Home Health Patient-Driven Groupings Model (PDGM) Software

Installation and User Manual

For PC/batch

Software version 01.0.20.R1 January 2020

Table of Contents

Chapter 1: Summary of changes

This chapter summarizes the changes made to the Home Health Patient-Driven Groupings Model (PDGM) Software for the 01.0.20.R1 January 2020 release.

Software

- Comorbidity Adjustment logic updated to ignore an invalid diagnosis code when reported as a secondary diagnosis and conditions are present for either a low or high comorbidity adjustment. If no comorbidity adjustment conditions are present and an invalid diagnosis code is submitted as secondary diagnosis, the Comorbidity Adjustment position in the HIPPS code is 1 indicating no comorbidity adjustment is applied. **Note:** No return code or error condition is provided in this instance.

- Updated and improved error and stability management in batch environment.

Documentation

- Comorbidity Adjustments logic section updated to indicate the processing of invalid secondary diagnoses.

- Description for Return Code 50 changed to "Fatal error – Component corrupted or not set up or other internal error"

Tables

- Return_Codes: Description updates only

Chapter 2: Introduction to the Home Health Patient-Driven Groupings Model (HH PDGM) Software

Prior to January 1, 2020, home health claims were processed using the Home Health Resource Groups (HHRG) model which represented a case-mix adjusted payment for a 60-day episode of care. As a result of the Affordable Care Act of 2010, the HHRG model and payment classification was reviewed by the Centers for Medicare & Medicaid Services (CMS) who determined the need for payment reform for home health claims. This reform was made into law under the Bipartisan Budget Act of 2018. Effective January 1, 2020, Medicare provides payment for home health care to home health agencies (HHAs) under the Home Health Prospective Payment System (PPS) by means of a national, standardized 30-day period of care payment rate calculated by the Patient-Driven Groupings Model (PDGM) Software. Final regulations and approval for the Home Health Payment System update via the PDGM software were published in the CY 2019 Federal Register.

The PDGM software categorizes each home health period of care into meaningful payment groups called Home Health Resource Groups (HHRGs). Each 30-day period is grouped into one of 432 possible HHRGs using five clinical variables.

- Referral source: Indicates whether the patient is being admitted for home health care from an institutional or community source.

- Period timing: Indicates whether a period of care is an initial home health event classified as early, or a subsequent home health event classified as late.

- Clinical grouping: Indicates the primary reason a patient is receiving home health services.

- Functional impairment level: Indicates the patient's level of functional impairment which is identified by responses to specific items from the home health Outcome and Assessment Information Set (OASIS).

- Comorbidity adjustment: Indicates if there are certain comorbid conditions present that would affect the resource usage needed to treat the patient. Comorbid conditions are commonly reported as secondary diagnoses submitted on a home health claim.

HHAs are required to use the 10th version of the International Classification of Diseases (ICD-10-CM) for reporting the principal and secondary diagnoses which are used in the PDGM software for clinical grouping assignment. Although procedure codes are not used in producing HHRGs, agencies are required to use HCPCS procedure codes when billing for home health services.

Versions of the software

The following table lists the versions and date ranges of the PDGM software. As new versions are added, this table will be updated to indicate the version of the program in the current release. The first level of the version number denotes the release month and the third level denotes the release year. The second level denotes the number of revisions since the original release. For example, 01.0.20 would be the first release in January 2020, and 02.0.20 would be the first release in October 2020.

Table 1.   Program versions

Version	Effective date range
01.0.20.R1	01/01/2020 - 12/31/2029*

* The ending date of the current version will be modified to the actual ending date at the time of the next release.

Purpose of the PDGM functionality

The PDGM software uses clinical information submitted on home health claims to categorize patients into clinical categories and provide adjustments based on a patient's resource needs. After the software has determined the categorization and adjustment, a Health Insurance Prospective Payment System (HIPPS) code is produced, upon which payment is established under the Home Health PPS Pricer program.

HIPPS code generation

The PDGM software outputs a HIPPS code using a distinct five-position, alphanumeric code. A HIPPS code represents a set of patient characteristics or case-mix on which payment determinations are made.

The following five positions are the clinical characteristics which make up a HIPPS rate code:

- The first position is a numeric value representing the home health referral source and the period timing present on a home health claim.

- The second position is an alphabetic character representing the clinical group assignment based on the principal diagnosis reported on a home health claim.

- The third position is an alphabetic character representing a patient's functional impairment level score based on responses to certain items in the OASIS assessment record.

- The fourth position is a numeric value representing an adjustment due to comorbid diagnoses submitted as secondary diagnoses on a home health claim.

- The fifth position is a numeric place holder value for potential future use.

The following table includes all values used in the generation of a HIPPS code. For example, if HIPPS code 1HA21 represents a patient that is referred from a community source with a period timing of "early," the primary need for home health care is cardiac related, a low functional level, and with a comorbid condition present.

Table 2.   HIPPS code values

Position	Description	Valid values
1	Source and timing	1 - Community Early 2 - Institutional Early 3 - Community Late 4 - Institutional Late
2	Clinical group	A - MMTA Other B - Neurological Rehab C - Wounds D - Complex Nursing E - Musculoskeletal Rehab F - Behavioral Health G - MMTA – Surgical Aftercare H - MMTA – Cardiac I - MMTA – Endocrine J - MMTA – Gastrointestinal/ Genitourinary K - MMTA – Infectious L - MMTA – Respiratory
3	Functional level	A - Low B - Medium C - High
4	Comorbidity	1 - No 2 - Low 3 - High
5	Placeholder	1 - placeholder

Period timing and referral source

A home health period of care is defined as a 30-day unit of payment. The PDGM software utilizes period timing to distinguish variations in resource needs. The first 30-day period typically

requires more resources to treat a patient in comparison to a subsequent 30-day period. Each period is defined as either "early" or "late", where the first 30-day period in a sequence of periods is always considered "early" and all subsequent periods of care after the first 30 days are considered "late." A new 30-day period of care cannot be considered early unless there is a gap of more than 60 days between the end of the last period and the start of the new period.

The referral source in combination with an "early" or "late" period of care determines the first position of the HIPPS code. A referral source is defined as "institutional" or "community" based on the healthcare setting utilized in the 14 days prior to the home health admission. An "institutional" admission includes any inpatient acute care hospitalizations, skilled nursing facility (SNF) stays, inpatient rehabilitation facility (IRF) stays, inpatient psychiatric facility (IPF) stays, or long-term care hospital (LTCH) stays. "Institutional" admissions also include acute care stays that occurred during a previous 30-day home health period of care that is within 14 days prior to the subsequent, contiguous 30-day period of care where the patient was not discharged and readmitted (in other words, the Admission date and the From date for the subsequent 30-day period of care do not match). In home health claims processing, the presence of Occurrence Code 61 (Acute care hospital discharge) or 62 (SNF, IRF, LTCH, or IPF discharge) determines if the referral source is institutional. All other admission types are considered "community" admissions.

Clinical group assignment

The PDGM software evaluates each 30-day period of care for clinical group assignment based on the principal diagnosis reported on the home health claim. The clinical group assignment identifies the primary reason for home health care for each period. Although all diagnosis codes are used for grouping and validation purposes, some diagnosis codes are not assigned to a clinical group. If a diagnosis is not assigned to a clinical group, it is either not a condition that would be primarily treated in a home health setting, or the diagnosis code should not be reported as a principal diagnosis according to ICD-10-CM coding guidelines. When the principal diagnosis for a period of care is not assigned to a clinical group the PDGM software does not generate a HIPPS code and instead provides a return code value of 5 to indicate the claim should be returned to the provider for more definitive coding. Return code 5 is generated when the principal diagnosis for a period of care is not assigned to a clinical group, or it is a manifestation code or an external cause of injury code. Return code 3 is generated when the principal diagnosis is blank or invalid.

