

FOR THE IARC CONFERENCE: ORAL/POSTER

SECTION: METHODS OF ENHANCING REGISTRATION USING ELECTRONIC METHODS

Reforming and enhancing Cancer registration methods in Greece: The new digital monitoring system of the CRC, spatio-temporal analysis and its perspectives.

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Background: The Cancer Registry of Crete (CRC) is a capacity aiming to suggest reliable preventive and management measures on cancer mortality and morbidity by monitoring the disease dynamics. Currently, under the support of the Region of Crete, a prospective innovative framework of a new digital Cancer Monitoring System (CMS) will be created. This study aims to present the CMS structure and its expected outcomes. The main objectives are to present the CMS' mechanisms of supporting data privacy and confidentiality, data mining, pooling, standardization techniques and the spatio-temporal models applications.

Methods: Database management system (DBMS) technology in the back-end and a graphical user interface (GUI) written in visual basic (programming language) in the front-end were used to construct a CMS suitable for accommodating data collection and managing "big data" according to international standards of disease coding and data privacy. The CMS is connected with a Geographic Information System (GIS) that will apply spatio-temporal analysis and dynamic models and export instant reports, maps and other results. A pilot study was performed to test the following: functionality, validity, reliability and accuracy.

Results: The pilot was successful as it identified certain important technicalities of the CMS. Several dysfunctions were identified and were managed directly, providing the final version of the CMS. Drop-down menus were used in order to make the recording platform more user-friendly while several commands and privacy rules were added. Connection with the GIS system was successful and it offered a wide range of applications apart from the instant reports (descriptive, maps, tables). These were the identification of high risk areas or population groups in risk, the correlation with several risk factors and the estimation of future spatio-temporal risk.

Conclusions: Maintenance and development of the CRC is considered to be of major importance, locally and nationally, since it is the only active official cancer regional registry in Greece. Within the next upcoming years and with the required funding and capacity, the new CMS will be upgraded through an integrated GIS and GPS system.

Key words: CRC, GIS, cancer monitoring system, data quality, data privacy, cancer analytics