



Singapore Healthcare Management 2018

# Right-siting of Ward Patients for Improved Operational and Care Coordination Outcomes



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## Background

The SGH Department of Internal Medicine (DIM) sees an average of 325 inpatients and 60 new admissions each day. In Y2016, nearly 48% of DIM inpatients were located in non-IM wards daily.

The team-based model coupled with bed assignment to various ward locations increased the ward round duration, where nearly 20% of the duration was spent walking across wards, generating downstream delays in discharge administration and prescriptions. This in turn decelerated bed turnover, resulting in longer A&E wait time for bed placement. There was therefore an impetus for change to ensure an efficient turnover of beds to create capacity for new admissions.

## Aim

The project aimed to review the bed assignment algorithm and localise 80% of DIM inpatients within 6 months.

## Analysis and Strategy for Change

A Cause and Effect Analysis (Figure 1) was performed to identify the factors affecting the duration of ward rounds.

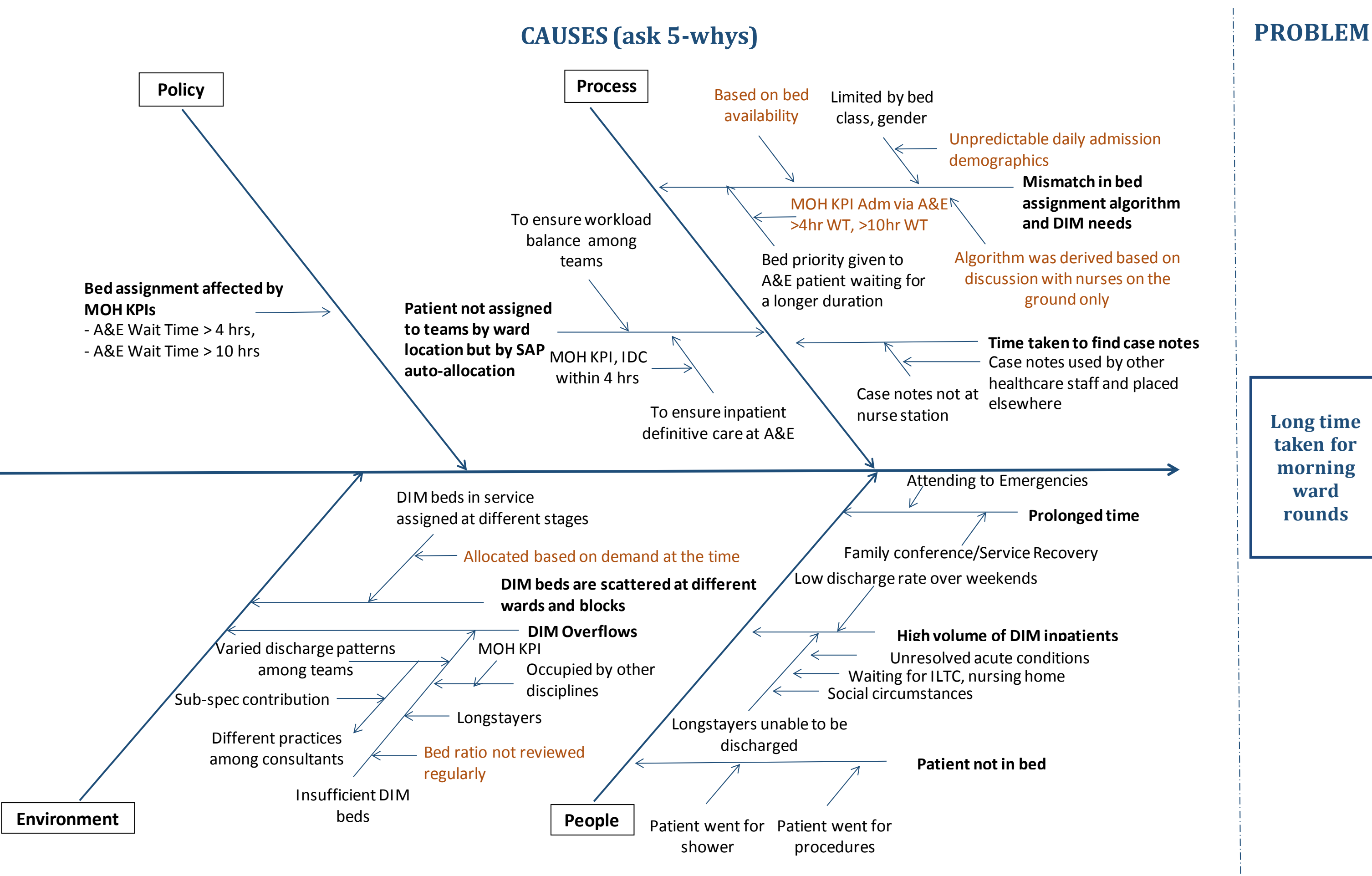


Figure 1: Root Cause Analysis

Several rounds of multi-voting were carried out, and a Pareto Chart was plotted. A focus was placed on the bed assignment algorithm, and the following were initiated:

