



DAD

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

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For permission or information, please contact CIHI:

Canadian Institute for Health Information

495 Richmond Road, Suite 600

Ottawa, Ontario K2A 4H6

Phone: 613-241-7860

Fax: 613-241-8120

[cihi.ca](http://cihi.ca)

[copyright@cihi.ca](mailto:copyright@cihi.ca)

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# 1 Introduction

This document provides an overview of the process for calculating expected length of stay (ELOS) and weights for use with the Health Based Allocation Model (HBAM) Inpatient Group (HIG) methodology for the 2022 Discharge Abstract Database (DAD). The HIG methodology applies to Ontario DAD inpatient data only. The 2022 HIG ELOS and weight values should be used only with data that has been regrouped to the 2022 HIG methodology year.

The HBAM funding methodology was developed in 2011 by the Ontario Ministry of Health under the Health System Funding Strategy. The Canadian Institute for Health Information (CIHI) supports HBAM annually by updating, applying and releasing the new ELOS and HIG weights. The Ontario Ministry of Health continues to define the overall methodology and factors associated with the HIG methodology.

HIG ELOS and RIW calculations for 2022 included just over 24,000 COVID-19 cases admitted to an Ontario hospital in fiscal year 2020–2021 to ensure that these cases were represented. The HIG client tables, which contain the details for assigning ELOS and HIG weights, are available for download from CIHI's eStore.

## 2 Overview of HIG assignment

HIG uses the Case Mix Group (CMG+) grouping methodology output and additional clinical information to assign each case to a HIG. The HIG group was the same as the assigned CMG+ group in 83% of Ontario inpatients for 2019–2020. It is therefore important to understand the assignment of CMG+ groups. For a complete introduction to CMG+ assignment, please consult the *CMG+ 2022 Directory*.

### High-level business rules

In most cases, the HIG groups are identical to the CMG+ groups. The remaining 17% of cases have different HIG and CMG assignments. These non-identical cases are assigned to 40 HIG groups that are created after applying 1 of the following 4 split types to 20 CMG+ groups:

1. **Diagnosis (see Table 1)** — 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 (see Table 2)** — 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) (see Table 3)** — Cases with CL 0 are grouped separately from cases with CL 1–4.
4. **1 intervention-driven group (see Table 4)** — In HIG, all bone marrow/stem cell transplant interventions are grouped together into HIG 618a, regardless of the most responsible diagnosis. On rare occasions when bone marrow transplants are performed on newborn or neonate cases in major clinical category 14, they will be included in HIG 618a (but not in CMG 619 or 620).

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+ 2022 Directory*.

**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
<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>619</b>	Allogenic Bone Marrow/Stem Cell Transplant	618a	Bone Marrow/Stem Cell Transplant
<b>620</b>	Autologous 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. The HIG methodology identifies 7 factors to be used to adjust resource indicators to help account for this variation:

- Age category
- Flagged intervention (FI)
- Intervention event (IE)
- Out-of-hospital (OOH) intervention
- Special care unit (SCU)
- Discharged with home care
- Maternal age  $\geq 40$

The first 4 factors are also part of the CMG+ methodology, whereas the last 3 are specific to HIG weights. 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+ 2022 Directory* for intervention codes included in each category.

**Table 5**    Flagged intervention codes

Flagged intervention category code	Flagged intervention category
<b>A</b>	Cardioversion
<b>B</b>	Cell Saver
<b>C</b>	Chemotherapy
<b>D</b>	Dialysis
<b>E</b>	Feeding Tube
<b>F</b>	Heart Resuscitation
<b>G</b>	Invasive Ventilation (Long) ≥96 hours
<b>H</b>	Invasive Ventilation (Short) <96 hours
<b>I</b>	Paracentesis
<b>J</b>	Parenteral Nutrition
<b>K</b>	Pleurocentesis
<b>L</b>	Radiotherapy
<b>M</b>	Tracheostomy
<b>N</b>	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, if at least one 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. If a case is assigned to a HIG in the intervention partition, it must have at least one 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 with home care

The HIG methodology also includes an adjustment for patients discharged with home care. DAD-coded referral to home care is a marker of measured severity and complexity and is generally associated with increased length of stay and 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 (Discharge to private home, condo, apartment with support service/referral) AND Transfer to Institution Type = 08 (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 considers 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 code of a case is defined based on the total length of stay (TLOS), palliative care status, transfer to/from institution type code, 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 and code in 2019 inpatient DAD data from Ontario.

**Table 8** HIG atypical distribution

Atypical category	Atypical description	HIG atypical code	Count	Percentage
<b>Typical</b>	Typical	00	1,035,828	85.47
<b>Atypical</b>	Transfer in	01	29,284	2.42
	Transfer out	02	35,043	2.89
	Sign out/not return from pass	03	13,062	1.08
	Death	04	24,483	2.02
	Transfer in and transfer out	05	8,790	0.73
	Transfer in and sign out/not return from pass	06	281	0.02
	Transfer in and death	07	1,862	0.15
<b>Short Stay</b>	SS (short stay)	09	16,172	1.33
<b>Long Stay</b>	LS (long stay)	10	33,361	2.75
<b>Long Stay Atypical</b>	LS transfer in	11	5,308	0.44
	LS transfer out	12	2,184	0.18
	LS sign out/not return from pass	13	226	0.02
	LS death	14	3,004	0.25
	LS transfer in and transfer out	15	945	0.08
	LS transfer in and sign out/not return from pass	16	34	0.00
	LS transfer in and death	17	329	0.03
<b>Miscellaneous</b>	Invalid LOS	97	0	0.00
	Not applicable	98	1,264	0.10
	RIW not assigned	99	0	0.00
	HIG >989	08	402	0.03

## Identifying short stay cases

Short stay cases with HIG atypical code 09 are cases with all 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

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 TLOS with long stay trim days. Long stay trim days is calculated by adding a long stay addition (based on the ELOS regression model) 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

The first step in assigning ELOS and HIG weight values to a case is 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 point are classified as long-stay. Similarly, short stay trim points identify records that have an unusually short length of stay and will be classified as such.

The patient population can be divided into 6 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 point. 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** (invalid LOS), **98** (not applicable), **99** (RIW not assigned) and **08** (HIG >989 including 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 2022 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

Short Stay Trim Days = 1.0000

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

Base ELOS = 4.5534

ELOS Adjustment<sub>Age R</sub> = 0.0000

Final ELOS = 4.5534 + 0.0000 = 4.5534

Long Stay Addition = 14.05

Long Stay Trim Days = 14.05 + 4.5534 = 18.6034

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

HIG Weight = 0.8831

Weight Adjustment<sub>Age R</sub> = 0.0000

Final HIG Weight = 0.8831 + 0.0000 = 0.8831

## Scenario 5.1.2

Consider a case like 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.

$$\text{Base ELOS} = 4.5534$$

$$\text{ELOS Adjustment}_{\text{Age S}} = 0.4569$$

$$\text{Final ELOS} = 4.5534 + 0.4569 = 5.0103$$

$$\text{Long Stay Addition} = 14.05$$

$$\text{Long Stay Trim Days} = 14.05 + 5.0103 = 19.0603$$

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

$$\text{Base HIG Weight} = 0.8831$$

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

$$\text{Final HIG Weight} = 0.8831 + 0.0000 = 0.8831$$

## 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

$$\text{Base ELOS} = 4.5534$$

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

$$\text{Long Stay Addition} = 14.05$$

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

$$\text{ELOS Effect}_{\text{SCU}} = 2.3153$$

$$\text{Final ELOS} = 4.5534 + 0.0000 + 2.3153 = 6.8687$$

$$\text{Long Stay Trim Days} = 14.05 + 6.8687 = 20.9187$$



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

$$\text{Base HIG Weight} = 0.8831$$

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

$$\text{Weight Factor}_{\text{SCU}} = 1.6939$$

$$\text{Final HIG Weight} = 0.8831 + 0.0000 + 1.6939 = 2.577$$

## 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.

$$\text{Base ELOS} = 4.5534$$

$$\text{ELOS Adjustment}_{\text{Age S}} = 0.4569$$

$$\text{Long Stay Addition} = 14.05$$

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

$$\text{ELOS Effect}_{\text{SCU}} = 2.3153$$

$$\text{Final ELOS} = 4.5534 + (0.4569) + 2.3153 = 7.3256$$

$$\text{Long Stay Trim Days} = 14.05 + 7.3256 = 21.3756$$

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.

