
British
Association of
Biological
Anthropology
and
Osteoarchaeology

CODE OF
PRACTICE

BABAO Working-group for ethics and practice

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1. Preamble

As its name implies, the British Association of Biological Anthropology and Osteoarchaeology (BABAO), is concerned with the disciplines of biological anthropology and osteoarchaeology. The Association's area of interest is defined as follows: "Physical anthropology is the study of human biology within the framework of evolution and with an emphasis on the interaction between biology and culture. This subdiscipline is also referred to as biological anthropology, and you'll find the terms used interchangeably." (Kilgore et al. 2009: 8). In Britain, professionals and students who study archaeologically derived human remains often apply the terms, osteoarchaeologist or bioarchaeologist to describe themselves and their professional activities (Buikstra 1977; Knüsel 2010; Roberts 2009: 5-6, 2010). Osteoarchaeology is regarded as the study of human remains from archaeological contexts but the term is also applied to research using archaeologically derived faunal remains (Reitz and Wing 1999: 3; Roberts 2009: 5-6; Sofaer 2006: xi). BABAO seeks to advance our understanding of human and non-human primates past and present, and views the generation, dissemination, and use of this knowledge as a valuable goal that should be undertaken in an ethical manner.

Since the study of biological anthropology and osteoarchaeology is multidisciplinary by its very nature (Turner 2005), BABAO members have interests and backgrounds that range broadly within the natural and social sciences. The researchers, teachers, and practitioners that make-up the BABAO membership are often members of many different communities, each with its own moral rules or codes of ethics, and BABAO members often have moral obligations as members of these other groups (e.g. family, religion, and community) as well as to the profession.

In an area of such complex relationships and responsibilities, it is unavoidable that misunderstandings, conflicts, and the need to make choices among apparently incompatible values will arise. It is a BABAO member's responsibility to deal with such challenges and explore avenues to resolve them. This Code and the BABAO Code of Practice will provide BABAO members with tools to engage in developing and maintaining an ethical framework for our work.

Members should recognise that the activities they engage in may be subject to more than one code of ethics, and they should aim to familiarise themselves with those affecting their particular working practices. The purpose of this Code is to foster discussion and provide guidance for conducting work in an ethical and professional manner. BABAO does not and will not adjudicate claims for unethical or unprofessional behaviour.

2. Introduction

In the drafting this Code, the BABAO working-group reviewed many of available statements published by archaeological, anthropological, primatological, and biological societies around the world. As such, we have drawn upon our previous statement (British Association of Biological Anthropology and Osteoarchaeology, 2008), the American Association of Physical Anthropologists ethics statement (2003), recently published discussions (e.g. Cassman et al. 2007), and guidance documents relevant to biological anthropology and osteoarchaeology in the United Kingdom, particularly those published by the Institute for Archaeologists (IFA). BABAO recognizes that its members live and work in many different countries throughout the world, and hopes that in conjunction with the code of ethics, this document will provide them with a framework that enables them to uphold their professionalism and commitment to the understanding of humanity's shared past.

BABAO recognizes that the study of human and non-human primates from the past and in contemporary populations is a privilege and not a right, because these remains differ from all other kinds of archaeological

and anthropological material and therefore, these biological remains¹ should always be treated with dignity and respect². BABAO’s recognition of this fundamental tenet is the basis for this Code. This Code replaces the 2008 BABAO Code of Ethics and is a direct response to the following:

- The results of the BABAO member’s opinion survey (2008) (<http://www.babao.org.uk/index/reburialissues>).
- The 2007 change by the Ministry of Justice in how it applied and interpreted burial laws in England and Wales (<http://www.justice.gov.uk/docs/burial-law-policy.pdf>)
- The proposed amendment of burial legislation in England and Wales Legislative Reform Order by the Ministry of Justice (<http://www.justice.gov.uk/docs/burial-law-policy.pdf>), and
- The change in the responsibility of the ‘Advisory Panel on the Archaeology of Christian Burials in England’ (APACBE) to the newly assembled ‘Advisory Panel on the Archaeology of Burials in England’ (APABE)

This Code builds upon the foundation established in the BABAO Code of Ethics, and the reader should refer to that document while using this Code. This document starts with an overview of UK legislation and professional standards related to human remains. It then looks at health and safety issues related to handling human remains. Next, it looks at practices related to the discovery and excavation of human remains, followed by practices specific to curation, research, teaching, and documentation. It concludes by providing recommendations for additional sources of information.

3. Overview of British legislation and professional standards

BABAO members should be fully conversant with all aspects of relevant legislation and professional standards in the area of the world in which they conduct biological anthropological or osteoarchaeological work. As BABAO is a British association and the majority of its members work in the United Kingdom³ this section will provide an overview of relevant legislation and standards (see Table 1). BABAO subscribes to the standards of professional conduct outlined in documents identified in Table 2.

Table 1. Legislation and standards specific to human remains in the United Kingdom.

