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TWO PATTERNS OF NARCOTIC DRUG ADDICTION IN THE UNITED STATES

JOHN C. BALL*

Evidence from the present study and a review of the literature support the thesis that two quite distinct patterns of narcotic drug addiction exist in the United States at the present time. One addiction pattern is followed by young heroin users who come predominantly from metropolitan centers and are engaged in illegal endeavors. The other pattern is typified by the middle-aged southern white who uses morphine or paregoric and obtains his drugs through legal or quasi-legal means. The heroin pattern of addiction has increased markedly since World War II and is currently associated with minority group status. The second type of addiction preceded the passage of the Harrison Act in 1914, and has, in the subsequent years, decreased materially.

The medical records of 3301 addict patients discharged from the U.S. Public Health Service Hospitals at Lexington, Kentucky, and Fort Worth, Texas, during the 1962 fiscal year were analyzed with a view toward delineating these two patterns of drug addiction. A part of the study consists of a comparison of this 1962 population with the hospital population in 1937.

THE CHANGING PATTERN OF OPIATE USE IN THE UNITED STATES

Opium has been extensively used throughout much of the world since pre-classical times. Its use has been associated with a diversity of cultural patterns (medical, religious, literary and criminal)

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and has, in modern times, often reflected the technical and scientific advances in medicine and pharmacology with respect to the particular drug taken and the means of administration employed by the user. Thus, the invention of the hypodermic syringe facilitated both the medical and non-medical use of opiates in the United States after 1856. The practice of opium smoking became somewhat of a vogue among the demi-monde of San Francisco after 1868, and spread rapidly thereafter throughout the country. The discovery of a new opium derivative, heroin, in Germany, in 1898, had a far-reaching effect upon twentieth century drug addiction in the United States.¹ In addition, government prohibition has affected the use of narcotic drugs. The Harrison Act of 1914 and subsequent federal and state laws have had a pervasive and continuing effect upon the availability of opiates and similar synthetic drugs.² In sum, drug addiction as a medical problem and behavioral phenomenon is entwined in the fabric of society and, consequently, is affected by changes in society.³

From the end of the Civil War to the passage of the Harrison Act in 1914, the use of opiates in the United States was widespread and virtually uncontrolled. Terry and Pellens estimated that a minimum figure for the United States was 264,000 addicts in 1920.⁴ Opiates were readily available during this period from druggists, some physicians,

¹ TERRY & PELLENS, *THE OPIUM PROBLEM* (1928), ch. 2; DAI, *OPIUM ADDICTION IN CHICAGO, SHANGHAI, CHINA* (1937), chs. 1 & 2; Eddy, *The History of the Development of Narcotics*, 22 *LAW & CONTEMP. PROB.* (1957) 3-8.

² Four principal federal statutes control narcotic drugs and marihuana use in the United States. These are the Narcotic Drugs Import and Export Act, as amended [21 U.S.C. Sec. 171-185 (1958)]; the Harrison Narcotic Law [26 U.S.C. Sec. 4701 et. seq. (1958)]; the Narcotics Manufacturing Act of 1960 [21 U.S.C. Sec. 501 (Supp. 1962)]; and the Marihuana Tax Act [26 U.S.C. Sec. 4741 et. seq. (1958)].

³ For a discussion of the factors affecting the change in public attitudes toward opiate addiction during the past century see: Isbell, *Historical Development of Attitudes toward Opiate Addiction in the United States*, *CONFLICT AND CREATIVITY*, 154-170 (Eds. Farber & Wilson 1963).

⁴ Terry & Pellens, *op. cit. supra* note 1, at p. 41.

and over-the-counter sales in general stores. The illicit traffic within the country was, apparently, negligible and confined to such prohibited opiates as smoking opium after 1909; but information is meager in this regard.⁵

The Harrison Act of 1914 had two effects upon drug addiction in the United States. First, it largely eliminated the indiscriminate sale of opiates through legal channels. And second, it had the indirect effect of making the illicit sale of opiates, and especially heroin, profitable. Thus, an illicit pattern of drug use was superimposed upon the pre-existing licit, or uncontrolled, pattern of opiate use.⁶ What has happened to these diverse but related types of narcotic addiction during the past twenty-five years is the subject of this paper.

