

THE MINNESOTA PROTOCOL ON THE INVESTIGATION OF POTENTIALLY UNLAWFUL DEATH (2016)

The Revised United Nations Manual on the Effective Prevention
and Investigation of Extra-legal, Arbitrary and Summary Executions



**UNITED NATIONS
HUMAN RIGHTS**
OFFICE OF THE HIGH COMMISSIONER

THE MINNESOTA PROTOCOL ON THE INVESTIGATION OF POTENTIALLY UNLAWFUL DEATH (2016)

The Revised United Nations Manual on the Effective
Prevention and Investigation of Extra-legal, Arbitrary and
Summary Executions



New York and Geneva, 2017

United Nations' publication issued by the Office of the United Nations High Commissioner for Human Rights (OHCHR).

Requests to reproduce excerpts or to photocopy should be addressed to the Copyright Clearance Center at copyright.com.

All other queries on rights and licenses, including subsidiary rights, should be addressed to:

United Nations Publications, 300 East 42nd St, New York, NY 10017, United States of America.

E-mail: publications@un.org; website: un.org/publications

The findings, interpretations, and conclusions expressed herein are those of the contributors and do not necessarily reflect the views of the United Nations or its officials or Member States.

This is an advance electronic version of the second edition.
The layout is subject to change from that of the final print and electronic publication.

While reasonable efforts have been made to ensure that its contents are factually correct and properly referenced, OHCHR/the UN does not accept responsibility for the accuracy and completeness of the contents, and shall not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance on, the contents of this advance electronic version.

Second edition:

© 2017 United Nations

All rights reserved worldwide

UN symbol: HR/PUB/17/4

Sales no.: E.17.XIV.3

ISBN: 978-92-1-154220-2

eISBN: 978-92-1-060582-3

Suggested citation: The Minnesota Protocol on the Investigation of Potentially Unlawful Death (2016), Office of the United Nations High Commissioner for Human Rights, New York/Geneva, 2017.

First edition:

© 1991 United Nations

All rights reserved worldwide

ST/CSDHA/12

Sales No. E.91.IV.1

ISBN: 92+130142-4 01500P

Foreword

I am very pleased to present the revised Minnesota Protocol on the Investigation of Potentially Unlawful Death (2016).

This is an updated version of the original UN Manual on the Effective Prevention of Extra-legal, Arbitrary and Summary Executions of 1991, which, through widespread usage, became known as the Minnesota Protocol. Like the original, this updated version supplements the UN Principles on the Effective Prevention and Investigation of Extra-legal, Arbitrary and Summary Executions (1989), which remains an important part of the international legal standards for the prevention of unlawful deaths and the investigation of potentially unlawful deaths.

The original Minnesota Protocol was drafted through an expert process led by the Minnesota Lawyers International Human Rights Committee, motivated by an awareness among civil society actors that there was no clear international reference point at the time to act as either a practical guide for those tasked with conducting investigations into suspicious deaths, or as a norm against which to evaluate such investigations.

The work pioneered by this group of legal and forensic experts throughout the 1980s, made it clear to all concerned what valuable allies forensic practitioners could be in the work to better protect human rights. The finalisation of the Minnesota Protocol, dealing with executions, and the subsequent development of the Manual on the Effective Investigation and Documentation of Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment (Istanbul Protocol), focusing on torture, have now made such professional collaboration a common practice.

In the years since it was drafted, the Minnesota Protocol has been widely used both as an education resource, as a practical guide, and as a legal standard. Along with the Principles, it has been used by national, regional and international courts, commissions and committees, such as the European and Inter-American Courts of Human Rights, the African Commission on Human and Peoples' Rights and the UN Human Rights Committee.

During the same intervening years, there have also been many welcome developments in international law, investigative practice and forensic science, and it was brought to the attention of my Office through several resolutions of the UN Commission on Human Rights that this valuable resource was in need of updating to retain

and expand its relevance. In 2014, the UN Special Rapporteur on extrajudicial, summary or arbitrary executions, Christof Heyns, in collaboration with my Office, initiated a process to revise and update the Protocol and convened the expert meetings that led to the finalisation of this text.

Given the role of forensic experts themselves in devising the original version, it has been particularly welcome that so many have been involved in this revision process. Likewise, just as the first UN Special Rapporteur on extrajudicial, summary or arbitrary executions, S. Amos Wako, played a significant role in the original process, I am grateful to the work of the former Special Rapporteur, Christof Heyns, for the hard work, the rigour and the excellence that has gone into this vital and timely revision. Although the document remains an expert document, a special effort was also made to get inputs from States, other international organisations, other Special Rapporteurs, treaty bodies, NGOs and individual professionals.

This collaborative approach has greatly enriched the text, and has, I hope, made more likely the widespread distribution of the revised standards to those experts and institutions who can most directly benefit from it.

For the norms of human rights to have real impact, there have to be tangible responses to potential violations. Investigations and, if appropriate, subsequent accountability processes play a vital role in upholding the right to life. However, in many contexts in which my Office works, we have found that the awareness of the standards to which such investigations should be held and of the range of various specialist methodologies required varies considerably.

A suspicious death occurring anywhere in the world is potentially a violation of the right to life, often described as the supreme human right, and therefore a prompt, impartial and effective investigation is key to ensuring that a culture of accountability—rather than impunity—prevails. The same applies to enforced disappearances. The updated version of the Minnesota Protocol provides a comprehensive and shared platform for forensic investigators, pathologists, law enforcement officials, lawyers, prosecutors, presiding officers and NGOs to make accountability a worldwide reality.

Zeid Ra'ad Al Hussein
UN High Commissioner for Human Rights

Background Note

This is an updated version of the 1991 United Nations (UN) Minnesota 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 Minnesota Protocol was originally drafted to supplement the UN Principles on the Effective Prevention and Investigation of Extra-legal, Arbitrary and Summary Executions.^I The UN Principles, which set out international legal standards for the prevention of unlawful death and the investigation of potentially unlawful death, were welcomed by the UN Economic and Social Council in 1989 after an intergovernmental process,^{II} and endorsed by the UN General Assembly in the same year.^{III}

The preparation of the Protocol in its first iteration was facilitated from 1983 to 1991 by the Minnesota Lawyers International Human Rights Committee (now The Advocates for Human Rights), with contributions from the Science and Human Rights Program of the American Association for the Advancement of Science. It was adopted by the Crime Prevention and Criminal Justice Branch of the UN Centre for Social Development and Humanitarian Affairs in 1991. It has since been used by national, regional and international courts, and commissions and committees such as the UN Human Rights Committee, the European and Inter-American Courts of Human Rights and the African Commission on Human and Peoples' Rights. The UN Principles and the Minnesota Protocol have also been used by States, international organizations and non-governmental organizations (NGOs) around the world, becoming an influential touchstone for death investigations. Since the publication of the 1991 Protocol there have been significant developments in international law, investigative practice and forensic science. In several resolutions, the UN Commission on Human Rights mandated the Office of the High Commissioner for Human Rights (OHCHR) to update the Protocol.^{IV}

To ensure that the Protocol retains its relevance and reflects these advances, in 2014 the UN Special Rapporteur on extrajudicial, summary or arbitrary executions, Christof Heyns, in collaboration with the Office of the UN High Commissioner for Human Rights, initiated a process to revise and update the Protocol. To this end they appointed an international team of legal and forensic experts and a high-level advisory panel.^V Stuart Casey-Maslen served as the overall research coordinator. Responsibility for the content of the 2016 Protocol rests with those involved in bringing it up to date.

The 2016 Minnesota Protocol is to be made available for download in all six UN languages on the website of the Office of the UN High Commissioner for Human Rights (www.ohchr.org).

-
- I. The 1989 Principles on the Effective Prevention and Investigation of Extra-legal, Arbitrary and Summary Executions were endorsed by UN General Assembly Resolution 44/162 of 15 December 1989 and remain unchanged.
 - II. ECOSOC Resolution 1989/65 of 24 May 1989.
 - III. UN General Assembly Resolution 44/162 of 15 December 1989.
 - IV. UN Commission on Human Rights Resolutions 1998/36, 2000/32, 2003/33 and 2005/26.
 - V. The history of this process and references to additional UN and other documents of relevance to investigations are available at: <http://www.ohchr.org/EN/Issues/Executions/Pages/RevisionoftheUNManualPreventionExtraLegalArbitrary.aspx>.

The members of the Legal and Forensics Working Groups were as follows:

[Kingsley ABBOTT](#), Senior International Legal Adviser for Southeast Asia, International Commission of Jurists, Bangkok

[Fred ABRAHAMS](#), Associate Director for Program, Human Rights Watch

[Federico ANDREU](#), Deputy Director of Litigation & Legal Protection, Colombian Commission of Jurists

[Prof. Ali CHADLY](#), Head of Department of Forensic Medicine and Dean of the Faculty of Medicine, University of Monastir, Tunisia

[Prof. Stephen CORDNER](#), Head, International Programmes, Victorian Institute of Forensic Medicine, Australia (editor of the Forensic Science sections of the 2016 Minnesota Protocol)

[Dr Uwom O. EZE](#), Senior Forensic Pathologist, University College Hospital, Ibadan, Nigeria; and Head of Secretariat, African Society of Forensic Medicine

[Dr Luis FONDEBRIDER](#), President, Argentine Forensic Anthropology Team, Buenos Aires

[Barbara FREY](#), Director of the Human Rights Program, University of Minnesota (Co-author of the 1991 Minnesota Protocol)

[Avner GIDRON](#), Senior Policy Adviser, Amnesty International

[Alistair GRAHAM](#), Investigations Team Leader, International Criminal Court

[Prof. Françoise HAMPSON](#), Emeritus Professor, University of Essex

[Prof. Sarah KNUCKEY](#), Associate Clinical Professor of Law; Director, Human Rights Clinic; Faculty Co-Director, Human Rights Institute, Columbia Law School (Chair of the Legal Working Group)

[Dr María Dolores MORCILLO MÉNDEZ](#), Regional Forensic Coordinator, Ukraine, Russian Federation and Western Europe, International Committee of the Red Cross

[Michael MOULDEN](#), Forensic Coordinator, Special Tribunal for Lebanon, Beirut

[Prof. Duarte Nuno VIEIRA](#), Dean of the Faculty of Medicine, University of Coimbra; President, European Council of Legal Medicine and Iberoamerican Network of Forensic Medicine and Forensic Sciences Institutions

[Irene O'SULLIVAN](#), Senior International Forensic Advisor, Netherlands Forensic Institute

[Dr Thomas PARSONS](#), Director, Forensic Sciences, International Commission on Missing Persons

[Jennifer PRESTHOLDT](#), Deputy Director, The Advocates for Human Rights, Minneapolis

[Stefan SCHMITT](#), Director, International Forensic Program, Physicians for Human Rights, United States

[Prof. Jorgen THOMSEN](#), Institute of Forensic Medicine, University of Southern Denmark (Co-author of the 1991 Minnesota Protocol)

[Dr Morris TIDBALL-BINZ](#), Head of Forensic Services, International Committee of the Red Cross, Geneva (Chair of the Forensics Working Group)

[Howard VARNEY](#), Senior Program Advisor, International Center for Transitional Justice, South Africa.

The working group of legal experts was supported by Toby Fisher, Barrister, Landmark Chambers, London, and by Dr Thomas Probert, Senior Researcher, Institute for International and Comparative Law in Africa, University of Pretoria. The working group of forensic experts was supported by Stuart Casey-Maslen, Honorary Professor, Faculty of Law, University of Pretoria.

The members of the Advisory Panel were as follows:

Prof. Philip ALSTON, New York University School of Law; Former UN Special Rapporteur on extrajudicial, summary or arbitrary executions

Emilio ALVAREZ, Executive Secretary, Inter-American Commission on Human Rights

Jay D. ARONSON, Associate Professor of Science, Technology, and Society and Director, Center for Human Rights Science, Carnegie Mellon University, Pittsburgh, Pennsylvania

Dr Eric BACCARD, Forensic Coordinator, International Criminal Court

Prof. Dame Sue BLACK, Director of Leverhulme Research Centre for Forensic Science, University of Dundee

Kathryne BOMBERGER, Director, International Commission on Missing Persons

Sean BUCKLEY, Managing Director, Osaco Solutions, United Kingdom

Prof. Pieter CARSTENS, Professor of Criminal and Medical Law, Faculty of Law, University of Pretoria

Supt. Anton CASTILANI, Chief, Police Medical Department, Indonesian National Police

Youk CHHANG, Director, Documentation Centre for Cambodia

Pablo DE GREIFF, UN Special Rapporteur on the promotion of truth, justice, reparation and guarantees of non-recurrence

Max DE MESA, Chairperson, Philippine Alliance of Human Rights Advocates

Michel DE SMEDT, Head of Investigations, International Criminal Court

Rafendi DJAMIN, Indonesian Representative, ASEAN Intergovernmental Commission on Human Rights

Ariel DULITZKY, Clinical Professor and Director, Human Rights Clinic, School of Law, University of Texas at Austin; and Member and former Chair-Rapporteur, UN Working Group on Enforced or Involuntary Disappearances

Stephen FONSECA, Southern Africa Forensic Adviser for Africa, International Committee of the Red Cross

Jennifer GIBSON, Head of Drones Team, Reprieve, United Kingdom

Sam HEINS, Counsel, Heins Mills and Olson plc, Minneapolis (Co-author of the 1991 Minnesota Protocol)

Dr Vincent IACOPINO, Medical Director, Physicians for Human Rights; Adjunct Professor of Medicine with the University of Minnesota Medical School; and Senior Research Fellow at the Human Rights Center, University of California, Berkeley

Asma JAHANGIR, Former UN Special Rapporteur on extrajudicial, summary or arbitrary executions

Zainabo KAYITESI, Chair, African Commission on Human and Peoples' Rights Working Group on Death Penalty and Extrajudicial, Summary or Arbitrary Killings in Africa

Andreas KLEISER, Director for Policy and Cooperation, International Commission on Missing Persons

Prof. Noam LUBELL, Head of School of Law, University of Essex; and Swiss Chair of IHL, Geneva Academy of International Humanitarian Law and Human Rights

Prof. Rashida MANJOO, Faculty of Law, University of Cape Town and former UN Special Rapporteur on Violence Against Women

Stephen MARGETTS, Legal Officer, UN Secretariat, New York

Juan MENDEZ, UN Special Rapporteur on torture and other cruel, inhuman or degrading treatment or punishment

George MUKUNDI, Head of African Governance Architecture Secretariat, African Union

Wilfred NDERITU, Managing Partner, Nderitu & Partners, Nairobi

Bacre NDIAYE, Former UN Special Rapporteur on extrajudicial, summary or arbitrary executions

Bernard O'DONNELL, Head of Division, Fraud Investigations, Inspectorate General, European Investment Bank, Luxembourg (acting in an independent capacity)

Dr Cristián ORREGO BENAVENTE, Senior Research Fellow in Forensic Genetics, Human Rights Center, School of Law, University of California, Berkeley

Fredy PECCERELLI, Director, Guatemalan Forensic Anthropology Foundation

Navi PILLAY, Former UN High Commissioner for Human Rights

Prof. Michael POLLANEN, Chief Forensic Pathologist of Ontario, Canada

[Matt POLLARD](#), Senior Legal Adviser, International Commission of Jurists

[John RALSTON](#), Director, Institute for International Criminal Investigations

[Felix REATEGUI](#), Senior Associate, Truth and Memory Program, International Center for Transitional Justice

[Sir Nigel RODLEY](#), Professor Emeritus and Chair, Human Rights Centre, University of Essex, Colchester; and Member, UN Human Rights Committee

[Dr Pornthip ROJANASUNAN](#), Director, Central Institute of Forensic Science, Thailand

[Prof. Gert SAAYMAN](#), Head of the Department of Forensic Medicine, University of Pretoria and Chief State Pathologist, Gauteng Department of Health

[Anna Giudice SAGET](#), Crime Prevention Officer, UN Office on Drugs and Crime

[Dr Antti SAJANTILA](#), Head of Forensic Genetics, University of Helsinki

[Yasmin SOOKA](#), Executive Director, Foundation for Human Rights, Johannesburg

[Mishel STEPHENSON](#), Chief of Forensic Genetics, Guatemalan Forensic Anthropology Foundation

[Eric STOVER](#), Adjunct Professor of Law and Public Health and Faculty Director, Human Rights Center, School of Law, University of California, Berkeley (Co-author of the 1991 Minnesota Protocol)

[Gary SUMMERS](#), Barrister, 9 Bedford Row International, London, United Kingdom

[Dr Ajith TENNAKOON](#), Head, Institute of Forensic Medicine and Toxicology; and President, College of Forensic Pathologists of Sri Lanka, Colombo

[Dr Lindsey THOMAS](#), Medical Examiner, Hennepin County Medical Examiner's Office (Co-author of the 1991 Minnesota Protocol)

[Dr Douglas UBELAKER](#), Professor of Anthropology, Smithsonian Institution

[Dr Vina VASWANI](#), Head, Department of Forensic Medicine, Yenepoya University, India

[Dr Jeanine VELLEMA](#), Head of Division, Forensic Medicine, University of Witwatersrand, South Africa

[Dr Jairo VIVAS](#), Head of Forensic Pathology, National Institute of Legal Medicine and Forensic Sciences, Colombia

[Prof. David WEISSBRODT](#), Professor of Law, University of Minnesota (Co-author of the 1991 Minnesota Protocol)

[Dr James WELSH](#), Independent Researcher, formerly Human Rights and Ethics Fellow, London School of Hygiene and Tropical Medicine.

*In memoriam Sir Nigel Rodley
(1 December 1941 – 25 January 2017)*

Contents

I.			
Aims and Scope of the 2016 Minnesota Protocol	1	C. Interviews and Witness Protection	16
		1. General principles	16
II.		2. Security and well-being	16
International Legal Framework	3	3. Recording interviews	16
A. The Right to Life	3	D. Recovery of Human Remains	17
B. Accountability and Remedy	4	1. General principles	17
C. The Triggering and Scope of the Duty to Investigate	5	2. Labelling	17
D. Elements and Principles of Investigations	6	3. Inventory	17
1. Elements of the duty to investigate	6	4. Intact bodies	18
2. Relevant international principles and codes	8	5. Skeletal remains on the surface	18
3. The participation and protection of family members during an investigation	8	6. Buried bodies/skeletal remains	18
4. Investigative mechanisms	9	7. Considerations in the recovery of buried remains	19
III.		E. Identification of Dead Bodies	19
Professional Ethics	10	1. General principles	19
		2. Visual recognition	19
IV.		3. The scientific approach to identification	19
Conduct of an Investigation	11	4. Events with multiple deaths	20
A. General Principles of Investigations	11	5. Conclusions about identity	20
B. The Investigation Process	11	F. Types of Evidence and Sampling	22
1. Collecting and managing data and materials	12	1. General principles	22
2. Important physical locations, including the death/crime scene	12	2. Human biological evidence	22
3. Family liaison	14	3. Non-biological physical evidence	22
4. Understanding the victim	14	4. Digital evidence	23
5. Finding, interviewing and protecting witnesses	14	5. Forensic accounting	23
6. International technical assistance	15	6. Soil/environmental samples	23
7. Telecommunications and other digital evidence	15	G. Autopsy	24
8. Financial issues	15	1. General principles	24
9. Chronology of events	16	2. The role of radiological imaging in investigating potentially unlawful death	25
		H. Analysis of Skeletal Remains	26

V.			
	Detailed Guidelines	27	
A.	Detailed Guidelines on Crime-Scene Investigation	27	
	1. Introduction	27	
	2. Photographic documentation	28	
	3. Measurements	29	
	4. Note-taking/data collection and compiling an inventory	29	
B.	Detailed Guidelines on Interviews	30	
	1. Introduction	30	
	2. Preparation and setting	30	
	3. Starting the interview	30	
	4. Fact-finding	31	
	5. Concluding the interview	31	
	6. Additional guidance when interviewing a suspect	32	
	7. The role of interpreters	32	
C.	Detailed Guidelines on the Excavation of Graves	33	
D.	Detailed Guidelines on Autopsy	35	
	1. Background and key principles	35	
	2. The clothed body	36	
	3. External examination	36	
	4. Internal examination	38	
	5. Further testing	39	
	6. Concluding the cause of death	41	
	7. The autopsy report	42	
	8. Autopsy signs of possible torture	42	
E.	Detailed Guidelines on the Analysis of Skeletal Remains	45	
	1. Introduction	45	
	2. Infrastructure for the analysis of skeletal remains	45	
	3. Preparing skeletal remains for analysis	45	
	4. Establishing a biological profile of the remains	46	
	5. Remaining analysis and report	47	
VI.			
	Glossary		48
VII.			
	Annexes		51
	Annex 1. Anatomical Sketches		51
	Annex 2. Case Details Form		76
	Annex 3. Firearm Wound Chart		78
	Annex 4. Stab Wound/Laceration Chart		79
	Annex 5. Adult Dental Chart		80
	List of Tables		
	Table 1:		21
	Ante-Mortem and Post-Mortem Data for the Purpose of Identification		
	Table 2:		43
	Torture Techniques and Related Findings		

I.

Aims and Scope of the 2016 Minnesota Protocol

1. The Minnesota Protocol aims to protect the right to life and advance justice, accountability and the right to a remedy, by promoting the effective investigation of potentially unlawful death or suspected enforced disappearance. The Protocol sets a common standard of performance in investigating potentially unlawful death or suspected enforced disappearance and a shared set of principles and guidelines for States, as well as for institutions and individuals who play a role in the investigation.
2. The Minnesota Protocol applies to the investigation of all “potentially unlawful death” and, *mutatis mutandis*, suspected enforced disappearance. For the purpose of the Protocol, this primarily includes situations where:
 - (a) **The death may have been caused by acts or omissions of the State, its organs or agents, or may otherwise be attributable to the State, in violation of its duty to respect the right to life.**¹ This includes, for example, all deaths possibly caused by law enforcement personnel or other agents of the state; deaths caused by paramilitary groups, militias or “death squads” suspected of acting under the direction or with the permission or acquiescence of the State; and deaths caused by private military or security forces exercising State functions.²
 - (b) **The death occurred when a person was detained by, or was in the custody of, the State, its organs, or agents.** This includes, for example, all deaths of persons detained in prisons, in other places of detention (official and otherwise) and in other facilities where the State exercises heightened control over their life.³
 - (c) **The death occurred where the State may have failed to meet its obligations to protect life.** This includes, for example, any situation where a state fails to exercise due diligence to protect an individual or individuals from foreseeable external threats or violence by non-State actors.⁴

There is also a general duty on the state to investigate any suspicious death, even where it is not alleged or suspected that the state caused the death or unlawfully failed to prevent it.

1. See, e.g. Art. 6(1), 1966 International Covenant on Civil and Political Rights (ICCPR); Art. 6, 1980 Convention on the Rights of the Child; and Art. 1, 1948 Convention on the Prevention and Punishment of the Crime of Genocide; Arts. 12 and 13, 1984 UN Convention against Torture; Art. 10, 2006 International Convention for the Protection of All Persons from Enforced Disappearance (ICPED); UN Basic Principles on the Use of Force and Firearms by Law Enforcement Officials, Principles 6, 22 and 23; UN Principles on the Effective Prevention and Investigation of Extra-legal, Arbitrary and Summary Executions, Principle 9; and the Body of Principles for the Protection of All Persons under Any Form of Detention or Imprisonment, Principle 34. In situations of international armed conflict, see Art. 121, 1949 Geneva Convention III (with respect to prisoners of war); and Art. 131, 1949 Geneva Convention IV (with respect to civilian internees).

2. Report of the Special Rapporteur on extrajudicial, summary or arbitrary executions to the UN Commission on Human Rights, UN doc. E/CN.4/2005/7, 22 December 2004, paras. 70–71.

3. These include psychiatric hospitals, institutions for children and the elderly and centres for migrants, stateless people, or refugees.

4. See, e.g., Human Rights Committee, General Comment No. 31 on The Nature of the General Legal Obligation Imposed on States Parties to the Covenant, UN doc. CCPR/C/21/Rev.1/Add.13, 26 May 2004, para. 8.

3. The Protocol outlines States' legal obligations and common standards and guidelines relating to the investigation of potentially unlawful death (Section II). It sets out the duty of any individual involved in an investigation to observe the highest standards of professional ethics (Section III). It provides guidance and describes good practices applicable to those involved in the investigative process, including police and other investigators, medical and legal professionals and members of fact-finding mechanisms and procedures (Section IV). While the Protocol is neither a comprehensive manual of all aspects of investigations, nor a step-by-step handbook for practitioners, it does contain detailed guidelines on key aspects of the investigation (Section V). A glossary is included (Section VI). Annexes (Section VII) contain anatomical sketches and forms for use during autopsies.
4. States should take all appropriate steps to incorporate Protocol standards into their domestic legal systems and to promote its use by relevant departments and personnel, including, but not limited to, prosecutors, defence lawyers, judges, law enforcement, prison and military personnel, and forensic and health professionals.
5. The Protocol is also relevant to cases where the United Nations, armed non-State groups exercising State or quasi-State authority,⁵ or business entities⁶ have a responsibility to respect the right to life and to remedy any abuses they cause or to which they contribute.⁷ The Protocol can also guide the monitoring of investigations by the UN, regional organizations and institutions, civil society and victims' families, and can aid teaching and training on death investigations.
6. States Parties to relevant treaties may have specific obligations that go beyond the guidance set out in the present Protocol. Although some States may not yet be in a position to follow all of the guidance set out within it, nothing in the Protocol should be interpreted in such a way as to relieve or excuse any State from full compliance with its obligations under international human rights law.

5. With respect to armed groups, see Report of the UN Fact-Finding Mission on the Gaza Conflict, UN doc. A/HRC/12/48, 25 September 2009, para. 1836.

6. OHCHR, Guiding Principles on Business and Human Rights, UN doc. HR/PUB/11/04 (2011).

7. 2005 UN Basic Principles and Guidelines on the Right to a Remedy and Reparation for Victims of Gross Violations of International Human Rights Law and Serious Violations of International Humanitarian Law (hereafter, UN Basic Principles and Guidelines on the Right to Remedy and Reparation).

II.

International Legal Framework

A. The Right to Life

7. The right not to be arbitrarily deprived of life is a foundational and universally recognized right, applicable at all times and in all circumstances. No derogation is permissible, including during an armed conflict or other public emergency.⁸ The right to life is a norm of jus cogens and is protected by international and regional treaties, customary international law and domestic legal systems. The right is recognized in, among other instruments, the 1948 Universal Declaration of Human Rights, the 1966 International Covenant on Civil and Political Rights, the African, Inter-American and European human rights conventions,⁹ and the Arab Charter on Human Rights.¹⁰
 - (b) **Protect and fulfil the right to life.** States must protect and fulfil the right to life, including by exercising due diligence to prevent the arbitrary deprivation of life by private actors. This is particularly the case where state officials have specific information about threats against one or more identified individuals; or where there is a pattern of killings where victims are linked by political affiliation,¹¹ sex,¹² sexual orientation¹³ or gender identity,¹⁴ religion,¹⁵ race or ethnicity,¹⁶ caste,¹⁷ or social status.¹⁸ States must implement their due diligence obligations in good faith and in a non-discriminatory manner. States must protect the life of each person under the jurisdiction by law. States must also take reasonable measures to address conditions that may give rise to direct threats to life.¹⁹
8. Protection of the right to life means preventing the arbitrary deprivation of life, including through an appropriate framework of laws, regulations, precautions and procedures. It also requires accountability for the arbitrary deprivation of life whenever it occurs. To secure the right to life, States must:
 - (a) **Respect the right to life.** States, their organs and agents, and those whose conduct is attributable to the State, must respect the right to life and not deprive any person of their life arbitrarily.

8. Under Article 15 of the 1950 European Convention on Human Rights (ECHR), in time of war or other public emergency threatening the life of the nation, States Parties may derogate from full observance of the right to life (Article 2) for lawful acts of war only and to the extent strictly required by the exigencies of the situation, provided that any measures are not inconsistent with their other obligations under international law.

9. Art. 6, ICCPR; Art. 2, ECHR; Art. 4, 1969 American Convention on Human Rights; and Art. 4, 1981 African Charter on Human and Peoples' Rights.

10. Art. 5, 2004 Arab Charter on Human Rights.

11. Human Rights Committee, *Krasovskaya v. Belarus*, Views (Comm. No. 1820/2008), 6 June 2012.

12. Inter-American Court of Human Rights (IACtHR), *González et al. ("Cotton Field") v. Mexico*, 16 November 2009, para. 455; Report of the Special Rapporteur on violence against women, its causes and consequences, UN doc. A/HRC/23/49, 14 May 2013, para. 73.

13. African Commission on Human and Peoples' Rights, Resolution 275 on Protection against Violence and other Human Rights Violations against Persons on the basis of their real or imputed Sexual Orientation or Gender Identity, adopted at 55th Ordinary Session, Luanda, 28 April to 12 May 2014.

14. "Discrimination and violence against individuals based on their sexual orientation and gender identity", Report of the Office of the UN High Commissioner for Human Rights, UN doc. A/HRC/29/23, 4 May 2015; see also "Discriminatory laws and practices and acts of violence against individuals based on their sexual orientation and gender identity", Report of the UN High Commissioner for Human Rights, 17 November 2011.

15. See, e.g., Urgent appeal to the Government of Pakistan sent by the Special Rapporteur on freedom of religion or belief, the Special Rapporteur on minority issues and the Special Rapporteur on extrajudicial, summary or arbitrary executions, UN doc. A/HRC/28/85, 23 October 2014, p. 104 (concerning the murder of two members of the Ahmadiyya Muslim community in Pakistan).

16. European Court of Human Rights (ECtHR), *Nachova v. Bulgaria*, Judgment, 6 July 2005, paras. 162–68; see also *B.S. v. Spain*, Judgment, 24 July 2012, paras. 58–59 and *X v. Turkey*, Judgment, 9 October 2012, para. 62.

17. See, e.g., Report of the Special Rapporteur on extrajudicial, summary or arbitrary executions, Christof Heyns on his mission to India in 2012, UN doc. A/HRC/29/37/Add.3, 6 May 2015, para. 47.

18. See, e.g., Report of the Special Rapporteur on extrajudicial, summary or arbitrary executions to the Human Rights Council, UN doc. A/HRC/11/2, 27 May 2009, paras. 43–59, which concerns the killing of alleged "witches". On "social cleansing" (killings of gang members, criminal suspects and other "undesirables"), see Report on Mission to Guatemala, UN doc. A/HRC/4/20/Add.2, 19 February 2007; as regards effective investigation into the killing of "street children" see IACtHR, *Villagrán-Morales et al. v. Guatemala*, Judgment, 19 November 1999.

19. See, e.g., ECtHR, *Öneriyıldız v. Turkey*, Judgment (Grand Chamber), 30 November 2004.

- (c) **Investigate potentially unlawful death, ensure accountability and remedy violations.** The duty to investigate is an essential part of upholding the right to life.²⁰ The duty gives practical effect to the duties to respect and protect the right to life, and promotes accountability and remedy where the substantive right may have been violated. Where an investigation reveals evidence that a death was caused unlawfully, the State must ensure that identified perpetrators are prosecuted and, where appropriate, punished through a judicial process.²¹ Impunity stemming from, for example, unreasonably short statutes

of limitations or blanket amnesties (de jure impunity), or from prosecutorial inaction or political interference (de facto impunity), is incompatible with this duty.²² A failure to respect the duty to investigate is a breach of the right to life. Investigations and prosecutions are essential to deter future violations and to promote accountability, justice, the rights to remedy and to the truth, and the rule of law.²³

9. Depending on the circumstances, States also have a duty to cooperate internationally in investigations of potentially unlawful death, in particular when it concerns an alleged international crime such as extrajudicial execution.²⁴

B. Accountability and Remedy

10. Persons whose rights have been violated have the right to a full and effective remedy.²⁵ Family members of victims of unlawful death have the right to equal and effective access to justice; to adequate, effective and prompt reparation;²⁶ to recognition of their status before the law;²⁷ and to have access to relevant information concerning the violations and relevant accountability mechanisms. Full reparation includes restitution, compensation, rehabilitation, guarantees of non-repetition, and satisfaction.²⁸ Satisfaction includes government verification of the facts and public disclosure of the truth, an accurate accounting for of the legal violations, sanctions against those responsible for the violations, and the search for the disappeared and for the bodies of those killed.²⁹
11. Family members have the right to seek and obtain information on the causes of a killing and to learn the truth about the circumstances, events and causes that led to it.³⁰ In cases of potentially unlawful death, families have the right, at a minimum, to information about the circumstances, location and condition of the remains and, insofar as it has been determined, the cause and manner of death.

20. See, e.g., ECtHR, *McCann et al. v. United Kingdom*, Judgment (Grand Chamber), 27 September 1995, para. 161; IACtHR, *Montero-Aranguren et al. (Detention Center of Catia) v. Venezuela*, Judgment, 5 July 2006, para. 66; African Commission on Human and Peoples' Rights (ACHPR), General Comment No. 3 on the Right to Life, November 2015, paras. 2, 15; Human Rights Committee, General Comment No. 31, paras. 15 and 18.

21. UN Commission on Human Rights, Updated Set of Principles for the Protection and Promotion of Human Rights through Action to Combat Impunity, UN doc. E/CN.4/2005/102/Add.1, 8 February 2005, Principle 1.

22. See, e.g., Human Rights Committee, General Comment No. 31, para. 18.

23. Report of the UN Special Rapporteur on extrajudicial, summary or arbitrary executions to the General Assembly, UN doc. A/70/304; Preamble to the UN Basic Principles and Guidelines on the Right to Remedy and Reparation.

24. See, e.g., IACtHR, *La Cantuta v. Peru*, Judgment, 29 November 2006, para. 160.

25. See UN Basic Principles and Guidelines on the Right to Remedy and Reparation; Updated Set of Principles for the Protection and Promotion of Human Rights through Action to Combat Impunity, Principle 4; Art. 2(3), ICCPR.

26. Reparation includes restitution, compensation, rehabilitation, guarantees of non-repetition, and satisfaction. See, e.g., Working group on Enforced or Involuntary Disappearances (WGEID), General Comment on Article 19 of the Declaration on the Protection of All Persons from Enforced Disappearance, UN doc. E/CN.4/1998/43, paras. 68-75; and Report of the Working Group on Enforced or Involuntary Disappearances, UN doc. A/HRC/22/45, 28 January 2013, paras. 46-68.

27. Art. 24(6) ICPED obliges States Parties to adopt adequate measures (for example, issuing certificates of absence due to enforced disappearance) to regulate the legal status of a disappeared person and his/her relatives in fields such as social welfare, family law and property rights. See WGEID, General comment on the right to recognition as a person before the law in the context of enforced disappearances, General Comment No. 11, 2011, in UN doc. A/HRC/19/58/Rev.1 (2012), para. 42.

28. See, e.g., Human Rights Committee, General Comment No. 31, *op. cit.*, paras. 15-17 and 19; Art. 24, ICPED; and Committee on Enforced Disappearance, *Yrusta v. Argentina*, Views (Comm. No. 1/2013), April 2016.