Location	Title	Authority	Action	Web Address
England, Wales and Northern Ireland	<i>Guidance for the Care of Human Remains in Museums</i>	Department for Culture, Media and Sport		http://www.culture.gov.uk/Reference_library/Publications/archive_2005/guidance_chr.htm
England, Wales and Northern Ireland	Human Tissue Act	Human Tissue Authority	License – 1) storage or research on human remains < 100 years old; and 2) display of human remains (including tissue) from an individual < 100 years old	http://www.opsi.gov.uk/acts/acts2004/pdf/ukpga_20040030_en.pdf
		Ministry of Justice	Excavation licence: Disused Burial Grounds Act	The current statement can be found here http://www.justice.gov.uk/guidance/

¹ In this document the phrase ‘biological remains’ is used to encompass living human and non-human primates, human and non-human primate skeletons, and other body tissue (i.e. hair).

² BABAO recognizes that the professional activity of its members also extends to fossil and forensic material, and does not limit the application of this ethics statement to the study of anatomically modern human and non-human primates.

³ Statement based on membership information. Great Britain: England, Scotland and Wales; United Kingdom: Great Britain, Northern Ireland and its dependencies, the Channel Islands and Isle of Man

				docs/burial-law-archaeology-statementii.pdf
England & Wales	Church Law (Burial Act of 1857)	Church of England (Ministry of Justice)	License – 1) in burial grounds in the care of the Church of England 2) active burial ground in other care; or 3) land passed into other use	http://www.opsi.gov.uk/acts/acts1857/pdf/ukpga_18570081_en.pdf
	Disused Burial Grounds Act 1981	Ministry of Justice	Licenses – disused burial ground	http://www.opsi.gov.uk/acts/acts1981/pdf/ukpga_19810018_en.pdf
Current statement regarding excavation licences. WE RECOMMEND THAT YOU CHECK THE WEBSITE REGULARLY TO ENSURE THAT THE MOST RECENT GUIDANCE IS FOLLOWED			The current statement can be found here http://www.justice.gov.uk/guidance/docs/burial-law-archaeology-statementii.pdf http://www.justice.gov.uk/about/burials.htm	
Scotland	The Burial Grounds (Scotland) Act 1855			http://www.scotland.gov.uk/Resource/Doc/924/0013079.doc
	Church of Scotland (Property and Endowments) Act 1925			
	Church of Scotland (Property and Endowment) Amendment Act 1933			
	Cremation Act 1902			
	Cremation Act 1952			
	Cremation (Scotland) Regulations 1935, 1952, 1967			
	Cremation (Scotland) Amendment Regulations 1985			
	The Cremation (Scotland) Amendment Regulations 2003			

Table 2. Professional conduct documents endorsed by BABAO.

Title	Author(s)	Date	Web Address
Code of Conduct	Institute for Archaeologists (IFA)	2010	http://www.archaeologists.net/modules/icontent/inPages/docs/codes/code_conduct.pdf
Code of Approved Practice for the Regulation of Contractual Arrangements in Archaeology	IFA	2008	http://www.archaeologists.net/modules/icontent/inPages/docs/codes/code_practice.pdf
Standard and Guidance: for archaeological excavation	IFA	2008	http://www.archaeologists.net/modules/icontent/inPages/docs/codes/exc2.pdf
Standard and Guidance: for archaeological field evaluation	IFA	2008	http://www.archaeologists.net/modules/icontent/inPages/docs/codes/fldeval2.pdf
Archaeological Archives: A guide to best practice in creation, compilation, transfer and curation	Brown	2007	http://www.archaeologists.net/modules/icontent/inPages/docs/pubs/Archives_Best_Practice.pdf

Title	Author(s)	Date	Web Address
Code for Treatment of Human Remains	Institute of Archaeologist of Ireland (IAI)	2006	http://iai.ie/Publications_Files/Code_Human1-0.pdf
The treatment of human remains in archaeology	Historic Scotland	2006	http://www.historic-scotland.gov.uk/human-remains.pdf
Guidance for Best Practice for Treatment of Human Remains Excavated from Christian Burial Grounds in England	English Heritage & Church of England	2005	http://www.babao.org.uk/humanremainsguidance.pdf
Centre for Archaeology, Human Bone from Archaeological Sites: Guidelines for producing assessment documents and analytical reports	English Heritage	2004	http://www.english-heritage.org.uk/publications/human-bones-from-archaeological-sites/humanbones2004.pdf/
The Treatment of Human Remains: Technical Paper for Archaeologists	IAI – Buckley et al.	2004	http://iai.ie/Publications_Files/TreatmentofHumanRemains.pdf
Human Remains in Archaeology	O'Sullivan and Killgore	2003	http://www.heritagecouncil.ie/fileadmin/user_upload/Publications/Archaeology/Human Remains in Archaeology.pdf
Excavation and post-excavation treatment of cremated and inhumed human remains	McKinley & Roberts	1993	
Guidelines to the Standards for Recording Human Remains	Brickley & McKinley (eds)	2004	http://www.babao.org.uk/HumanremainsFINAL.pdf
The Code of Practice	British Archaeologists and Developers' Liaison Group (BADLG) ⁴	1991	

4. Health and Safety

It is best practice to be compliant with the health and safety policies and standards set forth by the institution in which one is working. However, if the opportunity arises it is always wise to target the highest standards possible. BABAO members working in the United Kingdom should aim to meet the following standards:

- UK policies should be in accordance with the *Health and Safety at Work Act (1974)*, which requires employers of more than five (5) people to hold an up-to-date written health and safety policy statement;
- In accordance with *The Management of Health and Safety at Work Regulations (1999)*, no work with human remains, whether indoors or outdoors, should take place without an appropriate health and safety risk assessment. Where generic risk assessments already exist, they should be checked and revised with reference to the particular work being undertaken;
- *The Manual Handling Operations Regulations (1992)* should be observed when conducting indoor and outdoor work with human remains;
- In some cases (for example, a post-medieval cemetery excavation), a risk assessment from the local environmental health officer will be required before excavating human remains;
- Anyone working in the field should make sure they are up to date with tetanus injections;
- Human remains pose little or no risk as far as infection hazards are concerned, because harmful micro-organisms do not survive beyond a few months following death. However, individuals working with

⁴ In 2008, the Standing Conference of Archaeological Unit Managers (SCAUM) became the Federation of Archaeological Managers and Employees (FAME, <http://www.famearchaeology.co.uk>).

human remains should be aware of the circumstances under which they may be encountered and, to this end, should be familiar with relevant guidelines (e.g. see Table 3);

- It is advisable for excavation directors to advise staff to check whether they have any allergies to medicines such as Penicillin if they are working in burial contexts that could present an infection hazard;
- Circumstances that may pose an infection hazard include remains that are less than six (6) months old, remains soaked in body liquor (for example, inner coffins, mattresses and other paddings) and where horse hair pillows have been used in coffins. Under these circumstances, the risk (although believed to be remote) of contracting smallpox or anthrax should be considered and appropriate risk assessments prepared. The risk of contracting other conditions, for example anthrax, are not considered to be high, although inoculations may be employed, if considered appropriate (Mitchell 1998);
- When undertaking crypt excavations, lead dust is a significant health hazard, and appropriate personal protective equipment (PPE) should be worn for protection (see Cox 2001);
- Those exposed to aerosols from jet spray or bone sampling drills should wear a surgical mask;
- Where ground lime has been used as a disinfectant, PPE should be worn to protect the eyes, skin and the respiratory tract;
- Laying fresh lime in graves following an excavation is not necessarily advisable as the health risk from exposure to lime outweighs the likelihood of infectious organisms being present;
- Archaeological burials with soft tissue, or the archaeological excavation of burials associated with traumatic events still within living memory, may lead to post traumatic stress disorder (PTSD). It is recommended that relevant guidelines (National Health Service 1995; Wright 2010) are consulted, followed, and covered in a risk assessment (Table 3); and
- Anyone working with human remains in a confined space should have appropriate training. Confined spaces are spaces that are substantially enclosed (although not always entirely) and where serious injury can occur from hazardous substances or conditions within the space or nearby (for example, lack of oxygen). Deep, narrow excavations and crypts are examples.

Table 3. Quick reference to health and safety reference

Title	Date	Web Address
Crypt Archaeology: an approach (M. Cox)	2001	http://www.archaeologists.net/modules/icontent/inPages/docs/pubs/cryptarchaeology.pdf
The Management of Health and Safety at Work Regulations	1999	http://www.opsi.gov.uk/si/si1999/19993242.htm
The Manual Handling Operations Regulations	1992	www.hse.gov.uk/contact/faqs/manualhandling.htm
Post-traumatic stress disorder (PTSD). The management of PTSD in adults and children in primary and secondary care	1995	http://www.nice.org.uk/CG026NICEguideline.pdf
The IBCA exhumation handbook (P. Mitchell)	1998	
Health and safety in church and funerary archaeology (P. Kneller)	1998	
Health and Safety at Work Act	1974	http://www.hse.gov.uk/legislation/hswa.htm
Where are the bodies? In the ground (R.Wright)	2010	

5. Excavation

This section will first cover general practices for all types of excavations. It does not set out to prescribe inflexible standards or standard solutions. Rather, it describes the design principles and performance criteria

to be achieved. The section is then divided into two sections: 5.1 the excavation of human remains and 5.2 the excavation of non-human burial remains. Section 5.1 is further divided into subsection on inhumations, cremations, and disarticulated bone/charnel site, while Section 5.2 covers non-human burial remains. Excavation directors should consult the quick references supplied in Table 4 with regard to excavations.

BABAO members excavating in Britain should aim to meet the following standards:

- Excavation does not normally proceed until a strategy has been discussed and agreed with relevant curators (e.g. county/city archaeologists, diocesan archaeological advisers and English Heritage advisors). This usually requires an archaeological brief, prepared by the curator and often (although not always) a 'Written Scheme of Investigation' or 'Project Design', prepared by those undertaking the excavation;
- Following current guidelines (e.g. The Church of England and English Heritage 2005, 13), excavations where human remains are encountered should be screened from public view at all times;
- Excavation should be undertaken in accordance with IFA (McKinley and Roberts 1993) and English Heritage and The Church of England guidelines (2005);
- For crypts and post-medieval burials, the recommendations set out by the IFA (Cox 2001) and the guidance set out by the Institute of Burial and Cremation Administration (Inc.) (1998) are also relevant
- Unless suitably qualified, excavators should not excavate or remove modern burials (post-1910), nor remove or open sealed lead coffins;
- In accordance with recommendations set out by English Heritage and the Church of England (2005), excavating medieval or post-medieval skeletons beyond the limits of the trench is not advisable, unless they are deemed osteologically or archaeologically important;
- Graves and their contents should be hand excavated in plan. It is standard practice to assign each component of a grave (e.g. skeleton, grave cut, coffin (or remains of), grave fill, etc.) a unique context number from a running sequence. A group number may also be assigned to all of these, and small finds numbers to features such as coffin nails, hobnails and other grave goods (as appropriate);
- Burials (including the skeletal and cremated remains, coffin fittings, coffin, urn, grave goods/other) should be recorded by photographic and written record using specialised *pro forma* context sheets, although these records may only include schematic representations of the location, depth below the surface, and position of the skeletons, depending on the nature and circumstances of the burial;
- Burials should be planned using hand drawing and/or geo-rectified photography, and/or CAD and GIS referencing systems. Hand drawn plans should be made at a scale of 1:10, or sometimes at a scale of 1:5. Plans at these scales should be made when other methods cannot adequately show contexts, e.g. by the nature of the grave cut, urned cremation burials; undisturbed hob nails; and
- Client confidentiality should be respected at all times.

Table 4. Quick reference to excavation standards

Title	Author(s)	Date	Web Address
Code of Approved Practice for the Regulation of Contractual Arrangements in Archaeology	IFA	2008	http://www.archaeologists.net/modules/icontent/inPages/docs/codes/code_practice.pdf
Standard and Guidance: for archaeological excavation	IFA	2008	http://www.archaeologists.net/modules/icontent/inPages/docs/codes/exc2.pdf
Standard and Guidance: for archaeological field evaluation	IFA	2008	http://www.archaeologists.net/modules/icontent/inPages/docs/codes

Title	Author(s)	Date	Web Address
			/fldeval2.pdf
Guidance for Best Practice for Treatment of Human Remains Excavated from Christian Burial Grounds in England	English Heritage & Church of England	2005	http://www.babao.org.uk/humanremainsguidance.pdf
The Treatment of Human Remains: Technical Paper for Archaeologists	IAI - Buckley, Murphy, & Ó Donnabháin	2004	http://iai.ie/Publications_Files/TreatmentofHumanRemains.pdf
Excavation and post-excavation treatment of cremated and inhumed human remains	McKinley & Roberts	1993	
Guidelines to the Standards for Recording Human Remains	Brickley & McKinley (eds)	1993	http://www.babao.org.uk/HumanremainsFINAL.pdf

5.1 Human Remains

- Human remains should not be excavated without a relevant licence/faculty;
- Human remains that are exhumed should be placed in containers and labelled according to skeletal region. They should be carefully packed into suitable containers before being transported to a suitable storage location. Any associated coffins and coffin fittings should be contained with the human remains (but in separate receptacles) wherever possible; and
- It is recommended that the excavation of human remains is undertaken under by a suitably qualified osteoarchaeologist or field archaeologist who is experienced in the excavation, recording, and recovery of human remains.

5.1.1 Inhumation burials

- As a minimum, level readings should be taken on the skull, pelvis and feet
- Soil samples should be taken during the excavation of inhumation burials, usually from the region of the skull, chest, right hand, left hand, abdomen and pelvis, right foot and left foot. Infants (circa. less than 5 years) may be recovered as bulk samples and wet sieved, or have samples taken from the skull area in order to maximise the recovery of tiny bones and tooth buds. Soil samples should also be taken from the skull end of graves that appear to contain no human bone
- Human remains should not be treated with preservatives (e.g. Polyvinyl acetates – PVA glue) in the field⁵

5.1.2 Cremation burials

- Unurned burials should be subject to whole-earth recovery in quadrants and, where the deposit is >15cm in depth, in spits of 10cm depth as described in McKinley (1998, 2000, in press). If the deposit has been substantially disturbed (i.e. original formation processes have been obliterated), it may be recovered as a single bulk sample. All material recovered from the deposit should be wet sieved through a sieve stack to 1mm fraction-size. This facilitates the full recovery of all of the cremated material and is also the only realistic way to clean the bone.
- Undisturbed, urned burials should be wrapped in crepe bandage and block lifted for further excavation by an osteoarchaeologist. Laboratory excavation should be done in spits and quadrants as per the recommendations of McKinley (2004). Heavily disturbed urned burials may require excavation on site.

⁵ Please note that these recommendations are for those undertaking fieldwork in the United Kingdom.

5.1.3 Disarticulated, redeposited and charnel

The range of disarticulated, redeposited bone and charnel human bone recovered from archaeological deposits can be broadly grouped into scientifically and archaeological important samples and those for which re-interment are suitable (Mays et al. 2004). The first group is predominantly recovered from prehistoric deposits, whereby human bone has been deliberately placed in a disarticulated state. Other important samples include: a discrete deposit of charnel that clearly represents discernible individuals, and human remains that have been subjected to anthropogenic modification (for example, anatomization).

Unless deemed scientifically or archaeologically important by a biological anthropologist, osteoarchaeologist and/or archaeologist, disarticulated, redeposited bone and charnel remains should be collected and re-interred under the conditions of the burial licence/faculty. Where possible, analysis to an appropriate level of detail (e.g., a rapid-scan, depending on the nature and context of the human remains), should be undertaken by a qualified osteoarchaeologist.

