

# Knowledge, Application and Practice of Stop and Mock Before You Block Among Anaesthetic Doctors in Hospital Kuala Lumpur

Ng Jo Sheng<sup>1</sup>, Azrin Mohd Azidin<sup>2</sup>, Mohd Azizuddin Amir Shariffuddin<sup>3</sup>

<sup>1,2</sup>Department of Anaesthesia and Intensive Care, Hospital Kuala Lumpur

<sup>3</sup>Clinical Research Centre, Hospital Kuala Lumpur

## Abstract

**Introduction:** Safe practice during regional anaesthesia is important to ensure avoidance of morbidity and mortality. The Stop and Mock Before You Block is a safety initiative that is developed to prevent wrong sided and site regional blocks. The study aims to identify the incidences of wrong side or site blocks and also identify the knowledge, application and practice of anaesthetic doctors in Hospital Kuala Lumpur.

**Method:** This is a observational descriptive study, where a questionnaire in the format of Google Form is distributed among Anaesthetic doctors via Whatsapp. The data was then collected and analysed using SPSS to generate frequencies and mean of responses. It was also used to analyse the relationship between the variables and demographics.

**Results:** A total of 143 anaesthetic doctors responded. The study found an incidence of 8 wrongly performed blocks. The study also found significant correlation between years of practice and doctor's grade to the knowledge, application and practice components.

**Conclusion:** The study has identified 8 occurrences of wrong side or site block that has occurred among the anaesthetic doctors in Hospital Kuala Lumpur. Based on the results of the study, majority of the anaesthetic doctors had moderate to poor knowledge, application and practice of the Stop and Mock Before You Block safety initiative.

**Keywords:** Regional anaesthesia, Stop Before You Block, Mock Before You Block

## Introduction

Stopping before blocking might neglect to diminish the incidence of incorrect site blocking. In its introduction, National Reporting and Learning Service (NRLS) information showed that as of November 2010 (around 54 years), there were sixty seven mistake site blocks in 15 months. In 2007, NRLS revealed thirty-three incidents, while just twenty-seven incidents were accounted for in 2009.<sup>1</sup> In 2015, 34 blunders were accounted for in the 9 months since April 2015 (around 45 years-1 year) (Laharie et al., 2018). The Fifth National Audit Project (NAP5) movement review gauges that 422,000 fringe nerve blockages are completed each year; this shows that the typical incidence has remained at around 1 in 6250, and the binomial 95% certainty interval that has covered throughout the long term.<sup>1</sup>

Part of the justification behind this present circumstance is the growing acknowledgment of the impediments of the actual rundown. The WHO careful security Checklist initially created amazing outcomes, three however these outcomes have not been affirmed in bigger and later examinations.<sup>2</sup>

Michigan's focal venous catheter agenda essentially diminished the infection rate by 66% and provoked the NHS to embrace a "match Michigan" plan. Sadly, and surprisingly, the outcomes are vague. Different variables might be the disappointment or refusal of staff to apply the agenda, or to work on the report (that is, the past information is misjudged).<sup>2-5</sup>

Given the circumstances, safe nerve block requires both command (that is, areas of strength for a to get done with the job) and reaction to counter-command (that is, an indispensable open door in activity to stop the undertaking).<sup>6-8</sup> Instances of wellbeing task results that expect command-to-command balance are to delicately stir things up around town while riding downhill, or to dial back and think back before overtaking on the thruway. Counter-command dials back the main errand by opposing it, in fact, it itself turns into a characteristic and inseparable piece of the actual activity.<sup>8</sup>

A 'stop' moment should be undertaken before performing a local anaesthetic or regional block to prevent wrong-side block.<sup>9-11</sup> This guidance was produced by the Safe Anaesthesia Liaison Group (SALG) and then included in the National Safety Standards for Invasive Procedures (NatSSIPs).<sup>12</sup> There are several measures proposed to force the 'stop' moment, from checklists to signs on ultrasound machines, or the novel 'mock before you block' technique.<sup>11-12</sup> In this context, we write to express concern about the recent correspondence that advocates either making additional 'anaesthetic' marks or placing anaesthetic labels on the side to be blocked, as a means of forcing the 'stop' moment.<sup>12</sup>

Previous international study has shown that there is very low uptake of the safety initiative into the Anaesthetic practitioners daily practice.<sup>13-14</sup> In fact many studies have cited the failure to perform either one of the safety initiative together with the lack of reminders have led to wrong side / site peripheral nerve blocks.<sup>15-16</sup> In Malaysia so far, there has been no study regarding the knowledge, attitude and practice of 'Stop and Mock Before You Block' among Anaesthetic practitioners.<sup>16</sup>

