



# Assigning HIG Weights and ELOS Values to Ontario Inpatient DAD Cases 2017

Version 1.0, Updated January 2017



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for Health Information

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# 1 Introduction

The purpose of this document is to provide an overview of the process for calculating expected length of stay (ELOS) and Health Based Allocation Model (HBAM) Inpatient Grouping weights for use with the HBAM Inpatient Grouping (HIG) methodology for the 2017 Discharge Abstract Database (DAD). The HIG methodology applies to Ontario inpatient data only.

HBAM is the funding methodology of the Ontario Ministry of Health and Long-Term Care (MOHLTC) developed in 2011 under the Health System Funding Strategy. CIHI's support of HBAM includes the development, maintenance and evolution of the HIG methodology.

While CIHI supports the inpatient grouping methodology, the Ontario MOHLTC maintains the HIG weighting components, including ELOS values, HIG weights, and short- and long-stay trim point values. As well, the MOHLTC defines the methodology and factors that adjust the ELOS and weight. The weight and ELOS tables previously provided in the appendices have been removed from this document. They are available for download from CIHI's eStore under HIG Client Tables.

## 2 Overview of HIG assignment

The HIG methodology uses Case Mix Group (CMG+) grouping methodology output and additional clinical information to assign each case to an HIG. In fact, the assigned HIG group is the same as the assigned CMG+ group in 82% of Ontario inpatients for 2015–2016. It is therefore important to understand the assignment of CMG+ groups. For a complete introduction to CMG+ assignment, please consult the CMG+ 2017 Directory.

### High-level business rules

In most cases, the HIG groups are identical to the CMG+ groups. As mentioned above, 82% of cases are assigned to HIG groups that are the same as the CMG+ group. The remaining 18% are assigned to 40 HIG groups that are created after applying 1 of the following 4 split types to 19 CMG+ groups:

1. **Diagnosis** — For example, CMG+ group 139 Chronic Obstructive Pulmonary Disease has been split into 2 HIG groups, 139c Chronic Obstructive Pulmonary Disease with Lower Respiratory Infection and 139d Chronic Obstructive Pulmonary Disease without Lower Respiratory Infection
2. **Presence/absence of comorbid cardiac conditions** among cardiac CMG+ groups — All diagnoses on the DAD abstract [diagnosis types (1), (2), (W), (X) and (Y)] are examined for specific comorbid cardiac conditions, such as congestive heart failure.

3. **Presence of comorbidities** in obstetric cases using the CMG+ grouper output comorbidity level (CL) — Cases with CL 0 are grouped separately from cases with CL 1–4.
4. **1 intervention-driven group** — The Bone Marrow/Stem Cell Transplant CMG+ group has been enhanced so that all records indicating bone marrow and stem cell transplants are grouped together.

The diagnosis codes and diagnosis types used to assign comorbid status in cardiac splits are found in Appendix A. For CCI codes used to group bone marrow/stem cell transplants and for comorbidity diagnosis codes used in obstetrics, see the CMG+ 2017 Directory.

For CMG+ groups that are not further split by the modifications described above, the HIG group assigned is the same as the CMG+ group. The following tables present the CMG+ groups that are further refined into unique HIG groups.

**Table 1** Diagnosis splits

CMG group	CMG description	HIG group	HIG description
<b>139</b>	Chronic Obstructive Pulmonary Disease	139c	Chronic Obstructive Pulmonary Disease with Lower Respiratory Infection
		139d	Chronic Obstructive Pulmonary Disease without Lower Respiratory Infection
<b>250</b>	Digestive Malignancy	250a	Digestive Malignancy — Colon
		250b	Digestive Malignancy — Stomach
		250c	Digestive Malignancy — Other
<b>437</b>	Diabetes	437a	Diabetes, Other
		437b	Diabetes With Renal Complications
		437c	Diabetes With Ophthalmic, Neurological or Circulatory Complications
		437d	Diabetes With Multiple Complications
<b>478</b>	Malignant Neoplasm of Urinary System	478a	Cancer of Bladder
		478b	Malignant Neoplasm of Urinary System



**Table 2** Cardiac splits

CMG group	CMG description	HIG group	HIG description
<b>193</b>	Myocardial Infarction/ Shock/Arrest With Coronary Angiogram	193a	Myocardial Infarction/Shock/Arrest With Coronary Angiogram
		193b	Myocardial Infarction/Shock/Arrest With Coronary Angiogram With Comorbid Cardiac Conditions
<b>194</b>	Myocardial Infarction/ Shock/Arrest Without Coronary Angiogram	194a	Myocardial Infarction/Shock/Arrest Without Coronary Angiogram
		194b	Myocardial Infarction/Shock/Arrest Without Coronary Angiogram With Comorbid Cardiac Conditions
<b>203</b>	Unstable Angina/ Atherosclerotic Heart Disease With Coronary Angiogram	203a	Unstable Angina/Atherosclerotic Heart Disease With Coronary Angiogram
		203b	Unstable Angina/Atherosclerotic Heart Disease With Coronary Angiogram With Comorbid Cardiac Conditions
<b>204</b>	Unstable Angina/ Atherosclerotic Heart Disease Without Coronary Angiogram	204a	Unstable Angina/Atherosclerotic Heart Disease Without Coronary Angiogram
		204b	Unstable Angina/Atherosclerotic Heart Disease Without Coronary Angiogram With Comorbid Cardiac Conditions
<b>207</b>	Angina (Except Unstable)/Chest Pain With Coronary Angiogram	207a	Angina (Except Unstable)/Chest Pain With Coronary Angiogram
		207b	Angina (Except Unstable)/Chest Pain With Coronary Angiogram With Comorbid Cardiac Conditions
<b>208</b>	Angina (Except Unstable)/Chest Pain Without Coronary Angiogram	208a	Angina (Except Unstable)/Chest Pain Without Coronary Angiogram
		208b	Angina (Except Unstable)/Chest Pain Without Coronary Angiogram With Comorbid Cardiac Conditions

**Table 3** Obstetric splits

CMG group	CMG description	HIG group	HIG description
<b>558</b>	Primary Caesarean Section, With Induction	558a	Primary Caesarean Section, With Induction
		558b	Primary Caesarean Section, With Induction With Obstetric Comorbidity
<b>559</b>	Primary Caesarean Section, No Induction	559a	Primary Caesarean Section, No Induction
		559b	Primary Caesarean Section, No Induction With Obstetric Comorbidity
<b>560</b>	Caesarean Section With Uterine Scar, No Induction	560a	Caesarean Section With Uterine Scar, No Induction
		560b	Caesarean Section With Uterine Scar, No Induction With Obstetric Comorbidity

CMG group	CMG description	HIG group	HIG description
<b>561</b>	Caesarean Section With Uterine Scar and Induction	561a	Caesarean Section With Uterine Scar and Induction
		561b	Caesarean Section With Uterine Scar and Induction With Obstetric Comorbidity
<b>562</b>	Vaginal Birth With Anaesthetic and Non-Major Obstetric/ Gynecologic Intervention	562a	Vaginal Birth With Anaesthetic and Non-Major Obstetric/ Gynecologic Intervention
		562b	Vaginal Birth With Anaesthetic and Non-Major Obstetric/ Gynecologic Intervention With Obstetric Comorbidity
<b>563</b>	Vaginal Birth With Anaesthetic Without Non-Major Obstetric/ Gynecologic Intervention	563a	Vaginal Birth With Anaesthetic Without Non-Major Obstetric/ Gynecologic Intervention
		563b	Vaginal Birth With Anaesthetic Without Non-Major Obstetric/ Gynecologic Intervention With Obstetric Comorbidity
<b>564</b>	Vaginal Birth Without Anaesthetic With Non-Major Obstetric/ Gynecologic Intervention	564a	Vaginal Birth Without Anaesthetic With Non-Major Obstetric/ Gynecologic Intervention
		564b	Vaginal Birth Without Anaesthetic With Non-Major Obstetric/ Gynecologic Intervention With Obstetric Comorbidity
<b>565</b>	Vaginal Birth Without Anaesthetic Without Non-Major Obstetric/ Gynecologic Intervention	565a	Vaginal Birth Without Anaesthetic Without Non-Major Obstetric/ Gynecologic Intervention
		565b	Vaginal Birth Without Anaesthetic Without Non-Major Obstetric/ Gynecologic Intervention With Obstetric Comorbidity

**Table 4** Intervention split

CMG group	CMG description	HIG group	HIG description
<b>610</b>	Bone Marrow/Stem Cell Transplant	618a	Bone Marrow/Stem Cell Transplant

### 3 Factors used in HIG methodology

There is often significant variation in resource consumption and length of stay among patients within a HIG. To account for this variation, the HIG methodology identifies 7 factors to be used to adjust resource indicators: age, flagged intervention (FI), intervention event (IE), out-of-hospital (OOH) intervention, special care unit (SCU), discharged to home care, and maternal age  $\geq 40$ .



These factors are used in the calculation of the weight and ELOS for each discharge; it is important to note that these factors are not used for HIG assignment.

## Age category

In the DAD, the patient age variable captures the patient's age at the time of admission. The HIG methodology contains the following age categories:

### **Newborns and neonates:**

F: 0 to 364 Days (Newborn/Neonate/Pediatric)

### **Pediatric:**

H: 1 to 17 Years (Pediatric)

### **Adult:**

R: 18 to 59 Years (Adult)

S: 60 to 79 Years (Adult)

T: 80+ Years (Adult)

The age factor is combined with the HIG to assign a base weight and ELOS value. These base values represent the ELOS and weight of the HIG/age category when no other factors are present.

## Flagged interventions

In HIG, 14 categories of interventions are identified as FIs. These FIs are used to identify patients whose cases are more complex and resource-intensive than those of patients who have not required these interventions. While the actual interventions may not be expensive, the associated costs and LOS are higher for patients who require these interventions than for patients in the same HIG who do not.

The 14 categories of flagged interventions are presented in Table 5. See the CMG+ 2017 Directory for intervention codes included in each category.

**Table 5** Flagged intervention codes

Flagged intervention category code	Flagged intervention category
A	Cardioversion
B	Cell Saver
C	Chemotherapy
D	Dialysis
E	Feeding Tube
F	Heart Resuscitation
G	Invasive Ventilation (Long) $\geq 96$ hours
H	Invasive Ventilation (Short) $< 96$ hours
I	Paracentesis
J	Parenteral Nutrition
K	Pleurocentesis
L	Radiotherapy
M	Tracheostomy
N	Vascular Access Devices

## Intervention event factor

The IE factor is designed to capture the effect of multiple intervention events and further enhance the prediction of patient resource consumption. An intervention event is defined as a trip made to the operating or surgical room, regardless of the number of interventions performed, as long as at least 1 intervention was significant — that is, an intervention was on the intervention partition list. When a patient requires multiple intervention events, it is suggestive of complicated treatments and higher resource consumption. Each case is assigned to 1 of 4 intervention event codes. By definition, if a case is assigned to a HIG in the intervention partition, it must have at least 1 IE.

For cases with 2 or more IEs, IE factors are used to adjust the ELOS and weight estimates for 2 IEs and for 3 or more IEs. Table 6 provides the IE codes and their descriptions.

**Table 6** Intervention event codes

Code	Description
1	1 intervention event
2	2 intervention events
3	3 or more intervention events
8	0 intervention events

## Discharged to home care

The HIG methodology also includes an adjustment for patients discharged to home care. DAD-coded referral to home care is a marker of measured severity and complexity and is generally associated with increased resource use. The Discharged to Home Care Flag is defined using both the discharge disposition and transfer to institution codes.

Specifically, the home care flag is set to 1 if

Discharge Disposition = 04 (Discharged to Home or a Home Setting With Support Services)  
AND Transfer To = Home Care or Blank

OR

Discharge Disposition = 05 (Discharged Home [patient functions independently with no support service from an external agency required]) AND Transfer To = Home Care

## Maternal age

The maternal age factor is flagged in obstetric cases in which the mother's age is greater than or equal to 40. This takes into account the increased complexity of births involving mothers of advanced age.

## Special care unit factor

The special care unit (SCU) factor is intended to account for the difference in cost for patients who were treated in special care units. Special care unit codes on the abstract are examined and presence/absence of codes set the SCU flag to 1 or 0. Table 7 lists the codes that are currently used to set the SCU flag to 1.

**Table 7** Special care unit codes

SCU code	Description
10	Medical Intensive Care Nursing Unit
20	Surgical Intensive Care Nursing Unit
25	Trauma Intensive Care Nursing Unit
30	Combined Medical/Surgical Intensive Care Nursing Unit
35	Burn Intensive Care Nursing Unit
40	Cardiac Intensive Care Nursing Unit Surgery
45	Coronary Intensive Care Nursing Unit Medical
50	Neonatal Intensive Care Nursing Unit (Undifferentiated/General)
51	Neonatal Intensive Care Nursing Unit Level 1
52	Neonatal Intensive Care Nursing Unit Level 2
53	Neonatal Intensive Care Nursing Unit Level 3
60	Neurosurgery Intensive Care Nursing Unit
70	Paediatric Intensive Care Nursing Unit
80	Respirology Intensive Care Nursing Unit

## Out-of-hospital intervention factor

The OOH intervention factor applies to only a handful of HIGs. It identifies cases that had an intervention performed in a hospital other than the admitting facility. This factor is applied to the following 3 groups of interventions: pacemaker implant, coronary angiography and percutaneous coronary intervention (PCI). Analysis of patient data illustrated that having these interventions performed on an OOH basis is routine for some institutions and results in significantly lower costs to the institution where the patient is admitted as an inpatient. While these interventions are often performed in a different facility, the patient's condition and need for treatment justifies grouping these cases with those cases that had the intervention performed in the admitting facility. This factor was created to account for the resources consumed outside of the admitting hospital.

