

U-500 Insulin Alert

MEDITECH PHA 5.6.7

EHR
Update

U-500 Insulin Alert

The purpose of this project is to alert an ordering practitioner to acknowledge orders for high-concentration (U-500) insulin.

This project utilizes a screen to direct practitioners to double check when ordering U-500 insulin, ensure the order is ordered as units, and consider switching patients from vial to pen at discharge.

In Pharmacy, the pharmacist will review the practitioner's response when verifying CPOE orders for this type of insulin. If the order is being entered within Pharmacy the pharmacist will be required to answer the PHA Order Entry screen as 'Yes' before filing the order as complete.

Provider Workflow

When ordering U-500 insulin with the POM Rule attached, the practitioner will receive a pop-up alert to double check that they are knowingly ordering U-500 insulin, ensure the order is ordered as units, and tell them that they should consider switching patients from vial to pen at discharge.

Screen Sample

U500 Insulin Alert - POM

Acknowledge high dose insulin:

- 1 Yes
- 2 No

You are placing an order for insulin U-500 (high concentration). The dose should be ordered as actual insulin units (NOT markings on the syringe). Please check the patient's dose and consider switching any patients using U-500 insulin in a vial to the PEN at discharge.

Select 'Yes' to continue once order has been reviewed or 'No' to Cancel.

Acknowledge high dose insulin: *

(End)

They will need to acknowledge the alert as 'Yes' before proceeding with submission of the order.

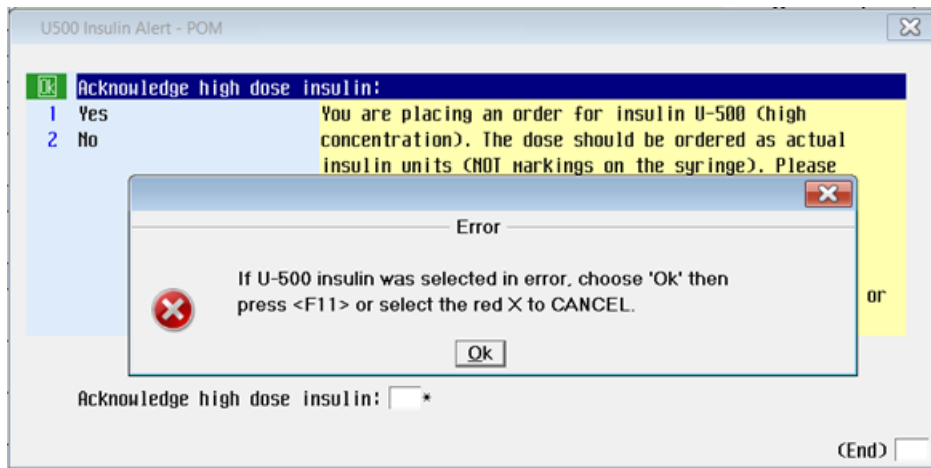
If the practitioner answers 'No' to the query they will get a message asking if the insulin was ordered in error and the steps to cancel the order, if so. The 'No' response will be removed after clicking the Ok button and the answer reentered. Only a response of 'Yes' will allow the order to be submitted.



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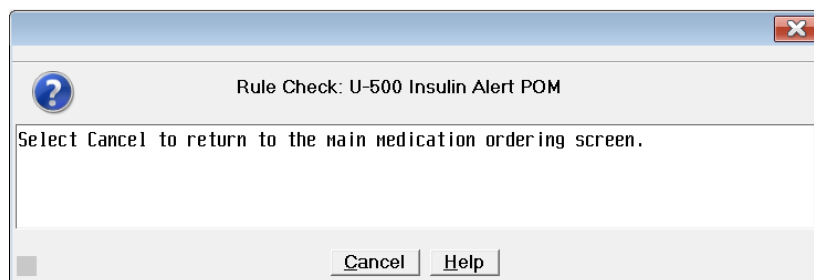
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Screen Sample



At any point during the ordering process, the provider can choose to exit the screen using <F11>, closure through <X>, or <Esc> key. After doing so, they will receive the Rule Check box, warning them that they will not be placing an order:

Screen Sample




Pharmacy Workflows

CPOE Order Verification

Orders placed through CPOE will require the pharmacist to review and acknowledge the text of the message displayed to the provider, as well as their response, prior to verifying U-500 High Concentration insulin orders.

Screen Sample

U-500 Insulin Alert



Prompt reviewed by provider prior to ordering:

You are placing an order for insulin U-500 (high concentration). The dose should be ordered as actual insulin units (NOT markings on the syringe). Please check the patient's dose and consider switching any patients using U-500 insulin in a vial to the PEN at discharge.

Acknowledge high dose insulin: Yes

Have you reviewed the above information?

The alert will fire at the DOSE field and the user must respond 'Yes' to the alert before proceeding with verification. Answering 'No' will return the user to the DOSE field of the order where the alert will continue to fire until it is answered as 'Yes'.

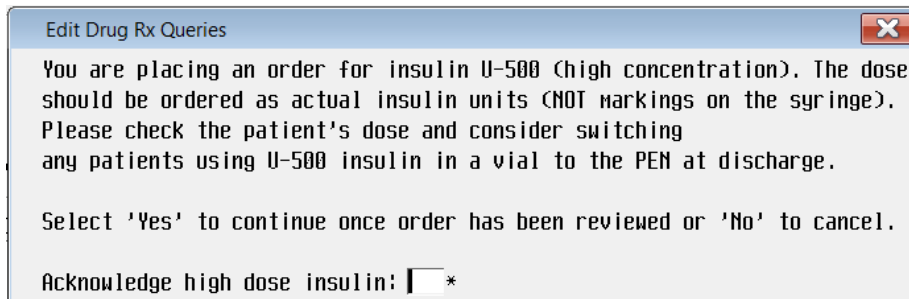
If the order needs to be put in pending status, the pharmacist will need to answer the acknowledgement alert with 'Yes' in order to proceed to that field on the ordering screen.

All information will be stored in the Print Order Audit. The provider's response is also stored in the Query field of the order and will not require further review prior to verifying the order.

Pharmacy Order Entry

When entering U-500 High Concentrate Insulin orders via PHA Order Entry, the user must complete the single required query in the PHA Order Entry screen before the order can be filed.

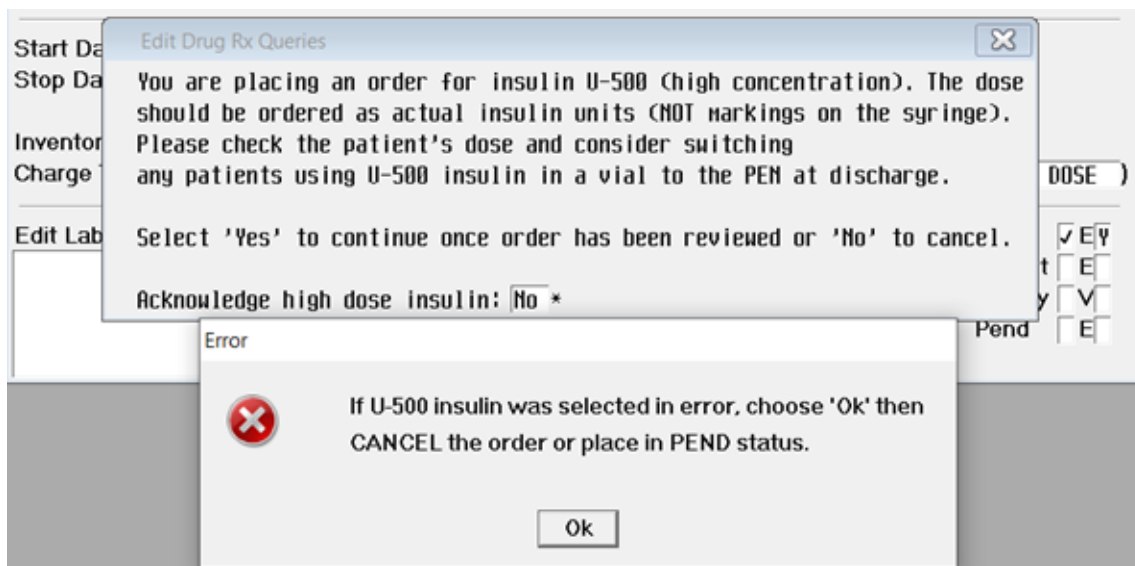
Screen Sample



The pharmacist will use the <F9> lookup to choose 'Yes' or 'No' from the group responses associated with the query field.

Answering 'No' displays an error message that instructs the user to cancel the order if the drug was chosen in error and instruct the user to cancel the order, if so.