There is one instance in which the principal diagnosis is not used in clinical group assignment — when a "Primary Awarding" diagnosis code is reported in the first secondary diagnosis position. If a diagnosis code is identified as Primary Awarding, it is treated as the principal diagnosis and is used to determine the clinical group assignment instead of the reported principal diagnosis. The unused principal diagnosis is excluded from all additional processing, such as the comorbidity adjustment. Refer to the Diagnosis Code table for a full code list that includes indicators for "Primary Awarding" diagnosis codes.

The following table lists the 12 clinical groups that may be assigned by the PDGM software along with their defined reason for home health care.

Table 3.   **Clinical groups**

Group ID	Group name	Primary reason for home health encounter
A	MMTA – Other	Assessment, evaluation, teaching, and medication management for a variety of medical and surgical conditions not classified in one of the previously listed groups
B	Neurological/Stroke Rehabilitation	Therapy (physical, occupational, or speech) for a neurological condition or stroke
C	Wounds – Post-Op Wound Aftercare and Skin/Non-Surgical Wound Care	Assessment, treatment, and evaluation of a surgical wound(s); assessment, treatment, and evaluation of non-surgical wounds, ulcers, burns, and other lesions
D	Complex Nursing Interventions	Assessment, treatment, and evaluation of complex medical and surgical conditions including IV, TPN, enteral nutrition, ventilator, and ostomies
E	Musculoskeletal Rehabilitation	Therapy (physical, occupational, or speech) for a musculoskeletal condition
F	Behavioral Health Care	Assessment, treatment, and evaluation of psychiatric conditions and substance use disorders
G	MMTA – Surgical Aftercare	Assessment, evaluation, teaching, and medication management for surgical aftercare
H	MMTA – Cardiac/Circulatory	Assessment, evaluation, teaching, and medication management for cardiac or other circulatory related conditions
I	MMTA – Endocrine	Assessment, evaluation, teaching, and medication management for endocrine related conditions
J	MMTA – Gastrointestinal/Genitourinary	Assessment, evaluation, teaching, and medication management for gastrointestinal or genitourinary related conditions
K	MMTA – Infectious Disease/ Neoplasms/Blood-forming Diseases	Assessment, evaluation, teaching, and medication management for conditions related to infectious diseases, neoplasms, and blood-forming diseases
L	MMTA – Respiratory	Assessment, evaluation, teaching, and medication management for respiratory related conditions

Functional impairment elements and scoring

The functional impairment status of a patient is used in determining an appropriate case-mix adjustment, which is accomplished by evaluating a defined set of responses to questions submitted on the Outcome and Assessment Information Set (OASIS). The inability to perform activities of daily living (ADL) directly affects the amount of resources that are required to appropriately treat a patient. Therefore, the OASIS elements listed in the following table are used to determine the function level of a patient, as these elements directly address a person's ADL. All other OASIS elements are not used by the PDGM software.

Note that field element M1033: Risk of Hospitalization is separated into 10 fields on input to the PDGM software. This requires each of the 10 response values for M1033 to be submitted on input with a valid value of 0 (no) or 1 (yes) depending on OASIS response values 1-10 being checked for element M1033. For example, if response values 3,4,5, and 6 were checked for M1033 on the OASIS, then the input value to the PDGM software for the third, fourth, fifth, and sixth M1033 element is 1 and all other M1033 element values are 0. If response value 10 is 1 (yes) all other response values for M1033 must be 0 (no); otherwise the PDGM software generates return code 7 to indicate an error in processing M1033.

The following table represents the PDGM elements used for functional impairment scoring as well as the valid values for scoring each element, which are determined by response values submitted on the OASIS.

Table 4.   Functional impairment elements

Element name	Valid values
M1033-HOSP-RISK-HSTRY-FALLS	History of falls (two or more falls - or any fall with an injury - in the past 12 months) 0 - No 1 - Yes
M1033-HOSP-RISK-WEIGHT-LOSS	Unintentional weight loss of a total of 10 pounds or more in the past 12 months 0 - No 1 - Yes
M1033-HOSP-RISK-MLTPL-HOSPZTN	Multiple hospitalizations (two or more) in the past 6 months 0 - No 1 - Yes
M1033-HOSP-RISK-MLTPL-ED-VISIT	Multiple emergency department visits (two or more) in the past six months 0 - No 1 - Yes

Element name	Valid values
M1033-HOSP-RISK-MNTL-BHV-DCLN	Decline in mental, emotional, or behavioral status in the past three months 0 - No 1 - Yes
M1033-HOSP-RISK-COMPLIANCE	Reported or observed history of difficulty complying with any medical instructions (for example, medications, diet, exercise) in the past three months 0 - No 1 - Yes
M1033-HOSP-RISK-5PLUS-MDCTN	Currently taking five or more medications 0 - No 1 - Yes
M1033-HOSP-RISK-CRNT-EXHSTN	Currently reports exhaustion 0 - No 1 - Yes
M1033-HOSP-RISK-OTHR-RISK	Other risk(s) not listed in 1 - 8 0 - No 1 - Yes
M1033-HOSP-RISK-NONE-ABOVE	None of the above 0 - No 1 - Yes Note: If input value is 1 (Yes) all other input values for M1033 must be 0 (No).
M1800-CRNT-GROOMING	00 - Able to groom self-unaided, with or without the use of assistive devices or adapted methods. 01 - Grooming utensils must be placed within reach before able to complete grooming activities. 02 - Someone must assist the patient to groom self. 03 - Patient depends entirely upon someone else for grooming needs.
M1810-CRNT-DRESS-UPPER	00 - Able to get clothes out of closets and drawers, put them on and remove them from the upper body without assistance. 01 - Able to dress upper body without assistance if clothing is laid out or handed to the patient. 02 - Someone must help the patient put on upper body clothing. 03 - Patient depends entirely upon another person to dress the upper body.

Element name	Valid values
M1820-CRNT-DRESS-LOWER	00 - Able to obtain, put on, and remove clothing and shoes without assistance. 01 - Able to dress lower body without assistance if clothing and shoes are laid out or handed to the patient. 02 - Someone must help the patient put on undergarments, slacks, socks or nylons, and shoes. 03 - Patient depends entirely upon another person to dress lower body.
M1830-CRNT-BATHG	00 - Able to bathe self in shower or tub independently, including getting in and out of tub/shower. 01 - With the use of devices, is able to bathe self in shower or tub independently, including getting in and out of the tub/shower. 02 - Able to bathe in shower or tub with the intermittent assistance of another person: (a) for intermittent supervision or encouragement or reminders, OR (b) to get in and out of the shower or tub, OR (c) for washing difficult-to-reach areas. 03 - Able to participate in bathing self in shower or tub but requires presence of another person throughout the bath for assistance or supervision. 04 - Unable to use the shower or tub, but able to bathe self independently with or without the use of devices at the sink, in chair, or on commode. 05 - Unable to use the shower or tub, but able to participate in bathing self in bed, at the sink, in bedside chair, or on commode, with the assistance or supervision of another person. 06 - Unable to participate effectively in bathing and is bathed totally by another person.
M1840-CRNT-TOILTG	00 - Able to get to and from the toilet and transfer independently with or without a device. 01 - When reminded, assisted, or supervised by another person, able to get to and from the toilet and transfer. 02 - Unable to get to and from the toilet but is able to use a bedside commode (with or without assistance). 03 - Unable to get to and from the toilet or bedside commode, but is able to use a bedpan/urinal independently. 04 - Is totally dependent in toileting.

