# Self-Charting of Intake and Output: Are our Patients and Caregivers engaged?

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#### Results

The second and final phase incorporated the Output chart as a combined A3-sized booklet and these were tested across the same seven wards, along with a Bristol Stool chart which aims to educate patients on how to recognise and identify the type of bowel output to aid in their accurate charting:

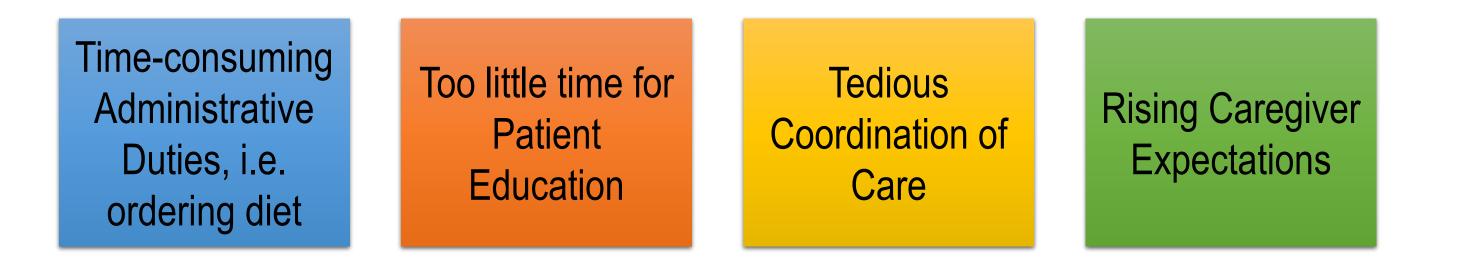
Water 🛛 🗖 Beverages

### Singapore Healthcare Management 2019

#### Introduction

The healthcare landscape in Singapore is facing a declining nursing workforce which is expected to reduce by 30% in 2030. Coupled with Singapore's aging population leading to an increase in the patient loads at our hospitals and a shift in patient expectations, these have presented as significant challenges to our nurses today.

From focus group discussions conducted with nurses from SGH, KKH and NHCS in 2017, four key areas were identified that required intervention:



The Self-Charting of Intake and Output was hence conceptualised to encourage patients and caregivers to participate actively in self-care activities, allowing nurses to focus on direct patient care and higher value-added activities. The initiative was piloted to test patients' receptiveness towards this activity.

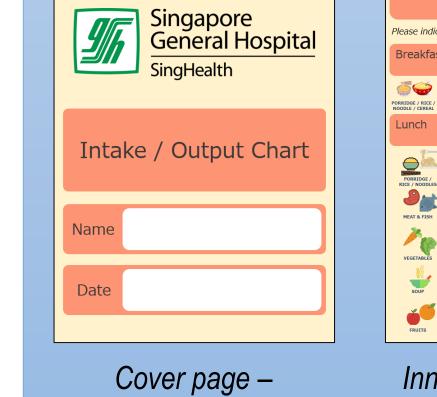
With better participation amongst patients in self-care, patients will be empowered to:



Manage their health better



Make more informed decisions regarding their own health



Institution logo,

patient name & date

Image: Serving taken e.g. ½, 1     Image: Serving taken e.g. Biscuits   Imag			Meals						
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			VEGETABLES						
RUITS			SOUP						
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		Ŷ	Out	put		
	Passing Uri	ine	Bowel Movement			
Time of Output	Method (Please circle)	No. of times OR Volume (ml)	Time of Output	Amount (Small, Moderate or Large)	Bristol Type (1 – 7 Refer to attached guide	
Зрт	/ 87 1	1 time OR 200 ml	Зрт	Moderate	2	
	/ 89					
	/ 89					
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	/ 87					
	/ 89					
Note: If	you discover any abno	rmalities in your uri	ne or bowel r	movements, please inform the r	nurse immediately.	

