A PRELIMINARY REPORT ON THE ACTIVITIES OF THE ANESTHETIC STUDY COMMITTEE OF THE MEDICAL SOCIETY OF THE COUNTY OF KINGS, NEW YORK

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The importance of establishing Anesthesia Study Commissions as recommended by Ruth (1) more than five years ago has been substantiated by the great number of commissions which has been created. This indicates the interest that has been manifested, nationally and regionally, by surgeons, internists, maternal welfare groups and others as well as by anesthesiologists. Ruth and his co-workers are to be commended on the foundations which they have established for the modus operandi of these commissions (2). His blueprint has served well the American Society of Anesthesiologists and all other study groups constituted for that purpose. It was on the basis of these precepts that a Mortality Committee of our county Medical Society was formed several years ago.

The first meeting of this Committee under the auspices of our Section on Anesthesiology attracted an audience which filled a large meeting room to overflowing with resident and nonresident physicians, specialists and general practitioners participating. The discussion was led by a professor of surgery, a medical examiner, a prominent anesthesiologist and other physicians well recognized in their respective fields. The comment that followed indicated a bright future for this Committee. Unfortunately, its future became quite dim soon after and the Committee consequently ceased to function.

Investigation revealed that several factors were predominant in preventing case reporting. Anesthesiologists either thought that their cases were not of sufficient interest or they were too busy to write out a detailed report. Some refused to respond following solicitation, fearing incrimination by accusation or implication. Many of the requests for information were sent to hospitals or fellow physicians based on hearsay which was frequently inaccurate, with resultant incomplete, inaccurate or negative returns. Some hospital administrators expressed concern regarding the legal implications when anesthesia technicians were employed, and about the responsibility when the choice of anesthesia did not reside in the technician. The name, "Mortality Com-

* Presented before the Section on Anesthesiology of the American Medical Association, San Francisco, California, June 28, 1950.
mittee," inspired distrust, fear and rejection. These obstacles were finally overcome by reorganization of the Committee, changing its name to the Anesthetic Study Committee, by making copies of death certificates available to this Committee and by making the profession and hospital administrators aware of the true educational purpose of the group. Through the cooperative efforts of the president and executive secretary of our County Medical Society and the educational and public-minded executives of the Department of Health of the City of New York, a routine photostatic copy of all death certificates of those whose demise had occurred on the day of or following operation in the County of Kings is forwarded to our Anesthetic Study Committee. Thus, a routine method of reporting fatalities occurring within one day of operation was established so that a proper statistical survey could be designed and an accurate method of reporting could become available.

The Department of Health included one provision in granting the petition: that these cases be presented only before the body of the official Committee appointed by the County Medical Society. There was no expression prohibiting the presentation of statistics or the abstraction of material for teaching purposes. The sentiment of the profession was favorably expressed by the interest displayed. The Department of Health is hereby praised for its far-sighted, public-spirited and educational spirit.

Deletion of Identity.—The most serious obstacle to obtaining the cooperation of all of the hospitals and physicians in our County was based on the fear of incrimination and recrimination which might arise between the professional and administrative staffs, the surgeons and the anesthetist and on the reprisals which generally follow. The contemplated ill feeling that could occur was in itself a deterring factor. Perhaps the most objectionable feature was the possibility of subpoena by the court of the findings of the Committee. Furthermore, anxiety was expressed because the availability of such information might stimulate the initiation of malpractice suits.

In order to maintain the integrity of this Committee and to instill confidence in the reporting agencies, it was decided to separate all information identifying the patients, the institutions and the physicians involved from the data submitted and the decisions reached. This is done by assigning a committee number to every case recorded in its book.

The hospital is informed by a routine letter of the assigned number and advised that all other identification will be absent thereafter. The findings of the Committee can be obtained only by presentation of the number.

Collection of Data.—Simultaneously with the mailing of the letter, a postcard is sent to a member of the Committee representing, or active in, the addressed institution. This method of alerting an interested person tends to accelerate the response. A note is attached to the
ACTIVITIES OF ANESTHETIC STUDY COMMITTEE

COMMITTEE ON ANESTHETIC STUDY

Medical Society of the County of Kings
1313 Bedford Avenue
Brooklyn 16, New York

Please include all pertinent data. Use additional sheet if necessary. All identifying data will be held confidential.

Name of individual submitting this report

Address

Case Report No.

Age       Sex       Wght.       Physical Build

Preoperative Diagnosis

Preoperative Clinical Condition and Treatment (include whatever laboratory findings are available) (Respiratory; Cardiovascular; Gastrointestinal; Urinary; Nervous; Metabolic)

Surgery performed or proposed

Preoperative Medication — Drug time
Effect — Satisfactory □ Unsatisfactory □
Anesthesia — Agents and Methods

Operative Procedure
Position of Patient
Course of Anesthesia and Operation (note doses, drugs, time given, time of occurrence of significant events)

Fig. 1.

