

This document highlights the changes made to the previous version of the pseudocode documents (1/28/2008). Changes marked with a section mark (§) reflect a change in the actual Grouper.DLL software.

CHANGES TO PSEUDOCODE DOCUMENT:																									
PAGE	CHANGE(S) MADE:																								
Through -out	<p>Updated references from Version 02.02 to Version 02.03 <i>(Some references to generic issues in version 2 were converted to "Version .02.0n".</i> Updated file names incorporating the version number (Pseu0202.pdf = Pseu0203.pdf, etc.) Updated email address for questions to <grouper0203@homehealthgrouper.info> Editorial changes to reflect the fact that the PPS refinements and the general approach of Grouper 02.0n are no longer new.</p>																								
p. i	Updated Table of Contents																								
pp. 1-2	<p>Added version note summarizing changes made in this version of the Grouper .DLL:</p> <ul style="list-style-type: none"> • Accommodating ICD-9-CM changes effective 10/1/2008 (specific codes flagged in Appendix Tables) (§) • A few changes to use of existing ICD-9-CM codes (§) • Fixing a few bugs in grouper 02.02 that applied to rare data combinations <ul style="list-style-type: none"> ○ Invalid values of M0826 & M0826NA (§) ○ NRS scoring of diabetic ulcers in M0246 following casemix or non-casemix V-codes in M0230/M0240 (§) ○ Data validity flag for manifestation codes in M0246 without an allowable V-code in M0230/M0240 (§) ○ Scoring NRS points for M0476 on followup/recert assessments when M0470 is blank (§) <p>Noted changes in pseudocode as well.</p>																								
p. 3	Added version note reiterating changes related to scoring diagnosis codes. (§)																								
p. 7	<p>Reformatted listing of M0090 and M0100 for clarity</p> <p>PREVIOUSLY:</p> <table> <tr> <td>302-303</td><td>M0090_INFO_COMPLETED_YR12</td></tr> <tr> <td>304-305</td><td>M0090_INFO_COMPLETED_YR34</td></tr> <tr> <td>306-309</td><td>M0090_INFO_COMPLETED_MMDD</td></tr> <tr> <td>310-310</td><td>M0100_ASSMT_REASON1</td></tr> <tr> <td>311-311</td><td>M0100_ASSMT_REASON2</td></tr> </table> <p>REVISED</p> <table> <tr> <td>302-309</td><td>M0090_INFO_COMPLETED</td></tr> <tr> <td>302-303</td><td>M0090_INFO_COMPLETED_YR12</td></tr> <tr> <td>304-305</td><td>M0090_INFO_COMPLETED_YR34</td></tr> <tr> <td>306-309</td><td>M0090_INFO_COMPLETED_MMDD</td></tr> <tr> <td>310-311</td><td>M0100_ASSMT_REASON</td></tr> <tr> <td>310-310</td><td>M0100_ASSMT_REASON1</td></tr> <tr> <td>311-311</td><td>M0100_ASSMT_REASON2</td></tr> </table>	302-303	M0090_INFO_COMPLETED_YR12	304-305	M0090_INFO_COMPLETED_YR34	306-309	M0090_INFO_COMPLETED_MMDD	310-310	M0100_ASSMT_REASON1	311-311	M0100_ASSMT_REASON2	302-309	M0090_INFO_COMPLETED	302-303	M0090_INFO_COMPLETED_YR12	304-305	M0090_INFO_COMPLETED_YR34	306-309	M0090_INFO_COMPLETED_MMDD	310-311	M0100_ASSMT_REASON	310-310	M0100_ASSMT_REASON1	311-311	M0100_ASSMT_REASON2
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311-311	M0100_ASSMT_REASON2																								
p. 9	<p>Added footnote emphasizing that 4 diagnosis positions can hold the primary diagnosis.</p> <p>ADDED:</p> <p>³Note that only 4 members of these arrays can potentially be the primary diagnosis: 1, 2, 7, and 13 (see below.)</p>																								

