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How exhaustive are out of hospital cardiac arrest registers? The example of the Northern French Alps Cardiac Arrest Registry

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Abstract:

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Cover Letter

for « How exhaustive are out of hospital cardiac arrest registers? The example of the Northern French Alps Cardiac Arrest Registry ».

Dear Editor,

We are pleased to submit a Letter to the Editor in consideration for publication in RESUSCITATION. One of the most important requirements for cardiac arrest registries is their completeness. We present the example of the Northern French Alps Cardiac Arrest Registry. All authors have made substantial contributions to the conception and design of the study, the acquisition of data and the drafting of the letter; they all gave their final approval of the version to be submitted. The letter has not been published previously and is not under consideration elsewhere.

We thank you in advance for the attention you will give to our manuscript.

Sincerely yours

Dominique Savary, MD

Accepted manuscript

How exhaustive are out of Hospital cardiac arrest registers? The example of the Northern French Alps Cardiac Arrest Registry

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Improving management and survival of out-of-Hospital Cardiac Arrest (OHCA) is a major public health issue (1). It has become essential to use standardized variables and implement registries to collect high quality data in the real-world setting (2). Besides internal validity, one of the most important requirements for registries is their completeness. We aimed to compare the completeness of the Northern French Alps Cardiac Arrest Registry (RENAU AC) with data from two other emergency systems.

From January 1st, 2016 to April 30th, 2016, data from one of the three counties (Haute-Savoie) of the Northern French Alps Cardiac Arrest Registry ("Register") were extracted. Manual identification allowed to link those data with the ones from the Emergency Medical Technicians from the Fire Department ("Firemen") and the ones from the Emergency Medical System from the prehospital medical system ("EMS"). Data were anonymized for the analyses. A proportional Venn diagram was used to visualize the overlap and differences between data sets (3). During the study period, 351 OHCA were included. Figure 1 shows the overlap between the data set. The completeness of the RENAU AC registry was estimated at

81,8% (287/351). Even after 10 years of existence, the registry accounts for more than 80% of completeness compared to the two other data sources.

This study is limited by the short period of time considered and the lack of information on the type of cardiac arrest, as it was not available in the "Firemen" and "EMS" data set. Furthermore, the study was focused on one county due to unavailable data in the other counties. However, the annual proportion of recruited cardiac arrest in each county and the practices in the Northern French Alps regarding the management of OHCA do not significantly differ. Some authors also suggested that it is possible to study the completeness of a register only based on a part of its population (4). Moreover, in this example, all centers participated in data collection, which is not always the case in published studies (5).

In conclusion, with less than 20% of missingness, the results produced by the RENAUC register may be reliable. While there may be a potential selection bias due to under-representation of certain cases, such bias should only have a marginal impact on estimates calculated from the register. Factors associated with failure of notification should be considered when using such register.

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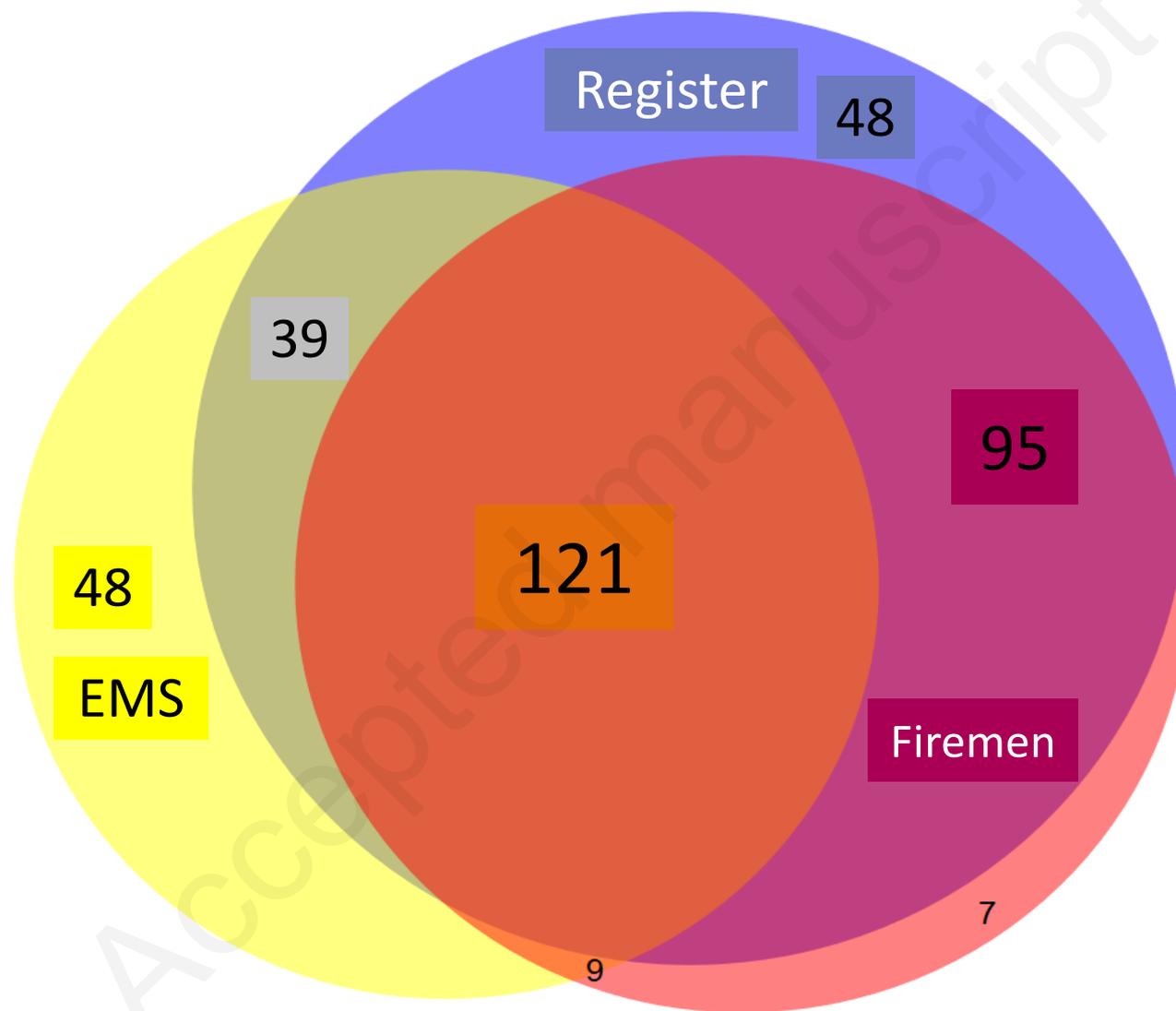


Figure 1. Venn Proportional Diagram (number of cases, EMS= emergency medical system)

Conflicts of interest : none

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