

ORIGINAL ARTICLE

Variation in Resource Supply of Mortuary for Autopsy at Tertiary Care Center - A Nation-Wide Survey

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Abstract:

Mortuaries and medicolegal services are essential support services to the administration of healthcare. There is a lack of information and uniformity regarding various resource supplies especially day to day consumables for medico-legal services in India. For this reason, a study was undertaken to evaluate the current status of mortuaries and resource supplies for autopsy work as well as the elements that contribute to it. A cross sectional study was conducted in several Indian tertiary care facilities using both qualitative and quantitative methods of data analysis. 74 faculty members from 71 institutes, including 5 AIIMS and AFMC Pune, participated in this study using data from 61 districts across 19 states and the union territories. Information about these health care institutions was gathered using a Google form that included 18 carefully crafted questions with options to observe and interview the faculties who are directly related to autopsy work. Across all the health care facilities we looked and discovered a wide range in resource availability and reluctance on the part of the institute to provide various resources for postmortem services.

Polythene and cloth to wrap the body after the postmortem were arranged by relatives and NGOs in 34% and 46% of institutes, respectively; even in 14% of institutes, containers for the preservation of viscera have been arranged by relatives of the deceased. In 57% of institutes, doctors and 45% of institute mortuary workers are not receiving any postmortem allowance; in 30% of institutes, doctors received less than 500 rupees; and in 22% of institute mortuary workers received less than 50 rupees. In 39% of institutes, mortuary workers are outsourced by the institute on a temporary basis, and in 24% of institutes, departmental sweepers are employed as mortuary workers. Most mortuaries did not have adequate and trained human resources. Thus the present study attempts to highlight the variation of resource supply for medico-legal cases in autopsy block, mortuary workers, their recruitment method, and the lowest rank of investigating officer handling PM, highlights the value of uniform guideline for these services at institute, state or national level.

Keywords: Medico-legal; Resources; Mortuary; Healthcare.

Introduction:

A medico-legal case of injury or ailment where attending doctor after taking history and clinical examination of the patient thinks that some investigations by law enforcing agencies are essential so as to fix responsibility regarding the case. It is the responsibility of a registered medical practitioner to judge each and every case properly and when in doubt, it is better to inform the police. This saves the doctor from unnecessary and needless allegations later.¹ Medico-legal cases comprises of accidents, assaults, burns, poisoning, sudden deaths, operative deaths, suicide, homicide, any suspicious deaths and cases referred from police or court.² A mortuary is hospital service point where security and safety of human corpses awaiting identification or autopsy to fasten the justice delivery system. They are useful source for tracking records and information on dead person and other medico-legal issues as well as institution for research.³

Despite the increased urge to improve medico-legal service delivery around the world, in India medico-legal services have not received much attention. Throughout India the tertiary care centers face challenges in maintaining mortuary and medico-legal facility.⁴ Unfortunately medico-legal services are grossly neglected all over the country especially in northern states and continue to struggle maintaining mortuary which other medico-legal services.⁴ There are no central government guideline or national SOP issued by any association or academy regarding the functioning of medico-legal services. Though some states have their own SOP although very few have been passed by concerned ministry or government to make it an official document. In the institutes, like AIIMS in various states, the availability of resources and medico-legal practices are much more coherent and uniform as compared to other institutes.

Data Collection:

Data was collected from responsible faculty members of various institutes who are involved in medico-legal services of that institute, using Google form through 18 specific questions related to resource supply in mortuary services. The questionnaire was validated through a small group assessment, before this study. Responses were recorded on Microsoft excel software and analyzed.

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Materials and methods:

Institutes we studied are from Bhopal, Sagar, Jabalpur, Vidisha, Indore, Shahdol, Chindwara and Satna in Madhya Pradesh, Mumbai, Yavatmal, Aurangabad, Sangli, Nandurbar, Ahmednagar, and Pune in Maharashtra, Kota, Jodhpur, Ajmer, and Bikaner in Rajasthan, South Goa in Goa, Bathinda and Patiala in Punjab, Bahraich, Jalaun, Raibareli, Gorakhpur, Prayagraj and Noida in Uttar Pradesh, Mandya, Manglore, Dharwad and Dakshin Kannada in Karnataka, Nalhar (Nuh) and Karnal in Haryana, Rajkot, Vadodara and Surat in Gujrat, Sambalpur and Cuttack in Odisha, Bilaspur, Rajnandgaon, Raipur, and Jagdalpur in Chattishgarh, Hyderabad in Telangana, Agartala in Tripura, Delhi, Pondicherry, Malapuram and Thiruvant in Kerela, Parganas, Kolkata, Malda and Purba Bardhaman in West Bengal, Vellore and Chengalpattu in Tamilnadu, Kangra in Himachal Pradesh.

