

# Treatment During the Golden Hour and Its Effect on Patient Mortality



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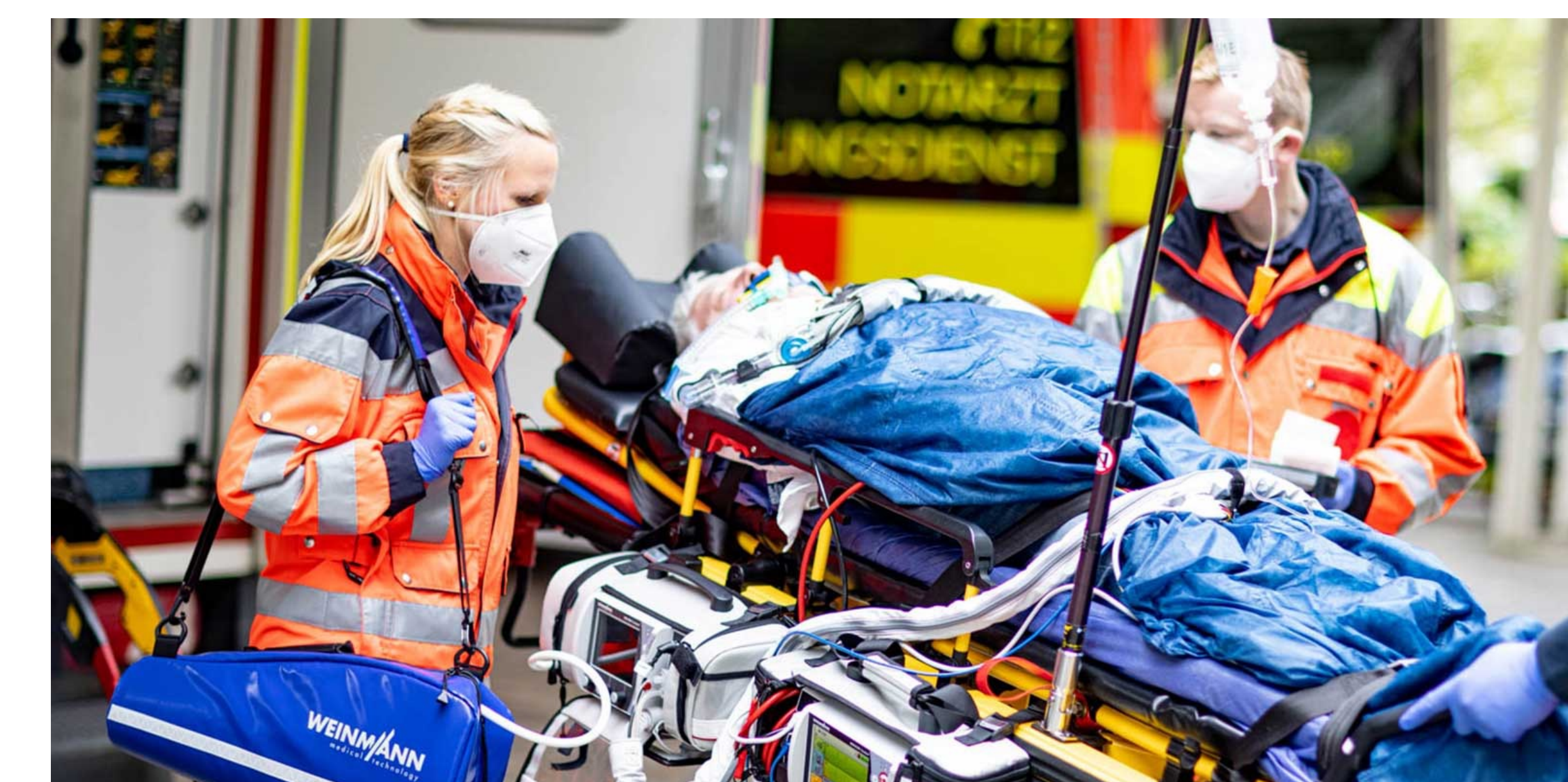
## QUESTION:

In trauma patients, how does treatment within the golden hour compared to the treatment outside of the golden hour affect patient survival rates?

