

The Abstractability and Consistency of Medical Examiner/Coroner Reports: Results from the 1993 National Mortality Followback Survey Pilot

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ABSTRACT: The 1993 National Mortality Followback Survey (NMFS) is designed to provide national estimates of important characteristics of the 2,218,940 people aged 15 years and older who died in 1993. One topic of special interest in the survey is injury-related deaths. Previous followback surveys have not obtained data from medical examiner and coroner offices (ME/Cs), who investigate most injury-related deaths. In this study, we sought to determine the feasibility of collecting data from various ME/C offices for the NMFS and the usefulness and limitations of data derived from their records.

Methods. We 1) developed a pilot survey instrument, the Medical Examiner/Coroner Abstract (MECA); 2) attempted to collect ME/C records on 159 deaths from 55 ME/C offices in four states with a variety of death investigation systems; and 3) assessed the feasibility of abstracting data from these records using the MECA.

Results. We received records on 105 deaths from 39 ME/C offices in three states. We identified items that could be abstracted from the records of most deaths and found that different abstractors could reproducibly and reliably identify information on these core items. Using the results of this study, we revised the MECA for use in the NMFS.

KEYWORDS: forensic science, pathology, forensic pathology, abstractability, consistency, medical examiner/coroner reports, research tools

The use of multiple—as opposed to single—sources of data provides a more complete and detailed description of the events surrounding death and the occurrence of fatal injuries. One valuable source is the reports of ME/Cs. Information collected by ME/C offices, however, is not uniform. This lack of uniformity poses a challenge for researchers who wish to use death investigation, autopsy, and toxicology reports as sources of data.

The 1993 National Mortality Followback Survey (NMFS) is designed to provide national estimates of important characteristics of the 2,218,940 people aged 15 years and older who died in 1993 (1). The major objectives for the 1993 NMFS include 1)

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determining socio-economic differentials in mortality, 2) studying health risk behaviors in relation to mortality, 3) measuring disability in the last year of life, 4) determining the reliability of certain items reported on the death certificate, and 5) identifying strategies to prevent deaths due to trauma. To accomplish this, the NMFS will collect comprehensive information on a sample of 23,000 deaths that occurred in 1993 to persons aged 15 years and older. Because of the current heightened interest in deaths related to injury, the NMFS will over sample injury-related deaths. Records of ME/C investigations provide a potential source of valuable information on the circumstances of these injury-related deaths and the characteristics of the decedents. These records, which may include death investigation, autopsy, and toxicology findings, were not utilized in the previous NMFSs.

To determine the feasibility of collecting records from various ME/C offices for a national survey and the usefulness and limitations of data derived from these records, we developed the Medical Examiner/Coroner Abstract (MECA) and conducted a pilot survey using the MECA in four states. We here report the results of the pilot survey and our evaluation of the MECA, and present the items that will be included in the NMFS.

Methods

Development of the MECA

Experts from several federal agencies and universities doing research on injuries or substance abuse were asked to suggest items to include in the MECA. The National Center for Health Statistics (NCHS) of the Centers for Disease Control and Prevention (CDC) compiled these items and evaluated each on the basis of 1) the likelihood of obtaining information on the item from death investigation, autopsy, or toxicology reports; 2) the usefulness of the item in addressing public health and forensic science concerns; and 3) the ability to relate the MECA item to the NMFS's companion survey instrument—the informant questionnaire. A prototype of the MECA was developed and reviewed by experts from NCHS and CDC, including forensic pathologists and a medical examiner. Finally, NCHS staff members reviewed all suggestions and finalized the items included in the MECA for the pilot survey.

