

MRCI Additional Instructions

The databases to be used will be limited to Micromedex for clinical drug information and Online Facts & Comparisons for product description (including OTC and Rx status)

This represents additional coding questions, beyond the original instructions included in the MedCom tool (Attachment A), that were discussed during coding meetings that included both CU and UCSD investigators.

This electronic version of the MRCI tool has been modified for use in the U.S.

1. If it is unclear how a patient should be coded, the overarching concept is to code as the least complex medication regimen.
2. When there is confusion about the MRCI scoring, enter a description and rationale in the 'Special Cases' input area.
3. If a frequency is missing only account for the dosage form.
4. Ignore drug if both the Rx dose and Rx frequency is missing – this is considered an inactive drug.
5. Categorize as OTC if a drug strength is available OTC and Rx:
 - a. e.g. Omeprazole 20 mg, Ranitidine 150 mg, IBU 200 mg are OTC
 - b. e.g. Omeprazole 40 mg, Ranitidine 300 mg, IBU 800 mg are Rx
 - c. Use [Online Facts & Comparisons](#) to verify OTC vs. Rx → Type in name of drug in Search box, then select "Product List"
6. The OTC vs. Rx issue will continue to come up. Note (in the notes box in the MRCI tool) when you have decided to call something Rx and why.
7. Be mindful of the Rx dose as it may indicate multiple doses of the dose prescribed.
 - a. e.g. Metformin 500mg, Take 1000mg by mouth twice daily
8. Ensure dosage forms are recorded accurately, especially patches.
9. Eyes, ears, nares are considered only one body part. Thus when the directions indicate 1 drop in each ear, it should be coded as one unit – NOT multiple units at one time.
10. When directions indicate that application to more than one body part (apply cream to arms and legs), it should be coded as one unit, NOT multiple units.
11. For further guidance regarding inhalation dosage forms, see Attachment B.
12. Coding regarding "additional directions" only in the MRCI tool (this does not address form or frequency):
 - a. Take with breakfast, lunch or dinner = "relation to food/liquid" and "take at specified time"
 - b. Take with meals = "relation to food/liquid"
 - c. Take nightly or bedtime = "take at specified time"
13. Injecting units of insulin is considered a prescribed dose which should be coded as one unit, NOT multiple units at once.
14. Code: All insulins = Rx
15. Code: Glucose tablets = OTC in DM cohort, not Disease
16. Code: Insulin sliding scale = "variable dose"
17. Code: Chewable = tablet
18. Code: Shampoo (nizatidine) = paint/solution

19. Code: Any frequency in the sig that is less frequent than the options listed in the MRCI tool = “alternate days”
 - a. e.g. Take Q 7 days, Take once monthly
20. Code: If the frequency (directions) is missing:
 - a. For disease state drugs only = infer the most common frequency (but least complex e.g. QD) for that drug; count as 1 drug; choose the correct dosage form
 - b. For non-disease state Rx or OTC drugs = count as 1 drug; count as missing frequency; choose the correct dosage form
21. Code: If directions indicate a dose MWF and a different dose other days = “once daily” and “variable dose”
 - a. e.g. Warfarin 2mg on MWF, and Warfarin 5mg on all other days
22. Code: When a variable frequency is indicated = code for the longest interval (least complex)
 - a. e.g. Vicodin, Take 1 tablet Q 4 – 6 H = choose “every 6 hours”
23. Code: If there is no code available (5 times a day) code as the next closest frequency in the tool to represent the least complex regimen (5 times a day code as “every 6hours”)
24. Code: Nitroglycerin sublingual tablets often have directions of take 1 tablet every 5 minutes PRN; code as “use as directed”
25. Code: Triptans (migraine treatment) often have directions stating take 1 tablet at onset and may repeat once in a 24 hours period; code as “use as directed”
26. Code: Z-Pak (azithromycin) as “once daily” and “multiple units at once”. If “As directed” is included in the sig after dosing instructions then disregard and do not code for that.
27. Code: Powders will be coded as powders and no additional directions will be included for “dissolve” unless the patient record specifically states so.
 - a. e.g. Miralax (polyethylene glycol) powder
28. Code: Duplicate drugs count as 1 medication. This clarifies/emphasizes Instruction #3 in the original MRCI Instructions (Attachment A).
 - a. e.g. Warfarin 2 mg + Warfarin 5 mg = 1 medication
 - b. e.g. Topiramate 50 mg daily & Topiramate 100 mg 2 times daily. Count as one drug; code as “twice daily” and “multiple units at once” (least complex)
29. Do not code if a drug is most often given in clinic
 - a. e.g. Darbopoetin, zolendronic acid, Decadron, vitamin B12 IM, and Kenalog-40, Haloperidol, Lupron, or Zometa injections
30. Do not code medical supplies or vaccines
 - a. e.g. Diabetic lancets, test strips, needles, dressings
31. Code: 1½ tablet = “Multiple units at once”, but NOT also “Break/crush tablet”