CHANGES TO PSEUDOCODE DOCUMENT:	
PAGE	CHANGE(S) MADE:
p. 14	<p><i>Deleted code related to verification that diabetes-related manifestation codes followed a diabetes etiology. (These situations are already covered in the general etiology/manifestation logic; the code was an artifact from the time before the general etiology/manifestation logic had been added to the grouper.)</i></p> <p><i>DROPPED:</i></p> <p><i>[Special diabetes code pair verification]</i> If ICD9_Start(2-6) + 1-6 is { 362.01, 362.02, 366.41 } and ICD9_Start(n-1) + 1-6 is not { 250.5x }, ICD9_Skip(n)=1 AND MANIFESTATION_SEQUENCING_FLAG = 1</p> <p>If ICD9_Start(13-18) + 1-6 is { 362.01, 362.02, 366.41 } and ICD9_Start(n-6) + 1-6 is not { 250.5x }, ICD9_Skip(n)=1 AND MANIFESTATION_SEQUENCING_FLAG = 1</p> <p>If ICD9_Start(2-6) + 1-6 is { 357.2 } and ICD9_Start(n-1) + 1-6 is not { 250.6x }, ICD9_Skip(n)=1 AND MANIFESTATION_SEQUENCING_FLAG = 1</p> <p>If ICD9_Start(13-18) + 1-6 is { 357.2 } and ICD9_Start(n-6) + 1-6 is not { 250.6x }, ICD9_Skip(n)=1 AND MANIFESTATION_SEQUENCING_FLAG = 1</p>
p. 15	<p><i>Added missing "ICD9_Skip(n)=1" to code checking potential etiology codes for completeness.</i></p> <p><i>PREVIOUSLY:</i></p> <p><i>[Check potential etiologies for missing 4th or 5th digits¹:]</i> Else, search Table 2, Pt. 3 (sections 3.1&3.2), with code pair [ICD9_Start(n)+1-6:ICD9_Start(n-1)+1-6]; if found (i.e., 4th/5th digits missing in ICD9_Start(n-1) + 1-6), then ICD9_Manifest (n)=0 AND MANIFESTATION_SEQUENCING_FLAG = 1;</p> <p><i>REVISED:</i></p> <p><i>[Check potential etiologies for missing 4th or 5th digits²:]</i> Else, search Table 2, Pt. 3 (sections 3.1&3.2), with code pair [ICD9_Start(n)+1-6:ICD9_Start(n-1)+1-6]; if found (i.e., 4th/5th digits missing in ICD9_Start(n-1) + 1-6), then ICD9_Skip(n)=1 and ICD9_Manifest (n)=0 AND MANIFESTATION_SEQUENCING_FLAG = 1;</p>

¹ Acceptable etiologies are defined for each manifestation/secondary-only casemix code – see Table 3. In terms of specificity required by the Grouper, a particular ICD-9-CM diagnosis may be acceptable at the 3-digit category level as a casemix diagnosis itself (see Table 1) but it may require further specification as an etiology for a particular casemix code – but not for others (see Table 3).

CHANGES TO PSEUDOCODE DOCUMENT:

PAGE	CHANGE(S) MADE:
p. 18	<p><i>Restored missing "IF" to logic test for M0250</i></p> <p><i>PREVIOUSLY:</i> [M0250_THH_IV_INFUSION = 0 AND M0250_THH_PAR_NUTRITION = 0 AND M0250_THH_ENT_NUTRITION = 0 AND M0250_THH_NONE_ABOVE = 0] THEN M0250_INTERNAL_LOGIC_INVLD = 1 AND CLINICAL_DOMAIN_DATA_ISSUE_FLAG =1</p> <p><i>REVISED</i> IF [M0250_THH_IV_INFUSION = 0 AND M0250_THH_PAR_NUTRITION = 0 AND M0250_THH_ENT_NUTRITION = 0 AND M0250_THH_NONE_ABOVE = 0] THEN M0250_INTERNAL_LOGIC_INVLD = 1 AND CLINICAL_DOMAIN_DATA_ISSUE_FLAG =1</p>
p. 23	<p><i>Added missing bracket to one logic test for M0476:</i></p> <p><i>PREVIOUSLY:</i> IF M0100_ASSMT_REASON = [04 OR 05] AND M0440_LESION_OPEN_WND <> 1 OR M0470_NBR_STASULC <> 01 OR 02 OR 03 OR 04] AND M0476_STAT_PRB_STASULC = 01 OR 02 OR 03, ...</p> <p><i>REVISED:</i> IF M0100_ASSMT_REASON = [04 OR 05] AND [M0440_LESION_OPEN_WND <> 1 OR M0470_NBR_STASULC <> 01 OR 02 OR 03 OR 04] AND M0476_STAT_PRB_STASULC = 01 OR 02 OR 03, ...</p>
p. 25	<p><i>Corrected one of the logic tests for M0826NA; if value is invalid, a HIPPS score is generated assuming 0 therapy visits, and the service domain validity flag is turned on:</i></p> <p><i>PREVIOUSLY:</i> IF M0826_THER_NEED_NA <> [0 or 1], THEN THERAPY_SCORE = 0 AND M0826_THERAPY_NEED_NUM_INVLD = 1</p> <p><i>REVISED:</i> IF M0826_THER_NEED_NA <> [0 or 1], THEN THERAPY_SCORE = 0 AND SERVICE_DOMAIN_DATA_ISSUE_FLAG =1</p>

