

## The Modified Cappuccini Test: A Proxy Indicator for Patient Safety in the Operating Theatre

James A. Morris (MBBS)<sup>1</sup>, Sean McKeon (MBBS)<sup>1</sup>, Rory Dyke (MB BS)<sup>1</sup>, Kate Reynolds (MBBS)<sup>1</sup>, Jonathan Super (BSc)<sup>2</sup>, John Hardman (MRCS)<sup>1</sup>, Raymond E. Anakwe<sup>1\*</sup>

<sup>1</sup>Department of Trauma and Orthopaedic Surgery Imperial College Healthcare NHS Trust St Mary's Hospital.

ARTICLE INFO	ABSTRACT
<p><i>Article type:</i> Short Communication</p> <hr/> <p><i>Article History:</i> Received: 28-Nov-2019 Accepted: 4-Jan-2019</p> <hr/> <p><i>Key words:</i> Patient safety, Safer surgery, Supervision</p>	<p><b>Introduction:</b> We report our experience with a modified audit tool, the modified Cappuccini test used to assess the availability and readiness of senior and expert help and supervision for trainee anaesthetists in the operating environment.</p> <p><b>Materials and Methods:</b> We sought to provide assurance as to the level of supervision for surgical and anaesthetic trainees within our organisation, a large tertiary centre in an urban environment. We would expect this to have a direct impact on patient safety in the operative environment and also on the training experience. We modified the Cappuccini test so that it could be used for surgical and anaesthetic trainees. Over 11 days we visited operating theatres across our institution and interviewed 195 trainees (anaesthetists and surgeons) undertaking operating lists.</p> <p><b>Results:</b> 96 (49.2%) anaesthetic trainees and 99 (50.8%) surgical trainees were interviewed. 166 (85.1%) trainees were being directly supervised by a consultant. 29 (14.9%) trainees were being remotely supervised without a physical consultant presence. 16 (55.2%) of these were anaesthetic trainees and the remainder were surgical trainees. 2 (6.9%) trainees stated that they were unsure who was directly supervising them. For the 29 remotely supervised trainees, we contacted 19 (65.5%) supervising consultants/senior doctors all of whom were aware that they were supervising the operating list and confirmed that they were available to attend if required.</p> <p><b>Conclusion:</b> The modified Cappuccini test is a simple and helpful tool, providing assurance as to the level of and access to senior and skilled supervision in the operating theatre and with the potential to be modified and deployed in a number of environments. We suggest that it is a useful proxy indicator of supervision and potentially also, patient safety in the operating theatre environment. We recommend that for operating lists which are remotely supervised, the name and method of contact for the senior supervising anaesthetist or surgeon should be explicitly stated at the beginning of each case.</p>
<p>► <b>Please cite this paper as:</b> Morris J, McKeon S, Dyke R, Reynolds K, Super J, Hardman J, Anakwe E, R. The Modified Cappuccini Test: A Proxy Indicator for Patient Safety in the Operating Theatre. Journal of Patient Safety and Quality Improvement. 2019; 7(4):185-187. Doi: 10.22038/psj.2020.44679.1257</p>	

\*Correspondence Author: Department of Trauma and Orthopaedic Surgery Imperial College Healthcare NHS Trust St Mary's Hospital, Praed St, London W2 1NY. E-mail: raymond.anakwe@nhs.net

© 2019 mums.ac.ir All rights reserved.

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/3.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

## Introduction

Healthcare organisations across the world celebrated the first World Health Organisation (WHO) World Patient Safety Day on 17 September 2019. Safer surgery has been a longstanding component of patient safety programmes and the WHO surgical checklist also celebrated its tenth anniversary in 2019. This programme is credited with reducing operative mortality and morbidity rates (1). Nevertheless, episodes of avoidable harm and in some cases, 'never events' continue to be reported (2,3). Access to senior and skilled support and clinical supervision have been recurring themes in the investigation of these events and form key lines of enquiry for patient safety investigations and training surveys. Training grade doctors are encouraged to progress to independent practice but should be appropriately supervised and able to access expert help.<sup>4</sup> Delay in accessing skilled assistance has been identified as a factor in episodes of surgical harm and indeed, death (3,5). The Royal College of Anaesthetists have endorsed a simple 5-point questionnaire, the Cappuccini test, to

quality and risk assess the level of supervision in operating lists where a trainee or non-consultant grade doctor is responsible for a patient undergoing surgery(5). This simple test identifies operating lists where a trainee anaesthetist is working under remote supervision. The trainee is asked to name the senior doctor supervising them and how they can be contacted. This means of contact is directly tested at this point.

