



# ImmuCast

## Release Notes

v5.22.3



## Support Services

For general support on this product, contact your system administrator or help desk. For up-to-date documentation, visit the STC Documentation Portal at <https://documentation.stchome.com/>.

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This documentation describes the following: ImmuCast 5.22.3 (and IWeb Forecaster) release notes

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## Introduction

This release contains schedule changes that may affect the group of patients you select to be re-forecasted. Detailed descriptions and test cases follow below in the ticket descriptions.

Please note that testing scenarios do not have a grace period applied.

Also note that Forecast, Forecaster, and ImmuCast are used interchangeably throughout this document.

## Apply the Release

Apply the release by executing either the included `forecast.bat` or `forecast.sh` file. Prior forecast releases through version 5.22.2 should have already been applied. Log files, which are created in the same folder from where the release is executed, can be reviewed for errors. To determine the current version of ImmuCast, execute this statement from SQLPlus:

```
SQL> select max(version) from h33_forecast_version where insert_stamp =  
(select max(insert_stamp) from h33_forecast_version);
```

If the version number returned is not 5.22.2, download and apply the previous releases prior to applying this. Log files are created in the folder from where the release is executed and can be reviewed for errors.

### For ImmuCast (Stand-Alone Forecaster)

After applying the release, restart Tomcat to enable and cache any new vaccine codes into memory.

### For IWeb Only

The database should be reforecast when there have been multiple changes to forecasting. Please be aware that this can affect many patients and is best accomplished over a weekend.

If IWeb is hosted by STC, please contact the Help Desk if you would to re-forecast a specific patient group other than what is noted as affected for this release.

Non-STC hosted clients may perform these steps to mark patients for reforecasting.

Executing the H33\_MARK\_FORECAST procedure in sqlplus (`SQL> exec h33_mark_forecast`) will flag all patient records to be reforecast. The procedure may also be run for a specific age range (in years). Example: `SQL> exec h33_mark_forecast(4,6)` flags patient records for 4 years through 6 years of age.

## Patient Groups Affected by this Release (v5.22.3)

- Patients with Hepatitis B 3 flagged as series complete with the Warning of "Dose not counted as last dose of series. Additional dose of Hepatitis B required." where there is not an existing dose 4 forecast.
- Patients with Td or Tdap after age 7 years that is flagged as Inadvertent.
- Patients with DTaP dose 4 marked as compromised.
- Patients with Polio dose 4 administered with a vaccination date+4 days >= 08/01/2009.

## New Features/Improvements

The following are new features, functionalities or enhancements in this version of ImmuCast.

Ticket	Description
<a href="#">HDSD-1566</a>	<b>Indiana Only:</b> Accommodation of Indiana custom vaccine codes. Modification to evaluate and forecast based on CVX code when an Indiana custom vaccine code exists that is not part of the STC ONE standard vaccine code set. The Indiana vaccine code must be associated with a standard CVX code. No test cases are included in these release notes for this change.

## Bug Fix Summary

Ticket	Description & Impact
<a href="#">HDSD-1509</a>	Polio dose 4 with immunization date $\leq$ 48 months of age-4 days and administered prior to 08/07/2009 (ACIP Polio guideline change) were incorrectly marked as Invalid. The evaluation date for the guideline was using 08/01/2009 instead of 08/07/2009. The grace period was being applied to the immunization date, putting the immunization date after evaluation date which then required the dose to meet a minimum age of 4 years. Grace period was removed from the evaluation and the guideline evaluation date was changed to 08/07/2009. The immunization now evaluates correctly as prior to 08/07/2009, completing the series.
<a href="#">HDSD-1592</a>	Patients should be placed in the Hepatitis B 4-dose schedule when dose 3 is administered too early to satisfy last dose in Hepatitis B series.
<a href="#">HDSD-1439</a>	Compromised DTaP vaccination at $\geq$ 4 years of age was incorrectly counted as DTaP at $\geq$ 4 years of age when evaluating completeness for Pertussis and affected forecasting Tdap adolescent dose.
<a href="#">HDSD-1502</a>	Scenario: Dose 4 of DTaP at $\geq$ 4 years of age and just prior to 7 years. Primary series is not complete. Td given at 7 years of age should complete primary series but was being counted as Inadvertent. Tdap following the Td is correctly marked Inadvertent.
<a href="#">HDSD-1614</a>	Scenario where dose 4 of DTaP is Invalid followed by a Td which was incorrectly marked as Inadvertent.

