

Are the French SAMU data relevant for health surveillance?

Isabelle PONTAIS¹, Florian Franke¹, Barbara Philippot², François Valli³, Gilles Viudes² and Céline Caserio-Schönemann¹

¹Santé publique France, Saint-Maurice Cédex, France; ²PACA Emergency Network Observatory (ORUPACA), Marseille, France;

³SAMU 06 / National Emergency Medical Service, Nice, France

Objective

To evaluate whether SAMU data could be relevant for health surveillance and proposed to be integrated into the French national syndromic surveillance SurSaUD® system.

Introduction

The syndromic surveillance SurSaUD® system developed by Santé publique France, the French National Public Health Agency collects daily data from 4 data sources: emergency departments (OSCOUR® ED network) [1], emergency general practitioners (SOS Médecins network), crude mortality (civil status data) and electronic death certification including causes of death [2]. The system aims to timely identify, follow and assess the health impact of unusual or seasonal events on emergency medical activity and mortality. However some information could be missed by the system especially for non-severe (absence of ED consultation) or, in contrast, highly severe purposes (direct access to intensive care units).

The French pre-hospital emergency medical service (SAMU) [3] represents a potential valuable data source to complete the SurSaUD® surveillance system, thanks to reactive pre-hospital data collection and a large geographical coverage on the whole territory. Data are still not completely standardized and computerized but a governmental project to develop a national common IT system involving all French SAMU is in progress and will be experimented in the following years.

Methods

A pilot study was performed in the South of France PACA region, where data from the six local SAMU structures are centralized into an interconnected database. A minimal set of variables required for health monitoring (administrative and medical items) and modalities for data extraction and transmission to Santé publique France were defined.

SAMU data were transmitted daily to Santé Publique France and the PACA regional team developed a Microsoft Access® application to import decrypted data, request database and analyze indicators.

Retrospective part of the study was performed over a 2-year period (2013-2014) and the prospective part during 2015 was based on daily data collection. Completeness and quality of variables were analyzed. SAMU indicators including several level of specificity were built and compared to existing SurSaUD® indicators in different situations (for detection, seasonal follow-up and health impact assessment) using Spearman coefficient correlation.

Results

During the pilot study, data from five of the six SAMU structures of PACA region were structured enough to be analyzed. On the study period, almost 2,400,000 files were recorded and 89% contain medical information. Data completeness was high (87%) and stable during the whole period. The annual rate of SAMU solicitation was 16 for 100 inhabitants at the regional scale. 15% of the records were opened only for medical advice. In contrast, patients were evacuated directly in intensive care unit in 9.5% of cases without ED admission. Coding quality depended on the existence and the use of official thesauri and

varied widely among SAMU structures. Despite coding variations, SAMU indicators for winter epidemics were significantly correlated with ED and SOS Médecins indicators. Respectively with ED flu, bronchiolitis and gastroenteritis indicators, the strongest correlations were found for SAMU lower respiratory infection (0.74), SAMU bronchiolitis (0.72) and SAMU gastroenteritis / diarrhea / vomiting (0.81).

Conclusions

This pilot study demonstrated the feasibility to collect daily SAMU activity data. The key strengths of SAMU data were a large geographic coverage, the subsidiarity with SurSaUD® system data sources, the follow-up of prehospital activity and for patients directly admitted into an intensive care unit. Some limitations were highlighted related to differences in coding practices especially for medical diagnosis. The generalization of this study will require the standardization of coding practices and homogenization of thesaurus. The implementation of the national SAMU information system should allow in a very next future to widely progressing on these topics.

Keywords

Emergency Medical Service; Pilot Study; Evaluation; Emergency department; France

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References

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*Isabelle PONTAIS

E-mail: isabelle.pontais@laposte.net

