The rapid growth of postgraduate schools of anesthesia in which nurses were trained, as well as the increasing enthusiasm for the trained nurse anesthetist during and after World War I, did not escape the attention of physician specialists in anesthesia, and during the 1920's resentment against the nurse anesthetist culminated in attempts to legislate her out of existence. Since the discovery of the anesthetizing properties of ether, the instrument of the law had been invoked from time to time to abolish the unqualified anesthetist (see Chap. 2, p. 19). However, the threats were not supported by action until the twentieth century, undoubtedly because of the low state of medical education, the weak character of the laws governing the practice of medicine and the absence of competition except among the physicians themselves prior to that time. Then, when such action was taken, it was not against the unqualified but against the qualified anesthetist.

According to Chapple and Coon:

When we come to the true division of labor, in which different individuals of a society specialize in different techniques, we find that the specialists are almost always men, because ordinarily only men are able to devote all their working time to a single task without interruption, being free of household duties and the care of young children.¹

It had happened in the field of anesthesia, as it had in teaching, that a formidable majority group of women, in violation of this anthropologic principle, had become full-time specialists in competition with a minority group of men, who, acting through the law, were determined to eliminate them. A unique feature of this competition was that it crossed the lines of professions and ultimately raised the question: Where does nursing end and medicine begin?

The medicolegal aspects of anesthesia aroused considerable interest during the last decades of the nineteenth century in Britain, where the subject of the inquiry happened to be the dentist. In answer to the question as to whether dentists should administer anesthetics, the British Medical Journal stated in 1893:

Anaesthetics should be administered only by duly qualified medical men. There is no law upon the subject, but only those who are able to perform tracheotomy in the event of asphyxia ought ever to administer nitrous oxide gas. Ether and chloroform should only be administered by medical men experienced in the use of anaesthetics. If a death were to occur in a dentist's chair the magistrate might consider it culpable negligence on the part of the dentist if he had no medical assistant present at the operation. The only safe rule is always to have a second person present, and, when possible, that person should be a doctor, or, better still, a skilled anaesthetist.²

In 1895 the British Medical Journal refused to give an opinion on the question as to whether unregistered dentists should administer anesthetics and suggested referring the matter to the president of the General Medical Council.³ In February, 1899, the Council stated:

Any registered medical practitioner who knowingly and wilfully assists a person who is not registered as a dentist, ... either by administering anaesthetics or otherwise, will be liable ... to be dealt with by the General Medical Council as having been guilty of infamous conduct in a professional respect.⁴

In 1896 R. W. Turner, a barrister-at-law, wrote in the Practitioner:

The present state of the law is one of lawlessness. Any man, woman, or child may administer anaesthetics. But as the administration of anaesthetics is part of the duty of a qualified man, it is clear that the unqualified administrator is liable to the penalties imposed by the Medical Dentists and Apothecaries Acts on unqualified persons provided the case falls within the four corners of any of their Acts. These Acts do not directly forbid the general administration of anaesthetics. ... [Reform] is necessary, not only to prevent quacks practising as doctors, but to prevent unqualified persons administering anaesthetics and other dangerous drugs.⁵

⁵Turner, R. W.: The present state of the law as to the administration of anaesthetics, Practitioner 57:398, 1896.
Through the efforts of Frederic W. Hewitt, a bill that sought to make it an offense for an unqualified person to administer an anesthetic in Britain was actually drafted but never introduced owing to the advent of World War I.\(^6\)

In the United States, as in Britain, the Medical Practice Acts give legal definition to what constitutes the practice of medicine. At the same time, laws are in force defining the legal province of nursing. One of the most interesting controversies among anesthetists—is the administration of anesthesia a legitimate nursing function?—was to be clarified by the court’s interpretation of the laws in both fields in the State of California in 1934 (see Chap. 8). The origin of the controversy was a certain movement that started in Ohio before World War I. But even prior to that time the legality of nurse anesthesia came into question, and an opinion was handed down by the counsel for the New York State Medical Society. In 1911, this counsel, James Taylor Lewis, declared that the administration of an anesthetic by a nurse was in violation of the law of the State of New York.\(^7\)*


\(^7\)Irwell, Lawrence: The case against the nurse-anaesthetist, Internat. Clin. 2:204, 1912.

*Reference was made to this opinion in 1912 at the American Hospital Association convention and again in 1913: At the first meeting, Thomas Howell, superintendent of the New York Hospital, said: “From a broad common sense view it may seem that trained nurses should serve as anaesthetists in hospitals but from the narrow legalistic view they should not, for they are not qualified, not having received the degree of Doctor of Medicine. At least this is true in New York and probably in other states.” (Howell, Thomas: Report of the committee on hospital efficiency, hospital finances and economics of administration, Tr. Am. Hosp. A. 14:147, 1912.)

In 1913 J. W. Fowler of Louisville, Ky., said: “I do not think that either an intern or a nurse is capable of giving an anaesthetic, and I voice in that proposition the voice of the American Medical Association. They claim that no nurse lives, or intern, who has had sufficient experience to be an anaesthetist. They do not understand anatomy and physiology sufficiently to be competent to do that service, and it is suggested by the American Medical Association that it is just as important that the anaesthetist should be a first-class physician and staff officer as any other branch in the entire field of medicine.” (Tr. Am. Hosp. A. 15:283, 1913.)

