

Problems in Suicide Statistics for Whites and Blacks

M. ELLEN WARSHAUER, MA, AND MARY MONK, PHD

Abstract: The accuracy of suicide statistics was assessed by comparing published Health Department suicide rates for an area of New York City with Medical Examiner records. For the period 1968–1970, records from the Medical Examiner's Office were searched to determine all deaths classified as definite suicides. Another group of deaths was considered suicide by the Medical Examiner but never classified as such. These deaths we labeled "assigned suicides."

When definite suicides were compared with all deaths considered suicide by the Medical Examiner (definite and assigned suicides), black suicide was underestimated by 80 per cent and white suicide by 42 per cent. Underestimation was the same for males and females but varied by age group.

In 1968, when the seventh revision of the International Classification of Deaths (ICD) was used, Health Department suicide rates for blacks were almost identical to Medical Examiner rates, while white rates were underestimated by 25 per cent. In 1969–1970, when the eighth revision was used, Health Department statistics underestimated black suicides by 82 per cent and white suicides by 66 per cent.

Reasons for the underestimations were related to the methods used in committing suicide by the two ethnic groups and to the ways that suicide classification has changed from the seventh to eighth revision. Implications for research using official death certificate reports are discussed. (*Am. J. Public Health* 68: 383–388, 1978)

In 1973 there were 24,400 suicide deaths in the United States.¹ While it is generally acknowledge that this is an under-enumeration, perhaps by as much as one-third, there is no agreement on whether the under-count is the same for different age groups, ethnic groups, or regional populations. Comparisons between suicide rates in different parts of the country, between occupational groups, and between blacks and whites are often made and differences interpreted as though underreporting were uniform for all groups.

The difference between suicide rates for whites and blacks in the United States is not the same in all areas of the country. Vital statistics publications show that in the southern part of the United States suicide rates for whites were two and one-half to three times higher than those for blacks. In the north, on the other hand, the differential was less with white rates only one and one-half times higher than blacks.²⁻³ In fact, in 1960, in New York City black males were reported to have higher rates than white males.⁴ These variations in differentials have been attributed to economic, cultural, and psychological factors.²⁻⁴ However, the possibility must be considered that differential reporting or misclassification of suicidal deaths for blacks and whites accounts for at least part of the difference in their rates.

Recent work by Barraclough in Great Britain⁵⁻⁶ and by a study group from the World Health Organization⁷ demonstrated that comparisons between nations may be invalid because of the different methods used in various countries to determine whether a death is suicidal. In addition, attitudes towards suicide vary from one country to another.⁷ It is not known whether such factors play a part in regional differences in suicides reported in the United States.

In addition to problems in the determination of suicide there are problems in coding the causes of deaths for vital statistics reports. The International Classification of Deaths (ICD) is used for this coding. The seventh revision of the ICD provided for the categories: suicide, accident or homicide, as well as "natural" causes. In the eighth revision of the ICD an additional category was introduced, "circumstances undetermined," which was to be used "when it cannot be determined whether the injuries are accidental, suicidal or homicidal. They include self-inflicted injuries not specified either as accidental or as intentional."⁸ The eighth revision was first used in official vital statistics reports in New York City in 1969. Hereafter, the "circumstances undetermined" category will be referred to as "undetermined."

Nationally the effect of the change from the seventh to the eighth revision on suicide rates was reported to be a 5 per cent decrease.⁹ In New York City the change in suicide rates was much more dramatic.

In 1967–68 (seventh revision, ICD), the overall age-adjusted suicide rate for blacks in New York City was 10.9 per 100,000; the overall rate for whites was 13.4. In 1970, when the eighth revision was used, the black rate decreased by almost two-thirds to 4.3, while the white rate decreased by

Address reprint requests to M. Ellen Warshauer, Assistant Professor, Department of Community and Preventive Medicine, New York Medical College, Fifth Avenue at 106th Street, New York, NY 10029. Dr. Monk is Professor of Community and Preventive Medicine, NYMC. This paper, submitted to the *Journal* March 28, 1977, revised, and accepted for publication July 19, 1977, is based on a paper presented at the 1975 Annual Meeting of the American Public Health Association, Chicago.

less than one-half to 7.7. The rate for blacks in the undetermined category was nearly twice as high as the rate for whites in that category (21.7 and 11.7 respectively).

