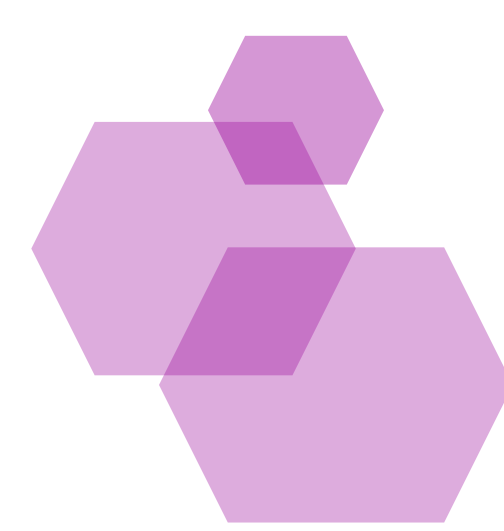
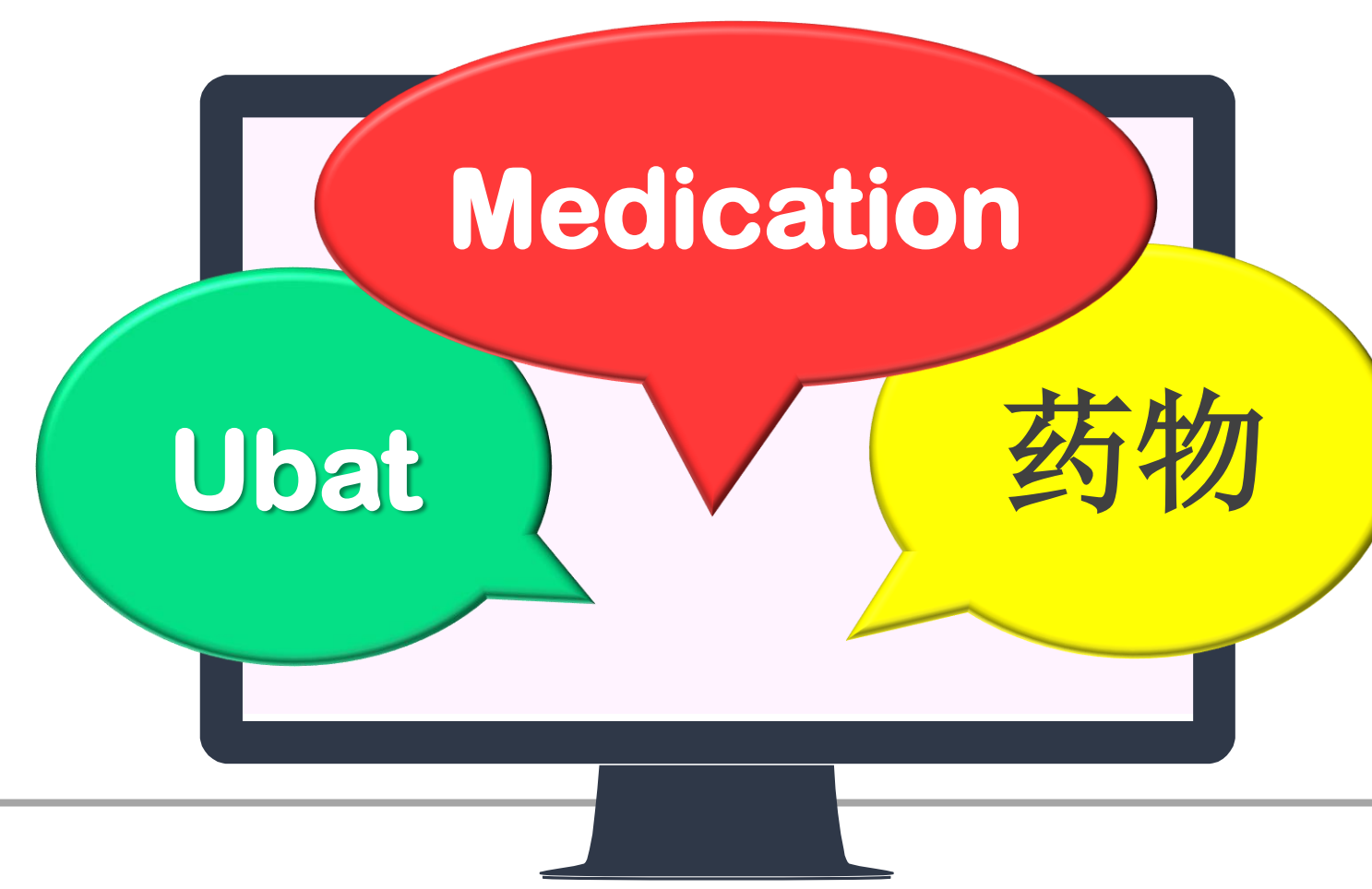




Singapore Healthcare Management 2017



Automated Translation of Medication Instruction on Labels: Impact on Patients and Staff



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1. Introduction

There has been an increasing need for medication instructions to be printed in multiple languages globally. This is especially crucial for patients with limited English proficiency as it enables the conveying of medication information in an effective and safer manner so as to improve adherence and reduce medication administration errors at home.