SELECTION OF THE HOSPITAL POPULATION OF 3301 PATIENTS

The United States Public Health Service Hospital at Lexington, Kentucky, was opened for the treatment of the narcotic addicts on May 29, 1935. Since that time there have been 70,238 admissions to the Lexington Hospital.⁷ The Fort Worth Hospital was opened on November 8, 1938, and there have been approximately 15,000 admissions since that date. These two federal hospitals are authorized to treat addict patients from all 50 states as well as from U.S. Possessions.⁸ The Fort Worth Hospital accepts male patients from West of the Mississippi River, while the Lexington Hospital treats male addicts from East of the River as well as female patients from the entire country.⁹ The first female addicts were admitted to the Lexington Hospital in 1941.

Two types of addict patients are admitted to the Lexington and Fort Worth Hospitals: voluntary patients and prisoners.¹⁰ The voluntary patients

constitute the majority (84.6 percent in 1962¹¹) They are voluntary with respect to their admission and in that they may leave at any time after treatment has begun. The addict prisoners have been sentenced by federal courts and are serving designated sentences.¹²

The subjects selected for study were all female and male addict patients¹³ discharged from the two hospitals between July 1, 1961, and June 30, 1962. There were 2713 males and 588 females discharged during this twelve month period. The figure of 3301 refers to the number of individuals discharged from the hospitals, not the number of separate discharges. This distinction is of some significance as there were 230 more discharges than persons; that is, some six percent of the patients were at the hospital more than once in 1962.¹⁴

A comparison of the addict patients at the two federal hospitals in 1962 with the addict patients at the Lexington Hospital in 1937 is meaningful because in 1937 the Fort Worth Hospital had not opened and, therefore, male addict patients from throughout the United States were sent to the Lexington Hospital. This comparison between the 1937 and 1962 addict populations is only possible with respect to male addicts since female addicts were not admitted to the U. S. Public Health Service Hospital in Lexington until 1941.

The question arises as to the representativeness of this hospital population with respect to all addicts in the United States. How do these 3301 patients compare with the total addict population of the nation? The answer is that we do not know. We do not know for the simple reason that this larger group—all addicts—is a population with unknown parameters. Still, we do have various means of comparing this hospitalized population with other data pertaining to drug addiction, such as the File of Active Addicts maintained by the Bureau of Narcotics, or state and local health records. Beyond this, we have the observation of Terry and Pellens, that one way to attack the problem of un-

¹¹ Of the 2,713 male patients, 2,277 (83.9 per cent) were voluntary; of the 588 female patients, 516 (87.8 per cent) were voluntary.

¹² The federal prisoners may or may not have been sentenced for offenses pertaining to the narcotic laws but they may be sent to Lexington or Fort Worth if there is evidence that they were addicted to narcotics.

¹³ Following hospital usage the term "patient" herein refers to any resident, whether voluntary patient or prisoner.

¹⁴ Of the 3,301 patients, 3,093 (93.7 per cent) were discharged only once in 1962, 189 twice (5.7 per cent), 16 three times (0.5 per cent), and 3 patients were at the hospital four times during the year.

⁵ *Ibid.*, 1; ELDRIDGE, NARCOTICS AND THE LAW 7-9 (1962).

⁶ In addition, the passage of the Harrison Act resulted in a redefinition of opiate addiction; it became a criminal endeavor, rather than a mere social problem. See Eldridge, *op. cit.* at p. 9.

⁷ As of December, 1963. This figure refers to the number of separate addict admissions, not to the number of addict patients.

⁸ 42 U.S.C. Sec. 257 et. seq.

⁹ For a description of the Public Health Service treatment program for addict patients see: Lowry, *Hospital Treatment for the Narcotic Addict*, 20 FED. PROB. 42-51 (1956). O'Donnell, *The Lexington Program for Narcotic Addicts*, 26 FED. PROB. 55-60 (1962).

¹⁰ The prisoner classification as herein employed includes both prisoners and probationers.

