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THE NALLINE TEST I—DEVELOPMENT AND IMPLEMENTATION*

STANLEY E. GRUPP

Stanley E. Grupp, Ph.D., is an Associate Professor of Sociology at Illinois State University, Normal, Illinois, who has been interested in the Nalline Test for drug addiction since he began research for his Ph.D. dissertation in 1963. He has published two other articles dealing with aspects of this test, and has served as an editor of *The Positive School of Criminology* (University of Pittsburgh Press 1968). Among his professional activities he has served as consultant for the Department of Mental Health Drug Abuse Programs, State of Illinois, 1967-8.—EDITOR.

This is the first of three articles dealing with the Nalline Test as a narcotic control device. In the present discussion consideration is given to the early history of Nalline as a detector of drug users, to the effects of Nalline, to pupil measurement as an indicator of narcotic use, and to the implementation of the test in the relatively elaborate and extensive programs making use of it in California and Illinois. The second article will consider the rationale sustaining the Nalline Test as a narcotic control device. Objections to and limitations of the Nalline Test as well as an assessment of it will be presented in the third article.

There are few discussions of the multiple aspects of the Nalline Test in the literature.¹ The following discussions assemble and discuss some of the data that are needed for an integrated appraisal of the Nalline Test.

The Nalline (nalorphine or N-Allylnormorphine) Test emerged as a narcotic control measure in the late 1950's. Nalline is the trade name of Merck and Company, Inc. for nalorphine hydrochloride. Nalline is the common label. It is a synthetic opiate antagonist and as such has the effect of counteracting the physical effects of opiates. This is to say that given the presence of a sufficient concentration of an opiate, the injection of a given amount of Nalline will precipitate the abstinence syndrome. It is this antagonistic effect which forms the basis for the Nalline Test used in some narcotic control programs. The nature and details of this use are described below. Nalline is the most commonly used of several anti-narcotic

agents.² The exact mechanism of the antagonistic effect of Nalline in the presence of opiates is unknown.³

Major uses of Nalline are: in the treatment of severe narcotic-poisoning overdosage; in the treatment of respiratory depression following the administration of opiates in medical treatment, for example, anesthesia, surgery, obstetrics, including respiratory depression in the newborn infant of an opiate-addicted mother; and as a means for diagnosis or detection of illicit users of opiates.⁴ The focus of attention in this study is on the latter.

EARLY HISTORY

The antagonistic effect of Nalline to morphine was recognized as early as 1943 by Unna as the result of experimental studies with animals.⁵ Unna's observation was supported by Hart and

² In addition to Nalline one other narcotic antagonist, Lofan (levallorphan) has had limited use in anti-narcotic testing programs. The uses of Lofan are similar to those of Nalline. For a brief description of its uses see, LORFAN (LEVALLORPHAN TARTRATE), Package insert, Roche Laboratories, Division of Hoffmann-La Roche Inc. (Nutley, New Jersey, April, 1965). For an extended and technical consideration of the narcotic antagonists emphasizing their chemical and pharmacological qualities and their clinical applications, see, FOLDES, SWERDLOW and SKER, *NARCOTICS AND NARCOTIC ANTAGONISTS* (1964).

³ For a discussion of the chemical action of Nalline see Dr. Henry Elliott's discussion in *CONFERENCE ON THE USE OF NALLINE IN NARCOTIC CONTROL*, Department of Justice, State of California, Fresno, April 1-2, 1960, 22.

⁴ For an early discussion of these various uses see ISBELL, *Nalline—A Specific Narcotic Antagonist: Clinical and Pharmacologic Observations*, THE MERCK REPORT, 23-26 (April, 1953). See also, NALLINE HYDROCHLORIDE (Nalorphine Hydrochloride), Direction Circular, Ph. 181705, Merck Sharp and Dohme (West Point, Pennsylvania, October, 1962), 10-15.

⁵ UNNA, *Antagonistic Effect of N-Allyl-normorphine Upon Morphine*, 79 JOURNAL OF PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS 27-31 (September, 1943).

* Adapted from Stanley E. Grupp, "The Nalline Test and Addict Attitudes," unpublished doctoral dissertation, Indiana University, 1967.

¹ One exception is the consideration of several facets of the narcotic control aspects of the test by Thorvald Brown. See, BROWN, *THE ENIGMA OF DRUG ADDICTION*, Ch. 9 (1961).

McCawley in 1944.⁶ Experimentation with human subjects at the Addiction Research Center, Public Health Service Hospital, Lexington, Kentucky in the early 1950's led to the recognition that Nalline may serve as a detector of surreptitious users of narcotics.⁷ In addition to Doctors Fraser and Isbell and others at the Addiction Research Center, several persons in California contributed to the development of the test. They are Dr. Charles T. Hurley, who experimented with Nalline at the Angelus Emergency Hospital in East Los Angeles from 1954 to 1957 and Dr. James G. Terry, Chief Medical Officer of the Santa Rita Rehabilitation Center (Alameda County), Pleasonton, California, who started experimenting with Nalline at least as early as 1955. Dr. Terry was active in the first full-scale Nalline testing program initiated in Oakland, California in April, 1956.

EFFECTS

In general it may be said that the behavior of Nalline depends upon the presence or absence of opiates in the system and upon the amount of Nalline introduced into the system. It is noted that Nalline will not substitute for opiates, and there are no definite symptoms of abstinence upon withdrawal of Nalline.

In nonaddicted persons, both physical and mental effects of Nalline vary in kind and degree from individual to individual. Small amounts of Nalline introduced into normal volunteers and previously addicted persons induce a variety of symptoms which may include drowsiness, a

pleasant relaxation, a sense of well-being, dissatisfaction, constriction of the pupil of the eyes, daydreams, giddiness, drooping eyelids, inability to co-ordinate voluntary muscular movements, nausea, and vomiting. Larger doses may induce sweating and anxiety in addition to the above reactions.⁸ Isbell observes that,

In nontolerant, nonaddicted persons doses of 5 mg. or less of nalorphine have very little effect other than slight pupillary constriction and depression of respiratory mental volume. Doses of 10 mg. cause mental changes and definite measurable physiological effects. Doses of 15-60 mg. are very likely to cause severe mental reactions, including hallucinations.⁹

The intensity of the abstinence syndrome which is immediately produced by Nalline depends on the quantity administered, the potency of the addicting drug, the length of addiction, the amount of time since the last intake of the opiate and the type of opiate consumed. Each of these are important variables. Several of them are directly related to the question of sensitivity of the Nalline Test and will be considered in a later article. In strongly addicted persons, as the amount of Nalline is increased the severity of the abstinence syndrome increases. "The greater the tolerance, the greater the severity of the abstinence phenomena produced by a given dose of antagonist."¹⁰

Regardless of the tolerance level that has been built up, Nalline in small amounts does not precipitate severe withdrawal symptoms. Isbell observes that "In strongly addicted persons, 1 mg. of Nalline will precipitate slight but detectable abstinence, 3 mg. causes moderate abstinence, 5 mg. severe abstinence, and 10 mg. very severe

⁸ With regard to the effects of Nalline on nonaddicted persons see, Mosk, Attorney General and Director, Department of Justice, California, A REPORT ON THE SYNTHETIC OPIATE ANTI-NARCOTIC TESTING PROGRAM, 10 (1961). See also, Isbell, *Thoughts on the Nalorphine Test for the Diagnosis of Addiction*, Unpublished paper presented at a meeting sponsored by the California Department of Public Health, Berkeley, California, January 8, 1958, 1 and 2.

