

Supporting Local Analysis with National Data thru Data Visualization

Janine Kaye, CPHIMS-CA

Canadian Institute for Health Information

Overview

- **About the Canadian Institute for Health Information (CIHI)**
- **Review – Creating effective data visualizations**
- **CIHI's Integrated eReporting Program**
- **Demos - Use of Data Visualization**
- **Questions and Discussion**

About CIHI

The Canadian Institute for Health Information (CIHI) is an independent, not-for-profit organization that provides essential information on Canada's health systems and the health of Canadians.

CIHI's Strategic Plan 2016 to 2021

Priority themes and populations

Themes

Patient experience
Quality and safety
Outcomes
Value for money

Health system
performance



Populations

Seniors and aging
Mental health and addictions
First Nations, Inuit and Métis
Children and youth



Strategic goals and priorities



**Be a trusted source of
standards and quality data**



**Expand analytical tools to support
measurement of health systems**



**Produce actionable analysis
and accelerate its adoption**



Reviewing From Last Year

Impactful Data Visualizations

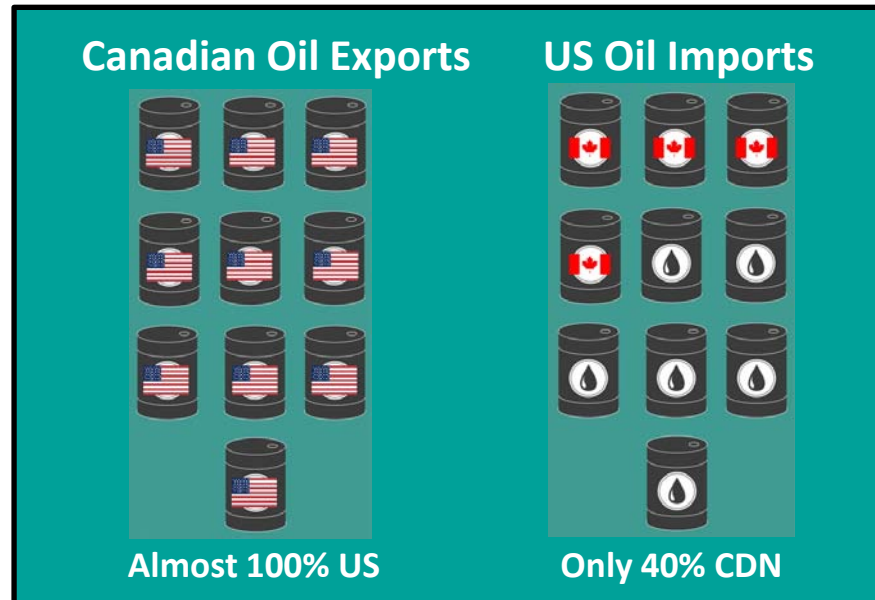
- Know the purpose of your visualization
- Make sure your key message is easily understood
- Know your target audience's needs
- Follow standards (industry and corporate)

Impactful Data Visualizations

Turn this...



Into this...



Source: [CTV News](#)



“Data is crude information. You have to mine it until it becomes like gas...You take that gas to run an engine which is a decision model, and that engine will make you move ahead of everybody else.”

