What Comes Next? Considerations for Suspected Unmarked Graves at Former Residential Schools

FAQ's on Anthropology Terminology and Techniques

Content Warning

This resource contains references to Indian Residential Schools (IRSs) and unmarked graves. If you require support, help is available 24/7 for Survivors and their families through the Indian Residential Schools Crisis Line at 1-866-925-4419. Mental health support for Indigenous peoples is available through the Hope for Wellness chatline at 1-800-721-0066 or using the chat box at https://www.hopeforwellness.ca/. The Indian Residential Schools Survivors Society provides information about these and other supports.

Introduction

There has been much discussion about recovering human remains from unmarked graves at former IRSs and other sites. This document is intended for communities as a resource about the possibilities and limitations involved in this kind of work. It builds on the introductory information provided in the document "When Unmarked Burials are Found: Possible Options for Next Steps", available on the CABA/ACAB website. The Canadian Association for Biological Anthropology / l'Association canadienne d'anthropologie biologique (CABA/ACAB) is also in the process of compiling a resource on the laws and agencies that are likely to have legal jurisdiction over these matters in different provinces and territories of Canada.

This document does not make recommendations about the steps that should be taken in any particular case, as they will be unique to the community, their goals, any associated legislation, and the context of the case. This is also not a guide to best practices in forensic anthropology or bioarchaeology, nor to using remote sensing techniques, such as ground penetrating radar (GPR), to detect unmarked graves. The Forensic Anthropology Subcommittee of the United States National Institute for Standards and Technology has published standards and recommended practices in that field. The Canadian Archaeological Association (CAA), in partnership with the Institute for Prairie and Indigenous Archaeology (IPIA), have published several resources on detecting possible unmarked graves with remote sensing technologies, which can be accessed at the CAA website.

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Community leadership

The Canadian Association for Biological Anthropology / l'Association canadienne d'anthropologie biologique (CABA/ACAB) advocates that Indigenous communities lead in decision-making about if, when, and how the work of recovering, identifying, and returning children who never came home from Residential Schools should proceed. In particular, communities must have final say on decisions, including but not limited to: incorporating ceremony and other protocols; if, when, and how to speak publicly about the findings; the methods used and the extent of the work; who is involved in the work; and where and how all resulting data and records are retained and used. This is in keeping with the United Nations Declaration on the Rights of Indigenous Peoples, the Truth and Reconciliation's Calls to Action, and the First Nations Principles of Ownership, Control, Access, and Possession.

The Truth and Reconciliation Commission's 76th Call to Action urges that all parties engaged in this work do so in accordance with the following principles:

> i. The Aboriginal community most affected shall lead the development of such strategies.
>
> ii. Information shall be sought from residential school Survivors and other Knowledge Keepers in the development of such strategies.
>
> iii. Aboriginal protocols shall be respected before any potentially invasive technical inspection and investigation of a cemetery site. (Truth and Reconciliation Commission of Canada, 2015:8)

Protocol and ceremony

Cultural protocols, including ceremonies to support, protect, and honour the taken children, the Survivors, and all others engaged in the work of finding the children, are crucial to its success. Many aspects of the investigative process, both archaeological and forensic, can be adjusted to better conform to community values and practices. How these practices are included will be specific to each investigation and will depend on factors such as the wishes of the communities involved, the place and

landscape that is being investigated, and the objectives of the investigation. For example, investigations intended to support a legal prosecution, in Canadian or International courts, may differ in certain ways compared to investigations that only seek to identify and return missing loved ones.

Indigenous data sovereignty over archaeological, skeletal, and genetic data

Any effort to locate, recover, and identify the remains of children who died at Residential Schools will produce many records and large quantities of data. Attempts to identify remains using DNA cannot succeed without genetic samples donated by living relatives of the missing. Given the experiences that Indigenous communities have had with the collection and misuse of their data, including genetic data, it is critical that any data produced by this process be curated securely and in a way that is acceptable to the community under the First Nations Principles of Ownership, Control, Access, and Possession. While we recognize that this work will intersect with the jurisdictions of multiple Canadian federal and provincial agencies, we urge these agencies to accept community leadership over the scope of work, methods used, and the curation and use of the resulting data.