In our hospital, about 50% of patients require the pharmacist to communicate to them in their preferred language of either Chinese or Malay. As the medication instructions are printed in English only, pharmacists will then manually write the translated instructions onto the label in the patient's preferred language during counselling.

As such, the dispensing system has since been enhanced to automatically translate the instructions and print them in both English and Chinese or Malay. (Fig 1)

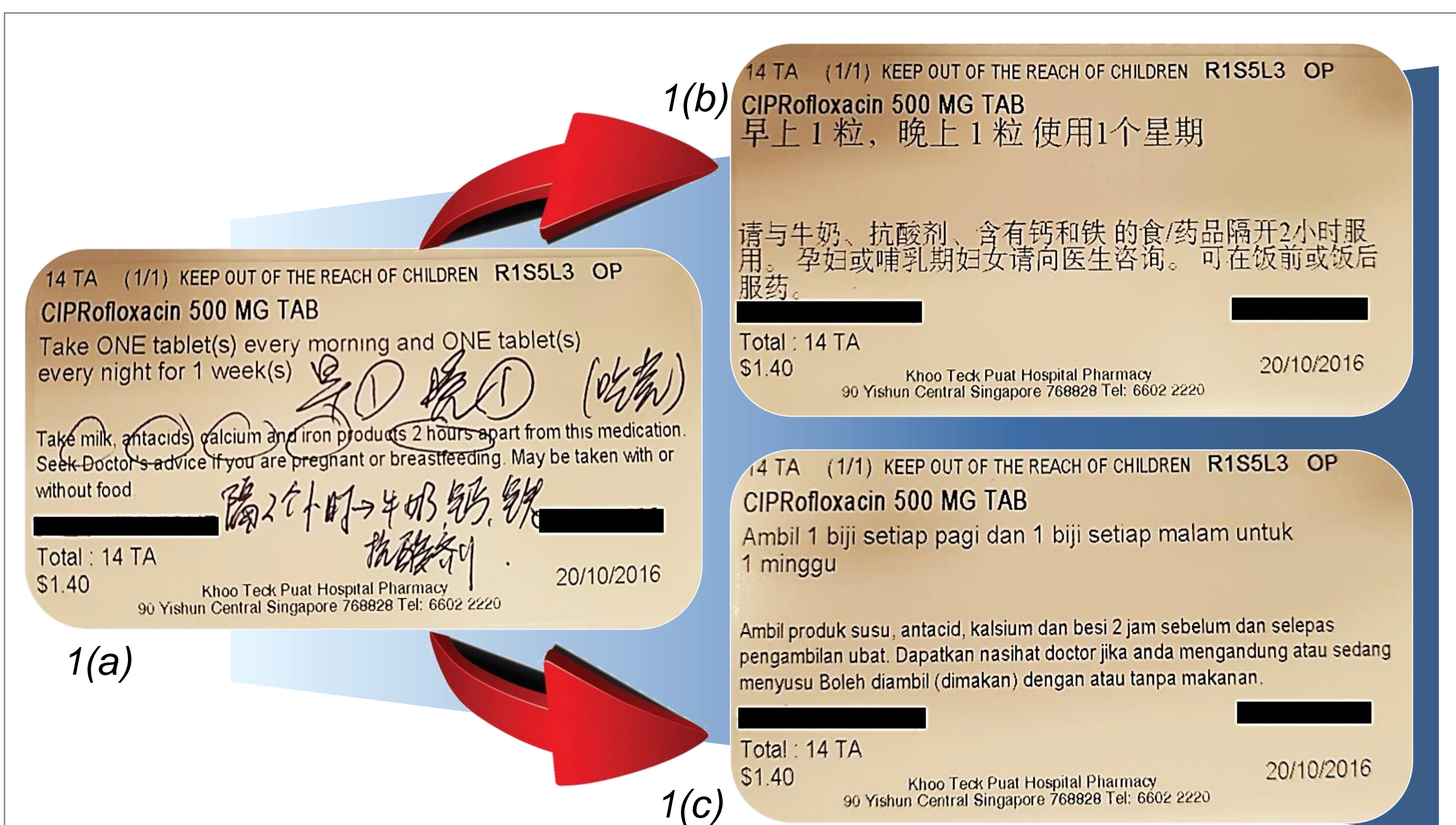


Fig 1. The image 1(a) represents printed label before the system enhancement while 1(b) and (c) are printed by automated translation feature in the system with instructions in Chinese and Malay respectively.