In the Anaesthesia and intensive care Department of Hospital Kuala Lumpur, the Stop and mock Before You Block safety initiative has never been implemented prior to this study. The department has a special team known as Block Team which perform the daily regional peripheral nerve blocks for patients coming for both elective and emergency surgery. However to date, the safety initiative has never been part of the conduct prior to performing regional peripheral nerve blocks. There have been 2 incidences of wrong sided / site peripheral nerve blocks which have occurred over the past 1 year. Thus proving the need of implementing a safety initiative such as the Stop and Mock Before You Block to curb the problem.

The study survey aims to determine the knowledge, application and practice of anaesthetic doctors in Anaesthesia and Intensive Care department HKL towards the Stop and Mock Before You Block safety initiative. The study will also determine the prevalence of the wrong side or site blocks and at the same time identify factors that may have led to wrong side or site blocks. This information gained will be helpful in planning future interventional programs to improve awareness and compliance of anaesthetic doctors to the Stop Before You Block and Mock Before You block safety initiative.

## Methodology

This is an observational cross-sectional study. A validated questionnaire is adopted from an international study done "Exploring performance of, and attitudes to, Stop and Mock Before You Block in preventing wrong-side blocks" by Hopping M, Merry AF, Pandit JJ and adapted to our local setting. It is then re-typed into Google Forms. Once questionnaire entry into the Google Forms is satisfactory and complete, it was distributed to anaesthetic doctors in HKL via Whatsapp. Google Form was set for collecting emails

to ensure single entry per participant. Responses were electronically collected into Google sheets. A total of 3 months (1<sup>st</sup> September 2022 till 30<sup>th</sup> November 2022) was allocated for data collection.

We employed Universal Sampling in view of small sample population. The first 130 respondents were recruited into the study. The inclusion criteria used were anaesthetic doctors working in the Anaesthesia Department Hospital Kuala Lumpur (consultants, specialist, medical officers, master program trainees, Fellowship of the College of Anaesthesia Ireland (FCAI) trainees) and consented to participate. Exclusion criteria were House Officers in Anaesthesia Department HKL, Anaesthesia doctors from other hospitals, foreign anaesthesia doctors, incompletely answered questionnaires, and those who did not consent to participate in the study.

The responses collected from the questionnaire were grouped into the domains of knowledge, application and practice. There are a total of 21 questions, 6 questions on demographics, 5 questions on knowledge, 5 questions on application and 5 questions on practice. The data collected was analysed using SPSS version 22 using Fisher's exact test. A value of  $P < 0.05$  was considered significant.

## Results

A total of 143 responses were collected from period of October – December 2022.

**Demographics** : The largest proportion consisted of medical officers (48.3%), followed by Trainees (30.8%), then specialist (18.9%), and finally consultants (2.1%)

**Incidence** : Out of the 143 participants 8 participants have performed a wrong sided block. Out of the 8 participants who have performed a wrong sided block, 4 participants had performed a wrong sided block during his first year of an Anaesthesia training, 2 during his second year in Anaesthesia, 1 participant during his 13<sup>th</sup> year of Anaesthesia while another 1 during his 14<sup>th</sup> year in the field of Anaesthesia. 3 have mentioned distraction being the reason for the mistake occurring while 5 participants mentioned that the reason for the wrong sided / site block was due to not performing the Stop and Mock Before You Block time out prior to performing a regional block.

**Knowledge** : 59.4% of participants had poor knowledge, 26.6% had moderate knowledge and only 14% had good knowledge of the Stop and Mock before you Block safety initiative. The mean of the knowledge component is 1.68.

**Application** : The frequency of participants having poor application was 6.3%, while 64.3% of participants had moderate application and only 28.7% had good application. The mean of application component is 2.88.

**Practice** : The frequency of participants having poor practice was 9.1%, while 79.6% had moderate practice and 11.3% had good practice. The mean of practice is 2.47

Fisher's exact test was used to determine if there was as significant association between demographic factors with Knowledge, Application and Practice of Stop and Mock Before You Block among Anaesthetic Doctors in Hospital Kuala Lumpur. This test revealed significant association between *years of practising anaesthesia* with *application* with  $p=0.005$ . The different grades of Anaesthetic doctors in the Anaesthetic Department of Hospital Kuala Lumpur correlates significantly with *knowledge*,  $p =0.001$ . There was a

statistically significant association of knowledge with *years of practising anaesthesia*,  $p = 0.003$  and with *when you performed your first wrong side*,  $p = 0.027$ . Nevertheless, none is significantly associated with practices.