The rejoinder came from Philemon E. Truesdale of Fall River, Mass., whose nurse anesthetist at the time was Alice Hunt: “I think the previous speaker will find that there is a very decided opinion to the contrary with regard to the ability of nurses to administer ether, and I question very much just how far the American Medical Association—I am a member of the Association—will go in this direction, but there is a movement in the State of New York to eliminate the nurse entirely from the position of anaesthetists and whether that is altogether a sane movement or not remains to be proven. When Miss McCall [sic], of Rochester, Minnesota, published her paper about three or four years ago, reporting 15,000 cases of anaesthesia, I think that that
The Ohio battle, which began the following year, ultimately centered in the Lakeside Hospital School of Anesthesia for nurses and the Interstate Association of Anesthetists, the latter a physicians' organization founded in 1915. It opened with a letter sent to George Crile by George H. Matson, secretary of the Ohio State Medical Board, on January 22, 1912:

The Board passed a resolution in which it expressed the opinion that no one other than a registered physician could administer an anaesthetic. This was referred to the Attorney-General for an opinion, which opinion entirely coincides with that of the Board, so that it is not only unethical but illegal for persons other than registered physicians to administer anaesthetics.8

Nothing immediately came of this resolution, but the question of the legality of nurse anesthesia continued to be discussed widely. An editorial in the American Journal of Surgery of August, 1914, stated:

There is little necessity for arguing with legislatures nor for blaming the community when the solution of the entire problem is distinctly in the hands of the profession itself. There is only one question involved: “Do surgeons desire nurses to administer anesthetics?” If the answer be in the affirmative, the laws should be altered so as to include the administration of anesthetics within the activities delegated to the nursing profession. If surgeons are opposed to nurses as anesthetists, no legislation is necessary. It merely remains with the profession to discontinue the use of nurses in this capacity. . . .—I.S.W.9

to any mortal is sufficient argument, at least it is for me, to convince me that the nurse has a place as an anaesthetist.

“Why should not the nurse be a good anaesthetist, if she is properly trained by temperament and by intellect? Because she has certain qualities that a man does not possess, and just as soon as the patient lies down to take his ether, if he is a man he gives up to the nurse, but if a man is going to administer that ether the feeling of resistance and fight is in him, and it stays in him until somebody puts their knee on his chest and he is overcome. Now, then, the nurse has a place as an anaesthetist. Moreover, if she devotes her whole time to anaesthesia she does something that men physicians will not do or, internes. They devote very little of their time to anaesthesia, most of their time is devoted to something else. I have employed a nurse as an anaesthetist for eight years, one for the last five years, and it is exceedingly difficult just now, in her absence for a few months, to find somebody to take her place. I have tried several and nobody is equal to it. Of course there are expert anaesthetist men, but the question here is, shall the nurse or the interne administer ether? I can take it a step further than that and say, the nurse or the physician, I think she is equally capable, and, to come right down to Dr. Crile’s proposition of . . . [anoci-association], his success is very largely vested in Miss Hodgins.” (Ibid.)

8Irwell, Lawrence: loc. cit.
Then, in 1916, the Interstate Association of Anesthetists, acting through Frank H. McMechan, petitioned the Ohio State Medical Board to take action against Lakeside Hospital "as the chief source of the nurse-anesthetist abuse." And, on August 9, the Board adopted the following resolution:

Whereas; it has been charged in a petition, signed by many well-known and reputable physicians, that the law regarding the administration of anesthetics by others than licensed physicians has been systematically violated by Lakeside Hospital, Cleveland, Ohio, and that courses in anesthetics are given nurses in Lakeside Hospital for the purpose and with the intent of violating the above mentioned law, therefore,

Be It Resolved, that until these charges are disproven and such courses, if given, discontinued, that all recognition of the Lakeside Hospital as an acceptable Training School for Nurses be withheld and recognition of its graduates as Registered Nurses shall be denied.10

The Cleveland Hospital Council authorized its secretary, Howell Wright, to arrange for a hearing before the medical board in order to protest against any interpretation of the law that would bar nurses from this field. Meanwhile, the Interstate Association of Anesthetists took a further step by adopting a resolution declaring that the association "bring to an end the administration of anesthetics by unlicensed persons in every state in the middle West in which such action can be secured."11

The hearing before the Ohio State Medical Board developed into a spirited contest between prominent Cleveland surgeons and representatives of the Interstate Association of Anesthetists. The immediate issue—the denial of recognition to the Lakeside Hospital Training School for Nurses—was quickly resolved: Recognizing the fact that the training of nurses in anesthesia might constitute a technical violation of the statutes, Lakeside Hospital agreed to discontinue the special school, and the ban on its nurse training department was lifted forthwith.

During the hearing, the president of the Ohio State Medical Board, L. E. Siemon, referred to an opinion rendered by Attorney General Hogan on April 14, 1911, which held that it was illegal for any person other than a physician or a dentist to administer an

10Use of nurses as anesthetists in Ohio hospitals in violation of State law is charged; Medical Board acts, Ohio State M. J. 12:679, 1916.
11Ibid.
anesthetic even though it was under the direct guidance of a phys-
icians. Albert A. Freiberg, of Cincinnati, J. F. Baldwin, of Colum-
bus, and Frank H. McMechan, of Cincinnati, denounced in no un-
certain terms the administration of anesthetics by nurses. McMechan
referred to an amendment to the New York health laws designed to
restrict the right to administer anesthetics to licensed physicians and
dentists, to an action by the Pennsylvania Board of Health with-
drawing funds appropriated to hospitals in which the services of
nurse anesthetists were used and to the decision of the Ohio State
Industrial Commission to refuse payment of anesthesia fees to any
person other than a licensed physician. "Ohio . . . is the pivotal
state," he said, " . . . in the national fight for the preservation of the
status of the anesthetist as a specialist."