Screen Sample



Only a response of 'Yes' in the acknowledgement screen will allow the pharmacist to file the order as complete. The pharmacist can PEND the order without a response and contact the provider, if necessary.

All the screen verbiage, query response and the pharmacist entering the order is recorded in the Print Order of the medication.

Insulin Dose/Route Alert

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Insulin Dose/Route Alert

The Insulin Dose/Route rule was created to display a message to the pharmacist for insulin orders with an order type of MED and a dose of ≥ 100 units with a route of SUBQ or on an order with a dose of >10 units with a route of IV.

Pharmacy Workflow Example

If the Pharmacist attempts to File an order with a MED order type and a dose of ≥ 100 units with a SUBQ route of administration or an order with a dose of >10 units with a route of administration of IV, the alert will instruct the user that the order should be set in a PEND status for further review by the facility if needed.

Workflow #1: Pharmacist attempts to file order for ≥ 100 units SUBQ Insulin

HCA.INSHD1 Alert Screen Sample

The screenshot shows the 'Edit Inpatient Medication Order' window. The patient information includes: Patient: COOLEY, INSULINHIGH; Acct #: J00021604093; Loc: J.PHP; U #: J000459267; Rx #: T042307; Ag/Sx: 39/M; Rm: J.PHA; Reg: 08/21/24; Order Dr: WILLIAMS, DOCTOR; Status: ADM IN; Bed: 29; DIS: ; Order Source: EPOM; Ord Type: M Medication; Med: HUMU1V1001 (Med, Dose, Route, Sig, Schedule, Par, PRN Reason, Total Doses); Clinical Indication: ; Dose: 100 (UNITS) Bulk? 1 ML PER DOSE; Route: SUBQ (Rule Check: High Dose Insulin Rule); Sig: AC HS 030; Schedule: SCH Par; Start Date: 08/22/; Stop Date: 09/19/; Inventory: PHA; Charge Type: NOCALC. An alert dialog box is displayed with the text: '>>>> ALERT - HIGH DOSE INSULIN WARNING <<<<< The SUBQ INSULIN DOSE for this order is 100 units or greater! PEND if clarification is needed. Continue? Yes No'. The bottom right of the window contains checkboxes for Rx Cmnts, Prep Instr, Spec Instr, Admin Crit, Lot/Dur/Exp, Query, Output, NF Qry, and Pend.



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Workflow #2: Pharmacy attempts to file order for >10 units IV Insulin

HCA.INSHD1 Alert Screen Sample

With either workflow:

- If the user chooses 'No', they will be returned to the order screen so that they can PEND the order.
- If the user chooses 'Yes', they will be allowed to verify the order.

If the order is verified by the pharmacist, the rule's information will be recorded in the Print Order audit trail:

Print Order Screen Sample

```

08/22/24 1705 - Verified by [redacted]
08/22/24 1705 - Rules At File by [redacted]
Eff: 08/22/24 1705
HUMU1001: HCA.INSHD1
HUMU1001: >>>> ALERT - HIGH DOSE INSULIN WARNING <<<<<
HUMU1001:
HUMU1001: The SUBQ INSULIN DOSE for this order is 100 units or greater!
HUMU1001:
HUMU1001: PEND if clarification is needed.
HUMU1001:
HUMU1001: Continue?
HUMU1001: Selected: Yes
HUMU1001: User: IPD [redacted]
    
```

Heparin Dose/Route Alert

MEDITECH PHA 5.6.7

EHR

Update

Heparin Dose/Route Alert

The heparin Dose/Route rule was created to alert the pharmacist if an order for heparin with a dose of 5000 or 7500 units was entered with a route of IV and is scheduled (SCH). This rule prevents potential medication errors by administering IV heparin on a scheduled basis, where orders are most likely meant to be administered SUBQ.

Pharmacy Workflow Example

If the Pharmacist attempts to File an order with a dose of 5000 or 7500 units and the route of administration is IV with a scheduled (SCH) order, the alert will instruct the user to verify the route of administration. The order should be set in a PEND status for further review by the facility if needed.

Workflow #1: Pharmacist attempts to file order with dose of 5000 units IV heparin

HCA.HEPSQ1 Alert Screen Sample

Edit Inpatient Medication Order

Patient	COOLEY, HEPARINHIGH	Acct #	J00021604117	Loc	J.PHP	U #	J000459269
Rx #	T042308	Ag/Sx	44/M	Rm	J.PHA	Reg	08/21/24
Order Dr	WILLIAMS, DOCTOR	Status	ADM IN	Bed	34	DIS	
Order Source	E						
Ord Type	M Medication						
Med	HEPARIN5006						
(Med, Dose, Route, Sig, Schedule, Par, PRN Reason, Total Doses)							
HEPARIN SODIUM, PORCINE 5,000 UNITS/ML VIAL							
(Rx ID <Prev Field>)							
Clinical Indication							
Dose	5,000	(UNITS)	Bulk?	<input type="checkbox"/>	1 ML PER DOSE		
Route	IV	Rule Check: Heparin Dose Route Rule					
Sig	Q12H	Verify HEPARIN route of administration.					
Schedule	SCH Pa	Heparin dose entered for 5000 units and a route of IV.					
		Please ensure this is part of a bolus/infusion order and not prophylaxis.					
		PEND if clarification is needed.					
		Continue?					
		<input type="button" value="Yes"/> <input type="button" value="No"/>					
Start Date	08/						
Stop Date	09/						
Inventory	PHA						
Charge Type	NOC						
Edit Label Comments?				Rx Cmnts	<input type="checkbox"/>	Query	<input type="checkbox"/>
				Prep Instr	<input checked="" type="checkbox"/>	Output	<input type="checkbox"/>
				Spec Instr	<input type="checkbox"/>	NF Qry	<input checked="" type="checkbox"/>
				Admin Crit	<input type="checkbox"/>	Pend	<input type="checkbox"/>
				Lot/Dur/Exp	<input checked="" type="checkbox"/>		



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Workflow #2: Pharmacy attempts to file order with dose of 7500 units IV heparin

HCA.HEPSQ1 Alert Screen Sample

Patient: COOLEY, HEPARINHIGH Acct #: J00021604117 Loc: J.PHP U #: J000459269
 Rx #: T042308 Ag/Sx: 44/M Rm: J.PHA Reg: 08/21/24
 Order Dr: WILLIAMS, DOCTOR Status: ADM IN Bed: 34 DIS:
 Order Source: [E]
 Ord Type: M Medication
 Med: HEPAIU5006
 (Med, Dose, Route, Sig, Schedule, Par, PRN Reason, Total Doses)
 HEPARIN SODIUM, PORCINE 5,000 UNITS/ML VIAL
 (Rx ID <Prev Field>)
 Clinical Indication:
 Dose: 7,500 (UNITS) Bulk? 1.5 ML PER DOSE
 Route: IV Rule Check: Heparin Dose Route Rule
 Sig: Q12H
 Schedule: SCH Pa
 Start Date: 08/ Stop Date: 09/ on Admin?
 Inventory: PHA Charge Type: NOC
 Edit Label Comments?
 Rx Cmnts: E Query: E
 Prep Instr: E Output: E
 Spec Instr: E NF Qry: V
 Admin Crit: E Pend: E
 Lot/Dur/Exp: E

With either workflow:

- If the user chooses 'No', they will be returned to the order screen so that they can PEND the order.
- If the user chooses 'Yes', they will be allowed to verify the order.

If the order is verified by the pharmacist, the rule's information will be recorded in the Print Order audit trail:

Print Order Screen Sample

```

08/22/24 1036 - Rules At File                               by [redacted]
                                                         Eff: 08/22/24 1036

HEPAIU5006: HCA.HEPSQ1
HEPAIU5006: Verify HEPARIN route of administration.
HEPAIU5006: Heparin dose entered for 7500 units and a route of IV.
HEPAIU5006: Please ensure this is part of a bolus/infusion order and not
              prophylaxis.

HEPAIU5006:
HEPAIU5006: PEND if clarification is needed.
HEPAIU5006:
HEPAIU5006:                               Continue?
HEPAIU5006: Selected: Yes
HEPAIU5006: User: IPD [redacted]

08/22/24 1036 - Rules At File                               by [redacted]
                                                         Eff: 08/22/24 1036
    
```


Gestational Age Medication Dosing

MEDITECH 5.6.7 PHA Update

EHR

Update

Gestational Age Dosing Updates for 2025.1 Release

For the 2025.1 Maintenance Release for Pharmacy, several updates have been made to the Gestational Age Dosing Screens, and these are outlined below:

1. Retired Ampicillin 50 mg/kg and Ampicillin 100 mg/kg and replaced with Ampicillin (Bacteremia) and Ampicillin (Meningitis) screens
2. Created screen for Penicillin G GBS Bacteremia
3. Created screen for Penicillin G GBS Meningitis
1. Created screen for Zosyn to only have Q8H option for everyone (removed attribute logic, same weight-based dose for all ages)
4. Created screen for Zidovudine PO HIV
5. Created screen for Fluconazole Inv Candidiasis
6. Made multiple changes to Dosing Chart:
 - a. Change all instances of "0-29" to " ≤ 29 "
 - b. Change ">44" to " ≥ 45 "

For general information about the Gestational Age Medication Dosing workflow, please see the following content further below in this document.

