

European Resuscitation Council Congress Barcelona 2023

The Resuscitation-Registry of the German Red Cross

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Results from the Pandemic Years 2020 and 2021

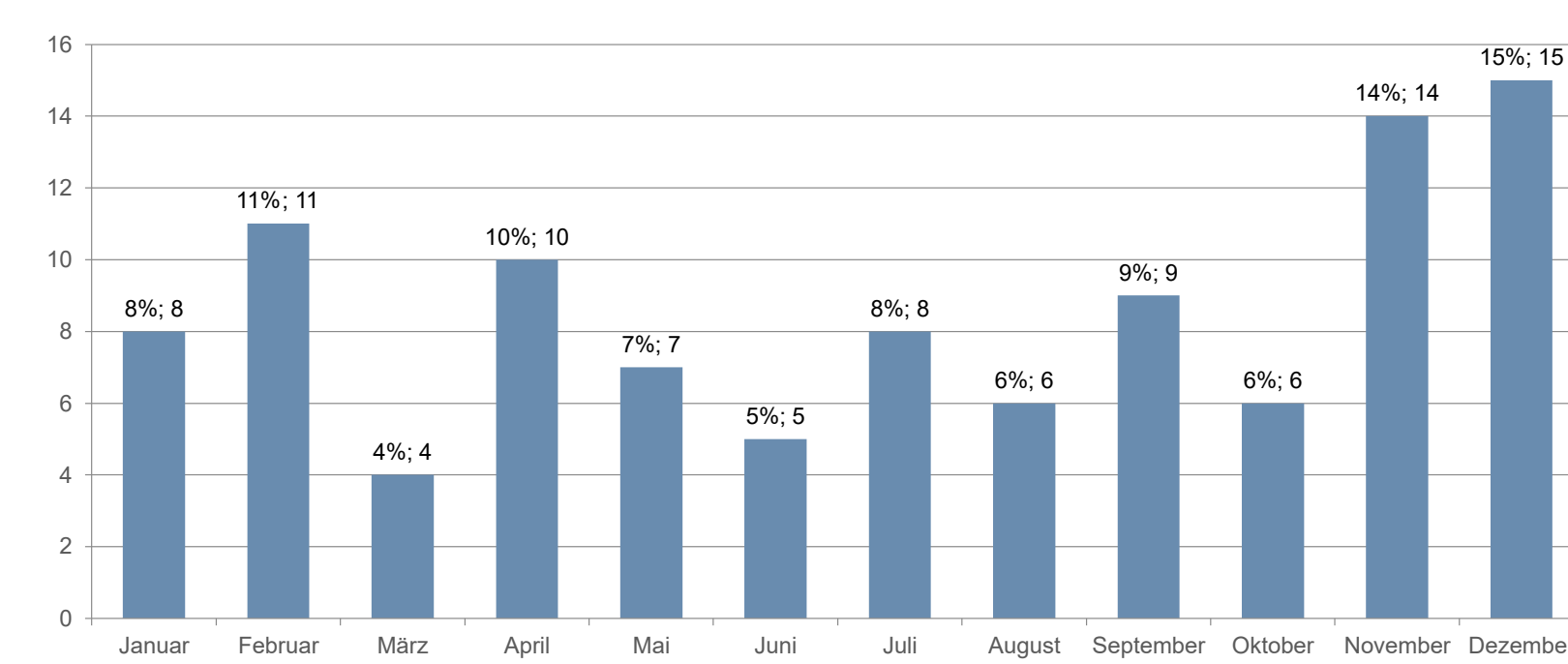
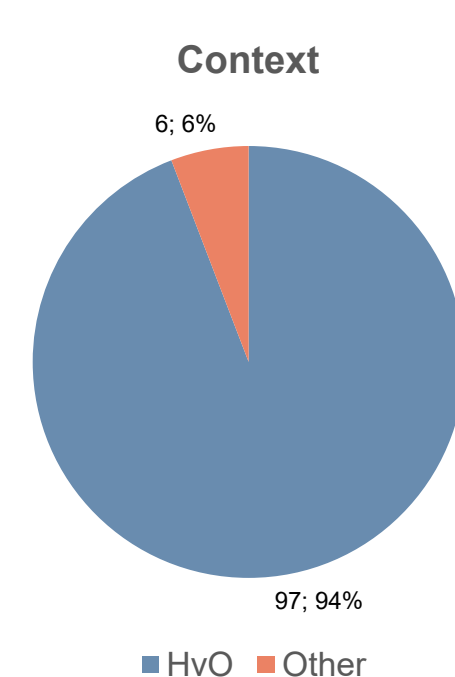
The German Red Cross (GRC) is the national Red Cross society of the Federal Republic of Germany, with approximately 420,000 volunteers involved in disaster relief, youth work, and welfare services. The organization closely follows the federal structure of the Federal Republic of Germany in its organization.