Element name	Valid values
M1850-CRNT-TRNSFRNG	00 - Able to independently transfer.
	01 - Able to transfer with minimal human assistance or with use of an assistive device.
	02 - Able to bear weight and pivot during the transfer process but unable to transfer self.
	03 - Unable to transfer self and is unable to bear weight or pivot when transferred by another person.
	04 - Bedfast, unable to transfer but is able to turn and position self in bed.
	05 - Bedfast, unable to transfer and is unable to turn and position self.
M1860-CRNT-AMBLTN	00 - Able to independently walk on even and uneven surfaces and negotiate stairs with or without railings (specifically, needs no human assistance or assistive device).
	01 - With the use of a one-handed device (for example, cane, single crutch, hemi-walker), able to independently walk on even and uneven surfaces and negotiate stairs with or without railings.
	02 - Requires use of a two-handed device (for example, walker or crutches) to walk alone on a level surface and/or requires human supervision or assistance to negotiate stairs or steps or uneven surfaces.
	03 - Able to walk only with the supervision or assistance of another person at all times.
	04 - Chairfast, unable to ambulate but is able to wheel self independently.
	05 - Chairfast, unable to ambulate and is unable to wheel self.
	06 - Bedfast, unable to ambulate or be up in a chair.

Functional impairment scoring

Each OASIS element response is assigned awarding points that reflect resource needs with higher intensity needs being assigned a greater number of points. To determine an overall functional level score, the PDGM software sums up the total points awarded for each element. The following table represents each element response and the points awarded for functional impairment scoring. Note that Element M1033: Risk of Hospitalization only awards points when at least four or more items from element M1033 (1-7) are selected with Yes.

Table 5.   **Functional impairment scoring**

Elements	Response values	Points
M1033: Risk of Hospitalization	1-7	If four or more items have a Yes response, award 11 points
M1033: Risk of Hospitalization	8-10	0
M1800: Grooming	0	0
M1800: Grooming	1	0
M1800: Grooming	2	5
M1800: Grooming	3	5
M1810: Current Ability to Dress Upper Body	0	0
M1810: Current Ability to Dress Upper Body	1	0
M1810: Current Ability to Dress Upper Body	2	6
M1810: Current Ability to Dress Upper Body	3	6
M1820: Current Ability to Dress Lower Body	0	0
M1820: Current Ability to Dress Lower Body	1	0
M1820: Current Ability to Dress Lower Body	2	5
M1820: Current Ability to Dress Lower Body	3	12
M1830: Bathing	0	0
M1830: Bathing	1	0
M1830: Bathing	2	3
M1830: Bathing	3	13
M1830: Bathing	4	13
M1830: Bathing	5	20
M1830: Bathing	6	20
M1840: Toilet Transferring	0	0
M1840: Toilet Transferring	1	0
M1840: Toilet Transferring	2	5
M1840: Toilet Transferring	3	5
M1840: Toilet Transferring	4	5

Elements	Response values	Points
M1850: Transferring	0	0
M1850: Transferring	1	3
M1850: Transferring	2	7
M1850: Transferring	3	7
M1850: Transferring	4	7
M1850: Transferring	5	7
M1860: Ambulation and Locomotion	0	0
M1860: Ambulation and Locomotion	1	0
M1860: Ambulation and Locomotion	2	9
M1860: Ambulation and Locomotion	3	11
M1860: Ambulation and Locomotion	4	23
M1860: Ambulation and Locomotion	5	23
M1860: Ambulation and Locomotion	6	23

Thresholds for functional level

After the overall functional score has been calculated, the PDGM software assigns a functional impairment level using the clinical group that was assigned by the principal diagnosis. Each clinical group maintains a threshold of point ranges that determines if the functional impairment level is low, medium, or high. For example, if the clinical group assigned is Musculoskeletal Rehabilitation, the second position of the HIPPS is "E." To determine the third value of the HIPPS, refer to the threshold of total points by functional impairment level for the Musculoskeletal Rehabilitation clinical group (see following table). If the overall function score is 42 then this score falls into the range of points for a medium functional impairment level and the third value of the HIPPS is "B."

The following table represents the functional score thresholds which determine the level of impairment applicable to each clinical group.

Table 6.   Thresholds for functional impairment level by clinical group

Clinical group	Functional impairment level	Total points
Behavioral Health	Low	0-36
Behavioral Health	Medium	37-52

Clinical group	Functional impairment level	Total points
Behavioral Health	High	53+
Complex Nursing Interventions	Low	0-38
Complex Nursing Interventions	Medium	39-58
Complex Nursing Interventions	High	59+
Musculoskeletal Rehabilitation	Low	0-38
Musculoskeletal Rehabilitation	Medium	39-52
Musculoskeletal Rehabilitation	High	53
Neurological Rehabilitation	Low	0-45
Neurological Rehabilitation	Medium	46-60
Neurological Rehabilitation	High	61+
Wound	Low	0-41
Wound	Medium	42-59
Wound	High	60+
MMTA - Surgical Aftercare	Low	0-37
MMTA - Surgical Aftercare	Medium	38-50
MMTA - Surgical Aftercare	High	51+
MMTA - Cardiac and Circulatory	Low	0-36
MMTA - Cardiac and Circulatory	Medium	37-52
MMTA - Cardiac and Circulatory	High	53+
MMTA - Endocrine	Low	0-34
MMTA - Endocrine	Medium	35-52
MMTA - Endocrine	High	53+
MMTA - Gastrointestinal tract and Genitourinary system	Low	0-41
MMTA - Gastrointestinal tract and Genitourinary system	Medium	42-54
MMTA - Gastrointestinal tract and Genitourinary system	High	55+
MMTA - Infectious Disease, Neoplasms, and Blood-Forming Diseases	Low	0-36

Clinical group	Functional impairment level	Total points
MMTA - Infectious Disease, Neoplasms, and Blood-Forming Diseases	Medium	37-52
MMTA - Infectious Disease, Neoplasms, and Blood-Forming Diseases	High	53+
MMTA - Respiratory	Low	0-37
MMTA - Respiratory	Medium	38-52
MMTA - Respiratory	High	53+
MMTA - Other	Low	0-36
MMTA - Other	Medium	37-52
MMTA - Other	High	53+

Comorbidity adjustments

To further provide an appropriate case-mix adjustment, the PDGM software assigns a comorbidity adjustment when a patient has one or more defined comorbid conditions present. A comorbidity refers to the presence of more than one diagnosis or condition occurring to an individual at the same time. An adjustment is needed because the presence of a comorbid condition likely increases the resource needs to treat the patient.

Comorbidity diagnoses are assigned in the PDGM software to comorbidity subgroups which are defined by CMS as statistically and clinically significant for case-mix adjustments. The comorbidity subgroups identified in the following sections are used to determine either a low comorbidity adjustment or high comorbidity adjustment. The low comorbidity adjustment is applicable when at least one valid secondary diagnosis is a comorbidity diagnosis assigned to a subgroup that is applicable for a low comorbidity adjustment. The high comorbidity adjustment is applied when there are two or more valid comorbidity diagnoses present that are associated with higher resource use when reported together rather than reported individually. Comorbidity subgroups that are associated with higher resource in PDGM are considered comorbidity subgroup interactions. If two or more reported comorbidity diagnoses are assigned to comorbidity subgroups that are interactions, a high comorbidity adjustment is applicable.

Only one comorbidity adjustment is applied per claim, even if two or more comorbidity adjustments are applicable. If conditions for both a high and low adjustment are present, the high comorbidity adjustment takes precedence. The comorbidity adjustment of low or high is not applied when the comorbidity diagnosis and the principal diagnosis are within the same sub-classification in the ICD-10-CM chapter definitions because the conditions are closely related

and do not require additional resource use. Additionally, an invalid diagnosis code reported as a secondary diagnosis is ignored if conditions are present for either a low or high comorbidity adjustment; no return code or error condition applies.

If there are no conditions present for comorbidity due to all secondary diagnosis codes reported not being assigned to a comorbidity subgroup for either a low comorbidity adjustment or a high comorbidity interaction the HIPPS position value is 1, indicating that no Comorbidity adjustment applies.