Gestational Age Medication Dosing

The Gestational Age Medication Dosing screens are designed to assist clinicians in ordering an initial appropriate dose and administration frequency for selected medications based on the applicable gestational, postmenstrual, and/or postnatal ages of neonatal patients. This educational document will walk the end-user through the step-by-step process of completing a Gestational Age Dosing screen for an applicable medication.

See the standard Gestational Age Dosing Chart for standard medications at the end of this document.



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Order Lookup

Any Order Lookup

Search on:

Preview/Edit Go to Favorites
Add to Favorites

Order Description	Category
Gest Age Amikacin	PHARMACY GEST AGE DOSE NONBILL
Gest Age Amikacin V2	PHARMACY GEST AGE DOSE NONBILL
Gest Age CeFAZolin	PHARMACY GEST AGE DOSE NONBILL
Gest Age Cefepime	PHARMACY GEST AGE DOSE NONBILL
Gest Age Cefotaxime	PHARMACY GEST AGE DOSE NONBILL
Gest Age Clindamycin	PHARMACY GEST AGE DOSE NONBILL
Gest Age Fluconazole	PHARMACY GEST AGE DOSE NONBILL
Gest Age Gentamicin	PHARMACY GEST AGE DOSE NONBILL
Gest Age Meropenem	PHARMACY GEST AGE DOSE NONBILL
Gest Age Meropenem Meningitis	PHARMACY GEST AGE DOSE NONBILL
Gest Age MetroNIDAZOLE	PHARMACY GEST AGE DOSE NONBILL
Gest Age Nafcillin	PHARMACY GEST AGE DOSE NONBILL
Gest Age Nafcillin Meningitis	PHARMACY GEST AGE DOSE NONBILL

More

Step 1: Choose the patient.

Step 2: Select an order set with gestational age dosing, or a gestational age dosing order pre-built in the Orders lookup.

Step 3: Press <Enter> or click "Done" to generate the Gestational Age Dosing Screen.

Dosing Screen Formats

Medications dosed using Postmenstrual age – Example

Gestational age (weeks): 25*(days): 6*

Postnatal age (days): 20

Postmenstrual age (weeks): 28

Amikacin dose: 12000 *12 mg/kg every 36 hours

PRESS <ENTER> OR CLICK 'OK' TO REFLEX ANTIBIOTIC ORDER

There are 3 Dosing Screens that are dependent upon the age that is entered:

- Postmenstrual age
 - Postmenstrual age will calculate once all components are available.

Medications dosed using Gestational age – Example

Gestational age (weeks): 29*(days): 3*

Postnatal age (days): 23

Fluconazole dose: 6024 *6 mg/kg every 24 hours

PRESS <ENTER> OR CLICK 'OK' TO REFLEX ANTIBIOTIC ORDER

- Gestational age
 - The Gestational age (weeks) and (days) fields are required.
 - If gestational age information is not available, it must be manually entered.
 - If gestational age information is available, that information will automatically populate into the gestational age fields.

Medications dosed using Postnatal age – Example

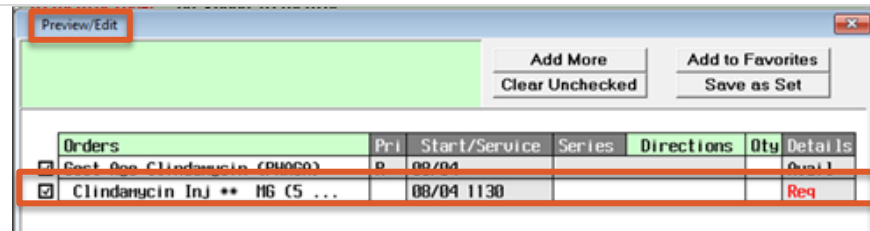
- Postnatal age
 - The postnatal age will automatically populate into the screen.

Gestational age update notification message

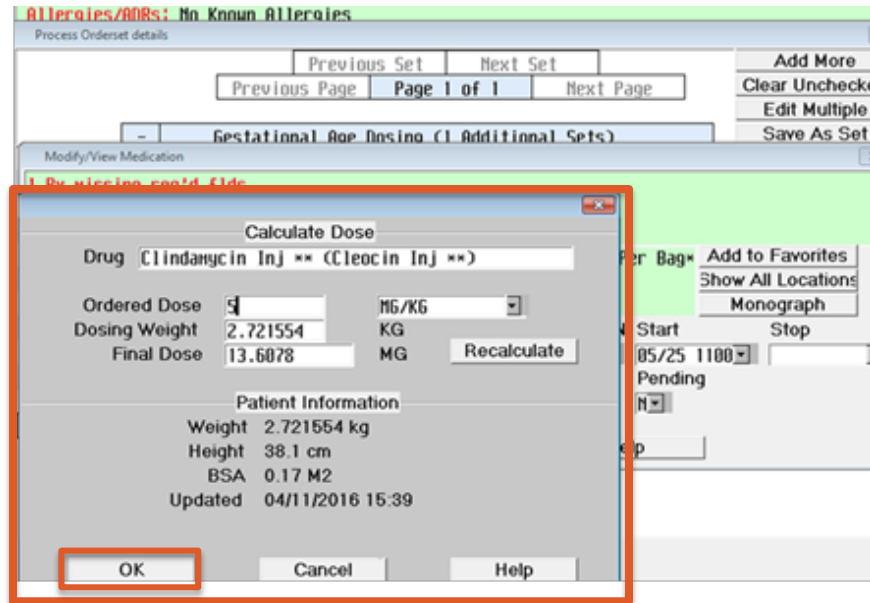
Note: Anytime a provider changes the Gestational age fields on the dosing screen, a message will be displayed (see image on left). If the Gestational age fields were blank prior to manually entering the information, no message displays.

Step 4: Once the dosing screen is complete with the necessary ages, press <Enter> or click “Ok” to reflex the medication order.

Step 5: You will be notified that a subsequent medication order has been reflexed

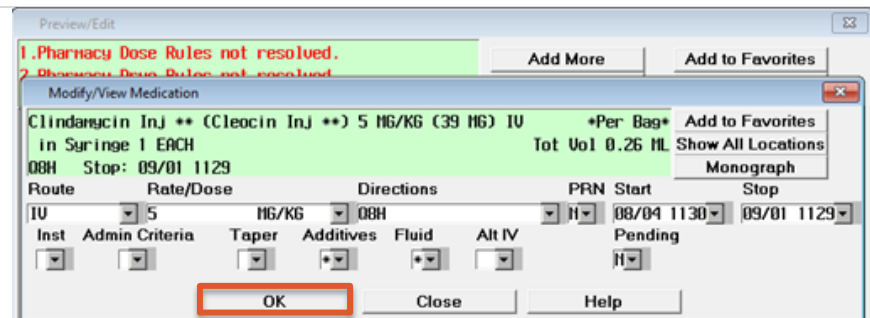


Step 6: The reflexed medication order will display on the Preview/Edit screen and may have required information to review.



Step 7: Within the Medication order, the Calculate Dose box will display. If needed, the dose or weight fields can be manually adjusted one last time.

Step 8: Press <Enter> or click "OK" to continue out of the Calculate Dose screen.




Step 9: Press <Enter> or click "OK" to continue out of the medication order screen.

GESTATIONAL, ONCE - 01M 14D/M DOB 04/11/16 ADM IN J.PHARM J.PHARM,
 38.1 cm 2.722 kg 0.17 m2 18.8 kg/m2 U/A J000424079/J000210092
 Allergies/ADRs: No Known Allergies

Current All Session

Category	Orders	Pri	Date/Time	Status	Stop	My
- New Orders (2)						
Gest Age Clindamycin (PHAGA)			05/25	New		*
Clindamycin Inj ** 14 MG (5 MG/KG) in Syringe 1 EACH IV Q8H 0.18 MLS/HR			05/25 1100	New		*

* Allergi
 View/Char
 Renew/Rep
 Hold/Res
 DC
 Undo
 Order Se
 Orders



Submit

Review Order Document Sign Desktop

Step 10: For final review, the order and medication order display as “New” on the patient profile.

Step 11: To complete the ordering process, press <Submit>.

