

Commentary on “Response to the submission of Hong Kong DNA Chips Ltd” presented by the Security Bureau to the Immigration (Amendment) Bill 2000 Bills Committee, Legco, 28 November 2000.

Hong Kong DNA Chips Ltd

1 December 2000

Summary

The Security Bureau has misunderstood or misinterpreted several points raised by our company in its submission. We reaffirm our view that private laboratories offer a faster, cheaper, and more flexible means of establishing the parentage of right of abode claimants than the method proposed by the Government. We suggest that private laboratories be allowed to conduct genetic testing of right of abode claimants.

Response to specific issues

Objections on technical grounds

We accept that the Government Laboratory (GL) is well equipped and suitably staffed to perform genetic testing to an acceptable standard. However, the view that the procedure is “technologically viable and sound” is false. The procedure proposed by the Security Bureau is based on the false premise that it is acceptable to split samples for testing between laboratories. No other organisation splits family samples in order to establish parentage. There is no scientifically valid reason to do so. The representative of the GL, Dr Betty Law, admitted that this was a unique situation and could not recall any other laboratory in the world where this practice was adopted or endorsed.

The use of the same protocol between genetic testing laboratories does not mitigate all potential sources of error. The main reason for testing all samples in the same laboratory is to make sample comparison easy and to eliminate systematic errors (i.e. non-random error due to fluctuations in equipment, protocol design, reagents, temperature, and operator error, etc). These types of corrections cannot easily be done by inter-laboratory comparisons of samples prepared by different laboratories.

Dr Law, for the GL, said that testing the samples separately resulted in a “double safeguard” as samples were being tested by well-controlled methods in two different

laboratories. This is false. Two tests performed “identically” in separate laboratories will be subject to two different sets of systematic and random error. The result will be more error-prone not less.

On a more technical note, it is not uncommon during genetic testing to come across discrepancies in the position of peaks when comparing results from parentage tests. If DNA samples are examined in isolation, out of the context of the family group, it will be difficult to determine if the discrepancies represent a true result or occur due to experimental error. This may lead to an increase in the number of cases requiring further examination — adding to the cost and delaying the outcome. The most appropriate way to deal with this phenomenon is for all family samples to be examined on the same equipment under identical experimental conditions. It is not appropriate for family samples to be split between laboratories in Hong Kong and the Mainland.

Proficiency testing

Dr Law stated that participation in international proficiency tests guaranteed the quality of the analytical data generated by the GL. This is not true. Samples provided by international proficiency testing bodies for DNA parentage tests consist of an entire mock family case, i.e. a mother, child, father and alleged father. The purpose of the proficiency test is to identify the alleged father with an appropriate degree of statistical confidence. Most competent laboratories will pass this kind of test. However, this does not accurately reflect the situation that will occur in Hong Kong. The GL will not receive a complete family case for genetic analysis. It will receive only the DNA sample from a father or from a mother and child. The proficiency testing body does not send DNA samples from individuals to separate laboratories and attempt to reconstruct family relationships based on data returned to them. This does not reflect a real life situation and is not an acceptable practice. This underscores the importance of testing entire family units at the same time.

The GL and Security Bureau should provide examples of other jurisdictions or competent authorities where the splitting of family samples for parentage testing is considered an acceptable practice. They should also specify why it is scientifically necessary to split samples between laboratories.

Accreditation

The GL indicated that it was an internationally accredited laboratory and therefore competent to perform parentage testing. The GL is a member of the American Society of Crime Laboratory Directors (ASCLD). This organisation offers proficiency testing

for a variety of forensic procedures, including toxicology, firearms, document examination, blood analysis, DNA analysis, etc. It is not a competent body for accreditation of parentage testing. The only organisation in the United States competent to accredit laboratories for parentage testing is the American Association of Blood Banks (AABB). Outside the US, the National Association of Testing Authorities (NATA), based in Australia, is also able to accredit parentage testing laboratories.

The Security Bureau mentions, “there will be independent testing of the two designated laboratories and cross checking of the test result”. What is the nature of the independent testing and which body/organisation will perform it? If this is a reference to international proficiency testing, then the results cannot be considered as acceptable due to the points raised above.

Mainland interference

The Security Bureau claims that DNA testing must be conducted in conjunction with Mainland authorities because that is required by the Basic Law, specifically article 22(4). In communication with Mr. Timothy Tong (Deputy Secretary for Security), the relevant passage of article 22(4) quoted does not mention DNA parentage testing. The passage merely reads, “the Mainland authorities wish to be assured of the claimed parent-child relationship ... and be directly involved in the process through which such relationship is established” (emphasis added). Involvement can take many forms and does not necessarily require the Mainland authorities to conduct any part of the actual DNA analysis. Genetic testing requires many separate operations, each equally important in establishing identity, e.g.

- Accurate identification of applicants,
- Obtaining and cataloguing DNA samples,
- DNA analysis, and
- Interpretation of results.