CHANGES TO PSEUDOCODE DOCUMENT:

PAGE	CHANGE(S) MADE:
p. 29 ff.	<p><i>Revised logic for cycling through diagnosis positions to be more specific when only one specific diagnosis position would every qualify for the test.</i></p> <p>PREVIOUSLY:</p> <pre> if ICD9_DG(1) > 0 and ICD9_PointsSE(1) > 0 then { If Diag_GrpsSE (ICD9_DG(n)) = 1 then ICD9_PointsSE(n) = 0 Else if ICD9_PointsSE(n) > 0 then Diag_GrpsSE (ICD9_DG(n)) = 1 } if ICD9_DG(7) > 0 and ICD9_PointsSE(7) > 0 then { If Diag_GrpsSE (ICD9_DG(n)) = 1 then ICD9_PointsSE(n) = 0 Else if ICD9_PointsSE(n) > 0 then Diag_GrpsSE (ICD9_DG(n)) = 1 } if ICD9_DG(13) > 0 and ICD9_PointsSE(13) > 0 then If Diag_GrpsSE (ICD9_DG(n)) = 1 then ICD9_PointsSE(n) = 0 else { if (13 <= n <= 18) and (ICD9_Manifest(n)=1) and (ICD9_PointsSE(n-6) > 0) then { if ICD9_PointsSE(n) > ICD9_PointsSE(n-6) then { ICD9_PointsSE(n-6) = 0 and Diag_GrpsSE (ICD9_DG(n-6)) = 0 and POINTS_REDUND_SE (n-1) = 1 } else ICD9_PointsSE(n) = 0 and POINTS_REDUND_SE (n) = 1 } if ICD9_PointsSE(n) > 0 then Diag_GrpsSE (ICD9_DG(n)) = 1 } } </pre> <p>REVISED:</p> <pre> if ICD9_DG(1) > 0 and ICD9_PointsSE(1) > 0 then { Diag_GrpsSE (ICD9_DG(1)) = 1 } if ICD9_DG(7) > 0 and ICD9_PointsSE(7) > 0 then { If Diag_GrpsSE (ICD9_DG(7)) = 1 then ICD9_PointsSE(7) = 0 Else if ICD9_PointsSE(7) > 0 then Diag_GrpsSE (ICD9_DG(7)) = 1 } if ICD9_DG(13) > 0 and ICD9_PointsSE(13) > 0 then If Diag_GrpsSE (ICD9_DG(13)) = 1 then ICD9_PointsSE(13) = 0 else { if ((ICD9_Manifest(13)=1) and (ICD9_PointsSE(7) > 0) then { if ICD9_PointsSE(13) > ICD9_PointsSE(7) then { ICD9_PointsSE(7) = 0 and Diag_GrpsSE (ICD9_DG(7)) = 0 and POINTS_REDUND_SE (7) = 1 } } } } </pre>

CHANGES TO PSEUDOCODE DOCUMENT:

PAGE	CHANGE(S) MADE:
p. 31	<p><i>Changed "1" to "6" in logic for dealing with diagnoses in M0246:</i></p> <p><i>PREVIOUSLY:</i></p> <pre> if ICD9_DG(14-18) > 0 and ICD9_PointsSE(14-18) > 0 then If Diag_GrpsSE (ICD9_DG(n)) = 1 then ICD9_PointsSE(n) = 0 else { if (13 <= n <= 18) and (ICD9_Manifest(n)=1) and (ICD9_PointsSE(n-6) > 0) then { if ICD9_PointsSE(n) > ICD9_PointsSE(n-6) then { ICD9_PointsSE(n-6) = 0 and Diag_GrpsSE (ICD9_DG(n-6)) = 0 and POINTS_REDUND_SE (n-1) = 1 } } } </pre> <p><i>REVISED:</i></p> <pre> if ICD9_DG(14-18) > 0 and ICD9_PointsSE(14-18) > 0 then If Diag_GrpsSE (ICD9_DG(n)) = 1 then ICD9_PointsSE(n) = 0 else { if (13 <= n <= 18) and (ICD9_Manifest(n)=1) and (ICD9_PointsSE(n-6) > 0) then { if ICD9_PointsSE(n) > ICD9_PointsSE(n-6) then { ICD9_PointsSE(n-6) = 0 and Diag_GrpsSE (ICD9_DG(n-6)) = 0 and POINTS_REDUND_SE (n-<u>6</u>) = 1 } } } </pre>

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pp. 33 ff. *Added logic for scoring NRS points for diabetic ulcers when the diagnosis codes have been "displaced" to M0246 by allowable V-code(s) in M0230 and/or M02340b:*

PREVIOUSLY:

[Setting the NRS diagnosis group flag for Diabetic Ulcers, identified by primary diagnosis and first "other" diagnosis and "turning off" the other non-pressure, non-stasis ulcer flag:]

IF (M0230_PRIMARY_DIAG_ICD = 250.80-250.89 and
 M0240_OTH_DIAG1_ICD = 707.10-707.9), then

set NRS-ICD9_DG(1) = 3 AND
set NRS-ICD9_DG(2) = 0 AND
set NRS-Diag_Grps (3) = 1 AND
set NRS-Diag_Grps (6) = 0)

REVISED:

[Setting the NRS diagnosis group flag for Diabetic Ulcers, identified by primary diagnosis and first "other" diagnosis and "turning off" the other non-pressure, non-stasis ulcer flag:]

IF ([M0230_PRIMARY_DIAG_ICD = [250.80-250.89 or
 [249.80-249.81 if M0090_INFO_COMPLETED_DT > "20080930"]
 and NRS-ICD9_Skip(1) = 0]
 AND
 [M0240_OTH_DIAG1_ICD = 707.10-707.9 and NRS-ICD9_Skip(2)=0]), then

set NRS-ICD9_DG(1) = 3 AND
set NRS-ICD9_DG(2) = 0 AND
set NRS-Diag_Grps (3) = 1 AND
set NRS-Diag_Grps (6) = 0)

IF ([M0230_PRIMARY_DIAG_ICD = [250.80-250.89 or
 [249.80-249.81 if M0090_INFO_COMPLETED_DT > "20080930"]
 and NRS-ICD9_Skip(1) = 0]
 AND
 [M0246_PMT_DIAG_ICD_B3 = 707.10-707.9 and NRS-ICD9_Skip(8)=0]), then

set NRS-ICD9_DG(1) = 3 AND
set NRS-ICD9_DG(8) = 0 AND
set NRS-Diag_Grps (3) = 1 AND
set NRS-Diag_Grps (6) = 0)

IF ([M0246_PMT_DIAG_ICD_A3 = [250.80-250.89 or
 [249.80-249.81 if M0090_INFO_COMPLETED_DT > "20080930"]
 and NRS-ICD9_Skip(7) = 0]
 AND
 [M0240_OTH_DIAG1_ICD = 707.10-707.9 and NRS-ICD9_Skip(2)=0]), then

set NRS-ICD9_DG(7) = 3 AND
set NRS-ICD9_DG(2) = 0 AND
set NRS-Diag_Grps (3) = 1 AND
set NRS-Diag_Grps (6) = 0)