⁹ Isbell, *ibid.*, 1.

¹⁰ ELLIOTT IN CONFERENCE ON THE USE OF NALLINE IN NARCOTIC CONTROL, *op. cit. supra* note 3 at 21. In addition to the immediacy of the abstinence syndrome produced by Nalline which is in contrast to the gradual onset of actual withdrawal, the abstinence signs precipitated by Nalline differ in that they are reported to last only a few hours. See, WAY, *The Pupil Test for Diagnosing Narcotic Usage*, 7 TRIANGLE 152 (1965).

⁶ HART & McCAWLEY, *The Pharmacology of N-Allylnormorphine as Compared With Morphine*, 82 JOURNAL OF PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS, 339-348 (December, 1944). For a bibliography of early research articles involving Nalline see, NALLINE HYDROCHLORIDE (Nalorphine Hydrochloride), *op. cit.*, *supra* note 4 at 19-24.

⁷ See, FRASER, VAN HORN & ISBELL, *Studies on N-Allylnormorphine in Man: Antagonism to Morphine and Heroin and Effects of Mixtures of N-Allylnormorphine and Morphine*, 231 THE AMERICAN JOURNAL OF MEDICAL SCIENCES 1-8 (January, 1956); FRASER, *Human Pharmacology and Clinical Uses of Nalorphine (N-Allylnormorphine)*, 41 MEDICAL CLINICS OF NORTH AMERICA 393-403 (March, 1957); ISBELL AND FRASER, *Addition to Analgesics and Barbiturates*, 99, pt. 2 JOURNAL OF PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS 355-397 (August, 1950); ISBELL, *Nalline—A Specific Narcotic Antagonist: Clinical and Pharmacologic Observations*, *op. cit. supra* note 4 and WIKLER, FRASER AND ISBELL, *N-Allylnormorphine: Effects of Single Doses and Precipitation of Acute "Abstinence Syndromes" During Addiction to Morphine, Methadone or Heroin in Man (Post Addicts)*, 109 JOURNAL OF PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS 8-20 (September, 1953).

symptoms."¹¹ This observation is in part sustained by Captain Thorvald Brown of the Oakland, California Police Department and a person with considerable experience with an on-going Nalline testing program, who observes that 3 mg. of Nalline will not cause serious distress in the average user.¹²

The physical and mental reaction resulting from 85,000 anti-narcotic tests, most of which were Nalline Tests, has been reported by Dr. Charles T. Hurley, formerly a Medical Consultant on Narcotic Control to the California Department of Corrections. Hurley notes that "marked medical reactions" were observed in only 127 instances or fifteen hundredths of one percent of all cases. On the whole the reactions do not appear especially serious. They include sixty local injection reactions, fifteen faintings, and thirteen withdrawal symptoms.¹³

PUPIL MEASUREMENT

One of the more consistent indicators of opiate use is found in the pupil of the eye. Opiates are notorious pupil constrictors (miosis).¹⁴ Dilation of the pupil, soon after the injection of small amounts of Nalline in persons using opiates, is one of the most persistent antagonistic effects of Nalline, and it is this action that forms the basis of narcotic control programs. In nontolerant persons Nalline produces constriction of the pupil. Specifically, the test as used in narcotic control involves measurement of the pupil before and after the injection of Nalline, to determine, either on this basis alone or using this as one of a number of criteria, whether or not the individual has been using opiates.

Dilation of the pupil upon the introduction of Nalline in the presence of opiates was recognized in the reports of Isbell, Fraser and others in the early 1950's.¹⁵ The possibility of using this effect as

¹¹ *Thoughts on the Nalorphine Test for the Diagnosis of Addiction*, op. cit. supra note 8 at 3.

¹² THE ENIGMA OF DRUG ADDICTION, op. cit. supra note 1 at 303.

¹³ HURLEY, *Anti-Narcotic Testing: A Physician's Point of View*, 27 FEDERAL PROBATION 36 (June, 1963).

¹⁴ The constrictive function of the opiates upon the pupil of the eye has long been recognized. Terry and Pellens, for example, contains twelve references to the effect of opiates on the pupil. See, TERRY & PELLENS, *THE OPIUM PROBLEM* (1928).

¹⁵ See, for example, FRASER, *Human Pharmacology and Clinical Uses of Nalorphine (N-Allylnormorphine)*, op. cit. supra note 7; FRASER, NASH, VAN HORN AND ISBELL, *Use of Miotic Effect in Evaluating Analgesic Drugs in Man*, 98 ARCHIVES INTERNATIONALES DE PHARMACODYNAMIE ET DE THERAPIE 443-451 (1954); and FRASER, VAN HORN AND ISBELL, *Studies on N-Allyl-*

a narcotic control measure seems to have been first suggested by Terry and Braumoeller. In the words of these observers, "The pupillary response alone is an accurate, sufficient, and sensitive index of narcotic addiction or of occasional use, or of the absence of narcotics."¹⁶ Stemming in part from the work of Terry and Braumoeller and supported by their experimentation with Nalline in 1954-1955, the first full-scale Nalline testing program was initiated in Oakland, California in 1956.

Terry and Teixeira describe the emergence of their interest in the pupil measurement procedure to identify opiate users as follows:

We... reviewed the medical literature on Nalline particularly the contributions from the United States Public Health Service at Lexington, Kentucky. They had devised a technique of testing a suspected addict using three doses at twenty minute intervals. Their technique was designed to produce outright withdrawal symptoms. Several addicts were brought to S.R.R.C. (Santa Rita Rehabilitation Center) from the outside and received the test as outlined at Lexington. It rapidly became clear to us in the moderate to heavy narcotic user the test given in this fashion would promptly produce withdrawal symptoms just as stated by the United States Public Health authorities. We then felt that the three doses were cumbersome and time consuming and possibly a single dose would be sufficient. Using a single dose of 5 mg. of Nalline we tested several more addicts. We learned as much from one dose as we did from three... It became our goal in all future testing of addicts not to produce withdrawal symptoms because of the discomfort attached but only a response in the size of the pupil. We felt then as we feel now that this goal was far more humane. The enlargement of the pupil is painless whereas nausea, vomiting, diarrhea, and muscular cramps are certainly discomforting, disconcerting, and not necessary for diagnosis. An enlargement in the size of the pupil following an injection of Nalline is the first change observable in the suspect ad-

nalorphine in Man: Antagonism to Morphine and Heroin and Effects of Mixtures of N-Allylnormorphine and Morphine, op. cit. supra note 7.

