

**DOSE ROUNDING FOR CHEMOTHERAPY AND MONOCLONAL ANTIBODIES**

STANDARD OPERATING PROCEDURE OVERVIEW	
SOP TITLE:	Dose Rounding for Chemotherapy and Monoclonal Antibodies
ISSUANCE DATE:	October 21, 2019
REVISION DATE:	April 29, 2020
PROCESS OWNER:	System Oncology/Chemotherapy Subcommittee
SOP NUMBER:	Example2

BACKGROUND:
Health System can reduce pharmaceutical waste and positively impact cost savings by rounding chemotherapy and monoclonal antibody doses to the nearest vial sizes when appropriate.
NOTES (ASSUMPTIONS, EXCEPTIONS, ETC.):
<p>The following patients are excluded from this rounding protocol:</p> <ul style="list-style-type: none"> <li>• Pediatric patients, defined as patients ≤ 18 years of age</li> <li>• Patients on a clinical trial or study <i>unless</i> the study allows for rounding to vial sizes               <ul style="list-style-type: none"> <li>○ Absolutely NO rounding is allowed on any drug with the notation INV</li> </ul> </li> <li>• Patients who are on a desensitization protocol</li> </ul>

PROCESS STEP:	DESCRIPTION:
1. DOSE ROUNDING	<p>Medications may be built in EHR so that their doses are automatically rounded to the nearest vial size during order entry.</p> <p>In the absence of the auto-rounding functionality, the verifying pharmacist has authority to <b><u>round selected chemotherapy and monoclonal antibody doses to the nearest vial size</u></b> if the agent is appropriate to round and it is within the following rounding percentage:</p> <ul style="list-style-type: none"> <li>• Chemotherapy agents within 5%</li> <li>• Monoclonal antibodies within 10%</li> </ul> <p>If the decision is made to proceed with manually rounding a dose, the verifying pharmacist shall:</p> <ul style="list-style-type: none"> <li>• Manually change the original dose ordered to the nearest vial size.               <ul style="list-style-type: none"> <li>○ This is only for the total dose; not individual vials that make up the total dose.</li> <li>○ Do not reject and reorder the chemotherapy order. Rounding can be done during verification by editing the dose.</li> </ul> </li> <li>• Provide the necessary documentation:               <ul style="list-style-type: none"> <li>○ Open an iVent → Optimize Therapy; Cost Effective → Document the dose rounding with the .rxchemorounding dotphrase.</li> <li>○ Document in the administration instructions with the .rxchemorounding dotphrase.</li> <li>○ Dotphrase verbiage: Dose rounded from *** mg to *** mg (within 5% for chemotherapy and 10% for monoclonal antibodies) per rounding protocol; original order *** mg/m2</li> </ul> </li> </ul>

**DOSE ROUNDING FOR CHEMOTHERAPY AND MONOCLONAL ANTIBODIES**

**2. CHEMOTHERAPY & MONOCLONAL ANTIBODIES**

See the table below for the list of chemotherapy and monoclonal antibodies that may be rounded and their vial sizes.

<b>Medication</b>	<b>Okay to Round?</b>	<b>Vial Sizes</b>
Ado-trastuzumab emtansine (Kadcyla®)	Yes – if original dose ordered is within 10% of vial size	100mg, 160mg
Aldesleukin (IL-2) (Proleukin®)	Yes – if original dose ordered is within 5% of vial size	22,000,000 units
Alemtuzumab (Campath®)	No	--
Arsenic Trioxide (Trisenox®)	Yes – if original dose ordered is within 5% of vial size	10mg
Asparaginase (Erwinase®)	Yes – if original dose ordered is within 5% of vial size	10,000 units
Atezolizumab (Tecentriq®)	No	--
Avelumab (Bavencio®)	No	--
Azacitidine (Vidaza®)	Yes – if original dose ordered is within 5% of vial size	100mg
Bendamustine (Bendeka®)	Yes – if original dose ordered is within 5% of vial size	100mg
Bevacizumab (Avastin® and biosimilars)	Yes – if original dose ordered is within 10% of vial size	100mg, 400mg
Bleomycin (Blenoxane®)	No	--
Blinatumomab (Blincyto®)	No	--
Bortezomib (Velcade®)	No	--
Brentuximab vedotin (Adcetris®)	Yes – if original dose ordered is within 10% of vial size	50mg
Busulfan (Busulfex®)	No	--
Cabazitaxel (Jevtana®)	Yes – if original dose ordered is within 5% of vial size	60mg
Carboplatin (Paraplatin®)	No	--
Carfilzomib (Kyprolis®)	Yes – if original dose ordered is within 5% of vial size	10mg, 30mg, 60mg
Carmustine (BiCNU®)	Yes – if original dose ordered is within 5% of vial size	100mg