**Mean (SD): 1.68 (1.37), (N = 143)**

Knowledge	Frequency (%)
Poor	85 (59.4)
Moderate	38 (26.6)
Good	20 (14.0)

**Table 1 : Analysis of Knowledge component**

**Mean (SD): 2.88 (0.93)**

Application	Frequency (%)
Poor	9 (6.3)
Moderate	92 (64.3)
Good	41 (28.7)

**Table 2 : Analysis of Application component**

**Mean (SD) :2.47 (0.85)**

Practice	Frequency (%)
Poor	13 (9.1)
Moderate	113 (79.6)
Good	16 (11.3)

**Table 3 : Analysis of Practice component**

	Frequency	Percent	Valid Percent	Cumulative Percent
Consultant				
Anaesthesiologist	3	2.1	2.1	2.1
Specialist				
(Anaesthesiologist)	27	18.9	18.9	21
Medical Officer	69	48.3	48.3	69.2
Trainee				
(Masters/FCAI/MCAI)	44	30.8	30.8	100
Total	143	100	100	

**Table 4: Frequency (%) of participants based on grade/position**

Practices	Poor	Moderate	Good	Sig. (p-value)
<b>Are you a</b>				
Consultant anaesthesiologist	0 (0.0%)	3 (100.0%)	0 (0.0%)	0.568
Special (anaesthesiologist)	2 (7.4%)	19 (70.4%)	6 (22.2%)	
Medical officer	7 (10.1%)	57 (82.6%)	5 (7.2%)	
Trainee (Masters/FCAI/MCAI)	4 (9.3%)	34 (79.1%)	5 (11.6%)	
<b>How long have you been practising in Anaesthesia?</b>				
1-5 years	9 (11.8%)	61 (80.3%)	6 (7.9%)	0.338
6-10 years	4 (10.0%)	31 (71.5%)	5 (12.5%)	
11-20 years	0 (0.0%)	16 (76.2%)	5 (23.8%)	
More than 20 years	0 (0.0%)	5 (100.0%)	0 (0.0%)	
Application	Poor	Moderate	Good	Sig. (p-value)
<b>Are you a</b>				
Consultant anaesthesiologist	0 (0.0%)	2 (66.7%)	1 (33.3%)	0.231
Special (anaesthesiologist)	0 (0.0%)	14 (51.9%)	13 (48.1%)	
Medical officer	5 (7.2%)	47 (68.1%)	17 (24.6%)	
Trainee (Masters/FCAI/MCAI)	4 (9.3%)	29 (67.4%)	10 (23.3%)	
<b>How long have you been practising in Anaesthesia?</b>				
1-5 years	5 (6.6%)	55 (72.4%)	16 (21.1%)	
6-10 years	4 (10.0%)	27 (67.5%)	9 (22.5%)	0.005*
11-20 years	0 (0.0%)	7 (33.3%)	14 (66.7%)	
More than 20 years	0 (0.0%)	3 (60.0%)	2 (40.0%)	
Knowledge	Poor	Moderate	Good	Sig.(p-value)
<b>Are you a</b>				
Consultant anaesthesiologist	1 (33.3%)	2 (66.7%)	0 (0.0%)	0.001**

Special (anaesthesiologist)	9 (33.3%)	13 (48.1%)	5 (18.5%)	
Medical officer	51 (73.9%)	8 (11.6%)	10 (14.5%)	
Trainee (Masters/FCAI/MCAI)	24 (54.45%)			
<b>How long have you been practising in Anaesthesia?</b>				
1-5 years	53 (68.8%)	13 (16.9%)	11 (14.3%)	0.003*
6-10 years	25 (62.5%)	12 (30.0%)	5 (7.5%)	
11-20 years	5 (23.8%)	11 (52.4%)	5 (23.8%)	
More than 20 years	2 (40.0%)	2 (40.0%)	1 (20.0%)	

**Table 5: Cross tabulation of Demographics against Knowledge, Application and Practice component (Run using Fisher Exact test, \*p<0.05, \*\*p<0.001)**

### Discussion

From the results obtained above, in a general overview of the participants in the study, there are a total of 143 participants. The number of consultants Anaesthesiologist are 3, specialist Anaesthesiologist is 27, medical officers 69 and trainees 44 making a total of 143 participants. The overall knowledge score is poor (59.4%), followed by moderate (26.6%) and then good (14%). The application score is highest in moderate (64.3%), followed by good (28.7%) and then poor application score (6.3%). The overall practice score is highest in moderate practice (79.6%), then good practice (11.3%) and finally poor practice (9.1%).

