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# Estimating costs of patient groups in the absence of patient level costing

September 10, 2025

## Outline

1. Overview of how to estimate patient costs
2. The CMDB Cost Allocation Methodology
3. How cost estimates are being improved
4. Key Takeaways

# Two methods for estimating patient costs

## Bottom-Up Approach

Detailed data on resources used at the patient encounter level

Also known as patient level costing, case costing, micro-costing, etc.

***[ + ] More precise estimates of cost***

***[ - ] challenging to collect***

e.g. Canadian Patient Cost Database (CPCD)

## Top-Down Approach

Estimating average cost of patients using aggregate level data

Uses aggregate financial and clinical information

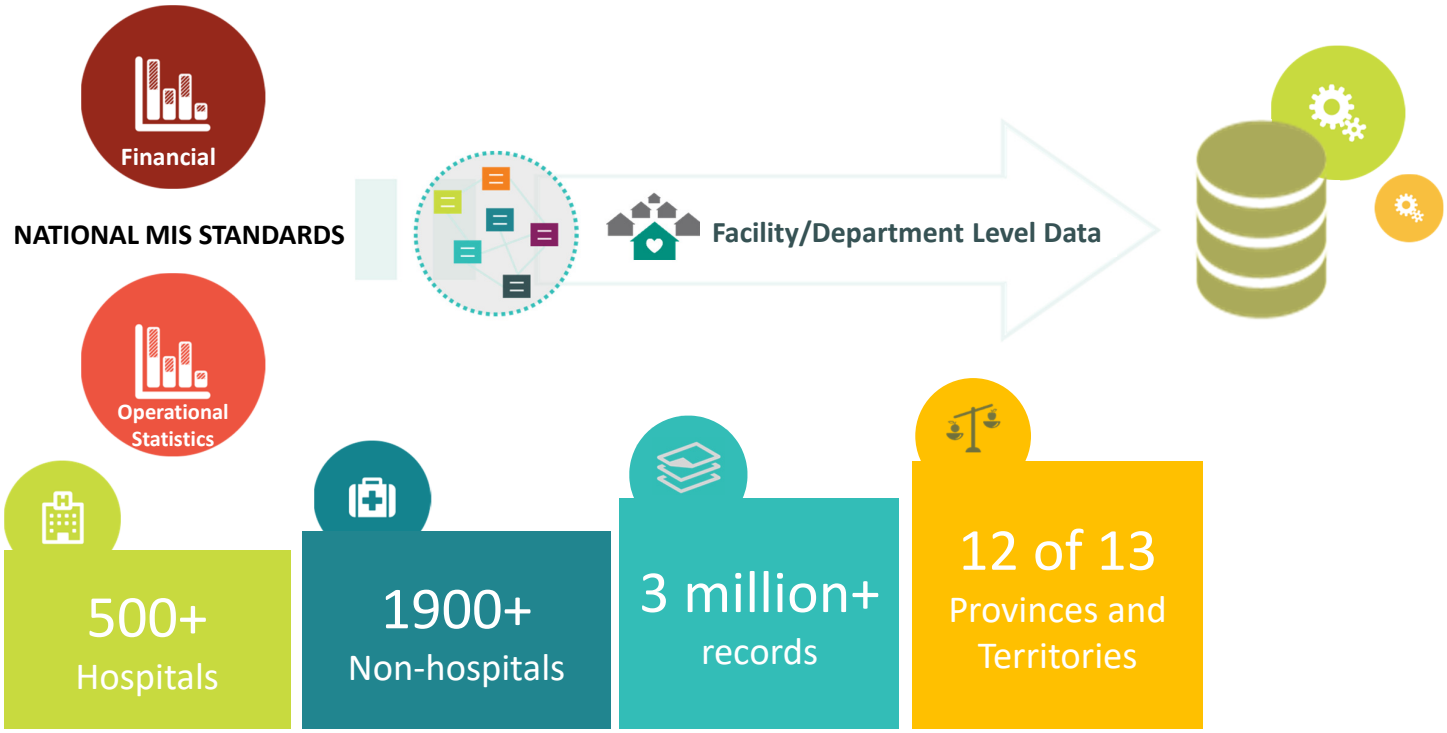
***[ + ] data more readily available***

***[ - ] Limited to average costs***

e.g. Cost of a Standard Hospital Stay

# Estimating patient costs in the absence of patient level data

# Canadian MIS Database (CMDB)






## Financial information and operational statistics are reported by functional centres (department)

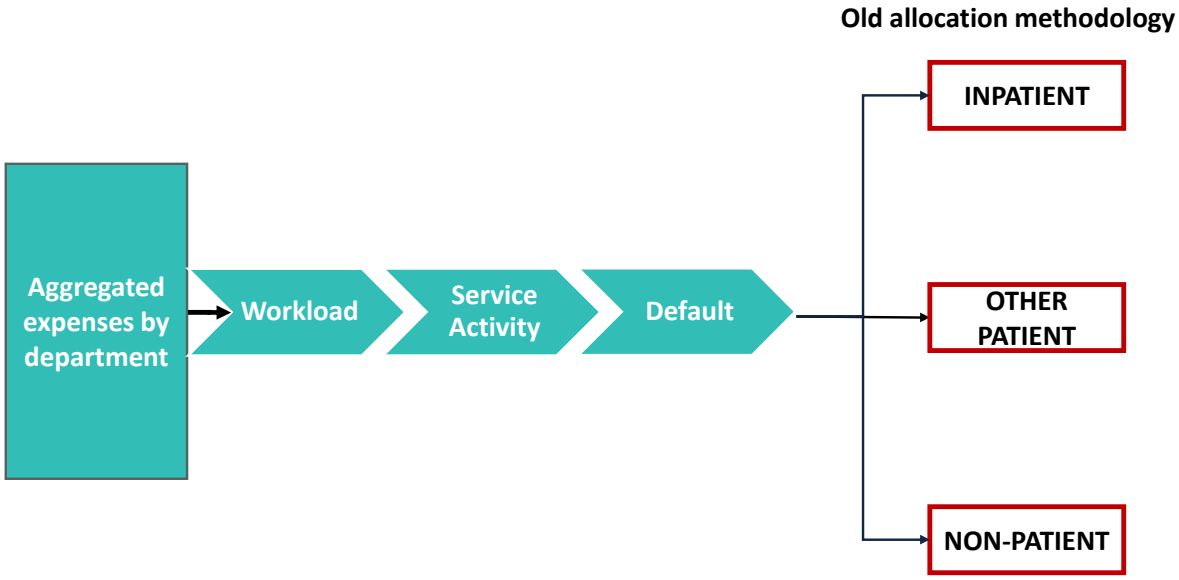
### Direct Expenses / Patient Care Services

- Expenses allocated using operational statistics

### Indirect Expenses / Business Functions

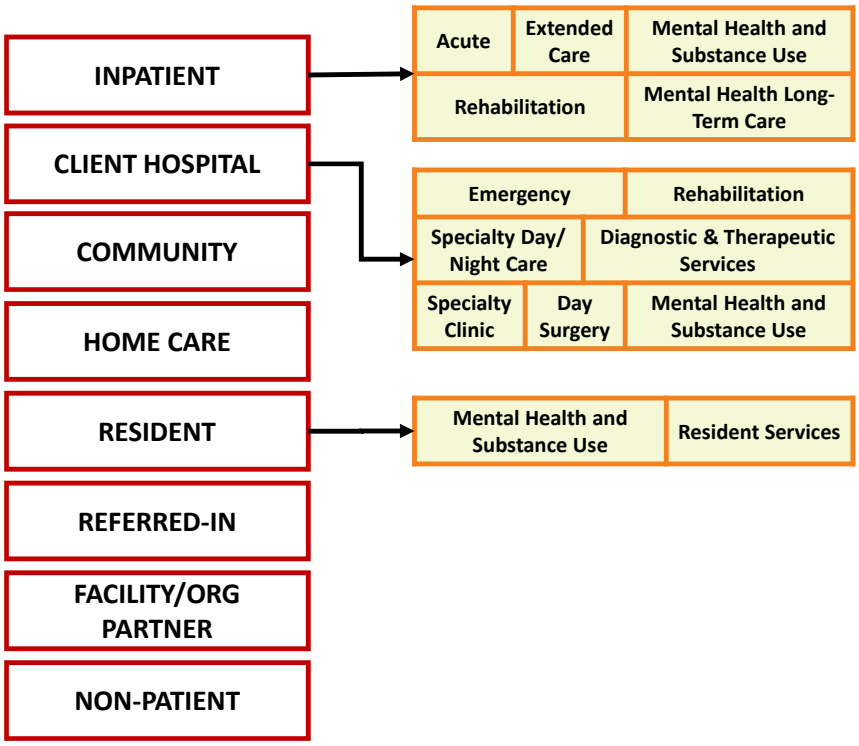
- Expenses allocated based on the proportion of direct expenses

