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Short communication

Role of Checklists in Medicolegal Death Investigation

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Abstract

Introduction: The essential element of criminal law mandates the offense to be proved beyond reasonable doubt by prosecution and law enforcement. The key approach is to not leave any stone unturned. Investigating agencies and forensic personnel need practice advancement- adopting modern and effective modalities. Although technological advancement is being considered as the mainstay of improvement, it is not the only area. **Medicolegal Aspects:** The overall conviction rate of a country requires upgrading the quality of work of investigating teams handling cases. As is true for all complex processes handled by teams, criminal investigations, and medicolegal autopsies are also prone to human errors at multiple stages. Hence, it is necessary to adopt methods for the improvement of teamwork. One accepted method is the usage of checklists. Here, we discuss the need for checklists in medicolegal death investigations, their utility of different types of checklists in various situations, and provide an example checklist for hanging. **Conclusion:** The introduction of checklists has been found to improve the work standards in high-reliability organizations such as aviation, and nuclear power plants. World Health Organization has recommended checklists in the operation rooms and areas affecting patient safety.

1. Introduction

Oxford dictionary defines a checklist as a list of the things that you must remember to do, to take with you, or to find out.¹ Checklists have gained significance in medical practice to improve patient safety and quality outcome. Since the introduction of checklists in Operating rooms by

the World Health Organization, its application has been found relevant in other domains of medical practice also.^{2,3}

However, its application in medico-legal practice is still restricted to developed countries. The current state of criminal investigation in India

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needs much improvement and checklists can prove to be an effective tool to improve ground-level teamwork.

2. Checklists:

Why checklist in the Indian system of medico-legal death investigation?

- Complexity leads to adversity.

The Law of individuality states that *“Every object whether natural or man-made has a unique quality or characteristic in it which is not duplicated in any other object”*.⁴ The same holds for crime scenes and involved individuals also. Crime investigators may find the modus operandi to be the same, but the individual’s response and interaction with the environment varies and its detection requires the dedicated focus of experts. The environment of a crime scene is also disarray -phones buzzing, next of kin expressing despair, casual trespasser and neighbors peeping out of interest, special effects provided by media, constant pressure of the clock ticking over the head, sense organs overwhelmed with sight and smell of thick air of a dead body- this creates an ambiance of exasperation for the young investigators. To add on: the interaction with seniors, juniors, colleagues, and other individuals involved in the investigation such as scientists and experts may not always go smoothly. This scenario takes a toll on physical and mental competencies to the extent that even experienced investigators can miss a vital step. The procedure is further complicated as the Chief investigating officer is expected to perform multiple tasks at hand keeping up with the current practice and knowledge. Similarly, during an autopsy, the forensic pathologist has to pay attention to the findings in front of him, take photographs, make a rough record of the findings, navigate the distracting straightforward injury and look for more, collect evidence for preservation, make sure the preservatives are added correctly, label them, respond to queries raised by staff and teach the post-graduate and undergraduate students. Though there is an assistant at teaching institutions to help, this luxury is not always present. Post-graduates and undergraduates

require constant monitoring and guidance even if they volunteer to help. While steering through the case, a simple routine cardinal step has a likelihood of being skipped and proves to be a vital miss in the death investigation.

- Humans have fallible memory.

When routine work is being done, the brain plays a trick and makes us skip steps. Similarly, when we try to recollect and pen down what we observed, the observations made commonly also come to the pen easily. Although this fallible memory may be a boon for the victims of crime to counter post-traumatic stress, the same does not apply to the ones solving the crime. In absence of a standardized checklist, professionals often find themselves engulfed in an unwanted urge to re-examine a cardinal finding which may be missed or interpreted wrongly.
- Experience at times gives an edge to miss vital steps.

Those involved in criminal investigations are well aware that minute steps during the process impact extraordinarily. One such experience of the author pertains to the autopsy examination of a dark-skinned person as a victim of assault. Though the standard practice necessitates incising the back to look for injuries, this step was missed until reminded by a junior at the last minute. The incision in the back revealed multiple tram track contusions. Missing a simple step like this can have a downhill consequence for the victim, society, and profession.
- Removing simple stuff out of the way will help to focus on the hard stuff.

When specific steps of a case are checked out, then focus can be diverted to the important points- interpretation of findings that may warrant further intervention. For example, a crime scene investigator may look for hidden evidence/material for a special investigation or an autopsy surgeon may proceed with additional dissection which can be of importance.
- Lack of knowledge and the ability to apply it.

One research study on the increasing acquittal rates in Indian criminal investigation observed that nearly 40% of criminal cases

are lost due to investigation flaws. Practical difficulties such as delay in collection of evidence and inability of 'clue team' to reach districts have been pointed out as common reasons for failure.⁵ In India, like many developing countries a significant portion of forensic autopsies and investigations are done by doctors and investigating officers who are neither qualified nor trained to do so.^{6,7} This results in a faulty investigation and endless legal deadlocks.

Even if investigating officers and doctors take an interest to gain theoretical knowledge, they fail to apply it or apply it wrongly due to a lack of experience, training, and misguidance by another person who has sat in the same boat for years and never had his/her shambles questioned by the judicial system. The introduction of a standardized checklist may enable untrained individuals to bring out an element of objectivity and standard to the practice.

Types

□ Do-confirm

When the chief investigating officer and forensic pathologist are well trained, then a do-confirm type of checklist will be helpful, as here the users are well acquainted with the procedure. They have to read the items in the list and ensure it is done. An example is given in [table 1](#).