¹⁶ TERRY & BRAUMOELLER, *Nalline: An Aid in Detecting Narcotic Users*, 85 CALIFORNIA MEDICINE 300 (November, 1956).

dict. It is measurable, it is a sign not a symptom and detects the early user.¹⁷

Thorvald Brown, who has worked closely with Dr. Terry in the Nalline testing program in Oakland, California and Alameda County, gives Dr. Terry full credit for the development of the pupil measurement procedure as a means of identifying narcotic users. Regarding pupil measurement Brown states:

The technique developed by Dr. James Terry is an adaptation of the procedure formulated by Dr. Isbell and associates at Lexington. The latter method was developed for the purpose of determining the extent of addiction and dependence in each patient for the purpose of treatment. Dr. Terry's test, as used by Law Enforcement Agencies, is much simpler. It is an innocuous time-saving and safe test which can be administered in any office or clinic. Its purpose is not to diagnose the extent of addiction, nor is it given with the view in mind of prescribing treatment. Its primary function is to detect and isolate those who have been using narcotics, so that enforced abstinence and follow-up can be provided and control measures instigated.¹⁸

A number of factors affect the diameter of the pupil including the intensity of light, convergence, and adaptation. These factors must be controlled if maximum results with the Nalline Test are to be obtained. In sum, maximum results from the test can be expected only if the proper physical setting is maintained. Dr. Hurley observes:

Maximum stability of the pupillary system can be established with good light control, convergence control, and adequate preadaptation. Sensitivity of pupil response to drug effects under these conditions is governed by the proper choice of initial pupillary diameter. Having established these conditions, the variability of the pupil mechanism has been reduced to a minimum. The sensitivity of the

test will now be related to the amount of the anti-narcotic administered.¹⁹

To this end, Dr. Hurley has described the physical structure of the testing procedures in Southern California in part as follows:

... mechanical convergence devices are used and electrical methods of continuously varying and accurately controlling light are also used. The individual sits in a chair converging on a mechanically-moving cyclic fixation point about 4 to 6 feet away. Facing him but only 45 degrees to the left and about 4 to 6 feet from him is a 100-watt, green, outdoor decorative spot light. The intensity of this light is controlled by a variable rheostat on the physician's desk. Under conditions of constant and reproducible convergence and lighting, the initial diameter of the pupil is measured by comparing the pupil size with a standard pupillometer card and recorded. The individual is then given his specific injection of anti-narcotic. After 15 minutes this is repeated in the same conditions of convergence and lighting. The size of the pupil is measured the second time. If the pupil has changed an adequate amount, this is the end of the test; however, if further information is needed, the pupil will be read again every 10 minutes up to a 45-minute period. The test is done on an entirely ambulatory basis.²⁰

The California Department of Public Health has described in considerable detail the recommended procedure to be followed in Nalline testing. Innumerable precautions are suggested including the recommendation that the subject be placed in bed if addiction is suspected.²¹ One observer has suggested that if all of the precautions recommended by the California Department of Public

¹⁷ TERRY & TEIXEIRA, SANTA RITA REHABILITATION CLINIC: TEN YEAR REPORT, Alameda County Sheriff's Department, Oakland, California, H. P. Gleason, Sheriff, 11-12 (1949-1959).

¹⁸ Brown, *Three Years of Nalline*, Paper presented at Joint Meeting of the Northern-Central California Narcotics Officers Association with Southern California Narcotics Officers, Palm Springs, California, October 29-30, 1959 (mimeograph), 4.

¹⁹ Hurley, *Factors Controlling the Accuracy and Sensitivity of Anti-Narcotic Tests*, Paper presented to the Committee on Drug Addiction and Narcotics, National Academy of Sciences-National Research Council, February 3, 4 and 5, 1964, Washington, D.C. Quoted by special permission of Dr. Hurley.

²⁰ Hurley, *Anti-Narcotic Testing: A Physician's Point of View*, *op. cit.* supra note 13 at 32-33.

²¹ California Department of Public Health in Conjunction With the Bureau of Narcotic Enforcement, Department of Justice, RECOMMENDED PROCEDURE FOR NARCOTIC USE TESTING OF PROBATIONERS AND PAROLEES (1961).

Health were insisted upon the use of the Nalline Test would be greatly restricted.²²

A differentiation should be made between the development of the simplified technique of pupillary measurement and the application of this procedure to the detection of surreptitious users of narcotics. In the latter regard, Dr. James Terry has played an important role. Dr. Harris Isbell played an active part in the rediscovery of the utility of the pupil gauge or pupillometer.²³ The pupillometer as used in Nalline testing is typically an oblong 1 × 3 inch card, with black dots graduated in diameter from 1 mm. to 5 mm. in .5 mm. intervals. Sometimes the card takes a different form; for example, a circular nature.

TESTING ROUTINE

Nalline testing procedures commonly permit the testing of fifteen to twenty or more persons an hour. Testing is typically conducted in the proximity of a room large enough to permit all persons appearing for the test to be seated at one time. This observer has witnessed situations where as many as thirty persons were present. Assuming the individual is not suspected of the use of narcotics the minimum total time spent at the Nalline testing center by any one individual is approximately one-half hour while the maximum time is probably no longer than one hour.

The diameter of the subject's pupil is measured by means of a pupillometer and the reading is recorded. Typically the physical setting and testing procedures are not as elaborate as those specified by the California Department of Health. Immediately following the pupillometer reading, Nalline is injected subcutaneously. The typical dose is 3 mg. Narcotic antidotes are kept available in the event a situation of extreme withdrawal should present itself. After fifteen to thirty minutes the subject's pupil is again measured, and if indicated, the pupil may be read more than once. If dilation of the pupil is evident, the use of opiates is indicated, and a positive test is recorded. If the

pupil constricts, narcotic use is not indicated and a negative test is recorded. If there is no change in the pupil several alternatives are possible, the most common of which appears to be an equivocal (questionable) recording. Depending on policy, however, a no-pupil-change reading could also be recorded as a positive or perhaps as a negative test.²⁴

The above paragraph oversimplifies the complexity of the testing procedures. Testing procedures often vary from jurisdiction to jurisdiction and from time to time within a given jurisdiction. The possibility of variations are several but include such technical aspects as planned variation in the time interval between the several pupil measurements, variation in the dose of Nalline administered and in the establishment of a baseline against which variations of a given subject's pupil may be assessed.²⁵

Nalline testing is conducted on a regular and surprise basis. Regular testing is conducted at given times on predetermined days, so that the person in the program knows when he is to appear. In surprise testing the individual is typically informed the day before the test is to be given. Thus, if testing is done in the evening and the individual is informed the morning of the day before, as many as thirty-five hours may elapse between the time of notification and the time of the test. In some situations the testee is informed with as much as forty-eight hours notification. Policies on these points vary considerably.

Usually, persons tested are asked to give their written consent to the test. This is done as a part of the processing after arrival at the testing station and prior to the initial pupil measurement and injection of Nalline. Since practically all testing is conducted as a requirement of probation or parole, presumably refusal to take the Nalline Test could be interpreted as an automatic violation. The obtaining of written consent appears to be motivated by at least two factors: (1) the question of the admissibility of the results of the test as evidence

²² WEINBERG, *Nalline as an Aid in the Detection and Control of Users of Narcotics*, 48 CALIFORNIA LAW REVIEW 284 (1960).

²³ Dr. Isbell states that he "invented" or rediscovered the use of the card with circles as a simple method of estimating pupillary size. Letter from Dr. Harris Isbell, January 12, 1965. Terry & Teixeira observe that the pupillometer was originally designed early this century by two San Francisco oculists. See, TERRY & TEIXEIRA, *Nalorphine Testing for Illegal Narcotic Use in California: Methods and Limitations* 2 THE JOURNAL OF NEW DRUGS 207 (July-August, 1962).