29. See UN Basic Principles and Guidelines on the Right to Remedy and Reparation, para. 22.

30. See, e.g., UN General Assembly Resolution 68/165, adopted on 18 December 2013; ICPED Arts. 12 and 24(2); WGEID, General Comment on the right to the truth in relation to enforced disappearance, General Comment No. 10, in Report of the Working Group on Enforced or Involuntary Disappearances, UN doc. A/HRC/16/48, 26 January 2011, para. 39. Inter-American Commission on Human Rights (IACHR), Report on the Demobilization Process in Colombia, OEA/Ser.L/V/II.120, Doc. 60, December 13, 2004, para. 18, citing, inter alia, IACHR, Annual Report of the Inter-American Commission on Human Rights 1985-86, OEA/Ser.L/V/II.68, Doc. 8 rev. 1, 26 September 1986, chap. V.

12. In potential cases of enforced disappearance, under the International Convention for the Protection of All Persons from Enforced Disappearance families have the right, at a minimum, to information about the authorities responsible for the disappearance and deprivation of liberty, the dates and place of the disappearance, and any transfers, and the victim's whereabouts.³¹ Determining the final whereabouts of the disappeared person is fundamental to easing the anguish and suffering of family members caused by the uncertainty as to the fate of their disappeared relative.³² A violation is ongoing as long as the fate or whereabouts of the disappeared is not determined.³³
13. The right to know the truth³⁴ extends to society as a whole, given the public interest in the prevention of, and accountability for, international law violations.³⁵ Family members and society as a whole both have a right to information held in a state's records that pertains to serious violations, even if those records are held by security agencies or military or police units.³⁶
14. In armed conflict, all parties must take all feasible measures to account for persons reported missing as a result of the conflict, and to provide family members with any information they have on the fate of their relatives.³⁷ In the event of death, all parties must use all means at their disposal to identify the dead, including by recording all available information prior to the disposal of the body and by marking the location of graves; and in a situation of international armed conflict they must at least endeavour to facilitate the return of the remains of the deceased at the request of, inter alia, the next of kin.³⁸ Moreover, each Party to an international armed conflict has to establish an information bureau to forward any information regarding, among other things, the death of protected persons in its hands to the power to which these persons belong.³⁹

C. The Triggering and Scope of the Duty to Investigate

15. A State's duty to investigate is triggered where it knows or should have known of any potentially unlawful death, including where reasonable allegations of a potentially unlawful death are made.⁴⁰ The duty to investigate does not apply only where the State is in receipt of a formal complaint.⁴¹
16. The duty to investigate any potentially unlawful death includes all cases where the State has caused a death or where it is alleged or suspected that the State caused a death (for example, where law enforcement officers used force that may have contributed to the death). This duty, which applies to all peacetime situations and to all cases during an armed conflict outside the conduct of hostilities, exists regardless of whether it is suspected or alleged that the death was unlawful. The duty to investigate potentially unlawful death caused during the conduct of hostilities is specifically addressed in Paragraph 21.
17. Where a State agent has caused the death of a detainee, or where a person has died in custody, this must be reported, without delay, to a judicial or other competent authority that is independent of the detaining authority and mandated to conduct prompt, impartial and effective investigations into

31. Under the ICPED, a victim is not only the person who is subjected to enforced disappearance but "any individual who has suffered harm as the direct result" of the crime (ICPED, Art. 24). As a consequence, the family and the community to which the disappeared person belonged can all be regarded as victims under the Convention. See also ICPED, Art. 12.

32. IACHR, Report on the Right to Truth in the Americas, August 2014; see also WGEID, General Comment on the right to the truth in relation to enforced disappearance, para. 4.

33. ICPED, Arts. 18 and 24(6); and General Comment on enforced disappearance as a continuous crime, General Comment No. 9, in Report of the Working Group on Enforced or Involuntary Disappearances, UN doc. A/HRC/16/48, 26 January 2011, para. 39. Under Art. 24(1), for the purposes of the ICPED, "victim" means the disappeared person and any individual who has suffered harm as the direct result of an enforced disappearance."

34. See, e.g., Art. 2, ICCPR and Art. 24, ICPED. See also Principles 2-5, Updated Set of principles for the protection and promotion of human rights through action to combat impunity, UN doc. E/CN.4/2005/102/Add.1; and see also UN docs. E/CN.4/2004/88 and E/CN.4/2006/91.

35. See, e.g., IACtHR, *Slaughter of the Rochela v. Colombia*, Judgment, 11 May 2007, para. 195; IACtHR, *Bámaca Velásquez v. Guatemala*, Judgment, 25 November 2000, para. 197.

36. Tshwane Principles on National Security and the Right to Information, 2013, Principle 10.

37. 1977 Additional Protocol to the 1949 Geneva Conventions, Relating to the Protection of Victims of International Armed Conflicts (1977 Additional Protocol I), Arts. 32, 33; International Committee of the Red Cross (ICRC), Customary IHL Study, Rule 117.

38. ICRC, Customary IHL Study, Rules 116 and 114; 1949 Geneva Convention I, Arts. 16, 17; 1949 Geneva Convention II, Arts. 19, 20; 1949 Geneva Convention III, Art. 120; 1949 Geneva Convention IV, Arts. 129, 130; and 1977 Additional Protocol I, Art. 34.

39. 1949 Geneva Convention I, Art. 16; 1949 Geneva Convention II, Art. 19; 1949 Geneva Convention III, Arts. 120, 122; 1949 Geneva Convention IV, Art. 136. Where relevant, this duty applies, *mutatis mutandis*, to enforced disappearance.

40. ECtHR, *Ergi v. Turkey*, Judgment, 28 July 1998, para. 82; *Isayeva, Yusopva and Bazayeva v. Russia*, Judgment, 24 February 2005, paras. 208-09; IACtHR, *Montero-Aranguren et al. v. Venezuela*, Judgment, 5 July 2006, para. 79.

41. See the Nelson Mandela Rules, Rule 71(1).

the circumstances and causes of such a death.⁴² This responsibility extends to persons detained in prisons, in other places of detention (official or otherwise) and to persons in other facilities where the State exercises heightened control over their life. Owing to the control exercised by the State over those it holds in custody, there is a general presumption of state responsibility in such cases.⁴³ Without prejudice to the obligations of the State, the same presumption of responsibility will apply to the authorities managing private prisons. Particular circumstances in which the State will be held responsible for the death, unless it is proven to the contrary, include, for example, cases where the person suffered injury while in custody or where the deceased was, prior to his or her death, a political opponent of the government or a human rights defender; was known to be suffering from mental health issues; or committed suicide in unexplained circumstances. In any event, the State is under the obligation to provide all relevant documentation to the family of the deceased, including the death certificate, medical report and reports on the investigation held into the circumstances surrounding the death.⁴⁴

18. Consonant with its responsibilities under international law, the State also has a duty to investigate all potentially unlawful death caused by individuals, even if the State cannot be held responsible for failing to prevent such deaths.⁴⁵
19. The duty to investigate applies wherever the State has a duty to respect, protect and/or fulfil the right to life, and in relation to any alleged victims or perpetrators within the territory of a state or otherwise subject to a state's jurisdiction.⁴⁶ Each State should ensure that an appropriate avenue is available for allegations of potentially unlawful death to be made and for relevant information to be provided. Where the duty to investigate applies, it applies to all States that may have

contributed to the death or which may have failed to protect the right to life.

20. The duty to investigate a potentially unlawful death – promptly, effectively and thoroughly, with independence, impartiality and transparency – applies generally during peacetime, situations of internal disturbances and tensions, and armed conflict. In the context of armed conflict, the general principles set out in Paragraphs 15-19 and 22-33 must, however, be considered in light of both the circumstances and the underlying principles governing international humanitarian law (IHL). Certain situations, such as armed conflict, may pose practical challenges for the application of some aspects of the Protocol's guidance.⁴⁷ This is particularly the case with regard to the obligation on a State, as opposed to another actor, to investigate deaths linked to armed conflict when they occur on territory the State does not control. Where context-specific constraints prevent compliance with any part of the guidance in this Protocol, the constraints and reasons for non-compliance should be recorded and publicly explained.
21. Where, during the conduct of hostilities, it appears that casualties have resulted from an attack, a post-operation assessment should be conducted to establish the facts, including the accuracy of the targeting.⁴⁸ Where there are reasonable grounds to suspect that a war crime was committed, the State must conduct a full investigation and prosecute those who are responsible.⁴⁹ Where any death is suspected or alleged to have resulted from a violation of IHL that would not amount to a war crime, and where an investigation ("official inquiry") into the death is not specifically required under IHL, at a minimum further inquiry is necessary. In any event, where evidence of unlawful conduct is identified, a full investigation should be conducted.

42. Report of the Special Rapporteur on extrajudicial, summary or arbitrary executions, UN doc. A/61/311, 5 September, 2006, paras. 49-54.

43. Human Rights Committee, *Barbato v. Uruguay*, Views (Comm. No. 84/1981), UN doc. CCPR/C/OP/2 at 112 (1990), para. 9.2.

44. ECtHR, *Opuz v. Turkey*, Judgment, 9 June 2009, para. 150.

45. See, e.g., Human Rights Committee, General Comment No. 31, *op. cit.*, para. 10; ACHPR, General Comment No. 3 on the Right to Life, November 2015. See also ECtHR, *Hassan v. UK*, Judgment (Grand Chamber), 16 September 2014, para. 78.

46. See, e.g., ECtHR, *Jaloud v. The Netherlands*, Judgment (Grand Chamber), 20 November 2014, para. 164: "It is clear that where the death to be investigated occurs in circumstances of generalised violence, armed conflict or insurgency, obstacles may be placed in the way of investigators... Nonetheless, even in difficult security conditions, all reasonable steps must be taken to ensure that an effective, independent investigation is conducted into alleged breaches of the right to life."

47. See The Public Commission to Examine the Maritime Incident of 31 May 2010, Second Report: Turkel Commission, "Israel's mechanisms for examining and investigating complaints and claims of violations of the laws of armed conflict according to international law", February 2013 (hereafter, Turkel II), paras. 48-50, pp. 102-03.

48. See The Public Commission to Examine the Maritime Incident of 31 May 2010, Second Report: Turkel Commission, "Israel's mechanisms for examining and investigating complaints and claims of violations of the laws of armed conflict according to international law", February 2013 (hereafter, Turkel III), paras. 48-50, pp. 102-03.

49. For a discussion of the duty to investigate violations of international humanitarian law (IHL) see ICRC Customary IHL Study, Rule 158 (Prosecution of War Crimes): "States must investigate war crimes allegedly committed by their nationals or armed forces, or on their territory... They must also investigate other war crimes over which they have jurisdiction and, if appropriate, prosecute the suspects." In the case of grave breaches of the Geneva Conventions, the exercise of universal jurisdiction is mandatory. See the 1949 Geneva Conventions: Geneva I, Art. 49; Geneva II, Art. 50; Geneva III, Art. 129; Geneva IV, Art. 146; the 1977 Additional Protocol I, Art. 85; and see also the Basic Principles and Guidelines on the Right to a Remedy and Reparation for Victims of Gross Violations of International Human Rights Law and Serious Violations of International Humanitarian Law, UN General Assembly Resolution 60/147, 21 March 2006; Report of the UN Special Rapporteur on extrajudicial, summary or arbitrary executions, UN doc. A/68/382 13 September 2013, para. 101. See also, e.g., Report of the UN Special Rapporteur on the Promotion and Protection of Human Rights and Fundamental Freedoms While Countering Terrorism, UN doc. A/68/389, 18 September 2013, para. 42.

D. Elements and Principles of Investigations

1. **Elements of the duty to investigate**
22. International law requires that investigations be: (i) prompt; (ii) effective and thorough; (iii) independent and impartial; and (iv) transparent.⁵⁰
 - i. **Prompt**
23. The rights to life and to an effective remedy are violated when investigations into potentially unlawful death are not conducted promptly.⁵¹ Authorities must conduct an investigation as soon as possible and proceed without unreasonable delays.⁵² Officials with knowledge of a potentially unlawful death must report it to their superiors or proper authorities without delay.⁵³ The duty of promptness does not justify a rushed or unduly hurried investigation.⁵⁴ The failure of the State promptly to investigate does not relieve it of its duty to investigate at a later time: the duty does not cease even with the passing of significant time.
 - ii. **Effective and thorough**
24. Investigations of any potentially unlawful death or enforced disappearance must be effective and thorough. Investigators should, to the extent possible, collect and confirm (for example by triangulation) all testimonial, documentary and physical evidence. Investigations must be capable of: ensuring accountability for unlawful death; leading to the identification and, if justified by the evidence and seriousness of the case, the prosecution and punishment of all those responsible;⁵⁵ and preventing future unlawful death.
25. Investigations must, at a minimum, take all reasonable steps to:
 - (a) Identify the victim(s)
 - (b) Recover and preserve all material probative of the cause of death, the identity of the perpetrator(s) and the circumstances surrounding the death⁵⁶
 - (c) Identify possible witnesses and obtain their evidence in relation to the death and the circumstances surrounding the death
 - (d) Determine the cause, manner, place and time of death, and all of the surrounding circumstances. In determining the manner of death, the investigation should distinguish between natural death, accidental death, suicide and homicide;⁵⁷ and
 - (e) Determine who was involved in the death and their individual responsibility for the death.It will almost always be the case that these aims will be materially assisted in some way by the performance of an autopsy. A decision not to undertake an autopsy should be justified in writing and should be subject to judicial review. In the case of an enforced disappearance, an investigation must seek to determine the fate of the disappeared and, if applicable, the location of their remains.⁵⁸
26. The investigation must determine whether or not there was a breach of the right to life. Investigations must seek to identify not only direct perpetrators but also all others who were responsible for the death, including, for example, officials in the chain of command who were complicit in the death. The investigation should seek to identify any failure to take reasonable measures which could have had a real prospect

50. See Human Rights Committee, General Comment No. 31, *op. cit.*, para. 15; UN Fact-Finding Mission on the Gaza Conflict, para. 1814; see also UN Basic Principles on the Use of Force and Firearms by Law Enforcement Officials, Principles 22 and 23; IACtHR, *Gómez Palomino v. Peru*, Judgment, 22 November 2005, para. 79 ff; and *Landaeta Mejías Brothers et al. v. Venezuela*, Judgment, 27 August 2014, para. 254; ACHPR, *Amnesty International et al. v. Sudan*, 11 November 1999, para. 51; ACHPR, General Comment No. 3 on the Right to Life, para. 7; ICPEd, Art. 12(1).

51. IACtHR, *Garibaldi v. Brazil*, Judgment, 23 September 2009, para. 139. For the requirement during armed conflict, see, e.g., Report of the detailed findings of the independent commission of inquiry established pursuant to Human Rights Council resolution S-21/1, UN doc. A/HRC/29/CRP.4, 24 June 2015, para. 625; *Turkel II*, Recommendation 10, para. 66, p. 399.

52. *Turkel II*, paras. 37, 63-66; pp. 385, 397-99.

53. IACtHR, *Anzualdo Castro v. Peru*, Judgment, 22 September 2009, para. 134.

54. ECtHR, *Pomilyayko v. Ukraine*, Judgment, 11 February 2016, para. 53.

55. Human Rights Committee, *José Antonio Coronel et al. v. Colombia*, Views (Comm. No. 778/1997), 24 October 2002; *Sathasivam v. Sri Lanka*, Views (Comm. No. 1436/2005), 8 July 2008; and *Abubakar Amirov et al. v. Russia*, Views (Comm. No. 1447/2006), 2 April 2009. Working Group on Enforced or Involuntary Disappearances, General Comment on the Right to the Truth in Relation to Enforced Disappearances, para. 5.

56. This should include telephone logs or reports, as well as digital evidence contained on mobile telephones, computers, cameras and other electronic devices.

57. IACtHR, *Véliz Franco et al. v. Guatemala*, 2011, para. 191.

58. See ICPEd, Art. 24(2) and (3).

of preventing the death. It should also seek to identify policies and systemic failures that may have contributed to a death, and identify patterns where they exist.⁵⁹

27. An investigation must be carried out diligently and in accordance with good practice.⁶⁰ The investigative mechanism charged with conducting the investigation must be adequately empowered to do so. The mechanism must, at a minimum, have the legal power to compel witnesses and require the production of evidence,⁶¹ and must have sufficient financial and human resources, including qualified investigators and relevant experts.⁶² Any investigative mechanism must also be able to ensure the safety and security of witnesses, including, where necessary, through an effective witness protection programme.

iii. Independent and impartial

28. Investigators and investigative mechanisms must be, and must be seen to be, independent of undue influence. They must be independent institutionally and formally, as well as in practice and perception, at all stages. Investigations must be independent of any suspected perpetrators and the units, institutions or agencies to which they belong. Investigations of law enforcement killings, for example, must be capable of being carried out free from undue influence that may arise from institutional hierarchies and chains of command. Inquiries into serious human rights violations, such as extrajudicial executions and torture, must be conducted under the jurisdiction of ordinary civilian courts. Investigations must also be free from undue external influence, such as the interests of political parties or powerful social groups.
29. Independence requires more than not acting on the instructions of an actor seeking to influence an investigation inappropriately. It means that the investigation's decisions shall not be unduly altered by the presumed or known wishes of any party.

30. Investigators must be able to perform all of their professional functions without intimidation, hindrance, harassment or improper interference, and must be able to operate free from the threat of prosecution or other sanctions for any action taken in accordance with recognized professional duties, standards and ethics. This applies equally to lawyers, whatever their relationship to the investigation.⁶³
31. Investigators must be impartial and must act at all times without bias. They must analyse all evidence objectively. They must consider and appropriately pursue exculpatory as well as inculpatory evidence.

iv. Transparent

32. Investigative processes and outcomes must be transparent, including through openness to the scrutiny of the general public⁶⁴ and of victims' families. Transparency promotes the rule of law and public accountability, and enables the efficacy of investigations to be monitored externally. It also enables the victims, defined broadly, to take part in the investigation.⁶⁵ States should adopt explicit policies regarding the transparency of investigations. States should, at a minimum, be transparent about the existence of an investigation, the procedures to be followed in an investigation, and an investigation's findings, including their factual and legal basis.
33. Any limitations on transparency must be strictly necessary for a legitimate purpose, such as protecting the privacy and safety of affected individuals,⁶⁶ ensuring the integrity of ongoing investigations, or securing sensitive information about intelligence sources or military or police operations. In no circumstances may a state restrict transparency in a way that would conceal the fate or whereabouts of any victim of an enforced disappearance or unlawful killing, or would result in impunity for those responsible.

59. For example, in order to establish the element of "widespread or systematic", evidence of the same chronology of events in different towns could be valuable (e.g. the arming of certain groups within the area, the arrival of paramilitaries into an area shortly before mass killings, communication and interaction between military and paramilitary groups, action by the military in support of paramilitary groups (e.g. shelling in advance of ground movement by paramilitaries), the establishment of detention facilities as part of a take-over plan, transfer of prisoners in an organized way between detention facilities in different towns, advanced preparation of mass graves, or templated paperwork used for the arrest, detention and transfer of prisoners).

60. See, e.g., Human Rights Committee, *Abubakar Amirov et al. v. Russia*, paras. 11.4 ff.; IACtHR, *Rodríguez Vera et al. (The Disappeared from the Palace of Justice) v. Colombia*, Judgment, 14 November 2014, para. 489.

61. ECtHR, *Paul and Audrey Edwards v. UK*, Judgment, 14 March 2002.

62. IACtHR, *"Mapiripán Massacre" v. Colombia*, Judgment, 15 September 2005, para. 224.

63. UN Basic Principles on the Role of Lawyers, Principles 16 and 17.

64. A victim's immediate family "must be involved in the procedure to the extent necessary to safeguard his or her legitimate interests". UN Special Rapporteur on extrajudicial, summary or arbitrary executions, Interim Report, UN doc. A/65/321, 23 August 2010; ECtHR, *Hugh Jordan v. UK*, Judgment, 4 May 2001, para. 109. See also ACHPR, General Comment No. 3 on the Right to Life, para. 7.

65. See ICPED, Arts. 12 and 24.

66. Under Art. 137 of 1949 Geneva Convention IV, information concerning a protected person, including about his/her death, may be withheld by the Information Bureau if transmission is "detrimental" to the relatives.

2. Relevant international principles and codes

34. Investigators and law enforcement officials should have regard for all relevant international standards, principles and codes. These include, in addition to the Principles and Protocol, the 1985 UN Basic Principles on the Independence of the Judiciary,⁶⁷ the 1990 UN Basic Principles on the Role of Lawyers,⁶⁸ the 1990 UN Guidelines on the Role of Prosecutors,⁶⁹ as well as the 1979 UN Code of Conduct for Law Enforcement Officials⁷⁰ and the 1990 Basic Principles on the Use of Force and Firearms by Law Enforcement Officials.⁷¹ Investigators should also be guided by the Siracusa Guidelines,⁷² the Lund-London Guidelines,⁷³ the OHCHR's Commission of Inquiry Guidance,⁷⁴ and the 2015 "Nelson Mandela Rules".⁷⁵

3. The participation and protection of family members during an investigation

35. The participation of the family members⁷⁶ or other close relatives of a deceased or disappeared person is an important element of an effective investigation.⁷⁷ The State must enable all close relatives to participate effectively in the investigation, though without compromising its integrity. The relatives of a deceased person must be sought, and informed of the investigation. Family members should be granted legal standing, and the investigative mechanisms or authorities should keep them informed of the progress of the investigation, during all its phases, in a timely manner.⁷⁸ Family members must be enabled by the investigating authorities to make suggestions and arguments as to what investigative steps are necessary, provide evidence, and assert their interests and rights throughout the process.⁷⁹ They should be informed of, and have access to, any

hearing relevant to the investigation, and they should be provided with information relevant to the investigation in advance. Where necessary to ensure that the family members are able to participate effectively, the authorities should provide funding for a lawyer to represent them. In the case of a child (and where there are no other relatives), a trusted adult or guardian (who may not be related to the deceased or disappeared person) may represent the interests of the child. In certain circumstances – for example, where family members are suspected perpetrators – these rights may be subject to restrictions, but only where, and to the extent, strictly necessary to ensure the integrity of the investigation.

36. Family members should be protected from any ill-treatment, intimidation or sanction as a result of their participation in an investigation or their search for information concerning a deceased or disappeared person. Appropriate measures should be taken to ensure their safety, physical and psychological well-being, and privacy.
37. Family members have specific rights in relation to human remains. When the identity of a deceased person has been determined, family members should be informed immediately and thereafter a notification of death posted in an easily accessible way. To the extent possible, family members should also be consulted prior to an autopsy. They should be entitled to have a representative present during the autopsy. Upon completion of the necessary investigative procedures, human remains should be returned to family members, allowing them to dispose of the deceased according to their beliefs.

67. Adopted by the Seventh UN Congress on the Prevention of Crime and the Treatment of Offenders held at Milan from 26 August to 6 September 1985 and endorsed by General Assembly Resolutions 40/32 of 29 November 1985 and 40/146 of 13 December 1985.

68. Adopted by the Seventh UN Congress on the Prevention of Crime and the Treatment of Offenders and endorsed by General Assembly Resolutions 40/32 of 29 November 1985 and 40/146 of 13 December 1985.

69. Adopted by the Eighth UN Congress on the Prevention of Crime and the Treatment of Offenders, Havana, 27 August to 7 September 1990.

70. Adopted by UN General Assembly Resolution 34/169 of 17 December 1979.

71. Adopted by the Eighth UN Congress on the Prevention of Crime and the Treatment of Offenders, Havana, 27 August to 7 September 1990.

72. Siracusa Guidelines for International, Regional and National Fact-Finding Bodies, adopted by the International Institute in Higher Studies in Criminal Sciences, Siracusa, Italy, 2013.

73. The International Human Rights Fact-Finding Guidelines (The Lund-London Guidelines) were produced by the International Bar Association's Human Rights Institute and the Raoul Wallenberg Institute in 2009 and revised in 2015.

74. OHCHR, *Commissions of Inquiry and Fact-Finding Missions on International Human Rights and Humanitarian Law, Guidance and Practice*, 2015.

75. UN Standard Minimum Rules for the Treatment of Prisoners (the "Nelson Mandela Rules"), adopted by UN General Assembly Resolution 70/175 of 17 December 2015.

76. The term "family" in this Protocol should be understood broadly as applying to the relatives of the deceased.

77. Report of the Special Rapporteur on the promotion of truth, justice, reparation and guarantees of non-recurrence, Mr. Pablo de Greiff, UN doc. A/HRC/21/46, 9 August 2012, para. 54.

78. See, e.g., IACtHR, *Villagrán-Morales et al. v. Guatemala*, Judgment, 19 November 1999, paras. 225, 227, 229.

79. UN Principles on the Effective Prevention and Investigation of Extra-legal, Arbitrary and Summary Executions, Principle 16; IACHR, *Manuel Stalin Bolaños v. Ecuador*, Report No. 10/95, Case 10.580, 12 September 1995, para. 45.

4. Investigative mechanisms

38. The duty to investigate does not necessarily call for one particular investigative mechanism in preference to another. States may use a wide range of mechanisms consistent with domestic law and practice, provided those mechanisms meet the international law requirements of the duty to investigate. Whether a police investigation, a coronial inquest, an investigation by an independent police oversight body, an investigation by a judge, special prosecutor or national human rights institution, or any other investigation, complies with the duty to investigate, is a matter to be determined in the light of the international legal obligations and commitments of the State. Whichever mechanisms are used, however, they must, as a whole, meet the minimum requirements set out in these Guidelines.
39. In specific circumstances a State may establish a special mechanism such as a commission of inquiry or another transitional justice mechanism. An international investigation mechanism with the expertise and capacity to conduct an independent and objective investigation may be appropriate. The requirements of promptness, effectiveness and thoroughness, independence and impartiality, and transparency apply equally to investigations undertaken by these mechanisms.⁸⁰
40. States must ensure that special mechanisms do not undermine accountability by, for example, unduly delaying or avoiding criminal prosecutions. The effective conduct of a special investigative mechanism – designed, for example, to investigate the systemic causes of rights violations or to secure historical memory – does not in itself satisfy a state’s obligation to prosecute and punish, through judicial processes, those responsible for an unlawful death. Accordingly, while special mechanisms may play a valuable role in conducting investigations in certain circumstances, they are unlikely on their own to fulfil the State’s duty to investigate. Fulfilment of that duty may require a combination of mechanisms.

80. In designing such mechanisms, States should have regard to the principles relating to commissions of inquiry contained in the Set of Principles to Combat Impunity, the OHCHR’s Commissions of Inquiry and Fact-Finding Missions Guidance and Practice and the Siracusa Guidelines for International, Regional and National Fact-Finding Bodies.

III.

PROFESSIONAL ETHICS

41. All those involved in investigating potentially unlawful death must meet the highest professional and ethical standards at all times. They must work to secure the integrity and effectiveness of the investigation process and to advance the goals of justice and human rights. Those involved in investigations bear ethical responsibilities toward victims, their family members and others affected by an investigation, and they must respect the safety, privacy, well-being, dignity and human rights of anyone affected, working in accordance with the applicable humanitarian principles, in particular humanity and impartiality.
42. When dealing with family members, potential witnesses and others contacted in the course of an investigation, investigators must take care to minimize the harm that the investigation process may cause, especially regarding the physical and mental well-being of those involved in the investigation and the dignity of the dead. Special consideration is required for those at particular risk of harm, such as victims of sexual abuse, children, the elderly, refugees and persons with disabilities.
43. Investigators shall act in accordance with domestic and international law and shall avoid arbitrary or unduly intrusive investigatory activity. They should endeavour to respect the culture and customs of all persons affected by the investigation, as well as the wishes of family members, while still fulfilling their duty to conduct an effective investigation.⁸¹
44. Any forensic doctor involved in the investigation of a potentially unlawful death has responsibilities to justice, to the relatives of the deceased, and more generally to the public. To discharge these responsibilities properly, forensic doctors, including forensic pathologists, must act independently and impartially. Whether or not they are employed by the police or the State, forensic doctors must understand clearly their obligations to justice (not to the police or the State) and to the relatives of the deceased, so that a true account is provided of the cause of death and the circumstances surrounding the death.
45. More generally, as stipulated by the International Code of Medical Ethics of the World Medical Association (WMA), “A physician shall be dedicated to providing competent medical service in full professional and moral independence, with compassion and respect for human dignity.”⁸² For its full realization, this also requires the State to create the circumstances in which such independence can be exercised, including by protecting the forensic doctor from harm or harassment as a result of involvement with potentially sensitive case work.

81. International Consensus on Principles and Minimum Standards in Search Processes and Forensic Investigations in cases of Enforced Disappearances, Arbitrary or Extrajudicial Executions, Annex 6 in International Commission of Jurists, *Enforced Disappearance and Extrajudicial Execution: Investigation and Sanction, A Practitioners Guide*, 2015.

82. WMA, International Code of Medical Ethics, at: <http://www.wma.net/en/30publications/10policies/c8/>.

IV.

CONDUCT OF AN INVESTIGATION

46. This section of the Minnesota Protocol describes the strategies and practical steps that should be taken in an effective investigation of a potentially unlawful death. These represent good practice in any investigation notwithstanding the specificities of local laws, practices and procedures. The general guidance offered in this section is complemented by sections providing detailed guidelines on, respectively, crime-scene investigation, the conduct of interviews, the excavation of graves, the conduct of an autopsy, and the analysis of skeletal remains.

A. General Principles of Investigations

47. In any investigation, the preservation of life – the lives of both the public and the investigative team – is paramount. All activities should be risk-assessed, especially when being carried out in areas affected by conflict. Members of the public and the investigation team should not be unduly placed in harm's way.

48. The overarching strategy of any investigation should be methodical and transparent, and all legitimate lines of inquiry into potentially unlawful death should be pursued. Depending on the circumstances, both routine investigative steps and highly specialized techniques may be required. A hierarchy should be established that includes accountability for all the decisions the investigation team takes.

49. An investigation may gather many different types of material, not all of which will be used as evidence in a judicial proceeding. Nevertheless, all materials and observations relevant to the investigation should be secured, recorded and logged. This includes all decisions taken, information gathered, and witness statements. The source, date and time of collection of all material must also be logged.

B. The Investigation Process

50. When a report or allegation of a potentially unlawful death is submitted or brought to the attention of the authorities, an initial investigation should be conducted to identify lines of inquiry and further actions. This includes identifying all sources of potential evidence and prioritizing the collection and preservation of that evidence. All relevant witness statements should be collected, including but not limited to accounts

of events provided by law enforcement personnel. Once a significant body of evidence has been collected and analysed, preliminary conclusions should be developed and compiled into a single report. The report should detail the lines of inquiry pursued and the outcome of these inquiries, and should recommend further inquiries that may advance the investigation.

51. A detailed analysis of information known about the circumstances of the death and those believed to be responsible should be provided in a written report. The report should include the following key information: the identity and official status of the individual making the initial report; the circumstances under which the report was made; the identity(ies) of the victim(s) (if known); the date(s), time(s) and location(s) of the death(s); the location(s) of the victim(s); the method(s) of causing the death(s); the individual(s) or organization(s) believed to be responsible; the underlying reason(s) for the death(s); and other specific details. Areas in need of further investigation should be identified. An overall strategy for locating and gathering further material to support the investigation, and potential judicial proceedings, should be developed. A plan should be made for evidence collection.
 52. A set of operational and tactical processes, deriving from the overall strategy, should be designed. These processes should seek to establish significant facts, preserve relevant material and lead to the identification of all the parties involved. Activities should be planned and appropriate resources allocated in order to manage the following:
 - The collection, analysis and management of evidence, data and materials
 - The forensic examination of important physical locations, including the death/crime scene
 - Family liaison
 - The development of a victim profile
 - Finding, interviewing and protecting witnesses
 - International technical assistance
 - Telecommunications and other digital evidence
 - Financial issues
 - The chronology of events.⁸³
 53. The investigation strategies should be reviewed periodically or in light of new material (or new, more robust methods). A record of the review process should be kept, with all critical decisions noted and the evidence to support each one clearly referenced. Any change of direction in investigative strategy should be justified and recorded, with relevant material logged. The review process should be open, recorded, and disseminated to the investigation team members.
1. **Collecting and managing data and materials**
 54. Material should be collected in a systematic manner. An effective information management system is required to ensure that all material gathered is recorded, analysed and stored appropriately, taking into account security concerns. This system does not need to be complex or technologically advanced, but it should be comprehensive, consistent and secure in order to ensure that no material is lost, damaged, degraded or overlooked; that provides an audit trail that can demonstrate that evidence has not been tampered with; and that it can be easily found, referenced and cross-referenced.
 55. The gathering, recording and retaining of material – both inculpatory and exculpatory – requires expertise to ensure that all relevant evidence can be disclosed in any judicial process. The relevance of material may only become apparent as the investigation progresses. The investigation team must not, however, withhold information that could, for example, weaken the prosecution’s case in any judicial proceedings.
 2. **Important physical locations, including the death/crime scene**
 56. In the investigation of a potentially unlawful death there may or may not be a body in a known location, which in turn may or may not be the place where the death occurred.⁸⁴ Every important physical location in the investigation should be located and identified, including the site of encounters between the victim(s) and any identified suspects, the location of any crimes, and possible burial sites. GPS coordinates should be taken and recorded. The identity of the victim(s) will need to be established if this is not known. The lifestyle, routines and activities and the political, religious or economic background of the victim(s) may indicate possible reasons for the death. Missing person reports, family witness statements, dental and other reliable physical records (i.e. so-called ante-mortem data), as well as fingerprints and DNA (deoxyribonucleic acid), can be used to assist in identifying the deceased.

83. For more detail on these areas, see e.g. documentation by the UN Office on Drugs and Crime (<http://www.unodc.org>) and Interpol (<http://www.interpol.int>).

84. If investigators are unable to locate a body or remains they should continue to gather other direct and circumstantial evidence which may suffice for identifying the perpetrator(s).

57. If DNA profiling is to be used for identifying human remains, other means of identification should be used in parallel. The sample used to generate the profile and the profile itself are powerful repositories of information that must be safeguarded against misuse.⁸⁵ In profiling DNA to establish the probability of kinship as part of identifying the deceased, mistaken beliefs about kinship may be discovered. Dealing properly with such incidental findings is an ethical issue of great importance, and policies on this should be established in advance.⁸⁶
58. A crime scene is any physical scene where investigators may locate, record and recover physical evidence. The term “crime scene” is used without prejudice to the determination of whether a crime has actually occurred.⁸⁷ A crime scene may be a place where a person’s body or skeletal remains are found, as well as any relevant building, vehicle or place in the environment, including individual items within that environment such as clothing, a weapon or personal effects.
59. A crime scene should be secured at the earliest possible opportunity and unauthorized personnel shall not be permitted entry. This enables evidence at the scene to be protected and gathered effectively and minimizes the contamination or loss of relevant material. Securing the scene requires controlling the entrance and egress of individuals and, where possible, restricting access to trained personnel only. Even in medico-legal systems that do not require forensic doctors to visit a crime scene, such a visit may be valuable to the investigation. The scene and any evidence within it should be protected by the use of a cordon. Where possible and relevant, it should be protected from weather or other factors that could degrade evidence.
60. A record of all personnel entering the scene should be kept with the corresponding date and time of their visit. Individuals interacting with evidence should provide DNA and fingerprints as reference samples. To minimize forensic contamination and to protect the health and safety of personnel, suitable protective clothing should be worn wherever it is available, including, at a minimum, gloves and masks. To ensure that evidence is preserved, the correct packaging and methodology for each type of evidence need to be used. When resources or logistics do not allow for this, packaging that will minimize cross-contamination or the forensic degradation of the sample should be used.
61. All material located at a crime scene should be considered potentially relevant to the investigation. Material that may be found at a crime scene includes, but is not limited to, the following:
- (a) Documentary evidence, such as maps, photographs, staffing records, interrogation records, administrative records, financial papers, currency receipts, identity documents, phone records, letters of correspondence, and passports
 - (b) Physical evidence, such as tools, weapons, fragments of clothing and fibres, keys, paint, glass used in an attack, ligatures, and jewellery
 - (c) Biological evidence, such as blood, hair, sexual fluids, urine, fingernails, body parts, bones, teeth and fingerprints
 - (d) Digital evidence, such as mobile phones, computers, tablets, satellite phones, digital storage devices, digital recording devices, digital cameras and closed-circuit television (CCTV) footage.
62. All relevant material should be recorded in documentary and photographic form as described in the Detailed Guidelines on Crime-Scene Investigation. Investigations vary in their capability to examine the material scientifically, but effectively recording the crime scene using notes, sketch plans and photographs will be necessary. Crime-scene recording and recovery of evidence should be thorough.
63. Samples should ideally be recovered and recorded by personnel with appropriate training or knowledge. Some sampling requires only basic training, but those undertaking medico-legal examinations will need advanced training in the context of their own judicial framework.

