



Singapore Healthcare Management 2021

Implementation of Cart Washer Disinfector in Housekeeping Operations

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Background of the problem

Healthcare-associated infections (HAIs) is a major challenge in healthcare institutions. As such, everything should be properly decontaminated after each use. Due to the high usage of hospital miscellaneous items, such as trolleys, commode chairs etc., thorough cleaning by Housekeeping is not possible after each use. Instead, a schedule was planned for Housekeeping to clean these items thoroughly on a periodic basis while ward users do a wipe down using approved alcoholic wipes after each use. The cleaning of hospital miscellaneous items is performed manually and require long man-hours. Any unforeseen changes in staff attendance will result in other staff having to perform overtime in order to meet the schedule. It is also physically draining and tends to be inconsistent in keeping to the cleaning standards as some areas are hard to reach.

Mission Statement

To reduce the man-hours needed by Housekeeping team to clean hospital miscellaneous items by 10% within 12 months

Analysis of problem

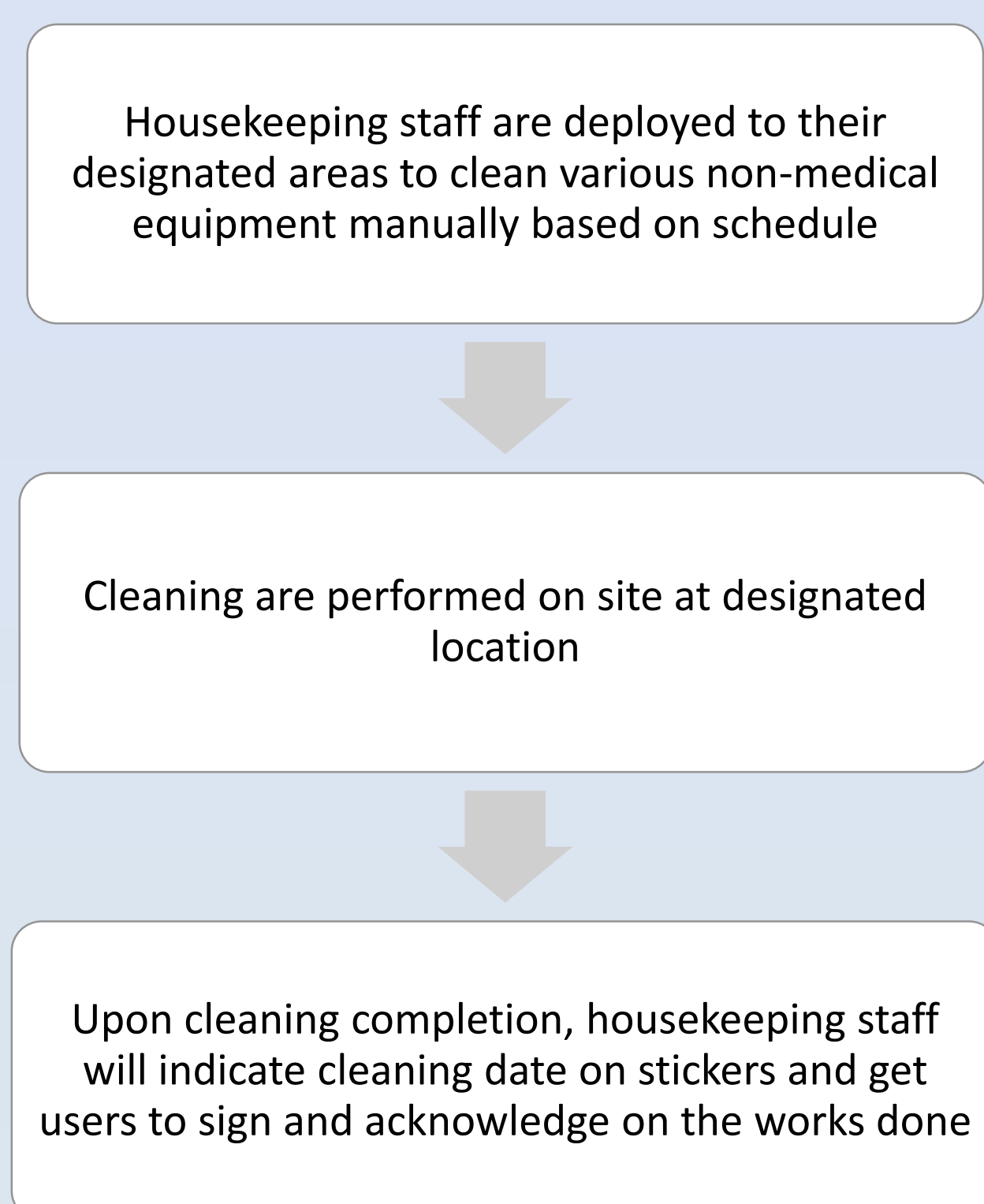


Fig 1. Traditional Process (Manual Clean)

