Organización Panamericana de la Salud
Oficina Regional de la Organización Mundial de la Salud

International Agency for Research on Cancer
World Health Organization

Curso International: Introducción a los Registros de Cáncer de Base Poblacional y su Aplicación a la Epidemiologia de Cáncer

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CanReg5 and Cancer Registration

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Overview

- What is CanReg?
- Survey
- Design and implementation
- Future development plans

What is CanReg?

- Cancer registries need a tool to input, store, check and analyze their data.
- Cancer registration data that are collected and coded in a standard way make possible the production of comparable cancer incidence among various countries.

What is CanReg? (contd.)

- The goal of the CanReg5 project is to make available an easy to use and flexible software package to support cancer registries in accomplishing these tasks.

What is CanReg? (contd.)

- CanReg5 contains modules for:
  - data entry
  - quality control
  - basic analysis of the data
- Provides online help

Survey

- Before the CanReg5 production started, a survey was done to determine the needs of the users: the population based cancer registries around the world.
- Invitations were sent to all members of the International Association of Cancer Registries (IACR).
- A total of 89 responses were received from cancer registries in 48 countries.

Design and implementation

- After reviewing the results of the survey and weighing the various requests, we designed and implemented the software.
- Main improvements:
  - Open source and open standards
  - Multi-user/network
  - User friendliness
  - Improved database engine
  - Quality control standards

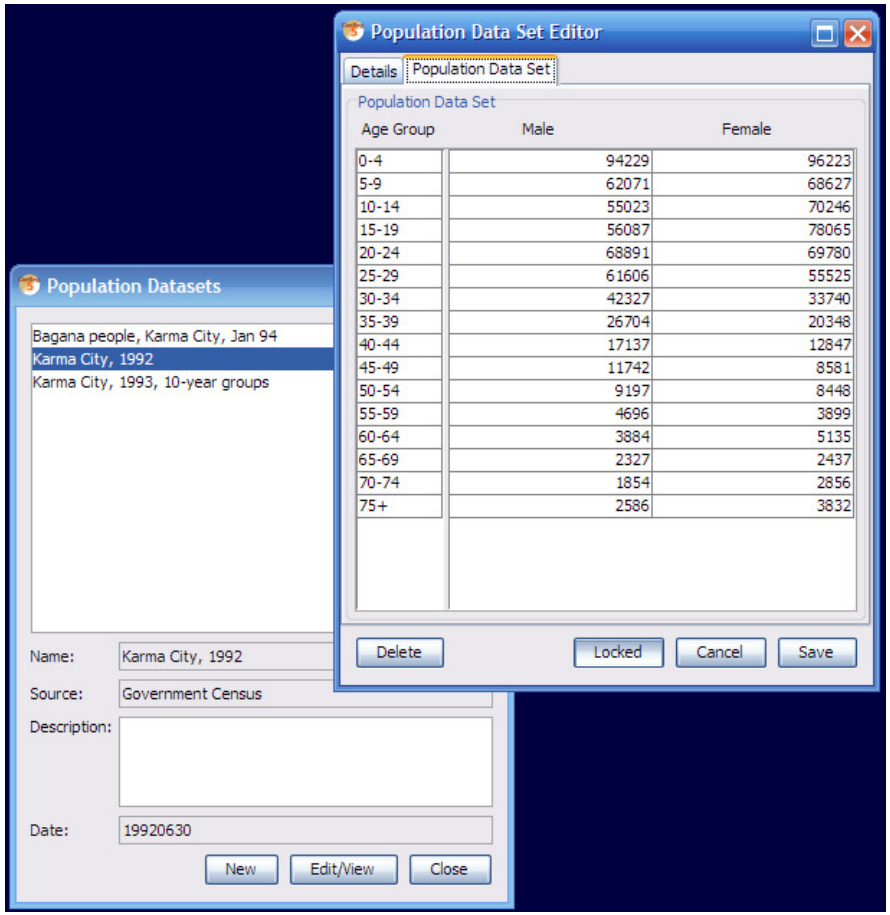
Open source

- CanReg5 is an open sourced program. (It is distributed under a GNU-General Public Licence.)
- The source code will be made available
  - For documentation purposes.
  - Allows more technical users to adjust the program to their needs, and to spot, fix and report programming errors.