TABLE 1
FIRST DRUG DIAGNOSIS OF 3301 ADDICT PATIENTS AT LEXINGTON AND FORT WORTH HOSPITALS—1962

Drug Diagnosis at Hospital	Male		Female		Total	
	Number	Percent	Number	Percent	Number	Percent
I. Opiates & Semi-Synthetics						
Heroin.....	1753	64.6	329	56.0	2082	63.1
Morphine.....	242	8.9	69	11.7	311	9.4
Paregoric.....	202	7.4	44	7.5	246	7.5
Dilaudid.....	181	6.7	52	8.8	233	7.1
Codeine.....	116	4.3	24	4.1	140	4.2
Pantopon.....	17	0.6	7	1.2	24	0.7
Opium.....	4	0.1	4	0.7	8	0.2
Others.....	3	0.1	1	0.2	4	0.1
(I = 92.3%)						
II. Synthetic Analgesics						
Meperidine.....	95	3.5	41	7.0	136	4.1
Methadone.....	59	2.2	13	2.2	72	2.2
Other Synthetics.....	12	0.4	3	0.5	15	0.5
(II = 6.8%)						
III. Other Diagnoses						
Barbiturates.....	16	0.6	1	0.2	17	0.5
Marihuana.....	8	0.3			8	0.2
Observation.....	5	0.2			5	0.2
(III = 0.9%)						
Total.....	2713	100.0	588	100.0	3301	100.0

Difference between male and female drug diagnosis: $\chi^2 = 25.11$, $P < .001$.

Note: Underline of last digit in total percent figure indicates that addition of the above column does not equal 100.0 due to rounding error.

raveling the addiction phenomenon is to secure detailed information from specified populations.¹⁵

FIRST DRUG DIAGNOSIS OF 3301 HOSPITALIZED ADDICT PATIENTS

Only persons addicted to narcotic drugs and synthetic analgesics are eligible for voluntary admission and treatment at the two federal hospitals.¹⁶ At the time of admission each patient is given a medical examination and, subsequently, on the basis of clinical evaluation on the withdrawal ward, the physician records a drug diagnosis. This diagnosis indicates the drug or drugs used by the patient immediately prior to hospital admission

¹⁵ Terry and Pellens, *op. cit. supra* note 1 at p. 4.

¹⁶ Persons who habitually use the following drugs are eligible for treatment by the Public Health Service: cocaine, coca leaves, codeine, dicodid, hycodan, dilaudid, heroin, marihuana, laudanum, meperidine, methadon, metopon, morphine, opium, pantopon, paregoric, peyote, NU-2206, and any other narcotic drug which may be brought under the Harrison Narcotic Act.

and for which treatment was provided. A patient may have one, two, or three separate drug diagnoses depending upon whether he was using or addicted to one, two or three drugs at the time of hospitalization.

The first drug diagnosis commonly refers to the narcotic drug use which provides the legal basis for hospitalization as well as to the drug of primary addiction. Thus a patient who was addicted to heroin before admission and was not using other drugs would have only a first diagnosis of heroin addiction. If he were also using barbiturates, this would be recorded as a second drug diagnosis. If he were using heroin, dilaudid and barbiturates and his principal opiate use was heroin, he would have a first diagnosis of heroin use, a second of barbiturate use (if this were of second importance) and a third indicating dilaudid use. A patient may then have one, two, or three separate drug diagnoses. All addict patients have at least a first drug diagnosis inasmuch as drug use is the reason for hospital admission.

The second drug diagnosis usually refers to a concomitant addiction to a non-narcotic drug; 26.1 percent of the 3301 patients had such a second diagnosis. A third diagnosis (present for 2.0 percent of the patients) would only be recorded if the patient were addicted to, or using, three drugs.

In the subsequent analysis, attention is directed to the first hospital drug diagnosis as it indicates the principal drug used by patients. The second (and third) drug diagnosis is not without clinical significance, but it affects only some one-fourth of the patients.

Of the 3301 addict patients discharged from the Lexington and Fort Worth Hospitals in 1962, 63.1 percent had a first drug diagnosis of heroin use prior to admission (Table 1). The next most frequent drug used was morphine (9.4 percent), followed by paregoric, dilaudid, codeine, meperidine, and methadone. The remaining drugs listed, in Table 1, were used by less than 3 percent of the patients. Thus 97.5 percent of the addict patients were diagnosed as using 7 drugs; 5 of these were opium derivatives, 2 were synthetic analgesics.

The overall similarity of narcotic drug use by female and male patients was more striking than the small differences tabulated, despite the fact that the sex difference was statistically significant. Females were generally addicted to the same drugs as the males, and in both instances heroin was the predominant drug of addiction.

