FAILURES OF MIDWIVES IN ASEPSIS.

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The need of this movement, that we now assist in inaugurating, which contemplates the control of the practice of midwives, is generally acknowledged. The credit for its origination belongs wholly to our experienced Assistant Health Commissioner, Dr. Reilly. It is the first practical and promising attempt in America to regulate midwife practice. I believe that we, the members of the staff, have an unusual opportunity to do a valuable service to the community.

Our work is humanitarian and based upon humanitarian motives. I believe that the chief consideration that induced each of us to enter into this work was that of benefiting the community. No doubt the legitimate desire to enlarge our experience through the observation of unusual and interesting cases had its influence on all of us; also the advantage to be gained through association with others interested in the same specialty. Yet back of all was the fact which our observation and experience have shown to exist, that the health and lives of many helpless and innocent people are jeopardized through the illegitimate practice of midwives. Just as the medical profession is always ready to unite in any well-digested effort to stamp out or prevent an epidemic of disease, so, when once a chance was given us, we were all ready to engage in the effort to reduce the well-recognized dangers to which thousands of poor women were exposed through the unrestrained ignorance of their attendants during childbearing, as well as through their unlawful practices to interfere with pregnancy.

These remarks do not imply that our attitude is one of hostility toward the midwives. On the contrary, it is our aim to assist them in their legitimate work. There are about 900 midwives in Chicago, and they attend from 20,000 to 25,000 cases of labor annually. Moreover, a large share of our population is composed of immigrants from Europe who are accustomed to employ midwives. If it were desirable to do away with midwife practice it would be absurd to attempt a thing so impracticable. But it is not desirable. A well-trained midwife can care for a poor woman and her child in a case where the employment of a nurse is an impossibility, better and much more cheaply than a physician. If she confine herself to her proper duties, and if she be trained to perform them and to recognize when she should call for assistance, she is a valuable member of the community.

The objections to midwives are that they are ignorant, especially of the principles and practice of asepsis, that they are prone to usurp functions not belonging to them, and that they often advise and produce abortions. It is the especial object of this movement to correct the abuses in their practice. In the June Report of the Health Department Dr. Reilly calls attention to the criminal practice of midwives, and mentions the fact that the recent records of the coroner's office show thirty-four cases of deaths of unfortunate women and girls from this cause. If in so many cases the responsibility is fixed, how many cases are there where the responsibility is unknown? A recent investigation of the puerperal mortality statistics of Chicago[1] shows that during the last ten years abortion has been assigned as the cause of death 161 times. This does not include cases of death assigned to uterine hemorrhage, septicemia, etc., which, as we know, often result from abortion. It is probable that a great many of these deaths were due to criminal practice. How many were performed by midwives we have no means of knowing, since the physicians called in and in attendance at the death issue the certificates. The common observation of all of us and the facts just cited from the coroner's report, show to what an extent the mortality depends upon criminal midwife practice. We must also remember that not only the great mortality is due to this cause, but a vast amount of sickness likewise results. It is one of the most important objects of this movement to stamp out this criminal practice. In none of the thirty-four coroner's cases was any punishment inflicted on the perpetrators of the crime. Our criminal laws can therefore have little or no effect in preventing the continuance of these crimes. The rules and regulations which will control midwife practice in the future provide that under no circumstances shall any midwife have in her possession . . . any drug or instrument or other article which may be used to procure an abortion. In the enforcement of this provision, as well as in those regulating the scope of their practice, we hope to see these crimes abolished.

Midwives usurp the functions of physicians not only by performing obstetric operations, but also by trying to treat and manage medical and surgical cases. The law-makers of all the States are gradually coming to recognize the importance to the community of a well educated and well trained medical profession, and are insisting upon a four years' special training based upon a thorough preliminary general education, as a requisite to a license to practice. We all know the necessity for a thorough training in anatomy, physiology and bacteriology to a comprehension of the principles of surgery. How then can a woman of limited education in four to six months learn to appreciate the indications for operative interference, to say nothing of the technic of difficult and dangerous operations. The most she can learn is to know the progress of normal labor and to recognize such deviations therefrom as to require her to call for assistance, and to ground herself thoroughly in the details of antisepsis and asepsis. Therefore our rules, following those of all countries whose experience has formulated these restrictions, specify when a physician must be called. Any violation of these specifications shall be considered as proof that the midwife practices medicine, and makes her subject to the penalties prescribed by the medical practice act.

