



Drowning in Data: What is a healthcare executive to do?

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The Smarter Health Series

WIHIR

This afternoon

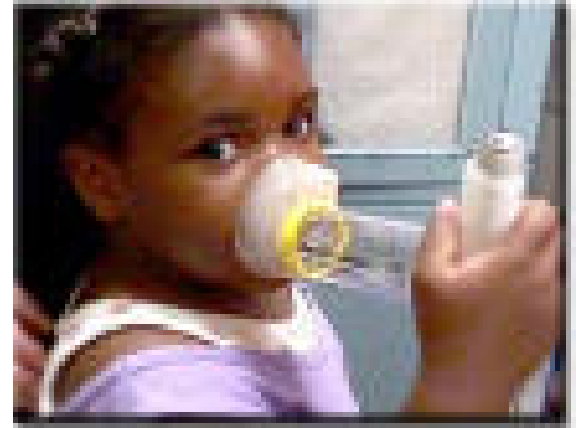
Explore some of the information management challenges that we face in Ontario's health system.

Share some emerging information management strategies being considered in Ontario.

Show how a research project to which the University of Waterloo is contributing is helping make "smarter" decisions in Ontario's hospital sector.



**Which town has the best
paediatric asthma management
program in Canada?**





Does your organisation get value for what it spends on IT?

(Does anyone know how much is spent on IT?)



How could we tell which LHIN is doing the best job of integrating care provision across the various provider sectors?





How much does it cost to deliver a baby at [hospital name of your choice] ?

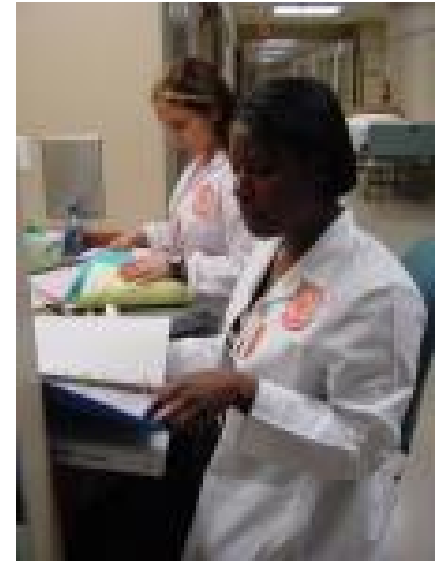
The answers to these questions (and many others) are needed by those who manage and deliver care.

Sadly, we often don't have an answer, and even when we think we know the answer, we often really don't know.

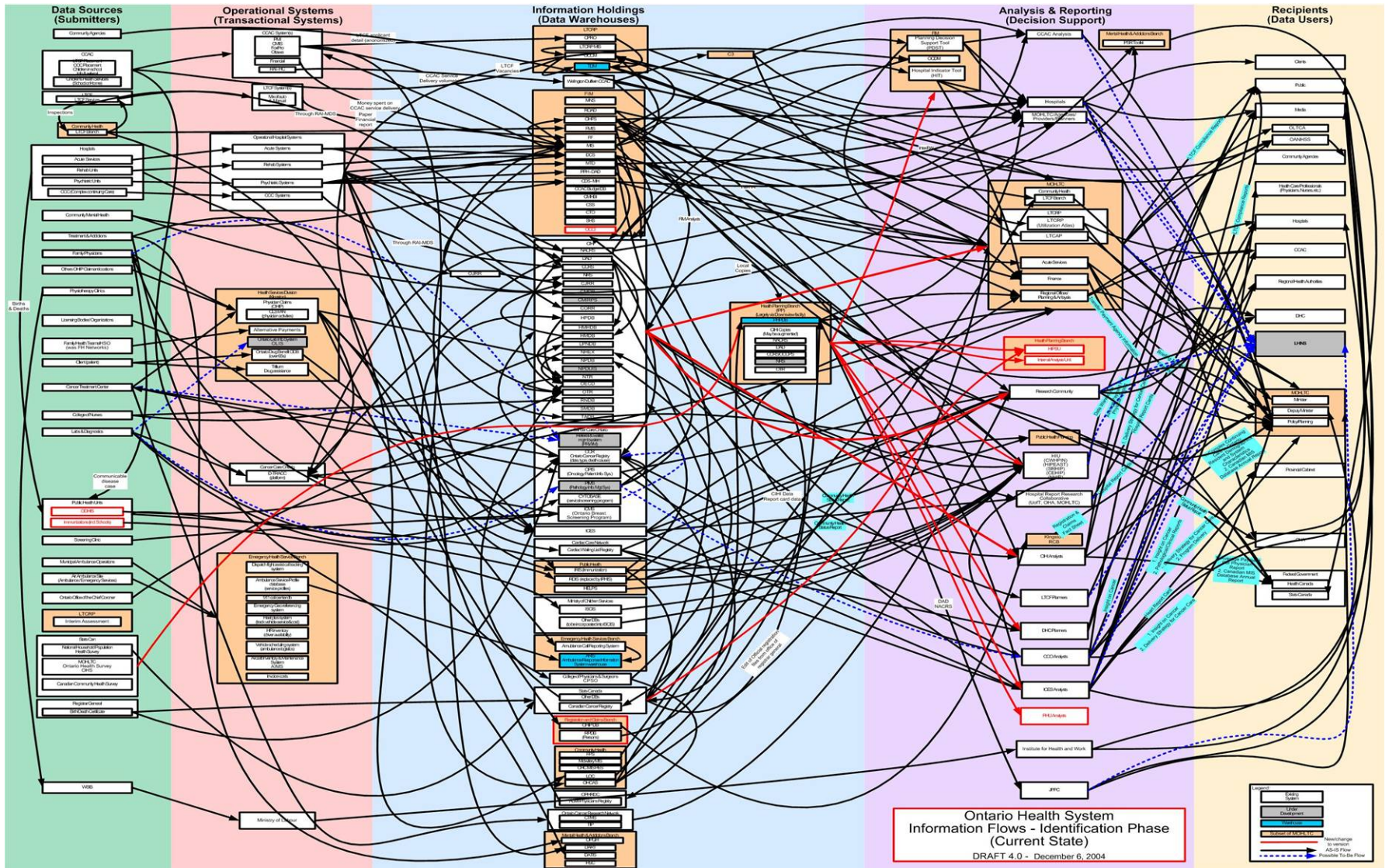
**But its not for lack of collecting
information.**

**(Information for internal decision
making, clinical management,
stewardship, compliance, funding...)**

**Any idea how much data we
collect and what we do with it?**



The gruesome truth...