## DOSE ROUNDING FOR CHEMOTHERAPY AND MONOCLONAL ANTIBODIES

Medication	Okay to Round?	Vial Sizes
Cetuximab (Erbix®)	Yes – if original dose ordered is within 10% of vial size	100mg, 200mg
Cisplatin (Platinol®)	No	--
Cladribine (Leustatin®)	Yes – if original dose ordered is within 5% of vial size	10mg
Cyclophosphamide (Cytoxan®)	Yes – if original dose ordered is within 5% of vial size	500mg, 1000mg, 2000mg
Cytarabine (Cytosar®)	No	--
Dacarbazine (DTIC®)	Yes – if original dose ordered is within 5% of vial size	100mg, 200mg
Dactinomycin (Cosmegen®)	Yes – if original dose ordered is within 5% of vial size	0.5mg
Daratumumab (Darzalex®)	Yes – if original dose ordered is within 10% of vial size	100mg, 400mg
Daunorubicin (Cerubidine®)	Yes – if original dose ordered is within 5% of vial size	20mg
Decitabine (Dacogen®)	Yes – if original dose ordered is within 5% of vial size	50mg
Docetaxel (Taxotere®)	Yes – if original dose ordered is within 5% of vial size	20mg, 80mg, 160mg
Doxorubicin (Adriamycin®)	No	--
Doxorubicin liposomal (Doxil®)	Yes – if original dose ordered is within 5% of vial size	20mg, 50mg
Durvalumab (Imfinzi®)	Yes – if original dose ordered is within 10% of vial size	120mg, 500mg
Elotuzumab (Empliciti®)	Yes – if original dose ordered is within 10% of vial size	300mg, 400mg
Enfortumab vedotin (Padcev®)	Yes – if original dose ordered is within 10% of vial size	20mg, 30mg
Epirubicin (Ellence®)	Yes – if original dose ordered is within 5% of vial size	50mg, 200mg
Eribulin (Halaven®)	Yes – if original dose ordered is within 5% of vial size	1mg
Etoposide (Vepsid®)	No	--
Fludarabine (Fludara®)	Yes – if original dose ordered is within 5% of vial size	50mg
Fluorouracil (5-FU®)	Yes – if original dose ordered is within 5% of vial size	500mg, 1000mg, 2500mg, 5000mg
Gemcitabine (Gemzar®)	Yes – if original dose ordered is within 5% of vial size	200mg, 1000mg

**DOSE ROUNDING FOR CHEMOTHERAPY AND MONOCLONAL ANTIBODIES**

<b>Medication</b>	<b>Okay to Round?</b>	<b>Vial Sizes</b>
Gemtuzumab ozogamicin (Mylotarg®)	No	--
Idarubicin (Idamycin®)	Yes – if original dose ordered is within 5% of vial size	5mg, 10mg, 20mg
Ifosfamide (Ifex®)	Yes – if original dose ordered is within 5% of vial size	1000mg, 3000mg
Inotuzumab ozogamicin (Besponsa®)	Yes – if original dose ordered is within 10% of vial size	0.9mg
Ipilimumab (Yervoy®)	Yes – if original dose ordered is within 10% of vial size	50mg, 200mg
Irinotecan (Camptosar®)	Yes – if original dose ordered is within 5% of vial size	40mg, 100mg, 300mg
Irinotecan liposomal (Onivyde®)	Yes – if original dose ordered is within 5% of vial size	43mg
Ixabepilone (Ixempra®)	Yes – if original dose ordered is within 5% of vial size	15mg, 45mg
Leucovorin	Yes – if original dose ordered is within 5% of vial size	50mg, 100mg, 350mg, 500mg
Melphalan (Evomela®)	Yes – if original dose ordered is within 5% of vial size	50mg
Mesna (Mesnex®)	Yes – if original dose ordered is within 5% of vial size	1000mg
Methotrexate	No for INTRATHECAL Yes for HIGH DOSE – if original dose ordered is within 5% of vial size	-- 1000mg
Mitomycin (Mutamycin®)	Yes – if original dose ordered is within 5% of vial size	5mg, 20mg, 40mg
Mitoxantrone (Novantrone®)	Yes – if original dose ordered is within 5% of vial size	20mg
Necitumumab (Portrazza®)	No	--
Nelarabine (Arranon®)	Yes – if original dose ordered is within 5% of vial size	250mg
Nivolumab (Opdivo®)	Yes – if original dose ordered is within 10% of vial size	40mg, 100mg, 240mg
Obinutuzumab (Gazyva®)	No	--
Ofatumumab (Arzerra®)	No	--
Omacetaxine (Synribo®)	Yes – if original dose ordered is within 5% of vial size	3.5mg
Oxaliplatin (Eloxatin®)	Yes – if original dose ordered is within 5% of vial size	50mg, 100mg

