



Arizona State Museum
THE UNIVERSITY OF ARIZONA®

GUIDELINES FOR DOCUMENTATION OF HUMAN REMAINS

Standards for the Documentation of Human Remains

The Arizona State Museum is accountable for the disposition and treatment of Human Remains under ARS §41-844 and §41-865 and therefore requires documentation to satisfy the requirements of this legal accountability.

Protocols for the documentation of human remains employed by the Arizona State Museum are principally those described in *Standards for Data Collection from Human Skeletal Remains*, edited by Jane E. Buikstra and Douglas H. Ubelaker, Arkansas Archeological Survey Research Series No. 44, 1994. A copy of *Standards* is required in order to fill out the ASM forms accurately and may be obtained from the Arkansas Archeological Survey, 2475 N. Hatch Ave., Fayetteville, AR 72704, <http://www.uark.edu/campus-resources/archinfo/>.

The ASM forms are similarly based on those developed for *Standards* and may include drawings from that publication. These are used with permission of the publisher.

Guidelines for the Documentation of Human Remains

The Arizona State Museum Human Remains Documentation Packet is designed to be flexible in order to accommodate the diversity that bioarchaeologists encounter when documenting human remains. The packet consists of a cover sheet and 12 recording forms, totaling 22 pages, and should be supplemented by additional documentation.

The documentation of human remains should be minimally accompanied by the cover sheet so that a nominal amount of contextual information is common to all remains recorded. Beyond the cover sheet however, select only those forms which apply, depending upon the type of mortuary feature, preservation and condition of the remains, and age of the individual. As many observations as possible should be recorded, even if they mostly report an absence of conditions. However, if there is uncertainty about the presence of a specific trait or pathology, it is better to leave the line blank. Missing information is preferable to inaccurate data.

It is also important to remember that this recording packet is only a guide. It is designed to prompt for a minimal amount of information in a standardized recording format to preserve comparable data. There is no substitute for additional detailed textual description, illustrations, and photo or 3-D documentation when permissible.

Human Skeletal Remains Recording Packet — Cover Page

Provenience: This box records critical information on provenience associated with the remains.

- **Site Name/No.:** Record the site name and number on the first line of every form.
- **Designation/I.D.:** Record any additional information, such as feature and/or burial number on the second line of every form. It is important to continue to note all of these provenience designators on each form used throughout the packet; in the case that any of the forms become disassociated with each other, they can be correctly re-associated. It is also important to record any other provenience-related information found on the bags or boxes associated with the remains. This can be done on the third line of the cover sheet.
- **Observer(s)/Date:** Record the date of the analysis and full first and last name of the individual(s) making the observations on the last line in the Provenience box. Initials or abbreviations of names are problematic over time when individuals move on and institutional memory fades.

Biological Profile: This box provides a brief profile or summary of the principle results for quick reference.

- **MNI:** Record the Minimum Number of Individuals identified for sets of remains associated from a single provenience designation. If more than one individual is represented and it is impossible to fully separate all bone fragments for analytical purposes, make sure to explicitly note when considering duplicate elements within the documentation forms.
- **Form List:** Check the boxes of all the forms used. This provides a way to confirm the contents of the packet and identify if something is missing.

Preservation: Record the degree of skeletal preservation of the remains and briefly describe any relevant observations.

Condition: Record the condition of the remains by noting some of the results of taphonomic processes affecting the remains and briefly describe any relevant observations.

NOTE: The mortuary archaeological context should be fully described on a separate set of forms. Most cultural resource managers have standard form packages for mortuary features that record the information required by *A.R.S. §41-844 and §41-865 Guidelines*. The Arizona State Museum Mortuary Feature forms may also be used and is available in a separate file.

Skeletal Inventory (Form 1)

The Skeletal Inventory form is composed of 1) a coding sheet to note the presence and condition of skeletal elements and, 2) a “fill-in” skeleton illustration recording sheet.

Code Sheet: Note the degree of completeness for every identifiable element (portion of element or group of elements). Complet = 75-100% of the skeletal element present; Partial = 25-75% of the skeletal element present; Fragmented = 1-25% of the skeletal element present.