Developed by the MOHLTC – Health Results Team for IM

We appear to be spending >\$600M in Ontario alone managing information.



(Maybe not a problem if we get >\$600M in benefit from this information.)

Despite our wisdom, some days we don't seem to be very smart.



Adding just one item to the Discharge Abstract Database is rumoured to cost \$1 million.

We don't know what it costs to remove something – we do it so rarely.



True or false?

- **More information leads to better decision making.**
- **Managers don't need the information they want.**
- **Users don't need to know how a system works, only how to use it.**
- **Widely sharing information improves decision making.**

What's needed?

Smart information to support smart decisions.



To get this we need a plan for managing information, and we must equip the field with tools to use the data they have.

Is there any good news?

YES!



Canadian Institute for Health Information
Institut canadien d'information sur la santé



Canada Health
Infoway Inforoute
Santé du Canada



Ontario



HOSPITAL REPORT
HRRRC
RESEARCH COLLABORATIVE

...and many others

A 4 step plan for information management.

(guided by Ontario's HRT-IM Team, and backstopped by many other players in the system)



1. Produce better data.
2. Support evidence-based decisions.
3. Measure performance.
4. Build trust.

Step 1

Produce better data.



We need data on cost, quality and resources that is more accurate, readily available, and comprehensive *while reducing the overall costs and burden of data collection.*

Real examples of wonky data.



the hospital that used \$1M more in supplies than it received

the hospital where a visit to the medical clinic costs \$10,000



the hospital where patients apparently prepaid thousands for future preferred accommodation

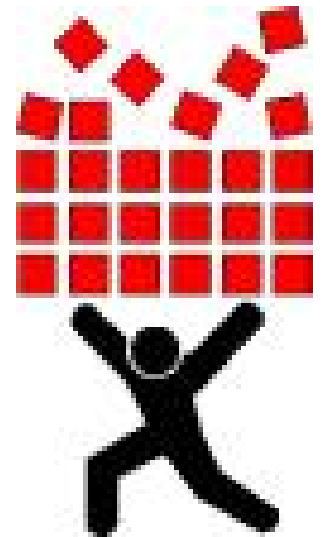
The reporting burden makes recording errors & misinterpretation problems more problematic.



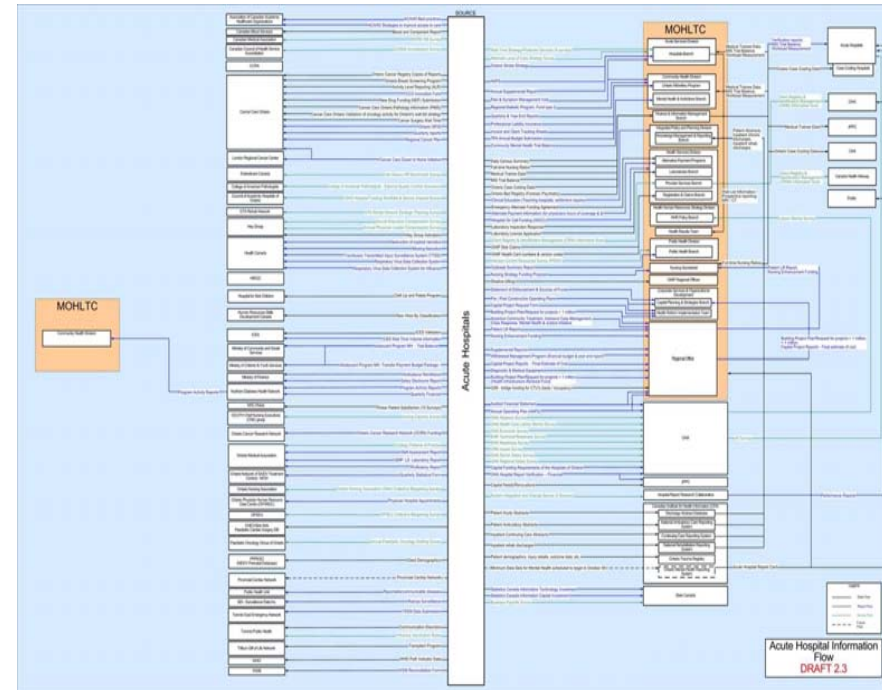
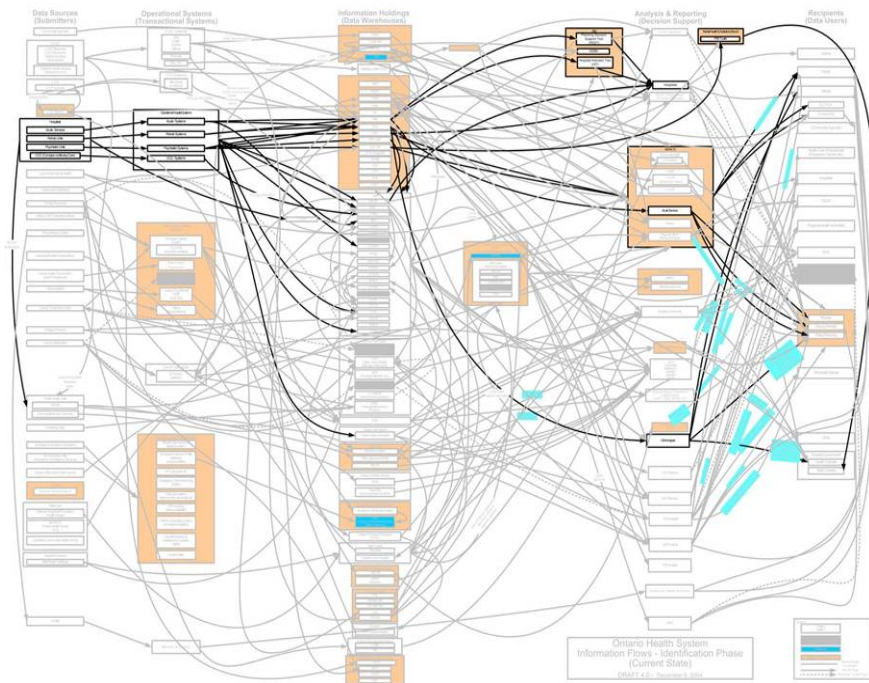
And then there are the data challenges caused by creative application of the "rules."