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

$$\text{Base HIG Weight} = 0.8831$$

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

$$\text{Weight Factor}_{\text{SCU}} = 1.6939$$

$$\text{Final HIG Weight} = 0.8831 + 0.0000 + 1.6939 = 2.577$$

### 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 client 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  $\geq 96$  hours are as follows:

**Table 9** Values for scenario 5.2.3

Indicator	Base (139c)	Age adjustment (R)	Factor effect	Factor value
ELOS	4.5534	0.0000	FI IV $\geq 96$ hours	6.1389
Long Stay Addition	14.05	—	—	—
HIG Weight	0.8831	0.0000	FI IV $\geq 96$ hours	5.1539

**Note**

— Not applicable.

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

$$\text{Final ELOS} = 4.5534 + 0.0000 + 6.1389 = 10.6923$$

$$\text{Long Stay Trim Days} = 14.05 + 10.6923 = 24.7423$$

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

$$\text{Final HIG Weight} = 0.8831 + 0.0000 + 5.1539 = 6.037$$

### 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
<b>ELOS</b>	4.5534	0.4569	Homecare	1.2186
<b>Long Stay Addition</b>	14.05	—	—	—
<b>HIG Weight</b>	0.8831	0.0000	Homecare	0.1992

**Note**

— Not applicable.

$$\text{Final ELOS} = 4.5534 + 0.4569 + 1.2186 = 6.2289$$

$$\text{Long Stay Trim Days} = 14.05 + 6.2289 = 20.2789$$

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

$$\text{Final HIG weight} = 0.8831 + 0.0000 + 0.1992 = 1.0823$$

**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 in the client table.

The IE factor effects can be found in the intervention events factor client 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 client table. Cases with multiple intervention events are categorized into 2 groups for the IE factor: 2 intervention events and 3 or more intervention events. In the IE factor client table, searching by HIG number then by number of interventions gives the IE effects for HIG 161. These are summarized in Table 11.

**Table 11** Values for scenario 5.2.5

Indicator	Base (161)	Age adjustment (R)	Factor effect	Factor value
<b>ELOS</b>	3.7281	0.0000	Intervention Events (3)	6.3043
<b>Long Stay Addition</b>	18.1906	—	—	—
<b>HIG Weight</b>	3.635	0.0000	Intervention Events (3)	2.8937

**Note**

— Not applicable.

Summing the base and factors for ELOS gives

$$\text{Final ELOS} = 3.7281 + 0.0000 + 6.3043 = 10.0324$$

$$\text{Long Stay Trim Days} = 18.1906 + 10.0324 = 28.223$$

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

$$\text{Final HIG Weight} = 3.635 + 0.0000 + 2.8937 = 6.5287$$

## Scenario 5.2.6

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

This case is like 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 client 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 (R)	Factor effect	Factor value
ELOS	3.7281	0.0000	OOH	2.8271
Long Stay Addition	18.1906	—	—	—
HIG Weight	3.635	0.0000	OOH	-1.9128

**Note**

— Not applicable.

Summing the base and factors for ELOS gives

$$\text{Final ELOS} = 3.7281 + 0.0000 + 2.8271 = 6.5552$$

$$\text{Long Stay Trim Days} = 18.1906 + 6.5552 = 24.7458$$

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

$$\text{Final HIG Weight} = 3.635 + 0.0000 + (-1.9128) = 1.7222$$

## 5.3 Example: Typical multiple-factor case

Next, we will look at a scenario with multiple factors. When there is more than one 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. These are summarized in Table 13.

**Table 13** Values for scenario 5.3.1

Indicator	Base (139c)	Age adjustment (S)	Factor effect	Factor value	Factor effect	Factor value
ELOS	4.5534	0.4569	SCU	2.3153	FI IV $\geq 96$ hours	6.1389
Long Stay Addition	14.05	—	—	—	—	—
HIG Weight	0.8831	0.0000	SCU	1.6939	FI IV $\geq 96$ hours	5.1539

**Note**

— Not applicable.

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

$$\text{Final ELOS} = 4.5534 + 0.4569 + 2.3153 + 6.1389 = 13.4645$$

$$\text{Long Stay Trim Days} = 14.05 + 13.4645 = 27.5145$$

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

$$\text{Final HIG Weight} = 0.8831 + 0.0000 + 1.6939 + 5.1539 = 7.7309$$

## 5.4 Example: Short stay case

Short stay cases (HIG atypical code 09) are those cases in which TLOS is less than or equal to the short stay trim days. Short stay is applicable only to CMG typical cases when 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:

$$\text{Short Stay Trim Days}_{\text{HIG 140}} = 1.0000$$

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:

$$\text{Short Stay Base} = 0.1638$$

$$\text{Short Stay PD} = 0.0981$$

And the final HIG weight for this example is

$$\text{Final HIG Weight}_{\text{Short Stay}} = 0.1638 + (0.0981 \times 1) = 0.2619$$

## 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
<b>TLOS ≤ HIG LOS 10th percentile</b>	$\text{HIG PD} = \text{HIG PerDiem}_{\text{Base}} + \text{HIG PerDiem}_{\text{Factors}} + \text{HIG PerDiem}_{10}$
<b>HIG LOS 10th percentile &lt; TLOS ≤ HIG LOS 25th percentile</b>	$\text{HIG PD} = \text{HIG PerDiem}_{\text{Base}} + \text{HIG PerDiem}_{\text{Factors}} + \text{HIG PerDiem}_{25}$
<b>TLOS &gt; HIG LOS 25th percentile</b>	$\text{HIG PD} = \text{HIG PerDiem}_{\text{Base}} + \text{HIG PerDiem}_{\text{Factors}} + \text{HIG Atypical Factor}$

The per diem adjustments are found in the atypical factor client 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:

$$\text{Base PD} = 0.1781$$

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

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

Component	Value
HIG Cell	139c
HIG Atypical Code	01
HIG LOS Percentile 10	2.0
HIG LOS Percentile 10 PD	0.0607
HIG LOS Percentile 25	3.0
HIG LOS Percentile 25 PD	0.0317
HIG Atypical Factor	0

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 HIG 139c with atypical code 01, if TLOS is less than or equal to 2, we adjust using the 10th percentile; if TLOS is less than or equal to 3 and greater than 2, 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.

$$\text{PD Adjustment}_{\text{Atyp}} = 0$$

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

$$\text{Final Weight} = (0.1781 + 0.0000 + [0]) \times 5 = 0.8905$$

## Scenario 5.5.2

In this scenario, we have a patient like 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 client table:

$$\text{Base PD} = 0.1781$$

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

$$\text{PD Effect}_{\text{FI}} = 0.1384$$

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.

$$\text{PD Adjustment}_{25} = 0.0718$$

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

$$\text{Final HIG Weight}_{\text{Atypical}} = (0.1781 + 0.0000 + 0.1384 + 0.0718) \times 3 = 1.1649$$

## 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 HIG 139c age category R, we formerly calculated

$$\text{Final ELOS} = 4.5534 + 0.0000 = 4.5534$$

$$\text{Long Stay Addition} = 14.05$$

$$\text{Long Stay Trim Days} = 4.5534 + 14.05 = 18.6034$$

In this case, the TLOS is greater than the long stay trim days of 18.6034. 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:

$$\text{Typical HIG weight} = 0.8831$$



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, like atypical cases, is adjusted based on the length of stay group.