Some investigators believe that the true incidence of suicide can be obtained by combining the suicide and undetermined categories.^{5, 10, 11} If the suicide and undetermined categories are combined, the black rate rises to 26.0 per 100,000, one-third higher than the white rate of 19.4.

Because of the variations in the black and white suicide rates throughout the country and the changes in the official rates in New York City after the introduction of the undetermined category, we studied in detail the reporting and classification of suicides in an area of New York City from 1968 through 1970. Medical Examiner records were carefully searched for all suicides by blacks and whites in this area and then the results of this search were compared with the official vital statistics reports in 1968 (seventh revision) and 1969-70 (eighth revision). Through such a comparison we hoped to determine which reporting and classificatory procedures would provide the most valid assessment of black and white suicide rates, and to identify those factors which might explain any variations in the results.

Methods

Population

The area used in this study included four Health Districts in New York: East Harlem in Manhattan and three districts in the South Bronx. Only suicides by persons 18 years and over were considered; in 1970, there were 575,676 persons over 17 years of age living in the study area. Table 1 shows the study area population by age, sex, and ethnicity. Approximately two-thirds of the population over age 17 were white and one-third were black. The white population was about one-half Puerto Rican. For all analyses shown here the results for Puerto Ricans in the white group were the same as those for the total white group. The study area residents were of a lower socioeconomic status than residents in the city as a whole.

Sources of Data on Suicide Deaths

Health Department Reports of Vital Statistics: The New York Health Department issued the official vital statistics on suicides for the city in 1968, 1969, and 1970 in *Vital Statistics by Health Areas and Health Center Districts*.¹² These were the same data reported to the National Center

TABLE 1—Population of East Harlem and the South Bronx by Age, Sex, and Ethnicity, 1970

Age (Years)	White			Black		
	Male	Female	Total	Male	Female	Total
18-24	30,340	34,714	65,054	19,501	24,190	43,691
25-34	36,636	42,489	79,125	24,033	32,096	56,129
35-54	50,561	59,762	110,323	31,953	42,507	74,460
55+	44,992	63,306	108,298	15,424	23,172	38,596
Total	162,529	200,271	362,800	90,911	121,965	212,876

for Health Statistics. Suicide deaths for the health districts used in this study were listed by age group and race, but not by sex. The Health Department obtained reports of suicidal deaths from the Office of the Chief Medical Examiner and classified them according to the ICD codes. The 1968 report used the seventh revision of the ICD; suicides were deaths classified in E963 and E970-979. In 1969 and 1970, the eighth revision of the ICD was in use; suicides were deaths coded in E950-959. Included in the Health Department data for a given year were those deaths termed suicide by the Medical Examiner's Office and sent to the Health Department within three months of the year's end.

Medical Examiner Data: The Office of the Chief Medical Examiner determines the cause of death for all persons who die by criminal violence, accident, suicide, who die suddenly or unattended, or who die in prison or in any suspicious or unusual way. By law these deaths must be reported to the Medical Examiner's office where the circumstances and cause of death are determined and a report sent to the Health Department.

The Medical Examiner's data on suicide for this study consisted of the following groups:

1. Deaths signed out as suicide

- The cause of death and the circumstances of the death were quickly determined to be those of suicide; the report of death was signed out as suicide and sent to the Health Department within a short time after death.
- The cause of death itself was not evident; deaths from ingestion, for example, required chemical or toxicologic examinations. Until the tests were completed, the Health Department listed these deaths as resulting from "ill-defined conditions" (coded in categories 795 or 796 in the ICD). The Medical Examiner at a later time, after investigation, signed out as suicide those deaths in which suicide was established and sent an amended report to the Health Department.
- The cause of death was apparent—for example, multiple injuries resulting from a fall from a high building. However, the circumstances—whether suicide, accident or homicide—had to be investigated. Until the investigation was complete, the Health Department listed these deaths as known cause, but circumstances undetermined. After investigation of the circumstances, the Medical Examiner signed out the cause of death as suicide, if such was the case, and sent an amended report to the Health Department.

The deaths in the above category will be referred to as *definite suicides*.

2. Deaths assigned as suicide by the Medical Examiner

In addition to the deaths which are signed out as suicide, the Medical Examiner's Office regards two other categories of deaths as suicide for study purposes:

- Deaths in which the circumstances could not be legally substantiated as suicide, but which the Medical Examiner would regard medically as suicide. (Evidence required for a court of law is different from that required for a medical decision.)

- b) Deaths which investigation showed to be suicide but which were not signed out as such because no final determination was requested.