5.2 Other forms of cremation related deposit

5.2.1 Pyre sites and pyre debris dumps

An undifferentiated, homogeneous *in situ* deposit should be excavated as a series of blocks and, should the deposit be sufficiently deep, spits. The size of such features/deposits can vary but as a guide, an area c. 1.40m long by 0.60m wide should be collected in a series of c. 0.20m² blocks, depths of >0.10m should be excavated in spits of that depth.

5.2.2 Spreads of redeposited pyre debris

Debris deposited in large features (e.g. ditches or large pits) and that from within structures, should be treated in a similar fashion to that of pyre sites. The blocks can be slightly larger, but should not exceed 0.50 m² and 0.10m represents a useful spit depth.

5.3 Non-human funerary remains

5.3.1 Coffins and coffin fittings

Wooden and lead coffins and any associated fittings, including fixing nails should be recorded on a *pro forma* coffin-recording sheet. It is advised that all surviving coffin fittings should be recorded by reference to Reeve and Adams (1993). Where individual types cannot be paralleled, they should be drawn and/ or photographed and assigned a style number. Biographical details obtained from legible *departum* plate inscriptions should be recorded and further documentary research done.

5.3.2 Funerary structures

Funerary structures, such as brick shaft graves and/or vaults should be hand-drawn at a scale of 1:10 or 1:20, as appropriate. The location, dimensions and method of construction should be noted, and the structure added to the overall trench plan.

5.3.3 Memorials

- Memorials, including headstones, revealed within the areas of development should be recorded irrespective of whether they are believed to be *in situ*.
- Where required, memorials should be accorded an individual context number and should also be included as part of the grave group (if such a system is employed), if the association with a burial is clear.

- Memorials should be recorded on *pro-forma* context sheets, based on and following the guidelines set out by Mytum (2000). It is recommended that they include details of:
 - Shape
 - Dimensions
 - Type of stone used
 - Iconography (an illustration may best describe these features)
 - Inscription (*verbatim* record of inscription; font of the lettering)
 - Stylistic type

6. Curation

BABAO considers that the extensive collections of human and non-human primate remains curated throughout the Britain (and the world) form a unique repository of information, whose existence allows us to understand our shared past. Our ability to ensure that this resource is available for the long-term has been repeatedly demonstrated by its continuing ability to provide data about our ancestors and contribute to developments in a wide range of fields and subjects: palaeopathology, human evolution, adaptation to and impact of past environments on humans, genetics and clinical medicine (see Roberts and Mays early view).

The statements below are a guide to best practice for dry, skeletonised biological material and samples taken from this material. With respect to mummified and fossilised material, specialist advice should be sought from the outset.⁶ Although, the statements were written taking into account the many disparate working environments of BABAO members, and they focus on human skeletonised material, as this is the most frequently encountered type in Britain, they also acknowledge the ever-present constraints of time and financial resources. Members should be aware that, for the most part, the archiving institution will issue guidelines and provide advice for the packing of material. BABAO also recognizes that the policies issued by many institutions represent the views of other stakeholders, such as conservators and collection care specialists.

Members should be aware that ensuring the long-term survival of collections is a dynamic process, which seeks to promote collection integrity. This approach “stresses the natural unaltered state of the collection as the preferred condition” (Cassman and Odegaard 2007a: 77). Members should familiarise themselves with curatorial best practice, as these strategies cannot be separated from their professional activities.

Table 5. Quick reference to curation standards

Title	Author(s)	Date	Web Address
Human remains in archaeology. A handbook. Practical handbooks in archaeology	Roberts, C.A.	2009	
Human remains. Guide for museums, and academic institutions	Cassman, V. et al.	2007	
Archaeological archives. A guide to best practice in creation, compilation, transfer and curation	Brown, D	2007	http://www.archaeologists.net/modules/icontent/inPages/docs/pubs/Archives_Best_Practice.pdf
A new approach to the storage of human skeletal remains	Bowron, E.	2003	
Guidance for the care of human remains in museums	Department for Culture, Media and Sport	2005	

⁶ The curation of fossilised material should be undertaken following best practice guidelines published by that discipline, for example, <http://www.geocurator.org/pubs/Guidelines.pdf>. The care of mummified material should follow best practice guidelines and advice published by specialists in that discipline. For example, Aufderheide, A.C. 2003. *The scientific study of mummies*. Cambridge: Cambridge University Press; http://www.scielo.cl/scielo.php?script=sci_arttext&pid=S0717-73562001000100013

6.1 Management

This section is relevant to any organisation with long-term responsibilities for collection management, i.e. a museum, research laboratory, university and government agency. The statements are strongly recommended for archaeological contractors or organisations that have short-term responsibility for biological remains⁷. The facilities should:

- Produce and make publicly accessible a mission statement, ethics and policy documents, an inventory list of collections held, and a research register;
- Establish and follow a management plan that would include topics such as, environmental standards, security, access, pest control, housekeeping, condition assessments, emergencies, destructive analysis, and deaccessioning (repatriation);
- Have a designated member of staff to curate the collection, preferably one who has training in osteoarchaeology and collection management. If it is not possible to have dedicated staff, then links should be established to institutions and/or professional networks whereby trained members of staff can provide support, training, and advice (i.e. Museum and Libraries, Specialist Subject Network Group);
- A record of all invasive and non-invasive procedures should be kept for each skeleton or context, e.g. destructive sampling (i.e., bone/tooth selected, for what purpose and by whom, and whether or not extant collagen exists) conservation interventions, and radiographs and photographs. The language used should be clear and based on standard accepted terminology (see Cassman and Odegaard 2007b: 37-41);
- Conduct regular checks to confirm that items on the inventory are present, and their condition has not deteriorated since the last check;
- Images of biological remains should not be published without consultation with the curating institution or relevant stakeholder
- Where appropriate (e.g. once research is complete), BABAO strongly urges curating institutions (i.e. a museum) to participate in public outreach activities (e.g. Festival of British Archaeology and British Association for the Advancement of Science) with suitably trained experts (i.e. an biological anthropologist or osteoarchaeologist), in order to disseminate the information learned from the study of their collections and to contribute to the public's scientific knowledge.
- Where appropriate (i.e. a museum) BABAO supports the display of biological remains in institutions in a holistic, respectful manner⁸. We recommend that the biological remains are displayed in context with any associated artefacts and with supporting information that clearly defines the purpose of their display, e.g. an example of the mummification process

6.2 Storage Area

- Human remains should be kept in dedicated secure locations, with controlled access;
- Human remains should be kept away from public view, unless their display is part of an education exhibit;
- Storage areas should be a dry, cool, stable environment that does not experience rapid fluctuations in temperature and humidity (55% ± 5% relative humidity is recommended in the United Kingdom);

⁷ In this document the phrase 'biological remains' is used to encompass living human and non-human primates, human and non-human primate skeletons, and other body tissue (i.e. hair).

⁸ This is based on the results of a number of surveys undertaken in the UK and Europe. We recognize that the material chosen for display should be selected based on a framework that integrates the perspectives of descents and Indigenous communities (as defined in DCMS 2005).

- Storage areas should be regularly checked for environmental damage and pests;
- Storage areas should be void of contaminants, pests, water ingress, radiation, and direct physical damage;
- Durable shelving, preferably metal, that is not overloaded (e.g. up to four boxes shelved in a stack) should be present so biological remains are never be stored in direct contact with the floor; and
- Where appropriate, descendants⁹ of the human remains should be consulted to ensure that the remains are stored in a manner that considers the descendant's wishes; e.g. funerary objects stored with the individual.

6.3 Storage Containers and Packing

- Containers should be inert and acid-free, and large enough to contain the remains without damaging them. Multiple boxes should be used to store a single individual if one box is not adequate to store their remains, where the boxes are numbered 1 of X, 2 of X, etc. and shelved together;
- Containers should include at least two labels providing the following information: site name (or code), unique identifier of the remains (i.e., context number), and what the bag contains (e.g. vertebrae). This information must be clearly written with a black indelible marker. Labels should never be directly attached to biological remains;
- Containers should be packed to limit damage, unless a specially designed box is used¹⁰
- Containers should be packed by placing the heavier and larger material at the bottom; cranial and pathological material should not be placed beneath or have heavier material resting on it;
- The material placed in the container should not be tightly packed or be too loose, the contents should not move about when the container is handled;
- If tissue, fabric, or metal adheres to the human remains, or if bones are articulated because of pathological changes, storage containers should be specially created to securely and safely accommodate them. The human remains should be properly supported by conservation grade materials, i.e., acid-free tissue or foam, to ensure that remains are not damaged during handling. It must be noted that often metal and bone may have conflicting conservation needs, and their curatorial strategies should be formulated with a conservation specialist;
- Fragile biological remains should be packed using conservation-grade materials that support and prevent damage;
- Unless the biological remains are fragile, it is not necessary to wrap each element in acid-free tissue paper;
- Bubble-wrap may be used as a temporary measure to protect biological remains, but it is not suitable for long-term use. Newspaper should not be used because it is acidic;
- The dry biological remains should be placed in clear strong plastic bags (i.e., at least 500 gauge thickness) and in a sensible fashion, in order to reduce damage and handling; e.g. right hand bones bagged separately from the left hand bones. Cremated remains should be placed in sealable strong plastic bags (at least 500 gauge thickness) or containers; and
- It is advisable to use acid-free foam or pads of tissue paper as a supporting layer at the base and top of the container. Bubble-wrap may be used as a temporary measure but is not suitable for long-term use; newspaper should not be used to wrap or support material, or used to support bags within a container.

⁹ As defined by DCMS (2005)

¹⁰ For example, those designed by Bowron (2003)

6.4 Reconstructions

- If a bone is broken, and if appropriate (i.e., for display purposes), it may be joined together using a reversible glue (HMG Paraloid B-72) and the process should be documented. The reconstruction should be performed by a human osteologist, wherever possible, in conjunction with a conservator familiar with the properties of bone, so the process can be documented. The uses of other products, e.g. glue-guns, sticky tape/tack, plasticine, is not recommended. If temporary solutions are necessary (e.g. for photography) and the use of supports (e.g. inert foam) has failed, then the use Parafilm M or 3M Scotch® Magic™ Tape¹¹ which are reversible, is recommended. Care should be taken to ensure that the surface of the material is not damaged;
- Biological remains should not be rearticulated (e.g. using string to connect vertebrae) for storage purposes;