## Details for v5.22.3

The following lists the detailed information about each of the tickets addressed in v5.22.3. Please note: When multiple service desk tickets address the same issue, the test cases below may not include all scenarios from all tickets. These test cases are also available in the STC Forecasting Test Bank [here](#).

Key	Vaccine Group	Description						
	<b>Polio</b>	Polio dose 4 with immunization date <= 48 months of age-4 days and administered prior to 08/07/2009 (ACIP Polio guideline change) were incorrectly marked as Invalid. The evaluation date for the guideline was using 08/01/2009 instead of 08/07/2009. The grace period was being applied to the immunization date, putting the immunization date after evaluation date which then required the dose to meet a minimum age of 4 years. Grace period was removed from the evaluation and the guideline evaluation date was changed to 08/07/2009. The immunization now evaluates correctly as prior to 08/07/2009, completing the series.						
Test Scenario	Antigen	Vacc Date	Valid	Rec Date	Min Date	Past Due	Comment	
<b>HDSD-1509</b> <b>STC Test Case</b> <b>POL-2020-1</b> Valid dose 4 prior to 08/07/2009 completes Polio series prior to 4 years of age.	DOB 04/27/2008	IPV CVX 10	06/27/2008	Y				
	Eval Date 07/28/2009	IPV CVX 10	08/27/2008	Y				
		IPV CVX 10	11/04/2008	Y				
		IPV CVX 10	07/28/2009	Y			Series is complete under ACIP guidelines prior to 08/07/2009	

Key	Vaccine Group	Description						
	<b>Hepatitis B</b>	Patients should be placed in the Hepatitis B 4-dose schedule when dose 3 is administered too early to satisfy last dose in Hepatitis B series.						
Test Scenario		Antigen	Vacc Date	Valid	Rec Date	Min Date	Past Due	Comment
<b>HDSD-1591 STC Test Case HEPB-2020-1</b> Patient is moved to 4-dose HepB schedule when dose 3 is administered early.	DOB 03/16/2019	HepB, Adol/Ped CVX 08	03/16/2019	Y				
	Eval Date 11/22/2019	DTaP-HepB-IPV CVX 110	05/16/2019	Y				
		DTaP-HepB-IPV CVX 110	08/15/2019	Y	09/26/2019	08/31/2019	11/12/2020	Warning: Dose not counted as last dose of series. Additional dose of HepB required.
		DTaP-HepB-IPV CVX 110	11/22/2019	Y				Complete
Test Scenario		Antigen	Vacc Date	Valid	Rec Date	Min Date	Past Due	Comment
<b>HDSD-1592 STC Test Case HEPB-2020-2</b> Patient is moved to 4-	DOB 08/01/2019	HepB, Adol/Ped CVX 08	08/01/2019	Y				
	Eval Date 01/17/2020	HepB, Adol/Ped CVX 08	09/30/2019	Y				