Overview: what, and who, will the process involve?

Every case will be different, depending on the context and priorities of the communities involved. However, certain steps are likely to be needed if a project's goals include finding, identifying, and returning the remains of missing children to their families. This section will briefly describe these steps, while the following sections will respond to some of the questions that a community planning to pursue identifications may have about the process. A more detailed overview may also be found in the following document from CABA/ACAB: When Unmarked Burials Are Found: Possible Options for Next Steps.

Who would normally be involved in recovering remains from an unmarked grave?

The work of recovering and analysing unidentified remains from recent (forensic) burials is normally done by experienced forensic archaeologists, forensic anthropologists, and forensic pathologists, among others. Officially identifying an unknown deceased person is normally the responsibility of a medicolegal authority such as a coroner or medical examiner, although this is not always the case.

Work of this kind will come into contact with medicolegal authorities, law enforcement, heritage regulators, and other government agencies created by Canada and its provinces and territories. CABA/ACAB and allied associations are compiling a resource that details many of the relevant agencies and laws in each

province or territory, which will hopefully assist investigating communities with planning for those relationships.

Locating potential graves

The first step will involve attempting to locate graves using sources such as Survivor testimony, archival research, and archaeological survey methods. The Canadian Archaeology Association has prepared resources on this process here.

Excavation and recovery

There is no way to be certain about who is buried in an unmarked, undocumented grave without physically recovering and analyzing the remains. If potential graves have been found and a community decides to move forward, then excavating the graves and recovering the remains are the next steps.

Gathering information from remains

Once recovered, any remains that are found will normally be examined by qualified forensic practitioners, notably experts in the skeleton (anthropologists) and teeth (odontologists), in order to gather information that can be used to help identify the individual(s). DNA samples may also be taken from typically small pieces of bones and/or teeth, which is a destructive process. The remains must be kept in a secure, climate-controlled place for as long as they are being examined, and potentially until they are returned to their family or community.

Gathering information about the missing

If remains are to be identified, then communities must plan to collect and curate sources of information about the missing person, notably DNA from relatives. This can be a difficult and sensitive process and will require proactively creating agreements and protocols to protect the information of family members and communities who consent to give information or DNA samples.

Identification, followed by return or other outcomes

Qualified, experienced practitioners will be needed to actually undertake the task of identification, which involves comparing the profile of an unidentified person to that of missing people who could be a match. In most Canadian jurisdictions, identification is a formal process with legal implications and is done by a coroner or medical examiner.

It may not be possible to identify all of the remains that are recovered from a given site, which means that any project will need to plan for how to care for individuals who are not identified. For those that are identified, plans will be needed for how to care for them or return them to their families or home communities.

Locating, excavating, and recovering remains

How are potential burials located?

There are many ways in which potential burials can be located, including first-hand accounts by Survivors, archival accounts, and ground penetrating radar (GPR). These methods should be used together when possible in order to narrow down the possible location of a burial. Archives are collections of historical records that have been accumulated by a person or institution. In the context of Residential Schools, documents such as quarterly reports, death reports, and other records when available, can provide the names of children who attended the schools or were sent to hospitals, but these records can contain incomplete or contradictory information. Obtaining and analysing the contents of these records is a long and ongoing effort by organizations such as the National Centre for Truth and Reconciliation.

Ground penetrating radar (GPR), like other remote sensing tools, can be used to find anomalies at or below the ground surface, which might indicate the presence of a burial. For more information on the possible uses and limitations of GPR see:

Canadian Archaeological Association:
Resources for Indigenous Communities Considering Investigating Unmarked Graves

Institute of Prairie and Indigenous Archaeology:
Geophysics and Unmarked Graves
Community Resources Guide for Unmarked Graves Research

Do you have to excavate a grave to tell who is in it?

The decision on whether to excavate is something that each community should decide among themselves. The excavation process can cause additional stress and grief to Survivors, other family members, and communities. In some cases, there may be enough archival or witness information to reasonably infer who is buried in a grave, particularly if the grave is marked. Furthermore, it is important to note that even if excavation proceeds, and the identification process is undertaken, it may not always be possible to specifically link the person's remains with a known missing person.