- Samir Elhedhli,
Chair, Mgmt Sciences Eng
UWaterloo

Additional Dashboard Tips

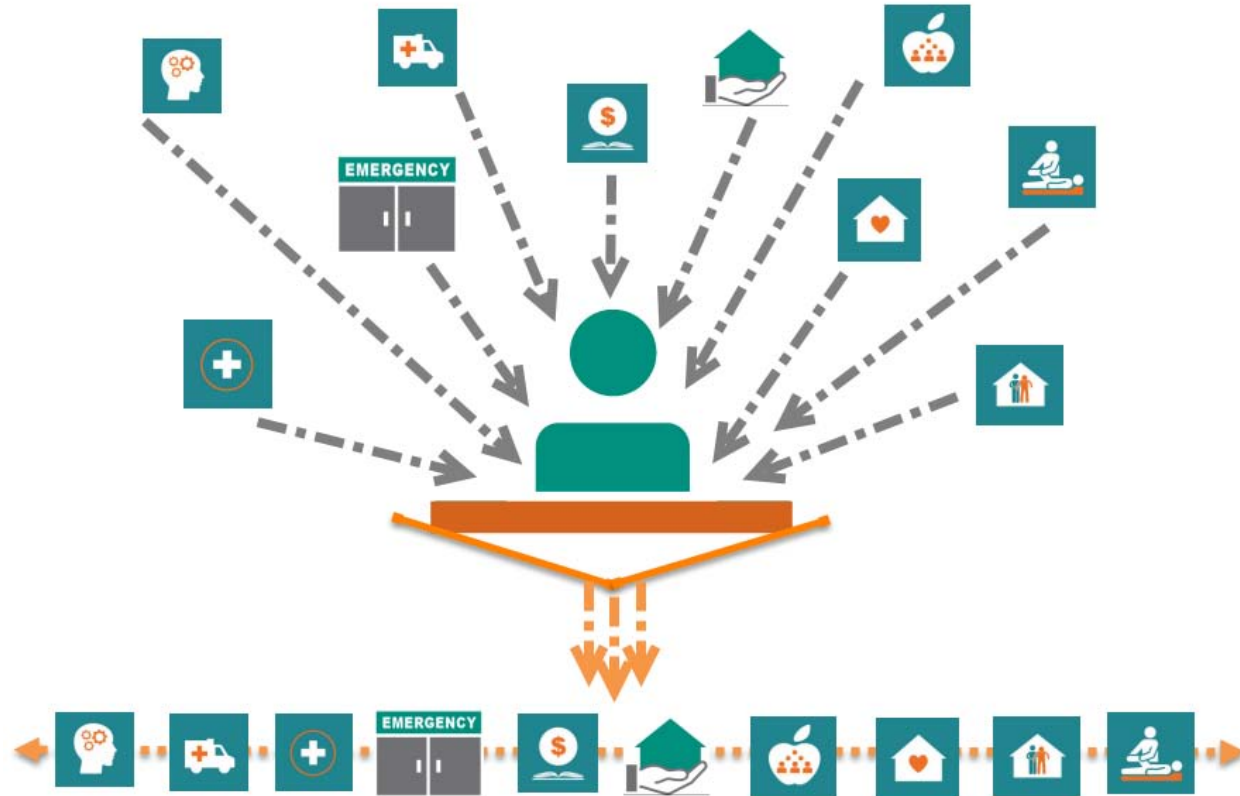
- **Think about the dashboard like a story you are trying to tell and select each visualization so that it provides a specific “plot” point**
- **Label interactive elements for users for a better user experience**
- **Limit the number of panels on a single dashboard and use multiple tabs or dashboards instead**



Integrated eReporting at CIHI

CIHI's integrated reporting

Current state



Future

Improved Client Experience

Information Gallery

- Curated for the public
- Limited set of indicators

Indicator Hub

- Publicly available
- Highly granular

Analytics Centre

- Private access
- Simple presentation PLUS highly customizable



Your Health System

This site's interactive tools will help you learn more about your health system and the health of Canadians.
Choose one of the following:



Your Health
System
[In Brief](#)

Explore 15 indicators representing 5 themes that Canadians told us were important.



Your Health
System
[In Depth](#)

Take a look at an expanded suite of indicators: find comparable results for hospitals and regions.



Your Health
System
[Insight](#)



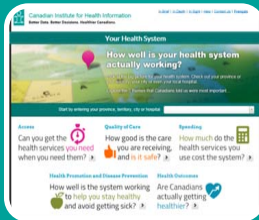
Health care providers and analysts can use this analytical tool to dig deeper into indicator results. Login required.



