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# Bias and Quality Control in Forensic Science: A Cause for Concern

Today science, technology, and criminological specialization pervade the criminal process. This evolution has not been without reason. Many of the mainstays of the field of law enforcement have been weakened, and in the process, law enforcement officials have come to rely more and more on science. Modern research has demonstrated an underlying unreliability in regard to eyewitness testimony. Court decisions have limited the use of confessions and altered police procedures regarding interviews and interrogations. Forensic science has emerged into the main arena of the law enforcement process. Like its predecessors, though, forensic science could fall into disuse unless it has the foresight to control and guide its destiny in a better fashion.

This paper will explore the factors bearing on the usefulness of forensic science in the law enforcement field—both current and future. Emphasis will be made on the legal rights to expert assistance and on the forensic science system in criminal justice. Statutory, constitutional, and foreign provisions for expert assistance will be examined, as well as the administration and control of forensic laboratories. Proposed changes in the forensic science system will be made as they relate to these legal and administrative requirements, with a view toward preserving the value of scientific evidence in the future of the law enforcement process.

## Legal Rights to Expert Assistance

In many criminal cases the prosecution and the defendant, especially an indigent one, are mismatched, with the latter being markedly at a disadvantage [*1*]. A defendant is guaranteed counsel to aid in his defense, but with the scientific invasion of the criminal process, he often lacks the resources to contend with the experts at the disposal of the prosecution. Their contentions, whether truthful or not, come from laboratories or scientists who are largely untested or uncontrolled except through the trial process. This inequity in the criminal justice system, which frequently forces a defense devoid of expert scientific aid, is inconsistent with the American desire of "equality before the law" [*2*]. When a defendant is required to contest a serious charge in court but is denied the necessary tools by which he can contest, the criminal process becomes offensive to fairness and justice.

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*Statutory Provisions*

Recognizing the inequity for indigent defendants and the importance of expert and investigatory services, legislatures have established statutory provisions for securing expert assistance [*3*].

On the Federal level, the first significant statutory provision for Federal aid in addition to counsel was the Federal Criminal Justice Act of 1964. Under section (e) of the Act, counsel for a defendant who is financially unable to obtain such expert assistance may be authorized, upon request, to obtain necessary services on the defendant's behalf not in excess of $300.00, exclusive of reasonable expenses, for each person rendering these services [*4*]. Under normal conditions the defense attorney will make a request to the court, which is followed by an *ex parte* proceeding. This proceeding must establish the findings that the defendant is financially unable to pay and that the services are necessary for an adequate defense. A defense attorney appointed under the Act can obtain such services without prior authorization, if necessary for an adequate defense, but the maximum under these conditions is $150.00 plus expenses reasonably incurred. Although the Criminal Justice Act has been quite effective in regard to providing counsel for indigents [*5*], it has been relatively ineffectual in regard to providing services in addition to counsel [*6*]. These provisions are definitely a step in the right direction, but they involve several troublesome areas. One of these is money. Is $300.00 adequate in these days of increasing costs for laboratory equipment and the even higher fees that experts charge? On many occasions, the courts have not believed so and have appointed their own experts under the Federal Rules of Criminal Procedure so that the maximum financial limits of the Act can be exceeded [*7*]. Secondly, the need for establishing that the expert is "necessary for an adequate defense" is often difficult. Frequently, the answer to this question is not known for certain until after the service is performed, or the service is necessary in order to ascertain which defense might be used. This type of use of section (e) applications is not within the purview of the law [*8*]. Extensive preparation, prolonged litigation, and overcrowded court dockets frequently drive appointed expert assistance beyond the reach of the indigent defendant [*1*]. On other occasions, courts are frequently reluctant to make such services available, and unless "clear error" is established on appeal, their refusal will stand [*9*]. As the law currently applies, it does not provide the flexibility and interpretation necessary to ensure the desired equality before the bar of justice.

On the state level, at least 14 legislatures have adopted some statutory provision for providing services in addition to counsel for indigent defendants [*1*]. Many of these statutes were modeled after the Federal Criminal Justice Act, but often they were made dependent on other conditions such as "capital cases," "murder cases," or "relatively serious incidents" [*10*]. "Capital cases" do not require any greater incident of the need for such services, and courts have held that such case distinctions are illogical [*11*]. These state laws are plagued by the same problems as the Federal statute, in addition to those they have created by restricting the Federal procedures. Also, the states frequently find their programs in financial trouble because of inadequate appropriations [*1*]. These problems all point to the fact that no effective statutory method has yet been established to ensure that where a need exists, it will be adequately served through the law.