## Materials and Methods

We sought to provide assurance as to the level of supervision for surgical and anaesthetic trainees within our organisation, a large tertiary centre in an urban environment. We would expect this to have a direct impact on patient safety in the operative environment and also on the training experience. We modified the Cappuccini test so that it could be used for surgical and anaesthetic trainees (Fig 1). Over 11 days we visited operating theatres across our institution and interviewed 195 trainees (anaesthetists and surgeons) undertaking operating lists.

**Figure 1:** Modified Cappuccini Test tool

<p><b>Date:</b></p> <p><b>List: Elective / Trauma / Emergency</b></p> <p><b>Site: CXH / SMH / Hammersmith</b></p> <p><b>Theatre:</b></p> <p><b>Speciality:</b></p> <p><b>Questions</b></p> <p><b><u>Trainee or non-consultant career grade doctor (NCGD)</u></b></p> <ol style="list-style-type: none"><li>1. Supervisor present? (Y/N) If supervisor not present please continue with questions</li><li>2. Who is supervising you? (Able to state trainer's name (Y/N))</li><li>3. How would you get hold of them if you needed them now (Bleep/mobile/contact office/next operating theatre/ ask the nurse/other (state other))?</li></ol> <p><b><u>Supervisor- contact or go and find</u></b></p> <ol style="list-style-type: none"><li>4. Which list are you currently supervising?</li><li>5. Are you currently available to attend the case?</li><li>6. How long would it take you attend theatre if required (mins)?</li></ol>
---

## Results

Ninety-six (49.2%) anaesthetic trainees and 99 (50.8%) surgical trainees were interviewed. One hundred and sixty-six (85.1%) trainees were being directly supervised by a consultant. Twenty-nine (14.9%) trainees were being remotely supervised without a physical consultant presence. Sixteen (55.2%) of these were anaesthetic trainees and the remainder were surgical trainees. Two (6.9%) trainees stated that they were unsure who was directly supervising them. For the 29 remotely supervised trainees, we contacted 19 (65.5%) supervising consultants/senior doctors all of whom were aware that they were supervising the operating list and confirmed that they were available to attend if required. We were unable to contact 10 (34.5%) of the named consultants/senior doctors supervising trainees using the means suggested at the time. We did not make a second attempt or try to contact an alternate consultant as would happen if clinically needed.

## Conclusion

The Cappuccini test was developed following the unfortunate and unexpected death of a patient undergoing a caesarean section procedure (5). The death was attributed at least in part to delay in obtaining skilled and senior support to facilitate the timely re-intubation of the patient (6).

It is encouraging that the vast majority of operating lists took place under the direct supervision of consultants and also that remote supervision seemed to function with ready access to senior support allowing progress to independent practice with senior expertise at hand.

The modified Cappuccini test is a simple and helpful tool, providing assurance as to the level of and access to senior and skilled supervision in the operating theatre and with the potential to be modified and deployed in a number environments. We suggest that it is a useful proxy indicator of supervision and potentially also, patient safety in the operating theatre environment. We recommend that for operating lists which are remotely supervised, the name and method of contact for the senior supervising anaesthetist or surgeon should be explicitly stated at the beginning of each case.

## References

1. Haynes AB, Weiser TG, Berry WR, et al. Safe Surgery Saves Lives Study Group; A surgical safety checklist to reduce morbidity and mortality in a global population. *N Engl J Med* 2009; 360:491-9.
2. Bromiley M. The husband's story: From tragedy to learning and action. *BMJ Qual Saf*. 2015; 24:425-7.
3. Burnett S. Surgical never events. Learning from 38 cases occurring in English hospitals between April 2016 and March 2018. NHS Improvement. 12 September 2018. [https://improvement.nhs.uk/documents/3213/Learning\\_from\\_surgical\\_Never\\_Events\\_FINAL.pdf](https://improvement.nhs.uk/documents/3213/Learning_from_surgical_Never_Events_FINAL.pdf) last accessed 10 November 2019.
4. A Guide to Good Practice The Royal College of Surgeons. [www.rcseng.ac.uk/standardsandguidance](http://www.rcseng.ac.uk/standardsandguidance) last accessed 10 November 2019.
5. The Cappuccini Test - an audit of supervision . Royal College of Anaesthetists [www.rcoa.ac.uk/governance-and-support/the-cappuccini-test](http://www.rcoa.ac.uk/governance-and-support/the-cappuccini-test) last accessed 10 November 2019.
6. Coroner's Report. Prevention of future deaths. Frances Cappuccini. 27 January 2017. [www.judiciary.uk/publications/frances-cappuccini](http://www.judiciary.uk/publications/frances-cappuccini) last accessed 10 November 2019.