

**Project Title**

Optimisation of DEM & Call Centre Workflow for CE Activation

**Project Lead and Members**

Project members: Marcus Koh Wai Leong, Ong Jie Yi

**Organisation(s) Involved**

Singapore General Hospital

**Healthcare Family Group(s) Involved in this Project**

Healthcare Administration

**Applicable Specialty or Discipline**

Healthcare Administration

**Aims**

1. Review the current activation process for CE response
2. Propose solution to reduce time taken for activation and reduce manual processes which are prone to errors

**Background**

See poster appended/ below

**Methods**

See poster appended/ below

**Results**

See poster appended/ below

**Conclusion**

See poster appended/ below

**Project Category**

Care & Process Redesign

Quality Improvement, Productivity, Time Saving, Workflow Redesign

Technology

Digitalisation, Automation

**Keywords**

Digital Form, Hardcopy, Automation, Timely Delivery, Activation

**Name and Email of Project Contact Person(s)**

Name: Marcus Koh Wai Leong

Email: [singaporehealthcaremanagement@singhealth.com.sg](mailto:singaporehealthcaremanagement@singhealth.com.sg)



Marcus Koh Wai Leong, Ong Jie Yi, Crisis Planning & Operations (CPO), Singapore General Hospital

## Background

During a Civil Emergency (CE), the Department of Emergency Medicine (DEM) is the hospital's first port of call for activation of the CE response plan. Due to large number of areas and staff to be contacted within a short period of time during an activation, Call Centre would be informed by DEM to assist in activation of responders as well.

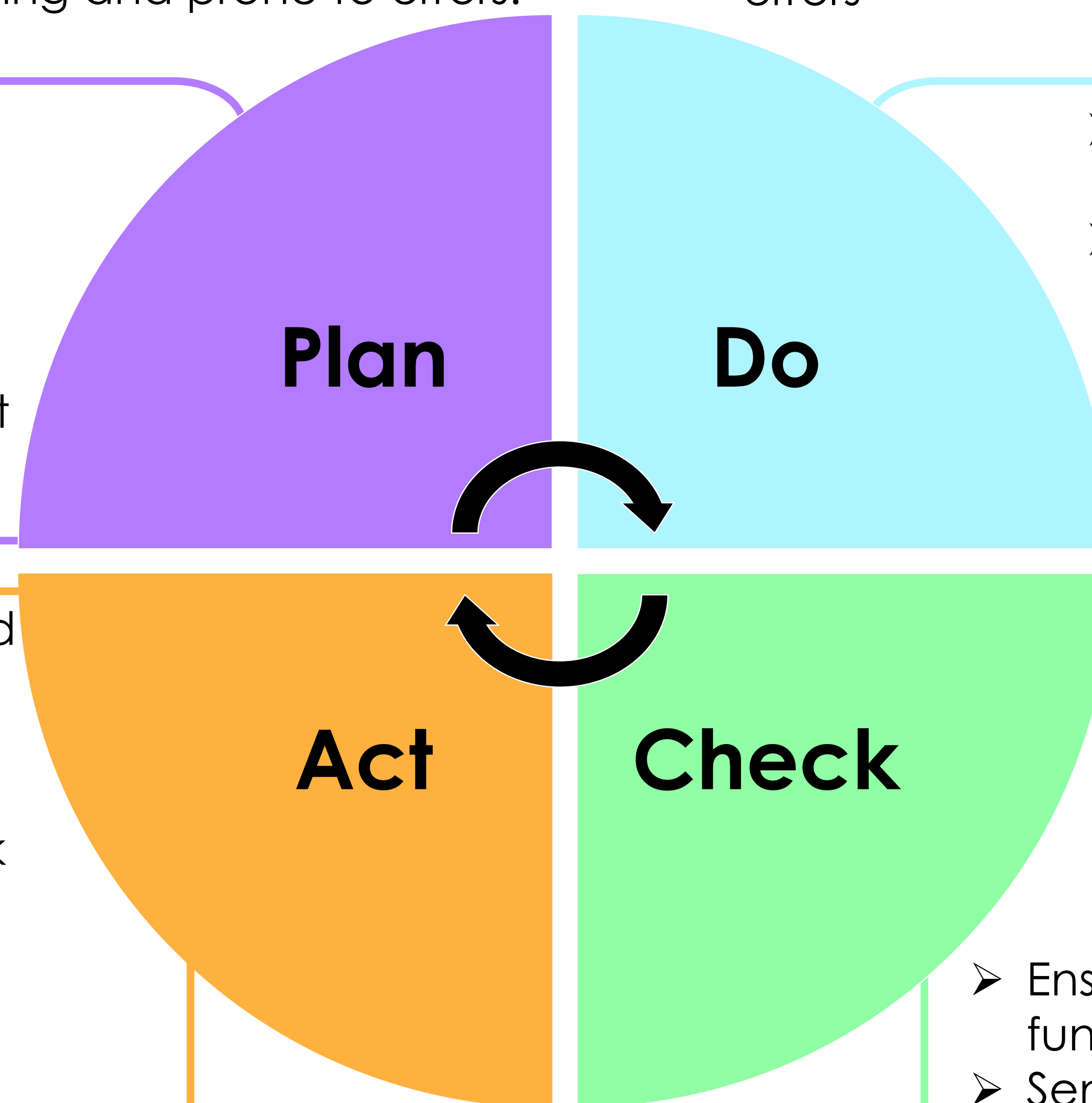
The notification to Call Centre is a manual process, where the DEM Duty Nurse Clinician (NC) would fill up a hardcopy form and fax over to Call Centre. Upon receiving the hardcopy form, Call Centre agents would need to collect the form from the fax machine located some distance from their work stations and return to their work stations to key the details stated in the form into the Call Centre Enquiry System (CCES), prepare the activation set up in the CCES and send out activation message to intended recipients.