*Constitutional Provisions*

With the greater involvement of forensic science in the legal process, efforts to obtain expert assistance have involved requests on constitutional grounds. The main thrust has been in five areas—effective assistance of counsel, confrontation with witnesses, equal protection, due process, and compulsory process.

The Sixth Amendment to the Constitution provides that a defendant has the right to the assistance of counsel for his defense. This assistance to counsel has been extended to the indigent [*11*], and it requires that the assistance be "effective" [*12*]. The Sixth Amendment does not demand a favorable and conclusive defense, but it does require that each defense in the indigent's favor be brought out, effectively prepared, and adequately presented. Two Federal cases have held that expert assistance was not necessary to provide a defendant with effective assistance of counsel [*13,14*]. In both cases, however, the decision was based on the availability of impartial expert testimony at trial. In *Bush v. McCollum* [*15*], the court made a distinction in sustaining the defendant's contention that he was denied effective assistance of counsel by saying "the right to counsel is meaningless if the lawyer is unable to make an effective defense because he has no funds to provide the specialized testimony which the case requires." This case, which involved an insanity plea, seemed to turn on the fact that the defendant had been adjudged insane some 37 years before his trial. In *Hintz v. Beto* [*16*], it was held that the Sixth Amendment right to counsel encompasses the appointment of experts sufficiently in advance of trial in state court to allow reasonable time to make examinations and prepare a defense based upon the results. The court said that the indigent defendant had a constitutional right to a lawyer who had an opportunity to prepare his defense, including time to study and evaluate reports prepared by experts. The majority of laws on this point, however, appears to be in accord with the view that denial of appointed expert assistance to the indigent does not result in a denial of his right to effective assistance of counsel [*17–20*].

The fundamental right of the accused "to be confronted by witnesses against him" under the Sixth Amendment also guarantees the accused the right to effectively cross-examine those witnesses [*21*]. This right is applicable to the states through the Fourteenth Amendment [*22*]. Cross-examination is a very valuable tool for the defense. Through it, opinion can be separated from fact, errors in methodology can be exposed, and limits on the extent of expert testimony and its value can be demonstrated. In order to effectively cross-examine expert witnesses, the defense must acquire knowledge of the subjects of their expert testimony. Frequently this is done through extensive research in these areas, but more often than not expert advice is needed for the attorney to be effective. In the case of the indigent defense, funds for such consultation are not available and the value and effectiveness of the cross-examination becomes questionable [*1,23*]. Although no specific case is known to have contended on this point, expert assistance may be held necessary to ensure "the defendant's . . . right to a fair trial as affected by his right meaningfully to cross-examine the witnesses against him" [*24*].

Denial of appointed expert assistance may also deny the indigent equal protection under the law as set forth in the Fourteenth Amendment. In *Griffin v. Illinois* [*25*], the Supreme Court held that denial of a transcript to an indigent because of cost effectively precluded his right to appeal. The court said that "there can be no equal justice where the kind of trial a man gets depends on the amount of money he has" [*25*]. Court decisions in *Douglas v. California* [*26*] and *Draper v. Washington* [*27*] held that a poor man's appeal (trial) should not be reduced to *a meaningless ritual* because he does not have means of presenting his contentions that are as good as those available to the nonindigent with similar contentions. In *Ex Parte Argo* [*28*], the court recognizes that the right to expert assistance for an indigent was based on constitutional grounds (due process or equal protection) but said it could not determine whether the denial of the motion for an expert would or would not deprive an accused of a constitutional right to witnesses in his behalf [*29*]. The majority of law on this point, however, has again held that denial of expert assistance does not deny an indigent his right to a fair trial under the Fourteenth Amendment

[30]. In *Foster v. Commonwealth* [31] and *Nelson v. State* [32], it was held that an indigent defendant's right to equal protection did not entitle him to expert testimony at state expense. With increased indigent actions today, however, this argument should find greater use in the courts, which have not had a Supreme Court interpretation of the current case law as it applies to this matter.