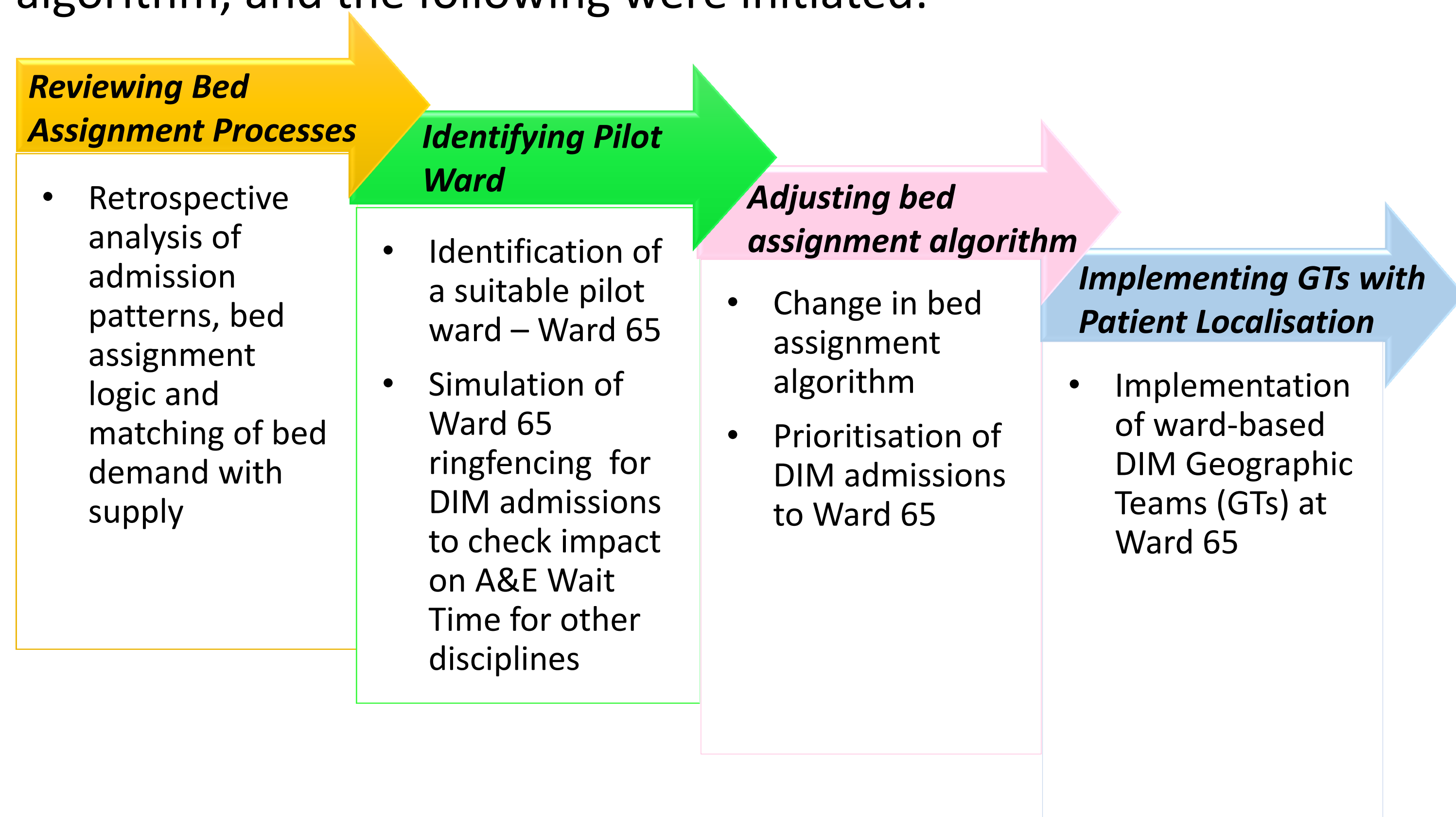


Figure 2: Change Implementation Process

## Results

Based on data between May - Oct 2017, Ward 65 fared the best in **DIM Discharges by 11.30am and 3.30pm** (Table 1)

DIM Discharges by Discharge Time	Discharge Ward								Total
	Others	W46	W53C	W54D	W63B	W65	W73	W73A	
<b>DIM Discharges</b>	<b>4,329</b>	<b>1,115</b>	<b>647</b>	<b>545</b>	<b>646</b>	<b>638</b>	<b>317</b>	<b>2,491</b>	<b>10,728</b>
00:01:00 - 11:30:59hrs	361	138	58	43	87	81	16	79	863
11:31:00 - 15:30:59hrs	2,468	584	374	318	312	367	170	1,489	6,082
15:31:00 - 00:00:59hrs	1,500	393	215	184	247	190	131	923	3,783
00:01:00 - 11:30:59hrs (%)	8%	12%	9%	8%	13%	13%	5%	3%	8%
11:31:00 - 15:30:59hrs (%)	57%	52%	58%	58%	48%	58%	54%	60%	57%

Table 1: DIM Discharges by 11.30am and 3.30pm by Ward

A 40% **productivity improvement** was shown in a time-motion study, with 12 patients seen per hour in GTs compared to pre-intervention (7 patients) with reduced walking (Figure 3).