Carl A. Hamann, George Crile and William E. Lower, all Cleve-
land surgeons, and F. C. Van Cleef, legal representative of the Cleve-
land Hospital Council, spoke for the nurse anesthetist. In this
practice, said Crile, Lakeside Hospital was "a follower," the lead
having been taken by many of the large clinics of the country. 12

The outcome of the hearing was that the edict against the Lake-
side training program for nurse anesthetists was withdrawn, and
pupils were accepted again in November, 1917. 13

12 Problem of the nurse-anesthetist is thoroughly discussed in spirited hearing before
State Medical Board, Ohio State M. J. 12:742, 1916.
13 Hodgins, Agatha: Unpublished manuscript.

*The question of the legal aspects of anesthesia received rather close attention at
the 1916 convention of the American Hospital Association: "In Ohio," said Miss M. A.
Lawson, superintendent of the Akron City Hospital, "we are having some little diffi-
culty. Dr. Crile employs nurse anesthetists and there is some trouble. The Anesthetists
Association is objecting seriously to it, and the State medical board passed a resolution
that it should not continue. There is also a law that an interne not registered in the
State cannot give an anesthetic. The general ruling in all the States is against the
nurse anesthetist's being legally responsible for the work she is doing." According to
E. F. Leiper, superintendent of the Episcopal Hospital, Philadelphia, "Under the law
of Pennsylvania and the ruling of the licensing board, internes are obliged to be pro-
ficient in anesthetics, and they are required to give anesthetics to the patients. They
are required to do so under the observation of a trained and paid special anesthetist

S. S. Goldwater, superintendent of the Mt. Sinai Hospital, New York City, an-
alyzed the situation thus: "Perhaps the most common hospital practice is to utilize
the internes as anesthetists. This means a frequent change in the office of anesthetist;
the only advantage of the system is to provide a moderate degree of training and
experience in this field for a comparatively large number of men. From the stand-
point of medical education the hospital ought not to discontinue the training of its
internes in anesthesia, but such training should not consist in mere unregulated ex-
perience, acquired at the expense of patients. A competent instructor should be pro-
vided, and the interne should not be left to his own devices until his competence
is assured.
In the neighboring state of Kentucky, similar events ran concurrently with the Ohio activities. On March 8, 1916, Attorney General M. M. Logan wrote to E. F. Horine and gave his opinion of certain resolutions passed by the Louisville Society of Anesthetists on the subject of nurse anesthesia:

You have this day submitted to me resolutions adopted by the Louisville Society of Anesthetists, with the request that I give you an opinion as to the proper construction of Section 2618 Kentucky Statutes. . . . [It] is therefore insisted by your society that an anesthetic should be administered only by one who has medical knowledge and training. . . . The administration of an anesthetic is unquestionably the practice of one of the branches of medicine and surgery, and no person has a right under the laws of this State to administer an anesthetic who has not been qualified as provided in the laws of this State for the practice of medicine.\(^{14}\)

Pursuing the same course at its annual meeting, the House of Delegates of the Kentucky State Medical Association passed a resolution sponsored by the Committee on Medical Ethics:

Your Committee in this connection desires to call your especial attention to a violation of these principles of ethics in the employment by surgeons of nurses and others as anesthetists who are not trained in the practice of medicine. It is urged that this is a procedure under the control of the surgeon, but we submit that neither law nor usage permits surgeons to decide who shall be permitted to practice medicine. . . .

"The tendency of the time is away from the use of the intern as anesthetist and towards the employment of permanent anesthetists. It is supposed that, through continuous practice, a high degree of skill will be developed; hence paid resident anesthetists holding medical degrees have been appointed. This is a rather costly expedient; moreover, the medical anesthetist who acquires a local reputation is soon tempted to abandon the hospital in order to . . . [engage] in lucrative private practice. The cost of a competent male medical anesthetist and the difficulty of holding him in the service of the hospital have led in some cases to the employment of women anesthetists who are commonly graduate nurses with operating room training. Eminent surgeons express themselves as satisfied with the service performed by such women, and argue that women are naturally better fitted for the work than men, quite apart from other considerations.

"As yet the number of court decisions on record is not sufficient to show whether or not graduate nurses may, with impunity, practice as anesthetists. The opinion of lawyers in New York State is that surgeons may employ women in the capacity named, but that in doing so they, the surgeons, assume liability for the result. If the administration of anesthetics is a part of the practice of medicine, anesthetics may be administered only by responsible licensed physicians. If a surgeon chooses to employ an anesthetist having no legal medical qualifications, he thereby tacitly assumes full responsibility for and undertakes to control the anesthesia, the anesthetist being regarded merely as his technical assistant." (Goldwater, S. S.: The hospital and the surgeon, Tr. Am. Hosp. A. 18:463, 1916.)

\(^{14}\)Nurses as anesthetists, Kentucky M. J. 15:49, 1917.
In order therefore, to stop this evil now, your Committee recommends that the medical profession of Kentucky request its members not to employ others than qualified physicians as anesthetists except in cases of emergency. In order to make this request urgent and effective, we would suggest that the profession should not refer cases to hospitals where nurses are allowed to give anesthetics, and that hereafter no member who so violates the law and ethics shall be considered in good standing in this Association.\textsuperscript{15}

Immediately after the propagation of this stand by the Kentucky State Medical Association, Louis Frank, a Louisville surgeon, and Margaret Hatfield, his anesthetist, who was a graduate nurse with special training in anesthesia, insisted that the State Board of Health be partner to a test case in the courts.\textsuperscript{16} On March 10, 1917, Judge Samuel B. Kirby, sitting in the Jefferson County Circuit Court, reviewed the facts as agreed upon by A. J. Carroll, attorney for the plaintiffs, Frank and Hatfield, and by M. M. Logan, attorney for the State Board of Health, the defendants, and decided in favor of the defendants.\textsuperscript{17} The case was appealed, and on May 4, 1917, Judge Hurt wrote an opinion for the Court of Appeals that reversed the decision:

The appellees insist, that, upon the facts agreed upon and the proof on file, that the appellant, Margaret Hatfield, is practicing medicine within the meaning of the law in this state, while the contrary is the contention of the appellants. The court below held to the view of the appellees and hence this appeal.