Some of the many ideas being explored to help produce better data...

- reduce the collection burden (every data flow & report is being examined for relevance, duplication, etc.)
- create local data management partnerships
- data blitzes to promote capture excellence (clinical already done)



- a "cleaning house" to streamline data flows & reduce reporting burden



Developed by the MOHLTC – Health Results Team for IM

Step 2

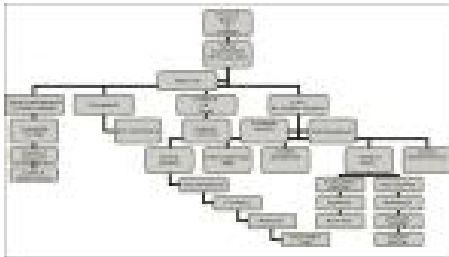
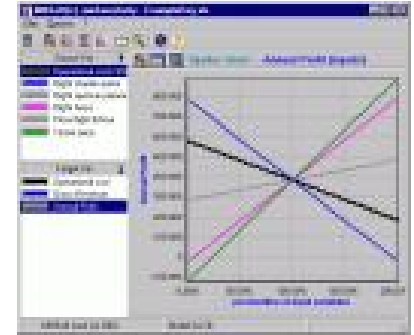
Support evidence-based decisions.

We need decision support structures that will allow the new LHINs to have timely, risk informed, information.

Users must have access to the tools and aggregated data they need to make evidence-based decisions.

Some current challenges.

Different parts of the MOH use different decision support tools that may not be aligned.



Multiple MOH points of contact and the risk that data known to one contact isn't known to another.

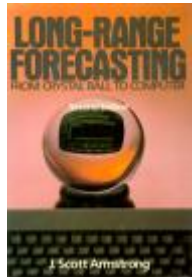
Many provider organisations need tools & data to support decision making.

A screenshot of a software application window showing a data table. The table has multiple columns and rows of data. The columns are labeled with various categories, and the rows contain numerical and text data. The application window has a standard Windows-style title bar and menu bar.

Some of the ideas being explored to help support evidence-based decisions...



**co-ordinated decision support
contact points for the LHINs.**



**long range scenario planning tools
(10-25 yr horizon) – being piloted
with the paediatric coordinating
council**

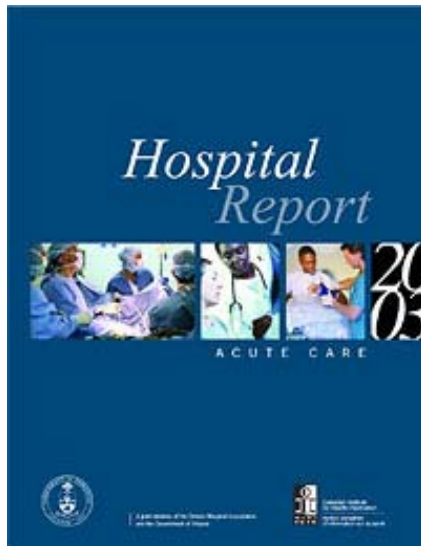


a knowledge management system

The university research community is also responding

The Hospital Report Project in Ontario

HOSPITAL REPORT
HRRRC
RESEARCH COLLABORATIVE



- **1997** – the ‘gang of 6’ led by Dr Ross Baker (UofT) with sponsorship from OHA (acute care only)
- development – proof of concept – replication mode
- by **2001**, a collaborative with over 30 researchers, multiple sectors, many institutions, now sponsored by OHA/Ontario MOH partnership.
- **2005** marks another milestone – the launch of our e-tools



