Patient Safety Conference 2019

**24 – 26 October 2019**
**Le Meridien Hotel & Conference Centre, Dubai**

# Adverse events in a Tunisian hospital: results of a retrospective cohort study

**Dr. Mondher Letaief**
*WHO-Eastern Mediterranean Regional Office (EMRO)*

World Health Organization
Regional Office for the Eastern Mediterranean

# Study general objective

To describe the frequency, type and preventability of AEs for patients admitted in the university hospital of Monastir.

It was part of a larger effort undertaken by the Eastern Mediterranean Regional Office of the World Health Organization to Hospitals assess the problem of patient safety in six countries of the region.

# Materials and methods

- *Adverse event*: injury related to medical management, in contrast to complications of disease. *Intrinsic risk factors*: are the co-morbidities selected from the established list in the review form 1.
- *Extrinsic risk factors*: they included the following:
  - – Surgical interventions;
  - – Endoscopy;
  - – Cardiac catheterization;
  - – Central line catheterization;
  - – Urinary catheterization;
  - – Mechanical ventilation

# Study Sample

- Retrospective cohort study.
- Collected data from Medical records
- stratified random sampling method.
- The sample size was proportional to the number of admissions in each of the 18 clinical departments. Assuming a rate of AE of 15% based on prior literature, we calculated that the study would require a sample of 544 patients to a achieve a precision of ±2% (based on a 0.05 probability of a type 1 error) [1, 6].
- selected 620 medical files to ensure that we end up with 544 complete records.

# The identification of AEs

- a 2-stage review process.
- First, a medical student reviewed the medical records to check for the presence of at least 1 of 18 screening criteria using the Review form 1 (Appendix 1).
- The criteria were not mutually exclusive and each patient could qualify for more than one criterion.
- Second, if one or more criteria were identified as present in the record by the medical student, the corresponding medical record was then reviewed independently by two expert physicians to judge whether an adverse event had occurred

# Proportion of Review Form 1 records in which criteria indicative of AEs were identified

| Criteria | Positive | Positive with AE (%) | Relative risk (RR) | 95% CI |
|---|---|---|---|---|
| Unplanned admission | 24 | 83.3 | 11.8 | [8.43–16.62] |
| Hospital acquired infection/sepsis | 22 | 95 | 13.9 | [10.11–18.92] |
| Hospital incurred patient injury | 10 | 90 | 10.3 | [7.46–14.32] |
| Unexpected death | 9 | 77.8 | 8.6 | [5.61–13.34] |
| Unplanned transfer to intensive care unit | 8 | 66.7 | 6.8 | [2.95–15.71] |
| Total | 93 | 11.7 | 8.6 | [6.61–11.09] |