Appointed expert assistance may also be considered necessary under the due process requirements of the Fourteenth Amendment. The doctrine of due process is an ever-changing one that has recently been expanded to include the criterion of whether the defendant's indigency would reduce the criminal process to "a meaningless ritual" [26]. The effect of these recent decisions has become known as the *Griffin-Douglas* doctrine [25,26], which shapes much of the current law regarding due process and the indigent. The Supreme Court has considered the question of appointed expert assistance as required by due process only once [14], and this was before the *Griffin-Douglas* doctrine was enunciated. In that case the court held that the State has no duty to provide such assistance by constitutional mandate. The court relied on *McGarty v. O'Brien* [13], which also involved the issue of insanity. In both cases impartial psychiatrists did testify, and the court held that the constitutional requirements had been satisfied. In two Federal cases decided after *Griffin-Douglas*, courts held that denial of a request for expert assistance by state courts did not breach the accused's constitutional rights or the "fundamental fairness" test of due process. Together with the Federal cases, state courts have held for the most part that pretrial expert assistance is not a requirement of due processes [19,30,32]. Certain cases have held to the contrary, however. A state court's denial of a request for an expert witness was held in *U.S. ex rel Robinson v. Pate* [33] to be an effectual suppression of evidence in violation of the fundamental rights of due process. In *State v. Taylor* [34], the court held that trial courts may exercise their rights to appoint experts without statutory provision, under the requirements of the due process clause. Several other cases have held that either with or without statutory authority, the appointment of experts is a matter for the discretion of the trial court [35]. As with equal protection, due process contentions for appointed expert assistance should receive greater notice in future court decisions.

The final constitutional basis for obtaining expert witnesses for the indigent is compulsory process. In *People v. Watson* [36], an indigent defendant was convicted of attempted forgery after his request for expert questioned document assistance was denied. The State contended that handwriting was not an issue because the defendant only signed the check in a clerk's presence and did not pass it. The court held, though, that if the defendant did not sign the check, he did not deliver it, and therefore handwriting was a material issue. The court concluded that denial of the request violated the compulsory process provisions of the Illinois and United States constitutions guaranteeing the accused the right to obtain witnesses in his behalf. After this case was decided, the U.S. Supreme Court held that the right of an accused to have compulsory process for obtaining witnesses in his favor is fundamental and essential to a fair trial, and thus is incorporated in the due process clause of the Fourteenth Amendment [37]. Since courts have held that expert witnesses require compensation for their services [38], these recent decisions appear to herald a change in procedure that will open the door to indigents who need expert assistance [39]. Now, the states and Federal government need to decide on the method whereby to provide these services.

*Foreign Provisions*

Although the United States prides itself on the equality of its legal system, it lags behind other countries in the aid it provides for indigent defense assistance [1].

Under the English Legal Aid and Advice Act of 1949, the government provides compensation for expert witnesses and investigation required in preparation for an indigent defendant's trial [*40*]. Under the Swiss legal mandate that "all are equal before the law," a variety of services in addition to counsel have been made available to all indigents [*41*]. Perhaps the broadest and most promising of these foreign programs are those in the Scandinavian countries. U.S. Federal courts have even taken note of these [*42*]. In these countries, every criminal defendant, regardless of his financial status, receives a court-appointed attorney, may make use of government forensic laboratories, receives assistance and testimony from government experts, and has government investigation at his disposal—all of which is provided at government expense. It is only through comprehensive programs such as these that the adversaries are able to contend equally and that our system of law is preserved.

*Proposed Provisions*

Many proposals have been set forth regarding ways of providing expert assistance to the indigent defendant [*1,35*]. Perhaps the most comprehensive of these is the *ABA Project on Minimum Standards for Criminal Justice, Standards Relating to Providing Defense Services* (Approved Draft, 1968):

> The plan should provide for investigatory, expert, and other services necessary to an adequate defense. These should include not only those services and facilities needed for an effective defense at trial but also those that are required for effective defense participation in every phase of the process, including pretrial release, competency to stand trial and disposition following conviction.