**DOSE ROUNDING FOR CHEMOTHERAPY AND MONOCLONAL ANTIBODIES**

<b>Medication</b>	<b>Okay to Round?</b>	<b>Vial Sizes</b>
Paclitaxel (Taxol®)	No	--
Paclitaxel protein-bound (Abraxane®)	Yes – if original dose ordered is within 5% of vial size	100mg
Panitumumab (Vectibix®)	Yes – if original dose ordered is within 10% of vial size	100mg, 400mg
Pegaspargase (Oncaspar®)	No for PEDIATRICS Yes for ADULTS – if original dose ordered is within 5% of vial size	-- 3750 units (max for adults)
Pembrolizumab (Keytruda®)	Yes – if original dose ordered is within 10% of vial size	100mg
Pemetrexed (Alimta®)	Yes – if original dose ordered is within 5% of vial size	100mg, 500mg
Pentostatin (Nipent®)	Yes – if original dose ordered is within 5% of vial size	10mg
Pertuzumab (Perjeta®)	No	--
Pralatrexate (Folotyn®)	Yes – if original dose ordered is within 5% of vial size	20mg, 40mg
Ramucirumab (Cyramza®)	Yes – if original dose ordered is within 10% of vial size	100mg, 500mg
Rituximab (Rituxan® and biosimilars)	Yes – if original dose ordered is within 10% of vial size	100mg, 500mg
Rituximab and hyaluronidase (Rituximab Hycela®)	No	--
Romidepsin (Istodax®)	Yes – if original dose ordered is within 5% of vial size	10mg
Temozolomide (Temodar®)	Yes – if original dose ordered is within 5% of vial size	100mg
Temsirolimus (Torisel®)	No	--
Thiotepa (Tepadina®)	Yes – if original dose ordered is within 5% of vial size	15mg, 100mg
Topotecan (Hycamtin®)	Yes – if original dose ordered is within 5% of vial size	4mg
Trabectedin (Yondelis®)	Yes – if original dose ordered is within 5% of vial size	1mg
Trastuzumab (Herceptin®)	Yes – if original dose ordered is within 10% of vial size	150mg
<b>Trastuzumab biosimilars</b>	Yes – if original dose is within 10% of vial size	150mg, 420mg
Vinblastine (Velban®)	Yes – if original dose ordered is within 5% of vial size	10mg

## DOSE ROUNDING FOR CHEMOTHERAPY AND MONOCLONAL ANTIBODIES

Medication	Okay to Round?	Vial Sizes
Vincristine (Onconvin®)	No	--
Vincristine liposomal (Marqibo®)	Yes – if original dose ordered is within 5% of vial size	5mg
Vinorelbine (Navelbine®)	Yes – if original dose ordered is within 5% of vial size	10mg, 50mg
VYXEOS® (liposomal cytarabine + daunorubicin)	Yes – if original dose ordered is within 5% of vial size	44mg + 100mg
Ziv-aflibercept (Zaltrap®)	Yes – if original dose ordered is within 5% of vial size	100mg, 200mg

### Approval

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**Deborah Simonson, VP Pharmacy**

**Date**

Reviewer	Date of Review	Notes
<i>System Oncology/Chemotherapy Subcommittee</i>	<i>6-25-2019</i>	<i>Approved</i>
<i>System Clinical Coordinators Meeting</i>	<i>8-8-2019 10-10-2019</i>	<i>Approved</i>
<i>Change Management Advisory Council</i>	<i>10-25-2019</i>	<i>Discussed plan for go live</i>
<i>DOP System Policy Committee</i>	<i>10-31-2019 11-14-2019 12-12-2019 1-9-2020</i>	<i>Reviewed &amp; approved</i>
<i>P&amp;T Committee</i>	<i>11-18-2019</i>	<i>Approved</i>
<i>DOP System Policy Committee</i>	<i>4-30-2020</i>	<i>Approved revisions</i>