dose HepB schedule when dose 3 is administered early.		HepB, Adol/Ped CVX 08	12/05/2019	Y	02/01/2020	01/16/2020	03/28/2021	Warning: Dose not counted as last dose of series. Additional dose of HepB
		HepB, Adol/Ped CVX 08	01/17/2020	Y				Complete
<b>Test Scenario</b>		<b>Antigen</b>	<b>Vacc Date</b>	<b>Valid</b>	<b>Rec Date</b>	<b>Min Date</b>	<b>Past Due</b>	<b>Comment</b>
<b>HDSD-1592 STC Test Case HEPB-2020-3</b> Patient is moved to 4-dose HepB schedule when dose 3 is administered early.	DOB 12/28/2009	HepB, Adol/Ped CVX 08	12/28/2009	Y				
	Eval Date 06/14/2010	HepB, Adol/Ped CVX 08	02/26/2010	Y				
		HepB, Adol/Ped CVX 08	05/28/2010	Y	06/28/2010	06/14/2010	08/24/2011	Warning: Dose not counted as last dose of series. Additional dose of HepB
		HepB, Adol/Ped CVX 08	06/14/2010	Y				Complete
<b>Test Scenario</b>		<b>Antigen</b>	<b>Vacc Date</b>	<b>Valid</b>	<b>Rec Date</b>	<b>Min Date</b>	<b>Past Due</b>	<b>Comment</b>
<b>HDSD-1635 STC Test Case HEPB-2020-4</b> Patient is moved to 4-	DOB 07/17/2019	HepB, Adol/Ped CVX 08	08/14/2019	Y				
	Eval Date 01/17/2020	DTaP-HepB-IPV CVX 110	09/26/2019	Y				

dose HepB schedule when dose 3 is administered early.		DTaP-HepB-IPV CVX 110	12/05/2019	Y	01/17/2020	01/01/2020	03/16/2021	Warning: Dose not counted as last dose of series. Additional dose of HepB
		DTaP-HepB-IPV CVX 110	01/17/2020	Y				Complete
<b>Key</b>		<b>Vaccine Group</b>	<b>Description</b>	<b>Key</b>	<b>Vaccine Group</b>	<b>Description</b>	<b>Key</b>	<b>Vaccine Group</b>
		<b>DTaP/Tdap</b>	Compromised DTaP vaccination at >= 4 years of age was incorrectly counted as DTaP at >= 4 years of age when evaluating completeness for Pertussis and affected forecasting Tdap adolescent dose.					
<b>Test Scenario</b>		<b>Antigen</b>	<b>Vacc Date</b>	<b>Valid</b>	<b>Rec Date</b>	<b>Min Date</b>	<b>Past Due</b>	<b>Comment</b>
<b>HDSD-1439 STC Test Case DTAP-2020-17</b> DTaP 5 at >= 4 years of age marked as compromised , followed by Tdap at 8 years of age.	DOB 01/20/2011	DTaP-HepB-IPV CVX 110	03/18/2011	Y				
	Eval Date 06/05/2019	DTaP-HepB-IPV CVX 110	05/18/2011	Y				
		DTaP-HepB-IPV CVX 110	07/18/2011	Y				
		DTaP CVX 20	12/04/2012	Y				
		DTaP-IPV CVX 130	07/10/2015	N	07/10/2015	07/10/2015	08/06/2015	Vaccine marked as compromised.

		Tdap	06/05/2019	Y	01/20/2022	01/20/2022	02/16/2024	
<b>Test Scenario</b>		<b>Antigen</b>	<b>Vacc Date</b>	<b>Valid</b>	<b>Rec Date</b>	<b>Min Date</b>	<b>Past Due</b>	<b>Comment</b>
<b>HDS-1439 STC Test Case DTAP-2020-18</b> DTaP 5 at >= 4 years of age marked as compromised , followed by Tdap at 8 years of age.	DOB 04/04/2011	DTaP, Unspec. CVX 107	06/08/2011	Y				
	Eval Date 03/27/2019	DTaP, Unspec. CVX 107	08/08/2011	Y				
		DTaP, Unspec. CVX 107	11/01/2011	Y				
		DTaP, Unspec. CVX 107	05/15/2013	Y				
		DTaP-IPV CVX 130	09/04/2015	N	09/04/2015	09/04/2015	04/03/2018	Vaccine marked as compromised.
		Tdap CVX 115	03/27/2019	Y	04/04/2022	04/04/2022	05/01/2024	
<b>Key</b>	<b>Vaccine Group</b>	<b>Description</b>	<b>Key</b>	<b>Vaccine Group</b>	<b>Description</b>	<b>Key</b>	<b>Vaccine Group</b>	
	<b>DTaP/Tdap</b>	Scenario: Dose 4 of DTaP at >= 4 years of age and just prior to 7 years. Primary series is not complete. Td given at 7 years of age should complete primary series but was being counted as Inadvertent. Tdap following the Td is correctly marked Inadvertent.						
<b>Test Scenario</b>		<b>Antigen</b>	<b>Vacc Date</b>	<b>Valid</b>	<b>Rec Date</b>	<b>Min Date</b>	<b>Past Due</b>	<b>Comment</b>