The institution of such a system would avert the near disaster of incidents such as occurred to a public defender in New York during a murder trial [*43*]. State police fingerprint experts testified that a latent print lifted from the crime scene was the defendant's by demonstrating 14 points of similarity. The defense was able to procure its own expert who proved three crucial points of dissimilarity—an acquittal followed. What would have occurred if the defense were unable to retain or consult with such an expert?

## The Forensic Science System in Criminal Justice

Like the current case law, the forensic science system unequally serves the adversaries in the criminal justice process. Extensive laboratories and masses of qualified experts stand ready to provide instant service to the police and the prosecutor. Although present and available at a price, the defense must seek out facilities and personnel for his service. With such a setup, it is not unlikely that the government forensic laboratory enjoys such overwhelming success.

*Extent of Facilities*

Securing the right to services of an expert may be only the first inequity between the adversaries in the criminal justice system. The next problem is that persons able to perform the required exam must be located and selected and must prepare for equal battle with their adversary's expert (or experts).

For the State, the extent and range of laboratories is numerous and diverse [*44*]. These facilities may be complex and well equipped, like the FBI's, or be as small as the one-man operations in some police forces. Each serves his force with varying efficiency, but all forces, no matter how small, have facilities available to them regardless of whether or

not they choose to use them. The fragmentation in crime laboratories reflects the state of the criminal justice system as a whole [*45*]. Of recent years, increasing amounts of money are being made available to police forces for use in forensic science projects. In many situations, the police officer has a qualified expert on the scene or on call to answer pertinent questions. This close cooperation often leads to successful resolution of criminal cases—a most important product. When the time for trial approaches, the prosecutor benefits from this same advantage in preparing his case and recognizing his weak and strong points. For the State, there is no searching and seeking out of qualified expert assistance—it is readily available. The State can dip into its comparatively vast resources and employ a most expensive procedure on the slightest indication that it may prove beneficial. The State employs qualified personnel who work full time in the forensic areas and are an integral part of the forensic community, which is developing the new procedures and limiting the old ones. Even the town constable out in the country has access to expert assistance in the form of the FBI laboratory if he desires.

For the defense, however, the situation may be quite different. In trying to locate a scientific or technical expert (not medical), the attorney may be confronted with a serious problem if he does not live in or near one of the large metropolitan areas [*46*]. He may have to consult the telephone directory, go to the library, or rely on other attorneys who have dealt with such witnesses before. Colleges, industry, or local associations may be polled before the needed assistance is located. When, and if, the expert is located, how well will he compare and be able to contend with the State's expert? Will he be as proficient and current in the field as the person who works for his living in the police lab? Will his equipment and methodology meet the levels of those in police forensic laboratories? The answer to all of these questions will probably be "No." Why? The expert whom the defense acquires is not usually engaged in forensic work as a career or on a full-time basis. There are private practitioners, such as document examiners, who do engage in such work, but generally the need for such services (outside the State) has been limited. Specialized private facilities that serve the defense in forensic matters have begun appearing on the criminal justice scene, but these facilities are still not extensive enough, in location or number, to bring the adversaries in all cases, including the indigent, into the arena on an equal basis.

*System Administration and Control*

With the forensic science system imbalanced within the criminal justice process, it is important to evaluate the manner in which the system is administered and controlled. In an area where the information and testimony from such a system can mark a person for life or bring about his incarceration, it is important to know what the system does to ensure its accuracy and fairness.

We have already noted that the preponderance of well-qualified forensic laboratories are located with the resources of the State. These resources belong almost totally to the law enforcement branches. They work hand in hand with the police from the beginning of an investigation to the end. They provide a guiding force to the police investigation and often bring about its successful resolution. This is most admirable, but what about the defense who must function confronted with this completed package of expert professional evidence? What does he do and where does he go? I believe that all would agree that the primary purpose forensic science should serve is justice. Could not this purpose be served better through an alignment not with one side but independent of each, yet serving both equally well? Does not an expert witness, who also frequently must be an officer or agent of his force, have an implied bias? Is the witness who has his job and salary controlled

by the State completely free from pressure, conscious or unconscious, to be entirely impartial? Many of the court decisions in regard to expert assistance have made reference to witnesses outside the control or influence of the State [*13*,*14*]. Whether truthful or not, testimony from experts so closely aligned with one side in a criminal trial becomes suspect and lessens the value that forensic science can serve in the criminal justice system.