Fewer

of measures

More



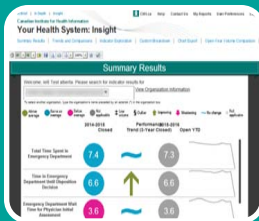
Your Health System: In Brief (public)

- 15 indicators in 5 themes selected based on consultation with Canadian public
- Clear, easy-to-read infographics



Your Health System: In Depth (public)

- 45 indicators from 1,800 hospitals and LTC homes
- Interactive visuals for peer comparison, benchmarking and top performer identification



Your Health System: Insight (private)

- Flexibility to explore performance drivers
- Supports drill down to patient level data
- Monthly updates with open-year data

*CIHI
Portal

*eDAD
eNACRS

Your Health System: Insight



- **Who?** – Health system managers and analysts from health care facilities, health regions and ministries/dept. of health
- **Where?** – Secure password protected web-based tool
- **When?** – Available now, 4 years of closed data + open year data updated monthly
- **Why?** – Provide information to support decision making, performance measurement and quality improvement
- **What?** – Business intelligence tool with pre-set dashboards and customizable slice and dice capacity providing access to chart-level (when authorized) and aggregate information at facility, regional, provincial and national levels

Now in Insight

- 30-Day readmissions
 - overall, obstetric, < 19 years, surgical, medical
- Emergency department wait times
 - total, time to physician Ax, time for bed, time to disposition decision
- 30-day in-hospital mortality following major surgery
- Hospital Standardized Mortality Ratio (HSMR)

Next to be added to Insight

- More content from inpatient and emergency department data

Future of Insight

- Integrated across the continuum of care
 - home care, long term care, rehabilitation, etc
- More clinical and administrative plus financial and health human resources information



CIHI Portal

- **Who?** – Health system managers and analysts from health care facilities, health regions and ministries/dept. of health
- **Where?** – Secure password protected web-based tool
- **When?** – Available now, 5 years of closed data + open year data updated monthly
- **Why?** – Provide information to support decision making, performance measurement and quality improvement
- **What?** – Business intelligence tool with that provides users with the ability to **create their own** reports, maps and dashboards and share with other users across the country