Through SPSS analysis using Fisher’s test of correlations, it was found that there is significant association between the years of practicing Anaesthesia with the application score (p=0.005). Grades and position of the Anaesthetic doctor (p=0.001), years of practicing in the field of Anaesthesia (p=0.003) and years when one performed their first wrong sided block (p=0.027) correlated significantly with the knowledge scores. No correlations were made with the practice component.

It is observed that as a person spends much longer time in the field of Anaesthesia, one has increase in years of experience and has improvement in grade and position within the department of Anaesthesia Hospital Kuala Lumpur. The increase in years of experience and grade led to better overall scores in the knowledge application and practice components of the study. This can be inferred that increasing number of years in Anaesthesia will lead to an improvement in the knowledge, application, and practice of the Stop and Mock before You block safety initiative.

The incidence of wrong sided / site regional block is 8 in this study. The occurrence of the wrong side / site block was mostly during the lower end of the number of years in the field of Anaesthesia. The reasons for a wrong sided / site nerve block are many. However, few frequently mentioned are the failure to perform the Stop and mock Before You Block safety initiative and the presence of distraction during the procedure. Other factors that have been cited are that patient was not in the supine position whereby the operator of the procedure was confused with regards to the Left and Right of the patient. Patient covered by surgical drapes are also another reason identified for wrong sided / site nerve blocks.

According to the National Health Service United Kingdom (NHS-UK), the wrong sided / site nerve block is a never event. However, after conducting this study, 122 (85.3%) of participants responded that the wrong sided / site nerve block is preventable event while 20 (14.0%) responded saying that it is a never event and 1 (0.7%) responded saying it is an adverse event. A never event is described as a serious incident or error that should not occur if proper safety procedures are followed. NHS-UK defines never events as serious incidents that are entirely preventable because guidance or safety recommendations providing strong systemic protective barriers are available at a national level and should have been implemented by all healthcare providers.

There is a total of 19 never events listed in the NHS-UK never Events List (last updated in February 2021). Wrong sided / site nerve blocks are number 1 in the list under the heading of wrong side / site surgery. This is because when a wrong sided / site nerve block is performed, the risk of performing a wrong side / site surgery increases dramatically. It is reassuring that 90 (62.9%) of participants feel that a wrong sided / site block leads to wrong sided / site surgery, however there are still 53 (37.1%) of participants that does not feel the same.

The Stop and Mock Before You Block safety initiative is a time out of its own and is not a part of the Safe Surgery Saves Lives (SSSL) checklist. Therefore, the block performer should not be dependent on awaiting confirmation on the side and site of surgery prior to performing a regional block but rather actively checks with the patient if awake against consent of procedure and patient notes prior to begging the procedure. A total of 74 (51.7%) participants said that the Stop and Mock Before You Block safety initiative was part of the SSSL checklist, while 69 (48.3%) said it was not part of the checklist.

It was reassuring that all the 143 (100%) participants of the study were keen on implementing the Stop and Mock Before You Block safety initiative at their place of practice. This highlights that there is insight within the Anaesthetic doctors of the department to want improvement in the workplace practices and improve the safety profile of the regional procedures done.

**Limitations:** Among the limitations of the study are

1. Larger sample to include all doctors in the department to truly assess and analyze the knowledge, application, and practice of Stop and Mock Before You Block safety initiative
2. Lack of manpower and resource to truly assess the Practice component by observing the doctors during their performance of the regional nerve block procedure
3. Issue of dishonesty and inaccuracy – participants may falsify information / may not answer truthfully
4. As this is a questionnaire conducted online via Google Forms – the quality of the data obtained depends solely on the participants understanding and interpretation of the questionnaire items

## **Conclusion**

The study has identified key areas of knowledge deficit among Anaesthesia Doctors in Department of Anaesthesia Hospital Kuala Lumpur in the areas of Stop and mock Before you Block, Safe Surgery Saves Lives (SSSL) checklist and Never Events. it is imperative that everyone and anyone that is involved with a patient receiving a regional nerve block be aware of the Stop and Mock Before You Block safety initiative, that wrong side/ site nerve blocker are never events and may lead to wrong sided / site surgery.

In conclusion, all practitioners of regional nerve blocks should have adequate knowledge to apply and practice the safety initiative in their daily work routine.

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