It is usually necessary to excavate a grave to determine with certainty who is buried in it, especially if there are no reliable markers or records to show who is buried where. Thus, if a community wishes to identify and return children who are thought buried in a particular area, then all of the graves in that location will need to be excavated and the remains analysed to try to determine their identities. A centralized record of information about those who have been identified and those who are still missing will be necessary.

What is involved in excavating a potential grave?

If areas of suspected unmarked graves are identified using GPR (see CAA section) and/or other methods, a process of excavation could be used to confirm the presence of human remains within the grave. Law enforcement and medicolegal investigators (Coroners and Medical Examiners) generally oversee the excavation of suspected modern unmarked graves, although this may not always apply in the case of Residential Schools sites.

Excavation is done by experienced (bio)archaeologists and may involve using a mechanical excavator to carefully remove overlying vegetation and topsoil to look for the outline of a potential grave. This can also be done more slowly by hand. This process must be carefully monitored to prevent disturbance to the burials themselves. Once the dimensions of a grave are identified it is then excavated by hand to determine if it contains human remains. Careful hand excavation will involve removing all human remains from the grave context, and all soil within the grave will be screened through a fine mesh to ensure recovery of all of the remains and other materials, such as possible clothing or personal possessions.

What does it mean if a likely grave is found, but there are no remains in it?

If no remains are found during an excavation, this does not necessarily mean that a burial never took place. Unfortunately, recovering the remains of a person from a grave is not guaranteed, even if they were buried there. Buried remains decay over time and cemeteries can be destroyed through natural processes, neglect, or development. A burial is subject to the environment, which can be destructive. Soil properties, trees, water tables, or any nearby disturbances such as construction, can all affect the preservation of a grave and any human remains it contains. Children's remains are more fragile and can be more difficult to locate and recover than adult remains. The effects of the environment can also make identification of found remains more challenging. From Survivor testimony, we know that some graves were disturbed or moved during the time of IRS operation, meaning children were removed from initial burial locations. (See the section below on concealed contexts.)

What are the costs and timelines involved in doing this kind of work?

The costs and timelines involved will depend on many factors, including the nature of the landscape where the graves are located, the goals that are set for the work, and the methods involved. In general, a more challenging environment and a larger scope of work will add cost and time. Archival work and community knowledge-gathering will be time-consuming, as is surveying for possible grave sites and collecting identifying information from family members. Further, there are no complete records as to who died at Residential Schools, which can complicate trying

to identify children in unmarked graves. In the end, identifying an individual may require a sustained effort over months or even years, and for some may never fully succeed. Ongoing efforts to record the names of children who died or went missing from the schools, such as the National Centre for Truth and Reconciliation's National Student Memorial Register, will be helpful in the effort to learn the identities of children buried in unmarked graves.

What can, and cannot, be learned from bones?

What does identification involve?

Identification involves comparing what is known about unidentified remains to what is known about a missing person, to determine whether or not they might be one and the same. Ideally, unique information about each should be compared. If there is little information available, then it can be much more difficult to confidently identify the person. An official, or formal, identification must be recognized by the local medicolegal authority (usually the Coroner or Medical Examiner), who is responsible for signing the death certificate for that individual.

Identifying a person starts with using information from the biological profile (see below) to compile a list of people who may match the unidentified individual based on associated records. For example, if an 8-year-old child is known to have died, and the remains are consistent with an 8-year-old, that child is a potential match. Next, unique features of the individual's skeleton need to be compared to information about the potential match. Some features, such as our teeth and DNA, are unique and can be used to identify us individually. DNA, teeth and dental interventions (like fillings), healed broken bones, and surgical interventions that affected the skeleton, are useful because they can be preserved even when the body's soft tissues, such as muscles and organs, are no longer present. However, these features must be compared to a known reference, such as DNA from a living family member(s) and/or dental or medical records such as X-rays or reports (if they exist).

Historical or archival records, witness statements, photographs, and Survivor accounts, may also help in locating and identifying individuals, though this depends very much on how detailed, accurate, and well preserved those records and memories are as well as the state of the human remains and graves in question.

