



## **HL7 Error Guide**



## Purpose of the ImmPRINT HL7 Error Guidance

This document provides assistance to healthcare providers submitting Immunization data through HL7 interface to Immunization Patient Registry with Internet Technology (ImmPRINT). This document describes possible HL7 errors and knowledge on how to fix them in the future to improve data quality.

## Version History

This document will be updated regularly to provide up to date information to all healthcare providers participating in data exchange with ImmPRINT. The current version will be posted on ImmPRINT Webpage: <https://www.alabamapublichealth.gov/immunization/immprint.html>

## HL7 Error in ImmPRINT

Every vaccine message submitted through HL7 interface to ImmPRINT will validate vaccines before updating on patient's vaccine history. If a VXU (Vaccination Update) message has an error then the vaccine message will be placed under HL7 errors. In ImmPRINT, HL7 errors are classified into two types.

### 1) Data Errors

### 2) Technical Errors

## HL7 Data Errors:

Data Errors occurred when an incorrect or incomplete patient and/or vaccine information submitted to ImmPRINT. Data Errors provide information like medical record number, patient name, patient DOB, error description and error created date.

There are various errors generated depending on incorrect or incomplete details sent to ImmPRINT and following is the list of Data Errors with a brief explanation on what the error is and how it occurred.

- **Patient Name is Invalid**

Patient name is one of the key patient identification details. The number of characters allowed in the first name and middle name fields are 20 and for last name it is 50. The Vaccine message will be rejected if the first name contains any of the below:

**BABY, NEWBABY, NEW BABY, NEWBORN, NEW BORN, UNBORN, NBORN, NUBORN, NEW, NEWBIORN, BOY, BABYBOY, BABY BOY, GIRL, BABYGIRL, BABY**



GIRL, BB, BG, BOY/, GIRL/, MALE, FEMALE, N/A, NA, FNU, NBWM, NBWF, NBBM, NBBF, NBM, NBF, FE, ~, ` , !, @, #, \$, ^, &, \*, (, ), [ , ] , { , } , \ , | , ; , : , " , < , , , > , , , ? , / , 1 , 2 , 3 , 4 , 5 , 6 , 7 , 8 , 9 , 0.

or the last name contains any of the above and below:

SR, JR, I, II, III, IV, V, VI, VII, VIII, IX, X

- **Patient DOB is Invalid**

Patient Date of Birth (DOB) is required for all VXU messages and it is one of the key patient identification information. Patient DOB format must be specified as – YYYYMMDD.

- **Patient SSN is Invalid**

Patient SSN is not required data to send, but if sent in VXU message then it must be a nine digit number.

- **Mother DOB is Invalid**

Mother's Date of Birth format must be in – YYYYMMDD.

- **Father DOB is Invalid**

Father's Date of Birth format must be in – YYYYMMDD

**Inactive Vaccine:**

A vaccine formulation that is no longer available for administration purposes.

- **Vaccination Date is Invalid**

Vaccination Date format must be in – YYYYMMDD

- **Vaccination Date cannot be greater than Current Date**

Vaccination Date cannot be a future date.

- **Vaccination Date cannot be same as Patient's DOB (Date of Birth)**

Vaccination Date can be same as Patient's DOB, except below vaccines.

1) HEP B ADOL/PED with CVX 08

2) HEP B UNS with CVX 45

## 3) HBIG with CVX 30

- **Vaccination Date cannot be less than DOB (Date of Birth)**

Vaccination Date is when patient got the shot and the date should not be prior to patient's DOB.

- **Vaccine (CVX Code) does not exist in (ImmPRINT)**

Check the CVX code of the given vaccine in Electronic Health Record (EHR) and cross verify with CDC CVX Code sets.