These two categories will be referred to as *assigned suicides*; for study purposes these assignments were made by a Deputy Medical Examiner after a careful review of all the material in the file.

3. *All Medical Examiner suicides*

The category of "all suicides" as used in this paper refers to the combination of the definite and assigned suicide groups.

4. *Deaths not included as suicide*

Cases in which the cause of death was acute and chronic intravenous narcotism or ethanolism were not included as suicide. Also excluded were all deaths from automobile accidents, those where the circumstances were completely unknown (e.g., bodies found in the river after long immersion), those involving mental defectives, and those in which another cause of death was established.

Results

Effect of the ICD on Suicide Rates

From Table 2 it is clear that Health Department suicide rates were greatly affected by the change in revision of the ICD. From the seventh to the eighth revision, rates for whites decreased by 45 per cent while those for blacks decreased by 80 per cent to the very low level of 2.7 per 100,000. The white/black ratio went from 1.3 in 1968 to 3.6 in 1969-70. This decrease in suicide rates was similar to the changes found for the city as a whole and discussed in the introduction.

Table 2 also shows that the Medical Examiner rates for all suicides increased somewhat from 1968 to 1969-70, but no dramatic shift occurred. Suicide rates for whites rose about 20 per cent from 1968 to 1969-70, while black rates showed a very modest increase of 8 per cent; the white/black

ratio remained fairly consistent at 1.8 and 2.0. Given the different time periods covered and the relatively small numbers, these slight variations in suicide rates might be expected. It is also evident from Table 2 that the Health Department suicide rates were lower than the Medical Examiner rates in almost all instances.

The major reason for the discrepancies between Health Department and Medical Examiner data and the variation in Health Department rates between the seventh and eighth revision was the manner in which the Health Department classified and reported undetermined deaths.

Since the seventh revision of the ICD contained no "undetermined death" category, all deaths for which the circumstances had not been determined by the Medical Examiner had to be coded by the Health Department as either suicide or accident. The Health Department classified as suicide all undetermined deaths due to falls or jumps from high places, ingestion of poison, or inhalation of gas. Deaths with undetermined circumstances resulting from drownings, knife or gunshot wounds, hanging, or other unspecified means (including subways) were classified as accidents.¹³ Under the eighth revision, both groups of deaths were not classified as either suicide or accident but instead were put in the new undetermined category and obviously suicide rates decreased; the decrease was greater for blacks than whites.

Since the introduction of the undetermined category in the eighth revision reduced the official Health Department suicide rates so much, the undetermined and suicide categories were combined in the eighth revision to see if this would provide a more accurate estimate of all suicides. The last column of Table 2 shows that for whites the combined categories yielded a Health Department estimate in 1969-70 almost identical to that of the Medical Examiner. For blacks, however, the combined categories resulted in an estimate that was two-thirds higher than the Medical Examiner's. Consideration will be given in the Discussion section as to whether the combination of the two categories should be used to obtain a better estimate of suicide.

TABLE 2—Number of Suicides and Age-Adjusted Suicide Rates per 100,000 per Year for Study Area Residents by Year, ICD Classification, and Ethnicity, According to Medical Examiner and Health Department Published Data

Year and Ethnicity	Medical Examiner Data		NYC Health Department			
	"All" Suicides		Suicide		Suicide and Undetermined	
	No.	Rate/Yr.	No.	Rate/Yr.	No.	Rate/Yr.
1968*						
Whites	88	24.1	66	18.0	NA	NA
Blacks	28	13.7	29	14.2	NA	NA
W/B Ratio	1.8		1.3			
1969-70**						
Whites	212	28.9	71	9.7	218	29.7
Blacks	60	14.7	11	2.7	98	23.9
W/B Ratio	2.0		3.6		1.2	

* Seventh Revision, ICD

** Eighth Revision, ICD

Effect of Medical Examiner Procedures on Suicide Rates

The category of "All Medical Examiner Suicides" is composed of both definite and assigned suicide deaths. Without a case-by-case review of all suspicious deaths in the Medical Examiner's Office, an investigator will be aware of definite suicides only. Therefore, it is necessary to compare definite and all suicides to determine how suicide rates vary when each category is utilized.

In the three-year period 1968-70, there were 388 suicides by study area residents 18 years of age and over of which two-thirds were definite. Slightly more than two-thirds of the white suicides were in the definite category, while only a little more than one-half of the black suicides were so classified. Since in each group the proportion of all suicides that were definite was the same for each period, data will be presented for the three years combined.

