



Background

Drugs are disposed for the following reasons: patient refund due to allergy or adverse drug reaction, expired drugs which cannot be exchanged with vendors and drug wastage due to exposure to undesirable storage conditions. Request will be raised in the system through e-Condemnation portal for approval of disposal of such drugs. After approval, the drugs will be sent for disposal and the pharmacy inventory system will be adjusted to correctly reflect the actual stock holding.

At the Bowyer Block Pharmacy, drug wastage is recorded manually by the staff during packing of drugs (e.g. dropped tablets, opened blister foil) and placed on the clipboard as shown in figure 1. These will collated by the designated staff on an ad-hoc basis and placed in the cupboard. This same cupboard is used to store other drugs for disposal (figure 2). As the drug disposal was not done on a regular basis, the cupboard contains a mixture of drugs in various stages of the disposal process: (1) e-condemnation not submitted (2) awaiting e-condemnation approval (3) e-condemnation approved but drug not brought to disposal area. Sorting of drugs in the cupboard is time-consuming.

For e-condemnation submission, the drugs need to be sorted out according to reasons for condemnation and details such as drug name, quantity and cost need to be tabulated. For drugs without accompanying labels, there are issues with drug identity. For the manual drug wastage recording, some information are missing or not illegible due to poor hand-writing.

The drug disposal process takes an average of 5 hours per month.