So far the State goes in defining the functions of midwives and in controlling them. It does not directly propose to educate them. However, we must admit that their ignorance of asepsis and antisepsis is practically a very great objection to them. There is much danger from this source, which is forcibly illustrated by the study of the mortality from puerperal infection in Chicago. In the tables already referred to I have obtained the average annual mortality rate from puerperal infection for the decennial periods 1866 to 1875, 1876 to 1885, and 1886 to 1895. In the first period there were 127 deaths from puerperal infection for every 1,000 deaths from all causes of women of childbearing age, namely, women from 15 to 45 years old. In the second decennial period there were ninety-seven deaths, and in the last period seventy-three

[1] See "The Mortality from Puerperal Infection in Chicago," by C. S. Bacon, Amer. Gyn. and Obst. Journal, April, 1896.

deaths. The rate based on the number of confinements shows about the same rate of decline. In the three periods, for every 1,000 confinements the rate was 7.6, 5.5, and 4.1 respectively. These figures show indeed a decline, and so far are encouraging. The decline corresponds in time to the spread of the teachings of Lister, and is no doubt due to the excellent teaching of asepsis and antisepsis in our medical schools. The fact remains, however, that the mortality rate from puerperal infection is still very much too high, and indeed has increased during the last four years. In 1891 it was 62 per 1,000 deaths of women of childbearing age, in 1892 it was 60 per cent., in 1893 65 per cent., in 1894 71 per cent., and in 1895, 69 per cent. In other words, puerperal infection still kills more women in the prime of life, women of the greatest worth to their families and to the State, than any other cause except consumption.

Who is responsible for this large continuing mortality, physicians or midwives? While it is impossible to answer this question from the imperfect records of the registrar's office, it seems very certain that the improvement for the last decades is due to the better training of medical students, and that the bad results of the last few years are largely due to midwife practice, which has not made corresponding advance.

Hence I claim justification in presenting to this staff the subject announced on the program. The scope of our duties is yet to a certain extent indefinite and will be left to natural development. We are called on by midwives to treat childbed fever. Is it not reasonable that we should try to prevent its development? I look forward to the growth of our organization in such a way that each member of the staff shall have practical charge of the midwives in his district. Like the commander of a company in an army, he shall inspect the records and outfits of the members of his division, and he shall come to feel so far responsible for the practice in his district that he will try to keep the mortality and morbidity records as low as possible. This is the condition in some of the German provinces where the best obstetric results are obtained. It is impossible for us at present to exercise such control. As Dr. Reilly pointed out at the last meeting, it is important that we go slowly at first in order not to wreck the movement at the start by over-zeal. The first thing to do is to secure a complete registration of midwives. So long as a certain number defy the authority of the City Board and the State Board of Health they would defy us and we would accomplish nothing. It will probably take some weeks or months longer to bring the defiant midwives to terms or to revoke their licenses to practice, and until then we must confine our efforts to advice to those who call on us. Yet in this way we can, if we will, accomplish very much of value, and for this reason it seems to me timely that we begin to study the mistakes and failures of midwives and consider the means to correct and prevent them.

The gravest mistakes midwives make in their legitimate practice are in the aseptic management of labor. Their most important mistakes in this direction are the following: failure to secure cleanliness of person and surroundings of patient, failure in subjective cleanliness, use of improper lubricants, making unnecessary internal examinations.

