

A Controlled Vocabulary for “Reason for Visit” in Ambulatory Encounters

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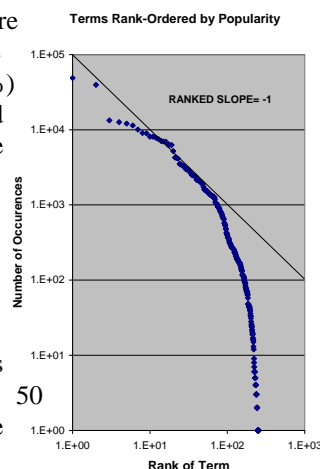
Objective: To enable improved health surveillance and clinical decision support within ambulatory Electronic Health Record (EHR) systems.

Background: In recent years, there has been much interest and some progress in defining a controlled vocabulary for emergency department chief complaints [1]. As EHRs become more widespread in outpatient settings, standards for structured data collection will enhance the utility of these systems for public health surveillance, investigation, and response. In one recent example, patients with “Diarrhea” or “Gastroenteritis” as reason for visit triggered an alert to request stool samples if patient reported “Veggie Booty” consumption in past week.

Methods: the Institute for Family Health is a community health center network offering comprehensive ambulatory care using the Epic™ EHR system. One or more “Reason for visit” terms can be selected from a list of nearly 1,000 terms that have been modified and added to over time (below). Patient encounter data from July 1st, 2004 to June 30th, 2006 was examined.

Results: There were 291,298 unique encounters; 5,627 (1.9%) had no documented reason for visit. There were 410,633 reasons listed, comprised of 254 unique terms and 21,951 (3.8%) listed as “Other”.

The top 10 terms captured 45%, the top 50 captured 83%, and the



top 100 terms captured 96% of these visits. As shown in Figure (right), the frequency of occurrence of the 10-100th ranked terms was consistent with Zipf’s Law, with a ranked slope of -1 on a log-log plot, but lower ranked terms occurring much less frequently than would be expected.

In contrast to emergency department chief complaints, only 43% of the reasons for visit related to specific acute complaints. The remaining reasons listed related to generic visit types (e.g. “physical exam”, “lab draw”, “refill request”, “referral request”, “social work counseling”), or chronic disease follow-ups (esp. for Diabetes, HIV, Asthma, and Depression).

The most common of the 137 acute complaints are listed in the table below. Terms that correspond to all of these terms (as well as their more specific child concepts) can be found within the SNOMED-CT® (Systematized NOMenclature of MEDicine-Clinical Terms) terminology.

Reason for Visit	Frequency	Percent	Cumulative Percent
EYE PROBLEM	13338	7.6%	7.6%
COUGH	12649	7.3%	14.9%
PAIN	11445	6.6%	21.4%
COLD SYMPTOMS	8970	5.1%	26.6%
SORE THROAT	7513	4.3%	30.9%
FEVER	7080	4.1%	34.9%
HEADACHE	6980	4.0%	38.9%
RASH	6955	4.0%	42.9%
BLOOD PRESSURE	6383	3.7%	46.6%
BACK PAIN	5186	3.0%	49.5%
EAR ACHE	4147	2.4%	51.9%
DIZZINESS	3344	1.9%	53.8%
STOMACH ACHE	3271	1.9%	55.7%
FATIGUE	2975	1.7%	57.4%
VOMITING	2900	1.7%	59.1%
ABDOMINAL PAIN	2696	1.5%	60.6%
DIARRHEA	2591	1.5%	62.1%
LEG PAIN	2480	1.4%	63.5%
CONGESTION	2480	1.4%	64.9%
KNEE PAIN	2423	1.4%	66.3%
CHEST PAIN	2172	1.2%	67.6%
SINUS PROBLEM	2133	1.2%	68.8%
SKIN PROBLEM	2130	1.2%	70.0%
FOOT PAIN	2108	1.2%	71.2%
THROAT PROBLEM	2070	1.2%	72.4%
SWELLING	2022	1.2%	73.6%
ALLERGIES	1943	1.1%	74.7%

Conclusions: Terms used to capture ambulatory reasons for visit must accommodate generic visit-types and follow-ups of chronic conditions as well as acute complaints. A hierarchical vocabulary for selecting acute complaints at the desired level of detail based on a subset of the SNOMED-CT vocabulary will be explored.

[1] Travers, Debbie A, Bodenreider, Olivier Identifying Medical Concepts in Free Text Chief Complaint Data Acad Emerg Med 2002 9: 511