Selection of Population Sample for Pilot Surveys

For the NMFS pilot, we selected from the NCHS Current Mortality Sample (CMS) 807 persons aged 15 years or older who died in one of four states during the six month period, October 1991 through March 1992. We selected the four states to provide a variety

of forensic jurisdictions: one state medical examiner system; one state medical examiner system with county coroners or medical examiners; and two systems with county medical examiners or coroners only (2). The CMS is a 10% systematic random sample of state death certificates that NCHS receives approximately three months after death occurs. Of the 807 deaths in the NMFS pilot sample, 298 (37%) were certified by a medical examiner or coroner and were, therefore, eligible for the MECA pilot study. After obtaining the death certificates, we attempted to contact the decedent's next of kin as listed on the death certificate to obtain consent for release of records. We were able to contact the next of kin of 238 (80%) of the 298 eligible decedents; 159 (67%) of those contacted consented to releasing the records. Finally, for each of these 159 cases we mailed to the appropriate ME/C's office a request to release the decedent's records.

Data Collection

From March 1 to May 31, 1993, we collected records from ME/C offices. After compiling a list of all deaths associated with a particular medical examiner's or coroner's office, we sent the office an introductory letter explaining the pilot study, a list of decedents whose reports we sought, and copies of associated next of kin consent statements. We asked each office to send a copy of the investigation, autopsy, and toxicology reports for each decedent to the Bureau of the Census, our data collection agent.

Approximately two weeks after the initial mailing, the Bureau of the Census contacted by telephone those ME/C offices that had not responded and asked if the office had received the initial request or had any questions. If after another two weeks the Bureau of the Census still had not received the reports, it called again and, if the office stated that it did not have the time or staff to copy the records, the Bureau offered to send a field representative to retrieve and photocopy the records. We paid for usual photocopying costs upon receipt of an invoice. A toll-free telephone number was established at NCHS to respond to questions from ME/C offices during the data collection period.

Data Abstraction and Quality Assessment

We received records for 105 of the 159 decedents. Using the MECA, an abstractor familiar with medical terminology attempted to abstract the following information from the death investigation, autopsy, and toxicology reports for each case: the demographic characteristics of the decedent; the nature of the fatal injury or accident; whether any rescue attempts were made; how the body was discovered; the pronouncement of death; the results of any investigation of the scene; the decedent's history, if any, of abuse, neglect, drug or alcohol use, medical problems or treatment, or use of medical devices; the circumstances surrounding a suicide or homicide; findings of the postmortem examination of the body, including findings of an autopsy, if one was performed; and results of toxicological testing. Finally, the abstractor looked for a summary of the case in each decedent's records. Table 1 contains a detailed list of the information that we attempted to abstract.

After all reports were abstracted, a medical examiner on the staff of NCHS randomly selected 14 (13%) of the 105 decedents and reabstracted the reports using the MECA in order to assess the quality and consistency of the original abstraction.

Statistical Analysis

We used the chi-square test to determine: 1) whether the distributions of characteristics among decedents for whom we received

records differed significantly from the distributions among decedents for whom we did not receive records; and 2) whether the proportion of requested records that we received differed significantly by type of office (medical examiner offices vs. coroner offices). The abstractability of records was assessed in terms of item completion rate, which we defined as the percentage of abstracted records that contained sufficient information to complete a specific MECA item. Because of difficulties associated with making inferences based on a low completion rate for an item, our original intent was to require that an item have a completion rate of 50% or higher for it to be included in the final MECA data set.

We used the kappa statistic (k), a measure of inter-rater agreement, to measure the degree of consistency of those abstracting records. A kappa of 0.80–1.00 signifies very good agreement between two independent raters (3).

Results

Participation Rate

We attempted to obtain records on 159 decedents from 55 separate medical examiner or coroner jurisdictions in four states; we ultimately received records on 105 (67%) decedents from 39 (71%) of the medical examiner or coroner jurisdictions in three states. As Table 2 indicates, the participation rate varied depending on the type of forensic jurisdiction in each of the four pilot states. State 1, a state medical examiner jurisdiction, did not provide any records. Although the reason given for not providing records was lack of manpower, State 1 also refused the offer from the Bureau of the Census to send a field representative to retrieve and photocopy the records. Medical examiner and coroner offices in States 2 and 4 refused to provide some or all of the requested records for the following reasons: 1) certain ME/C offices kept only the death certificate; 2) the legality of providing this information even with a signed consent from the next of kin was uncertain, since this was a voluntary survey; 3) some elected officials took the records with them when they left office; 4) some ME/C offices did only what was mandated; and 5) some ME/C offices would not release information on certain types of cases (for example, homicide) until the case had been resolved. All ME/C offices in State 3 responded, but no records could be found for four of the deaths.

