

## Publication

### Occurrence of No-Harm Incidents and Adverse Events in Hospitalized Patients with Ischemic Stroke or TIA: A Cohort Study Using Trigger Tool Methodology

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Adverse events (AEs)-healthcare caused events leading to patient harm or even death-are common in healthcare. Although it is a frequently investigated topic, systematic knowledge on this phenomenon in stroke patients is limited. To determine cumulative incidence of no-harm incidents and AEs, including their severity and preventability, a cohort study using trigger tool methodology for retrospective record review was designed. The study was carried out in a stroke center at a university hospital in the German speaking part of Switzerland. Electronic records from 150 randomly selected patient admissions for transient ischemic attack (TIA) or ischemic stroke, with or without acute recanalization therapy, were used. In total, 170 events (108 AEs and 62 no-harm incidents) were identified, affecting 83 patients (55.3%; 95% CI 47 to 63.4), corresponding to an event rate of 113 events/100 admissions or 142 events/1000 patient days. The three most frequent AEs were ischemic strokes (; n; = 12, 7.1%), urinary tract infections (; n; = 11, 6.5%) and phlebitis (; n; = 10, 5.9%). The most frequent no-harm incidents were medication events (; n; = 37, 21.8%). Preventability ranged from 12.5% for allergic reactions to 100% for medication events and pressure ulcers. Most of the events found (142; 83.5%; 95% CI 76.9 to 88.6) occurred throughout the whole stroke care. The remaining 28 events (16.5%; 95% CI 11.4 to 23.1) were detected during stroke care but were related to care outside the stroke pathway. Trigger tool methodology allows detection of AEs and no-harm incidents, showing a frequent occurrence of both event types in stroke and TIA patients. Further investigations into events' relationships with organizational systems and processes will be needed, first to achieve a better understanding of these events' underlying mechanisms and risk factors, then to determine efforts needed to improve patient safety.

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