Proposal: A standard for measuring the average rescue time for a surf lifeguard organisation

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Aims

- ❏ Propose a standard for measuring the average rescue time in a surf lifeguard organisation
- ❏ Use this standard to share data in an open-source project across the globe, to allow cost-efficient optimisation of the rescue time tailored to each individual lifeguard organisation.

Methodology

The methodologies used to develop the proposed standard for measuring the average rescue time in a lifeguard organisation are the Statistical Value Chain[1] and the Drowning Timeline[2].

Outlook

By collaborating on an open-source data project for average rescue time worldwide, all parties will be able to make cost-efficient optimisations of the rescue time tailored to each individual lifeguard organisation.

Motivation

- ❏ It is estimated that at a global level more than 500 million USD is spent annually on surf lifeguarding.
- ❏ A certain part of this money or resources is allocated to the 'rescue phase' of the drowning timeline.
- ❏ As far as the authors are aware, there exists no global standard for measuring the average rescue time of a surf lifeguard service.
- ❏ Due to the absence of a well-defined standard, it is difficult to compare and evaluate how efficiently resources spent on the rescue phase of the drowning timeline are used.
- ❏ Without the ability to evaluate the efficiency of resources spent on the rescue phase, it is almost impossible to suggest cost-efficient and data-based changes to improve the average rescue time.
- ❏ The standard is designed to be as realistic as possible to simulate a potential drowning situation.

Proposal for a standard measuring the average rescue time for a lifeguard organisation

1. The area of primary responsibility for a lifeguard station is approximately 300 meters to each side of the station, and no more than 200 meters perpendicular to the shoreline.
2. Tests that are used to calculate the average rescue time are not pre-warned tests.
3. A total randomisation across all variables, such as beaches, lifeguards, equipment, and weather conditions.
4. Having only one person acting as a casualty.
5. No sound from the casualty is allowed.
6. The casualty must be unfamiliar to the lifeguard(s) on duty. The casualty must behave in a manner consistent with other beach guests and dress accordingly.*
7. The casualty will put on a red swim hat and raise one arm above the water to indicate the start of the incident.
8. Starting time for the measured observation time is when the casualty puts on the red swim hat. End time for the measured observation time is when the 'on-duty lifeguard' observes the casualty. (Measured observation time = MOBS time).
9. Starting time for the measured operation time equals the end time of the measured observation time. End time for the measured operation time is when the lifeguard is at the position of the casualty. (Measured operation time = MOP time).
10. MOBS time + MOP time = the measured rescue time (MRT).
11. If the lifeguard(s) do not observe the casualty within a time limit of 45 minutes the test will stop.*
12. The casualty's head is to stay clear of the water at all times.
13. At least one instructor will act as a safety person.
14. As soon as the 'on-duty lifeguard' has observed the casualty, one instructor will raise a reasonably large sign indicating "test/drill" to inform the public and avoid any unnecessary 9-9-9 alarm calls.
15. Third-party authentication of the test results.
16. Calculation of sample size: days in operation per year (DO), number of lifeguard stations (NLS). DO x NLS = organisational size (OS). Sample size should be 5-10% of OS.
17. All relevant variables must be recorded and shared through an open-source data project.

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Follow the link to:

- ❏ Get involved in the global data collecting and sharing project to improve your organisation's average rescue time.
- ❏ See a demo for rescue-time data collection.

References:

1) Herrmann, I.T., Henningsen, G., Wood, C.D., Blake, J.I., Mortensen, J.B. and Spliid, H., 2013. *The Statistical Value Chain-a Benchmarking Checklist for Decision Makers to Evaluate Decision Support Seen from a Statistical Point-Of-View*. International Journal of Decision Sciences, 4(2), pp.71-83.

2) Szpilman, D., Tipton, M., Sempsrott, J., Webber, J., Bierens, J., Dawes, P., Seabra, R., Barcala-Furelos, R. and Queiroga, A.C., 2016. *Drowning timeline: a new systematic model of the drowning process*. The American journal of emergency medicine, 34(11), pp.2224-2226.

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Acknowledgements

[c] The Danish Council for Greater Water Safety, Denmark, http://www.badesikkerhed.dk/en/
[b] The North Zealandic Lifeguard Organisation, Denmark, http://livredningstjenesten.dk/
[a] Q2M2, www.q2m2.com

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