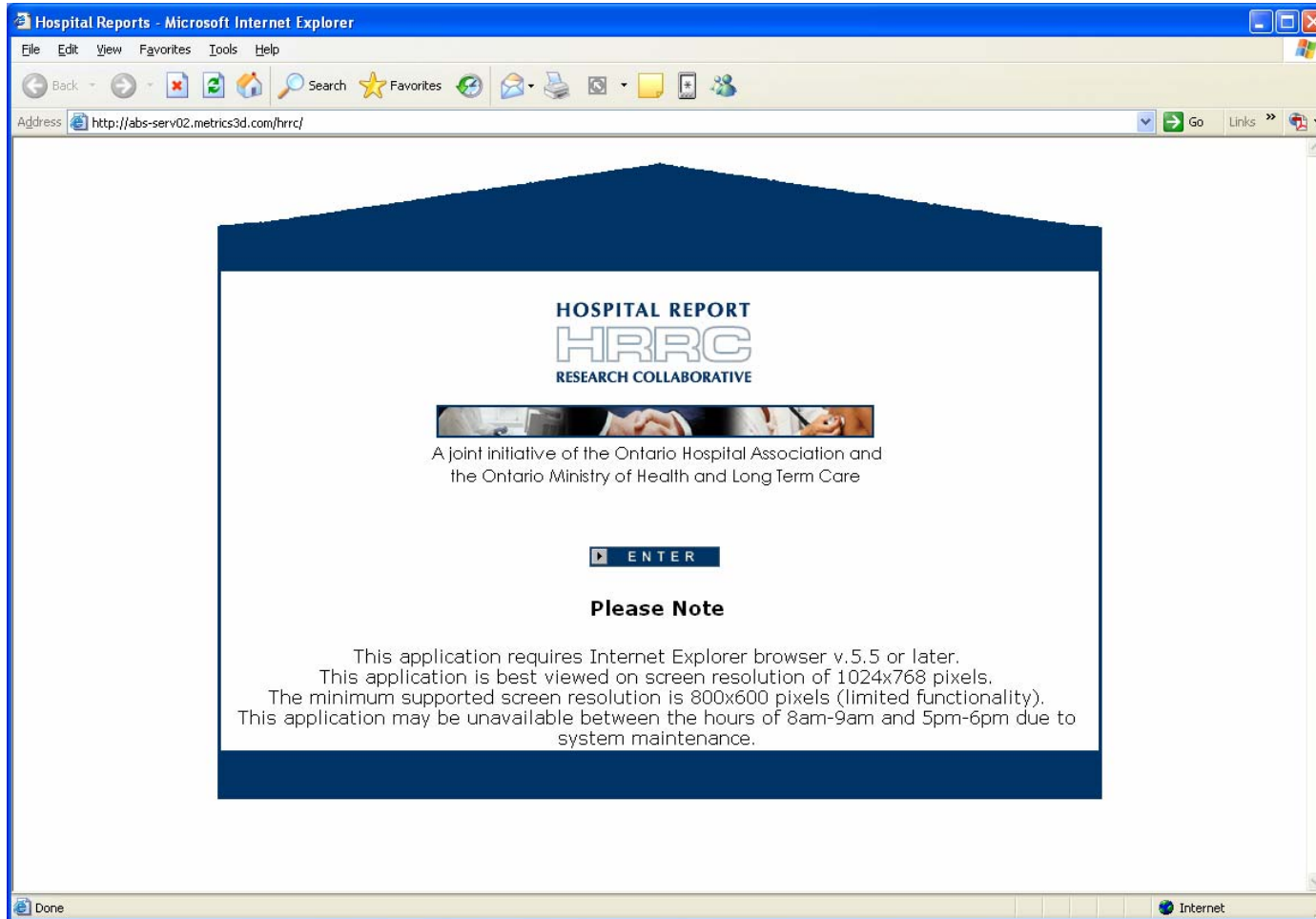
A quote from one CEO
that we think captures
our dilemma...

“I feel like we’re sitting on
a gold mine of data, but
not only do we not have
any miners, but we also
lack the mining tools.”

Let the mining begin...



The Hospital Report Research Collaborative's e-Scorecard



Among Our Objectives

Provide a more timely, user-friendly tool for performance management.

To facilitate use of performance data in hospital decision-making.

My hospital; My sites; All hospitals; Regions - by sector or a snapshot

The screenshot shows a web browser window with the URL `http://abs-serv02.metrics3d.com - HRRRC: Organization Selection - Microsoft Internet Explorer`. The page title is "HRRRC: Organization Selection". The user is logged in as "HRRRC User".

The interface features a navigation menu at the top with tabs for "My Hospital", "My Sites", "All Hospitals", and "Regions". The "Regions" tab is currently selected.

On the left side, there is a section titled "Select an Analysis Function:" with a list of options:

- Standard Executive Reports
- Acute Care
- Complex Continuing Care
- Emergency Department Care
- Rehabilitation
- Women's Health
- Performance Snapshot
- Create Your Own Reports

On the right side, there is a section titled "Organizations:" with a dropdown menu that currently displays "-- Please Select Organization --".

At the bottom of the main content area, there is a "Selected Organizations" field which is currently empty, and a status indicator that reads "Number of Organizations Selected: 0".

At the bottom of the page, there is an "INSTRUCTIONS" section that reads: "Select a Report/Function from the left. Select one or more organizations". There are also "BACK", "RUN", and "NEXT" buttons.



Users can select any hospital(s) in the province to find best practices

The screenshot shows a web browser window titled "http://hrrc.metrics3d.com - HRRC: Organization Selection - Microsoft Internet Explorer". The current user is identified as "HRRC User". The application interface includes a menu bar with "Actions", "Options", "Open Reports", and "Help". The main content area is divided into several sections:

- Navigation Tabs:** "My Hospital", "My Sites", "All Hospitals", and "Regions".
- Select an Analysis Function:** A sidebar with expandable options: "Standard Executive Reports", "Acute Care", "Complex Continuing Care", "Emergency Department Care", "Rehabilitation", "Women's Health", and "Create Your Own Reports".
- Organizations:** A list of hospitals with checkboxes for selection. The list includes: Alexandra Hospital, Alexandra Marine & General Hospital (>Yr2002), Algonquin Health Services, Almonte General Hospital, Arnprior & District Memorial Hospital, Atikokan General Hospital, Baycrest Centre for Geriatric Care, Blind River District Health Centre, Bloorview MacMillan Centre, Bluewater Health, and Brant Community Healthcare System (<=Yr2002).
- Actions:** "Select All" and "Deselect All" buttons.
- Summary:** "Organizations Shown: 148" and "Number of Organizations Selected: 0".
- Instructions:** "Select a Report/Function from the left. Select one or more organizations".
- Navigation:** "BACK", "RUN", and "NEXT" buttons.

The browser's status bar at the bottom shows "Done" and "Internet".

Or users can apply selection criteria – here 4 hospitals were found matching the conditions selected

The screenshot shows a web browser window titled "http://hrrc.metrics3d.com - HRRC: Organization Selection - Microsoft Internet Explorer". The page header includes "HOSPITAL REPORT HRRC RESEARCH COLLABORATIVE" and "Current User: HRRC User". The main navigation bar has tabs for "My Hospital", "My Sites", "All Hospitals", and "Regions".

On the left side, under "Select an Analysis Function:", there is a list of report categories:

- Standard Executive Reports
- Acute Care
- Complex Continuing Care
- Emergency Department Care
- Rehabilitation
- Women's Health
- Create Your Own Reports

The main content area is titled "Organizations:" and has three tabs: "Hospitals by Name", "Hospitals by Region", and "Hospitals by Filter". The "Hospitals by Filter" tab is active, showing a list of organizations with checkboxes:

- Hamilton Health Sciences
- Sunnybrook & Women's College Health Sciences Centre
- Trillium Health Centre**
- William Osler Health Centre

Below the list are "Select All" and "Deselect All" buttons. A status bar indicates "Organizations Shown: 4 out of 148".