CVX list: [www2a.cdc.gov/vaccines/iis/iisstandards/vaccines.asp?rpt=cvx](http://www2a.cdc.gov/vaccines/iis/iisstandards/vaccines.asp?rpt=cvx)

- **CVX Code is Invalid**

Verify the CVX code in the HER before the vaccine is submitted to ImmPRINT. Here is the list of current HL7 standard code set:

CVX list: <https://www2a.cdc.gov/vaccines/iis/iisstandards/vaccines.asp?rpt=cvx>

### **NDC Code is Invalid**

National Drug Code (NDC) is a unique 10 digit number with three segments. The NDC numbers are found on drug package or vial. If NDC number is displayed in 10 digit format it must be converted to 11 digit format. This error occurs when NDC code is in incorrect format and or NDC code is invalid or the NDC code is not present in ImmPRINT.

NDC Conversion rules: <https://www.cdc.gov/vaccines/programs/iis/2d-vaccine-barcode/downloads/guidance-documenting-ndc.pdf>

- **CVX Code is Missing**

CVX codes are codes that indicate the product used in a vaccination and CVX code is required for both encountered and historical shots. Please go through the below URL-

CVX List: <https://www2a.cdc.gov/vaccines/iis/iisstandards/vaccines.asp?rpt=cvx>

- **MVX Code is Missing**

MVX codes are codes that indicate the manufacturer of a vaccine. A MVX code is required for all encountered vaccines but optional for historical shots. If MVX code is missing on an encountered shot then the vaccine message will be placed under MVX code missing errors.

MVX Codes: <https://www2a.cdc.gov/vaccines/iis/iisstandards/vaccines.asp?rpt=mvx>

- **CVX/MVX Mismatch**

Each CVX is mapped to MVX code and if there is a mismatch between CVX and the MVX Codes, ImmPRINT will reject the vaccine message and will be placed in data errors.

- **CVX/NDC Mismatch**

There is an error when the CVX and NDC Codes are not matching in which case ImmPRINT will reject the vaccine message and will place under data errors.

NDC Crosswalk: <https://www2a.cdc.gov/vaccines/iis/iisstandards/vaccines.asp?rpt=ndc>

- **CVX/MVX/Brand Mismatch**

This error occurs when the brand and manufacturer combination is mismatching with an existing record in ImmPRINT.

- **NPI number is missing**

National Provider Identifier (NPI) number is required on administered shots but not on historical shots. Administered shots with missing NPI numbers are rejected and placed in data errors.

- **NPI number is Invalid**

NPI number is ten digit numbers and this error occurs when the NPI number is less than 10 digits or greater than 10 digits or is 123456789 or has numbers like 0000, 1111, 2222 etc.

- **LOT number is missing**

Lot number is required for all administered shots but is optional for historical shots.

Administered shots with missing Lot numbers are errored out as Lot number missing and placed in data errors.

- **Birth Order is missing**

Birth Order is required when multiple birth indicator is Yes.



## HL7 Technical Errors:

All incoming vaccine messages are validated in ImmPRINT, if the message validations fail due to missing required field, field too long or field value not found then those messages are placed under HL7 technical errors.

Technical Errors provide message created date, error description, and message control ID. Contact your Electronic Health Record (EHR) for assistance.

## HL7 Warnings

HL7 Warnings are messages which are accepted in ImmPRINT and not fatal errors. However, it's the responsibility of the provider to go over the warnings to ensure that the vaccine messages are sent correctly. Below are the two classifications of warnings.

1. Vaccine not within the acceptable age
2. Group Vaccine Found

It is important to check HL7 reports regularly in ImmPRINT to ensure that the vaccine messages submitted are coming across successfully. Please send an email to [immprint@adph.state.al.us](mailto:immprint@adph.state.al.us) if there are any questions concerning HL7 data exchange.

## Frequently Asked Questions

### 1. What is ImmPRINT?

Immunization Patient Resource with Integrated Technology (ImmPRINT) is a free, secure web-based, statewide population-based information system that stores immunization records for all children born in Alabama since January 1, 1993 as well as added patients. (Providers can add patients of all ages to the registry.)