\ldots  [These] laws have not been enacted for the peculiar benefit of the members of such professions, further, than they are members of the general community, but they have been enacted for the benefit of the people.

\ldots  While the practice of medicine is one of the most noble and learned professions, it is apparent that such a construction ought not to be given to the statute, which regulates the profession, that the effect of it would be to invade the province of the professions of pharmacy, dentistry or trained nursing, all of which are professions, which relate to the alleviation of the human family of sickness and bodily afflictions, and to make duties belonging to those professions, also “the practice of medicine” within the meaning of the statute. Neither should such a construction be given to it as to deprive the people from all service, which could be

\textsuperscript{15}Kentucky State Medical Association: Official Minutes of the Sixty-Sixth Annual Meeting held at Hopkinsville, October 25, 26 and 27, 1916, Kentucky M. J. 14:609, 1916.

\textsuperscript{16}Nurses as anesthetists, Kentucky M. J. 15:49, 1917.

\textsuperscript{17}Kentucky M. J. 15:94, 1917; Judge Kirby’s decision in nurse-anesthetist case, Kentucky M. J. 15:149, 1917.
rendered to them in sickness and affliction, except gratuitous service, or else by licensed physicians, unless the legislature intended that such should be the result of the enactment of the statute. . . .

We are of the opinion that in the performance of the services by appellant, Hatfield, in the way and under the circumstances as agreed upon, as being the facts in this case, that she is not engaged in the practice of medicine within the meaning of the statute laws upon that subject, and hence the judgment appealed from is reversed and the cause remanded for proceedings consistent with this opinion.\(^{18}\)

Despite this decision, the organized physician anesthetists, under the leadership of McMechan, did not let the issue die. As editor of the "Anesthetic Supplement" to the American Journal of Surgery, he was able to use the pages of that journal as a sounding board. But, in 1919, before the campaign got a second wind in Ohio, the physicians who supported the nurse anesthetist introduced a bill into the legislature to legalize the administration of anesthetics by nurses. In reporting the progress of the bill the Ohio State Medical Journal stated:

One piece of legislation in which all Ohio physicians are either directly or indirectly interested, and which, though defeated on February 28th, was reconsidered and passed with a restricting amendment in the House on March 4th, . . . [is] House Bill No. 214 which legalized the administering of an anesthetic by a registered nurse. . . . It simply modifies Section 1286 of the General Code. . . .

"Sec. 1286-2. Nothing in this chapter shall be construed to apply to or prohibit in any way the administration of an anesthetic by a registered nurse under the direction of and in the immediate presence of a licensed physician."

The bill was first approved by the House Committee on Public Health and on February 27 . . . in the House . . . was defeated 47 to 50.\(^{19}\)

During the first consideration of the bill, an attempt was made to amend it that nurses should be exempted only after they had taken "the prescribed course in anesthesia in a representative medical or dental college and . . . successfully passed the State Medical Board examination" and that no nurse should be exempted unless she had administered previously 500 anesthetics. An amendment that the anesthetic could be administered in the presence of a dentist as well as a physician was accepted.

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\(^{19}\)Bill to legalize administration of anesthetics by nurses causes difference of opinion, Ohio State M. J. 15:231, 1919.
When the measure was reconsidered and passed in March, it was amended to read: "Providing such nurse has taken a prescribed course in anesthesia at a hospital in good standing." Accepting this proviso, the House, by a decisive majority, reversed its previous position on the bill and on a second roll call, by a vote of 69 to 32, passed the measure. The Senate followed suit on March 18, 1919. Two years later, the physician anesthetists tried again. A digest of their activities was given by McMechan in the "Anesthetic Supplement" of the American Journal of Surgery for October, 1921:

One of the most commendable actions, recently taken to make anesthesia safer for the public, is the passing of a law, by the present session of the California State Legislature, making "Anesthesiology 32 hours" a minimum requirement in the medical curriculum and for certification to practice. The law has been signed by the Governor and is now in effect.

One of its first results was the following: An interne [female] in a San Francisco hospital refused to take instruction in anesthesia from a nurse. She was expelled for insubordination, and appealed to the County Medical Society, which sustained her position. She was reinstated and the nurse was dropped as an instructress in anesthesia.

In the present session of the Colorado Legislature a new Medical Practice Act was killed in Committee because it was against public welfare. Some surgeons and nurses were prepared to try and amend this new legislation so as to enable nurses to give anesthetics.

In Ohio, after the bill repealing nurse anesthesia had been passed by an overwhelming vote in the Senate, and had been endorsed by the House of Delegates of the Ohio State Medical Association by a vote of 63 to 10, it was held up in the House until the closing hours of the session. At this time efforts were made to amend it to death, but these were defeated. The floor leader then retired it in favor of tax legislation and just before final adjournment put it to a vote, when not enough legislators were present to pass it. In consequence the bill died with the passing of the session. [This bill was known as the Kumler Bill, No. 184, and was killed through the efforts of Crile, Lower and Hamann and the Cleveland Academy of Medicine.]

