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TRANSFERS OF NECROPSY CASES: THE PARADOX OF THE BRAZILIAN MEDICO-LEGAL SYSTEM AND REPERCUSSIONS IN MORTALITY DATA

Pathology

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ABSTRACT

In Brazil, the referral of autopsies occurs in police stations, with bodies going to the Death Verification Service – SVO (natural causes) or to the Medical-Legal Institute – IML (violent causes), generating transfers in doubtful situations. The analysis of 564 transfers in between the two institutions in Ribeirão Preto/SP, from 2009 to 2017 was done. Amongst the 362 cases transferred from SVO to IML, 65% were due to violent causes and 35% due to natural causes. Amongst the 202 cases transferred from IML to SVO, 98.5% were due to natural causes and 1.5% due to violent causes. Controversies occurred mainly in cases of broncho aspiration, falls, prisoners and putrefied. The transfers were inadequate in 45 cases (8%), meaning an inappropriate necropsy request every 6.32 days. This exposes the paradox of the Brazilian medico-legal model for autopsy requests that attempts to define the legal cause of death before the procedure, distorting national public health statistics.

KEYWORDS

Necropsy, Causes of Death, Public Health, Public Security.

INTRODUCTION

Ordinance 1,405 June 29th, 2006 [1] created the national network of Death Verification Services (SVOs) and causa mortis definition in Brazil. It determines that the SVOs will perform necropsies of deceased people from natural causes for diagnostic elucidation. The Medical Legal Institutes (IMLs) are responsible for performing necropsies in cases of confirmed or suspected deaths from violent causes, in advanced state of decomposition or unknown identity.

Within this medico-legal model, with two institutions performing necropsies for health or public security purposes – the corpse destination is decided at the elaboration of the 'event bulletin' (BO) which is the document for the referral and execution of the cadaveric examination. It is written based on the description reported at the police station by any witness. Thus, there is a paradox: the legal cause of death is supposed before the necropsy, and only confirmed after its execution at the SVOs or IMLs.

In Ribeirão Preto, Brazil, in cases of controversies generated during the corpses examination, there is a specific form to transfer corpses in-between the two institutions (SVO and IML) both located at the Medico Legal Centre of the Medico School of Ribeirão Preto, University of São Paulo (CEMEL/FMRP-USP), in order to facilitate documenting the reason(s) of such transfers [2]. This form enabled the analysis the transfers involving both of them.

The peculiarity of the Brazilian model leads to a lack of data on the subject and justify this study. On the other hand, with both institutions placed at CEMEL/FMRP-USP and with a specific form, the potential to reveal problems in the flow of information can contribute to the quality improvement in the definition of causes of death, and therefore, the information for public health statistics. Thus, this study aimed to analyse the necropsy cases of transference in-between the SVO and IML, from 2009 to 2017.

METHODOLOGY

This is a quantitative and descriptive study, based on a survey of the specific form for corpses transfers in-between the institutions that perform necropsies (SVO and IML) in Ribeirão Preto – São Paulo – Brazil, both based at the Medico Legal Centre, Medical School of Ribeirão Preto, University of São Paulo (CEMEL/FMRP-USP) focusing on the reason for the transferences, from 2009 to 2017. The city has an estimated population of 694,534 habitants in 2018 [3]. As a complementary check out information, data were collected from the Mortality Information System/Informatics Department of the Unified Health System (SIM/DATASUS), as well as the City Health Secretariat of Ribeirão Preto. Basic and associated causes of death were analysed through the codes of the International Classification of Diseases, 10th edition (ICD-10) [4], in order to verify whether the transfer criteria adopted were justifiable or controversial, based on the current legislation. Fetal deaths were excluded from the study due to deficiency in the definition of the underlying cause of it in Brazil [5].

The collected data were organized and transferred directly to an MS Office - EXCEL® spreadsheet and analysed through simple descriptive statistics. The sample totalled 564 cases.

The research was approved by the Research Ethics Committee of the Clinical Hospital of the Medical School of Ribeirão Preto, University of São Paulo (CEP-HC/FMRP-USP CAAE: 60467216.8.0000.5440).

RESULTS

From the 564 necropsies transfers verified in-between both institutions (SVO and IML) placed at CEMEL, from 2009 to 2017, there were 202 transfers from the IML to the SVO – an average of 22 transfers per year – and 362 transfers from the SVO to the IML in the same interval, an average of 40 transfers per year. The average attendance of the IML was 752 cases per year and the SVO was 995 cases per year.

The IML transferred, on average, 2.9% of its cases to the SVO, while this last one transferred, on average, 4% of its cases to the IML. Thus, the total number of transfers in-between the institutions corresponded to 6.9% of the sum of necropsies performed by SVO and IML.