### 2. What are the benefits of ImmPRINT?

- ImmPRINT consolidates immunization information from all providers into a single record.
- Forecasts due and overdue vaccines.
- Generates list to recall/remind patients missing immunizations.
- Helps providers avoid missed opportunities to vaccinate.
- Helps sustain high immunization rates and a low number of vaccine preventable disease occurrences.
- Saves time looking for immunization histories and documenting immunizations.
- Assists in vaccine management.
- Generates timely immunization reports to assist with Vaccines for Children (VFC) reporting requirements.

### 3. How to participate in ImmPRINT?

Immunization information can be submitted to ImmPRINT by two methods- by using the online web application and/or by submitting data from providers' electronic health record (EHR) systems via electronic data interface (HL7 V 2.5.1).

### 4. What computer equipment is required to participate in ImmPRINT?

Most computers with preferably high-speed internet access are adequate for registry use. Below link provides the Browser requirements.

<https://siis.state.al.us/ImmPrint/User/BestViewed.aspx>

### 5. How to correct a wrong immunization sent to imprint?

Manually the wrong immunization submitted by your site can be deleted by logging into ImmPRINT. Check with your EHR to see it is providing that capability for your organization.

### 6. How do we know which CVX codes are valid?

A list of CDC/CVX Codes and their status is available at the link:

<http://www2a.cdc.gov/vaccines/iis/iisstandards/vaccines.asp?rpt=cvx>

**7. How to add new user in ImmPRINT?**

The new user must go to ImmPRINT home page and click new user registration tab and complete registration, then a site administrator must approve their registration.

**8. How to change a site admin in ImmPRINT?**

You need to contact the ImmPRINT staff.

**9. Who do I need to contact for the expired site enrollment agreement?**

The site administrator must renew/update site enrollment agreement on an annual basis.

**10. Who do I contact for more questions regarding ImmPRINT?**

[immprint@adph.state.al.us](mailto:immprint@adph.state.al.us)

## Meaningful use

**1. What is Meaningful Use (MU)?**

Meaningful Use is a federal program that provides monetary incentives to encourage health care providers to convert from traditional medical records to electronic health records. Reporting immunization information to an immunization registry is one of the two meaningful use public health objectives, HealthIT.gov

**2. Why you need to have an account in MU portal?**

As we share the security credentials to establish the interface connection, we upload them in your MU account.

**3. Who do I contact for more questions regarding Meaningful Use (MU)?**

Question about MU should be directed to: [meaningfuluse@adph.state.al.us](mailto:meaningfuluse@adph.state.al.us)

## Interfacing with ImmPRINT (Electronically)

**1. What is HL7?**

HL7 (Health Level 7) is a set of standards, formats, and definitions for transferring clinical and administrative data between health care organization information systems.

Specifically for the registry, the purpose of HL7 is for the electronic data exchange between an immunization provider's electronic health record (EHR) system and the Alabama Immunization Registry System (ImmPRINT).

**2. Why must we report data through HL7?**

HL7 standards provide the common language that lets different digital systems work together, so providers can securely access and use the right health information when and where they need it. HL7 reporting eases the process of documenting immunization data and eliminates manual entry of data to ImmPRINT.



### **3. What is HL7 on-boarding Process?**

There are six mainstages to onboarding process see below. It requires providers and vendors engagement to accomplish each stage.

The various stages in on-boarding process are:

1. Registration
2. Testing
3. Waiting Queue
4. Pilot Production Phase (PPP)
5. Production Phase (PP)
6. Ongoing Submission and Maintenance

Onboarding road map:

<http://www.alabamapublichealth.gov/Immunization/assets/OnboardingRoadmap02.02.2018.pdf>

### **4. How is the queue prioritized?**

We add the requests to our spread sheet and starting working with the providers on the first come first serve basis and will move on to other providers if no action is provided to who are not responsive.

Please note, HL7 provider sites that are already in pilot production phase or production phase and are switching vendors will be reverted to Pilot Production waiting queue and are served with high priority.

### **5. What is the duration of stay in the queue?**

It varies, depending depends on the EHR vendor and provider engagement and responsiveness.

### **6. What is the pilot production phase?**

Pilot production phase involves the process of monitoring and reviewing immunization data which has been electronically transferred from the site's EHR to ImmPRINT pilot site. The data must be real patient data.