2. Objectives

To study the impact of automated translation on time-savings and experience of patients and pharmacy staff in the outpatient pharmacy.

3. Methods

Study was conducted in May 2016 over two weeks. The following were measured:

- Time taken to write translated dose, auxiliary and cautionary instructions onto labels.
- Time taken to print translated labels, after system enhancement.
- Time saving was computed as: (Time taken to write – Time taken to auto print) per line item.
- Obtained feedbacks from patients and pharmacy staff for satisfaction measurement.

4. Results

(a) Impact on time saving:

- The enhancement had led to a significant savings of 80% of time spent (about 8 seconds per line item). (Fig 2)

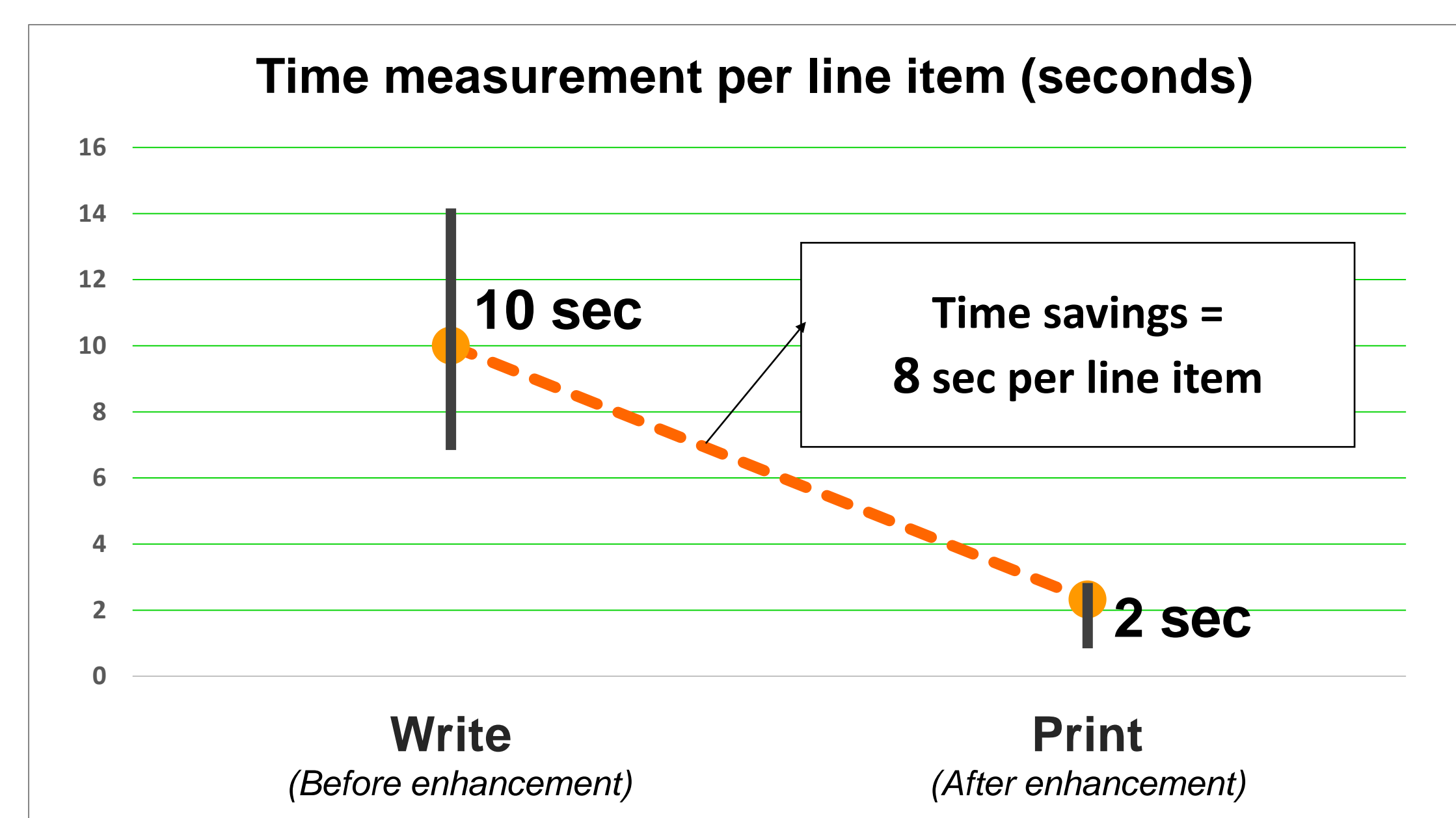


Fig 2.