85. See, e.g., ICRC, *Missing People, DNA Analysis and Identification of Human Remains: A Guide to Best Practice in Armed Conflicts and Other Situations of Armed Violence*, 2nd ed., 2009.

86. See, e.g., L.S. Parker, A.J. London, J.D. Aronson, “Incidental findings in the use of DNA to identify human remains: An ethical assessment”, *Forensic Science International: Genetics*, Vol. 7 (2013), pp. 221-29.

87. Even if a crime has not occurred, the death scene should be processed as though it is a crime scene.

64. Investigators should be appropriately equipped, including with personal protective equipment; relevant packaging such as bags, boxes and plastic and glass vials/bottles; and recording materials, including photographic equipment.
65. Every stage of evidence recovery, storage, transportation and forensic analysis, from crime scene to court and through to the end of the judicial processes, should be effectively recorded to ensure the integrity of the evidence. This is often referred to as the “chain of evidence” or “chain of custody”. Chain of custody is a legal, evidentiary concept requiring that any prospective item of evidence be conclusively documented in order to be eligible for admission as evidence in a legal proceeding. This includes the identity and sequence of all persons who possessed that item from the time of its acquisition by officials to its presentation in court. Any gaps in that chain of possession or custody can prevent the introduction of the item as evidence against a criminal defendant. Evidential material should be transported in a manner that protects it from manipulation, degradation and cross-contamination with other evidence. Each piece of evidence recovered, including human remains, should be uniquely referenced and marked to ensure its identification from point of seizure to analysis and storage. To meet chain of evidence and integrity requirements, the transportation, tracking and storage of this evidence should include the investigator’s details.
66. Evidential material should be kept in an appropriate storage facility at all stages of the investigation. Storage facilities should be clean, secure, suitable for maintaining items in appropriate conditions, and protected against unauthorized entry and cross-contamination. Digital evidence should be collected, preserved and analysed in accordance with international best practice.⁸⁸

3. Family liaison

67. Wherever it is feasible, a specific and suitably trained and experienced family liaison expert should be appointed to offer the family of the deceased information and support as well as to collect the information, such as ante-mortem data, required for identifying a deceased person.⁸⁹ The expert should meet the family at the earliest opportunity, should provide regular updates about the investigation, its progress and results, and should address any concerns the family may have as the investigation progresses.⁹⁰ A positive relationship with the family of any missing or deceased person can produce useful information and results for any investigation.

4. Understanding the victim

68. Lifestyle inquiries about the victim should be conducted and a victim profile developed. Appropriate sensitivity should be used with respect to, for example, findings of marital infidelity or other stigmatized sexual behaviour. The profile will test the working hypotheses of the case and assist in generating investigative opportunities where other lines of inquiry have been exhausted. It may also assist in identifying a motive for the crime. Information may be gathered from the victim’s associations, lifestyle, behaviour patterns and electronic devices.

5. Finding, interviewing and protecting witnesses

69. Individuals who might have information about a potentially unlawful death should be sought and interviewed. Publicizing the investigation may encourage witnesses and others to come forward in the knowledge that their information will be dealt with confidentially and sensitively.

88. See, e.g., Association of Chief Police Officers, “Good Practice Guide for Digital Evidence”, UK, http://www.digital-detective.net/digital-forensics-documents/ACPO_Good_Practice_Guide_for_Digital_Evidence_v5.pdf.

89. There will be circumstances when the authorities themselves are implicated in a suspicious death and liaison with the authorities to transmit and receive information about the investigation will not be acceptable to the family. Legal representatives for the family, or the involvement of non-governmental organizations, may be possible ways to ensure that important information is available.

90. See also Paras. 35–37 above.

70. The purposes of witness interviews are to:
- Obtain as much relevant information as possible, through a systematic and fair process, to assist the investigators in objectively establishing the truth
 - Identify possible suspects
 - Allow individuals an opportunity to provide information that they believe is relevant to establishing the facts
 - Identify further witnesses
 - Identify victims
 - Establish the location of crime scenes and burial sites
 - Establish background information and facts relevant to the alleged killing(s),⁹¹ and
 - Identify leads in the investigation.
71. Investigators conducting interviews should approach all witnesses with an open mind and observe the highest ethical standards. A careful assessment of risk, strategies and adequate human and financial resources must be in place to ensure the safety and security of all witnesses in the case. Families in some circumstances could, with reason, fear for their safety. Careful attention should also be paid to the safety of the investigator, since a witness may be the perpetrator.
72. A list of significant witnesses should be drawn up and their interviews prioritized. These witnesses include those who saw or heard the crime being committed, people with relevant knowledge of the victim(s) and/or suspected perpetrator(s), and people in the same organization or chain of command as the suspected perpetrator who may be able to provide information linking people other than the direct perpetrator to the death.⁹² Full statements should be taken from these witnesses. Where feasible and appropriately secure, investigators should consider recording their interviews by audio or video means. During the investigation phase, witness lists are highly sensitive and must be carefully safeguarded to ensure that witnesses are not exposed to undue risk. Electronic documents that may identify a witness should be taken outside the investigation office only in encrypted form. Access to hard-copy documents that may identify a witness must be restricted to the maximum extent possible.
73. House-to-house inquiries should be conducted in the vicinity of important physical locations and the crime scene, if it has been identified. House-to-house inquiries help the investigators to identify witnesses who live or work in key areas, gather local information and intelligence, identify other witnesses or suspects and raise awareness of the investigation, which may encourage people with information to come forward.
74. Interviews with family members and others to collect ante-mortem data for body identification – such as hair, blood, saliva samples, dental or chest X-rays, and information about possible bone fractures and other injuries or diseases – should be conducted by trained professionals who are in a position to answer technical questions authoritatively and with at least a basic knowledge of the correct medical and odontological terms. Proper equipment is needed to take samples, and donors should complete consent forms that state how the samples will be stored, who can access them, who manages the genetic database and how the data is to be used.
75. A media appeal may help to identify and locate people and material that could be useful to the investigation. This could include setting up a telephone hotline, an email address and/or a social media web page, which people could use for providing information to investigators confidentially or even anonymously. Consideration should also be given to offering a reward in return for relevant information.
76. A specific strategy should be developed, especially if a suspect is a state official, to ensure that anyone coming forward will be assured that the information they provide will be dealt with confidentially, within the limits of the law.

6. International technical assistance

77. The assistance of law enforcement agencies in other States may help the investigation cover any gaps in the technical capacity of local investigators. International bodies such as Interpol, for example, might be able to support the investigation, and humanitarian organizations such as the International Committee of the Red Cross (ICRC) might offer advice on forensic best practices for the proper and dignified management and identification of the dead in humanitarian contexts.

91. This may include, for example: the identity of political officials or military and paramilitary leaders; the identity and description of perpetrators; chains of command; communication codes and methods; details of official documentation linked to the killings; public announcements relevant to the crimes; interaction between military and political structures; the financing of military operations; and the chronology of events leading up to the killing(s).

92. For example, this could be through various modes of liability, including participation in a joint criminal enterprise, superior responsibility, ordering, aiding and abetting, planning, or instigating.

7. Telecommunications and other digital evidence

78. Within the confines of the applicable law, mobile telephone data should be requested from service providers. This information may help in establishing the identity, roles and relationships of persons of interest and their presence and participation in key activities (such as presence at key locations, attendance at meetings, the conduct of any surveillance, the procuring of materials and the execution of the crime). In planning an investigation, investigators should familiarize themselves with the data-retention policies of the service providers. Mobile phone data allows authorities to analyse the phone numbers that connect to a particular phone tower within a given period of time. Investigators can then match the mobile phone numbers with a particular customer's name, address and other account information, potentially putting individuals at locations at specific times. The mobile phones of the deceased and all prime suspects should be legally recovered and relevant data (e.g. dialled, missed and received calls, text (sms) or other messages, photographs, contacts and diary entries) professionally downloaded. The phones can then be returned to the family of the deceased or to the suspect, as the case may be. Where a phone is recovered that appears to have been used by a perpetrator, but the identity of the user or owner of the phone is not otherwise established, service provider or other information showing that the recovered phone has made or received calls or messages from family members of a prime suspect will make it easier to demonstrate, using phone attribution analysis, that the phone belonged to or was used by a particular suspect.
79. For all phones identified as relevant it may also be useful to request subscriber details, method of payment and call data, together with mobile phone site locations and any other data providers can offer. This may include text messages or International Mobile Station Equipment Numbers, which may identify the type, model and capability of the handsets used. Smart phones used by the victim or any suspects should be analysed for Wi-Fi locations activated and Internet sites visited for information which may provide leads in the investigation. Where possible, investigators should also obtain cell site coverage maps from service providers.

80. Analysis should compare call-data numbers and data, cross-referencing the movements of all people of interest in the case, on pictorial charts using specialist software, if available.

8. Financial issues

81. A financial profile of the victim should be developed where necessary and appropriate. Where a body or remains are located, this may assist in establishing the time of death. In cases of missing persons, continued activity on an account may help to determine if the suspected victim is still alive. In all cases, a financial profile can reveal new leads for an investigation.
82. Once a suspect has been identified, a suspect financial profile should be developed. Evidence of uncharacteristic financial payments or an extravagant lifestyle should be sought.

9. Chronology of events

83. A "living" chronology of events should be developed as the investigation proceeds. This should be sourced from any material obtained during the investigation, including:
- (a) Witness statements
 - (b) Known movements of the victim
 - (c) Known movements of any suspects
 - (d) Call and other communication data
 - (e) Documents, including police reports logs and notebooks
 - (f) Mobile phone site data
 - (g) Financial transactions
 - (h) CCTV footage and photographs
 - (i) Lifestyle data.

A chronology can help provide an overall understanding of events, identify gaps in knowledge and generate new lines of inquiry.

C. Interviews and Witness Protection

1. General principles

84. Interviews form an integral part of almost any investigation. If conducted well, they can obtain accurate, reliable and complete information from victims, witnesses, suspects and others. Poorly conducted interviews can undermine an investigation and place people at risk. The Detailed Guidelines on Interviews provide more thorough guidance on how to conduct an interview effectively and appropriately, and investigators should also refer to other relevant documents.⁹³
85. Interviews should be conducted in a way that maximizes access to justice for affected individuals and minimizes as much as possible any negative impact the investigation may have on interviewees. Special care should be taken when interviewing the bereaved or those who have witnessed a crime, in order to prevent their retraumatization.⁹⁴ Interviews should be conducted by trained individuals who apply the highest professional and ethical standards in order to obtain accurate information while respecting the rights and well-being of the interviewee. It is particularly important, in interviews gathering ante-mortem data which might be used later for identification purposes, that both the interviewer and the interviewee fully appreciate the uses to which the data might be put.

2. Security and well-being

86. The security and well-being of interviewees and interviewers is paramount. Risk assessments should be conducted before engaging with any witness to help ensure that the benefit of the engagement outweighs the risk. When necessary, and subject to the consent of the individual(s) concerned, investigators should take

steps to protect an interviewee and others from ill-treatment or intimidation as a consequence of providing information. Possible measures include protecting the identity of the interviewee (within the parameters of the law and the rights of the defence guaranteed under international fair trial standards), physical protection, relocation and placement in an effective witness-protection programme.

87. An effective witness-protection programme is essential for some investigations, and should be in place before the investigation begins. This includes reliable and durable protection for witnesses at risk, including the secure management of personal information, and legal and psychological support both during and after the investigation and any judicial proceedings. States should ensure that the authorities in charge of witness protection should in no way be involved in the alleged death.

3. Recording interviews

88. All formal and informal interviews should be recorded, regardless of where they take place, right from the commencement of an investigator's contact with a prospective witness or suspect. In certain circumstances this may be subject to the consent of the prospective witness or suspect.
89. Interviews may be recorded in written form, audio, or video. Considerations as to the best method to use may include the preference of the interviewee, the interview setting, and concerns about privacy and security.

93. See, e.g., OHCHR, *Manual on Human Rights Monitoring*, chap. 11, at <http://www.ohchr.org/Documents/Publications/Chapter11-MHRM.pdf>; and chap. 14, at <http://www.ohchr.org/Documents/Publications/Chapter14-56pp.pdf>; ICRC *Guidelines for Investigating Deaths in Custody*, at: <https://www.icrc.org/eng/assets/files/publications/icrc-002-4126.pdf>; World Health Organization (WHO), *WHO Ethical and Safety Recommendations for Researching, Documenting and Monitoring Sexual Violence in Emergencies*, at: http://www.who.int/gender/documents/OMS_Ethics&Safety10Aug07.pdf; WHO, *Researching Violence Against Women: A Practical Guide For Researchers and Activists*, at: <http://www.who.int/reproductivehealth/publications/violence/9241546476/en/>. See also the Istanbul Protocol, which offers guidance on the conduct of interviews where torture is suspected.

94. See, e.g., OHCHR, *Manual on Human Rights Monitoring*, chap. 12, available at: <http://www.ohchr.org/Documents/Publications/Chapter12-MHRM.pdf>.

D. Recovery of Human Remains

1. General principles

90. The recovery and handling of human remains – the most important evidence at a crime scene – require special attention and care, including respect for the dignity of the deceased and compliance with forensic best practices. Human remains are often recovered by police or other personnel without education or training in human biology, and thus there may be challenges in identifying body parts and/or skeletal elements. The recovery of human remains should, preferably, be under the supervision and advice of a suitably trained forensic anthropologist (if skeletonized) and/or a forensic doctor (if fleshed). Knowledge of forensic archaeology is also valuable in understanding the taphonomic processes at the scene. Expertise in forensic anthropology and/or archaeology may assist in the recovery of burnt, fragmented or buried remains. Handling encompasses labelling, packaging, security (including chain-of-custody documentation), transport and storage.
91. When two or more parts of a body are found, it should not automatically be assumed that the separate body parts belong to the same body. This determination should be made only by a forensic doctor or forensic anthropologist.
92. Photographs of human remains should be taken, whether of a complete body, scattered skeletal remains or buried bodies. All photographs should include a reference number, a scale, and a direction indicator. The position of the remains should also be recorded through notations and measurements in the scene sketch. Sketches and diagrams should document the disposition of the remains and associated evidence at the scene. Such sketches and diagrams could be supplemented by details from a GPS and/or a compass, a baseline, or any photogrammetric programme. If available, measurements and recordings can also be made electronically using a total station theodolite, which would allow later integration into a digital mapping/drawing system.
93. The remains should be examined and any clothing, personal items and associated evidence photographed, with any observations recorded in the scene notes. Additionally, any visible trauma should be recorded in an anatomical diagram and, in the case of skeletal remains, also in a skeletal inventory form.

2. Labelling

94. Labelling means assigning a unique reference number to each body or body part (as well as to each other piece of physical evidence). The labelling of human remains should be reflected in the crime scene notes, the photographs and any sketches/diagrams/skeletal inventory forms recorded at the scene. The same labelling needs to be recorded on the packaging used to transport and store the remains and any associated evidence.
95. The rationale for a labelling system should be documented in the crime scene notes. The labelling of human remains – whether individual bones, clusters of bones, body parts or complete bodies – should be unique and must be applied consistently throughout the documentation and packaging process. The labelling system should be agreed on prior to collection and packaging.
96. The labelling of recovered remains should use unique designator codes, which can be based on the following criteria:
 - (a) Location – the geographical location from where the remains are recovered
 - (b) Site – to distinguish between different sites (e.g. graves) in a particular location
 - (c) Individual – human remains identified as belonging to one unique individual; often this can be a single body part or skeletal element.⁹⁵The date on which the remains are discovered should be reflected in the code. The numbering system may be used for all evidence recovered from the same site.
97. If it appears that there are multiple deceased, the exercise of recovering the human remains may follow that of a Disaster Victim Identification procedure. In this case, the Interpol DVI Manual should be consulted.⁹⁶

95. E.g. PL-I1 (PL=Place name; I=Roman numeral for the site/grave at the place; 1=body number 1).

96. At: <http://www.interpol.int/INTERPOL-expertise/Forensics/DVI-Pages/DVI-guide>.

3. Inventory

98. Crime-scene notes should include a detailed inventory of the human remains recovered, and should describe:
- (a) The state of decomposition of the remains
 - (b) The body parts/skeletal elements recovered and their specific location(s)
 - (c) Any visible defects/possible trauma
 - (d) Clothing
 - (e) Personal effects
 - (f) Any other contextual evidence associated directly with the remains (e.g. ligatures, blindfolds, projectiles, trace evidence).
99. The inventory should be drawn up under the supervision of a forensic pathologist/doctor and/or forensic anthropologist. A field identification of body parts/skeletal elements and trauma should not be taken as final until confirmed by analysis in the laboratory or mortuary. Any descriptions and preliminary determinations noted in the field should be recorded in the crime-scene notes and documented through photography and anatomical diagrams, and in any scene sketches. The labelling on the packaging needs to be consistent with the numbering in the inventory, on the diagrams and on the skeletal inventory forms, and should be documented by photography.
100. Human remains are found in a wide variety of circumstances, each of which may affect the recovery and handling of the remains. The circumstances outlined below are for intact bodies, skeletal remains on the surface, and buried bodies or skeletal remains.

4. Intact bodies

101. Intact bodies are human remains that are recognizable as one individual with most of the soft tissue present. In general, no detailed examination or recovery of evidence on or attached to the remains should be undertaken at the scene unless there are good reasons for doing so.
102. The preservation of trace evidence (e.g. gunshot residue, fibres, hairs and foreign DNA on clothing) should be taken into account. In some cases such evidence might be contaminated (for example, by blood from the deceased), displaced from its original location, or lost in transport when left on the body. In such cases, the clothing should be carefully removed, secured in individual packaging and placed in the body bag along with the body. The rationale for this decision should be explained and recorded in the crime-scene notes and documented through photography.

103. Trace evidence that might be present on the hands and/or under the fingernails (such as fibres or foreign DNA) can be protected for later collection under controlled conditions in the mortuary by placing the hands (and feet when necessary) in paper bags, which should be sealed with tape. Consideration should be given to whether fluid may leak from the body, thereby contaminating the paper bags. Plastic bags encourage moisture condensation and mould growth if left in place too long, but for short periods of time (e.g. several hours) they may be more effective than paper bags, which are prone to leaks.
104. The placement of the body within the scene should be clearly and properly documented and the surface underneath the body processed for any additional evidence that might be present.
105. The body should be placed in a body bag following chain-of-custody procedures. These procedures include the correct labelling of the body and body bag, the completion of related documentation for security/chain of custody, and the sealing and signing of the body bag.
106. Once the body has been recovered, it should be placed in refrigerated or cool storage to inhibit further decomposition of the remains.

5. Skeletal remains on the surface

107. Sometimes human remains found on the surface are disarticulated and separated from each other to such a degree that any association between them has been lost. In these circumstances, where possible, a forensic anthropologist or forensic doctor should be present at the scene, allowing a preliminary field assessment of:
- (a) Whether the remains are human or not
 - (b) Whether the remains represent one or more individuals
 - (c) The presence of any visible trauma.
- The expert should then supervise a correct inventory of the human remains.
108. In such circumstances, coordinated crime-scene search methods should be used to locate all human remains prior to the labelling, documentation, recovery and preparation of an inventory. The pattern of the scattering throughout the scene should be documented in notes and sketches and through photography. Where available, a total station can also be used. This can indicate where a body or bodies first came to rest prior to disassociating into individual parts.

109. After assessing the pattern of scattering and recording the scene, the next task is to collect the remains. Scattered skeletal elements need to be packaged in paper bags and labelled, sealed and signed according to evidence-packaging procedures.

6. Buried bodies/skeletal remains

110. A grave may contain the remains of one person buried alone or of two or more persons buried either simultaneously or at different times.
111. A primary grave is the one in which the deceased is first placed. If the remains are then removed and are reburied, the place of reburial is considered to be a secondary grave. An undisturbed burial is unchanged since the time of primary burial. A disturbed burial is one that has been altered after the time of primary burial, either by human intervention, or animal scavenging, or by other natural processes. All secondary burials should be regarded as having been disturbed. Archaeological methods may be used to detect a disturbance in a primary burial.
112. Where human remains are buried, associated soil disturbances can be identified through surveys by experienced archaeologists. Such experts can identify modifications in the landscape, vegetation, movement of soil or differences in

plant growth that might indicate the presence of a burial. Where they are available, non-intrusive technologies – such as satellite/aerial image analysis or hyperspectral image analysis, and geophysical survey equipment such as ground-penetrating radar – may also be useful for indicating areas where soil has been disturbed, consistent with the burial of human remains. Where appropriate, intrusive archaeological excavation methods, such as metal probes or trenches, should be used with care, by qualified persons, to determine if human remains are present and to expose the physical size and detailed contents of a grave.

7. Considerations in the recovery of buried remains

113. Buried human remains can be encountered in various stages of decomposition, from complete bodies with soft tissues present to fully skeletonized remains. The packaging method used will depend on whether disinterred remains are complete bodies with soft tissue present (body bag) or fully skeletonized (paper bags).
114. Buried remains are found in individual graves or mass graves. In all instances, archaeological methods should be used in the excavation of any graves, as set out in the relevant Detailed Guidelines.

E. Identification of Dead Bodies

1. General principles

115. Human identification is the allocation of the correct name/identity to human remains. In any death investigation, the identification of the body or bodies is a major priority. It also meets humanitarian, human rights, and other social and cultural needs. Good-quality ante-mortem and post-mortem data, properly compared, are required for a valid identification.

2. Visual recognition

116. The viewing of the dead body and its recognition by family or friends is a form of ante-mortem and post-mortem comparison. It is undertaken universally, and is often reliable. However, recognition following the viewing of a dead body by a relative or friend can be mistaken: either falsely positive or falsely negative. Virtually all mortuaries have experience of such mistakes. Factors contributing to this possibility include facial congestion or lividity; lung oedema or stomach fluids issuing from mouth and/or nose; the presence of facial fractures, other injuries,

or bleeding; or changes associated with decomposition. Family members may be anxious or distressed to the point where they may not even look at the body or face of the deceased. A family member may rely on something other than the facial appearance of the deceased for recognition: for example, the appearance of the clothing or an item of jewellery such as a ring on a finger. These can be unreliable. Interpol does not accept visual recognition as a form of positive identification.

117. If the dead body is to be viewed for the purposes of recognition to help in its formal identification, this should be undertaken in controlled circumstances. Whenever possible, the viewing should be conducted in a designated area that respects the viewer's privacy and emotional state and minimizes distractions. The process should be supervised and witnessed by a forensic doctor, a trained mortuary technician, a grief counsellor (social worker), or other trained professional. Children should not be involved in visual recognition for identification purposes.

118. The dead body should be professionally assessed as being capable of being recognized by visual inspection. The person being asked to make the visual identification should always be informed of the condition of the remains and asked if they wish to proceed. The body should not be in an advanced state of decomposition; there should be no significant injury affecting the central facial features and, preferably, the face should be clean. (This last requirement may not be compatible with investigative priorities – e.g. the examination, photography.)
119. Preferably, the person viewing the dead body should be asked to look particularly at the body and face and engaged in discussion about what facial (or bodily) features he or she relied on in reaching their decision. For example, was it the appearance of the face, the shape of the nose or a mole on the face, a scar or the hair style? In this way, any person witnessing the process can assess whether or not the conclusion of the person viewing the dead body is likely to be reliable.

3. The scientific approach to identification

120. In potentially unlawful death (and especially as time passes and the body begins to show signs of decomposition, or the facial appearance is altered by the effects of injury or fire), any identification by visual recognition must be confirmed whenever possible by using other means, including scientifically reliable methods of identification such as fingerprints, dental examination and DNA analysis.
121. These scientifically reliable methods are sometimes referred to as “primary” methods of identification. Assessments of physical characteristics (such as body deformities, scars or surgical prostheses, as visible on the body or as represented in X-rays), which are compared with records made in life, are generally regarded as secondary methods, although in some cases they could, individually or collectively, approach the level of being uniquely identifying. The identification of personal effects is also regarded as a secondary method. Primary and secondary methods may be combined to strengthen the evidence for the conclusion.
122. If remains are skeletonized, physical/forensic anthropologists, if available, should be involved so as to obtain the most reliable conclusions about the biological profile of the skeletal remains.⁹⁷
123. The selection of the most appropriate method(s), ranging from visual recognition to sophisticated primary methods of identification, is an expert decision, usually the responsibility of the forensic doctor. The reason for selecting the methods used in a particular case, and the results, must be included in the final report. The results are considered, along with other relevant information, in addressing the question of the identification of the dead body.
124. Whatever methods of identification are employed, a methodical and holistic approach, involving the appropriate experts, with complete and detailed documentation, is always necessary.

4. Events with multiple deaths

125. Visual recognition alone should not be relied upon in cases of multiple deaths. Misidentification is more common in such circumstances owing to emotional pressures on those undertaking the viewing. The strain of viewing a row of dead bodies, or a number of dead bodies individually one after the other, reduces the likelihood of a reliable recognition. Additionally, personal effects are not unique, and depending on the processes around the retrieval of the bodies they may have been incorrectly put with the wrong body.⁹⁸
126. Reliable identification following an event involving multiple deaths requires organizational and technical forensic competence. This applies to:
- The scene, and the proper collection, recording, transport and storage of dead bodies, property and effects
 - The mortuary, the post-mortem examination (possibly including an internal examination and dental and anthropological examinations), and the collection and storage of post-mortem data
 - The collection of ante-mortem data about those who may have been killed in the event, and
 - The reconciliation of ante-mortem and post-mortem data to reach conclusions about identity.

97. See Detailed Guidelines on Analysis of Skeletal Remains.

98. Interpol DVI procedures require loose personal effects to be collected separately at the scene. They must not be allocated to a particular body.

127. The approach to human identification in events involving multiple deaths on a small to moderate scale has been standardized by Interpol.⁹⁹ For such events on a large scale, the work published by the Pan American Health Organization, the World Health Organization (WHO) and the ICRC offers a different approach.¹⁰⁰ The two approaches to human identification complement each other and, if circumstances dictate, may be combined. A reliable approach to human identification in events involving multiple deaths should be planned and trained for in advance.

5. Conclusions about identity

128. The final conclusion about identity in circumstances of potentially unlawful death is made by different officials in different countries, but should always be based on expert opinion and advice.
129. The results of the application of the selected methods to the deceased should be compared with the records (or with profiles from ante-mortem biological samples) of a known, named individual. Information from the circumstances of the case and from the examination of the place of death and/or where the dead body was found can properly be taken into account in some cases (see Table 1).

Table 1: Ante-Mortem and Post-Mortem Data for the Purpose of Identification

ANTE-MORTEM DATA	POST-MORTEM DATA
Information on the missing person obtained from investigations, oral accounts, or records	Information from the dead body/skeletal remains obtained by investigation, forensic examination (including photographs) or laboratory tests
Circumstances of death (place, history of the events, possible injuries)	Cause and circumstances of death, location where the body or remains were found, other traumatic findings
Date of disappearance	Date of recovery, time since death, general condition of the body
Age, sex, stature, ancestry, weight	Biological profile (sex, age group, ancestry, estimated stature and weight)
Physical appearance (e.g. eye colour, hair colour), surgical implants, prostheses, skin marks, scars, tattoos, occupation	Distinguishing features, physical appearance, surgical implants, prostheses, skin marks, scars, tattoos, occupational marks
Clothing and artefacts, eyewear, footwear	Complete description of clothing and personal belongings found with the body
Medical records, medications, X-rays	Evidence of ante-mortem trauma, surgical procedures, signs of pathology, medication found with the body
Dental records (information on dental condition and dental treatment)	Dental chart, dental condition, features
Fingerprints	Fingerprints, when possible
Photographs	Photographs, if suitable
Records of identity documents	Identity documents recovered or associated with the body
DNA profiles from biological samples from the missing person or from his/her relatives	DNA profiles from samples obtained from the body

99. See Interpol, *Disaster Victim Identification Guide*, 2014, at: <http://www.interpol.int/INTERPOL-expertise/Forensics/DVI-Pages/DVI-guide>.

100. M. Tidball-Binz and D. Van Alphen (eds.), *Management of Dead Bodies after Disasters: A Field Manual for First Responders*, 2016, available at: www.paho.org/disasters.

130. An analysis of all available evidence leads to a final conclusion. In general terms, this could be:
- (a) **Identification** where there is consistency between ante-mortem and post-mortem data and there are no discrepancies that cannot be explained
 - (b) **Rejection of a possible identity** when evidence supports the exclusion of a particular hypothesis about the identity of the human remains, or
 - (c) **No conclusion** about the identification of the human remains.

The relevant findings should be stated in the final report on identity.

There may be cases when, despite all possible scientific efforts to achieve identification, available information indicates only a probable/possible identity.

Whether the death is that of an individual or of multiple individuals in one event, families should be involved in and fully informed about the identification process. In many cases, this is not only necessary to achieve an identification, it also improves the likelihood that the family will accept the identification, which is an important part of accountability for potentially unlawful death(s), as set out above. Careful attention to clear communication will also improve the chances of a successful outcome.

F. Types of Evidence and Sampling

1. General principles

131. A range of types of evidence should be considered when collecting samples and evidence of human remains. Sample sizes for both biological and non-biological evidence should be sufficient for laboratory analysis and should allow for repeat testing.

2. Human biological evidence

132. Biological evidence in forensic analysis generally refers to organic substances collected from the human body or its surroundings. These can be collected directly from the human body or from items used by the person in question, such as toothbrushes, hair brushes and unlaundered clothing.
133. Identification and the proper collection and preservation of biological samples from a crime scene require specialized training in searching and testing for the presence of biological evidence. Biological samples from bodies may also be collected at the morgue or forensic anthropology laboratory. The collection of biological reference samples from living persons, for comparison purposes, should be conducted by personnel trained in dealing properly and ethically with victims and their families, and should be based on informed consent.

134. Biological samples are also a source of DNA, which can be used to establish the identity of persons and link them to the scene or to a piece of evidence recovered there. Biological samples include the following:

- Soft tissues
- Bone
- Teeth
- Blood
- Urine
- Saliva
- Semen/sperm
- Vitreous fluid
- Hair
- Natural nails (finger and toe).

135. Forensic biological evidence can usually be analysed for DNA if necessary. DNA analysis in forensic contexts is used to produce profiles that are accepted as identification evidence in many courts worldwide and are individualizing to very high degrees of probability. The persistence of DNA trace evidence depends on the conditions it has endured and the manner in which it is recovered, secured and stored. Damp, humid conditions can affect the persistence of a viable DNA trace and the ability to develop a profile. Evidence should, as far as possible, be maintained at a constant temperature and sealed in such a way as to minimize the risk of contamination.

136. Forensic biological evidence may also be analysed toxicologically for chemicals that have an adverse effect on human beings, such as drugs (controlled substances) and poisons. This applies to biological samples from living persons as well as from the deceased.

3. Non-biological physical evidence

i. Chemistry

137. Forensic chemistry is used to identify unknown substances at a crime scene. They include suspected drugs, toxic substances, gunshot residue (firearms) and explosive materials.

ii. Firearms

138. Firearms evidence is derived from the examination of handguns and long guns; projectiles such as spent bullets and shot; and ballistic information, including the pattern and movement of projectiles from a firearm after discharge. Trained examiners may be able to link expended projectiles, cartridge casings and related ammunition components to a particular firearm. In addition to matching a particular firearm to a fired projectile or expended cartridge casing, a firearms examiner may also be able to identify the manufacturer of a gun. At the time of drafting of this Protocol, however, toolmark and firearms analysis lacked a precisely defined and universally accepted process.¹⁰¹

139. Very often, firearms examiners are also responsible for firearm discharge analysis, to assess whether or not a firearm has been discharged, or analysis of items such as clothing to determine the distance between the impact and the position from which the gun was discharged. Chemical traces on the hands or clothing of a suspect may indicate that he or she has fired a weapon.

iii. Fingerprints

140. Fingerprints (including thumb prints) are a long-established means by which persons are individually identified with a high level of probability. This comparison is based on the unique patterns of friction ridges and furrows on fingers and thumbs, as well as on palms, feet and toes. Even identical twins have different fingerprints. Fingerprints are often collected routinely and are a common means of scientific identification. There can be problems, however, for example with partial prints.

141. Fingerprints may be recovered from or visualized on a variety of surfaces (in particular smooth, shiny ones) using a number of techniques. These include applying a powder and “lifting” the fingerprint with a tape or gel lift. Once it has been enhanced with powder, the print can be photographed. It can also be recovered as a complete item and submitted to a laboratory for examination. Latent fingerprints can be visualized on porous surfaces, using a number of chemical enhancement techniques, which are particularly effective on paper. Chemical enhancement is normally undertaken in a laboratory and not at the crime scene, so great care should be taken when packaging and transporting the item.

iv. Other non-biological evidence

142. Other relevant evidence includes military ordnance and weapons; fibre analysis; impressions (e.g. tyre tracks, footwear impressions); pattern analysis (e.g. bloodstain patterns/blood spatter analysis, burn patterns, fracture analysis); tool marks; car paint analysis, comparison and identification; and questioned documents. Care needs to be taken to ensure that the analysis of such evidence is underpinned by a validated scientific method.

101. See, e.g., Committee on Identifying the Needs of the Forensic Sciences Community, National Research Council, *Strengthening Forensic Science in the United States: A Path Forward*, US Department of Justice, Washington, DC, 2009, pp. 150-55, at: <http://www.nap.edu/catalog/12589.html>.

4. Digital evidence

143. Digital evidence is information and data that are stored on, received from or transmitted by an electronic device. Digital evidence can be found in images on cameras, on the internet, computers, mobile phones and other digital media, such as USB sticks.
144. Digital evidence has become increasingly important in investigations. It can be recovered from a number of sources: open systems such as the internet and social media; and closed systems such as computers, laptops, mobile phones and cameras. Internet and mobile-phone service providers frequently keep their data (e.g. call records) for only a limited time. In planning an investigation, investigators should be aware of how long data is retained by these providers so they can ensure that the appropriate information is requested within the available time frame.
145. Digital information can be recorded in various formats: photographs, audio recordings, video recordings, email/network communications, text/sms messages, mobile phone applications and social media. All of this information can be useful to an investigator. The metadata (e.g. information on the creator, date of creation, device, location, alteration/changes) can provide valuable information. However, this metadata can also be easily manipulated. Authenticating digital evidence is a technical challenge. If digital evidence is considered to be important in an investigation, every effort should be made to ensure that a qualified forensic expert recovers and/or examines the evidence.