## 4 Atypical code assignment

In HIG, the atypical status of a case is defined based on the total length of stay, palliative care status, transfer to/from code and discharge disposition of the patient and the CMG+ atypical code. The atypical code affects how the weight values are assigned to the case.

Table 8 lists the atypical codes for different types of cases as well as the percentages of cases in each atypical category in 2015 inpatient DAD data from Ontario.

**Table 8** HIG atypical distribution

Atypical category	Atypical status	HIG atypical code	Count	Percentage
<b>Typical</b>	Typical	00	1,011,967	86.56
<b>Atypical</b>	Transfer in	01	27,851	2.38
	Transfer out	02	33,094	2.83
	Sign out/not return from pass	03	9,035	0.77
	Death	04	21,205	1.81
	Transfer in and transfer out	05	8,303	0.71
	Transfer in and sign out/not return from pass	06	200	0.02
	Transfer in and death	07	1,608	0.14
<b>Short Stay</b>	SS (short stay)	09	15,710	1.34
<b>Long Stay</b>	LS (long stay)	10	29,081	2.49
<b>Long Stay Atypical</b>	LS transfer in	11	4,610	0.39
	LS transfer out	12	1,362	0.12
	LS sign out/not return from pass	13	125	0.01
	LS death	14	2,256	0.19
	LS transfer in and transfer out	15	721	0.06
	LS transfer in and sign out/not return from pass	16	13	0.00
	LS transfer in and death	17	247	0.02
<b>Miscellaneous</b>	Invalid LOS	97	1	0.00
	Not applicable	98	1,200	0.10
	RIW not assigned	99	0	0.00
	HIG > 989	08	530	0.05

## Identifying short stay cases

Short stay cases with atypical code 09 are cases with all of the following:

1.  $TLOS \leq$  short stay trim points
2. CMG atypical code = 00
3. No vascular access device, invasive ventilation or SCU codes were recorded on the abstract and the patient did not die

As we will see later on, these cases have HIG weights assigned using a per diem method. The short stay trim point is not factor-adjusted and is HIG-specific.

## Identifying long stay cases

Long stay cases with atypical codes 10 through 17 are determined by comparing total length of stay (TLOS) with long stay trim days. Long stay trim days is calculated by adding a long stay addition to the adjusted ELOS for a case.

Thus, a case is considered long stay if

$$TLOS \geq ELOS + \text{Long Stay Addition}$$

It is important to note that the long stay addition is not adjusted for any factors and is HIG-specific.

## Identifying atypical death cases

In HIG methodology, only palliative care deaths are atypical (atypical codes 04, 07, 14 and 17). A death is considered palliative if diagnosis code Z515 (Palliative Care) is anywhere on the abstract. If a patient dies and this code is not on the abstract, it is considered a typical case (atypical code = 00) and is weighted as such.

# 5 Typical weight methodology

## Overview

To assign ELOS and HIG weight values to a case, it is first necessary to determine the atypical category of the case (i.e., whether the case is typical, short stay, atypical or long stay). The atypical status of a case is based on the total length of stay, palliative care status, transfer to/from code and discharge disposition of the patient and the CMG+ atypical code, as previously noted.



Cases involving patients who have been transferred into and/or out of an acute care facility, had palliative care deaths or were signed out are considered atypical. Furthermore, every case will have a long stay trim day value assigned based on its HIG, age and presence or absence of factors.

The long stay trim point is used to identify records that have an unusually long length of stay. Records that have a total length of stay greater than or equal to the long stay trim days are classified as long-stay records. Similarly, short stay trim points identify records that have an unusually short length of stay and again will be classified as such.

The patient population can be divided into 7 types:

- **Typical** — No transfer, not a palliative death, not a sign out and length of stay between short stay and long stay trim point
- **Atypical** — Transfer, palliative death or sign out
- **Short stay** — Length of stay less than or equal to short stay trim. CMG atypical code 00, no invasive ventilation, vascular access device or special care unit
- **Long stay** — Total length of stay greater than or equal to the trim point
- **Long stay atypical** — Total length of stay greater than or equal to the trim point and transfer, death or sign out
- **Atypical codes 97, 98 and 99** (invalid LOS, not applicable, RIW not assigned)
- **HIG>989** (cadaveric donor, stillbirth, diagnosis not generally hospitalized, ungroupable)

As the next few sections will demonstrate, each type of case has its own approach for HIG weight assignment.

## 5.1 Examples: Typical non-factor cases

Please note that the following scenarios use HIG 2017 weights and are for example purposes only.

### Scenario 5.1.1

Consider a case in HIG 139c Chronic Obstructive Pulmonary Disease with Lower Respiratory Infection in age category R (18 to 59 years) with no flagged interventions, SCU flags or other factors. The total length of stay is 4 days.

For cases such as these, the final ELOS and HIG weight are equal to base ELOS and HIG weight and can be found in the base tables. The short stay trim point is also found in the base table.

It is important to note that age effects are contained in a separate table (Age weight and ELOS table) but are considered part of the base weight. Base values are assigned for each HIG–age group combination and are calculated by adding the age adjustment to the base HIG weight/ELOS.

The factor effects in HIG are additive. This means that the values in the base tables are added to the values in the factor effects tables to get the long stay trim point, ELOS and weight for cases.

#### **For HIG 139c**

$$\text{Short Stay Trim Days} = 1.0$$

TLOS > Short Stay Trim Days, so this is not a short stay case.

$$\text{Base ELOS} = 4.6645$$

$$\text{ELOS Adjustment}_{\text{Age R}} = 0.0000$$

$$\text{Final ELOS} = 4.6645 + 0.0000 = 4.6645$$

$$\text{Long Stay Addition} = 12.9724$$

$$\text{Long Stay Trim Days} = 12.9724 + 4.6645 = 17.6369$$

TLOS < Long Stay Trim Days, so this is a typical length case and we can calculate the HIG weight as follows:

$$\text{HIG Weight} = 0.8032$$

$$\text{Weight Adjustment}_{\text{Age R}} = 0.0000$$

$$\text{Final HIG Weight} = 0.8032 + 0.0000 = 0.8032$$

### **Scenario 5.1.2**

Consider a case similar to the one in scenario 5.1.1 but in age category S (60 to 79 years). From the base tables, ELOS and weight are found. Assume we have already determined that this is not a short stay case.

$$\text{Base ELOS} = 4.6645$$

$$\text{ELOS Adjustment}_{\text{Age S}} = 0.5489$$

$$\text{Final ELOS} = 4.6645 + 0.5489 = 5.2134$$

$$\text{Long Stay Addition} = 12.9724$$

$$\text{Long Stay Trim Days} = 12.9724 + 5.2134 = 18.1858$$

TLOS < Long Stay Trim Days, so this is a typical length case and we can calculate the HIG weight as follows:

$$\text{Base HIG Weight} = 0.8032$$

$$\text{Weight Adjustment}_{\text{Age S}} = 0.1163$$

$$\text{Final HIG Weight} = 0.8032 + 0.1163 = 0.9195$$

## 5.2 Examples: Typical single-factor cases

The following scenarios demonstrate the use of factors to adjust the ELOS, weights and long stay trim estimates. Note that not all factors are found in base tables; some factors have their own lookup table.

### Scenario 5.2.1

Consider a case in HIG 139c Chronic Obstructive Pulmonary Disease with Lower Respiratory Infection in age category R (18 to 59 years) with a TLOS of 4 days, a SCU flag of 1 and no other factors. Assume we have already determined that this is not a short stay case.

#### For HIG 139c

$$\text{Base ELOS} = 4.6645$$

$$\text{ELOS Adjustment}_{\text{Age R}} = 0.0000$$

$$\text{Long Stay Addition} = 12.9724$$

The SCU factor can be found in the base table on the same row as the base values for the HIG.

$$\text{ELOS Effect}_{\text{SCU}} = 2.2954$$

$$\text{Final ELOS} = 4.6645 + 0.0000 + 2.2954 = 6.9599$$

$$\text{Long Stay Trim Days} = 12.9724 + 6.9599 = 19.9323$$

TLOS < Long Stay Trim Days, so this is a typical length case and we can calculate the HIG weight as follows:

$$\text{Base HIG Weight} = 0.8032$$

$$\text{Weight Adjustment}_{\text{Age R}} = 0.0000$$

$$\text{Weight Factor}_{\text{SCU}} = 1.5288$$

$$\text{Final HIG Weight} = 0.8032 + 0.0000 + 1.5288 = 2.3320$$

## Scenario 5.2.2

Consider a case from the same HIG and the same factors as the case in scenario 5.2.1 but from age category S (60 to 79 years) and with a 4-day total length of stay. The base values are the same as in scenario 5.1.2.

$$\text{Base ELOS} = 4.6645$$

$$\text{ELOS Adjustment}_{\text{Age S}} = 0.5489$$

$$\text{Long Stay Addition} = 12.9724$$

In the same table, we can find the SCU effects for this HIG:

$$\text{ELOS Effect}_{\text{SCU}} = 2.2954$$

$$\text{Final ELOS} = 4.6645 + 0.5489 + 2.2954 = 7.5088$$

$$\text{Long Stay Trim Days} = 12.9724 + 7.5088 = 20.4812$$

Note that the SCU effects do not differ by age. Adding the SCU effects from the table with the base values gives the final ELOS, long stay trim days and weight.

$\text{TLOS} < \text{Long Stay Trim Days}$ , so this is a typical length case and we can calculate the HIG weight as follows:

$$\text{Base HIG Weight} = 0.8032$$

$$\text{Weight Adjustment}_{\text{Age S}} = 0.1163$$

$$\text{Weight Factor}_{\text{SCU}} = 1.5288$$

$$\text{Final HIG Weight} = 0.8032 + 0.1163 + 1.5288 = 2.4483$$

## Scenario 5.2.3

Consider a case from HIG 139c, age category R (18 to 59 years) with flagged intervention G (Invasive Ventilation  $\geq 96$  hours), no other factors and total length of stay of 4 days.

The base values are the same as in scenario 5.1.1.

The effects of flagged interventions can be found in the flagged intervention factor table. Note that rows with all factor effects equal to 0 were removed from the table to conserve space. Searching first by HIG and then by flagged intervention category gives the factor effect values. For HIG 139c, the FI effects for Invasive Ventilation  $\geq 96$  hrs are as follows:

**Table 9** Values for scenario 5.2.3

Indicator	Base (139c)	Age adjustment (R)	Factor effect	Factor value
ELOS	4.6645	0.0000	FI IV≥96hrs	6.0187
Long Stay Addition	12.9724			
HIG Weight	0.8032	0.0000	FI IV≥96hrs	4.8492

Adding the FI effect from the flagged interventions factor table with the base values gives the final ELOS and long stay trim days:

$$\text{Final ELOS} = 4.6645 + 0.0000 + 6.0187 = 10.6832$$

$$\text{Long Stay Trim Days} = 12.9724 + 10.6832 = 23.6556$$

TLOS < Long Stay Trim Days, so this is a typical length case and we can calculate the HIG weight as follows:

$$\text{Final HIG Weight} = 0.8032 + 0.0000 + 4.8492 = 5.6524$$

## Scenario 5.2.4

The case examined here is from HIG 139c, age category S (60 to 79 years), with total length of stay of 4 days, a home care flag of 1 and no other factors. This example examines the use of the home care factor.

The base values are the same as for scenario 5.2.2. The home care factor can be found in the base table as well on the same row as the base values for the HIG.

These are summarized in Table 10.

**Table 10** Values for scenario 5.2.4

Indicator	Base (139c)	Age adjustment (S)	Factor effect	Factor value
ELOS	4.6645	0.5489	Homecare	1.5579
Long Stay Addition	12.9724			
HIG Weight	0.8032	0.1163	Homecare	0.2086

$$\text{Final ELOS} = 4.6645 + 0.5489 + 1.5579 = 6.7713$$

$$\text{Long Stay Trim Days} = 12.9724 + 6.7713 = 19.7437$$

TLOS < Long Stay Trim Days, so this is a typical length case and we can calculate the HIG weight as follows:

$$\text{Final HIG weight} = 0.8032 + 0.1163 + 0.2086 = 1.1281$$

## Scenario 5.2.5

Consider a case in HIG 161 — Implantation of Cardioverter/Defibrillator, age category R (18 to 59 years), with a total length of stay of 4 days, 3 intervention events and no other factors. This example is meant to show the use of the IE factor table.

The IE factor effects can be found in the intervention events factor table. Only cases in the intervention-driven HIG groups are eligible for an IE effect, which is the reason that not all HIGs are present in the intervention events factor table. Cases with multiple intervention events are categorized into 2 groups with regard to the IE factor: 2 intervention events and 3 or more intervention events. In the IE factor table, searching by HIG number then by number of interventions gives the IE effects for HIG 161.

