2017-02-28 14:55:11	AA
2U7e-A.01.04.1kw	Allegan, Jazmine	83 (Hep A)	2017-02-28 14:55:11	AA
2U7e-A.01.07.1kl	Knox, Dwane	94 (MMRV), 21 (Varicella), 21 (Varicella)	2017-02-28 14:55:12	AA

Prev 1 2 3 4 5 6 7 8 9 10 ... 186 Next

HL7 Message Viewer

Xfer Test (1255-60-20)

‹ **06 · 08 · 2016** ›
received date

▼ Filter

✕ ESSR Statistic: **Immunizations Rejected**

0   160

Jan   Feb   Mar   Apr   May   Jun   Jul   Aug   Sep   Oct   Nov   Dec

2016   S M T W T F S

ESSR Statistics ▸

Person			Responsible Party			Immunizations		
Persons Added/Updated	903	▼	Responsible Party Added	903	▼	Immunizations Added	1483	▼
Persons Accepted	903	▼	Responsible Party skipped having Person errors	96	▼	Immunizations skipped having Person errors	150	▼
Persons not found for Update	4	▼	Responsible Party Accepted	999	▼	Immunizations Accepted	1483	▼
Other Persons Errors	107	▼	Responsible Party Rejected	11	▼	Immunizations Rejected	78	▼
Persons Rejected	111	▼	Total Responsible Party Processed	1010	▼	Duplicate Immunizations	8	▼
Total Persons Processed	1014	▼				Total Immunizations Processed	1719	▼

Persons not found for Update	4			
Other Persons Errors	107			
Persons Rejected	111			
Total Persons Processed	1014			

Responsible Party Accepted	999	
Responsible Party Rejected	11	
Total Responsible Party Processed	1010	

Immunizations Accepted	1483	
Immunizations Rejected	78	
Duplicate Immunizations	8	
Total Immunizations Processed	1719	
Total Records Processed	1719	

Messages (72)

Message Control ID	Patient Name	CVX	Message Received Date	Ack Status
18019	Banks, Tyler	58160-0806-01 (HIBERIX), 00006-4095-01 (VAQTA), 00006-4681-01 (M-M-R II), 21 (varicella)	2016-06-08 13:29:06	AA
18019	Muscatine, Norville	00006-4095-01 (VAQTA)	2016-06-08 13:29:08	AA
3J0F-K.01.06.em	Monroe, Flanna	03 (MMR)	2016-06-08 13:28:54	AE
3J0F-K.01.08.fN	Nordstrom, Pranav	94 (MMRV)	2016-06-08 13:28:56	AE
3J0F-K.01.09.gy	Blaine, Catalonia	94 (MMRV)	2016-06-08 13:28:57	AE
12462	Pedersen, Donnelly	49281-0560-05 (Pentacel), 00006-4047-20 (RotaTeq), 00005-1971-01 (Prevnar 13), 45 (Hep B, unspecified formulation), 45 (Hep B, unspecified formulation)	2016-06-08 13:29:01	AA
3J0F-K.01.10.ht	Ohio, Erwina	03 (MMR)	2016-06-08 13:28:59	AE
3J0F-K.01.11.i5	Upton, Sanchay	null (Varicella)	2016-06-08 13:28:59	AA
3J0F-K.01.12.iP	Wexford, Henrik	14000BADVALUE (Varicella)	2016-06-08 13:29:00	AA
72268	Linn, Emrick	49281-0215-88 (TENIVAC), 88 (influenza, unspecified formulation), 88 (influenza, unspecified formulation)	2016-06-08 13:29:03	AA

◧ HL7 Message Viewer

Xfer Test (1255-60-20)