<b>HDS-1502 STC Test Case DTAP-2020-19</b> DTaP 1 at > 12m of age. DTaP 4 at >= 4 yrs of age and < 7 yrs of age. Td at 7 yrs of age.	DOB 04/28/2009	DTaP-Hib-IPV CVX 120	10/01/2010	Y				
	Eval Date 01/30/2020	DTaP-HepB-IPV CVX 110	12/01/2014	Y				DTaP >= 4yrs
		DTaP CVX 20	09/11/2015	Y				
		Td, Unspec. CVX 139	08/31/2016	Y	04/28/2020	04/28/2020	05/25/2022	Primary series complete. Tdap due at 11 yrs.
		Tdap CVX 115	10/06/2016	N	04/08/2020	04/28/2020	05/25/2022	Inadvertent dose.
<b>Key</b>		<b>Vaccine Group</b>	<b>Description</b>	<b>Key</b>	<b>Vaccine Group</b>	<b>Description</b>	<b>Key</b>	<b>Vaccine Group</b>
	<b>DTaP/Tdap</b>	Scenario: Invalid DTaP and series completion with Td and Tdap. Includes Inadvertent Tdap dose.						
<b>Test Scenario</b>		<b>Antigen</b>	<b>Vacc Date</b>	<b>Valid</b>	<b>Rec Date</b>	<b>Min Date</b>	<b>Past Due</b>	<b>Comment</b>
<b>HDS-1614 STC Test Case DTAP-2020-20</b> DTaP 1 at > 12m of age. DTaP 4 at >= 4 yrs. of age and < 7 yrs. of age. Td at 7 yrs. of age.	DOB 02/18/2012	DTaP CVX 107	05/07/2012	Y				
	Eval Date 01/30/2020	DTaP CVX 107	04/19/2013	Y				
		DTaP CVX 20	08/23/2013	Y				

		DTaP CVX 107	12/11/2015	Y				
		DTaP CVX 107	03/29/2016	N				Invalid: Minimum Interval from previous dose not met.
		Td Unspec. CVX 139	08/22/2017	Y	02/18/2019	02/18/2019	02/18/2019	Warning: Tdap or Td administered at less than 7 years of age.  (Patient has had 6 doses before age 7. No more doses until 7 yrs.)
		Tdap CVX 115	05/10/2019	Y	02/28/2023	02/18/2023	03/17/2025	Tdap due at 11 yrs.
		Tdap CVX 115	12/27/2019	N	02/18/2023	02/18/2023	03/17/2025	Invalid: Inadvertent dose.

## Known Issues for v5.22.3

The following are known issues and will be addressed in future releases:

### HPV

Recommendation Change: HPV Forecasting for 26 years old, no history

- Scenario: CDSi 2016-0013 Female age 26, No HPV doses. Forecaster does not return a recommendation. Setting to suppress first dose is not enabled. Age indication expanded by CDC in October 2018.
- The ACIP recommendation was issued June 2019: **ACIP approved vaccination of persons age 27–45 years based on “shared clinical decision making” between the patient and clinician.** *\*Shared clinical decision making means the decision to vaccinate persons age 27 through 45 years should be based on a discussion of benefits and risks between the patient and the clinician.* This decision is not considered final until it is published in the MMWR. This ticket is blocked pending publication.