The topic of quality control is one that is regarded with suspicion and contempt by most scientists, including those in the forensic laboratory. Since the terms "efficiency" and "quality" are not absolutes, and since the forensic system deals with the lives of men, it therefore is subject to standards that must be set [*47*]. Some procedures (for example, firearms identification) lend themselves to standards more easily than do other procedures (that is, handwriting examinations), but each procedure is subject to standards, which can be composed by a group of qualified experts from the fields involved. This kind of control is not abusive but serves as the only true means of evaluation of the performance of forensic laboratories. If performance is measured in terms of convictions or arrests, the product may be self-deceiving, as well as unfair. With forensic science laboratories, the product is original, unique, and intangible and can probably be evaluated only through a procedure such as quality control. The need for such controls has been particularly well documented in other fields of science, especially in medicine. The scientific community is well aware of certain controlled studies in which standards have been analyzed by several laboratories, which have arrived at varying results. Some of these studies have demonstrated extremely wide ranges for rather common procedures. Certainly, it can be presumed that such variations also exist within the mass of forensic science laboratories. Without quality control, how can we be sure that justice is being supplied with the same degree of expertise in Idaho as it is in New York City?

Not only do forensic laboratories make the use of their facilities extremely difficult for the defense attorney, but they often preclude examination of their work by other laboratories and refuse to have other previously examined evidence processed in their facilities. By such refusal these facilities have indicated on this informal level that they are opposed to quality control. What do they fear? If the evidence were contaminated prior or subsequent to their examination, their procedure would remain valid and the result would be admissible to the point of the examination. This is precisely the extent to which any examination is admissible. Of course, the result would be disqualified if contamination were established, but then the laboratory would not be derelict. Normal work load would currently prohibit such a procedure in all cases (a two-laboratory check), but a national quality control effort would not impose any extreme manpower hardship.

Hand in hand with the problem of quality control is the question of certification of laboratories. There is no known national program of accreditation of forensic laboratories. In the courts, the small one-person facility is accorded equal status with the well-equipped metropolitan facilities manned with trained and educated personnel. I do not mean to imply that a one-person office cannot provide a good product in his area, but can it serve the needs of justice as well as the larger facility? The doctrine of standard of care is important in the medical profession, and it makes few distinctions currently regarding locality; all persons regardless of locale must meet the same standards. What is the "standard of care" in the forensic science profession? Procedures and technical knowledge frequently advance beyond the capabilities of certain labs, but the justice system makes no allowances for these deficiencies in regard to facilities, only to examiners. If a national minimum standards system were established for forensic labs, coupled with a quality control program, then the quality of the laboratories' service would meet at least an acceptable level. Minimum standards would not stifle new procedures because these could in

turn be used to update and raise the standards. A continuing process such as this could ensure the continuing improvement of a most worthwhile profession. Forensic laboratory accreditation could assure the courts of minimum quality of the product system, while at the same time "red-flagging" those facilities that are not able to receive such certification because of failure to meet minimum standards. The end result would serve to strengthen the quality of our product while elevating the standards of our profession.

Many proposals have been made regarding the need for quality control and improved administration of forensic laboratories [*47,48*]. One of the most significant proposals regarding administration was that of the President's Commission on Law Enforcement and Administration of Justice [*49*]:

> . . . the great majority of police department laboratories have only minimal equipment and lack highly skilled personnel able to use the modern equipment now being developed and produced by the instrumentation industry. . . . The need for the regional laboratories follows naturally from the increasing expense of facilities and the increasing demand for individuals of superior technical competence.

## Proposal

With the increasing legal and scientific concern evidenced in this paper, the need for some change in the structure of forensic science facilities is indicated. With that purpose in mind, the following proposal has been made. It is not meant to be exhaustive or rigid, and it needs the qualified inspection of authorities within the field as well as detailed study and experimentation. It is, however, believed to be a workable proposal that will fill the needs of the State and the defendant without abusing either. Reasoning for each specific facet of the proposal is given under the appropriate section. Undoubtedly, this proposal will provoke extensive criticism, which it is hoped will be constructive and well motivated and result in a more just and fair system than is now in operation.

