11/18 Follow-Up

Updates

☑ Removed UTI, Skin, Enterococcal, Staph Epi from `Exclusions` on `LandingPage`

☑ Added 3rd dose option to `Labs/Levels` tab in `NewConsult`

☑ Tried to fix bug when changing `Load Dose` or `Maintenance Dose`

☑ Fixed a bug when trying to go straight to Post Levels and using a 1st dose strategy

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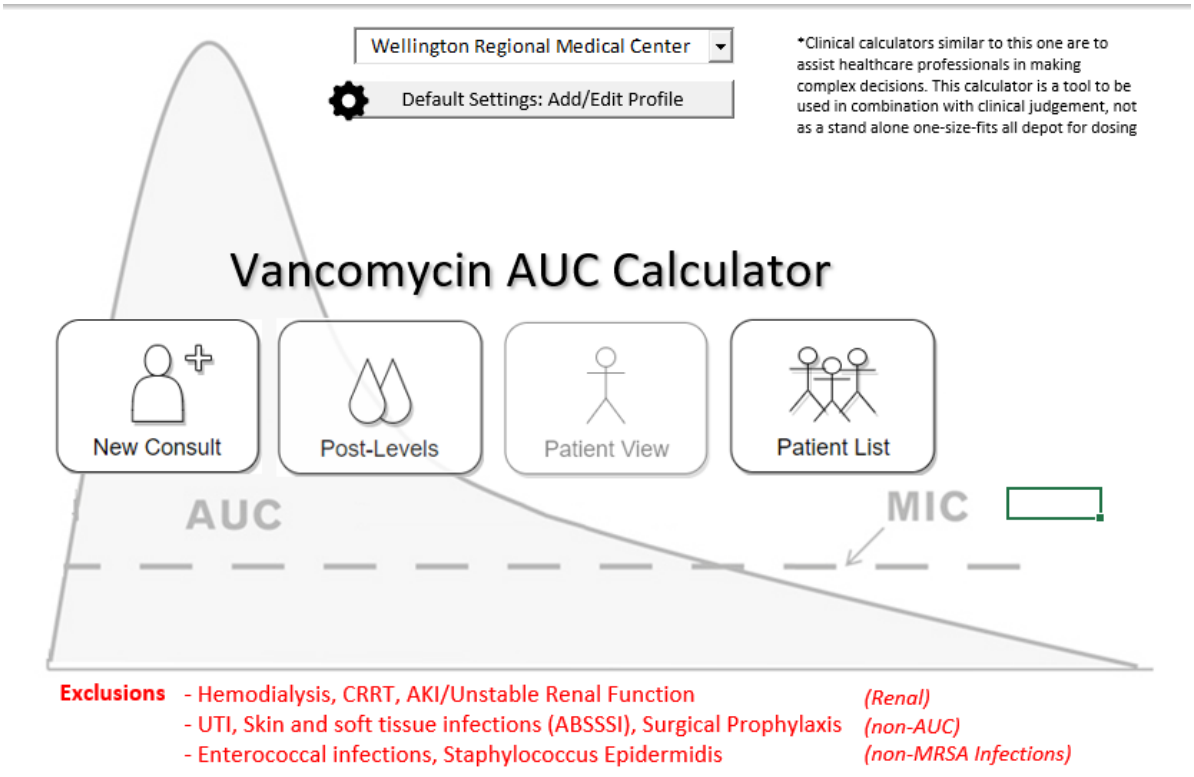
- current calculator version ***1.14.1***

Details and Screenshots of updates

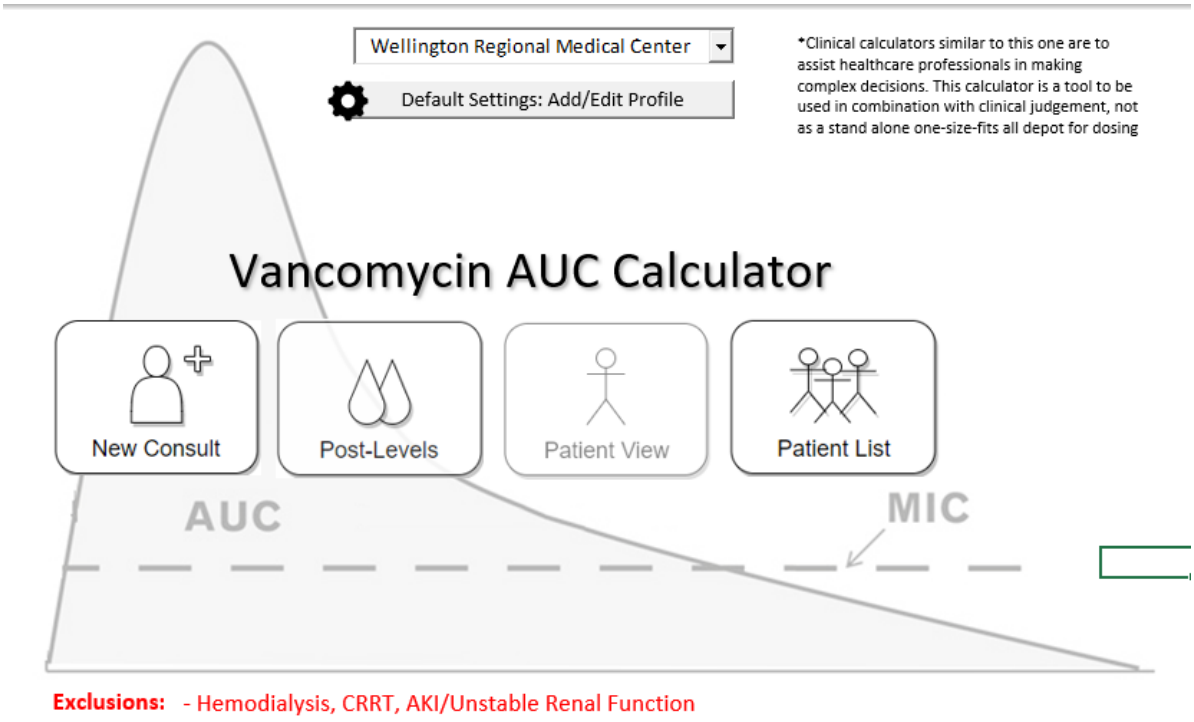
1.) ☑ Removed UTI, Skin, Enterococcal, Staph Epi from `Exclusions` on `LandingPage`

> could remove the UTI, Skin, Enterococcal, Staph epi from the EXCLUSION main page since we are expanding access to all of those within the calculator?