Low comorbidity adjustment subgroups

The PDGM software applies a low comorbidity adjustment if a home health claim contains a secondary diagnosis assigned to one of the subgroups listed in the following table.

Table 7.   Low comorbidity adjustment subgroups

Comorbidity subgroup	Subgroup description
Cerebral 4	Includes sequelae of cerebral vascular diseases
Circulatory 4	Include hypertensive chronic kidney disease
Circulatory 9	Includes acute and chronic embolisms and thrombosis
Circulatory 10	Includes varicose veins with ulceration
Endocrine 2	Diabetes due to a Known Underlying Condition
Heart 11	Includes heart failure
Neoplasms 1	Includes oral cancers
Neurological 5	Includes Parkinson's disease
Neurological 7	Includes hemiplegia, paraplegia, and quadriplegia
Neurological 10	Includes peripheral and polyneuropathies
Skin 1	Includes cutaneous abscess, cellulitis, lymphangitis
Skin 3	Includes diseases of arteries, arterioles, and capillaries with ulceration and non-pressure, chronic ulcers
Skin 4	Includes Stages Two through Four and Unstageable pressure ulcers

High comorbidity adjustment interaction subgroups

In determining if a high comorbidity adjustment is applicable, the PDGM software evaluates if there are at least two secondary diagnoses assigned to comorbidity subgroups that are

identified as interactions. If an interaction of subgroups is present and meets the requirements for assignment, then a high comorbidity adjustment is applied.

The following table lists the interactions of comorbidity subgroups that are applicable for a high comorbidity adjustment.

Table 8.   High comorbidity adjustment interaction subgroups

Interaction	Comorbidity subgroup	Description	Comorbidity subgroup	Description
1	Behavioral 2	Includes mood disorders	Skin 3	Includes diseases of arteries, arterioles, and capillaries with ulceration and non-pressure, chronic ulcers
2	Cerebral 4	Includes sequelae of cerebrovascular diseases	Circulatory 4	Includes hypertensive chronic kidney disease
3	Cerebral 4	Includes sequelae of cerebrovascular diseases	Heart 10	Includes dysrhythmias
4	Cerebral 4	Includes sequelae of cerebrovascular diseases	Heart 11	Includes heart failure
5	Cerebral 4	Includes sequelae of cerebral vascular diseases	Neurological 10	Includes diabetes with neuropathy
6	Circulatory 4	Includes hypertensive chronic kidney disease	Skin 1	Includes cutaneous abscess, cellulitis, lymphangitis
7	Circulatory 4	Includes hypertensive chronic kidney disease	Skin 3	Includes diseases of arteries, arterioles, and capillaries with ulceration and non-pressure, chronic ulcers
8	Circulatory 4	Includes hypertensive chronic kidney disease	Skin 4	Includes Stages Two through Four and Unstageable pressure ulcers by site
9	Endocrine 3	Includes Type1, Type2, and other specified diabetes	Neurological 5	Includes Parkinson's disease
10	Endocrine 3	Includes diabetes with complications	Neurological 7	Includes hemiplegia, paraplegia, and quadriplegia
11	Endocrine 3	Includes diabetes with complications	Skin 1	Includes cutaneous abscess, cellulitis, lymphangitis

Interaction	Comorbidity subgroup	Description	Comorbidity subgroup	Description
12	Endocrine 3	Includes diabetes with complications	Skin 3	Includes diseases of arteries, arterioles, and capillaries with ulceration and non-pressure, chronic ulcers
13	Heart 10	Includes dysrhythmias	Skin 4	Includes Stages Two-Four and unstageable pressure ulcers by site
14	Heart 11	Includes heart failure	Neurological 10	Includes diabetes with neuropathy
15	Heart 11	Includes heart failure	Neurological 5	Includes Parkinson's disease
16	Heart 11	Includes heart failure	Skin 1	Includes cutaneous abscess, cellulitis, lymphangitis
17	Heart 11	Includes heart failure	Skin 3	Includes diseases of arteries, arterioles, and capillaries with ulceration and non-pressure, chronic ulcers
18	Heart 11	Includes heart failure	Skin 4	Includes Stages Two through Four and Unstageable pressure ulcers by site
19	Heart 12	Includes other heart diseases	Skin 3	Includes diseases of arteries, arterioles, and capillaries with ulceration and non-pressure, chronic ulcers
20	Heart 12	Includes other heart diseases	Skin 4	Includes Stages Two through Four and Unstageable pressure ulcers by site
21	Neurological 10	Includes diabetes with neuropathy	Neurological 5	Includes Parkinson's disease
22	Neurological 3	Includes dementia in diseases classified elsewhere	Skin 4	Includes Stages Two through Four and Unstageable pressure ulcers by site
23	Neurological 5	Includes Parkinson's disease	Renal 3	Includes diabetes insipidus
24	Neurological 7	Includes hemiplegia, paraplegia, and quadriplegia	Renal 3	Includes diabetes insipidus

Interaction	Comorbidity subgroup	Description	Comorbidity subgroup	Description
25	Renal 1	Includes chronic kidney disease and ESRD	Skin 3	Includes diseases of arteries, arterioles, and capillaries with ulceration and non-pressure, chronic ulcers
26	Renal 1	Includes chronic kidney disease and ESRD	Skin 4	Includes Stages Two through Four and Unstageable pressure ulcers by site
27	Renal 3	Includes diabetes insipidus	Skin 4	Includes Stages Two through Four and Unstageable pressure ulcers by site
28	Respiratory 5	Includes COPD and asthma	Skin 3	Includes diseases of arteries, arterioles, and capillaries with ulceration and non-pressure, chronic ulcers
29	Respiratory 5	Includes COPD and asthma	Skin 4	Includes Stages Two through Four and Unstageable pressure ulcers by site
30	Skin 1	Includes cutaneous abscess, cellulitis, lymphangitis	Skin 3	Includes diseases of arteries, arterioles, and capillaries with ulceration and non-pressure, chronic ulcers
31	Skin 3	Includes diseases of arteries, arterioles, and capillaries with ulceration and non-pressure, chronic ulcers	Skin 4	Includes Stages Two through Four and Unstageable pressure ulcers by site

Placeholder

The fifth position of the HIPPS code is represented only as a placeholder for future use.

Chapter 3: Installing and testing the software for the batch platform

The following procedure explains how to install and test the batch module of the Home Health Patient-Driven Groupings Model (PDGM) Software.

Before you begin

Make sure you have Java® 8 or higher installed on your computer.

To install and test the software

1. Unzip the Home Health PDGM software pack to your computer.

2. At the location where you unzipped the files, browse into the 'HomeHealthPDGMGrouper\bin' folder.

3. Run the 'runGrouperTest.bat' file.

   By default, the generated results file includes only the output portion of the record.

4. Browse into the 'HomeHealthPDGMGrouper\test' folder.

5. Review the grouping results in the 'TestDataV<VVSYY>_OUT.txt' file.

   'VVSYY' in the filename represents the PDGM software version.

Chapter 4: Data processing

The following sections describe the layouts for the input and output data processing.

Program input

The data elements in the following table are entered in the PDGM Software for claim processing. All diagnoses are left-justified in the first seven characters of an eight-character field with the POA indicator occupying the eighth character. Unused characters in the diagnosis field must be blank.