In 2010, the GRC introduced the use of the laryngeal tube (LT) into the training of volunteer emergency technicians (VET). The training for volunteer emergency technicians consists of 48 hours, with 10 hours dedicated to advanced resuscitation techniques. VETs come from a variety of professional backgrounds, with the majority having no medical experience. Each GRC branch has a volunteer doctor responsible for overseeing training and operations.

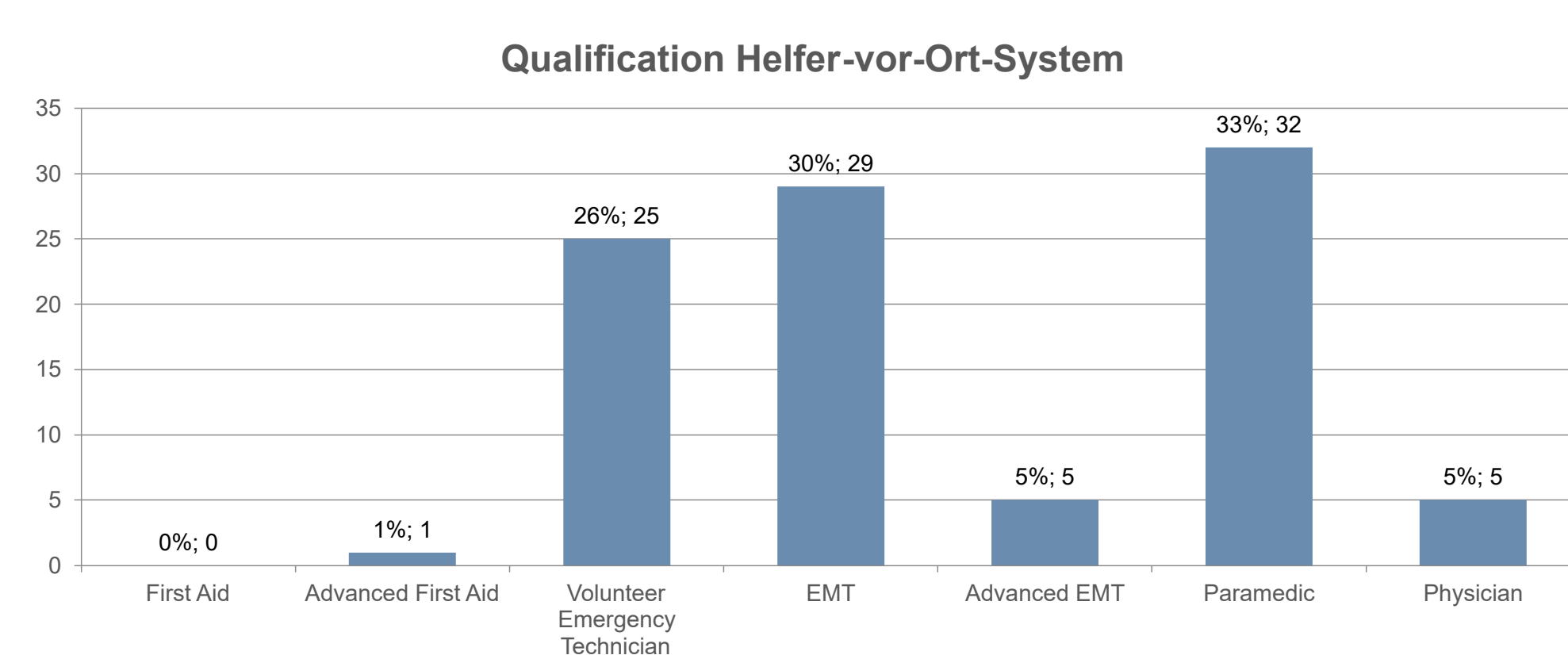
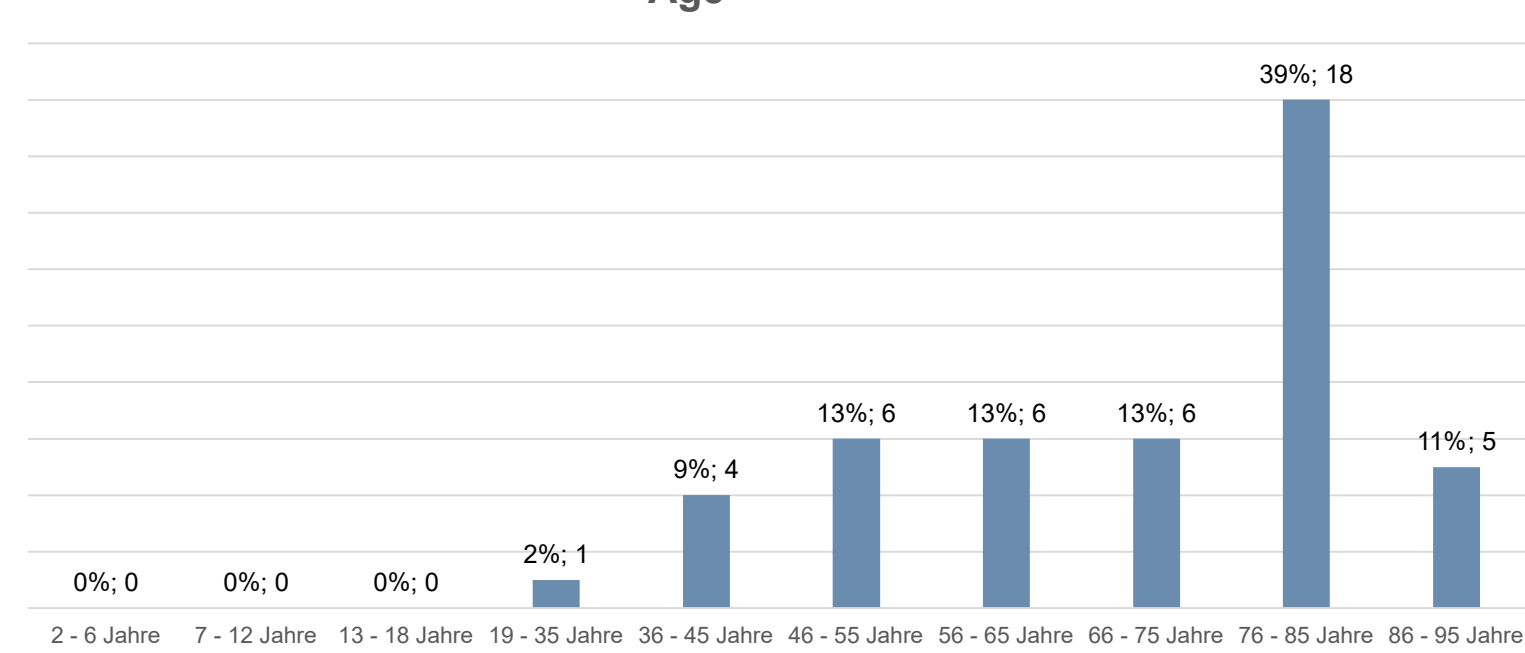
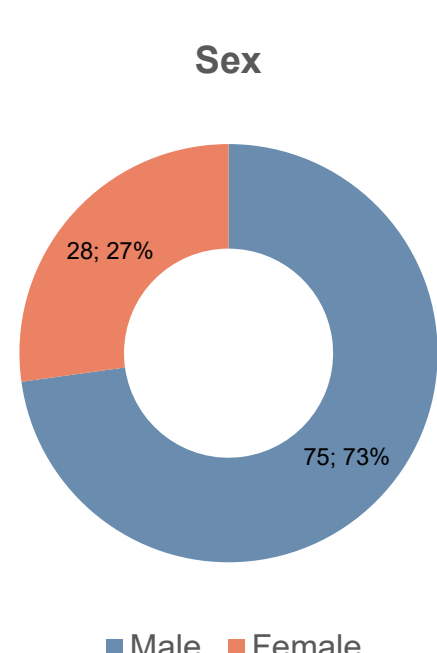
In the context of advancing technological capabilities, in 2019, it was possible to directly record and evaluate resuscitations carried out by volunteer GRC Hessen volunteer emergency technicians.