### Improvement in Efficiency of DIM Ward Rounds

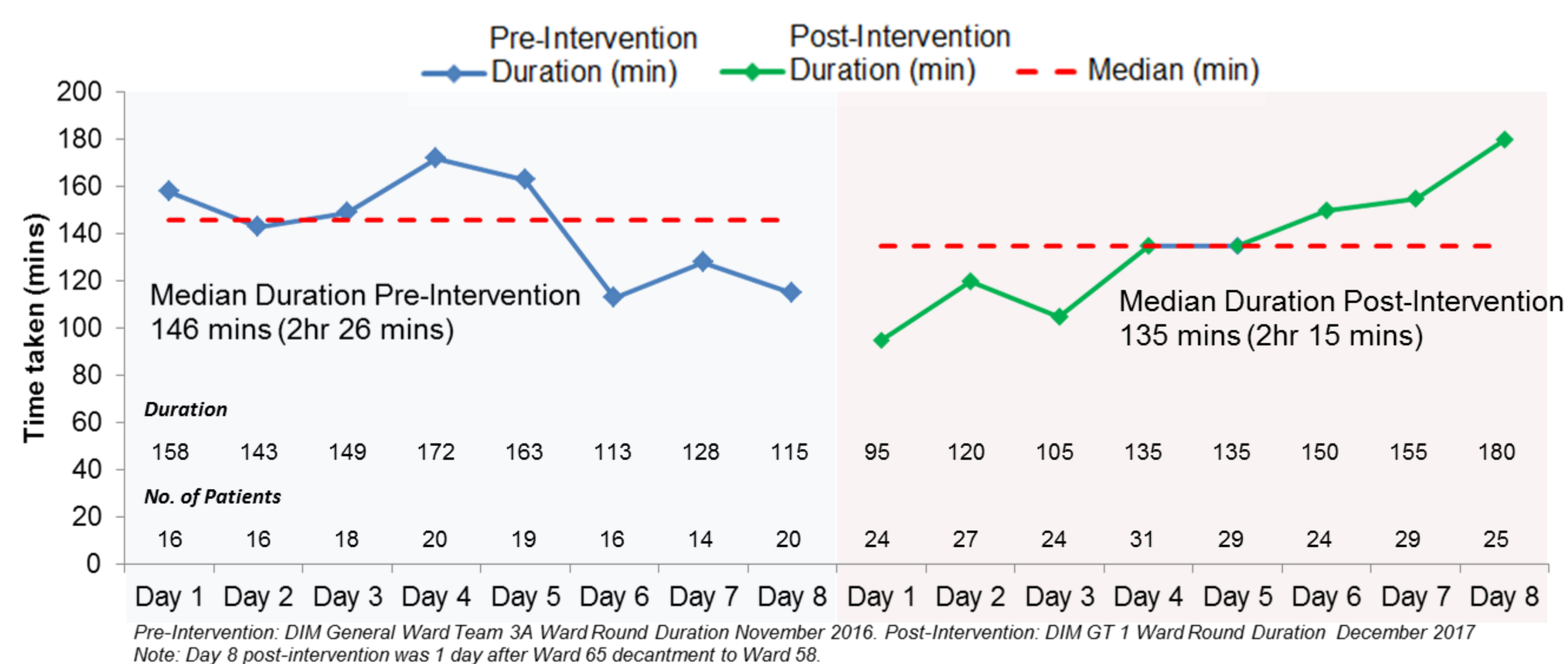


Figure 3: Ward Round Duration pre- and post-intervention

GTs created **manpower efficiency**, with deployment of fewer team doctors made possible due to patient localisation (Table 2). Nurses had also provided **positive feedback on communications and care coordination** when they work with fixed DIM teams at Ward 65. A subsequent daily huddle meeting among Doctors, Nurses, and Allied Health was also implemented to initiate earlier discharge planning.

Teams	Manpower (Average Consultant, Registrar/Senior Resident, Medical Officer/Resident, House Officer Nos.)	Average Daily Patient Load	Manpower Efficiency
Acute Medical Ward Teams covers AMW patients (primarily at W73A) and overflows	7	19	2.71
General Ward Teams covers DIM patients across wards	7.75	21	2.71
Geographic Teams ward-based DIM patient coverage	6.3	17	2.70

Table 2: Generation of manpower efficiency with patient localisation in GTs

## Conclusion

Bed Management Unit's continued support while balancing considerations such as A&E wait time and bed crunch situations will be critical in sustaining DIM patient localisation.

While the 80% target has yet to be achieved, right-siting of DIM patients generated manpower efficiency and facilitated care coordination with better rapport among healthcare teams. The initiative has been implemented at two other wards in Y2018, with performance outcomes being tracked and reviewed regularly.