Protocol folder requesting the hospital administration to notify the Committee's representative of the arrival of this formal request for the case report. Thus, the problem of notification is served from both ends.

Figures 1, 2, 3, 4, 5 and 6 represent the pages of the 6-page questionnaire which is a conglomerate of many existing forms. It is hereby acknowledged that many of the topics were obtained from the forms of
Complication

Treatment of Complication

When did it occur?

If patient died, state methods and time of attempted resuscitation

Cause of death—anesthetist’s opinion

—surgeon’s opinion

—as noted on hospital record

Postmortem findings (essentials)

**Fig. 2.**

Please type on this sheet a complete summary of the case, including any relevant data not properly covered in the schedule itself. Also include range of temperature, pulse and respiration, laboratory work and other data pertinent to the anesthetic management.

**Fig. 3.**

the Anesthesia Study Commission of the Philadelphia County Medical Society and of the New England Society of Anesthesiologists. Our form may be criticized for its length, but a careful perusal will reveal that the multiplicity of questions facilitates and directs the replies so that long essays may be avoided. On the other hand, the inserted sheet (fig. 3) permits expansion of any part or whole of the data by a narrator. Many of the topics have been criticized for reduplication, redundancy, indirect and unintentional maintenance of case identity and admission of error in choice or administration of anesthetic agent. At the present time it has been decided to eliminate “Name of individual submitting this report” and “How would the anesthetist and surgeon
## Anaesthesia Study Record

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<td>1 2 3 4 5 6 7</td>
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### Anaesthesia Study Record

#### Preoperative Diagnosis

<table>
<thead>
<tr>
<th>Preoperative Diagnosis</th>
<th>Technique</th>
<th>Reason</th>
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#### Anaesthesia

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<th>Anaesthetist</th>
<th>W.E.</th>
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#### Operation

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<tr>
<th>Surgeon</th>
<th>S-U</th>
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### Induction

- **N₂O**
- **O₂**
- **N₂O/O₂**
- **O₂/N₂O**

### Maintenance

- **CO₂**
- **H₂O**
- **EtCO₂**

### Recovery

- **Respiratory Rate**: 
- **Vital Signs**: 
- **Blood Pressure**: 
- **Heart Rate**: 

### Additional Information

- **Depress.**
- **Worn Off**
- **Approch.**
- **Others**

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**Fig. 4.**
Summary (by individual who administered anesthesia)

Choice of agent and method — reason

Who made the choice? (surgeon, anesthetist, etc.)
Who administered the anesthesia? (nurse, resident, intern, surgeon, anesthesiologist)
Who attended the patient during anesthesia?
What was learned?

How would the anesthetist and surgeon manage a similar situation now?

Please attach copy of anesthesia record
Would copy of hospital record be available if desired?

Fig. 5.

manage a similar situation now?” The latter has been interpreted as indicating that an error has been committed. The Committee has designed an Anesthesia Record (fig. 4) so as to avoid the insertion of an identifiable record from the hospital concerned. Whenever a hospital submits a copy of its own record, steps are taken to remove identity.

The last page (fig. 6) indicates the data which are desired for a statistical study of the practice of anesthesiology in our County. This page also provides a classification of the information obtained, and de-
limits the statistics to the concern of anesthesiology. Our Committee is not averse to discussing each case in its entirety but does not feel qualified to interpret surgical judgment or technic except in relation to the physiologic chain of events which influences the management of the anesthetic period.

"Anesthesiologists" applies to physicians who are specialists and limit their practice to this field. "Physician" indicates a licensed physician who devotes only part time to this field, or any physician in training. "Nurse" is self-explanatory. The "Operative Procedure," "Diagnosis of Committee," "Contributing Causes" and "Anesthesia"
are classified according to the code of the (3) American Society of Anesthesiologists.

A letter of gratitude is sent from the Committee upon receipt of the protocol.

The following communication on the stationery for the Committee was designed for follow-up when a delay exceeding one month occurred. The necessity for submitting a report is stressed again. It should be noted that the Committee cannot consider a case closed until the report is submitted.

Re:

(Name of patient)

(Date of operation)

(Date of Death)

(Operative Diagnosis)

Dear Sir:

A letter was sent you dated requesting a copy of the protocol of the above captioned case. This Committee again requests your cooperation.

Any delay in replying to these requests adds considerably to the work of this Committee. It is necessary that some reply be incorporated in the record in order to complete the tabulation of statistics and to close the record of this case as submitted by the Department of Health of the City of New York.