Total 74 participants from 65 institute (Including AIIMS and AFMC) of 18 states/union territories were included in this study. Evaluation was carried out by following specific questions-

1. Polythene to wrap the body of the deceased arranged by...!
2. Cloth to wrap the body of the deceased arranged by...!
3. Candle and lakh (chapadi) used to seal the articles arranged by...!
4. Container and bottle to preserve viscera/tissues for chemical analysis and histo-pathological examination arranged by...!
5. How much postmortem allowance per case paid to doctor?
6. How much postmortem allowance per case paid to sweeper/mortuary worker?
7. Postmortem report given in which format?
8. Which documents are mandatory before conducting postmortem?
9. FSL reports are provided to doctors...!
10. Whats the lowest rank of investigating officer in police inquest?
11. Whats the lowest rank of investigating officer in magistrate inquest?
12. Mortuary workers are appointed through...!
13. Histopathology of postmortem cases are done...!
14. In magistrate inquest how often the magistrate comes to the mortuary as an investigating officer?
15. Postmortem performed by...!
16. In any case of postmortem examination requiring, X-Ray it is done...!
17. Pathological autopsy including non-MLC foetal autopsy in the institute...!
18. In most of the cases unknown body preserved in the mortuary cold storage for how much time?

Limitations: Few responses were not complete and few were believed to be unauthentic which were not included in this study as authors cannot read the mind of responders and it is unrealistic for author to cross check each response with the respective

Table 1. Polythene to wrap the body of the deceased.

| Arranged by | No of institutes | % |
|-------------------|------------------|--------|
| Hospital purchase | 39 | 52.70% |
| Police | 3 | 4.05% |
| Departmental fund | 3 | 4.05% |
| Relative and NGO | 25 | 33.78% |
| Other | 4 | 5.40% |

Table 2. Container and bottle to preserve viscera/tissues for chemical analysis and histo-pathological examination

| Arranged by | No of institutes | % |
|-------------------|------------------|--------|
| Hospital purchase | 46 | 62.16% |
| Police | 12 | 16.21% |
| Departmental fund | 5 | 6.75% |
| Relative and NGO | 10 | 13.51% |
| Other | 1 | 1.35% |

Table 3. Postmortem allowance per case paid to doctor

| In rupees | No of institutes | % |
|----------------|------------------|--------|
| More than 1000 | 0 | 0% |
| Less than 1000 | 10 | 13.51% |
| Less than 500 | 22 | 29.72% |
| Not given | 42 | 56.75% |
| Other | 0 | 0% |

Table 4. Format for postmortem report

| Format | No of institutes | % |
|---|------------------|--------|
| Computer typed | 33 | 44.59% |
| Handwritten in english language | 24 | 32.43% |
| Software like MedLEaPR | 11 | 14.86% |
| Handwritten in hindi/any other local language | 0 | 0% |
| Other | 6 | 8.10% |

Table 5. FSL reports

| FSL reports provided to doctors | No of institutes | % |
|--|------------------|--------|
| In every case | 37 | 50% |
| In specific case | 19 | 25.67% |
| Only after the request made by doctors | 7 | 9.45% |
| Not provided to doctors even after the request | 11 | 14.86% |
| Other | 0 | 0% |

Table 6. Lowest rank of investigating officer (IO) in police inquest

| Investigating officer in police inquest | No of institutes | % |
|---|------------------|--------|
| Constable | 7 | 9.45% |
| Head constable | 37 | 50% |
| ASI | 22 | 29.72% |
| SI | 8 | 10.81% |
| Other | 0 | 0% |

Table 7. Appointment of mortuary workers

| Mortuary workers appointed through | No of institutes | % |
|--|------------------|--------|
| Permanent recruitment by government | 15 | 20.27% |
| Departmental sweeper used as amortuary workers | 18 | 24.32% |
| Outsourced by institute (temporary) | 29 | 39.18% |
| Through department funds | 1 | 1.35% |
| Other | 11 | 14.86% |

Table 8. Histopathology in postmortem cases

| Histopathology in postmortem cases are done by | No of institutes | % |
|---|------------------|--------|
| Forensic Medicine departmentwith the help of Pathology department | 9 | 12.16% |
| Department of Pathology ofown institute | 55 | 74.32% |
| Other institute | 5 | 6.75% |
| No clear cut guidelines regardinghisto-pathological examination | 5 | 6.75% |
| Other | 0 | 0% |

institute, hence authenticity of responder is the limitation of this study.