Recommendation Change: Harmonize HPV catch-up schedule for male and female

- In June 2019, ACIP voted unanimously to harmonize the routine catch-up vaccination schedule for both males and females through age 26. This decision is not considered final until it is published in the MMWR. This ticket is blocked pending publication.

### Hib

Forecaster incorrectly recommends Dose #3 Hib at 4 week interval after dose 2, rather than an 8 week interval.

- Scenario: DOB 03/01/17 Dose #1 HIB-PRP-T on 05/19/17 at 2.6 months of age. Dose #2 was given on 10/05/17 at 7.2 months of age.
- Current behavior: Forecaster returned a recommended date of 11/02/20, only 4 weeks after the 2nd dose and the same as the minimum interval. This occurred because forecasting for Hib was previously changed to forecast based on the last vaccination date/patient age to match CDSi.
- Expected behavior: If the forecasts evaluates the patient’s current age as  $\geq 12$  months, the interval would be 8 weeks.
- Task: Determine method for forecasting based on supplied evaluation date. If evaluation date is null or “today”, the forecast should be based on patient’s current age.
- HDSAF-143

Forecaster correctly marks a Hib PRP-T dose as invalid but returns a “minimum interval not met” reason, rather than “minimum age not met”.

- Scenario: DOB 08/23/2005. Patient received Hib (PRP-T) doses on 10/24/05, 01/10/2006, 02/27/2006, and 08/15/2006.
- Current behavior: Dose #4 is correctly marked as invalid. The reason for the invalid status displayed on the Vaccination Data Quality report is *Minimum interval from previous dose not met*.
- Expected behavior: Reason for invalid status is expected to display as *Minimum age for this dose not met*.
- HDSD-499

Recommended Hib intervals between Dose #1 and Dose #2 are different for Hib PRP-OMP and Hib-PRP-T and display "Minimum" interval dates as "Recommended" interval dates.

- Scenario: Forecaster returns recommended date for dose 2 of 4 weeks after dose 1 if Hib PRP-T Dose #1 is given at 3 mos.
- Current behavior: Forecaster returns recommended date for dose 2 of 8 weeks after dose 1 if Hib PRP-OMP Dose #1 is given at 3 mos.
- Expected behavior: Forecaster should return recommendation with 4 week interval when first dose is given before the 1<sup>st</sup> birthday. Forecaster should return recommendation with 8 week interval when first dose is given between 12-14 months.
- HDSD-567

## Pneumococcal

Forecast returns PCV13 recommendation 1 year after inadvertent PPSV.

- Scenario: DOB 3/1/19, PPSV23 dose given 4/30/19.
- Current behavior: Forecast returns PCV13 recommendation 1 year after inadvertent PPSV. PPSV23 given at this age should not be considered to be part of the pneumococcal vaccination series. PCV13 should be administered as soon as the error is discovered.
- Expected behavior: Based on ACIP, PPSV23 given at this age should not be considered to be part of the pneumococcal vaccination series. PCV13 should be administered as soon as the error is discovered.
- HDSD-403, HDSD-455

Dose 2 incorrectly displays *Invalid PNEUMO (PCV): Minimum interval from previous dose not met*.

- Scenario #1: DOB: 08/10/2018, PCV13: 09/28/2018, 03/07/2019.
- Current behavior: Dose 2 incorrectly displays *Invalid PNEUMO (PCV): Minimum interval from previous dose not met*. Warning disappears with 4 day grace period.
- Expected behavior: Dose should not be marked as invalid.
- Scenario #2(related): DOB -8/30/2018, PCV 13 dose administered 03/28/2019
- Current behavior: Dose is incorrectly marked Invalid PNEUMO (PCV): *Minimum interval from previous dose not met*, even though it is the first dose on the record.
- Expected behavior: Dose should not be marked as invalid.

