

# Syndromic surveillance : made in Europe

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# Valorisation

## Relevance of research results

The innovative aspect of the research results is the provision of new knowledge on the application of syndromic surveillance in Europe. There is doubt about the usefulness of syndromic surveillance among public health professionals and decision makers (1, 2). The research results add clarity on the strengths and weaknesses of the approach and its applicability and usefulness in the European context. The research was accomplished based on the work of the two Health Programme actions SIDARTHa and Triple S-AGE and as such was from the beginning oriented towards relevance for practice and decision making in public health surveillance. The analysis of actually applied syndromic surveillance systems or as part of case studies support the practical relevance of the results. Especially, the new definition, the generic syndromic surveillance system concept, and the success factors provide concrete input for public health surveillance. The SIDARTHa system concept was implemented at the regional level in Austria and Spain. During the Triple S-AGE action, some of the research results regarding the SIDARTHa project were included in the European guidelines for syndromic surveillance systems (3). These form a handbook for public health authorities who intend to implement or improve syndromic surveillance systems and are available from the Triple S-AGE website (4).

There are three valorisation areas for which the research results are relevant beyond science:

1. the improvement of the surveillance and early warning capacity of public health authorities,
2. the potential to enhance general public health monitoring based on syndromic data sources, and
3. the support of timely management of resources in health services.

Figure 1 provides an overview of the different aspects of the valorisation process for each area that is explained in more detail in the following.

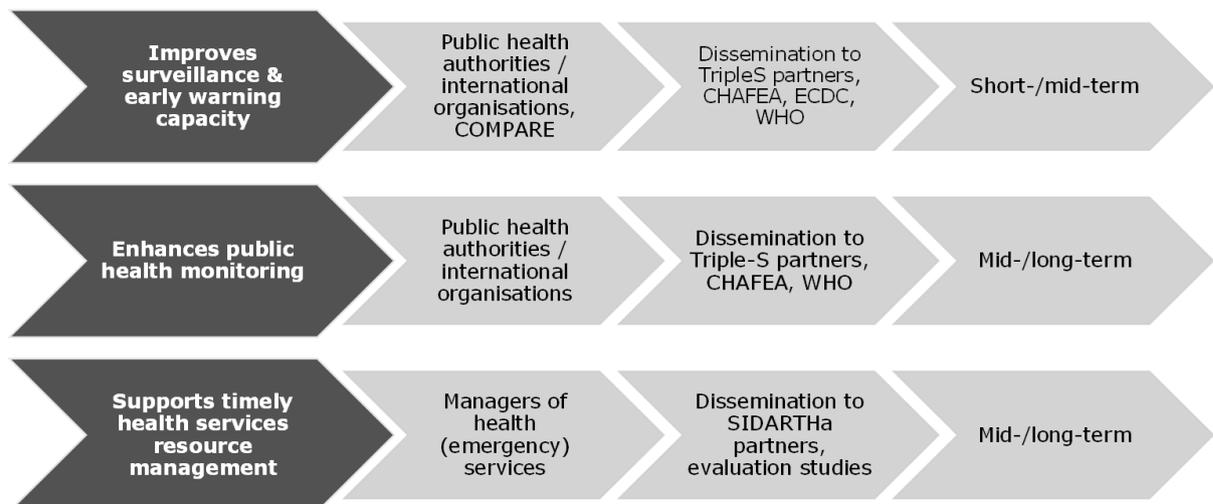


Figure 1: Main aspects of the valorisation process

CHAFAEA = Consumers, Health, Agriculture and Food Executive Agency (European Commission); ECDC = European Centre for Disease Prevention and Control; WHO = World Health Organization (Regional Office for Europe)

## Improves surveillance and early warning capacity

The research provides additional knowledge relevant for improving the surveillance capacity of public health authorities. The new syndromic surveillance definition, system concept and success factors can support syndromic surveillance operators to set up or improve syndromic surveillance systems. An increased and improved use of syndromic surveillance can enhance the ability of public health authorities at local, regional, and national level to timelier assess expected or emerging health threats. The exploitation of existing data sources for public health surveillance through syndromic surveillance adds an additional piece to the health information puzzle that can help identify and track health threats.