Looking up the necessary base values for HIG 139c,

$$\text{Base Outlier PD} = 0.1516$$

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

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:

$$\text{PD Adjustment}_{95} = -0.0253$$

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

$$\text{Long Stay Per Diem} = 0.1516 + 0.0000 + (-0.0253) = 0.1263$$

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

$$\text{Final HIG Weight}_{\text{Long Stay}} = 0.8831 + 0.1263 \times (121 - 4.5534) = 15.5903$$

## 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 18.6034 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,

$$\text{Typical HIG weight} = 0.8831$$

$$\text{Base Outlier PD} = 0.1516$$

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

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:

$$\text{PD Adjustment}_{95} = -0.0253$$

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

$$\text{Long Stay Per Diem} = 0.1516 + 0.0000 + (-0.0253) = 0.1263$$

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

$$\text{Final HIG Weight}_{\text{Long Stay Atypical}} = 0.8831 + 0.1263 \times (121 - 4.5534) = 15.5903$$

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.

## 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

$$\text{HIG Base PD} = 0.2197$$

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

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

$$\text{HIG Weight} = 0.2197 \times 4 = 0.8788$$

## 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	Homecare	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	4.5534	18.6034	0.8831	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	5.0103	19.0603	0.8831	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	6.8687	20.9187	2.577	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	7.3256	21.3756	2.577	Base, Age	Typical, single factor

Scenario	HIG	Age category	TLOS	SCU	FI	Homecare	IE	OOH	ELOS	Long stay trim days	HIG weight	Factor table	Comments
<b>5.2.3</b>	139c Chronic Obstructive Pulmonary Disease with Lower Respiratory Infection	R: 18–59 Years	4	0	Invasive Ventilation ≥96 hours	0	1	0	10.6923	24.7423	6.037	Base, Age, FI	Typical, single factor
<b>5.2.4</b>	139c Chronic Obstructive Pulmonary Disease with Lower Respiratory Infection	S: 60–79 Years	4	0	None	1	8	0	6.2289	20.2789	1.0823	Base, Age	Typical, single factor
<b>5.2.5</b>	161: Cardioverter/Defibrillator	R: 18–59 Years	4	0	None	0	3	0	10.0324	28.223	6.5287	Base, Age, IE	Typical, single factor
<b>5.2.6</b>	161: Cardioverter/Defibrillator	R: 18–59 Years	4	0	None	0	1	1	6.5552	24.7458	1.7222	Base, Age, OOH	Typical, single factor
<b>5.3.1</b>	139c Chronic Obstructive Pulmonary Disease with Lower Respiratory Infection	S: 60–79 Years	4	1	Invasive Ventilation ≥96 hours	0	1	0	13.4645	27.5145	7.7309	Base, Age, FI	Typical, multiple factors
<b>5.4.1</b>	140 Bronchiectasis	R: 18–59 Years	1	0	None	0	8	0	—	—	0.2619	Base, Age	Short stay

Scenario	HIG	Age category	TLOS	SCU	FI	Homecare	IE	OOH	ELOS	Long stay trim days	HIG weight	Factor table	Comments
5.5.1	139c Chronic Obstructive Pulmonary Disease with Lower Respiratory Infection	R: 18–59 Years	5	0	None	0	8	0	—	—	0.8905	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	—	—	1.1649	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	4.5534	18.6034	15.5903	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	4.5534	18.6034	15.5903	Base, Age, Atypical	Long stay atypical
5.7.1	993: Diagnosis Not Generally Hospitalized	S: 60–79 Years	7	—	None	0	8	0	—	—	0.8788	Base	Atypical type 08

**Note**

— Not applicable.

# 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 using only Ontario cost data. CMG+ RIWs are derived within CIHI from case-cost data collected from Nova Scotia, Ontario and Alberta. In addition, HIG factors are additive, use different years of data, apply factors and use a trim point methodology.

## **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. CMG and HIG weights will also be different as HIG has different trim points and an atypical methodology.

## **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 ([learning.cihi.ca](https://learning.cihi.ca) [login required]).

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

Specifications for HIG 2022 were provided to vendors in January 2022.

## **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 2022 and 1 with data grouped to CMG+ 2022.

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

Yes, the record-level and comparative HIG reports are cumulative. For 2022, all files will contain all data submitted since April 1, 2022.

## **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 MOH by email at [HSF@Ontario.ca](mailto:HSF@Ontario.ca).

# Appendices

## 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
I13	Hypertensive heart and renal disease
I201	Angina pectoris with documented spasm
I236	Thrombosis of atrium, auricular appendage, and ventricle as current complications following acute myocardial infarction
I240	Coronary thrombosis not resulting in myocardial infarction
I260	Pulmonary embolism with mention of acute cor pulmonale
I269	Pulmonary embolism without mention of acute cor pulmonale
I270	Primary pulmonary hypertension
I272	Other secondary pulmonary hypertension
I313	Pericardial effusion (noninflammatory)
I319	Disease of pericardium, unspecified
I400	Infective myocarditis
I401	Isolated myocarditis
I408	Other acute myocarditis
I409	Acute myocarditis, unspecified
I421	Obstructive hypertrophic cardiomyopathy
I443	Other and unspecified atrioventricular block
I460	Cardiac arrest with successful resuscitation
I470	Re-entry ventricular arrhythmia
I471	Supraventricular tachycardia
I472	Ventricular tachycardia
I479	Paroxysmal tachycardia, unspecified
I500	Congestive heart failure
I5010	Left ventricular failure with preserved ejection fraction
I5011	Left ventricular failure with reduced ejection fraction
I5019	Left ventricular failure, unspecified
I509	Heart failure, unspecified
I513	Intracardiac thrombosis, not elsewhere classified
I514	Myocarditis, unspecified

Diagnosis code	Diagnosis description
I519	Heart disease, 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
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
I64	Stroke, not specified as haemorrhage or infarction
I650	Occlusion and stenosis of vertebral artery
I651	Occlusion and stenosis of basilar artery
I652	Occlusion and stenosis of carotid artery
I653	Occlusion and stenosis of multiple and bilateral precerebral arteries
I658	Occlusion and stenosis of other precerebral artery