**Monoclonal Antibody Rounding Table:****Ado-trastuzumab**

<b>If the ordered dose falls between:</b>	<b>Then pharmacist may round the dose to:</b>
161-176 mg	160 mg
201-220 mg	200 mg
261-286 mg	260 mg
301-319 mg	300 mg
321-352 mg	320 mg
361-396 mg	360 mg
401-419 mg	400 mg
421-459 mg	420 mg
461-499 mg	460 mg
501-550 mg	500 mg

**Bevacizumab and biosimilars**

<b>If the ordered dose falls between:</b>	<b>Then pharmacist may round the dose to:</b>
201-220 mg	200 mg
301-330 mg	300 mg
401-440 mg	400 mg
501-550 mg	500 mg
601-660 mg	600 mg
701-770 mg	700 mg
801-880 mg	800 mg
901-990 mg	900 mg
1001-1099 mg	1000 mg
1101-1199 mg	1100 mg
1201-1299 mg	1200 mg
1301-1399 mg	1300 mg
1401-1499 mg	1400 mg
1501-1599 mg	1500 mg
1601-1699 mg	1600 mg
1701-1799 mg	1700 mg
1801-1899 mg	1800 mg
1901-1999 mg	1900 mg
2001-2099 mg	2000 mg
2101-2199 mg	2100 mg
2201-2299 mg	2200 mg

**Brentuximab vedotin**

<b>If the ordered dose falls between:</b>	<b>Then pharmacist may round the dose to:</b>
51-55 mg	50 mg
101-110 mg	100 mg
151-165 mg	150 mg

**Cetuximab**

<b>If the ordered dose falls between:</b>	<b>Then pharmacist may round the dose to:</b>
201-220 mg	200 mg
301-330 mg	300 mg
401-440 mg	400 mg
501-550 mg	500 mg
601-660 mg	600 mg
701-770 mg	700 mg
801-880 mg	800 mg
901-990 mg	900 mg
1001-1099 mg	1000 mg
1101-1199 mg	1100 mg
1201-1299 mg	1200 mg
1301-1399 mg	1300 mg
1401-1499 mg	1400 mg
1501-1599 mg	1500 mg

**Daratumumab**

<b>If the ordered dose falls between:</b>	<b>Then pharmacist may round the dose to:</b>
601-660 mg	600 mg
701-770 mg	700 mg
801-880 mg	800 mg
901-990 mg	900 mg
1001-1099 mg	1000 mg
1101-1199 mg	1100 mg
1201-1299 mg	1200 mg
1301-1399 mg	1300 mg
1401-1499 mg	1400 mg
1501-1599 mg	1500 mg
1601-1699 mg	1600 mg
1701-1799 mg	1700 mg
1801-1899 mg	1800 mg
1901-1999 mg	1900 mg
2001-2099 mg	2000 mg
2101-2199 mg	2100 mg
2201-2299 mg	2200 mg
2301-2399 mg	2300 mg
2401-2499 mg	2400 mg



**Durvalumab**

<b>If the ordered dose falls between:</b>	<b>Then pharmacist may round the dose to:</b>
361-396 mg	360 mg
481-499 mg	480 mg
501-550 mg	500 mg
621-682 mg	620 mg
741-814 mg	740 mg
861-946 mg	860 mg
981-999 mg	980 mg
1001-1099 mg	1000 mg
1121-1232 mg	1120 mg
1241-1359 mg	1240 mg
1361-1480 mg	1360 mg
1481-1499 mg	1480 mg
1501-1560 mg	1500 mg

**Elotuzumab**

<b>If the ordered dose falls between:</b>	<b>Then pharmacist may round the dose to:</b>
401-440 mg	400 mg
601-660 mg	600 mg
701-770 mg	700 mg
801-880 mg	800 mg
901-990 mg	900 mg
1001-1099 mg	1000 mg
1101-1199 mg	1100 mg
1201-1299 mg	1200 mg
1301-1399 mg	1300 mg
1401-1499 mg	1400 mg
1501-1599 mg	1500 mg
1601-1699 mg	1600 mg
1701-1799 mg	1700 mg
1801-1899 mg	1800 mg
1901-1999 mg	1900 mg
2001-2099 mg	2000 mg
2101-2199 mg	2100 mg
2201-2299 mg	2200 mg
2301-2399 mg	2300 mg
2401-2499 mg	2400 mg
2501-2599 mg	2500 mg
2601-2699 mg	2600 mg
2701-2799 mg	2700 mg
2801-2899 mg	2800 mg
2901-2999 mg	2900 mg
3001-3099 mg	3000 mg

