



# ImmuCast

## Release Notes

v5.25.2



## 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 5.25.2 (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.

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 5.25.0 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 5.25.0 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 (Stand-Alone Forecaster)

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

## Patient Groups Affected by this Release (v5.25.2)

This release adds forecasting schedules for COVID-19, mRNA, LNP-S, PF, 100 mcg/0.5 mL dose (CVX 207) (Moderna COVID-19 Vaccine). CVX 213, SARS-COV-2 (COVID-19) vaccine, UNSPECIFIED, has also been added as an allowable vaccine for Dose 2 of either COVID-19 schedule. CVX 213, SARS-COV-2 (COVID-19) vaccine, UNSPECIFIED recorded as Dose 1 will forecast Dose 2 following the Moderna schedule.

Patients with a Covid-19 immunization history using CVX 207 or CVX 213, prior to this release, will have no dose 2 forecast until they have gone through the forecast process after this release has been applied.

# New Features/Improvements

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

## Issue Summary

Ticket	Description												
	<p><a href="#">Interim Clinical Considerations for Use of mRNA COVID-19 Vaccines Currently Authorized in the United States.</a></p> <p>Addition of CVX 207, Moderna COVID-19 Vaccine as a 2-dose schedule with an interval of 28 days between Dose 1 and Dose 2. Inclusion of CVX 208 and CVX 213 as allowable vaccines to the Dose 2 schedule for the Moderna COVID-19 vaccine. Inclusion of CVX 207 and CVX 213 as allowable vaccines to Dose 2 of the Pfizer-BioNTech COVID-19 vaccine schedule.</p> <table border="1"><thead><tr><th>CVX</th><th>Short Description</th><th>CDC Product Name</th></tr></thead><tbody><tr><td>208</td><td>COVID-19, mRNA, LNP-S, PF, 30 mcg/0.3 mL dose</td><td>Pfizer-BioNTech COVID-19 Vaccine</td></tr><tr><td>207</td><td>COVID-19, mRNA, LNP-S, PF, 100 mcg/0.5 mL dose</td><td>Moderna COVID-19 Vaccine</td></tr><tr><td>213</td><td>SARS-COV-2 (COVID-19) vaccine, UNSPECIFIED</td><td></td></tr></tbody></table>	CVX	Short Description	CDC Product Name	208	COVID-19, mRNA, LNP-S, PF, 30 mcg/0.3 mL dose	Pfizer-BioNTech COVID-19 Vaccine	207	COVID-19, mRNA, LNP-S, PF, 100 mcg/0.5 mL dose	Moderna COVID-19 Vaccine	213	SARS-COV-2 (COVID-19) vaccine, UNSPECIFIED	
CVX	Short Description	CDC Product Name											
208	COVID-19, mRNA, LNP-S, PF, 30 mcg/0.3 mL dose	Pfizer-BioNTech COVID-19 Vaccine											
207	COVID-19, mRNA, LNP-S, PF, 100 mcg/0.5 mL dose	Moderna COVID-19 Vaccine											
213	SARS-COV-2 (COVID-19) vaccine, UNSPECIFIED												
<a href="#">HDSD-2828</a>	Corrected an issue that resulted in the forecast error when two vaccines from the same vaccine group existed in the patient's immunization history on same date.												

## Additional Information Relevant to COVID-19 Forecasting

The following information is available in the above linked document in the Issue Summary.

**Pfizer-BioNTech COVID-19 vaccine** - Current recommend minimum age for Dose 1 is 16 years of age. If Dose 1 is administered prior to 16 years of age, Dose 2 is forecast 21 days from Dose 1, or at 16 years of age, whichever is greatest. If Dose 2 is administered prior to 16 years of age, that dose is considered valid.

Recommended minimum interval between Dose 1 and Dose 2 is 21 days. The grace period of 4 days may be applied. If Dose 2 is administered prior to 21 days – 4-day grace (17 days), the dose is considered valid and does not need to be repeated. A third dose is not

recommended in any scenario. CVX 213, SARS-COV-2 (COVID-19) vaccine, UNSPECIFIED recorded as Dose 2 will complete either manufacturer schedule.

There is no maximum interval between Dose 1 and Dose 2. Doses administered after the 21-day recommended interval do not need to be repeated.

**Moderna COVID-19 vaccine** - Current recommend minimum age for Dose 1 is 18 years of age. If Dose 1 is administered prior to 18 years of age, Dose 2 is forecast 28 days from Dose 1, or at 18 years of age, whichever is greatest. If Dose 2 is administered prior to 18 years of age, that dose is considered valid.

Recommended minimum interval between Dose 1 and Dose 2 is 28 days. The grace period of 4 days may be applied. If Dose 2 is administered prior to 28 days – 4-day grace (24 days), the dose is considered valid and does not need to be repeated. A third dose is not recommended in any scenario.

There is no maximum interval between Dose 1 and Dose 2. Doses administered after the 28-day recommended interval do not need to be repeated.

CVX 213, SARS-COV-2 (COVID-19) vaccine, UNSPECIFIED recorded as Dose 1 will forecast Dose 2 following the Moderna schedule. CVX 213, SARS-COV-2 (COVID-19) vaccine, UNSPECIFIED recorded as Dose 2 will complete either manufacturer schedule.

#### **Additional Information Applicable to Both Vaccine Products:**

COVID vaccination should be administered alone and spaced from any other vaccine by 14 days (in either direction). However, if this suggested spacing is broken no vaccines need to be repeated (Covid or non-Covid).

