National Cancer Control Programme

National Cancer Information System

NCIS GUIDE

Managing Changes to Dosing Parameters

1 Background

In NCIS.Med (BD CATO) doses are calculated at Physician Verification and Pharmacist Verification. If there is **any** change in the variable used for dosing, i.e. body surface area (BSA), weight, creatinine clearance, between Physician and Pharmacist verification the user applying Pharmacist Verification will receive a warning. It is then possible for the user to accept the newly calculated dose or retain the physician verified dose.

This guide explains how this functionality works, and suggests potential workflows.

2 Functionality

Figure 1 shows a physician verified dose, the dose was verified on 19/06/2023 using a BSA of 1.81m^2.

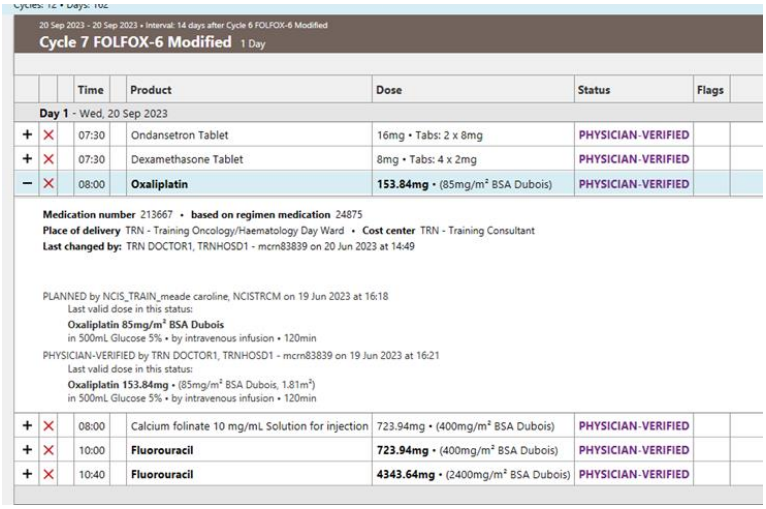

Figure 1: Physician Verified Dose

It is possible to see the variables used in the calculation either by looking at the medication log (figure 1) or by opening the Medical Results tab (figure 2).

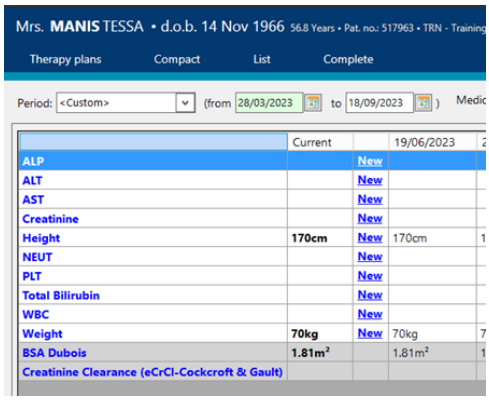

Figure 2: Medical Results tab showing the height, weight and BSA

Figure 3 shows that a new weight of 72kg is entered on 18/09/2023 with a corresponding change to BSA Dubois to 1.83^2.

	Current		18/09/2023	19/06/2023	2
ALP		New			
ALT		New			
AST		New			
Creatinine		New			
Height	170cm	New		170cm	16
NEUT		New			
PLT		New			
Total Bilirubin		New			
WBC		New			
Weight	72kg	New	72kg	70kg	7
BSA Dubois	1.83m²		1.83m²	1.81m²	1.
Creatinine Clearance (eCrCl-Cockcroft & Gault)					

Figure 3: Medical results tab showing changed weight

When completing Pharmacist Verification NCIS.Med (BD CATO) will warn the user that there has been a change in the dosing variable, see figure 4. To note this warning will trigger for any change and there is not functionality available to set a variance on this warning.