Table 3 shows the age-adjusted rates for definite sui-

TABLE 3—Number of Suicides and Age-Adjusted* Average Annual Suicide Rates per 100,000, per Year, by Ethnic Group, Sex, and Medical Examiner Classification.

Medical Examiner Classification	Males					Females				
	White		Black		W/B Ratio	White		Black		W/B Ratio
	No.	Rate	No.	Rate		No.	Rate	No.	Rate	
Definite Suicides	125	25.6	31	11.9	2.2	87	14.4	18	5.0	2.9
All Suicides**	181	37.1	57	21.7	1.7	119	19.6	31	8.8	2.2
Per Cent Increase***	44.9		82.4			36.1		76.0		

* Indirect adjustment by total New York City rates, 1967-68.

** The category of "all suicides" refers to the combination of the definite and assigned suicide groups.

*** Per cent increase from definite to all suicides.

cides alone and for all suicides. Rates for both white men and women increased about 40 per cent when all suicides were considered; rates for blacks increased by about 80 per cent. As a result, for definite suicides only, suicide rates for white men were two times higher than for black men and rates for white women were three times higher than for black women. For all suicides, white women's rates were twice as high as black women's but white men's rates were only two-thirds higher than black men's.

Table 4 shows that the increase in suicide rates among white men occurred evenly in all age groups. Although the increase among age groups for white women was somewhat more variable, peaking among 35 to 54 year-olds, the variation was still not large. Among blacks, on the other hand, the increase in suicide rates was quite variable, but these rates were based on very small numbers. The addition of assigned suicides for the youngest black men resulted in only a 20 per cent increase in rates, while the rates of older black men doubled. Among black women, the increase in rates decreased with age from 100 per cent in the youngest group to 67 per cent in the oldest group.

The factor most responsible for the greater under-enumeration of black suicide rates seemed to be the different methods that blacks and whites used for committing suicide. Table 5 shows that the categorization of a suicide as definite

varied considerably by the method used. All of the deaths by shooting and hanging, and more than three-fourths of all ingestion deaths were definite, as compared with only 57 per cent of "other" methods and 46 per cent of deaths by jumping. The "other" methods category is composed of stabbing, jumps in front of subways and buses, carbon monoxide poisonings from car exhausts, and drownings.

From Table 6 it can be seen that over three-fourths of all black suicides resulted from the use of methods that were the least likely to be definite, i.e., jumping and "other" methods. Blacks used these methods almost twice as often as whites. This was true for definite suicides as well as for all suicides. Whites, on the other hand, used methods that were the most likely to be classified as definite suicides, i.e., guns, hanging, or ingestion, two to three times more often than blacks.

Discussion

In New York City there was obviously great variation in suicide rates and in the white/black differential, depending upon which revision of the ICD was used and upon which source of data was used. While a case by case review of Medical Examiner records may give the most valid estimate

TABLE 4—Number of Suicides and Age-Specific Suicide Rates per Year by Ethnic Group, Sex, and Medical Examiner Classification.

Age (Yrs)	MALES										
	White					Black					
	Definite		All		% Increase	Definite		All		% Increase	
No.	Rate	No.	Rate	No.		Rate	No.	Rate			
18-24	28	30.8	40	43.9	42.5	10	17.1	12	20.5	19.9	
25-34	32	29.1	47	42.8	47.1	7	9.7	15	20.8	114.4	
35-54	30	19.8	43	28.3	42.9	11	11.5	24	25.0	117.4	
55+	35	25.9	51	37.8	45.9	3	6.5	6	13.0	100.0	
All ages	125	25.6	181	37.1	44.9	31	11.4	57	20.9	83.3	
	FEMALES										
Age (Yrs)											
18-24	20	19.2	26	25.0	30.2	2	2.8	4	5.5	96.4	
25-34	17	13.3	23	18.0	35.3	7	7.3	12	12.5	71.2	
35-54	20	11.2	31	17.3	54.5	6	4.7	10	7.8	66.0	
55+	30	15.8	39	20.5	29.7	3	4.3	5	7.2	67.4	
All ages	87	14.5	119	19.8	36.6	18	4.9	31	8.5	73.5	

TABLE 5—Number and Percentage of Suicides According to Medical Examiner Classification for Methods Used in Suicide.

