

DO-ing More to Reduce System Related Medication Errors on Transfer: A Story of Intensive Care



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Background

After the implementation of an electronic prescribing system in all wards of the hospital except the Intensive Care Unit (ICU), an audit of ICU discharges found that **70% of discharges had at least one medication error**[#]. In some cases, these errors persisted for **up to 70 hours** before discovery.

Aims

To investigate the effect of a weekend pharmacy ICU discharge reconciliation service on the impact of ICU-to-ward transcription errors.

Methods

Implementation of a **3 to 4-hour shift** on Saturday and Sunday between 12-4pm to catch the majority of planned discharges. Pharmacist participation was **voluntary** and all pharmacists involved received a brief orientation to the ICU workflow.

A report run at the start of each shift **identified discharges** occurring outside of pharmacy hours that required retrospective review.

A **standardized audit form** was used to reduce inter-auditor variance and collect data on:

- The total number of orders,
- **Errors and their types**
- Time of discharge and pharmacist reconciliation.

At the completion of the reconciliation any suspected **errors were brought to the attention of the ICU team** and, if confirmed, were **amended immediately**.

Results

During the first 33 covered days, **50 discharges** with a total of **457** unique medication orders were reconciled (mean 9.1 orders per patient, range 1-21). Each patient had an **average of 1.4 errors** (range 0-6), representing an error rate of **1 per 6.5 orders**. Although only 44% of discharges were error-free, the presence of the weekend pharmacist resulted in **67% of error-containing discharges / 74% of errors being fixed within 1 hour of transfer**.

