

## NECROPSY REQUEST BEHAVIOUR OF CLINICIANS: A STUDY FROM A UNIVERSITY TEACHING HOSPITAL IN NIGERIA

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### ABSTRACT

**Objectives:** To investigate necropsy request practices at the Olabisi Onabanjo University Teaching Hospital, Sagamu and to determine the extent to which these might influence the declining necropsy rates.

**Methodology:** The necropsy service was audited retrospectively over a fifteen-month period and data relating to non-coroner's (hospital) necropsy requests, including the clinical service were extracted from the death register of the department of Morbid Anatomy and Histopathology, Olabisi Onabanjo University Teaching Hospital and documented. The reasons for non-request were recorded for deaths in which a necropsy was not requested. A cross-sectional study of clinicians was conducted at an Academic Staff Assembly of Obafemi Awolowo College of Health Sciences, Olabisi Onabanjo University, Sagamu, held in August 2007, using a standardized randomly self-administered questionnaire

**Results:** There were 1053 deaths comprising 684 non-coroner's and 369 coroner's cases. The overall, non-coroner's, and coroner's necropsy rates were 35.3%, 3.3%, and 99.2% respectively. The non-coroner's necropsy request rate was 33.3% with success rate of 100%. Residents doctor made all the requests and the internal medicine service, which accounted for most of the non-coroner's death; the necropsy requests rate of 33.3% was the same for Surgery and Accident and Emergency units. Lack of manpower, diagnosis was the main reason for not requesting a necropsy.

**Conclusions:** These findings show a relatively high necropsy success rate in the face of abysmally low necropsy request rate, and indicate that necropsy rates can be increased if clinicians make more necropsy requests in a timely manner in all patients.

**KEY WORDS:** Necropsy request, Clinicians Behaviour.

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## INTRODUCTION

Despite consistent confirmation of the importance of the necropsy in the practice of modern medicine, necropsy rates have shown a worldwide decline over the past several decades.<sup>1-6</sup> Recently, we examined our necropsy rates at the Olabisi Onabanjo University Teaching Hospital from 1996-2004.

The factors contributing to declining necropsy rates have been examined and dis-

cussed in several reports from developed countries, and can be broadly grouped to include administrative policies, the attitudes of the medical profession, manpower, and the attitudes of the public.<sup>7-12</sup> Where the medical profession is concerned, it is well recognized that the number of hospital necropsies performed at any institution depends heavily on requests being made by the relevant clinicians, and that inappropriate delegation of clinical necropsy requests to the most junior clinicians has contributed to falling necropsy rates.<sup>13</sup> Therefore, we decided to conduct a retrospective audit of our hospital necropsy services in an attempt to establish a possible link between our declining necropsy rates and necropsy practice of our clinicians. We also sought to document the necropsy success rate

To the best of our knowledge, this study represents the first of such report from Nigeria.

## METHODOLOGY

Our study took the form of an audit of the necropsy service of the department of Morbid Anatomy and Histopathology, which retrospectively examined data related to deaths and autopsies at the Olabisi Onabanjo University Teaching Hospital. It is a 240 bedded, multi-disciplinary teaching hospital attached to the Obafemi Awolowo College of Health Sciences, Olabisi Onabanjo University, in Sagamu- over the fifteen period from June 2006 to August 2007.

A cross-sectional study of clinicians was conducted at an Academic Staff Assembly of Obafemi Awolowo College of Health Sciences, Olabisi Onabanjo University, Sagamu, held in August 2007, using a standardized randomly self-administered questionnaire. It was designed to enquire about the clinical service under which the patient was managed, the relevant clinical diagnosis, and whether or not a necropsy was requested. If requested, the position of the relevant clinician was recorded and, if not, we documented the reason given for not requesting the necropsy.

The information regarding necropsy requests was extracted for non-coroner's necropsies

only from the death register since Coroner's (Medico-legal) necropsies are mandatory in our institution.

These data were used to calculate the following:

- \* The overall necropsy rate for the study period- the number of necropsies performed as a percentage of the total number of deaths.
- \* The non-coroner's necropsy rate- the number of non- coroner's necropsies performed as a percentage of the number of non-coroner's deaths
- \* The coroner's necropsy rate - the number of coroner's necropsies performed as a percentage of the total number of necropsies performed.
- \* The necropsy request rate-the number of non-coroner' necropsies requested as a percentage of the total number of non-coroner's requested.
- \* The necropsy success rate-the number of non-coroner's necropsies performed as a percentage of the number of non-coroner's necropsies requested.