Diagnosis code	Diagnosis description
I659	Occlusion and stenosis of unspecified precerebral artery
I670	Dissection of cerebral arteries, nonruptured
I671	Cerebral aneurysm, nonruptured
I672	Cerebral atherosclerosis
I673	Progressive vascular leukoencephalopathy
I674	Hypertensive encephalopathy
I675	Moyamoya disease
I676	Nonpyogenic thrombosis of intracranial venous system
I677	Cerebral arteritis, not elsewhere classified
I678	Other specified cerebrovascular diseases
I679	Cerebrovascular disease, unspecified
I710	Dissection of aorta [any part]
I711	Thoracic aortic aneurysm, ruptured
I712	Thoracic aortic aneurysm, without mention of rupture
I713	Abdominal aortic aneurysm, ruptured
I714	Abdominal aortic aneurysm, without mention of rupture
I715	Thoracoabdominal aortic aneurysm, ruptured
I716	Thoracoabdominal aortic aneurysm, without mention of rupture
I718	Aortic aneurysm of unspecified site, ruptured
I719	Aortic aneurysm of unspecified site, without mention of rupture
I720	Aneurysm and dissection of carotid artery
I721	Aneurysm and dissection of artery of upper extremity
I722	Aneurysm and dissection of renal artery
I723	Aneurysm and dissection of iliac artery
I724	Aneurysm and dissection of artery of lower extremity
I725	Aneurysm and dissection of other precerebral arteries
I726	Aneurysm and dissection of vertebral artery
I728	Aneurysm and dissection of other specified arteries
I729	Aneurysm and dissection of unspecified site
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
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
T826	Infection and inflammatory reaction due to cardiac valve prosthesis

## 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
<b>E1452</b>	Unspecified diabetes mellitus with certain circulatory complications

## 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)
003	2	5	2	4	4	7	2	5	2	4	4	7
004	5	8	3	7	6	11	5	9	4	7	6	11
005	3	7	2	5	7	16	3	7	2	5	7	18
006	3	5	3	5	4	12	3	6	3	5	4	13
007	2	5	2	4	8	14	3	5	2	4	8	17
008	1	2	1	2	6	11.5	1	2	1	2	8	15
009	3	5	2	4	5	10	3	5	2	4	5	10
010	3	5	2	4	5	8	3	5	2	4	5	8
011	2	4	1	3	7	15	2	4	1	3	7	16
012	1	2	1	2	4	7	1	2	1	2	4	8
013	1	2	1	1	14.5	19	1	2	1	1	15	21.5
014	1	1	1	1	5	10	1	1	1	1	5	10
015	2	9	1	4	10	19	2	9	1	5	10	19
023	5	8	5	8	3	10	6	12	6	10	6	25
024	2	6	2	5	5	12	3	7	2	5	9	35
025	2	5	3	6	1	4	2	6	3	6	1	4
026	3	5	3	5	1	4	3	5	3	5	1	5
027	2	3	2	3	1	3	2	4	2	3	1	4
028	1	3	2	3	1	1	1	3	2	3	1	1
029	2	3	2	3	1	3	2	3	2	3	1	3.5
030	3	4	2	4	7.5	14.5	3	4	2	4	7.5	16
031	4	8	4	7	3	8.5	4	8	4	7	3	9
032	4	8	5	8	3	9	4	9	5	8	3	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)
033	4	8	4	7	4	14	4	9	5	8	4	19
034	1	3	2	3	1	4.5	1	3	2	3	1	5
035	4	7	4	7	1	10	4	8	4	7	1.5	22
036	3	5	3	5	1	6	3	6	4	6	1	9
037	1	3	1	3	1	4	1	3	1	3	1	6
038	2	6	2	5	3	7	3	6	2	5	3	8
039	1	3	1	3	2	6	1	3	1	3	2	6
040	1	2	1	2	1	4	1	2	1	2	1	5
041	1	2	1	2	1	4	1	2	1	2	1	4
042	2	4	2	4	3	7	2	4	2	4	3	7
043	1	3	1	3	1	3	1	3	2	3	1	3
050	1	1	1	1	1	4.5	1	1	1	1	1	4.5
051	1	1	1	1	8	8	1	1	1	1	8	8
052	1	1	1	1	1	3.5	1	1	1	1	1	3.5
053	1	1	1	1	11	17	1	1	1	1	11	17
054	1	1	1	1	—	—	1	1	1	1	—	—
055	1	1	1	1	8	8	1	1	1	1	8	8
056	1	1	1	1	10	16	1	1	1	1	10	16
063	2	3	2	3	2	2.5	2	3	2	3	2	2.5
064	1	2	1	2	1	1.5	1	2	1	2	1	1.5
065	1	2	1	2	1	3	1	2	1	2	2	3
070	1	1	1	1	—	—	1	1	1	1	—	—
071	9	12	9	12	1	2	9	12	9	12	1	2
072	2	3	2	3	—	—	2	3	2	3	—	.
073	1	1	1	1	14	15	1	1	1	1	14	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)
074	1	4	1	4	14	21	1	4	1	4	14	24
075	1	2	1	2	12	25	1	2	1	2	12	25
076	1	2	1	2	1	2	1	2	1	2	1	2
077	1	1	1	1	9	11	1	1	1	1	9	11
078	1	1	1	1	7	10	1	1	1	1	7	10
079	1	1	1	1	20	20	1	1	1	1	20	20
080	1	1	1	1	4	5	1	1	1	1	4	5
081	1	1	1	1	8	10.5	1	1	1	1	8	10.5
082	1	1	1	1	2	9	1	1	1	1	2	9
083	1	1	1	1	5	5	1	1	1	1	5	5
084	1	1	1	1	5.5	7.5	1	1	1	1	5.5	7.5
085	1	1	1	1	7	9.5	1	1	1	1	7	9.5
086	1	1	1	1	5	7	1	1	1	1	5	7
087	1	1	1	1	1	8.5	1	1	1	1	1	8.5
088	1	1	1	1	9	10.5	1	1	1	1	9	10.5
094	2	7	4	7	1	5	2	7	4	7	1	5
095	1	1	1	1	8	10	1	1	1	1	8	10
096	1	2	1	2	1	3	1	2	1	2	1	3
097	1	2	1	2	3	9	1	2	1	2	3	13
098	1	2	1	2	1	7	1	2	1	2	1	13
099	1	2	1	2	1	2	1	2	1	2	1	2
100	2	3	2	3	2	6	2	3	2	3	2	6
101	1	3	1	2	1	6	1	3	1	2	1	7
102	1	2	1	2	1	1	1	2	1	2	1	1
103	1	2	1	2	1	1	1	2	1	2	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)
104	1	1	1	1	1	2	1	1	1	1	1	2
105	1	2	1	2	2	8	1	2	1	2	2	9
110	16	22	15	20	39	58.5	16	24	15	21	39	58.5
113	3	5	3	5	1	6	3	5	3	5	1	6
114	2	2	1	2	5	12	2	2	1	2	5	12
115	2	4	1	3	5.5	22	2	5	1	3	5.5	22
117	2	5	2	3	9	30	2	5	2	3	10	32
119	3	5	1.5	3.5	11	26	3	5	1.5	3.5	11	26
120	5	11	4	8.5	11	26	5	12	4	8.5	11	28
121	3	5	3	5	7	19	3	5	3	5	7	19
130	4	8	4	8	2	8	4	8	4	8	2	8
131	6	9	6	9	5	15	6	9	6	9	5	15
132	3	6	4	7	1	6	3	7	4	7	1	7
133	3	7	4	7	1	6	3	7	4	8	1	7
134	5	9	5	8	12	19	5.5	9	5	9	12	33
135	3	6	3	6	1	6	3	6	3	6	1	7
136	3	5	3	5	2	6	3	5	3	5	2	7
137	5	9	5	8	9	23	5	9	5	8	9	25
138	3	5	3	4	2	7	3	5	3	4	3	8
139c	3	5	3	5	1	5	3	5	3	5	1	6
139d	2	4	2	4	1	3	2	4	2	4	1	4
140	3	5	3	5	1	1	3	5	3	5	1	1
141	1	2	1	2	1.5	5.5	1	2	1	2	1.5	6.5
142	3	6	4	7	1	6	3	7	4	7	1	6
143	3	5	4	6	1	2	3	5	4	6	1	2