²⁴ Dr. Guy R. Turgeon has observed that in some circumstances a minimal "constriction of a quarter of a millimeter . . . is often an indication of narcotic use." Letter from Dr. Guy R. Turgeon, Medical Consultant, Narcotic Control, Parole and Community Services Division, Department of Corrections, Los Angeles, California, July 15, 1965.

²⁵ It is apparent that implementing the latter type of testing variation requires a strong commitment to making the best possible use of the Nalline Test. Of special importance in this regard is an examining physician who is interested in working toward this end.

if permission were not given, and (2) the possibility of civil action. The legal questions raised by this procedure are not considered here but have been discussed by other writers.²⁶

In some jurisdictions a urine sample is collected at each Nalline testing routine so that positive or equivocal pupillometer readings can be further checked and clarified.

IMPLEMENTATION

California and Illinois are the states most active in the use of the Nalline Test. Of the two, California has made the more extensive use of the test and for a longer period of time. Nalline testing was initiated in California in 1956 and in Illinois on a modest scale in 1958. The active use of the test in these two states was continuing in 1968. Use has also been made of the Nalline Test in Phoenix, Portland, and St. Louis. It has been used in Hong Kong both in research and as an adjunct of treatment procedures to identify surreptitious users.²⁷ Still other jurisdictions have considered the test without adopting it.

Nalline testing is conducted as one aspect of a series of efforts to control or treat the drug user. In no jurisdiction is Nalline testing conducted as the single narcotic control measure. Its use has been as an auxiliary device, as an arm of formal narcotic control procedures. It is most commonly used as an adjunct to probation and parole supervision procedures. Thus to an appreciable extent the Nalline Test and its use, its interpretation to the drug user, and the part that it plays in the total narcotic control program, is a reflection of the general nature of the control program. The use of the test reflects not only formally imposed control regulations but also to some extent the strengths and weaknesses of the extant probation and parole casework supervisory procedures. Nalline has been used almost entirely within the limits imposed by a

law enforcement program.²⁸ It does not represent a major shift in the traditional law enforcement approach to the narcotics problem, but is rather an adjunct of it.

Areas Considering the Test. Jurisdictions that have considered using the Nalline Test include: the Pennsylvania Board of Parole; the Kings County, New York, Probation Department; the New York State Division of Parole; and the State of New Jersey. In each of these instances the Nalline Test was rejected for reasons such as the following: other methods were felt to be more or equally effective; it was felt that the Nalline Test had objectionable characteristics; and because personnel could not be found to administer the test. In 1959, a New York Joint Legislative Committee recommended that experiments with the Nalline Test be conducted. However, the test was subsequently rejected by several New York agencies.²⁹ The President's Advisory Commission, although not specifically mentioning the Nalline Test, did recommend that the Federal government establish a civil commitment program and that as a concomitant of this program the individual "parolees should be required to report periodically for tests to determine, to the extent possible, whether he has relapsed to drug abuse."³⁰ Presumably the suggested testing could include the Nalline Test.

St. Louis, Portland, Phoenix. Nalline testing was initiated in St. Louis in late 1957³¹ and continued until May, 1962. The cessation of testing seems to have been due primarily to the effects in Missouri of the United States Supreme Court decision in *Robinson v. California*, June, 1962 which said that addicts cannot be punished for being addicts. Since this time no consideration had been given to the readoption of the test.³²

Portland started using the Nalline Test in 1959.

²⁸ Note, however, that Brown reports several examples of former addicts who "voluntarily submit to the tests with no strings attached" and gives one example of a female probationer who "often requests more frequent tests." It is probable that such examples are conspicuous by their infrequency. See BROWN, *Narcotics and Nalline: Six Years of Testing*, 27 *FEDERAL PROBATION* 30 (June, 1963).

²⁹ REPORT OF THE STATE OF NEW YORK JOINT LEGISLATIVE COMMITTEE ON NARCOTIC STUDY 1959, Legislative Document (1959), No. 7, 127.

³⁰ FINAL REPORT: THE PRESIDENT'S ADVISORY COMMISSION ON NARCOTIC AND DRUG ABUSE, 72 (1963).

³¹ St. Louis Globe Democrat, October 17, 1957, p. 13.

³² Letters from Detective Sergeant Harold J. Bloss, Narcotic Section Supervisor, St. Louis Police Department, January 2, 1963, June 30, 1965, and Detective Peter O'Connell, Narcotic Section, St. Louis Police Department, October 20, 1968.

²⁶ COLEMAN, *Nalline: Some Legal Implications in Its Use*, 3 *JOURNAL OF FORENSIC SCIENCES* 425-430 (October, 1958); CONRAD, *The Admissibility of the Nalline Test as Evidence of the Presence of Narcotics*, 50 *THE JOURNAL OF CRIMINAL LAW, CRIMINOLOGY AND POLICE SCIENCE* 187-191 (July-August, 1959); POZE, *Opiate Addiction I. The Nalorphine Test II. Current Concepts of Treatment*, 20 *STANFORD MEDICAL BULLETIN* 1-23 (February, 1962); WEINBERG, *Nalline as an Aid in the Detection and Control of Users of Narcotics*, 48 *CALIFORNIA LAW REVIEW* 282-294 (May, 1960).

²⁷ HESS, *CHASING THE DRAGON: A REPORT ON DRUG ADDICTION IN HONG KONG*, 126, 129, & 139 (1965). See also WAX, *Control and Treatment of Drug Addiction in Hong Kong*, in *NARCOTICS*, Wilner & Kassebaum, eds., 285 and 287 (1965).

In 1965 it was reported that no more than three or four persons a year had participated. The use of the test was discontinued in recent years because it was felt to be a "surveillant mechanism" as opposed to being a "specific therapy." It is not anticipated that the test will be readopted.³³

Arizona's use of Nalline is similarly limited in scope. Although authorized by Arizona law, Maricopa County (Phoenix) appears to be the only area in the state that has used the test. In this county, parolees, probationers and volunteers are tested on a regular weekly schedule with the possibility of some surprise tests. Nalline Tests are not checked by urinalysis. Since Nalline testing was initiated in September, 1963, through November 15, 1968, fifty-one persons had been admitted to the program.³⁴ Nalline testing in Arizona seems destined to be a small program because there are relatively few addicts.

California. California has made extensive use of Nalline testing.³⁵ The pattern of testing and the extent of this implementation has varied from time to time as well as from agency to agency and from testing clinic to testing clinic.

The earliest formal recommendation in California that Nalline be used to identify former drug users, "out patients" who had started to use narcotics again, seems to have been made in 1954 in a Citizen's Advisory Committee Report.³⁶ As already indicated, the program in Oakland and surrounding Alameda County was set up about two years later in April, 1956. By 1959 the program had expanded to include all major drug

using areas of the state of California. The major use of the test in the state has been with parolees, probationers, and since 1961, with civilly committed persons.

