César Muñoz  
Brazil Senior Researcher  
Human Rights Watch  

14 June 2019

Re: Findings and conclusion from review of autopsies and responses to your inquiries – Independent Forensic Expert Group (IFEG)

Dear Mr Muñoz,

Following your request to conduct an independent expert review of nine autopsy reports and records reputedly obtained from official sources and related to deaths occurring in the contexts of the Fallet-Fogueteiro police operation on 8 February 2019, the International Rehabilitation Council for Torture Victims (IRCT) hereby provides our expert findings and conclusion and responses to your four specific inquiries.

Comprising of 160+ rehabilitation centres in 74 countries, we are the world’s leading centre of knowledge on the medical and psychological effects of torture and ill-treatment. We are also a key provider of technical assistance and expertise on forensic investigation to health and legal professionals and policymakers worldwide, including to several state authorities, regional and intergovernmental bodies.

Upon your request, we asked members of the Independent Forensic Expert Group (IFEG) – Prof Dr Djordje Alempijevic, Prof Dr Duarte Nuno Viera and Prof Dr Antti Sajantila – to conduct a comprehensive expert review of the materials. Their extensive qualifications are attached.

The IFEG is an international body of thirty-five preeminent independent forensic specialists from eighteen countries, who are recognised global leaders in medico-legal investigation. IFEG members hold high-level positions in international organisations, treaty bodies, government bodies, nongovernmental organisations, and academic institutions worldwide. The IFEG also includes several authors of both the Istanbul
Protocol\textsuperscript{1} and Minnesota Protocol\textsuperscript{2} – the internationally accepted standards on the effective forensic investigation of torture allegations and the effective forensic investigation of potentially unlawful death.

In summary, the IFEG experts found the post-mortem examinations and autopsy reports to be "substandard," evidencing "multiple substantial and significant insufficiencies and deficiencies," which are discussed in detail in their report. They conclude that the reports "fare far below the minimum acceptable standards and represent a serious and flagrant violation of the lege artis [law of the art] of post-mortem examinations."

Prof Dr Alempijevic, Prof Dr Nuno Viera and Prof Dr Sajantila additionally observe that "in most cases, individuals appear to have been subjected to severe trauma that may rapidly lead to death in normal circumstances. In the case of Mr. Felipe Guilherme Antunes, it can be estimated that based on the injuries documented, his death was highly likely to be instantaneous."

The detailed independent expert review by Prof Dr Alempijevic, Prof Dr Nuno Viera and Prof Dr Sajantila (IFEG) and their responses to your inquiries are attached.

We remain at your disposition should you have any questions.

Yours truly,

James Lin
Istanbul Protocol Programme Coordinator

\textsuperscript{1} Manual on the Effective Investigation and Documentation of Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment (the Istanbul Protocol). 2004. HR/P/PT/8/Rev.1.

I. Experts’ qualifications

Djordje Alempijevic MD, PhD graduated and specialized in forensic medicine at the Faculty of Medicine, University of Belgrade (FMUB). He also received the Diploma in Forensic Medicine from Monash University, Melbourne, Australia. Since 1993, he has been employed by the FMUB, was appointed Assistant Professor in 2006, in 2012 became Associate Professor, and in 2018 was appointed Full Professor. He has a strong professional interest in human rights and fundamental freedoms, in addition of promoting the role of forensic medicine in investigations of interpersonal violence. Dr. Alempijevic is an author and co-author of several articles published in peer-reviewed scientific journals. As an experienced forensic pathologist, he has participated in activities related to people unaccounted for during the armed conflicts in the Former Yugoslavia, including exhumations and examination of human remains. He participated in the ICRC project “The Missing”, launched in 2003, and completed a mission to Georgia in relation to the armed conflict in Abkhazia. He is an active member of the Independent Forensic Expert Group (IFEG) coordinated by the International Rehabilitation Council for Torture Victims (IRCT). In these capacities, he has conducted trainings on Istanbul Protocol in Finland, Serbia, Georgia, Kazakhstan and Sweden, in addition to completing a mission to the Russian Federation to collect forensic evidence on torture. The results have been submitted as evidence to the European Court of Human Rights. Since 2004, he has been involved with the International Organisation for Migration (IOM) in trainings (Serbia, Croatia, Bosnia and Herzegovina and the Belarus Republic). In 2009, he joined the expert team of the Ombudsman of Serbia (“Protector of Citizens”), and since 2011, he has been visiting places of detention as expert of its National Preventive Mechanism (NPM). In 2011 he appointed to the European Committee for the Prevention of Torture (CPT) and is currently serving his 3rd term with the Committee. In his capacity as CPT member, Dr. Alempijevic took part in missions to Armenia, Azerbaijan, Bulgaria, Georgia, Germany, Greece, Republic of Moldova, Russian Federation, Slovak Republic, Turkey and Ukraine. Dr. Alempijevic has given presentations on torture prevention and monitoring places of detention both nationally and internationally (Finland, Russian Federation, Montenegro and Spain). He is a Foundation Member of the Faculty of Forensic and Legal Medicine at the Royal College of Medicine, London, UK. His memberships include the Steering Committee of the Victimology Society of Serbia, the Serbian Physicians’ Society, the International Academy of Legal Medicine, and the American Academy of Forensic Sciences.