At the bottom of the main content area, there is a "Selected Organizations" section with a "Filters" tab. The filters are:

- Acute is Yes
- and CCC is Yes
- and CCC Patient Days (2001/02) is Large (29,001+)
- and ED is Yes
- and Rehab is Yes
- and Total Operating Revenues [in \$millions] (2001/02) is <49 or 50 - 149 or 150 - 249
- and Total Operating Revenues [in \$millions] (2002/03) is 250 +

At the bottom of the page, there is an "INSTRUCTIONS" box that says "Select a Report/Function from the left." and a navigation bar with "BACK", "RUN", and "NEXT" buttons.

Users can perform comparative analysis, time tracking or search for best practices

The screenshot shows a web browser window titled "http://hrrc.metrics3d.com - HRRRC: Organization Selection - Microsoft Internet Explorer". The browser's address bar and menu bar are visible. The page header includes the HRRRC logo and navigation links for "Load", "Bulletin", and "Logout". The main content area is divided into several sections:

- Navigation Tabs:** "My Hospital", "My Sites", "All Hospitals", and "Regions".
- Select an Analysis Function:** A sidebar with buttons for "Standard Executive Reports", "Create Your Own Reports", "Comparative Analysis" (with a sub-option "Compare by Measures"), "Time Tracking", and "Best Practices".
- Organizations:** A section with tabs for "Hospitals by Name", "Hospitals by Region", and "Hospitals by Filter". Below this are tabs for "Selection Criteria" and "Organization List".
- Organization List:** A list of four organizations with checkboxes: "Hamilton Health Sciences", "Sunnybrook & Women's College Health Sciences Centre", "Trillium Health Centre", and "William Osler Health Centre".
- Buttons:** "Select All" and "Deselect All" buttons are located below the list.
- Selected Organizations:** A section showing the selected organizations and their filters, including criteria like "Acute is Yes", "and CCC is Yes", "and CCC Patient Days (2001/02) is Large (29,001+)", "and ED is Yes", "and Rehab is Yes", "and Total Operating Revenues [in \$millions] (2001/02) is <49 or 50 - 149 or 150 - 249", and "and Total Operating Revenues [in \$millions] (2002/03) is 250 +".
- Instructions:** A box at the bottom left with the text "INSTRUCTIONS Select a Report/Function from the left."
- Navigation Buttons:** "BACK", "RUN", and "NEXT" buttons are located at the bottom right.

The browser's status bar at the bottom shows "Done" and "Internet".

Comparative info on some financial indicators for the 4 hospitals that met my earlier selection criteria

The screenshot shows a web browser window with the URL `http://hrrc.metrics3d.com - HRRC: Measure Selection - Microsoft Internet Explorer`. The page title is "HRRC: Measure Selection" and the user is identified as "Current User: HRRC User".

The interface includes a navigation menu with "Actions", "Options", "Open Reports", and "Help". The main content area is divided into several sections:

- Available Data Elements:** A tree view showing categories like Acute, Clinical, Financial, and Patient Satisfaction. Under "Financial", "Current Ratio (Acute)" and "Total Margin (Acute)" are selected.
- Selected Data Elements:** A list containing "Current Ratio (Acute)" and "Total Margin (Acute)".
- Selected Timestamps (as of 2003/04):** A dropdown menu showing "2003/04".
- Selected Organizations:** A list of four organizations: Hamilton Health Sciences, Sunnybrook & Women's College Health Sciences Centre, and Trillium Health Centre. The "Filters" section shows "Number of Organizations Selected: 4".

At the bottom, there are "INSTRUCTIONS" and a "RUN" button. The status bar shows "Done" and "Internet".

Results can be viewed in tabular fashion, can be charted, and can be exported for further analysis

http://hrrc.metrics3d.com - HRRC: Reports: All Hospitals-Compare by Measures
Benchmark: HRRC - Microsoft Internet Explorer

Actions Help Current User: HRRC User

HOSPITAL REPORT
HRRC
RESEARCH COLLABORATIVE

Save Graph Print Download Correlation Transpose Benchmarking Logout

Performance Snapshot (Scorecard) Benchmark: HRRC Target

Performance Snapshot (Scorecard) Benchmark: HRRC Target

All Hospitals-Compare by Measures Benchmark: HRRC Target

All Hospitals-Compare by Measures
Benchmark: HRRC Target
At least one has value (Any Value)

Organization	Code	Rev1_AC	RevMinusExp_A
		2001/02	2001/02
Hamilton Health Sciences	HHS	528,060,727.00	8,908,637.00
Sunnybrook & Women`s College Health Sciences	SWCHSC	419,924,426.00	31,500,979.00
Trillium Health Centre	THC	241,771,157.00	3,836,690.00
William Osler Health Centre	WOHC	238,832,827.00	5,776,661.00
Prov Value			