With respect to the 30 patients who were not diagnosed as addicted to opiates—Classification III, Table 1—8 were marihuana users and 17 were barbiturate users; 5 were "under observation for addiction". It should not be inferred from this that the use of marihuana and barbiturates is negligible among the 3301 addicts. A sizable proportion, perhaps a majority of these patients, have smoked marihuana¹⁷ but the hospital drug diagnosis commonly makes reference only to their opiate addiction. Of the 3301 patients, 21.0 percent had a secondary drug diagnosis which specified that barbiturates had also been used prior to hospitalization.¹⁸

¹⁷ In a follow-up field study of 245 former Puerto Rican patients from the Lexington Hospital, marihuana use is admitted by 68 of the 77 subjects interviewed to date (88 per cent).

¹⁸ Of the male patients, 19.8 per cent had a secondary drug diagnosis of barbiturate use; of the females 26.7 per cent had a similar secondary diagnosis. For a discussion of research findings pertaining to opiate and barbiturate addictions see: WIKLER, *OPIATE ADDICTION* ch. 6 (1953); Martin, *Analgesic and Antipyretic Drugs*, *PHYSIOLOGICAL PHARMACOLOGY*, A COMPRE-

Several drugs under federal control were conspicuous by their absence. There were no first drug diagnoses of cocaine, metopon, or peyote use.¹⁹

A comparison with Pescor's tabulation²⁰ of the 1,036 male admissions to the Lexington Hospital during the 1937 fiscal year reveals that the use of heroin during this twenty-five year interval has increased (from use by 43.3 percent of the male patients to use by 64.6 percent) while the use of morphine has markedly decreased (from 50.7 percent to 8.9 percent). It appears that two principal changes have occurred in drug use among these patients since 1937. First, there has been a decrease in the use of morphine and a corresponding increase in the use of opium derivatives or synthetic analgesics. Second, the use of the underworld drug of choice—heroin—has increased until it is now the principal addicting opiate in the United States.²¹

To what extent this change in drug use during the twenty-five year period reflects a shift in the composition of the hospital population itself, or to what extent it is due to changes in the availability of particular opiates, is uncertain. It seems evident, however, that both of these changes are important, since the number of patients treated has increased (from 1,036 to 3,301) and their social characteristics are now quite different from 1937; further, new drugs have come into manufacture and use.

DEMOGRAPHIC CHANGES IN THE PATTERN OF OPIATE ADDICTION

In considering narcotic addiction as a national problem, it is meaningful to note and consider the geographic distribution of patients at the two U. S. Public Health Service Hospitals. The rate of male addict patients per 100,000 population for each state is shown in Table 2. New York, Puerto Rico, and the District of Columbia have markedly higher rates than the rest of the United States. The first 12 states (10 states, the District of Columbia, and Puerto Rico) contribute 70.9 percent of the male narcotic patients at the two federal hospitals. Conversely, there were no patients from six states: Alaska, Idaho, Maine, Montana, South Dakota, and Wyoming.

ENSIVE TREATISE, (Vol. 1: *The Nervous System*. Eds. Root & Hofmann 275-312 1963).

¹⁹ There were, however, six second drug diagnoses of cocaine use and one of peyote use.

²⁰ Pescor, *A Statistical Analysis of the Clinical Records of Hospitalized Drug Addicts*, *PUBLIC HEALTH REPORTS* (Supplement No. 143, 1943) 24.

²¹ Of the 47,905 addicts in the Federal Bureau of Narcotics Active File in 1963, 92.7 per cent were heroin users.

TABLE 2

STATE OR PLACE OF RESIDENCE OF 3301 ADDICT PATIENTS AT LEXINGTON AND FORT WORTH HOSPITALS IN 1962
BY SEX AND RATE PER 100,000 ADULT MALES