Attachment A

Medication Regimen Complexity Index (MRCI) Directions

1. MRCI applies to both prescribed and over the counter medications. All entries are to be made only based in information on the label or drug chart (at time of dispensing or discharge). No assumptions are to be made based on clinical judgment.
2. There are three sections in the scale. Complete each section before proceeding to the next. At the end, add the scores for the three sections to give the MRCI.
3. If the same medication (same brand and dosage form) is present more than once in different strengths (e.g. Warfarin 5mg, 3mg, and 1mg as directed), it is still considered 1 medication.
4. If a dosage is optional, choose the dosing instruction with the smallest dose/ frequency (e.g. Ventolin MDI 1-2 puffs, 2-3 times daily will receive weightings for 'metered dose inhalers', 'variable dose' and 'twice daily'; but not multiple units at one time)
5. In certain cases the dosing frequency needs to be calculated (e.g. Ranitidine 1 morning and 1 nightly is 1 tablet twice daily).
6. It is possible that with certain 'use as directed' instructions, the regimen will not get a score under dosing frequency (e.g. Prednisolone 5mg as directed).
7. If there is more than one dosing frequency direction, they should be scored for all the dosing frequency directions (e.g. Ventolin MDI 2 puffs twice daily and PRN, will receive scores for 'metered dose inhalers', 'multiple units at one time', 'twice daily' and 'PRN').
8. Instances where two or more medications are mutually exclusive, they need to be scored twice or more as PRN with the recommended dosing frequency (e.g. Ventolin MDI or Ventolin nebulizer twice daily PRN will receive scores for both 'metered dose inhalers' and 'nebulizer' under dosage forms, but needs to be scored two times for 'twice daily PRN').
9. In cases where there is no matching option, choose the closest option (e.g. 6 times daily could be considered as 'q4h').

Attachment B

Guidance Regarding Inhalers

Information obtained through: Micromedex; the Global Initiative for Chronic Obstructive Lung Disease (GOLD) guidelines; National Heart Lung and Blood Institute guidelines (Expert Panel Report 3: Guidelines for the Diagnosis and Management of Asthma)

Metered Dose Inhalers (MDIs)	Aerolizers	Other DPIs (Diskus, Flexhaler, Handihaler, Twisthaler, Autohaler)
Albuterol: Ventolin HFA; ProAir HFA; Proventil HFA	Formoterol: Foradil Aerolizer	Budesonide: Pulmicort Flexhaler
Albuterol/Ipratropium: Combivent		Fluticasone: Flovent Diskus
Beclomethasone: Qvar; Beclovent		Ipratropium: Atrovent
Ciclesonide: Alvesco		Mometasone: Asmanex Twisthaler
Flunisolide: Aerobid		Pirbuterol: Maxair Autohaler
Fluticasone: Flovent HFA		Salmeterol: Serevent Diskus
Formoterol/Budesonide: (Symbicort)		Salmeterol/Fluticasone: Advair Diskus
Ipratropium: Atrovent HFA		Tiotropium: Spiriva Handihaler
Levalbuterol: Xopenex HFA		
Salmeterol/Fluticasone: Advair HFA		
Triamcinolone: Azmacort		
Cromolyn sodium		