Primary Health Care Information System for the Epidemiologic Study of Farmers

Dimitris Zikos, Marianna Diomidous, John Mantas

Health Informatics, Faculty of Nursing, National and Kapodistrian University of Athens

INTRODUCTION

- Greece is a country with significant agricultural production
- 11% of the population are occupied as farmers.
- The agricultural work is associated with a series of adverse health effects, which are related with a series of characteristics of the specific sector.

Risk factors

- Physical (ie. exposure to sun)
- Chemical (ie. pesticides)
- Biological (ie. viruses)
- Ergonomical (ie. musculoskeletal problems)

MAIN OBJECTIVES

Development of an Information System

- For the epidemiological study of farmers health
- For the surveillance of heath and other health and safety parameters concerning farmers health
- For the improvement of farmers health

FIELDS OF THE INFORMATION SYSTEM

- Demographic data
- Health data
- Data concerning type of production and duration of farming work
- Exposure to risk factors
- Data on the use of Personal Protective Equipment
- Knowledge of farmers on health and safety issues

CORRELATIONS

- Correlation of personal characteristics of farmers with the development of specific diseases.
- Correlation of personal characteristics of farmers with the extend of use of Personal Protective Equipment.
- Correlation of the level of use of PPE with the development of certain symptoms and diseases.
- Correlation of type of production/hours-days of work per sector with the development of diseases/symptoms.
- Correlation of exposure to pesticides, noise from tractors and other hazards with the development of diseases/symptoms.

SELECTION OF FIELDS

- Research on farmers habits.
- Research on farmers health problems.
- Research on the Personal Protective Equipment that should be used.
- Research for the appropriate scales for each selected field
- Development of Questionnaire for the simulation of the Information System to check possible problems concerning the selected fields and feedback

THE QUESTIONNAIRE

The questionnaire is an important tool towards the development of the Information System, due to the fact that the fields selected are the ones that would be included in the e-health application.

- SECTION A: Demographic information, years of work, education
- SECTION B: Health record, current diseases, family health record, gynecologic record, accidents, smoking and alcohol consumption, inoculations.
- SECTION C: Type of production, hours /days of work by type of production, land use.
- SECTION D:Exposure to hazardous agents (noise, pesticides), description of occupational accidents, use of Personal Protective Equipment, Self-assessment of knowledge about hazards related to the agricultural work.

DEVELOPMENT OF THE INFORMATION SYSTEM

- MS Access ,SQL Server and .NET platform are being used
- Direct connection of Information System with Statistical Packages
- The Information System itself includes statistical calculations based on the data collected and further analysis can be performed once the extraction of the e-health record is done.
- The application is being installed in Primary Health Care facilities and the data collected shall be used by any relative healthcare institute interested in conducting epidemiological research on farmers' health.

EVALUATION

Assessment of the application in terms of

- Content quality
- Usability
- Responsiveness
- Appearance

- The evaluation of these parameters will be performed by healthcare professionals and healthcare students.

- A questionnaire will be used for this step.

EPIDEMIOLOGICAL STUDY

PURPOSE

- To detect the habits/level of knowledge in Health and Safety issues of farmers in Greece
- To detect correlation between exposure to hazards and development of diseases/symptoms

DISCUSSION

- The use of the Electronic Health Record will contribute in the everyday work of healthcare professionals in terms of time, accuracy and operational costs.
- The use of the International Classification of Diseases (ICD) in all fields referring to diseases and symptoms will help towards the accuracy and fidelity of the health data.
- The Health Record of farmers is expected to be easily distributed across granted interested parties.
- The backup system developed for the security needs of the Information system is expected to ascertain the security of the health data.

REFERENCES

- Linaker C, Smedley J. Respiratory illness in agricultural workers. Occup Med. 2002;52: 851-59.
- Bonner MR, Lee WJ, Sandler DP, Hoppin JA, Dosemeci M, Alavanja MC. Occupational exposure to carbofuran and the incidence of cancer in the Agricultural Health Study. Environ Health Perspect. 2005;113(3): 285-9.
- Grobee D, Hoes A, Verheij T, Schrijvers A, van Ameijden E, Numans M. The Utrecht Health Project: Optimization of routine healthcare data for research. European Journal of Epidemiology. 2005;20: 285-87.
- Majeed A. Sources, uses, strengths and limitations of data collected in primary care in England. Health Stat Q. 2004;21: 5-14.
- Mansson J, Nilsson G, Bjorkelund C, Strender LE. Collection and retrieval of structured clinical data from electronic patient records in general practice. A first-phase study to create a health care database for research and quality assessment. Scandinavian Journal of Primary Health Care. 2004; 22(1): 6-10.
- Mock J, Jennings H, Wilson J. Wear Protective Clothing When Applying Pesticides. North Carolina Cooperative Extension Service, North Carolina State University. 1991.
- Howard J, McLeod D, McLeod W. Respiratory Protection Needed for Many Farm Jobs. Michigan State University, Agricultural Engineering Department.