

EMR Dashboards:

A ROADMAP UNDER CONSTRUCTION

Introduction

There is increasing interest and activity related to EMR dashboards in primary care. The differences between various initiatives have generated confusion about what dashboards are, what purpose they serve and who should pay for them, among other questions. This working document has been developed to help teams navigate the EMR landscape and ensure they are asking the right questions. It outlines some key characteristics to consider when comparing dashboard options.

Essentially, this document is a list of the questions you need to be asking when looking at dashboards, what kinds of answers you can expect, and the answers currently available. As mentioned, this is intended to be a working document; if you have additional information to add, please share it with us at improve@afhto.ca and help create a map of the EMR Dashboard landscape

What is a dashboard?

Dashboard is a generic term. There are multiple dashboards in primary care. Distinguishing between different dashboards can be based on the following characteristics:

- **Data source:** Dashboards can display EMR, administrative, patient-recorded, manually entered and/or calculated data.
- **Format and Content:** A graphical presentation of the current status and trends of key performance indicators.
- **Indicators:** Indicators presented in the dashboard can be selected by individual providers, groups of providers who agree on content, or external groups.
- **Frequency of update:** Dashboards can be real-time or updated periodically (e.g., monthly, annually).
- **Level of automation:** Dashboards can be populated by manual entry of data or automatically through one or more feeds from data sources.
- **Users:** Users could be patients, front-line providers, administrators, researchers and/or policy decision-makers.
- **Intended use/purpose:** Dashboards could be used to manage the care of individual patients, monitor performance of providers (individual providers or groups/teams) and/or monitor performance of the healthcare system at regional or higher levels.
- **Analytics:** Dashboards could include raw data only, summary statistics or aggregate measures based on manipulation of the raw data, including calculations to maximize value of information even in the face of variable data quality.

- **Spread across sector:** Dashboards may be available and/or relevant to all primary care providers or subsets such as providers in a specific geographic area or model of care.
- **Interactivity:** Dashboards can present data that are static as of the most recent update of the dashboard or allow users to change various aspects of data displayed – e.g., subsets of providers, time frames or specific topics, etc.
- **Mandate and cost:** Providers can choose to contribute to/access dashboards or can be required to participate in them, with or without a registration cost.
- **Sponsor:** The development work to create a dashboard can be paid for by the users themselves, a partnership between users and developers or an external party such as MOHLTC.
- **Ownership of data:** The ownership of the data used to populate the dashboard could remain in the hands of those providing it or those sponsoring the development/deployment of the dashboard. The same applies to the ownership of the data displayed on the dashboard – i.e., aggregate/summary measures, etc.

Role of EMR data quality

Any dashboard displaying EMR data will be affected by EMR data quality. Some dashboards will be more or less overt about addressing data quality. Some have data quality indicators – e.g., D2D, OMD dashboard proof of concept. Some incorporate processes to optimize data quality – e.g., CPCSSN algorithms. Regardless of how the dashboard acknowledges, reports or attempts to address it, improving EMR data quality remains an important responsibility of primary care providers.

There are a number of actions providers can take to improve EMR data quality. At a high level, these include:

- **Improving consistency of data entry:** CIHI picklists at a system level or custom forms built locally to prompt users to enter specific data.
- **Correcting inconsistent data entry:** Data cleaning efforts (e.g., [North York data cleaning manual](#), ALIVE project) which improve data quality on a one-time basis. It is important to note that these efforts must be supported by tools to ensure ongoing consistency of data entry or the data quality will revert back to pre-cleaning levels of quality in very short order.
- **Standardized data extraction/compilation:** As CPCSSN, EMRALD and D2D have demonstrated, it is possible to use EMR data “as is” through sophisticated data mining and algorithms. OMD dashboard is attempting to leverage this to optimize the value of the data presented in the proof of concept EMR dashboard under development.

Comparison of dashboards available to AFHTO members

Table 1 (next page) compares several dashboards according to the criteria described above.

Table 1: Comparison of EMR Dashboards (DRAFT)

	DATA SOURCE	INDICATORS	FREQUENCY OF UPDATE	LEVEL OF AUTOMATION	USERS	INTENDED USE/PURPOSE	ANALYTICS	SPREAD ACROSS SECTOR	INTERACTIVITY	MANDATE	COST	SPONSOR	OWNERSHIP OF DATA
LOCALLY DESIGNED DASHBOARDS	various	front-line providers	varies	varies	front-line providers	care management	Likely not	Local users	varies	voluntary	Operational budget	users	users
D2D	various	front-line providers	bi-annually	none	Managers, front line providers	QI, Perf measurement	Some	AFHTO	some	voluntary	QIDS budget	AFHTO	AFHTO and users
ONTARIOMD PROOF OF CONCEPT	EMR	various	real-time	automatic	front-line providers	care management	Likely not	Pilot for prov. spread	some	TBD	TBD	OntarioMD	users
INTELLIDASH	EMR	HQO, practice management, Thrombosis Canada, outside use	real-time	automatic	front-line providers	QI, care management	Yes	OSCAR, Nightingale, Accuro users	some	voluntary	\$20 per physician per month	users	users
TELUS	EMR other sources in the works	Clients, sponsor, library of starting indicators	real-time	automatic	front-line providers, managers, sponsor	QI, care management	Yes	PS Suite, MedAccess and Wolf users across Canada	all	voluntary	Development, maintenance cost	many ranging from local care teams to provinces	Users and Sponsors
BIRT	EMR	Front line providers, admin	nightly	automatic	managers	QI, Perf measurement	Yes	CHCs/AHACs	some	required (for CHCs)	?	AOHC	users
CPCSSN	EMR	CPSSSN	Quarterly?	semi automatic	Managers, front-line providers	QI, System performance	Yes	CPCSSN participants	Yes via DPT	voluntary	none	CPCSSN	CPCSSN and user
EMRALD	EMR, admin data	EMRALD	Quarterly?	semi automatic	Managers, front-line providers	QI, research	Yes	EMRALD participants	none	voluntary	none	EMRALD	EMRALD and user
PRIMARY CARE PRACTICE REPORT	admin data	HQO, ICES	bi-annually	automatic	Managers, Physicians	QI, Perf measurement	Some	All PC physicians, FHT & CHC EDs	none	voluntary	none	HQO	ICES

Testimonials and Contact Information

User testimonials about the dashboards included in Table 1, along with links to their developers' websites, where available, are given below. *Please note: As this is a living document, we will be adding testimonials as we receive them. If you have experience with one or more of these dashboards and wish to contribute a testimonial to this document, please provide this feedback via improve@afhto.ca.*

- **Locally designed dashboards:** These dashboards vary in scope and complexity, and can be built within excel or use professional data-analytics software. An example would be an excel file with data from EMR queries to show in graph format cancer screening rates.
- [D2D interactive report](#)
- [OntarioMD EMR Physician Dashboard](#)
- [intelliDASH](#)
- [Telus Health Outcome Services](#)
- **BIRT-** A centrally-hosted system that consolidates data and enable robust data analysis for Community Health Centres, enabling review of data across the sector and benchmark performance (i.e., by peer group, LHIN, or program). BIRT is sponsored by the Association of Ontario Health Centres on behalf of its members.
- [Canadian Primary Care Sentinel Surveillance Network \(CPCSSN\)](#)
 - [Data Presentation Tool \(DPT\)](#)
- [Electronic Medical Record Administrative data-Linked Database \(EMRALD\)](#)
- [HQO Primary Care Practice Reports](#)