### *Consolidation*

The first and perhaps most efficient step that can be taken toward improvement of forensic science laboratories is consolidation. As other studies have pointed out, regionalization of criminal justice facilities is an important direction to follow [*45,48*]. Such a procedure would allow conservation of resources and provide better services to a larger population. It is felt that this consolidation should be on at least a state level for state cases. In some states, one statewide facility will be able to operate quite effectively because of land area and work load. In other states, it may be necessary for a number of state, regional, or metropolitan labs to be established to meet needed service requirements. The number and location of these state laboratories should be determined by the state, based on service and population requirements; all facilities should be consolidated under statewide control, however. This will ensure that all jurisdictions requiring service can receive it equally. On the Federal level, it is felt that the minimum consolidation should be one national laboratory to serve all Federal cases. Situation and workload may dictate the establishment of several smaller feeder laboratories located regionally (according to need) to handle the more frequently requested examinations, such as those for drugs or questioned documents. Such a procedure would relieve the assets of the main national laboratory to handle the more complex and less frequently employed examinations. Again, location will be determined by existing needs within the Federal criminal justice system.

*Administration*

The current problems of bias and alignment of "police" laboratories have been noted. For these reasons, it is felt that administration and control of the proposed forensic science facilities should be transferred to the judicial branch of government. Thus, the facilities would not be aligned with either side in the dispute and would not be subject to the subtle pressures of working for law enforcement or the defense. They would, however, continue as an integral part of the criminal justice system in much the same way as the judge. The legislatures or Congress would provide the funding for the facilities in the way that they do for the judicial activities within their concern. All administrative control would rest with the laboratory director, however, who would be responsible only to the chief judge or highest court of the jurisdiction he serves. In this manner and through other procedures that can be established, the forensic science facility can be made independent of influence and bias and yet responsive to all who need its services. Under this system, the forensic laboratory and each of its operatives would function as officers of the court, responsible and accountable for their actions to the court, not to an adversary in the criminal justice process.

*Certification*

The problems associated with the products of forensic science laboratories have been discussed. It has been pointed out that individual examiners are judged as the key in regard to the weight their testimony is given. In most instances, this situation is as it should be, but frequently the product of a facility is related to the facility as a whole and not to the individual performing the examination. For this reason, forensic laboratories deserve a greater degree of scrutiny within the criminal justice process. A similar situation existed within medical laboratory facilities and has been the subject of action by medical groups. For these very reasons, it is felt that forensic laboratory facilities should be subject to accreditation and inspection in much the same way that medical facilities are. There is a similarity between medical and forensic facilities, and both deal with the future of men's lives—sometimes with equal severity. The Commission on Laboratory Inspection and Accreditation of the College of American Pathologists has an excellent program for accreditation of medical laboratories [*50*]. The program involves the development of required minimum standards for laboratory services within the hospital. By these standards medical laboratories are inspected and evaluated periodically. Based on the results of this inspection, the laboratories are given accreditations of varying length and varying status (that is, full, probationary, provisional). A similar program could and should be adopted within the forensic science community. The logical body to develop and oversee such a program would be the American Academy of Forensic Sciences. The Academy could form a committee on laboratory accreditation that would develop the minimum standards, explanatory notes, inspection programs, and quality control procedures. The following is an indication of what proposed standards could be:

1. *The forensic-science laboratory shall have sufficient space, equipment, and facilities to perform the required volume of work with optimum accuracy, precision, efficiency, and safety.* Explanatory notes would include the minimum procedures the lab must be able to perform and requirements in regard to personnel policies, work area, and safety considerations.

2. *The director of the forensic science laboratory shall be a person qualified to assume the professional, organizational, and administrative responsibility for his (her) facility. Sufficient personnel with training and experience adequate to supervise and conduct the*

*work of the forensic facilities shall be provided.* Explanatory notes will specify the personnel qualifications for the laboratory director, supervisors, technicians, and staff.

3. *Channels of communication within the laboratory as well as with all other components of the criminal justice system shall be appropriate for the size and complexity of the facility.* Explanatory notes would include the relationship with police, prosecutor, and defense and the service provided to each.

4. *The quality control systems of the laboratory shall be designed to assure the legal reliability of laboratory data.* Explanatory notes will include minimum reliable methodology, control systems, and maintenance and calibration standards for specific equipment and internal controls on evidence.

