

# Refinement of management effectively reduces dispensing errors: 12-year experience from an outpatient pharmacy

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## Abstract

**Objective:** Medication errors in hospital outpatient pharmacy have a serious negative impact on people's health and economy. To assess the efficiency of 12-year refined management using PDCA cycle on reducing the dispensing errors in a large-scale hospital outpatient pharmacy. **Methods:** A retrospective study of dispensing errors was performed. Data for dispensing errors, stocks and accounts management from 2008 to 2019 was collected from the electronic system and evaluated using direct observation method. **Results:** The consistent rate of the stocks and accounts was significantly increased (86.93% vs 99.54%,  $p < 0.05$ ). A remarkable reduction of error rate was achieved (0.014% vs 0.0006%,  $p < 0.05$ ) and the rate of dispensing errors was significantly reduced (0.019% vs 0.000034%,  $p < 0.05$ ). Besides, the technicians improved themselves during this procedure. **Conclusion:** the refined management using PDCA cycle was helpful to prevent the dispensing errors and improve medication safety for patients.

Dear editor,

Please find the enclosed manuscript entitled: “**Refinement of management effectively reduces dispensing errors: 12-year experience from an outpatient pharmacy** ” to be submitted to Journal of Evaluation in Clinical Practice for consideration of publication.

Medication errors are common in hospital pharmacy and have a serious negative impact on people's health and economy. Thus, improving the management of hospital outpatient pharmacy was essential to reduce medication errors. In this manuscript, we retrospectively examined the refined management focusing on dispensing errors without automatic dispensing machine for the past 12 years. PDCA cycle was applied as the tool for quality management. Data for dispensing errors, stocks and accounts management from 2008 to 2019 was collected from the electronic system and evaluated using direct observation method. As a result, after a 12-year refined management using PDCA cycle, the consistent rate of the stocks and accounts was significantly increased (86.93% vs 99.54%,  $p < 0.05$ ). A remarkable reduction of error rate was achieved (0.014% vs 0.0006%,  $p < 0.05$ ) and the rate of dispensing errors was significantly reduced (0.019% vs 0.000034%,  $p < 0.05$ ). Besides, the technicians improved themselves during this procedure. In summary, we provided practical management experience to reduce medication errors in a large-scale hospital without automatic dispensing machine. To our knowledge, there is no such a report on the refined management of reducing dispensing errors using PDCA cycle.

We certify that the paper has not been submitted elsewhere in similar form, and all authors have contributed significantly to publication. Besides, all authors are aware of the submission and agree with it.

Sincerely yours,

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