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)
144	2	4	2	3	2	6	2	4	2	3	2	6
145	1	2	1	2	1	5.5	1	2	1	2	1	5.5
147	1	2	1	2	1	3	1	2	1	2	1	3
148	1	3	1	2	2	10.5	1	3	1	2	2	11.5
149	1	2	1	2	1	3	1	2	1	2	1	3
160	12	23	12	21	41	108	12	23	12	21	41	108
161	3	7	2	6	5	10	3	7	2	6	5	10
163	5	8	5	7	9	17	5	8	5	7	9	18
164	1	5	1	3	6	10	1	5	1	3	6	10
165	4	6	4	5	12	15.5	4	6	4	5	12	16.5
166	9	12	9	11	10	15	9	12	9	11	10	15
167	8	10	8	10	7	11	8	10	8	10	7	11
168	9	12	8	12	10	13	9	12	8	12	10	13
169	8	11.5	8	11	9	12	8	11.5	8	11	9	12
170	6	8	6	7	6	8	6	8	6	7	6	8
171	5	7	5	6	6	7	5	7	5	6	6	7
172	5	6	5	6	6	8	5	6	5	6	6	8
173	4	7	4	6.5	5	11	4	7	4	6.5	5	11
175	2	3	2	3	1	2	2	3	2	3	1	2
176	1	1	1	1	1	3	1	1	1	1	1	3
178	1	2	1	1	3	10	1	2	1	1	3	10
179	1	1	1	1	6	9	1	1	1	1	6	9
180	7	13	8	13	5	11	8	14	9	15	5	11.5
181	1	4	1	4	6	14	1	4	1	4	6	15
182	3	5	3	5	1	4	3	5	3	5	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)
183	5	9	5	7	5	15.5	5	9	5	7	5	17.5
185	1	3	1	3	5	15	1	3	1	3	5	17
186	1	2	1	1	3	8	1	2	1	1	3	8
187	3	4	3	5	1	3	3	4	3	5	1	3
188	12	29	17	26	12	32.5	12	29	17	26	12	32.5
189	1	2	1	1	8	12	1	2	1	1	8	12
190	5	7	5	6	12	16	5	8	5	6	12	16
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	1	3	1	2	1	2	1	3	1	2
194b	2	4	2	5	1	3	2	4	2	5	1	3
195	5	8	5	8	6	11	5	8	5	8	6	11
196	3	6	4	6	1	5	3	6	4	6	1	5
197	4	7	4	6	4	10	4	7	4	7	4	10
198	1	1	1	1	1	6.5	1	1	1	1	1	6.5
199	5	9	7	11	3	7	5	10	7	11	3	7
200	2	4	2	4	2	5	2	4	2	4	2	5
201	3	5	3	5	1	4	3	5	3	5	1	4
202	1	2	1	2	1	3	1	2	1	2	1	3
203a	2	3	2	3	1	4	2	3	2	3	1	4
203b	3	5.5	3	5	3	6	3	5.5	3	5	3	6
204a	1	2	1	2	1	2	1	2	1	2	1	2
204b	2	4	2	4	1	5	2	4	2	4	1	5
205	1	2	1	2	1	2	1	2	1	2	1	2
206	1	2	1	2	1	3	1	2	1	2	1	3

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)
207a	2	3	2	3	1	1	2	3	2	3	1	1
207b	3	4	3	4	3	4	3	4	3	4	3	4
208a	1	1	1	1	1	1	1	1	1	1	1	1
208b	1	3	1	3	1	2	1	3	1	3	1	2.5
209	2	4	2	4	1	4	2	4	2	4	1	4
210	2	4	2	4	1	3	2	4	2	4	1	4
211	2	4	2	4	2	5	2	4	2	4	2	7
212	2	4	2	4	2	6	2	5	2	4	2	6
213	1	4	2	4	1	4	1	4	2	4	1	4
214	2	5	2	5	2	6	2	5	2	5	2	6
220	7	10	7	10	10	25	7	10	7	10	10	25
221	5	9	5	8	9	24	5	9	5	8	9	27
222	5	8	5	8	8	17	5	8	5	8	8	18
223	3	5	3	5	4	11	3	5	3	5	4	11.5
224	8	9	7	9	24	36	8	9	7	9	24	39
225	5	7	5	7	2	6	5	7	5	8	2	6
226	2	4	2	3	7	15	2	4	2	3	7	15
227	3	4	3	4	1	1	3	4	3	4	1	1
228	2	3	2	3	3	3	2	3	2	3	3	3
229	1	2	1	1	6	7.5	1	2	1	1	6	8
230	2	3	2	3	11	16	2	3	2	3	13	18
231	3	4	3	5	1	3	3	4	3	5	1	3
232	2	4	2	4	4	11	2	4	2	4	4	14
233	1	2	1	2	2	5	1	2	1	2	2	5
234	1	1	1	1	1	1	1	1	1	1	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)
235	1	2	1	2	10.5	13	1	2	1	2	11	14
236	1	1	1	1	5	7	1	1	1	1	5	8
237	2	4	2	4	6	16	2	4	2	4	6	17
248	3	4	3	4	1	2	3	4	3	4	1	2
249	2	3	2	3	1	5	2	3	2	3	1	7
250a	3	6	3	6	1	5	3	6	3	6	1	6
250b	3	6	4	6	1	3	3	6	4	6	1	4
250c	3	6	3	6	1	5	3	6	3	6	1	5.5
251	3	5	3	5	1	4	3	5	3	5	1	5
252	2	3	2	3	2	5	2	3	2	3	2	6
253	3	4	3	5	1	1	3	4	3	5	1	1
254	2	3	2	3	1	4	2	3	2	3	1	4
255	2	3	2	3	2	5	2	3	2	3	2	6
256	2	3	2	3	2	8	2	3	2	3	2	8
257	1	2	1	2	1	3	1	2	1	2	1	4
258	1	3	1	3	1	4	1	3	1	3	1	4
270	9	13	8	12	16.5	34.5	9	13	9	12	16.5	35
271	6	8	6	7	17	25	6	8	6	7	17	25
274	4	5	4	5	1	12	4	5	4	5	1	12
275	3	5	3	5	1	1	3	5	3	5	1	1.5
278	1	2	1	2	3	9	1	2	1	2	3	11
279	2	4	2	4	3	31	2	4	2	4	3	31
280	3	5	3	5	1	7	3	5	3	5	1	7
281	3	4	3	5	1	2	3	5	3	5	1	2
282	1	2	1	2	6	16	1	2	1	2	7	16

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)
283	4	6	5	6	1	7	4	6	5	6	1	7
284	3	6	3	6	1	5	3	6	4	6	1	5
285	3	6	4	6	2	6	3	6	4	6	2	7
286	3	5	3	5	2	8	3	5	3	5	2	8
287	2	3	2	3	1	3	2	3	2	3	1	3
288	2	3	2	3	1	4	2	3	2	3	1	4
289	4	6	4	5	24	42	4	6	4	5	24	42
290	3	5	3	5	1	1	3	5	3	5	1	1
300	4	7	4	6	5	13	4	7	4	7	8	13
308	1	3	1	2	10	37	1	3	1	2	10	44
309	6	10	5	9	8	16	6	10	5	9	8	16
310	4	6	4	6	1	16	4	6	4	6	1	17
311	1	2	1	2	2	20.5	1	2	1	2	2	20.5
312	4	6	3	6	5	11	4	6	3	6	5.5	11
313	2	3	2	3	7	14	2	3	2	3	8	15
314	1	1	1	1	5	8	1	1	1	1	7	9
315	2	2	1	2	8	14	2	3	1	2	13	15
316	5	8	4	7	9	15	5	8	4	7	9	18
317	2	4	2	4	6	10	2	5	2	4	7	13
318	3.5	6	3	6	7	17	4	6	3	6	7	25
319	1	2	1	2	4	9	1	2	1	2	4	14
320	1	1	1	1	5	11	1	1	1	1	6	12
321	1	1	1	1	1	4	1	1	1	1	1	4
323	1	2	1	2	3	10	1	2	1	2	3	10
325	1	1	1	1	6	7	1	1	1	1	6	12

