THE CAUSES OF DEATH IN CHILDBIRTH; MATERNAL MORTALITIES IN 100,000 CONFINEMENTS AT THE NEW YORK LYING-IN HOSPITAL.

BY

JAMES A. HARRAR, M. D.,

New York.

THE vital statistics of childbirth in the community in general are reasonably open to considerable suspicion. Deaths from puerperal infection are often crowded in under the heading of typhoid or pneumonia by the medical attendant, or an unrecognized rupture of the uterus goes down on the certificate as postpartum hemorrhage, or later as peritonitis. On the other hand, hospital statistics are unavoidably exaggerated both in the frequency of abnormalities and in the death rate, on account of the contamination of the figures by the great number of serious referred cases.

This is particularly so at the New York Lying-In Hospital, where no woman is refused admission, no matter how ill she may be. Many women have been received in a dying condition, and forty women have died within less than an hour after their admission, of the hemorrhage, convulsions, shock or sepsis, for which they were sent to the hospital by their attending doctors or midwives. Three hundred and fifty-six of the deaths recorded have been among our postpartum admissions. Naturally in these deaths, and also in those among the emergency cases entering the hospital far advanced in labor, we feel that our responsibility is most fragmentary, and we cannot hold ourselves wholly accountable for the unfortunate outcome.

However, it is instructive to us to review the various causes of death in childbirth where the intensive hospital study of the sick woman and occasionally postmortem examination enable us to reasonably determine the true cause of death.

It is in the outdoor service especially that we are able to appreciate the approach to the irreducible minimum to be obtained in private practice and where the figures are not distorted by the inclusion of the emergency failures of others.

From the organization of the service of the Lying-In Hospital in 1890 until July, 1917, the institution has cared for, in the wards and in the homes of the patients, 115,439 women. Of these 7213 were gynecological ward cases and women late in the puerperium; 37,483 were parturient and recent puerperal admissions to the wards, and 70,743 were labors conducted in the tenements.

On the indoor service, abortions, ectopics, women less than ten days postpartum, and parturients at term, are all classed under the somewhat arbitrary term "confinements." Subtracting the necessary percentage, the number actually confined at or near term indoor was 32,116. Of these, 23,130 were regular applicants, applying for examination and advice one to three months before labor, and 8,986 were emergency labors. The latter include both those who had not previously applied to the hospital, and cases of dystocia referred in by their unsuccessful medical attendants.

Of the 70,743 confinement cases on the outdoor service, 1,662 were abortions, leaving 69,081 confinements in the outdoor at or near term. In all 101,197 actual confinements at or near term have been conducted by the hospital, and it is with the mortalities in these that we are especially interested.

For purposes of study it is necessary to divide the mortalities into groups. In the outdoor service, in 69,081 actual confinements, 218 women died. Of these 218, 137 died in their homes, and 81 after transfer into the wards of the Lying-In or other hospitals, so that 218 is the full maternal mortality in the tenement service to date. This represents one death in every 317 women confined, or 0.31 per cent. mortality.

In the last eight years the maternal mortality of the outdoor tenement service has fallen from one death in every 312 confinements to one death in every 326 confinements.

On the indoor service, of 23,130 regular applicants confined, 109 died. This is one death in every 212 women confined, or 0.47 per cent. One important reason for the somewhat higher mortality among the indoor regular applicants over the outdoor is the much greater proportion of primiparæ on the indoor service. In the tenement service twenty out of every 100 labors are primiparæ, while on the indoor service forty-eight out of every 100 are primiparæ.

When we consider the emergency cases confined in the hospital, the death rate rises tremendously. These were women who either had never submitted to an antepartum examination or to prenatal care, or who were sent in by their midwives or doctors after failure to deliver. Among these 463 died, one in every twenty

deliveries, or 5 per cent. The comparison between the mortality of the regular applicants and that of the emergency labors is a striking commentary on the necessity and value of the prenatal examinations and advice that the Lying-In Hospital has afforded its regular applicants during the past twenty-five years.

While we believe our death rate to be low, both in our outdoor confinements and in our regular indoor applicants, it is disconcerting to find that even in these selected groups the predominating cause of death is puerperal infection. The one element of mortality in obstetrics, of which we are inclined to boast, and that we ought to have most certainly under our control, causes more than twice as many deaths as any other single complication. There were twenty-three deaths from puerperal infection among the 23,130 regular applicants confined indoor, and fifty-nine deaths from puerperal infection among the 69,081 outdoor confinements; a mortality of 0.95 per thousand, and 0.85 per thousand, respectively.

In the deaths occurring among the postpartum admissions and the emergency labors handled by a succession of midwives and doctors before admission, considerably more than one-third died of puerperal infection.

Eclampsia ranks second on the list as a cause of maternal death, accounting for ten deaths among the indoor regular applicants, or 0.43 per thousand confinements and for twenty-six deaths on the outdoor service, or 0.37 per thousand confinements.

The third most frequent cause of death is peritonitis after the performance of Cesarean section. Thirteen deaths occurred among the indoor regular applicants and three among the outdoor cases referred into the hospital for Cesarean. These deaths might reasonably be included under the heading of puerperal infection.

Next in importance come rupture of the uterus and placenta previa. Our results in placenta previa are better among the indoor regular applicants than among the outdoor, and of late years all cases of placenta previa occurring on the outdoor service are transferred indoor, if possible, for delivery. Five died of placenta previa among the indoor regular applicants, 0.26 per thousand, and twenty-five among the outdoor applicants, or 0.36 per thousand. Of ruptured uterus, there were five deaths indoor and twenty deaths outdoor, or 0.26 per thousand and 0.28 per thousand.

Deaths from nephritis, broken cardiac compensation, pneumonia, shock and exhaustion from prolonged labor, and postpartum hemorrhage rank next. Then come deaths from shock and hemorrhage after Cesarean section, tuberculosis, acute toxemia of pregnancy

without convulsions, and accidental hemorrhage, they are in the order named.

The lesser causes, explaining from one to three deaths each, are abdominal pregnancy, rupture of the vaginal vault, pulmonary embolism, and thrombosis, cerebral hemorrhage, appendicitis complicating late pregnancy, suicide in acute mania, carcinomatosis, brain tumor, sarcoma of the liver, and ether and chloroform narcosis. And, finally, there is a considerable number, about one-tenth of 1 per cent. of the total number of deaths, who died suddenly of unknown causes; the majority of these being put down on the reports as due to pulmonary embolism, but without autopsy for verification.