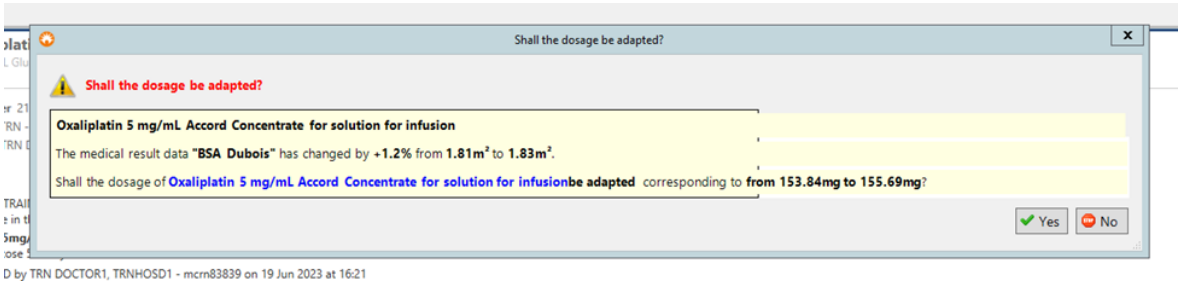

Figure 4: Warning triggered due to change in dosing variable between physician and pharmacist verification

At this point it is possible to either accept the proposed dose change by clicking “Yes” or rejecting by clicking “No”. If the dose change is rejected the medication dose will still be calculated by the new variable (1.83m^2 in this case) but the dose will be adjusted to maintain the previous dose (98.81% in this case). Figure 5 shows the pharmacist verification screen after “No” is clicked and the previous dose is maintained.

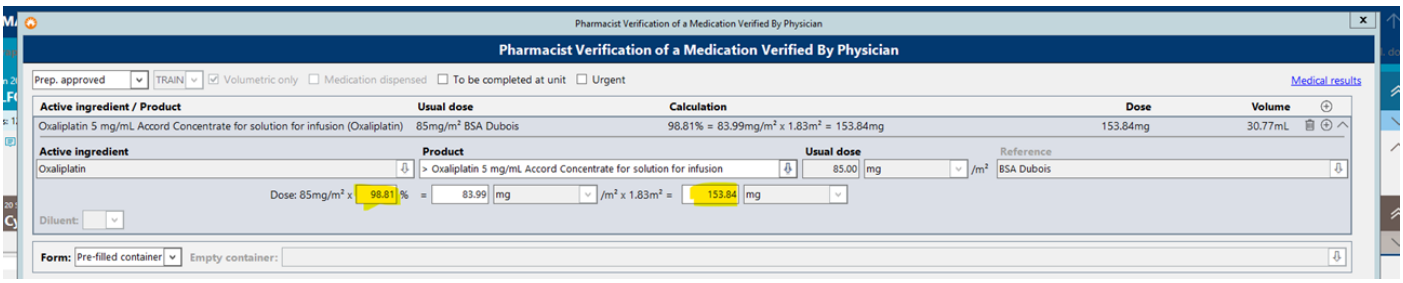

Figure 5: Pharmacist Verification screen showing a rejected dose change

It remains possible to round or band the dose as normal, remembering the percentage adjustment will be based on the new dosing variable.

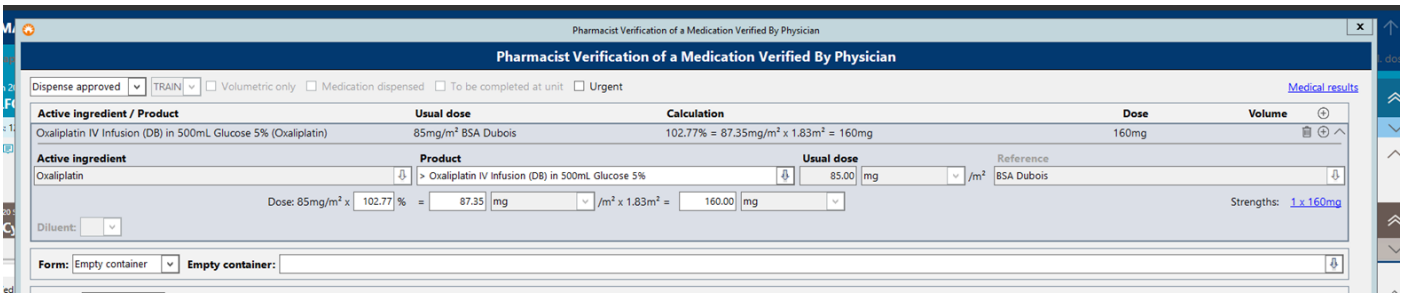

Figure 6: Pharmacist verification window following selection of a dose-banded strength

The therapy plan will display the dose as expected as well as indicating that there is a new dosing variable.

