Testing Death Registration Completeness in a Group of Premature Infants

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THE NORTH CAROLINA State Board of Health for some time has been concerned with the under-registration of deaths, particularly of deaths among the very young. This study, conducted in 1959 with the cooperation of the State board of health, was designed with the following objectives in mind:

- To develop a method of determining the completeness of registration of deaths of infants weighing 1,500 gm. or less at birth.
- Insofar as possible, to use the method developed to measure completeness of registration of deaths for this group of infants.
- To determine, for a selected group of premature infants, the relationship between under-registration of deaths and such factors as birth weight, age at death, race, and marital status of the mother.

At the time of the 1950 census of population, the U.S. Bureau of the Census, the National Office of Vital Statistics, and the North Carolina State Board of Health conducted a test of birth registration completeness (*1*). This study revealed that birth certificates were on file for 97.6 percent of white infants and for 93.4 percent of nonwhite infants born in North Carolina during the first quarter of 1950.

Although a comprehensive study of the completeness of death registration has never been made in North Carolina, for some time the belief has been that the under-registration of infant deaths is equal to the under-registration of births and greater than the under-registration of deaths of older persons. Furthermore, the mortality rates for premature infants indicate more under-registration of deaths in this mortality-prone group than in other groups of infants. Therefore, this study was limited to infants weighing 1,500 gm. or less at birth. If the method developed proves successful in testing registration completeness in this group, it is reasonable to assume that it could be used successfully among other weight groups.

This retrospective study was anchored to vital records, with the universe defined by registered vital events. An advantage of this method of collecting data is the convenience of using the established vital statistics system, which provides an operating organization for conducting the study. During the planning and conducting of the study every effort was made to minimize the possibility of jeopardizing this operating organization.

North Carolina is fortunate in having a full-time health department in each of its 100 counties. In 78 counties the local health department serves as registrar of vital statistics. In the other 22 counties, town or township appointees serve in this capacity. In this study, the county health departments were the primary source of data. In order to insure the full cooperation of the local health departments, de-

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This investigation was made and the report prepared as part of the course "Field Training in Statistics," University of North Carolina School of Public Health. The fieldwork was performed through the North Carolina State Board of Health in the summer of 1959.

tailed plans were discussed with the State health director, the chief of the public health statistics section, and the director of the division of local health. All approved the study design, and public health statistics section personnel assisted the authors in carrying out the study. Other than the services of personnel, the only cost to the State board of health was for postage and supplies.

Collection of Data

A list of infants weighing 1,500 gm. or less at birth, born alive in 1958 to residents of North Carolina, was obtained from the tabulating unit of the State board of health. There were 1,484 such infants registered. Of these, 859, almost 60 percent, were white. Among the white infants, 33 (3.8 percent) were born out of wedlock; of the 625 nonwhite infants, 173 (27.7 percent) were born out of wedlock. This compares with illegitimacy rates of 2.1 and 23.0 percent, respectively, for all white and nonwhite births in the State in 1958. More than 50 percent of the infants of both races weighed 1,001–1,500 gm. Only a small percentage weighed 500 gm. or less.

The distribution of live-born premature infants weighing 1,500 gm. or less is shown in table 1, by race and percentage born out of wedlock.

A list of infant deaths registered for this group of premature infants was prepared by the tabulating unit from punchcards designed to consolidate data from the birth and death certificates of each infant who died under 1 year of age. When certificates for these infant deaths were matched against certificates for live births, it was found that 1,005 of the 1,484 infants born alive had died and death certificates had been filed for them. The distribution of matched infant deaths and infant death rates, by birth weight and race, is shown in table 2.