□ Read-do

This type of checklist is for personnel who are untrained or are doing a non-routine procedure. Here every step is explained in order clearly and one just has to read and do it.

Table 1: Do-confirm type checklist for autopsy in a hanging case.

Example Checklist for Autopsy Surgeon In A Case Of Hanging

(Do-Confirm type)

Pre-procedure

- € Is history taking complete
- € Review of evidence collected from the crime scene
- € Briefing about the case to the team involved
- € Has the autopsy request and inquest papers been reviewed

- € Has the identification been confirmed by the investigating officer (IO)
- € Any infection risk identified
- € Scale and Measuring tape ready
- € Equipment ready- to preserve and send samples for fiber from neck/ligature material
- € Is there a need for any additional/supportive investigation

During procedure

Before incision

- € Collection of fiber from neck/ligature material
- € Tongue position and evidence of Salivary Dribble
- € Heel to fingertip measurement with upper limb extended above the head
- € Description of Clothes, Ligature mark & Ligature material (if present in situ)
- € Rigor and Hypostasis (location and fixation)
- € Any evidence of physical or sexual abuse
- € Plan for wide and bloodless field for neck dissection

Before closure

- € Neck structures examination
- € Hyoid bone and thyroid cartilage examination
- € Any signs of poisoning/intoxication (requiring preservation of viscera)

Post-procedure

- € Is the body sutured and packed properly
- € Are the evidence collected labeled properly, sealed, and handed over to IO
- € Communication about evidence processing given to IO
- € Body handed over to the IO

What is a Good Checklist?

- Easy to use: Simple sentences, straightforward language, electronic or hardcopy but can be carried and stored with ease.
- To the point: one item in the checklist stick to one simple task.
- Relevant: though the content of the checklist can grossly remain the same across the country, it can be tailored as per the local needs.
- Time savvy: a good checklist should not take more than 90 seconds to read through and acknowledge.
- Tested and reviewed: The checklist created once should be tested in the field repeatedly and inputs from those using it routinely should be taken to update it. Meetings at the local or state

or national level should happen regularly to exchange ideas and update the checklists.

- Strategic: During an investigating process, putting the questions too early and even too late may beat the purpose of the checklist. Hence, a checklist has to be broken into multiple modules (ideally three) and applied at relevant times.

Where can a checklist be used in the medico-legal investigation?

- Autopsy
- Crime scene investigation
- Medico-legal case examinations (wound, drunkenness, age certification, etc.)
- Framing sub-sequent / review opinion
- Weapon examination
- Preparation of investigation summary by law enforcement agencies

Who should implement the checklist?

One may argue that the introduction of checklists in the Indian criminal investigation system requires legal recognition before its acceptance in a uniform manner and that statutory incorporation will be time taking process. However, the practice of a checklist at the grass-root level can go a long way. Here, roles can be identified as:

- Supervision: by a senior officer. For example, the chief investigating officer at the crime scene and the main autopsy surgeon in the mortuary. The implementation of the checklist requires the whole team to pay attention while the items are being read. This task falls in the hands of the senior-most person to pull everyone together and to encourage speaking up of the team members if there is any concern.

Execution: by a trained designated person in the team. This can be a constable at the crime scene and a technician or junior assistant during the autopsy. The one who reads through the checklist also has the responsibility to be a sincere speak-up person. They have to tick only those items that have been confirmed and raise the issue if an item has been neglected.

3. Conclusion:

Checklists remind the minimal necessary steps and make them explicit. They not only offer the possibility of verification but also instill a kind of discipline of higher performance. An apt and effective checklist will reduce human error, ensure

completeness, and reduce subjectivity. In the ever-expanding complexities of human endeavors in forensic practice, we can resort to breakdown and simplifying.

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References:

1. Oxford Advanced Learner's Dictionary. Checklist noun - Definition, pictures, pronunciation and usage notes. Oxford Learners: Oxford University Press; 2022 [cited 1st March 2021]. Available from: <https://www.oxfordlearnersdictionaries.com/definition/english/checklist>.
2. Haynes AB, Weiser TG, Berry WR, Lipsitz SR, Breizat A-HS, Dellinger EP, et al. A Surgical Safety Checklist to Reduce Morbidity and Mortality in a Global Population. *N Engl J Med*. 2009 ;360(5):491–9.
3. Braham DL, Richardson AL, Malik IS. Application of the WHO surgical safety checklist outside the operating theatre: medicine can learn from surgery. *Clin med*. 2014 Oct;14(5):468-74.
4. Forensic Yard. Seven Basic Laws and Principles of Forensic Science. Forensic yard: the yard of knowledge [cited 27th August 2021]. Available from: <https://forensicyard.com/laws-and-principles-of-forensic-science/>
5. Santhy KVK, Balakrishna MD. Problems in the criminal investigation with reference to increasing acquittals: A Study of Criminal Law and Practice in Andhra Pradesh. Bureau of Police Research and Development: NALSAR University of Law Justice City; 2016 [cited 27th December 2021]. Available from: <https://bprd.nic.in/WriteReadData/userfiles/file/201608020459199930125Report.pdf>
6. Banwari M. An erroneous opinion on a cause of death in a forensic autopsy: a case report. *Afr Health Sci*. 2018;17(4):1246–9.
7. Menezes RG, Monteiro FN. Forensic Autopsy. Treasure Island: StatPearls Publishing; 2021 [cited 21st April 2021]. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/30969723>