**Table 11** Values for scenario 5.2.

Indicator	Base (161)	Age adjustment (S)	Factor effect	Factor value
ELOS	3.9111	0.0000	Intervention Events (3)	8.4579
Long Stay Addition	20.2151			
HIG Weight	4.5863	0.0000	Intervention Events (3)	1.3588

Summing the base and factors for ELOS gives

$$\text{Final ELOS} = 3.9111 + 0.0000 + 8.4579 = 12.3690$$

$$\text{Long Stay Trim Days} = 20.2151 + 12.3690 = 32.5841$$

TLOS < Long Stay Trim Days, so this is a typical length case and we can calculate the HIG weight as follows:

$$\text{Final HIG Weight} = 4.5863 + 0.0000 + 1.3588 = 5.9451$$



## Scenario 5.2.6

The case in the next scenario deals with the OOH intervention factor.

This case is similar to the case in scenario 5.2.5, but it differs in that the cardioverter/defibrillator implantation was performed out of hospital and the total length of stay is 4 days. The OOH factor table lists the effect of the OOH intervention factor on various HIGs. Note that the OOH intervention factor affects both the ELOS and weight. For HIG 161, the required values are shown in Table 12.

**Table 12** Values for scenario 5.2.6

Indicator	Base (161)	Age adjustment (S)	Factor effect	Factor value
ELOS	3.9111	0.00000	OOH	2.6083
Long Stay Addition	20.2151			
HIG Weight	4.5863	0.0000	OOH	-3.2012

Summing the base and factors for ELOS gives

$$\text{Final ELOS} = 3.9111 + 0.0000 + 2.6083 = 6.5194$$

$$\text{Long Stay Trim Days} = 20.2151 + 6.5194 = 26.7345$$

TLOS < Long Stay Trim Days, so this is a typical length case and we can calculate the HIG weight as follows:

$$\text{Final HIG Weight} = 4.5863 + 0.0000 + (-3.2012) = 1.3851$$

## 5.3 Examples: Typical multiple-factor cases

Next we will look at a scenario with multiple factors. When there is more than 1 factor, each of the factors is added to the base values.

### Scenario 5.3.1

Consider a case from HIG 139c age category S (60 to 79 years) with SCU flag of 1, and flagged intervention G (Invasive Ventilation  $\geq$  96 hours). This case has a total length of stay of 4 days. Base values are the same as for scenario 5.2.1 and flagged interventions and SCU factors can be looked up as previously discussed.

**Table 13** Values for scenario 5.3.1

Indicator	Base (139c)	Age adjustment (S)	Factor effect	Factor value	Factor effect	Factor value
ELOS	4.6645	0.5489	SCU	2.2964	FI IV≥96hrs	6.0187
Long Stay Addition	12.9724					
HIG Weight	0.8032	0.1163	SCU	1.5288	FI IV≥96hrs	4.8492

The final values are found by adding all factor effects to base values as follows:

$$\text{Final ELOS} = 4.6645 + 0.5489 + 2.2954 + 6.0187 = 13.5278$$

$$\text{Long Stay Trim Days} = 12.9724 + 13.5275 = 26.4999$$

TLOS < Long Stay Trim Days, so this is a typical length case and we can calculate the HIG weight as follows:

$$\text{Final HIG Weight} = 0.8032 + 0.1163 + 1.5288 + 4.8492 = 7.2975$$

## 5.4 Examples: Short stay cases

Short stay cases (atypical code 09) are those cases in which TLOS is less than or equal to the short stay trim days, CMG+ atypical code is 00 and the patient did not have invasive ventilation, vascular access device or special care unit codes in the abstract. These cases are assigned a weight on a per diem basis and are not adjusted for factors.

Weights for these cases are calculated by multiplying a per diem value by TLOS and then adding it to the short stay base weight. The next example will examine this methodology.

### Scenario 5.4.1

In this scenario, we have a patient in HIG 140 — Bronchiectasis with TLOS 1, no factors and age category R.

We look up the base values and find the following:

#### HIG 140

$$\text{Short Stay Trim Days} = 1.000$$

As the total length of stay is equal to the short stay trim point, this is a short stay case.

The weight of a short stay case is calculated using a per diem basis and is not adjusted for any factors.

$$\text{HIG Weight}_{\text{Short Stay}} = \text{HIG Short Stay}_{\text{Base}} + (\text{HIG Short Stay per Diem} \times \text{TLOS})$$

Going back to the base table, we look up short stay base and short stay per diem for HIG 140:

Short Stay Base = 0.1458

Short Stay PD = 0.0855

And the final HIG weight for this example is

$$\text{Final HIG Weight}_{\text{Short Stay}} = 0.1458 + (0.0855) \times 1 = 0.2313$$

## 5.5 Examples: Atypical cases

Atypical cases include those that are acute care transfers (in, out, or in and out), sign outs, and palliative death cases with TLOS less than the long stay trim days. Due to the mode of admission/discharge, these cases do not follow the typical course of treatment. Instead of being assigned a typical HIG weight, these atypical cases utilize a per diem–based approach in assigning HIG weight.

The per diems are adjusted according to the length of stay group. Table 14 lists the length of stay groups and corresponding per diem.

**Table 14** Per diem by total length of stay

Total length of stay	Per diem
TLOS ≤ HIG LOS 10th percentile	HIG PD = HIG PerDiem <sub>Base</sub> + HIG PerDiem <sub>Factors</sub> + HIG PerDiem10
HIG LOS 10th percentile < TLOS ≤ HIG LOS 25th percentile	HIG PD = HIG PerDiem <sub>Base</sub> + HIG PerDiem <sub>Factors</sub> + HIG PerDiem25
TLOS > HIG LOS 25th percentile	HIG PD = HIG PerDiemBase + HIG PerDiemFactors + HIG Atypical Factor

The per diem adjustments are found in the atypical factors table.

### Scenario 5.5.1

In this scenario, the patient was transferred to an acute care hospital from another acute care institution, resulting in the patient being defined as atypical type 01 (Transfer In). Again, this example is from HIG 139c, age category R, no factors present and TLOS of 5 days.

We look up the necessary base values for HIG 139c from the base ELOS and HIG weight tables:

$$\text{Base PD} = 0.1742$$

$$\text{PD Adjustment}_{\text{Age R}} = 0.0000$$

Next we look up the per diem adjustment from the atypical percentile tables. In the Atypical factors table, we find HIG cell 139c with atypical code = 01.

**Table 15** Values for scenario 5.5.1

HIG cell	139c
HIG Atyp Code	01
HIG LOS Percentile 10	2.0
HIG LOS Percentile 10 PD	0.0680
HIG LOS Percentile 25	3.0
HIG LOS Percentile 25 PD	0.0332
HIG LOS Percentile 75	
HIG LOS Percentile 75 OPD	
HIG LOS Percentile 90	
HIG LOS Percentile 90 OPD	
HIG LOS Percentile 95	
HIG LOS Percentile 95 OPD	
HIG Atyp Factor	0.00000

Table 15 presents the length of stay values at the 10th and 25th percentiles, as well as their corresponding adjustment factors.

We look up TLOS to see whether it is less than or equal to the 10th percentile, greater than the 10th and less than or equal to the 25th, or greater than the 25th percentile.

Examining Table 15, we see that for HIG139c with atypical code 01, if TLOS is less than or equal to 1, we adjust using the 10th percentile; if TLOS is less than or equal to 3 and greater than 1, we adjust using the 25th percentile; and if TLOS is greater than 3, we adjust using the HIG atypical factor. In this case, we have a TLOS of 5 days and thus adjust using the HIG atypical factor.

$$\text{PD Adjustment}_{\text{Atyp}} = 0.00000$$

$$\text{Final Weight} = (\text{Base Per Diem} + \text{PD Adjustment}_{\text{Age R}} + \text{PD Adjustment}_{\text{Atyp}}) \times \text{TLOS}$$

$$\text{Final Weight} = (0.1742 + 0.0000 + 0.0000) \times 5 = 0.8710$$

## Scenario 5.5.2

In this scenario, we have a patient similar to the patient in scenario 5.5.1; however, this patient was a palliative care death (atypical code 04) and has 1 flagged intervention (G) and TLOS of 3 days.

We look up the necessary base values for HIG 139c from the base ELOS and HIG weight tables and FI factor table:

$$\text{Base PD} = 0.1742$$

$$\text{PD Adjustment}_{\text{Age R}} = 0.0000$$

$$\text{PD Effect}_{\text{FI}} = 0.1758$$

Next, we consult the atypical percentile table to find our adjustment. Here, a TLOS of 3 days falls between the 10th and 25th percentile, so we adjust for below the 25th percentile.

$$\text{PD Adjustment}_{25} = 0.0694$$

$$\text{Final Weight} = (\text{Base PD} + \text{PD Adjustment}_{\text{Age R}} + \text{PD Effect}_{\text{FI}} + \text{PD Adjustment}_{25}) \times \text{TLOS}$$

$$\text{Final HIG Weight}_{\text{Atypical}} = (0.1742 + 0.0000 + 0.1758 + 0.0694) \times 3 = 1.2582$$

## 5.6 Examples: Long stay cases

All cases previously presented have a total length of stay less than the long stay trim days. If, on comparing the total length of stay and final long stay trim days, the total length of stay for the case is greater than or equal to the long stay trim days, then we would calculate the HIG weight using the long stay methodology.

### Scenario 5.6.1

Let's consider the case in scenario 5.1.1. In that scenario, the total length of stay is 121 days.

For HIG139c age category R, we formerly calculated

$$\text{Final ELOS} = 4.6645 + 0.0000 = 4.6645$$

$$\text{Long Stay Addition} = 12.9724$$

$$\text{Long Stay Trim Days} = 4.6645 + 12.9724 = 17.6369$$

In this case, the TLOS is greater than the long stay trim days of 17.6369. The case is therefore defined as long stay (atypical code = 10).

HIG weights for long stay cases are calculated as the sum of the typical case weight and a per diem weight that accounts for the extended length of stay of the case. We calculated the typical portion in scenario 5.1.1 as follows:

$$\text{Typical HIG weight} = 0.8032$$

The second part of the weight is calculated using the number of days beyond ELOS and a long stay per diem. This long stay PD is adjusted for factors and, similar to atypical cases, is adjusted based on the length of stay group.

Looking up the necessary base values for HIG 139c,

$$\text{Base Outlier PD} = 0.1531$$

$$\text{PD Outlier Adjustment}_{\text{Age R}} = 0.0000$$

Next, we consult the atypical percentile table for HIG cell 139c atypical code = 10. In this case, a TLOS of 121 days falls beyond the 95th percentile, so we adjust for being above the 95th percentile:

$$\text{PD Adjustment}_{95} = -0.0207$$

$$\text{Long Stay PD} = \text{Base Outlier PD} + \text{PD Outlier Adjustment}_{\text{Age R}} + \text{PD Adjustment}_{95}$$

$$\text{Long Stay Per Diem} = 0.1531 + 0.00000 + (-0.0207) = 0.1324$$

$$\text{HIG Weight} = \text{Typical HIG weight} + \text{Long Stay Per Diem} \times (\text{TLOS} - \text{ELOS})$$

$$\text{Final HIG Weight}_{\text{Long Stay}} = 0.8032 + 0.1324 \times (121 - 4.6645) = 16.2060$$

## Scenario 5.6.2

Suppose we have the same case as in scenario 5.6.1, but instead of being discharged from hospital, the patient was transferred to another acute facility. Since the HIG and factors remain the same from scenario 5.6.1, the long stay trim days of 17.6369 still applies to this case and it is still a long stay case. However, since the patient was transferred out, this becomes a long stay atypical case with HIG atypical code = 12.

The HIG weight for atypical long stay cases is calculated as the sum of the typical case weight and a per diem weight that accounts for the extended length of stay of the case.

As with scenario 5.6.1,

$$\text{Typical HIG weight} = 0.8032$$

$$\text{Base Outlier PD} = 0.1531$$

$$\text{PD Outlier Adjustment}_{\text{Age R}} = 0.0000$$



Next, we consult the atypical percentile table for HIG cell 139c atypical code = 12. In this case, a TLOS of 121 days falls beyond the 95th percentile, so we adjust for being above the 95th percentile:

$$\text{PD Adjustment}_{95} = -0.0207$$

$$\text{Long Stay PD} = \text{Base Outlier PD} + \text{PD Outlier Adjustment}_{\text{Age R}} + \text{PD Adjustment}_{95}$$

$$\text{Long Stay Per Diem} = 0.1531 + 0.0000 + (-0.0207) = 0.1324$$

$$\text{HIG Weight} = \text{Typical HIG Weight} + \text{Long Stay Per Diem} \times (\text{TLOS} - \text{ELOS})$$

$$\text{Final HIG Weight}_{\text{Long Stay Atypical}} = 0.8032 + 0.1324 \times (121 - 4.6645) = 16.2060$$

In this case, the PD adjustment for both 5.6.1 and 5.6.2 is the same. This is not true in all cases, however.

## 5.7 Atypical type 08 (HIG>989)

Cases in HIG groups numbered >989 are a collection of cases that included cadaver donors, stillbirths, patients with a diagnosis not generally hospitalized, as well as ungroupable data. These cases are assigned a weight on a per diem basis to a maximum of 4 days. These are not adjusted for any factors.

### Scenario 5.7.1

Consider a case in HIG 993 Diagnosis Not Generally Hospitalized, with a TLOS of 7 days. We look up our per diem values in the base ELOS and HIG weight tables.