For all weight groups, the death rate is higher for white than for nonwhite infants. This could be attributed to a greater force of

Table 1. Resident live births of infants weighing 1,500 gm. or less, by birth weight, race, and percent born out of wedlock, North Carolina, 1958

Birth weight (gm.)	Live births						Percent born out of wedlock		
	Total		White		Nonwhite		Total	White	Nonwhite
	Number	Percent	Number	Percent	Number	Percent			
Total	1,484	100.0	859	100.0	625	100.0	13.9	3.8	27.7
500 or less	102	6.9	66	7.7	36	5.8	9.8	4.5	19.4
501–1,000	523	35.2	308	35.8	215	34.4	12.8	2.6	27.4
1,001–1,500	859	57.9	485	56.5	374	59.8	15.0	4.5	28.6

Table 2. Resident live births and matched infant deaths and deaths per 1,000 live births, infants weighing 1,500 gm. or less, by birth weight and race, North Carolina, 1958

Birth weight (gm.)	Live births			Matched infant deaths			Deaths per 1,000 live births		
	Total	White	Nonwhite	Total	White	Nonwhite	Total	White	Nonwhite
Total	1,484	859	625	1,005	617	388	677.2	718.3	620.8
500 or less	102	66	36	87	62	25	852.9	939.4	694.4
501–1,000	523	308	215	462	280	182	883.4	909.1	846.5
1,001–1,500	859	485	374	456	275	181	530.8	567.0	484.0

mortality or to a higher degree of death registration completeness for whites, or both. Among white infants, the death rate declines as birth weight increases. Among nonwhites, however, the death rate is higher in the 501–1,000 gm. weight group than in the group weighing 500 gm. or less. This seems highly improbable and suggests that under-registration of deaths may be responsible for some of the race differences in death rates shown in table 2, particularly in the group weighing 500 gm. or less.

After the matching process had been completed, there remained 479 unmatched live births of infants weighing 1,500 gm. or less. These unmatched births are shown in table 3, by birth weight, race, and percentage occurring out of wedlock. Since these births were not matched with a death, the infants were assumed to be alive at the time of this investigation.

The unmatched births were approximately equally divided according to race. There are, however, some differences in their distribution by birth weight, according to race. The group weighing 500 gm. or less contains almost three times as many nonwhite as white infants. A preponderance of all births occurring out of wedlock were among nonwhites.

The unmatched births were tabulated according to county of residence of the mother, and a form on which to list the resident births for each county was prepared. Certain identifying information on each child, such as name, sex, race, birth date, legitimacy status, parents' names and address, and name of attendant at birth, was shown. Since all this information was not available from the lists prepared by the tabulating unit, it was necessary to examine the birth certificates for all 479 unmatched births.

A list of each county's unmatched resident live births of infants weighing 1,500 gm. or less was sent to the director of that county health department, accompanied by a form letter requesting him to ascertain the current status of each infant on his list. If the infant was dead, date of death, county of death, and name of the undertaker were requested. An effort was made to make the letter brief yet clearly understandable as to the information requested. The letter was signed by the State health director.

Eleven counties had no unmatched births for the infants in the study. Only nine infants weighing 1,500 gm. or less had been born in 1958 to residents of these counties. All nine infants had died, and a death certificate was located for each one. In the remaining 89 counties, the number of unmatched resident birth certificates ranged from 1 each in 14 counties to 33 in Cumberland County.

It was considered desirable to develop some method of checking the accuracy of the reports received from the county health departments. The first thought was to query the mother of each infant having an unmatched birth certificate. However, it was finally decided to wait until the responses of the county health departments were received and then to query the mothers of the infants whom the departments reported as alive.

Special consideration was given to planning this phase of the study. In the first place, the

Table 3. Unmatched resident live births of infants weighing 1,500 gm. or less, by birth weight, race, and percent born out of wedlock, North Carolina, 1958

Birth weight (gm.)	Unmatched births [1]						Percent born out of wedlock		
	Total		White		Nonwhite		Total	White	Nonwhite
	Number	Percent	Number	Percent	Number	Percent			
Total	479	100. 0	242	100. 0	237	100. 0	15. 4	5. 0	26. 2
500 or less	15	3. 1	4	1. 7	11	4. 6	13. 3	0	18. 2
501–1,000	61	12. 8	28	11. 6	33	13. 9	14. 8	3. 6	24. 2
1,001–1,500	403	84. 1	210	86. 7	193	81. 5	15. 6	5. 2	26. 9

[1] Births for which no matching death certificate could be found.

counties had already been asked for this information, and should they learn that the mothers of these infants were queried for the same information there could be repercussions which might damage the relationship between the State and county health departments. Second, 74 (15 percent) of the 479 unmatched birth certificates were for infants born out of wedlock, and it is the policy of the State board of health to give mothers of these infants as little publicity as possible.