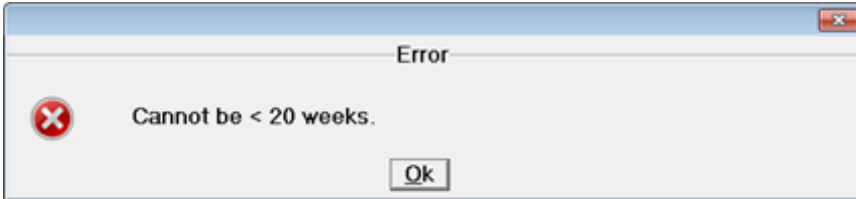
Note: When the ordering session is submitted, it will also file the Gestational Age (weeks) and (days) used during this session for any future orders and dosing of medications utilizing gestational age for this patient.

IMPORTANT: When a provider discontinues the medication, MEDITECH notifies the provider that the medication order is linked to a non-medication procedure. The order should also be discontinued. If the order is cancelled, the software logic wipes out the Gestational Age for future references in the Gestational Age Dosing tool.

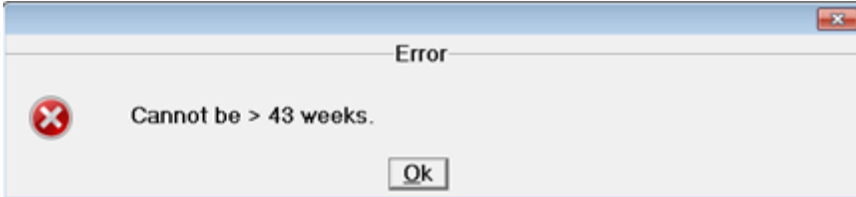
The provider then must define the Gestational Age again even if it was previously saved within the dosing tool.

Error Messages

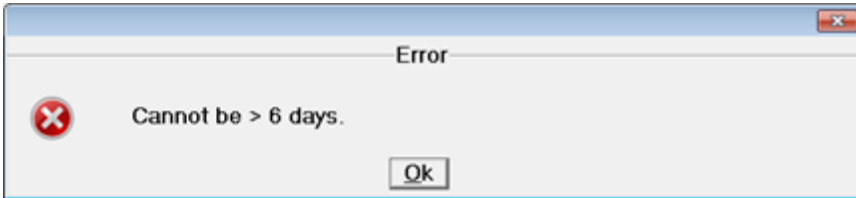
Gestational age (weeks): Error Message "< 20 weeks"



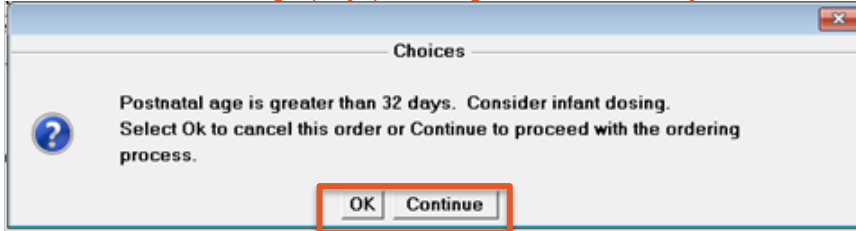
Gestational age (weeks): Error Message "> 43 weeks"



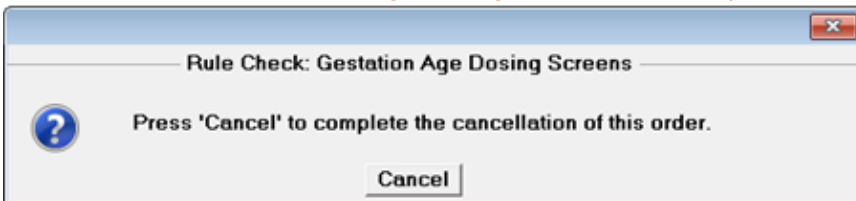
Gestational age (days): Error Message "> 6 days"



Postnatal Age (days): Alert "greater than X# days".



Rule Check: Gestational Age Dosing Screen "Cancel" option.



A few error messages could display during the gestational age medication ordering process if the age entered is not within the established boundaries.

- The gestational age (weeks) field will not accept a value of less than 20 weeks or greater than 43 weeks.
- The gestational age (days) field will not accept a value of more than 6.

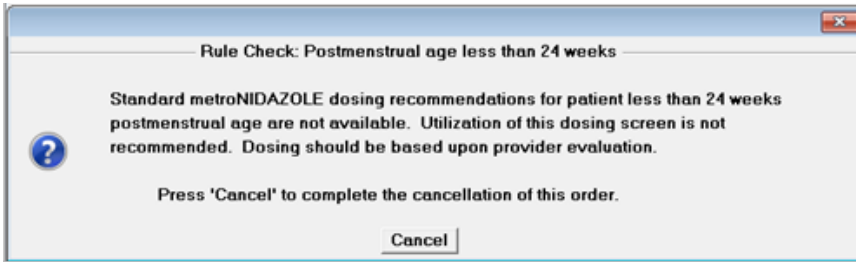
Based on your facility's Postnatal age (days) background settings, you may receive an alert to consider infant dosing instead.

Note: The example shown has the age set at 32 days.

Selecting "Continue" will return the user back to the calculations screen. Selecting "OK" will result in a final confirmation message to cancel the order.

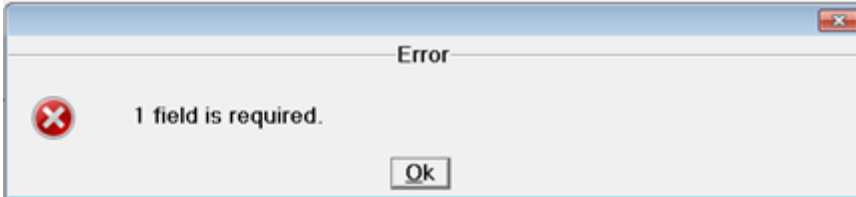
MetroNIDAZOLE ONLY: The postmenstrual age (weeks) field will not allow a calculation of less than 24 weeks and generate an alert.

MetroNIDAZOLE ONLY Rule Check: Postmenstrual age less than 24 weeks "Cancel" screen



If the dosing screen is missing information (e.g., the gestational age), an error message will display as shown.

Error Message "field required"



Gestational Age Dosing Chart

Note: Most of the medications listed below use postmenstrual age for dosing.

Fluconazole, Meropenem, and Meropenem meningitis use Gestational Age for dosing.

Cefepime, Ampicillin (Meningitis), Penicillin G GBS Bacteremia, and Penicillin G GBS Meningitis uses only Postnatal Age for dosing.

Key:

PMA – Postmenstrual Age

GA – Gestational Age

Reference for all dosing: NeoFax online (accessed 5/4/22) Dosing approval granted by the Pediatric Pharmacy Advisory Board.

Medication	PMA (weeks)	Postnatal Age (days)	Dose (mg/kg)	Interval (hours)
Amikacin	</=29	0-7	14	48
	</=29	8-28	12	36
	</=29	>/= 29	12	24
	30-34	0-7	12	36
	30-34	>/= 8	12	24
	>/= 35	All	12	24
Ampicillin (Bacteremia) (Gestational Age only)	GA (weeks)	Postnatal Age (days)	Dose (mg/kg)	Interval (hours)
	</= 34	0-7	50	12
	</= 34	> 7	75	12
	> 34	All	50	8
Ampicillin (Meningitis) (Postnatal Age only)	GA (weeks)	Postnatal Age (days)	Dose (mg/kg)	Interval (hours)
	All	0-7	100	8
	All	> 7	75	6

CeFAZolin	PMA (weeks)	Postnatal Age (days)	Dose (mg/kg)	Interval (hours)
	</= 29	0-28	25	12
	</= 29	>28	25	8
	30-36	0-14	25	12
	30-36	>14	25	8
	37-44	0-7	25	12
	37-44	>7	25	8
	>/= 45	All	25	6

Cefepime (Postnatal Age only)	GA (weeks)	Postnatal Age (days)	Dose (mg/kg)	Interval (hours)
	All	</= 28	30	12
	All	>28	50	12
Cefotaxime	PMA (weeks)	Postnatal Age (days)	Dose (mg/kg)	Interval (hours)
	All	< 7	50	12
	< 32	>/= 7	50	8
	>/= 32	>/= 7	50	6