6.5 Marking Bones

- Marking directly on skeletonised (inhumed and cremated) bone presents a number of economic, conservation, and respect issues. Many of the methods traditionally used to mark bone are not reversible and become absorbed into the material over time, creating both conservation and curatorial concerns.
- The site name/code and unique identifier should be clearly written on the dried biological remains using an indelible marker pen or Indian ink¹². It should be written onto a barrier of HMG Paraloid B72 (a less favourable choice would be clear fingernail polish). The information should not be placed on a joint surface, or on any area judged to be of significance (e.g. a pathology or a measuring landmark);
- If material has to be removed from the rest of its context for some purpose (i.e. a loan or exhibition) then it must be marked with the site code and context number;
- We recommend that whenever feasible, material which will be deposited with an archive is marked either by the depositing or receiving institution;
- Extant soft tissue (i.e., finger nails) should not marked; and
- Skeletonised remains used for teaching should be marked using a reversible medium.

6.6 Soft Tissue

These statements are recommendations only. Curatorial strategies for human soft tissues¹³ that may also be subject to aDNA, stable isotope and other analyses should be undertaken with conservators and specialists in the respective fields, as guidance frequently changes:

- Statements concerning the holding institution follow the above;
- ‘Wet’ samples can be temporarily stored in labelled plastic vials or containers¹⁴ using dry-ice. In the long-term, they should be kept frozen in freezer-proof labelled vials/containers. If the material thaws out, this should be documented, as material will degrade;
- Dry hair samples should be kept in labelled vials or in acid-free paper envelopes¹⁴, stored in labelled conservation-grade containers that are kept out of direct sunlight and are curated in a stable environment;

¹¹ We recommend that one type of material is consistently used in order to ensure that any contaminants are easily identified and documented

¹² Indian ink is not reversible when directly applied to bone (Cassman and Odegaard 2007c, 113)

¹³ In this document, soft tissue refers to non-bone or dental biological material, e.g. nails or fibrous tissue.

¹⁴ These should be new and uncontaminated

- Dry collagen can be kept in labelled or plastic/glass vials¹⁴ in a stable environment, at room temperature, away from direct sunlight;
- Soft tissue samples can also be frozen in freeze-proof labelled containers¹⁴; dry tissue may also be kept in labelled conservation-grade containers **Error! Bookmark not defined.** in stable environment away from direct sunlight; and
- DNA samples should be kept frozen at -80°C for long-term survival; -20 °C is tolerable for less than a year.

7. Destructive Sampling

7.1 Non-archaeological/historical material

Taking samples from living and deceased human and non-human primates less than one hundred (100) years old are subject to the legislative requirements of their resident country. Therefore, we advise that our members familiarise themselves with these before undertaking any project where the collection of these data is necessary.

- In England, Wales and Northern Ireland: Human Tissue Authority (Human Tissue Act 2004) <http://www.hta.gov.uk/legislationpoliciesandcodesofpractice/legislation.cfm>.
 - See also the Medical Research Council <http://www.mrc.ac.uk/Ourresearch/Ethicsresearchguidance/Useofhumantissue/index.htm>
- In Scotland: there is no equivalent of the Human Tissue Authority and no licences are needed for the storage and use of human tissue. The Scottish Human Tissue Act (2006) is restricted to tissue from the deceased http://www.opsi.gov.uk/legislation/scotland/acts2006/asp_20060004_en_1

7.2 Archaeological Human Remains

Archaeologically derived human remains are a finite repository of information about past communities and environments, and are subject to the ethical and practical considerations of retention and repatriation – many of which are unforeseen. Consequently, the ethics and guidance concerning destructive testing are written with these fundamental tenets in mind.

- All stakeholders and institutions which hold biological remains in their care under public trust should seek to ensure their long-term survival;
- Archaeologically derived biological remains should not be regarded as a limitless resource for testing methods of analysis;
- Biological remains should not be repeatedly sampled for the same study;
- The temporal, national, regional, palaeopathological and archaeological/historical significance of the biological remains should be established by the holding institution (permanent and/or temporary) before sampling is considered, and judgments should be made based on these assessments;
- If biological remains are being sampled for analysis outside the country of their excavation and/or curation, the person undertaking the project should make themselves aware of, and comply with, the relevant legislation and import/export conditions, and ensure the transport of the material is undertaken in such a way as to safe-guard the sample;
- If the biological remains are destined for curation at an institution, but are being held in the interim by other stakeholders (e.g. an archaeological contractor), the stakeholder should liaise with the institution to

ensure that the sampling is undertaken in a manner which does not conflict with their conservation and policies in order to ensure the long-term curation of the material;

- Destructive sampling should not be undertaken until the minimum standards of data have been collected (i.e., Brickley and McKinley, 2004);
- Consider if the sampling is necessary to answer the research question and if it is undertaken, ensure that the results justify the sacrifice, and consider what other methods of analysis are prevented by sampling;
- If sampling does take place:
 - the person undertaking the research should be aware that the extant collagen etc... remains in the care and trust of the institution/stakeholder from which it was taken and should be returned in a timely fashion upon completion of the work;
 - a record should be made of: the biological remains selected and their dimensions, pathological conditions present (using standard recording methods i.e. Brickley and McKinley (2004)) and wherever possible, the material should be radiographed and photographed (in superior, inferior, medial and lateral views with a scale) before sampling;
 - the person undertaking the research should only sample the minimum amount of biological material necessary to perform the analysis;
 - always seek to prevent damage to the biological remains when using sampling equipment;
 - create an archive with the relevant institution/stakeholder; before and after sampling images with supporting context data (i.e. rib or tooth before and after sampling), information about where the sample will be analysed and by whom, and ensure that a copy of the results and all subsequent research using the biological remains is deposited and archived with the institution/stakeholder.