*Statistical Analysis:* The results are presented using tables and collected data were analyzed using Microsoft- Excel software.

## RESULTS

The total number of deaths for the fifteen month study period was 1053 namely, 684 non- coroner's cases and 369 coroner's cases. There were 595 male and 458 female patients giving a male to female ratio, 1.3: 1. The age ranged from one day to 97 years. However, the age of two female patients were unknown. Documented hospital rates of autopsy of 3.6% which was low compared with international rates which are reported as at least 10%.<sup>14</sup>

The results show that 17 questionnaires were sent out representing 44.73% of the clinicians that deposited corpses in the mortuary. Thirteen of the questionnaires were returned giving a response rate of 76.5%. Records show that 684 non- coroners deaths were received

Table-I: Non-coroner's necropsy requests by grade of clinicians

<i>Grade of clinicians</i>	<i>Non-coroner's Necropsy requests N %</i>	<i>Non-coroner's Necropsies granted N %</i>	<i>Necropsy Success rate N %</i>
1. House- Officers	0.0	0.0	0.0
2. Residents	3.0	3.0	100.0
3. Consultants	0.0	0.0	0.0
4. Not known	0.0	0.0	0.0
Total	3.0	3.0	100.0

from the various units of the hospital: Surgery (122), Obstetrics and Gynaecology (111), Medicine (229), Accident and Emergency (50) and Pediatrics (172).

Tables-I shows the resident doctors request for necropsies with the permission of their consultants.

Table-II presents the overall figures for deaths and necropsies by service. The total number of necropsies requested during this period was 372, giving an overall necropsy rate of 35.3%. The coroner's necropsy rate was 99.2% and non-coroner's necropsy rate was 0.44%. The largest number of deaths occurred under the internal medicine service, which had the lowest request rates of 0.44%, followed by surgical (0.82%) and accident and emergency departments (2.0%).

Table-III shows the necropsy request and success rates for the three non-coroner's cases by service. The necropsy request rate was 0.44% for internal medicine, 0.82% for surgery and 2.0 % for accident and emergency. The overall necropsy success rate was 100.0%.

Table-IV shows that the main reason for not requesting for autopsy in our center was lack

of man-power (12.25%) followed closely, in order of importance by, refusal by relations (11.2%), Administrative bottle neck (10.85%), religious reasons (10.5%), attitude of the public (10.15%), confident clinical diagnosis (7.30%), chronic illness (6.65%), terminal illness (6.30%), HIV positivity (5.95%). Patient too old (5.25%), no further information to be gained (4.9%), personal reasons (4.55%) and radiological/ laboratory investigations (38.5%).

## DISCUSSION

Necropsy rates in Nigeria have shown a consistent decline over the past three decades,<sup>15</sup> and the data from our study demonstrate a continuation of this trend, with an overall necropsy rate of 35.3% and an overall non-coroner's necropsy request rate of 3.3%. This is similar to the trend that has been reported worldwide and various reasons have been offered to explain this, including poor necropsy request practices.<sup>1,2,7,13,16</sup> Our study is the first to document necropsy request practices in our institution and we could not find similar reports from developing countries such as ours. The highest non-coroner' necropsy rate were

Table-II: Number of deaths, number of necropsies, overall necropsy rates, and non-coroner's rates by clinical service

Internal Medicine	229(21.7)	229	1	1 (0.9)	0.09	0.44
Surgery	122 (12.2)	122	1	1(0.9)	0.09	0.82
O & G	111 (11.1)	111	0	0(0.0)	0.0	0()
Pediatrics	172 (17.2)	172	0	0(0.0)	0.0	0()
A & E	419 (41.9)	50	370	1(0.9)	35.13	2.0
Total	1053 (100*)	684	372	3(100.0)	35.31	3.3

A&E, accident and emergency, NC, non - coroner's, O&G, obstetrics/ gynaecology..