Parolees and civilly committed persons are supervised by the Department of Corrections, the agency responsible for most of the subjects in the Nalline testing program in California. The Los Angeles County Probation Department appears to be the second largest user of the test. In addition, it is given to probationers in areas of the state other than Los Angeles County, and some testing is done for other agencies; for example, the California Youth Authority and the California Division of Motor Vehicles. In 1961 it was reported that ninety-five per cent or more of the Nalline testing was being done on probationers and parolees.³⁷

Differences in the pattern of testing have consisted largely in the relationship between surprise and regular testing and in the use of urinalysis. Reports received by this investigator from California authorities on this point have not always been consistent with each other. Apparently this reflects the variability inherent in programs of this nature, area differences, and the degree of intimate acquaintance with what is actually happening at a given time. The testing patterns and schedules have varied over time depending on such factors as the type of schedule deemed most desirable, including the funds available for the program, progress of the individual, size of the caseload, area of the state, availability of personnel to administer the tests, and the specific type of program the addict is in; for example, regular parole status, civil commitment, or a participant in the former Narcotic Treatment Control Program.

The traditional testing pattern for regular parolees has been four regular and one surprise test a month. Testing patterns have been varied for both regular parolees³⁸ and civilly committed addicts.³⁹ Similarly, the participants in the former Narcotic Treatment Control Program were sub-

³³ Letters from Dr. Thomas L. Meador, May 21, 1965 and November 21, 1968. Dr. Meador was formerly the City Health Officer, Bureau of Health, Department of Public Health, Portland, Oregon. He is now Assistant Health Officer, Department of Medical Services, Multnomah County, Oregon.

³⁴ Letters from Dr. Lad Mezera, Director, Bureau of Preventable Diseases, Health Department, Maricopa County, Phoenix, Arizona, May 21, 1965 and November 18, 1968.

³⁵ Lorpham (levallorphan) has been used to a limited extent in California; however, the predominant anti-narcotic used is Nalline. In 1959 the California Department of Public Health reported that three of fourteen physicians experienced with the anti-narcotic testing program had made some use of Lorpham. Reported in *THE ENIGMA OF DRUG ADDICTION*, *op. cit. supra* note 1 at 330. In 1965 it was estimated that less than 10 per cent of the tests use Lorpham. Letter from Dr. Guy R. Turgeon, Medical Consultant, Narcotic Control, Parole and Community Service Division, Department of Corrections, Los Angeles, California, July 1, 1965.

³⁶ Citizen's Advisory Committee to the Attorney General on Crime Prevention, *NARCOTIC ADDICTION* 32 and 40 (1954).

³⁷ A REPORT ON THE SYNTHETIC OPIATE ANTI-NARCOTIC TESTING PROGRAM, *op. cit. supra* note 8 at 16.

³⁸ Letter from James W. Neiswonger Supervisor, Special Projects and Research, Parole and Community Services Division, Department of Corrections, Sacramento, California, June 17, 1965.

³⁹ Letter from Mr. S. A. Whiteside, Narcotic Program Administrator, Parole and Community Services Division, Department of Corrections, Los Angeles, California, November 4, 1964.

jected to variable testing schedules.⁴⁰ During the spring of 1965 there appears to have been a general statewide cutback in the frequency of all Nalline testing.⁴¹

On June 1, 1964, the Department of Corrections adopted the policy of corroborating all positive and questionable Nalline Tests with a chemical test.⁴² A number of factors appear to have been involved in this change in policy. One of the contributing reasons was the recognition of certain limitations of the Nalline Test. Urinalysis is generally accepted as being a more sensitive testing device than the Nalline Test. Dr. Guy Turgeon indicates that two factors were involved in the policy change, "the new availability of facilities for large-scale laboratory tests and the lack of Nalline testing in smaller cities where volume did not justify the setting up of a Nalline clinic."⁴³ As of mid-1965 some of the other agencies and "Nalline Clinics" had started to corroborate positive and questionable Nalline Tests with a chemical test.⁴⁴

It is emphasized, however, that prior to the adoption of the chemical test by the Department of Corrections the various formal reports in California consistently recommended that the Nalline Test not be used as the single criterion for determining the use of narcotics. Until June, 1964,

⁴⁰ California Department of Corrections, ADMINISTRATIVE BULLETIN No. 62/90 13-14 (1962); California Department of Corrections, Research Division, Research Report No. 19, NARCOTIC TREATMENT CONTROL PROGRAM, PHASE I AND PHASE II 7 (1963), and Research Report No. 25, NARCOTIC TREATMENT CONTROL PROGRAM PHASE III 8-9 (1968).

⁴¹ At the Central Testing Clinic in Los Angeles, for example, the average number of tests per month have decreased from approximately fifty-five hundred for the year ending in May, 1965 to an average of three thousand during the summer months of 1968. Letters from Dr. Guy Turgeon, Medical Consultant, Narcotic Control, Parole and Community Services Division, Department of Corrections, Los Angeles, California, March 22, 1968 and September 19, 1968.

⁴² One source states that urinalysis was initiated to supplement the Nalline Test in California as early as 1963. See, E. C. Gaulden, M.D., Chief of Research, California Rehabilitation Center, Corona, California, *Detection of Narcotic Use by Thin Film Chromatography*, 1 and 2 (Ditto abstract of paper in preparation for publication).

⁴³ Letter from Dr. Guy R. Turgeon, Medical Consultant, Narcotic Control, Parole and Community Services Division, Department of Corrections, Los Angeles, California, July 1, 1965.

⁴⁴ Letters from Mr. Claude Stetler, Senior Deputy Probation Officer, Probation Department, County of Sacramento, California, June 15, 1965, and Dr. William G. McCormick, Chief Resident, The Fresno County General Hospital, Fresno, California, June 30, 1965.

however, urinalysis procedures were not commonly used.

The number of Nalline testing stations or "Nalline Clinics" in existence in California has been variable. A variety of governmental agencies including probation departments, sheriffs' departments, police departments, and local health departments have administered the "Nalline Clinics." The typical procedure, irrespective of the sponsoring agencies, is to make the facilities available to other agencies in which case the sponsoring agency is reimbursed for each test given.

With the exception of the Oakland Police Department,⁴⁵ to the best of this investigator's knowledge, reasonably complete and readily accessible data regarding the activities of the various testing clinics for any given year is not available.⁴⁶ Information is spotty, inaccessible, or unavailable. Although the Bureau of Criminal Statistics receives statewide Nalline Test reports on all persons tested this data is collated for positive tests only. Data relevant to the confirmation of the Nalline Test results by urinalysis is not reported to the Bureau of Criminal Statistics. It is not anticipated that the Bureau will expand its analysis and summarization of the Nalline Test data. As of 1968 the Bureau will cease processing this data and will no longer report positive tests.⁴⁷ The substance of these facts is that for California we have no adequate statewide Nalline Test data upon which an analysis of the program may be based.

Positive Nalline Test results have been reported in annual state narcotics reports of drug arrests and disposition data since 1961. The positive tests that are reported are test failures of those persons

⁴⁵ Since the inception of Nalline testing in 1956 and continuing through 1964, statistical data sheets were released by the Oakland Police Department which presented in considerable detail descriptive data about the program. The compilation of this information was stopped after 1964 because of excessive work and lack of requests for information. Letter from Captain Thorvald Brown, February 9, 1967.