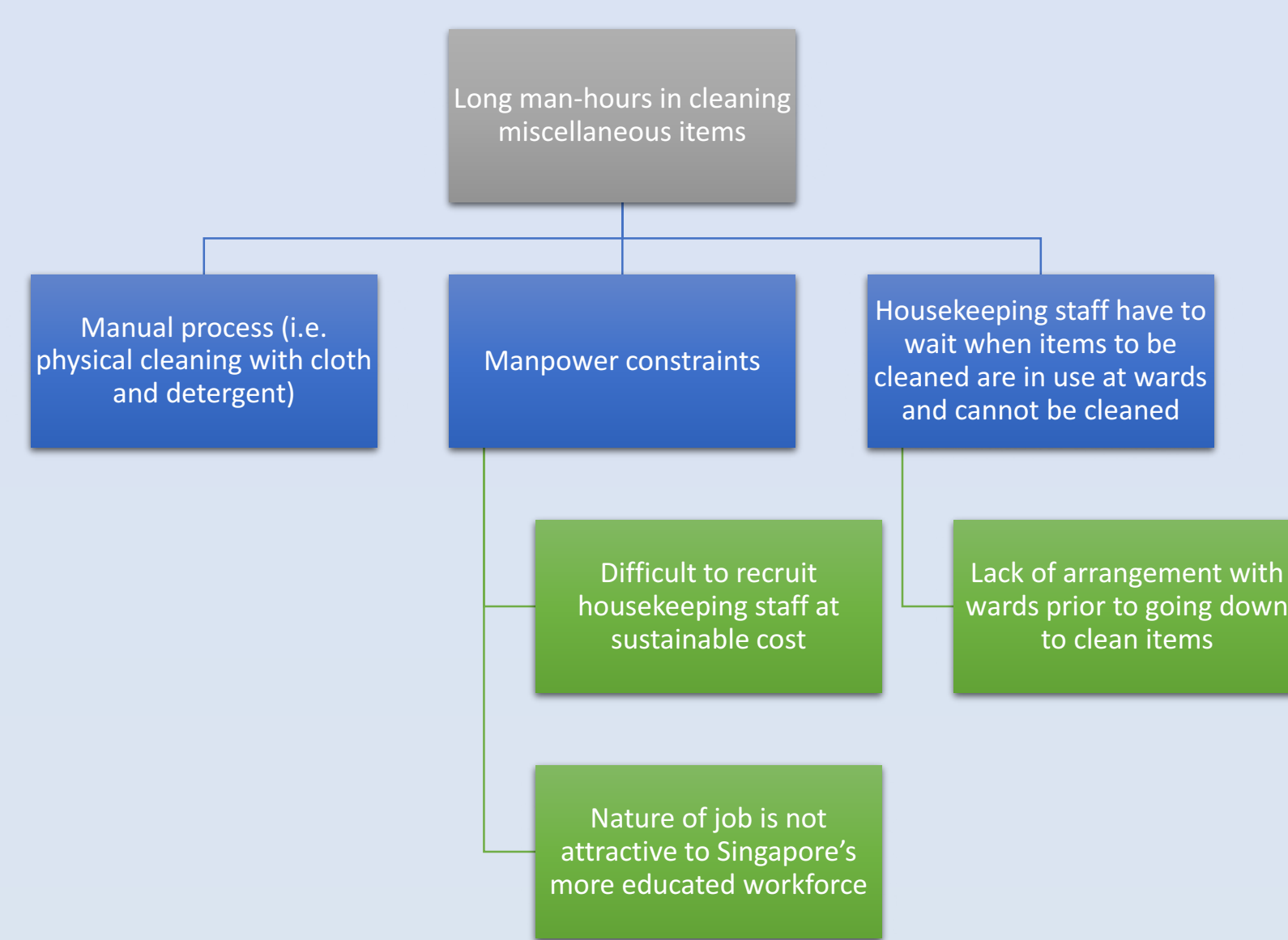


Fig 2. Why diagram

Interventions / Initiatives

The current state workflow for cleaning of miscellaneous items is illustrated in Figure 1. Staff follow the workflow provided based on approved cleaning schedules disseminated.

A simple why diagram has been illustrated to categorise the root causes derived from the current workflow (Fig 2).