Duarte Nuno Vieira, MD, MSc, PhD, is Dean and Full Professor (of Forensic Medicine, Forensic Sciences, Ethics and Medical Law) at the Faculty of Medicine of the University of Coimbra (Portugal) and at the Faculty of Health Sciences of the University of Beira Interior. He has served, on a regular basis, as lecturer and visiting professor in several other European, African, South American and Asian universities as well as the United Nations University for Peace.

He is Chairman of the Scientific Advisory Board of the Prosecutor of the International Criminal Court and Chairman of the Thematic Federation on Legal and Forensic Medicine of the European Union of Medical Specialists. He is also President of the Ibero-American Network of Forensic Medicine and Forensic Science Institutions and Vice-President of the European Confederation of Experts on Evaluation and Repair of Bodily Injury. He is member of the Advising Committee of the American
Board of Independent Medical Examiners and of the Working Group in Forensic Pathology and Forensic Anthropology of the Permanent Committee of INTERPOL on Disaster Victim Identification. He is also member of the Advisory Board of the Portuguese National Mechanism for the Prevention of Torture and member of the Human Rights Resource Centre of the American Academy of Forensic Sciences and President of the Ethics Committee of Hospital Luz Saúde Coimbra. He was founder of the Portuguese Speaking Countries Observatory on Human Rights.

He has been President of the International Academy of Legal Medicine, of the International Association of Forensic Sciences, of the European Council of Legal Medicine, of the World Association of Police Medical Officers, of the Mediterranean Academy of Forensic Sciences and of the Latin American Association of Medical Law. He also has been President of the Portuguese National Institute of Legal Medicine and Forensic Sciences, of the Portuguese Medico-Legal Council and of the Portuguese Association for Bodily Injury Assessment, among many other appointments.

He is Member of the International Forensic Advisory Board of the International Committee of the Red Cross and Member of the Independent Forensic Expert Group (IFEG) of the International Rehabilitation Council for Torture Victims. He works on a regular basis as temporary forensic consultant for the United Nations, mainly for UN OHCHR and UNODC.

He also has been member of the Portuguese National Council of Ethics for Life Sciences and of the National Commission for Civil Protection. He is Member of the Scientific Board of the European Institute of Training Evaluation and Repair of Bodily Injury of Paris and member of the group of expert reviewers of the European Science Foundation.

Prof. Vieira has published over 350 scientific papers, he is editor or co-editor of 13 books, and serves on the editorial boards of several international leading scientific publications of his area of medical expertise, as well as has been in the editorial boards of national forensic scientific journals from 18 different European, American, Asian, Middle-East and African countries (Portugal, Costa Rica, Spain, Italy, Ireland, Turkey, Iran, India, Brazil, Romania, Egypt, Russia, Peru, Poland, Uruguay, Denmark, etc.). He is Chief-Executive Editor of the Journal of Forensic Research (edited by Taylor & Francis), International Associate Editor of the Spanish Journal of Legal Medicine (edited by Elsevier) and Chief-Editor of the Portuguese Journal of Personal Injury Assessment (edited by Coimbra University Press). He has given, as invited keynote speaker, more than 700 keynote lectures outside of Portugal, in countries of Europe, Asia, Africa, Middle-East, Australia, and the Americas, and trainings courses in more than 30 different countries (namely on the Istanbul Protocol and the Minnesota Protocol). He is author or co-author of more than 1,500 oral communications and posters presented in scientific events. He as supervised 15 PhD theses and more than 60 Master’s theses, and he has been member of more than 150 academic juries in European, Asian, African, Middle-East and South American universities (Portugal, Spain, Romania, Ireland, China, Estonia, Jordan, Egypt, Uzbekistan, Greece, Brazil, Crete, etc.)