What is a biological profile, and what is it used for?

In a death investigation involving skeletal remains, a biological profile is compiled by a forensic anthropologist, and is necessary to narrow down the list of missing people to whom the unknown individual is compared. The same applies in the context of trying to identify individuals from unmarked graves at Residential Schools. A biological profile, or osteobiography, is a description of a person based on what can be learned from their skeleton. It will usually include estimates of their height, their

biological sex, and how old they were. The amount of confidence placed in the accuracy of these estimates will be based on different factors, such as the preservation of the skeleton or the age at which the person died. For example, it is not possible to confidently estimate the sex of a child or infant based on their skeleton, and often DNA is required for this purpose. A biological profile will also record unique skeletal features as well as skeletal evidence of disease or injury. However, many aspects of who we are, and our life experiences, do not affect the skeleton in obvious ways, and so may not be detectable in a biological profile nor assist with identification. This includes diseases and injuries that did not affect the bones or teeth.

What is involved in using DNA to identify the missing children?

In order to use DNA to identify a deceased individual, DNA collected from a typically small piece of their bone or tooth must be compared to DNA from living relatives. Ideally, close relatives such as siblings or parents should be involved. DNA can be donated by potential family members by using a sterile swab to collect cells painlessly from the inside of one's cheek. Both DNA samples are then sequenced and compared by a qualified analyst, who evaluates the degree of genetic relatedness between the unidentified person and the living donors, to establish whether they are likely to have been offspring, siblings, cousins, etc., or are biologically unrelated to one another. In cases where two or more closely related people are possible matches, information from the biological profile, such as their age, may be used to help distinguish them.

DNA identification is not fool-proof. It has benefits and drawbacks that must be discussed by the communities involved. DNA collection from human remains is a destructive process, meaning typically small pieces of bone or tooth from each unknown child would be crushed and dissolved. It also may require that many people are asked to donate DNA. In cases such as this, where many communities had children taken and many children are known, or thought, to have died, there may be many living relatives who will need to consider giving a DNA sample to a database that can be used to identify the children. Understandably, there is sensitivity about collecting, storing, and using genetic information. If DNA identification is to be used, a secure and trustworthy database of these DNA samples must be created and managed responsibly in accordance with the First Nations Principles of Ownership, Control, Access, and Possession.

Will it always be possible to identify someone from their skeleton? Why or why not?

Sometimes unidentified remains cannot be confidently identified for a variety of reasons. The chances of a successful identification are highest when: there is

reliable knowledge of where someone was buried (such as from witness testimony, oral history, or documents such as burial records); the skeleton is well preserved; and there is detailed information available about a known missing person, including DNA from their relatives, or dental or medical records if they exist. Information about a known missing person must be compared with the biological profile, DNA profile, or other information from the unidentified person, to determine whether or not they are a possible match.

If there are few or no reliable records about the grave site, then identification must rely entirely on analysis of the skeleton and, if well-enough preserved, DNA from the individual's skeletal remains. If there are no dental or medical records to compare the bones and teeth with, if the DNA is too degraded, or if there are no close relatives who are able to give DNA for comparison, it will not be possible to identify someone from their physical remains.

Can you tell how long someone has been buried?

Much information on how long someone has been buried will be contextual, meaning it will be based on witnesses, archives, or objects such as coins and preserved textiles recovered from the grave. Chemical tests, namely radiocarbon dating, can be used to determine whether a person was born before or after the start of the nuclear testing era, in about 1950, based on analysis of a small piece of bone or tooth. It is important to note that this process is destructive and will result in the piece of bone or tooth being used up in the analysis. With the exception of detailed archives, these methods often indicate a general, rather than a precise date.

Can you identify how a person died or the illnesses and injuries they had?

Sometimes it is possible to determine a cause of death from skeletal remains, but not in all cases because many causes of death do not affect the skeleton. In some cases, it might be possible to see the effects of physical trauma such as a broken bone, or that an individual suffered from a disease, but illness and injury cannot always be detected on bone. Every case is different.