## Problem Statement

During a CE, timely activation of responders such that hospital is ready to manage mass influx of casualties and delivery of accurate information are crucial. Manual filling in of hardcopy activation form, use of fax and transferring of information from hardcopy to system are time consuming and prone to errors.

## Aim

1. Review the current activation process for CE response
2. Propose solution to reduce time taken for activation and reduce manual processes which are prone to errors



- Understood and gathered user requirements from DEM, Call Centre and CPO
- Reviewed the key information required, and removed unnecessary fields and redundant information for activation.

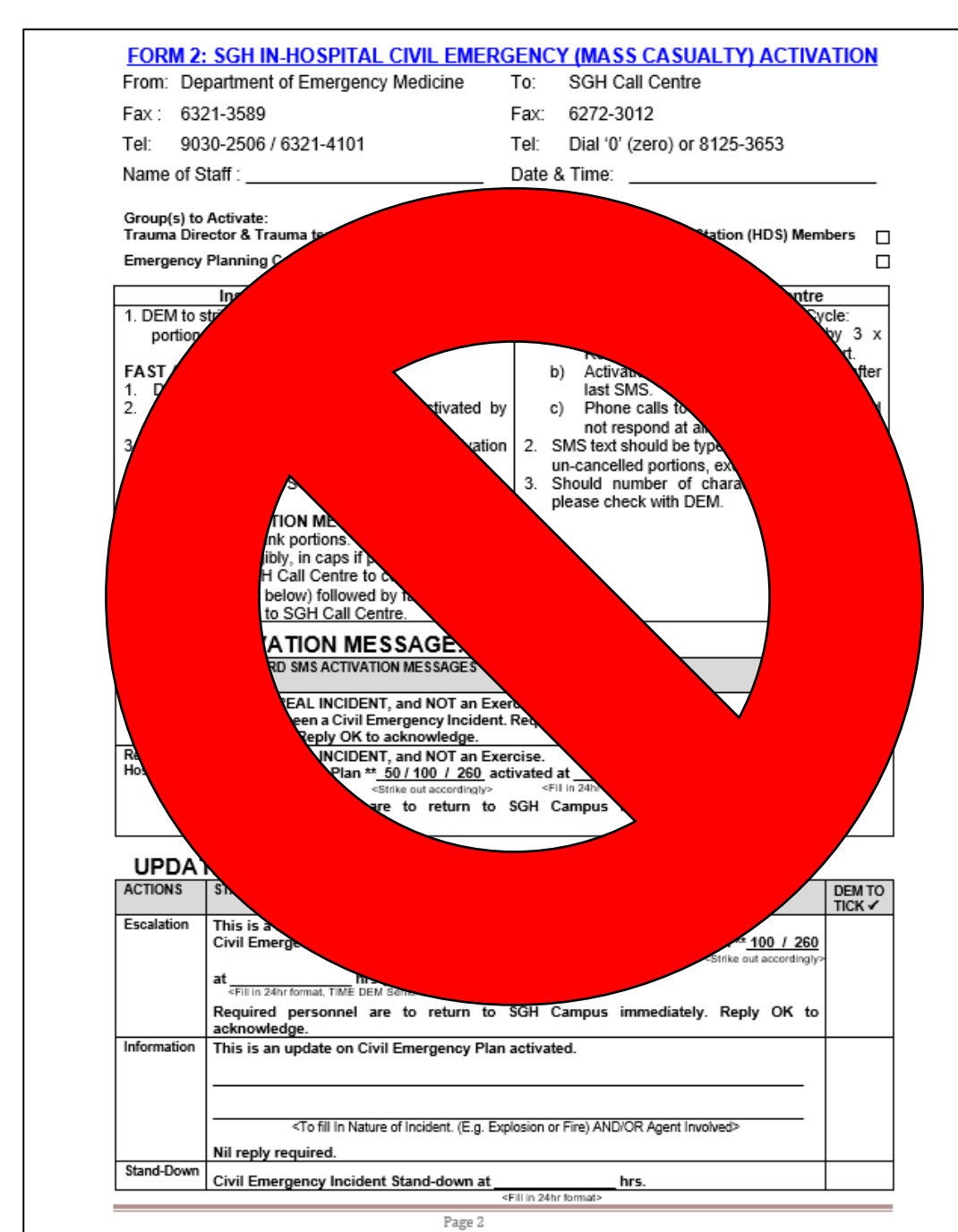
- Proposed to adopt email instead of faxing
- Worked out a digital form in a macro enabled excel workbook for completion by DEM, which would then auto generate an activation email to Call Centre.