Prof. Vieira is a Fellow of the American Academy of Forensic Sciences and member of numerous national and international forensic scientific associations, having received honorary fellowship from 18 universities, scientific associations and academies from Europe, North, Central and South
America, Africa and Asia. He has been awarded with distinctions from different governments and municipalities and has received 15 scientific prizes (he is, for example, Doctor Honoris causa by Grigore T. Popa University of Medicine and Pharmacy of Iasi, Romania, Honorary Citizen of the City of Guayaquil, Ecuador, Honorary Member of the College of Pathologists of Sri Lanka, Honorary Member of the Medico-Legal Society of Panama, Honorary Member of the Medico-Legal Society of Cuba, Honorary Member of the Spanish Society of Personal Injury Assessment, Honorary member of the Russian Association of Forensic Experts, Gold Medal of the Comenius University in Bratislava, Slovakia, etc.). He is Academic (chair 11) of the Portuguese Academy of Medicine, Honorary Academic of the Royal Academy of Medicine of Granada (Spain), of the Academy of Medicine of Uruguay, and of the National Academy of Sciences, Humanities and Arts of Italy. He has been awarded with the title of Knight of the Royal Order of Nossa Senhora da Conceição and of Knight of the Order of the Holy Sepulchre of Jerusalem. He has been awarded by the American Academy of Forensic Sciences, in 2014, with the Douglas Lucas Medal Award, the most prestigious international award in the area of legal and forensic medicine.

Prof. Vieira has been president and organizer of the main international meetings in his area of expertise and has been member of the organizing and scientific committees of more than 70 international congresses in countries of the 5 continents.

Prof. Vieira also has participated in more than 45 international missions promoted by Amnesty International, the European Commission, International Red Cross, United Nations, USAID, etc., especially in the field of human rights, in countries of Europe, Latin America, Middle East, Africa, Australia and Asia (Brazil, Iraq, Paraguay, Palestine, Nigeria, Moldova, Mexico, Kazakhstan, Colombia, Peru, Kyrgyzstan, Indonesia, Morocco, Kosovo, Libya, Tajikistan, Switzerland, Papua New Guinea, East-Timor, Greece, Jordan, Bosnia-Herzegovina, Mexico, Macedonia, Ivory Coast, Poland, Palestine, Italy, Ukraine, Kenya, Argentina, Mauritania, Egypt, Mali, Ghana, Tunisia, Argentina, Turkey, Armenia, Georgia, Bahrain, Mozambique, Philippines, Serbia, etc.). He also has intervened as expert witness in legal proceedings in countries of European, American, African and Asian continents. Some of his main fields of work and research are personal injury assessment, the investigation and documentation of torture and ill-treatment and investigation of potentially unlawful death, and gender-based violence.

Antti Sajantila, MD, PhD, professor, holds the specialist qualification in forensic medicine from the University of Helsinki, Finland. He received his PhD in 1992, and MD in 1993 from the University of Helsinki, Finland. He gained an associate professorship in forensic genetics in 1998, and a degree of specialist in forensic medicine (forensic pathology) in 1999. Antti Sajantila has been since 2003, a full professor in genetic forensic medicine and full professor of forensic medicine in the University of Helsinki since 2016. Antti Sajantila has been a short-term invited professor in the University of Ferrara, Italy (2000) and University of Florence, Italy (2001). He spent a sabbatical year 2013/2014 as a visiting professor in the University of North Texas Health and Science Center. Antti Sajantila has over 200 scientific publications including original articles, book chapters, and editorials and he serves in the editorial boards of several peer-reviewed journals including the International Journal of Legal Medicine; Forensic Science, Medicine and Pathology; Forensic Science International. Genetics. Besides scientific work, Antti Sajantila is a practicing generalist in forensic medicine. Antti Sajantila is
a member of the Finnish Forensic Expert Team, and he has participated in numerous missions e.g. in Kosovo, Peru, Nepal and Libya. In 2002, he was a member of the Finnish Forensic Expert Team, nominated by United Nation’s Secretary General Kofi Annan, for the Jenin Refugee Camp (chaired by President Martti Ahtisaari), as well as an adviser for the Truth and Reconciliation Commission in Peru. He is also a member of the Independent Forensic Expert Group (IFEG), which promotes the Istanbul protocol in investigations of alleged torture and other cruel, inhuman or degrading treatment or punishment. Antti Sajantila has been awarded with the prize of the International Society of Forensic Genetics (ISFG) (1997), Finnish Medical Foundation’s 40th Anniversary Prize (2000) and an honorary medal from the Finnish Association for Cherishing the Memory of the Dead of the War (2010) for his work in identification of the Finnish M.I.A.s in World War II. For his work for the Truth and Reconciliation Commission in Peru, he was promoted to professor honoraria causae in the Pontificial University of Lima, Peru. Since 2018 Antti Sajantila is a member of The Finnish Society of Sciences and Letters.