Some analyses can be used to determine if a child was experiencing stresses such as malnutrition or infection during their life. For example, a child who was malnourished may not have grown well and may therefore have been shorter than peers who were not malnourished; however, many factors contribute to a person's height, including genes from their parents, grandparents, etc. It can be useful for the purposes of identification to examine a person's skeleton for evidence of episodes of disease or poor diet that they might have experienced during life. However, it must be kept in mind that it may not be possible to say for certain that they had an illness or experienced malnutrition.

Is it possible to tell where a child may have originally come from?

Many children were sent to Residential Schools from distant communities or were moved from place to place without records being kept. Some chemical testing methods, called isotopic analysis, can provide general information about where a person lived, based on the chemical content of their teeth and bones. The chemicals that are analysed for this purpose are normal, non-toxic (not harmful) chemicals that our bodies need to function. Chemical elements like oxygen, carbon and strontium exist naturally all around us. Elements that are in the water we drink and food we eat become incorporated in our skeletons as our bones grow and turnover during life.

Isotopes are like fingerprints for chemical elements. Different parts of Canada (as with different areas across the world) have different isotope signatures. Oxygen and strontium isotopes are most commonly used in isotopic analyses of geographic location. The oxygen isotope composition of an individual's teeth is determined by the isotopic make up of the water they drank during early childhood (while the teeth were forming). Similarly, an individual's bones and teeth take up the strontium isotope signature of the soil that their food was grown in (or the soil of the plants that animals ate).

The variation in oxygen (in water) and strontium (in soil) isotope signatures across Canada is generally well documented. This allows for an individual's oxygen and strontium isotope values to be compared to the oxygen and strontium isotope signatures of geographic regions across Canada. The size of the different geographic areas varies greatly and it is not possible to pinpoint the exact area that a person once lived. However, with this method, it is possible to exclude certain geographic areas as an individual's childhood home, thereby leaving a much smaller list of possible home areas. This method could be especially useful for identification if a child grew up far away from where they were buried, as the isotopic values in their bones and teeth will likely be quite different from the isotope signatures of the burial location.

It is important to note that isotopic analysis, like DNA analysis, is destructive, meaning that any bone or tooth used will be destroyed during the analysis. Like DNA analysis, typically only a small piece of bone or tooth is needed.

Is it possible to find and identify children whose bodies were concealed in other places, rather than buried in cemeteries? **CW

Content warning: the below two sections relate to deliberate attempts to conceal deaths.

Survivors have shared memories of deceased children's bodies being hidden by a variety of means, including by moving them after an initial burial, by concealing them in walls or cellars, or by using furnaces or nearby water bodies such as rivers to destroy or hide their remains. The following two paragraphs relate to finding and identifying children in these circumstances. **Forensic and medicolegal authorities should be contacted before attempting to search for them**.

Finding concealed remains

Finding children in cases where their remains have been deliberately concealed requires a very careful search of the area where they are thought to have been hidden. It will depend largely on how much information is available: the chance of success is greater when there are documents or eyewitness accounts to indicate the best area to search, such as a specific part of a building or an area where secondary graves were known to have been dug. Building plans that include information about cellars or the location of potential air spaces between inner and outer building walls may also be useful.

If the location of a likely disposal site is to be excavated, fine mesh screens can be used to recover fragments.

In cases where a body of water was used to conceal a body, any search will be difficult and must take into account the direction and volume of any current, as well as factors such as seasonal flooding. The safety of those involved in a search is also a necessary consideration: for example, professional divers or specialised equipment may be required to conduct a safe and effective search. In these cases, the probability of finding remains is generally low, unless witness testimony exists about a body having been recovered from the water and buried. Running water can move human remains a great distance and is likely to break apart and scatter them over time. In some very special instances, such as in a lake or bog with minimal current, divers or remote sensing approaches, such as sonar, may be successful in locating human remains.

Identifying concealed or scattered remains

Success in identifying children whose bodies were not buried will depend on many of the same factors that determine whether it is possible to identify children in unmarked graves. If the bones are well preserved, then a biological profile can be created. If DNA has survived in the bones or teeth, then it can be compared with the DNA of living family members. However, burning and fragmentation can obscure important physical details, and may even destroy DNA and other chemicals that are used for identification, which can make it impossible to identify the person with certainty.