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Background:

Who we are?

- The Cancer Registry of Crete (CRC) is the official regional registry of Crete aiming to report data on cancer mortality and morbidity and suggest preventive and management measures by monitoring the disease dynamics [http://crc.uoc.gr/].

Where do we operate?

- It operated in the University of Crete since 1992, as a joint initiative of the Department of Clinical Oncology of School of Medicine [http://www.pagi.gr:8081/pag] and the Clinic of Social and Family Medicine (CSFM) [http://www.tammed.uoc.gr], under the support of the Region of Crete, it opened a prospective new framework for the development of a new digital cancer monitoring system (CMS).

Aim of this study: to illustrate the CMS structure, its methods and perspectives.

Main objectives: to present the CMS’ mechanisms of supporting privacy and confidentiality of the data, data mining, pooling, standardization techniques and the spatio-temporal models applications.

Methods:

- Data are collected by specially trained staff from the death registries and hospitals of Crete, by distance, while the server is placed at the CSFM (map, below).

- Database management system (DBMS) technology in the back-end and a graphical user interface (GUI) written in Visual Basic (programming language) were used to construct a CMS suitable for accommodating the collection and management of “big data”.

- International standards of disease coding (ICD10-O) 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 and maps.

- A pilot study was performed to test: functionality, validity, reliability and accuracy

Results – (I):

- Several dysfunctions were identified through the pilot and were managed directly, providing the final version of the CMS (see Figure below; where the red “N” denotes additional features and enhancements):

- Drop-down menus were used in the recording platform in order to increase usability. The use of several controls and privacy rules has decreased data entry errors.

Results – (II):

- Export data and files compatible for statistical softwares and environments

- Connection with the GIS system offered a wide range of applications:

  - Instant reports
  - Identification of high risk areas or population groups.
  - Correlation with risk factors and estimation of future risk

Conclusions:

- Development of the CRC is considered to be of major challenge for Crete as well as Greece; since it is the sole official cancer registry in the country that operated and published data, systematically.

- Within the coming years and with the required funding and capacity, the new CMS will become the main tool for population studies in the region that will combine population structure and spatio-temporal dynamics.