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)
327	1	1	1	1	9	26	1	1	1	1	9	26
328	5	9	5	8	5	17	5	10	5	8	5	18
329	2	5	1	3	7	16	2	5	1	3	8	19
330	3	6	2	5	6	12	3	6	2	5	7	16
331	1	1	1	1	11	14.5	1	1	1	1	14	15
332	1	3	1	2	9	16	1	3	1	2	10	17.5
333	4.5	7	5	7	1	9	4.5	8	5	7	1	10
334	1	1	1	1	4	14	1	1	1	1	6	16.5
335	1	2	1	1.5	6	12	1	2	1	1.5	6	20
336	1	2	1	1	8	13	1	2	1	1	9	15
337	1	3	1	1	9	13	1	3	1	1	9	13
338	1	1	1	1	—	—	1	1	1	1	—	.
339	1	1	1	1	—	—	1	1	1	1	—	.
340	1	3	1	2	11	13.5	1	3	1	2	11	17
341	1	1	1	1	6	12	1	1	1	1	7	12
342	1	3	1	2	11	14	1	3	1	2	11	14.5
343	1	1	1	1	7	11.5	1	1	1	1	7	30.5
344	1	1	1	1	7	12	1	1	1	1	8	13.5
345	1	3	1	2	11	16	1	3	1	2	12	20
346	2	6	2	5	11	26	2	6	2	5	16	41
347	1	2	1	2	7	12	1	2	1	2	7	13
348	2	6	1	4	9	25	2	7	1	4	11	29
349	1	2	1	1	7.5	11	1	2	1	1	8	15
350	3	7	4	6	2	8	3	7	4	7	2	8
351	1	1	1	1	7	9.5	1	1	1	1	8	12.5

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)
352	1	1	1	1	1	6.5	1	1	1	1	1	8.5
357	4	7	5	8	2	5	4	8	5	8.5	2	5
358	3	7	5	8	1	2	4	8	6	9	1	3
359	4	7	4.5	7	1	4.5	4	7	5	8	1	5
360	3	5	4	6	1	3	3	6	4	7	1	3
361	3	5	3	5	3	8.5	3	5	3	5	3	9
362	2	5	3	5	1	1	3	6	3	6	1	1
363	3	6	3	6	1	6	3	6	4	6	1	7
364	2	4	2	3	2	5	2	4	2	4	2	7
365	2	3	2	3	1	3	2	3	2	3	1	4
366	3	6	4	6	1	3	3	7	4	7	1	3
367	2	5	4	6	1	2	3	7	5	8	1	2.5
368	2	4	2	4	2	5	2	5	2	4	2	6
369	1	3	1	3	2	6	1	3	1	3	2	7
370	2	4	2	4	5	12	2	4	2	4	5	22
380	8	13	9	13	7	12	9	15	10	16	7	13
381	5	9	6	9	2	6.5	5	9	6	10	2	7
382	3	6	2	5	4	16	3	6	2	5	5	24
383	2	5	2	4	8	13	2	5	2	4	8	13
384	2	4	1	3	6	20	2	4	1	3	6	25.5
385	1	2	1	2	5	5	1	2	1	2	5	5
386	1	1	1	1	1	1	1	1	1	1	1	1
387	1	1	1	1	8	11.5	1	1	1	1	8.5	17
388	1	1	1	1	8.5	17	1	1	1	1	8.5	23.5
389	1	1	1	1	40	40	1	1	1	1	40	40



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)
390	1	1	1	1	9	10	1	1	1	1	9	10
391	1	1	1	1	13	15	1	1	1	1	13	15
392	1	2	1	2	4	12	1	2	1	2	4	14
401	4	8	5	8	2	6	4	9	5	9	2	9
402	3	6	4	7	1	4	3	6	4	7	1	4
403	3	7	3	6	4	8	4	7	3	7	4	9
404	4	7	4	7	1	6	4	7	4	8	1	7
405	3	4	3	5	1	1	3	5	3	5	1	1
406	2	4	2	4	1	4	2	4	2	4	1	4
407	2	3	2	3	1	5	2	3	2	3	1	6
408	1	3	1	3	3	8	1	3	1	3	4	15
409	1	2	1	2	1	1	1	2	1	2	1	1
420	2	4	2	4	10	14.5	2	4	2	4	10.5	17
421	1	2	1	2	6	12.5	1	2	1	2	10	13.5
422	1	1	1	1	1	1	1	1	1	1	1	1
423	1	1.5	1	1	13	15	1	1.5	1	1	15	23
424	1	1	1	1	6	10	1	1	1	1	6	10
425	1	1	1	1	7	10	1	1	1	1	7	10
426	1	1	1	1	2	2	1	1	1	1	2	2
432	6	13	8	13	1	2	6	13	8	13	1	2
433	3	6	3	6	1	4	3	6	3	6	1	5
434	2	5	2	4.5	1	5	2	5	2	5	1	6
435	2	4	2	4	3	6	2	4	2	4	3	8
436	2	3	2	3	1	5	2	3	2	3	1	7
437a	2	3	2	3	1	2	2	3	2	3	1	2