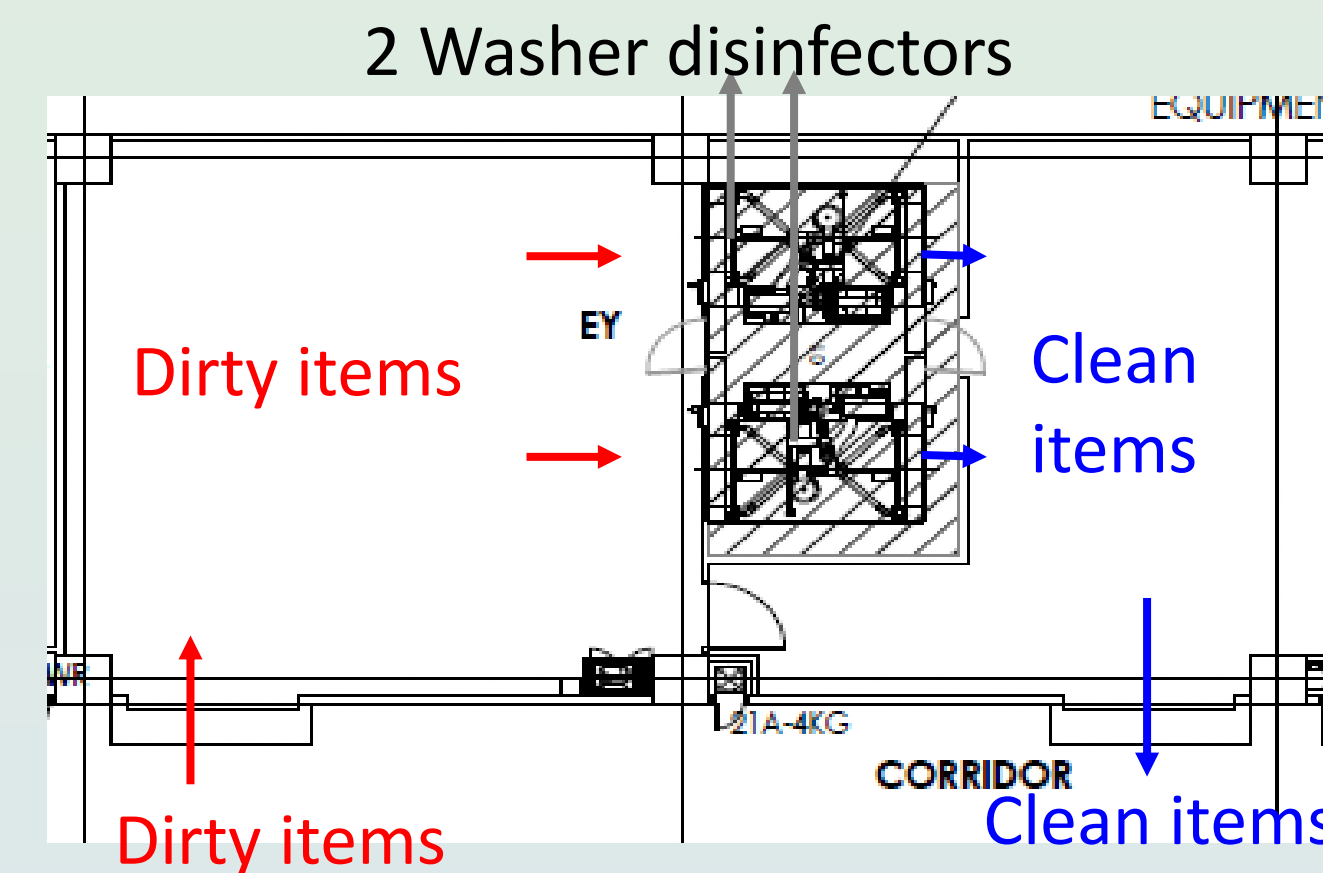
Environmental Services started to look into better solutions to reduce the long man-hours resulting from manual cleaning processes. A cart washer disinfector machine was proposed as it serves to reduce man-hours while ensuring consistency in cleaning standards.