Medical Examiner Classification	Method Used									
	Ingestion		Jump		Gun/Hanging		Other		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Definite Suicide	84	78.5	78	46.1	82	100.0	17	56.7	261	67.2
Assigned Suicide	23	21.5	91	53.8	—	—	13	43.3	127	32.7
TOTAL	107	100.0	169	100.0	82	100.0	30	100.0	388	100.0

of suicide from official sources, it would be desirable to make accurate estimates from other more easily-obtained sources.

It has been suggested that adding the suicide and undetermined categories of the eighth revision would provide a good estimate of all suicides. Analysis of New York City data (Table 2) showed that the number thus obtained might be accurate for whites but probably not for blacks. On the other hand, the best estimate for blacks appeared to be the coding used in the seventh revision.

The correspondence between all black suicides and official Health Department rates from the seventh revision probably occurred because with that revision the Health Department had categorized as suicide some deaths listed by the Medical Examiner as undetermined. The necessity for this practice arose because of the long period of time needed for police and laboratory investigations of deaths reported to the Medical Examiner. In many instances the final decision as to whether or not a death was suicide was not made until after the Health Department had to close its annual books and make its report to the National Center for Health Statistics. The result was that before 1969 a number of undetermined deaths resulting from jumps, poisons, and gas were coded as suicide whether or not the Medical Examiner later decided they were suicide. Therefore, the number of suicides for blacks from official Health Department data and for all Medical Examiner suicides might be the same, but different individuals would be identified from the two sources.

For the eighth revision the Health Department estimate for white suicides was the same as for all suicides from the Medical Examiner's Office when the suicide and undetermined categories were combined. The undetermined category contains, however, some deaths later determined to be suicide by the Medical Examiner and some not so classified. In addition, it excludes the suicides from drug ingestion, poi-

son, or gas that were originally coded as "ill-defined conditions" and so reported in official data because the Medical Examiner's final report of them as suicide was delayed by laboratory investigation. The numbers for the combined categories may be correct, but the individuals identified as suicides would be different from those identified by the Medical Examiner's Office.

Thus it seems unlikely that combining or reclassifying causes of death can yield very accurate data about the characteristics of people committing suicide and the numbers would be accurate only as long as methods used for committing suicide and for determining the fact of suicide do not change.

These comparisons and the changing suicide rates should not be regarded as implying criticism of the Medical Examiner's Office or of the Health Department, but rather as illustrating the problems arising in the study of suicide from official data. The chief function of the Health Department and the Medical Examiner is not research. The cooperation of both offices in our research efforts indicates their awareness of the problems involved in assigning suicide as a cause of death and in coding such deaths.

Since the Health Department and the Medical Examiner's Office applied the same procedures to all deaths in New York City, we believe that the results obtained in this study have validity for the city as a whole even though the number of suicides studied was relatively small. Some of the changes in rates found here may, however, reflect the low socioeconomic status of the area used in this study.

It has long been known that suicides are generally underreported. When hanging or shooting is the cause of death, some objective criteria, such as trajectory of the bullet or position of weapon or rope, can be applied to determine the circumstances. To a lesser degree, levels of a drug in the blood can also be used to indicate accidental or suicidal circumstances. Fewer objective criteria can be applied in determining the circumstances of unobserved jumps or falls. With the absence of a note or an eyewitness report, the final determination of suicide as a cause of death may rest on judgments regarding intent. These judgments are influenced by the completeness of the past history concerning the psychological state of the decedent, as well as the attitudes of the medical examiners or coroners making the final decision.

Informants often try to cover up suicides by distorting or giving incomplete reports. In addition, the presence of any history may be influenced by other factors such as the

TABLE 6—Number and Percentage of All Suicides Using Different Methods for Suicide by Ethnic Group

Method Used	White		Black		Total	
	No.	%	No.	%	No.	%
Ingestion	97	32.3	10	11.4	107	27.5
Jump	113	37.7	56	63.6	169	43.6
Gun/Hanging	73	24.3	9	10.2	82	21.1
Other	17	5.7	13	14.8	30	7.7
TOTAL	300	100.0	88	100.0	388	99.9

need of certification for insurance purposes, willingness to provide information to officials of the Medical Examiner's Office or police department, and whether or not the decedent lived alone. In this study, the records of blacks were less likely than those of white to contain complete histories and this lack coupled with the use of jumping as a means of death may well have led to fewer definite suicides for blacks.