#### For HIG 993

$$\text{HIG Base PD} = 0.1971$$

$$\text{HIG Weight} = \text{HIG PD} \times \text{MINIMUM}(\text{TLOS}, 4)$$

As the TLOS of 7 days is greater than the 4-day maximum, we will use 4 days as the TLOS.

$$\text{HIG Weight} = 0.1971 \times 4 = 0.7884$$

## 5.8 Atypical types 97, 98 and 99 (invalid LOS, not applicable, RIW not assigned)

Cases with atypical codes 97, 98 or 99 are assigned a weight of 0.

Table 16 summarizes all the cases in the example scenarios. It gives a description of all cases, including their atypical status, HIG, age category and factors. It also lists their final indicator values and the tables used to derive ELOS and weight.

**Table 16** Summary of example scenarios

Scenario	HIG	Age category	TLOS	SCU	FI	Home-care	IE	OOH	ELOS	Long stay trim days	HIG weight	Factor table	Comments
5.1.1	139c Chronic Obstructive Pulmonary Disease with Lower Respiratory Infection	R: 18–59 Years	4	0	None	0	8	0	4.6645	17.6369	0.8032	Base, Age	Typical, non-factor
5.1.2	139c Chronic Obstructive Pulmonary Disease with Lower Respiratory Infection	S: 60–79 Years	4	0	None	0	8	0	5.2134	18.1858	0.9195	Base, Age	Typical, non-factor
5.2.1	139c Chronic Obstructive Pulmonary Disease with Lower Respiratory Infection	R: 18–59 Years	4	1	None	0	8	0	6.9599	19.9323	2.3320	Base, Age	Typical, single factor
5.2.2	139c Chronic Obstructive Pulmonary Disease with Lower Respiratory Infection	S: 60–79 Years	4	1	None	0	8	0	7.5088	20.4812	2.4483	Base, Age	Typical, single factor
5.2.3	139c Chronic Obstructive Pulmonary Disease with Lower Respiratory Infection	R: 18–59 Years	4	0	Invasive Ventilation >=96 hours	0	1	0	10.6832	23.6556	5.6524	Base, Age, FI	Typical, single factor
5.2.4	139c Chronic Obstructive Pulmonary Disease with Lower Respiratory Infection	S: 60–79 Years	4	0	None	1	8	0	6.7713	19.7437	1.1281	Base, Age	Typical, single factor
5.2.5	161: Cardioverter/Defibrillator	R: 18–59 Years	4	0	None	0	3	0	12.3690	32.5841	5.9451	Base, Age, IE	Typical, single factor

Scenario	HIG	Age category	TLOS	SCU	FI	Home-care	IE	OOH	ELOS	Long stay trim days	HIG weight	Factor table	Comments
5.2.6	161: Cardioverter/Defibrillator	R: 18–59 Years	4	0	None	0	1	1	6.5194	26.7345	1.3851	Base, Age, OOH	Typical, single factor
5.3.1	139c Chronic Obstructive Pulmonary Disease with Lower Respiratory Infection	S: 60–79 Years	4	1	Invasive Ventilation >=96 hours	0	1	0	13.5275	26.4999	7.2975	Base, Age, FI	Typical, multiple factors
5.4.1	140 Bronchiectasis	R: 18–59 Years	1	0	None	0	8	0			0.2313	Base, Age	Short stay
5.5.1	139c Chronic Obstructive Pulmonary Disease with Lower Respiratory Infection	R: 18–59 Years	5	0	None	0	8	0			0.8710	Base, Age, Atypical	Atypical, non-factor
5.5.2	139c Chronic Obstructive Pulmonary Disease with Lower Respiratory Infection	R: 18–59 Years	3	0	Invasive Ventilation >=96 hours	0	1	0			1.2582	Base, Age, FI, Atypical	Atypical, factor
5.6.1	139c Chronic Obstructive Pulmonary Disease with Lower Respiratory Infection	R: 18–59 Years	121	0	None	0	8	0	4.6645	17.6369	16.2060	Base, Age, Atypical	Long stay, non-factor
5.6.2	139c Chronic Obstructive Pulmonary Disease with Lower Respiratory Infection	R: 18–59 Years	121	0	None	0	8	0	4.6645	17.6369	16.2060	Base, Age, Atypical	Long stay atypical
5.7.1	993: Diagnosis Not Generally Hospitalized	S: 60–79 Years	7	N/A	None	0	8	0			0.7884	Base	Atypical type 08

# Frequently asked questions

## **1. What is the difference between the HIG ELOS/weight values and CMG ELOS/RIW values?**

Ontario-specific weight values (HIG) are calculated by the Ontario MOHLTC using only Ontario cost data. CMG+ RIWs are derived within CIHI from case-cost data collected from Ontario, Alberta and British Columbia. In addition, HIG is additive, uses different factors and has different trim points.

## **2. Why is my HIG weight higher/lower than my CMG+ RIW?**

It is difficult to compare CMG+ RIWs to HIG weights as they are derived using different cost data and have different factor adjustments. Thus, for an individual case, sometimes the CMG RIW may be higher and sometimes the HIG weight may be higher.

## **3. Where can I find more information on the HIG methodology?**

For a more in-depth understanding of HIG, there is an Introduction to HIG Methodology self-study and workshop available on CIHI's Learning Centre (<https://learning.cihi.ca>).

## **4. Will vendors be providing products to group data to HIG?**

Specifications for HIG 2017 were provided to vendors in January 2017.

## **5. Where can I find my HIG reports?**

Record-level reports can be found on CIHI's website in the Client Services section under eHSR. Comparative reports are available in eReporting.

## **6. Will Ontario facilities continue to receive data grouped to CMG+?**

Yes, Ontario facilities submitting acute inpatient data to DAD will receive 2 files: 1 with data grouped to HIG 2017 and 1 with data grouped to CMG+ 2017.

## **7. Are the HIG reports cumulative throughout the year?**

Yes, the record-level and comparative HIG reports are cumulative. For 2017, all files will contain all data submitted since April 1, 2017.

## **8. Who should I contact if I have questions?**

If you have questions about HIG grouping and weighting or questions about the reporting of HIG information, please contact CIHI via eQuery (Case Mix) or send an email to [casemix@cihi.ca](mailto:casemix@cihi.ca). If you have questions about the HBAM methodology, contact the Ontario MOHLTC by email at [HBAM@Ontario.ca](mailto:HBAM@Ontario.ca).

# Appendix A: Cardiac comorbidity ICD-10-CA diagnosis codes

Only diagnosis types (1), (2), (W), (X) and (Y) are used to determine comorbidity.

Diagnosis code	Diagnosis description
I012	Acute rheumatic myocarditis
I500	Congestive heart failure
I501	Left ventricular failure
I509	Heart failure, unspecified
I513	Intracardiac thrombosis, not elsewhere classified
I514	Myocarditis, unspecified
I600	Subarachnoid haemorrhage from carotid siphon and bifurcation
I601	Subarachnoid haemorrhage from middle cerebral artery
I602	Subarachnoid haemorrhage from anterior communicating artery
I603	Subarachnoid haemorrhage from posterior communicating artery
I604	Subarachnoid haemorrhage from basilar artery
I605	Subarachnoid haemorrhage from vertebral artery
I606	Subarachnoid haemorrhage from other intracranial arteries
I828	Embolism and thrombosis of other specified veins
I830	Varicose veins of lower extremities with ulcer
I831	Varicose veins of lower extremities with inflammation
I832	Varicose veins of lower extremities with both ulcer and inflammation
I838	Varicose veins of lower extremities with other complications
I839	Varicose veins of lower extremities without ulcer, inflammation or other complication
I871	Compression of vein
I872	Venous insufficiency (chronic)(peripheral)
I878	Other specified disorders of veins
I879	Disorder of vein, unspecified
I890	Lymphoedema, not elsewhere classified
I891	Lymphangitis
I898	Other specified noninfective disorders of lymphatic vessels and lymph nodes
I899	Noninfective disorder of lymphatic vessels and lymph nodes, unspecified
I080	Disorders of both mitral and aortic valves
I081	Disorders of both mitral and tricuspid valves
I082	Disorders of both aortic and tricuspid valves
I083	Combined disorders of mitral, aortic and tricuspid valves
I088	Other multiple valve diseases

Diagnosis code	Diagnosis description
I200	Unstable angina
I201	Angina pectoris with documented spasm
I209	Angina pectoris, unspecified
I607	Subarachnoid haemorrhage from intracranial artery, unspecified
I608	Other subarachnoid haemorrhage
I609	Subarachnoid haemorrhage, unspecified
I610	Intracerebral haemorrhage in hemisphere, subcortical
I611	Intracerebral haemorrhage in hemisphere, cortical
I612	Intracerebral haemorrhage in hemisphere, unspecified
I613	Intracerebral haemorrhage in brain stem
I614	Intracerebral haemorrhage in cerebellum
I615	Intracerebral haemorrhage, intraventricular
I616	Intracerebral haemorrhage, multiple localized
I618	Other intracerebral haemorrhage
I619	Intracerebral haemorrhage, unspecified
I620	Subdural haemorrhage (acute)(nontraumatic)
I621	Nontraumatic extradural haemorrhage
I629	Intracranial haemorrhage (nontraumatic), unspecified
I630	Cerebral infarction due to thrombosis of precerebral arteries
I631	Cerebral infarction due to embolism of precerebral arteries
I632	Cerebral infarction due to unspecified occlusion or stenosis of precerebral arteries
I633	Cerebral infarction due to thrombosis of cerebral arteries
I634	Cerebral infarction due to embolism of cerebral arteries
I635	Cerebral infarction due to unspecified occlusion or stenosis of cerebral arteries
I636	Cerebral infarction due to cerebral venous thrombosis, nonpyogenic
I638	Other cerebral infarction
I639	Cerebral infarction, unspecified
I650	Occlusion and stenosis of vertebral artery
I651	Occlusion and stenosis of basilar artery
I652	Occlusion and stenosis of carotid artery
I240	Coronary thrombosis not resulting in myocardial infarction
I241	Dressler's syndrome
I248	Other forms of acute ischaemic heart disease
I249	Acute ischaemic heart disease, unspecified
I255	Ischaemic cardiomyopathy
I256	Silent myocardial ischaemia
I260	Pulmonary embolism with mention of acute cor pulmonale
I269	Pulmonary embolism without mention of acute cor pulmonale
I270	Primary pulmonary hypertension



Diagnosis code	Diagnosis description
I272	Other secondary pulmonary hypertension
I279	Pulmonary heart disease, unspecified
I653	Occlusion and stenosis of multiple and bilateral precerebral arteries
I658	Occlusion and stenosis of other precerebral artery
I659	Occlusion and stenosis of unspecified precerebral artery
I319	Disease of pericardium, unspecified
I400	Infective myocarditis
I401	Isolated myocarditis
I408	Other acute myocarditis
I409	Acute myocarditis, unspecified
I64	Stroke, not specified as haemorrhage or infarction
I460	Cardiac arrest with successful resuscitation
I470	Re-entry ventricular arrhythmia
I471	Supraventricular tachycardia
I472	Ventricular tachycardia
I479	Paroxysmal tachycardia, unspecified
I2080	Atypical angina
I2088	Other forms of angina pectoris
I2381	Pericarditis as current complication following acute myocardial infarction
I2382	Postmyocardial infarction angina as current complication following acute myocardial infarction
R570	Cardiogenic shock
I8700	Postthrombotic syndrome with ulcer
I8701	Postthrombotic syndrome with inflammation
I8702	Postthrombotic syndrome with both ulcer and inflammation
I8708	Postthrombotic syndrome with other complications
I8709	Postthrombotic syndrome without ulcer, inflammation or other complications

# Appendix B: ICD-10-CA codes for diagnosis splits

## HIG 139c Chronic Obstructive Pulmonary Disease with Lower Respiratory Infection

Diagnosis	Diagnosis description
<b>J440</b>	Chronic obstructive pulmonary disease with acute lower respiratory infection

## HIG 139d Chronic Obstructive Pulmonary Disease without Lower Respiratory Infection

All cases of CMG 139 not grouping to HIG 139c

## HIG 250a Digestive Malignancy — Colon

Diagnosis	Diagnosis description
<b>C180</b>	Malignant neoplasm of caecum
<b>C181</b>	Malignant neoplasm of appendix
<b>C182</b>	Malignant neoplasm of ascending colon
<b>C183</b>	Malignant neoplasm of hepatic flexure
<b>C184</b>	Malignant neoplasm of transverse colon
<b>C185</b>	Malignant neoplasm of splenic flexure
<b>C186</b>	Malignant neoplasm of descending colon
<b>C187</b>	Malignant neoplasm of sigmoid colon
<b>C188</b>	Overlapping malignant lesion of colon
<b>C189</b>	Malignant neoplasm colon, unspecified
<b>D010</b>	Carcinoma in situ of colon

## HIG 250b Digestive Malignancy — Stomach

Diagnosis	Diagnosis description
<b>C160</b>	Malignant neoplasm of cardia
<b>C161</b>	Malignant neoplasm of fundus of stomach
<b>C162</b>	Malignant neoplasm of body of stomach
<b>C163</b>	Malignant neoplasm of pyloric antrum
<b>C164</b>	Malignant neoplasm of pylorus
<b>C165</b>	Malignant neoplasm lesser curvature of stomach, unspecified
<b>C166</b>	Malignant neoplasm greater curvature of stomach, unspecified
<b>C168</b>	Overlapping malignant lesion of stomach
<b>C169</b>	Malignant neoplasm stomach unspecified
<b>D002</b>	Carcinoma in situ of stomach