A brief questionnaire, designed to obtain from the mothers essentially the same information as that requested from the county health departments, was prepared. Most of the information requested could be provided by checkmarks. Two leading questions were used to indicate a sincere interest in the premature infant. However, the primary interest of the study was in whether the infant was living or dead.

The data from this questionnaire were intended to serve two purposes: (*a*) to measure the reliability of the information supplied by the county health departments and (*b*) to determine the feasibility of querying the mothers as an alternate means of obtaining information retrospectively concerning the current status of a selected group of premature infants.

Findings

The response to the queries was gratifying. Reports were received from one-third of the counties during the first week following the date of mailing the questionnaire, and within 10 days reports had been received from 74 percent of the counties receiving the questionnaire. The overall response was 100 percent. Reports had been received from all but six counties within 3 weeks. Followup letters were sent to these counties, and reports from four were received shortly thereafter. It was necessary to call two counties by phone.

Reports were received on all 479 infants, on 300 (63 percent) during the first 10 days after mailing the questionnaires. The counties with relatively few study infants were the most prompt in reporting.

A tabulation of the reports from the counties indicated that 81 infants were dead. These reports were rechecked against the death files in the State board of health, and 20 death certificates not identified in the initial matching were found. The remaining 61 deaths were considered to be unregistered.

When the mothers were queried, it was found that eight of the infants reported as alive by the counties were actually dead. Thus, the total number of unregistered deaths for this group of infants was found to be 69, or 14.4 percent of the unmatched births.

Reliability of County Data

As previously stated, to check the accuracy of the data obtained from the counties, a questionnaire designed to elicit essentially the same information as the questionnaire sent to the county health departments was mailed to the mothers of 332 infants whom the county health departments had not reported as dead. Two followup queries were sent to mothers who did not respond to the original questionnaire. A response rate of approximately 80 percent was finally obtained. Questionnaires were not sent to mothers of those infants whom the counties had reported as dead, since in most cases the county health department had contacted these mothers when securing death certificates for the infants. The mothers of illegitimate infants also were not queried.

As a result of querying the mothers, eight additional unregistered deaths were found. In view of the more accurate information thus obtained and the mothers' fairly high response rate, querying the mothers might be more productive than sending questionnaires to county health departments. Certainly, it would be cheaper and would lend itself to a larger population of infants.

Death Registration Completeness

In order to measure death registration completeness, it is necessary to know the actual number of deaths and the number of registered deaths in a community. In North Carolina, the number of registered deaths was known. An estimate of the actual number of deaths, hereafter referred to as actual deaths, of infants weighing 1,500 gm. or less at birth was obtained by combining the registered and unregistered deaths found in the study. Death registration

completeness may be defined as the ratio of registered to actual deaths. The death registration completeness for this selected group of premature infants is shown in table 4, by birth weight and race.

The completeness of death registration in this group was 93.7 percent, ranging from 73.5 percent for nonwhite infants weighing 500 gm. or less to 96.6 percent for white infants weighing 501–1,000 gm. The completeness of death registration for nonwhite premature infants weighing 1,500 gm. or less (89.9 percent) was less than the completeness of birth registration (93.4 percent) for all nonwhite infants in North Carolina in 1950 (*1*). The completeness of death registration for white infants in the study group (96.3 percent) was also less than the completeness of birth registration (97.6 percent) for all white infants in 1950 (*1*). For all weights, the registration of deaths was more complete for white than for nonwhite infants. The percentages shown in table 4 represent the upper limit of registration completeness. They cannot be increased but should more unregistered deaths be found among the study infants, the registration completeness percentages would be decreased.