Table-III: Necropsy request and success rates for 684 non-coroner's deaths

<i>Service</i>	<i>No. of NC deaths N</i>	<i>No. of necropsy requests N</i>	<i>Necropsy request rate (%)</i>	<i>No. of necropsies done</i>	<i>Necropsy success rate (%)</i>
Internal Medicine	229	1	1(0.44)	1	100.0
Surgery	122	1	1(0.82)	1	100.0
O & G	111	0	0(0.0)	0	0.0
Pediatrics	172	0	0(0.0)	0	0.0
A & E	50	1	1(2.0)	1	100.0
Total	684	3	3 (3.3)	3	100.0

A&E, accident and emergency, NC non-coroner's; O&G, obstetrics/ gynaecology, unit.

seen for the accident and emergency, surgical and internal medicine and these services also had the highest request rates. In contrast, internal medicine, in which most deaths occurred, had the lowest non-coroners necropsy rate and the Accident and Emergency with the lowest number of death and has the highest necropsy rate. These data show inverse relationship between the number of non-coroners' death and request rate in our institution, which does not support the direct link between the two variables that was documented elsewhere.<sup>17</sup>

The low non-coroners necropsy request rate did not permit us to analyze the necropsy request in relation to patients' age but experience has shown that there was significantly greater likelihood for necropsies to be requested in younger versus older patients, although, a few of the deaths occurred in aged and very often, clinicians write "old age" as cause of death. This is wrong and should be discouraged. Studies have shown a similar trend<sup>3,18,19</sup> and as suggested by Ahronheim et al<sup>19</sup> the death of elderly patients are more likely to be attributed to 'natural causes', despite there being significant discordance between clinical and post-mortem diagnoses when necropsies are performed in this age group.

Residents made most of the necropsy requests (100.0%), which is not surprising because they are responsible for the day to day management of patients in the wards. These results are similar to those of Start et al<sup>18</sup> who reported that house officers, senior house officers, and regis-

trar (the equivalent of our residents) made most of the requests, whereas consultants requested the smallest proportion. Data from this study do not measure the degree of consultant supervision of this process, but it is accepted that it is the responsibility of the consultants to obtain permission for the performance of necropsies.<sup>8</sup> Even if this responsibility is allocated to junior staff they should be trained to approach relatives in a sensitive and informed manner, which would maximize the likelihood of obtaining consent. The overall necropsy request rate was low but, once requested,

Table-IV: Reasons why necropsies were not requested by clinicians.

<i>Reasons</i>	<i>No. (%)</i>
1. Lack of manpower	35(12.5)
2. Refusal by relations	32(11.2)
3. Administrative bottle neck	31(10.9)
4. Religious reasons	30(10.5)
5. Attitude of the public	29(10.15)
6. Confident clinical diagnosis	22(7.3)
7. Chronic illness	19(6.65)
8. Terminal illness	18(6.30)
9. HIV positivity	17(5.95)
10. Patient too old	15(5.25)
11. No further information to gained	14(4.9)
12. Personal reason	13(4.55)
13. Radiological/ laboratory investigations	11(3.85)

necropsies stood a good chance of being done, with an overall success of 100%.

Analysis of the reason obtained for the non-request of necropsies pointed strongly to lack of manpower. This was followed closely by refusal by relations to give consent, which is in line with other studies that have documented an unwillingness of relatives to provide consent in up to 69% of cases.<sup>20,21</sup> Administrative bottle neck was the third most common reason for non-request of necropsy which is followed by religious reasons, attitude of the public, confident clinical diagnosis, chronic illness, terminal illness, patient too old, no further information to be gained, personal reasons and radiological/ laboratory investigations. This was despite the fact that it has been well documented that advances in imaging and other diagnostic technology have not significantly altered the rates of clinical and necropsy discordance over the past several decades.<sup>22-25</sup>

The results of our study are similar to those previously reported from developed countries. If our necropsy rates are to attain recommended international standards, our data suggest that clinicians should be educated as to the value of the necropsy with a view to improving their non-coroner's necropsy request rates. This might entail implementing some of the recommendation made by Sinard and Blood.<sup>26</sup> In developing countries, the importance of hospital guidelines for non-coroner's necropsies must be emphasized. Failure to deal with these issues will probably result in the continuing decline of necropsy, with the concomitant loss of all of its potential benefits.

In conclusion, the necropsy remains an important form of medical audit, while providing avenues for medical education and research. Despite this, we have documented low overall and non-coroner's necropsy request rates, which varied across clinical services in contrast to the success rate, which was uniformly high. Non-consultant clinicians (residents) requested for all of the necropsies. Where reasons were obtained for the non-request of

necropsies, it was mostly related to lack of manpower followed closely by refusal by the relations to give consent.

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