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20 Bill to legalize administration of anesthetics by nurses causes difference of opinion, Ohio State M. J. 15:231, 1919.
21 Close, Garth: Personal communication; Hodgins, Agatha: Unpublished manuscript.
* The West Virginia Official Code of 1932, Section 2925, Chapter 30, Article 7, Section 10, stated: "In any case where it is lawful for a duly licensed physician and surgeon practicing medicine and surgery under the laws of this state to administer anesthetics, such anesthetics may lawfully be given and administered by any nurse who has been duly registered as such under the laws of this state, provided such anesthetic is administered by the nurse in the presence and under the supervision of such physician or surgeon."
The Ohio State Medical Association, however, through its President and Council has settled on a definite policy on anesthesia. . . . Apparently all opposition within the Ohio State Medical Association against repealing nursing anesthesia is centered in Cleveland. . . .

During the final Executive Session of the American Association of Anesthetists [organized in 1912] at the Boston meeting, the following resolutions was [sic] adopted:

"Be It Resolved, That in the future no member of the American Association of Anesthetists shall instruct any undergraduate nurse or orderly in the art of anesthesia, with the intention of granting them a certificate or diploma qualifying them as competent anesthetists.*

"Be It Further Resolved, That nothing in this resolution shall effect [sic] the instruction of medical students in regular medical schools or teaching hospitals or the routine teaching of nursing."

During the meeting of the Ontario Medical Association at Niagara Falls, Canada, the draft of a new Medical Practice Act . . . makes anesthesia an inviolable part of the practice of medicine.  

The agitation continued. In 1922 in the State of California:

[A] marked reaction against the nurse anesthetist was reported, and a good deal of pressure was being brought to bear in a great number of hospitals who were employing the nurse anesthetists. The strongest objection seemed to be against nurse anesthetists who were working on the fee basis; this being apparently most strongly objected to by the "specialists" in anesthesia.  

At the American Hospital Association convention during 1922, the legal aspects of nurse anesthesia came up for discussion, and into the minutes was read a letter from J. M. Baldy, Commissioner of the Department of Public Welfare of Pennsylvania:

I have before me your question, "Where a nurse is trained in the giving of anesthetics and a death results directly from anesthesia, who is held legally responsible for this? Can an institution chartered as charitable, not for profit, be sued for such a mishap?"

Let me answer the last portion of this question first, namely, any institution may be sued for anything. The question as to whether recovery can be made through the suit is an entirely different thing. Where it is legal for a nurse to give an anesthetic (I will define such a nurse, in answering the first part of the question) if all reasonable precautions have been taken by the institution through the nurse, she

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23Hodgins, Agatha: Unpublished manuscript.
*The purpose of this resolution eludes comprehension, for the instruction of undergraduate nurses and orderlies did not enter into the controversy at all.
being an employee of the institution for this purpose, recovery could not be made any more than it could from a physician under the same circumstances. Any given question brought to test would undoubtedly be decided on the merits of the individual case, the questions being:

(a) Was the nurse a known employee of the hospital for the purpose of giving anesthetics?

(b) Had the hospital taken proper precautions in employing her to know that she was recognized as competent in the giving of anesthetics?

(c) Did she take reasonable precautions such as are taken under similar circumstances by other hospitals?

The question as to who is held legally responsible, the nurse or the hospital, is again a question which would undoubtedly be decided by the court on the facts. Was she especially trained in the giving of anesthesia and was she recognized as competent? Had she taken every precaution recognized as proper and as practiced under such circumstances? Was a proper examination made by the laboratory and a physician previous to the administration? I do not believe a charitable institution under such circumstances could or would be held responsible, all proper precautions having been taken in the employment of its employees. I believe the suit would resolve itself into an individual one of the nurse, and I do not believe recovery could be made through her.

The State of Pennsylvania, under a decision of the Attorney-General's office, has ruled that a nurse properly and specially educated was acting within her legal rights in giving the anesthesia and that the institution was acting within its legal rights in employing her.

As regards the other states than Pennsylvania in which it has been legally declared that the nurse under these circumstances has a right to give anesthetics, I think the results would obtain exactly as they would in Pennsylvania. In states in which such pronouncement has not yet been made the whole case would hinge, I believe, on the decision of the court as to whether it was or was not legal for the nurse to give the anesthesia. In states in which a decision has obtained that it is illegal for a nurse to do this, I believe that both the hospital and the nurse would be held responsible.24

At the same meeting, Clarence E. Ford, superintendent, Division of Medical Charities, Albany, N. Y., explained the situation in that state:

As there are many New York State hospital superintendents here, I wish to say just a word in reference to this matter. The New York State Board of Charities, with which I am connected, has recently asked from the New York State Attorney-General an opinion on this point. The Attorney-General has held that a nurse may lawfully administer

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an anesthetic only when under the actual supervision and direction of a physician or surgeon. In other words, the nurse is acting as assistant to the physician, who assumes responsibility for the operation and for her qualifications as an anesthetist.\textsuperscript{25}

A detailed analysis was made by Malcolm MacEachern, Vancouver, British Columbia:

It may be said definitely that a nurse, when properly and well trained, is usually good. Nurses make good technicians on account of their natural adaptability to technical procedures, having a fine sense of touch, giving a more interested and continuous service, and not so prone to distractions of attention during the act of administering anaesthesia, which might be said of the medical anaesthetist. A proper training means a special course in a good teaching department of from three to six months, followed by supervised experience up to a year. The prerequisites should be a capable graduate nurse of a recognized training school, with natural inclination to such a service, having as basic qualities patience, coolness, tact, initiative and resourcefulness, with knowledge of human psychology. She should have fundamental lectures in Anatomy, Physiology, Pathology, Neurology, Pre and Post Anaesthetic Care of Patients, with special stress on the clinical symptoms associated normally and abnormally with anaesthesia. In addition, of course, her lectures on anaesthesia in a technical sense. She should also have given at least fifty anaesthetics on major cases, and after all, supervised up to a year. This may seem a good deal, but it is only fair to all concerned and should be a minimum.