Result and Observations:

Following data were collected from the responses received - in 39 (53%) of institutes polythene to wrap body of the deceased (table-1) is provided by hospital purchase and 25 (34%) arrangements made by relatives or some NGO, 3 by police, 3 by departmental fund, and in 4 institutes, polythene was not used. Almost similar finding found for cloth to wrap the body: In 35 (47%) institutes, cloth to wrap body was provided by hospital purchase and in 34 (46 %) it's arranged by relatives or some NGO, in 4 (5.40%) arranged by police, and in 1 institute cloth is not used.

Candle and lakh (chapadi) used to seal the articles: It is provided by hospital purchase fund in 63 (85%) of institutes and in 7 (10 %) institutes arrangement made by departmental fund, in 3 (4.05%) institutes it is arranged by police, and 1 institute do not use lakh chapadi.

In 46 (62%) institutes containers and bottles (table-2) are provided by hospital purchase, in 12 (16%) institutes arranged by police, in 10 (14%) institutes it's arranged by relatives and NGO, in 5 (7%) institutes it's provided by departmental fund, and in 1 institute it's provided by police for viscera to carry to FSL and for histo-pathology it's provided by hospital purchase. In 42 (57%) institutes no postmortem allowance given to the doctors (table-3), in 22 (30%) institutes less than 500 rupees and in 10 (13%) institutes less than 1000 or 1000 rupees per PM postmortem allowance is given to the doctor.

Postmortem allowance given to the mortuary worker: Similarly in 40 (54%) institutes no postmortem allowance given to the mortuary worker, in 16 (22%) institutes less than 50 rupees, in 8 (11%) institutes less than 100 rupees, in 7 (9%) institutes less than 200 rupees, in one institute 300 rupees and exceptionally in one institute 500 rupees per PM is given to the mortuary worker. In one institute there is fix pay for mortuary workers. In 33 (45%) institutes PM report (table-4) is computer typed, 11 (15%) institutes online software (like MedLEaPR – Medico Legal Examination and Post-mortem Reports) is used for report writing, while 24 (32%) institutes still handwritten report in english is given and in 6 (8%) institutes they used both (typed or handwritten) method as per convenience.

Documents mandatory before conducting postmortem: In another observation it was found that all the documents like requisition form with copy of panchnama, merg intimation and hospital documents were required before conducting postmortem in 39 (52%) institutes, in 20 (27%) institutes requisition form along with panchnama is needed, in 8 (10.81%) institutes requisition form with copy of panchnama and merg intimation while in 7 (9%) institutes only requisition form was sufficient.

37 (50%) institutes get FSL report (table-5) in every case, whereas 11 (15%) institutes do not get the report even after request made by the doctor, 19 (26%) institutes get report in specific case, and 7 (9%) institutes receive report after request.

In 37 (50%) institutes head constable is the lowest rank of investigating officer (IO) in police inquest (table-6), in 22 (29.72%) institutes ASI is the lowest rank and in 7 (9%) institutes

Table 9. Performance of postmortem

| Postmortem performed by | No of institutes | % |
|--|------------------|--------|
| Casualty medical officer/medical officer of the institute | 3 | 4.05% |
| Only by the department of Forensic Medicine | 57 | 77.02% |
| Both the above options | 13 | 17.56% |
| Doctors outside the institute comes to perform postmortem in the department mortuary | 1 | 1.35% |
| Others | 0 | 0% |

Table 10. Unknown body preserved in the cold storage of mortuary

| Unknown body preserved in the cold storage | No of institutes | % |
|---|------------------|--------|
| Only for 48 hours | 1 | 1.35% |
| Only for 72 hours | 33 | 44.59% |
| Only for 96 hours | 6 | 8.10% |
| Indefinite as per request by the IO/authorities | 30 | 40.54% |
| Others | 4 | 5.40% |

constable is the lowest rank. Lowest rank of investigating officer in magistrate inquest: In 22 (29.72%) institutes nayab tehsildar is the lowest rank of investigating officer in magistrate inquest, in 20 (27.02%) institutes tehsildar is the lowest rank and in 14 (18.91%) institutes SDM is the lowest rank of IO. Magistrate come to the mortuary as an investigating officer: One more observation related to magistrate was to assess whether they come to the mortuary as an investigating officer in magistrate inquest. In 48 (64.86%) institutes, magistrate comes to the mortuary as an investigating officer while in 20 (27.02%) institutes, he comes to the mortuary only in sensitive/high profile magistrate inquest cases. In 3 (4.06%) institutes they come to the hospital administrative building but never to mortuary, while in 3 (4.06%) institutes they never come to institute.

In 29 (39%) institutes mortuary workers (table-7) are outsourced by institute on temporary basis, in 18 (24%) institutes departmental sweepers are used as mortuary workers, in 15 (20%) institutes they are appointed by permanent recruitment method, and in 11 (15%) institutes mortuary workers are both on permanent and temporary basis. In 55 (75%) institutes histo-pathological examination of postmortem cases (table-8) are done in department of Pathology of own institute and only in 9 (12%) institutes Forensic Medicine department is actively involved in the work of histopathology.