Clindamycin	PMA (weeks)	Postnatal Age (days)	Dose (mg/kg)	Interval (hours)
	</=29	0-28	5	12
	</=29	>28	5	8
	30-36	0-14	5	12
	30-36	>14	5	8
	37-44	0-7	5	12
	37-44	>7	5	8
	>/= 45	All	5	6
Clindamycin Necro Entero	PMA (weeks)	Postnatal Age (days)	Dose (mg/kg)	Interval (hours)
	</=29	0-28	7.5	12
	</=29	>28	7.5	8
	30-36	0-14	7.5	12
	30-36	>14	7.5	8
	37-44	0-7	7.5	12
	37-44	>7	7.5	8
	>/= 45	All	7.5	6
Fluconazole	GA (weeks)	Postnatal Age (days)	Dose (mg/kg)	Interval (hours)
	</=29	0-14	6	48
	</=29	>14	6	24
	>=30	0-7	6	48
	>=30	>7	6	24

Fluconazole Inv Candidiasis	GA (weeks)	Postnatal Age (days)	Dose (mg/kg)	Interval (hours)
	</= 29	0-14	12	48
	</= 29	>14	12	24
	>/=30	0-7	12	48
	>/=30	>7	12	24
Gentamicin	PMA (weeks)	Postnatal Age (days)	Dose (mg/kg)	Interval (hours)
	</=29	0-7	5	48
	</=29	8-28	4	36
	</=29	>=29	4	24
	30-34	0-7	4.5	36
	30-34	>=8	4	24
	>=35	All	4	24
Meropenem (Intra-abdominal and non-CNS infections)	GA (weeks)	Postnatal Age (days)	Dose (mg/kg)	Interval (hours)
	<32	<14	20	12
	<32	>/= 14	20	8
	>/= 32	<14	20	8
	>/= 32	>/= 14	30	8
Meropenem (Bacterial Meningitis)	GA (weeks)	Postnatal Age (days)	Dose (mg/kg)	Interval (hours)
	<32	<14	40	12
	<32	>/= 14	40	8
	>/= 32	All	40	8
Metronidazole	PMA (weeks)	Postnatal Age (days)	Dose (mg/kg)	Interval (hours)
	24-25	All	7.5	24
	26-27	All	10	24
	28-33	All	7.5	12
	34-40	All	7.5	8
	>/= 45	All	7.5	6
Nafcillin (Non-Meningitis)	PMA (weeks)	Postnatal Age (days)	Dose (mg/kg)	Interval (hours)
	</= 29	0-28	25	12
	</= 29	>28	25	8
	30-36	0-14	25	12
	30-36	>14	25	8
	37-44	0-7	25	12
	37-44	>7	25	8
	>/= 45	All	25	6

Nafcillin (Meningitis)	PMA (weeks)	Postnatal Age (days)	Dose (mg/kg)	Interval (hours)
	</= 29	0-28	50	12
	</= 29	>28	50	8
	30-36	0-14	50	12
	30-36	>14	50	8
	37-44	0-7	50	12
	37-44	>7	50	8
	>/= 45	All	50	6

Oxacillin (Non-Meningitis)	PMA (weeks)	Postnatal Age (days)	Dose (mg/kg)	Interval (hours)
	</= 29	0-28	25	12
	</= 29	>28	25	8
	30-36	0-14	25	12
	30-36	>14	25	8
	37-44	0-7	25	12
	37-44	>7	25	8
	>/= 45	All	25	6

Oxacillin (Meningitis)	PMA (weeks)	Postnatal Age (days)	Dose (mg/kg)	Interval (hours)
	</= 29	0-28	50	12
	</= 29	>28	50	8
	30-36	0-14	50	12
	30-36	>14	50	8
	37-44	0-7	50	12
	37-44	>7	50	8
	>/= 45	All	50	6

Penicillin G (Bacteremia)	PMA (weeks)	Postnatal Age (days)	Dose (units/kg)	Interval (hours)
	</= 29	0-28	50,000	12
	</= 29	>28	50,000	8
	30-36	0-14	50,000	12
	30-36	>14	50,000	8
	37-44	0-7	50,000	12
	37-44	>7	50,000	8
	>/= 45	All	50,000	6

Penicillin G (GBS Bacteremia)	GA (weeks)	Postnatal Age (days)	Dose (units/kg)	Interval (hours)
	All	0-7	50,000	12
	All	>7	50,000	8

Penicillin G (Meningitis)	PMA (weeks)	Postnatal Age (days)	Dose (units/kg)	Interval (hours)
	</= 29	0-28	100,000	12
	</= 29	>28	100,000	8
	30-36	0-14	100,000	12
	30-36	>14	100,000	8
	37-44	0-7	100,000	12
	37-44	>7	100,000	8
	>/= 45	All	100,000	6
Penicillin G (GBS Meningitis)	GA (weeks)	Postnatal Age (days)	Dose (units/kg)	Interval (hours)
	All	0-7	150,000	8
	All	>7	125,000	6
Tobramycin	PMA (weeks)	Postnatal Age (days)	Dose (mg/kg)	Interval (hours)
	</= 29	0-7	5	48
	</= 29	8-28	4	36
	</= 29	>/= 29	4	24
	30-34	0-7	4.5	36
	30-34	>/= 8	4	24
	>/= 35	All	4	24
Vancomycin (Non-Meningitis)	PMA (weeks)	Postnatal Age (days)	Dose (mg/kg)	Interval (hours)
	</=29	0-14	10	18
	</=29	>14	10	12
	30-36	0-14	10	12
	30-36	>14	10	8
	37-44	0-7	10	12
	37-44	>7	10	8
	>/= 45	All	10	6
Vancomycin (Meningitis)	PMA (weeks)	Postnatal Age (days)	Dose (mg/kg)	Interval (hours)
	</=29	0-14	15	18
	</=29	>14	15	12
	30-36	0-14	15	12
	30-36	>14	15	8
	37-44	0-7	15	12
	37-44	>7	15	8
	>/= 45	All	15	6

Zidovudine PO HIV	GA (weeks)	Postnatal Age (days)	Dose (mg/kg)	Interval (hours)
	<30	<=28	2	12
	<30	29-56	3	12
	<30	>56	12	12
	30-34	<15	2	12
	30-34	15-42	3	12
	30-34	>42	12	12
	>=35	<=28	4	12
	>=35	>28	12	12
Zosyn 100 mg/kg	GA (weeks)	Postnatal Age (days)	Dose (mg/kg)	Interval (hours)
	All	All	100	8

Edoxaban Verbiage Updates

MEDITECH PHA 5.6.7

EHR

Update

Edoxaban Verbiage Updates

All Direct Oral Anticoagulant (DOAC) medications have the potential to falsely elevate INR due to an interaction with the lab assay. An alert message will be added to the edoxaban screens' workflow to provide similar safety and ordering alert messaging for all DOACs. The same alert message from the apixaban and rivaroxaban screens' workflow for INR assay interaction will be applied to edoxaban.

Below are the screens where the verbiage has been updated. Note: for a review of the workflow for the original edoxaban project, please see the workflow section in the Administration Guide for the project.

Provider Indication Screen – Verbiage Update

Edoxaban - POM v1b J00021577022 DOAC,ADULT1

Rx Indication:

- 1 Nonvalvular Afib
- 2 VTE Treatment
- 3 Other

Criteria for patient receiving edoxaban:

- INR \leq 2.5 if warfarin received within last 7 days
- Order INR if no INR in last 24 hrs (inpt or outpt)
- If INR $>$ 2.5, hold edoxaban until INR \leq 2.5

Please be aware DOACs can falsely elevate INR due to interaction with assay.
Continue edoxaban if patient was not recently on warfarin, as appropriate.

Dose dependent on indication, renal function, and weight

- VTE indications, \leq 60 kg: 30 mg PO daily
- Nonvalvular Afib OR VTE indications w/ CrCl 15-50 mL/min: 30 mg PO daily
- Nonvalvular Afib OR VTE indications w/ CrCl $<$ 15 mL/min: Avoid use
- Nonvalvular Afib w/ CrCl $>$ 95 mL/min: Avoid use

Rx: Savaysa 60 MG PO DAILY SCH

Rx Indication: *

Other Rx Indication:

(End)




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Pharmacy Order Verification – DOSE field indication alert

Edoxaban Alert

 Indication selected by provider:
Nonvalvular Afib

Prompt presented to provider:
Criteria for patient receiving edoxaban:
INR \leq 2.5 if warfarin received within last 7 days
Order INR if no INR in last 24 hrs (inpt or outpt)
If INR > 2.5, hold edoxaban until INR \leq 2.5

Please be aware DOACs can falsely elevate INR due to interaction with assay.


Continue edoxaban if patient was not recently on warfarin, as appropriate.

Dose dependent on indication, renal function, and weight
VTE indications, \leq 60 kg: 30 mg PO daily
Nonvalvular Afib OR VTE indications w/ CrCl 15-50 mL/min: 30 mg PO daily
Nonvalvular Afib OR VTE indications w/ CrCl < 15 mL/min: Avoid use
Nonvalvular Afib w/ CrCl > 95 mL/min: Avoid use

Have you reviewed the above information?