... What is best for the patient? Any service in hospital or medical practice should ask this question as the fundamental or keystone to the answer. Do not minimize anaesthesia administration in your hospitals. I am skeptical about those hospitals which say they never have deaths from anaesthesia. This is a camouflaged statement. Anaesthesia to day in many hospitals is totally hazardous. We must look upon it more seriously. Do not let medico-legal or economy aspects overshadow the question of service to the patient. What is the best thing for the patient? This is a good anaesthetic, where there is quiet and smooth induction, uniform and steady administration, best after-results free from excitement, nausea, vomiting ... [or] post-bronchial, parotid or other complications. To get this, therefore, we must have:

First principle: A complete physical and psychological examination the night before the operation. This is necessary to win the patient's confidence, give the necessary reassurance, study the case physically and mentally for guidance in the best application of anaesthesia.

Secondly: A quiet, smooth induction with as little fear, struggle or

disturbance of physiological condition, such as pulse, respiration, blood
pressure, color, etc., as possible.
Thirdly: A continuous, smooth, even, deep or surgical anaesthesia.
Fourthly: The use of a minimum amount of anaesthesia throughout.
Fifthly: A follow-up or check-up on past anaesthesia cases to:
(a) Determine the efficiency of anaesthesia.
(b) Prevent, as far as possible, after-effects, or treat them rationally
if they arise.
Can these be done by a trained nurse?

In the second, the third and the fourth instances MacEachern
said, "Yes." In the first and the fifth instances, he said, "No," as they
belonged properly to the trained medical man who had specialized.

The surgeon is not the proper person, for usually his examination
beyond the lesion area is very limited, superficial or not at all. He is
not, and probably has never been a close student or observer of anaes-
thesia. His interest is limited to the operation.

What, then, is best? I believe in the combination. The hospital
should have a department of anaesthetics with a competent expert
medical experienced anaesthetist, and under his direction such nurse
anaesthetists as are required.26

A further contribution was made by Simon Tannenbaum, super-
intendent of the Beth David Hospital, New York City:

I recently had occasion to recommend the employment of a nurse
anesthetist in our hospital, and was authorized by the Board of Trus-
tees to engage one. After we had engaged her one of the surgeons raised
the question of the legality of employing a nurse anesthetist. In order
to get the question definitely settled I wrote to the State Medical So-
ciety and received the opinion of the counsel of the society, which was
to the effect that it depended entirely upon whether or not the admin-
istration of the anesthetic constituted medical practice as legally de-

27Ibid.
In 1923, in Ohio, the organized physician anesthetists again took up the cudgels, but the bill in the legislature was "indefinitely postponed" through the efforts of William E. Lower and other supporters of nurse anesthesia.  

It was to be expected that the surgeons, as a body, would take a stand on the question, and, at the convention of the American College of Surgeons in 1923, a resolution was adopted. Frank E. Bunts of Cleveland opened the subject:

One of the greatest advances in the administration of anaesthetics has been the advent of the nurse anaesthetist. The technical education of a physician is not necessary to acquire the ability to administer anaesthetics. . . .

The responsibility for the patient must be assumed by the operating surgeon, whether the anaesthetist be a nurse or a physician. . . . I am at a loss to understand how one who has spent the time and money necessary to acquire the broad education of a physician, can willingly confine himself to the narrow specialty of administering anaesthetics. . . . [Its advocates contend] that it is depriving the physician of a legitimate and much prized source of revenue. . . . At the hospital with which I am connected between five and six thousand operations [are performed] . . . each year under general anaesthesia. With few exceptions, all anaesthetics are given by nurse anaesthetists, and in a number of years . . . there have been but two anaesthetic deaths, and both were cases where the anaesthetic was administered by a physician.

The World War demonstrated beyond any question the value of the nurse anaesthetist. . . .

I wish it were possible for the great influence of this American College of Surgeons . . . to be definitely used not to forbid the physician to give anaesthetics, should he decide that that is what he is best qualified to do, but rather simply to assure the public and our state legislatures that we do approve of the nurse anaesthetist and that her abolition would be a calamity.  

F. N. G. Starr of Toronto, Canada, took an opposing view:

A man is a law unto himself. Unfortunately some surgeons appear to think that they should be a law unto the universe! During the early days of the war when the supply of doctors was limited, the British sent nurses to be trained in administering anaesthetics. Only about one in each 100 became proficient—that one became a marvel in proficiency but the scheme was later abandoned.

28Hodgins, Agatha: Unpublished manuscript.
Starr claimed that if interns were given the training they should have, the anesthesias which they administered would be much safer than those given by the nurse. Also, it was intimated that the principal reason for employing a nurse anesthetist was a desire to save money. However, when Bunts pleaded that the nurse be allowed to give a general anesthetic when advisable, he was applauded warmly by the majority of the Fellows. T. Casey Witherspoon then presented the following resolution:

Resolved that we express ourselves as opposed to any and all legislative enactments which would prohibit the nurses, when qualified, from giving anaesthetics.