Before:



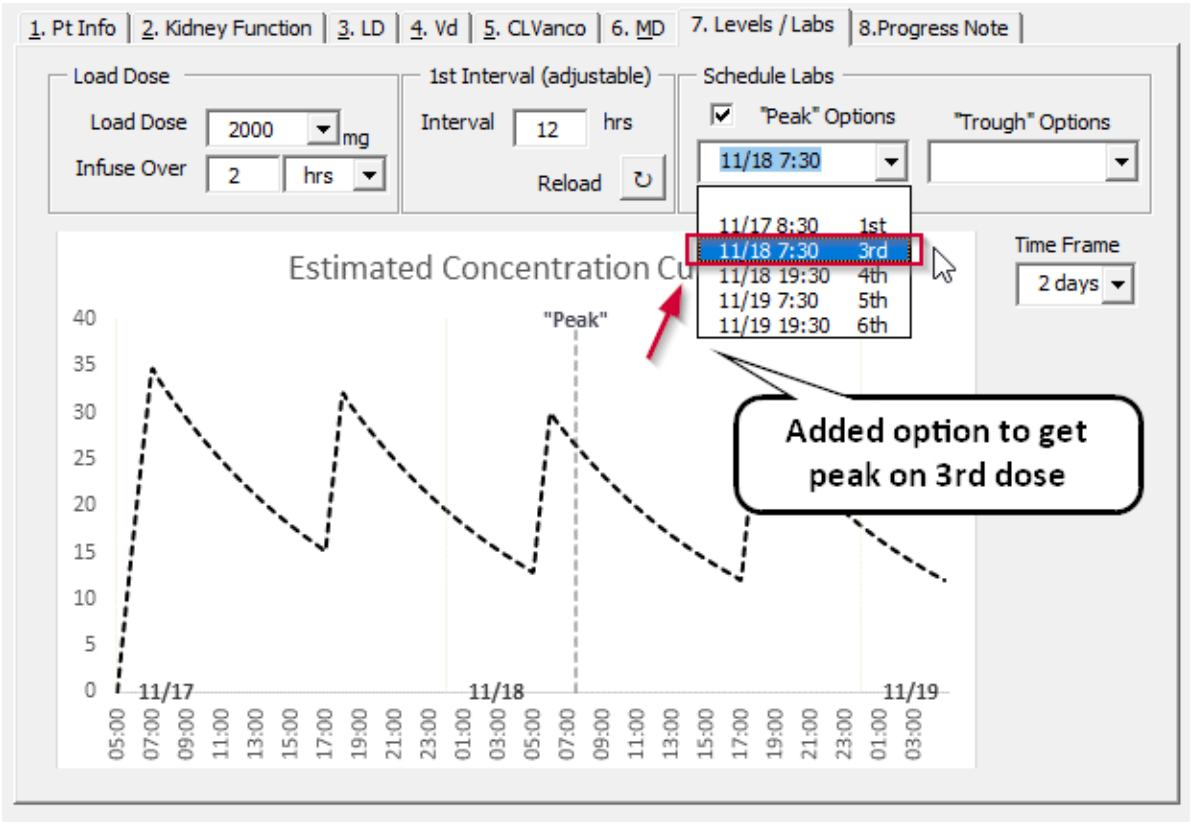
After:

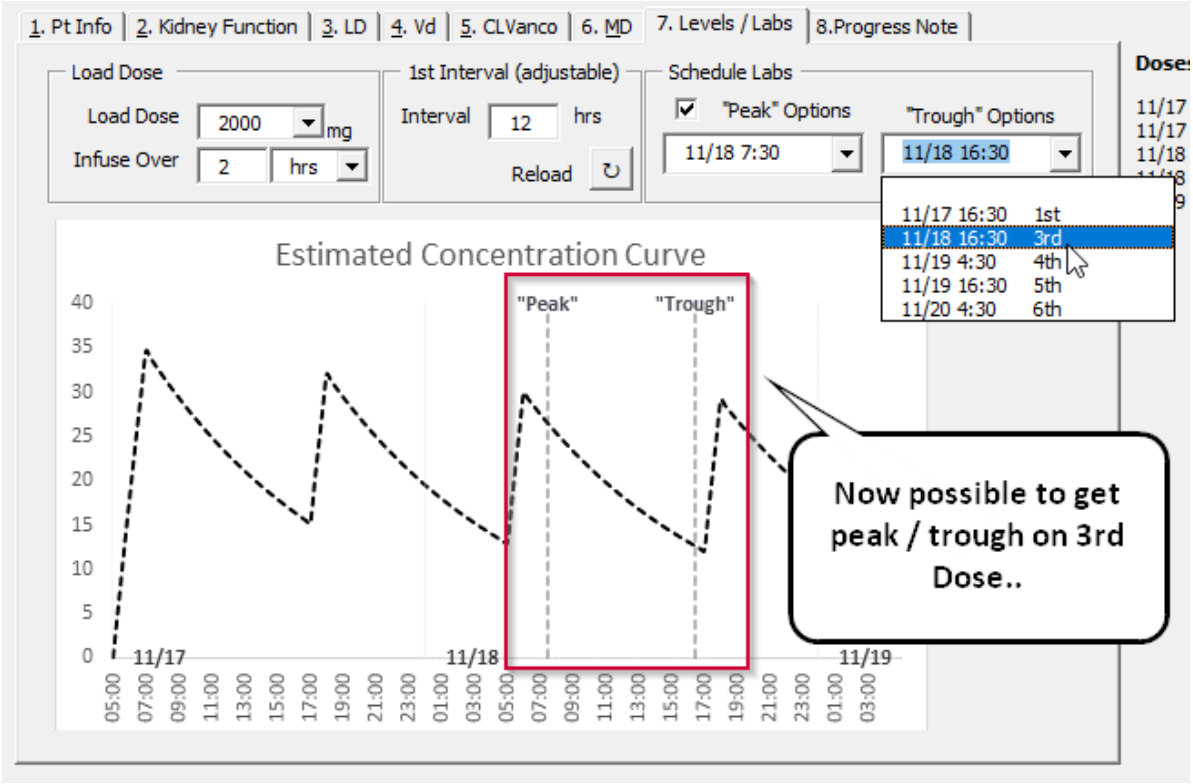


Exclusions: - Hemodialysis, CRRT, AKI/Unstable Renal Function

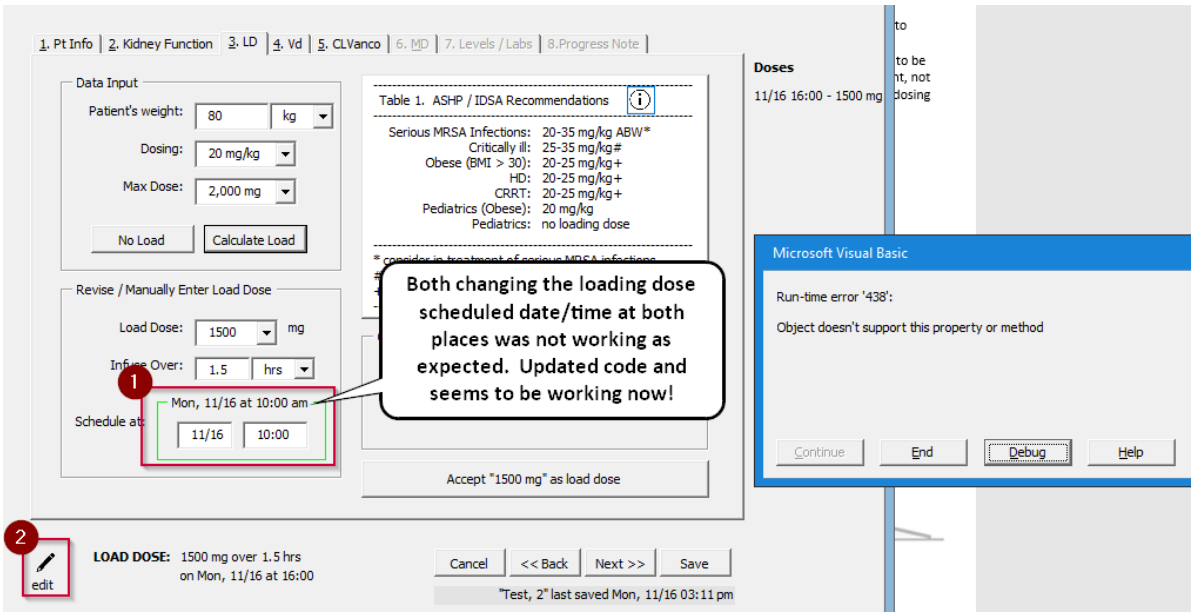
2.) ☑ Added 3rd dose option to `Labs/Levels` tab in `NewConsult`

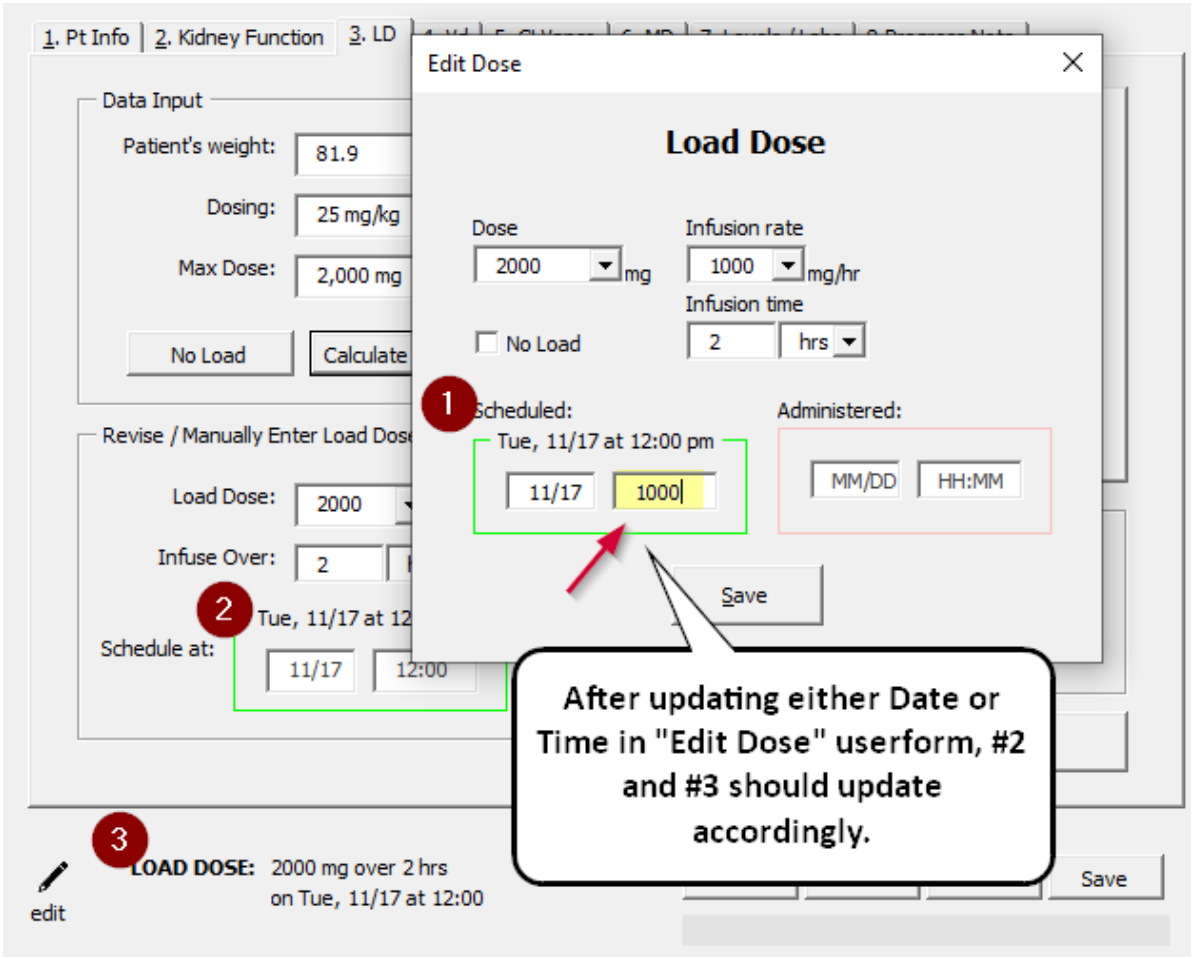
> Could you add the 3rd dose option below that Robin is talking about?

