

## GUIDELINES AND RECOMMENDATIONS

# A safety checklist for transoesophageal echocardiography from the British Society of Echocardiography and the Association of Cardiothoracic Anaesthetists

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## Abstract

The World Health Organisation (WHO) launched the Surgical Safety Checklist in 2008. The introduction of this checklist resulted in a significant reduction in the incidence of complications and death in patients undergoing surgery. Consequently, the WHO Surgical Safety checklist is recommended for use by the National Patient Safety Agency for all patients undergoing surgery. However, many invasive or interventional procedures occur outside the theatre setting and there are increasing requirements for a safety checklist to be used prior to such procedures. Transoesophageal echocardiography (TOE) is an invasive procedure and although generally considered to be safe, it carries the risk of serious and potentially life-threatening complications. Strict adherence to a safety checklist may reduce the rate of significant complications during TOE. However, the standard WHO Surgical Safety Checklist is

### Key Words

- ▶ transoesophageal echocardiography
- ▶ safety checklist

not designed for procedures outside the theatre environment and therefore this document is designed to be a procedure-specific safety checklist for TOE. It has been endorsed for use by the British Society of Echocardiography and the Association of Cardiothoracic Anaesthetists.

## Introduction

The number of surgical procedures being performed worldwide continues to increase. However despite the introduction of more advanced surgical techniques, there remains a significant risk of complications and death from surgical procedures (1). Previous studies have shown that over 50% of surgical complications are avoidable (2). In addition, the importance of effective teamwork has been established and been shown to improve outcome (3). Consequently, the World Health Organisation (WHO) developed the Surgical Safety Checklist in 2008 (4). Following the introduction of the WHO surgical safety checklist, a large global multi-centre study demonstrated a 40% reduction in complications and death following surgery (5). The use of this checklist is now recommended for all patients undergoing surgery in the UK by the National Patient Safety Agency.

## The rationale for a safety checklist in transoesophageal echocardiography

A large number of invasive and interventional procedures are now performed outside the theatre environment. Many of the factors contributing to surgical complications and serious untoward incidents are present when performing invasive procedures and/or administering sedation in other environments. Consequently, there is an increasing requirement to utilise safety checklists for all invasive procedures. The indications, guidelines and protocols for transoesophageal echocardiography are well established (6, 7, 8). Transoesophageal echocardiography is generally considered to be low risk but is occasionally associated with serious complications including oesophageal perforation, transmission of infection and death (<0.01%) (9). Adherence to the British Society of Echocardiography (BSE) guidance on TOE probe cleaning and disinfection (10) is important to reduce the risk of transmission of infection between patients. In addition, the BSE has produced guidance on the use of safe sedation during TOE (11). The incidence of complications may be further reduced by implementation and adherence to a safety checklist together with effective team working. The current WHO Surgical safety checklist was designed for use within the

theatre environment and hence is not directly relevant for use in TOE. This document produced by the British Society of Echocardiography and the Association of Cardiothoracic Anaesthetists aims to outline a procedure specific safety checklist for TOE ([Safety Checklist for Transoesophageal Echocardiography](#), see section on [Safety Checklist for Transoesophageal Echocardiography](#) given at the end of this article).

## How to use the checklist

The form is designed to be printed on a double-sided A4 page and can be filed in the patient medical records once it has been completed. However, the form can be adapted for use locally or converted into an electronic format for use in an electronic patient record if necessary. In keeping with the format of the WHO safety checklist, the procedure has been broken down into three phases, corresponding to patient checks, immediately pre-procedure and post-procedure checks. There is also an appendix to be completed if the TOE is being performed under general anaesthesia.

In order to complete the checklist effectively, it is important that one member of the team assumes responsibility for completion of each stage of the checklist. This can be any member of the team. At the start, it is important that the patient verbally confirms their identity and the intended procedure in their own words. During the 'Time Out' phase, all team members should be present and should confirm their name and role. If the team is unchanged during a list, this stage can be performed at the start of the list but does not need repetition for each patient. Immediately pre-procedure, the team should reconfirm that the correct patient is about to undergo the correct procedure and outline any anticipated difficulties for each patient. Once the procedure has been completed, appropriate handover to the recovery team and any specific instructions should be given and all documentation completed.

## Conclusion

It is anticipated that the use of this checklist will ensure a consistent process is followed when performing TOE.

This will minimize the risk of avoidable complications that may occur during TOE.

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**Safety Checklist for Transoesophageal Echocardiography**

This is linked to the online version of the paper at <http://dx.doi.org/10.1530/ERP-15-0035>.

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**Declaration of interest**

The authors declare that there is no conflict of interest that could be perceived as prejudicing the impartiality of this guideline.

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