II. Statement regarding veracity of testimony

I, Dr. Djordje Alempijević, have personally examined the facts recited in this written report. I believe all statements to be true. I would be prepared to testify to these statements based on my personal knowledge and belief.

I, Dr. Duarte Nuno Vieira, have personally examined the facts recited in this written report. I believe all statements to be true. I would be prepared to testify to these statements based on my personal knowledge and belief.

I, Dr. Antti Sajantila, have personally examined the facts recited in this written report. I believe all statements to be true. I would be prepared to testify to these statements based on my personal knowledge and belief.

III. Background information

1. The brief for this report

In our capacity as experts of the Independent Forensic Expert Group:

We have been asked to review and evaluate the post-mortem examinations and nine autopsy reports and materials received from Human Rights Watch reputedly obtained from official sources and related to deaths occurring in the contexts of the following incident (https://www.theguardian.com/world/2019/feb/14/brazil-13-dead-gang-policy-shoot-to-kill-rio)\(^1\) and to respond to the following questions:

1) Whether, in any of these cases, death was likely instantaneous or sudden and at the crime scene and, if so, how likely?
2) What, if any, is the appropriate procedure to follow to detect signs of close-range shooting or when signs of close-range shooting are detected during autopsy?

3) Are there indications that individuals were tortured prior to death? If not, what other steps should be taken.

4) Is there anything else you think deserves mention?

2. General information

According to the available media information, police forces of Rio de Janeiro, Brazil, conducted an operation in February 2019 that resulted in the death of 13 people. Following the incident, citing Rio’s municipal health authority, media has reported that 16 people reached the hospital – of which 13 were dead on arrival.

Allegedly similar summary killings by police have earlier been reported and, in 2017, the Inter-American Court of Human Rights condemned Brazil for failing to investigate questionable police killings and ordered the country to do so.

3. Review of medical documentation received for evaluations

The following documents were translated to English and presented to us:

1. Nine autopsy reports of nine deceased as mentioned below.

We have also received the following documents in electronic format, and written in Portuguese:


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ESTADUAL SECRETARIA DE ESTADO DE SEGURANÇA REPUBLICA CHEFIA DE POLÍCIA CIVIL DEPARTAMENTO GERAL DE POLÍCIA TÉCNICO-CIENTÍFICA INSTITUTO DE IDENTIFICAÇÃO FELIX PACHECO SETOR DE IDENTIFICAÇÃO E PERICIAS NECROPAPILOSCÓPICAS") prepared on 2 pages that are consecutively numbered, dated 10 February 2019, and signed; (c) Report on recognition and identification of cadaver ("TERMO DE RECONHECIMENTO E IDENTIFICAÇÃO DE CADÁVER") on a single page, dated 8 February 2019; and (d) two body diagrams.