⁴⁶ The San Francisco Police Department provided this investigator with a complete set of their data sheets for the years 1960 through 1964 describing the activities of the Nalline Clinic supervised until recent years by the Department. This information is broken down by the agency for whom the tests are conducted and includes the sex, race, and results of the tests. The recording entity, however, is for the number of tests given and, therefore, it is not possible to determine the results for separate individuals.

⁴⁷ Letter from Mr. Charles K. Bridges, Senior Crime Studies Analyst, Bureau of Criminal Statistics, Department of Justice, Sacramento, California, November 6, 1968.

in the program at the time of scheduled testing and who are assumed to be arrested as the result of the positive test—that is, failure.⁴⁸ The Bureau of Criminal Statistics assumes that persons testing positive *are arrested* unless there is evidence to the contrary and according to the opinion of one California authority, "Nearly all those testing positive are arrested."⁴⁹ In view, however, of the multiplicity of programs and jurisdictions using the Nalline Test and the variable use which has ostensibly been made of it, the assumption that all positive tests culminate in arrest may not be a tenable one. If we assume that the reported failures do reflect the actual number of persons in the state testing positive the value of the information is unfortunately vitiated by the fact that failures "include those who tested negative but had suspicious marks as well as those who obviously were under the influence which precluded testing."⁵⁰ These and other factors contribute to the difficulty in interpreting the Nalline Test failure data. In addition to the above these factors include incomplete information regarding number of persons in the program, number of tests given, and no information about the nature of the program the individual was participating in. All of these factors vitiate the value of the reported positive Nalline Test data. Irrespective of these serious limitations, this data appears to be the best estimate that we have of positive test results (failures) for the entire state of California.

Only limited information is available regarding the number of persons involved in the Nalline testing in California. In 1960, a formal report by the California Attorney General estimated that about 1,500 parolees and probationers were being tested each month.⁵¹ This may be an understatement. In Oakland alone there were 444 parolees

⁴⁸ Nalline Test failures resulting in arrests are reported as follows: 1961-644; 1962-525; 1963-772; 1964-998; 1965-551 and 1966-537. Los Angeles County has consistently contributed the majority of these failures. See, Bureau of Criminal Statistics, Department of Justice, NARCOTIC ARRESTS AND DISPOSITIONS IN CALIFORNIA, 1961, DRUG ARRESTS AND DISPOSITIONS IN CALIFORNIA 1962, 1963, 1964, 1965, 1966, Yearly reports (Sacramento, California).

⁴⁹ Letter from Mr. Charles K. Bridges, Senior Crime Studies Analyst, Bureau of Criminal Statistics, Department of Justice, Sacramento, California, November 6, 1968.

⁵⁰ Letter from Mr. Charles K. Bridges, Associate Crime Studies Analyst, Bureau of Criminal Statistics, Department of Justice, Sacramento, California, December 16, 1964.

⁵¹ A REPORT ON THE SYNTHETIC OPIATE ANTI-NARCOTIC TESTING PROGRAM, *op. cit. supra* note 8 at 16.

and probationers in the program in 1960. From the time of its initial use in 1959 by the Los Angeles County Probation Department (reputedly the second largest user of the test) through January 1, 1966, 1,375 probationers had participated. Three hundred and seventy-three were active cases on the latter date.⁵² In 1965 it was estimated that there were 15 to 25 incoming and about the same number of outgoing cases in the Los Angeles County Probation Department each month.⁵³

Spokesmen from the California Department of Corrections are able to provide rough estimates of the number of persons under their supervision involved in the Nalline testing program. During the summer of 1965 it was suggested that "possibly 2,000" persons had been given the test at least once during that year.⁵⁴ One estimate of the total number of persons involved in the program (under the supervision of the Department of Corrections) places this number at 15,000 different persons and "probably more."⁵⁵

Data regarding civil commitments in the Nalline program, all of whom are under the supervision of the Department of Corrections, is more complete. Total commitments to the California Rehabilitation Center through December 31, 1966 were 6,243. Of these, 3,640 had been transferred to outpatient status, and we may assume that most went into the Nalline testing program.⁵⁶

Oakland, California represents a special situation because it has the longest experience with the Nalline Test of any area in the United States and

⁵² BAILEY, *Nalline Control of Addict-Probationers*, 3 THE INTERNATIONAL JOURNAL OF THE ADDICTIONS 134 (1968).

⁵³ Letter from Mr. J. W. Fitz, Supervising Deputy, Special Assignment Office, Narcotic Treatment and Control Unit, Probation Department, County of Los Angeles, California, June 22, 1965.

⁵⁴ Letter from Dr. Guy R. Turgeon, Medical Consultant, Narcotic Control, Parole and Community Services Division, Department of Corrections, Los Angeles, California, July 1, 1965.

⁵⁵ Letter from Mr. James W. Nieswonger, Supervisor, Special Reports and Research, Parole and Community Services Division, Department of Corrections, Sacramento, California, June 17, 1965. A recent paper estimates that in 1964 about 3,000 California parolees were taking the Nalline Test an average of three times a month. See, ELLIOTT, NOMOF, PARKER, AND TURGEON, *Detection of Narcotic Use—Comparison of the Nalorphine (Pupil) Test with Chemical Tests*, 109 CALIFORNIA MEDICINE, 121 (August, 1968).

⁵⁶ CIVIL COMMITMENT PROGRAM FOR NARCOTIC ADDICTS 1961 THROUGH 1966, Summary Statistics, California Rehabilitation Center Program, Department of Corrections, Research Division, Administrative Statistics Section, Sacramento, California, June, 1968, 4.

because Nalline testing records are available. The Oakland Police Department's statistical data sheets entitled, *Oakland Police Department Nalline Test Results*, distributed through 1964, are one of the more detailed of few such efforts to provide a reasonably detailed breakdown of Nalline testing information.

The reasons for the early emergence of the Nalline Test as a formal narcotic control measure in Oakland appear to be twofold: first, the fact that Dr. James Terry, one of the originators of the test, was the Chief Medical Officer at the Alameda County Rehabilitation Center, and second, the fact that the test had the support of key figures in the Oakland Police Department as well as of other Alameda County law enforcement personnel.⁵⁷

The Oakland statistical data sheets present a wide array of facts on a yearly basis including the total number of tests conducted, test information based on race and sex, and test information for parolees and probationers including the number of tests conducted and the numbers of persons tested. Nalline Test results are presented for each of the above categories and several more. It is unfortunate that the Oakland authorities felt it necessary to abandon publication of this report.

Illinois. Illinois has actively used the Nalline Test since June, 1958. Initial use in 1958 and early 1959 appears to have been largely exploratory in nature. The number of tests administered gradually increased and with expanded physical facilities in mid-1961 they increased appreciably.⁵⁸

Nalline testing in Illinois was initiated following a recommendation by a Legislative Narcotics Investigation Commission in 1957.⁵⁹ The Commission further recommended the creation of a Division of Narcotic Control with authority to establish Nalline "clinics." The Division of Narcotic Control became a reality on January 1, 1958.

Thus the responsibility for the administration of the Nalline Test in Illinois since its inception has been with the Division of Narcotic Control, a division within the Department of Public Safety.

⁵⁷ See, *THE ENIGMA OF DRUG ADDICTION*, *op. cit.* *supra* note 1 at 289-291 and 293-294.