5. Forensic accounting

146. Forensic accounting applies accounting, statistical and economic analysis to a criminal investigation. In the investigation of a suspicious death, it may uncover information that helps to identify a motive for a killing and possible suspects or witnesses.

6. Soil/environmental samples

147. When the crime scene involves an outdoor location, soil/environmental samples should be taken. Samples should be taken from the crime scene itself and also from the surrounding areas. These later samples provide control samples, allowing the forensic expert to determine background levels and weigh the importance of the evidence recovered from the crime scene. Samples should also be taken from alleged perpetrators' clothing/footwear. Comparing the sample recovered at the crime scene with those samples recovered from the suspect could provide a link.

G. Autopsy

1. General principles

148. Paragraph 25 sets out the aims of an investigation into a potentially unlawful death. To achieve these aims, the necessity for an autopsy should be considered. With the exception of identifying possible witnesses, all of the aims rely to some extent on an autopsy being performed, so helping to achieve them becomes a key duty of the forensic doctor, who must be well trained and experienced.
149. While the duties of clinical doctors are generally understood by the public, this is not the case with respect to forensic doctors.¹⁰² The duties of forensic doctors in relation to death investigations are: (i) to help ensure that the identity of the deceased is established; (ii) to help ensure that the cause and circumstances of the death are revealed; and (iii) to exercise care and skill in this work. The discharge of these duties requires an understanding of the basic aims of the autopsy. These aims are to: (i) discover and record all the identifying characteristics of the deceased (where necessary); (ii) discover and record all the pathological processes, including injuries, present; (iii) draw conclusions about the identity of the deceased (where necessary); and (iv) draw conclusions as to the cause of death and factors contributing to death.¹⁰³ In situations where the circumstances of death are unknown or in question, a forensic doctor should apply the autopsy findings and conclusions to the reconstruction of those circumstances. If possible, the doctor should attend the scene of death, preferably with the body *in situ*.¹⁰⁴
150. A forensic doctor should record the positive and relevant negative observations and findings in such a way as to enable another forensic pathologist at another time to come to his or her own conclusions about the case independently. As forensic pathology is essentially a visual exercise, this involves a dependence on good quality – preferably colour – photography.
151. The autopsy report may be used by the authorities and others to help determine if the deceased was assaulted (including whether they were tortured or maltreated), and if the injuries either caused or contributed to death. On this basis, the autopsy report must not only include a list of the findings and injuries, it must also provide an interpretation of them. If the forensic doctor believes that specific injuries have been inflicted by a particular mechanism, such as might occur during torture, for example, then he/she is strongly encouraged to provide that opinion in writing in the autopsy report. In addition, if a group of injuries, when considered together, imply a certain pattern of inflicted maltreatment, this should also be clearly stated in the autopsy report. While the forensic doctor may not make the final determination of whether the deceased was assaulted (or tortured), it is his/her duty to interpret and explain, if at all possible, how the injuries occurred. If the connections between the observed injuries and the mechanism of infliction are not made by the forensic doctor, then the main value of actually performing the autopsy – helping to find the truth behind the death – may be lost.
152. The Detailed Guidelines on Autopsy should be followed to the extent possible given the resources available. The forensic doctor should request additional resources if they are regarded as necessary or desirable in the circumstances of the case. Use of the Guidelines will permit valid and reliable conclusions to be reached, thus contributing to the correct resolution of controversial cases. It will also thwart the speculation and innuendo that are fuelled by unanswered questions in the investigation of an apparently suspicious death.
153. The Detailed Guidelines on Autopsy include guidance on the detection of torture as an aide-memoire for forensic doctors who may not be experienced in the assessment of such cases. The Detailed Guidelines on Autopsy are supported by the Detailed Guidelines on the Analysis of Skeletal Remains.

102. In this document, forensic pathologist, forensic doctor and prosecutor are used interchangeably. The last term refers to the person undertaking the autopsy.

103. See, e.g., M. El-Nageh, B. Linehan, S. Cordner, D. Wells and H. McKelvie, *Ethical Practice in Laboratory Medicine and Forensic Pathology*, WHO Regional Office for the Eastern Mediterranean, Alexandria, Egypt, 1999, pp. 38-39, at: www.emro.who.int/dsaf/dsa38.pdf.

104. This excerpt relates to the duties of the prosecutor in a forensic autopsy generally, not specifically one involving a potentially unlawful death. In the latter case, the expectation will be that, if possible, the forensic doctor will attend the scene of the death, usually at the request of the police.

154. The forensic doctor should be responsible and accountable for the autopsy. In other words, he or she should be in charge of this part of the overall investigation into the potentially unlawful death, and accountable for it in accordance with applicable law and ethics, including the need to respect the dignity of the dead. (See also Paragraph 45).
155. The body should be made available to the forensic doctor for a reasonable minimum period (e.g. 12 hours) that is sufficient to ensure an adequate and unhurried examination. Unrealistic limits or conditions are occasionally placed upon the forensic doctor with respect to the length of time permitted for the examination or the circumstances under which an examination is allowed. If unacceptable conditions are imposed, the forensic doctor should be able to refuse to perform a compromised examination and should prepare a report explaining this position. Such a refusal should not be interpreted as indicating that an examination was unnecessary or inappropriate. If the forensic doctor decides to proceed with the examination notwithstanding difficult conditions or circumstances, he or she should include in the autopsy report an explanation of the limitations or impediments.
156. Resources such as autopsy rooms, X-ray equipment or adequately trained personnel are not available everywhere, and their provision and upkeep are usually not the responsibility of the forensic doctor. Forensic doctors operate under divergent political and legal systems. In addition, social and religious customs vary widely throughout the world.¹⁰⁵ The forensic doctor, therefore, may not always be able to follow all of the steps in this Protocol when performing autopsies. Minor deviations from the Detailed Guidelines on Autopsy may be inevitable, or even preferable in some cases. When there are major deviations from the Guidelines, however, this should be explicitly noted and the reasons for them given in the autopsy report.
157. In the investigation of potentially unlawful death, the body of the deceased is taken out of family control and placed in the control of the investigative mechanism. The forensic doctor should be aware of the potential emotional and other disruption this may cause, and should minimize it, and the inconvenience to the family, as much as possible consistent with his/her obligation to discharge properly the responsibilities set out in this document.
- 2. The role of radiological imaging in investigating potentially unlawful death**
158. Plain X-rays have always been used, and continue to play an important part, in the investigation of the cause and circumstances of potentially unlawful death. In recent years, the advent of new forms of radiological imaging known as cross-sectional and three-dimensional imaging or scanning (computerized tomography – CT scanning; magnetic resonance imaging – MRI scanning), have captured the public imagination to the point where the term “virtual autopsy” has entered the language. The concept embedded in this term has led to expectations that scanning can reliably replace the traditional autopsy. Such expectations are some way from being realized.
159. Whole-body scanning has, however, strengthened the ability of medical science to investigate a death, for the following reasons:
- Parts of the body not easily inspected by traditional means are now seen
 - In some cases the reconstruction of three-dimensional images from scanning data may assist in interpreting injury or disease, and the acceptability of the images may help courts to understand this interpretation
 - Victims of multi-fatality disasters can be triaged, improving prospects for identification
 - Long-term digital storage of the images improves the reviewability of the examination of the dead body
 - Medico-legal systems where autopsies are rare can obtain information about the body that would otherwise be unavailable.
160. The expense of this new imaging is such that it is not, and is unlikely to become, widely available on a global scale. In addition, although much work has been done, the relative sensitivity, specificity and predictive value of findings made using scanning techniques, compared to those from autopsy, have yet to be comprehensively studied.

105. See, e.g., Report of the Special Rapporteur on freedom of religion or belief, Abedelfattah Amor, on his mission to the United States of America, UN doc. E/CN.4/1999/58/Add.1, para. 15(b).

161. Considerable experience is required to understand what questions can properly be answered by imaging techniques alone without the support of traditional autopsy. The images are quite different from naked-eye images, and overlap only to some degree the information obtained by traditional autopsy. Body samples are still needed for all forms of post-mortem testing (e.g. toxicology, histology, microbiology). Thus, while information is available from scanning the body that is sometimes not available from an autopsy, this information supplements and does not replace the information available from the autopsy.

162. In some cases, findings from scanning considered together with the deceased's medical history, information about the circumstances of the death, and an external examination of the dead body,

may be sufficient for trained and experienced forensic doctors to reach reasonable conclusions about a death. In a potentially unlawful death, it is not likely that such conclusions will suffice to meet all the aims of the death investigation set out in Paragraph 25. As mentioned in the section of the Detailed Guidelines on Autopsy that addresses the post-mortem detection of torture, cross-sectional scanning techniques may be particularly helpful in the detection of some forms of torture.

163. If the technology of cross-sectional and three-dimensional imaging is to be relied upon to fulfil the aims set out in Paragraph 25, and a decision is then made to have no autopsy, this approach should be fully justified and the reasons for it documented.

H. Analysis of Skeletal Remains

164. The analysis of skeletal remains usually follows the same principles and objectives as in the case of a fresh body: dignified management of the bodily remains; identification of the remains; assessing the cause and manner of death and, using archaeological dating methods, the time since death; and contributing to the reconstruction of the circumstances surrounding the death.

165. Recently deceased, partially skeletonized or completely skeletonized bodies require an interdisciplinary approach. The forensic doctor responsible for the case has to work in cooperation with other specialists. In the case of skeletal remains, this requires a forensic anthropologist. Forensic anthropology is the application of

physical anthropological theory and methods, in particular those relating to the recovery and analysis of human remains, to resolve legal matters. The forensic anthropologist assists the forensic doctor in assessing skeletal traits for the purpose of identification or to find and interpret signs of pathology and trauma. The forensic anthropologist may also collaborate with the forensic doctor in coming to conclusions about the cause and manner of death and, using archaeological dating methods, the time since death.

166. Further guidance is set out in the Detailed Guidelines on Analysis of Skeletal Remains.

DETAILED GUIDELINES

A. Detailed Guidelines on Crime-Scene Investigation

1. Introduction

167. Crime-scene examinations aim to identify scientifically, document, collect and preserve court-admissible evidence that may link suspects, victims and physical evidence with the scene. Such examinations should be conducted by forensic experts who have been trained in the legal and scientific identification, documentation, collection and preservation of evidence.

168. Documentation consists of:

(a) **Photographic documentation.**

Photographs can also include a reference scale and direction indicator. Video documentation can supplement photographic documentation, but owing to poor image resolution should not be considered a primary means of capturing images

(b) **Measurements** (e.g. length/width/height, marked on sketches, diagrams or maps; instrument results)

(c) **Notes** describing findings and recording data collection.

These records need to be managed according to chain-of-custody standards, safeguarding them from possible manipulation.

169. In situations where the rule of law has broken down, such as during armed conflict, investigations may not be carried out by local authorities, and in such cases international bodies may not establish jurisdiction until long after any crimes have occurred, if at all. Under these circumstances, non-forensic experts, such as medical workers, journalists, or human rights activists, may be the first to come upon the scene. What these witnesses document may be important to future investigations as well as to the proper management of the dead and the identification of victims, even though they have no formal legal mandate to identify, document or collect evidence.

170. Nonetheless, documentation through methodical photographing and/or video recording, measurements and thorough note-taking is a means for such non-experts to contribute to future truth-seeking and/or judicial inquiries. The credibility of such documentation is increased when records are kept according to chain-of-custody standards, allowing for independent verification of the identity of the author, the origin of the records and how they were subsequently stored or managed. The effective implementation of the right to the truth is also supported by a strong national archival system.

171. Crime-scene investigators are individuals trained in identifying, documenting, collecting and preserving physical evidence for further analysis. At an early stage, it should be established which type of scientific expertise will be needed in the field and, later on, in forensic laboratories. Some of the experts who may need to be consulted include:

- Forensic pathologists/doctors
- Forensic anthropologists
- Forensic archaeologists
- Forensic entomologists
- Forensic odontologists
- Forensic botanists
- Forensic radiologists
- Ballistics and firearms experts
- Chemists (e.g. with expertise in chemical weapons) and/or toxicologists
- Human identification experts (e.g. fingerprint experts, mass fatality management experts, molecular biologists/forensic DNA experts, or forensic dentists)
- Digital data experts (e.g. mobile phones, memory sticks, computers or social media), and
- Facial reconstruction experts.

Within the overall investigatory strategy, recognized forensic laboratories should be identified for subsequent laboratory examinations and analysis of evidence.

172. Once its dimensions have been identified, the scene needs to be secured. A crime scene entry log should be opened and maintained until the crime scene has been fully processed. Securing the scene entails:
- (a) **Limiting access:** Access to the geographic area of the scene is documented and limited to relevant experts and investigators. Access that may have contributed to the contamination and degradation of evidence, as well as any evidence of a manipulation of the scene that may have occurred or could possibly occur, need to be identified and documented
 - (b) **Personnel safety:** The scene is rendered safe for access for the identification, documentation and collection of evidence. In circumstances such as ongoing armed conflict, or areas where items such as unexploded ordnance, toxic agents, and/or booby-traps are suspected, specialists with expertise in rendering such items safe need to be consulted. They include explosive ordnance disposal personnel and chemical, biological and/or radiological experts. Precautions against coming under armed attack might also be necessary in some circumstances
 - (c) **Evidence security:** Limiting access to a death scene entails establishing a chain of custody that originates when an individual crime-scene investigator identifies evidence.
173. The crime scene should be searched for evidence. Where possible, the search should be conducted jointly with an investigator who is aware of background information on the death, although great care should be exercised so as not to bias the investigation. The search criteria must, at a minimum, be documented in investigators' notes. This serves to identify which items are pertinent to establishing a sequence of events and can link suspects, victims and other physical evidence with the scene of death.
174. Items of physical evidence need to be identified with unique photo markers (numerical and/or alphabetical). The site code also needs to be identified. This allows for their location and their relation to other items of evidence within the death scene to be comprehensively documented, including for inventory and chain-of-custody purposes. A standard marking system for all evidence should be introduced – see Paragraphs 94 to 97 on labelling.
175. Any forensic analysis, including but not limited to the crime scene, requires the following documentation methods: photography, measurements, note-taking and an inventory. These should all be cross-referenced against each other, to improve the independent understanding of a death scene and increase the credibility of the collected evidence.
- ## 2. Photographic documentation
176. The photographic documentation of a death scene and of any physical evidence is a two-dimensional depiction of a three-dimensional space or object. Photographs should therefore be taken in sequence, with an overlap between one image and the next, allowing an outside observer or examiner to understand the spatial relationship between the items of evidence within a defined space such as a death scene.
177. The sequence in which such photographs were taken should be documented by a photolog, identifying, at a minimum, the identity of the photographer, the position of a photograph within a sequence, the time the photographs were taken and the location at which they were taken. Where the technology exists, digital cameras should be used. Check that the date and time on the camera is set correctly. Digital cameras can generate a sequential file-numbering system and include metadata embedded in the digital images themselves. Such metadata can include date and time, the camera's technical settings and, when it is connected to a global positioning system (GPS), longitude and latitude information. Relevant information should be included in a photolog. The same data should be recorded if analogue (film) cameras are used.
178. Three types of photographs need to be included in the documentation of crime scenes and evidence:
- (a) **Overview photographs** visually establish the spatial dimensions of a crime scene. Overview photographs should be taken from the outside of the scene towards its centre, ideally from along the outside perimeter of the scene. If possible, photo markers should be distinguishable in these photographs

- (b) **Medium-range photographs** establish a spatial relationship between items of evidence and their location in a crime scene. Photo markers identifying the individual items of evidence should be visible in these photographs
- (c) **Close-up photographs** visually establish the characteristics of individual pieces of evidence. They should include an initial photograph of the photo marker identifying the evidence and then subsequent photographs of the item of evidence. Close-up photographs should fill the frame of the photograph with the item of evidence and should include a scale.

3. Measurements

- 179. Measurements taken at the scene corroborate and elaborate on the spatial dimensions documented in the photographs. If resources allow, they can be generated through computer-aided design software and technology, such as laser scanners or theodolite systems, or can be hand-drawn. Such measurements and resulting diagrams should include, at a minimum, the name of the investigator taking the measurements, a case number, a date and time, measured dimensions, a north arrow and an index of the items of evidence located in the sketch via measurements taken at the scene. A scale and reference points are needed for measurements.

4. Note-taking/data collection and compiling an inventory

- 180. Existing forms are available. Notes establish a written record by an individual death-scene examiner or forensic expert. Often, such notes are handwritten, adding to the credibility of the work by individualizing the record itself through the handwriting. The fact that such records are relatively difficult to falsify and/or manipulate subsequently also increases their credibility.
- 181. Notes should include, at a minimum, the name of the investigator, a date and time, and a chronological log of the activities conducted (such as search criteria, when the search was conducted, when and where photographs were taken, when and where measurements were taken, when and where evidence was collected and packaged, and what types of analysis were conducted). Notes should include an inventory and a detailed description of items of evidence, identified with their corresponding photo markers, and should be signed by the investigator carrying out the investigation or analysis.
- 182. These methodical scientific documentation techniques (i.e. photography, measurements and notes) should be included in any forensic documentation. This applies both at a crime scene and in the laboratory, for example when bloodstains on an article of clothing are being documented, or when a medical examiner is documenting a human body.

B. Detailed Guidelines on Interviews

1. Introduction

183. These Guidelines look in detail at the conduct of an interview: how to prepare, how to start one, how to elicit facts and how to conclude. They also deal with how to interview a suspect, the role of interpreters, and recording an interview.

2. Preparation and setting

184. Identify the purpose of the interview and how it fits into the overall investigative strategy.

185. Learn what you can about the interviewee prior to the interview, such as their relationship to events, possible biases and potential security risks.

186. Gather information, including documents and photographs, that might be referred to during the interview.

187. Prepare the best possible strategy and interview structure to elicit information, but remain flexible. Compile a list of key points to cover during the interview.

188. Consider the gender, ethnicity, religion and other profile factors of interviewers and interpreters, to respect the interviewees' culture and to help put them at ease. When interviewing people about sexual or gender-based crimes, consider the gender of interviewers and interpreters. Consult with experts before interviewing victims of sexual violence.

189. Consult with experts on approaches to interviewing children, people with disabilities, the bereaved and others who are vulnerable or potentially prone to retraumatization. Examples include holding shorter interviews, using simpler language and having trusted support persons present.

190. Whenever possible, conduct the interview in a secure and private place where the likelihood of disruption is minimized as far as possible.

191. Whenever possible, conduct the interview in a one-to-one setting, considering the interviewee's preferences and needs. In some circumstances the protection of human rights and the quality of the investigation may call for more than one interviewer, or the presence of a support person for the interviewee.

192. Allocate enough time to conduct a thorough interview without rushing, and allow time for breaks.

3. Starting the interview

193. Record the interview from the very beginning using the means chosen.

194. The interviewers should introduce themselves and their affiliation and should clearly communicate the purpose and intended use of the interview.

195. Informed consent should normally be sought from the interviewee before proceeding. This requires:

(a) Discussing any risks associated with the interview

(b) Agreeing on security measures to protect the interviewee and others, without offering assurances that cannot be guaranteed. This includes whether a person's identity will be kept confidential and if so, how this will be done

(c) Explaining that participation is voluntary and that the interviewee may stop the interview at any time, or may choose not to answer any questions, without adverse consequences

(d) When interviewing children, consider the best interests of the child, including whether there are other ways to obtain the information than through the interview. Ensure that the child understands the purpose and intended use of the interview, and obtain his/her consent. Whenever possible, inform the child's parents or legal guardians of the interview, unless there are reasonable grounds not to do so. The child's parents or legal guardians, or another trusted person, may be present during the interview if the child so requests

(e) When interviewing people with mental or intellectual disabilities, clearly explain, and repeat if necessary, the purpose and intended use of the interview. Use simple, accessible language (orally and/or in written format) and allow the interviewee sufficient time to make a decision.

196. Ask the interviewee to describe everything that he/she knows to the best of their ability, and to make it clear when they are talking about something they have observed or heard directly versus information they have obtained from others.

197. Act fairly and with integrity. The use of duress, deception or unfair means to elicit information or to obtain a confession could result in evidence being excluded from consideration by a court. It is not permissible in any circumstances to use torture or cruel, inhuman or degrading treatment to obtain information from an interviewee.

- 198. For interviews with people who may be traumatized, try to ensure their privacy and comfort. Avoid questions that imply victim-blaming; avoid jumping back and forth between sensitive and “safe” topics; and limit detailed questions about violent incidents, especially sexual and gender-based crimes, to what is essential for the investigation.
- 199. Build rapport and show empathy as appropriate.
- 200. Use neutral and culturally sensitive language.
- 201. Keep an open mind, be objective and remain non-judgmental.

4. Fact-finding

- 202. Record the interviewee’s identity, personal and contact details in a way that takes into account any security concerns.
- 203. Record the identity, personal and contact details of all others present at any time during the interview, taking into account security concerns.
- 204. Begin with non-controversial and less sensitive questions, to establish a rapport before addressing difficult topics.
- 205. Establish the interviewee’s relationship to events (e.g. is the person an eyewitness, a relative, an expert?).
- 206. Ask open-ended questions to understand the overall picture, such as “describe”, “explain” and “what happened next?”.
- 207. Avoid questions that imply a certain answer (leading questions) or that elicit yes/no answers (closed questions).
- 208. Keep questions as short and simple as possible; repeat or rephrase a question if the answer was unclear.
- 209. As the interview progresses, ask for details to establish timelines, identify relevant individuals and elicit facts that can later be checked.
- 210. Do not always accept the first answer given: persistent questioning, done respectfully, helps to obtain accurate information.

- 211. Test information obtained from an interviewee against what the interviewer already knows or what can reasonably be established.
- 212. Ask interviewees to support their assertions with documents and other corroborative material.
- 213. Ask interviewees to draw maps and diagrams for clarification and, when safe, to show the interviewer locations relevant to the investigation.
- 214. Ask a wide range of questions to obtain information, but keep questions appropriate to the case.
- 215. When interviewing more than one person at a time is unavoidable, clearly record which person has provided what information.
- 216. Carefully observe the interviewee for signs of retraumatization. Take breaks or stop an interview when appropriate. Traumatized interviewees may have gaps or inconsistencies in their recollection of events.
- 217. The interviewee should be observed for any inappropriate or inconsistent responses to questions, which may transform the interviewee into a suspect.
- 218. When interviewing children – which, preferably, should be undertaken by a specially trained interviewer – use plain language, ask short questions and take frequent breaks. Stay attuned to the child’s medical and psychosocial needs, and provide service referrals as appropriate.
- 219. When interviewing people with disabilities, make sure they feel comfortable and safe. Speak directly to the person and maintain eye contact rather than interacting directly with a support person or, if present, the sign language interpreter. When interviewing someone who is blind or has limited vision, the interviewers should identify themselves and any others present. When interviewing someone with a mental or intellectual disability, ask simple questions and repeat them until understood. Provide referrals for medical and psychosocial needs as appropriate.

5. Concluding the interview

220. Read or play the record of interview back to the interviewee and allow the person to correct or clarify the contents. Ask if the interviewee has anything to add.
221. Ask if the interviewee can suggest others to interview.
222. Obtain, with permission, any material referred to in the interview, such as photographs, medical reports and court records.
223. With the interviewee, review security measures and ways to stay in contact after the interview.
224. Ensure that the interviewee certifies in writing or on audio or video that:
 - (a) The interviewee's statement has not been made under any form of unlawful duress
 - (b) The content of the interview is true and correct to the best of the interviewee's knowledge and recollection
 - (c) The interviewee was not threatened or forced to give the statement, nor were any promises or inducements offered in this regard
 - (d) The interviewee is aware that the statement may be used in legal proceedings and that they may be called to give evidence
 - (e) The interviewee may be liable to prosecution for contempt of court, for interfering in the administration of justice, or for giving false testimony if they say anything in the statement that they know to be false or do not believe to be true.
225. Ensure that the interviewee signs and dates every page of a written interview record. Any document or material, such as diagrams and photographs, to which the interviewee refers or which s/he creates during the interview should also be signed or otherwise authenticated and should be attached to the interview record.
226. Ensure that all records from the interview are stored securely to protect privacy and to maintain security.
227. Identify points arising from the interview to follow up in the investigation, including other people to interview and potential lines of inquiry.

6. Additional guidance when interviewing a suspect

228. In addition to the guidance set out above, suspects must be granted and informed of at least the following rights:
 - (a) To be presumed innocent until proven guilty, which includes a fair opportunity to provide their account of relevant events
 - (b) Not to be compelled to incriminate themselves
 - (c) To remain silent
 - (d) To the presence and assistance of a lawyer during questioning, and to consult the lawyer in private
 - (e) To have the interview recorded, including place(s) and date(s) of questioning; the place of detention, if any; the start and end times of each interview session; the intervals between sessions (including rest periods); the identities of the interviewer(s) and all others present; and any requests made by the individual being questioned
 - (f) To be interviewed in a language he or she understands
 - (g) If the person is arrested or detained, to be informed immediately of the reason for the arrest and to be told promptly of any charges
 - (h) For foreign nationals, to access consular officials of their State of nationality; or, in the case of stateless persons, refugees, or asylum seekers, their relevant national authorities or UNHCR.

7. The role of interpreters

229. In some situations an interpreter may be required to assist with the interview of a witness, victim, suspect, or other person relevant for the investigation. The interpreter's role is to facilitate communication in a neutral and objective manner. Interpreters should be limited to that role, have appropriate interview training, be accredited by the relevant authorities, understand the terminology specific to the investigation, and apply internationally agreed standards and best practice. The interpreter should declare any potential conflict of interest in advance.

230. When selecting an interpreter, consider the interviewee's gender, sexual orientation, gender identity, nationality, ethnicity, religion, education, literacy, language and dialect, and any of their preferences. An interviewee should have the right to express the wish for a different interpreter.
231. An interpreter should:
- (a) Only interpret for the language(s) for which they are qualified, authorized, or accredited
 - (b) Provide a complete and accurate interpretation without alterations or omissions
 - (c) Demonstrate a high level of professionalism and ethics and maintain their integrity, impartiality and independence
 - (d) Disclose any real or perceived conflicts of interest, including prior knowledge of, or dealings with, the person being interviewed
 - (e) Avoid soliciting or accepting any gratuities or taking personal advantage of any information obtained in the course of their work
 - (f) Maintain confidentiality, and protect information obtained in the course of the work from unauthorized individuals
 - (g) Sign and give any notes they have made during the interview to the primary interviewer.
232. An interpreter's qualifications should be certified prior to the start of a session. At the end of the interview, the interpreter should certify, either in writing or on audio or video, that they have read the record of the interview back to the interviewee and that the interviewee has confirmed its accuracy.

C. Detailed Guidelines on the Excavation of Graves

233. The following procedures apply to the excavation of all areas containing buried human remains.
234. Record the date, location, start and finishing times of the disinterment and the names of all workers and other persons present.
235. Record the information in narrative form, supplemented by sketches and photographs. Videotaping may also be considered.
236. Photograph the work area from the same perspective before work begins and after it ends every day, to document any disturbance not related to the official procedure.
237. If recording equipment, such as a total station, is not available, establish a datum point, then block and map the burial site using an appropriate-sized grid and standard archaeological techniques. In some cases it may be adequate simply to measure the depth of the grave from the surface to the skull and from the surface to the feet. Associated material may then be recorded in terms of its position relative to the skeleton.
238. Remove the overburden of earth, screening the dirt for associated materials. Record the level (depth) and relative co-ordinates of any such findings. The type of burial, especially whether it is primary or secondary, influences the care and attention that needs to be given to this step. Associated materials located at a secondary burial site are unlikely to reveal the circumstances of the primary burial but may provide information on events that have occurred after it.
239. Search for items such as bullets, or personal items such as jewellery – for which a metal detector can be useful – particularly in the levels immediately above and below the level of the remains.
240. Once the level of the burial has been located, circumscribe the body and – after documenting archaeological findings such as the dimensions of the grave (noting in particular the edges of the grave outline), the deposition patterns and the characteristics of the matrix of the burial (the hole where the body is buried), including tool marks, where possible – open the burial pit to a minimum of 30 cm on all sides of the body.
241. Expose the body as clearly as possible to ensure that its full extent is visible before removal from the scene. Make sure to expose similarly all associated artefacts before removal. Carefully expose the burial area by digging on all sides to the lowest level of the body (approximately 30 cm). Also expose any associated artefacts.

242. Expose the remains using a soft brush or whisk broom (or other implement appropriate for the soil type). The remains may be fragile, and the interrelationships between elements are important and may be easily disrupted if not handled carefully. Damage can seriously reduce the amount of information available for analysis.
243. Photograph and map the remains *in situ*. All photographs should include an identification number, the date, a scale and an indication of magnetic north.
- First photograph the entire burial, then focus on significant details so that their relation to the whole can be easily visualized
 - Anything that seems unusual or remarkable should be photographed at close range. Careful attention should be given to evidence of trauma or pathological change, either recent or healed
 - Photograph and map all associated materials (e.g. clothes, hair, coffin, artefacts, bullets, casings). The map should include a rough sketch of the skeleton and of any associated materials.
244. Before displacing anything, measure the remains:
- Measure the total length of the remains and record their position in the grave
 - If the skeleton is so fragile that it may break when lifted, measure as much as possible before removing it from the ground.
245. When exhuming skeletal remains, the only way to ensure the recovery of complete and individual bodies is the to remove its skeletal elements according to the anatomical articulation of the skeleton in the grave.
246. When recovering skeletal remains, the general principle is that bones should not be separated from clothing until the remains are in the more controlled conditions of a laboratory. The remains should be recovered taking all due care to minimize the loss of evidence, such as firearm discharge residue. Where skeletal remains are clothed, they should be removed using the clothing as containers (i.e. the trousers containing the legs and pelvis, the upper garments containing the chest and arms). Bearing in mind the possibility of commingling, each individual set of remains (bones, clothing and associated evidence) needs to be appropriately packaged and labelled (e.g. in a cardboard box, in the case of completely skeletonized remains) for transport to the laboratory.
247. Special attention must be given to commingled bodies. It might not be possible to exhume complete bodies at one time if they are intertwined. In such cases, it is important to follow the anatomical articulation of the remains. Either partially remove them (in cases of skeletal remains), or move the remains and free them from each other in order to recover a complete set. This needs to be carefully documented to ensure that the remains are recovered whole and as individual bodies.
248. Special attention must be paid to the exhumation, labelling and packaging of each individual set of remains in order to ensure that no mixing of individual bodies or body parts, their clothing or any associated evidence occurs.
249. Excavate and screen the level of soil immediately under the burial. Document and recover, as per the recovery strategy, any "finds" within the soil. A level of "sterile" (artefact-free) soil should be located before ceasing excavation.

D. Detailed Guidelines on Autopsy

1. Background and key principles

250. These Guidelines should be followed during an autopsy of a potentially unlawful death.¹⁰⁶ The order in which things are done needs to be carefully thought about in advance, priorities established, and procedures prepared for, in accordance with the particular circumstances of the case. A complex autopsy may take an entire working day or even longer, as the examiner may need to return for further examinations.
251. These Guidelines may be of value to the following:
- (a) Experienced forensic doctors or pathologists, who may follow them to ensure a systematic examination and to facilitate meaningful positive or negative criticism by later observers
 - (b) General pathologists or other physicians who have not been trained in forensic pathology or medicine but who are familiar with basic autopsy techniques. It may also alert them to situations in which they should seek consultation
 - (c) Independent consultants whose expertise has been requested in observing, performing, or reviewing an autopsy and may cite these Guidelines and their proposed minimum criteria as a basis for their actions or opinions
 - (d) Governmental authorities, international political organizations, law enforcement agencies, families or friends of the deceased, or representatives of potential defendants charged with responsibility for a death
 - (e) Historians, journalists, attorneys, judges, other physicians and representatives of the public, who may use the Guidelines as a benchmark for evaluating an autopsy and its findings
 - (f) Governments or individuals who are attempting either to establish or to upgrade their medico-legal system for investigating deaths, who may use the Guidelines as a basis.
252. Use of these Guidelines will help thwart the speculation and innuendo that are fuelled by unanswered, partially answered, or poorly answered questions arising from the investigation of a potentially unlawful death.
253. The date, start and finishing times and the place of the autopsy should be recorded.
254. The name(s) of the forensic pathologist prosector(s), the participating assistant(s) and all other persons present during the autopsy should be recorded, including the medical and/or scientific degrees and professional, political or administrative affiliations(s) of each. Each person's role in the autopsy should be indicated. If there are multiple prosecutors, one should be designated as the principal prosecutor with authority to direct the performance of the autopsy.
255. Adequate photographs are crucial for the thorough documentation of autopsy findings and for enabling them to be independently reviewed.¹⁰⁷
- (a) Photographs should be taken using a high-quality camera/lens. If high-quality equipment is not available, then other equipment, such as mobile phones, may be acceptable, bearing in mind that it is important for the photographs to be of sufficient quality to enable the autopsy findings to be independently reviewed. Each photograph should contain a ruled reference scale and an identifying case name or number. A description of the camera and the lighting system should be included in the autopsy report. If more than one camera is used, the identifying information should be recorded for each. Photographs should also include information indicating which camera took each picture, if more than one camera is used. The identity of the person taking the photographs should be recorded
 - (b) Serial photographs reflecting the course of the external examination should be included. Photograph the body prior to and following undressing, washing, shaving or hair cutting
 - (c) Close-up photographs should be supplemented with distant and/or medium-range photographs to permit the orientation and identification of the close-up photographs

106. For further specific advice on approaches to and technical aspects of forensic autopsy, including the operation of the mortuary, see: *Forensic Autopsy: Manual for Forensic Pathologists*, UN Office on Drugs and Crime, October 2015.

107. Videotaping of the autopsy may also be considered.

- (d) 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
 - (e) After the body has been washed or cleaned, identifying facial features should be portrayed with photographs of a full frontal aspect of the face and right and left profiles of the face.
256. The role of cross-sectional scanning has been discussed at Paragraphs 158 to 163 above. If it is available, then CT scanning of the whole body enclosed in the body bag should be undertaken. (If this is done, further consideration of the need for plain X-rays will still be needed). In the likely event that cross-sectional imaging is not available, the body should be radiographed with plain X-rays before it is removed from its packaging. X-rays should be repeated both before and after undressing the body. Fluoroscopy (looking for foreign bodies such as projectiles) may also be performed.¹⁰⁸ The following X-rays may also be required:
- (a) Dental X-rays may be necessary for identification purposes
 - (b) Any skeletal system injury should be documented by X-ray. Skeletal X-rays may also record anatomic defects or surgical procedures. Check especially for fractures of the fingers, toes and other bones in the hands and feet
 - (c) 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. Other radio-opaque objects (such as knife fragments) should also be documented with X-rays, removed, photographed, recorded as exhibits, and secured. If necessary for the purposes of identification, metallic prostheses must be removed and examined, and any identifying features recorded, photographed and secured. Any pacemakers must be removed, especially if cremation is to take place, as they will explode in a fire
 - (d) Skeletal X-rays can assist in determining the age and developmental status of children and young adults.