Here, we present the results for the years 2020 and 2021. We initiated the data collection system on January 1, 2020, without anticipating how the year would unfold. The implementation of the system had been prepared since October 2019. After the course of the year 2020, which saw significant restrictions on public life, we decided to consolidate the data from 2020 and 2021. In 2020, all public events were initially canceled, including the First Responder systems, known as the "Helfende-vor-Ort" (HvO) system within the GRC. HvO volunteers serve as first responder support at the scene of emergencies before the public emergency medical service arrives. In emergencies, the control centers can inform/alert HvO responders, who promptly proceed to the emergency location. It is usually unclear how many HvO responders can be reached and respond to the emergency call. It also cannot be guaranteed that comprehensive emergency equipment and an AED (Automated External Defibrillator) are available. According to legislation (in Hessen), HvO systems are not considered part of the public emergency medical service and, as such, do not count towards meeting the response time targets (in Hessen: 10 minutes). The key value of HvO is that they are often at the scene of the incident before the official emergency services, allowing them to assist with CPR (Cardiopulmonary Resuscitation) and initially support any potential relatives.

Due to the frozen event landscape, 94% of the 101 recorded resuscitations occurred within the scope of HvO deployments. In total, operations were reported from 12 out of 37 district associations.



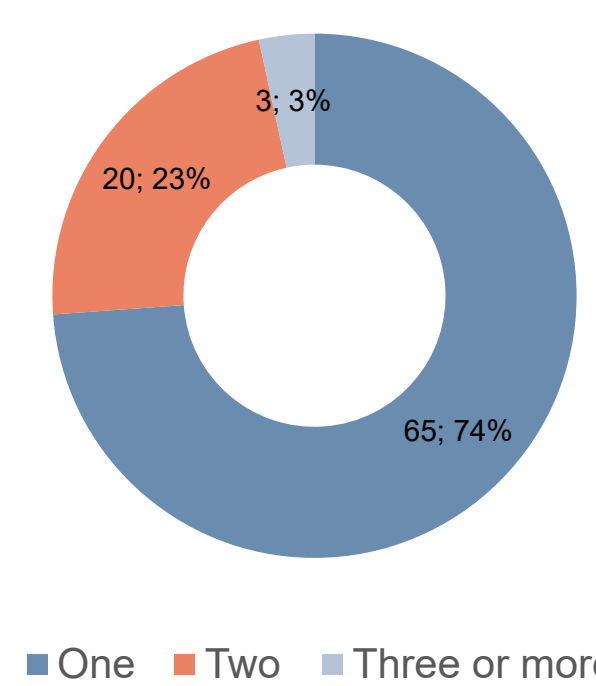
Although there is a trend in the seasonal distribution of resuscitations towards the months of November and December, no significant difference can be found.



In fact, among the HvO (Helfende-vor-Ort) volunteers, there are also individuals with professional medical qualifications such as paramedics and doctors.