Results

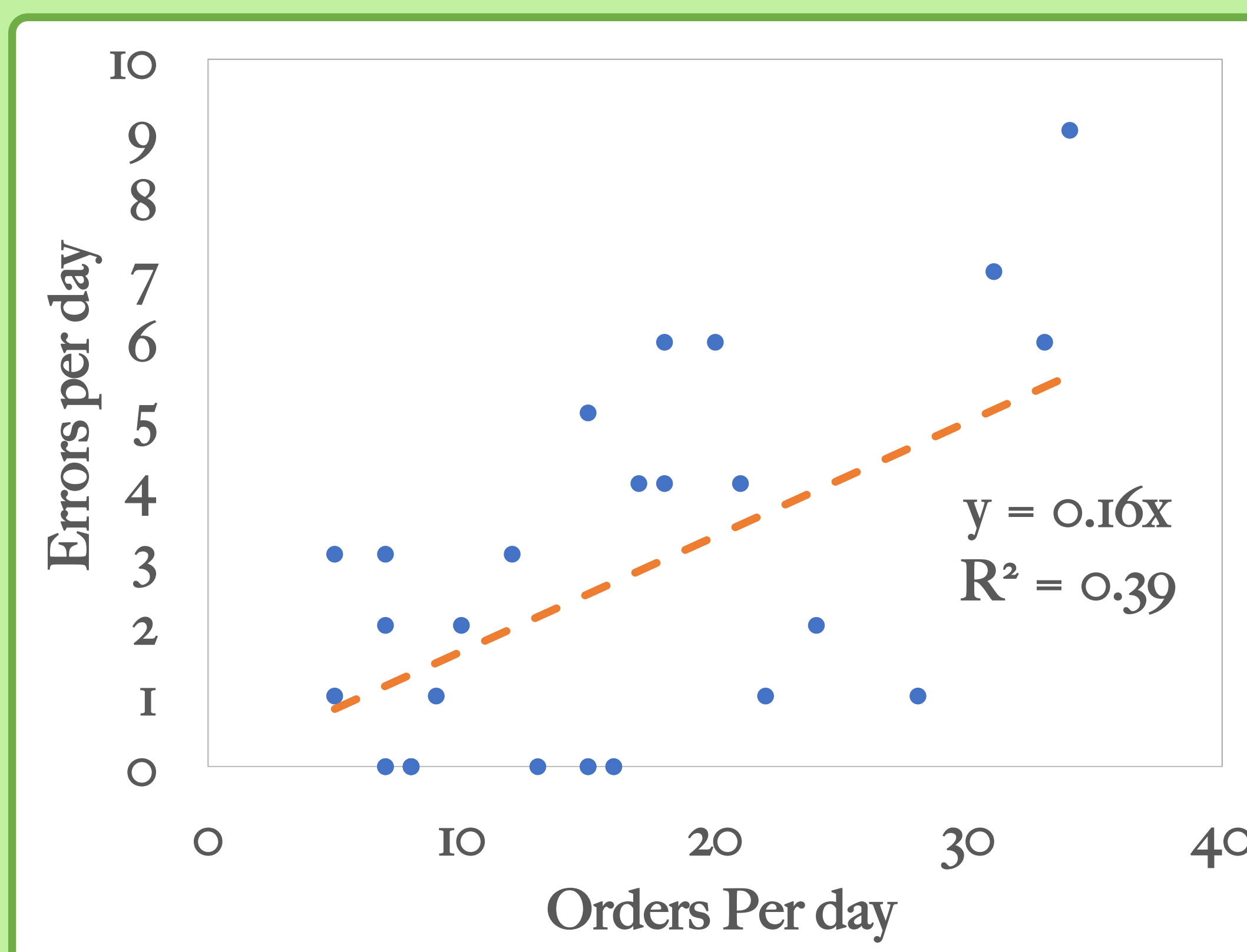


Figure 1. Relationship between number of medications ordered in day and number of errors