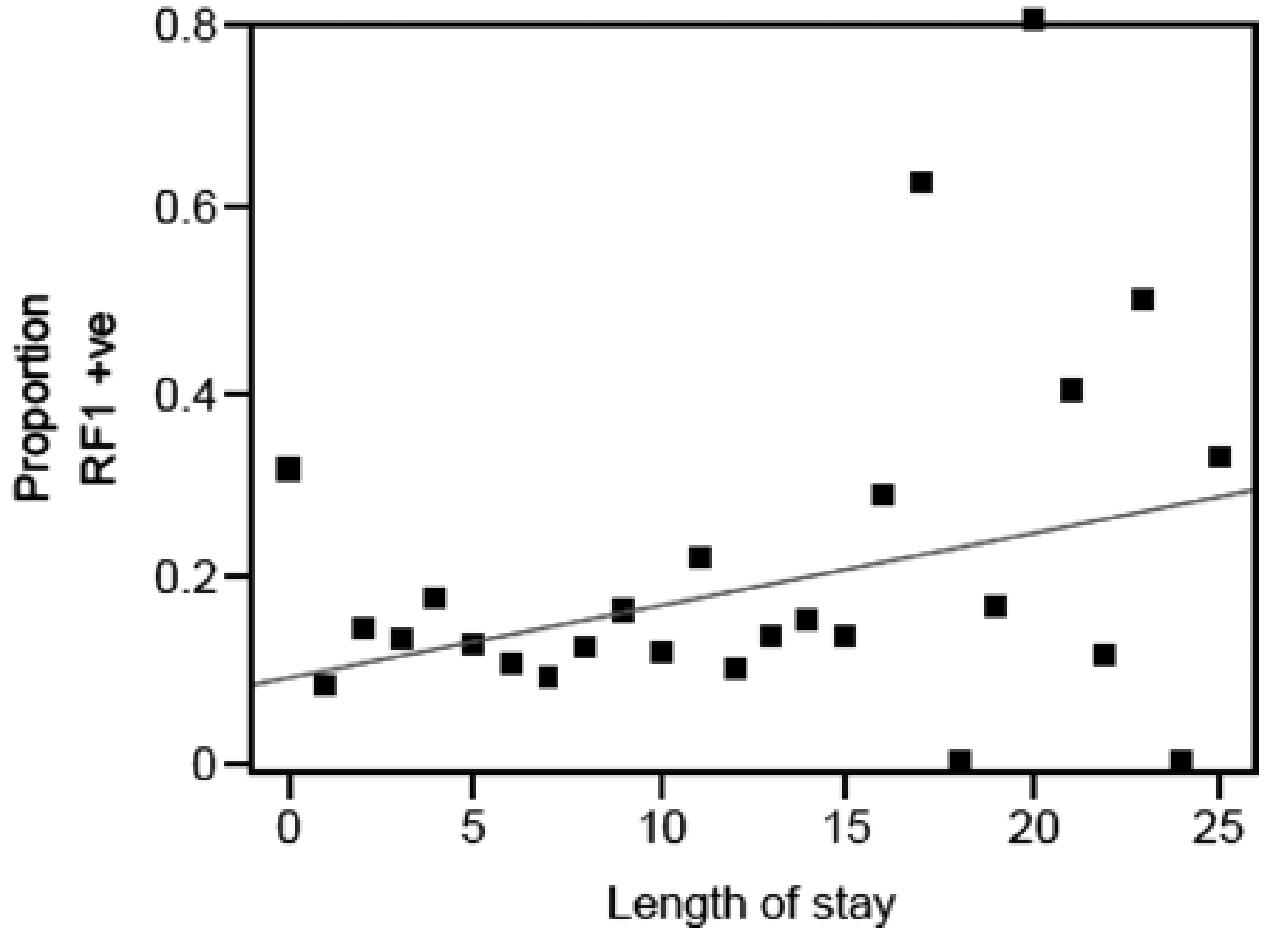
# Classification of the AEs

| Type of AEs | (%) |
|---|---|
| Surgical and invasive procedures | 54.8 |
| Therapeutic errors | 20.9 |
| Diagnostic errors | 12.9 |
| Drug related AEs | 6.5 |
| Others | 4.9 |
| Total | 100 |

# Patient's characteristics and occurrence of AEs (*n* = 62)

| **Patient's characteristics** | | **Total number** | **Number of adverse events** | ***p-value*** |
|---|---|---|---|---|
| Age | < 2 years | 46 | 11 | NS |
| | 3–15 years | 70 | 11 | |
| | 16–45 years | 268 | 10 | |
| | 46–64 years | 124 | 12 | |
| | 65 years and more | 112 | 18 | |
| Sex | Female | 331 | 27 | NS |
| | Male | 289 | 35 | |
| Length of stay | < 7 days | 360 | 22 | <0.001 |
| | ≥ 7 days | 260 | 40 | |
| Extrinsic risk factors | Yes | 173 | 44 | <0.01 |
| | No | 447 | 18 | |
| Intrinsic risk factors | Yes | 207 | 11 | NS |
| | No | 413 | 51 | |

**Figure 1** Relationship between the proportion of Review Form 1 positive and the length of stay (truncated to 25+ ...



# Distribution of disability degrees for patients with positive AEs

| disability degrees | Medical department | Surgical department | ICU | Total |
|---|---|---|---|---|
| Minimal impairment, recovery within 1 month | 2 | 5 | 3 | 10 |
| Moderate impairment, recovery within 1–6 months | 8 | 12 | 6 | 26 |
| Moderate impairment, recovery within 6–12 months | 3 | 4 | 2 | 9 |
| Permanent impairment, degree of disability <50% | 0 | 2 | 1 | 3 |
| Permanent impairment, degree of disability >50% | 0 | 1 | 0 | 1 |
| Death | 4 | 6 | 3 | 13 |
| Total | 17 | 30 | 15 | 62 |

# Comments

- The validity of screening AEs by the medical record review
- Incidence rate of 10% of patients ?
- significant correlation in AEs and their preventability according to specialties
- AEs led to prolonged hospital stay, disability and death
- Main gaps identified in our study by reference to the AEs contributory factors were the inadequate communication and training

# For more information

- https://academic.oup.com/intqhc/article/22/5/380/1787156