X-ray in the body of gunshot cases: Out of all the institutes studied, in 51 (69%) institutes body is send to Radiology department for x-ray in gunshot cases, while only 8 (11%) institutes have own x-ray machine in FMT department, and in 7 (9%) institutes x-ray not done in these cases. In 57 (77%) institutes post-mortem is performed (table 9) exclusively by department of Forensic Medicine and in 13 (17%) institutes department of Forensic Medicine and casualty medical officers both are involved in postmortem work.

There are no specific uniform guidelines for 'how much time body could be stored in mortuary cold storage?' (table-10). In 33 (44.59%) institutes, unknown body is preserved in the cold storage for 72 hours and in about 30 (40.54%) institutes, it is stored indefinitely as per the request by IO/authorities, which makes mortuary the dumping and storage station for unidentified bodies. Some institute are allowed for 7 days and some institute don't have cold storage.

Discussion:

No previous similar study was found during review of literature. Looking to the pathetic condition, of medico-legal services in India, BPRD ministry of home affairs government of India has given a consolidated framework and basic guidelines for the mortuary work.⁵ Grounded in the data obtained from this study, it is evident that a significant number of health institution have less focus on medico-legal services, and even few tertiary care center don't have basic requirements for mortuary services. More so they don't have any clear cut guidelines from the state or center regarding arrangements of these resources, manifested by lack of the necessary infrastructure, human resources, poor information management system and poor processes in managing human remains. These findings and gross variation in resource supply conform to the assertion that the mortuary and medico-legal services are much neglected part of health care delivery system.³ Since death is a saddening and grieving experience to the relatives of the deceased, this may be worsened further when relatives have to face the reality of seeing their loved ones go through such poor condition of the mortuaries where there is no polythene and cloth for covering the body, body handled by in experienced sweeper, even relative have to manage containers etc. for viscera preservation in some cases. This may have led to a poor perception in society towards mortuary services, related to these institutes.

The study also revealed among others that in many institution postmortem and histopathology services are performed by other department even after presence of Forensic Medicine department in the institute, and those who are involved in these services don't get any extra allowance in many institutes. This challenge may not be unique to India but the same problem identified in many developing countries.⁴ In addition, medical superintendent and dean of these institute may have little to do about this, as they have to follow the local or central government policies as far as human resource recruitment are concerned, where such an important human resource like mortuary helper or worker cannot be permanently recruited, and the institutes have to outsource these workers on temporary basis or daily consumables have to be purchased through contingency funds, where no sperate specific budget is allocated for such purchase.

Even police and home department doesn't take these services seriously. Various studies show that only head constable is the investigating officer in majority of medico legal cases, who is less trained and taught about criminology and forensic investigation. In addition to this, services which are integrated with each other like department of Pathology in medical colleges, Forensic Science labs under home department are also reluctant in taking up histo-pathological samples or toxicological samples, which may be due to already existing overload of cases further complicating the situation. Pediatricians, other clinicians or pathologists are not very keen to perform foetal or adult pathological autopsies to upgrade knowledge regarding unknown causes of death in various cases. In gunshot cases many institute don't have facility of x-ray of the deceased and in maximum institute body has to be send to the radiology department which causes inconvenience to patients, doctors and relatives.

Mortuary workers and doctors at many institute don't get extra allowance which is essential to keep mortuary worker satisfied with the job. Post-mortem report writing vary from institute to institute, state to state, where some doctors still prefer hand written report, others provide computer typed report and in very few states the report is written through established online software such as MedLEaPR (Medico Legal Examination and Post-mortem Reports) which is made mandatory through respective high court.

Conclusion:

This study has revealed that good facilities in the mortuaries are practically nonexistent in some tertiary care centers in India. The services provided by many institutes are not properly facilitated or adequately funded, and only few health care delivery centers like AIIMS and other central government institutes have comparatively good support from the management and government to impress quality assurance and resource development. As a result, medico-legal services are underutilized and Forensic Medicine experts are not given due importance as per their experience, knowledge and qualification specially in most of the private medical colleges all over the country where they are only involved in theory teaching of undergraduate MBBS students. Ministry of health, medical education, home department of state or union government and local administration in the region should pay attention to this very sensitive state of affairs and consider functionalizing the mortuaries and medico legal services in top priority. Here also comes the role of Forensic Medicine experts to sensitize masses and media regarding these lacunas especially on the special days like Forensic Medicine day or doctors day or insisting on WHO themes on this very pertinent deficiency in health care system.

Conflict of interest: The author has no conflict of interest to declare.

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