Pharmacy Order Entry – MED field criteria alert

Edoxaban Alert

 Criteria for patient receiving edoxaban:
INR \leq 2.5 if warfarin received within last 7 days
Order INR if no INR in last 24 hrs (inpt or outpt)
If INR > 2.5, hold edoxaban until INR \leq 2.5

Please be aware DOACs can falsely elevate INR due to interaction with assay.

Continue edoxaban if patient was not recently on warfarin, as appropriate.

Dose dependent on indication, renal function, and weight
VTE indications, \leq 60 kg: 30 mg PO daily
Nonvalvular Afib OR VTE indications w/ CrCl 15-50 mL/min: 30 mg PO daily
Nonvalvular Afib OR VTE indications w/ CrCl < 15 mL/min: Avoid use
Nonvalvular Afib w/ CrCl > 95 mL/min: Avoid use

Have you reviewed the above information?

Dabigatran Verbiage Updates

MEDITECH PHA 5.6.7

EHR

Update

Dabigatran Verbiage Updates

All Direct Oral Anticoagulant (DOAC) medications have the potential to falsely elevate INR due to interaction with the lab assay. An alert message will be added to the dabigatran screens' workflow to provide similar safety and ordering alert messaging for all DOACs. The same alert message from the apixaban and rivaroxaban screens' workflow for INR assay interaction will be applied to dabigatran.

Below are the screens where the verbiage has been updated. Note: for a review of the workflow for the original dabigatran project, please see the workflow section in the Administration Guide for the project.

Provider Indication Screen – Verbiage Update

Dabigatran - POM v1b J00021577022 DOAC_ADULT1

Rx Indication:

- 1 Nonvalvular Afib
- 2 VTE Treatment
- 3 VTE Recurrence PPx
- 4 VTE PPx Hip Replacement
- 5 VTE PPx Knee Replacement
- 6 Other

Criteria for patient receiving dabigatran:

- INR less than 2 if warfarin received in the last 7 days
- Order INR if no INR in the last 24 hrs (inpt or outpt)
- If INR \geq 2, hold dabigatran until INR less than 2

Please be aware DOACs can falsely elevate INR due to interaction with assay.

Continue dabigatran if patient was not recently on warfarin, as appropriate.

Nonvalvular Afib with CrCl 15-30 mL/min: 75 mg PO BID
Nonvalvular Afib with CrCl less than 15 mL/min: Avoid use

Rx: Pradaxa 150 MG PO BID SCH

Rx Indication: *

Other Rx Indication:

(End)




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Pharmacy Order Verification – DOSE field indication alert

Dabigatran Alert

 Indication selected by provider:
Nonvalvular Afib

Prompt presented to provider:
Criteria for patient receiving dabigatran:
INR less than 2 if warfarin received in the last 7 days
Order INR if no INR in the last 24 hrs (inpt or outpt)
If INR \geq 2, hold dabigatran until INR less than 2

Please be aware DOACs can falsely elevate INR due to interaction with assay.


Continue dabigatran if patient was not recently on warfarin, as appropriate.

Nonvalvular Afib with CrCl 15-30 mL/min: 75 mg PO BID
Nonvalvular Afib with CrCl less than 15 mL/min: Avoid use

Have you reviewed the above information?

Pharmacy Order Entry – MED field criteria alert

Dabigatran Alert

 Criteria for patient receiving dabigatran:
INR $<$ 2 if warfarin received in the last 7 days
Order INR if no INR in the last 24 hrs (inpt or outpt)
If INR \geq 2, hold dabigatran until INR $<$ 2

Please be aware DOACs can falsely elevate INR due to interaction with assay.

Continue dabigatran if patient was not recently on warfarin, as appropriate.

Nonvalvular Afib with CrCl 15-30 mL/min: 75 mg PO BID
Nonvalvular Afib with CrCl $<$ 15 mL/min: Avoid use

Have you reviewed the above information?

COVID-19 Tocilizumab Indications Project Update

Tocilizumab is now an FDA approved treatment for COVID-19 for adult patients. EUA documentation is no longer required for adult patients (EUA documentation IS still required for pediatric patients). To help mitigate alert fatigue, due to additional steps and popups which are no longer needed, screens have been updated to reflect the approved status of Tocilizumab for COVID-19 treatment for adult patients, but still require EUA workflow for pediatric patients.

Workflow Examples

Ordering Provider

From an Order String

- When ordering tocilizumab, the provider will select a string.

Screen Sample

Strings for location: J.PHA

Tocilizumab Inj (Actemra Inj) IV *Per Bag*

Add to Favorites
Monograph
Show All Locations

Rate/Dose: 400
Directions: MG
PRN: ONCE
Start: 04/09 1545
Stop: [Empty]

Inst: [Empty] Admin Criteria: [Empty] Taper: [Empty] Additives: * [Empty] Fluid: [Empty] Alt IV: [Empty] Pending: N

400 MG ONCE NS 0.9% 100 ML

- Once the provider selects the string and clicks <Done>, they will receive the following Point-n-Click screen with a required Rx indication field.



Indication Screen Sample

Tocilizumab Indications POM v2 J00021328929 TOCIL,INDICATION

Rx Indication:

1 COVID-19	4 Scleroderma/Systemic Sclerosis
2 CAR T-Cell induced Cytokine Release Syndrome	5 Temporal arteritis
3 Juvenile-arthritis or rheumatoid arthritis	6 Other

Avoid Tocilizumab in the following patients:

Drug Precautions:	Diseases/conditions:
- On chronic steroids	- Active infections other than COVID-19
- On chronic methotrexate	- Active hepatic disease
- On immunosuppressive anti-rejection therapy	- Hepatitis B or C carriers
Lab Precautions:	- Active/High risk of GI/bowel perforation or complicated diverticulitis
- ANC < 500/mm ³	- Chronic immune suppressing conditions
- Platelets < 50,000/mm ³	- Pregnancy
- AST/ALT >5x upper limit of normal	

Rx: ACTEMRA 400 MG IV ONCE ONE

Rx Indication: *

Other Rx Indication: *

(End)

- If the provider selects **CAR T-Cell induced Cytokine Release Syndrome, Juvenile-arthritis or rheumatoid arthritis, Scleroderma/Systemic Sclerosis, or Temporal arteritis** as the indication, the screen automatically closes.
- If the provider selects **Other** as the indication, the Other Rx Indication field requires a free-text response. The provider can click the <Enter> key, <End> or <Ok> to complete the screen.

Screen Sample

Tocilizumab Indications POM v2 J00021328929 TOCIL,INDICATION

Other Rx Indication:
Enter free text.

Avoid Tocilizumab in the following patients:

Drug Precautions:	Diseases/conditions:
- On chronic steroids	- Active infections other than COVID-19
- On chronic methotrexate	- Active hepatic disease
- On immunosuppressive anti-rejection therapy	- Hepatitis B or C carriers
Lab Precautions:	- Active/High risk of GI/bowel perforation or complicated diverticulitis
- ANC < 500/mm ³	- Chronic immune suppressing conditions
- Platelets < 50,000/mm ³	- Pregnancy
- AST/ALT >5x upper limit of normal	

Rx: ACTEMRA 400 MG IV ONCE ONE

Rx Indication: Other *

Other Rx Indication: *

(End)

- If the provider selects **COVID-19** as the indication, they are taken to a new page to complete an attestation and EUA queries, if applicable.

Screen Sample

Tocilizumab Indication POM v2b J00021606404 TOCIL,INDICATION

Provider reviewed criteria for use and:

- 1 Patient meets criteria for use
- 2 Patient does not meet criteria for use

Review facility criteria for use prior to ordering for this patient.

- EUA use is only authorized for patients 2 years through 17 years of age.
- FDA approved for 18 years of age and older.
- ICU patients: Admitted to the ICU within the prior 24 hours requiring one of the following:
 - Mechanical ventilation, ECMO, noninvasive ventilation, or high-flow nasal cannula (HFNC) oxygen (>0.4 FiO2/30 L/min of oxygen flow).

Provider reviewed criteria for use and: *

Provider to discuss with patient/representative and document the following before ordering.

Patient/representative given FDA fact sheet for patient/parents/caregiver:

Patient/representative informed of alternatives to receiving this therapy:

Patient/representative informed therapy is unapproved & authorized by EUA:

Print English EUA: Print Spanish EUA: (End)

- Once the provider has reviewed the criteria and selected from the 2 options presented,
 - the screen will close for patients 18 years or older
 - the cursor will advance to the EUA queries for patients less than 18
 - Each of the EUA queries are required and only accept an answer of Yes.

