



# ImmuCast

## Release Notes

v5.34.0



## 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 5.34.0 (and STC|One IWeb Forecaster) release notes

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## Introduction

Detailed descriptions and test cases (if applicable) follow below in the ticket descriptions. This release may contain immunization schedule changes that affect the group of patients you select to be re-forecasted. Please refer to the section entitled "Patient Groups Affected by this Release" for guidance on determining if patients should be reforecast.

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 5.30.0 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 5.33.0 or higher, download and apply the previous releases prior to applying this release. Log files are created in the folder from where the release is executed and can be reviewed for errors.

### For ImmuCast 1.0 (Stand-Alone Forecaster)

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

## Patient Groups Affected by this Release (v5.34.0)

This release will not mark patients for re-forecasting. Vaccine warning messages will be updated when a patient record is viewed in the user interface.

## Fixes and Improvements

Key	Summary	Description
	CVX Codes	Update to CVX codes.

		Removed Vaccinia, smallpox monkeypox vaccine live, PF (CVX 206) from forecast validation. Monkeypox is included in the Vaccinia vaccine group (smallpox) and displayed as Invalid.
		COVID-19 forecast revision to reflect CDSi v4.31.0 and recent ACIP guidelines. This release does not include forecasting for immunocompromised.

**CVX Codes.**

CVX	CPT	Modification
229	N/A	COVID-19, mRNA, LNP-S, bivalent, PF, 50 mcg/0.5 mL dose

**Details for v5.34.0**

The following are test cases for the tickets addressed in v5.34.0. Test cases may reflect vaccination dates that are prior to a vaccine or vaccine group’s official recommendation date due to age range testing. Please note: When multiple service desk tickets address the same issue, the test cases below may not include all scenarios from all tickets.

Key	Vaccine Group	Description						
	<b>COVID-19</b>	<b>Refer to Issue Summary above</b>						
Test Scenario		Antigen	Vacc Date	Valid	Rec Date	Min Date	Past Due	Comment
Janssen COVID-19 vaccine prior to 18 yrs. of age	DOB: 12/01/2017	Janssen COVID-19 (CVX 212)	01/01/2022	Y (Warning: Janssen COVID-19 vaccine administered prior to 18 years of age should be followed by an mRNA COVID-19 vaccine 28 days later.)	01/29/2022	01/29/2022	03/04/2022	Patient moves to mixed product schedule.
		Janssen COVID-19 (CVX 212)	03/01/2022	N (Invalid: Inadvertent dose.)	03/01/2022	03/01/2022	03/01/2022	Product not allowed.
		Pfizer COVID-19 (CVX 208)	03/15/2022	Y	05/10/2022	05/10/2022	06/06/2022	
		Pfizer COVID-19 (CVX 208)	05/10/2022	Y				Booster
Test Scenario		Antigen	Vacc Date	Valid	Rec Date	Min Date	Past Due	Comment
Janssen COVID-19 vaccine at	DOB: 01/01/2004	Janssen COVID-19 (CVX 212)	02/01/2022	Y	03/29/2022	03/29/2022	04/25/2022	

>= 18 yrs. of age. All doses same product.								
		Janssen COVID-19 (CVX 212)	04/01/2022	Y (Warning: People aged 18-49 yrs. with doses 1 and 2 of Janssen vaccine are recommended to receive an mRNA COVID-19 vaccine at least 4 months after prior dose.)	08/01/2022	08/01/2022	08/28/2022	
		Janssen COVID-19 (CVX 212)	06/01/2022	Y				Booster doses that do not meet min. interval are not repeated.
Test Scenario		Antigen	Vacc Date	Valid	Rec Date	Min Date	Past Due	Comment
Janssen COVID-19 vaccine at >= 18 yrs. of age. Dose 3 mRNA product.	DOB: 01/01/2004	Janssen COVID-19 (CVX 212)	02/01/2022	Y	03/29/2022	03/29/2022	04/25/2022	
		Janssen COVID-19 (CVX 212)	04/01/2022	Y (Warning: People aged 18-49 yrs. with doses 1 and 2 of	08/01/2022	08/01/2022	08/28/2022	



				Janssen vaccine are recommended to receive an mRNA COVID-19 vaccine at least 4 months after prior dose.)				
		Pfizer COVID-19 (CVX 208)	06/01/2022	Y				Patient remains in Janssen schedule. Booster doses that do not meet min. interval are not repeated.
<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>
Janssen COVID-19 vaccine at >= 18 yrs. of age. Dose 2 mRNA product.	DOB: 01/01/2004	Janssen COVID-19 (CVX 212)	02/01/2022	Y	03/29/2022	03/29/2022	04/25/2022	
		Pfizer COVID-19 (CVX 208)	04/01/2022					No further doses needed.
<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>
6m-17yr - No history	DOB: 01/01/2021	No History			07/01/2021	07/01/2021	07/28/201	
<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>

