

Health Based Allocation Model: HBAM Inpatient Group Methodology and Reports at CIHI



The Health Based Allocation Model (HBAM) is a funding methodology of the Ontario Ministry of Health and Long-Term Care (MOHLTC), under the Health System Funding Strategy.

The Canadian Institute for Health Information (CIHI) is supporting the use of the MOHLTC's HBAM methodology. Support includes providing monitoring tools, such as record-level and comparative reports. These reports contain the grouping methodology output for the 5 methodologies that are used as direct inputs into the HBAM methodology.

The **HBAM Inpatient Group (HIG)** methodology is the acute inpatient grouping methodology used within HBAM. Since the release of HIG 2014, the HIG methodology has also been applied to non-acute cases in the Discharge Abstract Database (DAD).

How are HIGs assigned to Ontario inpatient cases?

HIG groups are assigned using CIHI's Case Mix Group+ (CMG+) grouping methodology output along with additional clinical information from CIHI's DAD.

In most cases, the HIG groups are identical to the CMG+ groups. In fact, 83% of cases are assigned to HIG groups that are the same as the CMG+ group. The remaining 17% 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, 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 [(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 to 4.
4. **A single intervention-driven group** — The Bone Marrow/Stem Cell Transplant CMG+ group has been enhanced so that all records with bone marrow and stem cell transplants are grouped together.

HIG resource indicators

The HIG weighting methodology and its values are developed and maintained by the MOHLTC. Cases are assigned resource indicators (base weight and estimated length of stay [ELOS]) using the HIG group and age category. These are further adjusted by the following factors:

- Flagged intervention
- Intervention event
- Out-of-hospital intervention
- Special care unit
- Discharged to home care
- Maternal age 40 or older

Table Similarities/differences between CMG+ and HIG resource indicators

Model parameter	CMG+	HIG
Factors	Multiplicative	Additive
Deaths	Always atypical	Non-palliative deaths are typical
Age categories	9 age categories	5 age categories
Flagged interventions	17	14
Out-of-hospital interventions	Yes	Yes
Number of intervention events	Yes	Yes
Discharged to home care	Not applicable	Yes
Special care unit	Not applicable	Yes
Short-stay adjustments	Not applicable	Yes
Maternal age ≥40	Not applicable	Yes

Additional resources for HIG

For more information on the HIG grouping and weighting methodologies, Ontario facilities can visit CIHI's Learning Centre at <https://learning.cihi.ca>:

- Introduction to the HIG Grouping and Weighting Methodology for Ontario (self-study course)

For more detailed grouping and weighting examples, as well as a full appendix of HIG weight/ELOS values, Ontario facilities can visit CIHI's eStore at <https://secure.cihi.ca/estore>:

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



Questions or feedback?

Please send an email to casemix@cihi.ca.

For questions concerning HBAM, please contact the MOHLTC at hbam@ontario.ca.