

1-U60-OH-010892-01A1 - Use of Michigan Worker Compensation Data for Surveillance of Work-Related Injuries and Illnesses

This report documents the progress on the Michigan Workers' Compensation (WC) grant from September 1, 2016 through August 31, 2017.

Aim #1: Develop rates of Workers' Compensation (WC) claims per full time equivalents (FTE) by industry and employer size.

The WC data for 2014, 2015 and 2016 claims filed for paid lost work time was obtained. We have completed an initial analysis of the 2014, 2015 and 2016 data (20,732 paid claims from 8,933 unique companies in 2014, 18,457 paid claims from 8,314 unique companies in 2015 and 16,522 paid claims from 7,787 unique companies in 2016). Employer Identification Numbers (EINs) in the state WC data are obtained under strict confidentiality requirements from the State of Michigan's Department of Treasury and the WCA could only provide us with the last 4 digits of the EIN for the companies with claims in 2014, 2015 and 2016. The WCA does not have NAICS code for industry type. To obtain the NAICS code and number of workers within each NAICS we are in the process of mating the WCA claims database with the Quarterly Census of Employment and Wages (QCEW) database. An algorithm was then developed for the match, since the last four digits of EIN were not sufficient to create a definite match. The criteria we used for matching the two data bases were:

- Levenshtien5 – 1: Using the Levenshtein algorithm, this record was matched by employer name, FEIN, street address, city, state, and zip code.
- Levenshtien5 – 2: Using the Levenshtein algorithm, this record was matched by FEIN, street address, city, state, and zip code.
- Levenshtien5 – 3: Using the Levenshtein algorithm, this record was matched by employer name, and FEIN.
- Soundex – 1: Using the Soundex algorithm, this record was matched by employer name, FEIN, street address, city, state, and zip code.
- Soundex – 2: Using the Soundex algorithm, this record was matched by employer name, and FEIN.
- Soundex – 3: Using the Soundex algorithm, this record was matched by FEIN, street address, city, state, and zip code.
- Soundex – 4: Using the Soundex algorithm, this record was matched by employer name, and requiring an exact match on street address, city, state, and zip code.
- Soundex – 5: Using the Soundex algorithm, this record was matched by street address, city, state, zip code, and requiring an exact match on employer name.
- Soundex – 6: Using the Soundex algorithm, this record was matched by employer name, street address, city, state, and zip code.

The results of the matching to date, using the 2014 data, are listed below. SOUNDEX6 and 1635 unmatched records are currently under review.

LEV1- 100% match of 5744 records

LEV2- 1 record could not be matched of the 2671 records (99.9%)

LEV3- 41 records could not be matched of the 6714 records (99.4%)

SOUNDEX1- 100% match of 438 records

SOUNDEX2- 94 records could not be matched of the 2990 records (96.9%)
SOUNDEX3-44 records could not be matched of the 480 records (90.8%)
SOUNDEX4-100% match of the 397 records
SOUNDEX5- 100% match of the 12 records
SOUNDEX 6 - currently under review

The matching results for 2015 are still underway but will be very similar to 2014. The criteria to select a NAICS code to represent the overall employer within the QCEW reflect a modification of the methods used by Wurzelbacher et. al. in their published paper, Development of Methods for Using Workers' Compensation Data for Surveillance and Prevention of Occupational Injuries Among State-Insured Private Employers in Ohio AJIM 2016: 59; 1087-11072016. The compression rules we used to choose the NAICS code when combining QCEW locations into one single location were:

- Rule 1. Determine the 6-digit NAICS code associated with at least 75% of the employees for a given employer across locations. If this fails, then...
- Rule 2. Determine the 4-digit NAICS code associated with at least 75% of the employees for a given employer across locations. If this fails, then...
- Rule 3. Determine the 3-digit NAICS code associated with at least 75% of the employees for a given employer across locations. If this fails, then...
- Rule 4. Determine the 2-digit NAICS code associated with at least 75% of the employees for a given employer across locations. If this fails, then...
- Rule 5. Determine the NAICS code associated with the most employees for a given employer. If this fails, then...
- Rule 6. OEM Staff select a NAICS code for this employer.

We obtained the QCEW denominator data on the number of employees for 2014 and 2015. The request for 2016 QCEW data has been submitted and is expected to be delivered in October 2017. We will then match the 2016 data.

Ms. Reilly attended the state WC partners meeting on December 8, 2016 in Atlanta. Some of the key take-home messages from this valuable meeting included the need to determine how to address critical issues such as multi-employer worksites, the public sector, sustainability of the activity, and denominator choices. In addition, discussions on the potential uses of the WC findings were especially helpful, in terms of thinking about how to translate the activity and outputs into prevention activity. We also participated in the quarterly conference call with NIOSH and the four other state grantees.

We participated in multiple meetings with our contractors performing the match and setting up the web portal where we will provide the query-able data.

Aim #2: Develop a report of three years' worth of data that includes recommendations for follow-up intervention.

This aim is to be accomplished in the third year of the award.

Aim #3: Develop publically accessible electronic WC case datasets.

We are working with our contractor, Kunz, Leigh & Associates (KLA) in carrying out the analysis and presentation of the findings on the Michigan HHS interactive web-based platform. We selected KLA

because they developed MDHHS's Environmental website site and they will be expeditiously able to add the WC data to this site.

The website we will use is housed at: www.mittracking.state.mi.us. It went live in May 2017. The National Tracking Network is a system of integrated health, exposure, and environmental hazard information and data from national, state, and city sources. The Tracking Network provides users with the ability to query data content areas for various indicators and measures, and to create maps, tables, and graphs with the query results. This website portal houses environmental data for the state of Michigan. It has interactive capabilities to search various markers of health and the environment and will continue to expand with additional capabilities as additional data is added. Details on the State of Michigan environmental tracking initiative can be found at: http://www.michigan.gov/mdhhs/0,5885,7-339-71548_54783_54784_54984_73821---,00.html.

We have completed draft language for the WC data that will be presented on the MI tracking portal, including "Information about These Data", "Metadata" which essentially provide details on the subject of WC data in the state of Michigan.

The WC interactive datasets will be available at the MI DHHS environmental tracking site; in addition we will provide a link to this site from our existing MSU Occupational and Environmental Medicine website: www.oem.msu.edu.

Outputs, Outcomes, and Research to Practice (r2p)

There are not yet outcomes for this project. Outputs include the matching results and development of language to be used with the data on the portal.

Human Subjects/IRB Approval

This project has current IRB approval, which will be renewed prior to the expiration of this year's award on 8/31/2018.