IF ([M0246_PMT_DIAG_ICD_A3 = [250.80-250.89 or
 [249.80-249.81 if M0090_INFO_COMPLETED_DT > "20080930"]
 and NRS-ICD9_Skip(7) = 0]
 AND
 [M0246_PMT_DIAG_ICD_B3 = 707.10-707.9 and NRS-ICD9_Skip(8)=0]), then

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p. 34	<p><i>Added logic to allow M0246a3 to accrue diabetic ulcer NRS points</i></p> <p><i>PREVIOUSLY:</i> Look up the diagnostic group for each NRS-ICD9_DG variable in "Table 7: NRS Casemix Adjustment Variables and Point Scores" and assign points to each diagnosis position.</p> <p>IF NRS-ICD9_DG(1-18) = 1, assign Table 7, row 1 points to NRS-ICD9_Points(n) IF NRS-ICD9_DG(1-18) = 2, assign Table 7, row 3 points to NRS-ICD9_Points(n) IF NRS-ICD9_DG(1) = 3, assign Table 7, row 5 points to NRS-ICD9_Points(1) IF NRS-ICD9_DG(1-18) = 4, assign Table 7, row 6 points to NRS-ICD9_Points(n) IF NRS-ICD9_DG(1-18) = 5, assign Table 7, row 8 points to NRS-ICD9_Points(n) IF NRS-ICD9_DG(1-18) = 6 AND NRS-Diag_Grps (3) <> 1, assign Table 7, row 10 points to NRS-ICD9_Points(n)</p> <p><i>REVISED:</i> Look up the diagnostic group for each NRS-ICD9_DG variable in "Table 7: NRS Casemix Adjustment Variables and Point Scores" and assign points to each diagnosis position.</p> <p>IF NRS-ICD9_DG(1-18) = 1, assign Table 7, row 1 points to NRS-ICD9_Points(n) IF NRS-ICD9_DG(1-18) = 2, assign Table 7, row 3 points to NRS-ICD9_Points(n) IF NRS-ICD9_DG(1) = 3, assign Table 7, row 5 points to NRS-ICD9_Points(1) <u>IF NRS-ICD9_DG(7) = 3, assign Table 7, row 5 points to NRS-ICD9_Points(7)</u> IF NRS-ICD9_DG(1-18) = 4, assign Table 7, row 6 points to NRS-ICD9_Points(n) IF NRS-ICD9_DG(1-18) = 5, assign Table 7, row 8 points to NRS-ICD9_Points(n) IF NRS-ICD9_DG(1-18) = 6 AND NRS-Diag_Grps (3) <> 1, assign Table 7, row 10 points to NRS-ICD9_Points(n)</p>

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pp. 36 ff. *Revised logic for cycling through NRS diagnosis positions to be more specific when only one specific diagnosis position would every qualify for the test. (Also, removed all "SE"s from NRS calculations. (There are no separate scoring equations for NRS scoring.)*

PREVIOUSLY:

if NRS-ICD9_DG(1) > 0 and NRS-ICD9_PointsSE(1) > 0 then

{

 If NRS-Diag_GrpsSE (NRS-ICD9_DG(n)) = 1 then NRS-ICD9_PointsSE(n) = 0

 Else if NRS-ICD9_PointsSE(n) > 0 then NRS-Diag_GrpsSE (NRS-ICD9_DG(n)) = 1

}

if NRS-ICD9_DG(7) > 0 and NRS-ICD9_PointsSE(7) > 0 then

{

 If NRS-Diag_GrpsSE(NRS-ICD9_DG(n)) = 1 then NRS-ICD9_PointsSE(n) = 0

 Else if NRS-ICD9_PointsSE(n) > 0 then NRS-Diag_GrpsSE(NRS-ICD9_DG(n)) = 1

}

if NRS-ICD9_DG(13) > 0 and NRS-ICD9_PointsSE(13) > 0 then

 If NRS-Diag_GrpsSE(NRS-ICD9_DG(n)) = 1 then NRS-ICD9_PointsSE(n) = 0

 else

 {

 if (13 <= n <= 18) and (NRS-ICD9_Manifest(n)=1) and (NRS-ICD9_PointsSE(n-6) > 0) then