Your immediate cooperation in this matter is earnestly requested.

Very truly yours,

Chairman, Committee on Anesthetic Study

A final form is utilized for the tabulation of the statistical data, the bookkeeping. These two pages are kept in a loose-leaf form until all entries have been completed, after which a permanent binding is applied. A temporal inclusion basis is still undetermined. At present, the Committee allots a five-year period per volume.

This form has been repeatedly reviewed and frequently revised. Each entry is copied from the back page of the protocol as soon as a discussion of the case has been held. Column 1 contains the case number. The first two digits indicate the year and the remaining indicate the sequence in which the death certificates are received. Column 2 contains the name of the physician to whom the case has been referred for abstraction. The insertion of the letter “A” next to his name indicates that an autopsy has been performed. The primary cause of death is copied from the death certificate for inclusion in column 3. In column 4 is inserted the code letter “A” for anesthesiologist, “P” for physician and “N” for nurse, indicating the classification of the anes-
Activities of Anesthetic Study Committee

The entries in column 5 are also copied from the death certificate, but they are classified and coded in accordance with the form of the American Society of Anesthesiologists (3). The same classification is applied to the diagnosis of the Committee, column 6, and the contributing causes, column 7. Column 8 merely requires a check under the subdivision of "yes" or "no" to indicate the decision of the Committee as to whether the case is judged an anesthetic death or not. Our own code has been devised to classify the preventable factor which was deemed operative in contributing to the fatality. This code includes five subdivisions, (a) premedication, (b) error in selection of agent or method, (c) improper management of anesthetic period, (d) improper resuscitation and (e) postoperative medication.

The type of anesthesia administered is described by the agent or agents used and the technic employed. This code also has been borrowed from that of the American Society of Anesthesiologists. The primary and secondary subdivisions have been ignored because such delineative reporting became confusing. The columns age, sex and race, were chosen empirically with no prediction of their future utility.

The Function of the Committee.—The Anesthetic Study Committee is composed of a chairman and members who are active members of the Medical Society. They are annually appointed by the President of the Medical Society of the County of Kings. Any active member is eligible for appointment; an interest in anesthesiology is not a prerequisite. In fact, physicians in other fields are welcomed and their participation often solicited. Cooperation with other investigative and educational committees has been invited. A combined meeting with the Committee for the Study of Maternal Welfare has been held. Meetings are held in the Society building every Wednesday at 4 p.m.

Discussion of Reports.—An attempt was made to assign cases to discussants in advance of presentation. It was not considered feasible because of the large amount of work involved in setting up an assignment system, the unpredictability of the appearance of assignees on schedule, and the reluctance to permit case reports to circulate outside of Committee quarters. A case is now handed to each member upon arrival in sequence. After a short period of study each report is presented to the group for discussion.

Time for discussion is unlimited. Occasionally, specific questions for further information are considered desirable. These reports are held up until the information is obtained. At the conclusion of discussion, a vote is taken on the controversial issues, anesthetic death and preventable death. The chairman records the majority opinion.

Definition.—Considerable controversy still arises on the limitation of responsibility for the surgeon and the anesthesiologist. Our fields are so closely related and so closely integrated by physiology, and in some instances by anatomy, that the initiation of cause and the comprehension of effect invade delicate and indefinable boundaries. The re-
ponsibility of anesthesiologists varies from institution to institution, from anesthesiologist to surgeon and from group to group. In some hospitals the anesthetist orders and administers blood transfusions; in others he may be permitted authority in one or the other or denied both. Thus in one hospital the definition of anesthetic death and the allocation of the factor at fault must necessarily differ from that of another. It is not statistically sound to find an anesthetic death due to insufficient replacement of blood in one situation and then to deny an anesthetic death when it is not the prerogative of the anesthetist to order blood. Such controversy has provided prolonged and heated argument as in the case in which morphine was ordered by the physician which contributed to the immediate postoperative death of an asthmatic patient.

It has been the philosophy of our Committee that all judgments be made on the circumstances and standards existing in the institution where the mortality occurred. It thus followed that in the more progressive and advanced departments of anesthesiology more responsibility was accorded the anesthesiologists. In those institutions where unsupervised technicians are employed, not even the choice of anesthetic agent or technic could be held as responsible unless there is an indication that the technician expressed his or her own preference. Morally and legally everyone is responsible for his or her own deeds, but this cannot be upheld in the operating room where the technician is completely subject to the orders of the surgeon. Needless to say, the anesthesiologist who is a physician is morally and legally responsible for his own acts. His acts are, therefore, more closely scrutinized. Close study is more readily directed to his management and away from the surgical team.