‹	**06 · 08 · 2016**	›

received date

▼ Filter

✕ Message Search: 3J0F-A.01.01.2k

0 ▭▭▭▭ 1

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
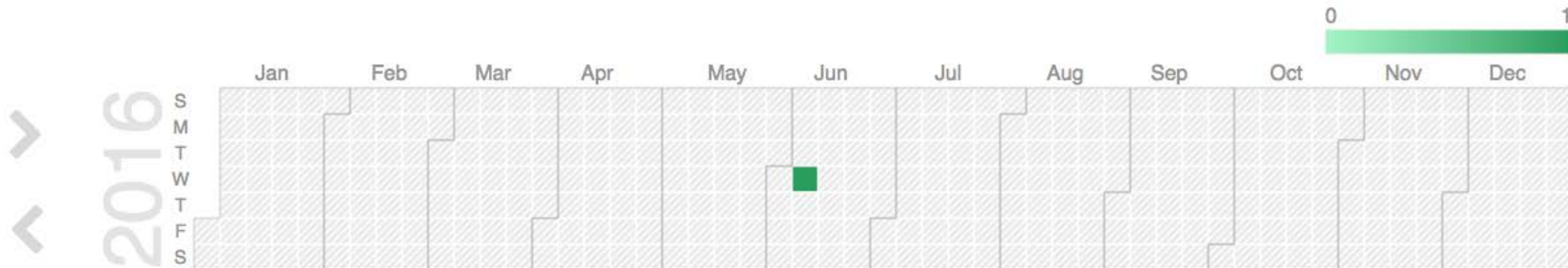
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ESSR Statistics ▾

Messages (1)

Message Control ID	Patient Name	CVX	Message Received Date	Ack Status
3J0F-A.01.01.2k	Greenup, Larissa	21 (Varicella)	2016-06-08 13:28:34	AA

Prev	1	Next

Version: 1.1.1-DEVELOPMENT<8085>

◨◨ HL7 Message Viewer

Xfer Test (1255-60-20)

< **06 · 08 · 2016** >
received date

▼ Filter

✕ Message Search: **Greenup**

0 ▬▬▬▬▬▬▬ 12

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
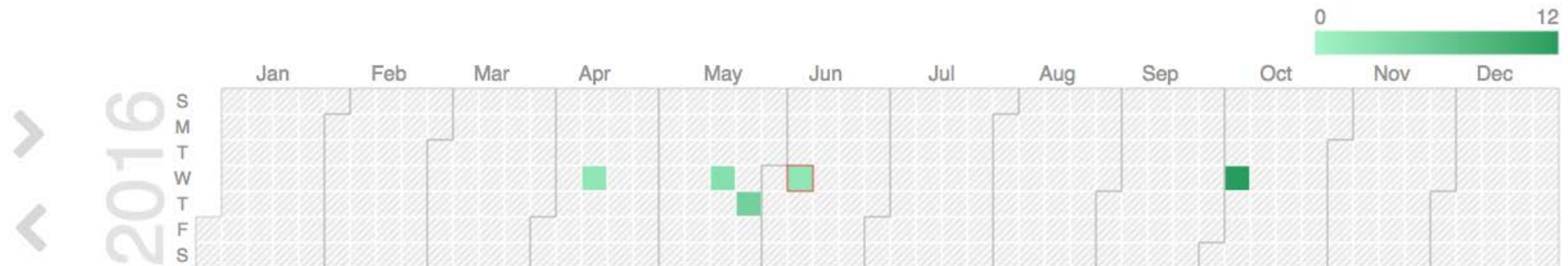
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ESSR Statistics ▾

Messages (2)

Message Control ID	Patient Name	CVX	Message Received Date	Ack Status
3J0F-A.01.01.2k	Greenup, Larissa	21 (Varicella)	2016-06-08 13:28:34	AA
3J0F-C.02.128.1ny	Greenup, Lacey	03 (MMR)	2016-06-08 13:37:51	AA

| Prev | 1 | Next |

HL7 Message Viewer

‹ Return to list

Message Information

Sender	Xfer Test (1255-60-20)
Received Date	2016-06-08 13:28:54
Patient Name	Monroe, Flanna
CVX List	03 (MMR)
Control Id	3J0F-K.01.06.em
Ack Status	AE

ESSR Statistics

Other Persons Errors	1
Persons Rejected	1
Immunizations Rejected	1
Total Immunizations Processed	1

Errors

Field	Value	Message	Reason
BIRTH_DT	20190911	The Date cannot be greater than today's date	date is not a valid month, day or year.
SHOT_DT		Shot Date cannot be less than birth date	date is not a valid month, day or year.