Cell Summary
Min: N/A
Max: N/A
Value: N/A
Target: N/A

Information
Measure Definition
Interpretation
Formula
Org. Definition

Views
Sort Ascending
Sort Descending
Show Gauges

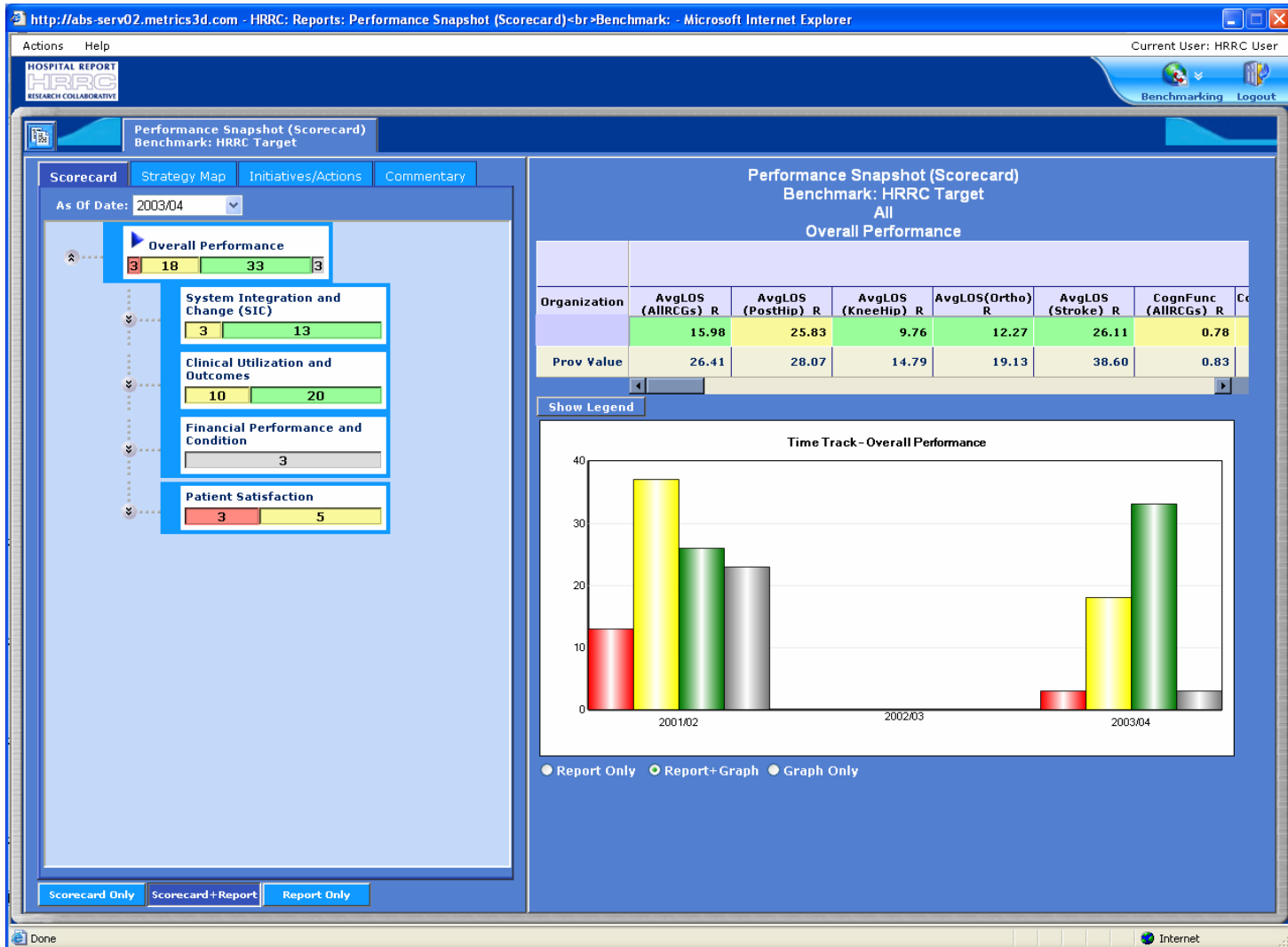
Exploration
Time Series
Indicator Comp.
PG Members