Concerning cleanliness of patient.—Many patients who employ midwives regard the hemorrhage accompanying labor and the amniotic fluid as a kind of filth, and consequently find it proper to collect these discharges in filthy cloths. To them it would be absurd to put on clean bedding before labor, and one finds dirty rags and dress-skirts used for pads. They have, moreover, a great fear of cold, and use feather beds and keep the windows carefully closed. The same fear leads them to avoid the use of water about their bodies. To manage a labor properly under such conditions requires a thorough belief in cleanliness and considerable energy to exert the necessary authority to overcome ignorant prejudice. A midwife, even if she have an idea of the importance of cleanliness, finds it much easier to put up with the surroundings than to improve them. Any one of us who has had any practical acquaintance with the conditions present in such cases will not condemn a midwife too severely for not securing a state of surgical cleanliness. We will also allow for the fact that she can not exert the same authority as a physician. For her assistance it is well that she have very definite and detailed directions to aid her, and to fall back upon in case of opposition on the part of the patient. Such I would formulate as follows:

Have the patient prepare beforehand a piece of white oil-cloth 1½ yards square and at least six clean sheets, and plenty of old pieces of sheets or cloths thoroughly boiled and washed. All should be put together with the baby-clothes in a clean drawer and not handled with dirty hands. At the beginning of labor remove all bedding from the bed, cover the mattress with the oil-cloth and put over it only the clean sheets and the cloths for pads. Under no circumstances use old blankets or cotton comforters, or dirty skirts as pads. Have the patient take a tub or sponge bath with soap and water, put on a clean night-shirt and give her an enema. Do not let her touch the clean bed with dirty or everyday clothes.

Before each internal examination wash the outside genitals thoroughly with soap and the antiseptic solution which is used for disinfecting the hands, but do not give a vaginal douche either before or after labor. If there be a purulent discharge or if the vulva look sore, call in a physician, for these conditions are dangerous and apt to cause fever in the mother or sickness of the child. When the afterbirth comes away remove the sheet and pads, wash the patient with the antiseptic solution, wash and wipe off the oilcloth, and spread over it a clean sheet and clean cloths for pads as before. For a napkin for the patient use only absolutely clean cloths and do not fasten them tightly against her. Afterward change the sheets and pads as often as necessary, and wash the patient every time with clean soap and warm water.

Concerning subjective cleanliness.—Keep the clothes and hands clean. A midwife would better wear light-colored wash-dresses. Under any circumstances she should have a number of large white aprons with sleeves which cover the entire dress to protect the patient and her bed from contamination by the street dress. In cases of emergency she should cover her dress with a sheet.

Great care should be taken to keep the hands free from cracks and from sores about the roots and sides of the nails. If a midwife have any ulcer or running sore on her body she must not attend any labor until the sore is healed. In short, she must avoid all infection of the hands, for it is very difficult and takes much time to clean them again. Before making an internal examination she must disinfect the hands

and arms. This process consists in the following steps:

1. Washing with soap and water as hot as can be borne for ten minutes, using the brush and paying especial attention to the folds of the nails. All finger rings must be removed. A midwife should not wear rings.

2. Cleaning around the nails with a steel nail-cleaner or with a knife until no dirty particle can be seen.

3. Washing another minute with soap and hot water.

4. Scrubbing the hands and arms three minutes in a disinfecting solution. A midwife may use a sublimate solution (1 to 1,000), creolin or lysol 1 per cent. or carbolic acid 3 per cent. The sublimate is the most efficient, but chaps the skin of some people, who may find lysol the best to use.

After disinfection the hands must not be contaminated again by touching anything before making the examination. Hence the patient must uncover herself and flex the thighs so that the midwife need not touch the sheet. Then, with the thumb and fingers of one hand, she should separate the lips of the vulva so that the examining fingers do not carry into the vagina any impurities from the outside.

