A Retrospective Cross Sectional Analysis of Asthma, Hypertension, and Diabetes Emergency Encounters in Philadelphia; New Insights for Community Health Needs Assessments

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BACKGROUND

Community Health Needs Assessments and the developed strategies correspondingly. As a result, findings provide opportunities to improve the health of communities by targeted, coordinated efforts to meet the community needs. Thomas Jefferson University Hospital’s 2016 Community Health Needs Assessment utilized numerous data sources: the Public Health Management Corporation’s (PHMC) household health survey, secondary data and literature sources, minority internal and external experts and representatives of healthcare and community-based organizations knowledgeable of health and social conditions within the communities, and focus groups. The data used for the CHNA was found to have data gaps pertaining to the health status of immigrant populations due to language barriers within surveys utilized.

Large amounts of electronic patient-specific information are generated, exchanged, and stored capturing data pertaining to all aspects of care (diagnosis, medication, laboratory test results and radiological imaging data). There is much potential for the mining of EHRs for establishing new patient-stratification principles, revealing unknown disease correlations, identifying patient risk factors and better understanding populations as a whole as the data is clinically originated.

Unfortunately, typically large amounts of patient data are scattered, heterogeneous, and difficult to access to assess. The HealthShare Exchange (HSX) is the health information exchange within the Greater Philadelphia region. HSX engages providers, health systems and health plans in securely sharing patient information, working to ensure interoperability between health information systems of its members. The HSX does this through linking the electronic medical record systems of its members to enable accessibility at inpatient and outpatient points of care and for care management.

Project Goals

• To identify disparities of the following indicators present within the adult population within the city of Philadelphia: asthma, hypertension, diabetes without complications, diabetes with complications between race/ethnicities in emergent encounters.
• To investigate the HealthShare Exchange’s Clinical Database Repository use for community health needs assessments and population evaluations.

METHODS

This study was used to analyze the data from the HealthShare Exchange (HSX), the health information exchange warehouse within the Greater Philadelphia region. The data weresubset in an SQL query of the HSX Clinical Data Repository over select criteria: (1) within the calendar year 2017; (2) within the emergent patient class (emergent encounter); (3) within the over age 18 during their encounter date population; and (4) encounters carrying the Health Care Utilization Project’s (HCUP) clinically relevant diagnosis grouping used to group diagnoses related to hypotension, asthma, diabetes mellitus without complications and diabetes mellitus with complications.

The sample population was then narrowed to patients in the adult population (as defined by 18-105 years of age), to the Philadelphia zip codes, and to the encounters with complete sets of information (gender, age, ethnicity label, zip code, and patient class).

For analysis, sample was evaluated using EHRs’ EMR statistical software using descriptive statistics and comparison analysis for statistically significant differences. Excel was used to perform two-sample z-test to determine significant differences between rates of diagnoses. Excel was used to complete risk ratio comparing found values to the established rates of diagnoses per 1000 (diagnoses/census population x1000).

DISCUSSION AND NEXT STEPS

The following findings of this study are consistent with the previous Jefferson Health Community Health Needs Assessment:

• (1) the rates of adult hypertension were seen to be highest in the Black Non-Hispanic population and lowest in the Asian Non-Hispanic population,
• (2) the Black Non-Hispanic adult population was seen to have the highest rates of diabetes and Asian Non-Hispanics the lowest.

The magnitude of the differences in rates may stem from cultural differences of emergency department use by the different race/ethnicities. This study provides deeper assessment of the health status of the Asian Population, which had been identified as a significant gap of data within the Jefferson Health Community Health Needs Assessment.

Conclusions

There were significant differences found between race ethnicity pairings in the rates of diagnoses. The Black Non-Hispanic has the most diagnoses for all of the conditions analyzed. The Asian Non-Hispanic population had the least diagnoses for all of the conditions analyzed.

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<th>Geographic Region</th>
<th>Hypertension</th>
<th>Diabetes without Complications</th>
<th>Diabetes with Complications</th>
<th>Asthma</th>
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RESULTS

There were significant differences between genders in the city of Philadelphia when comparing rates of asthma and hypertension diagnoses. The differences between diabetes with and without complications was not significant.

CORE COMPETENCIES

This project includes the following core competencies: Analytical and Assessment Skills, Policy Development/Program Planning Skills, Communication Skills, Cultural Competency Skills, Community Dimensions of Practice Skills, Public Health Science Skills, Financial Planning and Management Skills, Leadership and Systems Thinking Skills.

ACKNOWLEDGEMENTS

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