Table 9. **Input format**

Field Name	Pos	Len	Occ	Source	Values	Description
Claim ID	1	24	1	UB-04	Alphanumeric	Patient Claim ID
From Date	25	8	1	UB-04	Date: YYYYMMDD	Claim From Date
Period Timing	33	1	1	UB-04	1 - Early 2 - Late	Defined as Early if the claim From and Admission dates match or if Medicare systems determine period is early; otherwise late
Referral Source	34	2	1	UB-04	Alphanumeric	Occurrence code 61 or 62 determines Institutional referral source otherwise any other value defaults to Community referral source
Principal Diagnosis	36	8	1	UB-04	8 characters (includes POA 8th char)	ICD-10-CM principal diagnosis; POA is included as input but does not impact grouping results
Secondary Diagnosis	44	8	24	UB-04	8 characters (includes POA 8th char)	ICD-10-CM secondary diagnosis; POA is included as input but does not impact grouping results
Filler - Item 1	*236*	*8*	*5*	*N/A*	*N/A*	*For future diagnosis use*
M1033-HOSP-RISK-HSTRY-FALLS	276	1	1	OASIS	0 - No 1 - Yes	Risk for hospitalization – falls
M1033-HOSP-RISK-WEIGHT-LOSS	277	1	1	OASIS	0 - No 1 - Yes	Risk for hospitalization – weight loss

Field Name	Pos	Len	Occ	Source	Values	Description
M1033-HOSP-RISK-MLTPL-HOSPZTN	278	1	1	OASIS	0 - No 1 - Yes	Risk for hospitalization – multiple hospitalizations
M1033-HOSP-RISK-MLTPL-ED-VISIT	279	1	1	OASIS	0 - No 1 - Yes	Risk for hospitalization – multiple emergency department visits
M1033-HOSP-RISK-MNTL-BHV-DCLN	280	1	1	OASIS	0 - No 1 - Yes	Risk for hospitalization – mental behavior decline
M1033-HOSP-RISK-COMPLIANCE	281	1	1	OASIS	0 - No 1 - Yes	Risk for hospitalization – compliance
M1033-HOSP-RISK-5PLUS-MDCTN	282	1	1	OASIS	0 - No 1 - Yes	Risk for hospitalization – currently taking five or more medications
M1033-HOSP-RISK-CRNT-EXHSTN	283	1	1	OASIS	0 - No 1 - Yes	Risk for hospitalization – exhaustion
M1033-HOSP-RISK-OTHR-RISK	284	1	1	OASIS	0 - No 1 - Yes	Risk for hospitalization – other risks
M1033-HOSP-RISK-NONE-ABOVE	285	1	1	OASIS	0 - No 1 - Yes	Risk for hospitalization – none of the above. If the input value is 1 then all other M1033 input values must be 0.
M1800-CRNT-GROOMING	286	2	1	OASIS	00, 01, 02, 03	Grooming
M1810-CRNT-DRESS-UPPER	288	2	1	OASIS	00, 01, 02, 03	Dress upper body
M1820-CRNT-DRESS-LOWER	290	2	1	OASIS	00, 01, 02, 03	Dress lower body
M1830-CRNT-BATHG	292	2	1	OASIS	00, 01, 02, 03, 04, 05, 06	Bathing
M1840-CRNT-TOILTG	294	2	1	OASIS	00, 01, 02, 03, 04	Toileting
M1850-CRNT-TRNSFRNG	296	2	1	OASIS	00, 01, 02, 03, 04, 05	Transferring
M1860-CRNT-AMBLTN	298	2	1	OASIS	00, 01, 02, 03, 04, 05, 06	Ambulation
FILLER-Item 2	*300*	*300*	*1*	*N/A*	*N/A*	*For future use*
FILLER	*600*	*1*	*1*	*N/A*	*Y = Internal interface debug*	*For internal use only*

Program output

The data elements shown in the following table are returned from the PDGM Software.

Table 10.   Output format

Field ID	Field name	Pos	Len	Occ	Values	Description
26	Version Used	601	7	1	January 2020: 01.0.20.R1 XX. = Grouper version number X. = Sequential release number XX = Year	Version defining the grouper used to produce the HIPPS code based on From Date passed as input
27	HIPPS Code	608	5	1	1st position = Period Timing and Referral Source (1 - 4) 2nd position = Clinical Group (A-L) 3rd position = Functional Impairment Level (A, B or C) 4th position = Comorbidity Present (1, 2, 3) 5th position = Placeholder (1)	Five-digit alphanumeric code defining grouping results
28	*Validity Flag*	*613*	*2*	*1*		*For future use*
29	Grouper Return Code	615	2	1	00-99	Identifies claim related errors or technical (fatal) errors in processing that terminate grouping (ungroupable)
30	*FILLER - Item 3*	*617*	*84*	*1*		*For future use*

Return codes

The PDGM software provides return codes in the program output to identify an error in claims processing or system-related errors, which are fatal to the program. Return code values 00-14 are claim-specific errors, which are likely returned if an invalid value or blank value is submitted. Only a return code of 5 returns a home health claim to the provider. Return code 50 is for system-related errors and indicates there is a problem with environment setup or corruption in

reading a table or file. If a system-related error has occurred, it is likely you will need to re-install the PDGM software.

If a return code other than 00 is returned, no HIPPS code is provided on output because an error has occurred in determining one or more values in the HIPPS code.

Table 11.   Return codes

Return code	Description
00	Grouping successful
01	From date out of range
02	Invalid Period Timing
03	Invalid or blank PDX
05	No clinical group assigned for PDX, or it is a manifestation code or external cause of injury code
07	Invalid or inconsistent value for FUNCTIONAL IMPAIRMENT HOSPITALIZATION RISK field
08	Invalid value for FUNCTIONAL IMPAIRMENT GROOMING field
09	Invalid value for FUNCTIONAL IMPAIRMENT DRESS UPPER field
10	Invalid value for FUNCTIONAL IMPAIRMENT DRESS LOWER field
11	Invalid value for FUNCTIONAL IMPAIRMENT BATHING field
12	Invalid value for FUNCTIONAL IMPAIRMENT TOILETING field
13	Invalid value for FUNCTIONAL IMPAIRMENT TRANSFERRING field
14	Invalid value for FUNCTIONAL IMPAIRMENT AMBULATION field
50	Fatal error - Component corrupted or not set up or other internal error

Chapter 5: Installing and testing the interactive module for the PC platform

The following procedure explains how to install and run the interactive module of the Home Health Patient-Driven Groupings Model (PDGM) Software.

Before you begin

Make sure you have Java® 8 installed on your computer. This version of PDGM will work only with Java 8.

To install and test the software

1. Unzip the Home Health PDGM software pack to your computer.

2. At the location where you unzipped the files, browse into the 'HomeHealthPDGMGrouper\interactive' folder.

3. Double click on 'HomeHealthGUI.jar'.

   If a double click doesn't work use the 'runGrouperGUI.bat' file.

To uninstall the software

1. Browse into the 'HomeHealthPDGMGrouper\interactive' folder.

2. Delete the HomeHealthGUI.jar file.

System requirements for accessibility

The following are system requirements for accessibility.

- Windows-based Assistive Technology software (needs to be running prior to using the PDGM Software).

- JAVA Access Bridge

Viewing the content tables

After you install the software, you can view copies of all the content reference tables, in tab-delimited format, in the following folder:

HomeHealthPDGMGrouper\tables

Chapter 6: Data entry for the PC platform

This chapter describes how to interactively enter data into the Home Health Patient-Driven Groupings Model (HH PDGM) Software. Keyboard shortcuts for accessing fields and tabs are included where appropriate.

To access the interactive interface

1. Go to the location where you unzipped the files when you installed the software.

2. Browse into the 'HomeHealthPDGMGrouper\interactive' folder.

3. Double click on 'HomeHealthGUI.jar'.

   If a double click doesn't work use the 'runGrouperGUI.bat' file.

4. Enter claim data on the Home Health Grouper window.

   The data entry window is shown in the "Data entry fields" (page).

Data entry fields

The fields on the Claim Input tab are described in the following tables. You can access these fields using the Tab key to advance from field to field. The order of the fields in the following tables represents the tab order as you advance from one field to the next.

Figure 1: Claim input tab for data entry

Table 12.   Claim detail and diagnosis code fields

Field name	Values	Description
Claim ID	Alphanumeric	Claim ID for the claim to be printed on the report.
From Date	MM/DD/YYYY	Required. Claim From Date.
Period Timing	1 - Early 2 - Late	Defined as Early if the claim From and Admission dates match or if Medicare systems determine period is early; otherwise late.