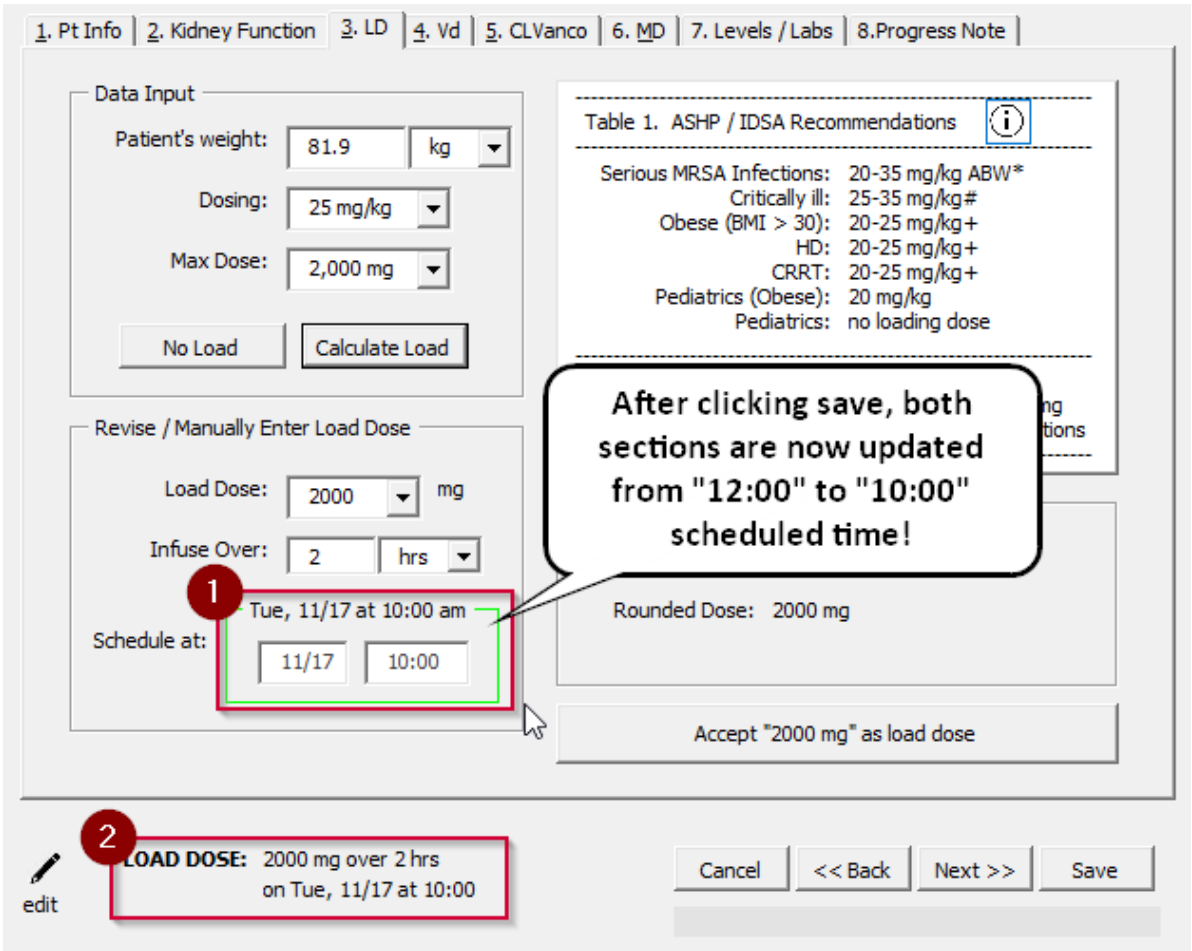




3.) ☑ Tried to fix bug when changing `Load Dose` or `Maintenance Dose`



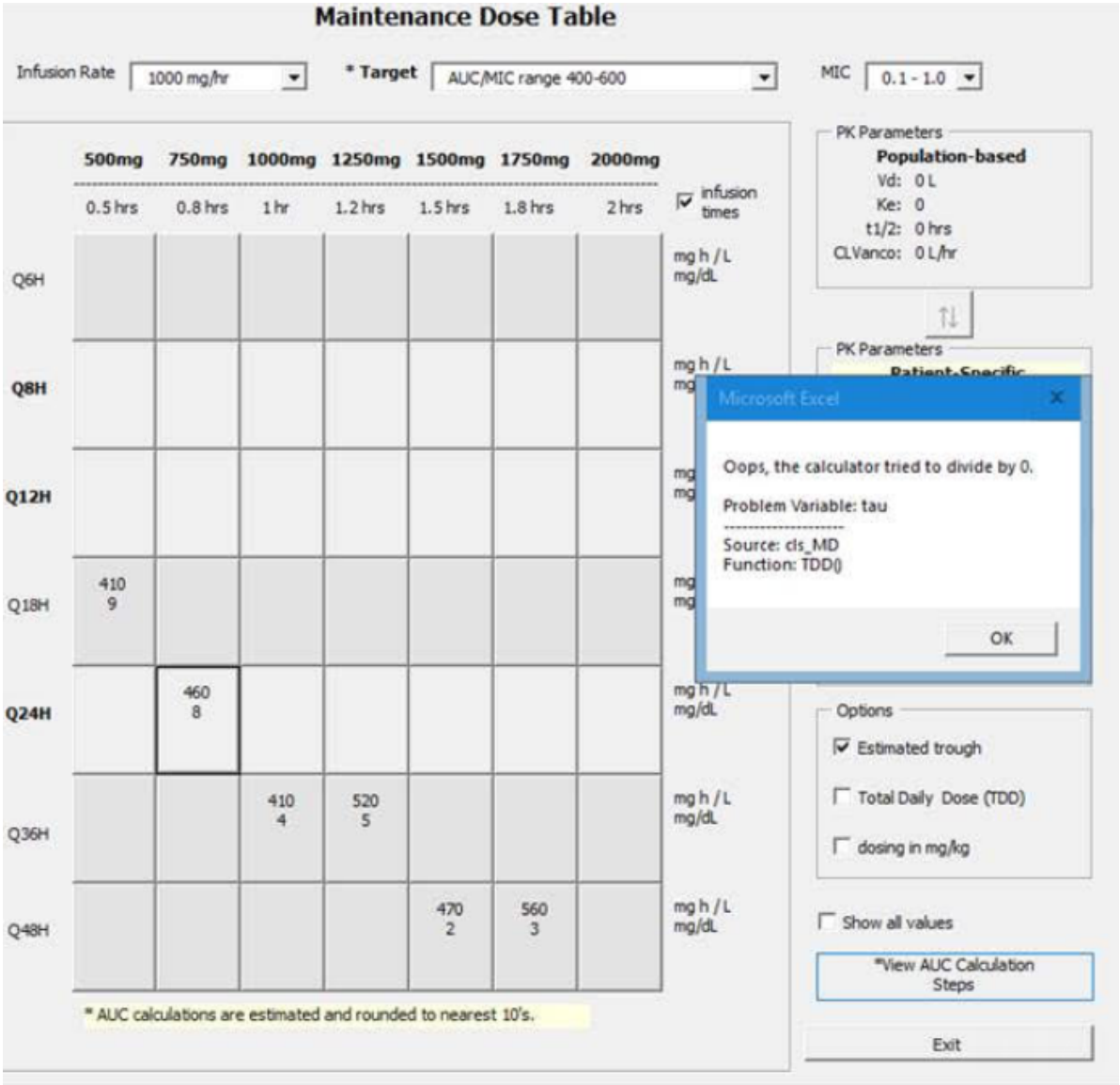

1. Pt Info
2. Kidney Function
3. LD
Edit Dose
Load Dose
Data Input
Patient's weight: 81.9
Dosing: 25 mg/kg
Max Dose: 2,000 mg
No Load
Calculate
Dose
2000 mg
Infusion rate
1000 mg/hr
Infusion time
2 hrs
No Load
1
Scheduled:
Tue, 11/17 at 12:00 pm
11/17
1000
Administered:
MM/DD
HH:MM
Save
Revise / Manually Enter Load Dose
Load Dose: 2000
Infuse Over: 2
2
Schedule at:
Tue, 11/17 at 12
11/17
12:00
After updating either Date or Time in "Edit Dose" userform, #2 and #3 should update accordingly.
3
LOAD DOSE: 2000 mg over 2 hrs
on Tue, 11/17 at 12:00
edit
Save


1. Pt Info
2. Kidney Function
3. LD
4. Vd
5. CLVanco
6. MD
7. Levels / Labs
8.Progress Note
Data Input
Patient's weight: 81.9 kg
Dosing: 25 mg/kg
Max Dose: 2,000 mg
No Load
Calculate Load
Table 1. ASHP / IDSA Recommendations
Serious MRSA Infections: 20-35 mg/kg ABW*
Critically ill: 25-35 mg/kg#
Obese (BMI > 30): 20-25 mg/kg+
HD: 20-25 mg/kg+
CRRT: 20-25 mg/kg+
Pediatrics (Obese): 20 mg/kg
Pediatrics: no loading dose
Revise / Manually Enter Load Dose
Load Dose: 2000 mg
Infuse Over: 2 hrs
1
Schedule at:
Tue, 11/17 at 10:00 am
11/17
10:00
After clicking save, both sections are now updated from "12:00" to "10:00" scheduled time!
Rounded Dose: 2000 mg
Accept "2000 mg" as load dose
2
LOAD DOSE: 2000 mg over 2 hrs
on Tue, 11/17 at 10:00
edit
Cancel
<< Back
Next >>
Save

4.) ☑ Fixed a bug when trying to go straight to Post Levels and using a 1st dose strategy

> Hi Kurt!
>
> I was just talking with Robin on some issues that have come up in training staff and in converting some of our patients from existing trough based dosing.
>
> One thing I have been able to do on existing patients who are already at steady state and being converted to AUC (which is likely to only occur in the beginning of the conversion to AUC dosing), is to just enter the New patient data in the “post levels” portion and go from there. This appears to work for the SS patients as you enter a frequency (tau) when entering the SS levels and dose info.
> When I was talking to Robin, we were thinking about a scenario where an overnight RPh starts a patient and then a dosing RPh comes in the next day and wants to get a 1st dose level – I was thinking she would be able to use the same strategy and bypass the “consult” since the load and initial levels were already done. However, it looks like since we’re getting the error below, it’s requiring that initial frequency from the consult to calculate the TDD.