Machine Characteristics

- A heavy duty, large capacity, hydro-spray washer/ dryer designed to clean, sanitize and dry miscellaneous hospital items
- Various washing cycles for different items to maximize output with least resources



Cart washer disinfector at B2 SingHealth Tower



Implementation

A new process was implemented using the machine to clean miscellaneous hospital items. We made sure that there was no cross contamination between clean and dirty items.



1 Nursing prepare the items. Housekeeping collect from ward & bring down soiled items from ward to tunnel



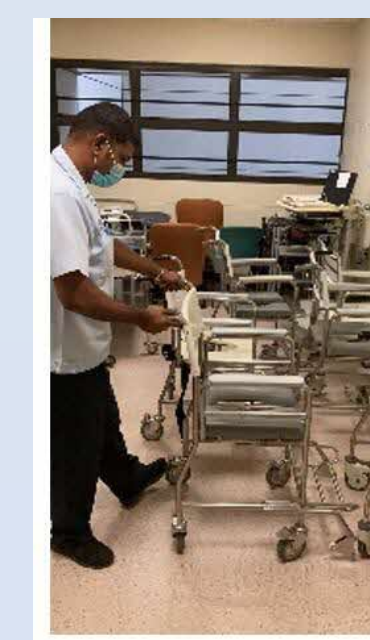
2 Load soiled items to stainless steel cart at tunnel and tow items to Cart Washer Disinfector Room