Field name	Values	Description
Referral Source	61 62 None	Occurrence code 61 or 62 determines Institutional referral source otherwise any other value defaults to Community referral source.
Diagnosis	ICD-10-CM diagnosis code	Field used to enter diagnosis codes. No character padding is needed. POA is included as the 8th character. ▪ Use the Add PDX or Add SDX button to add a diagnosis to the claim. ▪ Use the Remove DX button to remove the selected code.

Table 13. OASIS M1033 Risk for hospitalization response value fields

Field name	Values	Description
Falls	No – Unchecked Yes – Checked	M1033 - History of falls (two or more falls - or any fall with an injury - in the past 12 months)
Weight Loss	No – Unchecked Yes – Checked	M1033 - Unintentional weight loss of a total of 10 pounds or more in the past 12 months
Mult. Hospitalizations	No – Unchecked Yes – Checked	M1033 - Multiple hospitalizations (two or more) in the past six months
Mult. Emergency Department	No – Unchecked Yes – Checked	M1033 - Multiple emergency department visits (two or more) in the past six months
Mental Behavior Decline	No – Unchecked Yes – Checked	M1033 - Decline in mental, emotional, or behavioral status in the past three months
Compliance	No – Unchecked Yes – Checked	M1033 - Reported or observed history of difficulty complying with any medical instructions (for example, medications, diet, exercise) in the past three months
Taking 5 or More Medications	No – Unchecked Yes – Checked	M1033 - Currently taking five or more medications
Exhaustion	No – Unchecked Yes – Checked	M1033 - Currently reports exhaustion
Other Risks	No – Unchecked Yes – Checked	M1033 - Other risk(s) not listed

Field name	Values	Description
None	No – Unchecked Yes – Checked	M1033 - None of the above. Will uncheck any other checked fields

Table 14.   Additional OASIS response value fields

Field name	Values
M1800 Grooming	00 - Able to groom self-unaided, with or without the use of assistive devices or adapted methods. 01 - Grooming utensils must be placed within reach before able to complete grooming activities. 02 - Someone must assist the patient to groom self. 03 - Patient depends entirely upon someone else for grooming needs.
M1810 Dress Upper	00 - Able to get clothes out of closets and drawers, put them on and remove them from the upper body without assistance. 01 - Able to dress upper body without assistance if clothing is laid out or handed to the patient. 02 - Someone must help the patient put on upper body clothing. 03 - Patient depends entirely upon another person to dress the upper body.
M1810 Dress Lower	00 - Able to obtain, put on, and remove clothing and shoes without assistance. 01 - Able to dress lower body without assistance if clothing and shoes are laid out or handed to the patient. 02 - Someone must help the patient put on undergarments, slacks, socks or nylons, and shoes. 03 - Patient depends entirely upon another person to dress lower body.

Field name	Values
M1830 Bathing	00 - Able to bathe self in shower or tub independently, including getting in and out of tub/shower.
	01 - With the use of devices, is able to bathe self in shower or tub independently, including getting in and out of the tub/shower.
	02 - Able to bathe in shower or tub with the intermittent assistance of another person: (a) for intermittent supervision or encouragement or reminders, OR (b) to get in and out of the shower or tub, OR (c) for washing difficult-to-reach areas.
	03 - Able to participate in bathing self in shower or tub but requires presence of another person throughout the bath for assistance or supervision.
	04 - Unable to use the shower or tub, but able to bathe self independently with or without the use of devices at the sink, in chair, or on commode.
	05 - Unable to use the shower or tub, but able to participate in bathing self in bed, at the sink, in bedside chair, or on commode, with the assistance or supervision of another person.
	06 - Unable to participate effectively in bathing and is bathed totally by another person.
M1840 Toileting	00 - Able to get to and from the toilet and transfer independently with or without a device.
	01 - When reminded, assisted, or supervised by another person, able to get to and from the toilet and transfer.
	02 - Unable to get to and from the toilet but is able to use a bedside commode (with or without assistance).
	03 - Unable to get to and from the toilet or bedside commode, but is able to use a bedpan/urinal independently.
	04 - Is totally dependent in toileting.
M1850 Transferring	00 - Able to independently transfer.
	01 - Able to transfer with minimal human assistance or with use of an assistive device.
	02 - Able to bear weight and pivot during the transfer process but unable to transfer self.
	03 - Unable to transfer self and is unable to bear weight or pivot when transferred by another person.
	04 - Bedfast, unable to transfer but is able to turn and position self in bed.
	05 - Bedfast, unable to transfer and is unable to turn and position self.

Field name	Values
M1860 Ambulation	00 - Able to independently walk on even and uneven surfaces and negotiate stairs with or without railings (specifically, needs no human assistance or assistive device).
	01 - With the use of a one-handed device (for example, cane, single crutch, hemi-walker), able to independently walk on even and uneven surfaces and negotiate stairs with or without railings.
	02 - Requires use of a two-handed device (for example, walker or crutches) to walk alone on a level surface and/or requires human supervision or assistance to negotiate stairs or steps or uneven surfaces.
	03 - Able to walk only with the supervision or assistance of another person at all times.
	04 - Chairfast, unable to ambulate but is able to wheel self independently.
	05 - Chairfast, unable to ambulate and is unable to wheel self.
	06 - Bedfast, unable to ambulate or be up in a chair.

Menu items

The menu item available from the main software window is described in the following table.

Table 15.   Menu items

Menu	Item	Function	Keyboard shortcut
File	Close	Launches a confirmation window to close the tool.	Ctrl+C

Command buttons and tabs

The command buttons and tabs in the software are described in the following table. Refer to the Function column to locate the task you want to perform. To switch to another tab, press Ctrl+Tab or use the keyboard shortcut listed below.

Table 16. **Command buttons and tabs**

Name	Type	Function	Keyboard shortcut
Claim Input	Tab	Switch the view to the claim input view.	Alt+I
Add PDX	Button	Adds the currently entered diagnosis to the diagnosis table as the principal diagnosis.	Alt+A
Add SDX	Button	Adds the currently entered diagnosis to the diagnosis table as a secondary diagnosis.	Alt+S
Remove DX	Button	Removes the selected diagnosis in the diagnosis table from the claim.	Alt+R
Clear All Claim Data	Button	Clears the claim data from the claim input view.	Alt+C
Component Output	Tab	Displays the output from the component for the current claim.	Alt+O (not available while this tab is disabled)
Save Report	Button	Saves the report displayed on the Component Output or Detailed Report tabs.	Alt+C (saves appropriate report based on selected tab)
Detailed Report	Tab	Displays the output from the component for the current claim including detailed processing messages.	Alt+D (not available while this tab is disabled)

Error messages

The system automatically performs data entry checks and displays an error message when an error is detected. The following error messages can occur during data entry.

Table 17. **Error messages**

Error message	Occurs when
Date entry error	The From Date entered is not within range of the component

Chapter 7: Program output for the PC platform

This chapter describes the output from the Home Health Patient-Driven Groupings Model (HH PDGM) Software. Keyboard shortcuts for accessing fields and tabs are included where appropriate. Reports are created and saved individually, and the software does not append them. If you want a file of multiple reports, you can copy several output reports, one at a time as you generate them, and paste them, one at a time, into a text file.

Viewing an output report

To view the output report for a claim

1. Complete your data entry on the Claim Input tab.

2. Select the Component Output or Detailed Report tab.

   The output report displays.

A sample Component Output report is shown below. This report shows the Health Insurance Prospective Payment System (HIPPS) code assignment as well as the inputs used to calculate the HIPPS code.