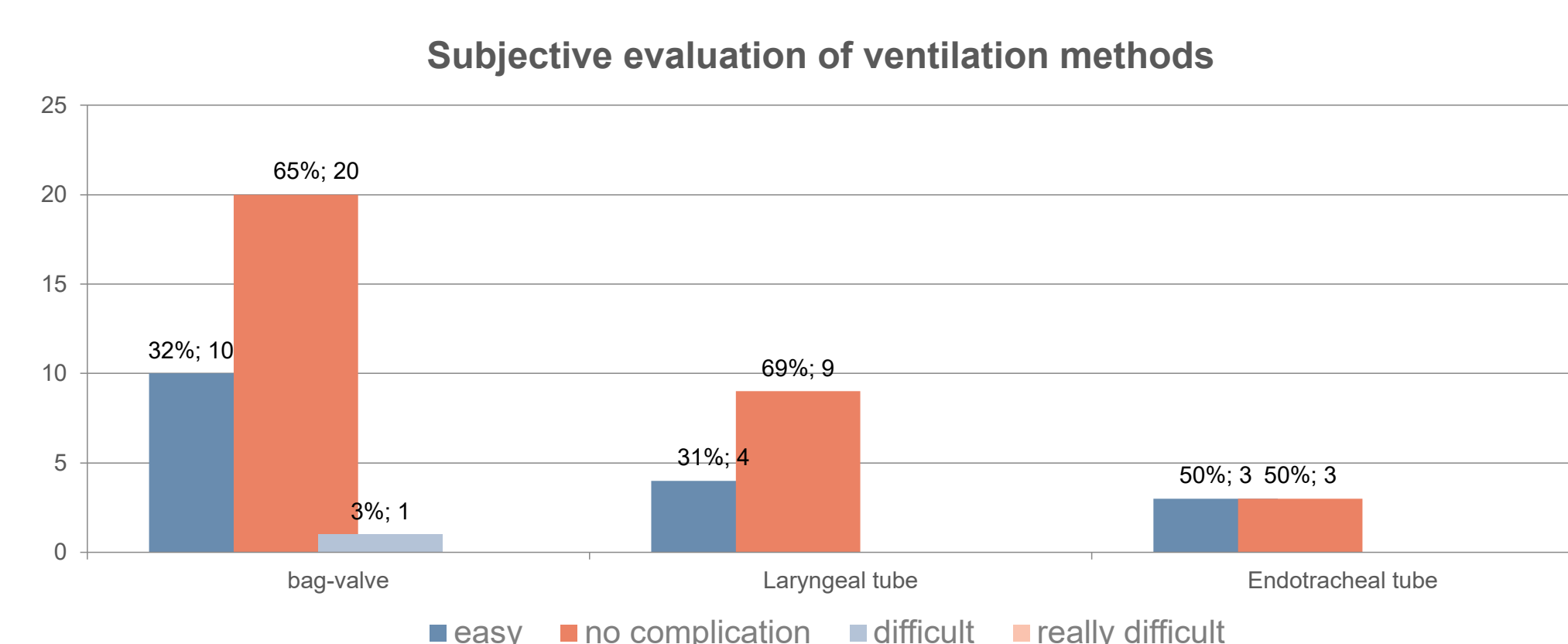
In 17 cases, the HvO responder was alone at the scene, yet in 13 of these cases, CPR with ventilation was still performed. In all other instances, there were two or more responders at the scene.

Number of ventilation method per resuscitation



Most commonly, in cases where only one responder was present, initial ventilation was omitted, and only chest compressions were performed.

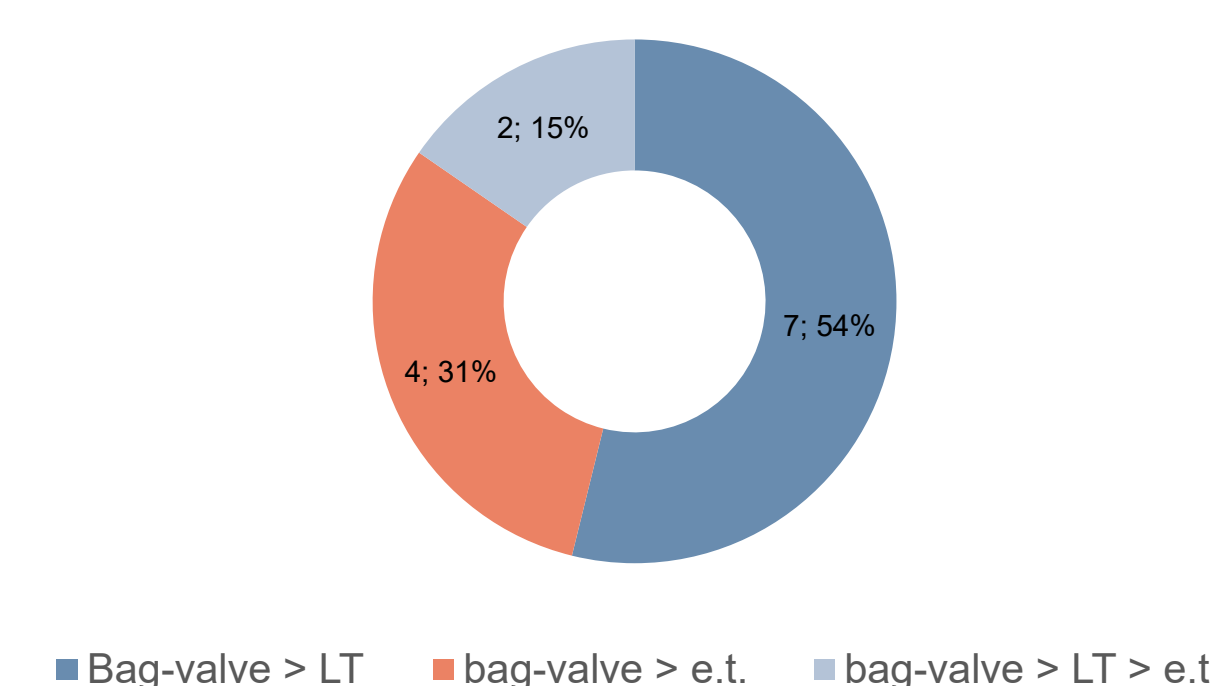
When ventilation was carried out, a single method was predominantly used in the majority of cases, specifically, in 65 out of 88 cases, the method employed was the mask-bag-valve ventilation.