Pfizer 6m-4 yrs. Dose 1 at 6 months of age. Patients with 2 doses prior to 5 years of age require 3 doses as a primary series.	DOB: 01/01/2021	Pfizer (CVX 218)	07/01/2021	Y	07/22/2021	07/22/2021	08/25/2021	
		Pfizer (CVX 218)	07/22/2021	Y	09/16/2021	09/16/2021	10/13/2021	
		Pfizer (CVX 218)	09/16/2021	Y				Primary series complete. Booster dose is not recommended for this age group.
<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>
Pfizer 5yrs-11 yrs. Dose 1 at 5 years of age. Patients with 2 doses at >= 5 years of age require 2 doses as a primary series and	DOB: 01/01/2017	Pfizer (CVX 218)	03/01/2022	Y	03/22/2022	03/22/2022	04/25/2022	

booster with 5 month interval								
		Pfizer (CVX 218)	03/22/2022	Y	08/22/2022	08/22/2022	09/18/2022	Primary series complete
		Pfizer (CVX 218)	08/22/2022	Y				Booster. No further doses
<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>
Pfizer 18+ yrs.	DOB: 01/01/2000	No History			12/12/2020	12/12/2020	01/08/2021	Rec. date reflects COVID-19 ACIP adoption date.
		Pfizer (CVX 208)	01/01/2022	Y	01/22/2022	01/22/2022	02/25/2022	
		Pfizer (CVX 208)	01/22/2022	Y	06/22/2022	06/22/2022	07/19/2022	Primary series complete
		Pfizer (CVX 208)	06/22/2022	Y	01/01/2050	01/01/205	01/28/2050	No further boosters until age 50 yrs.
<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>
Pfizer 18+ yrs. - CVX 218 at >= 18 yrs. of age.	DOB: 01/01/2000	Pfizer (CVX 218)	01/01/2022	N (Invalid: Inadvertent dose.)	01/01/2022	01/01/2022	01/28/2022	CVX 218 is not allowed at >= 18 yrs of age and should be repeated with

								appropriate product.
Test Scenario		Antigen	Vacc Date	Valid	Rec Date	Min Date	Past Due	Comment
Moderna 6m-5 yrs. Dose 1 at 6 months of age.	DOB: 01/01/2021	Moderna (CVX 207)	07/01/2021	Y	07/29/2021	07/29/2021	08/25/2021	
		Moderna (CVX 207)	07/29/2021	Y				Primary series complete. Booster dose is not recommended for this age group.
Test Scenario		Antigen	Vacc Date	Valid	Rec Date	Min Date	Past Due	Comment
Moderna 6yr-11yr- Dose 1 at 6 years of age.	DOB: 01/01/2016	Moderna (CVX 207)	01/01/2022	Y	01/29/2022	01/29/2022	02/25/2022	
		Moderna (CVX 207)	02/01/2022	Y				Primary series complete. Booster dose is not recommended for this age group.
Test Scenario		Antigen	Vacc Date	Valid	Rec Date	Min Date	Past Due	Comment
Moderna 12yr-18yr- Dose 1 at	DOB: 01/01/2010	Moderna (CVX 207)	01/01/2022	Y	01/29/2022	01/29/2022	02/25/2022	

12 years of age.								
		Moderna (CVX 207)	02/01/2022	Y				Primary series complete. Booster dose is not recommended for this age group.
<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>
Moderna 18+ yrs. - Dose 1 at 18 years of age.	DOB: 01/01/2004	Moderna (CVX 207)	01/01/2022	Y	01/29/2022	01/29/2022	02/25/2022	
		Moderna (CVX 207)	02/01/2022	Y	07/01/2022	07/01/2022	07/28/2022	Primary series complete. Booster dose recommended with 5-month interval.
		Moderna (CVX 207)	07/01/2022	Y	01/01/2054	01/01/2054	01/28/2054	No further boosters until age 50 yrs.
<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>
Mixed Product – 6+ months Dose 1 at 12 months	DOB: 01/01/2021	Pfizer (CVX 208)	01/01/2022	Y	01/22/2022	01/22/2022	02/25/2022	Pt is initially put into Pfizer schedule

		Moderna (CVX 207)	02/01/2022	Y	03/29/2022	03/29/2022	04/25/2022	
		Pfizer (CVX 208)	04/01/2022	Y				Primary series complete. Booster dose is not recommended for this age group.
<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>
Mixed Product – 6+ months Dose 1 at 6 years	DOB: 01/01/2016	COVID NOS (CVX 213)	01/01/2022	Y	01/29/2022	01/29/2022	02/25/2022	
		Pfizer (CVX 208)	02/01/2022	Y	07/01/2022	07/01/2022	07/28/2022	Primary series complete.
		Pfizer (CVX 208)	07/01/2022	Y				Booster
<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>
Mixed Product – 6+ months Dose 1 at 50+ years	DOB: 01/01/1971	COVID NOS (CVX 213)	01/01/2022	Y	01/29/2022	01/29/2022	02/25/2022	
		Moderna (CVX 207)	02/01/2022	Y	07/01/2022	07/01/2022	07/28/2022	Primary series complete

		Pfizer (CVX 208)	07/01/2022	Y				Booster
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## Known Issues for v5.34.0

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

### DTaP/Tdap

- Scenario: DTaP Dose 5 in catch-up schedule forecasts with 6-month interval without regard to the individual's age.
- Scenario: Patient with no contraindication to Pertussis has Pediatric DT recorded in immunization history and does not meet definition of complete for Pertussis. Pediatric DT doses do not count towards series completion because it does not satisfy the Pertussis component. If patient has 5 doses in history, including Pediatric DT, and age at evaluation is < 7 yrs of age, a dose of DTaP should be forecast 28 days from the last dose.
- Tdap at 10 yrs of age marked as inadvertent dose but should satisfy adolescent booster dose.

### 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 aged 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. PSV23 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.
- HDSD-422, HDSD-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

### 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 STC|One 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:

- Implementation and Configuration Guide 5.18.8
- ImmuCast 5.34.0 Release Notes