Parentage Testing in the United States: The Role of the American Association of Blood Banks

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INTRODUCTION

The involvement of the American Association of Blood Banks (AABB) in parentage testing can be traced to the late 1970s and grew out of a need to establish paternity as a result of the increasing number of requests to AFDC (Aid to Families with Dependent Children) for support of children living in single-parent households. Claims had been steadily rising since the end of World War II, not due to death or disability, but rather due to abandonment of families by fathers and the rise in illegitimacy in the postwar period. As one means to try to contain costs, the Federal government passed the Title IV-D legislation in 1975, which established a mechanism for identifying fathers so that the responsibility for child support could be enforced upon them. Threshold levels of paternity establishment were set for states, that if met resulted in financial support of their programs; if the thresholds were not met, penalties resulted.

Genetic testing to establish paternity was first acknowledged officially by the legal profession with the passage of a law in New York in 1935 stating that ABO blood group test results could be introduced in court if performed by an individual of acceptable expertise. Expertise was defined as a doctoral degree and training in blood banking, hematology or genetics. In 1937 the MN blood group system markers were added to the list of acceptable markers. Additional systems were added as reagents and the understanding of the genetics of blood groups increased. In the mid-1970s, with the addition of HLA serology, paternity laboratories routinely became able to not only exclude falsely accused men but also to calculate probabilities of paternity for non excluded men that were compelling to the courts. Such powerful, yet complex, serological tests led both the American Bar Association and the American Medical Association to conclude that guidelines for performing tests and interpreting the results were needed. The first such fusion of law and science appeared in 1976 in the *Family Law Quarterly* (1). This collaborative work, prepared by physicians and legal experts, initiated a discussion on the qualifications needed for experts and for laboratories performing such tests, so test results could be accepted by the courts without question. The discussion even extended to proposing an accreditation program based on generally agreed upon standards.

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DEVELOPMENT OF PARENTAGE TESTING STANDARDS

One of the authors of the paper, Harry Krause, JD, felt this topic to be so critical that he and others in the field organized a meeting of experts in parentage testing to discuss how best to perform such tests and interpret results. Underwritten by a grant from the Office of Child Support Enforcement, within the Department of Health and Human Services, this pivotal meeting was organized with the help of the AABB and was held in 1982 in Airlie, Virginia. In one of the opening lectures, Mr. Krause stated that the purpose of Airlie was to "arrive at a scientific consensus or, minimally, define what our disagreements are, in the service of the law". He felt that Child Support Enforcement needed reform on two levels to reap maximum benefit from the Title IV-D legislation. First, a new framework for paternity actions was needed to improve quality and consistency of genetic testing, so as to expand the volume of claims that could be processed by the courts. Secondly, the more efficient system must, nonetheless, provide fuller protection and safeguards for falsely accused men. It was clear that both goals could be realized if an accreditation program existed for parentage testing laboratories.

The AABB was a logical choice for involvement in parentage testing because of the reliance on serology for testing, an expertise largely found in blood bank laboratories, which of course were often associated with the AABB. The first official entry into parentage testing by the AABB came in 1978 when Dr. Byron Myhre, then President of the organization, recommended to the

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Board of Directors that a Committee on Parentage Testing be formed. Dr. Richard H. Walker assumed the role as Chair of the Committee, whose first charge was to assess the status of parentage testing in the United States, both in terms of the number of laboratories performing testing and the number of tests performed. The first survey performed by the committee indicated that in 1978 there were 259 laboratories performing about 11,000 tests, with a mean caseload of about 42 cases per year. By comparison, the Annual Report (2) of 1995 and 1996 data published last year by the AABB indicated a total paternity test volume in the United States of approximately 170,000 cases, performed by 45 laboratories.

ACCREDITATION GUIDELINES

The first step in the formulation of standards by the Parentage Testing Committee was the publication of the Guidelines for Reporting Estimates of Probability of Paternity (3). No procedure or policy in this first publication was mandatory. Rather, practices in these guidelines were simply recommended. A publication of standards that included the words "must" and "shall" (i.e., requirements rather than recommendations) occurred with the implementation of an accreditation program in 1984. Accreditation and standard setting have undergone changes over the years, culminating in the present program, consisting of an on-site inspection every two years, based upon the recently published *Third Edition of Standards for Parentage Testing Laboratories*. Other organizations engaged in genetic testing for identification have also established accreditation programs like that of the AABB, involving on-site inspection based upon a set of mandated standards and recommended practices.

The field of human identity testing is dynamic. Technologies are changing at a rapid rate and any accreditation program must likewise evolve to remain effective at providing quality assurance to the end user. In the coming year, the AABB Parentage Testing Committee will revisit the standards once again, with the goal of incorporating them into an ISO 9001-like format. It is likely that other organizations that set standards for identity testing laboratories will move to this kind of format as well. A short workshop devoted to this topic will be presented at the *Ninth International Symposium on Human Identification* in Orlando, Florida, October 7, 1998. This workshop is co-sponsored by the AABB, the Human Identity Trade Association (HITA) and Promega Corporation, and will consist of two hours of presentations on updates to accreditation programs by speakers representing the AABB and ASCLD/LAB.

In the parentage testing area, one of the goals professed by Harry Krause, JD at the Airlie Conference in 1982 has been realized. The accreditation program of the AABB has succeeded in ensuring a high level of quality in laboratory testing in cases of disputed parentage. This consistent level of overall quality has resulted in general acceptance of test results from accredited laboratories by the courts without the need for expensive and time-consuming trials involving expert witnesses. It is likely that crime laboratories engaged in DNA typing will realize a similar benefit from a widespread accreditation program devoted to the forensic use of genetic testing.

REFERENCES

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3. In: *Inclusion Probabilities in Parentage Testing* (1983) R.H. Walker ed., American Association of Blood Banks, Bethesda, MD, p.xiv.