Figure 2: Component Output sample

A sample Detailed Report is shown below. This report shows the HIPPS code assignment as well as logging information and additional details about how the value for each HIPPS code position was calculated.
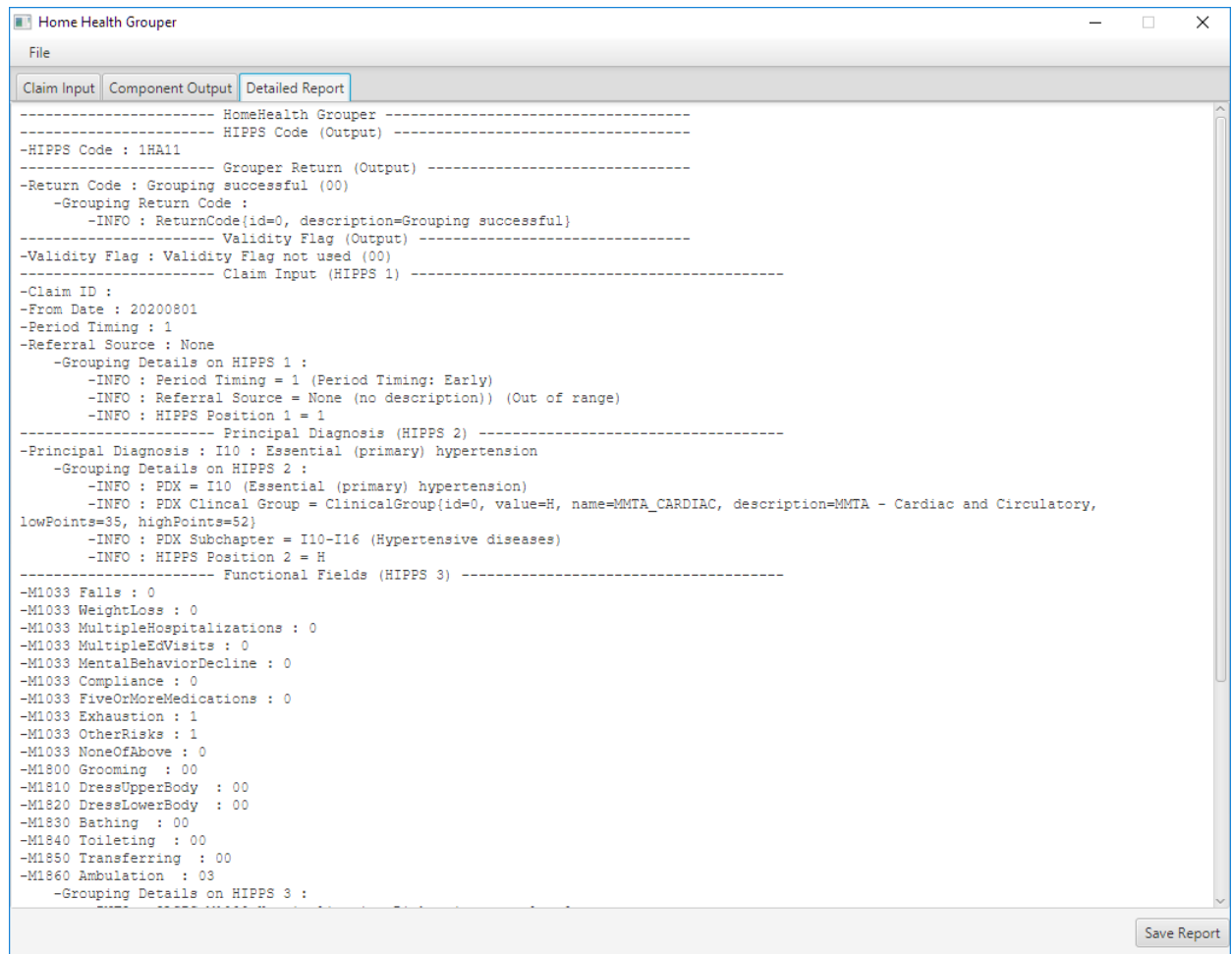
Figure 3: Detailed Report sample

Output report fields

For a list of the fields included in the output report, see Program output on page .

Saving an output report

To save an output report

1. Select the Component Output or Detailed Report tab.

2. Click the Save Report button.

3. Browse to the location where you want to save the report.

4. Click Save.

Return codes

The PDGM software provides return codes in the program output to identify an error in claims processing or system-related errors, which are fatal to the program. Return code values 00-14 are claim-specific errors, which are likely returned if an invalid value or blank value is submitted. Only a return code of 5 returns a home health claim to the provider. Return code 50 is for system-related errors and indicates there is a problem with environment setup or corruption in reading a table or file. If a system-related error has occurred, it is likely you will need to re-install the PDGM software.

If a return code other than 00 is returned, no HIPPS code is provided on output because an error has occurred in determining one or more values in the HIPPS code.

Table 18.   Return codes

Return code	Description
00	Grouping successful
01	From date out of range
02	Invalid Period Timing
03	Invalid or blank PDX
05	No clinical group assigned for PDX, or it is a manifestation code or external cause of injury code
07	Invalid or inconsistent value for FUNCTIONAL IMPAIRMENT HOSPITALIZATION RISK field
08	Invalid value for FUNCTIONAL IMPAIRMENT GROOMING field
09	Invalid value for FUNCTIONAL IMPAIRMENT DRESS UPPER field
10	Invalid value for FUNCTIONAL IMPAIRMENT DRESS LOWER field
11	Invalid value for FUNCTIONAL IMPAIRMENT BATHING field

Return code	Description
12	Invalid value for FUNCTIONAL IMPAIRMENT TOILETING field
13	Invalid value for FUNCTIONAL IMPAIRMENT TRANSFERRING field
14	Invalid value for FUNCTIONAL IMPAIRMENT AMBULATION field
50	Fatal error - Component corrupted or not set up or other internal error

Appendix A: Flowchart of logic for Home Health Patient-Driven Groupings Model Software