- Long Bone Segments: epi-p = proximal epiphysis; prox = proximal 1/3 of shaft; mid = middle 1/3 of shaft; dist = distal 1/3 of shaft; epi-d = distal epiphysis.
- If you cannot identify the exact position of a vertebra, or a phalanx, etc., bracket the entire category and write in the total number of elements of that type with the average completeness stage.
- If an element can be identified but the side is unknown, enter as a left and indicate on the side with a “u” or in the Notes section that the element is unsided.

Skeleton Illustration: Fill-in the elements or portions of elements that are present.

- If you cannot identify the exact position of an element, label it with an “a” to denote approximate location.
- If an element can be identified but the side is unknown, fill-in the left side and label it with a “u” to indicate that it is unsided.

Age and Sex Assessment — Adult (Form 2a)

Age: Record the adult indicators of age estimation that are present for pelvic, post-cranial, and/or cranial features.

- Record pelvic morphology according to the appropriate pubic symphysis (Todd, 1921; Suchey et al., 1984) or auricular surface systems (Lovejoy et al., 1985).
- Record cranial suture closure and epiphyseal fusion: 0 = open, 1 = minimal fusion/closure, 2 = significant fusion/closure, 3 = complete fusion/obliteration.

- In the Observations section, indicate how you arrived at the age estimate, including any additional criteria considered.
- Record the estimated age range in years for the individual at the top of the page (and cover sheet).

Sex: Record the adult indicators of primary and secondary sex characteristics for pelvic, post-cranial, and/or cranial features and note the estimated sex of the individual at the top of the page (and cover sheet).

- Note that three different numerical scales are used for the sex indicators. Therefore, the total estimated sex number cannot be a numerical average. The overall estimated sex assessment is judgmental, based upon which traits you think are more indicative. Use the following codes for the overall assessment: *1= female, 2= female?, 3= indeterminate, 4= male?, 5= male.*

Age Assessment — Juvenile (Form 2b)

Record the stage of union of epiphyses and primary ossification centers: *0= open, 1= minimal fusion, 2= complete fusion.*

- In the Comments section, indicate how you arrived at the age estimate, including any additional criteria considered.
- Record the estimated age range in years for the individual under “Age Assessment” (and cover sheet).

Dental Inventory & Pathology — Permanent (Form 3a)

The Permanent Dental Inventory & Pathology form (teeth #1-32) is composed of 1) a coding sheet to note the presence and condition of oral segments and, 2) an illustration recording sheet including the dental arch and jaws.

Code Sheet: Record presence, pathology, wear, and dimensions of dentition using codes largely from Buikstra and Ubelaker (1994).

- **Dental Inventory:** Recorded on a scale from 1-8 using codes from Buikstra and Ubelaker (1994).
- **Dental Development:** Recorded on a scale from 1-14 using codes from Buikstra and Ubelaker (1994).
- **Caries:** Recorded as *1= occlusal surface, 2= interproximal surfaces, 3= smooth surfaces (not interproximal), 4= cervical caries (at the CEJ), 5= root caries, 6= large caries (origin unknown), 7= non-carious pulp exposure* from Moore and Corbett (1971).
- **Abscesses:** Recorded as *1= buccal/labial or 2= lingual alveolar channel* from Buikstra and Ubelaker (1994).
- **Calculus:** Recorded as *1= small, 2= moderate, 3= large amount* from Buikstra and Ubelaker (1994).
- **Chipping:** Record the number of antemortem chips (damaged locations) on the crown.
- **Alveolar Resorption (Periodontitis):** Recorded as *1= mild (active porosity and limited remodeling) or 2= severe remodeling (deep alveolar pockets, roots exposed).*
- **Tooth Wear:** Occlusal surface wear is recorded on the incisors, canines, and premolars (scores 1-8) using Smith (1984) and reflects a consideration of the entire surface. Molar occlusal surface wear is recorded for each of the four quadrants (scores 1-10) using Scott (1979).

- **Crown Dimensions:** Record the mesiodistal diameter, buccolingual diameter, and crown height (from the CEJ) to the closest millimeter according to Buikstra and Ubelaker (1994).
- **Enamel Defects:** Record the tooth affected, the number of defect on each tooth, the type of defect, the distance of the defect from the CEJ, and the color of the defect using codes from Buikstra and Ubelaker (1994).