## HIG 250c Digestive Malignancy — Other

CMG 250 cases not grouping to HIG 250a or HIG 250b

## HIG 437a Diabetes

CMG 437 cases not grouping to HIG 437b to HIG 437d

## HIG 437b Diabetes With Renal Complications

Diagnosis	Diagnosis description
<b>E1020</b>	Type 1 diabetes mellitus with incipient diabetic nephropathy
<b>E1023</b>	Type 1 diabetes mellitus with established or advanced kidney disease
<b>E1028</b>	Type 1 diabetes mellitus with other specified kidney complication not elsewhere classified
<b>E1120</b>	Type 2 diabetes mellitus with incipient diabetic nephropathy
<b>E1123</b>	Type 2 diabetes mellitus with established or advanced kidney disease
<b>E1128</b>	Type 2 diabetes mellitus with other specified kidney complication not elsewhere classified
<b>E1320</b>	Other specified diabetes mellitus with incipient diabetic nephropathy
<b>E1323</b>	Other specified diabetes mellitus with established or advanced kidney disease
<b>E1328</b>	Other specified diabetes mellitus with other specified kidney complication not elsewhere classified
<b>E1420</b>	Unspecified diabetes mellitus with incipient diabetic nephropathy
<b>E1423</b>	Unspecified diabetes mellitus with established or advanced kidney disease
<b>E1428</b>	Unspecified diabetes mellitus with other specified kidney complication not elsewhere classified

## HIG 437c Diabetes With Ophthalmic, Neurological or Circulatory Complications

Diagnosis	Diagnosis description
<b>E1030</b>	Type 1 diabetes mellitus with background retinopathy
<b>E1032</b>	Type 1 diabetes mellitus with proliferative retinopathy
<b>E1033</b>	Type 1 diabetes mellitus with other retinopathy
<b>E1036</b>	Type 1 diabetes mellitus with advanced ophthalmic disease
<b>E1038</b>	Type 1 diabetes mellitus with other specified ophthalmic complication not elsewhere classified
<b>E1040</b>	Type 1 diabetes mellitus with mononeuropathy
<b>E1041</b>	Type 1 diabetes mellitus with polyneuropathy
<b>E1042</b>	Type 1 diabetes mellitus with autonomic neuropathy
<b>E1050</b>	Type 1 diabetes mellitus with peripheral angiopathy
<b>E1051</b>	Type 1 diabetes mellitus with peripheral angiopathy with gangrene
<b>E1052</b>	Type 1 diabetes mellitus with certain circulatory complications
<b>E1130</b>	Type 2 diabetes mellitus with background retinopathy
<b>E1131</b>	Type 2 diabetes mellitus with preproliferative retinopathy
<b>E1132</b>	Type 2 diabetes mellitus with proliferative retinopathy
<b>E1133</b>	Type 2 diabetes mellitus with other retinopathy
<b>E1136</b>	Type 2 diabetes mellitus with advanced ophthalmic disease
<b>E1138</b>	Type 2 diabetes mellitus with other specified ophthalmic complication not elsewhere classified
<b>E1140</b>	Type 2 diabetes mellitus with mononeuropathy
<b>E1141</b>	Type 2 diabetes mellitus with polyneuropathy
<b>E1142</b>	Type 2 diabetes mellitus with autonomic neuropathy
<b>E1150</b>	Type 2 diabetes mellitus with peripheral angiopathy
<b>E1151</b>	Type 2 diabetes mellitus with peripheral angiopathy with gangrene
<b>E1152</b>	Type 2 diabetes mellitus with certain circulatory complications
<b>E1342</b>	Other specified diabetes mellitus with autonomic neuropathy
<b>E1352</b>	Other specified diabetes mellitus with certain circulatory complications
<b>E1432</b>	Unspecified diabetes mellitus with proliferative retinopathy
<b>E1436</b>	Unspecified diabetes mellitus with advanced ophthalmic disease
<b>E1438</b>	Unspecified diabetes mellitus with other specified ophthalmic complication not elsewhere classified
<b>E1440</b>	Unspecified diabetes mellitus with mononeuropathy
<b>E1441</b>	Unspecified diabetes mellitus with polyneuropathy
<b>E1442</b>	Unspecified diabetes mellitus with autonomic neuropathy
<b>E1450</b>	Unspecified diabetes mellitus with peripheral angiopathy
<b>E1451</b>	Unspecified diabetes mellitus with peripheral angiopathy with gangrene

## HIG 437d Diabetes With Multiple Complications

Diagnosis	Diagnosis description
<b>E1070</b>	Type 1 diabetes mellitus with foot ulcer (angiopathic) (neuropathic)
<b>E1071</b>	Type 1 diabetes mellitus with foot ulcer (angiopathic) (neuropathic) with gangrene
<b>E1078</b>	Type 1 diabetes mellitus with multiple other complications
<b>E1170</b>	Type 2 diabetes mellitus with foot ulcer (angiopathic)(neuropathic)
<b>E1171</b>	Type 2 diabetes mellitus with foot ulcer (angiopathic) (neuropathic) with gangrene
<b>E1178</b>	Type 2 diabetes mellitus with multiple other complications
<b>E1370</b>	Other specified diabetes mellitus with foot ulcer (angiopathic) (neuropathic)
<b>E1371</b>	Other specified diabetes mellitus with foot ulcer (angiopathic) (neuropathic) with gangrene
<b>E1378</b>	Other specified diabetes mellitus with multiple other complications
<b>E1470</b>	Unspecified diabetes mellitus with foot ulcer (angiopathic) (neuropathic)
<b>E1471</b>	Unspecified diabetes mellitus with foot ulcer (angiopathic) (neuropathic) with gangrene
<b>E1478</b>	Unspecified diabetes mellitus with multiple other complications

## HIG 478a Cancer of Bladder

Diagnosis	Diagnosis description
<b>C670</b>	Malignant neoplasm of trigone of bladder
<b>C671</b>	Malignant neoplasm of dome of bladder
<b>C672</b>	Malignant neoplasm lateral wall bladder
<b>C673</b>	Malignant neoplasm anterior wall bladder
<b>C674</b>	Malignant neoplasm of posterior wall of bladder
<b>C675</b>	Malignant neoplasm of bladder neck
<b>C676</b>	Malignant neoplasm of ureteric orifice
<b>C677</b>	Malignant neoplasm of urachus
<b>C678</b>	Overlapping malignant lesion of bladder
<b>C679</b>	Malignant neoplasm of bladder, unspecified
<b>D090</b>	Carcinoma in situ of bladder

## HIG 478b Malignant Neoplasm of Urinary System

CMG 478 cases not grouping to HIG 478a

## Appendix C: LOS percentiles for HIG

HIG code	25th percentile acute LOS (all)	50th percentile acute LOS (all)	25th percentile acute LOS (typical)	50th percentile acute LOS (typical)	25th percentile acute LOS (atypical)	50th percentile acute LOS (atypical)	25th percentile TLOS (all)	50th percentile TLOS (all)	25th percentile TLOS (typical)	50th percentile TLOS (typical)	25th percentile TLOS (atypical)	50th percentile TLOS (atypical)
001	3	8	3	5	14	24	3	8	3	5	14	24
002	1	7	1	3	13	20	1	7	1	3	13	20
003	2	4	1	3	4	8	2	4	1	3	4	9
004	4	8	4	7	6	8	4	8	4	7	6	8
005	3	6	2	4	6	15	3	6	2	4	6	16
006	3	6	3	5	5	10	3	6	3	5	5	11
007	2	5	2	4	7	12	2	5	2	4	7	13
008	1	3	1	2	5	8	1	3	1	2	5	8.5
009	3	6	3	5	5	10	3	6	3	5	5	10
010	2	4.5	2	4	3	7	3	5	2	4	3	7
011	2	4	2	3	5	13	2	4	2	3	5	13
012	1	2	1	2	4	9	1	2	1	2	4	11
013	1	2	1	2	15	23	1	2	1	2	17	28
014	1	1	1	1	4	6	1	1	1	1	6	22
023	4	7	5	8	2	3	4	10	6	11	2	4
024	3	6	3	6	1	5	3	7	4	7	1	7.5
025	2	5	3	6	1	3	2	6	3	6	1	4
026	3	5	3	5	1	5	3	6	4	6	1	5
027	2	4	2	4	2	5	2	4	2	4	2	6
028	2	3	2	4	1	3	2	4	2	4	1	3
029	1	3	1	3	2	5	2	3	2	3	2	6
030	2	3	2	3	1	4	2	3	2	3	1	4

HIG code	25th percentile acute LOS (all)	50th percentile acute LOS (all)	25th percentile acute LOS (typical)	50th percentile acute LOS (typical)	25th percentile acute LOS (atypical)	50th percentile acute LOS (atypical)	25th percentile TLOS (all)	50th percentile TLOS (all)	25th percentile TLOS (typical)	50th percentile TLOS (typical)	25th percentile TLOS (atypical)	50th percentile TLOS (atypical)
031	3	7	3	7	2	6.5	3	7	3	7	2	6.5
032	4	8	4	7	4	10	4	8	4	7	4	10
033	4	8	5	8	2	6	5	9	6	9	2	7
034	2	4	2	4	2.5	6	2	4	2	4	2.5	7
035	3	7	3	7	5	11	4	8	3	7	6	14
036	3	5	3	5	1	2	3	5	4	6	1	4
037	1	3	1	3	2	5	1	3	1	3	2	6
038	2	5	3	6	1	4	2	6	3	6	1	4
039	2	4	2	3	3	6.5	2	4	2	3	3	7
040	1	2	1	2	2	8	1	2	1	2	2	11
041	1	2	1	2	1	5	1	2	1	2	1	7
042	2	4	2	4	2	6	2	4	2	4	2	7
050	1	1	1	1	4	11	1	1	1	1	4	12
051	1	1	1	1	4.5	9.5	1	1	1	1	6	13
052	1	1	1	1	1	8	1	1	1	1	1	8
053	1	1	1	1	6	7	1	1	1	1	6	7
054	1	1	1	1	1	1.5	1	1	1	1	1	1.5
055	1	1	1	1			1	1	1	1		
056	1	1	1	1	1	9.5	1	1	1	1	1	9.5
063	2	3	2	3	1	5	2	3	2	3	1	5
064	1	1	1	1	1	3.5	1	1	1	1	1	4.5
065	1	2	1	2	1	7	1	2	1	2	1	8
070	1	1	1	1	6	6	1	1	1	1	6	6
071	10	14	10	14	2	17.5	10	14	10	14	2	17.5

HIG code	25th percentile acute LOS (all)	50th percentile acute LOS (all)	25th percentile acute LOS (typical)	50th percentile acute LOS (typical)	25th percentile acute LOS (atypical)	50th percentile acute LOS (atypical)	25th percentile TLOS (all)	50th percentile TLOS (all)	25th percentile TLOS (typical)	50th percentile TLOS (typical)	25th percentile TLOS (atypical)	50th percentile TLOS (atypical)
072	2	3	2	3	30	30	2	3	2	3	30	30
073	1.5	2	1	2	15	23	1.5	2	1	2	15	23
074	1	2	1	2	18	23	1	2	1	2	19	27
075	1	2	1	1	8	19	1	2	1	1	8	19
076	1	2	1	2	1	1.5	1	2	1	2	1	1.5
077	1	1	1	1	8	12	1	1	1	1	8	12
078	1	1	1	1	8	11.5	1	1	1	1	8	13.5
079	1	1	1	1	3	3	1	1	1	1	3	3
080	1	1	1	1	5	5.5	1	1	1	1	5	5.5
081	1	1	1	1	7	8	1	1	1	1	7	8
082	1	1	1	1	4	8	1	1	1	1	4	8
083	1	1	1	1	7	8	1	1	1	1	7	8
084	1	1	1	1	6	7	1	1	1	1	6	7
085	1	1	1	1	6	8	1	1	1	1	6	8
086	1	1	1	1	5	6.5	1	1	1	1	5	7
087	1	1	1	1	3	9	1	1	1	1	3	9
088	1	1	1	1	6.5	8	1	1	1	1	7.5	9
094	3	8	3	7	7	16	4	8	3	7	7	18
095	1	1	1	1	13	17	1	1	1	1	13	18
096	1	2	1	2	1	2.5	1	2	1	2	1	2.5
097	1	2	1	2	2	7	1	2	1	2	2	10
098	1	2	1	2	3	10	1	2	1	2	8	12
099	1	2	1	2	1	2	1	2	1	2	1	2
100	1	2	1	2	9	15	1	2	1	2	9	15



