

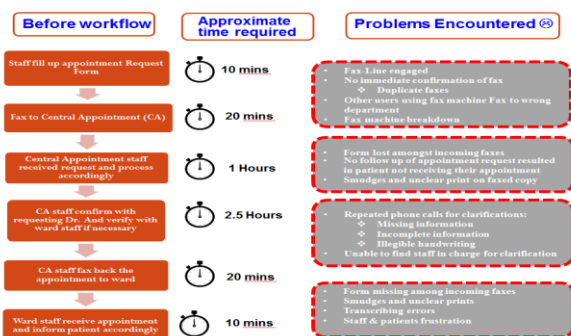
# Innovation in Complex Appointments Booking

## To Improve Workflow Efficiency

**Ding Na, Senior Nurse Manager**  
**Jenifer Soo, Nursing Informatics**  
**Sim Boon Eng, Senior Nurse Clinician**  
**Selena Ng, Senior Executive**

### Aims

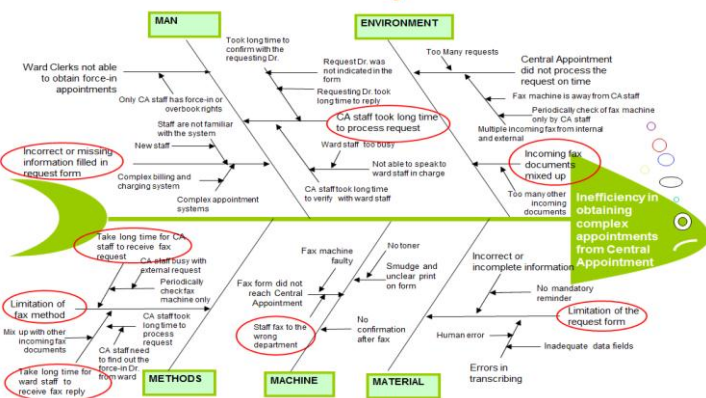
The coordination of patient's follow up appointment for medical review is important for continuity of care. Generally, ward staff, clerks and Central Appointment (CA) staff encountered numerous delays and communication issues with complex appointment scheduling. We aimed to improve and enhance the process for appointment making by leveraging on IT technology to achieve operational efficiency and improve service quality that leads to better patient coordination.



### Methodology

A Process Improvement Project (PIP) workgroup involving staff from nursing, inpatient wards and CA staff was formed. Through root causes analysis, the current Appointment Request Form and fax method were identified as the two main areas for improvement. After two rounds of PDCA cycles, we developed a customized template whereby, the MS-Outlook email to CA uses a KKH Appointment template. This template auto populates the addressee and has features such as drop down list and built in mandatory fields. The implementations of solution were successfully piloted in three departments which represented adult wards, paediatrics medical and paediatrics surgical wards. Subsequently the new workflow was rollout into all the inpatient wards of the hospital.

### Cause and Effect Analysis



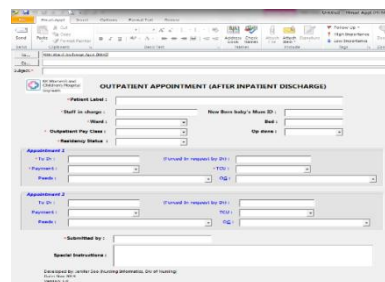
### Solution Design

Proposed Solutions		A	B	C	D	Total	
To improve workflow efficiency in complex appointment booking	Limitation of fax method	1. Email to CA for appointment request					😊
	Limitation of appointment request form	2. Electronic form with prompting of necessary information					😊
	CA staff took long time to process request	3. Electronic form with necessary information, e.g. requesting Dr.					😊
	Incorrect or incomplete information on request form	4. Electronic form with mandatory fields					😊
SELECTION CRITERIA		1	2	3	4	5	
A - Improve operational efficiency		Meets criterion least	Meets criterion fairly	Meets criterion well	Meets criterion very well	Meets criterion extremely well	
B - Achieve cost savings							
C - Improve customer satisfaction							
D - Ease of implementation							

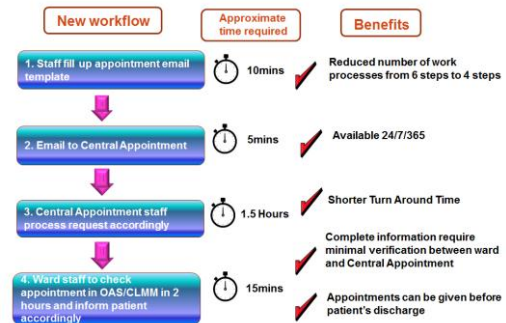
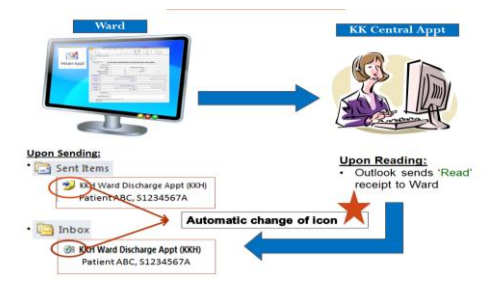
### Results

The new workflow has streamlined the workflow of obtaining complex appointment from 6 steps to now 4 steps. The mandatory fields' setting incorporated in the template reduces the incidences of incomplete information on the Appointment Request form and also minimize the need for verification between ward and CA staff. The system prompt on the template alerts staff on an incomplete information. The new workflow had successfully reduced the turnaround time for obtaining complex appointment from 4.5 hours to 2 hours.

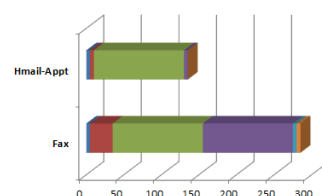
#### Appointment template



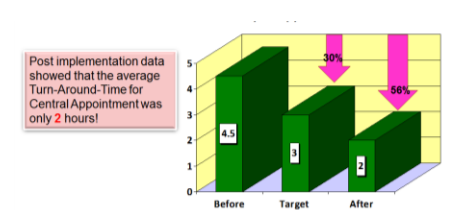
#### New workflow



#### Total time taken for each appointment taken (minutes)



#### Turnaround time for complex appointments (hours)



### Cost and benefit evaluation

One time cost for development	
Development of email template	\$S200
Applications of email accounts for 23 inpatient wards	\$S100 x 23 = \$S2,300
<b>Total:</b>	<b>\$S2,500</b>
Cost saving	
Paper usage	(1+1) rim x \$S350 x 365 = \$S2,555/year
Total savings of manpower 36,500 hours/year	\$S9.40 x 36,500 hours = \$S342,188
<b>Total cost saving:</b>	<b>\$S344,743</b>
<b>Total saving over one year (NET) = \$S344,743 – \$S2500 = \$S342,243</b>	

### Conclusion

The new workflow has been implemented at hospital wide. It greatly improved the process of obtaining complex in the wards. The communication between ward staff and CA staff has been improved. Lesser phone call was required. Thus, allowing ward staff and CA staff to spend more time on other value-added tasks.