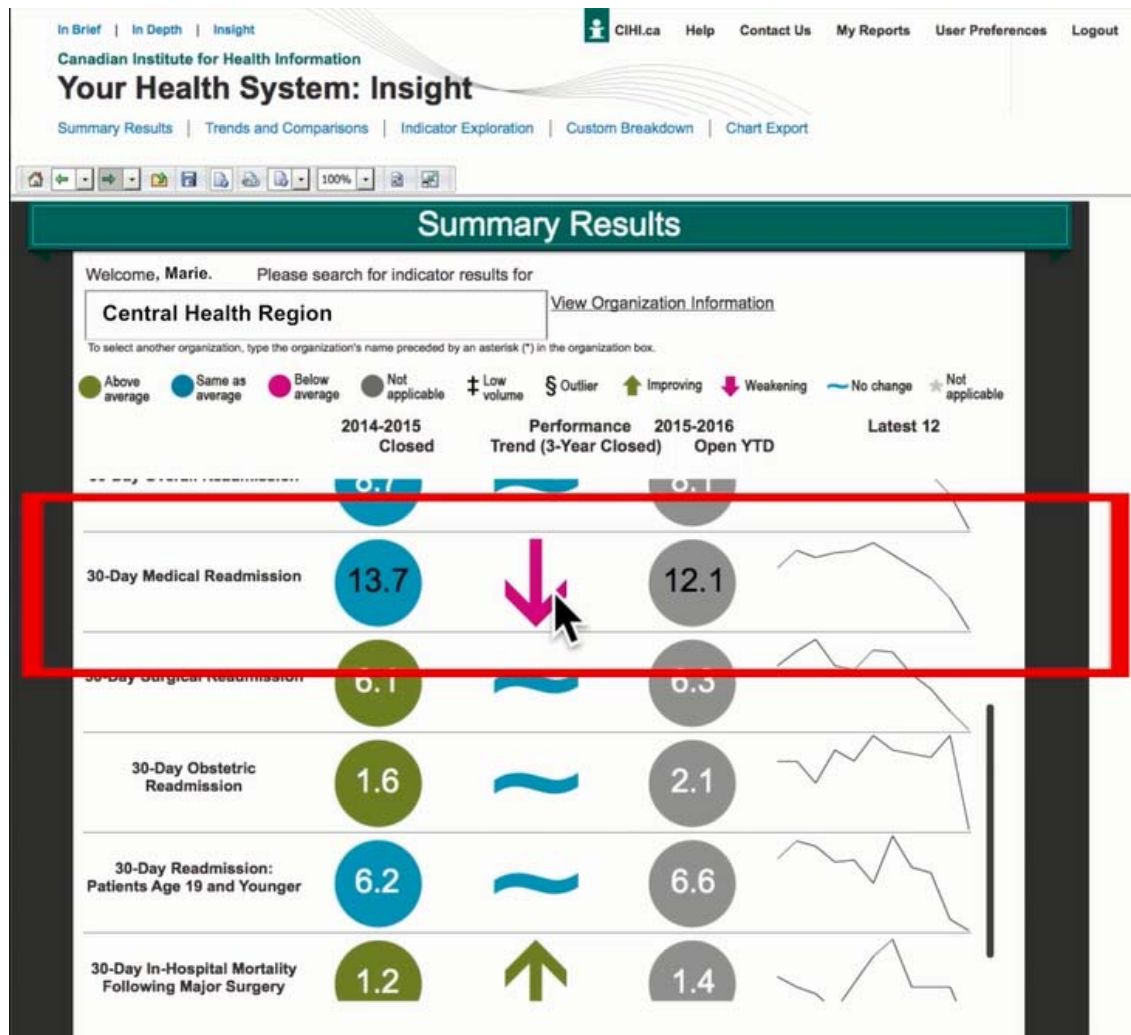


A Few Examples...

Francine's Story



Identify area
of focus



Trends and compares

Trends and Comparisons: 30-Day Medical Readmission

Select an indicator:

30-Day Medical Readmission

Select a metric to graph:

- ☒ Risk-adjusted rate
- ☐ Crude rate
- ☐ Numerator count
- ☐ Denominator count
- ☐ Expected value
- ☐ Observed/expected

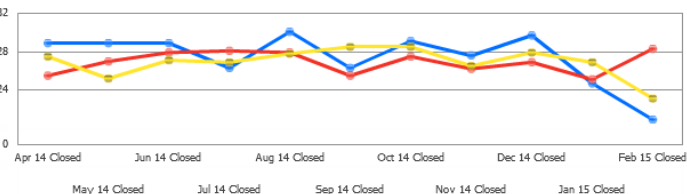
Select organization(s):

Central Health Region
East Health Region
West Health Region

Indicator Trends

Natural Comparators

Hospital Groupings



Monthly

Quarterly

Yearly

Trends and Comparisons: 30-Day Medical Readmission

Select an indicator:

30-Day Medical Readmission

Select a province/territory:

My Province

Select a region:

Central Health Region

Select a peer group:

(All)

Select metrics:

(Note: Not all metrics apply to all time periods)