Characteristics of the Decedents and of Medical Examiner and Coroner Offices

Because we received records for only two thirds of the 159 cases in our study, we examined the data by type of office (medical examiner versus coroner) for response bias by comparing the characteristics of the decedents—and the circumstances of their deaths—for whom we *did* receive records with the characteristics of the decedents—and the circumstances of their deaths—for whom we *did not* receive records. From the informant questionnaire, we obtained data on the type of informant and on the decedent's age at death, sex, marital status, and race; and from the death certificate we obtained data on the manner of death and on autopsy results, if an autopsy was performed. As Table 3 indicates, and according to the results of chi-square tests, the distributions of characteristics of decedents for whom we received records were similar to those for whom we did not receive records, with one exception: we were more likely to receive records from ME/C offices when the informant was a relative than when the informant was not ($P < 0.05$). We also found that we were three times more

TABLE 1—Presence of information in medical examiner and coroner records, and the consistency of abstraction of information from these records, by Medical Examiner/Coroner Abstract (MECA) topic and item, from the pilot National Mortality Followback Survey of four states, March–May 1993.

NMFS*		MECA topic and item	Information present (%)	Consistency of abstraction (kappa)**
Pi	FT			
Demographic characteristics of decedent				
x	x	Gender	100	1.00
x	x	Race	100	1.00
x	x	Marital status	100	1.00
x	x	Age at death	97	0.92
x		Was decedent in a relationship of unmarried cohabitation?	97	1.00
x	x	Date of death	94	1.00
x	x	Place of death	91	1.00
x		Decedent retirement status	49	—
x		Was decedent recently fired or laid off from his/her job?	45	—
x		Decedent's usual occupation(s)	0	—
x		Kind of industry or business	0	—
Circumstances of fatal injury or accident				
x	w	Briefly describe activities the decedent was engaged in at the time of death.	90	1.00
x	w	Was the decedent exposed to drugs, alcohol, etc.?	84	1.00
x	w	Did the death result from an injury?	82	1.00
x		Was the fatal injury related to the decedent's occupation?	65	1.00
x		Describe the nature and type of drug, alcohol, or chemical exposure.	0	—
x		Were any known violations of safety standards at the work place?	0	—
x		Describe the kind of safety violation(s).	0	—
x		Was decedent using protective equipment at the time of injury?	0	—
x		List all medical condition(s), intoxication(s) or other risk factors of the decedent which were relevant to the fatal injury/accident.	0	—
	x	Did the fatal event result from the discharge of a firearm?		
	x	Where did the fatal accident or injury occur?		
	x	How many deaths resulted from the fatal event?		
Rescue attempts				
x		Were there any rescue attempts performed?	77	1.00
x		Types of rescue attempted	30	—
x		Rescue attempted by ...	27	—
Discovery of the body				
x		Signs of body decomposition	81	1.00
x	x	Date & time of discovery	70	0.92
x	w	Elapsed time between when decedent was last seen alive and discovery of the body	43	—
x		Degree of decomposition	2	—
Pronouncement of death				
x	x	Where was death pronounced	95	1.00
x	x	Date and time of pronouncement	91	1.00
x	w	Was death pronounced at scene	87	1.00
x		Basis for pronouncement of death	8	—
Scene investigation				
x		Were any witnesses know to be present at the scene?	69	1.00
x		Were any drugs and/or drug paraphernalia present at the scene?	43	—
x		Were alcoholic beverages and/or containers found at the scene?	42	—
x		Sources of information used in the investigation	20	—
x		Type of witness present	4	—
x		Type of drugs and/or paraphernalia	0	—
x		Type of alcoholic beverages/containers	0	—
Abuse or neglect history				
x		Did the decedent have a history of suffering from chronic abuse at the hands of others?	3	—
x		The abusers were:	0	—
x		Abuse situation(s) occurred at:	0	—
Substance abuse history				
x		Did the decedent have a history of drug abuse?	15	—
x		Did the decedent have a history of alcohol (ethanol) abuse?	14	—
x		Type of drug(s) abused:	14	—