Concerning a lubricant for the examining hand.—Vaselin and oil, which are generally used as lubricants, are dangerous, for they are good collectors of germs. Even carbolized vaselin, if contained in boxes or jars into which the fingers are dipped or which are exposed to dust and dirt, may contain living germs, for the oily substance protects them from the action of the germicide. The importance of a proper lubricant was well illustrated by a recent report of Dr. Weichardt, the medical officer in charge of midwifery practice in a district in the Duchy of Sachsen-Altenburg in Germany (see *Monatschrift für Geburtshülfe und Gynäkologie*, June, 1896). During the year 1895 there were in his district 1331 labors attended by the thirty-five midwives, with no deaths. The mortality in previous years had been 5 to 6 per cent. Dr. Weichardt suspected the cause of this mortality to be the boxes of carbolized vaselin used by the midwives for lubrication, so he had them provide themselves with collapsible tubes filled with carbolized vaselin. This change alone brought about the ideal result shown in the report. I have ordered from Sharp & Smith such tubes, which will probably be the most practical and safe lubricant for midwife use. Such tubes are also put up by Johnson & Johnson. In a woman who has borne children and also in a primipara, after rupture of the membranes, when the vaginal canal is bathed in the amniotic fluid, there is generally no need of any lubricant. Ordinarily I use soap when any is needed. The collapsible tubes of soft soap are well adapted to this purpose. To use either soap or vaselin in tubes, a little should be squeezed out on to a clean plate or saucer, and with the tips of the sterilized fingers a little is taken up and rubbed over the fingers mixed with the disinfecting solution. Otherwise a piece of hard soap whose surface has been well cleaned can be thoroughly washed in the sublimate solution and then serves very well to lubricate the fingers.

Concerning unnecessary internal examinations.—Professor Leopold has shown in hundreds and even thousands of cases in the hospital in Dresden, that it is possible to conduct labor without any internal examinations. With very little practice it is much easier for any one to determine the position of the child by external than by internal examination. The progress of labor can also be determined by the rate of the descent of the head. Internal examinations are always somewhat dangerous. Germs are almost inevitably carried into the vagina, where they may infect the tears in the cervix or vaginal walls made by the head of the child. The danger increases with the frequency of examination. It is well proven that the chance of fever increases proportionately with the number of internal examinations. Any ordinary case of labor lasting only six to ten hours rarely requires more than one examination to be made. Patients sometimes think that a midwife or doctor assists them by making long or frequent internal examinations. This foolish idea should be dispelled. Let the rule be, examine only when there is a good indication, such as uncertainty as to the position, fear of prolapse of the cord, delay in the labor, or when it may be advisable to learn the degree of dilatation of the cervix. In making the examination do not introduce the fingers into the uterus, and be careful not to rupture the bag of waters.

In this hasty summary of the chief mistakes of midwives in asepsis I have aimed to indicate where they fail by insisting with considerable attention to detail upon the rules of practice which should govern them. While I have not aimed at a complete discussion of aseptic midwifery, I believe that a careful inspection will show that no important detail has been omitted and no unimportant direction included.

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CLEANLINESS THE FIRST PRINCIPLE OF HYGIENE.

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Hygiene, the science of health, is undoubtedly the first foundation of therapeutics, the science of restoring lost health, because without knowing the laws which maintain health, no physician can tell his patient the right way that leads him to health and give him the proper advice how to regain it. Hence disease, as we call lost health, must be in one or the other way the consequence of departure from the natural path of life, or, in other words, disease is the indication of the loss of the vital equilibrium; its symptoms are the manifestation of the vital force to regain the normal state.

By studying such abnormal conditions and the way by which nature is seeking to lead the organism back to the prior state of health, we will find out not only the proper way of cure, but learn also how to keep up our health, *i. e.*, the principles of hygiene.

Hygiene is as old as the history of mankind. Its highest development has always been found in the most civilized countries, today as well as several thousand years ago, not because they have the highest civilization—nothing in the world develops without necessity, its motive power—but because the more a people has advanced in so-called civilization the more are the natural laws of life usually neglected, so that it may be doubted whether the high development of science, technics and industries of the modern world is really the result of mental progression, or is not rather the necessary effect of reduced vitality and lessened resistance to morbific influences, accord-