First concrete valorisation activities in this area would focus on the dissemination of the research results. The main target group would be public health authorities and European organisations that can influence the transfer of knowledge and innovations in this area. As the research was based on the work of the Triple S-AGE action, the partner organisations involved in the action, mainly national public authorities, would be the primary target group for disseminating the research results. The partners could use the research results to improve their own syndromic surveillance systems. Further, the European Centre for Disease Prevention and Control, the European Commission's Health Threat Unit and the World Health Organization Regional Office for Europe were part of the project. Awareness about the research results among these institutions could help to further disseminate the research results. We will send a copy of this thesis in 2015 to all project partners and the European Commission's Consumers, Health, Agriculture and Food Executive Agency (CHAFEA) that handled the Triple S-AGE action. We think it very likely that those Triple S-AGE partners who are operating syndromic surveillance systems will use the research results in short to mid-term.

Furthermore, there is a new European research project called COMPARE, co-funded by the European Commission as part of the Horizon 2020 programme (5). The COMPARE project intends to integrate different information sources for a timelier detection of and response to disease outbreaks among humans and animals. The author of this thesis and the supervisor Thomas Krafft are involved as advisors on syndromic surveillance in the project. To raise awareness on the research results, we will send the thesis also to the co-coordinator of the project, Marion Koopmans. The project just started and there is a chance that the research results inform the project activities in the next couple of years.

Finally, the e-book version of this thesis could be included on the web-platform set up by the Triple S-AGE action, which can be seen as the primary information source on syndromic surveillance in Europe (4). Furthermore, it could be included also on the primary web-platform worldwide, hosted by the International Society for Disease Surveillance, that was involved as advisor in the Triple S-AGE action (6). Also the CHAFEA could be asked to include the thesis or a link to the thesis on their website. We will approach the three organisations in 2015. It is likely that public health authorities who intend to setup a syndromic surveillance system in the next couple of years are visiting these web-platforms and might include the research results in their work.

## Enhances public health monitoring

The research has shown the use of syndromic information to monitor various health threats, especially also non-communicable threats. This yields the potential of syndromic data sources and indicators to be used also for general public health monitoring. Some of the partner organisations of the SIDARTHa action, including the author and the supervisor Thomas Krafft, were involved in another Health Programme Action, the "European Emergency Data Project" (EED Project). The EED Project partners defined and tested key health monitoring indicators based on routine emergency care data – the same data source used in the SIDARTHa action for syndromic surveillance. They have defined five key indicators, which were included in the European Community Health Indicators long list (7, 8). The author and the supervisor Thomas Krafft were also involved in a case study in Germany on the added value and feasibility of pre-hospital emergency care data for the European Injury Data Base (9). The study showed that many indicators, which are required for the Injury Data Base were retrievable from pre-hospital emergency care data and even provided additional data compared to the usually registered data from hospitals. Recently, the World Health Organization has acknowledged the potential of non-traditional data sources such as electronic patient records for public health monitoring in their 2015 European Health Report (10).

The focus of the valorisation activities in this area is also on disseminating the research results. As part of the dissemination activities described above, we will inform the same target groups about the potential of the syndromic data sources for other areas of public health surveillance and public health monitoring. We will ask our contacts at the organisations to send the link to the e-book version of the thesis to the colleagues in their organisations who are responsible for public health monitoring. We will also disseminate the e-book version to the Division of Information, Evidence, Research and Innovation of the WHO Regional Office for Europe, who are the editors of the European Health Report, and to which the supervisor Helmut Brand serves as advisor. The research results can provide awareness about the approach and its potential use for health monitoring but further research is warranted to build a sound evidence base. Therefore, the valorisation of the research results in this area is rather indirect and mid to long-term.