☐ Select All Metrics

Indicator Trends

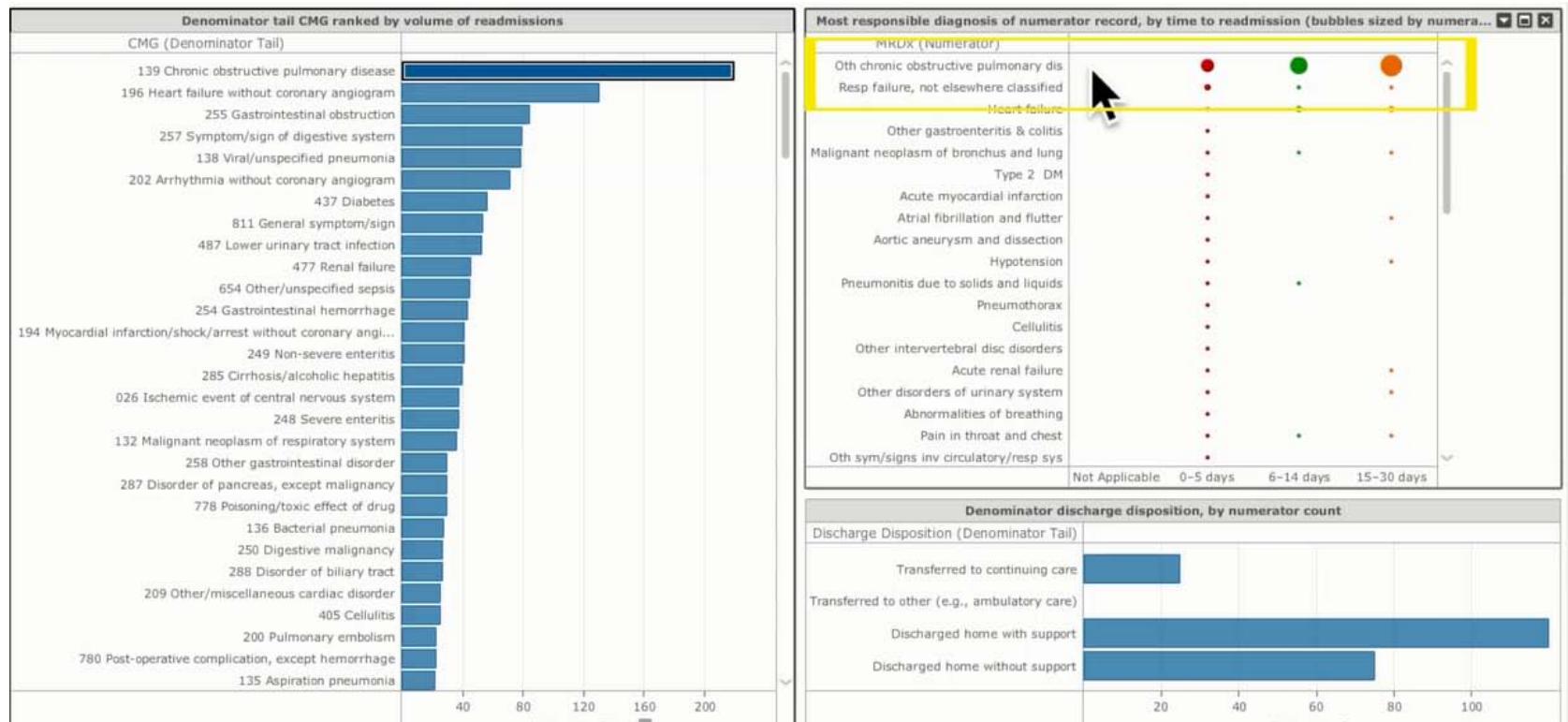
Natural Comparators

Hospital Groupings



Organization	Metric	2012-2013 Closed	2013-2014 Closed	2014-2015 Closed
Hospital A	Risk-adjusted rate	12.6	13.5	27.7
	Performance Comparison	●	●	●
Hospital B	Risk-adjusted rate	13.2	14.7	29.7
	Performance Comparison	●	●	●
Hospital C	Risk-adjusted rate	11.8	12.9	28.7
	Performance Comparison	●	●	●

Explore the indicator result



Benefit of YHS: Insight

Current:

- Get a quick visual overview of performance
- Compare performance with peers and identify above and below average performers
- Determine potential drivers of the indicator results
- Monitor monthly results over time

Future:

- Follow the patient cohort across the continuum of care

Michael's Story



Identify area of focus

[Home](#) [CAPHC](#) [Programs](#) [Conference](#) [Tools & Resources](#)



National Benchmarking & Data Sharing

- » About CAPHC - CPDSN
- » [CAPHC - CPDSN Membership](#)
- » [CPDSN Symposium](#)
- » [Governance & Strategic Directions](#)
- » [Contact CAPHC - CPDSN](#)



CAPHC Canadian Association of Paediatric Health Centres CPDSN Canadian Paediatric Decision Support Network

National Benchmarking & Data Sharing

CAPHC - Canadian Paediatric Decision Support Network (CPDSN)

What is CAPHC - Canadian Paediatric Decision Support Network?

CAPHC - CPDSN is a network of the 16 academic paediatric health centres (17 facilities) and participating community and regional hospitals that have come together as an organization to advance paediatric empirical decision support in Canada with the goal of improving health care and health of Canadian children, youth and their families. Our mandate is to coordinate and oversee national data sharing, networking and benchmarking for the paediatric health community.