Effect of Study Findings on Death Rates

Another method of examining the underregistration factor in death registration is by comparing observed and actual death rates. "Observed rates" are defined as registered deaths per 1,000 live births; "actual rates," as the total of registered and unregistered deaths per 1,000 live births. The observed and actual death rates for the infants in the study are shown in table 5, by race and birth weight.

As a result of this study, the death rate for all premature infants weighing 1,500 gm. or less at birth was increased from 690.7 to 737.2 deaths per 1,000 live births. The greatest in-

Table 4. Death registration completeness for a selected group of premature infants, by birth weight and race, North Carolina, 1958

Birth weight (gm.)	Deaths									Percent completeness of registration		
	Actual			Unregistered			Registered [1]					
	Total	White	Nonwhite	Total	White	Nonwhite	Total	White	Nonwhite	Total	White	Nonwhite
Total	1,094	649	445	69	24	45	1,025	625	400	93.7	96.3	89.9
500 or less	100	66	34	13	4	9	87	62	25	87.0	93.9	73.5
501–1,000	498	296	202	26	10	16	472	286	186	94.8	96.6	92.1
1,001–1,500	496	287	209	30	10	20	466	277	189	94.0	96.5	90.4

[1] Includes 1,005 matched infant deaths and 20 mismatched deaths.

Table 5. Observed and actual death rates for a selected group of premature infants born alive, by race and birth weight, North Carolina, 1958

Birth weight (gm.)	Observed death rates [1]			Actual death rates [2]			Increase due to findings		
	Total	White	Nonwhite	Total	White	Nonwhite	Total	White	Nonwhite
Total	690.7	727.6	640.0	737.2	755.5	712.0	46.5	27.9	72.0
500 or less	852.9	939.4	694.4	980.4	1,000.0	944.4	127.5	60.6	250.0
501–1,000	902.5	928.6	865.1	952.2	961.0	939.5	49.7	32.4	74.4
1,001–1,500	542.5	571.1	505.3	577.4	591.8	558.8	34.9	20.7	53.5

[1] Registered deaths per 1,000 live births.
[2] Registered and unregistered deaths per 1,000 live births.

creases in death rates as a result of the inclusion of unregistered deaths in the rate computations were among the nonwhite infants in all birth weight groups. Both the observed and actual death rates are highest among white infants in all weight groups. The current status of 30 infants was not indicated since the counties were unable to locate them. Therefore, the actual rates shown in table 5 are probably understated since it is very likely that some of these 30 infants died shortly after birth.

Factors in Under-Registration

The findings of this study indicate a close relationship between certain factors and underregistration of deaths among a selected group of premature infants. A comparison of these factors in registered and unregistered deaths follows. The 69 unregistered deaths of infants weighing 1,500 gm. or less at birth are shown in table 6 by birth weight and age at death, race, place of delivery, and attendant at birth.

Birth Weight

Fifteen infants in the study group weighed 500 gm. or less at birth (table 3). None of the infants in this weight group were reported as living. Reports from the counties revealed the deaths of 12 which were found to be unregistered; 1 was found to have been a fetal death rather than a live birth; and 2 could not be located. Of the latter two, one mother reported the death of her infant. Thus, the deaths of 13 (86.7 percent) were found to be unregistered.

The 501–1,000 gm. weight group contained 61 study infants. County reports revealed 23 unregistered deaths, 11 deaths which had previously been registered but were not identifiable from the matched infant death cards, 1 fetal death previously reported as a live birth, and 1 for whom the birth weight had been incorrectly stated on the certificate. Four could not be located by the counties, and 21 of the infants were reported as living. Replies to the queries submitted to the mothers revealed three additional unregistered deaths. The total number of unregistered deaths found then for this weight group was 26 (42.6 percent).

In the 1,001–1,500 gm. weight group, 403 infants were listed on the questionnaires mailed to the counties. The deaths of 26 were found to be unregistered, deaths of 9 were registered but had not originally been identified, 2 were reported as fetal deaths, 24 could not be located by the counties, and 342 (84.9 percent) were reported to be living. The mothers reported 4 of these as dead, bringing to 30 (7.4 percent) the total number of unregistered deaths for this weight group.