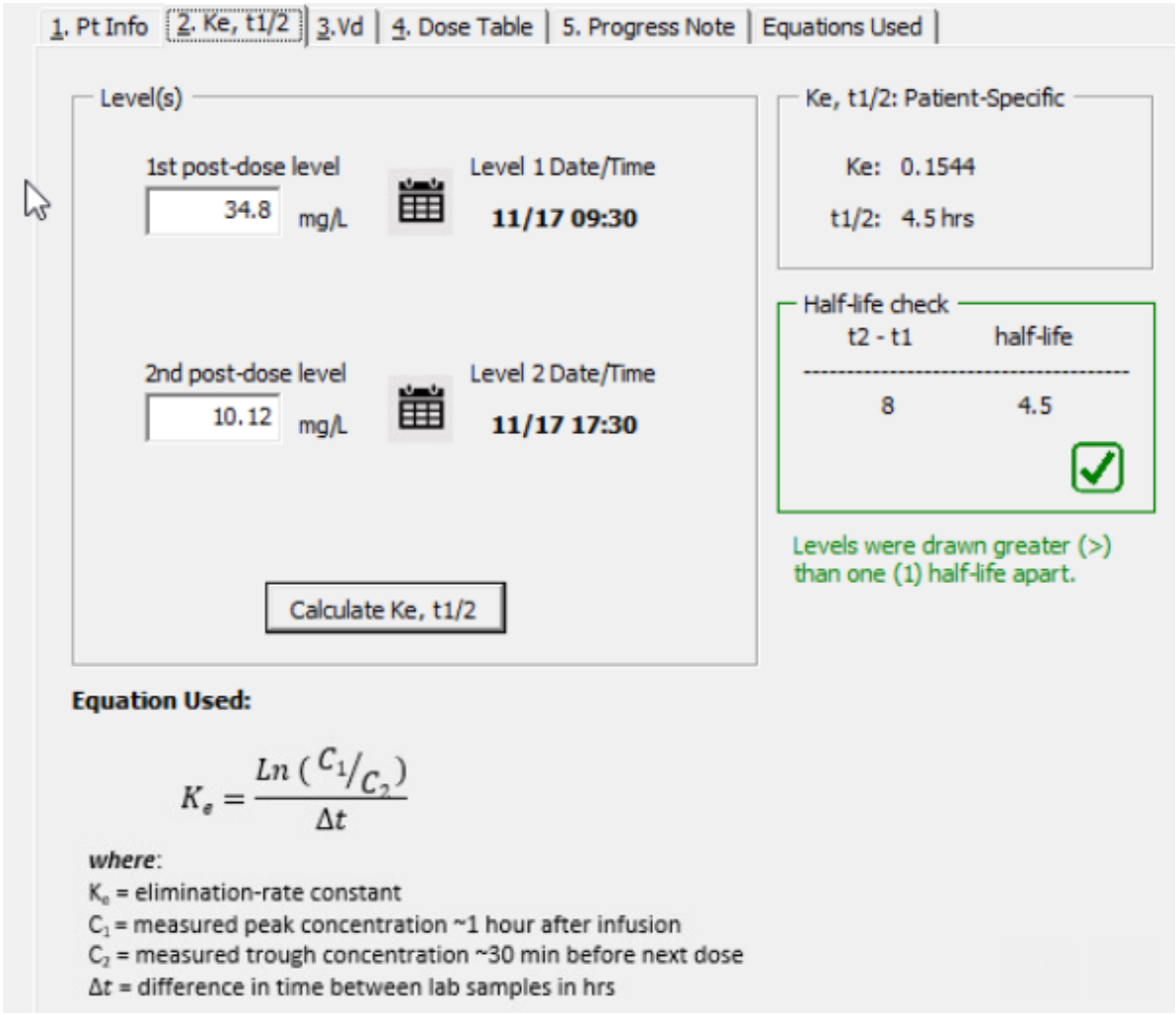
Here was the bug that was screenshotted:



Recreated tried to fix the error when going straight to post levels, doing a 1st dose strategy.

When starting, here's an example Post Dose levels I inputted:
1.) Ke / t1/2 tab

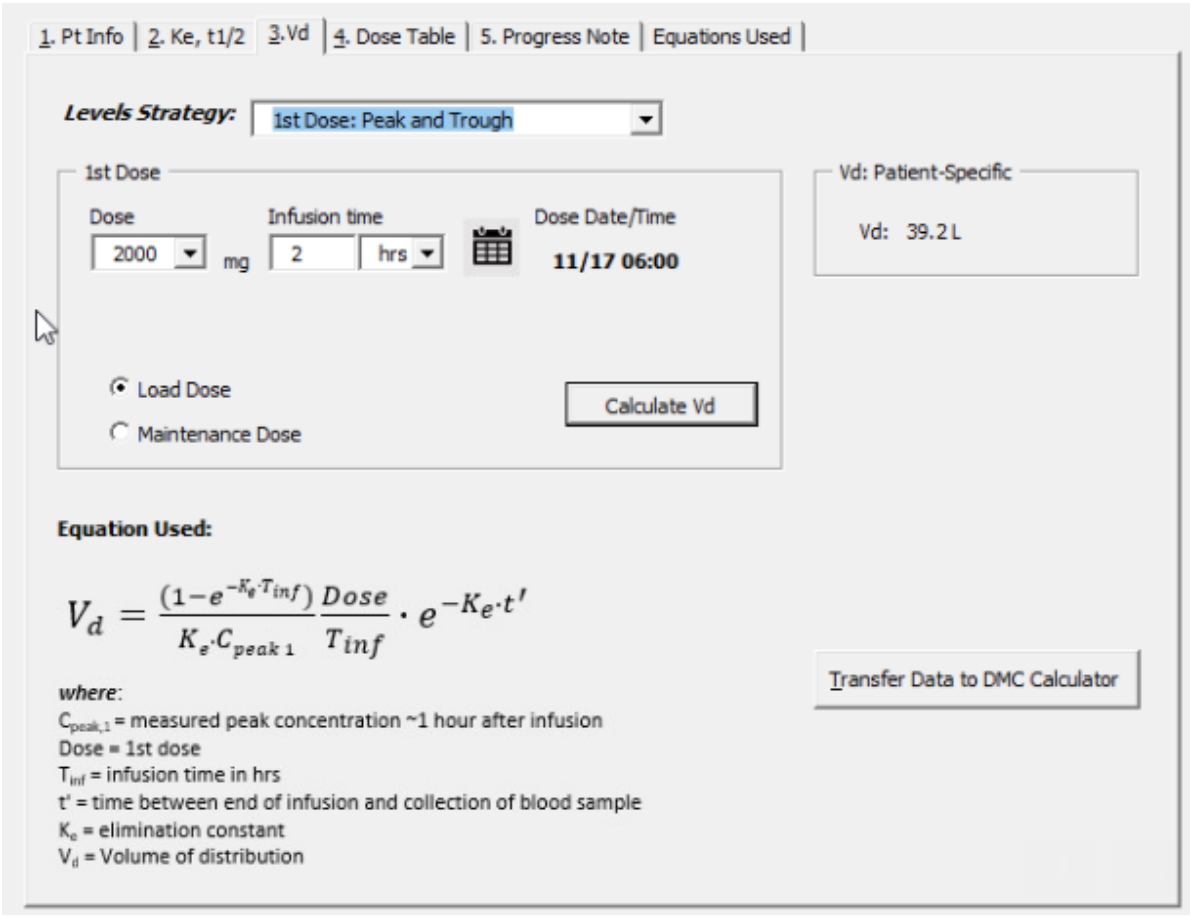
- **Level 1: 34.8,** 11/17 09:30
- **Level 2**: ***10.12***, 11/17 17:30

