

Temporal Distribution of Abnormal Events

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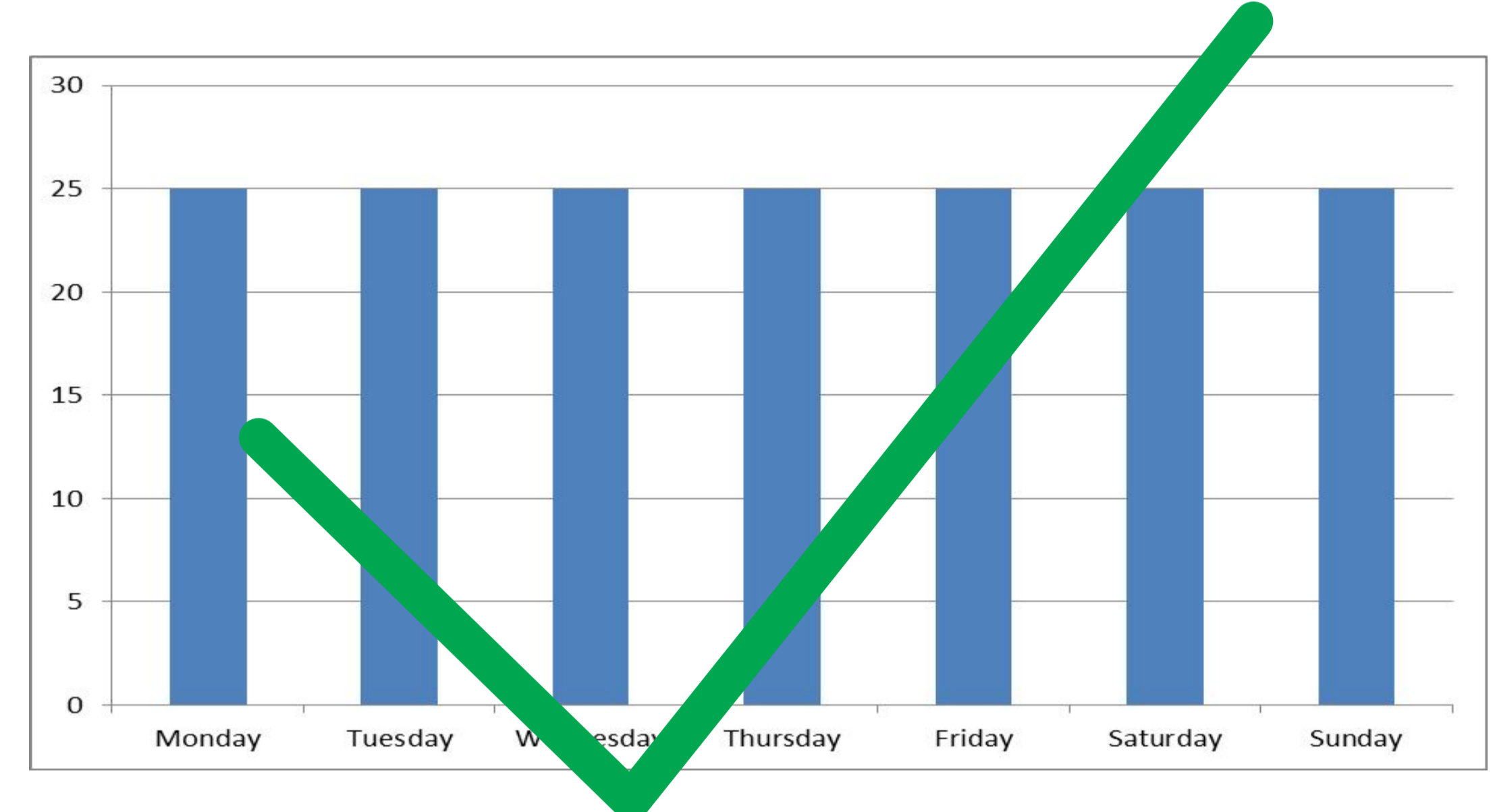