2. The clothed body

- 257. Before clothing is removed, the clothed body should be photographed.
- 258. If it has not already been done, and is indicated by the circumstances, the hands should now be swabbed for firearm discharge residues. If not done at the scene, the clothed body 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.
- 259. The clothing should be carefully removed (preferably without damage) over a clean sheet or body pouch. The clothing and any jewellery should all be individually examined, described, recorded, labelled, photographed and secured.

3. External examination

- 260. The external examination, focusing on a search for external evidence of injury, is in most cases the critically important part of the autopsy.
 - (a) All of the body area must be photographed
 - (b) The body must be examined and the deceased's apparent age, height, weight, sex, head-hair style and length, nutritional status, muscular development, and colour of skin, eyes and hair (head, facial and body) must be examined and recorded
 - (c) In babies, the head circumference, crown-rump length and crown-heel length should also be measured
 - (d) The degree, location and fixation of rigor and livor mortis should be recorded
 - (e) Body warmth or coolness and state of preservation should be noted as should any decomposition changes, such as skin slippage. The general condition of the body should be evaluated and note taken of adipocere formation, maggots, eggs, pupae, or anything else that suggests the time or place of death
 - (f) With all injuries, their location (related to static anatomic landmarks), size, shape, surrounds, pattern, contents, colour, course, direction and depth must be recorded. Injuries resulting from therapeutic measures should be distinguished wherever possible from those unrelated to medical treatment

¹⁰⁸ This section has been written on the basis that cross-sectional imaging or scanning such as CT scanning or MRI scanning is not available. If it is available, it should be used, bearing in mind the discussion above. Some plain X-rays may still be required.

- (g) In the description of firearm wounds, note 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
- (h) All injuries should be photographed, and labelled with the autopsy identification number on a scale that is oriented parallel or perpendicular to the injury. Shave hair where necessary to clarify an injury, and take photographs with a photographic scale both before and after shaving. Save all hair removed from the site of the injury. Take photographs before and after washing the site of any injury. Wash the body only after any blood or material that may have come from an assailant has been collected and secured
- (i) Examine the skin. Note and photograph with a photographic scale any scars, areas of keloid formation, tattoos, prominent moles, areas of increased or decreased pigmentation, and anything distinctive or identifying, such as birthmarks. Note any bruises and incise them for delineation of their extent. Some, if not all of them, should be excised for microscopic examination as this may be useful for assessing the time between injury and death. The head and genital area should be checked with special care. Note any injection sites or puncture wounds. Note any bite marks; these should be photographed to record the dental pattern, swabbed for saliva testing (before the body is washed), and excised for microscopic examination. The evaluation of bite marks is highly contentious and they should also be evaluated by a forensic dentist with training and experience in such evaluation, if possible. Note any burn marks and assess the possible cause (e.g. burning rubber, a cigarette, electricity, a blowtorch, acid, hot oil) by sampling for histology and other analysis if possible. Note any gunpowder residue on the hands. Document this photographically and save it for analysis. Excise any suspicious areas for microscopic examination, as it may be possible in some circumstances to distinguish between burns caused by electricity and those caused by heat or cold
- (j) Identify and label any foreign object that is recovered, including its relationship to specific injuries. Foreign objects should be placed in a container that should be processed in accordance with established procedures to maintain the chain of custody. Do not scratch the sides or tip of any projectiles. Photograph each projectile and large projectile fragment with an identifying label, and secure them individually in a sealed, padded and labelled container in order to maintain the chain of custody¹⁰⁹
- (k) Examine the head and external scalp, bearing in mind that injuries may be hidden by the hair. Shave hair where necessary. Check for fleas and lice, as these may indicate unsanitary conditions prior to death. Note any alopecia, as this may be caused by malnutrition, heavy metals (e.g. thallium), drugs, or traction. Pull – do not cut – 20 representative head hairs and save them, as hair may be useful for detecting some drugs and poisons. (It may also be of value in stable isotope analysis)
- (l) Examine the teeth and note their condition. This should be performed by a forensic odontologist if possible. Record any that are absent, loose or damaged, and record all dental work (e.g. restorations, fillings) using a dental identification system to identify each tooth (eg: Annex 5). Check the gums for periodontal disease. Photograph dentures, if any, and save them if the deceased's identity is unknown. Check the inside of the mouth and note any evidence of trauma, injection sites, needle marks or biting of the lips, cheeks or tongue. Note any articles or substances in the mouth. In cases of suspected sexual assault, save oral fluid, or get a swab for spermatozoa and acid phosphatase evaluation. (Swabs taken at the tooth-gum junction and samples from between the teeth provide the best specimens for identifying spermatozoa.) Also take swabs from the oral

109. Special packaging is needed to ensure that there has been no unauthorized interference with a specimen, as tampering with the packaging will be evident. This level of security, provided the initial securing of the sample has been adequately documented, ensures at least that the sample has not been interfered with. In addition, complete records must be kept of every time the sample changes hands.

- cavity for seminal fluid typing. Dry the swabs quickly with cool, blown air if possible, and secure them in clean plain-paper envelopes. (If rigor mortis prevents adequate examination, a complete oral examination may need to be deferred until later, during the internal examination. At that time, after subcutaneous dissection to expose the structures of the neck and face to permit better exposure of the oral cavity, the masseter muscles may be divided)
- (m) Examine the face and note if lividity, congestion and/or petechiae are present
- (i) Examine the eyes and view the conjunctivae of both the globes and the eyelids. Note any petechiae in the upper or lower eyelids. Note any scleral icterus. Save contact lenses, if any are present. Collect at least 1 ml of vitreous humour from each eye
 - (ii) Examine the nose and ears and note any evidence of trauma, haemorrhage, or other abnormalities. Examine the tympanic membranes
- (n) Examine all aspects of the neck externally and note any contusions, abrasions or petechiae. Describe and document injury patterns to help differentiate manual, ligature and hanging strangulation. Examine the neck at the conclusion of the autopsy (after removal of the brain and the thoracic contents), when the blood has drained out of the area, as this limits the formation of artefactual bruising associated with dissection
- (o) Examine all surfaces of the extremities – arms, forearms, wrists, hands, legs and feet – and note any “defence” wounds. Dissect and describe any injuries. Note any bruises about the wrists or ankles that may suggest restraints such as handcuffs or suspension. Examine the medial and lateral surfaces of the fingers, the anterior forearms and the backs of the knees for bruises
- (p) Note any broken or missing fingernails. Take fingerprints in all cases. (If it is not possible to have fingerprints taken, explore all possible avenues – e.g. removing the epidermal “glove” of the fingers, or keeping the body so that fingerprints can be taken in the following days – to avoid the unacceptable prospect of having to remove the fingers). Save fingernail clippings and any under-nail tissue (nail scrapings). Examine the fingernail and toenail beds for evidence of objects having been pushed beneath the nails. Nails can be removed by dissecting the lateral margins and proximal base, and then the under-surface of the nails can be inspected. If this is done, the hands must be photographed before and after this dissection. Carefully examine the soles of the feet, noting any evidence of beating. Incise the soles to delineate the extent of any injuries. Examine the palms and knees, looking especially for glass shards or lacerations
- (q) Examine the external genitalia and note the presence of any foreign material or semen. Note the size, location and number of any abrasions or contusions. Note any injury to the inner thighs or peri-anal area. Look for peri-anal burns
- (r) In cases of suspected sexual assault, examine all potentially involved orifices. A speculum should be used to examine the vaginal walls. Collect foreign hair by combing the pubic hair. Pull and save at least 20 of the deceased’s own pubic hairs, including roots. Aspirate fluid from the vagina and/or rectum for analysis (e.g. acid phosphatase, blood group and spermatozoa). Take swabs from the same areas for seminal fluid typing. Dry the swabs quickly with cool, blown air if possible and secure them individually in clean plain-paper envelopes
- (s) The back, the buttocks and extremities including wrists and ankles must be dissected subcutaneously 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.

4. Internal examination¹¹⁰

261. The internal examination should clarify and augment the external examination insofar as injuries are concerned, and should identify and characterize any and all natural disease present. Remember to photograph the internal manifestations of injury and any other abnormalities identified. Ideally, photograph all organs and their cut surfaces. Before removing the organs, obtain fluid specimens, e.g. blood, urine, bile.

- (a) Be systematic in the internal examination. Perform the examination either by body regions or by systems, including cardiovascular, respiratory, biliary, gastrointestinal, reticuloendothelial, genitourinary, endocrine, musculoskeletal and central nervous systems. Record the volume, colour, consistency and nature of any collections of fluid, and retain samples for further investigation if required. Record the weight, size, shape, colour and consistency of each organ, and note any neoplasia, inflammation, anomalies, haemorrhage, ischemia, infarcts, surgical procedures, or injuries. Take sections of normal and any abnormal areas of each organ for microscopic examination. Take samples of any fractured bones for further radiographic and microscopic estimation of the age of the fracture
- (b) Examine the chest.¹¹¹ Note any abnormalities of the breasts. Record any rib fractures, noting whether cardiopulmonary resuscitation was attempted. Before opening the chest, check for pneumothoraces. Record the thickness of subcutaneous fat. Immediately after opening the chest, evaluate the pleural cavities and the pericardial sac for the presence of blood or other fluid, and describe and quantify any fluid present. Save any fluid present until foreign objects are accounted for. Note the presence of air embolism, characterized by frothy blood within the right atrium and right ventricle. Trace any injuries before removing the organs. If blood is not available from other sites, collect a sample directly from the heart. Examine the heart, noting degree and location of coronary artery disease or other abnormalities. Examine the lungs, noting any abnormalities including the presence of blood or other material in the trachea and bronchi
- (c) Examine the abdomen and record the amount of subcutaneous fat. Note the interrelationships between the organs. Trace any injuries before removing the organs. Note any fluid or blood present in the peritoneal cavity, and save it until foreign objects have been accounted for
- (d) Remove, examine and record the quantitative information on the liver, spleen, pancreas, kidneys and adrenal glands. Remove the gastrointestinal tract and examine the contents. Note (and photograph) any food present and its degree of digestion. Save the contents of the stomach. If a more detailed toxicological evaluation is desired, the contents of other regions of the gastrointestinal tract may be saved. Examine the rectum and anus for burns, lacerations, or other injuries. Locate and retain any foreign bodies present. Examine the aorta, inferior vena cava and iliac vessels
- (e) Examine the organs in the pelvis, including ovaries, fallopian tubes, uterus, vagina, prostate gland, seminal vesicles, urethra and urinary bladder. Trace any injuries before removing the organs. Remove these organs carefully so as not to injure them artefactually. Note any evidence of previous or current pregnancy, miscarriage, or delivery. Save any foreign objects within the cervix, uterus, vagina, urethra, or rectum
- (f) Palpate the head and examine the external and internal surfaces of the scalp, noting any trauma or haemorrhage. Note any skull fractures. Remove the calvarium carefully and note epidural and subdural haematomas. Quantify, estimate the age, and save any haematomas present. Remove the dura to examine the internal surface of the skull for fractures. Remove the brain and note any abnormalities. (Preferably, retain the brain in fixative for some days prior to examination, if possible, with the assistance of a neuropathologist.) Dissect and describe any injuries. Cerebral cortical atrophy, whether focal or generalized, should be specifically commented upon
- (g) Evaluate the cerebral vessels

110. Prior to the internal examination, preparations should be made for the sampling required for "Further Testing" (see subsection 5 below).

111. Some prosecutors prefer to start with an examination of the head. This may be particularly appropriate where there are visible injuries to the neck.

- (h) Examine the neck after the thoracic organs and brain have been removed and the neck vessels have been drained. Remove the neck organs, including the tongue, under direct vision having reflected the skin of the front of the neck. Take care not to fracture the hyoid bone or thyroid cartilage. Dissect and describe any injuries. Check the mucosa of the larynx, pyriform sinuses and oesophagus, and note any petechiae, oedema, or burns caused by corrosive substances. Note any articles or substances within the lumina of these structures. Examine the thyroid gland. Separate and examine the parathyroid glands, if they are readily identifiable
- (i) Dissect the neck muscles, noting any haemorrhage. Dissect the muscles from, and note any fractures of, the hyoid bone or thyroid or cricoid cartilages. Consider also a posterior neck dissection if it is at all possible; there may be soft tissue or skeletal injuries there
- (j) Examine the cervical, thoracic and lumbar spine. Examine the vertebrae from their anterior aspects and note any fractures, dislocations, compressions or haemorrhages. Examine the vertebral bodies
- (k) In cases in which spinal injury is suspected, dissect and describe the spinal cord. Examine the cervical spine anteriorly and note any haemorrhage in the paravertebral muscles. The posterior approach is best for evaluating high cervical injuries. Open the spinal canal and remove the spinal cord. Make transverse sections every 0.5 cm and note any abnormalities.
263. After the autopsy has been completed, saved specimens must be recorded and listed in the report. Label all specimens with the name of the deceased, the autopsy identification number, the date and time of collection, the name of the prosector (if applicable), and the contents. Carefully secure all evidence and begin the chain of custody record with the appropriate release forms. There should be agreement with the investigating officer about how the samples will be stored and then transported to the laboratory undertaking the analysis. The transport of such samples is usually a police responsibility exercised following full chain of custody requirements which ensure the security of the samples.

(a) **Large organ and tissue specimens:**

Very occasionally, large organ and tissue specimens may be retained by the forensic doctor for:

- (i) Better examination of an organ of particular importance in the case (e.g. the brain)
- (ii) Further examination by an expert, including one acting for an accused person
- (iii) Use as direct evidence.

The next of kin should be informed and preferably their consent to the retention obtained. If consent is not provided, and the retention is still regarded as being necessary, then formal authorization of the retention should be obtained. Such retention must be in accordance with local law and ethical guidelines, and take into account the family's preferences for the burial or disposal of such organs and tissues.

- (b) **Histology:** In all cases of potentially unlawful death, small representative samples of all major organs, including areas of normal and any abnormal tissue, should be retained in 10% formalin, processed histologically and stained with haematoxylin and eosin (and other stains as indicated). The wet tissue, paraffin blocks and slides should be kept indefinitely. Many forensic doctors are not trained to evaluate histology material. Arrangements should be made for a suitable histopathologist, preferably one with forensic training and experience, to report on the histology. This should be done in consultation: the histopathologist needs to understand the history and findings from the autopsy; and the forensic doctor needs to understand the conclusions, and any limitations, of the histopathologist

5. Further testing

262. The autopsy is a specialized medical investigation that includes the collection of samples, tissues and fluid for further testing.¹¹² The specimens and the manner of collecting them, together with their storage and transport and period of retention, should be agreed with the laboratory that will be undertaking the further testing. If there is no such laboratory, samples, tissues and fluid should still be retained, as testing may be organized later.

112. This section relates to the collection of samples, tissues and fluid. It draws heavily on Section 5.6 "Special Investigations" of *Forensic Autopsy: Manual for Forensic Pathologists*, UN Office on Drugs and Crime. This manual should be consulted for any further assistance required.

- (c) **Toxicology (including biochemistry):** Communication with the testing laboratory is very important. The fluids and volumes required, and the tissue required (if any), will vary from laboratory to laboratory. In all cases, the site from which the specimen has been obtained must be carefully recorded
- (d) **Blood:** If possible, at least 10 ml, preferably obtained from a peripheral site (e.g. the femoral vein) prior to the commencement of the autopsy. To avoid post collection fermentation and putrefaction, add 1% w/v sodium fluoride (NaF) to the collection tube. If peripheral blood is not available, a central site (e.g. the heart) can be used. As a last resort, blood from a body cavity can be obtained, although this will almost certainly be contaminated owing to leakage from other structures (e.g. stomach or bowel contents, mucus, urine, pus or serous fluids) and thus the interpretation of the results will be seriously compromised
- (i) **Urine:**¹¹³ If possible, at least 10ml is usually obtained by direct needle puncture of the exposed bladder after the abdomen has been opened. Alternatively, a urinary catheter inserted via the urethra can be used
- (ii) **Vitreous Humour:**¹¹⁴ 2–3 ml can be obtained by needle puncture of each globe. As it is relatively viscous, a 15- or 17-gauge needle should be used
- (iii) **Bile:** Up to 10 ml
- (iv) **Tissue:** Liver, muscle, kidney, brain, adipose tissue (if possible, 100 mg of each), skin site (e.g. if an insulin injection is suspected). The tissues should be placed in separate, clean, glass or plastic jars without a fixative. Consider freezing the samples if delays are anticipated before transport to the laboratory, or before analysis
- If volatile substance inhalation is suspected, an entire lung should be taken and sealed in a nylon bag. (Polyethylene/plastic bags are permeable to volatile substances)
- (v) **Stomach contents:** Ideally, prior to removing the abdominal contents, the stomach can be isolated by clamping or tying the lower oesophagus and duodenum. After removal, the stomach should be opened inside a large clean dish. After describing and photographing the contents, submit them in secure, clean, screw-top glass or plastic jars
- (vi) **Hair and fingernails:** These may be useful in cases of heavy-metal poisoning or certain drugs. Obtain hair samples by plucking the hair, thereby including the root; do not cut with scissors. Nail samples should comprise the whole nail.
- (e) **Microbiology:** This is not a routine autopsy investigation but can be useful if the collection technique is good and samples are collected in the early post-mortem period. Differentiating between pathogens and normal post-mortem flora complicates the assessment of results. Possible samples include:
- (i) Blood, taken using a sterile needle and syringe under direct vision from the femoral vein or artery (or other suitable vessel), accessed in a sterile manner prior to commencing the autopsy
- (ii) Sampling a small piece of tissue (e.g. lung, spleen) under conditions that are as sterile as possible
- The specimen should be taken to the microbiology laboratory without undue delay. Otherwise, the specimen should be kept in a refrigerator until (the earliest possible) transfer.
- (f) **Entomology:** The collection of appropriate samples of larvae, beetles, flies and other insects on or in the body requires consultation with an entomologist. This includes eggs, maggots and pupae as well as adult insects. Samples may be useful for toxicological analysis as well as helping to assess the minimum post-mortem interval and/or possibly to assess whether the body has been moved some distance after death

113. These samples can be used for biochemical testing. Assessments of hyperglycaemia, ketosis, renal failure and/or dehydration (among other things) can sometimes be made from analysis of these specimens.

114. *Forensic Autopsy: Manual for Forensic Pathologists*, UN Office on Drugs and Crime.

(g) **Molecular/DNA testing:** This is a rapidly developing technological area. The importance of liaising with the relevant laboratory cannot be overemphasized. Splenic tissue is one of the best organs for DNA recovery, although liver, muscle, kidney and brain tissue may also be used. At least 2g of tissue should be placed in a plastic tube without fixative or preservative. The specimen may then be frozen if it is not to be used immediately. In the case of decomposed or skeletonized remains, a sample of bone may be submitted, often the mid shaft of the long bones or teeth (without reparation or cavity), or part of the shaft of the femur. Techniques using less invasive samples such as cartilage, phalanges, fingernails, or toenails have been developed in some centres

(h) **In addition**, other evidence that may need to be collected, recorded and secured includes:

- (i) All foreign objects, including projectiles, projectile fragments, pellets, knives and fibres. Projectiles must be subjected to ballistic analysis
- (ii) All clothes and personal effects of the deceased, either worn by or in the possession of the deceased at the time of death
- (iii) Fingernails and under-nail scrapings
- (iv) Hair, foreign and pubic, in cases of suspected sexual assault
- (v) Head hair, in cases where the place of death or location of the body prior to its discovery may be an issue.

As mentioned at the beginning of this section on further testing, there must be active discussion between the prosecutor and the investigator, and concrete decisions made about the fate of all the specimens.

264. After the autopsy, all organs not retained should be replaced in the body, and the body should be well embalmed to facilitate a second autopsy in case one is desired at some future point. Cremation of the remains will of course prevent a second autopsy.

6. Concluding the cause of death

265. At the end of his/her investigation of the death, it is a fundamental responsibility of the prosecutor to conclude the cause of death and identification of the deceased. It is a surprise for many that only in a small number of deaths can the cause of death be determined from the autopsy findings alone without any other information about the death. In some jurisdictions, the forensic doctor is also required to conclude the manner of death; in other jurisdictions, the system leaves this conclusion to judicial officers.

266. The internationally accepted format for recording the cause of death is set out by the WHO in "The International Form of Medical Certificate of Cause of Death".¹¹⁵ The part of the form on cause of death includes the following sections:

- (a) Part I – includes diseases or conditions directly leading to death (immediate causes) and antecedent causes (or underlying causes)
- (b) Part II – other significant conditions contributing to death, but not contributing to or causing the conditions listed in Part I.

267. All forensic doctors should clearly understand the following concepts involved in correctly concluding the cause of death according to the standard WHO format:

- (a) Underlying cause of death – defined as the disease or injury that initiated the train of morbid events leading directly to death or the circumstances of the accident or violence that led to the fatal injury
- (b) Contributory cause(s) of death – other significant diseases or conditions that contributed to the death but not to the disease(s) or condition(s) listed in the sequence in Part I as causing the death
- (c) A common error is to list the mode of death, such as cardio-respiratory arrest, respiratory failure or coma as the immediate cause of death
- (d) If there is only one cause of death (e.g. Gunshot wound to the head; where death has apparently occurred rapidly at the scene) this should be listed as I(a). In the terminology above, this is both the immediate and the underlying cause of the death
- (e) If the cause of death is unknown even after all investigations have been completed, then it is correct to record it as "unknown" or "unascertained".

115. WHO, *Strengthening civil registration and vital statistics for births, deaths and causes of death: Resource Kit*, Geneva, 2013, available at: http://apps.who.int/iris/bitstream/10665/78917/1/9789241504591_eng.pdf

7. The autopsy report

268. 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. At the end of the autopsy report should be a summary of the findings, including the results of special tests. In addition, the prosecutor should provide his/her opinion about the identity of the deceased, and injuries and disease present, attributing any injuries to external trauma, therapeutic efforts, post-mortem change, or other ante-mortem, peri-mortem, or post-mortem causes. As mentioned above (see Paragraph 151), an opinion as to how the injuries might have been caused, and whether they caused or contributed to the death, should be provided. Reasonable, evidence-based conclusions about the circumstances of the death (including where appropriate the manner of death) should be made. Finally, the formal cause of death, as discussed above, should be provided and explained. The full report should be given to the appropriate authorities and (except if they are implicated in the cause of the death) to the deceased's family.

8. Autopsy signs of possible torture

269. Torture, in brief, is the intentional infliction of severe mental or physical pain or suffering by or with the consent of State authorities for a specific purpose.¹¹⁶

270. Forensic doctors are at the forefront of detecting torture, and never more so than when undertaking the autopsy of a person who has died in the custody of the State.

271. This section has extracted much of the information in Table 2 from both the original Minnesota Protocol and from the Istanbul Protocol: Manual on the Effective Investigation and Documentation

of Torture and other Cruel, Inhuman or Degrading Treatment or Punishment.¹¹⁷ It is intended as an aide-memoire for forensic doctors who may be about to undertake the autopsy of a potentially unlawful death where the deceased has been, or may have been, in the custody of the State. The annex is not a comprehensive list of all the signs of torture or mistreatment that could occur. In particular it does not cover the myriad effects of neglect (including deprivation of food and water) and withholding medical care.

272. Notwithstanding the aide-memoire, it is crucial that as part of the autopsy examination the prosecutor should detect, photograph and record in writing all injuries, whether old or recent. This means recording their site, size, shape, symmetry, surrounds, colour, contour, surface (scaly, crusty, ulcerating), course, direction, depth, any associated bruising or oedema and any surrounding pallor/melanos. Much torture will be missed if there is not an inquiring approach to the autopsy. There should be a willingness to undertake subcutaneous dissection – it is a well-known principle of forensic medicine that deeper injury is often not visible externally and must be sought. Fractures and dislocations may occur in relatively unusual places for autopsy dissection – often the limbs and the facial bones. Again, these will be missed if not searched for. For these reasons, if whole-body cross-sectional scanning (e.g. CT scanning) is available, its use should be very seriously considered, even if it means having to transport the body to another location.

273. In the conclusions of the report, comments should be made both on the overall pattern of the injuries (the number and location of different injury types) and what this might mean, and also on individual injuries with sufficient specificity to suggest their cause.

116. At: <http://www.ohchr.org/EN/ProfessionalInterest/Pages/CAT.aspx>. Art. 1 of the 1984 UN Convention Against Torture defines torture as: "any act by which severe pain or suffering, whether physical or mental, is intentionally inflicted on a person for such purposes as obtaining from him or a third person information or a confession, punishing him for an act he or a third person has committed or is suspected of having committed, or intimidating or coercing him or a third person, or for any reason based on discrimination of any kind, when such pain or suffering is inflicted by or at the instigation of or with the consent or acquiescence of a public official or other person acting in an official capacity. It does not include pain or suffering arising only from, inherent in or incidental to lawful sanctions."

117. At: <http://www.ohchr.org/Documents/Publications/training8Rev1en.pdf>.

Table 2: Torture Techniques and Related Findings

TORTURE TECHNIQUE	PHYSICAL FINDINGS AND NOTES ON THEIR DETECTION
Acute (single episode) and chronic (repeated episodes of) injury	<p>Abrasions, bruises, lacerations, scars; fractures (and, if multiple, some at different stages of healing), especially in unusual locations, which have not been treated</p> <p>Skull fractures, scalp bruising, laceration, cerebral contusions and other intracranial manifestations of trauma; after time, cerebral cortical scars and atrophy</p> <p>Consider cervical spine trauma when facial trauma present</p> <p>Assess nasal bone alignment, crepitation, deviation of the septum; consider plain X-ray, CT scan for the septum. Assess for rhinorrhoea and orbital plate/crista galli fracture</p> <p>Consider fractures of the temporo-mandibular and laryngeal structures. Assess these as part of a detailed neck and facial examination following subcutaneous dissection. At the same time also look for tooth avulsions and fractures; dislocated dental fillings; broken dental prosthesis; bruised Tongue; lesions from forcible insertion of objects into the mouth, electric shocks or burns</p> <p>Specific injuries may disclose a shape suggestive of the causative object, e.g. tramline bruising from rods, truncheons or canes</p> <p>Consequences of blunt force injuries to the orbit, including “blow out” fractures (and/or loss of integrity of the globe), conjunctival haemorrhage, lens dislocation, subhyaloid haemorrhage, retrobulbar haemorrhage, retinal haemorrhage</p>
Suspension by the wrists (“La bandera”) ¹¹⁸	Bruises or scars around the wrists. A chronic linear zone around a wrist or ankle, with few hairs or follicles, is most likely to be a cicatricial alopecia from the prolonged application of a tight ligature. There is no differential diagnosis of spontaneous skin disease for such an appearance
Suspension by the neck or arms (eg “cross suspension” – spreading the arms and tying them to a horizontal bar; “butchery” – tying the hands upwards together, or one by one)	Bruising or scars at the site of binding; prominent lividity in lower extremities; neck trauma (often minimal but may include fractures to larynx)
Suspension with the feet upwards and head downwards (“reverse butchery”, “murciélago”)	Bruises or scars around the ankles; ligamentous damage, dislocations to ankles or other joints
Suspension from a ligature tied around the elbows or wrists with the arms behind the back; or the forearms bound together behind the back with the elbows flexed to 90 degrees and the forearms tied to a horizontal bar (“Palestinian hanging”)	Abrasions, bruises, scars around the wrist(s); dislocation of shoulder joint, or ligamentous damage, muscular tears and/or necrosis to upper arm or pectoral muscles; myoglobinuric renal damage or failure

118. Note that these various forms of suspension, which may last from between 15 and 20 minutes to hours or days, are often accompanied by various forms of beatings and can result in serious systemic consequences.

TORTURE TECHNIQUE	PHYSICAL FINDINGS AND NOTES ON THEIR DETECTION
Suspension of a victim by the flexed knees from a bar passed below the popliteal region, usually while the wrists are tied to the ankles ("parrot perch", "Jack", "pau de arara") (can lead to cruciate ligament tears)	Abrasions, bruises, and/or lacerations, scars on the anterior forearms and backs of the knees; abrasions, bruises to the wrists and/or ankles
Forcible immersions of head in water often contaminated with urine, faeces, vomit or other impurities ("wet submarine", "pileta", "latina")	Signs of drowning/near drowning; faecal or other debris in the mouth, pharynx, trachea, oesophagus or lungs. In survival, pneumonia
Many other forms of positional torture, tying or restraining victims in contorted, hyperextended or other unnatural positions	Fractures, dislocations, injuries to ligaments, tendons, nerves and blood vessels, both recent and old
Blunt abdominal trauma while lying on a table with the upper half of the body unsupported ("operating table", "el quirófano")	Abdominal bruises, back injuries, injuries to abdominal viscera including rupture. Intramuscular, retroperitoneal, intra-abdominal haemorrhage
Hard slap of palm to one or both ears ("teléfono")	Rapid increase of pressure in ear canals causes ruptured ear drum(s); after time, these will appear scarred. There may be injuries to the external ear. Use otoscope
Whipping	Multiple depigmented, linear hypertrophic scars surrounded by a zone of hyperpigmentation are most likely the consequence of whipping. Exclude plant dermatitis
Forcible removal of a fingernail or toenail	Acutely, laceration and bruising to the nail bed and skin of the distal phalanx; other injuries associated with restraint. Later, an overgrowth of tissue may be produced at the nail fold forming a pterygium. Lichen planus is the relevant differential diagnosis, and this is usually accompanied by other skin lesions. Fungal infections produce thickened yellowish crumbling nails
Burns	Cigarette, hot objects acutely result in characteristic burns (after time, these cause atrophic scars with narrow hypertrophic and hyper-pigmented periphery. Spontaneously occurring inflammatory processes lack this characteristic marginal zone); when the nail matrix is burnt, subsequent growth produces striped thin deformed nails, sometimes broken up in longitudinal segments
Electric shock (wires connected to a source of electricity; e.g. "cattle prod"/"la picana": pointed electric instrument, metal on the tip)	Electric shock to hands, feet, fingers, toes, ears, nipples, mouth, lips or genitalia. Gels or water often used to prevent detectable burns. The appearance is of burns and depends upon the age of the injury. Immediately: red spots, vesicles and/or black exudate. Within a few weeks: circular reddish macular scars. At several months: small, white, reddish or brown or hyperpigmented spots (picana)
Heated metal skewer inserted into the anus ("black slave")	Peri-anal or rectal burns
Repeated blunt trauma to the soles of the feet (and occasionally the hands or hips) ("falanga", "falaka", "bastinado")	May be missed on cursory external examination; even if signs are present, swelling and not bruising may be the dominant appearance. Closed compartment syndrome may lead to muscle necrosis (aseptic), or vascular compromise of toes or even the distal foot. Fractures of carpal and metatarsals can occur. The aponeurosis and tendons may be torn. After time, irregular scars involving the skin may occur
Sexual assault	Sexually transmitted disease; pregnancy; injuries to the breasts or genitalia All the signs of penetration of vagina, anus or mouth and their differential diagnoses

E. Detailed Guidelines on the Analysis of Skeletal Remains

1. Introduction

274. These Guidelines describe the process to be followed in the analysis of skeletal remains.

2. Infrastructure for the analysis of skeletal remains

275. The analysis of skeletal remains requires infrastructure, in particular a laboratory. In terms of security, chain of custody and biosecurity, the laboratory is set up in the same way as a mortuary. The laboratory should be used exclusively for the analysis of skeletal remains as ordinarily it takes longer than an autopsy (sometimes days or even weeks) for the analysis to be completed. The following list sets out some of the basic conditions required. These will vary depending on the number of cases under analysis at any one time:

- (a) Sufficient space to place the tables where the remains will be analysed. The tables should be large enough to lay out skeletal remains anatomically
- (b) Good lighting
- (c) Good ventilation
- (d) Areas for the deposit and storage of remains and associated evidence (refrigeration is not required for skeletonized remains)
- (e) Cleaning area (with access to running water)
- (f) Photography area
- (g) Area for taking samples for genetic analysis (this needs to take into account potential cross-contamination issues)
- (h) Access to plain X-rays
- (i) The availability of exhaust air filtration to address odours and the accidental dispersal of infectious materials, spores, etc.
- (j) When the body is in an advanced stage of decomposition, a special room for removing flesh to allow the bones to be examined.

3. Preparing skeletal remains for analysis

276. The importance of properly recovering the remains cannot be overemphasized. Failures in recovery further complicate an already complicated task, and may render it impossible to produce reliable and valid conclusions concerning all of the issues to be addressed in the analysis of the remains.

277. After receiving the remains at the laboratory, and following all the steps relating to chain of custody and documentation, the forensic anthropologist must establish:

- (a) Whether or not the remains are human
- (b) Whether the case is one of medico-legal interest, and not one relating to a historical or pre-historical context
- (c) What is the minimum number of individuals represented by the remains.

278. In cases of very fragmented remains it may be difficult to establish macroscopically whether or not the remains are human. If so, histological, genetic or chemical methods should be used.

279. In some cases it is critical to establish if the remains are of medico-legal interest, as they could date from historical or prehistoric times. In those situations, the method of disposal of the remains, the associated objects (e.g. stone tools) found with the remains and their position inside the grave may play a key role in the assessment. Also, certain features of the bones (e.g. strong muscle insertions) and teeth (extreme dental wear) may indicate their historical nature. Such features need to be interpreted with care, however, as contemporary populations may also show such features. The presence of dental restorations will, obviously, indicate a more contemporary context.

280. If the remains have arrived at the laboratory commingled, a proper strategy for sorting them is required in order to establish what is called the Minimum Number of Individuals (MNI) present. Possible approaches include: pair-matching, articulation, process of elimination, osteometric comparison, taphonomy and, finally, genetic analysis.

281. Once established as a case of forensic interest, the remains should be prepared in the following sequence:

- (a) **Inventory:** Which bones and teeth are present, the condition of these individual elements, and whether there is more than one individual (identified by repetition of same bones/teeth)

- (b) **Plain X-rays:** Any bone showing signs of damage, for example by gunshots, must be X-rayed for metallic objects invisible to the naked eye. Chemical tests can be used to identify the presence of lead or copper, e.g. from projectiles. X-rays are also very useful for evaluating bone pathology

X-rays should be taken before any cleaning of the remains occurs. This is particularly important with partially decomposed remains, where commingling might not be detected upon exhumation

- (c) **Cleaning/sampling:** If their condition allows, all the bones and teeth should be washed with simple running water and no other product. A trap must be in place to capture any material that might be dislodged by the water. In a case of severely decomposed skeletal remains, however, washing can be detrimental. A brush with soft bristles, such as a toothbrush, may be used to remove dirt, special care being taken with worn bones, such as the epiphyses of the long bones and the faces of the pubic symphysis. Teeth not permanently attached to the alveolar bone should be removed and washed separately, to prevent their loss

In cases where the remains are not completely reduced to bone, and soft tissue is still attached, a non-chemical method should be used for cleaning, under strict control. Such a process shall only be undertaken once the forensic pathologist has evaluated and properly documented the remains and the necessary samples have been collected. Once the remains have been washed, they should be allowed to dry, preferably away from light and without exposing the bones to the sun. A fan can be used to speed up the process

- (d) **Sampling:** The main reason for taking samples when analysing skeletal remains is to perform a genetic analysis that could help in identification. This procedure must be coordinated, as sampling methods vary according to the requirements of the DNA laboratory. Depending on the condition of the skeleton and the number of individuals represented, the anthropologist has to decide how many samples to take. This decision is more complicated in commingled cases, and must take into account the wider strategy on how to analyse such complex cases. Usually, two or three healthy teeth and a sufficient quantity of a long bone, such as a femur or tibia, are enough for the sampling of a complete individual skeleton. (It is preferable for such sampling to take place before the teeth and bones are cleaned, to avoid new contamination)

- (e) **Reconstruction:** The bones presenting peri- or post-mortem trauma may have to be reconstructed. Special glue, which allows the fragments to be separated without damage in the event of an error, should be used.