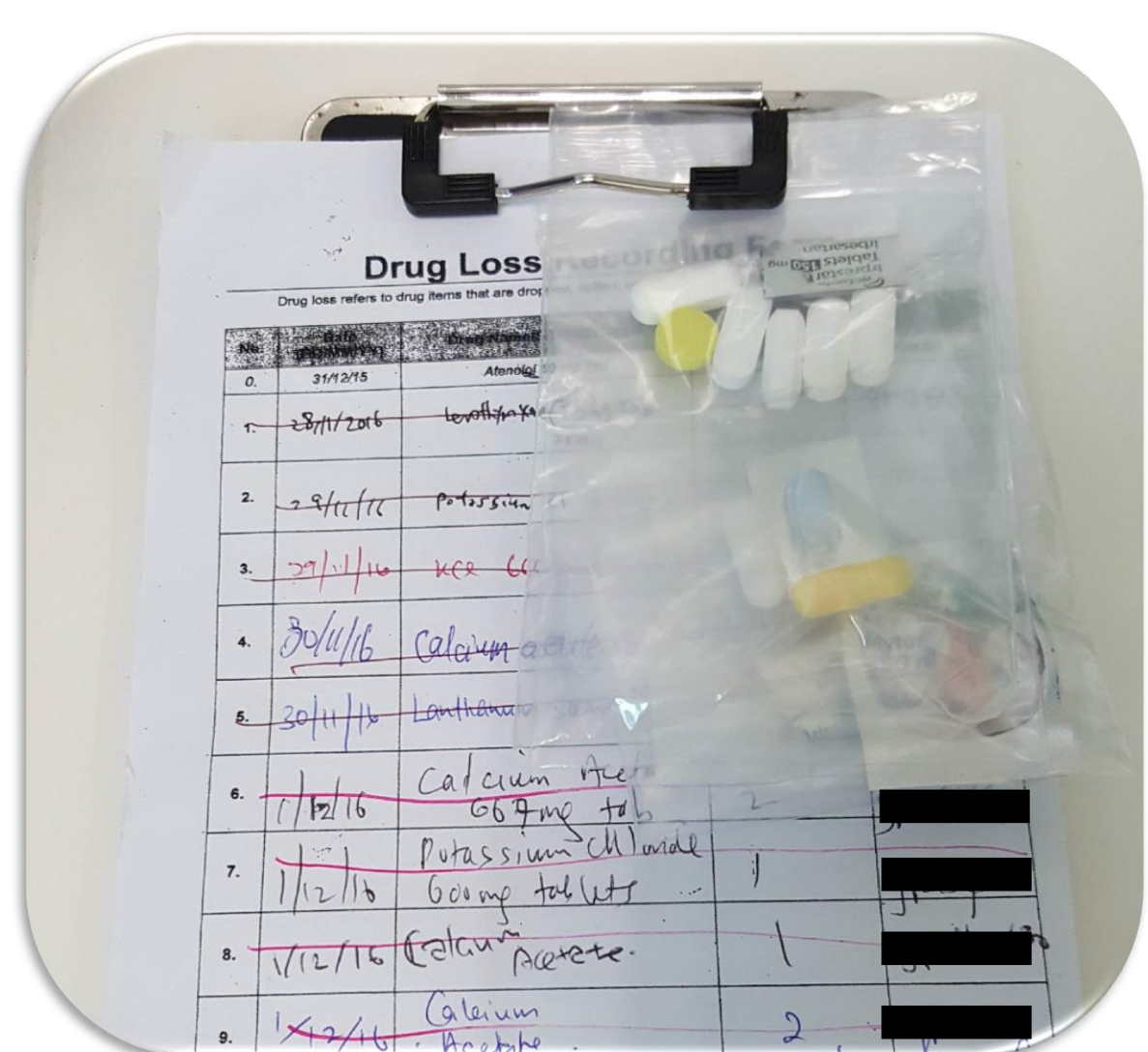


Fig 1. Manual drug wastage recording form with drugs attached



Fig 2. Drugs for disposal in the designated cupboard for storage with no clear indication of reasons for disposal and disposal stage