Both doses of the series should be completed with the same product. If two doses of different mRNA COVID-19 vaccine products are inadvertently administered, no additional doses of either product are recommended at this time. CVX 213, SARS-COV-2 (COVID-19) vaccine, UNSPECIFIED recorded as Dose 2 will complete either manufacturer schedule.

#### **Contraindications**

- Severe allergic reaction after previous dose of COVID-19
- Adverse reaction to vaccine component

## Details for v5.25.2

The following lists detailed test case information for COVID-19 immunization forecasting.

Key	Vaccine Group	Description						
		Refer to Issue Summary above						
Test Scenario		Antigen	Vacc Date	Valid	Rec Date	Min Date	Past Due	Comment
No prior Covid-19 vaccine history and current age > 16 years of age.	DOB: 01/01/1980	COVID-19 (CVX 208)			12/12/2020	12/12/2020	01/08/2021	Rec date is EUA date of 12/12/2020
Test Scenario		Antigen	Vacc Date	Valid	Rec Date	Min Date	Past Due	Comment
No prior Covid-19 vaccine history and current age < 16 years of age.	DOB: 01/01/2005	COVID-19 (CVX 208)			01/01/2021	01/01/2021	01/28/2021	Rec date is 16 <sup>th</sup> birthday
Test Scenario		Antigen	Vacc Date	Valid	Rec Date	Min Date	Past Due	Comment
Current age > 16 years of age with administration of Dose 1 and Dose 2 administered 21 days after Dose 1.	DOB: 01/01/1980	COVID-19 (CVX 208)	12/12/2020	Y	01/02/2021	01/02/2021	01/29/2021	
		COVID-19 (CVX 208)	01/02/2021	Y				Complete
Test Scenario		Antigen	Vacc Date	Valid	Rec Date	Min Date	Past Due	Comment

Current age > 18 years of age with administration of Dose 1 and Dose 2 administered 28 days after Dose 1.	DOB: 01/01/1980	COVID-19 (CVX 207)	12/12/2020	Y	01/09/2021	01/09/2021	02/05/2021	
		COVID-19 (CVX 207)	01/09/2021	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>
Current age > 18 years of age with administration of Dose 1 Moderna and Dose 2 Pfizer administered 21 days after Dose 1.	DOB: 01/01/1980	COVID-19 (CVX 207)	12/12/2020	Y	01/09/2021	01/09/2021	02/05/2021	
		COVID-19 (CVX 208)	01/02/2021	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>
Current age > 18 years of age with administration of Dose 1 Moderna and Dose 2 Covid-19 Unspecified administered 21 days after Dose 1.	DOB: 01/01/1980	COVID-19 (CVX 207)	12/12/2020	Y	01/09/2021	01/09/2021	02/05/2021	
		COVID-19 (CVX 213)	01/02/2021	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>



Current age > 18 years of age with administration of Dose 1 as COVID-19 Unspecified	DOB: 01/01/1980	COVID-19 (CVX 213)	12/12/2020	Y	01/09/2021	01/09/2021	02/05/2021	Dose 2 forecast is 28 days from Dose 1.
<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>
Current age < 18 years of age with administration of Dose 1 as COVID-19 Unspecified. Dose 2 as Pfizer COVID-19 administered 20 days from Dose 1.	DOB: 01/01/2004	COVID-19 (CVX 213)	12/12/2020	Y	01/01/2022	01/01/2022	01/28/2022	Dose 2 forecast is at 18 <sup>th</sup> birthdate
		COVID-19 (CVX 208)	01/01/2021	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>
Current age > 16 years of age with administration of Dose 1. Dose 2 administered 15 days after Dose 1.	DOB: 01/01/1980	COVID-19 (CVX 208)	12/12/2020	Y	01/02/2021	01/02/2021	01/29/2021	
		COVID-19 (CVX 208)	12/27/2020	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>
Current age < 16 years of age with administration of Dose 1. Dose 2	DOB: 01/01/2006	COVID-19 (CVX 208)	12/12/2020	Y	01/01/2022	01/01/2022	01/28/2022	Dose 2 rec date at 16 <sup>th</sup> birthday.

administered 15 days after Dose 1.		COVID-19 (CVX 208)	12/27/2020	Y				Complete
Test Scenario		Antigen	Vacc Date	Valid	Rec Date	Min Date	Past Due	Comment
Current age > 16 years of age with administration of HepB Dose 1 on 11/01/2020 and COVID Dose 1 on 12/12/2020.	DOB: 01/01/1980	Hepatitis B Adult (CVX 43)	11/01/2020	Y	11/29/2020	11/29/2020	11/29/2020	
		COVID-19 (CVX 208)	12/12/2020	Y	01/02/2021	01/02/2021	01/29/2021	HepB rec, min, past due dates will now display as 12/26/2020, 14 days after COVID Dose 1.
				Hepatitis B 12/26/2020	12/26/2020	12/26/2020		
		Hepatitis B Adult (CVX 43)	12/21/2020	Y	02/21/2021	02/21/2021	02/21/2021	COVID-19 rec, min dates will now display as 01/04/2021, 14 days after Hepatitis B Dose 2.
			COVID-19 01/04/2021	01/04/2021	01/31/2021			

## Known Issues for v5.25.2

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: A patient with no contraindication to Pertussis has Pediatric DT recorded in their immunization history and does not meet the definition of complete for Pertussis - Pediatric DT doses do not count towards series completion because it does not satisfy the Pertussis component. If the 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 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:

- Implementation and Configuration Guide 5.18.8
- ImmuCast 5.25.2 Release Notes