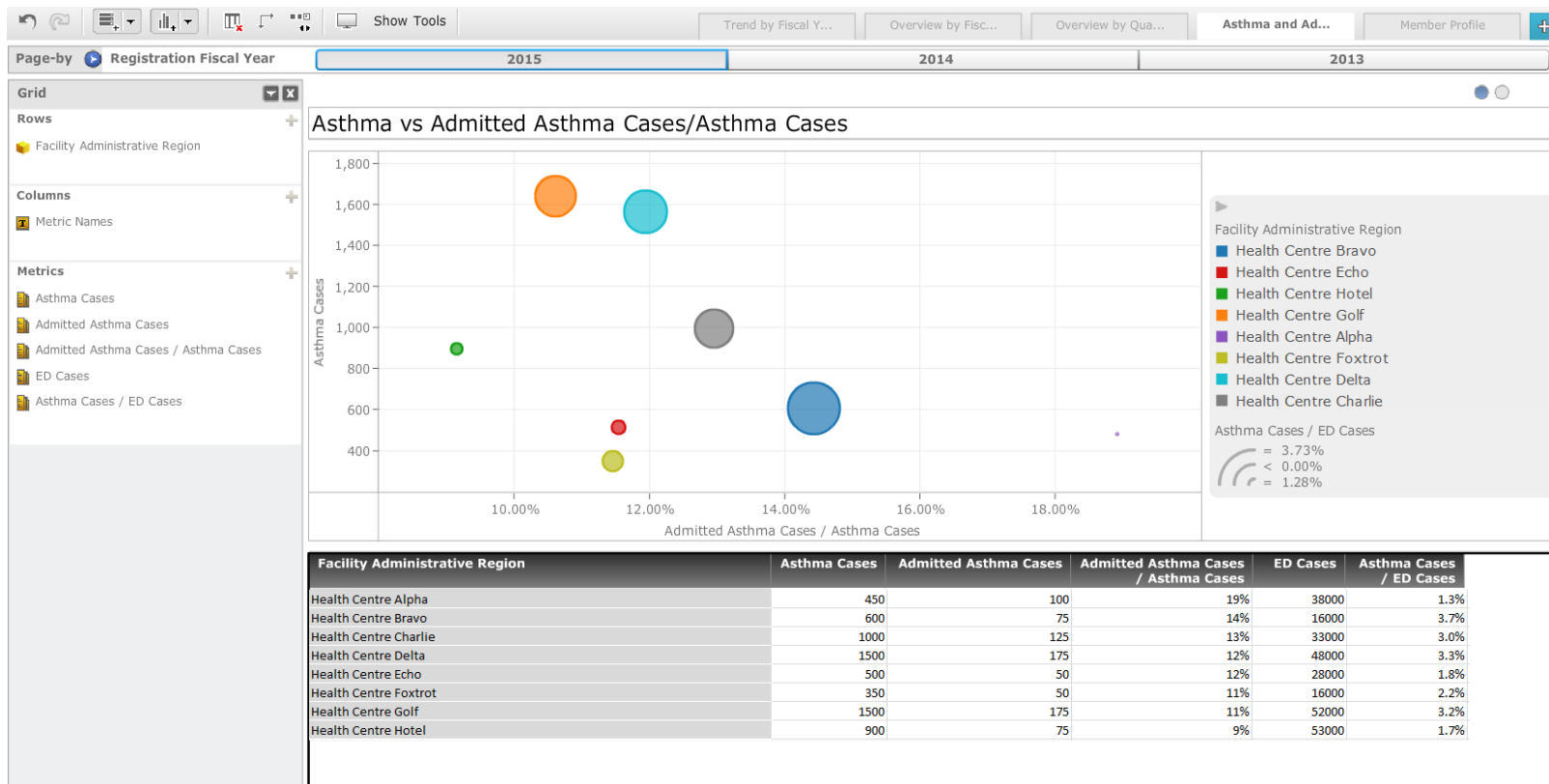
CAPHC-CPDSN Members

Please [click here](#) to enter the private section for [CAPHC - CPDSN Members](#)

