

## About National Healthcare Group



National Healthcare Group (NHG) is a leading public healthcare cluster in Singapore. NHG consists of 4 hospitals, 1 international medical centre, 1 national centre, 9 NHG polyclinics, 3 specialty institutes, 4 business divisions. It has a staff strength of 11,000 and S\$1 billion in annual revenues.



## TTSH Online Patient Dashboard System with Radio-Frequency Identification (RFID) Technology

Source: Project by Tan Tock Seng Hospital, National Healthcare Group. Exhibited during Hospital Management Asia 2006.

### Profile

- Hospital: Tan Tock Seng Hospital
- Bed distribution: 1,400
- Staff Strength: 3,984
- Inpatient Admissions: 52,064
- Specialist Outpatient Attendances: 458,129
- A&E Attendances: 139,730



### Objectives

- To better manage utilization of limited bed resources and provide real time status of ward capacity to the Emergency Department (ED), Bed Management Unit (BMU) and Wards
- To reduce time taken to locate an average of 4 patients per day who are not in bed / out of the ward
- To improve on Care Coordination ratings as part of the Patient Satisfaction Survey by 5%

## Challenges

Allocation of hospital beds is complex as patients could choose between "A", "B1", "B2" or "C" class wards.

Prior to this subject, BMU has to go through 17 steps to manually handle confirmation of bed availability and bed-related enquiries. This is done via phone calls with ED and the Wards.

This is one of the causes for the long waiting time of 2.1 hours for admissions from ED.

## Interventions

In Jan '06, the Patient Dashboard System was implemented at ED, BMU and "C" class wards to facilitate real time bed status information.

BMU could promptly allocate beds to patients as they could see which beds are available in use or being cleaned up upon patient discharge.

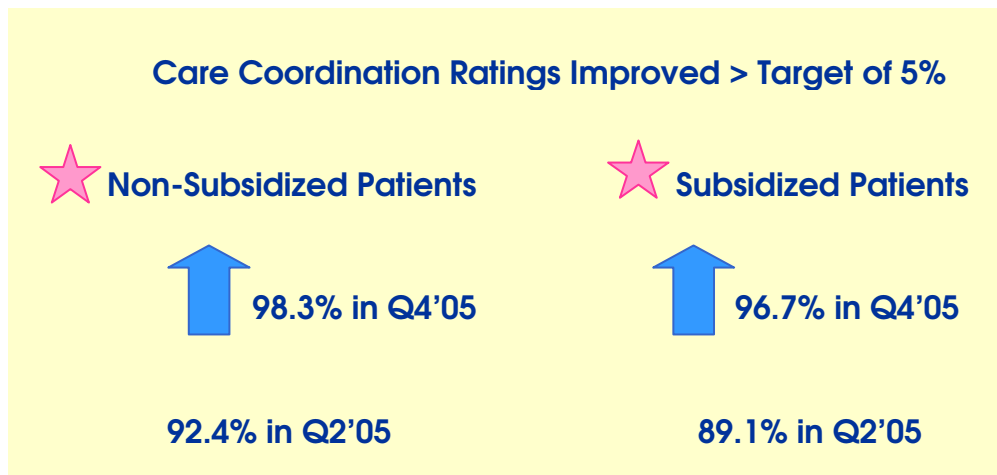
## Results

Objectives	Activities	Average Time Spent (mins)	Estimated No. of Cases for 10 "C" Class Wards/ Year	Projected Manpower Savings/Year (Based on 160 hrs worked per month)
To better manage utilization of limited resources	Eliminating Double Bookings <sup>1</sup>	20 mins	1,040	2 man months
	Reducing Phone communications between Wards, ED and BMU <sup>2</sup>	3 mins	20,800	6.5 man months
To facilitate patient location tracking at the Wards	Locating patients' whereabouts <sup>3</sup>	2 mins	14,600	3 man months
<b>Total</b>				<b>11.5 man months</b>

<sup>1</sup> An average of 2 double bookings per week per ward, i.e. 1,040 per year for 10 wards in Phase 1

<sup>2</sup> An average of 8 phone calls are made per ward per day, i.e. 20,800 per year for 10 wards in Phase 1

<sup>3</sup> An average of 4 cases per ward per day, i.e. 14,600 cases per year for 10 wards in Phase 1



### Intangible Benefits

- As and when the tag is put on or taken off the patient's wrist, the sensing device in the Dashboard system would indicate if the bed has been assigned or is available for the next patient.
- On Patient Admission, communication with the patient's next-of- kin (NOK) is enhanced as the Dashboard will send a short-text-message to the NOK.
- On Patient Discharge, the system will automatically send a paging message to Housekeeping to clean and prepare the bed for the next patient.
- The available bed will immediately be indicated on the Dashboard at BMU & ED.
- The patient's bill will automatically be generated as patient's discharge is directly updated to the patient records management system.