Screen Sample

Tocilizumab Indications POM v2 J00021328929 TOCIL,INDICATION

Patient/representative given FDA fact sheet for patient/parents/caregiver:

- 1 Yes

In addition to the previously stated criteria the FDA REQUIRES EUA documentation.

The provider must address all items below prior to ordering.

Provider reviewed criteria for use and: *

Provider to discuss with patient/representative and document the following before ordering.

Patient/representative given FDA fact sheet for patient/parents/caregiver:

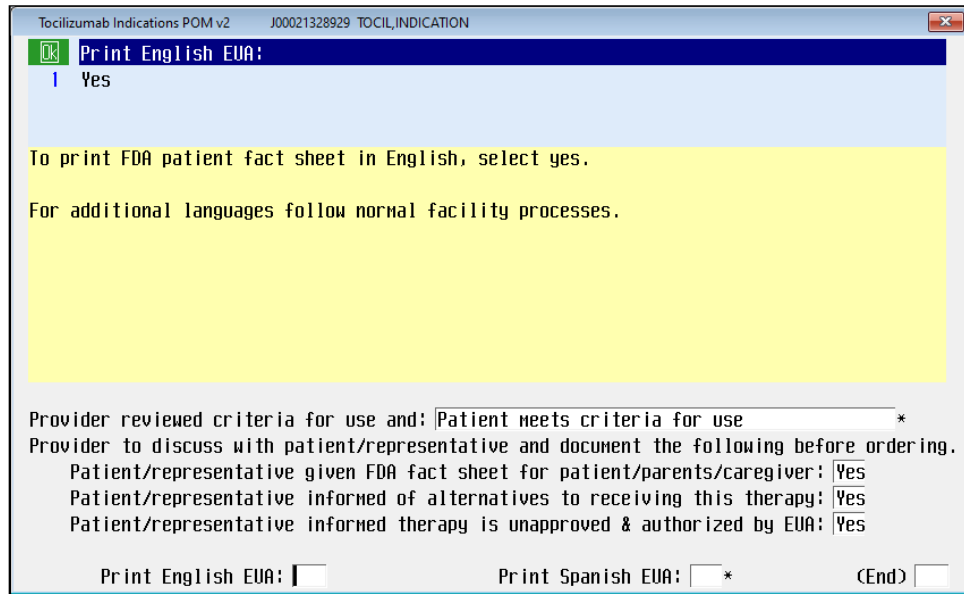
Patient/representative informed of alternatives to receiving this therapy:

Patient/representative informed therapy is unapproved & authorized by EUA:

Print English EUA: Print Spanish EUA: * (End)

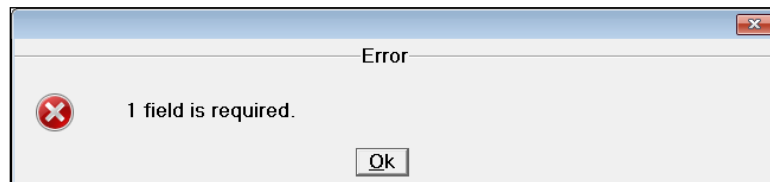
- After answering the EUA questions, the provider can print the patient fact sheet in either English or Spanish.

Screen Sample



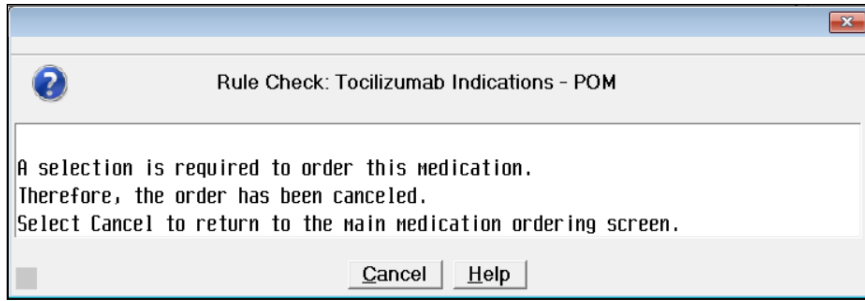
- The provider must select Yes in one of the Print queries. The EUA fact sheet opens in the default browser.
 - Once the respective page loads, the provider should print the EUA fact sheet and then return to MEDITECH to continue with the medication ordering process.
 - If the provider prints the EUA fact sheet in English, they must click <End>, <Ok> or <green checkmark> to complete the screen.
 - If the provider prints the Spanish EUA fact sheet, the screen will automatically close as the final field has been addressed and the provider may proceed with their ordering session.
- At any point, should the provider attempt to complete either the indication or attestation/EUA screens without all required fields being completed, as applicable, they receive an error message.

Screen Sample



- At any point during the ordering process, the provider can click the <red X> to close the screen. Doing so cancels the order, and the provider receives a notification as such.

Screen Sample

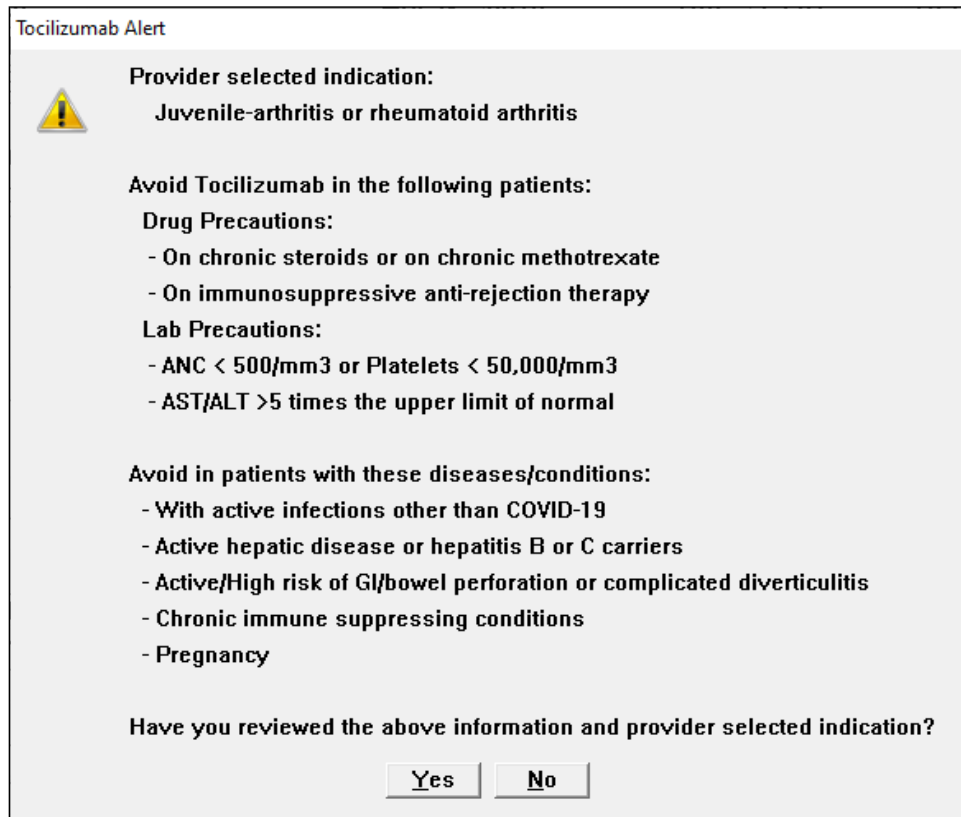


Pharmacy

Verifying an ePOM Order (CPOE)

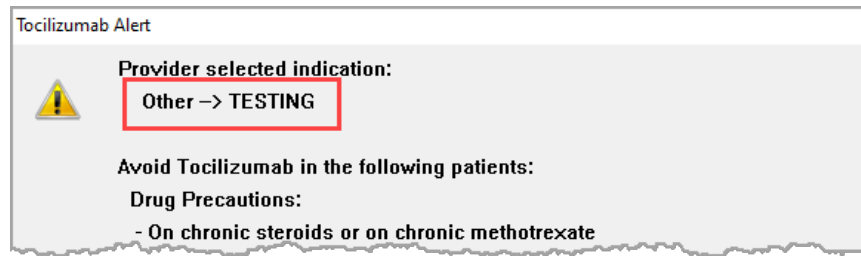
- As the pharmacist processes through an UNV order, at the DOSE field an alert message containing the provider-selected response will prompt for review. The information will show a little differently based on the indication the provider selected.
 - For **CAR T-Cell induced Cytokine Release Syndrome, Juvenile-arthritis or rheumatoid arthritis, Scleroderma/Systemic Sclerosis, or Temporal arteritis** indications, the following alert message presents to the pharmacist for review.

