

26th April 2018

Dear Minister Zappone,

The Expert Technical Group (ETG) would like to thank you for the opportunity to review the report submitted by Prof D Bradley *et al*. At no point does the ETG say that identification through DNA is impossible merely that there are challenges and the ETG would like to thank the authors for their submission.

It is our view that certain aspects of this review from the TCD/UCD group were somewhat misleading in the representation of what is said within the ETG report. We would like to individually address the most significant of these concerns.

1) Use of a Pilot Study

The TCD/UCD group raised the issue of a pilot study. The ETG report had clearly stated that a pilot study is essential for any DNA technologies that are to be employed in identification at the Tuam site (Section 3.5.3 pg 28-29, Section 4 pg 37, Sections 5.3 and 5.4 pg 47, and Section 7.1 pg 56). The ETG initiated a pilot study through Forensic Science Ireland; this was suspended for reasons beyond our control (Section 7.1 pg 56).

2) Costs

Their submission also refers to figures quoted in the ETG report however a DNA pilot study was not costed in the ETG report. The only costs provided refer to those of field work and recovery (ETG Section 4, pg 37, 41, 43 and 45). It is not possible to cost a DNA programme of identification at this time as further investigation needs to be conducted; *“cost implications may vary considerably, based on what DNA technologies may be possible or pursued.”* (ETG Section 5.4 pg 49).

3) Use of DNA Technologies and the Use of a Particular Class of Genetic Marker

The role of the ETG is an advisory one and the ETG should (and does) not advocate any particular option. There can be little doubt that a decision to excavate remains and embark on an identification/re-unification programme is likely to be a logistically challenging and protracted exercise – that is the reality of the site at Tuam and should not be understated. That is not to say that such a programme cannot or should not happen – merely that expectations should be set accordingly.

It is a mistaken inference to suggest that the ETG is biased towards using STR markers and has simply ignored the potential offered by SNPs. The ETG are well aware of its forensic potential and do not disagree that SNPs may ultimately prove to be very useful markers. The HTS¹ platform has been used for many years for genome sequencing although its application to forensic science is more recent. Some of the claims have yet to be proven such as better

¹ This is more commonly referred to as Next Generation Sequencing (NGS) or formally and more correctly as Massively Parallel Sequencing (MPS).

performance with degraded DNA, increased sensitivity, and reduced cost per sample. That is not to say the technology cannot or should not be used.

Moreover, if any DNA programme is to be governed by a body charged with adjudicating on the evidence at the site in Tuam, it may have its own opinions about whether “novel” methods are appropriate and about the level of standardisation, validation and accreditation of methods required.

The ETG agrees that that the historical reliance on CE/STR analysis for MFI projects should not be determinative of the approach to Tuam should a DNA programme be deemed desirable. Nevertheless, the ETG note that the example cited of the identification of the remains of Thomas Kent by UCD has little relevance to Tuam. This was an investigation of a single set of remains being compared to a single putative family. At Tuam, there are potentially several hundred sets of remains to be compared against an, as yet, undefined number of families. This is a multi-dimensional problem on a very much larger scale than that carried out at Cork Gaol. This, of course, also assumes, that the only purpose of a DNA testing programme is to identify the deceased rather than, for example, to re-unify fragmentary and commingled remains.

Either way, the issue of the laboratory capacity required to process hundreds of excavated bones cannot be ignored and would require the collaborative effort of several laboratories. These are logistical challenges that would be better considered at the appropriate juncture. It is premature at this point for the ETG to open up detailed discussions regarding the choice of technology particularly when the forum for adjudication will have a role in these decisions. It is the understanding of the ETG that this case currently remains in coronial jurisdiction.

4) Use of Petrous Bone

The ETG is well aware of the potential use of petrous bones (ETG Section 3.5.3 pg 28, Section 5.4 pg 48) and acknowledges that they are considered to be a prime target for DNA analysis. The approach suggested by the TCD/UCD group assumes that all the remains will have one complete skull. This apparent misunderstanding of juvenile osteology and commingling underestimates the complexity of recovery and identification at the Tuam site. For each individual interred here there may be two petrous portions, in many cases the bones will not have yet fused. Under the programme suggested in the submission, all that may be returned to family members is the petrous portion, all other commingled bones in the assemblage will remain unidentified.

In Conclusion

The ETG feels that the group misrepresented the report and this is further detailed in the table attached to this correspondence. There were a number of archaeological and anthropological aspects that were not fully appreciated by the TCD/UCD submission. There was a public consultation process hosted by Galway County Council at which the ETG was in attendance. The authors did not attend or engage with the ETG at any time to enter into a professional discourse that may have assisted both. This submission, and associated media

interest, highlights the responsibility that experts and specialists have towards the expectations of family members and the general public.

Any approach to the situation in Tuam requires that many disciplines and specialists work together to deal with this complex situation. Whatever pathway is undertaken it must incorporate these challenges alongside the dignity of all those interred, both those named and those unnamed.

Yours Sincerely,

The Expert Technical Group

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