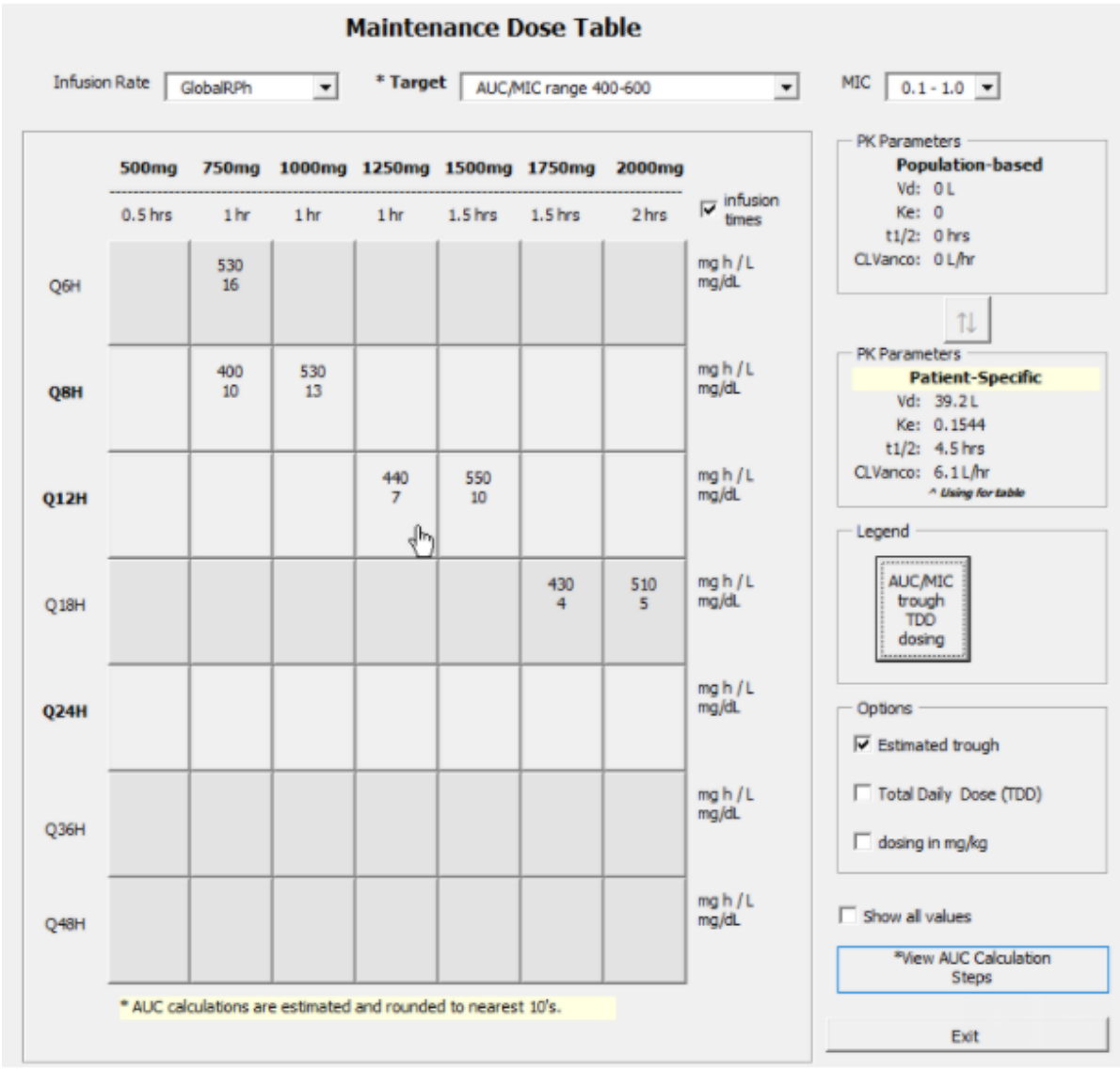


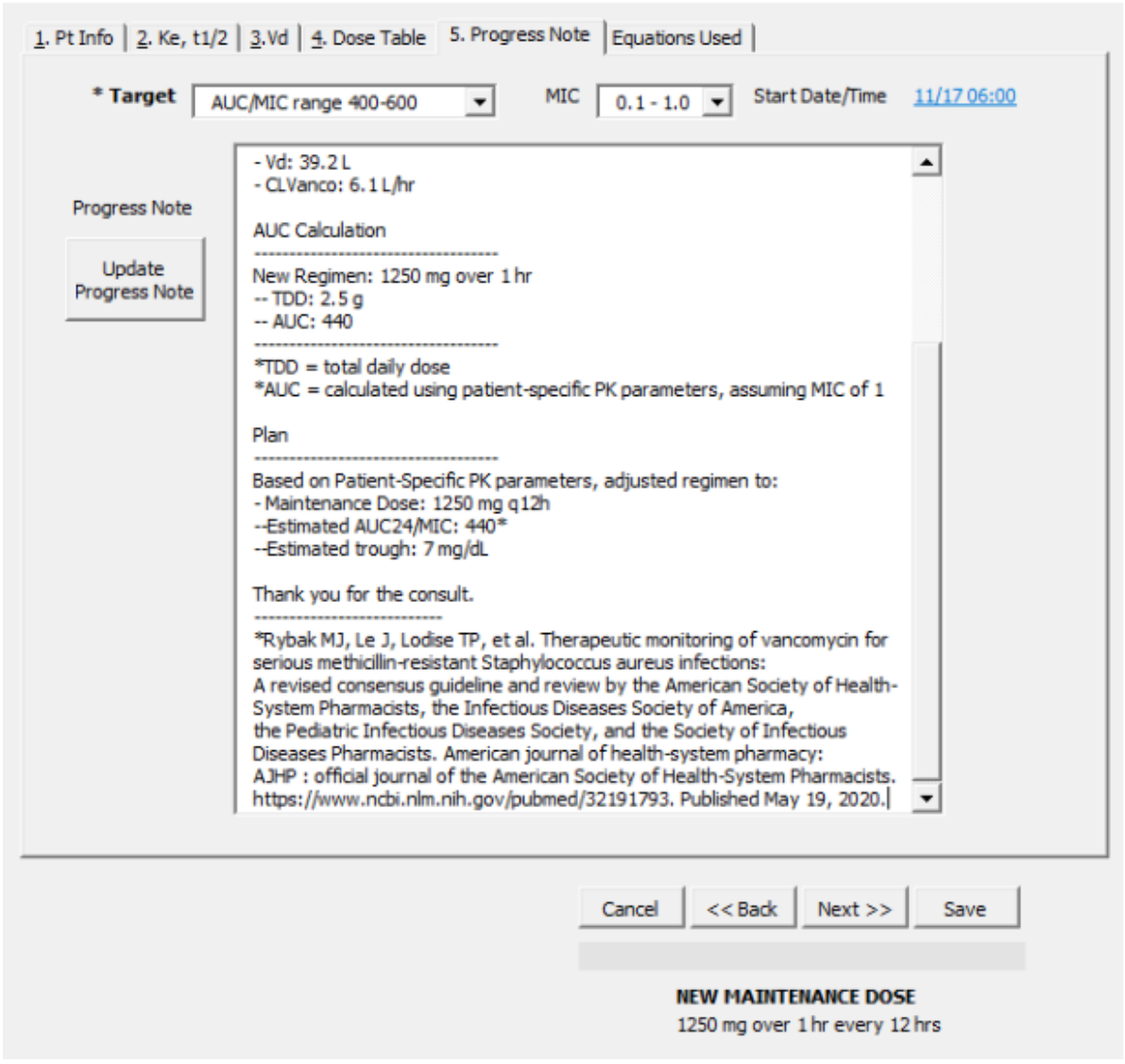
2.) Vd tab

- **First Dose**: 2,000mg load dose over 2 hrs

- **Date/Time**: 11/17 06:00


1. Pt Info
2. Ke, t1/2
3.Vd
4. Dose Table
5. Progress Note
Equations Used
Levels Strategy:
1st Dose: Peak and Trough
1st Dose
Dose
2000
mg
Infusion time
2
hrs
Dose Date/Time
11/17 06:00
Load Dose
Maintenance Dose
Calculate Vd
Vd: Patient-Specific
Vd: 39.2 L
Equation Used:
$V_d = \frac{(1-e^{-K_e \cdot T_{inf}})}{K_e \cdot C_{peak\,1}} \frac{Dose}{T_{inf}} \cdot e^{-K_e \cdot t'}$
where:
$C_{peak,1}$ = measured peak concentration ~1 hour after infusion
Dose = 1st dose
T_{inf} = infusion time in hrs
t' = time between end of infusion and collection of blood sample
K_e = elimination constant
V_d = Volume of distribution
Transfer Data to DMC Calculator


Maintenance Dose Table
Infusion Rate
GlobalRPh
* Target
AUC/MIC range 400-600
MIC
0.1 - 1.0
500mg 750mg 1000mg 1250mg 1500mg 1750mg 2000mg
0.5 hrs 1 hr 1 hr 1 hr 1.5 hrs 1.5 hrs 2 hrs
infusion times
Q6H 530 16 mg h / L mg/dL
Q8H 400 10 530 13 mg h / L mg/dL
Q12H 440 7 550 10 mg h / L mg/dL
Q18H 430 4 510 5 mg h / L mg/dL
Q24H mg h / L mg/dL
Q36H mg h / L mg/dL
Q48H mg h / L mg/dL
* AUC calculations are estimated and rounded to nearest 10's.
PK Parameters
Population-based
Vd: 0 L
Ke: 0
t1/2: 0 hrs
CLVanco: 0 L/hr
PK Parameters
Patient-Specific
Vd: 39.2 L
Ke: 0.1544