STUDY	DESCRIPTION	RESULTS
Association Between Prehospital Time and Outcome of Trauma Patients in 4 Asian Countries: A Cross-National, Multicenter Study (Chen, C.H., et al, 2020)  Level III Study	<ul style="list-style-type: none"> <li>24,365 patients retrospectively studied over 3 years (2016-2018) to calculate 30-day mortality.</li> <li>21,886 patients were then assessed for functional outcome.</li> <li>From Japan, Korea, Malaysia, and Taiwan.</li> <li>Times recorded include response time, scene to hospital time, and total prehospital time.</li> </ul>	<ul style="list-style-type: none"> <li>Longer prehospital time (PHT) not associated with increased 30-day mortality.</li> <li>Increased PHT leads to poorer functional outcomes.</li> <li>Every 10-minute delay in PHT leads to 6% increase in odds of poor functional outcome.</li> </ul>
Prehospital Intervals and In-Hospital Trauma Mortality: A Retrospective Study from a Level I Trauma Center (Al-Thani, H., et al, 2020)  Level III Study	<ul style="list-style-type: none"> <li>1,455 patient retrospectively studied from Qatar.</li> <li>Three groups.</li> <li>357 T1 activations (require immediate care).</li> <li>910 T2 activations (require intermediate care within 2-4 hours).</li> <li>188 other.</li> <li>Road traffic injuries and falls were most common.</li> <li>Median TPT time was 70 minutes in both groups.</li> </ul>	<ul style="list-style-type: none"> <li>In-hospital mortality was independent of total prehospital time (TPT).</li> <li>Mortality in T1 activations was associated with longer on-scene time.</li> </ul>
Is Prehospital Time Important for the Treatment of Severely Injured Patients? A Matched-Triplet Analysis of 13,851 Patients from the TraumaRegister DGU (Klein, K., et al, 2019)  Level IV Study	<ul style="list-style-type: none"> <li>13,851 patients met inclusion criteria.</li> <li>3 groups of 4,617 that were statistically comparable.</li> <li>Groups established based on emergency treatment time.</li> <li>From Germany and Austria.</li> <li>Mean duration of PHT was approximately 70 minutes.</li> </ul>	<ul style="list-style-type: none"> <li>As the number of prehospital measures increased, emergency treatment time also increased.</li> <li>Increase in mortality with shorter emergency treatment times due to key information being missed at the scene.</li> <li>Focus placed on short rescue time and well-used rescue time.</li> </ul>

## CONCLUSIONS:

- Longer prehospital times associated with increased mortality in 2 out of 3 studies.
- Renewed focus placed on short rescue time and well-used rescue time.
- There were higher mortality rates in T1 activations due to the need for more interventions and longer extraction times.



## BACKGROUND:

- The golden hour is a concept that recommends starting treatment within 60 minutes following traumatic injury.
- The purpose of the golden hour is to provide rapid interventions that are appropriate for the individual injuries.
- Traumatic injuries may be caused by motor vehicle accidents, falls, assault, or by being hit by a heavy object, for example.
- Injuries are body wide and are not limited to any one system.
- Treatment of traumatic injuries include chest tubes, intubation, transfusion of blood products, fluid resuscitation, and more.
- Over 5 million deaths due to injury per year (AAST, n.d.)
- Total cost of medical bills following car accidents was roughly \$56 billion dollars in 2019. (CDC, 2021)
- Over 2.5 million people treated in emergency departments in 2019 following car accidents. (CDC, 2021)

## APPLICATION:

- Short rescue time and well-used rescue time are vital to patient outcomes.
- Rapid assessment of airway, breathing, and circulation should happen first.
- This is followed by an assessment of the rest of the patient.
- Missing major injuries and delaying treatment led to an increase in patient mortality.
- Systematic approaches are helpful in EMS and emergency departments to streamline the process.