# Operational statistics are used to allocate expenses

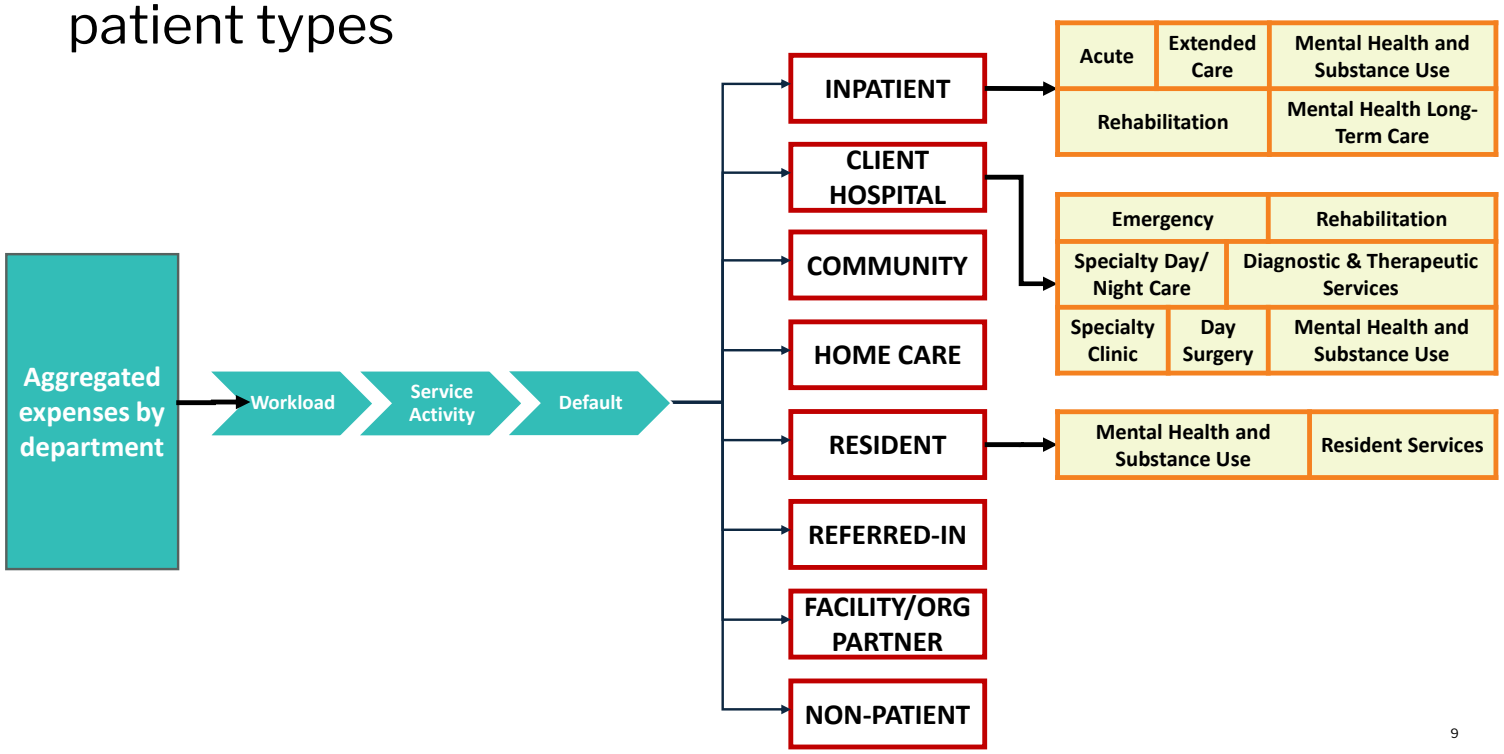





# Operational statistics are reported by patient type



# Operational statistics are used to allocate expenses to all patient types






Methodology highlight

**25%**

of functional centres use more / better statistics

# More data used

| Old methodology | New methodology |
|---|---|
| • **Regressions** included unreasonable outliers<br>• **Strict rules** determined which statistics were used<br><br>*"outliers" used a **default methodology** to allocate expenses* | • **Intuitive values** to determine "inliers"<br>• **Increased flexibility** in data that is reported<br><br>*Allocations better reflect **actual activity** using actual data* |

Methodology highlight

**~3:1**

Estimated ratio between cost of inpatient and day surgery visits

# Ratio of surgical visits based on Canadian Patient Cost Database

| Old methodology | New methodology |
|---|---|
| • Inpatient and day surgery surgical visits considered **equal weight** | • **Greater weight** assigned to inpatient surgical visits than day surgery surgical visits |