Initiatives

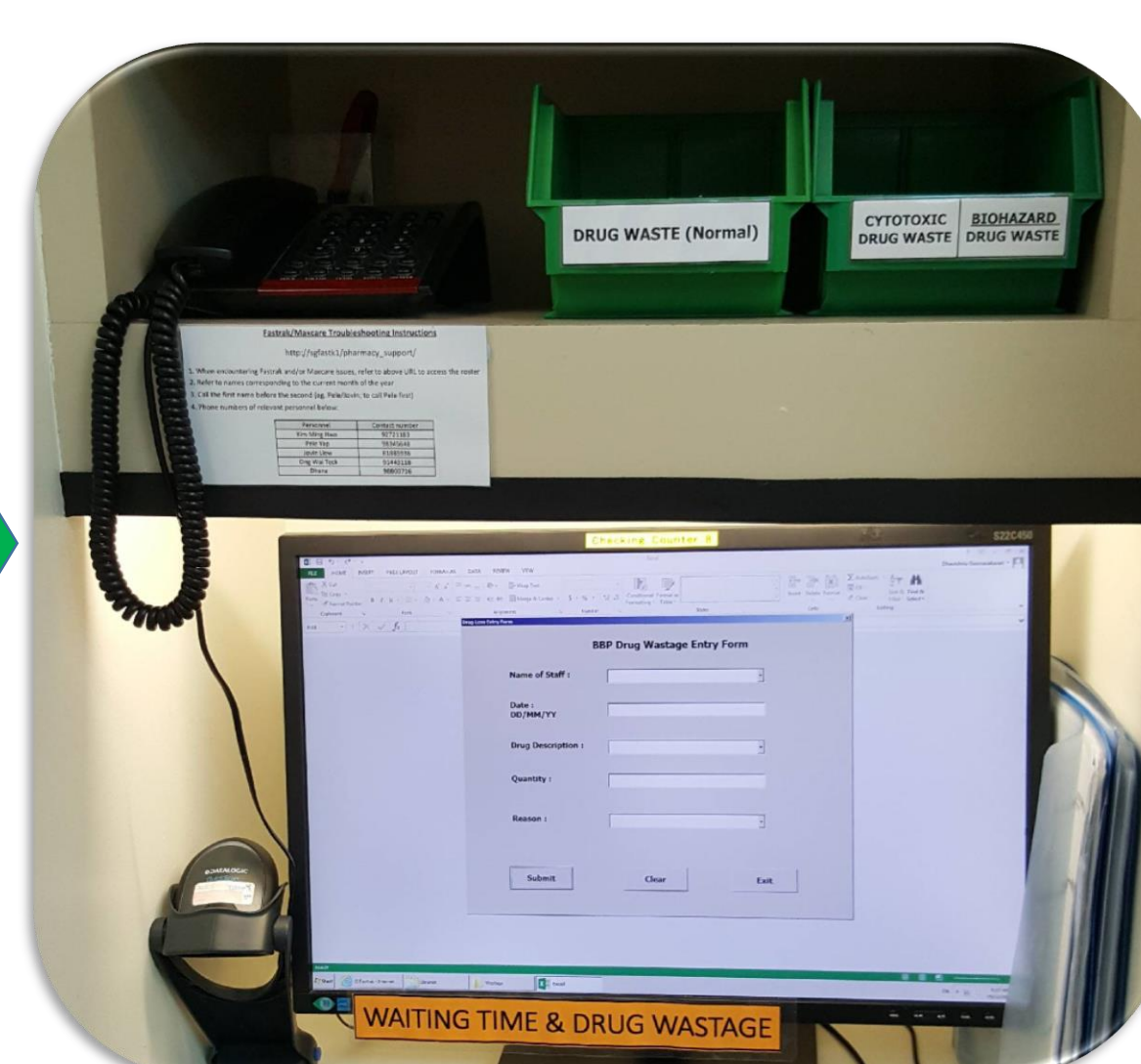


Fig 4. Collection bins for drug wastage are conveniently setup near to the drug wastage record station



Fig 5. Drugs are segregated into bins according to reasons for disposal.

We adopted the reporting concept from Inpatient Pharmacy and created our own **online platform** for staff to record drug wastage (figure 4) to bypass the hardcopy to softcopy transcribing (no more illegible handwriting) as well as the matching of drug to cost price processes. This online platform also helps to ensure staff input all the necessary information and standardize the drug disposal recording format (no more missing information). We extended this platform to the recording of other drug disposal reasons as well.

We utilized the **5S strategy** to reorganize the cupboard (figure 5) i.e. segregate drugs according to reasons for disposal and disposal stage.

- **Sort:** Drugs for disposal were classified into 4 main categories
- **Set in order:** Each category for drug disposal was assigned a location
- **Shine:** Designated cupboards were cleaned, labeled and fitted with drug bins
- **Standardize:** Staff were briefed on disposal locations
- **Sustain:** Staff to continue to maintain the tidiness and cleanliness of the cupboards

S/No	Implementation Plan	Date
1	Create online platform for drug wastage recording	Nov 2016
2	Reorganize cupboard for drug disposal	Nov 2016
3	Implementation of new drug disposal workflow	Dec 2016

Mission statement

This project aims to reduce the time taken to process drug condemnation by 50% within 1 month at the Bowyer Block Pharmacy.

Analysis of the problem

Root cause analysis was conducted to determine the final root causes for the long time taken to process drug disposal, refer to figure 3. We identified two main causes: time-consuming to sort drugs in cupboard as well as to submit request through e-Condemnation portal. From the final root causes identified, a brainstorming session was held and the best solutions were selected.