Rank	State	Male Population, 21 Yrs and Over in 1960	Lexington and Fort Worth Patients			Male Patients per 100,000 Population
			Male	Female	Total	
1	New York	5,155,837	1,017	156	1,173	19.7
2	Puerto Rico	514,687	79	1	80	15.3
3	Dist. Columbia	233,443	29	5	34	12.4
4	Illinois	3,034,992	265	99	364	8.7
5	Alabama	869,029	69	24	93	7.9
6	Texas	2,690,014	193	20	213	7.2
7	Arizona	366,554	23	1	24	6.3
8	Louisiana	860,951	52	10	62	6.0
9	Georgia	1,059,866	59	21	80	5.6
10	New Mexico	252,073	14	1	15	5.6
11	New Jersey	1,853,862	85	16	101	4.6
12	Kentucky	857,870	39	14	53	4.5
13	Nevada	91,707	4	1	5	4.4
14	West Virginia	522,215	21	8	29	4.0
15	North Carolina	1,228,283	45	13	58	3.7
16	Missouri	1,286,092	43	11	54	3.3
17	Tennessee	994,486	33	18	51	3.3
18	South Carolina	603,929	19	10	29	3.1
19	Mississippi	555,549	17	6	23	3.1
20	Michigan	2,246,835	67	23	90	3.0
21	Colorado	503,602	15	6	21	3.0
22	California	4,743,305	140	28	168	3.0
23	Ohio	2,816,884	83	22	105	2.9
24	Oklahoma	683,955	20	7	27	2.9
25	Indiana	1,344,943	37	20	57	2.8
26	Arkansas	502,450	13	6	19	2.6
27	Delaware	130,626	3	2	5	2.3
28	Connecticut	765,150	17	2	19	2.2
29	Virginia	1,135,065	25	4	29	2.2
30	Massachusetts	1,523,958	32	—	32	2.1
31	Pennsylvania	3,385,080	70	13	83	2.1
32	Maryland	898,505	18	2	20	2.0
33	Rhode Island	257,054	5	—	5	1.9
34	Florida	1,493,604	28	5	33	1.9
35	New Hampshire	178,753	3	—	3	1.7
36	Oregon	529,349	6	4	10	1.1
37	Washington	858,452	8	2	10	<1.0
38	Vermont	110,731	1	—	1	<1.0
39	North Dakota	182,183	1	—	1	<1.0
40	Hawaii	188,564	1	—	1	<1.0
41	Kansas	645,724	3	2	5	<1.0
42	Utah	231,242	1	1	2	<1.0
43	Wisconsin	1,156,004	3	1	4	<1.0
44	Nebraska	419,864	1	2	3	<1.0
45	Minnesota	981,274	2	—	2	<1.0
46	Iowa	804,826	1	—	1	<1.0
47-52	Six states	1,037,860	—	—	—	—
	Outside U.S.		3	1	4	—
	Total	52,787,281	2,713	588	3,301	5.1

TABLE 3

PRINCIPAL DRUG DIAGNOSIS OF 1924 MALE PATIENTS AT LEXINGTON AND FORT WORTH HOSPITALS—1962—BY PERCENT USING SPECIFIED DRUGS IN EACH OF 12 STATES

State	I. Opiates & Semi-Synthetics						II. Synthetic Analgesics			III. Others Misc.
	Heroin	Morphine	Paregoric	Dilaudid	Codeine	Others	Meperidine	Methadone	Others	
1. N. Y.	92.6	1.2	—	3.2	0.9	0.4	0.6	0.7	0.1	0.3
2. P. R.	100.0	—	—	—	—	—	—	—	—	—
3. D. C.	93.1	3.4	3.4	—	—	—	—	—	—	—
4. Ill.	74.7	6.4	9.1	5.3	0.8	0.4	1.5	1.9	—	—
5. Ala.	2.9	20.3	29.0	14.5	7.2	1.4	15.9	7.2	—	1.4
6. Tex.	42.0	9.8	20.2	7.3	8.8	1.0	5.7	1.6	—	3.6
7. Ariz.	91.3	4.3	—	—	4.3	—	—	—	—	—
8. La.	28.8	13.5	3.8	17.3	5.8	3.8	17.3	5.8	—	3.8
9. Ga.	1.7	20.3	25.4	10.2	13.6	3.4	16.9	5.1	1.7	1.7
10. N. M.	78.6	—	7.1	—	—	—	—	7.1	7.1	—
11. N. J.	87.1	3.5	1.2	—	2.4	—	2.4	2.4	1.2	—
12. Ky.	5.1	43.6	—	17.9	7.7	—	15.4	2.6	—	7.7
Total:										
Number . . .	1453	103	103	93	50	12	59	30	4	17
Percent . . .	75.5	5.4	5.4	4.8	2.6	0.6	3.1	1.6	0.2	0.9

Difference in drug use between five southern states and remaining seven states: $\chi^2 = 308.88$, $P < .001$.