The surgical procedures are discussed and criticized only as they relate to the anesthetic management. No classification of the contribution of the surgical procedure is recorded. It is hoped that surgeons, obstetricians and other physicians concerned will eventually become sufficiently aware of our work and become stimulated to attend our meetings.

*Improvement of Anesthetic Service.*—It is strongly recommended that similar Anesthetic Study Committees be established throughout this country. The collection of data, the tremendous material available for study, the pooling of information, research and ideas can contribute a vast storehouse of kinetic knowledge. The stimulation of interest and the exposition of flagrant and ignorant violations of ordinary management of anesthetic problems can readily be accomplished by such committees. It is even more important that the present academic and technical information be disseminated in the backward and unprogressive anesthesia departments which are still prevalent in some large cities as well as in rural areas.
Some Interesting Data.—There is considerable time lag between receipt of the copy of the death certificate and the final processing of the protocol. Inasmuch as the present activities of this Committee began only in February 1949, it is still difficult to evaluate the cooperation of all hospitals. It is, therefore, thought that the following table presented may indicate a trend, but cannot be used for statistical purposes:

<table>
<thead>
<tr>
<th>1949 Incomplete Statistics of the Anesthetic Study Committee</th>
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<tr>
<td>Total number of death certificates received</td>
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<tr>
<td>Number of cases not under jurisdiction of committee</td>
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<tr>
<td>Number of protocols returned</td>
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<tr>
<td>Number of cases examined by Committee up to April 1950</td>
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<tr>
<td>Number of autopsies</td>
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<tr>
<td>Number of deaths judged due to anesthesia</td>
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<tr>
<td>Questionable</td>
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<tr>
<td>Number of deaths considered preventable</td>
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<tr>
<td>At fault</td>
</tr>
<tr>
<td>A. Premedication</td>
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<tr>
<td>B. Error in selection of agent or method</td>
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<tr>
<td>C. Improper management of anesthetic</td>
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<tr>
<td>D. Improper resuscitation</td>
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<tr>
<td>E. Postoperative medication or management</td>
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Although these statistics are incomplete in many respects, the figures relating to autopsies performed are complete. Twenty-seven autopsies in 260 deaths, or 10.4 per cent, occurring within a day of surgery is a lamentable figure. The fact that death occurred so close to the anesthetic and operative periods should have provided and must provide in the future a much higher percentage of autopsies. Investigation revealed several reasons for failure to obtain postmortem examinations. The Medical Examiner is in a position to provide the greatest assistance, but these statistics do not indicate that his cooperation was available. Bodies have been released by the latter when the immediate cause of death was either uncertain or not established. More cooperation from him is urgently necessary to fulfill the purpose and ideals of the Committee. Failure to obtain permission from the family was frequently attributed to the emotional distress of the next of kin, to religion or to reluctance on the part of the professional staff to coax consent from the relatives. This problem must be solved and more postmortem examinations must be obtained if we are to expand our facilities for interpretation of anesthetic processes, and understand, predict, manage and avoid recurrences. Such examinations would be most helpful in providing a positive educational program.

The percentage of deaths judged by this Committee as due to anesthesia may still vary considerably. It is interesting to note that the most frequent factor under preventable deaths is improper management of the anesthetic period, with error in selection of agents or method running a distant second.
SUMMARY

The Committee on Anesthetic Study of the Medical Society of the County of Kings has been accorded by the Department of Health of the City of New York the signal privilege of receiving a photostatic copy of the death certificate of every patient whose death occurred in Kings County on the day of or the day following the performance of the surgical procedure. The modus operandi of the Committee, including the collection of data, the stationery and the classification and recording of data received, has been demonstrated. It is hoped that the establishment of Anesthesia Study Commissions throughout this country will not only serve to collect and study the data of anesthetic problems but will contribute immeasurably to the dissemination of existing technical and academic information to the great number of substandard anesthesia departments which still exist in large cities as well as in rural areas. It is urged that greater effort be made to obtain postmortem examinations of patients who have received anesthesia regardless of whether or not the latter is believed a contributory factor in the demise of that individual. Greater cooperation from the Medical Examiners so that more postmortem examinations may be obtained should be earnestly solicited.

REFERENCES


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CHICAGO SOCIETY OF ANESTHESIOLOGISTS

NOTICE OF MEETING

The first regular meeting of the fall season for the Chicago Society of Anesthesiologists will be held at 8:00 p.m., October 18, at Billings Hospital. Doctor Stuart C. Cullen of Iowa City will present a paper on "Preliminary Observations on the Narcotic Action of Xenon in References to the Theories of Narcosis." A business session will follow.