Figure 4: PDGM software logic

```
                              ┌──────────┐
                              │   From   │
                              │  Page 1  │
                              └────┬─────┘
                                   │
                                   ▼
                           ╱◇────────────◇╲
                          │   Secondary    │
                          │ diagnosis codes│────────No──────────────────┐
                          │    present?    │                            │
                           ╲◇────────────◇╱                             │
                                   │                                    │
                                  Yes                                   │
                                   ▼                                    ▼
                           ╱◇────────────◇╲            ┌──────────────────────────────┐
                          │   Comorbidity   │          │ 4th position HIPPS code = 1   │
                          │    diagnosis     │───No────▶│   (No Comorbidity            │
                          │    present?      │          │   Adjustment present)        │
                           ╲◇────────────◇╱            └──────────────────────────────┘
                                   │                              ▲
                                  Yes                             No
                                   ▼                              │
                         ╱◇──────────────◇╲          ╱◇──────────────◇╲
                        │ Is comorbidity    │       │     Other        │
                        │ diagnosis in same │─Yes──▶│  comorbidity     │
                        │ subchapter as     │       │   diagnosis      │
                        │ principal         │       │   present?       │
                        │ diagnosis?        │        ╲◇──────────────◇╱
                         ╲◇──────────────◇╱             │
                            │              ▲           Yes
                           No              └────────────┘
                            │
                            ▼
                   ╱◇──────────────◇╲          ┌──────────────────────────────┐
                  │ Two or more       │        │ 4th position HIPPS code = 3   │
                  │ comorbidity       │─Yes───▶│  (High Comorbidity           │
                  │ diagnoses within  │        │  Adjustment present)         │
                  │ Comorbidity       │        └──────────────────────────────┘
                  │ Subgroup          │                    │
                  │ Interactions?     │                    │
                   ╲◇──────────────◇╱                     ▼
                            │              ┌──────────────────────────┐
                           No              │   Add placeholder        │
                            │              │   value 1 to 5th         │◀───┐
                            ▼              │   position HIPPS code    │    │
                   ╱◇──────────────◇╲     └──────────────────────────┘    │
                  │       Is          │  ┌─────────────────────┐    │      │
                  │  comorbidity      │  │4th position HIPPS   │    │      │
                  │  diagnosis in Low │─Yes▶│code = 2          │───▶┘      │
                  │  Comorbidity      │  │(Low Comorbidity     │           │
                  │  Subgroup?        │  │Adjustment present)  │           │
                   ╲◇──────────────◇╱   └─────────────────────┘           │
                            │                                              │
                           No         ┌─────────────────────┐             │
                            └────────▶│4th position HIPPS   │   ┌──────────────┐
                                      │code = 1             │──▶│  End process │
                                      │(No Comorbidity      │   └──────────────┘
                                      │Adjustment present)  │
                                      └─────────────────────┘
```
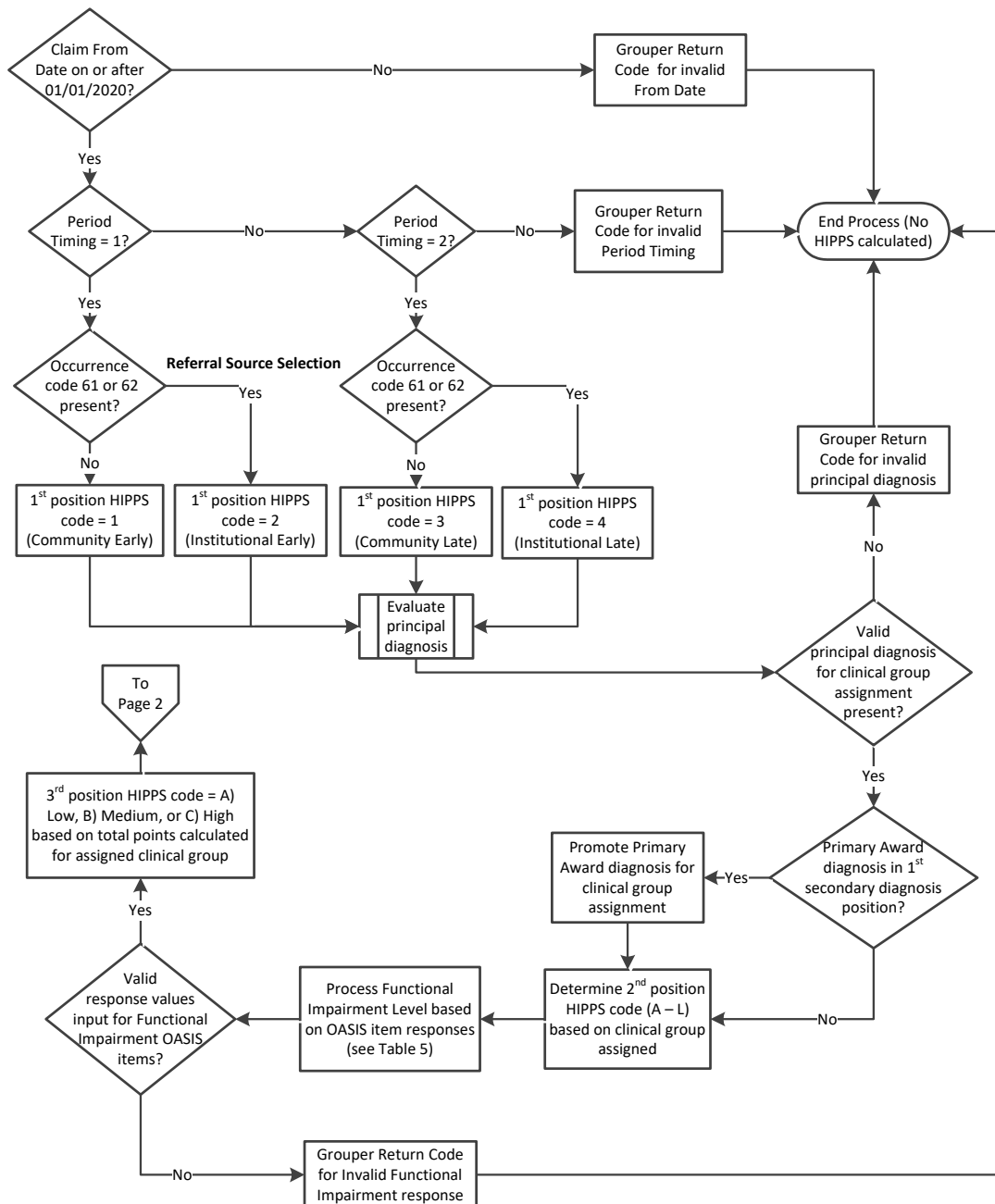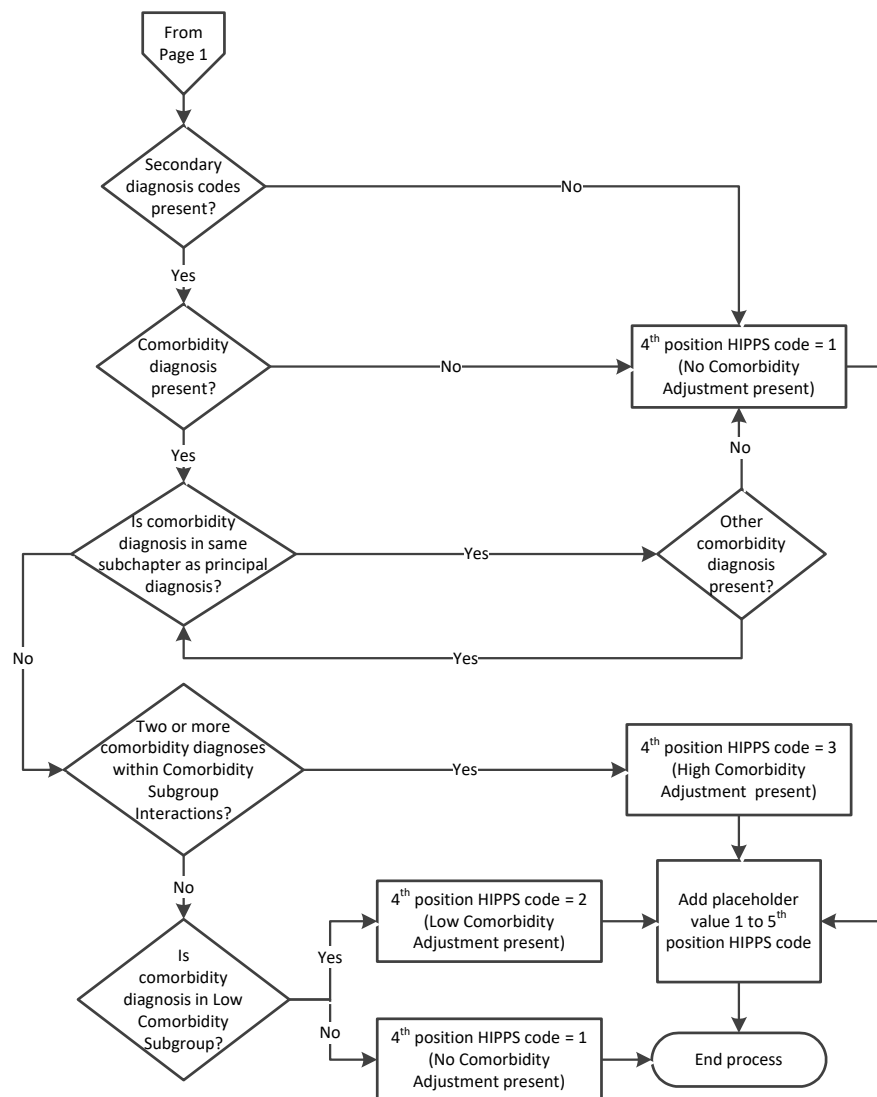
Figure 5: PDGM software logic, continuation