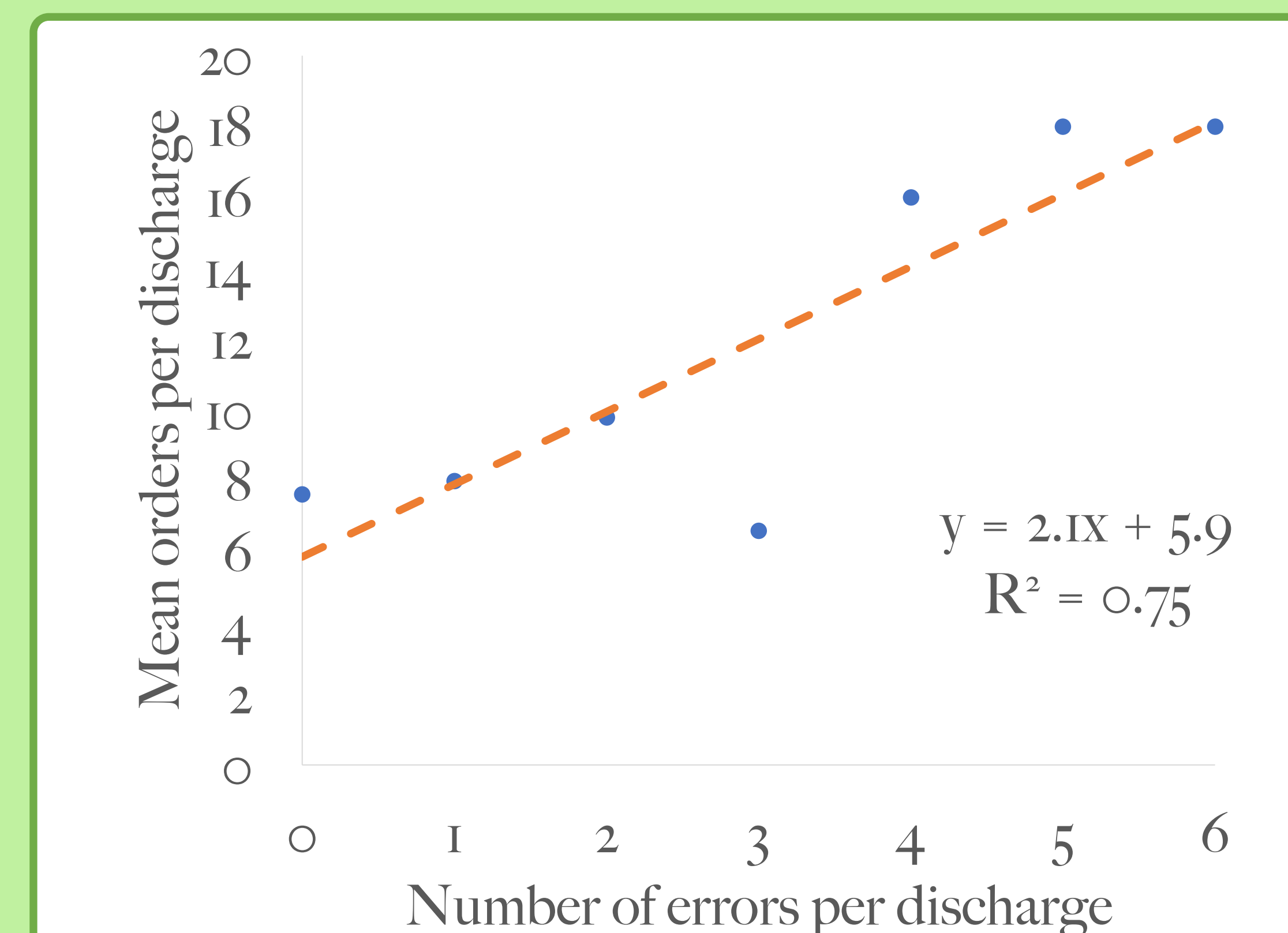


Figure 2. Relationship between mean medication orders on discharge and number of errors found.

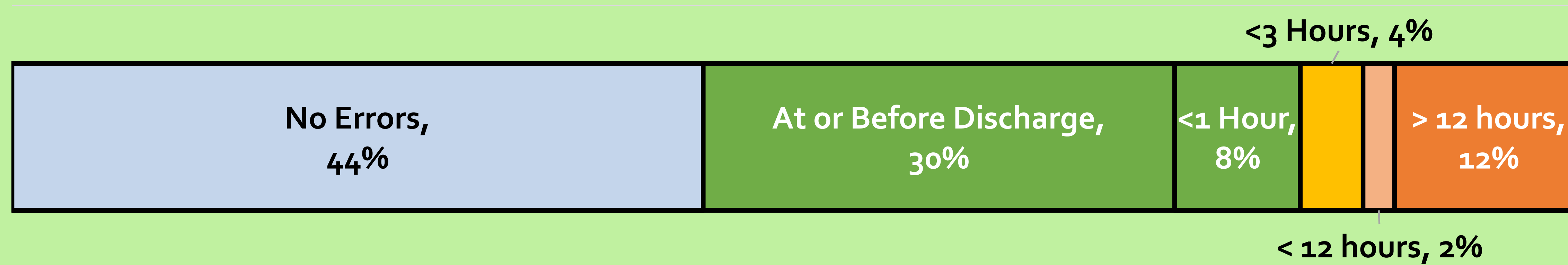


Figure 3. Time to an accurate discharge as a proportion of all discharges.