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NMFS*		MECA topic and item	Information present (%)	Consistency of abstraction (kappa)**
Pi	FT			
Medical history				
x		Was a history of the health conditions mentioned in the report?	31	—
x		Were health-related risk factors mentioned in the report?	19	—
x		Had decedent taken any of the following medications?	13	—
x		Did the decedent have a history of surgery during the year preceding death?	11	—
History of medical device				
x		Did decedent have or use an artificial or medical device?	4	—
Manner of death				
x	x	What was the manner of death?	100	1.00
Suicide				
x	x	Describe the method of suicide:—	100	1.00
x	x	Was any kind of a suicide message left?	67	1.00
x	w	Observed behavior manifestations noted prior to the incident	55	1.00
x	w	Known precipitating events:	39	—
x	w	Had the decedent made prior visit(s) to a psychiatrist, psychologist, other therapist, counselor or clergy during the year preceding death	28	—
x		Was the suicide part of a homicide-suicide incident?	22	—
x	w	Had the decedent previously obtained medical attention (from a doctor, hospital, emergency room, or clinic) related to suicide attempt during the year preceding death	11	—
x		Describe any physical evidence of suicide?	0	—
x		Relationship(s) of the homicide victim(s) to the suicide victim?	0	—
	w	Had the decedent made previous suicide threats?		
Homicide				
x	x	Describe the method of assault	100	1.00
x	x	Describe the circumstances of the homicide incident:	100	1.00
x	x	Describe the weapon(s) used or method(s) of death:	100	1.00
x		Was the weapon found near the decedent?	79	—
x		Was more than one victim killed as a result of the homicide incident?	75	1.00
x	w	Relationship of the homicide victim to the perpetrator(s):	38	—
x	w	If firearm, type and caliber or gauge:	33	—
	x	What is the number of alleged perpetrators?		
Transport related accident				
x		Number of vehicles involved in the accident		
x		What was the decedent's role in relationship to the vehicle?		
x		Was the accident on the roadway or shoulder, or some other place?		
x		What type of vehicle was involved?		
x		Was the decedent wearing a safety belt at the time of the accident?		
x		Was the decedent wearing a helmet at the time of the accident?		
x		Was the decedent's seat equipped with an air bag?		
Non-transport related accident				
x		Where did the decedent drown?		
x		What was the cause of the fall?		
x		Did decedent fall from a height, or on the same level?		
x		What type of fire caused the fatal injury?		
x		What was the cause of the fire?		
x		What was the cause of the poisoning?		
x		What agent caused the poisoning?		
Undetermined				
x		Statement which best describe the circumstance surrounding the death		
	x			
Examination of body				
x	x	Date and Time of examination of the body	70	0.92
x	x	External signs of drug abuse	15	—
x	w	List all externally visible injuries (include gunshot wounds, stab and other cutting wounds, blunt trauma, fractures that can be found on external examination, abrasions, contusions, burns, dislocations).	10	—