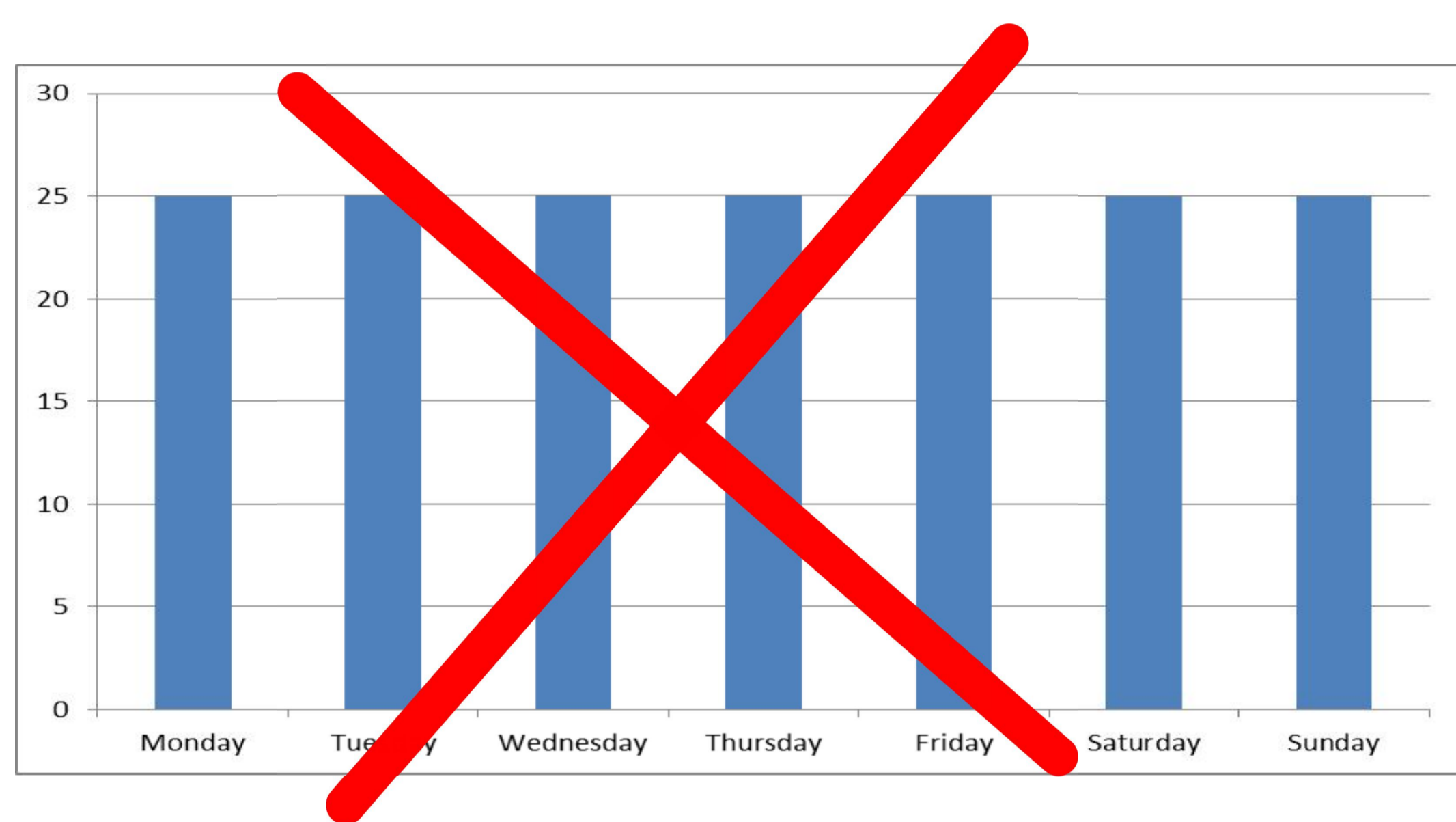
The principal question: Does the day-of-the-week effect occur in use of radiation in healthcare?