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)
437b	2	5	2	4	3	8	2	5	2	5	3	11
437c	2	4	2	4	3	6	2	4	2	4	3	8
437d	2	3	2	3	1	4	2	3	2	3	1	4
438	1	2	1	2	1	5	1	2	1	2	2	8
439	1	3	1	3	1	4	1	3	1	3	1	5
440	2	2	2	2	8	10	2	2	2	2	8	10
441	2	4	2	3	7	14	2	4	2	3	8	18
450	6	8	6	7	19	25.5	6	8	6	7	19	25.5
451	2	3	2	3	—	—	2	3	2	3	—	.
452	6	8	6	8	20	31	6	8	6	8	24	32
453	1	2	1	2	27	27	1	2	1	2	27	27
454	2	3	2	3	8	17	2	3	2	3	8	18
455	1	2	1	2	10	14	1	2	1	2	11	15
456	1	2	1	2	7	10	1	2	1	2	7	10
457	1	1	1	1	8	10	1	1	1	1	8	10
458	2	4	2	4	6	23	2	4	2	4	6	26
459	1	1	1	1	4	7	1	1	1	1	5	7
460	1	2	1	1	9	15	1	2	1	1	9	15
461	1	1	1	1	5	7	1	1	1	1	5	7.5
462	1	2	1	2	13.5	14.5	1	2	1	2	13.5	14.5
463	2	3	2	3	22	39	2	3	2	3	22	39
464	1	1	1	1	9	14	1	1	1	1	10	15
467	2	3	2	3	12	24	2	3	2	3	12	35
468	1	4	1	3	10.5	30	1	4	1	3	11.5	34
477	3	5	3	5	1	4	3	5	3	6	1	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)
478a	3	6	2	5	6	12.5	3	6	2	5	6	13.5
478b	3	6	3	5.5	1	8	3	6	3	6	1	8
479	3	7	5	8	1	2	3	8	5	8	1	3
480	3	6	3	5	4	8	3	6	3	5	4	10
481	2	3	2	3	2	5	2	4	2	3	2	6
482	2	4	2	4	1	4	2	4	2	4	1	4
483	2	3	2	3	2	8	2	3	2	3	2	10
484	1	2	1	2	2	6	1	2	1	2	2	11
485	2	4	2	3.5	2.5	6.5	2	4	2	3.5	2.5	6.5
486	1	2	1	2	1	2	1	2	1	2	1	2
487	3	4	3	4	1	2	3	4	3	4	1	2
488	2	3	2	3	2	9	2	3	2	3	2	12.5
500	2	3	2	3	11	26	2	3	2	3	11	29
501	1	2	1	2	10	13	1	2	1	2	10	15
502	1	1	1	1	6	8	1	1	1	1	6	8.5
503	1	1	1	1	9.5	10	1	1	1	1	9.5	10
504	3	3	3	3	7.5	14	3	3	3	3	7.5	14.5
505	1	2	1	2	7	9	1	2	1	2	7	9
506	1	1	1	1	—	—	1	1	1	1	—	.
507	1	1	1	1	1	7	1	1	1	1	1	7
508	1	2	1	2	4	14	1	2	1	2	4	14
509	1	1	1	1	6	7	1	1	1	1	6	7
510	1	1	1	1	—	—	1	1	1	1	—	.
511	1	1	1	1	7	8.5	1	1	1	1	8	9
512	1	1	1	1	9	11	1	1	1	1	9	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)
520	2	6	3	5	1	6	2	6	3	5	1	6
521	1	1	1	1	7	8.5	1	1	1	1	7	10.5
522	2	3	2	3	1	3	2	3	2	3	1	3
523	1	2	1	2	—	—	1	2	1	2	—	.
524	1	1	1	1	3	7	1	1	1	1	3	8
525	1	2	1	2	4	10	1	2	1	2	4	11
532	1	1	1	1	3	5.5	1	1	1	1	3	5.5
533	3	4.5	3	4	3	7	3	4.5	3	4	3	7
546	1	1	1	1	1	1.5	1	1	1	1	1	1.5
547	1	1	1	1	1	1	1	1	1	1	1	1
548	1	1	1	1	8	11.5	1	1	1	1	8	11.5
549	1	1	1	1	3	5	1	1	1	1	3	5
550	1	1	1	1	1	2	1	1	1	1	1	2
551	1	1	1	1	1	1	1	1	1	1	1	1
552	1	1	1	1	1	2	1	1	1	1	1	2
553	1	2	1	2	1	2	1	2	1	2	1	2
554	1	1	1	1	1	6	1	1	1	1	1	6
555	1	1	1	1	1	2	1	1	1	1	1	2
556	1	1	1	1	1	1	1	1	1	1	1	1
557	1	1	1	1	1	4	1	1	1	1	1	4
558a	2	3	2	3	2	3	2	3	2	3	2	3
558b	3	3	3	3	3	7	3	3	3	3	3	7
559a	2	2	2	2	2	9	2	2	2	2	2	9
559b	2	3	2	3	4	8	2	3	2	3	4	8
560a	1	2	1	2	1.5	8	1	2	1	2	1.5	8

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)
560b	2	3	2	2	7	11	2	3	2	2	7	11
561a	2	2	2	2	51	51	2	2	2	2	51	51
561b	2	3	2	3	1	3	2	3	2	3	1	3
562a	1	2	1	2	3	6	1	2	1	2	4	6
562b	2	2	2	2	4	10	2	2	2	2	4	10
563a	1	1	1	1	1	2	1	1	1	1	1	2
563b	1	2	1	2	5	12	1	2	1	2	5	12
564a	1	1	1	1	1	2	1	1	1	1	1	2
564b	1	2	1	2	4	9	1	2	1	2	4	9
565a	1	1	1	1	1	1	1	1	1	1	1	1
565b	1	1	1	1	3	7	1	1	1	1	3	7
570	14	26.5	9	18	15	30	14	26.5	9	18	15	30
571	9	14	2	4	10	16	9	14	2	4	10	16
573	11	19	3	15	12	40	11	19	3	15	12	40
576	1	1	1	1	1	1	1	1	1	1	1	1
577	1	2	1	2	1	2	1	2	1	2	1	2
578	1	2	1	1	3	34.5	1	2	1	1	3	34.5
579	10.5	47	4	73	17	47	10.5	47	4	73	17	47
580	14	34	30	42	14	32.5	14	34	30	42	14	32.5
581	15	37	15	64	15	36	15	37	15	64	15	36
582	9	20	21	28	8	15	9	20	21	28	8	15
583	8	22	26	34	5	16	8	22	26	34	5	16
584	7	15	15	20	4	9	7	15	15	20	4	9
585	4	7	6	9	2	5	4	7	6	9	2	5
586	5	11	10	14	3	7	5	11	10	14	3	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)
587	2	3	2	3	2	5	2	3	2	3	2	5
588	1	2	1	2	2	7	1	2	1	2	2	7
589	1	2	1	2	1	2	1	2	1	2	1	2
590	1	2	1	2	1	3.5	1	2	1	2	1	3.5
591	1	2	1	2	1	2	1	2	1	2	1	2
592	2	4	3	4	2	5	2	4	3	4	2	5
593	2	2	2	2	3	11	2	2	2	2	3	11
594	1	1	1	1	1	2	1	1	1	1	1	2
595	1	2	1	2	1	3	1	2	1	2	1	3
596	2	5	2	3	4	18	2	5	2	3	4	18
597	1	1	1	2	1	1	1	1	1	2	1	1
598	1	1	1	1	1	4	1	1	1	1	1	4
599	3	6	4	6	3	6	3	6	4	6	3	6
600	1	2	1	2	1	3	1	2	1	2	1	3
601	1	1	1	1	1	3	1	1	1	1	1	3
602	1	2	1	2	2	2.5	1	2	1	2	2	2.5
612	1	2.5	1	2	16.5	19	1	2.5	1	2	16.5	19
615	1	3	1	2	11.5	19.5	1	3	1	2	12	20
617	3	5.5	2	5	10	22	3	6	2	5	10	25
618	3	8	4	8	1	13	3	8	4	8	1	13
618a	16	22	17	22	3	8	16	22	17	22	3	8
624	5	13	8	23	2	7	5	14	8	24	2	7
625	4	10	8	12	1	3.5	4	10	8	12	1	3.5
626	3	6	4	6	1	4	3	6	4	6	1	4
627	5	9	6	9	2	10	5	10	6	10	2	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)
628	4	7	4	6	2	10	4	7	4	6	2	11
629	2	5	2	4	2	5.5	2	5	2	4	2	6
630	3	6	3	6	1	5	3	6	3	6	1	5
631	2	5	2	4	2	5.5	2	5	2	4	2	5.5
632	2	5	3	6	1	3	2	5	3	6	1	3
633	3	4	3	4	1	3	3	4	3	4	1	3
634	2	3	2	3	2	7	2	3	2	3	2	7
635	2	4	2	4	1	6	2	4	2	4	2	8
636	2	3	2	3	5	13	2	3	2	3	5	13
637	2	4	2	3	2	7.5	2	4	2	3	2	8.5
638	2	3	1	3	8	21	2	3	1	3	9	21
639	1	2	1	2	4	11	1	2	1	2	4	11
640	2	3	2	3	2	5	2	3	2	3	2	5
650	6	12	6	11	6	16	6	13	6	11	6	17
653	5	9	6	10	3	9	5	10	6	10	3	9
654	3	6	3	6	1	5	3	6	3	6	1	5
655	7	14	7	12.5	8	26.5	7	14	7	13.5	14	35
657	4	9	4	8.5	4	13	4	9	4	8.5	4	13
658	5	13	7	13	2	13	5	13	7	13	2	13
659	4	7	4	6	3	15	4	7	4	6	3	15
660	4	6	4	6	1	6	4	6	4	6	1	6
661	1	2	1	2	1	10.5	1	2	1	2	1	12
662	1	3	2	3	1	3	2	3	2	3	1	3
670	4	9	5	9	3	8	8	20	9	17	4	33
671	4	8	4	7	2	8	5	9	5	9	2	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)
672	2	5	2	5	5	11	2	6	2	5	6	19
673	6	13	7	13	1	7	6	13	7	13	1	7
678	1	3	1	4	1	2	1	4	1	4	1	3
683	1	3	1	3	1	4	1	3	1	3	1	4
684	2	5	2	5	1	5	2	5	2	5	1	5
685	2	3	1	3	2	5	2	3	1	3	2	6
686	2	4	2	4	1	3	2	4	2	4	1	3.5
687	1	3	1	3	1	3	1	3	1	3	1	3
689	1	3	1	3	1	4	1	3	1	3	2	6
691	1	3	1	3	19	36	1	3	1	3	43	60
693	2	4	2	4	1	4	2	4	2	4	1	4
694	3	5	3	5	1	3	3	5	3	5	1	3
697	2	4	2	4	2	4	2	4	2	4	2	4
698	1	2	1	2	1	2	1	2	1	2	1	2
702	3	6	4	6	1	3	3	6	4	6	1	3
703	2	3	2	3	2	5	2	3	2	3	2	5
704	14	31	11	14	40	75	14	37.5	11	14	75	88
707	1	3	1	3	2	6	1	4	1	3	2	13
708	1	3	2	3	1	2	1	3	2	3	1	2
709	2	4	2	4	1	4	2	4	2	4	1	4
713	5	13	8	14	1	10	5	14	8	15	1	10
717	1	2	1	3.5	1	1	1	2	1	4.5	1	1
718	1	2	1	2	1	3	1	2	1	2	1	3
726	4	7	5	7	3	6	5	8	5	8	4	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)
727	4	7	5	7	3	6	5	8	5	8	3	7
728	1	3	1	3	4	9	1	3	1	3	4	13
729	2	3	2	3	5	9	2	3	2	3	5	14
730	3	7	2	6	5	9.5	3	7	2	6	5.5	11
731	5	10	5	9	6	12	6	10	5	10	6	12
733	5	10	5	9	4	16	5	10	5	9	4	18
734	2	5	2	4	6	17	2	5	2	4	7	19
736	3	10	5	10	1	13	3	10	5	10	1	14
737	2	4	1	3	5	11	2	4	1	3	5	12.5
738	1	2	1	2	4	9.5	1	2	1	2	9	15
739	1	1	1	1	4	9	1	1	1	1	5	11
740	1	3	1	2	4	12	1	3	1	2	4	12
741	1	1	1	1	1	2	1	1	1	1	1	2
742	1	2	1	1	5	10	1	2	1	1	5	10
743	1	2	1	2	8	13	1	2	1	2	8.5	15
744	1	2	1	2	6.5	13	1	2	1	2	9	14.5
745	1	1	1	1	5	10	1	1	1	1	5	10.5
747	1	2	1	2	4	8	1	2	1	2	5	15
748	1	2	1	1	4	10.5	1	2	1	1	4	10.5
749	1	2.5	1	2	6	13	1	2.5	1	2	18	23
750	1	1	1	1	1	16	1	1	1	1	1	16
751	1	1	1	1	8	8	1	1	1	1	8	8
752	4	7	3	6	5	10	4	8	4	6	5	11
760	1	4	2	4	1	4	2	4	2	4	1	4
761	4	6	4	7	1	3	4	8	5	9	2	3