 {

 if NRS-ICD9_PointsSE(n) > NRS-ICD9_PointsSE(n-6) then

 {

 NRS-ICD9_PointsSE(n-6) = 0 and

 NRS-Diag_GrpsSE(NRS-ICD9_DG (n-6)) = 0 and

 NRS-POINTS_REDUND_SE(n-1) = 1

 }

 else NRS-ICD9_PointsSE(n) = 0 and

 NRS-POINTS_REDUND_SE (n) = 1

 }

 if NRS-ICD9_PointsSE(n) > 0 then NRS-Diag_GrpsSE (ICD9_DG(n)) = 1

 }

REVISED:

if NRS-ICD9_DG(1) > 0 and NRS-ICD9_Points(1) > 0 then

{

 NRS-Diag_Grps(NRS-ICD9_DG(n)) = 1

}

if NRS-ICD9_DG(7) > 0 and NRS-ICD9_Points(7) > 0 then

{

 If NRS-Diag_Grps(NRS-ICD9_DG(7)) = 1 then NRS-ICD9_Points(7) = 0

 Else if NRS-ICD9_Points(7) > 0 then NRS-Diag_Grps (NRS-ICD9_DG(7)) = 1

}

if NRS-ICD9_DG(13) > 0 and NRS-ICD9_Points(13) > 0 then

 If NRS-Diag_Grps(NRS-ICD9_DG(13)) = 1 then NRS-ICD9_Points(13) = 0

 else

 {

 if ((NRS-ICD9_Manifest(13)=1) and (NRS-ICD9_Points(7) > 0) then

 {

 if NRS-ICD9_Points(13) > NRS-ICD9_Points(7) then

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p. 37	<p>Changed "1" to "6" in logic for dealing with NRS diagnoses in M0246:</p> <p><i>PREVIOUSLY:</i></p> <pre> if (13 <= n <= 18) and (NRS-ICD9_Manifest(n)=1) and (NRS-ICD9_PointsSE(n-6) > 0) then { if NRS-ICD9_PointsSE(n) > NRS-ICD9_PointsSE(n-6) then { NRS-ICD9_PointsSE(n-6) = 0 and NRS-Diag_GrpsSE (ICD9_DG(n-6)) = 0 and NRS-POINTS_REDUND_SE (n-1) = 1 } } </pre> <p><i>REVISED:</i></p> <pre> if (13 <= n <= 18) and (NRS-ICD9_Manifest(n)=1) and (NRS-ICD9_Points(n-6) > 0) then { if NRS-ICD9_Points(n) > NRS-ICD9_Points(n-6) then { NRS-ICD9_Points(n-6) = 0 and NRS-Diag_Grps(ICD9_DG(n-6)) = 0 and NRS-POINTS_REDUND (n-<u>6</u>) = 1 } } </pre>

APPENDIX TABLES

Throughout	<ul style="list-style-type: none"> • Updated references from Version 02.02 to Version 02.03 • Updated file names incorporating the version number (Pseu0202.pdf = Pseu0203.pdf, etc.) • Updated email address for questions <grouper0203@homehealthgrouper.info> • Diagnosis codes (in Tables 1, 2, 3, 4, 6, and 7) that become effective and/or part of the Grouper as of October 1, 2008 are marked with an asterisk (*); (§) • Diagnosis codes that become INVALID and/or not part of the Grouper as of October 1, 2008 are flagged with a pound sign (#). (§) • Added footnotes to tables to explain marks
Table 1	Table sorted by ICD-9-CM code rather than diagnosis group for ease of use.
Table 6	Table sorted by ICD-9-CM code rather than NRS diagnosis group for ease of use.
Table 2, pt 3	Changed from asterisk (*) to plus sign (+) the symbol indicating code categories that are identified as etiologies at the three-digit level, but must be reported at the 4- or 5-digit level because they include one or more case-mix diagnosis codes which must be reported at the 4- or 5-digit level of specificity.