t1/2: 4.5 hrs
CLVanco: 6.1 L/hr
^ Using for table
Legend
AUC/MIC trough TDD dosing
Options
Estimated trough
Total Daily Dose (TDD)
dosing in mg/kg
Show all values
*View AUC Calculation Steps
Exit


1. Pt Info
2. Ke, t1/2
3.Vd
4. Dose Table
5. Progress Note
Equations Used
* Target
AUC/MIC range 400-600
MIC
0.1 - 1.0
Start Date/Time
11/17 06:00
Progress Note
Update Progress Note
- Vd: 39.2 L
- CLVanco: 6.1 L/hr
AUC Calculation
New Regimen: 1250 mg over 1 hr
-- TDD: 2.5 g
-- AUC: 440
*TDD = total daily dose
*AUC = calculated using patient-specific PK parameters, assuming MIC of 1
Plan
Based on Patient-Specific PK parameters, adjusted regimen to:
- Maintenance Dose: 1250 mg q12h
--Estimated AUC24/MIC: 440*
--Estimated trough: 7 mg/dL
Thank you for the consult.
*Rybak MJ, Le J, Lodise TP, et al. Therapeutic monitoring of vancomycin for serious methicillin-resistant Staphylococcus aureus infections:
A revised consensus guideline and review by the American Society of Health-System Pharmacists, the Infectious Diseases Society of America,
the Pediatric Infectious Diseases Society, and the Society of Infectious Diseases Pharmacists. American journal of health-system pharmacy:
AJHP : official journal of the American Society of Health-System Pharmacists.
https://www.ncbi.nlm.nih.gov/pubmed/32191793. Published May 19, 2020.
Cancel
<< Back
Next >>
Save
NEW MAINTENANCE DOSE
1250 mg over 1 hr every 12 hrs