8. Research and Teaching

Please note that the practical issues of research and teaching are addressed in the curation and deposition sections of this document to avoid repetition.

- BABAO strongly recommends that the collections are open for study by *bona fide* researchers and where appropriate (e.g. students), access should be supported by a covering letter from their institution of study. Access should be considered and documented using an application form which, as a minimum, records: the researcher's contact details, the collections studied, methods used in the study, a copyright agreement for images, and an agreement that a copy of the study is deposited with the curating institution. If destructive sampling takes place, the recommendations described in this code should be documented;
- Research space should conform to health and safety legislation¹⁵, and individuals working in the space should be familiar with risk assessments and provided with the institution/stakeholders' ethics and policy documents;¹⁶
- Research facilities should aim to be as comprehensive as possible to ensure that sufficient equipment and resources are provided;
- BABAO members have an ethical responsibility to the individuals they research and study, whether living or dead, human or non-human primates;

¹⁵ Members are responsible for identifying the legislative requirements in their locale.

¹⁶ As described in DCMS (2005)

- Working-space (e.g. benches/tables) should be covered with a protective layer (preferably plastazote foam¹⁷) and fragile items should be supported by plastazote/microfoam (e.g. a thick piece of plastazote cut to form a skull ring) or a bean-bag made from polypropylene pellets;
- Members should endeavour to identify potential ethical difficulties when designing projects and determine how these can best be resolved;
- In the preparation and carrying-out of research, members should be clear and open about the purpose and projected outcomes of the study with the stakeholders involved in/or affected by the research (e.g. host institutions/ communities, sponsors, funding bodies). All efforts should be made to ensure that safety, dignity and privacy of the stakeholders is not compromised. This can be achieved by obtaining consent in advance, and operating within the legislative directives of a given locale, and ensuring that the stakeholders are not exploited by the project;
- The outcomes of the research should be disseminated to and deposited with the stakeholders and other relevant parties (i.e. funding bodies, host institutions/communities, peers) within reasonable time;
- BABAO urges its members to consider applications for access to their research information, particularly if there is a hiatus between the project being completed and the archive being deposited at an institution;
- Members should uphold the policies and legislative frameworks governing professional conduct at their respective institutions;
- Professionals who are responsible for and/or use collections curated by their institution should endeavour to ensure its long-term survival and uphold best practice curatorial strategies;
- BABAO strongly recommends that the teaching biological anthropology and osteoarchaeology should be undertaken using actual skeletal materials, as these are the only means by which normal and abnormal variation can be identified in a population and effectively taught. Plastic material is not a substitute for this resource, but may be helpful for the most basic of classes where anatomy is being taught;
- Individuals responsible for teaching/research should mentally and physically prepare students for working with material;
- Individuals responsible for teaching/research space should issue guidelines on acceptable behaviour, health and safety practices, and complete a risk assessment;¹⁵
- Teaching/research facilities should aim to be as comprehensive as possible, to ensure that sufficient equipment and resources are provided.

9. Documentation/Archives

The undertaking of any research or excavation will result in the creation of information, the nature of which changes in relation to technological developments. Excavators, researchers, and curators should seek to deposit an archive of their work in a public repository in order to ensure that their outputs can be understood in their wider context, and that information is available for future analysis. In the majority of situations, the depository (e.g. local, regional or national institutions) for this information is established prior to the excavation or research initiative. Some other depository options include: professional societies and internet-based holdings, (e.g. the Archaeology Data Service (ADS); see <http://ads.ahds.ac.uk>). The ADS is also able to advise on the production of a digital archive.

Best practice in documentation includes:

¹⁷ This is recommended conservation standard. Bubble-wrap is a less desirable alternative (see Cassman and Odegaard 2007d, 51). Members should be aware that the inadvertent use of inappropriate materials will damage material – see Cassman and Odegaard (2007d).

- Materials suitable for inclusion in an archive include: written or digital texts, drawings, film negatives/prints, digital photographs, film/digital radiographs and offprints of publications and research based on the studied material;
- An archive should be a reliable and complete record of an excavation or study;
- An archive should be secure and stable at the time of deposition;
- All analytical and interpretive activities are documented and referenced, so that all terms, abbreviations, and procedures can be understood by future users. This is most pertinent when specialist equipment, conservation treatments or instrumental forms of analysis are employed;
- All biological anthropological material should be packed in accordance to existing acceptable standards (see below for recommendations of best practice) and the requirements of the receiving institution; and
- Members should be aware of and be willing to undertake legal responsibilities with respect to copyright and ownership, and where appropriate, to ensure that copies of any extant copyrights are given to the receiving institution.

10. Acknowledgements

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