

Karola Pitsch, Peter Bachmann, Marcel Dudda (2020): 'Triage' in Mass Casualty as Situated Interaction. Algorithm and Participation. In: Proceedings of the 18th European Conference on Computer-Supported Cooperative Work: The International Venue on Practice-centred Computing on the Design of Cooperation Technologies - Exploratory Papers, Reports of the European Society for Socially Embedded Technologies (ISSN 2510-2591), DOI: 10.18420/ecscw2020_p05

'Triage' in Mass Casualty as Situated Interaction. Algorithm and Participation

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Abstract. This paper investigates how the pre-clinical 'triage' in field trainings of mass casualty incidents is realized as a collaborative, situated practice. Whilst triage algorithms are mainly presented as an individualistic decision process, we show – using video data – how the professionals' practices are based on mutual monitoring and interactional coordination and thus provide for reflecting on decisions and preparing for next actions.

Introduction: 'Triage' as a Collaborative Practice?

In the case of mass casualty incidents (MCI), the situation of emergency is characterized by shortage of personnel and equipment in relation to the number of victims and injured persons. To deal with such circumstances, an overview of the situation needs to be established quickly so that appropriate rescue measures can be mobilized. In this process, the 'triage' constitutes a central element: the number of victims needs to be established, their respective medical conditions assessed and categorized. To ensure efficiency and comparability a pre-defined 'algorithm' exists (Kanz et al. 2006). In Germany, the triage is generally carried out by a physician in close collaboration with a paramedic who act on the basis of

different institutional logics. As the algorithm – described as an individualistic decision process – does not provide any information about its use within collaborative scenarios, and the ‘triage’ teams are constituted spontaneously, the nature and details of the inter-professional collaboration need to be established in situ. Whilst some general guidelines exist (e.g. physician and paramedic should work ‘hand-in-hand’), the actual practices show great diversity. Novel technologies to support the triage appear to influence established practices/responsibilities (Ellebrecht & Kaufmann 2014). The organizations rely on reflecting their trainings, yet little is known about the micro-level of their interactional practices. Addressing this void, we aim at providing a basis both for debriefing and for technological development. In this paper, we investigate: (1) How do physician and paramedic organize their interaction during the triage? (2) How is this dyadic activity situated within the larger participation framework?

Triage: mStart Algorithm

To support the medical decision and documentation process, a pre-clinic triage algorithm – here: mStart (Kanz et al. 2006) – has been established which suggests to examine victims with regard to the following criteria: (i) Patient able to walk? (ii) Fatal injury? (iii) Lack of respiration? (iv) Respiratory rate greater than 30 per minute? (v) Radial pulse absent? (vi) Unable to follow simple commands? – Depending on their state, victims are classified into different categories: acute danger for life (red), severe injury (yellow), minor/no injury (green), deceased (black), and – typically not used in civil situations – no or small change of survival (blue). This check is expected to take around 90 seconds per victim. Over time, victims can also shift between categories. The algorithm is generally presented as a flow chart and described as an individualistic decision process.

Study & Data

Starting in 2017, we have established a video-based corpus of five field training situations of MCI, in which 100+ participants from different emergency services (fire brigade, medical doctors, paramedics, aid organizations, police) collaborate to provide aid in the case of an alleged emergency. To capture both the complexity of the setting, the simultaneity of ongoing actions and the micro-details of interaction, we have documented these MCI with time-synchronized recordings of multiple (up to 14) video cameras, (up to 4) mobile eye-tracking glasses, a drone camera, and radio communication circuits. Among others, one focus has been given to the inter-professional team responsible for ‘triaging’. Here, initial analysis is based on data from one training (MCI-2, 50:50-52:05).

successively join the group (TR-1 in l. 07, TR-2 in l. 11). This stepwise reconfiguration of the participation framework is oriented to by PH: she gazes at them and reformulates the diagnose (l. 10, timecode 51:32.72) and the category (l. 12, 51:38.42). This reveals that the triage is closely monitored by other participants who project relevant next actions. The physician orients to this constantly shifting participation framework and provides precisely tailored pieces of information.

07 PH: und könnte dann in absprache |mit dem LNA vielleicht
 TR-1: | (arrives)

08 PH: gleich relativ zügig ins euh- ins eh zielkrankenhaus-
 09 PH: möglicherweie KLInikum gebracht werden;
 10 PH: mit verdacht auf stumpfes bauchtrauma
 PH-gaz: @ TR-1 ...

11 PA: JA; (-) |
 VI: (breathes/moanes loudly)
 PH: |O:kay; |NO PROblem;
 TR-2: |arrives

12 PH: sie ist ROT,
 PH-gaz: @TR-2 ...



Summary & Discussion

Analysis has shown that this triage team’s collaboration involves a slight offset in their time with the patient. This requires *reporting* of the diagnosis, which creates an ecology for making decisions transparent/discussible and for allowing to project next actions. Compared to other practices, their implications/risks transpire.

Acknowledgments

The authors acknowledge the financial support for data collection from the Profile Focal Point “Transformation of Contemporary Societies” (U of Duisburg-Essen) and thank all team members.

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