Screen Sample



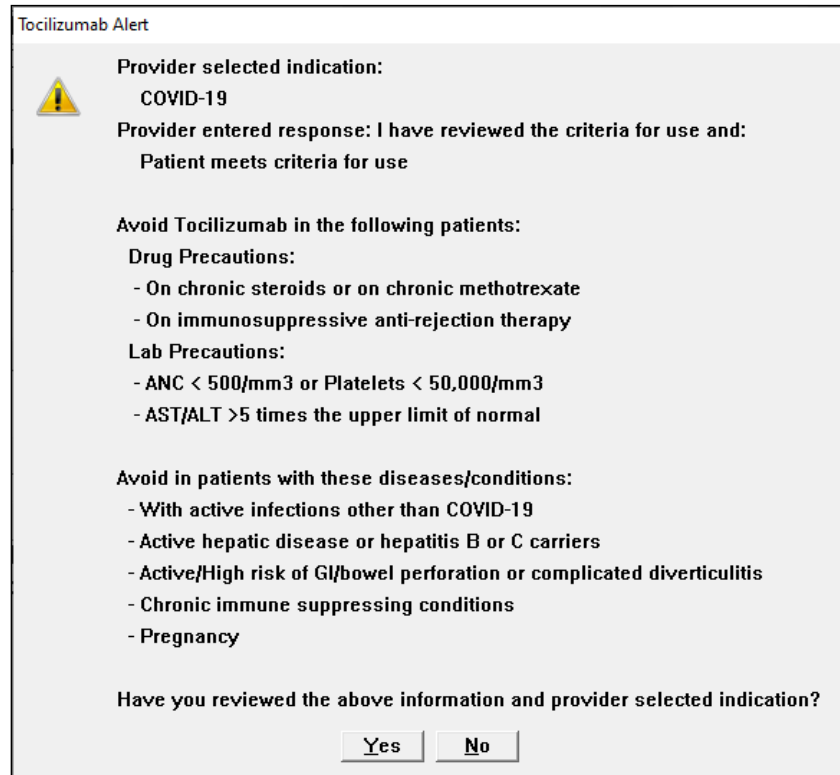
- For an indication of **Other**, the alert message to the pharmacist displays the same information as above and also includes the free-texted response from the provider.

Screen Sample



- For a **COVID-19** indication, the following alert message presents to the pharmacist for review.

Screen Sample




- On any of the alerts, the pharmacist can select <Yes> or <No> to continue but cannot bypass the screen by pressing the <Enter> key.
- The DOSE rule, along with all associated information in the alerts, is recorded in the Audit Trail.

PHA Order Entry

- When a pharmacist enters a NEW tocilizumab order through PHA Process Orders, he/she receives an alert message at the DOSE field containing general medication information.

Screen Sample

Tocilizumab Alert



Avoid Tocilizumab in the following patients:

Drug Precautions:

- On chronic steroids or on chronic methotrexate
- On immunosuppressive anti-rejection therapy

Lab Precautions:

- ANC < 500/mm³ or Platelets < 50,000/mm³
- AST/ALT >5 times the upper limit of normal

Avoid in patients with these diseases/conditions:

- With active infections other than COVID-19
- Active hepatic disease or hepatitis B or C carriers
- Active/High risk of GI/bowel perforation or complicated diverticulitis
- Chronic immune suppressing conditions
- Pregnancy

Have you reviewed the above information?

- The pharmacist can select <Yes> or <No> to continue but cannot bypass the message by pressing the <Enter> key.
- An indication is required on the Order Entry Query screen to complete an order. If the pharmacist attempts to file a new order that does not yet contain an indication, he/she will receive an error that a required field is missing.

Screen Sample



- After entering through the error, the cursor goes to the Query field where the pharmacist will type a Y in the Edit field to access the Order Entry Query field.

- They will then press <F9> in the Rx Indication field to select an indication.

Order Entry Query Screen Sample

Rx Indication:
 Other Rx Indication:
 --- COVID-19 Section as applicable ---
 Provider reviewed criteria for use and:
 ATTESTATION: FDA REQUIRES this documentation for EUA use.
 Provider to discuss with patient/representative and document the following before ordering.
 Patient/representative given FDA fact sheet for patient/parents/caregiver:
 Patient/representative informed of alternatives to receiving this therapy:
 Patient/representative informed therapy is unapproved & authorized by EUA:

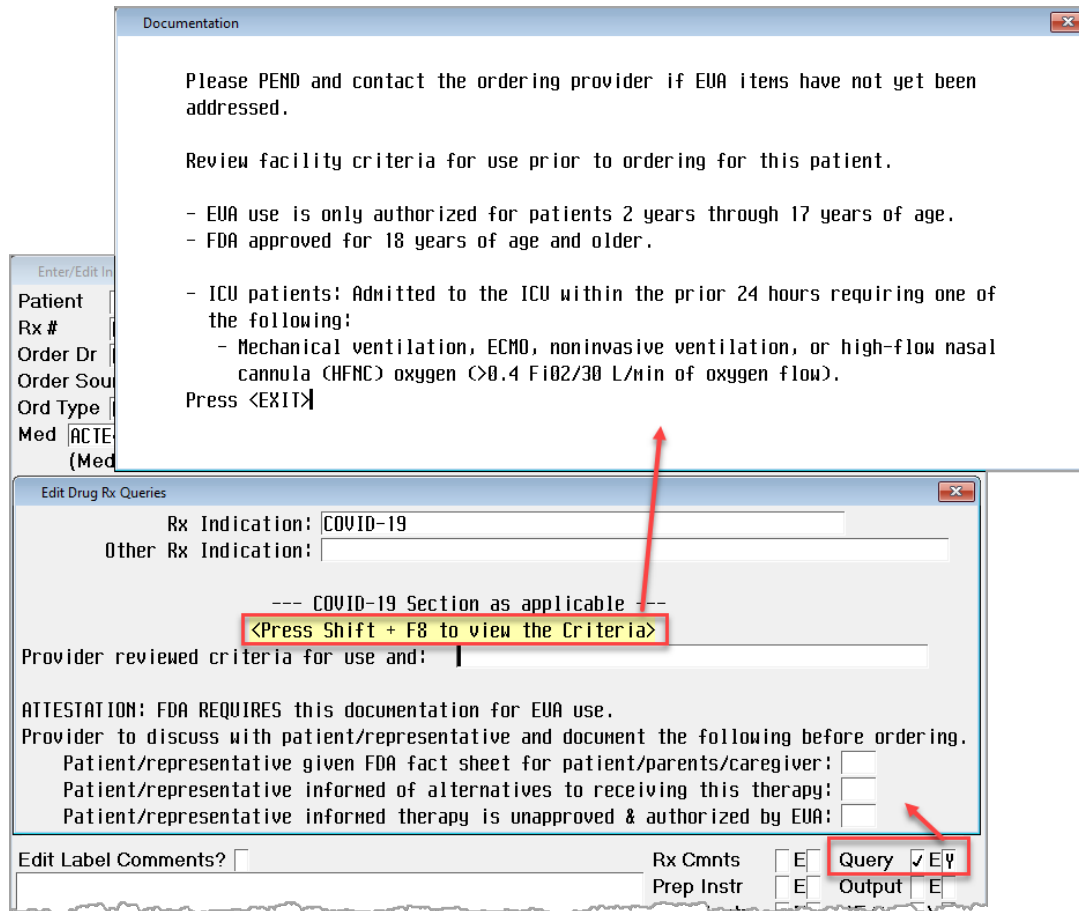
Indication Lookup Screen Sample

	Mnemonic	Responses
1	IN.COVID	COVID-19
2	IN.CRT	CAR-T induced CRS
3	IN.JARA	Juvenile/Rheuma Arthritis
4	IN.SCL	Scleroderm/Syst Sclerosis
5	IN.TART	Temporal arteritis
6	IN.zOTHER	Other

- If **CAR-T induced CRS**, **Juvenile/Rheuma Arthritis**, **Scleroderm/Syst Sclerosis**, or **Temporal arteritis** is selected as the indication, the screen will auto-close after the selection is made.
- If **Other** is selected as the indication, the Other Rx Indication field requires you to enter a free-text response. Next, press <Enter> or <F12> to complete the screen.

- If **COVID-19** is selected as the indication, the cursor advances to the “Provider reviewed criteria for use and:” field. Once the cursor is in this field, the highlighted text displays for the pharmacist directing them to press <Shift + F8> to view the COVID-19 criteria for use.

Screen Sample



- After selection is made, the screen will close if the patient is 18 years or older or remain open requiring completion of the EUA queries for patients less than 18.
- If the patient is less than 18 years old and the provider has not provided attestation that the patient meets criteria for use as well as EUA documentation, the pharmacist should PENDING the order and contact the ordering provider.
- All queries completed in the screen, along with the pharmacist review of the DOSE alert, will log in the Print Order.