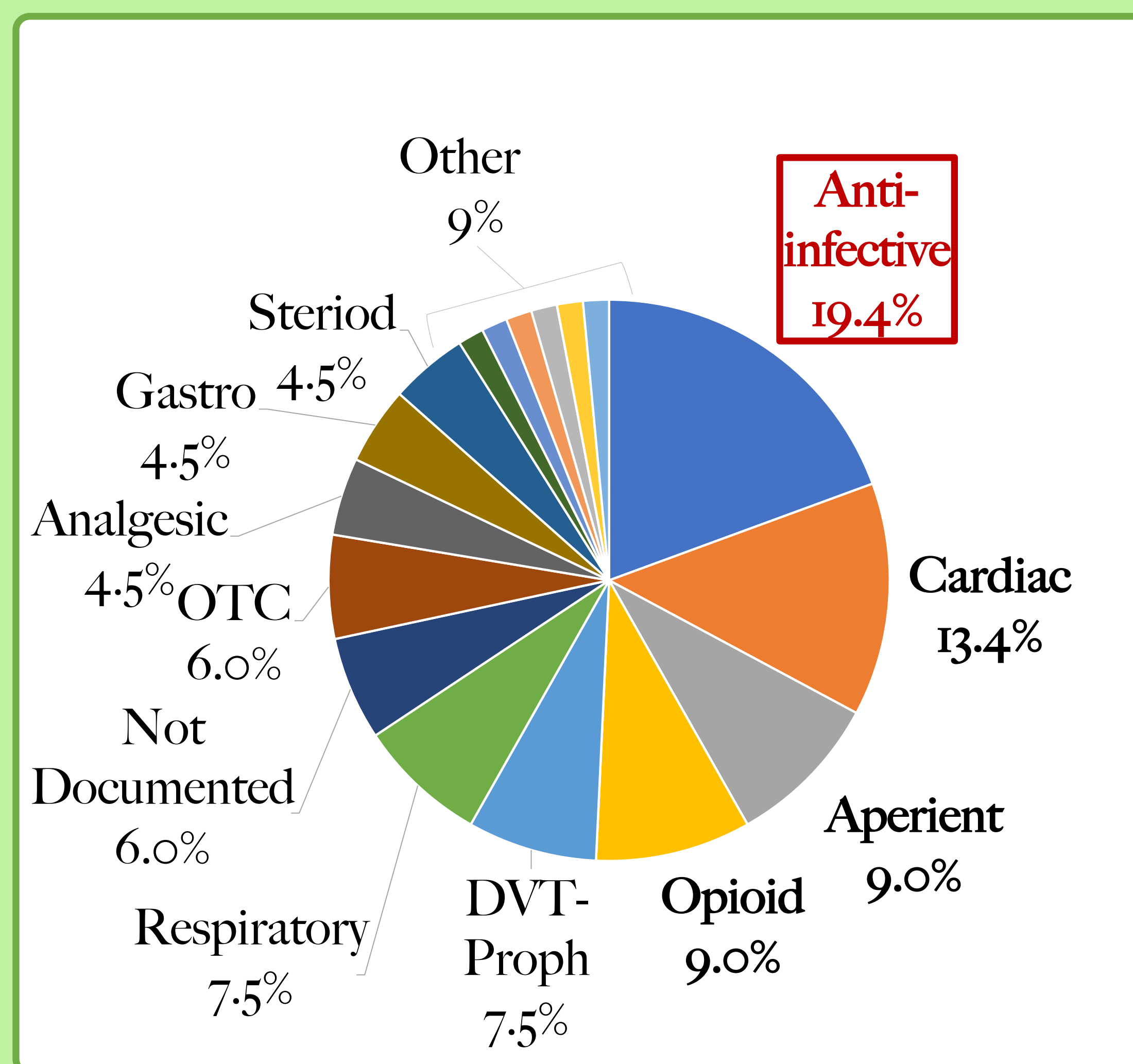


Figure 4. Drug class of erroneous orders and their frequencies. * Other = Anticoagulant, D&A, Eye, Neuro, Psychoactive & Renal.