2. PDF document "Fallet - Cópia IP - CASO 2.pdf" in Portuguese language, containing 9 pages in total: (a) Autopsy report ("LAUDO DE EXAME DE NECROPSIA") with precise identification number, compiled by Department of Technical-Scientific Police of the Secretariat of the State Civil Police Department of State Government of Rio de Janeiro ("GOVERNO DO ESTADO DO RIO DE JANEIRO SECRETARIA DE ESTADO DE POLÍCIA CIVIL DEPARTAMENTO DE POLÍCIA TÉCNICO-CIENTÍFICA IML") prepared on 4 pages that are consecutively numbered, printed on 9 February 2019, and signed by forensic examiner; (b) Report on Post-mortem Fingerprinting ("LAUDO DE PERÍCIA NECROPAPILOSCÓPICA") with precise identification number, compiled by the Institute for Identification Felix Pacheco – department of post-mortem identification of Public Service of the State Secretary of the Republic Security Directorate of Civil Police Department of Technical-Scientific Police ("SERVIÇO PÚBLICO ESTADUAL SECRETARIA DE ESTADO DE SEGURANÇA REPUBLICA CHEFIA DE POLÍCIA CIVIL DEPARTAMENTO GERAL DE POLÍCIA TÉCNICO-CIENTÍFICA INSTITUTO DE IDENTIFICAÇÃO FELIX PACHECO SETOR DE IDENTIFICAÇÃO E PERICIAS NECROPAPILOSCÓPICAS") prepared on 2 pages that are consecutively numbered, dated 10 February 2019, and signed; (c) Report on recognition and identification of cadaver ("TERMO DE RECONHECIMENTO E IDENTIFICAÇÃO DE CADÁVER") on a single page, dated 9 February 2019; and (d) two body diagrams.


6. PDF document “Fallet - Cópia IP - CASO 6.pdf” in Portuguese language, containing 9 pages in total: (a) Autopsy report (“LAUDO DE EXAME DE NECROPSIA”) with precise identification number, compiled by Department of Technical-Scientific Police of the Secretariat of the State Civil Police Department of State Government of Rio de Janeiro (“GOVERNO DO ESTADO DO RIO DE JANEIRO SECRETARIA DE ESTADO DE POLÍCIA CIVIL DEPARTAMENTO DE POLÍCIA TÉCNICO-CIENTÍFICA IML”) prepared on 4 pages that are consecutively numbered, printed on 9 February 2019, and signed by forensic examiner; (b) Report on Post-mortem Fingerprinting (“LAUDO DE PERÍCIA NECROPAPILOSCÓPICA”) with precise identification number, compiled by the Institute for Identification Felix Pacheco – department of post-
mortem Identification of Public Service of the State Secretary of the Republic Security Directorate of Civil Police Department of Technical-Scientific Police ("SERVIÇO PÚBLICO ESTADUAL SECRETARIA DE ESTADO DE SEGURANÇA REPÚBLICA CHEFIA DE POLÍCIA CIVIL DEPARTAMENTO GERAL DE POLÍCIA TÉCNICO-CIENTÍFICA INSTITUTO DE IDENTIFICAÇÃO FELIX PACHECO SETOR DE IDENTIFICAÇÃO E PERICIAS NECROPAPILOSCÓPICAS") prepared on 2 pages that are consecutively numbered, dated 9 February 2019, and signed; (c) Report on recognition and identification of cadaver ("TERMO DE RECONHECIMENTO E IDENTIFICAÇÃO DE CADÁVER") on a single page, dated 9 February 2019; and (d) two body diagrams.


10. PDF document “Fallet - Cópia IP - CORPOS.pdf” in Portuguese language, containing 9 pages in total; all pages are marked with precise identical file number and consecutively numbered in the right lower corner from 17-25. In the upper part of page, the names of eight individuals and one unidentified (NÃO IDENTIFICADO), five names match the names of autopsy reports described.


12. A set of eight JPG files (PHOTO-2019-04-23-14-25-05.jpg; PHOTO-2019-04-23-14-26-05.jpg; PHOTO-2019-04-23-14-27-38.jpg; PHOTO-2019-04-23-14-28-26.jpg; PHOTO-2019-04-23-14-29-21.jpg; PHOTO-2019-04-23-14-32-16.jpg; PHOTO-2019-04-23-14-53-52.jpg; and PHOTO-2019-04-23-14-54-43.jpg) and three videos files (VIDEO-2019-04-23-14-36-27.mp4; VIDEO-2019-04-23-14-39-20.mp4; and VIDEO-2019-04-23-14-53-17.mp4), ranging from 22 to 63 seconds in length. These photos and audiovisual materials were reputedly recorded by Rio de Janeiro residents and by staff of Souza Aguiar Municipal Hospital showing bodies reputedly belonging to some of those individuals named above. These photos and audiovisual material, in our opinion, may not be commented on with respect to particular details as the bodies shown are not properly labelled (e.g. by name and/or case/autopsy file tag). Therefore, it is not possible for us to link or comment on particular victims and/or to use submitted photo and audiovisual material in our assessment of the individual autopsy reports submitted to our attention and scrutiny. However, one of the submitted videos (VIDEO-2019-04-23-14-36-27.mp4), between 00:50-00:52 shows a person cutting trousers
and removing it from what appears to be a body of a dead young male. Such action, in our view, appears to not have been done in the autopsy room, but outside mortuary premises.