⁵⁸ Over two thousand Nalline Tests were conducted in 1961 and more than four thousand in 1962. The number declined in 1963 to less than three thousand and remained at this level through 1967.

⁵⁹ Narcotics Investigation Commission, *ILLEGAL NARCOTICS... A PATTERN OF EVIL*, Report to the 70th General Assembly—March 25, 1957, 36-40 and 46 (Springfield, Illinois, 1957).

The Division of Narcotic Control conducts Nalline testing for the Division of Supervision of Parolees (which is also a division within the Department of Public Safety) and the Cook County Adult Probation Department. On January 1, 1970 the Division of Narcotic Control became a part of the Illinois Bureau of Investigation and the Division of Supervision of Paroles was transferred to the Department of Correction both with minor modifications in their names. These two agencies contribute virtually all of the subjects to the program in Illinois.

In the program's early stages, testing was done in the private offices of the Cook County Chief Probation Officer. Limited space and limited personnel seriously restricted the program at this time. The need to include more persons in the program, to test more consistently, and to provide more adequate space, was discussed in a legislative commission report of 1961, which evidenced considerable concern about the program, and in the 1960 annual report of the Division of Narcotic Control.⁶⁰ A new Nalline Testing Center opened in May, 1961, and the number of tests increased. The interpretation of the test and the confidence formally placed in it by the Illinois Department of Public Safety is partly expressed in an Associated Press release announcing the opening of the center. The release stated in part:

Illinois is ready to begin a greatly improved program of rehabilitation supervision for drug addict parolees and probationers.

Opening of a new narcotics rehabilitation center in the South Side stockyards districts ... will be the signal for stepped-up spot checks of addicts under state supervision. ...

"We can check people who may be likely subjects for addiction as well as those with use records," McMahon [Administrative Assistant to the Director of Public Safety] said. ... "There will be many benefits, ... And the supervision is not just a structure.

"I expect that we will catch many so-called

⁶⁰ Narcotics, Dangerous Drug and Hazardous Substance Investigation Commission, *A REPORT IN THE INTEREST OF THE HEALTH AND SAFETY OF THE PEOPLE OF THE STATE OF ILLINOIS (Third Report)*, Report to the 72nd General Assembly—May 31, 1961, 13-19 (Springfield, Illinois, 1961); and Department of Public Safety, Division of Narcotic Control, *ACTIVITIES REPORT FOR THE YEAR ENDED DECEMBER 31, 1960*, 7 (Springfield, Illinois, February 15, 1961).

small habit cases—those which have not yet developed into the overwhelming craving which results in theft and robberies to get money for dope.

"To the extent that we curb development of addicts, we'll inhibit the market and the traffic in illegal drugs."⁶¹

This confidence in the Nalline Test as a narcotic control measure is repeatedly expressed in the annual reports of the Illinois Division of Narcotic Control. Witness, for example, a statement from the 1964 report:

In the opinion of experienced narcotic specialists, the tests seem to deter relapses, to prolong periods of abstinence, and to detect recidivism promptly. We feel that Nalline is a valuable and efficient tool in the effective probationary and parole supervision of detoxified opiate addicts and when developed to its fullest capacity will be an economical way of restraining addicts from use.⁶²

In the early years of the Nalline testing program in Illinois the position of Rehabilitation Supervisor existed. Ostensibly this position was created to administer the Nalline Test and to co-ordinate it with other rehabilitative segments of the program. In sum, the test was conceived in part as one aspect of a rehabilitative effort. In addition:

It was the responsibility of the Rehabilitation Supervisor to find suitable detention and rehabilitation institutions in Illinois for the detention, processing, treatment, and safeguarding of narcotic addicts both in the category of civilly committed addicts as well as for narcotic addicts sentenced under criminal charges. The job necessitated the working out of the most comprehensive plan for using existing, or to be created, facilities for the treatment of addicts, and the development of the proper program for commitment and detention so that these people would not remain at large in the community as a focus of contagion.⁶³

⁶¹ Bloomington, Illinois Pantagraph, May 9, 1961, p. 20.

⁶² Department of Public Safety, Division of Narcotic Control, ANNUAL REPORT FOR YEAR ENDED DECEMBER 31, 1964 5 (Springfield, Illinois, April 7, 1965).

⁶³ A REPORT IN THE INTEREST OF THE HEALTH AND SAFETY OF THE PEOPLE OF THE STATE OF ILLINOIS, *op. cit.* *supra* note 60 at 14.

As suggested by the above quotation a further function of the position was that of the location of "hospitals" or places of detention for addicts. Gilbert H. Cross, the one and only person to occupy the position of Rehabilitation Supervisor, has commented as follows regarding the Illinois program:

A strong, solid, effective basis has been laid for proper control, confinement, containment, rehabilitation, testing, and follow-up of the drug addict in the State of Illinois. It is, of course, too early to draw unwarranted conclusions, but we are confident that the majority of the offenders locked in the jaws of this program will never return to narcotic addiction and, consequently, many of them will never return to crime.⁶⁴

Gilbert Cross resigned April 30, 1962. The position of Rehabilitation Supervisor has never been filled.

Illinois operates only one Nalline Testing Center. Its location is off South Halsted Street in the stockyards area and is immediately adjacent to the Chicago office of the Illinois Division of Narcotic Control. Because all testing is conducted at one location it is possible to describe reasonably accurately the procedural aspects of the program.

The predominant use of the Nalline Test in Illinois has been with probationers and parolees. Conspicuously few tests have been given to other persons. The Division of Supervision of Parolees and the Cook County Adult Probation Department are responsible for notifying their wards when to appear for testing. Both agencies rely on surprise testing and typically subjects are informed by the parole or probation officer the day prior to their required appearance.

Since 1963, two probation officers are assigned to caseloads limited to subjects in the Nalline program and assume the responsibility for notifying their clients when to appear. The probation officers are present at the time of testing and meet with their respective clients at some time during their appearance at the center.

The Division of Supervision of Parolees operates differently. Caseloads composed entirely of narcotic cases are not maintained. Similar to the probation program, parolees are informed the day

⁶⁴ GILBERT H. CROSS, Rehabilitation Supervisor, ANNUAL REPORT—ADDICT CONTROL AND REHABILITATION, Illinois Division of Narcotic Control, Department of Public Safety 4-5 (Springfield, Illinois, October 10, 1960).

prior to testing that they are to appear. This division, however, follows a policy of rotating its duty assignments at the Nalline Testing Center, one result of which is that the parolee may seldom, perhaps never, see his own parole officer at the time of taking the test. The exception to this is the women, who, because they are fewer in number also have fewer women parole officers.

One conspicuous difference between the Illinois and California Nalline programs is that since the inception of the former, urinalysis has been consistently used to corroborate positive and equivocal Nalline Tests. In addition, urinalyses are run on persons to whom the Nalline Test cannot be given because of medical contraindications or because they appeared too late.

The effect of the use of urinalysis is that the Nalline Test in Illinois is definitely used as a "screening device." That is, all persons suspected of using narcotics as measured by the Nalline Test have this suspicion corroborated by urinalysis. Because of its greater sensitivity, testing by urinalysis of all positive and equivocal Nalline Test results, presumably insures that persons will not be falsely accused of using narcotics. Also, the certainty of identifying those who are using narcotics is increased. Thus, using this procedure, only those tests showing a "false negative" result as measured by the Nalline Test will "slip through" the net of the testing program.