A comparison of the 1962 geographic distribution with Pescor's data reveals a marked change in the hospital population. In 1937, the highest rates of admission were from the southern states.²² Thus, what has occurred since 1937 has been a substantial increase in the number of patients from northern metropolitan centers.²³ The rates of hospitalization for patients from New York and Illinois now exceed those for any of the southern states. Still, the high southern rates of admission have continued, although their relative quantitative significance has

²² Computing rates of hospitalization per 100,000 males 21 years of age or older from Pescor's data, the twelve leading states in 1937, in order, were: 1. Louisiana (13.9), 2. Texas (8.2), 3. Kentucky (8.0), 4. District of Columbia (7.0), 5. Oklahoma (5.2), 6. Georgia (4.5), 7. Tennessee (4.2), 8. Arkansas (3.9), 9. Florida (3.6), 10. Missouri (3.6), 11. South Carolina (3.3), and 12. Alabama (3.1). These rates were computed from Table 2 of Pescor's study (*op. cit.*) using 1940 census data. (Pescor grouped 16 states together under "All Others" which precluded the computation of rates for these states from which the fewest patients were received; it seems unlikely that any one of these 16 states would be among the first 12 states if the rate were computed.)

²³ The present data refers only to state of residence, but from hospital records it is known that most admissions from New York and Illinois come from New York City and Chicago respectively; Martha G. Barclay, *Comparative Statistics of Addiction* (unpublished Master's thesis, Dept. of Hygiene and Public Health, University of Kentucky, 1963) 32.

diminished due to the recent influx of young addicts from the largest cities.²⁴

The change in place of residence of the addict patients between 1937 and 1962 has been accompanied by shifts in age and race. The median age of the 2713 male patients in 1962 was 30.2 years, the mean was 33.5 years. The range was from 17 through 78 years. Patients less than 30 years of age constituted 49.3 percent of the total male population. In 1937 the median age of males was 38.3, the mean 39.1. Only 19.7 percent of the male patients were under 30 years of age.²⁵ Thus, the median age has decreased by eight years. During this period the median age of males in the United States has remained fairly constant: in 1930 26.7 years, in 1940 29.1, in 1950 29.9 and, in 1960 28.7.

The racial and ethnic composition of the hospital population has altered markedly during this twenty-five year period. In 1937, 88.4 percent of the male patients were white, 8.9 percent Negro,

²⁴ The rates of patients admitted from the southern states for the 1937 fiscal year and the rates of patients discharged from the southern states for the 1962 fiscal year are quite similar. (Compare Footnote 22 above and Table 2.) Thus, the southern pattern of addiction has continued. What has changed is the increased rates of admission from states with large metropolitan areas, such as New York and Illinois.

²⁵ Pescor, *op. cit.*, p. 26.

1.2 percent Mexican and, together, Chinese, Japanese, and Indian were 1.5 percent.²⁶ In 1962, 51.0 percent of the male patients were white, 30.4 percent Negro, 12.2 percent Puerto Rican, 4.9 percent Mexican, and others 1.5 percent. There has, then, been a notable increase in the number of addicts from the minority groups in American society.

FIRST DRUG DIAGNOSIS OF PATIENTS FROM 12 STATES

States with high rates of narcotic addiction—as here measured—fall into two contrasting patterns with respect to drug use. One pattern consists primarily of the use of heroin; this drug is neither legally manufactured nor sold in the United States. This is the dominant pattern of use in New York, Puerto Rico, the District of Columbia, Illinois, New Jersey, Arizona and New Mexico (Table 3).

The second pattern of drug use consists of the use either of opiates other than heroin or synthetic analgesics. Of the 12 states (or places) with highest discharge rates from the two hospitals in 1962, most of the addicts were not using heroin in five of these states. This pattern of addiction which, for want of a better name, may be termed a Southern pattern inasmuch as it is most evident in this part of the country, is exemplified by Alabama, Georgia, and Kentucky. From each of these states, 5 percent or less of the patients were using heroin.