If DNA analysis is excluded, the Mainland authorities still can be “directly involved in the process through which ... relationships are established” by participating in any of the other processes listed. They should be particularly encouraged to set up a panel of their own DNA experts to examine the raw data and interpret the results obtained from the genetic analysis.

Right to choose genetic services

The Security Bureau is wrong when it asserts that “the integrity of the process cannot be ensured short of Government’s direct supervision and participation.” Ensuring

integrity is one of the purposes of accreditation, about which the Security Bureau has much to say in its favour.

Right to privacy

The comment that no conflict of interest will arise, as the GL is not authorised to process applications for Certificates of Entitlement, is irrelevant. The fact remains that one Government agency is performing the genetic test whilst another Government agency processes applications. The conflict of interest is readily apparent.

Right to appeal

The use of the Immigration Tribunal as the only channel for appeal in cases where the claimants dispute the results of the genetic test raises further questions. Does the Immigration Tribunal have the power to authorise a repeat test by a different laboratory, or is its role simply to re-examine all existing data? If the data is produced by the scientifically inappropriate method outlined in the proposals, further examination will be fruitless. When the results are in dispute, the quicker and easier option is simply to perform another DNA test. The Immigration Tribunal should be empowered to authorise an independent genetic test in cases where it is deemed necessary.

Proposed alternative testing strategy

The Security Bureau has misunderstood or misinterpreted our proposed alternative testing strategy. The attached diagram may be useful clear up any confusion (Figure 1). We agree that it is impractical and undesirable for Mainland authorities to have direct contact with private testing laboratories. This was not our meaning. Our intention is that ALL samples, including those from claimants currently residing in the Mainland, are transferred to a “central sample collection centre” in Hong Kong. Here, the DNA samples from the Mainland applicants (mother/child) would be matched with those of the Hong Kong claimants (father) and assembled into family units for testing. The family unit samples would be encoded and then delivered to various accredited private testing laboratories. The private laboratories would report their results to the central sample collection centre, which would then pass the information to the Mainland authorities. The Mainland authorities would communicate only with the central sample collection centre — maintaining a direct Government-to-Government channel of communication. The Government would have no need to monitor the collaboration of private laboratories in Hong Kong with Mainland authorities, as there would be none. Thus, the “complicated and costly” monitoring mentioned by the Security Bureau would not be required. An appropriate “administration fee” could be levied by both the Hong Kong and Guangdong

provincial government to cover the costs of this operation.

Fee issues

The Security Bureau states that fees will be charged on a full cost-recovery basis. Does the price estimation cover the start-up costs of equipping and staffing the parentage testing laboratory? The present fee of \$4,670 per family is based on an estimated caseload of 3,000 cases per year. In communication with Mr. Timothy Tong, it was stated that the exact number of claimants would not be known until implementation. What if only 1,000 cases were identified for testing? Would the cost per case increase to $\$4,670 \times 3 = \$14,010$, as required if full cost recovery were enforced? In addition, the Security Bureau indicates that certain cases may enjoy a fee waiver or reduction. Will the additional cost be covered by the remaining claimants, as would be necessary in a full cost recovery programme? Will additional bills be sent to them after they have been tested in order to recover the costs of the fee waiver cases? Mr. Tong has repeatedly stated that the test will not constitute a burden to the Hong Kong taxpayer. How often will the fee be reviewed? Presumably, it benefits claimants to be tested as quickly as possible, as the price of the test will rise as the number of outstanding cases diminishes. Obviously, pricing and payment issues have not been fully considered and clarification is required. It should be noted here that fees for parentage testing in private laboratories have remained constant for the preceding 12 months and are currently significantly lower than the estimate provided by the Security Bureau.

Caseload

We accept that it is very difficult for the Security Bureau to accurately determine the number of cases expected for parentage testing. We are not disputing their estimate or the means by which it was calculated. The major concern is that it is an estimate with a wide degree of variability. As such it is foolish for the Security Bureau to endorse spending millions of dollars to equip and staff a parentage testing unit with no accurate means of determining how much it will be used. It would be far more cost-effective to allow all parentage testing to be conducted by private laboratories. Money saved in this way could be spent on establishing an accreditation system and the “central sample collection centre”.

Effect on existing businesses

If 3,000 cases are provided at a cost of \$4,670 each, a total of over \$14,000,000 per year will be lost to local enterprises. Does the Security Bureau accept that restricting genetic testing of right of abode claimants to the GL will have a significant adverse

effect on local genetic testing companies?

Contrary to the claims of the Security Bureau that the proposed testing procedures will be “efficient and reliable” we have outlined the many reasons why they will be inefficient and unreliable.

Conclusion

We maintain that the role of the Hong Kong SAR Government in the genetic testing of right of abode claimants is to provide a supportive infrastructure for private laboratory testing.

Figure 1: Alternative testing strategy

