

# Using Electronic Health Records to Drive Quality Improvement in Blood Pressure Control and Other Million Hearts Measures for Disparate Populations

Laura Nasuti, MPH<sup>1</sup>; Patricia Daly<sup>1</sup>, RN MS; Andrea Pinzon, MPH<sup>1</sup>; Ellen Hafer MTS MBA<sup>2</sup>; Joanna Kreil, MPH MSW<sup>2</sup>; Mark Josephson<sup>2</sup>; Thomas Land, PhD<sup>1</sup>.

As part of CDC's Community Transformation Grant program, the Massachusetts Department of Public Health (MDPH) entered into a partnership with the Massachusetts League (League) of Community Health Centers (CHC) to increase preventive care in primary care settings. By adopting a quality improvement (QI) strategy, we promote positive change in national Million Hearts™ ABCS measures (ABCS: Aspirin, Blood Pressure, Cholesterol, and Smoking).

Each quarter, the League transfers encounter-level electronic health records data (EHR) to MDPH which includes every adult medical encounter from participating CHCs. These data extracts from the EHR are created from the CHIA DRVS system (Community Health Information Association Data Repository & Visualization System). Using this data, feedback reports are created with input from the QI coach that focus on ABCS measures for individual providers and teams. Data on race/ethnicity and preferred language is used to identify populations to focus on for quality improvement activities.

**Table 1. Demographics of the Adult Patient Population in Participating Community Health Centers in Massachusetts from Electronic Health Record Data\*, 2013.**

	n	%
<b>Gender</b>		
Female	15,880	58.3
Male	11,360	41.7
<b>Race/Ethnicity</b>		
White, NH	9,329	34.3
Black, NH	13,015	47.8
Hispanic	2,597	9.5
Other, NH	1,081	4.0
Missing	1,218	4.5
<b>Preferred Language</b>		
English	15,876	58.3
Cape Verdean Creole	3,427	11.9
Haitian Creole	1,903	7.0
Portuguese	2,962	10.9
Spanish	1,523	5.6
Other	1,705	6.3
Missing	24	0.1
<b>Age Categories</b>		
18-37	10,604	38.9
35-44	5,428	19.9
45-54	5,296	19.4
55-64	3,545	13.0
65+	2,367	8.7

\*Data extracted using the CHIA DRVS.

**Table 2. Hypertension Control Among Adult Patients with a Hypertension Diagnosis, Participating Community Health Centers, 2013.**

	Total number with Hypertension Diagnosis*	% with blood pressure <140/90 mmHg at last visit
	n	%
<b>Race/Ethnicity**</b>		
White, NH	1,863	60.9
Black, NH	3,723	51.1
Hispanic	506	58.9
Other, NH	231	58.4
Missing	177	63.8
<b>Preferred Language**</b>		
English	3,260	55.3
Cape Verdean Creole	1,136	56.6
Haitian Creole	894	47.0
Portuguese	518	64.3
Spanish	322	57.5
Other	367	53.1
Missing	3	100.0

\*Hypertension diagnosis was identified as ICD-9 codes: 401, 402, 403, 404.

\*\*Chi-square significance testing p<0.001 at alpha=0.05.

The medical records indicate differences in hypertension control among different racial/ethnic groups as well as by preferred language. EHR data can be used to drive change at the provider-level through the creation of individualized and team feedback reports. QI coaches working in conjunction with MDPH and providers ensure that reports reflect the concerns of care teams. EHR data that can be customized for in-depth data exploration can support quality improvement efforts in primary care settings. In the long-term, feedback reports will focus on improved health outcomes.

For more information on this project, please contact Laura Nasuti ([laura.nasuti@state.ma.us](mailto:laura.nasuti@state.ma.us))

1. Massachusetts Department of Public Health, Bureau of Community Health and Prevention
2. Massachusetts League of Community Health Centers