Drill Up - Down
Drill Up to Regions
Drill Down to My Sites

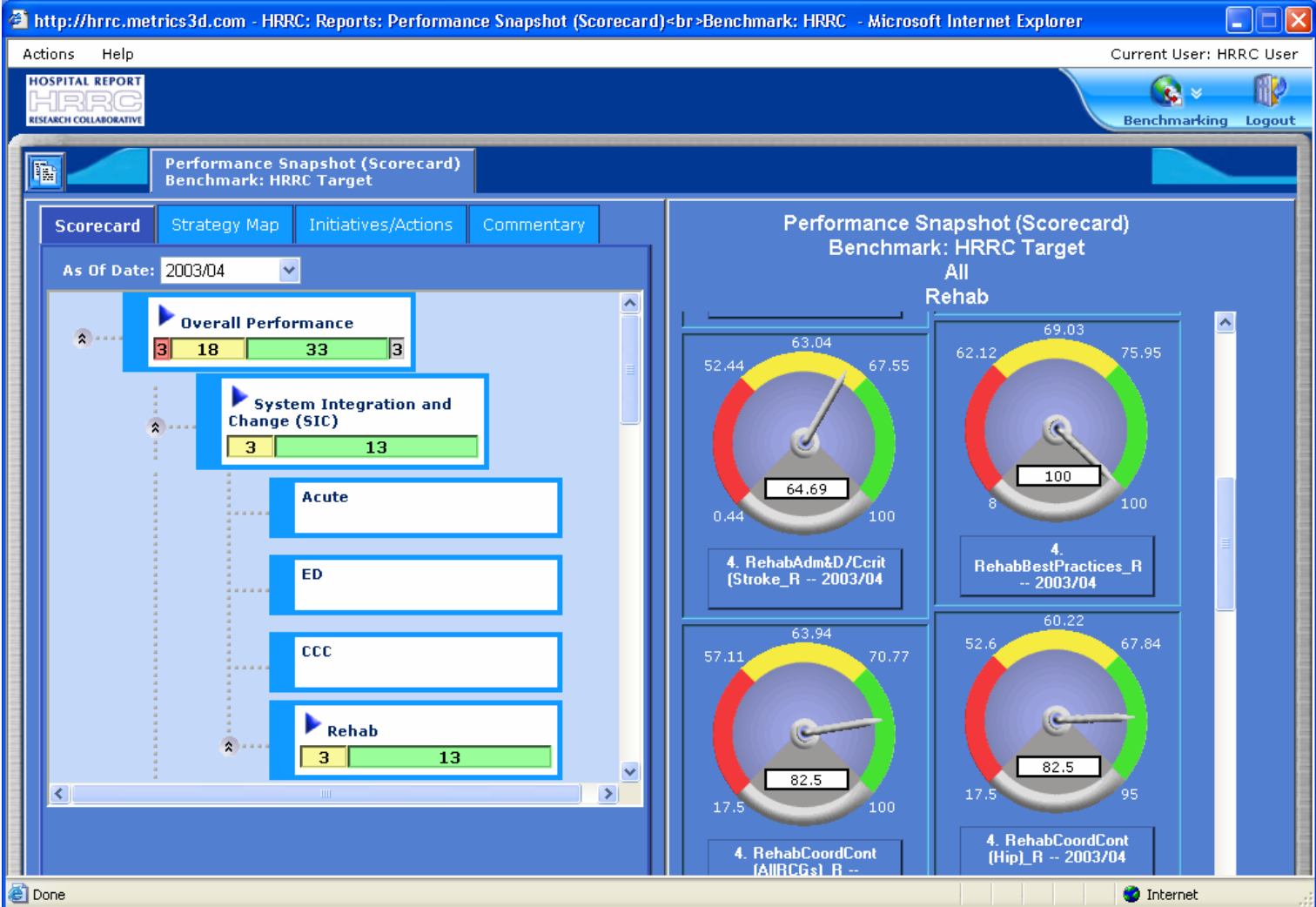
Show Legend

Done Internet

More valuable for executive use will be the performance snapshot

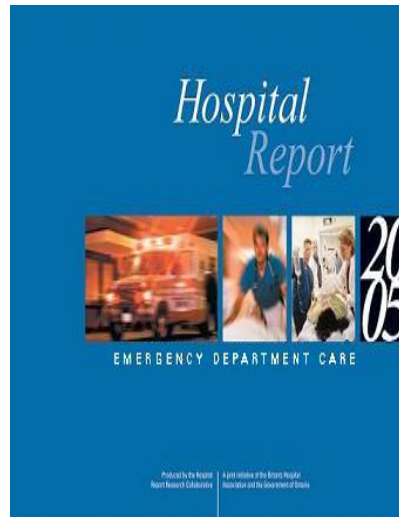
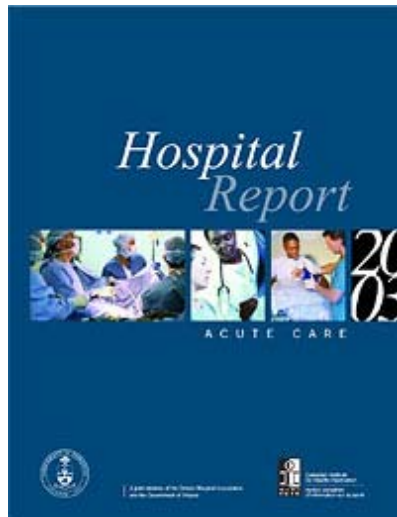


Speedometers provide a wealth of performance information.



 **ideas** at the University of Waterloo is responsible for the delivery of the e-Scorecard to hospitals across Ontario.

All 2005 results are online.



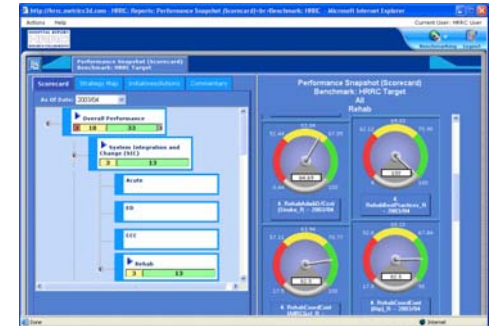
Step 3

Measure performance.

**We can't manage what we don't measure.
And we can't manage properly if we don't
measure the right things.**

Some current challenges

Sector specific performance reporting is helpful, but limits system-level management.



NO EMPTY PROMISES.

A new climate of resource flow being tied to delivering on promises.

Lack of tools to measure current performance.



Some of the ideas being explored to help support measuring performance...



strategy first, performance measurement second

increased transparency, and initiatives like the quality council

the Wizard for Hospital Indicator Calculation (WHIC Tool)



The WHIC is a good example of how the research community can contribute to the field's desire for more timely information.



WHIC applies Hospital Report algorithms to local hospital data to generate real time Hospital Report Research Collaborative indicator values.

Starting next month, the WHIC will also allow hospitals to calculate their Hospital Accountability Agreement Indicators.


Three modules – with more coming (like Emergency Dept care & Rehabilitation)

The screenshot shows a web browser window titled "Hospital Report Research Collaborative". The page features a dark blue header with the University of Toronto logo on the left, the text "WHIC" in large white letters in the center, and the "HOSPITAL REPORT HRRRC RESEARCH COLLABORATIVE" logo on the right. Below the header, the main content area is white and contains the heading "Choose the Area for Analysis" with a "Tutorial On" button to its right. A instruction text reads: "Click on 'Accountability Agreement' or one of the sectors to proceed with indicator processing." Three large, light-colored buttons are arranged vertically: "Acute Care" (with a stethoscope icon), "Complex Continuing Care" (with a group of people icon), and "Hospital Accountability Agreement" (with a document icon). In the bottom-left corner of the page, there are two smaller buttons labeled "Home" and "Help".



Supports the calculation the new hospital accountability agreement indicators

Hospital Report Research Collaborative

 **WHIC** 

Select Indicator(s) for Tutorial On
Hospital Accountability Agreement

Either use check boxes on left to select one or more indicators or or

	Indicator Domain	Indicator
<input checked="" type="checkbox"/>	1 Financial Health	HAA Current Ratio
<input checked="" type="checkbox"/>	2 Financial Health	HAA Total Margin
<input checked="" type="checkbox"/>	3 Patient Access and Outcomes	HAA ALOS and TLOS
<input checked="" type="checkbox"/>	4 Patient Access and Outcomes	HAA Relative risk of Readmission Rate to own Facility
<input type="checkbox"/>	5 Organizational Health	HAA Percent Full-Time Nurses
<input type="checkbox"/>	6 Volume	HAA Total Acute Weighted Cases
<input type="checkbox"/>	7 Volume	HAA Total Acute Cases

30 indicators are defined for Hospitality Accountability Agreement. Scroll up and down to see them all

Detailed reporting, with various export functions available.