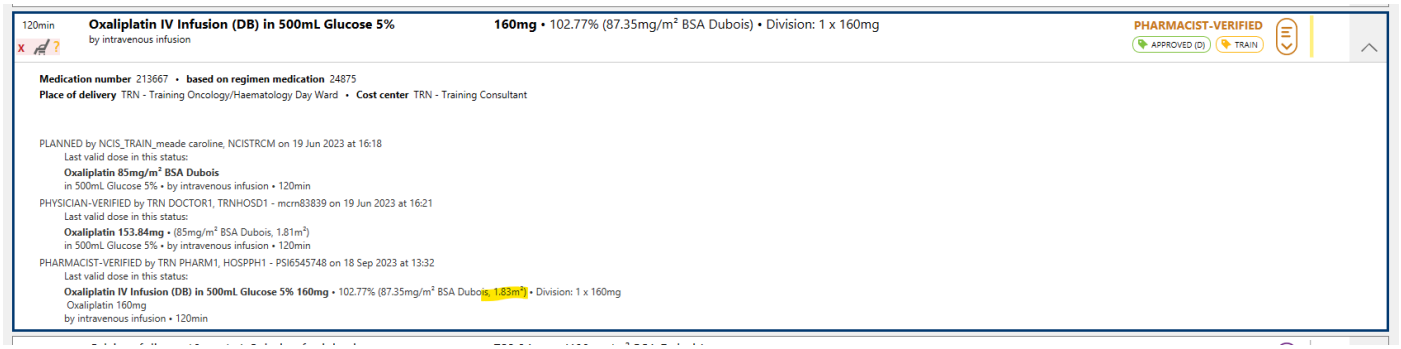

Figure 7: Therapy plan window view

3 Potential Workflows

There are several potential workflows for managing this functionality. The workflow chosen will depend on the agreed processes locally and as stated in the Medical Oncology Safety Review Report (2014) these processes should be clearly documented.

3.1 Always use the most up to date dosing variable

In this workflow when pharmacist verifying the dose is always adjusted to the most recent dosing variable. This approach is advantageous as it is always using the most up to date parameters for dosing and may work well in units that are primarily preparing. However for outsourced products this may lead to complications due to ordering lead times and frequent dose changes.

3.2 Only adjust the dose if the dosing variable changes by an agreed variance between physician and pharmacist verification

In this workflow an agreed variance in dosing variable is utilised. Provided the dosing variable has not changed by greater than the agreed variance the dose is maintained. An example is described in the box below:

The hospital pharmacy has agreed with the medical oncologists that if a BSA is within 5% of the BSA used when physician verifying then the dose will be retained. This is documented in the hospitals oncology workflow SOP.

Example

- Mr A is commenced on 12 cycles of FOLFOX. His initial weight = 60kg, height = 170cm and BSA Dubois = 1.7m^2
- Dr B physician verifies the first 6 cycles using the BSA of 1.7m^2.
- As Mr A's weight has reduced to 56kg when the pharmacist is verifying cycle 2 they are warned that Mr A's BSA has reduced to 1.65m^2 and asked if they wish to change the doses of his medication. As the BSA has changed by only 2.9% the pharmacist chooses to retain the previous doses.
- Mr A's weight continues to drop throughout his treatment, by cycle 6 his weight is now 53kg with a BSA of 1.61m^2. Again the pharmacist is warned there is a change in dosing variable, however as the BSA change is now 5.3% the pharmacist chooses to accept the warning and adjust the doses.
- Dr B now physician verifies the remaining 6 cycles, but this time using the new BSA of 1.61m^2. This becomes the new baseline for pharmacist verification.

3.3 Only adjust the dose if the weight or creatinine changes by an agreed variance from baseline

This workflow has been commonly utilised when using paper prescriptions. This workflow is more complex in BD CATO as users would need to check the original weight/creatinine using the medical results tab, manually calculate the differential and adjust the dose accordingly.