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NMFS*		MECA topic and item	Information present (%)	Consistency of abstraction (kappa)**
Pi	FT			
x		List all natural abnormalities present (include deformities, skin abnormalities including tumors, rashes, jaundice, albinism, etc.)	0	—
	w	What was the type of examination of the body?		
x	x	Mark all internal injuries related to the accident or injury (list of choices provided).		
		Autopsy findings		
x	x	Was an autopsy performed	100	1.00
x	x	Date and time of autopsy	100	1.00
x		Autopsy was not performed because of	56	1.00
x		Type of autopsy	52	1.00
x		Autopsy restrictions	40	—
x		Heart		
x		• weight	48	—
x		• ventricular thickness, right & left	14	—
x		• valve circumference, tricuspid, mitral, pulmonic, aortic	4	—
x		• major coronary arteries percentage occlusion:		
x		• right main, right posterior descending	40	—
x		• left main, left anterior descending	40	—
x		• left circumflex	40	—
x		Lung weights, right & left	48	—
x		Liver weight	48	—
x		Pancreas and gastrointestinal tract		
x		• volume of gastric contents (est.)	40	—
x		• description of gastric contents	40	—
x		Kidney weights, right & left	48	—
x		Brain, skull and spinal cord		
x		• brain weight	48	—
x		• skull and spinal cord	48	—
x		• spine and great vessels	48	—
		Organ and tissue donation		
x	x	Was decedent designated as an organ or tissue donor?	3	—
x	x	Did decedent actually donate an organ or tissue/bone?	3	—
x	x	Who gave permission to donate?	3	—
		Toxicological and other tests		
x	x	Post-mortem toxicology findings, specimen type, test for drugs, alcohol, chemical etc. kind of test/method and result	75	1.00
x	w	Time elapsed between discovery of the body and blood alcohol sample taken	68	1.00
x	w	Time elapsed between discovery of the body and obtaining of the vitreous fluid sample	33	—
x		Gunpowder residue test results	1	—
	x	Were post-mortem toxicological tests performed to detect alcohol, other drugs, or chemicals?		
x		Case summary	60	1.00

*Pi = pilot survey; FT = full survey; "x" in a column means that an item was included in the pilot or will be included in the full survey; "w" means that the wording of the item in the pilot has been modified for the full survey.

**Consistency was assessed only for those 50 Medical Examiner/Coroner Abstract items for which information was present in at least half (53) of the records.

likely to receive records from coroner offices than from medical examiner offices ($P < 0.05$).

Abstractability of the Records

Table 1 presents all the MECA items and the percentage of records, by item, for which the abstractor found information. For items in the homicide, suicide, autopsy, and toxicology sections, we calculated the completion rate on the basis of the number of

cases within each section. (For example, the denominator used for homicide was 24.)

As one can see from Table 1, most ME/C records contained information on the demographic characteristics of the decedent. Most also contained information concerning activities the decedent was engaged in at the time of death, whether the decedent was exposed to substances of abuse, and whether the fatal event was related to the decedent's occupation. For suicides, more than 50% of the ME/C records contained information on the method of

TABLE 2—Participation rates of medical examiner and coroner (ME/C) offices in the pilot National Mortality Followback Survey of four states, March–May 1993.

State	Type of system	Number of ME/C Offices			Number of Cases		
		Contacted	Responded	Rate (%)	Requested	Received	Rate (%)
1	State medical examiner	1	0	0	22	0	0
2	State medical examiner with county ME/Cs	23	12	52	47	30	64
3	County ME/Cs	10	10	100	46	42	91
4	County ME/Cs	21	17	81	44	33	81
Total		55	39	71	159	105	67

TABLE 3—Characteristics of decedents for whom records were received from medical examiner and coroner offices and of those for whom records were not received, by type of office, from the pilot National Mortality Followback Survey of four states, March–May 1993.