Response (Ack)

```
MSH|^~\&|||||20160608132854-0400||ACK^V04^ACK|20160608132854-0400.14|P|2.5.1|
SFT|MCIR|0|MDCH|2|
MSA|AE|3J0F-K.01.06.em|Message rejected: PATIENT_BIRTH_DATE_IN_FUTURE|
ERR|||100|E||||PATIENT_BIRTH_DATE_IN_FUTURE|
ERR|||100|E||||VACCINATION_DATE_BEFORE_DOB|
```

Response (Ack)

```
MSH|^~\&|||||20160608132854-0400||ACK^V04^ACK|20160608132854-0400.14|P|2.5.1|
SFT|MCIR|0|MDCH|2|
MSA|AE|3J0F-K.01.06.em|Message rejected: PATIENT_BIRTH_DATE_IN_FUTURE|
ERR|||100|E|||PATIENT_BIRTH_DATE_IN_FUTURE|
ERR|||100|E|||VACCINATION_DATE_BEFORE_DOB|
```

Message Received

```
MSH|^~\&|||||20160608132820-0400||VXU^V04^VXU_V04|3J0F-K.01.06.em|P|2.5.1|
PID|||3J0F-K.01.06^^^AIRA-TEST^MR||Monroe^Flanna^^^^^L|Mason^Eve|20190911|F||1002-5^American Indian or Alaska Native^HL70005|59 Douglas Lr
PD1|||||||||||02^Reminder/Recall - any method^HL70215|||||A|20160608|20160608|
NK1|1|Monroe^Eve^^^^^L|MTH^Mother^HL70063|59 Douglas Ln^^Reading^MI^49274^USA^P|^PRN^PH^^^517^9869359|
ORC|RE||Z99E14.3^AIRA||||||||I-23432^Burden^Donna^A^^^^^NIST-AA-1||57422^RADON^NICHOLAS^^^^^^NIST-AA-1^L|
RXA|0|1|20160608||03^MMR^CVX|0.5|mL^milliliters^UCUM||00^Administered^NIP001|||||||U1747GW||MSD^Merck and Co^MVX||||A|
RXR|SC^^HL70162|LA^^HL70163|
OBX|1|CE|64994-7^Vaccine funding program eligibility category^LN|1|V03^VFC eligible - Uninsured^HL70064|||||||F|||20160608|||VXC40^Eligibil
OBX|2|CE|30956-7^Vaccine Type^LN|2|03^MMR^CVX||||||F|
OBX|3|TS|29768-9^Date vaccine information statement published^LN|2|20120420||||||F|
OBX|4|TS|29769-7^Date vaccine information statement presented^LN|2|20160608||||||F|
```

Find in message:

| type / click message |

Prev | 1 | 2 | 3 | ... | 14 | Next

Value	Segment	Location	Field Repetition	Location Description
|	0	MSH-1	1	Field Separator
^~\&	0	MSH-2	1	Encoding Characters
20160608132820-0400	0	MSH-7-1	1	Date/Time Of Message - Time
VXU	0	MSH-9-1	1	Message Type - Message Code
V04	0	MSH-9-2	1	Message Type - Trigger Event
VXU_V04	0	MSH-9-3	1	Message Type - Message Structure

Response (Ack)

```
MSH|^~\&|||||20160608132854-0400||ACK^V04^ACK|20160608132854-0400.14|P|2.5.1|
SFT|MCIR|0|MDCH|2|
MSA|AE|3J0F-K.01.06.em|Message rejected: PATIENT_BIRTH_DATE_IN_FUTURE|
ERR|||100|E||||PATIENT_BIRTH_DATE_IN_FUTURE|
ERR|||100|E||||VACCINATION_DATE_BEFORE_DOB|
```

> **PID-3-4-1**
>
> Patient Identifier List - Assigning
> Authority - Namespace ID

Message

```
MSH|^~\&|||||20160608132.  .0-0400||VXU^V04^VXU_V04|3J0F-K.01.06.em|P|2.5.1|
PID|||3J0F-K.01.06^^^AIRA-TEST^MR||Monroe^Flanna^^^^^L|Mason^Eve|20190911|F||1002-5^American Indian or Alaska Native^HL70005|59 Douglas L
PD1|||||||||||02^Reminder/Recall - any method^HL70215|||||A|20160608|20160608|
NK1|1|Monroe^Eve^^^^^L|MTH^Mother^HL70063|59 Douglas Ln^^Reading^MI^49274^USA^P|^PRN^PH^^^517^9869359|
ORC|RE||Z99E14.3^AIRA|||||||I-23432^Burden^Donna^A^^^^^NIST-AA-1||57422^RADON^NICHOLAS^^^^^^NIST-AA-1^L|
RXA|0|1|20160608||03^MMR^CVX|0.5|mL^milliliters^UCUM||00^Administered^NIP001|||||||U1747GW||MSD^Merck and Co^MVX||||A|
RXR|SC^^HL70162|LA^^HL70163|
OBX|1|CE|64994-7^Vaccine funding program eligibility category^LN|1|V03^VFC eligible - Uninsured^HL70064|||||||F|||20160608|||VXC40^Eligibil
OBX|2|CE|30956-7^Vaccine Type^LN|2|03^MMR^CVX|||||||F|
OBX|3|TS|29768-9^Date vaccine information statement published^LN|2|20120420|||||||F|
OBX|4|TS|29769-7^Date vaccine information statement presented^LN|2|20160608|||||||F|
```