- The excel workbook was tweaked to enhance and refine certain functions
- Other applicable activation forms were also added to the workbook
- Finalised workflows and implemented use of digital forms via a macro enabled excel workbook to replace filling and faxing of hardcopy forms

- Through the use of VBA, different functions were coded to ensure correct fields were referenced for specific purposes so that accurate information was generated in the email.
- Ensure email generation and sending function was robust
- Sent excel workbook to DEM and Call Centre for testing, and collected feedback and suggestions from CPO and DEM

## Results After Implementation

- For CE activations, DEM Duty NC will now fill up a digital form created in a macro enabled excel workbook, which would automatically generate an email to Call Centre. This has greatly reduced the time required by DEM for CE activation, as auto generation and emailing have replaced manual filling and faxing.
- Call Centre agents no longer required to leave their work stations to retrieve hardcopy form and manually transfer information into CCES for activation. Agents will now receive activation message via email at their work station, where they can toggle to CCES and accurately copy the message over for quick activation. This again reduced time taken and avoid errors from manual process.



FORM 2: SGH IN-HOSPITAL CIVIL EMERGENCY (MASS CASUALTY) ACTIVATION			
Step 1	Step 2	Step 3	Step 4
Ensure you have clicked enable at the top to allow macros. To choose which groups to activate, fill in cells in yellow.	Decide on To, CC and subject of email (can still be edited after email is generated), fill in cells in yellow.	Decide which message format to use and fill in the cells in yellow.	Click button to generate email. Can still amend email if needed
Groups to activate: (Add Groups from the list)	Email TO, CC, Subject	<b>Activation Message:</b>	Generate Plan 50 Email Generate Plan 100 Email Generate Plan 260 Email
	To: (Input CCES email address) From: (Input CCES email address) CC: Subject:	Activation Time: (Input Time 24hr format) Type of Bomb: (Leave blank if unknown) Nature of Incident: (E.g. Explosion or Fire) Leave blank if unknown	
	Name of Staff:	Instructions to SGH Call Centre: 1) In Activation SMS, followed by 3-Reminder SMS, at 5 minutes apart 2) Activation SMS to send out to HES Wave 1, PRF and EPC first, followed by HES Wave 2 immediately after sending out the first activation SMS 3) Retention Loop to close 30 minutes after activation start 4) Phone calls to be made 20 minutes after activation start to those who did not respond at all	
		<b>Escalation Message:</b>	Escalate to Plan 100 Email Escalate to Plan 260 Email
		Timing of ESCALATION of Plan: (E.g. 10:00 AM when Plan is activated (Input Time 24hr format)) Type of Bomb: (Leave blank if unknown)	
		Instructions to SGH Call Centre: 1) In Escalation SMS, followed by 3-Reminder SMS, at 5 minutes apart 2) Activation SMS to send out to HES Wave 1, PRF and EPC first, followed by HES Wave 2 immediately after sending out the first activation SMS 3) Retention Loop to close 30 minutes after activation start 4) Phone calls to be made 20 minutes after activation start to those who did not respond at all	

## Conclusion

Timely activation and delivery of accurate information were achieved via the creation of a digital form via a macro enabled excel workbook, which replaced the manual process of filling up a hardcopy form, faxing and transferring of information from hardcopy to system. The same principle can also be applied to other relevant forms to further increase efficiency of workflows.