These proposed standards are meant to provide only an idea of the basis for laboratory accreditation and are not meant to be complete or necessarily the standards that should be adopted. They are intended only to serve as a model for standards that must be developed by personnel qualified in each particular area. The actual standards should be simple, clear, and practical. Constructive principles, rather than restriction, should guide the standards, which should be concerned primarily with how well the facility serves its jurisdiction.

### *Quality Control*

It has been mentioned previously that there is a definite need for quality control in forensic laboratories and that this control involves both internal and external factors. The product of forensic facilities is unique and so intangible that we cannot be sure of its quality without some form of independent and indirect control. External and internal quality control would serve this purpose. The internal aspects can be covered by accreditation standards to be adopted for forensic science laboratories. The external controls should be covered by a separate program administered by the accrediting organization. In this manner, results of each laboratory's performance can be known by the accrediting group as well as the laboratory involved. The program can work very simply. First, the accreditation committee prepares known standards of various forensic specimens (for example, bullets, questioned writings, drugs, bloodstains) and sends these to each laboratory for examination or comparison. The laboratories then report their results together with their methodology to the accreditation committee. The committee then collects all the responses from the laboratories and analyzes them as to correctness and degree of variation. The results of each laboratory's performance are then returned to it together with a comparative evaluation of the performance of other peer group facilities. The procedure is performed on a continuing basis with the concerned laboratories being unaware of the "correct" conclusion for the submitted specimen. The continuing procedure would allow the laboratory to evaluate its product periodically in an independent manner. In this way, any weaknesses can be identified and corrected before they pervade the criminal justice process. A program similar to this, currently in progress with medical laboratories, has resulted in significant improvement within a number of facilities and serves as an outstanding source of pride for others [*51*].

### *Access and Function*

The problem of access to forensic laboratories and the functions they perform is one that has been discussed and noted as being quite limited for the defendant, particularly the indigent. In view of the constitutional considerations and the desire for impartiality in forensic science, it is proposed that access to forensic science facilities be open to both

adversaries within the criminal justice system. This would allow both sides equal benefit, without regard to financial status, from the expert assistance of forensic scientists.

With employment of the dual system (Federal and state laboratories), the defense can utilize a different facility than the prosecution to cross-check results of tests performed on State evidence, and vice versa. If more than one state facility existed, these cross-checks could be performed within one jurisdiction. If the defense had new evidence they wished examined, they could utilize the same facility as the prosecution. This would be possible since the laboratory would be a function of the court.

Use of such a laboratory system would require some rules regarding disclosure and discovery of the examination reports. It is proposed that all reports of laboratory examination be recorded with the courts. In the case of the prosecution, all such results would be made public at the time trial process begins. This would be required under current law and legal rules for discovery. In the case of the defense, reports of such examinations would remain privileged until so used by the defense for trial purposes, with one exception. In the event that a defense-requested examination or cross-check is incriminatory to the defendant and the defendant provides testimony or a defense denying that result, then the result would be made available to the prosecution for rebuttal to the testimony or defense [*52*]. When favorable results are to be used by the defense in trial process, then the prosecution would be afforded full discovery.

Finally, in the event that the defense desires no forensic examinations but the State intends to call an expert witness during trial, it is proposed that the defense shall be able to utilize the forensic science facilities and personnel in a consultation capacity to prepare for adequate cross-examination. In view of the constitutional law on this matter, the procedure will provide a necessary legal requirement and can probably eliminate much of the current unnecessary and misdirected cross-examination.

*Discussion*

There are a great many radically different aspects to this proposal that will probably draw fire. There are many benefits that far outweigh the disadvantages, however, and it is felt that the overall proposal will create a far more equitable criminal justice system than is now in existence.

One of the first considerations is economics. The creation and equipping of consolidated laboratories to meet accreditation standards will result in the expense of a large amount of money in one area. Opening the laboratories to the defense will increase costs also, but this is already being done and could be done more economically with a public laboratory than with out-of-pocket expenditures for the defense and a good laboratory for the prosecution. The effect of the financial impact will be lessened by conservation of resources (personnel, facilities, and equipment) during the transition, as well as by decreased appellate action, faster and more certain court decisions involving forensic examinations, and more efficient and reliable facilities. Most of these economic benefits are intangible and difficult to evaluate, but it can be satisfactorily presumed that, with the savings accrued in consolidation and accreditation, the additional expenses of free services to be provided for the defense can be absorbed without unduly high financial burdens on the government.

