

Improvement of Medical Management of Parkinson's Disease in Inpatients

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Introduction

Levodopa-based therapies are the mainstay of treatment for symptom-control in most patients with Parkinson's disease. The dose regimen is highly variable between individuals, to allow maximisation of benefit from the drugs, with minimisation of adverse effects. Missing or delayed doses can result in problematic "off-spells" characterised by significant bradykinesia and rigidity, and it can take several days or weeks before a patient's functional baseline is re-established. Delayed doses in hospitalised patients results in increased care needs, and complications due to reduced mobility and inability to take other medications.

The recommended standard set for this project was that levodopa-based therapies should be administered no more than 30 minutes before or 30 minutes after the scheduled dose.

Methodology

All electronic drug charts for patients on care of the elderly wards at Bedford Hospital were reviewed during a two week data collection period. The time of administration of levodopa was recorded for each scheduled dose. Interventions were then instigated before two further two week periods of data collection.

The interventions included: meeting with senior sister's for each ward to increase awareness amongst nursing staff, circulation of recommendation flyers to nursing and medical staff, introduction of "get it on time" flyers to wards (see figure 1), and presentation at local departmental audit meeting.

Results

380 doses of levodopa-based therapy were scheduled to be administered during the initial two week study period. 216 (56.8%) were given on time, and 10 doses were missed due to drug unavailability. The mean time discrepancy between scheduled time and actual time of administration was 35.55 minutes (30.49 to 40.61, 95% confidence interval).

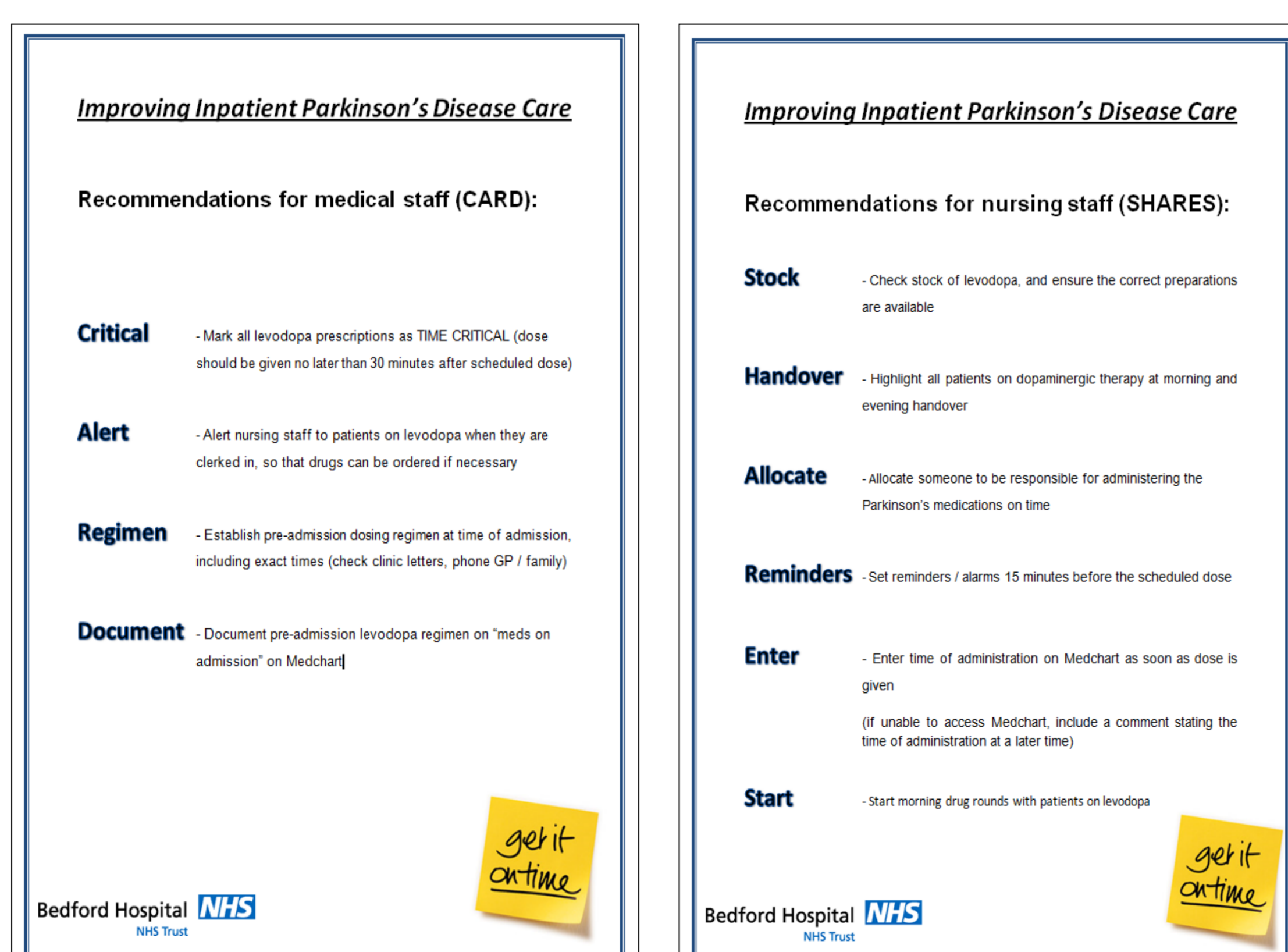


Figure 1 - "Get it on time" clock (placed above the beds of patients on levodopa to serve as a reminder for administration times), and recommendation flyers that were circulated to medical and nursing staff

During subsequent data collection periods there was a general trend of improvement following initiation of interventions. The percentage of doses given on time was 63.9% (of 155 scheduled doses) in the second data collection period, and 68.3% (of 122 scheduled doses) in the third data collection period (see figure 2).