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)
762	3	7	3	6	1	12	3	7	3	6	1	12
763	3	6	3	5	5	9	3	6	3	6	5	9
764	2	6	2	5	3	8	2	6	2	5	3	9
765	2	3	2	3	2	5	2	4	2	3	2	6
766	1	2	1	4	1	1	1	2	2	5	1	1
767	1	4	1	3	1	6	1	5	1	4	2	19
768	2	4	3	5.5	1	1	2	6	4	8	1	1
769	2	5	3	6	1	3	3	7	4	8	1	5
770	1	3	1	2	4	8	1	4	1	2	9	15
771	3	6	4	6	1	4.5	3	7	4	7	1	5
772	2	4	2	4	2	5	2	5	2	5	2	7.5
773	2	4	2	4	2	7	2	4	2	4	2	7
774	2	3	2	3	1	5	2	3	2	3	1	5
775	1	2	1	2	1	6	1	2	1	2	1	10
776	1	2	1	2	1	5	1	2	1	2	1	7
777	2	3	2	3	1	3	2	3	2	3	1	5
778	1	2	1	2	1	2	1	2	1	2	1	2
779	1	1	1	1	2	8	1	1	1	1	2	9
780	2	4	2	4	2	6	2	4	2	4	2	7
781	1	3	1	3	2	6	1	3	1	3	2	6
782	1	2	1	2	1	4	1	2	1	2	1	4
783	1	4	1	3	1	5	1	4	1	4	2	12.5
800	4.5	13	3	14	6	12	5.5	14.5	3	17	7	13
801	1	5	1	4	7	15	1	6	1	4	12	29
805	5	10	8.5	14	4	9	7	14	13	22	6	12

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)
806	1	1	1	1	2	4	1	1	1	1	2	5
807	14	23	7	24	14	23	14	23	7	24	14	23
808	1	3	1	3	4	13	1	3	1	3	4	13
809	0	0	0	0	0	0	10	26	9	17	11	28
810	2	5	4	7	1	4	2	5	4	8	2	5
811	2	4	2	3	2	5	2	4	2	4	2	12
812	1	1	1	1	0	1	1	3	1	2	4	20
813	1	1	1	1	2	4.5	1	1	1	1	2	6.5
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	2	5	3	5	1	1	2	5	3	6	1	1
901	8	16	7	13	9	23	8	19	8	15	9	29
902	2.5	4	2	4	9	9	2.5	4	2	4	9	9
903	2	8	2	7	17	23	2	8	2	7	17	23
904	10	17	9	15	12	25	10	19	10	16	12	27
905	5	11	6	10	2	14.5	6	11	6	11	2	16
906	4	7	4	6	2	10	4	7	4	6	2	12
907	6	12	5	9	10	21	6	12	5	9	10	24
908	4.5	10.5	5	10	1	12	5	11.5	5	11	1	13
909	1	4	1	3	11	21	1	4	1	3	16	28
910	5	9	5	8.5	1	13	5	9	5	9	1	15
911	8	15	8	14	3	17	8	16	8	15	3	20
912	2	9	2	7	13	25	2	9	2	7	13	25
918	4	12	4	4	7.5	12	4	12	4	4	7.5	12

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)
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	—	—	1	1

**Note**

— Not applicable.



**CIHI Ottawa**

495 Richmond Road  
Suite 600  
Ottawa, Ont.  
K2A 4H6  
**613-241-7860**

**CIHI Toronto**

4110 Yonge Street  
Suite 300  
Toronto, Ont.  
M2P 2B7  
**416-481-2002**

**CIHI Victoria**

880 Douglas Street  
Suite 600  
Victoria, B.C.  
V8W 2B7  
**250-220-4100**

**CIHI Montréal**

1010 Sherbrooke Street West  
Suite 602  
Montréal, Que.  
H3A 2R7  
**514-842-2226**

cihi.ca

11174-0222