It may be noted (Table 3) that there is a heroin belt along the Mexican border states of Arizona, New Mexico, and Texas. In the case of Texas, and Louisiana to a lesser extent, it appears that the heroin pattern of use is being superimposed upon the older pattern of paregoric, morphine, codeine and dilaudid use.²⁷

A further delineation of these two principal patterns of drug use is afforded by a comparison of age, race, and prisoner status among patients from the two groups of states. The median age at admission of patients from New York, Puerto Rico, the District of Columbia, and Illinois was, respectively, 27, 24, 29, and 30 years; the comparable median figures for Alabama, Georgia, and Kentucky were 43, 43, and 44 years. With respect to racial or ethnic composition, some two-thirds of the patients from New York, the District of Columbia, and

Illinois were Negro, or Puerto Rican.²⁸ Conversely, among the patients from Alabama, Georgia, and Kentucky more than 90 percent were white.²⁹

That the heroin pattern of drug use is more closely associated with criminal endeavors than the older non-heroin pattern may be inferred from the fact that 91.3 percent of the male prisoner patients have a first drug diagnosis of heroin use while only 59.5 percent of the voluntary patients were heroin users. Even more revealing is the fact that the voluntary male patients used 96.0 percent of all drugs other than heroin reported in the first diagnosis.

INTERPRETATION OF RESEARCH RESULTS

The two patterns of drug use reported here would appear, in part, to be a continuation of those described by Lawrence Kolb (1928), by Terry and Pellens (1928), and subsequently by others. Kolb classified addicts into two groups: dissipators and those medically induced.³⁰ Terry and Pellens in *The Opium Problem* primarily depict the non-heroin user who secures his drugs through legal or quasi-legal channels, although they do refer to the increasing use of heroin in the underworld.³¹ More recently, Chapman has described both the southern addict group and the large-city addicts from minority groups.³²

What has occurred since the 1920's is the increased use of heroin among addicts and the concentration of this type of addiction among Negroes, Puerto Rican, and Mexican³³ youth in metropolitan slum areas. Thus, of the Negro, Puerto Rican, and Mexican patients discharged from the two hospitals in 1962, 92.9 percent of the males and 94.3 percent of the females were heroin users. By contrast, only 37.3 percent of the white males and 25.2 percent of the white females were heroin users. As Clausen has observed, addiction in the United States has now become "clearly entwined with minority group status".³⁴

²⁸ Of the 1,311 male patients from New York, the District of Columbia, and Illinois, 65.6 per cent were Negro, Puerto Rican, Mexican or non-white.

²⁹ Of the 69 male patients from Alabama, 63 were white and 6 Negro; of the 59 male patients from Georgia, 58 were white and 1 Negro; of the 39 male patients from Kentucky, 37 were white and 2 were Negro.

³⁰ Kolb, *Drug Addiction*, 20 ARCHIVES OF NEUROLOGY AND PSYCHIATRY, 171-183 (1928).

³¹ Terry and Pellens, *op. cit. supra* note 1, chs. 1 and 2.

³² Chapman, *Drug Addiction: The General Problem*, 20 FED. PROB. 43 (1956).

³³ That is, of Puerto Rican or Mexican parentage.

³⁴ Clausen, *Drug Addiction*, CONTEMPORARY SOCIAL

²⁶ *Ibid.*, p. 26.

²⁷ In Texas and Louisiana the Southern pattern of opiate use by white middle aged males continues while, at the same time, the youthful Spanish speaking heroin addicts are appearing at the Fort Worth Hospital.

More detailed information pertaining to the two general patterns of opiate addiction is evident from the initial results of two follow-up field studies of former addict patients at the Lexington Hospital. In a follow-up study of 266 former addicts from Kentucky it has been found that most of these white former patients secured their morphine, dilaudid, or codeine, as well as considerable quantities of barbiturates, from legal or quasi-legal sources.³⁵ Conversely, in a follow-up study of 245 former patients from Puerto Rico, the predominant drug is heroin, and it is secured through illegal sources.³⁶

A comparison with the active file of the Federal Bureau of Narcotics reveals that their population of 47,905 addicts is quite similar in composition to the prisoner population at the Lexington and Fort Worth hospitals, but not to the voluntary population. Thus, 92.7 percent of the 47,905 addicts in their file were heroin users; their addict population is 18.2 percent female, and 72.7 percent Negro, Mexican or Puerto Rican.³⁷ Underrepresented or excluded from their compilation is a considerable group of non-heroin addicts.³⁸

LIMITATIONS OF THE RESEARCH FINDINGS

The fundamental limitation of the findings is that they refer exclusively to hospitalized addicts. From the clinical data available at the two hospitals, it is known that most voluntary patients do not seek admission until some years after the onset

PROBLEMS, 190 (Eds. Merton & Nisbet 1961). In this regard, Chein and Rosenfeld state: "Areas of high incidence of juvenile drug use are the most deprived areas of the city, where family life is most disrupted, where the population is of the lowest socioeconomic status, and where often-discriminated-against ethnic groups (in New York City, these are Negroes and Puerto Ricans) are highly concentrated." *Juvenile Narcotics Use, LAW AND CONTEMPORARY PROBLEMS, op. cit.*, p. 53.