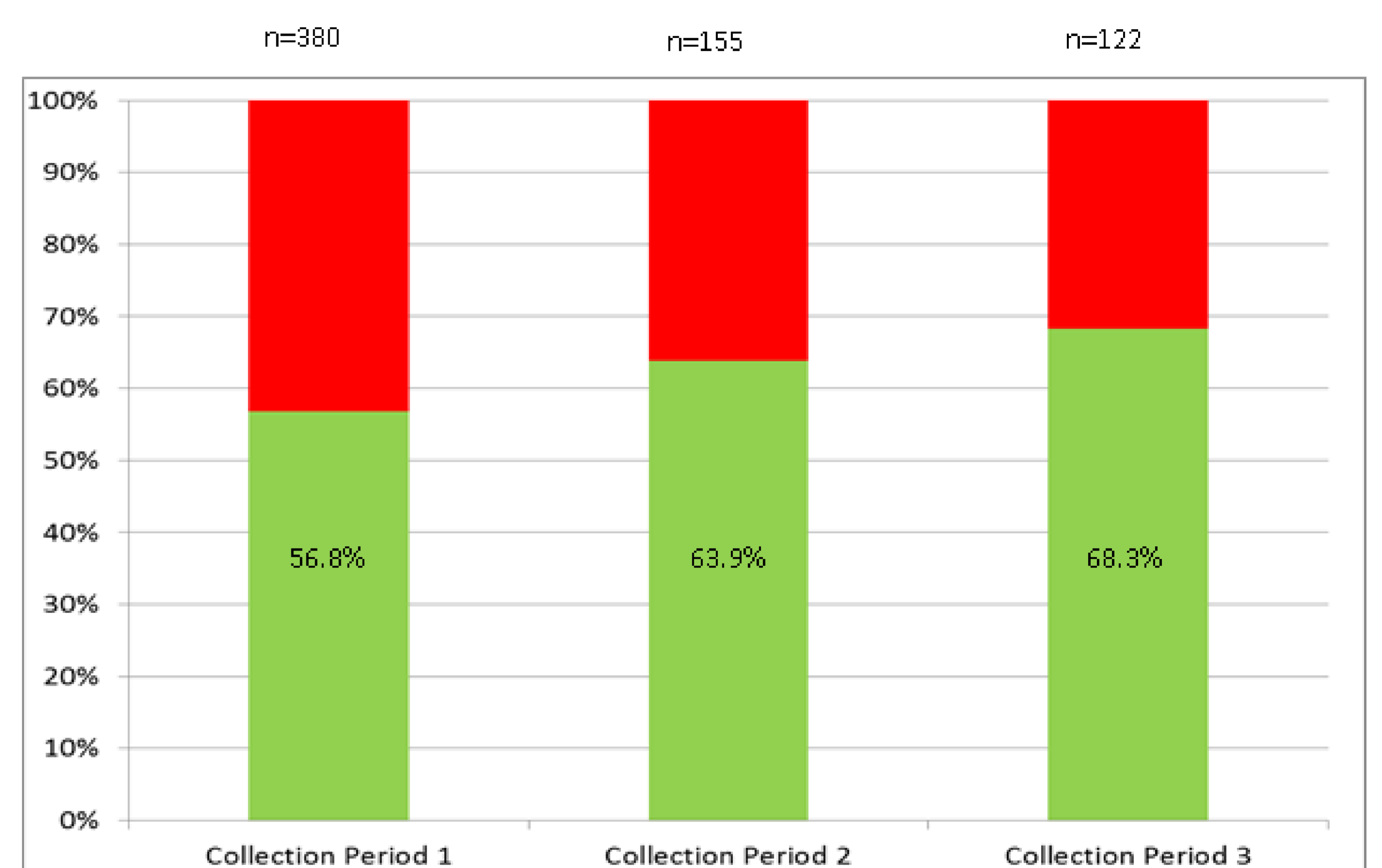


Figure 2 - Percentage of levodopa-based therapy doses being given on time by data collection period. Green indicates the percentage given on time

Discussion

There was a trend of modest improvement during the study period to date. The authors feel that the most important factor in driving this has been increased awareness of the importance of administering levodopa on time. The introduction of the clock flyers has also received positive feedback.

Dose times often do not coincide with the times of conventional drug rounds, so there must be active processes to facilitate these being given on time. It is not clear to what degree the recommendations have been adhered to and whether the clock flyers have been used for all patients on levodopa. This is something that will be audited in the future. Another challenge to the administration of levodopa on time is the Parkinson's disease patient with significant cognitive impairment. These patients may be intermittently agitated and therefore it may not be possible to give medications when they are due. Performance was particularly poor for doses due between 1001h and 1200h, so this must be a focus for improving performance in the future.

Further improvement is required to reach to 90% target, with the following recommendations being planned:

1) Involvement of pharmacy team

- Supply of common preparations on the wards to avoid missed doses due to lack of availability
- Levodopa prescriptions to be automatically marked time critical as time critical
- Pharmacists to be able to mark levodopa prescriptions as time critical

2) Root cause analysis of doses consistently not given on time

3) Educational sessions to medical team

4) Alarms on each ward for dosing reminders

5) Expansion of use of "get it on time" clocks to all wards