The data sent to ImmPRINT pilot site will not be imported into the immunization registry (ImmPRINT production site) until the provider site passes the pilot production phase.

Please note, once the provider site passes the pilot production phase, EHR vendors/providers need to resubmit all the data sent to pilot site to production.

**7. What is the WebEx EHR demonstration session?**

The EHR demonstration session is a video conference session between the vendor, the provider, and the ImmPRINT staff. This session allows the ImmPRINT staff to identify potential issues or challenges with message content, data quality, and clinic workflow.

**8. Do all of our clients have to go through pilot production phase? (For EHR vendors)**

Yes, unlike testing phase, all the provider sites on-boarding with the EHR vendors must go through the pilot production phase before officially moving to the production phase.

**9. When can we be promoted to Production Phase (PP) from Pilot Production Phase (PPP)?**

The typical duration for pilot production phase is 1-3 months. Duration varies based on quality of data and active engagement of vendor and provider.

The site will be promoted to production phase if the ongoing submission of high quality data is maintained and if the EHR vendor staff and provider staff has demonstrated their ability to carry out the tasks of reviewing/fixing errors effectively.

**10. What is the accuracy level expected for the data submitted to Pilot ImmPRINT during on-boarding process, so that the site can be moved to Production environment at the earliest?**

The below link provider you with the necessary information.

<http://www.alabamapublichealth.gov/Immunization/assets/OnboardingRoadmap02.02.2018.pdf>

**11. How often do I need to run the reports in order to find out if the submitted data is error free?**

We emphasis to do daily or as often as possible, but it is up to the practice workflow.

**12. Do we have to register in Pilot Production if we have an ImmPRINT account?**

Yes, you do have to register in Pilot Production. The ImmPRINT production and pilot production are two different applications. The Pilot production registration allows you to review and manage your HL7 reports during the Pilot Production phase.

Pilot Production:

<https://siis.state.al.us/ImmPRINTPilotProd/Login/Login.aspx?ReturnUrl=%2fImmPRINTPilotProd%2fLogin%2fLogout.aspx>

**13. We only administer flu vaccines; do we still need to send immunization data to the registry?**

Yes. ImmPRINT consolidates a patient's immunization records into one complete, accurate record over lifespan.

**14. How is electronic submission beneficial for Providers?**

- Eliminates the need for dual data entry into ImmPRINT.
- Meaningful Use Incentives
- Completes a patient Immunization Record.

**15. How long will the On-boarding process take?**

The on-boarding process is dependent on many things. Hence, timeframe can vary.

Direct contact information and effective communication between the EHR vendor, the provider, and the ImmPRINT staff can help speed up the process.

**16. Can we use one interface to send immunization data for multiple sites?**

That is not possible. The registry enrolls every location as an individual site.

**17. What is a historical shot?**

A shot entered from an immunization record, which could have been issued by different provider. Even though the vaccine was not administered at your clinic, your clinic is reporting it to registry

**18. What is an administered shot?**

The immunization actually administered at your facility.

**19. Do I need to update the ImmPRINT Registry in addition to the Pilot ImmPRINT while in the process of On-boarding?**

Once you complete the Pilot Phase, all your data will be moved into production by your vendor. If you want a COI then you need to make a manual entry in the regular ImmPRINT, when you are in Pilot Phase.

**20. Who do I contact for more questions regarding On-boarding?**

Question about On-boarding with ImmPRINT should be directed to [immprint@adph.state.al.us](mailto:immprint@adph.state.al.us)

## Production

### 1. What are the responsibilities once we have moved to production?

Resubmit all the corrected live data that was sent to pilot production in the past to production. Maintain ongoing submission of high quality data. Monitor your HL7 reports in a timely manner. Maintain all ImmPRINT requirements.

### 2. Whom do we need to contact for the production errors?

For all the data errors in the reports, we have a description given, if you need assistance you can contact the ImmPRINT team.

Technical errors, you need to take the assistance of your Vendor.