Hypothesis 1

Temporal distributions of human errors is not uniform.

Hypothesis 2

The other errors are uniformly distributed over time.



In Finland STUK - Radiation and Nuclear Safety Authority shall be notified of all significant abnormal events. These reports are stored in a national database. In the present study we collected all reports of abnormal events in the years 2010-2017. Other than the abnormal events in X-ray examinations in health care were excluded. The remaining abnormal events formed the dataset for this paper.

Results

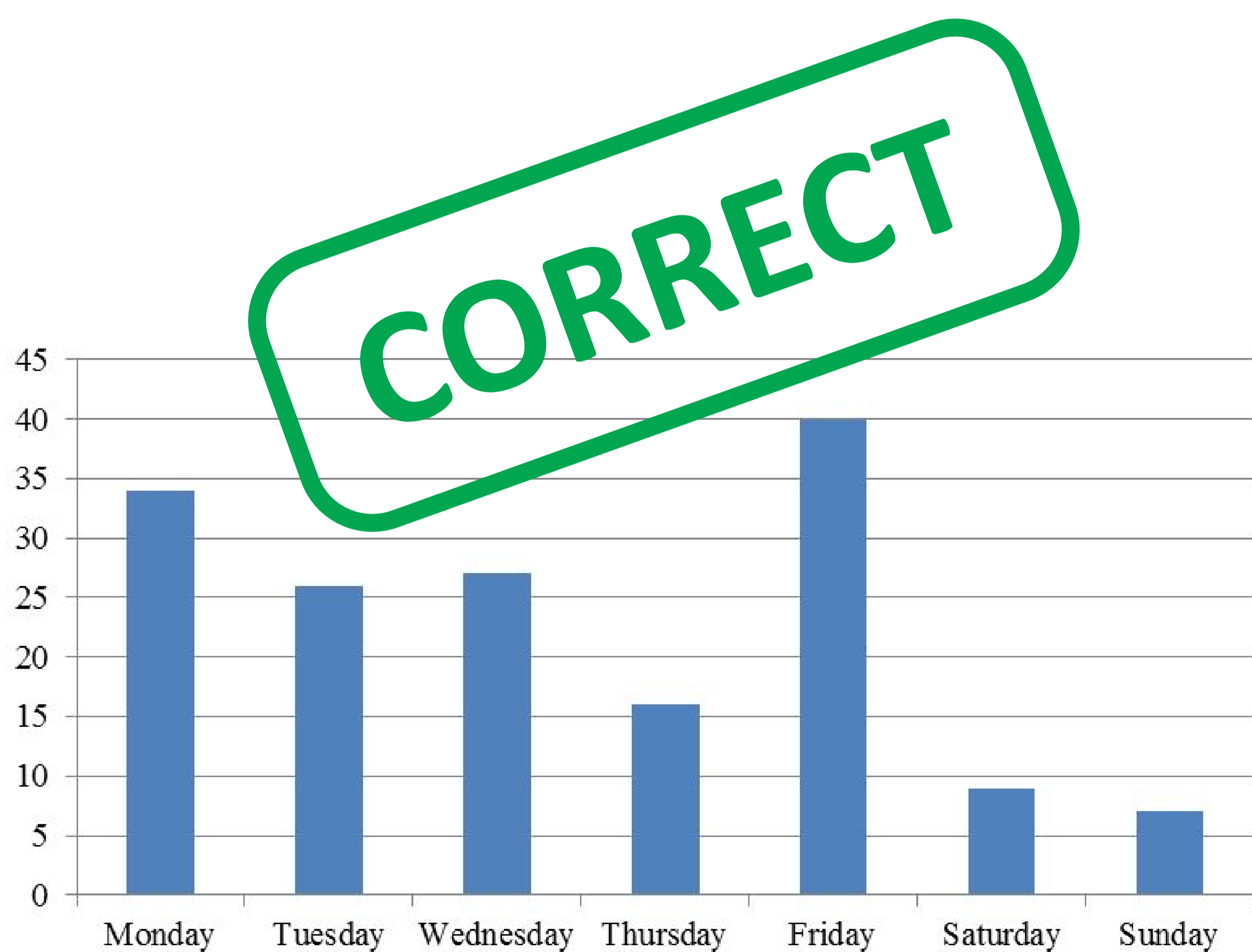


FIG. 1 The temporal distribution of human errors.

FIG. 2 The temporal distribution of abnormal events that are not human errors.

The day-of-the-week effect is evident.

Conclusion

Based on the results we propose a day-of-the-week-based approach as a tool to decrease number of abnormal events.

This could be a part of self-evaluation process in healthcare units.