



Singapore Healthcare Management 2018

Eliminate Missing Code Blue Activation Forms

Elisabeth Angelina^{1,3}, Selina James², Samsiah Bte Kasmis², Kamsiah Bte Jaafar², Marianah Bte Mustafa², K S Vickneswari³, Dr Ulina Santoso³,
Dr Chee Huei Leng³, A/Prof Soh Chai Rick¹

¹ICU Committee, ²Call Centre Department, ³Clinical Quality and Performance Management Department, Singapore General Hospital, Singapore.

Background Data on Code Blue activations, such as which Code Blue Team (CBT) activated, time of response and patients' outcomes, need to be collected for audit purpose to assist the ICU Committee on decision making, and monitoring of patient's outcome. Currently, whenever there is a Code Blue (patient with cardio and/or pulmonary arrests), a staff will call the operator in Call Centre where the Call Center operator will then activate the CBT. Afterwards, the operator will fill in a Code Blue activation form which contains of the caller details and faxed it to ICU Committee secretariat; i.e. the Clinical Quality and Performance Management Department (CQPMD). Afterwards, CQPMD staff will ask the caller / the CBT member for the Code Blue Report, which will contain details of the patients and resuscitation.

Problem CQPMD will ask for summary of activations from Call Centre during routine audit of the reports. It was discovered that there were instances of missing Code Blue activation forms. CQPMD and Call Centre staff will then compare the cases to identify and trace the missing forms. However, even after the missing activation forms have been identified, oftentimes it is difficult to ask the CBT for the Code Blue reports. Hence, these cases will be excluded from the data. Incomplete data results in the loss of information on the timeliness of resuscitation and quality of care of Code Blue patients.

Objectives To eliminate missing Code Blue activation forms.

Methods

1. Identify reasons of missing forms (Oct '16)

The ICU Committee and Call Centre staff had a meeting to discuss on the possible reasons for missing activation forms. Following are the possible reasons:

- Poor fax connection
- Wrong fax number entered
- Misplacement of forms

2. Revised Workflow (Mar '17)

The team decided to change the workflow such that the activation form will be emailed to CQPMD staff instead of being faxed through. The activation form is replaced with an easy-to-use excel sheet that has drop down list to assist the Operator to fill in the details. The excel sheet also contains the CQPMD and Call Centre staff that needs to be emailed to. The excel sheet is then saved into the Call Centre Operators' computers for easy access and all staff were given orientation / training of the new workflow.

3. CQPMD Workflow Adjustments (Jun '17)

After conversion to using the excel template in Mar '17, there were 2 missing data (in Mar and May '17). CQPMD eventually created a regular counter-check measure between 2 staff to ensure that the Code Blue activations are being followed up thoroughly.

