Our objective was to compare the medication-ordering error rates in resident physicians who are post-call versus those who are not. Errors in Medicine have recently received much attention. Prior studies show that people who are sleep-deprived make more errors in simple cognitive tasks. However, most prior studies looking at physicians used surrogate markers for error making. Additionally, these studies have had conflicting results.

**Introduction**
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**Objective**
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**Methods**
- We analyzed all inpatient medication orders written by resident physicians in the ICU, medical, and surgical wards during a one-month period (based on power calculations).
- Physician call schedules and pharmacy medication error logs were also entered into a database.
- An "error" was defined as anytime a pharmacist contacted a physician if it resulted in a change in a medication order.
- "Post-call orders" were defined as those written after midnight by a physician on call the previous day.
- Two trained data abstractors using standardized forms gathered data.
- Error rates and descriptive statistics were calculated, and Chi-squared tests were used to compare error rates.

**Results**
- 8,195 orders were entered
  - 2,620 (32%) written by post-call physicians
  - 5,575 (68%) were not post-call
- There were 177 medication-ordering errors (including incorrect dosing schedules, interactions, allergies, etc.)
- The error rate was higher when physicians were post-call (2.7% vs. 1.9%, p<0.02), and higher on the General Wards than in the Critical Care Units (2.6% vs. 1.2%, p<0.0001).
- The post-call error rate in particular was higher on the general wards than in the critical care units (3.6% vs. 0.5%, p<0.0001).

**Limitations**
- Retrospective design
- Only includes errors detected by Pharmacist
- May not extrapolate to other medical decision making
- Unable to determine clinical significance of errors
- Possible last minute changes to call schedule

**Conclusions**
- Medication-ordering error rates were higher when physicians were post-call.
- This effect was especially pronounced on the General Wards.
- Additionally, errors were more common on the General Wards than in the Critical Care Units.
- Although the absolute differences were small, and the errors were generally minor, this study provides one possible area for reduction of errors in medicine.
- This study suggests that sleep-deprived, post-call house officers make more errors in cognitive tasks.

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