- HDS-422, HDS-418

#### Recommendation Change: PCV13 for Immunocompetent Older Adults

- The following change in recommendation for PCV13 in immunocompetent older adults was approved in June 2019: ACIP recommends PCV13 based on shared clinical decision making for adults 65 years and older who do not have an immunocompromising condition\*\* and who have not previously received PCV13. All adults 65 years and older should receive a dose of PPSV23.\*
- Of note, the recommendations for vaccination of adults at high risk of invasive pneumococcal disease (MMWR, Vol. 61, No. 40, pages 816-819) have not changed.
- This decision is not considered final until it is published in the MMWR. This ticket is blocked pending publication.

## Rotavirus

Rotavirus Dose #2 dates off (Found by STC during regression testing)

- Scenario: CDSi Test Case 2013-0773 DOB: 05/17/2018, RV1 Dose #1 08/24/2018,
- Current behavior: Forecaster returns Min 9/21, rec 10/19, past due 11/18
- Expected behavior: Min and rec 9/21, past due 11/03

Two Rotavirus CDSi test cases with correct evaluation but inaccurate reason (Found by STC during regression testing)

Scenario #1: CDSi 2013-0782

- DOB 12/18/2018 , CVX 116 on 01/27/2019 , CVX 116 on 02/21/2019
- Current behavior: Minimum Interval from previous dose not met
- Expected behavior: Evaluation of Not Valid due to Minimum age for this dose not met.

Scenario #2 CDSi 2013-0785

- DOB 11/20/2018, CVX 116 on 12/29/2018 , CVX 116 on 01/26/2019, CVX 116 on 02/21/2019
- Current behavior: Minimum Interval from previous dose not met
- Expected behavior: Evaluation of Not Valid due to Minimum age for this dose not met.

## Zostavax

Shingrix at age 18

- If a dose is inadvertently administered to an adult 18 through 49 years of age, CDC does not recommend repeating the dose but administering the second RZV dose on or after the 50th birthday. This guidance does not appear in the most recent zoster ACIP statement but is in the General Best Practices Guidance (Table 3-1 in the Timing and Spacing of



Immunobiologics section at [www.cdc.gov/vaccines/hcp/acip-recs/general-recs/timing.html](http://www.cdc.gov/vaccines/hcp/acip-recs/general-recs/timing.html)) and is based on guidance from CDC's zoster subject matter experts.

- Task: Determine approach to this documentation.
- HDS-821

## Planned Logic Changes

### New Vaccine Forecasting

- Addition for forecasting logic for Twinrix Jr.

### Live Vaccine Rules

- HDS-535: Patient received OPV and MMR less than 28 days apart. MMR dose on 8/1/1988 is flagged as invalid but should be considered valid based on CDC General Recommendations on Immunization from the Pink Book. *"Parenteral live vaccines (MMR, MMRV, varicella, zoster, and yellow fever) and LAIV are not believed to have an effect on live vaccines given by the oral route (OPV, oral typhoid, and rotavirus). Live oral vaccines may be given at any time before or after live parenteral vaccines or LAIV."*
- HDS-519: Patient received RSV IGIV on 3/15/18 and then received MMR and varicella vaccines on 4/9/18. The MMR and varicella vaccines are incorrectly marked as invalid.

### CDSi Logic NOT Being Implemented in ImmuCast 1.0

- CDSi allows a 5-dose Polio schedule when dose 4 is given too early (as in the use of combination vaccines). The 5-dose schedule considers an early Dose 4 as valid instead of invalid, similar to the Hepatitis B 4-dose schedule. ImmuCast 1.0 will not implement this logic due to the issues it will cause in the IWeb school certificates and reports.

## Product Documentation

Product documentation is located on the STC Documentation Portal:  
<https://documentation.stchome.com/>.

The following documents are available for this version of ImmuCast:

- ImmuCast 5.18.1 User Guide
- ImmuCast 5.22 Release Notes
- ImmuCast 5.22.1 Release Notes
- ImmuCast 5.22.2 Release Notes
- ImmuCast 5.22.3 Release Notes