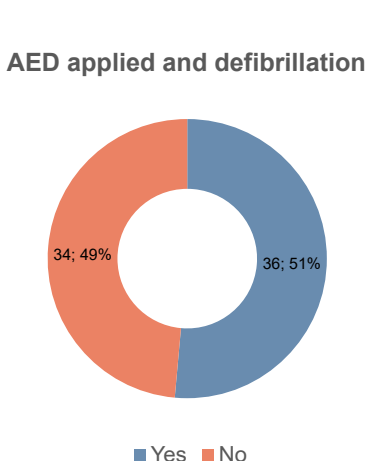
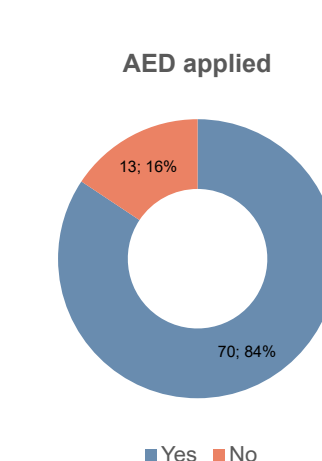
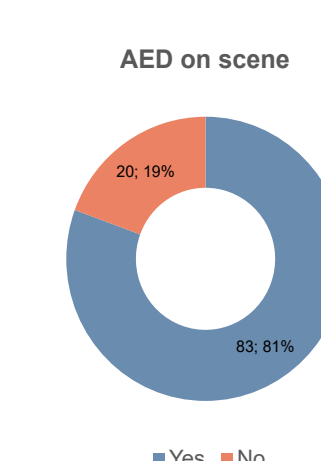
The methods used were mostly assessed as complication-free. The subjective evaluation of the chosen ventilation method was generally straightforward, whether it was bag-valve ventilation or laryngeal tube ventilation (LT), across all qualifications.

In the majority of cases (74%), only one ventilation method was used, while in 26% of cases, a switch to an alternative method was made. In a small percentage of cases, ventilation was attempted using more than two methods. Mouth-to-mouth ventilation was documented in only one instance. The predominant method for ventilation was mask-bag-valve ventilation. The laryngeal tube (LT) was used in 32% of cases. In the majority of cases (93%), ventilation was successful, and no issues arose. In 7% of cases (3 instances), correctable complications were documented.

Sequence of ventilation methods



The analysis of the sequence of ventilation methods revealed that the majority of cases followed the trained algorithm (Bag-valve - LT - endotracheal intubation). One case of complications during LT use was reported, and in this case, a return to bag-valve ventilation was implemented.



Discussion:

The collected data indicate that the procedure of timely data collection after resuscitation has been well-received by emergency responders and can provide unfiltered data. Due to the pandemic, the actual topic of collecting data on resuscitations at public events (fairs, concerts, sports events) couldn't be investigated. However, we were able to gather initial insights into the resuscitations performed by HvO (volunteers). The fact that only 81% of the deployments included an AED suggests that these responders were indeed called to emergencies from their everyday activities. The number of reports also demonstrates that the supplementary HvO service is feasible under pandemic conditions.

The primary focus was to gather data on the safety of the used supraglottic airway device (SGA). The data from HvO responders did not come from the primary target group of non-professional responders, as one might expect in the majority of cases when providing support at public events. The participants in the HvO program are more frequently involved in resuscitation situations and are thus better trained. Nevertheless, for this group of individuals, there were no indications of complications when using the SGA (LT). It is gratifying to note that in 11 out of 108 cases, Return of Spontaneous Circulation (ROSC) was documented.

In the analysis of the post-pandemic years, we plan to separate the entries for HvO deployments from the medical services at events, thus recognizing their contributions separately.

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