Characteristic ^b	All offices		Coroner offices		Medical examiner offices	
	Records received (number and percentage) ^a					
	Yes	No	Yes	No	Yes	No
Type of informant						
Relatives	79 (75)	50 (93)	55 (73)	23 (92)	24 (79)	27 (93)
Non-relatives	24 (23)	3 (5)	18 (24)	1 (4)	6 (21)	2 (7)
Unknown	2 (2)	1 (2)	2 (2)	1 (4)	—	—
Age at death						
15–45	57 (54)	23 (43)	37 (49)	9 (36)	20 (66)	14 (48)
46+	45 (43)	28 (51)	35 (46)	13 (52)	10 (33)	15 (52)
Unknown	3 (3)	3 (6)	3 (4)	3 (12)	—	—
Gender						
Male	61 (58)	31 (57)	41 (55)	17 (68)	20 (67)	14 (48)
Female	41 (39)	22 (41)	32 (42)	7 (28)	9 (30)	15 (52)
Unknown	3 (3)	1 (2)	2 (2)	1 (4)	1 (3)	—
Marital Status						
Never married	39 (37)	16 (30)	27 (36)	6 (24)	12 (40)	10 (34)
Single (widowed, divorced, separated)	34 (32)	23 (43)	28 (37)	10 (40)	6 (20)	13 (45)
Married	30 (29)	14 (26)	18 (24)	8 (32)	12 (40)	6 (21)
Unknown	2 (2)	1 (1)	2 (3)	1 (4)	—	—
Race						
White	57 (54)	35 (65)	42 (56)	15 (60)	15 (50)	20 (69)
Non-white	46 (44)	18 (33)	31 (41)	9 (36)	15 (50)	9 (31)
Unknown	2 (2)	1 (2)	2 (3)	1 (4)	—	—
Manner of death						
Accident	45 (43)	16 (30)	35 (47)	6 (24)	10 (33)	10 (34)
Homicide	24 (23)	8 (15)	17 (22)	4 (16)	7 (23)	4 (14)
Natural	19 (18)	12 (22)	12 (16)	5 (20)	7 (23)	7 (24)
Suicide	16 (15)	14 (26)	11 (15)	9 (36)	5 (17)	5 (17)
Undetermined	1 (1)	4 (7)	—	1 (4)	1 (3)	3 (10)
Autopsy						
Yes	29 (28)	7 (13)	14 (19)	3 (12)	15 (50)	4 (14)
No	29 (28)	16 (30)	18 (24)	13 (52)	11 (37)	3 (10)
Unknown	47 (44)	31 (57)	43 (57)	9 (36)	4 (13)	22 (76)
Total	105 (100)	54 (100)	75 (100)	25 (100)	30 (100)	29 (100)

^aPercentage may not add to 100 because of rounding.

^bData for type of informant and the decedent's age, sex, marital status, and race are from the informant questionnaire; data for manner of death and autopsy are from the death certificate.

suicide, whether a suicide note was left, and whether suicidal behavior or depression was exhibited prior to death.

For homicides, the circumstances surrounding the death, the method of homicide, the kind of weapon used, and the location of the weapon were reported most of the time. In the section on the examination of the body, only the date and time of examination of the body was reported more than 50% of the time. In the autopsy findings section, whether an autopsy was performed, the reasons

for not performing an autopsy, and the type of autopsy performed, including its date and time, had response rates above 50%. In the toxicology section, more than 50% of the ME/Cs specified whether pre- or postmortem toxicological or chemical tests were performed, the kind of tests and results, and the time elapsed between the discovery of the body and the collection of blood for alcohol testing. Finally, most death investigation reports included a case summary.

Consistency (reproducibility) of Abstraction of Records

The agreement between the independent abstractor and the original abstractor on the 14 cases reviewed by both was assessed for the 50 MECA items that contained data from at least half (53) of the records. As the fifth column of Table 1 indicates, there was perfect agreement between the two abstractors except for the following items: age at death, date and time of discovery of the body, and date and time of examination of the body. The reason for the lack of perfect agreement for these items was found to be transcription errors on the part of one or both abstractors.

Development of a Comprehensive Set of Items to be Abstracted for the NMFS

One purpose of this pilot study was to develop an ME/C abstract for the NMFS. To this end, we developed and evaluated a prototype abstract, the MECA. In revising this prototype for use in the NMFS, we considered the following:

- The likelihood that an item would be available from ME/C reports.
- The potential usefulness of an item to the forensic sciences and public health.
- The availability of funding to support collection of data on the item.