3 Preparation and washing of items by using Cart Washer Disinfector



4 Load cleaned items to stainless steel cart and tow items to respective SGH block's tunnel



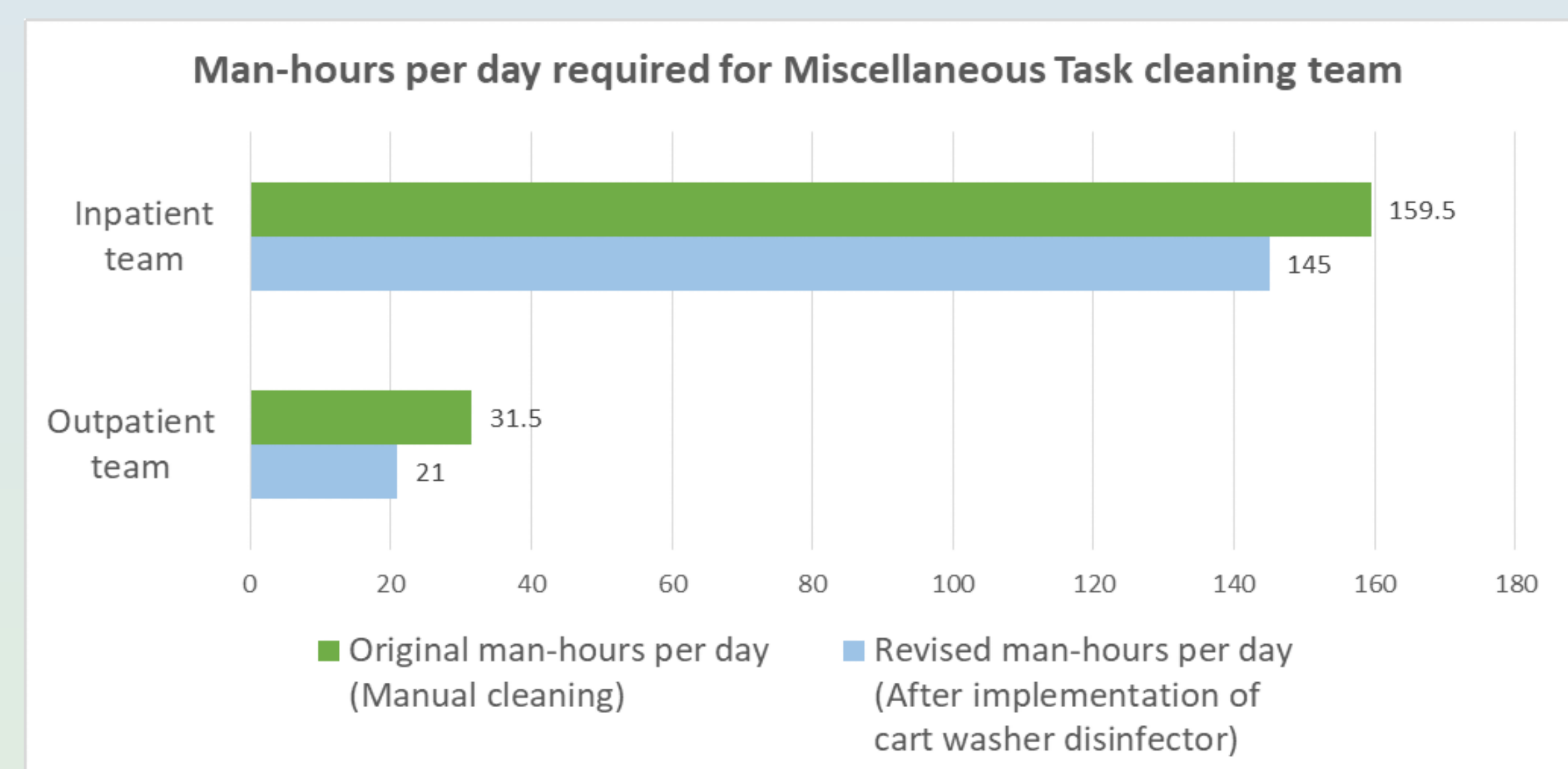
5 Send cleaned items back from tunnel to ward

Fig 3. New Cart Washer Disinfector Process Flow

Prior to towing the items to the designated area, the team communicates to ward users that items are scheduled for cleaning before executing the process flow. The team has worked out a cleaning schedule to ensure all items are covered.

Results

- With this implementation, we have achieved the key objective of reducing about 13% of manhours spent to clean hospital miscellaneous items (from 191 hrs to 166 hrs per day)
- Estimated \$162,000 manpower cost savings per year from this new process



In addition, there are some other secondary benefits:

1. Team Leaders observed well-being of staff is improved in terms of mental and physical stress
 2. Ward users' feedback: "Items received appear to look cleaner as compared to manual washing"
- Upskill and boost staff morale, through learning automating process.

The trial phase with inpatient team and outpatient team has ended and since then, the team has been reaching out to more departments to implement the system, such as the Operating Theatres.