Find in message:

[type / click message]

| Prev | 1 | 2 | 3 | ... | 14 | Next |

Value	Segment	Location	Field Repetition	Location Description
|	0	MSH-1	1	Field Separator
^~\&	0	MSH-2	1	Encoding Characters
20160608132820-0400	0	MSH-7-1	1	Date/Time Of Message - Time
VXU	0	MSH-9-1	1	Message Type - Message Code
V04	0	MSH-9-2	1	Message Type - Trigger Event
VXU_V04	0	MSH-9-3	1	Message Type - Message Structure

Response (Ack)

```
MSH|^~\&|||||20160608132854-0400||ACK^V04^ACK|20160608132854-0400.14|P|2.5.1|
SFT|MCIR|0|MDCH|2|
MSA|AE|3J0F-K.01.06.em|Message rejected: PATIENT_BIRTH_DATE_IN_FUTURE|
ERR|||100|E||||PATIENT_BIRTH_DATE_IN_FUTURE|
ERR|||100|E||||VACCINATION_DATE_BEFORE_DOB|
```

Message Received

```
MSH|^~\&|||||20160608132820-0400||VXU^V04^VXU_V04|3J0F-K.01.06.em|P|2.5.1|
PID|||3J0F-K.01.06^^^AIRA-TEST^MR||Monroe^Flanna^^^^^L|Mason^Eve|20190911|F||1002-5^American Indian or Alaska Native^HL70005|59 Douglas L
PD1|||||||||||02^Reminder/Recall - any method^HL70215|||||A|20160608|
NK1|1|Monroe^Eve^^^^^L|MTH^Mother^HL70063|59 Douglas Ln^^Reading^MI                            ^9869359|
ORC|RE||Z99E14.3^AIRA|||||||I-23432^Burden^Donna^A^^^^^NIST-AA-1||57                         ^-AA-1^L|
RXA|0|1|20160608||03^MMR^CVX|0.5|mL^milliliters^UCUM||00^Administe                   ^Merck and Co^MVX||||A|
RXR|SC^^HL70162|LA^^HL70163|
OBX|1|CE|64994-7^Vaccine funding program eligibility category^LN|1|V03^VFC eligible - Uninsured^HL70064||||||F|||20160608|||VXC40^Eligibil
OBX|2|CE|30956-7^Vaccine Type^LN|2|03^MMR^CVX||||||F|
OBX|3|TS|29768-9^Date vaccine information statement published^LN|2|20120420||||||F|
OBX|4|TS|29769-7^Date vaccine information statement presented^LN|2|20160608||||||F|
```

OBX-5-2

Observation Value - component

Find in message:

| type / click message |

Prev | 1 | ... | 10 | **11** | 12 | 13 | 14 | Next

Value	Segment	Location	Field Repetition	Location Description
VFC eligible - Uninsured	**7**	**OBX-5-2**	**1**	**Observation Value - component**
HL70064	7	OBX-5-3	1	Observation Value - component
F	7	OBX-11	1	Observation Result Status
20160608	7	OBX-14-1	1	Date/Time of the Observation - Time
VXC40	7	OBX-17-1	1	Observation Method - Identifier
Eligibility captured at the immunization level	7	OBX-17-2	1	Observation Method - Text

STORIES

- "The provider kept saying we were not processing codes properly, but I was able to tell the provider exactly what they sent, and why it was wrong!"
- "I was able to tell the provider that we received their message a whole day after the sent date/time in the message header"
- ...

THE FUTURE

We're actively working with AIRA, Nathan Bunker, and the DQA project in order to integrate the concepts and code from this application into the DQA!

MICHIGAN CARE IMPROVEMENT REGISTRY

MICHIGAN DEPARTMENT OF HEALTH AND HUMAN SERVICES

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Kunz Leigh & Associates, Okemos, MI

Feel free to email with questions!