(b) Feedback from patient:

Majority felt that this was a better means to communicate information on medication administration. (Fig 3)

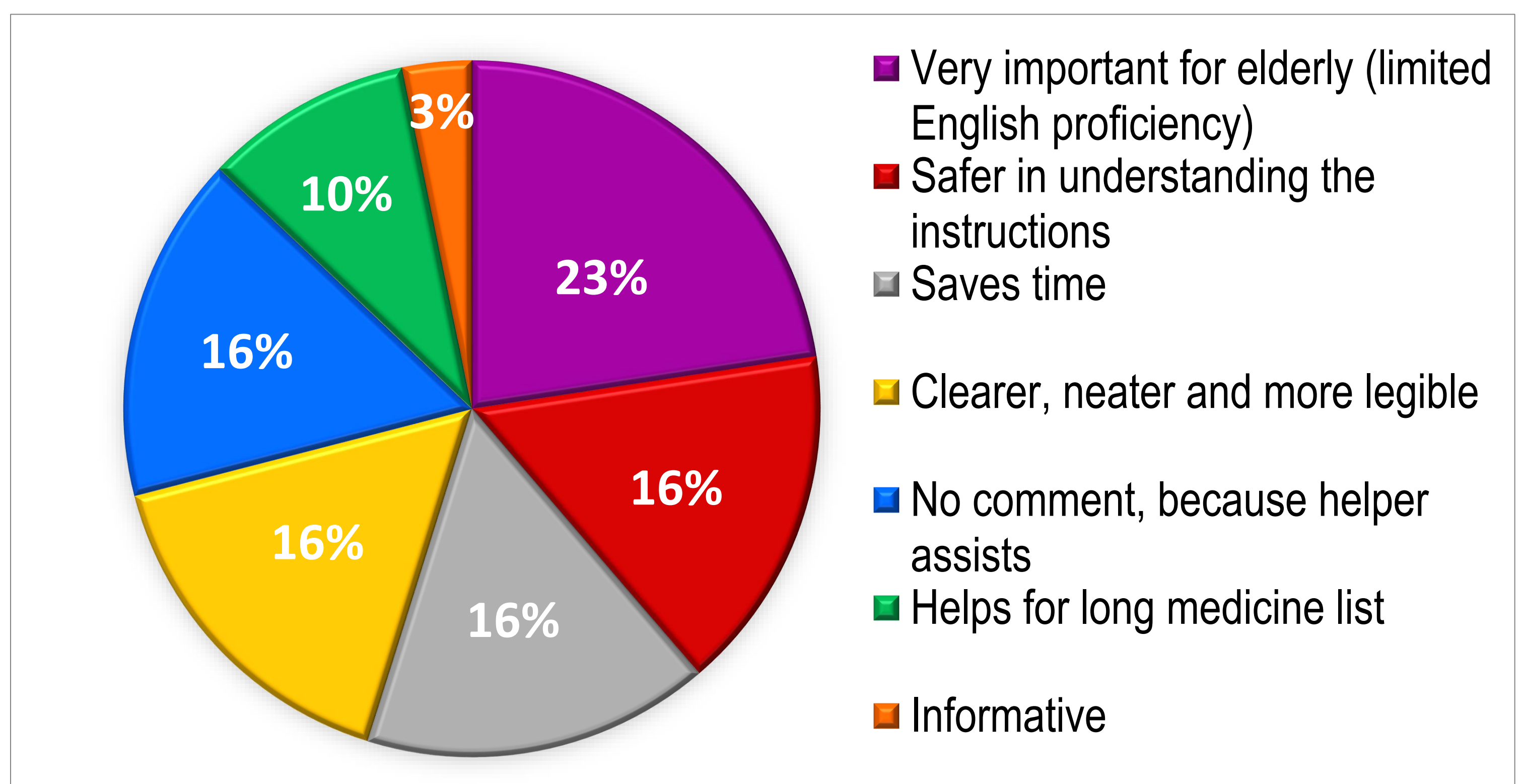


Fig 3. Feedback from patients (n=31, who received printed labels in translated language)

(c) Feedback from pharmacists:

Our pharmacists (n=2) had also favored the printed translated labels as it provided a safer and more standardised translation to educate patients on medication administration which in turn saves time and facilitates counselling.

6. Conclusion

- Automated translation has benefitted both patients and staff that more than doubling of process efficiency and zero translation errors during and after implementation
- Approximately 5 hours can be saved daily, which is equivalent to 0.65 full-time-equivalents (FTE)
- Reduction in patient waiting time while dispensing was a tremendous gain for institution's reputation. Dispenser need not spend time to handwrite translations but counselling patient efficiently. Potentially free up frontline staff to attend patients and their caregivers more readily
- Further studies could be done to ensure the enhancement demonstrates zero error