IV. Introductory remarks

In this report, we assume that the reader is familiar with the autopsy reports referenced above, the photographs, and other documents produced during the post-mortem examination, and subsequent identification of the nine deceased. We describe below what we consider as the main issues arising from the autopsies, which include, but are not limited to, the specific areas mentioned in the brief above. We then discuss the quality of post-mortem examinations, reporting on autopsies, supporting documentation, and identification of cadavers, and conclude by addressing the questions 1 to 4 mentioned above.

First of all, it is important to define the basic aims of the medico-legal autopsy, which are as follows:

1) To discover, describe and record all the significant pathological and traumatological processes present and the determining characteristics of the deceased for identification purposes;

2) With knowledge of the medical history, circumstances of the death, and death scene examination, to come to conclusions about the cause of death and factors contributing to death;

3) In situations where the circumstances of death are unknown or in question, to apply the autopsy findings and conclusions to the reconstruction of those circumstances. This will, on occasion, involve attendance at the scene of death, preferably with the body in situ;

4) In specific situations where death occurs in the context of law enforcement actions, to investigate possible violations of the duty to respect the right to life, and namely the possibility of excessive use of lethal force, violence or torture, or even situations of extra-legal, arbitrary and summary executions;

5) To record the positive and relevant negative observations and findings in such a way as to enable another forensic pathologist at another time to independently come to his/her own conclusions about the case. As forensic pathology is also about visual documentation, this involves a dependence on good quality and preferably colour photography with rulers and identification labels in those. (1)

When it comes to the standards for medico-legal autopsies, the General Assembly of the United Nations in 1989 set international legal standards for the prevention of unlawful death and the investigation of potentially unlawful death as provided in the Manual on the Effective Prevention of Extra-legal, Arbitrary and Summary Executions, which, through widespread usage, became known as
the Minnesota Protocol (the Protocol). The Protocol has since been used as a standard reference by national, regional and international courts and commissions and committees such as the UN Human Rights Committee and Inter-American Court of Human Rights. A new revised (2016) edition has been published in 2017 (2).

As outlined in the Protocol, investigations into death occurring in the context of law enforcement actions must, *inter alia*, take all reasonable steps to determine the cause, manner and circumstances of death by the performance of an autopsy providing that a medico-legal specialist should essentially follow the professional standards listed above. Further to that, the Protocol provides detailed guidelines on autopsy including that:

1) Adequate photographs are crucial for the thorough documentation of autopsy provided that each photograph should contain a ruled reference scale and an identifying case name or number, and that serial photographs reflecting the course of the external examination are included (including photograph of the body prior to and following undressing, washing, etc.). Also, photographs should be comprehensive, and must confirm the presence and details of all demonstrable signs of injury or disease commented upon in the autopsy report. Photographs of injuries should include a scale with the autopsy number.

2) X-rays should be taken in gunshot cases to aid in locating the projectile(s). Any projectile or major projectile fragment seen on an X-ray must be recovered, photographed, recorded as an exhibit and secured.

3) The external examination, focusing on a search for external evidence of injury, is in most cases the critically important part of the autopsy. Therefore, all of the body area must be photographed, while all injuries should be recorded including description of their location (related to static anatomic landmarks), size, shape, surrounds, pattern, contents, colour, course, direction and depth. Beside description, all injuries should be photographed and labelled with the autopsy identification number on a scale that is oriented parallel or perpendicular to the injury.

4) In the case of firearm wounds, description should contain information on the presence or absence of marginal abrasions, lacerations or defects in the margins of the wound, foreign contents within the wound, singeing or grease marking the margins of the wound, and soot and/or gunpowder stippling or tattooing around the wound. If firearm discharge residue is present, this should be photographed and preserved for analysis. It should be determined whether the bullet wound is an entry or exit wound. If an entry wound is present and no exit wound is seen, the projectile must be found and secured or accounted for.