Another consideration is the effect that a government-subsidized forensic science system would have on the private enterprise aspects of the field, as well as the research aspects. First, private enterprise will not be forced out of the field, because undoubtedly the financially able will still use private facilities on occasion rather than the public facilities under the court, which are subject to discovery. Private facilities will also be able to apply and

receive accreditation if they meet the standards. The pressure to do this should be great when it comes to testimony in court against facilities that are accredited. Secondly, private facilities will not be affected by this procedure except in the criminal justice system. Their support can still be provided in civil cases, business matters, or private affairs because the state laboratories will be restricted to the criminal sphere. Lastly, any private facilities that are dissolved by the institution of public-supported laboratories could be absorbed by the increased need and use of public laboratories for personnel and equipment. In regard to research, the increased needs and uses of public laboratories will increase the requirements for new research and more efficient and reliable equipment and methodology. For this reason, the accreditation standards and appropriate explanatory notes will be under constant observation and subject to change when better procedures are noted. Even if standards are not changed, laboratories will be free to use new procedures, provided they have met at least the minimum standards required.

Another consideration that must be taken into account is the effect that independent laboratories will have on law enforcement and the police function. Many will argue that removing the laboratories from the police will handicap them in their effort to combat crime effectively. This need not be the case, for the police will have as much essential support available from the facilities as they currently have. Forensic scientists are not needed to collect and preserve evidence. This is the proper function of the police officer and investigators, who can probably do it better. The police forces that have used laboratory people for this task will have to train their personnel in evidence collection under the concept of the public laboratory. This should not present any great or permanent handicap to the police effort. Laboratory assistance to law enforcement in providing leads and investigative evidence will remain as great as before. In fact, with improved facilities many law enforcement agencies will receive better laboratory services than they had before.

Finally, some will probably contend that we are giving the defendant—"the criminal"—an unfair advantage in such a system. It is not our intention, nor is it expected to be the result of this proposal, that the defendant receive an unfair advantage. The current system is unfair to most defendants, whereas the proposed system would create equality among all parties. After all, what satisfaction is there in knowing that you are able to win in a contest with a cripple? The proposed system only provides each person with the same tools with which he can perform his tasks. The task remains the same, as should the result, if it has been accomplished properly. There is nothing to fear in this system but the whole truth. Anyone who fails to face his limitations has done nothing constructive; he has only restricted himself.

## Conclusion

This paper has examined the growth of the role of forensic science within the criminal justice system and how the system has become dependent on it. It has also noted that other mainstays of law enforcement have been limited by overreliance upon them by police. The constitutional and statutory provisions for expert assistance in the United States have been examined and compared with foreign provisions, and proposed reforms in the area of expert assistance have been noted. The treatise has examined the current forensic science function within the criminal justice system and has noted inherent problems of access, availability, bias, and alignment. It has demonstrated the need for a quality control and accreditation program for forensic science facilities. In survey, it has concluded with a proposal to improve the service that forensic facilities provide to the criminal

justice system and to relieve some of the inequities currently in the system. This proposal included:

(1) consolidation of forensic science facilities so that there is at least one laboratory for each state and one for the nation, with additional regional facilities for the states or the Federal government as needed;

(2) placement of administration and control of consolidated forensic facilities under the supervision of the chief judge or highest court of the jurisdiction served, and having the laboratory personnel function as officers of the court;

(3) institution of a program of minimum standards and accreditation for forensic science laboratories under the auspices of the American Academy of Forensic Sciences;

(4) institution of a program of external quality control to provide for the evaluation of each forensic facility's services and to serve as a standard of comparison with other such laboratories; and

(5) provision for open access to these facilities for all parties in a criminal action without fee, and provision to ensure the privileged nature of communication by defendants with such facilities, except when defense requests counterclaims made by the defendant during the judicial process.

This proposal was discussed as it related to economics and to effects on private laboratories, research, and law enforcement. It was concluded that there exists a definite need for such a proposed system and that the proposal made constitutes a workable solution to current problems.

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