## Enables timely health services resource management

Syndromic surveillance information might also be useful for resource management in health services. As indicated in chapter 4, the SIDARTHa syndromic surveillance system that is implemented based on emergency department data in Spain was the only source of timely information on the peak of the influenza season during the Christmas holidays in one season. The head of the emergency department used the information provided by the syndromic surveillance system in that season to call further staff members into the emergency department to cope with the increasing number of patients. The SIDARTHa syndromic surveillance systems are intended to be implemented in the institutions that are providing data such as emergency service providers, not in the public health authorities. This allows for better awareness of and direct access of managers in these institutions to the syndromic surveillance information.

Also for this area, the focus of the valorisation activities is on dissemination. The major target group are the partners of the SIDARTHa action, which were mainly representing regional-level emergency care institutions from different countries. We will send the

thesis to all SIDARTHa partners and the CHAFEA, with an enclosed letter asking for further spread of the link to the e-book-version to other emergency care institutions in their networks. In 2015, the e-book-version will also be included for download on the websites of the SIDARTHa action (11) and the European Emergency Data Research Network (8), combined with a news item posted on the home pages. In the following years, the two active SIDARTHa system implementations in Austria and Spain could be evaluated for this purpose. This could be done as part of placements of Bachelor or Master students of Maastricht University's European Public Health programme, in which both supervisors are involved. We think that the use of the research results in this area will depend on the demonstration of the usefulness in the two implementation sites or other institutions involved in the SIDARTHa action. Therefore, the valorisation of the research results in this area will rather be mid- to long-term.

## References

1. Koopmans M. Surveillance strategy for early detection of unusual infectious disease events. *Curr Opin Virol.* 2013;3(2):185-91.
2. Kaydos-Daniels SC, Rojas Smith L, Farris TR. Biosurveillance in outbreak investigations. *Biosecur Bioterror.* 2013;11(1):20-8.
3. Triple S Project. Guidelines for designing and implementing a syndromic surveillance system; 2013 [cited 29 September 2015]. Available from: [http://www.syndromicsurveillance.eu/Triple-S\\_guidelines.pdf](http://www.syndromicsurveillance.eu/Triple-S_guidelines.pdf).
4. Triple S-AGE [Internet]; 2015 [cited 29 September 2015]. Available from: [www.syndromicsurveillance.eu](http://www.syndromicsurveillance.eu).
5. COMPARE [Internet]; 2015 [cited 29 September 2015]. Available from: [www.compare-europe.eu](http://www.compare-europe.eu).
6. International Society for Disease Surveillance [Internet]; 2015 [cited 29 September]. Available from: [www.syndromic.org](http://www.syndromic.org).
7. Krafft T, Garcia Castrillo-Riesgo L, Edwards S, Fischer M, Overton J, Robertson-Steel I, et al. European Emergency Data Project (EED Project): EMS data-based health surveillance system. *Eur J Public Health.* 2003;13(3 Suppl):85-90
8. European Emergency Data Research Network [Internet]; 2015 [cited 29 September 2015]. Available from: [www.eed-network.eu](http://www.eed-network.eu).
9. Krafft T, Ziemann A. Notfallmedizin und öffentliche Gesundheit - Einsatz notfallmedizinischer Daten für Fragen der öffentlichen Gesundheit in Europa In: Neumayr A, Schinnerl A, Baubin M, editors. *Qualitätsmanagement in der prähospitalen Notfallmedizin.* Heidelberg: Springer; 2013. p. 31-42.
10. World Health Organization Regional Office for Europe. *The European Health Report 2015. Targets and beyond - reaching new frontiers in evidence.* Copenhagen: World Health Organization; 2015.
11. SIDARTHa [Internet]; 2015 [cited 29 September 2015]. Available from: <http://www.sidartha.eu>.