

Rhode Island Occupational and Environmental
Illness and Injury Data Collection Project
Final Progress Report

Grant Number: 1R01 OH0007879-01

Principal Investigator:
Thomas K. Hicks, MD, MPH
22 Lenox Street
Worcester, Massachusetts 01602
508.767.1841

Institution:
Occupational and Environmental Health Center
of Rhode Island
410 South Main Street
Providence, Rhode Island 02903

Table of Contents

Abstract	Page 1
Highlights/Significant Findings	Page 2
Translation of Findings	Page 3
Outcomes/Relevance/Impact	Page 4
Scientific Report	Page 5
Citations	Page 7

Abstract

The Occupational and Environmental Health Center of Rhode Island (OEHC-RI) was established in the year 2000 not only to evaluate and treat workers with occupational and environmental injuries and illnesses but also to promote the prevention of occupational and environmental injuries and illnesses. In order to prevent occupational injuries and illness from occurring, one must initially have a reliable source of data collection to measure the incidence and severity of these injuries and illnesses. It is after establishing reliable data on workplace injury and illness that one can analyze that data and use the results of that data analysis to target specific work-related conditions and/or industries to focus preventative efforts. By continuing to monitor the data for a specific work-related condition and /or a specific industry, one can measure the effect of a preventative intervention on that condition and/or industry.

At the time of the application for this Grant, the state of Rhode Island had no adequate mechanism for physician reporting of occupational injuries and illnesses. Given the size of its workforce, the relatively small size of its medical community and the variety of industries in which its population is employed, Rhode Island represents a unique opportunity to establish a database to collect data on occupational injuries and illnesses. The purpose of this Grant was to establish the infrastructure to develop a system for the reporting of occupational injuries and illnesses. This system would be primarily web-based and would feature physicians in the community reporting via the World Wide Web to the OEHC-RI. In addition to establishing an infrastructure for reporting, we also established an Advisory Board to define specific occupational injuries and illnesses for which reporting to the newly established system would be asked of all physicians in the State. As this system that was to be established would be voluntary, it was recognized that the OEHC-RI would be required to market this reporting mechanism to the medical community in order to maximize physician participation in the project.

During the time period for this Grant, the Principal Investigator was forced to resign his position at the OEHC-RI due to medical illness. Since there were no co-investigators on the Grant, work on the Grant could no longer continue after his departure. As of this time, the OEHC-RI had established the computer and network infrastructure to institute the database reporting system. In addition to this, the vendor to whom the work was awarded has established that the following elements of the project are complete: database design; database development; client development; server development; and internal testing. The advisory committee has established that the following conditions would be the first occupational conditions for which physician reporting would be asked: occupational eye injuries; all work injuries incurred by teenagers and children; and all new cases of adult onset asthma. Items that still require attention include: to receive question content on database for specific occupational injuries/illnesses; to enable end users to test; to create a deployment plan; and to create a training plan.

Highlights/Significant Findings

The highlight of the project was the establishment of the infrastructure for a database physician reporting system for occupational injuries and illnesses. This reporting system is to be web-based and would be accessible to all physicians in the state of Rhode Island. In addition to being web-based, Rhode Island physicians would also have the option of reporting occupational injuries and illnesses via fax or mail. The OEHC-RI would become the first institution in the State of Rhode Island to collect data on occupational injuries and illnesses reported by physicians. The OEHC-RI database would essentially function similar to a state-run Occupational Health Surveillance Program.

Translation of Findings

The development of a database for the reporting of occupational illnesses and injuries is a principal element in the prevention of occupational illnesses and injuries. It is only by first measuring the extent and severity of disease and injury that one can measure the impact of prevention activities against that disease and injury. Our project was not only going to require reporting of information on occupational injuries and illness but was also going to require reporting of specific information on how the exposure/injury occurred. It is through the analysis of this data on the circumstances of the injury and exposure that one can develop targeted prevention programs aimed at modifying those circumstances. After introducing these modified circumstances into the workplace one can measure the impact of the intervention by continuing to monitor the incidence and severity of the specific occupational illness or injury.

Our project would initially call for the physician reporting of all work-related eye injuries, all work-related injuries to teenage workers (age less than 18-years-old) and all new cases of adult onset asthma. Each of these conditions represents a unique opportunity to target and educate particular groups of physicians who would normally see these affected workers. It is thought that emergency medicine physicians and eye physicians would primarily see workers with eye injuries; that emergency medicine physicians and primary care physicians would primarily see injured teenage workers; and that primary care physicians and pulmonary physicians would primarily see adults with new onset of asthma. These three groups of physicians would be targeted for education efforts aimed at increasing their awareness of these conditions with the ultimate goal of improving their reporting of these conditions. After the data has been compiled and analyzed, specific interventions aimed at prevention will be implemented for each of these injuries and illnesses. After the interventions for each of the three conditions, data will continue to be collected and analyzed in order to measure the effect of the interventions. Over time, the number of conditions for which physician reporting would be requested is expected to expand.