We used the results of the pilot survey to assess the likelihood that an item would be available. For example, because the information concerning a history of abuse or neglect was rarely available, we dropped this section. In contrast, because the date and time of autopsy were always available, we included these items in the revised MECA. We also found that other information on the autopsy—although not included in the pilot MECA—was available for most cases in which an autopsy was performed. As a result, we added new items to the autopsy section concerning external and internal injuries (which will be abstracted by using a modification of the Abbreviated Injury Scale (4) in order to assess the prevalence of specific injuries in traumatic deaths.

We included some items with a response rate less than 50% in the revised MECA because of their potential usefulness according to subject area experts, including forensic pathologists and researchers in injury control and substance abuse, *and* because of the availability of funding for them. Items in the organ and tissue donation section will be included in the revised MECA and are examples of items of public health importance with a low response rate for which funding has been provided by one of the federal cosponsors of the NMFS. We *excluded* a few items with a response rate greater than 50% due to a lack of funding.

Discussion

Our pilot study of the NMFS using the MECA has shown that it is feasible to obtain and abstract information from ME/C records on deaths related to injuries. It has also shown what specific kinds of information we can expect to commonly find in these records and the specific steps that should be taken to improve participation in the NMFS. With respect to participation, we learned that in a state with a state-wide medical examiner system (and there are 20 of these in the United States (2), the response of a single person or office can determine whether any records will be received from that state. It will be critical to inform the offices in these 20 states of the importance and uses of the NMFS and, therefore, the

importance of their participation. In contrast, in states with county or district jurisdictions, participation will not be dependent on a single office, but rather on the practices of many, individual county offices. For example, in States 2 and 4 some county offices refused to provide records—questioning the legality of doing so, even with the consent of the decedent's next of kin—while other offices in the same state did provide records. Because the release of ME/C records is usually governed by state law (5), some county officials are apparently either unaware of state laws or are interpreting them incorrectly. A thorough knowledge of the law in each state by those conducting the NMFS will be important in addressing similar concerns of county officials about participating in the survey.

Although all participated, some offices in State 3 were not able to find records corresponding to all injury-related deaths. In a recent study in Iowa, researchers found that medical examiner reports were not available for 31% of fatal injuries and that the lack of availability was associated with the decedent's sex (female), age (older), and cause of injury (for example, falls) (6). In the NMFS, we should be able to estimate on national level the number and types of injury deaths that are not reported to, and, presumably, not investigated by ME/Cs. Such knowledge may be useful for targeting efforts to improve reporting and investigation of such deaths.

Although office participation was only 71%, and records were obtained for only 67% of eligible cases, we found that demographic characteristics and manner of death of decedents for whom records were received did not differ significantly from those of decedents for whom records were not received, suggesting that ME/C offices did not selectively respond on the basis of the decedents' demographic characteristics or manner of death. Thus, we believe that the reviewed records are representative of all eligible cases.

Information was available from fewer than 50% of the records for most of the items included in the pilot MECA. This was not unexpected, since a number of the items were selected by injury researchers and reflect their interests in specific risk factors, outcomes, or methods of investigation. In spite of these interests, ME/Cs are primarily responsible for collecting data relevant to determining the circumstances and cause of an individual death; they cannot be expected to consistently collect risk factor or other information for all, or even a majority of the deaths they investigate. For example, information related to substance abuse or to the use of protective equipment (for example, seat belts) would not be collected for a given case unless the circumstances, physical findings, or the decedent's medical or social history suggested that such factors may have played a role in the death. In addition, because offices take different approaches to death investigation, they may collect different types of information, even on similar cases. Our study suggests that it might be useful to define a practical set of data items that should be collected for all deaths, as well as items that should be collected for specific circumstances or causes of death. The widespread acceptance and use of such data sets could improve the local and national availability and comparability of data collected by ME/Cs. Several groups have recently worked on standardized data sets or protocols for all deaths (7, 8), infant deaths (9), and suicides (10).

Field work for the National Mortality Followback Survey will begin in March 1995. We hope that this national mortality survey, for which a standardized abstraction form will be used, will provide reliable, useful national estimates of the characteristics of decedents aged 15 years and older, as well as detailed information on the circumstances of their deaths. The participation of ME/C offices will be critical to the success of this survey.

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