Results

• Elimination of 'missing' Code Blue data

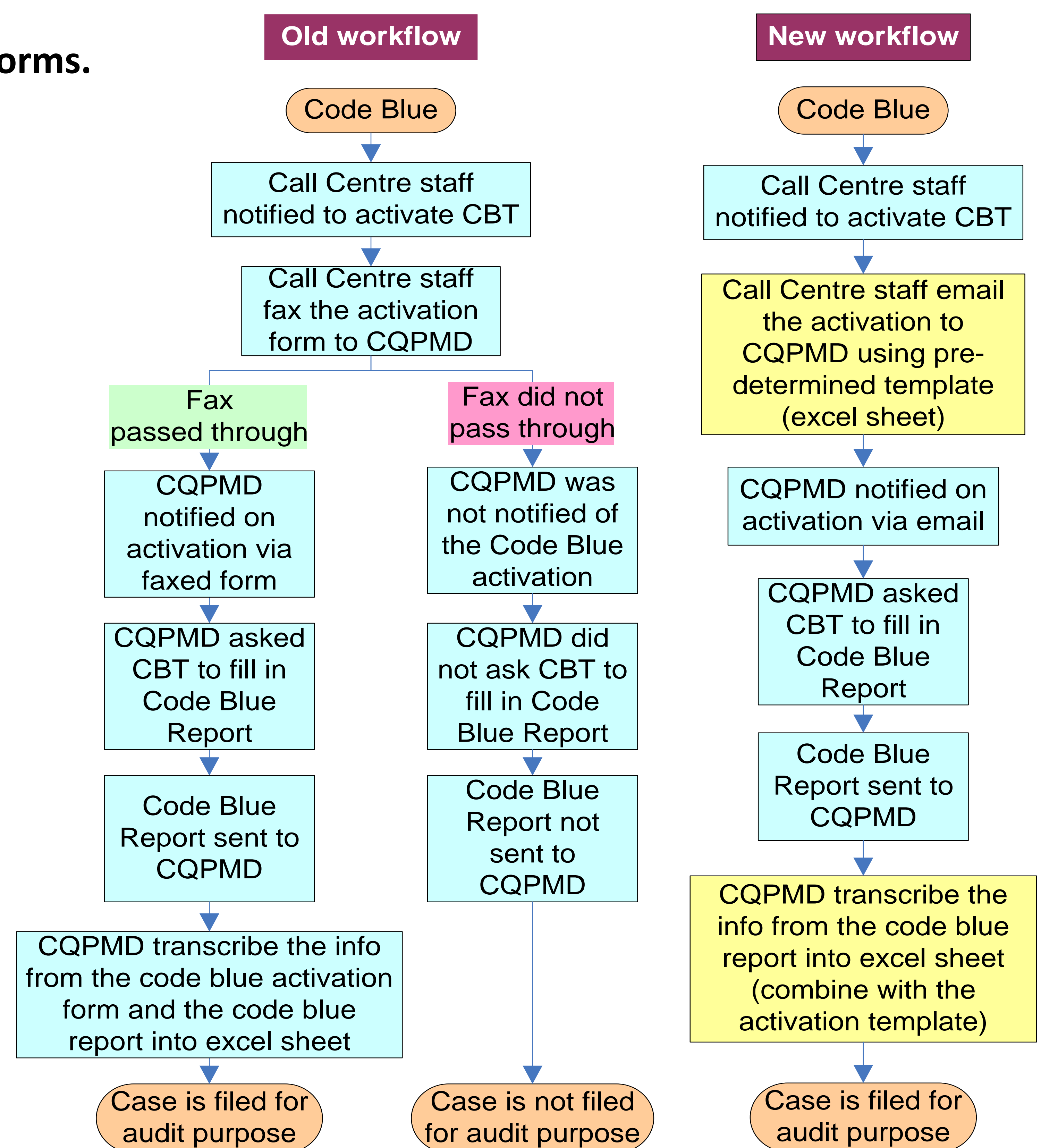
After intervention in Jun '17, there were 0 missing form (data until Nov '17). Completeness of information and data analysis provides valuable information for improvement strategies.

• Time saving

Elimination of missing data means Call Centre and CQPMD staff do not need to spend time (approximately 3 minutes per missing form) in identifying and tracing the 'missing' forms. Total time saved is approximately 4 hours.

• Cost saving

Elimination of hardcopy activation forms (approximately 244 forms / year) means cost saving on the printing of the forms (approximately



Excel Template used to replace the hardcopy Code Blue activation forms

| Callers Particulars | | | | | | | | | | Doctors Activated | | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-------------------|------|-------------|----------------|----------------------------------------------------------------------------------------|----------------------|---------|------|-------------------|-------------|--------------|---------|
| Date | Time Received | Call Center Staff | Name | Designation | Contact Number | Team Request to Activate | Location of Collapse | Message | Name | HP No. | Time of SMS | Time of Call | Remarks |
| | | | | | | 999 Cardio DNC Emergency Medical NCCS Outram Poly ERT Paediatrics | | | | | | | |
| Email To: elisabeth.angelina@sgh.com.sg vicky@sgh.com.sg Cc: samsiah.kasmis@sgh.com.sg selina.james.n@sgh.com.sg marianah.mustafa@sgh.com.sg senthamarai.shanmugam@sgh.com.sg | | | | | | | | | | | | | |

Results

| Year | Total Activations | Missing Forms | Forms Found | Missing Data |
|------|-------------------|---------------|-------------|--------------|
| 2015 | 128 | 19 | 19 | 0 |
| 2016 | 119 | 18 | 10 | 8 |
| 2017 | 119 | 2 | 0 | 2 |

Project Extension Due to the positive feedback, the Code Blue report filled in by the Code Blue Team has been converted from hardcopy (sent via faxing) into softcopy (sent via email) as well.