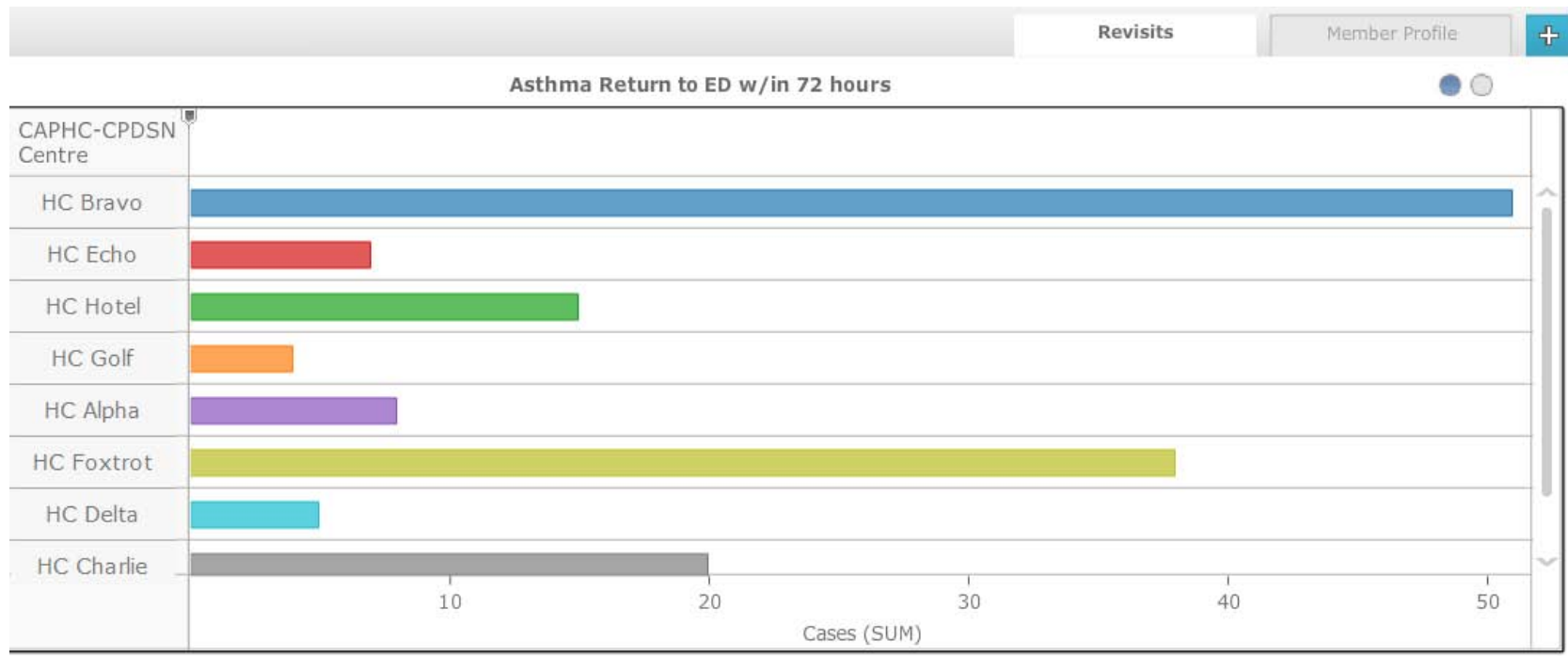
Partnership

Emergency Care for
Paediatric Asthma

Trends and compares



Trends and compares



Explore the result

Creates a custom facility level report that:

- Looks at the demographics of the admitted or return patients
- Looks at other comorbidities or interventions they may have
- Compare with the population of patients who went home and did not return
- Connect with contacts in facilities who are seeing better results

Benefit of Portal Dashboards

Current:

- Develop your own dashboards of local or specialized interest
- Compare performance with peers
- Determine potential drivers of the results
- Monitor monthly results over time

Future:

- Follow the patient cohort across the continuum of care
- See chart level data where authorized





Canadian Institute for Health Information

Better data. Better decisions. Healthier Canadians.

cihi.ca

jkaye@cihi.ca



@cihi_icis