Figure 1 shows that amongst the 362 cases transferred from the SVO to

the IML, 237 (65%) were correctly justified as violent causes and 125 (35%) were concluded as due to natural causes, making the transfer controversial. Amongst the cases transferred from IML to SVO, 199 (98.5%) were justified as due to natural causes and 3 (1.5%) concluded as due to violent causes, so, not justifiable.

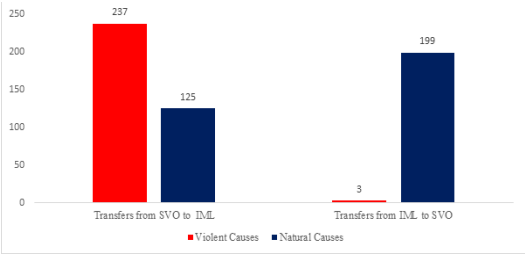


Figure 1. Distribution of mortality by natural or violent causes, according to data of the specific form for transfers in-between SVO and IML at CEMEL/FMRP-USP and confirmed by SIM/DATASUS from 2009 to 2017.

Table 1 shows that amongst the 202 cases transferred from IML to the SVO, 181 (89.6%) were considered justifiable, since, after the first evaluation performed by the IML, it was concluded that occasional lesions were superficial, not characterizing evidence of violence. The remaining 21 cases (10.4%), were controversial: a) prisoners; b) falls from the same level and falls in general being considered as a consequence of death, that means, originated by loss of consciousness at the moment of death and c) Broncho aspiration.

Table 1- Distribution of cases transferred from IML to the SVO considering the root and associated causes with death and reason of transfers at CEMEL/FMRP-USP from 2009 to 2017.

Causes of death	n	%	Reason
Natural death, with superficial lesions arising and ill-defined causes	181	89.6	Justified
Violent causes involved or suspected	21	10.4	Controversial
Total	202	100	

Table 2 shows that amongst the 362 cases referred from SVO to the IML, 342 (94.5%) were considered as justifiable, since, after the first evaluation performed by the SVO, there was evidence of violent causes, highlighted by the frequency in the following circumstances: Broncho aspiration and blunt lesions, especially falls.

Table 2. Distribution of cases transferred from the SVO to the IML considering the root causes and associated with death and reason of transfers at CEMEL/FMRP-USP from 2009 to 2017.

Causes of death	n	%	Reason
Violent cause involved or suspected	342	94.5	Justified
Data incomplete	20	5.5	Ignored
Total	362	100	

In summary, 8% of the transfers amongst 564 cases in 9 years of study were not justifiable, i.e. 45 cases. This means that an inappropriate necropsy requisition was generated every 6.32 days, coming from a public security agency (police station).

DISCUSSION

The considerable number of necropsy cases transferred in-between the institutions (SVO and IML) evidence the flaws of the Brazilian medico-legal system, which tries to define the legal cause of death before the necropsy examination.

Regarding the criteria for referral to SVO, there were controversial cases, such as necropsy in prisoners. Indeed, all cases of death of individuals detained in police stations, prisons, hospices or judicial asylum, as well as deaths occurring during the transferences of detainees to hospitals or other custody institutions should be regarded as suspicious deaths, and therefore, these necropsies should be performed at the IML [6].

The falls also generate controversy and have been observed to be increasing as cause of mortality is association with advancing age in Brazil [7].

Another controversial situation is broncho aspiration, which is considered a modality of death by asphyxia, with obstruction of the trachea by foreign body, such as food or gastric content [8] and should be assigned to necropsy at the IML.

Among the cases transferred from SVO to the IML, the unidentified ones are worth mentioning. Inserted in this context are the putrefied corpses, who lack not only human identification, but also the clarification of the cause of death, moving away from violent death. The putrefied corpses examination is intended to determine the cause of violent death or not, the agent who produced it, providing subsidies for justice, such as the legal cause of death, the estimated time of death and the identification of the victim [9].

Our data was obtained from a SVO which is considered as a national reference – because it is inserted in a medical school in the largest public university in the country and showed that the current model generates at least one inappropriate necropsy requisition every 6.32 days from a police station. This finding is particularly valuable because it is a pioneer in assessing the relationship between the two necropsy services that elucidates the causes of death in the country, with important impacts on epidemiological issues. Inadequate requests for necropsies generated at the police stations generate distortions in the official records, impairing the quality and credibility of the Brazilian Mortality Information System (SIM/DATASUS), which impacts the planning of health programs and policies [10]. The way to avoid this problem would imply a drastic reform of the medico-legal system in Brazil, with the unification of the two institutions, SVO and IML, providing teams of necropsy physicians prepared to perform diagnosis of both natural causes (pathologists) and violent causes of death (forensic doctors).

CONCLUSION

The Brazilian medico-legal system for necropsies in two different institutions based on the pre-assumption of the legal cause of death in the police stations needs to be re-evaluated, because it impairs the reliability of the mortality statistics for public health and security, and consequently, jeopardizing the planning for the best uses of the scarce financial resources to public health and forensic science in Brazil.

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