This resolution was passed without a dissenting vote.\textsuperscript{30}

In 1923 the financial aspects of the problem came up in a discussion of fees for obstetric anesthesia at the American Hospital Association convention. C. Henry Davis said:

[A] . . . combination of circumstances has made it necessary for physician anesthetists to charge a fee which is prohibitive for the average obstetrical patient. . . . It is not our purpose to enter into the controversy regarding nurse anesthetists other than to state that as a general proposition nurses make excellent anesthetists when properly trained. Legislation which prevents them from administering anaesthetics is shortsighted and most unfortunate. It is only by training all our nurses to give obstetrical analgesia that its costs can be kept within reach of the average woman.\textsuperscript{31}

The prevailing practice with respect to the employment of physicians and nurses as anesthetists during the third decade of the twentieth century was revealed in 1925 by a survey of the Committee on Clinical and Scientific Equipment and Work of the American Hospital Association. Of 27 hospitals of 100 beds or less reporting, in 14 the anesthetics were given by expert nurse anesthetists, in 8 by physicians, in 4 by physicians or expert nurse anesthetists and in 3 by interns after instruction and under supervision. Of 41 hospitals of more than 100 beds reporting, in 13 the anesthesia was administered by expert nurse anesthetists, in 14 by physicians, in

\textsuperscript{30}Bunts, Frank E.: \textit{loc. cit.}

by either physicians or expert nurse anesthetists and in 35 by interns after instruction and under supervision.\textsuperscript{32}

Also, at that convention, reference to the continued activities of the organized physician anesthetists was made, the speaker being Stuart Graves of Louisville, Ky.:

Most state boards require that a man who graduates from a medical school and comes up for licensure shall have given a certain number of anesthetics, under the proper supervision. The last two years here, in co-operation with the Associated Anesthetists of America, we have been attempting to work out a system of professional administration of anesthetics. Prior to that time we have had nurses as anesthetists. We have been very much pleased with the system so far, our only disappointment being that the first man we got was so good that the University of Colorado took him away at twice the salary we were paying. We are starting to train our own graduates and have found very helpful co-operation from Dr. Herb and Dr. McKesson, of the Associated Anesthetists. We believe that the student should learn to give anesthetics, but should not do so on his own responsibility under a nurse anesthetist, if a doctor is available. We are trying to put anesthesia in the hospital upon a professional basis, and in that effort we have been supported heartily by the Associated Anesthetists and we feel that the system is bound to be a success.\textsuperscript{33}

While the controversy over the legality of nurse anesthesia dominated the scene during the twenties,\textsuperscript{*} the decade also saw the application of several new agents and methods for the production of anesthesia and a clearer elucidation of the anesthetic process. From a comparatively limited sphere of operation the field of anesthesia expanded in all directions—in possibilities for medical research and clinical practice and, consequently, in prestige and attraction for the physician.

In 1923 ethylene gas was first used in clinical anesthesia by Arno B. Luckhardt, J. B. Carter and Isabella Herb.\textsuperscript{34} In 1849 Thomas


\textsuperscript{33}\textit{Ibid.}


\textsuperscript{*}Legislation to discriminate against or to disqualify the nurse anesthetist as a legal administrator of anesthesia was introduced into the legislatures of several states in subsequent years and remains a continual threat to the profession.
Nunneley had described its anesthetic properties in reports on animal experiments in which he tested both chloride of olefiant gas (Dutch liquid) and olefiant gas (ethylene, $C_2H_4$). However, it received little attention until 1908 when William Crocker and L. I. Knight discovered that in greenhouses in Chicago the loss of carnations was due to the presence of ethylene in the illuminating gas.

During the decade, the second agent introduced was avertin (tribromethyl alcohol in amylene hydrate), which was identified by Eichholz in 1917. In 1926 O. Butzengeiger proved that this agent had anesthetizing properties when administered rectally. Attempts to produce anesthesia by rectal administration of drugs date back to Nikolai I. Pirogoff, who, in 1847, described anesthesia produced by giving ether by rectum. However, it was found that the rectal mucosa was damaged by the use of pure ether vapor or liquid, and not until 1913, when James T. Gwathmey began to use a mixture of ether and oil, did the method have anything to recommend it.

In 1928, G. H. W. Lucas and V. E. Henderson showed that cyclopropane, discovered and described by August von Freund in 1882, had anesthetizing properties, and, in 1934, J. A. Stiles and his associates at the University of Wisconsin began to use it clinically.

Also, during the twenties, the groundwork was laid for the rapid development of intravenous anesthesia during the next decade. Perhaps the first clinical use of the method was that made in 1872 by Pierre-Cyprien Oré when he injected chloral hydrate into a vein to


produce general anesthesia.\textsuperscript{41} After the turn of the century other agents were tried: hedonal by Fedoroff in 1909;\textsuperscript{42} procaine to produce local anesthesia by August Bier in 1908;\textsuperscript{48} chloroform and ether by Ludwig Burkhardt in 1909;\textsuperscript{44} paraldehyde by H. L. C. Noel and H. S. Souttar in 1912;\textsuperscript{45} magnesium sulfate by C. H. Peck and S. J. Meltzer in 1916;\textsuperscript{46} ethyl alcohol by M. G. Marin in 1929\textsuperscript{47} and avertin by Martin Kirschner in 1929.\textsuperscript{48}

However, the intravenous method was not successful clinically until derivatives of barbituric acid were adopted. In 1921 Daniel Bardet reported on the intravenous use of somnifene alone as an anesthetic.\textsuperscript{49} Other barbitals tried included dial by Bogendörfer in 1924;\textsuperscript{50} pernocton by R. Bumm in 1927;\textsuperscript{51} sodium amytal by L. G. Zerfas in 1929\textsuperscript{52} and pentobarbital sodium by R. H. Fitch and associates in 1930.\textsuperscript{53} None of these agents produced results that justified their extensive clinical use, and it remained for the introduction of evipal in 1932 by H. Weese and W. Scharpf to make available an

agent that was both safe and effective. Then, in 1934 John S. Lundy demonstrated clinically the further superiority of thiopental sodium, and, at last, anesthetists had an agent that could be used widely and effectively as an intravenous anesthetic. Thiopental sodium was one of two drugs submitted to Lundy for clinical trials by the Abbott Laboratories, the other being sodium allyl secondary butyl thiobarbituric acid.

