

SurSaUD® Software: A Tool to Support the Data Management, the Analysis and the Dissemination of Results from the French Syndromic Surveillance System

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Objective

The presentation describes the design and the main functionalities of the software developed to support the data management and data analysis of the French syndromic surveillance system.

Introduction

The French syndromic surveillance system SurSaUD® was set up by the French institute for public health surveillance (InVS) in 2004. The system is based on three main data sources: 1/the attendances in the Emergency departments (ED), 2/the consultations to emergency General Practitioners' associations SOS Médecins 3/the mortality data from civil status offices and e-certificates.

In 2012, 400 of the 710 ED and 59 of the 62 GP's associations are involved in the system. 80% of the national mortality is also collected. Given this large database and the need to analyze data in a short delay to reach the early warning objective of the system, a specific software has been developed.

Methods

The application has been designed in order to support the users with automatised process of the three main following steps:

1. Data integration in a database, data management and the control of data quality transmitted by the providers
2. The statistical analysis of the data, according to different demographic, geographic and syndromic criteria. Individual and aggregated data are consulted using reporting tools (graphs and tables).
3. The output and reporting for decision makers and feedback for data providers through epidemiological bulletins and dashboards.

Each night, XML files containing data recorded during the previous day are sent from the ED and GP's association SOS Médecins to InVS. All files are automatically integrated in the national database. A data quality process is done to check the completeness and the validity of the transmitted data. The data are managed by aggregating by age groups, syndromes, by day and ED or association.

After the data management, bulletins and dashboards are automatically generated. Those Word® documents contain graphs, tables or maps with the most recent data. This functionality allows producing already formatted documents, including an updated overview of the health situation of the previous days. Through those documents available at 10:30 AM every day, the epidemiologists can analyse, add comments of the results and publish their bulletins in a short delay.

The users can also consult aggregated data through a BI tool to have a more in-depth analysis of the public health. Such tool can also support the investigation of abnormal signals.

Results

Sursaud software is a login and password-protected and secured internet web site. Since its deployment in 2010, about 300 users have had an access to the software and 25% are data providers.

In August 2012, almost 35,000 new patients are daily caught by the system and nearly 50 millions of patients are recorded in the database since 2004.

To analyse data, the diagnosis coded either in ICD10 for ED visits or with specific thesaurus for GP's calls are pre-aggregated in about 200 syndromes covering a large part of the medical diagnosis and call reasons collected in the system. 22 age groups are also available with a focus on the most frailty population, like the youngest and the elderly. Finally, various geographic levels can be chosen, from the local ED or association to the national level.

An average of 25 bulletins or dashboards is daily produced by the software and about 10,000 documents have been produced since the deployment. They support the analysis of general overviews of population health or are focused on the surveillance of specific health situations, such as epidemics, emergent pathologies or exceptional events (disasters, mass gatherings,...)

Conclusions

The software is a fundamental support for the French syndromic surveillance system. A new version is being developed in order to add improvements and integrate the mortality data. The deployment of this second version is expected in 2013.

Keywords

software; France; Emergency department, General practitioners

References

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