Open standards

- At the heart of the program there is a standard compliant powerful open sourced SQL relational database engine.
- Open Standards allow users to access, and to a certain extent, design their own database using existing tools.
  - System configuration of CanReg5 is done using standard XML files.
- Improved interoperability with other programs.
  - Cut and paste to/from general spreadsheets etc.

Open standards (contd.)



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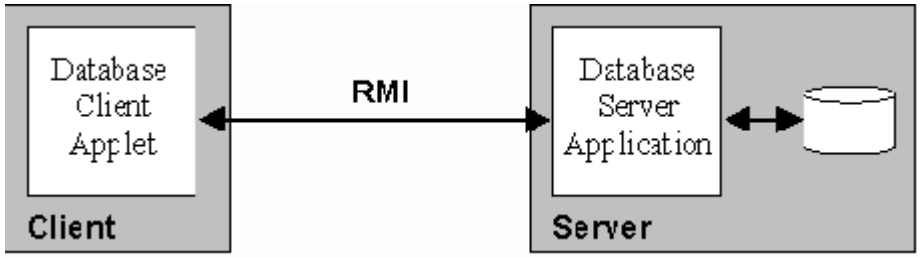
Multi-user/network

- Robust networked multi-user support was implemented by wrapping the database in a server application, easy to set up and run.
- Standard multi-tier design, using Java/RMI