Inner pages – Food & drink Intake chart at one glance (when the patient spreads the A3 booklet open)

Last page – Output chart (accompanied by Bristol Stool chart attached to the back)

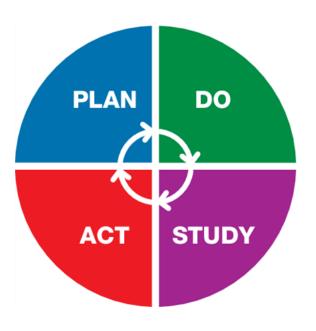
The adoption rates for this combined booklet were measured over a period of 2 weeks in the second-half of February 2019:



Adult setting (5 wards total): 59%

Paediatrics setting (2 wards total): 73%

We also conducted a questionnaire to solicit feedback from the patients who took part in this pilot. Of the 126 patients who were surveyed, a high majority favoured the Self-Charting of Intake and Output:

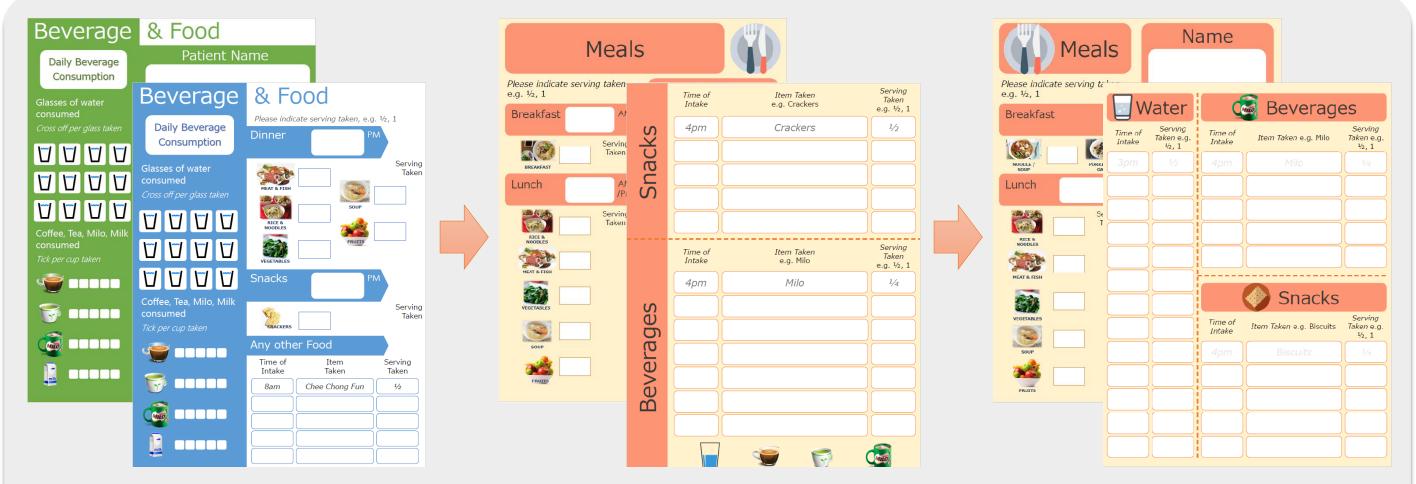


We adopted and employed the Plan-Do-Study-Act cycle in an iterative manner, such that the charting forms were reviewed, refined and enhanced over a period of 6 months (between September 2018 and February 2019).

#### The Plan-Do-Study-Act cycle consists of the following four key steps:

Plan		Do	Study	Act
Establish	the	Test hypothesis	Use data to	Refine / adjust
hypothesis		by protyping	analyse result	hypothesis

Methodology



## 92.9%

Agreed or strongly agreed that the layout and presentation of the chart was user friendly

91.3%

Agreed or strongly agreed that they had no difficulty in performing Self-Charting

#### Conclusion

The pilot results have exceeded the expected adoption of 3% and 50% for adult- and paediatric-setting wards respectively. The difference in expectation can be attributed to the very small subset of the patient population in adult-setting wards who are expected to chart their Intake and Output, as opposed to paediatric-setting wards where currently 100% of patients are expected to self-chart. The high adoption rates suggest that our patients are engaged and receptive towards self-charting of Intake and Output.

As a result of the positive findings, the potential for electronic self-charting is being explored for scale-up across the SingHealth hospitals, leveraging on the Nursing Software Suite which comprises the following key modules.

Contact Inf

Iteration 1: Minimal free text boxes, more prescriptive

Iteration 2: Completely revamped to include more free text boxes Iteration 3: Minor improvements to previous iteration

The first phase of the initiative included only the charting of Intake, as we felt that Output charting was more complicated to a patient's perspective.

We deployed the charts across selected inpatient wards in SGH, KKH and CGH. Nurses identified patients and caregivers suitable to perform self-charting and issued these forms to them on a daily basis. Thereafter, these were collected back and analysed to make refinements and the process was repeated.





Through the implementation of the Nursing Software Suite, it is postulated that there will be **increased empowerment and flexibility** for patients in managing their own day-today itinerary while in hospital, as well as **enhanced information delivery** for patient education and orientation, resulting in better communication with patients.