HIG code	25th percentile acute LOS (all)	50th percentile acute LOS (all)	25th percentile acute LOS (typical)	50th percentile acute LOS (typical)	25th percentile acute LOS (atypical)	50th percentile acute LOS (atypical)	25th percentile TLOS (all)	50th percentile TLOS (all)	25th percentile TLOS (typical)	50th percentile TLOS (typical)	25th percentile TLOS (atypical)	50th percentile TLOS (atypical)
101	1	2	1	2	2.5	7.5	1	2	1	2	2.5	9
102	1	2	1	2	1	2	1	2	1	2	1	2
103	1	1	1	2	1	1	1	1	1	2	1	1
104	1	1	1	1	1	2.5	1	1	1	1	1	2.5
105	1	2	1	2	2	8	1	2	1	2	2	9
110	18	25.5	16	21	51	78	18	27.5	16	21	53	85
113	4	7	4	6	4	8	4	7	4	6	4	8
114	2	3	2	3	5	14.5	2	3	2	3	5	15.5
115	2	4	2	3	8.5	22	2	4	2	3	9	23
117	2.5	6	2	4	9	23	2.5	6	2	4	10	24
119	1	4	1	3	17	23	1	4	1	3	17	26
120	4	9	4	6	12	23.5	4	9	4	6	12	26
121	4	5	3	5	18	28	4	5	3	5	18	31
130	3	7	4	8	2	7	3	8	4	8	2	7
131	6	13	5	12	7	14	6	13	5	12	7	14
132	3	7	4	7	2	7	4	7	4	7	2	8
133	7	11.5	7	10	7	14.5	7	12	7	10	7.5	15
134	5	9	5	9	7	20	5.5	10	5	9	7	20
135	3	6	4	6	1	6	3	6	4	6	1	6
136	3	5	3	5	1	3	3	5	3	5	1	3
137	3	7	3	6	6	14	3	7	3	6	7	14
138	2	4	2	4	2	7	2	4	2	4	2	8
139c	3	5	3	5	1	5	3	5	3	5	1	5
139d	2	4	2	4	2	5	2	4	2	4	2	5

HIG code	25th percentile acute LOS (all)	50th percentile acute LOS (all)	25th percentile acute LOS (typical)	50th percentile acute LOS (typical)	25th percentile acute LOS (atypical)	50th percentile acute LOS (atypical)	25th percentile TLOS (all)	50th percentile TLOS (all)	25th percentile TLOS (typical)	50th percentile TLOS (typical)	25th percentile TLOS (atypical)	50th percentile TLOS (atypical)
140	3	5.5	4	6	1	2.5	3	6	4	6	1	2.5
141	1	2	1	2	1	4	1	2	1	2	1	4
142	3	6	4	6	1	6	3	7	4	7	1	7
143	3	5	3	6	1	2	3	5	3	6	1	2
144	2	4	2	3	3	5	2	4	2	3	3	5
145	1	2	1	2	3	11	1	2	1	2	3	12.5
147	1	2	1	2	1	5	1	2	1	2	1	5
148	1	2	1	2	2	7	1	2	1	2	2	7
149	1	2	1	2	1	3	1	2	1	2	1	3
160	19	30	18	30	22	54	19	30	18	30	22	55
161	2	6	2	5	5	10	2	6	2	5	5	10
162	5	8	5	7	10	18	5	8	5	7	10	18
163	5	8	5	7	13	22	5	8	5	7	13	22
164	3	7	3	6	6	18	3	7	3	6	6	18
165	5	6	5	6	15	19.5	5	6	5	6	15.5	20
166	10	13	10	12	11	15	10	13	10	12	11	15
167	10	13	10	13	11	14	10	13	10	13	11	14
168	10	13	9	12	10	15	10	13	9	12	10	15
169	7	12	7	12	7	18	7	12	7	12	7	18
170	7	9	6	8	7	9	7	9	6	8	7	9
171	7	9	6	8	7	9	7	9	6	8	7	9
172	5	6	5	6	7	9	5	6	5	6	7	9
173	5	8	5	7.5	6	12	5	8	5	7.5	6	12
175	2	3	2	3	1	1	2	3	2	3	1	1

HIG code	25th percentile acute LOS (all)	50th percentile acute LOS (all)	25th percentile acute LOS (typical)	50th percentile acute LOS (typical)	25th percentile acute LOS (atypical)	50th percentile acute LOS (atypical)	25th percentile TLOS (all)	50th percentile TLOS (all)	25th percentile TLOS (typical)	50th percentile TLOS (typical)	25th percentile TLOS (atypical)	50th percentile TLOS (atypical)
176	1	1	1	1	1	2	1	1	1	1	1	2
178	1	2	1	1	5	13	1	2	1	1	5	14
179	1	1	1	1	6	8	1	1	1	1	6	8
180	7	12	8	13	5	10	8	15	10	16	5	11
181	2	5	2	5	5	11	2	5	2	5	5	11
182	3	5	3	4	1	5	3	5	3	4	1	5
183	4	7	4	7	6	15	4	7.5	4	7	8	17
185	2	3	1	3	5	14	2	4	1	3	6	16
186	1	2	1	2	5	11	1	2	1	2	5	11
187	2	4	2	4	2	4	2	4	2	4	2	4
188	4	29	1	21	14.5	35	4	29	1	21	14.5	35
193a	3	4	3	4	2	5	3	4	3	4	2	5
193b	4	7	4	6	4	8	4	7	4	6	5	8
194a	1	2	2	3	1	2	1	2	2	3	1	2
194b	2	5	3	6	1	3	2	5	3	6	1	3
195	5	8	5	8	5	11	5	8	5	8	5	11
196	3	5	3	5	1	4	3	5	3	6	1	4
197	3	6	3	5	4	11	3	6	3	5	4	11
198	1	1	1	1	2	8	1	1	1	1	2	8
199	5	10	6	10	4	9	5	10	7	11	4	9
200	2	4	2	4	2	5	2	4	2	4	2	6
201	3	5	3	5	1	5	3	5	3	5	1	5
202	1	3	1	3	1	3	1	3	1	3	1	4
203a	2	3	2	3	2	5	2	3	2	3	2	5

HIG code	25th percentile acute LOS (all)	50th percentile acute LOS (all)	25th percentile acute LOS (typical)	50th percentile acute LOS (typical)	25th percentile acute LOS (atypical)	50th percentile acute LOS (atypical)	25th percentile TLOS (all)	50th percentile TLOS (all)	25th percentile TLOS (typical)	50th percentile TLOS (typical)	25th percentile TLOS (atypical)	50th percentile TLOS (atypical)
203b	3	6	3	5	5	9	3	6	3	5	5	9
204a	1	2	1	2	1	2	1	2	1	2	1	2
204b	2	4	2	4	1	4	2	4	2	4	1	4
205	1	2	1	2	1	3	1	2	1	2	1	3
206	1	2	1	2	2	6	1	2	1	2	2	8
207a	1	3	2	3	1	1	1	3	2	3	1	1
207b	2	4	2	4	1	4	2	4	2	4	1	4
208a	1	1	1	1	1	2	1	1	1	1	1	2
208b	1	2	1	2	1	4	1	2	1	2	1	4
209	2	3	2	3	1	4	2	3	2	3	1	4
210	2	4	2	4	1	3.5	2	4	2	4	1	4
211	2	5	2	4	3	8	3	5	2	5	4	9
212	2	4	2	4	3	7	2	5	2	4	3	7
213	1	3	2	3	1	4	1	4	2	3	1	4
214	3	6	3	5	3	7	3	6	3	5	4	7
220	8	13	7	12	13	25.5	8	13	7	12	13	26
221	6	10	6	9	4	15	6	10	6	9	4	16
222	6	9	6	9	8	17	6	9	6	9	8	17
223	4	6	4	5	8	16	4	6	4	5.5	9	18
224	8	11	8	10	13	33	8	11	8	10	13	33
225	5	8	5	8	2	7	5	8	5	8	2	7
226	2	4	3	4	1	1	2	4	3	4	1	1
227	3	4	3	4	1	1	3	4	3	4	1	1
228	3	3	3	4	1	1	3	3	3	4	1	1

HIG code	25th percentile acute LOS (all)	50th percentile acute LOS (all)	25th percentile acute LOS (typical)	50th percentile acute LOS (typical)	25th percentile acute LOS (atypical)	50th percentile acute LOS (atypical)	25th percentile TLOS (all)	50th percentile TLOS (all)	25th percentile TLOS (typical)	50th percentile TLOS (typical)	25th percentile TLOS (atypical)	50th percentile TLOS (atypical)
229	1	1	1	1	6	8	1	1	1	1	6	8
230	2	3	2	3	10	14	2	3	2	3	13.5	17.5
231	2	4	3	5	1	2	2	4	3	5	1	2
232	2	4	2	3	5	14	2	4	2	3	5	19
233	1	2	1	2	3	5	1	2	1	2	3	5
234	1	1	1	1	2	6	1	1	1	1	2	6
235	1	2	1	1	9	12	1	2	1	1	9	13
236	1	1	1	1	1	5.5	1	1	1	1	1	7
237	2	4	2	4	5	13	2	4	2	4	5	14
248	3	5	3	5	1	3	3	5	3	5	1	4
249	1	3	1	2	2	6	1	3	1	2	2	7
250a	3	6	3	6	1	6	3	6	4	6	1	7
250b	3	7	3	6	1	9	3	7	3	6	1	10
250c	3	7	4	7	1	6	3	7	4	7	1	7
251	3	5	3	4	2	8	3	5	3	5	2	9
252	2	3	2	3	1.5	8	2	3	2	3	1.5	9.5
253	3	4	3	5	1	1	3	4	3	5	1	1
254	2	3	2	3	1	5	2	3	2	3	1	5
255	2	3	2	3	2	5	2	3	2	3	2	6
256	1	3	1	3	3	13	1	3	1	3	3.5	14
257	1	2	1	2	1	5	1	2	1	2	1	5
258	1	3	1	3	1	5	1	3	1	3	1	5
270	10	15	9	13	26	44	10	15	9	13	28	53
271	7	9	7	9	11	20	7	9	7	9	11	20

HIG code	25th percentile acute LOS (all)	50th percentile acute LOS (all)	25th percentile acute LOS (typical)	50th percentile acute LOS (typical)	25th percentile acute LOS (atypical)	50th percentile acute LOS (atypical)	25th percentile TLOS (all)	50th percentile TLOS (all)	25th percentile TLOS (typical)	50th percentile TLOS (typical)	25th percentile TLOS (atypical)	50th percentile TLOS (atypical)
274	4	6	4	6	13	22	4	6	4	6	13	22.5
275	3	5	3	5	6	14.5	3	5	3	5	6	14.5
278	1	2	1	2	3	12	1	2	1	2	3	12
279	3	4	2	4	5	13.5	3	4	2	4	5	13.5
280	3	5	3	5	1	9	3	5	3	5	1	9
281	3	5	3	5	1	3	3	5	3	5	1	3
282	2	3	2	3	6	17	2	3	2	3	7	17
283	4	5.5	4	5	2	7	4	5.5	4	5	2	7
284	3	5	3	6	1	4	3	6	4	6	1	5
285	3	5	3	6	1	5	3	6	3	6	1	6
286	2	5	2	4	3	8	2	5	2	4	3	8
287	2	3	2	3	2	4	2	3	2	3	2	4
288	2	3	2	3	2	5	2	3	2	3	2	5
289	4	6	4	6	15	36	4	6	4	6	15	36
290	4	6	4	5	7	10	4	6	4	5	7	10
300	6	8	5	7	11	21.5	6	8	5.5	7	11	27
308	2	4	2	4	10	14	2	4	2	4	10	14
309	6	10	5.5	9	8	14	6	11	6	9.5	8	14
310	4	7	4	7	1	7	4	7	4	7	1	7
311	1	2	1	2	21	31	1	2	1	2	25	41.5
312	4	6	4	6	1	9	4	6	4	6	1	9
313	2	3	2	3	6	10	2	3	2	3	6	14
314	1	2	1	1	6	8	1	2	1	1	7	9
315	3	4	3	4	5	15	3	4	3	4	5	15

HIG code	25th percentile acute LOS (all)	50th percentile acute LOS (all)	25th percentile acute LOS (typical)	50th percentile acute LOS (typical)	25th percentile acute LOS (atypical)	50th percentile acute LOS (atypical)	25th percentile TLOS (all)	50th percentile TLOS (all)	25th percentile TLOS (typical)	50th percentile TLOS (typical)	25th percentile TLOS (atypical)	50th percentile TLOS (atypical)
316	5	7	4	6	9	17.5	5	8	5	7	11	25.5
317	3	4	3	4	6	10	3	4	3	4	7	14.5
318	4	6	4	6	7	12	4	6	4	6	8	13
319	2	3	2	3	5	9	2	3	2	3	6	15.5
320	2	3	2	3	1	1	2	3	2	3	1	1
321	2	3	2	3	3	7	2	3	2	3	3	13
323	1	2	1	2	8	10	1	2	1	2	9	11
325	1	1	1	1	6	7	1	1	1	1	7	7
326	1	2	1	2	4.5	9	1	2	1	2	7	12
327	1	2	1	2	7	12	1	2	1	2	10	14
328	5	8	4	7	8	16.5	5	9	4	8	8	26.5
329	2	5	2	3	7	15.5	2	5	2	3	8	21
330	3	5	2	4	6	11	3	6	2	5	8	19
331	1	2	1	2	7	18	1	2	1	2	22	27
332	1	2	1	2	6	12	1	3	1	2	7	13
333	3	6	3	5	8	16	3	6	3	5	11	31
334	1	2	1	1	4	7	1	2	1	1	12	15
335	1	1	1	1	7	10.5	1	1	1	1	7	12.5
336	1	1	1	1	7	12	1	1	1	1	9	17
337	1	1	1	1	5	8	1	1	1	1	5	9
338	1	1	1	1	5	11.5	1	1	1	1	5	11.5
339	1	1	1	1	4	4	1	1	1	1	4	4
340	1	2	1	1.5	6	10	1	2	1	1.5	6	10
341	1	1	1	1	7	10	1	1	1	1	7	10.5