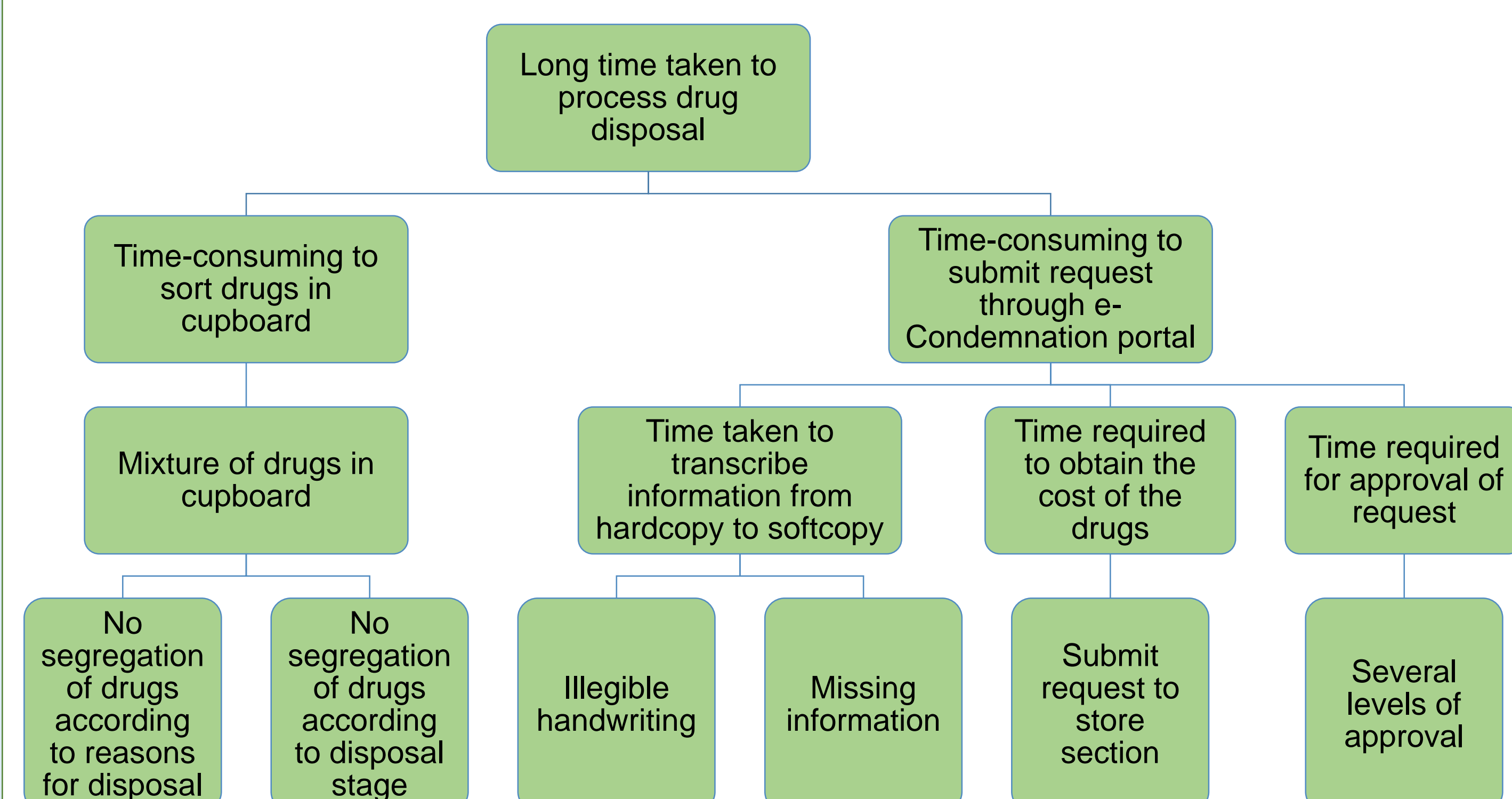


Fig 3. Root cause analysis for the long time taken to process drug disposal

Results

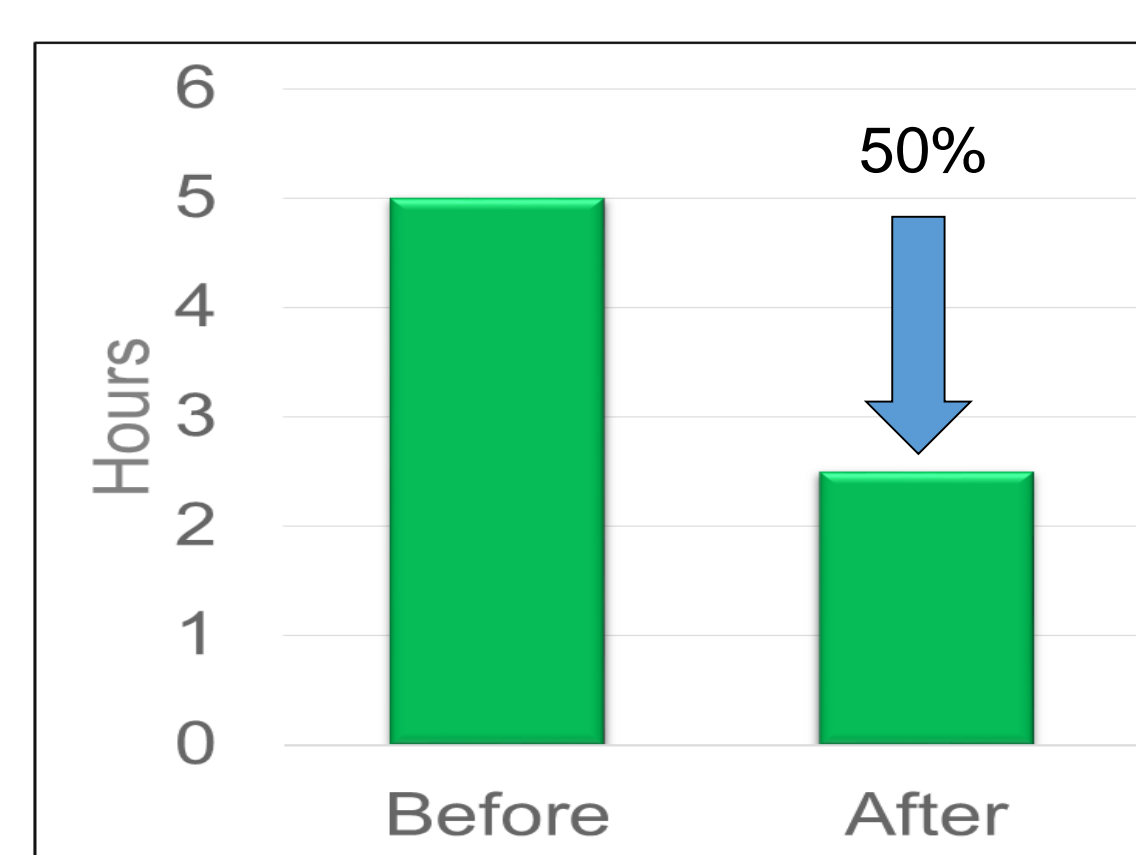


Fig 6. Time spent in processing drug disposal before and after streamlining workflow

After implementation of the online platform coupled with the reorganization of the cupboard, the average time spent processing drug condemnation reduced by 50% from 5 hours per month to 2.5 hours per month (figure 6).

More complete submissions and close follow up with Approvers allowed more timely approval of the requests. The handover process was also smooth, allowing staff to continue to follow up on previous e-condemnation raised by the previous staff to ensure timely processing of drug disposal on a weekly basis.

Conclusion

Generally, time saved was mainly from the sorting of physical drugs and entering of data. With the successful implementation of our initiatives at Bowyer Block Pharmacy, we managed to streamline the drug condemnation process at Block 3 Level 1 Pharmacy as well and improved the overall process efficiency.

Sustainability plans

Designated cupboard for drug condemnation

- Staff are reminded to place drugs for disposal according to labelled bins inside the cupboard to minimize sorting by inventory team members.

Online platform for reporting drug disposal

- Requires minimal maintenance except for updating of drug list. Inventory team members will update the list every 6 months.