Name of Policy:	**Dose Rounding**
Policy Number:	3364-133-77
Department:	Pharmacy
Approving Officer:	Senior Hospital Administrator
Responsible Agent:	Director of Pharmacy
Scope:	University of Toledo Medical Center

THE UNIVERSITY OF TOLEDO MEDICAL CENTER

Effective Date: 4/25/2022
Initial Effective Date 10/1/2009

_____ New policy proposal
_____ Major revision of existing policy
__x__ Minor/technical revision of existing policy
_____ Reaffirmation of existing policy

(A) Policy Statement

To maintain a protocol of rounding high-cost medication dosages to fit with available product sizes, which is consistent with safe administration and minimal risk, while maintaining optimal therapeutic response. The purpose of this policy is to minimize charge errors in accounting, promote optimal cost-effective patient care and avoid the waste of unstable medications. In addition, this policy will address rounding of certain expensive chemotherapeutic and biologic medications to the nearest vial size.

(B) Purpose of Policy

Minimize charge errors in accounting and promotes optimal cost effective patient care. Avoid the waste of unstable medications. Decrease medication errors by standardization and consistency of dosing.

(C) Procedure

The drugs included for this protocol are chemotherapy, IVIG, granulocyte colony-stimulating factors (i.e filgrastim), erythropoiesis-stimulating agents (i.e. darbepoetin), hemophilia factors, KCentra, monoclonal antibodies and antibiotics.

1. Dose to be given of high-cost targeted medications within 5% (plus or minus) of the calculated prescribed dose.

2. The prescribing physician will be notified of potential rounding of doses greater than 5% and must approve in writing the new dose prior to any changes made by the pharmacist.

3. The pharmacist rounds to within 5% of calculated dose and process a clarification per protocol in the patient record

4. The pharmacist enters the medication billing for the appropriate vials size and dispenses the medication using those appropriate vial sizes.

5: Medications dosed by weight will remain dosed based of the original weight at the time of prescribing unless the weight fluctuated by greater than 10% from base line.

(D) Procedure for Select Biologic and Chemotherapeutic Medications

1. Dose to be given of high-cost targeted medications in the following reference table (page 2)

2. The dose prescribed by the physician can be rounded to the nearest vial size by the pharmacist unless otherwise noted on the order by the physician.

3. The pharmacist rounds to the nearest vial size by rounding up for any dose that more than or equal to half of the smallest vial size OR down if dose is less than half of the smallest vial size (i.e. A dose of rituximab (Rituxan) 550mg should be rounded up to 600mg, but a dose of 549mg should be rounded down to 500mg).

4. The pharmacist will then process a clarification per protocol, place in patient's medical record, enter the medication billing for the appropriate vials size and dispense the medication using those appropriate vial sizes. If rounding to nearest vial size results in a 10% or greater change in dose, the pharmacist must send written communication to the prescribing physician.

Medication	Available Vial Sizes	Rounded to Nearest
4-factor prothrombin complex conc (KCentra)	500 units (range 400 – 600 units per vial)	Whole vial
Ado-Trastuzumab Emtansine(Kadcyla)	100mg, 160mg	100mg
Bevacizumab (Avastin)	100mg, 400mg	100mg
Cetuximab (Erbitux)	100mg, 200mg	100mg
Factor VIIa (NovoSeven)	1.2 mg, 2.4 mg, 4.8 mg	1.2 mg
Gemcitabine (Gemzar)	200mg, 1000mg, 2000mg	200mg
Infliximab (Remicade)*	100mg	Up to 100mg
Ipilimumab (Yervoy)	50mg, 200mg	50mg
Irinotecan (Camptosar)	40mg, 100mg	40mg
IVIG (Octagam, Gammaguard)	5 gram, 10 gram, 20 gram	5 grams
Nab-Paclitaxel (Abraxane)	100mg	100mg
Nivolumab (Opdivo)	40mg, 100mg	40mg
Panitumumab (Vectibix)	100mg, 400mg	100mg
Pemetrexed (Alimta)	100mg, 500mg	100mg
Ramucirumab (Cyramza)	100mg, 500mg	100mg
Rituximab (Rituxan)	100mg, 500mg	100mg

*Infliximab infusions per Rheumatology and Dermatology should be round up to entire vial (i.e. 301 mg rounded to 400 mg; 450 mg rounded to 500 mg; 599 mg rounded to 600 mg).

**Belimumab (Benlysta), Golimumab (Simponi Aria) and Tocilizumab (Actemra) should be exact dosing per Rheumatology and Dermatology unless fall within the 5% dose rounding limit.

(E) References

1: Dooley M, Singh S, Michael M. *Implications of dose rounding of chemotherapy to the nearest vial size*. Support Care Cancer 2004. 12: 653-656.

2: Fasola G, et al. *Drug waste minimisation and cost-containment in Medical Oncology: Two-year results of a feasibility study.* BMC Health Services Research 2008. 8:70

Approved by:		**Review/Revision Date:**
/s/ Lindsey Eitniear, PharmD, BCPS, AAHIVP Director of Pharmacy	04/25/2022 Date	12/13 6/14 10/15 4/17 2/19 4/22
/s/ Russell Smith, PharmD, MBA, BCPS Senior Hospital Administrator	04/25/2022 Date	
Dr. Zohaib Ahmed, MD Chair of Pharmacy and Therapeutics Committee	04/25/2022 Date	
Review/Revision Completed By: *Pharmacy*		**Next Review Date:** 4/1/2025
Policies Superseded by This Policy:		

It is the responsibility of the reader to verify with the responsible agent that this is the most current version of the policy.