4. Establishing a biological profile of the remains

282. Once the remains have been prepared, the anthropologist compiles the biological profile of the individual: the assessment and determination of age, sex, ancestry and stature.
283. **Age:** This is estimated within a range, and is not exact. The older the individual, the wider the range. From the fetal stage to approximately 25 years of age, the human skeleton undergoes continuous development and growth. Several indicators are evaluated, including dentition development, length of long bones and the appearance and fusion of epiphyses in early ages; and, in later stages of development, the pubic symphysis and the morphology of the sternal end of the fourth rib. Once development stops, degenerative changes begin to appear, especially in the joints, such as signs of osteoarthritis (e.g. osteophytes).
284. **Sex:** The sexual dimorphism in the skeleton is seen after puberty, so before that period determination of sex is not very reliable. In older individuals, there are two main ways to determine the sex:
- Morphological traits in specific areas of the pelvis and skull, and
 - Metric assessments, which involve measurements of various dimensions of limb bones and articular surfaces
- In cases where the remains are fragmented or no bones diagnostic of sex are available, a genetic analysis (amelogenin) could also be applied to determine the sex. Determining the sex (amelogenin) is undertaken as standard in the genetic analysis of bones.
285. **Ancestry:** Ancestry refers to the geographic region and/or the ancestral origin of a particular population group. It is assessed by evaluating specific traits in the skeleton, mainly in the skull, that can be present or absent, or present to some degree. At the same time, several measurements can be taken in the skull and post-cranial skeleton. Software is available to process the measurements and produce an assessment of the ancestry of the skeleton under analysis, when appropriate.

286. **Stature:** The stature of a skeleton is usually estimated following one of two methods:
- (a) Measuring the height/length of some specific bones (skull, spine, femur, tibia and talus), adding those measurements and correcting for the missing soft tissue, or
 - (b) Measuring one complete long bone (such as the femur, tibia or humerus) or the combination of two such bones (femur and tibia ideally), and applying a regression formula to the result
 - (c) Regression formulae are also available for fragmented bones. In all cases, information on sex and ancestry are required in order to select the correct reference table to use.

5. Remaining analysis and report

287. After a biological profile has been established, the analysis continues with the following steps:
- (a) Analysis of any indicator of **ante-mortem trauma**, pathological conditions or skeletal variations (which may or may not be symptomatic) that can provide information about the cause and circumstances of the death or specific information leading to identification
 - (b) Analysis of possible **post-mortem changes** in the bones, due to taphonomic processes (see Paragraph 289) that could affect the body after death. It is critical to distinguish these changes from the injuries relating to peri-mortem trauma
 - (c) Dental analysis, to contribute to age estimation and possibly even identification. (This should be undertaken by a forensic odontologist if possible.)
288. Establishing the **period of time since death** is difficult, especially in cases of skeletal remains. In the case of historical or prehistoric remains, several methods of dating have been developed. For cases of forensic interest, covering periods from a few days to up to 30 or 40 years, there is no scientific method, relying on an analysis of bones or teeth, to establish whether a person died one, five, or ten years ago. However, new studies of radiocarbon are being applied in some specific contexts. Circumstantial information and other material with the skeletal remains, or in some instances even satellite imagery, may help to establish when the events (or burial) took place.

289. **Forensic taphonomy** is a field that studies the various changes to the human body after death. On some occasions this may enable post-mortem changes observed in the skeleton to be understood (e.g. action of scavengers, plant activity), but it will generally not provide any degree of certainty about the time since death. In that sense, archaeological dating methods, using objects associated with the remains, such as coins or cartridge case, may provide a better general estimation.

290. Methods used in the analysis of skeletal remains must meet standards accepted by the scientific community. In the event that indicators and databases relying on local data collection are used, they must be endorsed by publication in reputable peer-reviewed publications.

291. All analysis must be properly documented, with photos, drawings, notes and specific forms. A precise record of the samples taken from the remains must be kept, the samples must be correctly labelled and records of security and the chain of custody kept. If the remains are to be buried before formal identification, the process must be properly documented. This includes recording the exact location of the disposal of the remains, proper labelling of the container holding the remains, and appropriate notation on the chain-of-custody form.
292. The final forensic anthropology report must include all information relating to the reception of the remains; procedures followed for the analysis; samples taken and to whom they were given; and the conclusions and any recommendations. (In some circumstances it may be necessary or desirable to include forms and diagrams). This report must be integrated with those produced by other specialists in order to present to the authority an integrated forensic report.

VI. GLOSSARY

Abrasion	Superficial injury involving the skin; often called a scratch, scrape or graze.
Accountable	Subject to a system that is designed to ensure the proper discharge of responsibility by a person or institution.
Alveolar bone	In relation to teeth, the sockets holding the teeth.
Ancestry	In relation to forensic anthropology, the biological heritage of the remains.
Ante-mortem data	Data about a named individual while alive that can be used to compare with post-mortem data collected from the body, usually for the purpose of identifying the body.
Artefact	Artificial product. In relation to a dead body, a change (for example resulting from resuscitation or post-mortem damage) imitating pathology, disease or injury occurring in life.
Autopsy	In this document, the examination of a dead body involving its external and internal examination and incorporating the results of special tests (including radiology). The internal examination involves, but is not limited to, examining the contents of the cranium, chest and abdomen. Further dissection may occur in particular circumstances.
Biological profile	A term used in forensic anthropology to refer to the evaluation of skeletonized human remains to make conclusions about the age, sex, ancestry and stature of those remains, to aid in their identification.
Bruise	An injury characterized by extravasation of blood into the surrounding tissues.
Cause of death	<p>The underlying cause (the disease, condition or circumstance initiating the chain of events resulting in death), possibly proceeding through more immediate (or proximate) causes, concludes the logically linked statements that constitute the cause of death. In concluding the cause of death according to the WHO format, which is the conventional and internationally understood format, the most immediate cause is stated first, and the underlying cause(s) stated last. Thus, the cause of death of a young man who was shot in the chest resulting in massive haemorrhage as the bullet passed through the heart and the lungs should be recorded as: I(a) Haemorrhage (due to) I(b) Perforation of the heart and lungs (due to) I(c) Gunshot wound to the chest.</p> <p>Part II of the cause of death statement includes the disease(s), condition(s) or circumstance(s), if any, that contribute to the death, but NOT to the underlying cause listed in I. The cause of death is Parts I and II considered together.</p> <p>Note: the cause of death is distinguished from the manner of death (qv) and the mode of death (qv).</p>
Chain of custody (of an exhibit)	A process enabling the complete history of the custody of an exhibit to be tracked and recreated; that is, who has had care and control of the exhibit from the time it was first secured to the present.
Commingled remains	Usually in relation to skeletal remains, the mixing of the remains of two or more individuals, for example in a mass grave.
Contamination	The location on a person or object of material, whether obvious or not, from another source. Such contamination can be useful in forensically linking a suspect to a crime scene; or it can be confusing and damaging to justice (e.g. DNA contamination).
Continuity	See Chain of custody (above).






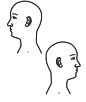

















Death	The irreversible cessation of all vital functions, including brain activity. Death is “natural” when it is caused solely by disease and/or the ageing process. It is “unnatural” when its causes are external, such as intentional injury (homicide, suicide), negligence, or unintentional injury (death by accident).
Decomposition (post mortem)	The process of dissolution of the body after death. In the early hours and days after death, some of the changes can be mistaken for injuries (e.g. signs of putrefaction such as swelling and purplish discolouration of the face and body).
Deceased	Depending upon the context, dead, or a dead person.
Defence injuries/wounds	Injuries/wounds sustained by a victim resulting from attempts at self-defence during an assault.
Disaster Victim Identification (DVI)	The scene, mortuary-based and related processes (e.g. ante-mortem data collection, reconciliation) of dealing with a multiple fatality event to ensure that individuals are correctly identified. Undertaken in accordance with Interpol guidelines.
Epiphysis(es)	The end(s) of particularly, but not only, long bones; the process of the fusion of the epiphysis(es) with the shaft of the long bone allows conclusions to be drawn about the age of the person.
Ethics	The study of what is right and wrong. Professional ethics concentrates on the behaviour and attitudes of members of a particular profession.
Exhibits	Physical evidence thought to be relevant to the investigation of a crime or death that are labelled, recorded as exhibits and kept securely so that they cannot be interfered with or contaminated.
Femur	The thigh bone.
Fingerprints (latent)	Fingerprints present on a surface requiring a technical process to make them visible.
Forensic	Relating to the courts or, more generally, the law.
Forensic anthropology	The examination of human skeletal material to answer medico-legal questions including those of identification.
Forensic archaeology	The use of the skills employed in the study of ancient remains and objects for the purposes of the law, usually in relation to the excavation, recovery and evaluation of scenes and sites.
Forensic ballistics/firearms and toolmarks	These two categories of forensic science are often used interchangeably; in this document, they refer to the examinations leading to conclusions of forensic value about gunshot wounds and the projectiles recovered from them.
Forensic doctor	For the purposes of this document, a certified medical doctor who is authorized to perform forensic post-mortem examinations.
Forensic entomology	The study of insects in a forensic setting, most often in forensic pathology as an indicator of the minimum time since death.
Forensic odontology	The study of dentistry in relation to the law, in particular in the investigation of death, especially for the identification of human remains.
Forensic medicine	The principles and practice of medicine as applied to the needs of the law and the courts.
Forensic pathologist	The medical specialist concerned with the investigation of deaths in which the law has an interest; in this document, used interchangeably with the term forensic doctor.

Forensic science	The application of the principles and practice of science to the needs of the law and the courts.
Forensic toolmarks	The examination of marks left on exhibits and the comparison of these with possible causative implements/tools/weapons; in some laboratories this is combined with the assessment of firearms.
Forensic toxicology	The science of drugs and poisons applied to the needs of the law and the courts.
Fracture	Break; a discontinuity in the cortex of a bone; sometimes used in relation to a cartilaginous structure such as a costal cartilage or thyroid cartilage.
Histology (histopathology)	The study of the microscopic structure of tissues (histology) in a diseased state (histopathology).
Human identification	In this document, the attachment of the correct name to a dead body.
Human remains	In this document, synonymous with deceased person or dead body, whether the body is freshly dead, decomposing or skeletonized.
Humerus	The upper arm bone.
Immediate cause of death	The disease, condition or complication, resulting from the underlying or an intermediate cause, that immediately precedes death.
Inventory	List.
Laceration	A tear or split in the skin or other organ or soft tissue due to blunt force.
Livor mortis, lividity (post mortem)	The post-mortem phenomenon of blood settling under the influence of gravity.
Manner of death	The summary of the circumstances of the death; thus: homicide, suicide, accident, natural or undetermined.
Minimum Number of Individuals (MNI)	Forensic anthropological term used in relation to the assessment of commingled remains and referring to how many individuals, as a minimum, are represented in the commingled remains being examined.
Mode of death	The pathophysiological process by which a person died (e.g. haemorrhage, respiratory failure, cardiac failure, multi-organ failure, septicaemia). Its use alone is not sufficient to complete the cause of death properly in the internationally accepted WHO format. See also "Cause of death".
Mortuary (morgue)	The place for storing, keeping and looking after the dead until final disposal or interment; includes the autopsy room; hospital for the dead.
Ordnance	Relating to artillery, large guns.
Osteophytes	Usually small growths of extra bone associated with degenerative, osteoarthritic changes in the joints.
Peri-mortem	Around the time of death. This term is often used in forensic anthropology in relation to injuries because, once the remains have skeletonized, an injury inflicted shortly before death will look identical to the same injury inflicted shortly after death.
Petechiae (petechial haemorrhages)	Pinpoint or "dot-like" haemorrhages. Some forms occur in life, others can occur after death.
Photolog	The list of all photographs taken with related data, e.g. the name of the photographer, the time the photograph was taken and the place where it was taken.
Photo markers	Markers with numbers and letters visible in photographs enabling later identification of the photographs and the items shown in them.
Postcranial skeleton	The entire skeleton apart from the skull.
Post-mortem changes	A term that encompasses all the natural changes that can occur to a dead body.
Post-mortem data	Data obtained from the dead body to compare with data obtained about a named individual while alive (ante-mortem data), usually for the purposes of identifying the dead body.

Post-mortem examination	In this document, examination of the body after death not including an internal examination. (In this document, an examination of a dead body that includes an internal examination is an autopsy.)
Prosector	The authorized medical practitioner/forensic doctor undertaking the autopsy and preparing the report.
Pubic symphysis	The part of the pubic bone that joins with the other pubic bone at the front of the pelvis.
Reference sample	A standard sample against which another sample can be compared.
Reliability	The reliability of a result is its stability when the test is undertaken by different observers in different places at different times.
Responsibility	The duty to perform a task or function properly.
Reviewability	One of the aims of the autopsy is that it (and indeed the whole death investigation) should be conducted in such a way that another forensic doctor or pathologist at another time can independently come to his/her own conclusions about the death. This enables conclusions to be drawn about the reliability of the autopsy and the conclusions arising from it.
Rigor mortis	Post-mortem stiffening of the body.
Sample (or exhibit) degradation	The loss or alteration of the characteristics of a sample (or exhibit) that it possessed at the time it came into existence, was found, or was collected. In a forensic context, this means that the sample's ability to contribute to the investigation is reduced.
Security (of exhibits)	The process, including documentation, whereby an exhibit is secured such that it is evident whether or not it has been accessed, and if so, when and by whom.
Sexual dimorphism	The two different shapes of some bones, associated with males and females (which only becomes readily apparent after puberty).
Skeletal remains	The bony remains of the dead body after all soft tissue has been lost following decomposition.
Stature	Height.
Taphonomy	The study of all the (usually natural) processes that can affect a dead body.
Theodolite	A precision survey instrument which simultaneously measures angles in the horizontal and vertical planes. Modern versions (such as a total station theodolite) include electronic readers as well as distance measuring devices.
Tibia	The larger of the two lower leg bones.
Transparency (of processes)	Degree to which processes can be evaluated externally because their details are available to be examined.
Underlying cause of death	The disease or condition initiating the chain of events leading to death (often with intervening intermediate and immediate – or proximate – causes of death).
Validity	In relation to a measure or a result, the extent to which the measure or result reflects the truth of the phenomenon.
Wound	A significant discontinuity in the surface of a structure, most often in the skin, e.g. incised wound, stab wound, gunshot wound, laceration. It does not include a bruise or an abrasion.

Annex 1. Anatomical Sketches

The legend for the anatomical sketches contained in Annex 1 is set out below.*

(i)	Whole body - front		(ii)	Whole body - back	
(iii)	Whole body - side (R)		(iv)	Whole body - side (L)	
(v)	Head - front and back		(vi)	Head - side (L & R)	
(vii)	Hands - back and palm (L & R)		(viii)	Forearms - (R & L)	
(ix)	Feet - soles and dorsum (R & L)		(x)	Whole body skeleton	
(xi)	Skull - front and back		(xii)	Skull - side (L & R)	
(xiii)	Skull - base and top		(xiv)	Skull - inside	
(xv)	Genitalia - male		(xvi)	Genitalia - female	
(xvii)	Extended neck - front and larynx		(xviii)	Extended neck - side (L & R)	
(xix)	Neck - section (R & L)		(xx)	Spine - three sections	
(xxi)	Brain - surfaces		(xxii)	Brain - slices	
(xxiii)	Brain - coronal slices				

* The copyright for the sketches and other annexes is held by the Victorian Institute of Forensic Medicine in Australia, which has kindly agreed to their reproduction in the Protocol. The contribution of the Institute's Deputy Director, David Ranson, is also gratefully acknowledged.

Figure (i)
Whole body - front

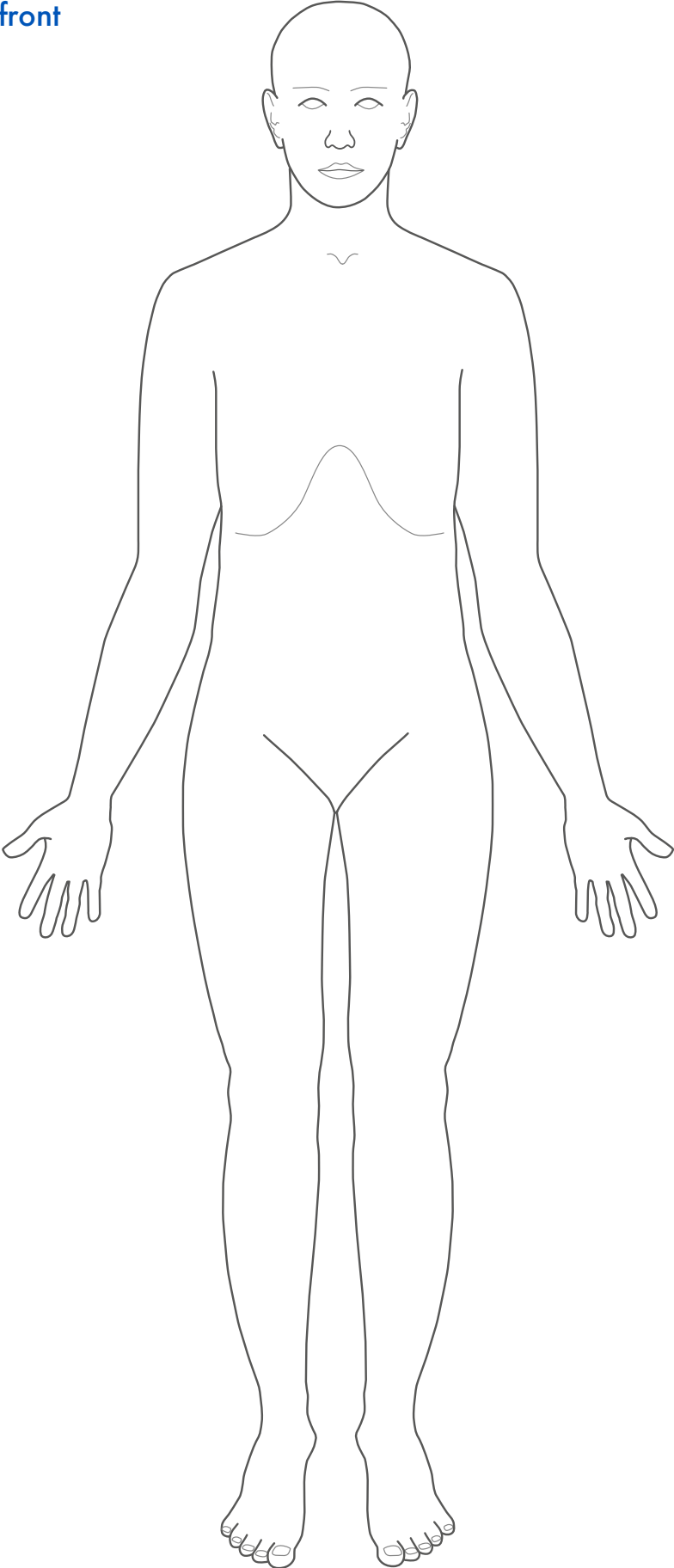


Figure (ii)
Whole body - back

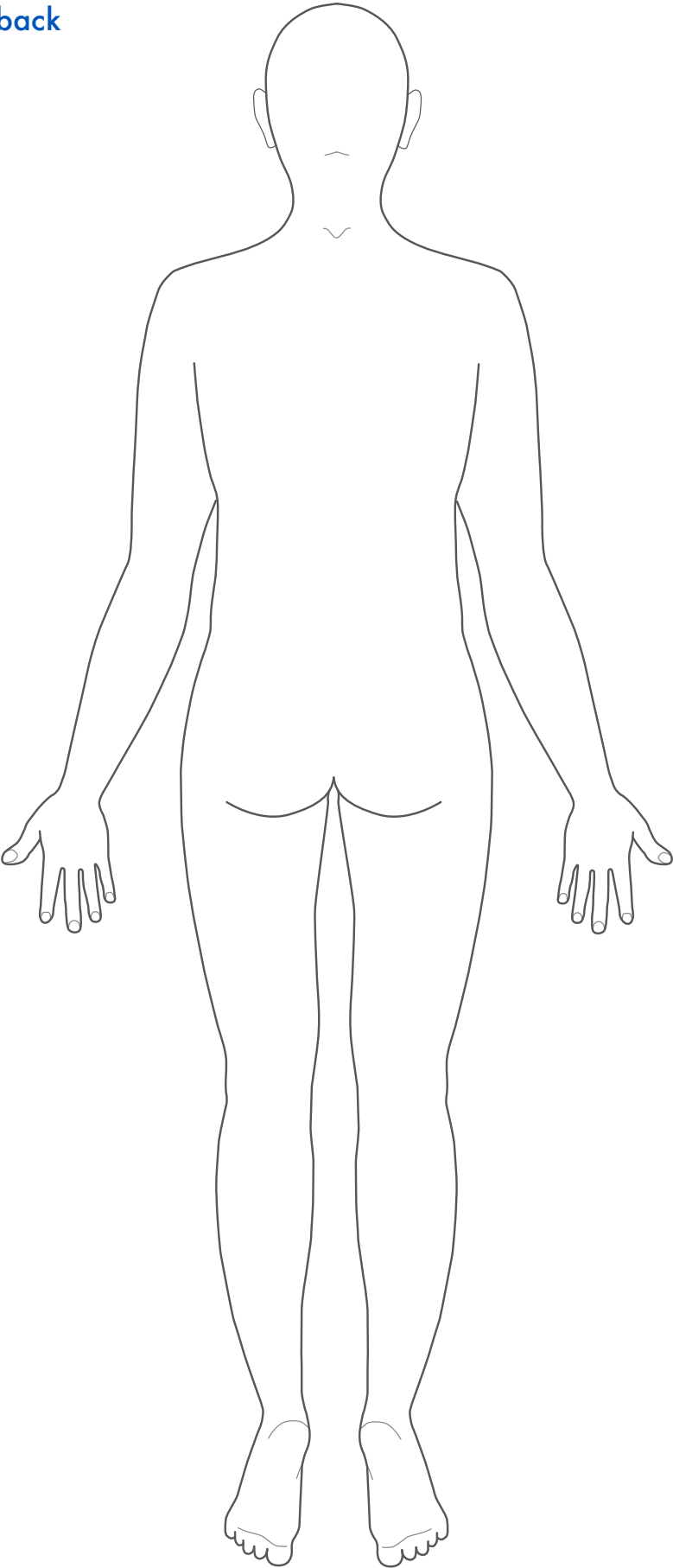


Figure (iii)
Whole body - side (R)

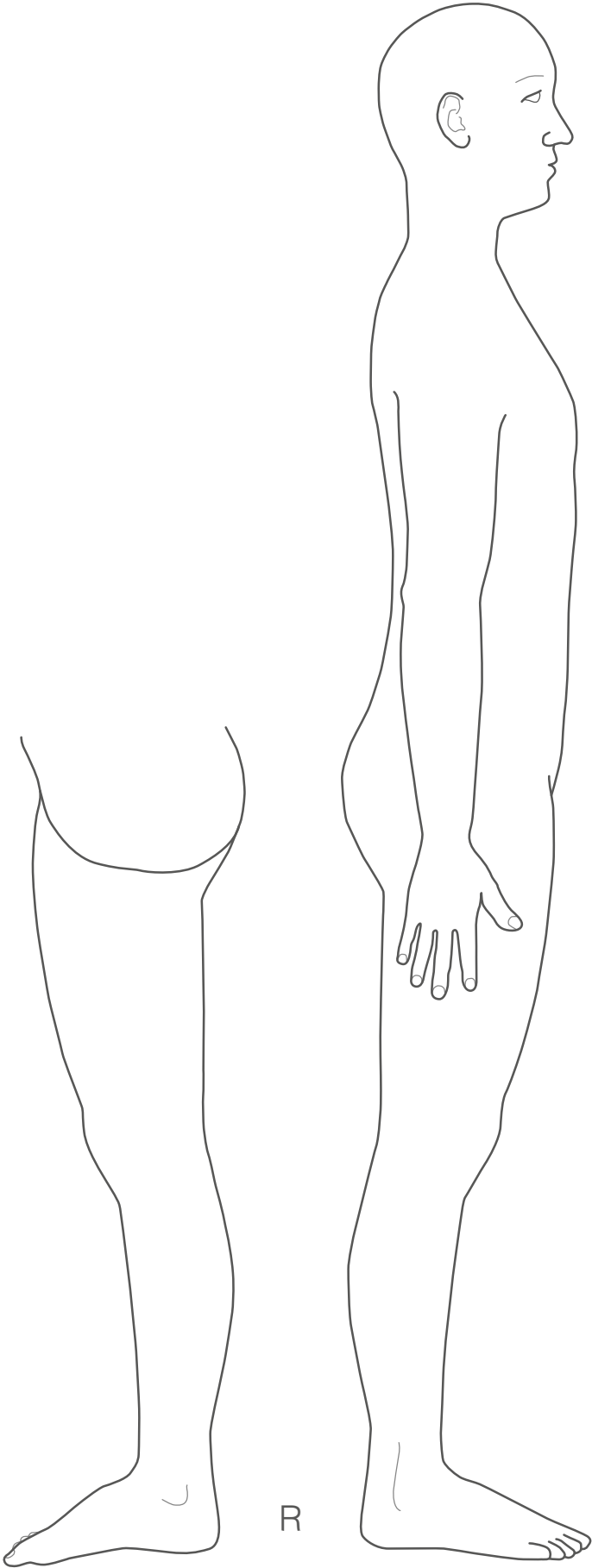


Figure (iv)
Whole body - side (L)

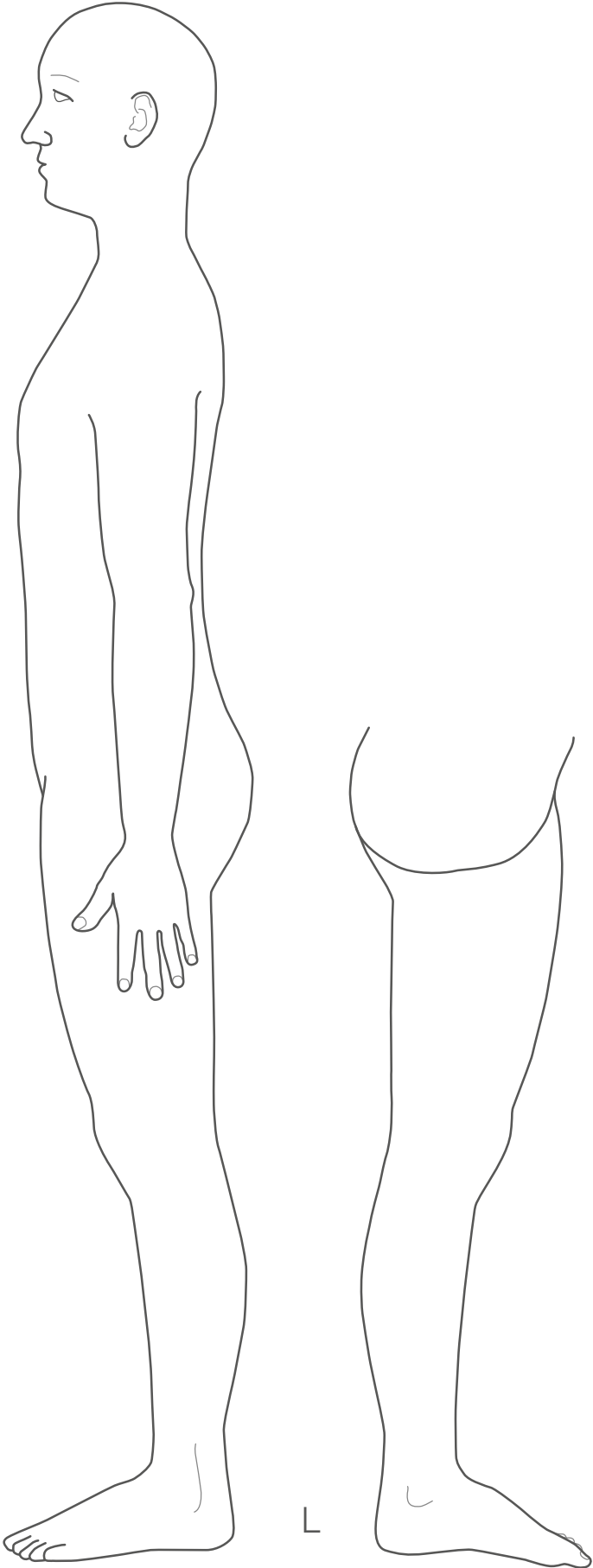


Figure (v)
Head - front and back

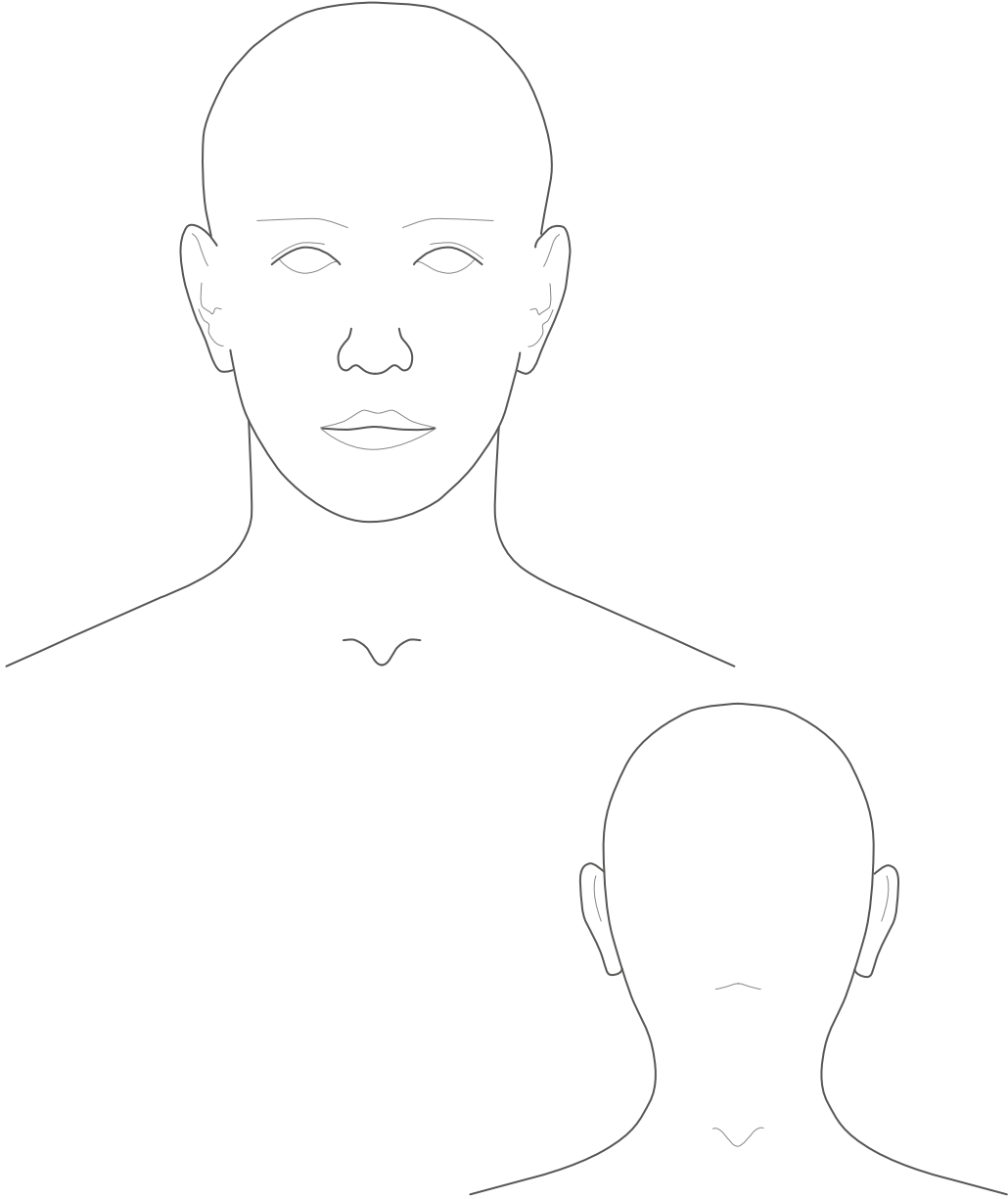


Figure (vi)
Head - side (L & R)

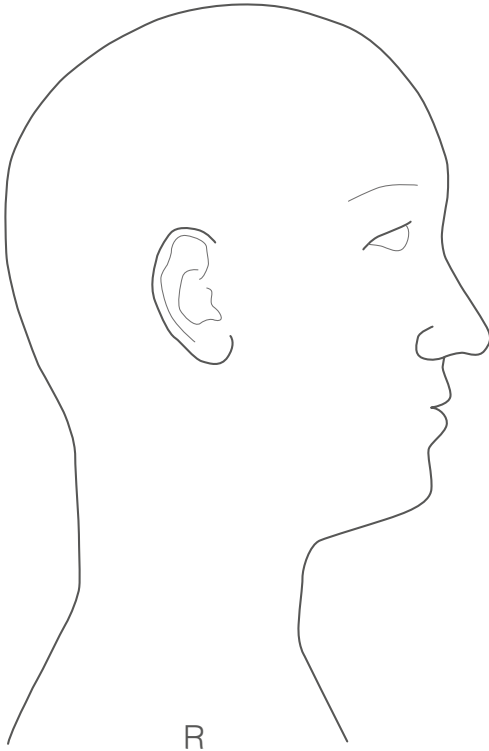
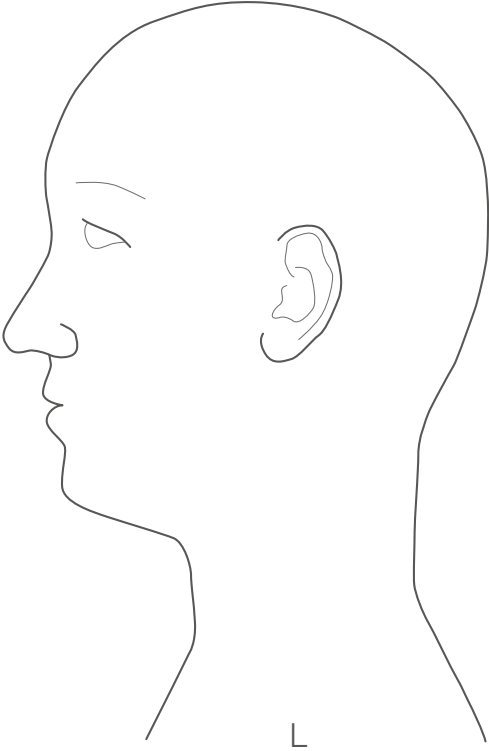
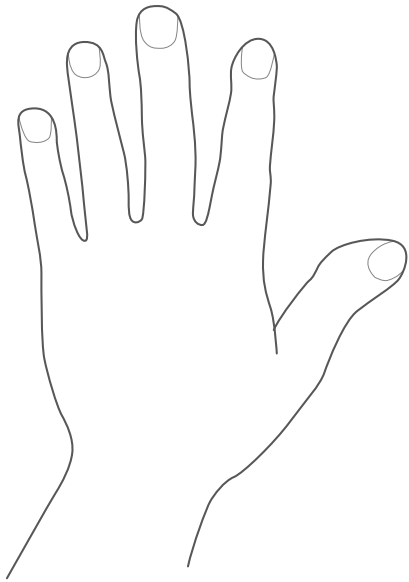
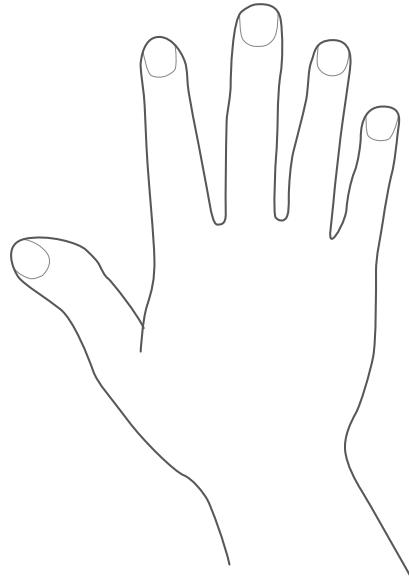