**Enfortumab**

<b>If the ordered dose falls between:</b>	<b>Then pharmacist may round the dose to:</b>
21-22 mg	20 mg
31-33 mg	30 mg
41-44 mg	40 mg
51-55 mg	50 mg
61-66 mg	60 mg
71-77 mg	70 mg
81-88 mg	80 mg
91-99 mg	90 mg
101-109 mg	100 mg
111-119 mg	110 mg
121-125 mg (max dose)	120 mg

**Inotuzumab ozogamicin**

<b>If the ordered dose falls between:</b>	<b>Then pharmacist may round the dose to:</b>
0.91-0.99 mg	0.9 mg
1.81-1.98 mg	1.8 mg
2.71-2.97 mg	2.7 mg

**Ipilimumab**

<b>If the ordered dose falls between:</b>	<b>Then pharmacist may round the dose to:</b>
51-55 mg	50 mg
101-110 mg	100 mg
151-165 mg	150 mg
201-220 mg	200 mg
251-275 mg	250 mg
301-330 mg	300 mg
351-385 mg	350 mg
401-440 mg	400 mg
451-495 mg	450 mg
501-550 mg	500 mg
551-599 mg	550 mg
601-649 mg	600 mg
651-699 mg	650 mg
701-749 mg	700 mg
751-799 mg	750 mg
801-849 mg	800 mg
851-899 mg	850 mg
901-949 mg	900 mg
951-999 mg	950 mg
1001-1049 mg	1000 mg
1051-1099 mg	1050 mg
1101-1149 mg	1100 mg
1151-1199 mg	1150 mg
1201-1249 mg	1200 mg
1251-1299 mg	1250 mg
1301-1349 mg	1300 mg

## DOSE ROUNDING FOR CHEMOTHERAPY AND MONOCLONAL ANTIBODIES

1351-1399 mg	1350 mg
1401-1449 mg	1400 mg
1451-1499 mg	1450 mg
1501-1549 mg	1500 mg

### Nivolumab

If the ordered dose falls between:	Then pharmacist may round the dose to:
41-44 mg	40 mg
81-88 mg	80 mg
101-110 mg	100 mg
121-132 mg	120 mg
141-154 mg	140 mg
181-198 mg	180 mg
201-220 mg	200 mg

### Panitumumab

If the ordered dose falls between:	Then pharmacist may round the dose to:
201-220 mg	200 mg
301-330 mg	300 mg
401-440 mg	400 mg
501-550 mg	500 mg
601-660 mg	600 mg
701-770 mg	700 mg
801-880 mg	800 mg

### Pembrolizumab

If the ordered dose falls between:	Then pharmacist may round the dose to:
101-110 mg	100 mg
201-220 mg	200 mg
301-330 mg	300 mg

### Ramucirumab

If the ordered dose falls between:	Then pharmacist may round the dose to:
301-330 mg	300 mg
401-440 mg	400 mg
501-550 mg	500 mg
601-660 mg	600 mg
701-770 mg	700 mg
801-880 mg	800 mg
901-990 mg	900 mg
1001-1099 mg	1000 mg
1101-1199 mg	1100 mg
1201-1299 mg	1200 mg
1301-1399 mg	1300 mg
1401-1499 mg	1400 mg
1501-1599 mg	1500 mg

**Rituximab and biosimilars**

<b>If the ordered dose falls between:</b>	<b>Then pharmacist may round the dose to:</b>
501-550 mg	500 mg
601-660 mg	600 mg
701-770 mg	700 mg
801-880 mg	800 mg
901-990 mg	900 mg
1001-1099 mg	1000 mg
1101-1199 mg	1100 mg
1201-1299 mg	1200 mg
1301-1399 mg	1300 mg
1401-1499 mg	1400 mg
1501-1599 mg	1500 mg

**Trastuzumab (and biosimilars)**

**\*\*\*biosimilar 420mg is multi-dose; rounding needed if using 150mg vials\*\*\***

<b>If the ordered dose falls between:</b>	<b>Then pharmacist may round the dose to:</b>
151-165 mg	150 mg
301-330 mg	300 mg
451-495 mg	450 mg
601-660 mg	600 mg
751-825 mg	750 mg
901-990 mg	900 mg
1051-1155 mg	1050 mg
1201-1320 mg	1200 mg