

Power in Numbers: Unlocking the potential of the diagnostic data in your EMR

Primary Source

Data quality of electronic medical records in Manitoba: do problem lists accurately reflect chronic disease billing diagnoses?
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The GP Environment is a complex landscape.

Low prevalence of anything particular,
high prevalence of illness

Complexity of patient = co-morbidity + stability

Complexity of encounter:

- 3-6 health problems per encounter.
- 30 encounters per day, per physician.

- Course of disease
- Early in course
- Undifferentiated complaints

Time:

- Longitudinal person oriented information
- Evolution of Health Problems over Time

Information overload, No institutional support:

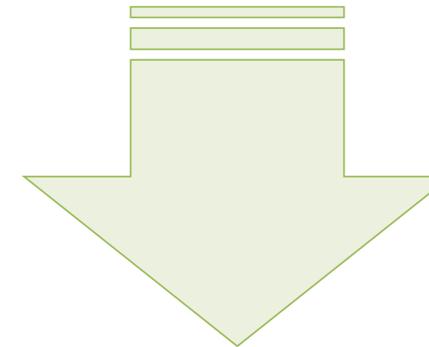
- 10% referrals to specialists: not gate keepers,
- multitasking
- Acute diagnosis and management
- Chronic disease management
- Screening
- preventive health care
- Secondary care, occ tertiary care, not only primary care
- Coordination of care
- Multiple guidelines

What is EMR Completeness?

The degree to which different fields in the EMR contain electronic patient information in the form of data. For research purposes, EMR completeness has been defined as “the number of patients who had received a prescription for a specific chronic disease and who also had that disease documented in the EMR’s problem list.” (CFP Singer 2017) Only those medications with a single indication were chosen.

Methodology

Using the same methodology as a study that was conducted in 18 primary care clinics in Manitoba, we analyzed the completeness of our EMR Data.



Measuring Up

We noted significantly higher rates of EMR completeness at our site than at those sites that participated in the Manitoba study.

We wonder how other clinics in Ontario measure up.

If the Manitoba study is representative of the typical Ontario FHT, are problem lists an accurate source of healthcare data?

Drug	Indication in problem list	Completeness of problem List – Manitoba study	Completeness of problem List - BFHT	Difference (BFHT-Manitoba)
Allopurinol	Gout or hyperuricemia	50%	70%	20%
Bisphosphonates	Osteoporosis, osteopenia, compression fracture	58%	90%	32%
Donepezil*	Dementia, Alzheimer's, cognitive impairment	62%	sample too small*	*
Hypoglycemic Agents	Diabetes, gestational diabetes, Obesity BMI>30, impaired fasting glucose.	82%	98.2%	16.2%
Levothyroxine	Any thyroid related diagnosis - hypothyroidism, thyroiditis, goiter	64%	86.9%	22.9%
Statins	Diabetes, any lipid disorder including low HDL, hypertriglyceridemia, any coronary artery disease including MI ASHD stents bypass, peripheral vascular disease, stroke and CVD,	45%	91.4%	46.4%
Tiotropium	COPD, asthma	58%	85%	27%
Triptans	any headache	50%	69.8%	19.8%
Zopiclone	insomnia, anxiety, depression, sleep apnea, bipolar	11%	44%	33%

How have we been able to maintain a higher degree of EMR completeness than the clinics in Manitoba?

Our criteria for valid use of a medication is more complete than the Manitoba study, so some degree of being better is expected.

We have programmed EMR reminders using the same information contained in the drug and problems table above. The reminders are designed to catch the provider’s attention when a drug is prescribed without the presence of an associated indication in the problem list.

What are the possible reasons that problem lists are incomplete?

It is possible that some drugs are a “trial of therapy”, to see if they work before a true diagnosis is made. Some problems may seem so obvious to a provider that putting them in a problem list appears superfluous. (Example: Is it really necessary to put Obesity in a problem list when the patient in front of you is obviously obese, if you have measured the BMI at 40?) Adding and coding a problem in an EMR problem list is perceived by some providers as an extra and time consuming step that is not needed clinically, but is needed only for practice statistics, or for research, analysis, or QI Initiatives. Thus, the lack of a perceived immediate benefit affects the decision. Providers may also differ in opinion on what should and should not go on the problem list, in addition to when to remove or add a problem from the list.