Age at Death

Fifty-seven (82.6 percent) of the infants whose deaths were unregistered died in the

Table 6. Distribution of 69 premature infants whose deaths were unregistered, by birth weight, age at death, race, place of delivery, and attendant at birth, North Carolina, 1958

Birth weight and age at death	Race		Place of delivery		Attendant at birth	
	White	Nonwhite	Hospital	Home	Physician	Midwife
Total	24	45	55	14	60	9
500 gm. or less	4	9	11	2	12	1
Under 1 day	2	6	7	1	8	---
1–27 days	1	1	1	1	1	1
28 days and over (and unknown)	1	2	3	---	3	---
501–1,000 gm	10	16	18	8	22	4
Under 1 day	8	13	14	7	18	3
1–27 days	2	1	2	1	2	1
28 days and over (and unknown)	---	2	2	---	2	---
1,001–1,500 gm	10	20	26	4	26	4
Under 1 day	7	9	15	1	15	1
1–27 days	3	4	5	2	5	2
28 days and over (and unknown)	---	7	6	1	6	1

neonatal period (under 28 days), four deaths occurred after the neonatal period, and the age at death of eight of the infants was unknown. Of the 57 neonatal deaths, 45 (78.9 percent) occurred under 1 day of age. Differences in age at death between registered and unregistered deaths were found to be highly significant at the 1 percent level.

Race

Forty-five (65.2 percent) of the 69 infants whose deaths were unregistered were nonwhite. Of the infants whose deaths were registered, 39.0 percent were nonwhite. The proportion of unregistered deaths among nonwhite infants was significantly higher than expected. A chi-square test indicated significance at the 0.1 percent level.

Place of Delivery and Attendant

Of the infants whose deaths were registered, 8.3 percent were delivered in the home and 3.3 percent were attended by a midwife. For the unregistered deaths, 20.3 percent of the infants were delivered in the home and 13.0 percent were attended by a midwife. Differences in these proportions were found to be highly significant at the 1.0 percent level. The eight unregistered deaths reported by the mothers were all infants delivered in a hospital by a physician.

Undertaker

Burial or disposal of the infant's body was handled by a funeral director in 44 of the unregistered deaths, by the family in 16, and by the hospital in 2. In seven cases the undertaker was unknown. The fact that 64 percent of the infants whose deaths were unregistered were buried by a funeral director and 23 percent were buried by the family is important in planning action to improve the registration of deaths of premature infants. Some funeral directors are evidently lax in registering deaths of premature infants and need closer supervision. Also, possibly more registration promotional efforts should be directed toward the family.

Births Out of Wedlock

Differences in proportions of registered and unregistered deaths of infants born out of wedlock were suggestive but not significant at the 5 percent level. Among the unregistered deaths, 18.9 percent of the infants were born to unmarried mothers; among the registered deaths, 10.9 percent.

Table 7 shows the distribution of unregistered deaths by birth weight of infant, undertaker, and number of infants born out of wedlock.

Geographic Distribution

The 69 unregistered deaths were distributed among 37 counties in all sections of the State. The highest number for any county was 13. One county reported six deaths, one reported four, three counties reported three each, six reported two each, and 25 counties reported one each.

Other Findings

In addition to the 69 unregistered deaths, the counties reported 20 other infant deaths. A further search of the files in the State board of health revealed a death certificate for each of these deaths. These certificates had not been identified with the birth certificates in the initial matching process for various reasons, usually differences in the names. For four infants, both a live birth and a fetal death certificate were on file. These irregularities were called to the attention of the public health statistics section and the funeral directors and corrections were made.

Summary and Conclusions

A study of the registration of deaths of a selected group of premature infants was con-

Table 7. Distribution of 69 unregistered premature infant deaths, by birth weight of infant, undertaker, and number of infants born out of wedlock, North Carolina, 1958

Birth weight (gm.)	Undertaker			Number born out of wedlock
	Funeral director	Family	Other and unknown	
Total	44	16	9	13
500 or less	5	4	4	2
501–1,000	13	10	3	5
1,001–1,500	26	2	2	6

ducted in 1959 in North Carolina in an attempt to develop a method of determining the completeness of death registration for this group of premature infants, weighing 1,500 gm. or less at birth; to measure the completeness of death registration for these infants by using the method developed; and to determine the relationship of factors such as race, birth weight, age at death, and illegitimacy to under-registration of deaths in this group.