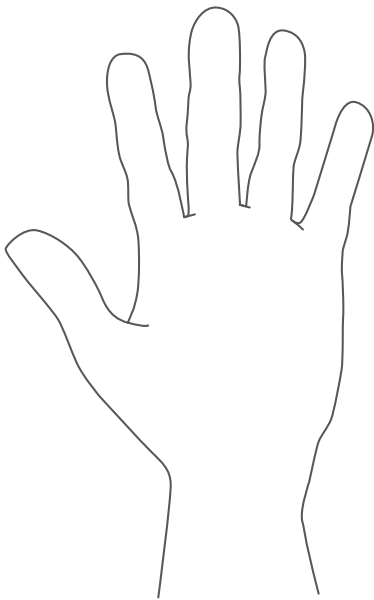
Figure (vii)
Hands - Back and Palm (L & R)



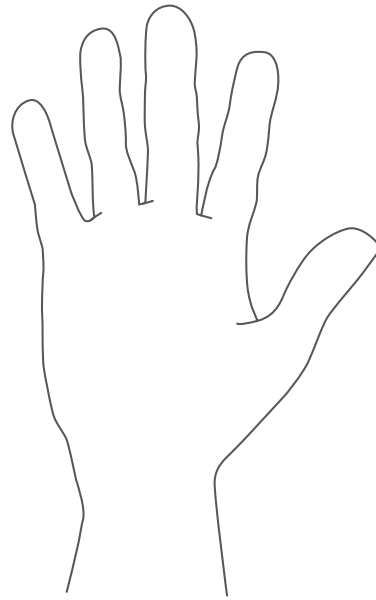
L



R



L



R

Figure (viii)
Forearms - (R & L)

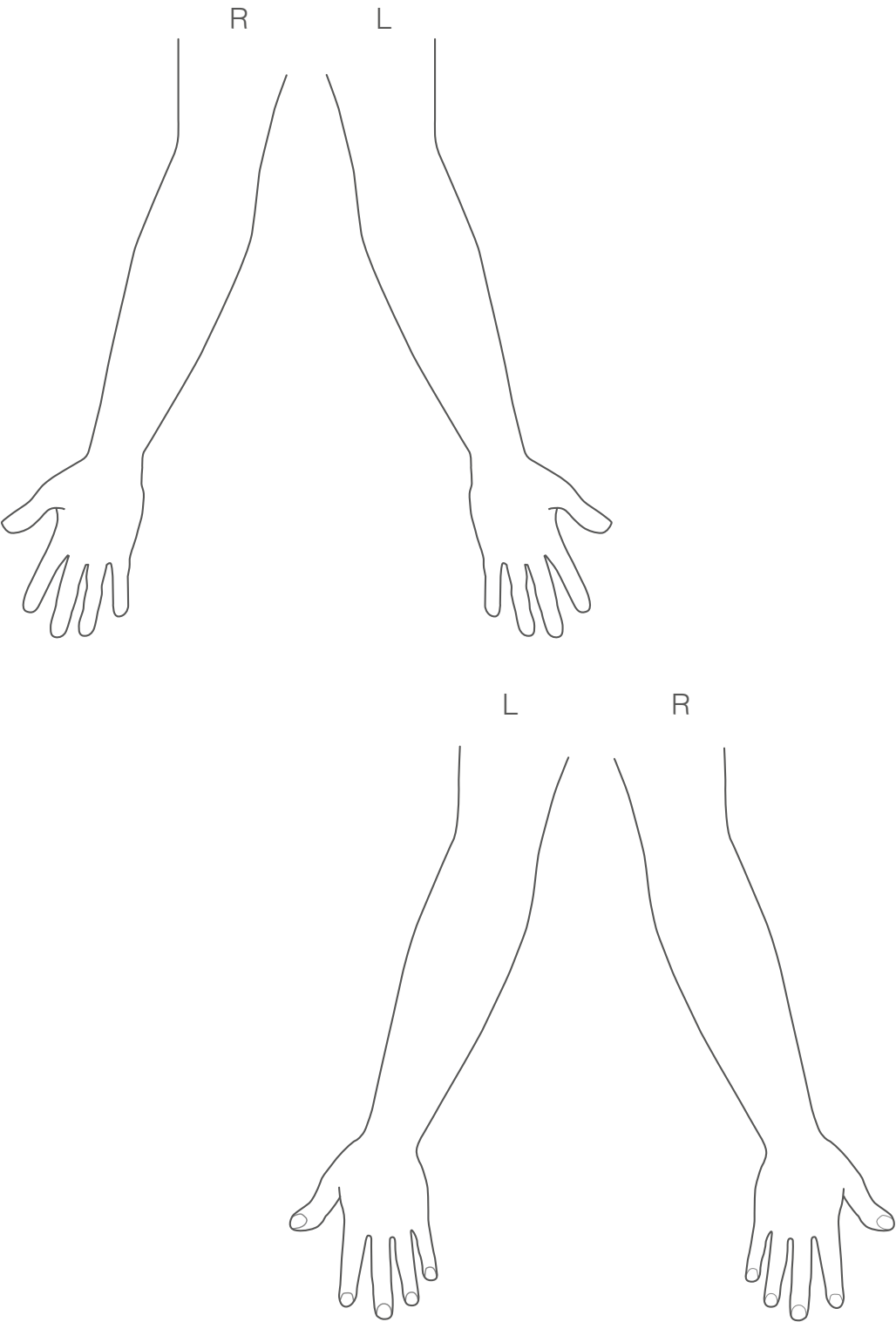


Figure (ix)
Feet - Soles and Dorsum (R & L)

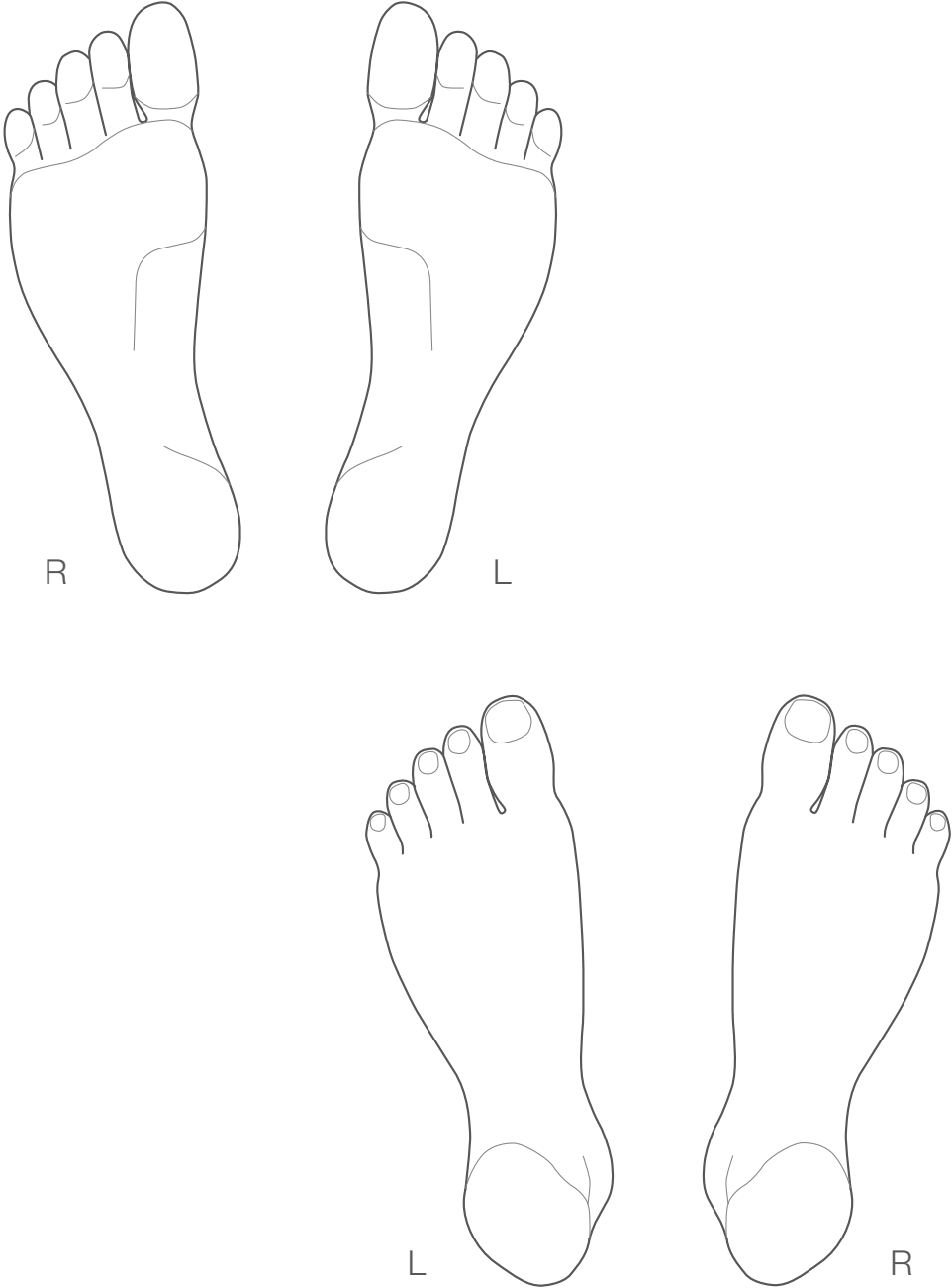


Figure (x)
Whole Body Skeleton

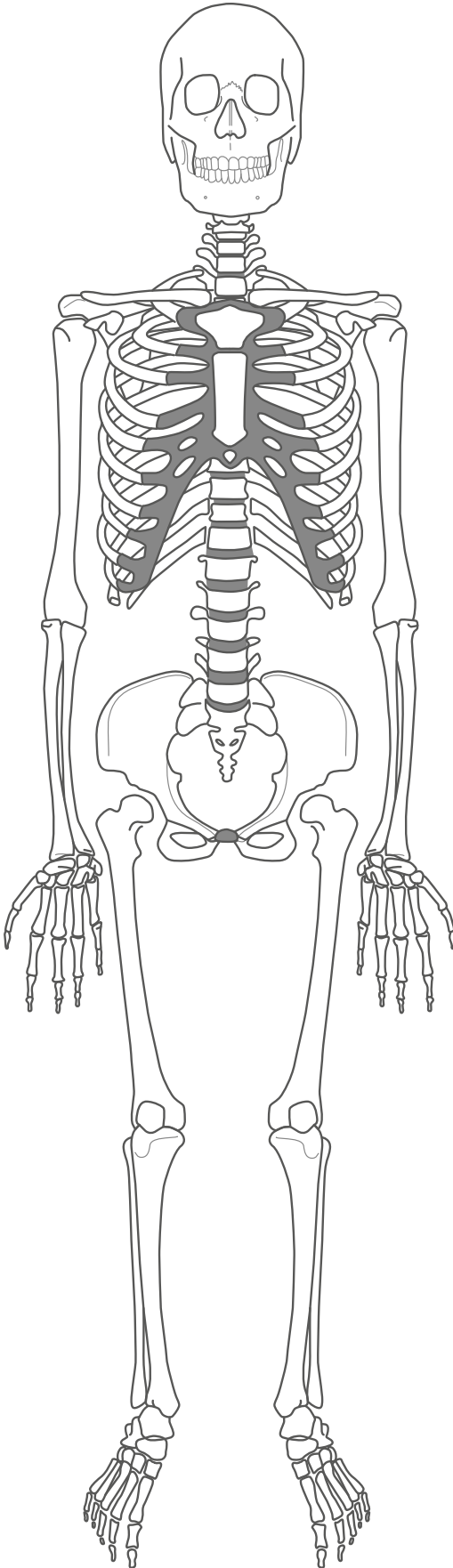


Figure (xi)
Skull - Front and Back

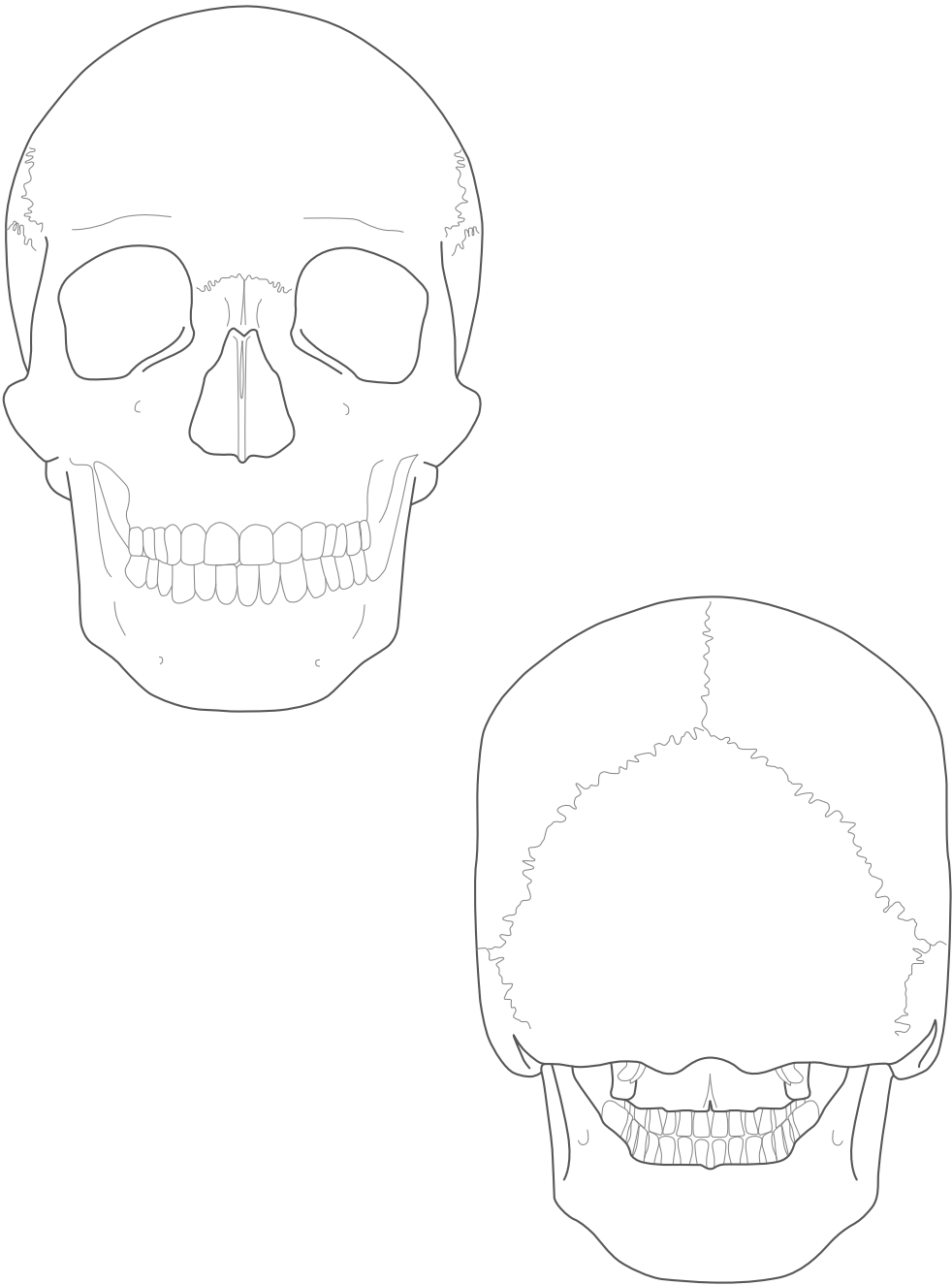


Figure (xii)
Skull - Side (L & R)

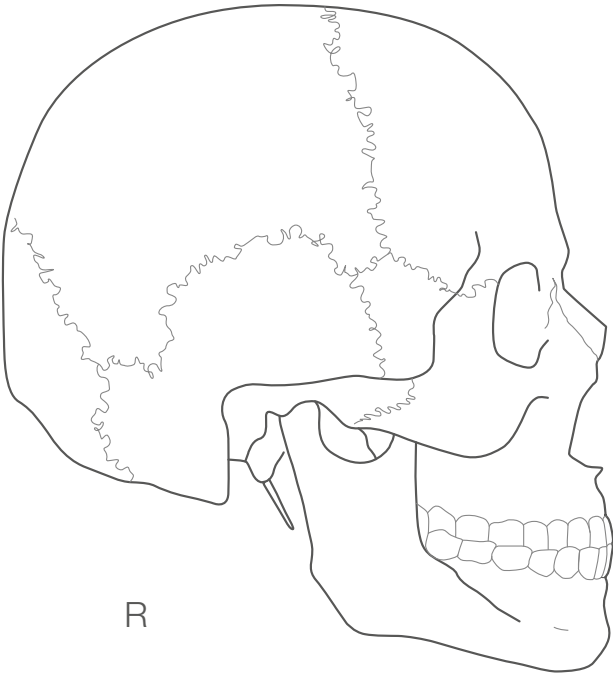
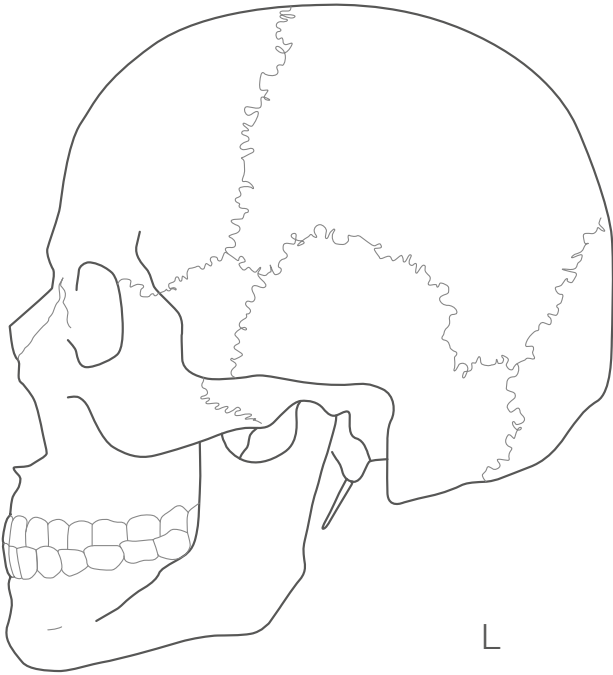
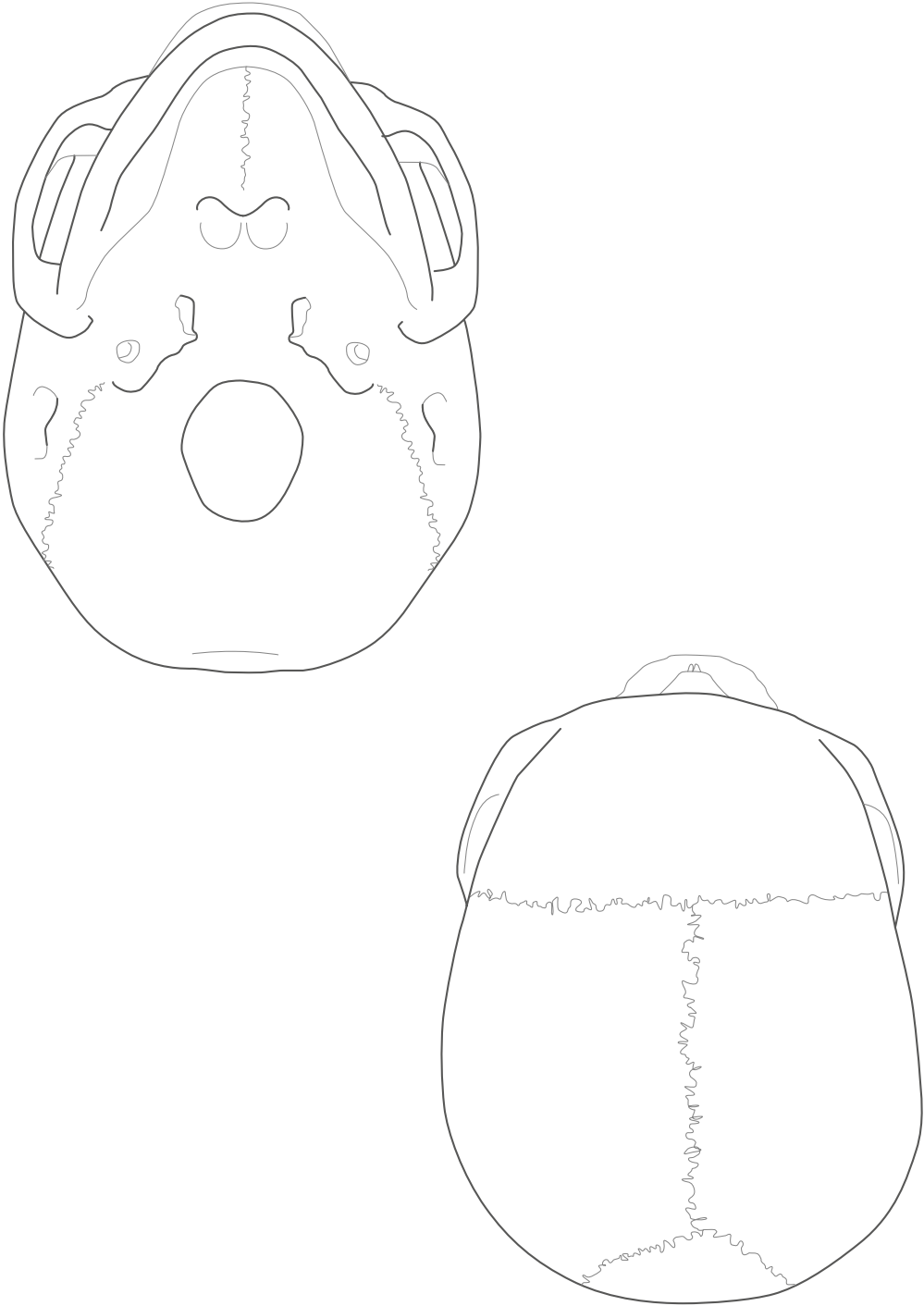


Figure (xiii)
Skull – Base and Top



3

Figure (xiv)
Skull - Inside

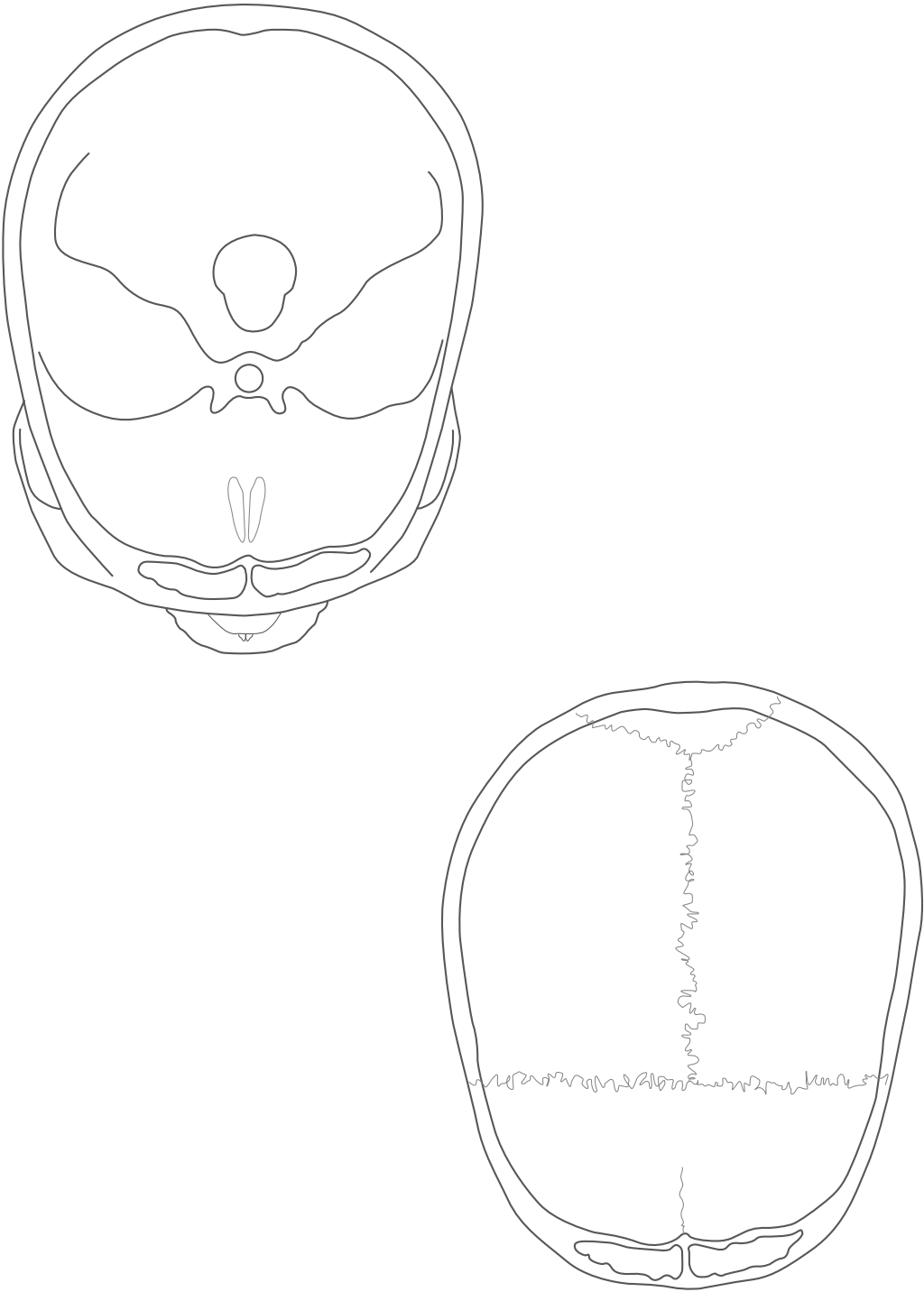


Figure (xv)
Genitalia - Male

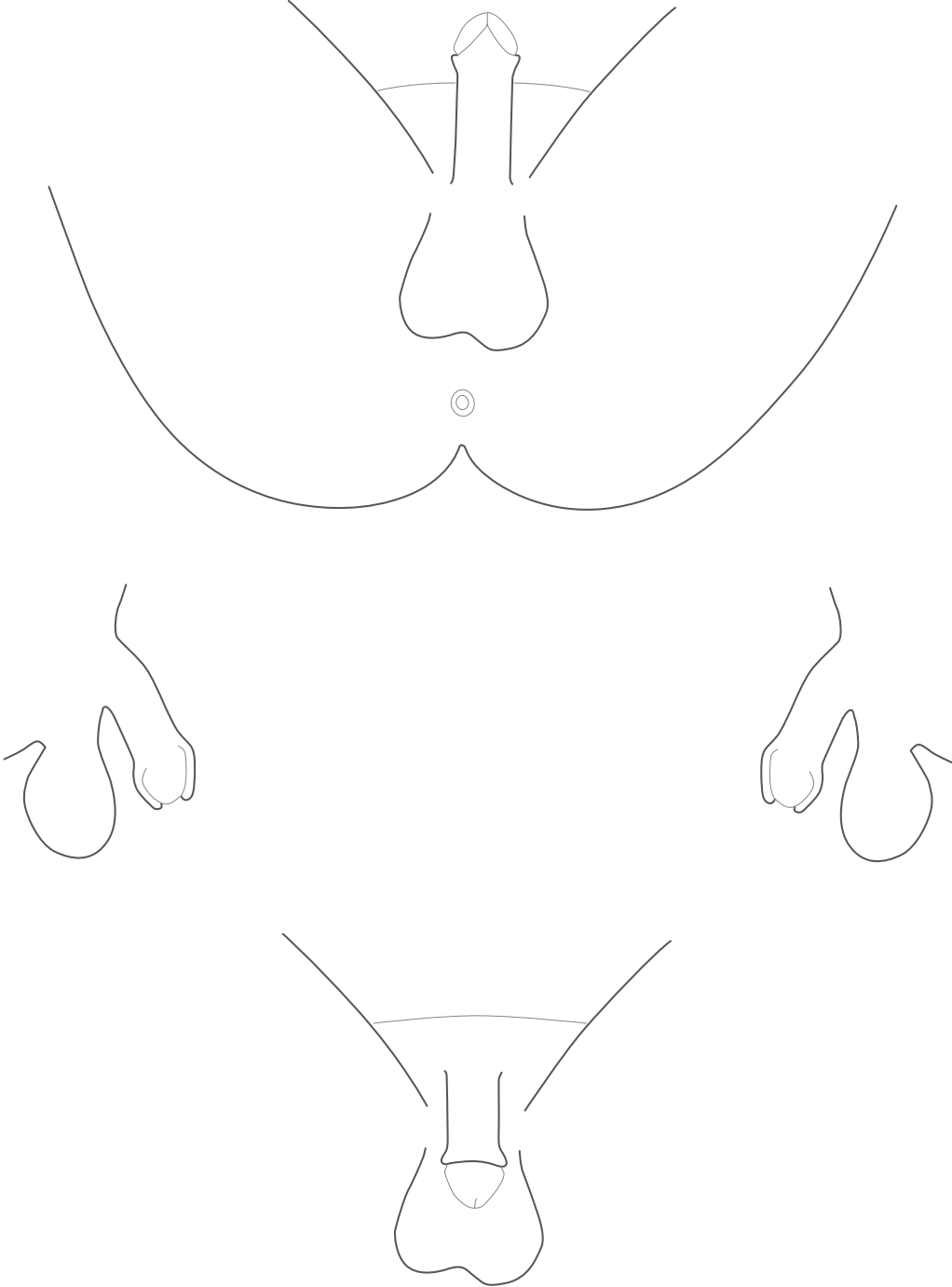


Figure (xvi)
Genitalia - Female

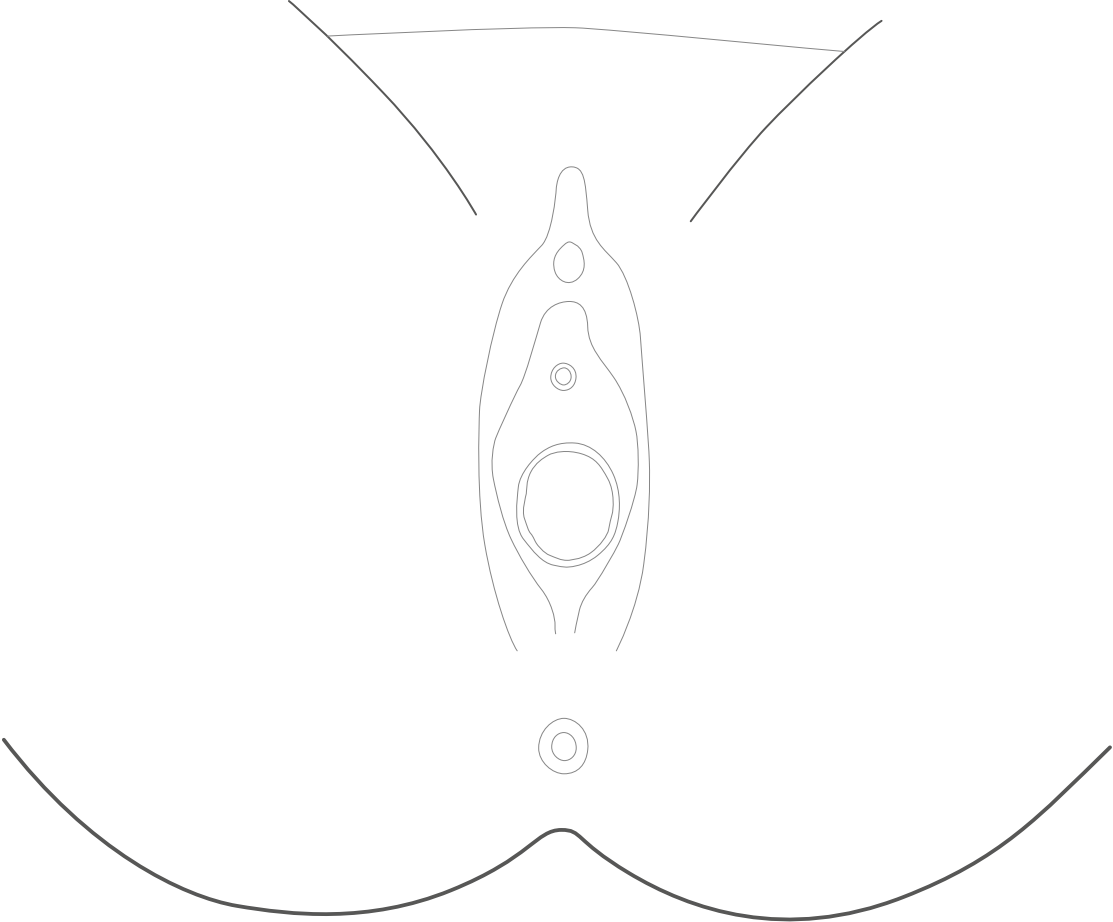


Figure (xvii)
Extended Neck - Front and Larynx

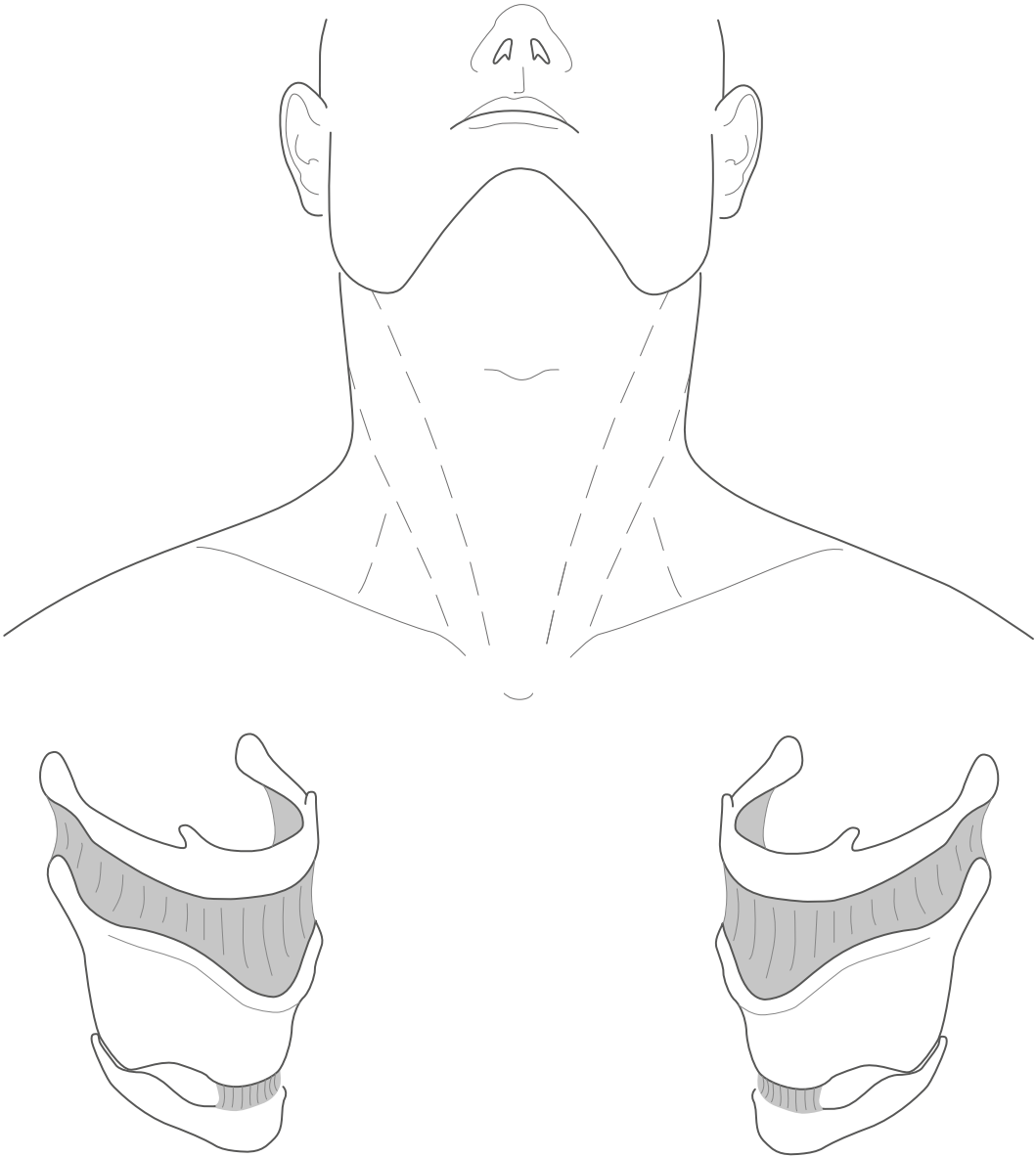


Figure (xviii)
Extended Neck - Side (L & R)