HIG code	25th percentile acute LOS (all)	50th percentile acute LOS (all)	25th percentile acute LOS (typical)	50th percentile acute LOS (typical)	25th percentile acute LOS (atypical)	50th percentile acute LOS (atypical)	25th percentile TLOS (all)	50th percentile TLOS (all)	25th percentile TLOS (typical)	50th percentile TLOS (typical)	25th percentile TLOS (atypical)	50th percentile TLOS (atypical)
342	1	1	1	1	8	16	1	1	1	1	11	16
343	1	1	1	1	16	26	1	1	1	1	19	30
344	1	1	1	1	5	9	1	1	1	1	7	9.5
345	1	2	1	2	9	13	1	2	1	2	9	14.5
346	2	5	1	4	7	19	2	5	1	4	7	21.5
347	1	2	1	2	6	10	1	2	1	2	6	10
348	1	6	1	4	5.5	17.5	1	6	1	4	9.5	18.5
349	1	1	1	1	7	9.5	1	1	1	1	7	9.5
350	4	6	4	6	5	12	4	6	4	6	5	13
357	4	8	4	8	2	8	4	9	5	8	2	9
358	4	7	5	8	1	2	4	9	6	10	1	2
359	4	7	4	7	1	5	4	7	5	8	1	5
360	2	5	3	6	1	2	3	6	4	7	1	2
361	2	4	3	4	1	1	2	4	3	4	1	1
362	2	5	3	5	1	1	3	5	3.5	6	1	1
363	2	5	3	5	1	3	3	6	3	6	1	4
364	2	3	2	3	2	6	2	4	2	3	2	9.5
365	2	3	2	3	1	5	2	4	2	3	1	17
366	2	5	3	5	1	2.5	2	5	3	6	1	2.5
367	2	5	3	6	1	2	3	6	5	8	1	2
368	2	4	2	3	3	6	2	4	2	3	3	6
369	1	3	1	3	2	6	1	3	1	3	2.5	18
370	2	4	2	4	4	11	2	4	2	4	4.5	24
380	7	13	7	13	5	11	7	14	8	15	5	11



HIG code	25th percentile acute LOS (all)	50th percentile acute LOS (all)	25th percentile acute LOS (typical)	50th percentile acute LOS (typical)	25th percentile acute LOS (atypical)	50th percentile acute LOS (atypical)	25th percentile TLOS (all)	50th percentile TLOS (all)	25th percentile TLOS (typical)	50th percentile TLOS (typical)	25th percentile TLOS (atypical)	50th percentile TLOS (atypical)
381	5	8	5	8	1	7	5	8	5	8	1	7
382	2	5	2	4	8	19	2	5	2	4	8	27.5
383	1	5	1	4	8	21	1	5	1	4	14	42
384	1	3	1	2	14	21	1	3	1	2	18	27
385	1	2	1	2	29	36.5	1	2	1	2	34	39
386	1	1	1	1	5	5.5	1	1	1	1	6	6
387	1	1	1	1	7	8.5	1	1	1	1	7	8.5
388	1	1	1	1	7	8	1	1	1	1	7	8
389	1	1	1	1	19	19	1	1	1	1	19	19
390	1	1	1	1	7	7	1	1	1	1	7	8
391	1	1	1	1	1	12	1	1	1	1	1	12
392	1	1	1	1	10	16	1	1	1	1	12	17
401	4	8	6	9	2	3	5	9	6	10	2	4
402	3	6	4	7	1	4	3	7	4	7	1	4
403	4	9	3	6.5	7	10	5	9	4	7	8	15
404	3	6	3	6	3	8	3	7	3	7	3.5	8
405	2	4	3	5	1	1	2	4	3	5	1	1
406	2	3	2	3	1	4.5	2	3	2	3	1	4.5
407	1	3	1	3	2	6	1	3	1	3	2	6
408	1	3	1	2	4	11	1	3	1	2	11	14.5
409	1	2	1	2	2	13	1	2	1	2	2	13.5
420	3	4	3	4	11	20	3	4	3	4	15	20
421	1	2	1	2	3	15	1	2	1	2	3	15
422	2	2	2	2	8.5	11	2	2	2	2	8.5	11

HIG code	25th percentile acute LOS (all)	50th percentile acute LOS (all)	25th percentile acute LOS (typical)	50th percentile acute LOS (typical)	25th percentile acute LOS (atypical)	50th percentile acute LOS (atypical)	25th percentile TLOS (all)	50th percentile TLOS (all)	25th percentile TLOS (typical)	50th percentile TLOS (typical)	25th percentile TLOS (atypical)	50th percentile TLOS (atypical)
423	1	1	1	1			1	1	1	1		
424	1	1	1	1	6	8	1	1	1	1	6	9
425	1	1	1	1	13	20	1	1	1	1	13	20
426	2	2	2	2	3	3	2	2	2	2	3	3
432	6	12	7	12	5	14	6	12	7	12	5	14
433	3	6	3	6	1	4	3	6	3	6	1	5
434	2	4	2	4	3	8	2	4	2	4	4	8
435	2	4	2	4	3	6.5	2	4	2	4	3	7
436	2	3	2	3	2	6	2	3	2	3	2	7
437a	1	3	2	3	1	2	1	3	2	3	1	2
437b	3	5	2	5	4	7	3	5	3	5	4	9
437c	2	3	2	3	1	3	2	3	2	3	1	3
437d	2	3.5	2	3	6	6	2	4	2	4	6	6
438	1	3	1	2	1	4	1	3	1	3	1	7.5
439	1	2	1	2	1	5.5	1	2	1	2	1.5	5.5
440	2	2	2	2	8	12.5	2	2	2	2	8	13
441	2	4	2	3	8	16	2	4	2	4	11	18
450	6	7	6	7	19.5	25.5	6	7	6	7	20	25.5
451	3	3	3	3	9	9	3	3	3	3	9	9
452	7	9	7	8	21	35.5	7	9	7	8	21	35.5
453	3	3	3	3			3	3	3	3		
454	3	4	3	4	1	1	3	4	3	4	1	1
455	1	2	1	2	7	16	1	2	1	2	7	17
456	1	2	1	2	6	10	1	2	1	2	6	10

HIG code	25th percentile acute LOS (all)	50th percentile acute LOS (all)	25th percentile acute LOS (typical)	50th percentile acute LOS (typical)	25th percentile acute LOS (atypical)	50th percentile acute LOS (atypical)	25th percentile TLOS (all)	50th percentile TLOS (all)	25th percentile TLOS (typical)	50th percentile TLOS (typical)	25th percentile TLOS (atypical)	50th percentile TLOS (atypical)
457	1	2	1	1	9	15	1	2	1	1	9	16
458	2	4	2	4	7	16.5	2	4	2	4	9	25
459	1	1	1	1	6	7	1	1	1	1	6	7
460	1	1	1	1	10	15	1	1	1	1	10	15
461	1	1	1	1	6	7	1	1	1	1	6	8
462	2	2	2	2	10	11	2	2	2	2	10	11
463	2	3	2	3			2	3	2	3		
464	1	1	1	1	8	11	1	1	1	1	8	12
467	2	6	2	5	7	25	2	6	2	5	8	34
468	1	3	1	2	8.5	15.5	1	3	1	2	11.5	23.5
477	3	5	3	5	1	4	3	5	3	5	1	4
478a	2	5	2	4	5	11	2	6.5	2	5	6	13
478b	3	7	2	5	7	12.5	3	7	2	5	8	14
479	3	7	2	6	4	10	3	8	3	7	6	11
480	2	5	2	4	3	9	2	5	2	5	4	11
481	1.5	3	1	3	2	4	2	3	2	3	2	4
482	1	3	1	3	1	3.5	1	3	1	3	1	3.5
483	2	3	1	2	3	11	2	3	1	2	3	11
484	1	2	1	2	2	9	1	2	1	2	2	12
485	2	3	2	3	3	5	2	3	2	3	3	5
486	1	1	1	1	1	2	1	1	1	1	1	2
487	2	4	2	4	4	10	2	4	2	4	6	20.5
488	2	3	2	3	3	9	2	3	2	3	3	13
500	2	3	2	3	10	17.5	2	3	2	3	10	23

HIG code	25th percentile acute LOS (all)	50th percentile acute LOS (all)	25th percentile acute LOS (typical)	50th percentile acute LOS (typical)	25th percentile acute LOS (atypical)	50th percentile acute LOS (atypical)	25th percentile TLOS (all)	50th percentile TLOS (all)	25th percentile TLOS (typical)	50th percentile TLOS (typical)	25th percentile TLOS (atypical)	50th percentile TLOS (atypical)
501	1	2	1	2	10	14	1	2	1	2	11	15
502	1	2	1	2	7	8	1	2	1	2	7	8
503	1	2	1	2	8	16	1	2	1	2	8	16
504	3	4	3	4	14	21.5	3	4	3	4	17	23.5
505	2	2	2	2	7	8	2	2	2	2	7	9
506	1	1	1	1	2	2	1	1	1	1	2	2
507	1	1	1	1	3	8	1	1	1	1	3	8
508	1	3	1	3	11	13.5	1	3	1	3	11	19.5
509	1	1	1	1	6	7	1	1	1	1	6	8
510	1	1	1	1	1	8	1	1	1	1	1	8
511	1	1	1	1	7	9.5	1	1	1	1	7	9.5
512	1	1	1	1	7	9	1	1	1	1	7	9
520	3	6	3	6	1	4.5	3	6	4	6	1	7
521	1	1	1	1	2	9	1	1	1	1	2	9
522	2	3	2	3	2	4	2	3	2	3	2	4
523	2	2.5	2	2.5			2	2.5	2	2.5		
524	1	1	1	1	1	4	1	1	1	1	1	4
525	2	3	2	2	6	15	2	3	2	2	8	18
532	1	1	1	1	1	2	1	1	1	1	1	2
533	4	6	3	5	6.5	20.5	4	6	3	5	6.5	20.5
546	1	1	1	1	1	1	1	1	1	1	1	1
547	1	1	1	1	1	4	1	1	1	1	1	4
548	1	2	1	2	1	1	1	2	1	2	1	1
549	1	1	1	1	4	5	1	1	1	1	4	5

HIG code	25th percentile acute LOS (all)	50th percentile acute LOS (all)	25th percentile acute LOS (typical)	50th percentile acute LOS (typical)	25th percentile acute LOS (atypical)	50th percentile acute LOS (atypical)	25th percentile TLOS (all)	50th percentile TLOS (all)	25th percentile TLOS (typical)	50th percentile TLOS (typical)	25th percentile TLOS (atypical)	50th percentile TLOS (atypical)
550	1	1	1	1	1	2	1	1	1	1	1	2
551	1	1	1	1	1	2	1	1	1	1	1	2
552	1	1	1	1	1	7	1	1	1	1	1	7
553	1	2	1	2	2	2	1	2	1	2	2	2
554	1	1	1	1	12	12	1	1	1	1	12	12
555	1	2	1	2	1	1	1	2	1	2	1	1
556	1	1	1	1	1	2	1	1	1	1	1	2
557	1	1	1	1	1	3	1	1	1	1	1	3
558a	3	3	3	3	1	2	3	3	3	3	1	2
558b	3	4	3	4	5	12	3	4	3	4	5	12
559a	2	2	2	2	2	6	2	2	2	2	2	6
559b	3	3	2	3	4	10	3	3	2	3	4	10
560a	2	2	2	2	2	7	2	2	2	2	2	7
560b	2	3	2	3	5	9	2	3	2	3	5	9
561a	2	3	2	3	4	4	2	3	2	3	4	4
561b	3	4	3	4			3	4	3	4		
562a	1	2	1	2	4	6	1	2	1	2	4	6
562b	2	2	2	2	7	8	2	2	2	2	7	8
563a	1	2	1	2	2	3.5	1	2	1	2	2	3.5
563b	2	2	2	2	3	6	2	2	2	2	3	6
564a	1	1	1	1	1	1	1	1	1	1	1	1
564b	1	2	1	2	3	6	1	2	1	2	3	6
565a	1	1	1	1	1	1	1	1	1	1	1	1
565b	1	2	1	2	2	7	1	2	1	2	2	7