It is very likely that other localities also have problems in assigning and coding suicidal deaths, even though jumps from heights may not be a factor affecting rates.^{14, 15} In the country as a whole, the comparability between the seventh and eighth revisions was better than in New York City; only a 5 per cent decrease in suicide deaths was reported nationally. Officials in other areas of the United States may use different or better reporting and classificatory systems than in New York City, particularly in the placement of undetermined deaths under the seventh revision. In addition, people who commit suicide in other areas may use methods more consistently coded as suicide. However, the comparability could have resulted from a consistent under-enumeration of suspicious deaths as suicide both before and after 1968 in the country as a whole.

We believe it is unwise to compare official suicide rates for different groups or geographic areas unless a careful study is made of the way in which deaths are assigned and classified as suicide. Other studies are needed to determine how and to what extent the investigation, reporting, and classification of suicide deaths in other areas of the country, before and after 1968, affect the differences in suicide rates between whites and blacks or between occupational or age groups. Until this is done, official suicide statistics from New York City and other areas should be accepted with extreme caution.

REFERENCES

1. National Center for Health Statistics: Monthly Vital Statistics Report, Annual Summary for the United States, 1973. DHEW

Publication No. (HRA) 74-1120, Vol. 23, No. 13. U.S. Govt. Printing Office, Washington, DC, June, 1974.

2. MacMahon, B., Johnson, S., Pugh, T. Relation of suicide rates to social conditions. *Public Health Rep.* 78:285-293, 1963.

3. Kramer, M., Pollock, E., Redick, R., et al. *Mental Disorders/Suicide*. Cambridge, MA: Harvard Univ. Press, 1972.

4. Hendin, H. Black suicide. *Arch. Gen. Psychiat.* 21:407-422, 1969.

5. Barraclough, B. Differences between national suicide rates. *Brit. J. Psychiat.* 122:95-96, 1973.

6. Barraclough, B. Classifying poisoning deaths by motivation: Anglo-Scottish differences. *Acta Psychiat. Scand.* 50:625-635, 1974.

7. Brooke, E., ed. *Suicide and Attempted Suicide*. Public Health Papers 58. Geneva: World Health Organization, 1974.

8. World Health Organization: *International Classification of Diseases*. Geneva, 1967.

9. Klebba, A. J., Maurer, J. D., Glass, E. J. Mortality Trends for Leading Causes of Death: United States, 1950-69. DHEW Publication No. (HRA) 74-1853, Ser. 20, No. 16. U.S. Govt. Printing Office, Washington, DC, March, 1974.

10. Sainsbury, P. Suicide: Opinions and Facts. *Proc. Royal Soc. Med.* 66: 579-587, 1973.

11. Barraclough, B. Are the Scottish and English suicide rates really different? *Brit. J. Psychiat.* 120:267-273, 1972.

12. New York City Department of Health, Bureau of Health Statistics and Analysis: *Vital Statistics by Health Areas and Health Center Districts, 1968-1970*.

13. New York City Department of Health: *Summary of Vital Statistics, 1968*.

14. McCarthy, P. D., Walsh, D. Suicide in Dublin: I. The under-reporting of suicide and the consequences for national statistics. *Brit. J. Psychiat.* 126: 301-308, 1975.

15. Walsh, B., Walsh, D., Whelan, B. Suicide in Dublin: II. The influence of some social and medical factors on coroners' verdicts. *Brit. J. Psychiat.* 126: 309-312, 1975.

ACKNOWLEDGMENTS

This investigation was supported in part by Public Health Service Research Grant No. R01 MH 21985-01 from the National Institute of Mental Health and by General Research Support Grant RR-05398 from the General Research Support Branch, Division of Research Resources, National Institutes of Health.

Wayne State To Present Advanced Immunology Course

An "Advanced Institute in Methods of Immunological Diagnosis," conducted under the auspices of the World Health Organization Collaborating Laboratory for the Serology of Autoimmune Diseases at Wayne State University School of Medicine, will be held June 18-24, 1978. The course is to be held on the wooded campus of Cranbrook Educational Community in Bloomfield Hills, Michigan.

The course will present an up-to-date survey of current immunological methods applicable to the diagnosis of human immunological diseases.

Category 1 credit for postgraduate medical education has been approved. Deadline for receiving applications is April 15. Further information can be obtained by writing to: Noel R. Rose, MD, PhD, Department of Immunology and Microbiology, Wayne State University School of Medicine, 540 East Canfield, Detroit, MI 48201.