Two methods were developed: (*a*) querying county health departments 6 to 18 months after birth in regard to the current status of each premature infant who had not been reported dead and (*b*) querying the mothers of these infants.

The results indicate that the first method is practicable and relatively inexpensive. A high degree of response was obtained from the counties, reaching 100 percent after followup.

Querying the mothers of infants did not yield the same high response. On the other hand, this approach revealed eight deaths that the counties had overlooked. However, it remains to be determined just how the mothers of dead infants would respond to requests for information, since the mothers of the infants reported as dead by the counties were not queried in this study. Querying the mothers would lend itself to a larger population and should be much cheaper than working through the local health departments.

By using the data from this study, death registration in this group of premature infants was found to be 93.7 percent complete. The completeness of death registration for both white and nonwhite infants in this selected weight group was lower than the completeness of birth registration in 1950 for infants in all weight groups.

A number of factors were found to be closely related to under-registration of deaths in this selected group of premature infants. Among the most important were birth weight, age at death, race, attendant at birth, and place of delivery.

Other findings of the study point up the need for improvement in the State health department's matching of birth and death certificates of infants as well as the need for education of funeral directors and parents in their responsibility for registering infant deaths.

Although this study was made on the death registration of premature infants who weighed 1,500 gm. or less at birth, one should be able to use this method to study registration of deaths for any group of infants.

REFERENCE

(*1*) U.S. National Office of Vital Statistics: Vital statistics of the United States, 1950. Washington, D.C., U.S. Government Printing Office, 1954, vol. 1, pp. 108–117.

CDC Training Bulletin

Training courses to be offered by the Public Health Service's Communicable Disease Center during fiscal year 1962 are described in the "CDC Training Bulletin, July 1, 1961, to June 30, 1962." Titles, numbers, and dates for the courses were listed in the July issue of *Public Health Reports*, p. 640.

The new bulletin also describes other CDC training services and provides general information of interest to the prospective student. Audiovisual aids available from the CDC Film Library are listed for each category of courses.

Copies of the bulletin are available from the Chief, Communicable Disease Center, Atlanta 22, Ga., or the appropriate regional office of the Department of Health, Education, and Welfare.

Hospital Code for Press Relations

The following code for guiding press relations, prepared for the Fairfax Hospital, Fairfax, Va., and adopted with minor modifications, was published in the News Letter of the National Association of Science Writers, as submitted by Nate Haseltine, science editor for the Washington Post.

We will cooperate with the press to the fullest extent, without, of course, sacrificing our right and duty to our physicians and their patients to protect the doctor-patient relationship. We will not, however, use this relationship as an improper excuse to dismiss legitimate press inquiries. We will do whatever we can to expedite replies and to encourage cooperation by the physician, the patient and his family, and other authorities in this respect.

Wherever feasible, information about the hospital and its activities, including patient care, will be expeditiously routed through the hospital's press relations office. However, when this places an undue hardship on inquiring newsmen (who face constant deadlines), the persons next in press relations authority (administrator, assistant administrator, nursing supervisor on duty, or person in charge of the emergency room) shall be authorized to expedite permissible information to the press.

The most common complaint of the press against hospitals revolves around the emergency room, which works around the clock with changing personnel. Many of those in charge of emergency rooms do not know what information they should or should not give to newsmen.

For police cases the following items of public information may and should be given with or without the patient's consent:

1. Name: (*a*) Married or single, (*b*) color, (*c*) sex, (*d*) age, (*e*) occupation, (*f*) firm or company employing patient, and (*g*) address.

2. Nature of Accident: (*a*) injured by automobile, explosion, shooting, etc., (*b*) fractures may be ascribed to the member involved, that is arm, leg, and newsmen may be told if it is simple or compound.