WHIC HOSPITAL REPORT HRRRC RESEARCH COLLABORATIVE

Report Archives: Hospital Accountability Agreement [Tutorial On](#)

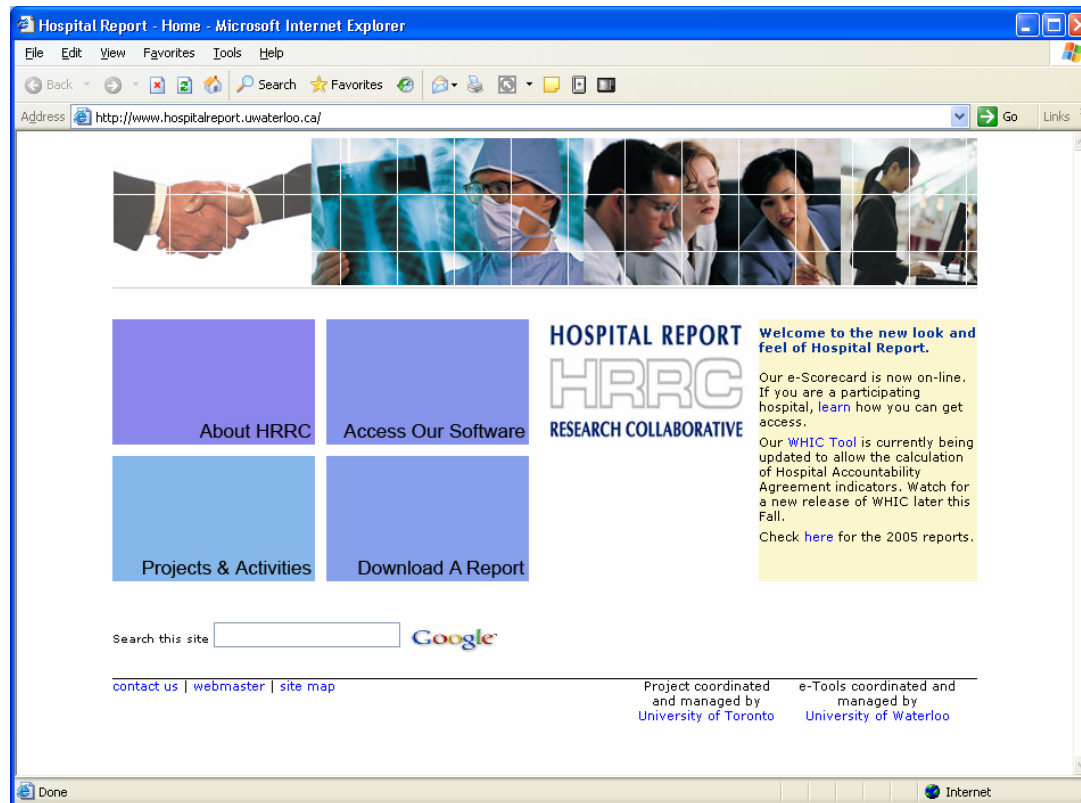
Select a Report to view: 15SEP05:08:45:56 YTD for quarters in 04-05 Hospital Accountability

Indicator	Subcategory	Value	Selected Subcategory	Year	Quarter YTD	Indicator Value	Total Cases
HAA ALDS (selected CMG-specific)	Total		All	02-03	1-Jun	2.571	21E
HAA ALDS (selected CMG-specific)	Female		sex	02-03	1-Jun	2.640	101
HAA ALDS (selected CMG-specific)	Male		sex	02-03	1-Jun	2.520	11E
HAA ALDS for all Hospital Acute Cases	Total		All	02-03	1-Jun	2.444	34E
HAA ALDS for all Hospital Acute Cases	Female		sex	02-03	1-Jun	2.818	17E
HAA ALDS for all Hospital Acute Cases	Male		sex	02-03	1-Jun	2.280	171
HAA Daily Physical Restraint Use	total		All	04-05	2-Sep	0.132	532
HAA Daily Physical Restraint Use	Female		Sex	04-05	2-Sep	0.000	2C
HAA Daily Physical Restraint Use	Male		Sex	04-05	2-Sep	0.067	5E
HAA Daily Physical Restraint Use	undifferentiated		Sex	04-05	2-Sep	0.138	457
HAA Disruptive or Severe Pain	total		All	04-05	2-Sep	0.124	532
HAA Disruptive or Severe Pain	Female		Sex	04-05	2-Sep	0.200	2C
HAA Disruptive or Severe Pain	Male		Sex	04-05	2-Sep	0.095	5E

The above report is in spreadsheet format. Use <Preview Print> to view an Adobe Acrobat version of the report.



If you work at a participating Ontario hospital, feel free to explore our tools...



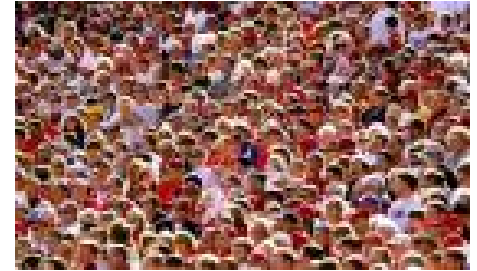
www.hospitalreport.ca

Step 4 Build trust.

Strengthening accountability by having policies & processes that provide clear lines of reporting to support continuous quality improvement.

Some current challenges

Accountability means different things to different people.



Some information management strategies can be inconsistent with building trust.

Our system sometimes doesn't always excel at transparency.



Some of the ideas being explored to help support accountability and build trust.



building a consistent framework for managing accountability relationships



shared target setting (instead of imposed target setting)



promoting data informed decision making

Looking to the Future



Either we learn to manage information, or it will manage us.

Lots of great ideas are in the hopper.

Each of us has an important role to play in bringing great ideas to life.

**Our children and our communities will be
better for your efforts.**

Good luck.



feel free to call or write...

Ian McKillop

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