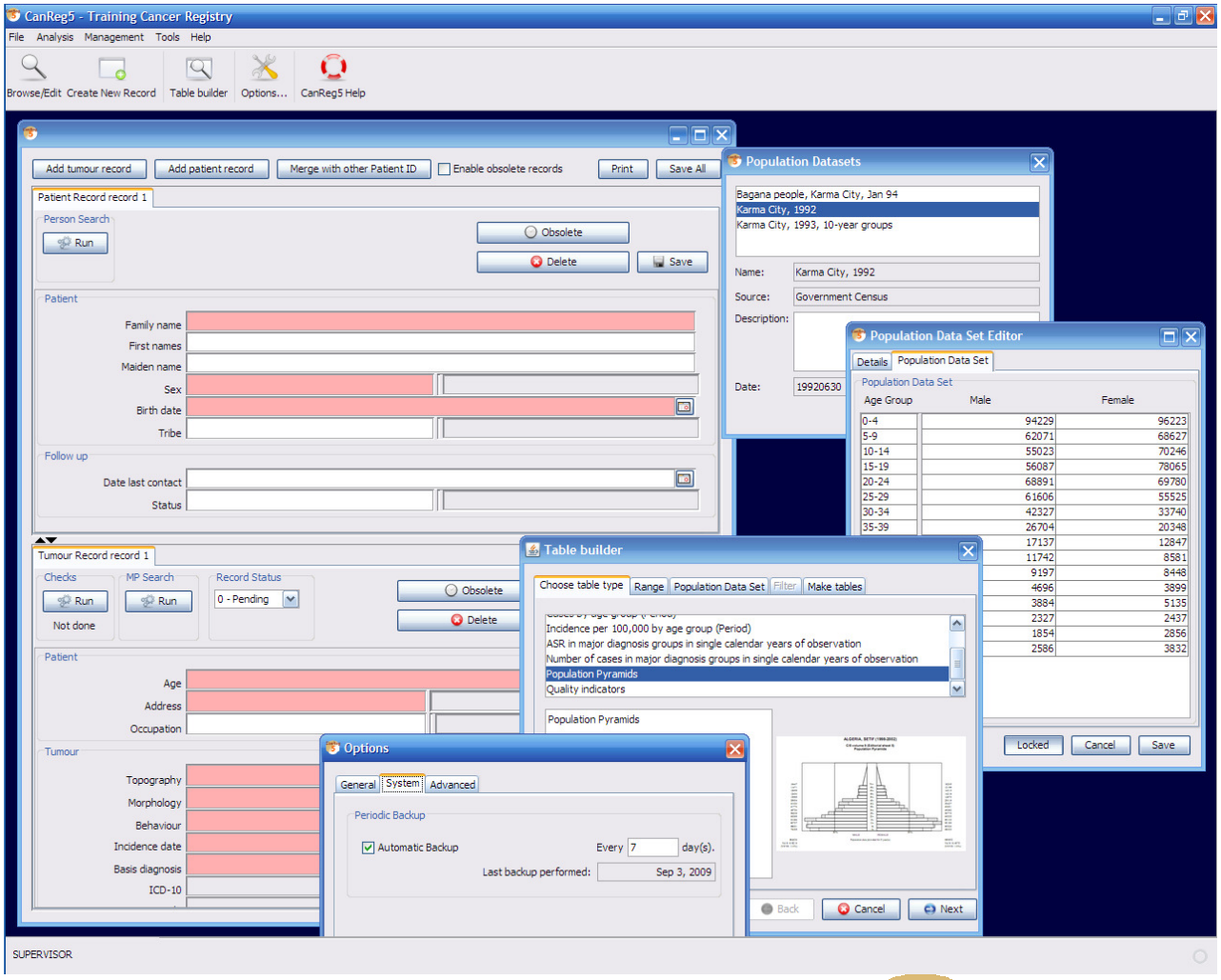
Multi-platform support

- CanReg5 was designed to run on all major operating systems (i.e. Microsoft Windows, Apple's OS X, Linux etc.)

User friendliness

- CanReg5 was designed with an emphasis on user friendliness
  - Has a modern user interface
  - Easy to navigate
- Is available in several languages

Multiple Document Interface



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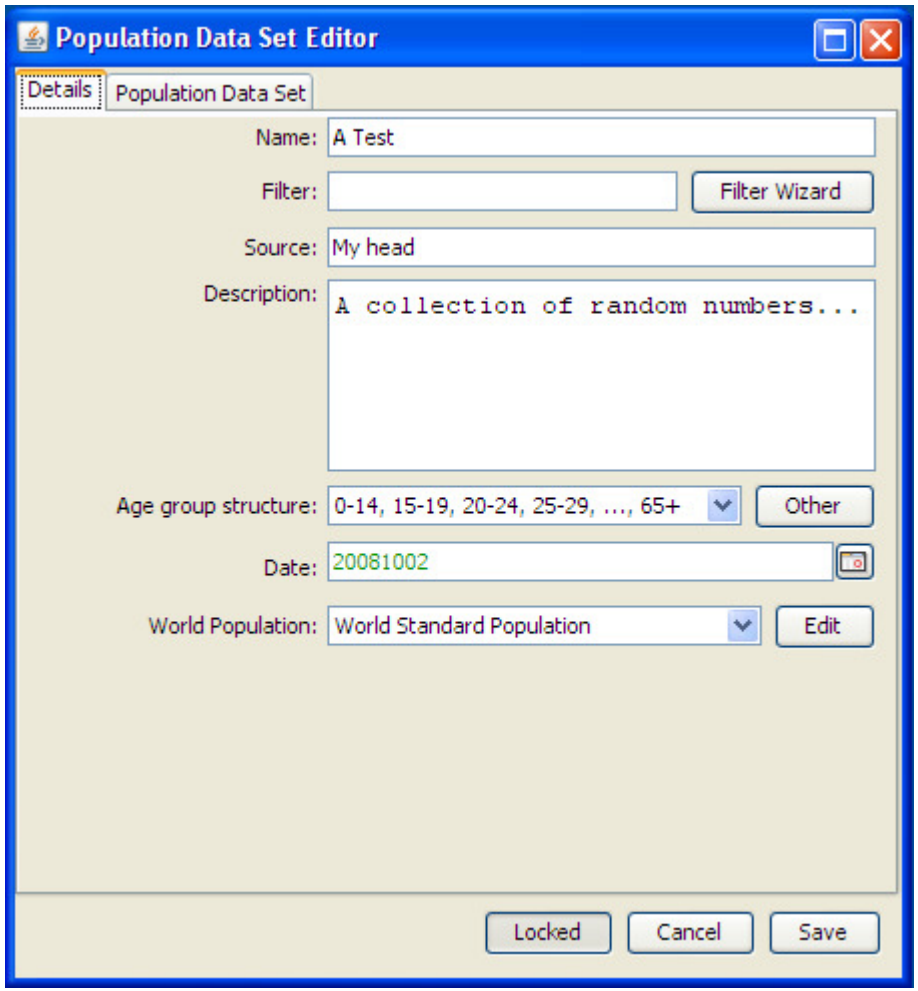
Example window