Figure (xix)
Neck - Section (R & L)

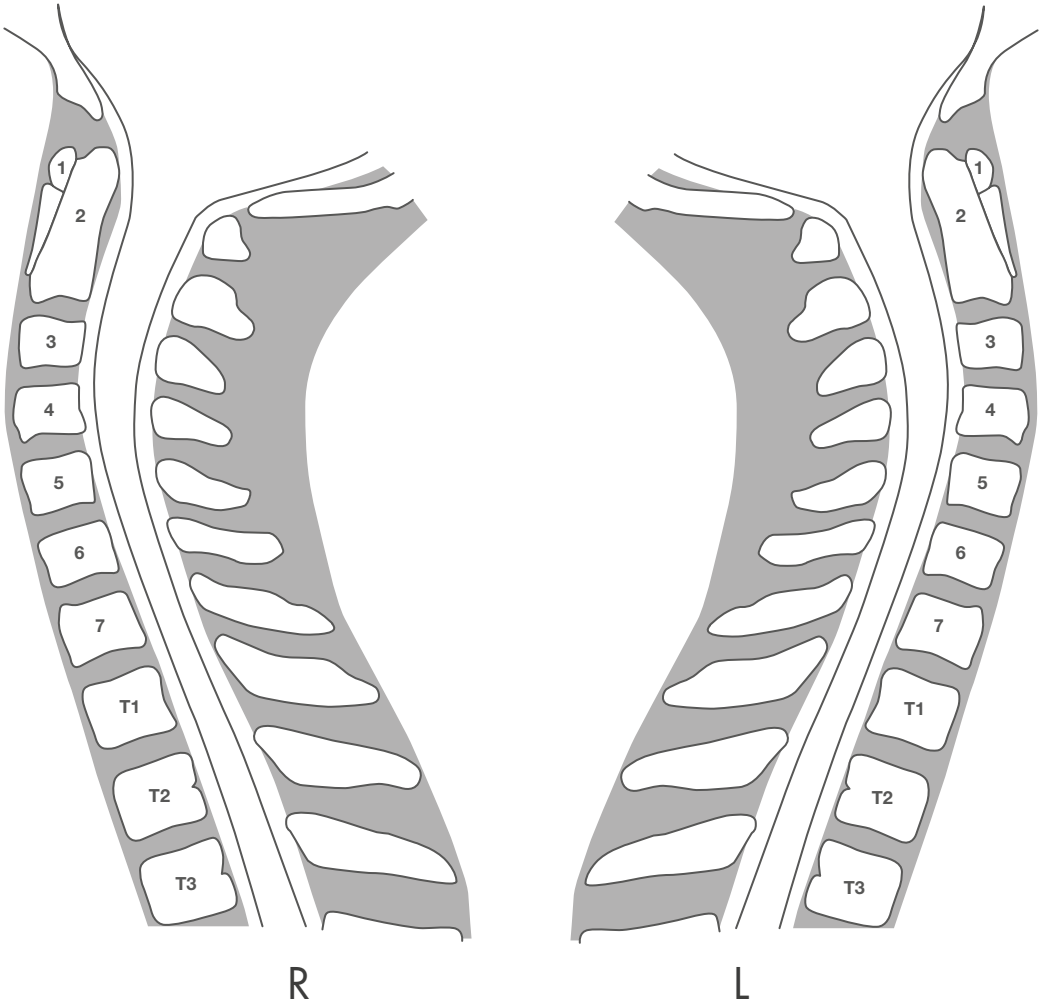


Figure (xx)
Spine - Three Sections

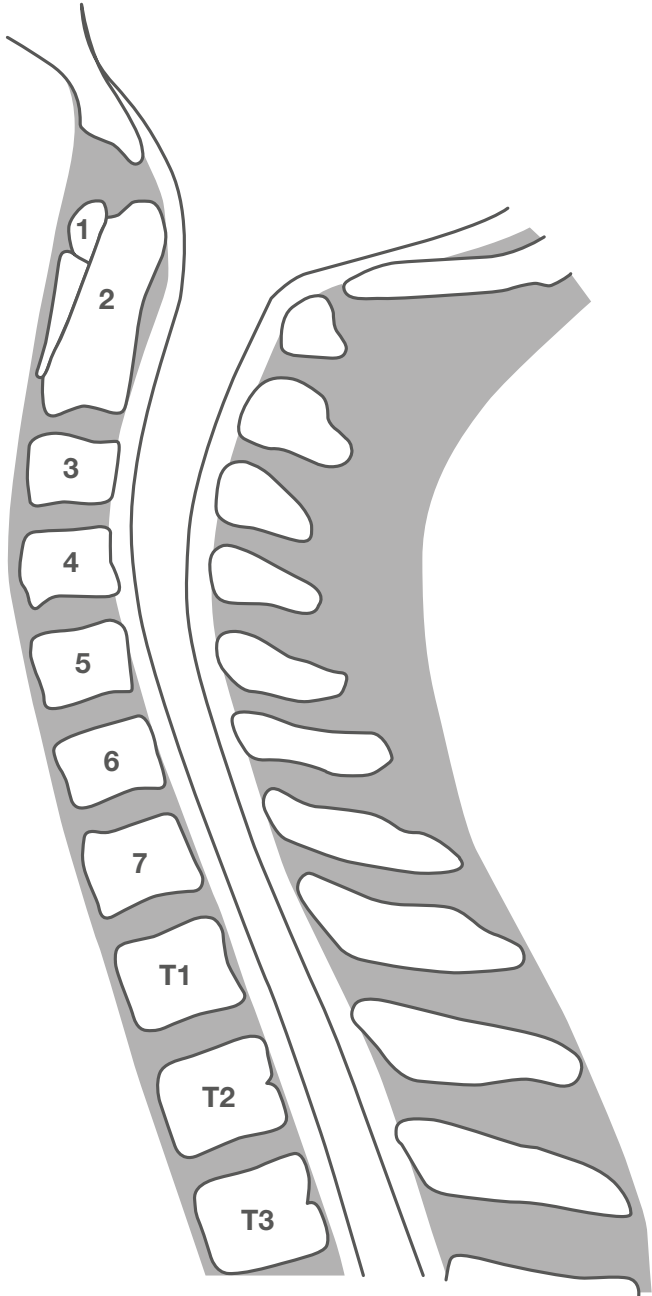


Figure (xx)
Spine – Three Sections continued

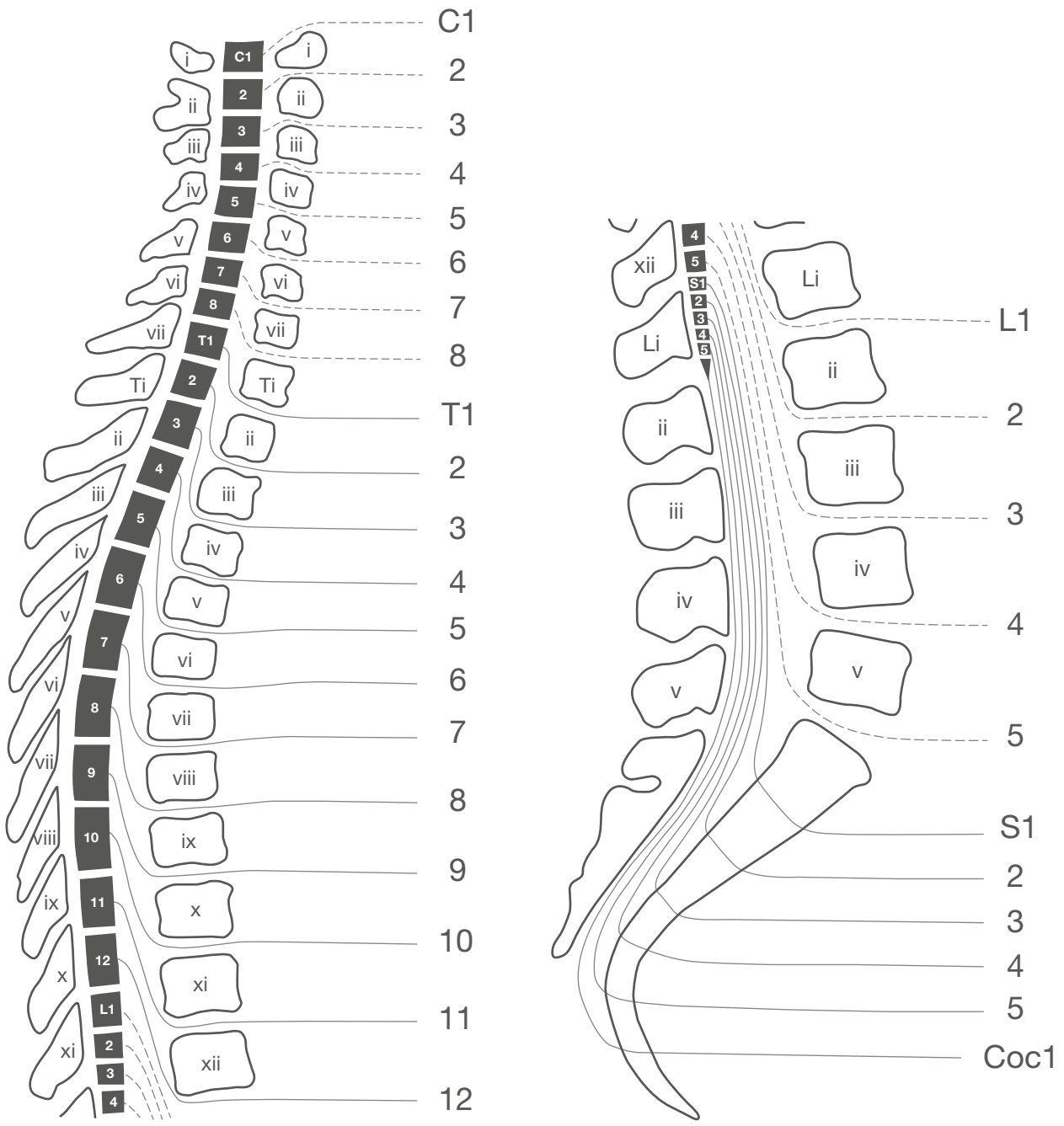


Figure (xxi)
Brain – Surfaces

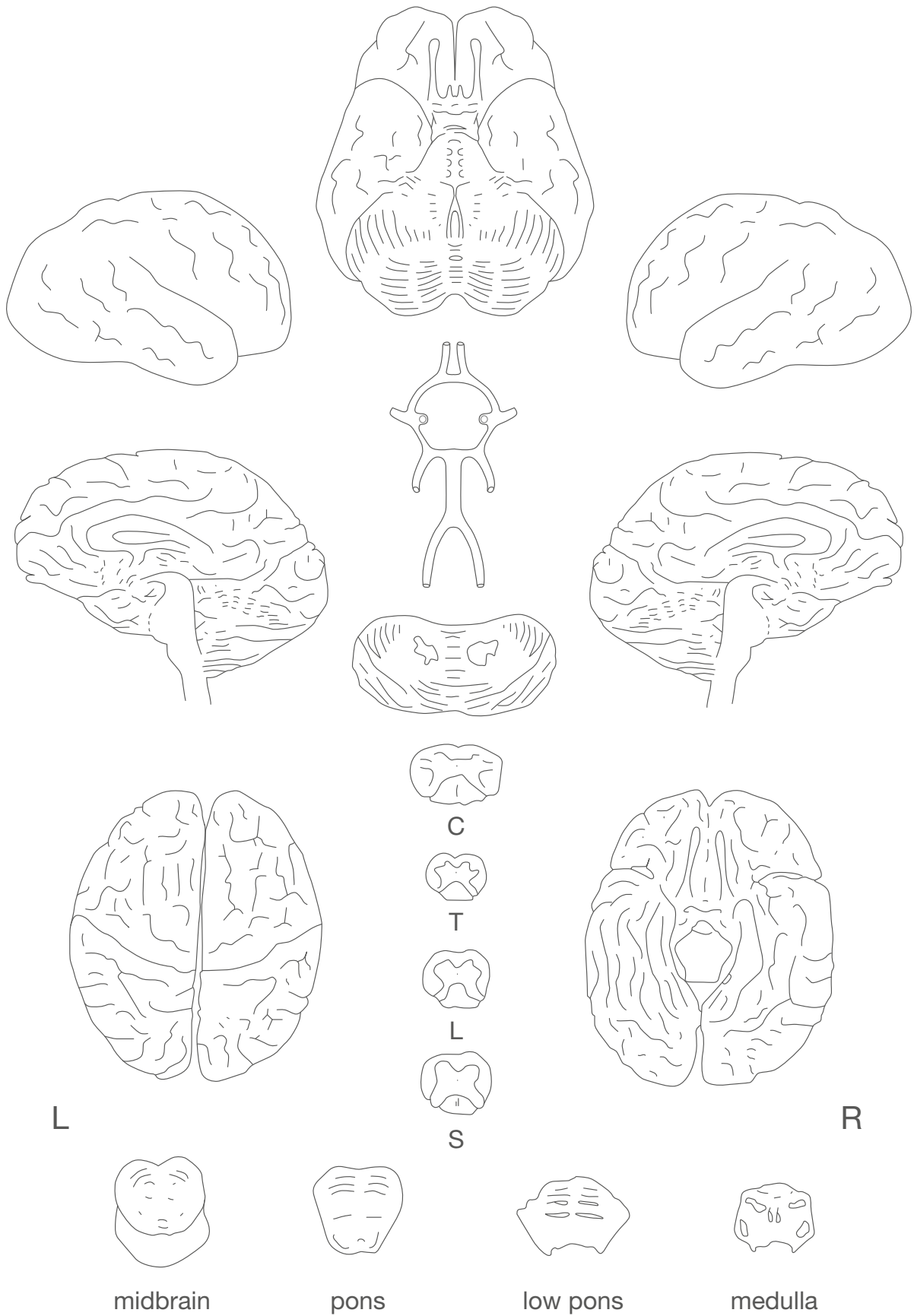


Figure (xxii)
Brain - Slices

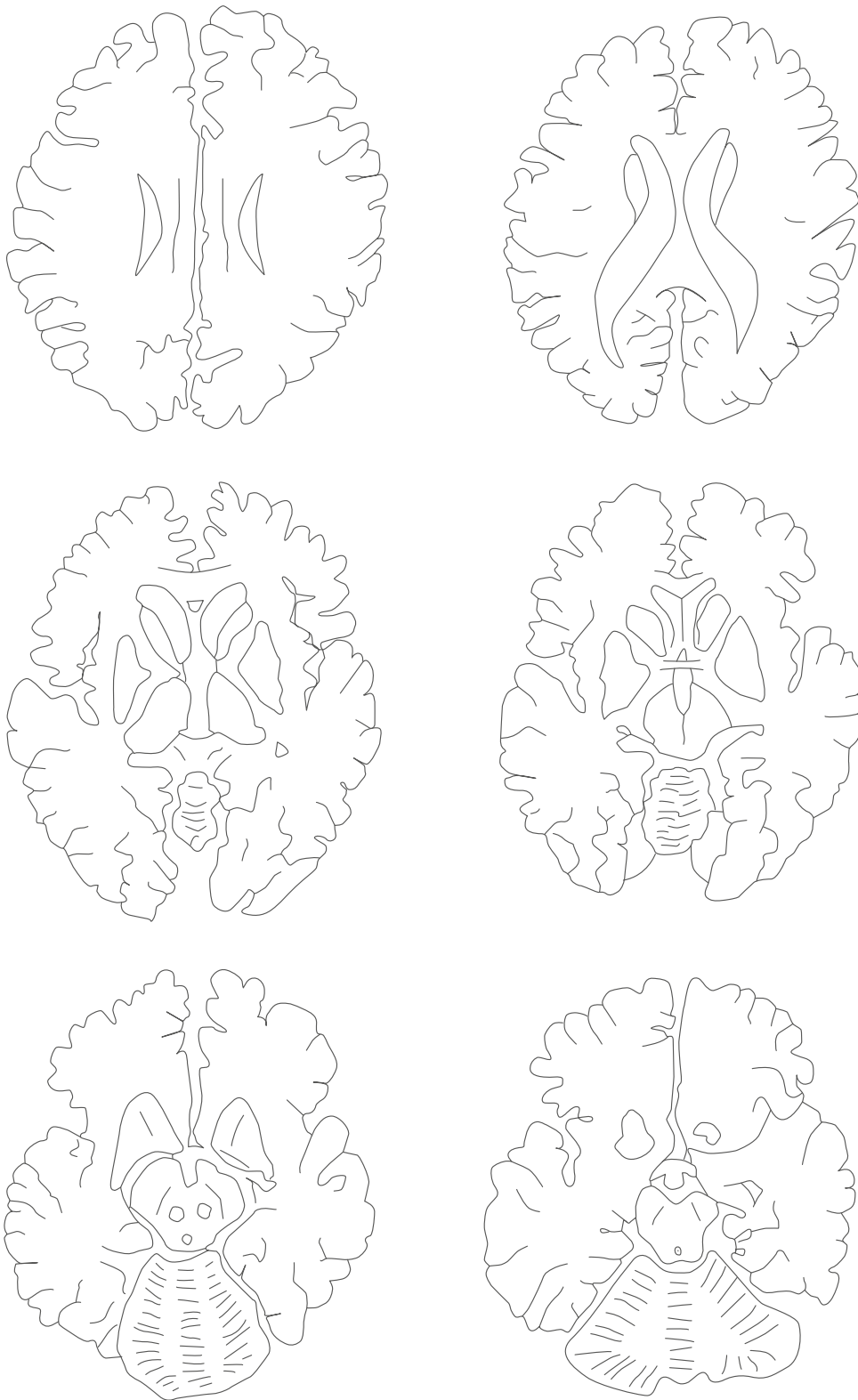
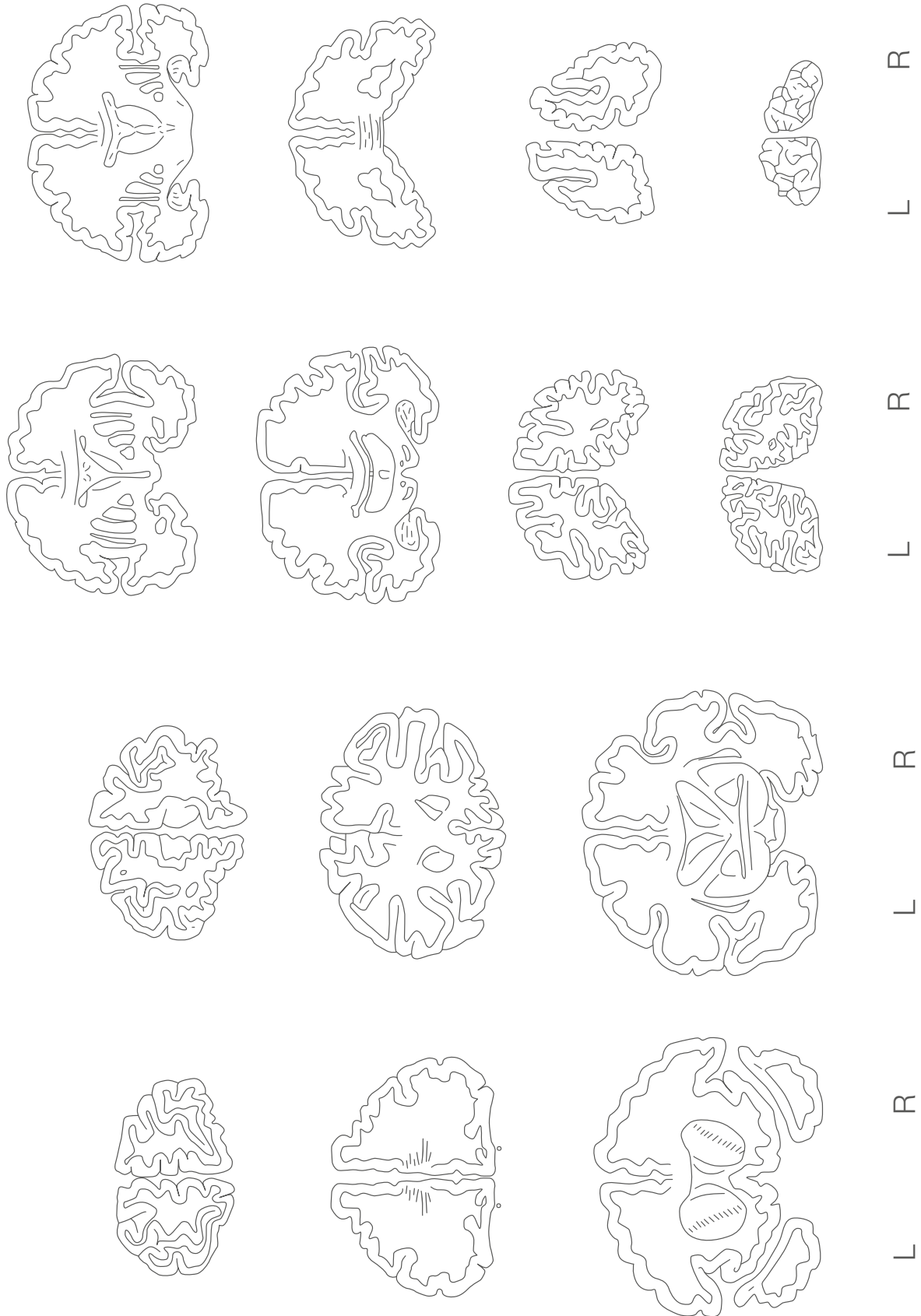


Figure (xxiii)
Brain - Coronal Slices



Annex 2. Case Details Form

Case Details:

Case No. / UR No. Place of examination

Subject's name

Address Address.....

Age D.O.B. / / M / F Tel Fax

E-mail.....

Consent: Obtained from

Time called hrs Time of arrival hrs Time of departure hrs
 (original callout) / / at scene / / from scene / /
 Time of commencement hrs Time of completion hrs Time of completion hrs
 of examination / / of examination / / of notes / /

Observers:

Name	Status	Name	Status
.....
.....
.....

<p>Circumstances / History:</p> <p>(a) From patient</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>(b) From others (police, ambulance, family, friends, others)</p> <p>Name of informant</p> <p>.....</p> <p>.....</p> <p>.....</p>	<p>Clothing:</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>Jewellery:</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>
---	--

<p>Specimens:</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>	<p>Specimens handed to:</p> <p>Recipient name</p> <p>Status</p> <p>Recipient signature</p> <p>Time hrs Date / /</p>
--	---

Past medical history:

.....

.....

.....

.....

.....

.....

Drugs/Medication

.....

.....

Medical examination:

Pulse rate:

B P:

Temp:°C

Ht: cm

Wt: Kg

Morphometry

.....

.....

General medical examination:

.....

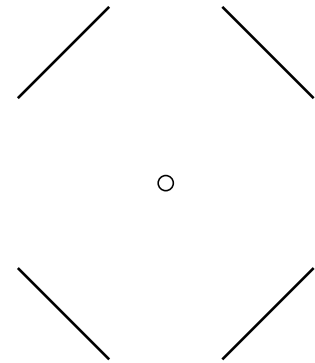
.....

.....

.....

.....

.....



Record of Findings: X-rays Photography Video

Other

Examiner:

Name Signature

Professional address Time hrs Date/...../.....

..... Tel Fax

Notes on wound description:

- In describing a wound *consider* the following features:

Site	Colour	Age
Size	Contours	Borders
Shape	Course	Classification
Surrounds	Contents	Depth
- Ensure descriptions are consistent with the following definitions:

Abrasion – A superficial scraping injury of the body surface with or without bleeding

Bruise – Leakage of blood from blood vessels discolouring the tissues of the body

Incision – A cutting-type injury that severs tissues in a clean and generally regular fashion

Laceration – A tear or split in tissues
- All descriptions of wounds and injuries should be made by reference to the subject in the standard anatomical positions.
- The use of terms such as Superior, Inferior, Anterior and Posterior should refer to the subject in standard anatomical position.
- The measured position of wounds on the body should be located by reference to fixed bony landmarks.
- The accurate classification of a wound type has major significance for determining injury causation.
- An accurate Forensic Medical examination should assist in the reconstruction of the events in which the injury occurred.

Annex 3. Firearm Wound Chart

Name Case No.

	WOUND NO.											
	1		2		3		4		5		6	
	Ent	Ex	Ent	Ex	Ent	Ex	Ent	Ex	Ent	Ex	Ent	Ex
1. Location of wound												
Head												
Neck												
Chest												
Abdomen												
Back												
Arm: Right												
Arm: Left												
Leg: Right												
Leg: Left												
2. Size of wound												
Diameter												
Width												
Length												
3. Centimetres from wound to												
Top of head												
Right of midline												
Left of midline												
4. Firearm residue												
On skin												
Clothing												
Not seen												
5. Direction of projectile through body												
Backward												
Forward												
Downward												
Upward												
To right												
To left												
6. Projectile recovered												
Probable Calibre												
Shotgun												

Annex 4. Stab Wound/Laceration Chart

Name Case No.

	WOUND NO.									
	1	2	3	4	5	6	7	8	9	10
1. Location of wound										
Head										
Neck										
Chest										
Abdomen										
Back										
Arm: Right										
Arm: Left										
Leg: Right										
Leg: Left										
2. The skin wound is:										
Horizontal										
Vertical										
Oblique										
3. Centimetres from wound to										
Top of head										
Right of midline										
Left of midline										
4. Wound size in centimetres										
Width										
Length										
5. Course of stab wound										
Backward										
Forward										
Upward										
Downward										
Medially										
Laterally										

Photographs taken of all wounds: YES NO

REMARKS:

Examined by: Date:

Annex 5. Adult Dental Chart**

Body#..... **Post Mortem Dental Examination** Age Range

Date Sex (circle): **Male / Female / Unknown**

Ancestry



Please draw the shape of fillings/decay/crowns you can see on the maxillary teeth above.
Please put a cross (x) through teeth that are missing.

Upper Denture > Present (Circle): Y / N **Material** (Circle): Plastic or metal

Number of teeth on the denture: Or **Full denture** (Circle): Y / N

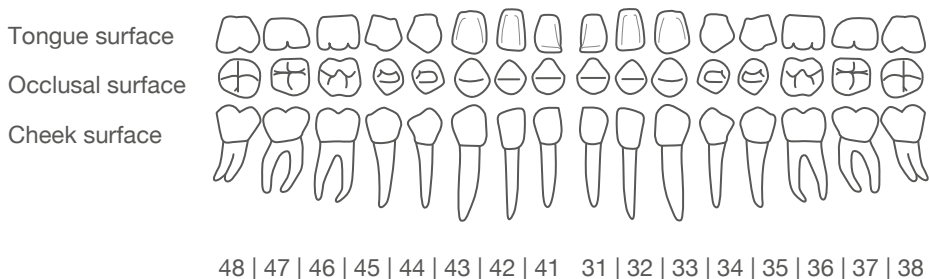
Please provide any specific comments about the upper teeth including staining, wear, fixed crowns or bridges, and broken teeth, condition of the supporting bone, retained roots, and evidence of gum disease or anatomical variations

.....

.....

.....

Occlusion (Circle): Overbite / Normal / Underbite



Please draw the shape of fillings/decay/crowns you can see on the maxillary teeth above. Please put a cross (x) through teeth that are missing.

Lower denture > Present (Circle): Y / N **Material** (Circle): Plastic or metal

Number of teeth on the denture: Or **Full denture** (Circle): Y / N

** The contribution to this chart of Richard Bassed and Lyndal Smythe, Human Identification Service, Victorian Institute of Forensic Medicine, is gratefully acknowledged. Additional quadrants will be needed for deciduous dentition.

Please provide any specific comments about the lower teeth including staining, wear, fixed crowns or bridges, and broken teeth, condition of the supporting bone, retained roots, and evidence of gum disease or anatomical variations.

.....
.....
.....



Describe the injuries to the hard tissues (if present):

.....
.....
.....

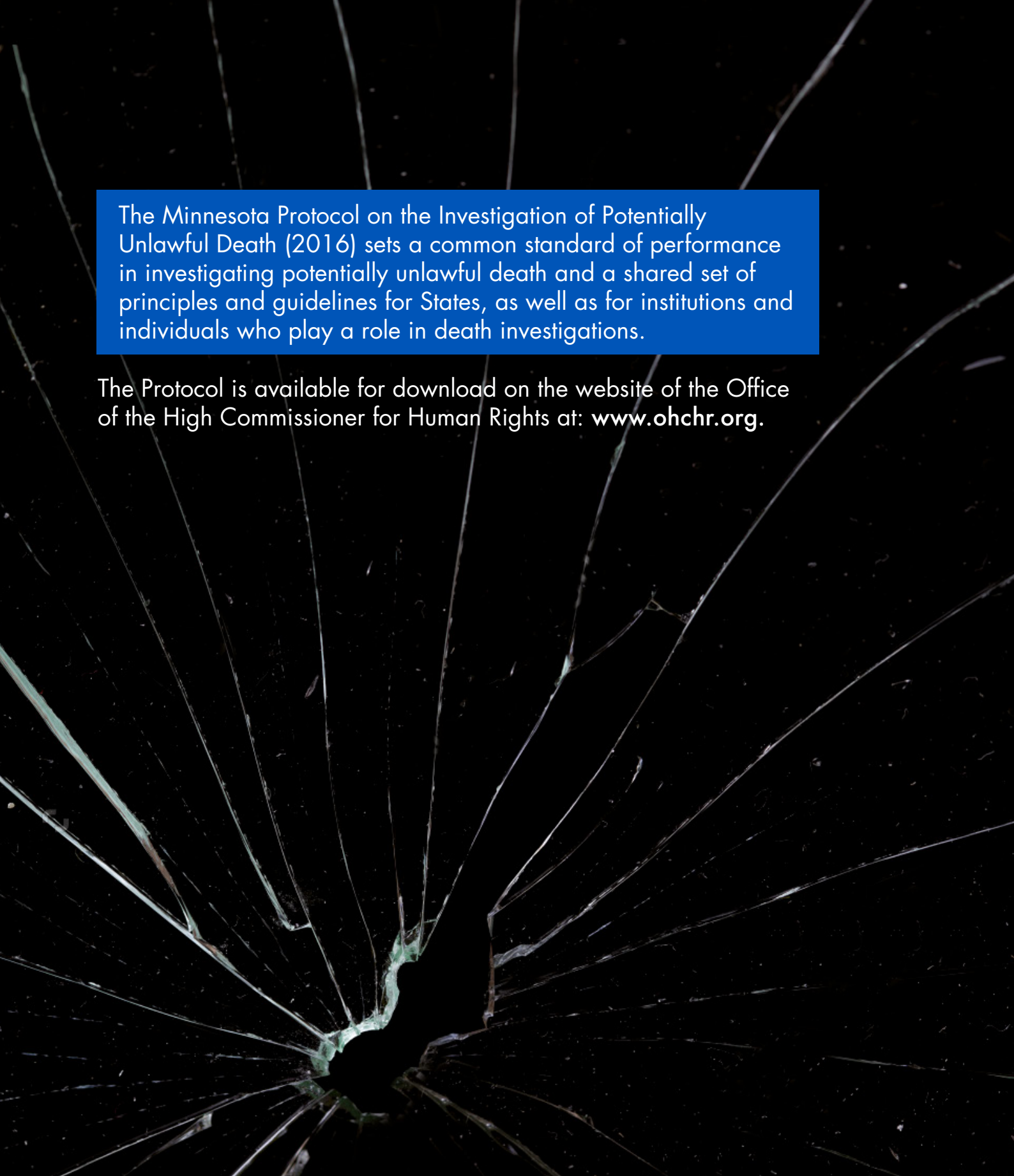
Describe the injuries to the soft tissues (if present)

.....
.....
.....



Name of Examiner / Doctor:

Signature of Examiner / Doctor:



The Minnesota Protocol on the Investigation of Potentially Unlawful Death (2016) sets a common standard of performance in investigating potentially unlawful death and a shared set of principles and guidelines for States, as well as for institutions and individuals who play a role in death investigations.

The Protocol is available for download on the website of the Office of the High Commissioner for Human Rights at: www.ohchr.org.

ADVANCE E-VERSION OF FORTHCOMING SECOND EDITION.

ISBN: 978-92-1-154220-2

eISBN: 978-92-1-060582-3