5) Dissection of subcutaneous tissue should be performed on the back, the buttocks and extremities including wrists, ankles and feet, to look for deeper injuries. The shoulders,
elbows, hips and knee joints must also be dissected subcutaneously, and possibly further, to look for ligamentous and related injury.

6) The internal examination should be systematic, either by body regions or by systems. Internal manifestations of injury and any other abnormalities identified ought to be photographed, observed pathological findings described, and weight, size, shape, colour and consistency of each organ recorded. The trajectory of the wound, involving the three body planes (transverse, coronal, sagittal), should be evaluated and described for each one.

7) Samples of both biological and non-biological evidences, should be taken for ancillary examinations, depending on the specificities of each case. In firearm deaths, the non-biological evidences must include sampling of clothing and skin for gunshot residues analysis (to determine the distance between the impact and the position from which the gun was discharged) as well as the investigation of chemical traces on the hands of the victims (hands should be swabbred for firearm discharge residues investigation).

8) The autopsy report should be sufficiently comprehensive for another forensic doctor, at another time and place (and supported by access to the photographs) to be in possession of all the relevant observations required in order to come to his or her own conclusions about the death (2). The autopsy report must also include, not only a list of the findings and injuries, but it must also provide an interpretation of them.

V. The main issues arising from the post-mortem examinations and the autopsy reports and photographs taken

1. The forensic examiner has performed substandard post-mortem examinations, and he has compiled substandard autopsy reports. His reports have multiple substantial and significant insufficiencies and deficiencies. Thus, it can be stated that they fare far below the minimum acceptable standards and represent a serious and flagrant violation of the lege artis of post-mortem examinations. In fact, they have a null utility, being not acceptable for judicial purposes.

- The post-mortem reports do not provide documentation of examination and sampling of clothing, claiming that they were not of “forensic interest”. Examining the clothing can be – and usually is – an important part of the overall examination (namely in firearm death related situations), part of the aim of which is to re-create the circumstances within which the death occurred. The reconstruction of events in this case is affected by a poor or non-existent detailed cloth examination.

- The post-mortem reports do not provide proper external examination and description of injuries, such as their location (related to static anatomic landmarks), size, shape,
surrounds, pattern, contents, colour, course, direction and depth. Further to that, it cannot be recalled from the autopsy reports that the internal examination was performed in a systematic manner as required. Descriptions of internal manifestations of injuries and any other abnormalities are not provided, nor is the weight, size, shape, colour and consistency of each organ recorded. This lack of adequate procedure creates a limitation in the potential of the autopsies for clarification of the cause, mode and circumstances of death.

- The post-mortem reports do not provide information that evidence sampling was performed and, especially, those that are essential in the investigation of firearm death related cases. The reports state that these samplings were not performed because they were not requested by the authorities. The lack of this fundamental procedure is unacceptable and a strong limitation to securing conclusions.

- The post-mortem examinations of the individual cases, as indicated in the autopsy reports, were mostly performed within 30 to 40 minutes. Although experienced pathologists can perform autopsies in an effective and quick manner, this period of time is clearly insufficient for an adequate post-mortem detailed external examination, for a complete dissection, for a detailed internal examination, for measurements (e.g. length/width/height), for an adequate photographic documentation, registration of notes, collection of samples, etcetera. In 30 to 40 minutes only very basic, superficial and incomplete observations can be possible, in particular in cases involving multiple traumatic lesions such as in the ones under the assessment. Without the overall and detailed consideration of all autopsy procedures, an adequate interpretation of the cause, manner and circumstances of death can never, ever, be provided or accepted.

- While many important details are either not documented or descriptions provided are scant, submitted documents allow us to conclude that the 9 victims of the incident have had multiple gunshot wounds involving mainly thoracic and/or abdominal region and cavities and, in some cases the other parts of the body as well (such as the face and/or extremities). This observation may allow us to consider that, due to extensiveness and/or location of traumatic lesions caused by firearm injuries, it was highly likely that death of affected individuals would occur in a very short timeframe following injury and possibly at the site of the incident.

2. Photographs taken during post-mortem examinations are inadequate.

- Poor quality photos were submitted for assessment. During the post-mortems, body areas and external and internal body injuries, as well as evidences eventually observed, were not submitted for photographic documentation. Provided autopsy photos are amateur and do not stand in accordance with the basic professional forensic principles (among other deficiencies, they were not labelled with the autopsy identification number on a scale).
• Similarly, bullets that have been recovered, as indicated in three autopsy reports stating (from the "back" and described as "yellow [...] projectile"), (from the abdominal cavity and described as "yellow [...] projectile"), and (from the abdominal cavity and described as "yellow [...] projectile") have not been photographed. This is, again, a violation of minimum autopsy standard procedures.