HIG code	25th percentile acute LOS (all)	50th percentile acute LOS (all)	25th percentile acute LOS (typical)	50th percentile acute LOS (typical)	25th percentile acute LOS (atypical)	50th percentile acute LOS (atypical)	25th percentile TLOS (all)	50th percentile TLOS (all)	25th percentile TLOS (typical)	50th percentile TLOS (typical)	25th percentile TLOS (atypical)	50th percentile TLOS (atypical)
570	13.5	22	12	20.5	14	23	13.5	22	12	20.5	14	23
571	11	20	9	16	12	22	11	20	9	16	12	22
573	11	23	10	19	11	27	11	23	10	19	11	27
576	1	1	1	1	1	5	1	1	1	1	1	5
577	2	2	2	2	1	2	2	2	2	2	1	2
578	1	1	1	1	2	31	1	1	1	1	2	31
579	8	46.5	3	84.5	9	42	8	46.5	3	84.5	9	42
580	20	32	42.5	51	20	26	20	32	42.5	51	20	26
581	11	36	21.5	67	10	34	11	36	21.5	67	10	34
582	10	23	24	33	8	17	10	23	24	33	8	17
583	8	23	28	32	7	15	8	23	28	32	7	15
584	7	15	15	20	4	10	7	15	15	20	4	10
585	4	8	6	10	2	5	4	8	6	10	2	5
586	7	12	10	14	4	8	7	12	10	14	4	8
587	2	3	2	3	2	5	2	3	2	3	2	5
588	2	2	1	2	2	8	2	2	2	2	2	8
589	1	2	1	2	1	2	1	2	1	2	1	2
590	1	2	1	2	1	2.5	1	2	1	2	1	2.5
591	1	2	2	2	1	2	1	2	2	2	1	2
592	2	4	2	4	2	5	2	4	2	4	2	5
593	2	2	2	2	3	7	2	2	2	2	3	7
594	1	2	1	2	1	2	1	2	1	2	1	2
595	1	2	1	2	1	2	1	2	1	2	1	2
596	2	5	2	3	5	13	2	5	2	3	5	13

HIG code	25th percentile acute LOS (all)	50th percentile acute LOS (all)	25th percentile acute LOS (typical)	50th percentile acute LOS (typical)	25th percentile acute LOS (atypical)	50th percentile acute LOS (atypical)	25th percentile TLOS (all)	50th percentile TLOS (all)	25th percentile TLOS (typical)	50th percentile TLOS (typical)	25th percentile TLOS (atypical)	50th percentile TLOS (atypical)
597	1	2	1	2	1	1	1	2	1	2	1	1
598	1	2	1	2	1	1	1	2	1	2	1	1
599	3	7	4	7	3	7	3	7	4	7	3	7
600	1	2	1	2	1	3	1	2	1	2	1	3
601	1	2	1	2	1	3	1	2	1	2	1	3
602	1	2	1	2	2	3.5	1	2	1	2	2	3.5
612	2	3	2	3	25	30	2	3	2	3	25	30
615	1	3	1	2	13	22	1	3	1	2	13	23
617	2	5	2	4	8	22	2	5	2	4	8	26
618	3	7	4	7	1	9	3	7	4	7	1	9
618a	17	21	17	20	17	50.5	17	21	17	20	17	50.5
624	6	18	9	25	2	7	6	18	9	25	2	7
625	5	10	8	12	1	6	5	11	8	12	1	6
626	3	6	4	6	1	7	3	7	4	7	1	7
627	5	9	6	10	2	8	5	10	6	10	2	8.5
628	4	8	4	7	4	11	4	8	4	7	4	12
629	2	5	2	4	2	5	2	5	2	5	2	6
630	4	8	4	8	2	8	4	8	4	8	3	9
631	2	4.5	2	4	2	12	2	4.5	2	4	2	17
632	2	4	2	4	3	9	2	4	2	4	3	9
633	3	4	3	4	1	1	3	4	3	4	1	1
634	2	3	2	3	1	3.5	2	3	2	3	1	3.5
635	2	3	1	3	3	7	2	3	1	3	3	10
636	1	2	1	2	2.5	9	1	2	1	2	2.5	9

HIG code	25th percentile acute LOS (all)	50th percentile acute LOS (all)	25th percentile acute LOS (typical)	50th percentile acute LOS (typical)	25th percentile acute LOS (atypical)	50th percentile acute LOS (atypical)	25th percentile TLOS (all)	50th percentile TLOS (all)	25th percentile TLOS (typical)	50th percentile TLOS (typical)	25th percentile TLOS (atypical)	50th percentile TLOS (atypical)
637	2	3	2	3	3	8	2	3	2	3	3	9
638	1	3	1	3	9	24.5	1	3	1	3	9	25.5
639	1	2	1	1	5.5	12.5	1	2	1	1	7	13
640	2	3	2	3	1	2	2	3	2	3	1	2
650	7	13	7	12	7	18	7	14	7	13	7	19
653	5	9	5	9	4	9	5	9	6	9	4	9
654	3	6	3	6	1	5	3	6	3	6	1	5
655	6	12	5	8.5	13	30	6	13	5	8.5	14	51
657	3	7	4	7	2	6	3	7	4	7	2	6
658	5	10	4	8	7.5	36.5	5	11	4	8	8.5	37.5
659	4	6	4	6	8	24.5	4	6	4	6	8	24.5
660	3	6	4	6	1	4	3	6	4	6	1	4
661	1	2	1	2	2	5	1	2	1	2	2	5
662	1	2	1	2	1	3	1	3	1	2	1	4
670	4	7	5	8	2	5	7	15	8	15	2	22
671	4	7	4	7	1	5	4	9	5	9	1	7
672	2	5	3	6	1	1	2	6	4	7	1	1
673	8	16	10	18	2	7	8	16	11	18	2	7
678	2	5	2	5	2	4	2	5	2	5	2	4
683	1	2	1	2	2	9	1	3	1	2	3	9
684	4	8.5	4	8	7	16.5	4	8.5	4	8	7	16.5
685	2	4	2	3	2	6	2	4	2	3	2	6
686	2	4	1	4	3	6	2	4	1	4	3	6
687	1	3	1	3	2	5	1	3	1	3	2	5



HIG code	25th percentile acute LOS (all)	50th percentile acute LOS (all)	25th percentile acute LOS (typical)	50th percentile acute LOS (typical)	25th percentile acute LOS (atypical)	50th percentile acute LOS (atypical)	25th percentile TLOS (all)	50th percentile TLOS (all)	25th percentile TLOS (typical)	50th percentile TLOS (typical)	25th percentile TLOS (atypical)	50th percentile TLOS (atypical)
689	2	5	2	5.5	2	4.5	2	6	2	6	2	5
691	1	4	1	4	1	3	1	4	1	4	3	4
693	2	4	2	4	2	4	2	4	2	4	2	4
694	2	4	2	4	3	6.5	2	4	2	4	3	7
697	2	3	3	4	1	1	2	3	3	4	1	1
698	1	1	1	1	1	1	1	1	1	1	1	1
702	3	5	3	6	1	2	3	5	3	6	1	2
703	2	5	2	4	2	8	2	5	2	5	2	9
704	14	26	4	14	53	61	21	45	14	25	58	67.5
707	1	3	1	3	1	3	1	4	1	4	1	4
708	1	3	2	3	1	2	1	3	2	3	1	2
709	2	4	1	4	3	6	2	4	1	4	3	6
713	7	13	8	13	2	14	8	14	8	13	2	14
717	1	2	1	2	1	2	1	2	1	2	1	2
718	1	2	1	2	1	3	1	2	1	2	1	3
725	7	10	6.5	9.5	42	42	7	10	6.5	9.5	42	42
726	4	6	5	6	4	6	5	7	5	8	4	7
727	4	6	4	6	3	5	5	7	5	7	3	5
728	2	3	1	3	6	17	2	3	1	3	7	20
729	2	3	2	3	4	7	2	3	2	3	4	11
730	4	7	4	6	2	8	4	8	4	8	2	8
731	6	10	6	9	6	11	6	11	6	10	6	11
733	5	9	5	9	4	13	5	10	5	9	4	14
734	2	5	2	4	4	13	2	5	2	4	4	14

HIG code	25th percentile acute LOS (all)	50th percentile acute LOS (all)	25th percentile acute LOS (typical)	50th percentile acute LOS (typical)	25th percentile acute LOS (atypical)	50th percentile acute LOS (atypical)	25th percentile TLOS (all)	50th percentile TLOS (all)	25th percentile TLOS (typical)	50th percentile TLOS (typical)	25th percentile TLOS (atypical)	50th percentile TLOS (atypical)
736	3	8	4	9	1	5	3	8	4	9	1	5
737	1	3	1	3	5	10	1	3	1	3	6	11
738	1	2	1	2	3	5	1	2	1	2	3	6
739	1	1	1	1	4	8	1	1	1	1	7	11
740	1	2	1	2	5	13	1	2	1	2	5	13
741	1	1	1	1	10	13	1	1	1	1	10	14.5
742	1	2	1	2	12.5	20	1	2	1	2	20	30.5
743	1	2	1	2	6	11	1	2	1	2	6	12
744	1	2	1	2	5	9	1	2	1	2	7	12
745	1	1	1	1	2	4.5	1	1	1	1	2.5	9
747	1	2	1	2	3	6	1	2	1	2	4	14
748	1	1	1	1	3	8	1	1	1	1	3	8
749	1	2	1	1	4.5	18.5	1	2	1	1	10	23.5
750	1	1	1	1	9	10	1	1	1	1	9	22
751	1	1	1	1	1	1	1	1	1	1	1	1
752	4	7	3	6	4	9	4	7	3	7	4	9
760	2	3	2	3	1	3	2	4	2	4	2	3.5
761	3	6	4	6	1	2	4	8	5	9	1	2
762	3	6	2	5	9	24.5	3	6	2	5	9	26.5
763	2	5.5	2	5	3	8	2	6	2	5	3	8
764	2	5	3	5	1	6	2	6	3	5	1	7
765	2	4	2	3	2	5	2	4	2	3	2	6
766	1	2	2	3	1	1	1	2	2	4	1	1
767	1	3	1	3	1	3	1	3	1	3	1	10

HIG code	25th percentile acute LOS (all)	50th percentile acute LOS (all)	25th percentile acute LOS (typical)	50th percentile acute LOS (typical)	25th percentile acute LOS (atypical)	50th percentile acute LOS (atypical)	25th percentile TLOS (all)	50th percentile TLOS (all)	25th percentile TLOS (typical)	50th percentile TLOS (typical)	25th percentile TLOS (atypical)	50th percentile TLOS (atypical)
768	2	4	2	4	1	4	2	5	2	6	1	4
769	2	4	3	5	1	2	2	7	4	8	1	3
770	1	2	1	1	3	6	1	2	1	1	5	12
771	3	5	3	5	1	2	3	6	4	7	1	3
772	2	5	2	5	2	6	2	5	2	5	2	6
773	3	4	3	4	3	7	3	4	3	4	3	7
774	2	3	2	3	2	4	2	3	2	3	2	5
775	1	2	1	2	1	5	1	2	1	2	1	5
776	1	2	1	2	2	7	1	2	1	2	2	12
777	1	3	1	2	1	5	1	3	1	3	3	6
778	1	2	1	2	1	2	1	2	1	2	1	2
779	1	1	1	1	1	6	1	1	1	1	1	8
780	2	4	2	4	3	7	2	4	2	4	3	8
781	1	2	1	2	2	5	1	2	1	2	2	6
782	1	2	1	1	2	7	1	2	1	1	2	7
783	1	3	1	3	2	5	1	3	1	3	2.5	16
800	6	13	4	11	8.5	17	6	16	4	15	8.5	19.5
801	2	6	1	3	10	20	2	7	1	4	13	28
805	6	11	8	15	5	9	7	15	11	17	7	13.5
806	1	1	1	1	2	4	1	1	1	1	2	6
807	12	20	15	28	12	19	12	20	15	28	12	19
808	1	3	1	3	1	3	1	3	1	3	1	3
809	0	0	0	0	0	1	4	11	7	12	2	11
810	2	5	4	7	1	4	2	6	5	9	2	5

HIG code	25th percentile acute LOS (all)	50th percentile acute LOS (all)	25th percentile acute LOS (typical)	50th percentile acute LOS (typical)	25th percentile acute LOS (atypical)	50th percentile acute LOS (atypical)	25th percentile TLOS (all)	50th percentile TLOS (all)	25th percentile TLOS (typical)	50th percentile TLOS (typical)	25th percentile TLOS (atypical)	50th percentile TLOS (atypical)
811	2	4	2	4	2	5	2	4	2	4	2	13
812	1	2	1	2	2	4	1	2	1	2	2.5	14.5
813	1	1	1	1	1	4	1	1	1	1	1	5
814	1	1	1	1	1	1	1	1	1	1	1	1.5
815	1	1	1	1	1	1	1	1	1	1	1	1
816	3	5	3	6	1	2.5	3	6	3	6	1	4
901	5	12	6	11	2	13	6	14	6	13	2	16
902	1	2.5	1	2.5	1	2.5	1	2.5	1	2.5	1	2.5
903	3	6	2	5	14	25	3	6	2	5	14.5	28.5
904	9	16	8	14	11	24	9	17	9	14	12	28
905	5	10	6	10	2	10	5	10	6	10	2	10
906	4	7	4	7	1	10.5	4	8	4	7	1	12.5
907	6	12	5	9.5	10	19.5	6	12	5	10	11	24
908	4	9.5	5	9	1	16	4	10	5	9	1	18
909	2	5	1	3	10	27	2	6	1	3	13	40
910	4	8	5	9	1	4	4	8	5	9	1	4
911	6	11	6	10	5	17	6	12	6	11	6	21
912	2	5	2	4	5	19	2	5	2	4	5	19
918	3	4	3	8.5	1	4	3	4	3	8.5	1	4
991	-1	-1					0	0				
992	-1	-1					0	0				
993	1	1			1	1	1	1			1	1
999	1	1			1	1	1	1.5			1	1.5



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