Methodology highlight

**1,973**

additional organizations now have a cost breakdown

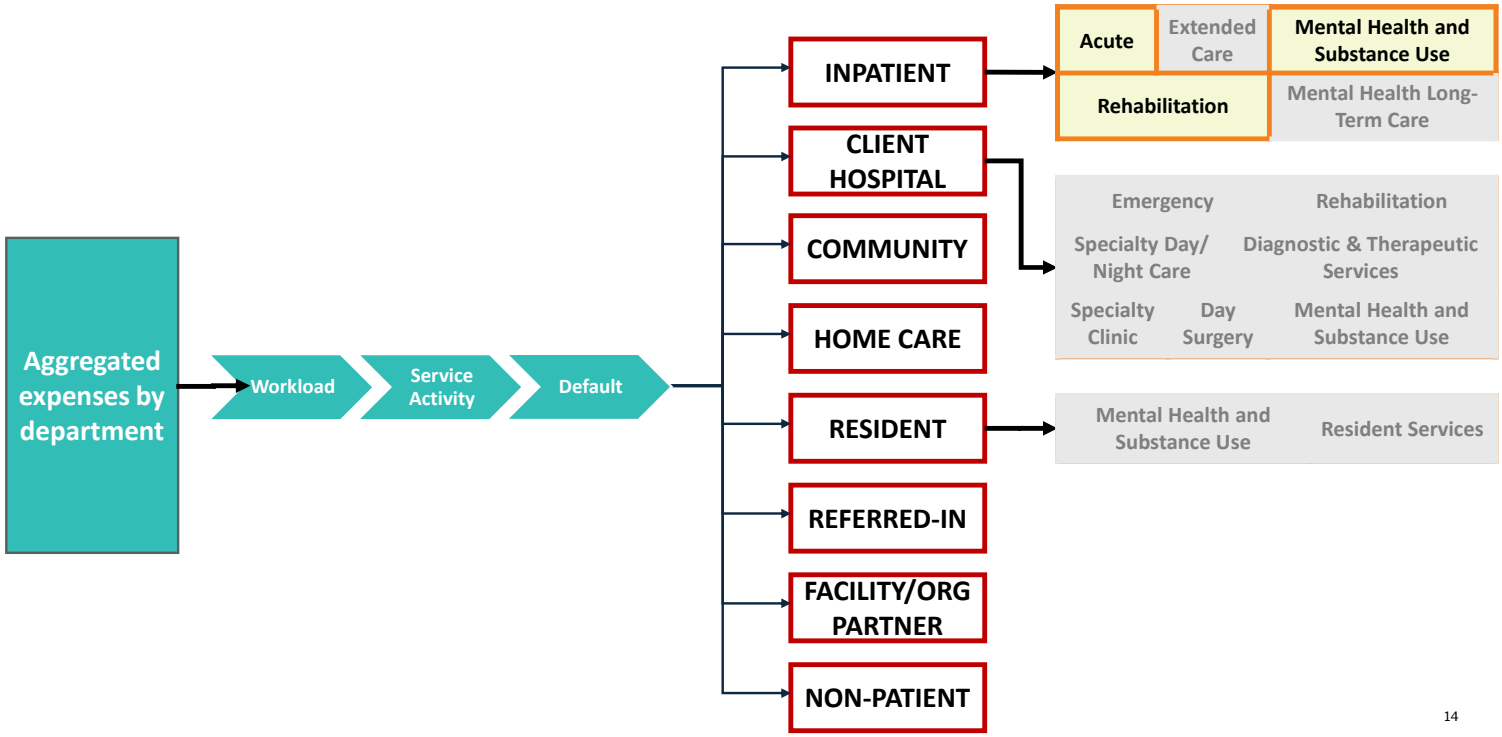
# Going beyond hospitals

| Old methodology | New methodology |
|---|---|
| • Allocation applied to only 509 hospitals | • Allocation applied to 1,973 additional organizations<br>• cohort is organization type specific |

# How the new CMDB Cost Allocation Methodology is improving top-down cost estimates



## Putting it all together to estimate inpatient costs



# Large changes are a result of improved methodology

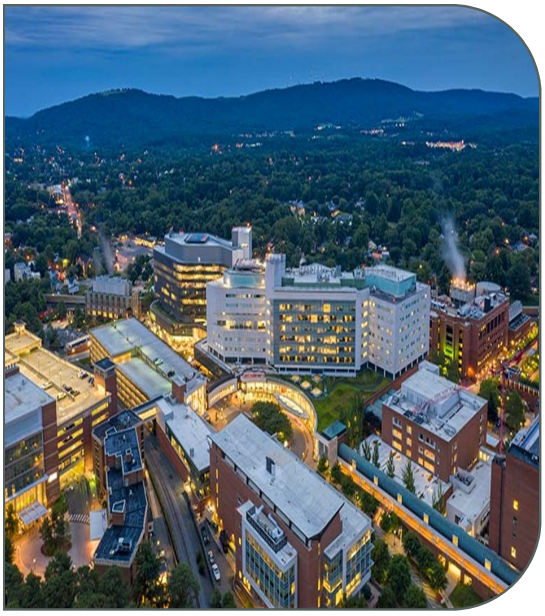
Example island hospital

- Inpatient medical unit that serves **both inpatients and outpatients** (no emergency department)

| Old methodology | New methodology |
|---|---|
| • outpatient activity "unreasonably" high<br>• **default allocation** used (100% inpatient allocation) | • Estimated inpatient AND outpatient costs based on available statistics |

**Inpatient allocation is 84% lower**
**More reasonable inpatient estimate**





# Cohort-specific methodology improves default cost allocations

Example health centre

- $405 in Acute Nursing and $3.2M in Resident care unit

| Old methodology | New methodology |
|---|---|
| • Considered a "hospital"<br>• **default methodology** allocated expenses to **inpatient** types | • Organization classified as resident facility<br>• **Default methodology** allocates expenses to **resident** types |

**Inpatient allocation is 20% lower**
**More reasonable inpatient estimate**

# The world's best health systems are powered by data.

**Better data:**

- Increased use of **actual data** instead of relying on defaults.
- Improved data utilization to more accurately reflect **real activity and cost variations**.
- Adoption of **standardized approach** to cost allocation.

**Better decisions:**

- Enhanced understanding of costs across all patient types
- Insights into patient types **beyond inpatient care**.

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# Questions

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