The most important innovation in methods of inducing anesthesia was the improved technic of intratracheal anesthesia devised during and after World War I by the Englishmen I. W. Magill and E. S. Rowbotham. According to Ralph M. Waters (1883- ), the reasons for this development were “(1) the treatment of respiratory obstruction and resuscitation by artificial respiration; (2) protection of the tracheo-bronchial tree from contamination by debris in surgery of the mouth and nose; and (3) control of intra-pulmonary pressure in thoracic surgery.”

In the first instance, the contribution of two men is important: Joseph P. O’Dwyer (1841-1898) and George E. Fell. The result of their respective efforts was an apparatus for the relief of laryngeal obstruction and the administration of artificial respiration. This consisted of a cannula, which was designed to fit variations in the size of the larynx, connected by a tube with a foot-operated bellows. The apparatus was perfected about 1896.

In the second instance, the work originated with Friedrich Trendelenburg (1844-1925), who, in 1869, began to perform tracheotomy and to introduce a tube through the opening for the administration of the anesthetic during operations on the upper air passages. In 1880 William Macewen (1848-1924) reported the in-
troduction of a tube through the mouth into the trachea to satisfy the same purpose. In 1895 the first direct-vision laryngoscope was adapted for introducing intratracheal tubes by Alfred Kirstein (1863-1922).

In the third instance, the work dates to Marin Théodore Tuffier’s research work on chest surgery in 1896 and his use of laryngeal

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intubation and controlled insufflation to prevent the ill effects of pneumothorax while the chest wall was open. This research work led other surgeons—Eugene Louis Doyen (1859-1916) in France, Franz Kuhn (1866-1929) in Germany and Rudolph Matas (1860-) in the United States—to work along similar lines. These men adapted and modified the Fell-O'Dwyer apparatus to the needs of thoracic surgery. The perfection of the intratracheal technic of anesthesia, as stated previously, was the work of Magill and Rowbotham during and after World War I.

In 1915 Dennis Jackson reintroduced the idea of carbon dioxide absorption with the use of sodium hydrate and calcium hydrate filters. The method was improved in 1924 by Ralph M. Waters, and soda lime was used in the absorber. Then, in 1928 Brian C. Sword, with the aid of Richard von Foregger, built a circle filter. This method both reduced greatly the cost of gas anesthesia by saving the anesthetic gas and made possible the closed system for satisfactory intratracheal anesthesia.

As progressive as was this period in the respects already mentioned, probably no work was so beneficial to progress in anesthesia as that of Arthur Guedel on the signs and stages of anesthesia. His first article on the subject appeared in May, 1920, the complete elucidation of the phenomena being published in a monograph on inhalation anesthesia in 1937.

By the 1930's—partly as a consequence of the application of these new technics and agents and of progress in the science of anesthesia and partly as a consequence of more and more nurses' entering the field—the lines were drawn between the proponents of nurse anesthesia on the one hand and of physician anesthesia on the other.

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At the American Hospital Association convention in 1932, Paul Keller of the Beth Israel Hospital, Newark, N. J., said:

Anesthesia first originated by drop method administered by nurses or technicians, or anyone available, and did not require special training or experience. It gradually grew to be an assignment of the nurse and then the nurse anesthetist, whereas today administering anesthesia is a scientific medical problem preferably coming under the supervision and direction of the physician anesthetist. The modern viewpoint is to regard the administration of anesthesia almost completely as the problem of the physician anesthetist. I am opposed to the nurse technician, as anesthesia in the past decade has developed by such tremendous strides that it is almost solely a specialized aspect of medicine. It is no longer administration of ether by cone but deals with local and regional anesthesia, spinal anesthesia, rectal anesthesia, and all specialized forms of administration. . . . The special anesthesias of today require constant physical interpretation during the period of administration, and the nurse or technician is unable to cope with the problem on the same basis as the medical attending anesthetist. 68

J. Rollin French of the Golden State Hospital, Los Angeles, thought otherwise:

I wish to take exception to one of Dr. Keller’s statements, and that is with reference to the nurse as an anesthetist. I agree with him that giving an anesthetic is a medical problem. I also want to state that I believe many other duties in a hospital which may be construed as medical problems can be handled by certain nurses better than by a doctor. There are many reasons why a well qualified nurse makes a better anesthetist than a physician. Frequently we ask a physician to give an anesthetic who is no more qualified to give one than he is to give an enema. I personally would rather have a well trained nurse give an anesthetic for me than a large percentage of the doctors. Please don’t understand that I mean to say I prefer an untrained nurse to a physician who is trained, but, taking them as an average, I believe that throughout the country we will find that the well qualified nurse, the one experienced in giving anesthetics, will give a better anesthetic than the average physician.

There is a great deal to be developed along that line. Of course, in the state of California, we are not permitted to have a nurse give an anesthetic, but nevertheless it is being done. And I presume in other states the same way. But, don’t overlook the fact that the physician, many times, in giving an anesthetic becomes more interested in the operation than he does in giving the anesthetic. We don’t find that

situation when the nurse is giving the anesthetic. . . . [At] the present time I am not in favor of preventing a well qualified nurse from giving an anesthetic.\textsuperscript{69}

It had become a question not only of whether administration of anesthesia was a medical and/or a nursing function but also whether, in a broad sense, the functions of nurses and physicians were mutually exclusive acts.

\textsuperscript{69}Reducing the cost of operation without the sacrifice of efficiency, Tr. Am. Hosp. A. 34:649, 1932.