Quality control standards

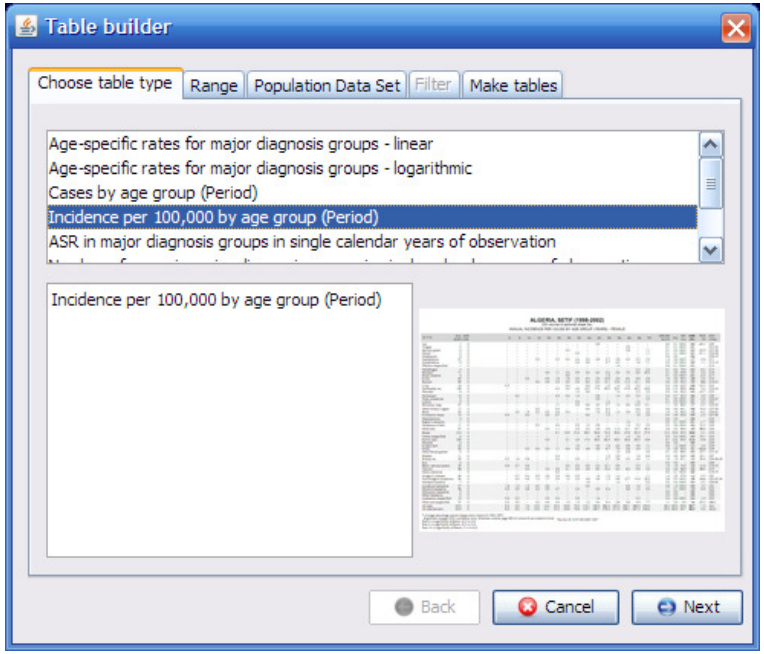
- Built into CanReg5 are several quality control mechanisms, such as:
  - Interactive code validation
  - Consistency checks for the most standard variables
  - Quality control reporting tools

Quality control standards (contd.)

- CanReg5 has a module for spotting and correcting potential duplicate patient records in the database and has a module that allows for tumour unduplication, using the 2004 multiple primary rules.
- The edit checks are based on the ones found in “DEPedits 2008”.

Improved analysis

- The data analysis part of CanReg5 has been improved to support more dynamic tables/reports.



Import and conversion of CanReg4 systems

- CanReg4 users can import their database into CanReg5 easily, using built-in modules that perform system definition conversions and import the database and dictionaries.

Beta testing

- The first closed beta version was released in January 2009 with cancer registries from Cyprus, Turkey, Jordan, Egypt, France (Mulhouse) and Italy (Turin and Naples) participating in the testing.
- A workshop on CanReg5 was held in Istanbul in June 2009 with participants from the MECC countries and another one in China in September 2009.
- An open beta version of CanReg5 was released in early November 2009.

Future development plans

- Implement suggestions from users
- Improved registration via Internet
- Improved data entry
- Improved analysis
- Improved data quality report tools, linked with mortality data

Conclusion

- The most important changes from previous versions of CanReg is the fact that it is open source software.
  - Source code serves as documentation
  - Users may intervene to fix errors etc.
- Other improvements includes:
  - stronger network support
  - modern database engine
  - multi-platform support.

Thanks!

- For more information please contact: ervikm@iarc.fr