Patient Registries
Improving Outcomes
DL 215

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Version 1.0
Introduction
Patients, payers and government initiatives demand continual quality of medical care while significantly decreasing the costs associated with delivering quality healthcare. Recent initiatives reward providers to meet increasingly stringent requirements to adopt technology and best practices to drive change. Providers are challenged to execute on parallel initiatives aimed at improving quality of care, improving workflow efficiencies and track pay for performance requirements.

Registries
Registries offer providers an innovative tool to focus on improving quality of care, measuring progress, as well as providing real-time information on patients. Registries also assist in achieving pay for performance initiatives.

An increasing number of providers are adopting electronic health record (EHR) applications to assist them in managing and recording the care provided to their patients. The patient information contained within the EHR provides the raw data that is needed to create registries propelling quality transformations within their practice as well as contribute to clinical analysis. As more providers make the transition to computerized clinical information systems, there will be greater opportunities to use the data for population-based care of chronic diseases and identify quality improvement initiatives.

Registries can be simple reports or spreadsheets that present information to healthcare professionals and encapsulate data to identify disease patterns as well as identify opportunities to improve workflows. The use of spreadsheets offers providers a simple interface to load, group and sort data. Disease management reporting using a spreadsheet is straight-forward and does not require intensive application knowledge to manipulate the data.

Registry reporting provides clinical indicators for target patient populations in addition to providing the ability to trace a patients’ progress as they receive treatments, medications and services aimed at improving quality of health.

Once registry reporting is implemented, the same data set can be utilized covering a number of scenarios. Applicable uses for registries can be:

- Identifying patients who are due/overdue for appointments, labs and treatments
- Generate reminders and care-planning for individual patients.
- Provide community care teams and researchers with disease indicators.
- Monitor patient’s indicators and provide evidence to support clinical care strategies
Targeting Patient Population and Conditions
Registries are meant to be a tracking tool and provide practices with concise information focusing on a segment of their patients and/or conditions. A practice will generate a number of registries to concurrently track their patients and their conditions.

Normally, registries have a focus on the patients that will be followed. Often the focal point will be a disease state such as diabetes, congestive heart failure, hypertension or a status, such as immunizations or smoking status.

Selection of data fields to include with the registries is crucial as the data fields related to the patients’ clinical values and demographics must be measurable and consistent. An example of the data fields that could be included in registry reports include:

- Demographics such as age, gender, type of diabetes, date of diagnosis, payor and smoking status.
- Risk factors such as blood pressure, lipids (total cholesterol, high-density lipoprotein [HDL], low-density lipoprotein [LDL], triglycerides) and medications.
- Test data such as micro-albumin screening; monofilament test for neuropathy; dilated retinal exam and medications.

WNY Beacon Registry Initiative
The Western New York Beacon initiative is actively engaged to improve clinical outcomes and patient safety through the use of health information technology and health information exchange, focusing on improving overall diabetes care management. To measure the impact that our clinical transformation projects have on the community; the Western NY Beacon team implemented a comprehensive registry report that uses data collected from our participating practices. The registry report consists of demographic and clinical information for patients diagnosed with diabetes. The compiled data is de-identified and provides us with a set of distinct indicators that enable us to measure the impact of the changes that take place within a practice as well across Western NY.

Patient Qualification
Patients must meet the following criteria to be tracked on the Beacon registry report.

1. **Age** – patients can only be 18 to 74 years old.
2. **Diabetic** – patients must have an ICD-9 diagnostic code of 250.0 to 250.9
3. **Periodicity of Care** – patients must have been treated by their primary care physician within the last 24 months at the time of reporting.
Patient Registry Data Elements
The following demographic and clinical data elements will be collected from the practices EHR solution for each patient that meets the qualifications.

- Age
- Gender
- Race
- Ethnicity
- Language
- Date of most recent visit / last visit
- Diabetes Status ICD-9 code (250.0 to 250.9)
- Last HbA1c value including result date
- Last LDL-C value including result date
- Last Nephropathy (Micro Albumin) value (measurement of the Albumin to Creatinine ratio including result date
- Last Dilated Retinal Exam date
- Influenza Vaccine Status - date of most recent vaccination
- Pneumococcal Vaccine Status - date of most recent vaccination
- Smoking Status (Yes, No or Not Documented) and associated date
- Last “at-rest” Blood Pressure (systolic / diastolic) readings and result date.
- Prescription List exists (Yes/No).
- Prescription Totals – Number of prescriptions taken by a patient
- Allergy Totals – Number of allergies listed for a patient
- Co-morbidity factors – an indication whether the patient is being treated for other diseases or conditions in addition to diabetes.
<table>
<thead>
<tr>
<th>Condition</th>
<th>Associated ICD9 codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypertension</td>
<td>401.0 to 405.9</td>
</tr>
<tr>
<td>Coronary Artery Disease</td>
<td>410.0 to 414.9</td>
</tr>
<tr>
<td>Hyperlipidemia</td>
<td>272.0 to 272.4</td>
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<tr>
<td>Renal Disease</td>
<td>582 to 582.9</td>
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<td></td>
<td>583 to 583.7</td>
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<td>585</td>
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<tr>
<td></td>
<td>588 to 588.9</td>
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<tr>
<td>Cerebrovascular disease</td>
<td>430.0 to 438.9</td>
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<tr>
<td>Peripheral vascular disease</td>
<td>443.9</td>
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<tr>
<td></td>
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<td></td>
<td>785.4</td>
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<tr>
<td>Chronic Obstructive Pulmonary Disease</td>
<td>490.0-496.9</td>
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<td>Arthritis</td>
<td>714.0 to 715.9</td>
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<tr>
<td>Depression</td>
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<td></td>
<td>296.3</td>
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<td></td>
<td>311.0 to 311.9</td>
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<tr>
<td>Cancer</td>
<td>140.0 to 208.9</td>
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</tbody>
</table>

**EHR Platforms**

Patient demographic and clinical information are produced by individual practices and resulting data is aggregated into a single data repository where the data is analyzed. The different EHR vendor solutions that data will be collected from include:

- Medent
- NextGen
- eClinical Works
- AllScripts (Enterprise and Professional)
- Amazing Charts
- STI- Chartmaker
Security
All registry reports consumed for the Beacon registry report are “de-identified” meaning that all data elements are removed that enable identification of an individual. The U.S. Department of Health and Human Services established criteria to ensure that all health care providers who electronically transmit any health information will protect the individual’s health information.

The U.S. Department of Health and Human Services established a standard consisting of eighteen (18) measures to “de-identify” patient health data.

Summary
Registries are an indispensable catalyst capable of providing healthcare professionals with qualitative intelligence to improve patient care and ignite quality improvement initiatives. Disease registries can provide vital information in quality improvement efforts such as Pay for Performance and help meet Meaningful Use standards.

The WNY Beacon project has deployed a registry report that collects key metrics from individual practices (De-identified) and compiles data into a single data repository. The resulting registry data sets are evaluated to provide a reproducible method of comparing outcomes to measure WNY Beacon effectiveness as they implement various clinical interventions.

About WNY Beacon
In May 2010, the Western New York community with HEALTHeLINK as the lead grantee, received a $16.1 million award, one of the largest Beacon Community Awards in the country from the U.S. Department of Health and Human Services. The mission of the WNY Beacon Community is to improve clinical outcomes and patient safety through the use of health information technology and health information exchange, focusing on diabetes care management.

HEALTHeLINK is Western New York’s clinical information exchange. For more information, please visit www.wnyhealthelink.com.