3. Injuries of the Head: Such injuries are best described as head injuries, without guess elaborations such as possible skull fracture. No opinion should be given as to severity until that severity is definitely determined, and prognoses are not made in the emergency room.

4. Internal Injuries: Internal injury or suspect internal injury may be stated, and a statement that the condition is very serious may be made. More specific location of the injuries should not be made.

5. Unconsciousness: Newsmen may be told if the patient was unconscious when brought to the hospital, and such statements as "the patient was still unconscious (number of) hours after he was brought here." The cause of unconsciousness, unless certain, may be withheld.

6. Poisoning Cases: Reports of such cases should be made expeditiously to the police, and inquiring reporters referred to the police for information.

7. Shooting: Newsmen may be told that a penetrating wound of a specific body site is involved. Statements on the circumstances of the injury or injuries are the province of the investigating police. The degree of injury, that is the condition of the patient, may be divulged, but no prognosis should be given.

8. Stabbing: Same as for shooting.

9. Intoxication: No statement on a patient's intoxication or degree of intoxication should be made; this, too, is a police matter.

10. Burns: A statement may be made that the person is burned, and burned body portions and degree of burn may be specified. The nature of the accident, when absolute facts are known, may be given to newsmen.

11. The name of the attending physician, when requested, may be given to newsmen so they may seek additional information (not releasable by hospital authorities) from him without using his name unless he permits it.

12. Pictures: Newspapers requesting permission to take photographs of patients shall be referred to the hospital administrator or his des-

ignated authority. Pictures taken of patients in the emergency room or awaiting emergency care may be taken with the administrator's permission, but no pictures identifying a patient may be published without the patient's consent. In police cases, the rule on patient's consent may be relaxed if the patient is duly charged with a crime against the public (such as an injured gunman captured during or after a holdup).

Any conflict of ideas as to the extent of information which can be or should be given should be quickly resolved by the administrator or his designated next in authority.

For other than police cases, the following rule will prevail.

If the patient is conscious and can communicate with the physician or nurse in charge, or relatives, he should be asked if he will permit any information to be given, and his decision will be final. He should not be prompted into a negative attitude by such assertions as "You don't want us to tell this to nosey reporters, do you?" More cooperatively, the question might be put something like: "Newspaper reporters are interested in your case. May we have your permission to tell them—?" When a patient is a minor, his nearest relative may speak for him, preferably directly to the press or, permissibly, through a responsible hospital authority (physician, nurse, press relations officer).

If we follow these rules sensibly we will maintain good press relations without violating the rights and privileges of our charges.

Hearing Aids, Wheel Chairs, Braces, and Limbs

About 1,161,000 of the civilian, noninstitutional population of the United States have hearing aids, according to a report by the Public Health Service's National Health Survey on "Distribution and Use of Hearing Aids, Wheel Chairs, Braces, and Artificial Limbs, United States, July 1958–June 1959." This total represents one-fifth of the people who are reported to have hearing impairments.

Among the persons with hearing impairments, proportionately more females than males have hearing aids. The proportion with hearing aids is also consistently higher in urban than in rural areas.

About 253,000 people have wheel chairs, the survey shows. Some 54 percent of these are persons so disabled as to be confined to the house except in emergencies.

Estimates of 201,000 persons with leg or foot braces and 494,000 with other types of braces were reported by the survey. About 82,000, or 41 percent, of the leg or foot braces are for children under 15 years of age, and about three-fourths of these 82,000 braces are worn because of conditions due to poliomyelitis or of congenital origin.

Of the estimated 139,000 persons with artificial limbs, 132,000, or 94 percent, are males. About 106,000, or 76 percent of the total number, are persons with an artificial leg or foot. Persons with an artificial limb represent about one-half of the 274,000 who reported the absence of either arms or legs.

The estimates are derived from household interviews with a representative sample of the population conducted for the National Health Survey by the U.S. Bureau of the Census. The report, PHS Publication No. 584–B27, may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington 25, D.C., for 25 cents.