Illustration Sheet: Provide a visual representation of the presence of oral segments and illustrate the locations and severity of pathology.

- **Dental Diagram:** Identify the location and severity of caries, enamel defects, and calculus on the dental diagram. Indicate antemortem missing teeth with a slash ("/") and postmortem missing teeth with an "X".
- **Maxilla/Mandible Diagram:** Identify the location and severity of abscesses and alveolar resorption (periodontal disease) on the maxilla and mandible diagrams. Note any portions of the bone that are missing with hatching.

Dental Inventory & Pathology — Deciduous (Form 3b)

The Deciduous Dental Inventory & Pathology form (teeth #51-71) is also composed of 1) a coding sheet to note the presence and condition of oral segments and, 2) an illustration recording sheet including the dental arch and jaws. Codes and recording procedures are identical to those employed for the permanent dentition (see above).

Dental Morphology — Permanent (Form 4a)

Most of these traits are derived from Turner et al. (1991). Many of the traits are scored in comparison with dental casts that may be obtained from the Dental Anthropology Lab at Arizona State University. Generally, these forms should be completed only by an analyst who has had training or experience in dental anthropology.

Dental Morphology — Deciduous (Form 4b)

Many of these traits are derived from Turner et al. (1991) and others from Hanihara (1961).

Measurements — Adult (Form 5a)

This form should be used for crania of adult individuals and skeletal elements with fused epiphyses. All measurements should be recorded in millimeters. Locations of cranial landmarks and post-cranial measurement techniques are defined and illustrated in Buikstra and Ubelaker (1994).

- Lengths of long bones should only be recorded if the ends are intact.
- Estimated lengths should only be recorded if there are small portions of the bone missing and the estimate is likely to be within 5mm of the true value and should be noted as an approximation.
- Skulls are frequently distorted postmortem by soil pressure. Do not record any cranial measurements that could have been affected by this process.

Measurements — Juvenile (Form 5b)

This form should be used for crania of young juvenile individuals and for shaft dimensions of skeletal elements without epiphyses. All measurements should be recorded in millimeters. Measurement techniques are defined and illustrated in Buikstra and Ubelaker (1994).

- As noted above, estimations should be avoided, especially with juvenile remains where small differences in length can have significant meaning for age estimates.

Non-Metric Traits (Form 6)

Non-metric traits and their expressions are defined and illustrated in Buikstra and Ubelaker (1994).

- If there is uncertainty about trait presence or category of expression, record as unobservable and/or add a written description of the character.

Pathology Checklist (Form 7)

The purpose of the pathology checklist is to ensure that observations on pathology are made, even if minimal.

- Each condition should have a checkmark in one of the three columns. A description must be included for any pathology noted as present and illustrations should ideally accompany the recording packet as supplementary material.
- For an inflammatory reaction or trauma, be sure to state whether the lesion appears to be active, healing, or fully remodeled.

Degenerative Joint Disease (Form 8)

Stages of degenerative joint disease from Ubelaker (1999:87) should be recorded for each articular surface observable and include: *a= normal articular surface, b= appearance of small deposits of bone on articular margins, c= small pits, d= polishing/eburnation, e= other*. A fifth category (type e) has been added to cover other forms of DJD, such as flattening of mandibular condyles. Provide a detailed description of the condition in the observations section.

- Give a general assessment of the severity of the DJD in the observations section at the bottom of the page. Is the lipping very slight? Are there certain elements that have more pronounced lipping? Is it symmetrical or is there a greater degree of expression on one side even though it is the same stage?

Spinal Osteophytosis (Form 9)

Codes for stages of osteophytosis are illustrated in Ubelaker (1999:85) and grade from *0= no lipping*, to *4= maximum lipping*. Stages of DJD should also be recorded here (as defined above) and illustrated on the figure.

- Illustrate the location and severity of osteophytes on the figure. If the severity of osteophytosis varies along the spine, note on the drawing which stages apply where.