• Adequate photographs are crucial for the thorough documentation of autopsy findings and for enabling them to be independently reviewed. Photographs can be important for the identification of corpses and for contradictory opinions relating to what was (or not) described and the interpretations made.

3. Projects and/or their fragments have not been searched for during the post-mortems, some were left unrecovered, and those that have been collected at autopsy are not properly managed.

• X-rays of bodies were not performed to aid in locating the projectiles. Subsequently, during the post-mortem, projectiles were not recovered in three cases as stated by three of the autopsy reports.

• In general, the absence of adequate examination procedures, namely in what concerns the ancillary examinations that should constitute routine procedure on autopsies made at medico-legal institutions, undermines the possibility of scientifically robust conclusions of the cause, manner and circumstances of death and thus limits the potential and value of the autopsy.

4. Clothing that eventually was on the bodies has not been described during the post-mortem, photographs of clothing were not taken, nor has the clothing been collected for further investigation, which is in particular relevant to estimation of shooting distance.

• The preservation of trace evidence (such as gunshot residue) is essential for comprehensive investigation in cases of firearm injuries. Clothed bodies should be carefully inspected for any traces that might constitute evidence. If any traces are found, they should be described, retrieved, recorded as exhibits, and secured. The result of their laboratory examination will be fundamental for an adequate and complete reconstruction of events. The lack of these fundamental autopsy procedures influences the determination of the cause, manner and circumstances of death.

VI. Responses to the questions made for this review

1) Whether, in any of these cases, death was likely instantaneous or sudden and at the crime scene and, if so, how likely?
Taking into consideration the poor quality of the autopsy examinations, there are insufficient elements to allow a scientifically based response to this question in the majority of the cases. However, we can note that, in most cases, individuals appear to have been subjected to severe trauma that may rapidly lead to death in normal circumstances. In the case of Mr. Felipe Guilherme Antunes, it can be estimated that based on the injuries documented, his death was highly likely to be instantaneous.

2) *What, if any, is the appropriate procedure to follow to detect signs of close-range shooting or when signs of close-range shooting are detected during autopsy?*

No appropriate procedures were followed during the autopsies. The sampling at entrance wounds for physical and chemical laboratory research of gunshot residues and collection of samples for histological observation are compulsory procedure that were not followed in these cases.

These basic procedures must be followed in all cases were death occurs in the context of law enforcement actions to determine the distance between the impact and the position from which the gun was discharged and to evaluate the legality of police action.

3) *Are there indications that individuals were tortured prior to death? If so, what steps should be taken.*

Taking into consideration the poor quality of the autopsy examinations, there are insufficient elements to allow a scientifically based response to this question. Torture can neither be affirmed nor excluded on the basis of the poor quality of the autopsies, which fail to provide in all cases proper external examination and documentation of injuries.

However, in cases where there is reasonable ground to believe that torture has been committed (such as based on the testimony of witnesses), the authorities are obliged to conduct prompt, impartial and effective investigation pursuant to the Istanbul Protocol (3) and the Minnesota Protocol, which provides specific guidance on detecting torture during autopsy.

4) *Is there anything else you think deserves mention?*

The absolute lack of quality, in general, of the autopsies performed should be strongly stressed. The autopsies performed do not meet acceptable minimum scientific standards for the provision of expert witness testimony to the Court and are unreliable. A competent pathologist would have performed and particularly documented the autopsies in a rigorous manner using the internationally accepted standards.

The autopsy reports have many insufficiencies and provide no sustainable conclusions. They are not in compliance with the minimum international acceptable standards of a post-mortem examination of firearm related deaths, representing a clear violation of the post-mortem *lege artis*, not allowing any scientifically supported conclusions on the questions made.
VII. References


VIII. Expert’s signature, date, place

Signed in Belgrade on 13 June 2019

Djordje Alempijevic, MD, PhD.

Signed in Coimbra on 13 June 2019

Duarte Nuno Vieira, MD, PhD

Signed in Helsinki on 13 June 2019

Antti Sajantila, MD, PhD.