³⁵ O'Donnell, *A Post-Hospital Study of Kentucky Addicts—A Preliminary Report*, JOURNAL OF THE KENTUCKY MEDICAL ASSOCIATION (July, 1963) 573-577, 604; in a study of 457 meperidine (demerol) addicts, Rasor and Crecraft found that the majority of these addicts secured their drugs through legal sources and that fifty per cent came from the southeastern states; Rasor & Crecraft, *Addiction to Meperidine (Demerol) Hydrochloride*, 157 JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION 654-657 (1955).

³⁶ Of 71 former Puerto Rican addict patients, 67 secured their drugs through underworld sources.

³⁷ Federal Bureau of Narcotics, *Statistical Data on Active Narcotic Addicts in the United States as of June 30, 1963* (Unpublished Report, 1963).

³⁸ Admission of voluntary patients to the Lexington and Fort Worth Hospitals is, by law, confidential.

of drug use.³⁹ Thus, we know that the hospital population is not representative of all addicts in the United States with respect to age, and it seems likely to be otherwise non-randomly selected.

In this regard, the rates of hospitalization by states should not be interpreted as reflecting the prevalence of narcotic addiction in those states. Obviously, the extent of hospitalization may reflect a number of local conditions. Nevertheless, it seems efficacious to consider rates of addiction, inasmuch as the concept of rate is basic to public health, criminology and demography.

Many questions remain to be studied,⁴⁰ both with respect to hospitalized addicts and those "on the street"—to use the addict's phrase for life in society. Among the questions pertaining to addict hospital patients is that of determining readmission rates by sex, age, race, and place of residence. Another unanswered question is, what happens to addicts after age 50? This question arises from the fact that both the Narcotics Bureau's Active File and the Addiction Research Center's Master File (of all addict patients admitted to the two hospitals) include a decreasing number of addicts in the middle and later years.⁴¹

CONCLUSION

Analysis of the medical records of 3301 addict patients discharged from the Lexington and Fort Worth Hospitals in 1962 reveals that two quite distinct patterns of opiate addiction exist in the United States. One pattern of addiction consists of heroin use among metropolitan youth who came predominantly from the minority groups in American society. The other pattern of addiction consists primarily of middle-aged whites who use opiates other than heroin or synthetic analgesics;

³⁹ Chein found that most of the addicts he studied in New York City had started before age 20; Chein and Rosenfeld, *op. cit. supra* note 34, at 52-68.

⁴⁰ For a recent appraisal of research needs pertaining to drug addiction see: *Narcotic Drug Addiction* (Mental Health Monograph 2, U. S. Dept. of Health, Education, and Welfare, Public Health Service, 1963) p. 21.

⁴¹ Pescor found that 42.5 per cent of the male patients at the Lexington Hospital were 40 years of age or older in 1937 (*op. cit.*, p. 26); in 1962, 23.0 per cent of the male patients at the Lexington and Fort Worth Hospitals were 40 or more years. Of the 47,905 addicts in the Active File of the Bureau of Narcotics, as of June 30, 1963, only 11.0 per cent were over 40 years of age. In this regard, see Winick, *Maturing Out of Narcotic Addiction*, 14 BULLETIN ON NARCOTICS 1-7 (January-March, 1962).

this second pattern of addiction is concentrated in the southern states.

A comparison of the addict patients at the two hospitals in 1962 with the 1937 hospital population described by Pescor reveals that marked changes have occurred during this twenty-five year period. The male patients are younger by some eight years. The use of heroin prior to admission has increased,

while the use of morphine has decreased. The proportion of the patients who come from northern metropolitan centers has increased notably; still, high rates of hospitalization have continued from many of the southern states. Thus, the major change has been the increasing preponderance of heroin addicts from the minority groups of our largest cities.