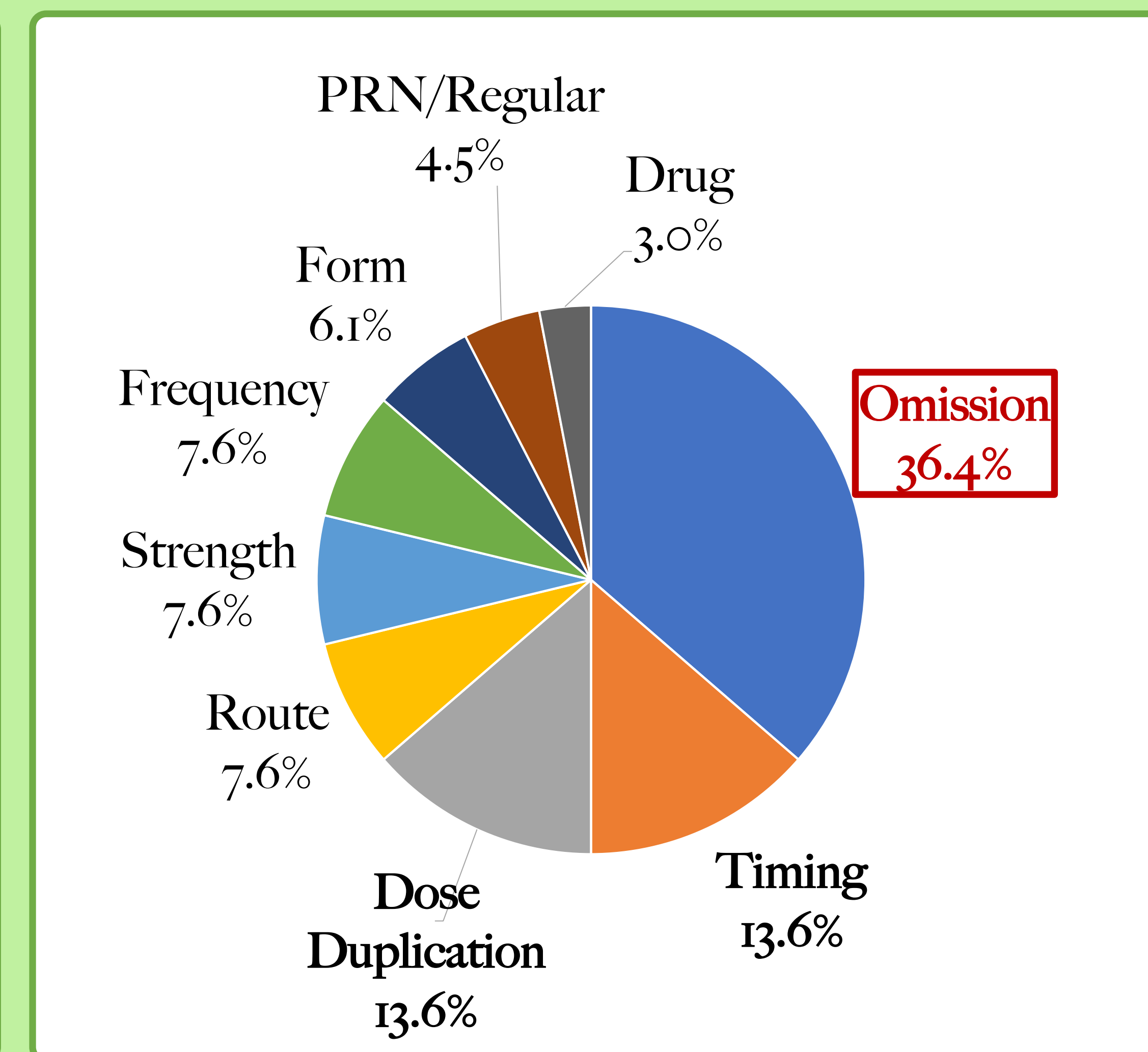


Figure 5. Types of Error and their frequencies

Conclusions

Despite all efforts to date, **the only effective method to reduce errors on discharge from the ICU has been the involvement of a pharmacist in the discharge process**. With the rapid spread of electronic prescribing outside and within ICUs across the country, a cost-effective, comprehensive solution is required.

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Binns S, Thai T. "Requires Intensive Care" – The challenges of intra-hospital medication reconciliation in a paper-electronic prescribing environment. SHPA MM'17 Oral Presentation 2PM, Nov 18 2017