The Illinois Division of Narcotic Control has consistently observed in its annual reports that an adequate follow-up program involves both Nalline testing and urinalysis. Data collected by the Division includes the results of Nalline Tests and urinalyses. The incorporation of urinalysis into the Illinois testing program seems to have come about as the result of decisions which took place at the policy formation stage between the Division and the Mason-Grimm Clinical Laboratory of Chicago.⁶⁵ Malachi L. Harney, the first Superintendent of the Illinois Division of Narcotic Control, has observed that the decision to incorporate corroborative urinalysis "did not arise from any specific failures in any specific Nalline cases, but from a desire to avoid such a possibility."⁶⁶

⁶⁵ See, A REPORT IN THE INTEREST OF THE HEALTH AND SAFETY OF THE PEOPLE OF THE STATE OF ILLINOIS, *op. cit.* *supra* note 60 at 19-34, and MASON & SHEPHERD *Evaluation of Two Screening Procedures for Detecting the Use of Opiates*, 37 THE AMERICAN JOURNAL OF CLINICAL PATHOLOGY, 176-181 (1962).

⁶⁶ Letter from Mr. Malachi L. Harney, June 30, 1965.

Table 1

TOTAL APPEARANCES FOR NALLINE TESTS AND PER CENT FOUND POSITIVE IN CHICAGO, OAKLAND AND SAN FRANCISCO 1956-1966^a

Year	Chicago ^b		Oakland ^c		San Francisco ^d	
	Number of Appearances	Per Cent Positive	Number of Appearances	Per Cent Positive	Number of Appearances	Per Cent Positive
1956	—	—	752	23.7	—	—
1957	—	—	1,723	11.3	—	—
1958	8	0	2,464	8.4	—	—
1959	182	8.8	4,445	4.2	647	9.4
1960	262	12.2	6,309	3.3	3,337	3.7
1961	2,418	2.9	8,397	1.6	5,027	1.5
1962	4,057	1.9	7,687	1.0	5,411	.6
1963	2,943	2.8	7,705	1.5	5,999	.3
1964	2,894	3.3	7,547	1.6	6,179	.7
1965	2,898	1.3	7,677	.9	—	—
1966	2,768	1.7	6,538	.9	5,659	.9

^a Total appearances for the test are used in this table because they provide the best overall index of the program's magnitude. There are always a few persons, however, who appear but for various reasons are not tested. If the persons who were not tested were excluded the proportion of positive tests would in some instances be slightly increased.

^b Data includes Nalline Test results from parolees, probationers, as well as a limited number of tests conducted for civil commitments, the Secretary of State Driver's License Division and a few persons under a miscellaneous category. The figures for 1961 to date are for parolees and probationers only. The presentation of the Chicago data is made possible through the Illinois Division of Narcotic Control, Department of Public Safety, Springfield, Illinois. Mr. Charles Southern, Inspector with the Division, has been of inestimable help in collating data from official monthly reporting forms from which this information is drawn.

^c Data abstracted from data sheets, OAKLAND POLICE DEPARTMENT NALLINE TEST RESULTS, Oakland, California. Information for 1965 and 1966 was provided by Captain Thorvald Brown. Letter from Captain Thorvald Brown, February 9, 1967.

^d Data provided by the Police Department, City and County of San Francisco, San Francisco, California, courtesy of Mr. J. H. Vanderford, Narcotic Bureau, letter of July 7, 1965, and Mr. James Casey, Narcotic Bureau, letter of February 9, 1967.

The Division of Narcotic Control formally releases only limited statistical data related to its involvement in the Nalline program. The annual report typically contains one or two sentences regarding statistics of the program, but this is the

extent of formally released data. Monthly reports of the number of times persons appear at the Chicago Testing Center and the results thereof, however, are assembled at the Center and submitted to the Springfield headquarters. Data is collected for both the Nalline Test and urinalysis. The information recorded is in terms of the number of times persons appeared and the tests given. The Division does not collect data relevant to the number of persons in the program. Neither does the Division collect data on the average number of tests given per individual during any one time period. Therefore, from the data provided by the Division of Narcotic Control it is impossible to estimate the number of persons in the program for any given year. The Adult Probation Department of the Circuit Court of Cook County reports that from the period of June 3, 1959 to September 30, 1962, 1,219 cases were supervised in the Nalline testing program. A similar inventory indicated that 540 cases were supervised between October 1, 1967 and October 2, 1968.⁶⁷ As of December 4, 1968 the Illinois Division of Supervision of Parolees had placed 3611 parolees in the Nalline program since mid-1961.⁶⁸

Information regarding the relative use of the Nalline Test in Chicago, Illinois, Oakland, California, and San Francisco, California in terms of the total appearances for the Nalline Test and the positive results during the several years of its use is presented in Table 1. Clearly many more tests are being given in both Oakland and San Francisco than in Chicago. Since the Chicago data represents the total testing situation in Illinois, it falls far short of the composite California effort. It is impossible to compare the three areas on the basis of the number of persons in the program because of the absence of information from Chicago and San Francisco.

Comparisons on the basis of the number of appearances for tests provides a crude index of the

intensiveness of the Nalline testing program in each of the three areas. Evaluation of the program on the basis of the proportion of tests that are positive, however, is very hazardous. Innumerable factors contribute to the number of positive tests, that is, failures. These factors include the conscientiousness with which the reports are submitted, the competency of the examiner, the prevailing practice regarding the interpretation of equivocal (no pupil change) tests, the prevailing drug-use patterns including the type and quality of the drugs being used, the relative proportion of the total drug using population that is in the Nalline program, the testing patterns that are employed and the assiduousness with which the program is implemented.

CONCLUSION

The Nalline Test emerged in the late 1950's as one of several auxiliary narcotic control measures accompanying law enforcement procedures and was acclaimed in some quarters as a highly useful control device. The test has seen its most extensive use in California whereas Illinois has made lesser use of it. Limited use of the test has been made in other states.

The implementation of the Nalline Test in California in contrast to Illinois, in virtually every respect, appears to be more vigorous, more encompassing and better articulated. A greater commitment to the test in California is indicated. This is true irrespective of the fact that Illinois has consistently corroborated selected test results by urinalysis while California initiated this procedure on a limited basis in 1964. In addition to the encompassing nature of the program in California, there has been some experimentation with the test both in the technical sense and in terms of varying the testing patterns.

It is noteworthy that while other states or agencies have considered the Nalline Test it has been rejected by most, sometimes by those who have accepted other anti-narcotic testing procedures which they consider to be more efficient. Interestingly this has occurred simultaneously with the on-going use of the Nalline Test in California and Illinois.

⁶⁷ Letter from Mr. Edward Kozlow, Supervisor, Adult Probation Department, The Circuit Court of Cook County, Chicago, Illinois, October 28, 1968.

⁶⁸ Letter from Mr. R. B. Johnson, Superintendent, Division of Supervision of Parolees, Department of Public Safety, Chicago, Illinois, December 4, 1968, courtesy of Clarence P. Nilles, Assistant Superintendent and Robert Klasna, Parole Agent.