Outcomes/Relevance/Impact

The establishment of the infrastructure for the reporting of work-related conditions represents one of the basic key elements for the prevention of work related conditions. Without public health surveillance instruments such as that to be established at the OEHC-RI there is no effective, accurate means to measure the public health impact of specific occupational injuries and illnesses or to measure the public health impact of interventions aimed at reducing those work related conditions. Once operational, the OEHC-RI database for occupational injuries and illnesses would collect data on specific work related conditions and become the only such source for information about those conditions in the State of Rhode Island. The information collected by the OEHC-RI database would be made available to the public. As such, other organizations would be able to use the information collected by this public health surveillance database in order to allow them to develop their own interventions to prevent occupational injuries and illnesses. Continued surveillance of those work related conditions following interventions aimed at prevention will allow entities to measure the effect of those interventions.

Scientific Report

Background

Public health surveillance is an important tool for the prevention of occupational injuries and illnesses. It is important not only in helping determine the magnitude of the problem but also in identifying those at greatest risk, in establishing prevention priorities, in determining risk factors and in measuring the effectiveness of prevention activities (1). The State of Rhode Island has no mechanism in place that effectively provides vital data on occupational health surveillance. Being a small state, Rhode Island represents an opportunity to use its size to its advantage in collecting data on occupational injuries and illnesses. If one could educate the relatively small sized medical community on the importance of reporting occupational injuries and illnesses, then one might obtain a fairly accurate picture of the scope of the problem within the state. It was with this in mind that this project was developed.

Specific Aims

The purpose of this project was to develop the infrastructure for the physician reporting of occupational injuries and illnesses in the State of Rhode Island. The National Occupational Research Agenda of the National Institute of Occupational Safety and Health has identified several occupational health and safety issues of priority for study. Among these priorities include: traumatic injuries; special populations at risk; and asthma and chronic obstructive pulmonary disease (2). We chose to initiate this occupational health surveillance project with the reporting of three different types of occupational injuries and illnesses that would be considered to be NORA conditions: occupational eye injuries (traumatic conditions); injuries to teenage workers (special populations at risk); and all new onset cases of asthma in adults (asthma and chronic obstructive pulmonary disease). All new cases of adult onset asthma was chosen instead of new cases of confirmed occupational asthma in order to remove the burden from the reporting physician of determining whether the case was work-related or not. The work relatedness of asthma would be determined after analysis of the data.

The reporting of cases of each of these conditions would be via a web based platform where physicians (or their staff) would have password protected access to the database. Physicians who chose not to use the web-based reporting mechanism could report via fax or mail.

Procedures

The OEHC-RI partnered with Hall Marketing of Scarborough, Maine to develop the occupational surveillance tool that would be used for the purposes of this project. Hall proposed a four phase staging for the project. Phase Zero was the Pre-launch phase in which numerous conversations and fact finding exercises occurred prior to proposal acceptance and sign off. Phase One consisted of in-depth interviews with users and stakeholders to define specific objectives and requirements for the project. Phase Two involved the development and testing of the website, applications, and database. Phase Three involves the implementation and testing of the finished product, and includes uses and administrative training.

Results

During this project, the Principal Investigator for the Grant was forced to resign his position at the OEHC-RI due to illness. As such, the work on the project that involved content (e.g., development of specific information that was to be requested of reporting physicians) ceased. Work that involved technical aspects of database development continued. Hall Marketing reported that the following aspects of the project were complete: web design, database development, client development, server development and internal testing. At the time of this writing, Hall reported that the following items are left to be done: receive question content, populate question database with data, test to determine if any changes are required based on the content received, enable/allow OEHC-RI end users to test, create a deployment plan and create a training plan.

Discussion

The development of a web-based reporting system for occupational eye injuries, injuries to teen aged workers and new onset of adult asthma in the State of Rhode Island was handicapped by the departure of the Principal Investigator during the middle of the project. There was no other individual who was identified whom the project could be transferred to. As a result, this project fell short of actually instituting its proposed reporting system. However, the infrastructure is in place for this project with appropriate computer and network capabilities established in order for the reporting system to go on line. Requirements needing to be fulfilled in order to go on line with the reporting system include: development of question content for each of the conditions for which reporting would be requested of treating physicians, populating the question database with data, testing the system to determine if any changes are required based on the content received, allowing OEHC-RI end users to test the system, creating a deployment plan for rolling out of the reporting system and creating a training plan for the reporting physicians.

Conclusion

The purpose of this project was to establish the infrastructure for the physician reporting of occupational injuries and illnesses in the State of Rhode Island. This goal was met. Unfortunately, due to unforeseeable circumstances, the principal investigator of the project left the OEHC-RI because of illness causing further work on the project (e.g., establishing specific questions for populating the database) to be suspended.

Citations

1. Thomsen C, McClain J, Rosenmen K, Davis L: [2007] Indicators for Occupational Health Surveillance. MMWR 56(RR01):1-7.
2. <http://www.cdc.gov/niosh/nora/default.html>