- Compression fractures, ankylosis, or other conditions can be illustrated on this form in addition to a detailed description. For ankylosis, note if the fusion is in the vertebral body, the spinous process, or both and indicate the degree of fusion.

Artificial Cranial Modification (Form 10)

Do not record artificial cranial modification if there is significant postmortem warping of the skull.

- The skull must be held in the Frankfort Horizontal plane in order to determine the relative angle of the plane of pressure.

Cremated Remains (Form 11)

The cremated remains form is composed of 1) a coding/description sheet to note the presence and condition of skeletal elements and, 2) a illustrated skeleton recording sheet. These can be used instead of the Skeletal Inventory form (Form 1).

Code Sheet: Sort the cremated remains into regions of the skeleton and document the elements present that are identifiable. Record the following data for the elements by region and for the remaining unidentifiable fragments and record the sums at the top of the form.

- **Count:** Number of fragments for each anatomical region (and unidentified) (exclude fragments smaller than 5mm).
- **Weight:** Weight in grams (g) for each anatomical region (and unidentified), then calculate the total weight.
- **Color:** Record the dominant color (reflecting degree of burning) for each anatomical region (and unidentified). If color varies, estimate what percentages are in each category. Note colors as Tan, Black, White (or calcined), Blue-Gray.
- **Texture:** Record the presence of bone texture: Longitudinally split, Transverse and longitudinal checking, Curved cracks, or Warping for each anatomical region. Note the dominance of a particular texture and variations within and across regions.
- **Maximum Length:** Record the maximum length in millimeters of the largest fragment for each anatomical region.
- Note the presence of unidentified fragments by skeletal region (when possible) based on morphology (cranial, long bones, vertebral, etc.).
- In very fragmentary cremations, there may be no pieces that are identifiable to element. In this case, is the bone “Consistent with human, but not diagnostic” or “Indeterminate with respect to human or animal?”

Skeleton Illustration: Fill in the elements or portions of elements that are identifiable using the defined color/hatching by bone color.

- If you cannot identify the exact position of an element, label it with an “a” to denote approximate location.

- If an element can be identified but the side is unknown, fill in the left side and label it with a “u” to indicate that it is unsided.
- When possible, note age and sex estimations (and the criteria used to assess them) and any pathology noted.

Isolated Remains (Form 12)

This form may be used as a single sheet to record very fragmentary unburned human remains. It may also be used to record the occasional human bone fragments that are sometimes found in bags of faunal bone once they reach the lab. It may also be used as a supplement to a complete inventory package when there are a few bone fragments that clearly belong to another individual or individuals.

- When multiple individuals are represented, specify which fragments belong to which individual.
- Record the elements by region of the skeleton and provide counts and weights.
- Additional notes on taphonomy, pathology, or age and sex estimation should also be recorded.

Additional Forms

Skeletal Visual Recording Forms: Numerous other forms can and should be used to supplement and complement those formally included as part of the ASM Human Remains Recording Packet, including several visual recording forms found in *Standards* (Buikstra and Ubelaker, 1994).

- **Adult Skeleton, Infant Skeleton, and Child Skeleton:** These drawings may be used to illustrate the distribution of skeletal lesions, trauma, or other conditions, when there are multiple manifestations of pathology in the individual.
- **Individual Element Drawings:** Drawings of pathology or other unusual conditions should include length and width measurements of the area affected and the location relative to at least one landmark. Illustrate each aspect of the bone (anterior, lateral, etc.) on which it is visible.

Descriptions: Provide as thorough a description as possible for every observation made on the remains.

- Is the lesion proliferative or lytic? Is the reactive bone porous (macro- or microporosity) or woven in texture? Does it appear to be confined to the cortical surface or does it extend into the medullary cavity? Does the lesion appear active, healing, or fully remodeled? In the case of healed fractures, indicate if there has been a change in the alignment of the bone. Are there ridges or grooves that formed as a result of trauma?

Photographs and (other) Digital Images: When permissible, photographs and digital media such as three-dimensional scans (i.e.-LiDAR) provide another medium to preserve information about the human remains.

- Provide a scale in photographs and always keep a log of images taken with a detailed description.
- Keep in mind that the luxury of image recording does not negate the necessity for a detailed description of the observation being recorded.

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