

# The First University Lying-In Hospital

## Göttingen in the History of Man-Midwifery

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**Abstract.** In France, the Netherlands, and Great Britain, male medical doctors and surgeons were turning to midwifery earlier than their German counterparts. Equally, in France and in England, maternity wards and hospitals emerged earlier than in Germany. Nevertheless, the lying-in hospital of Göttingen, founded in 1751, played a pioneering role: it was the first university institution in the world. Its main purpose was to give practical, hands-on education in obstetrics to medical students. The first professor of obstetrics and director of Göttingen University lying-in hospital, Johann Georg Roederer (1726–1763), was willing to transform the traditional female craft of midwifery into a branch of medical science. Through educating the next generation of obstetricians and his scholarly publications, he had a major impact in Germany and beyond.

For the period around 1800, an exceptionally rich collection of printed and archival sources allows deep insight into the practices of Göttingen University's lying-in hospital. The roles of the director, the midwife, the students, and the patients can be studied in detail, and compared to lying-in hospitals in other countries. Special attention is given to the practice of practical education.

Finally, the success of the maternity hospital can be assessed, both in terms of the directors' reputation, and the survival chances of mothers and children.

**Keywords:** lying-in hospital, maternity hospital, Göttingen University, practical education, Johann Georg Roederer, Friedrich Benjamin Osiander

Beginning in the seventeenth and eighteenth centuries, midwifery, which up to the early modern period had been the domain of women, was transformed into a branch of medical science. Midwives had handed down their art from generation to generation by practical and oral instruction. By contrast, medical men strove to base their new science of obstetrics on printed treatises and case histories, theoretical reasoning, and empirical observation. Although this is well known as a general trend, only micro-historical analysis can reveal what exactly the change meant for both the medical protagonists and the women giving birth. In addition, it should be explored how the process worked: How did doctors and surgeons get access to the

birth chamber, and how did they manage to teach male students the practical skills of midwifery? Göttingen University's maternity hospital is an appropriate institution for such a case study, because of its crucial role in the transformation process and its exceptionally rich documentation.

When in the middle of the eighteenth-century medical men in Germany began to turn to practical midwifery, they followed the path which their counterparts in France, the Netherlands, and Great Britain had taken.<sup>1</sup> There, as early as in the seventeenth century, medical doctors and surgeons entered the field of midwifery. France and England were also earlier than Germany in developing hospital treatment of childbirth. In Paris, the huge *Hôtel-Dieu* had a maternity ward since the late Middle Ages. It was directed by a midwife, trained female midwife apprentices, and in the eighteenth century, delivered more than a thousand women a year.<sup>2</sup> In 1728, the city of Strasbourg established a maternity ward at its hospital. There, not only female midwives were instructed, but also medical students could acquire practical skills, although it was not part of the university.<sup>3</sup> In London, several lying-in hospitals and maternity wards were founded in the middle of the eighteenth century, starting in 1739.<sup>4</sup> Most of them were charities, financed by private donations, aiming to help poor women.<sup>5</sup> Teaching obstetrics was mainly done outside of hospitals, in the form of private courses taught by fairly famous doctors.

Thus, the lying-in hospital of Göttingen, founded in 1751, and its first director, Johann Georg Roederer (1726–1763), in many regards followed models developed in Western Europe. This is clearly reflected by Roederer's education.<sup>6</sup> He studied medicine in his native town of Strasbourg, and in 1747–1749 did a *grand tour* to the centres of modern medicine in Paris, London, and Leiden, turning his attention to anatomy and obstetrics. In the end, he trained practical midwifery in the maternity ward of Strasbourg's city hospital and took his MD from Strasbourg University. When in 1751 he became the first professor of obstetrics and founding director of a lying-in hospital at Göttingen University, the new institution was largely modelled on the Strasbourg maternity ward. Nevertheless, the lying-in hospital of Göttingen played a pioneering role: it was the first in the world to be a university institution.

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1 Seidel, "Ein neue »Kultur des Gebärens«,“ 131–55; Wilson, *The Making of Man-Midwifery*, 65–122; Gélis, *La sage-femme*, 239–383.

2 Gélis, *La sage-femme*, 56–64; Beauvalet-Boutouyrie, *Naitre à l'hôpital*, 11–47.

3 Gélis, *La sage-femme*, 297–300; Lefftz, *L'art des accouchements à Strasbourg*.

4 Wilson, *The Making of Man-midwifery*, 114–16, 145–58.

5 Schlumbohm, "Poor Relief."

6 Schlumbohm, *Lebendige Phantome*, 13–15.

## Johann Georg Roederer, founder and “first teacher”<sup>7</sup> of medical obstetrics in Germany

In Germany, physicians and medical doctors were traditionally educated at universities. During the Enlightenment, efforts were made to adapt the curricula to recent developments in medicine. In some places, new institutions were created for this purpose, e.g., the *Collegium Medico-Chirurgicum* in Berlin, established in 1725 as a training school for military surgeons. The new currents did not bypass universities, reshaping them in decisive ways:<sup>8</sup> universities built anatomical theatres, established botanical gardens, and tried to create facilities for practical bedside teaching. This restructuring of medical faculties was most notable at universities like Halle (1694) and Göttingen (1733/37), newly founded in the spirit of the Enlightenment.

The creation of the lying-in hospital and professorship of obstetrics at the University of Göttingen was a major step in raising midwifery to a higher status, prestige and quality, as Roederer stated in his inaugural lecture, delivered in Latin under the title: *De artis obstetriciae praestantia, quae omnino eruditum decet, quin imo requirit* [On the excellence of the art of midwifery, which is absolutely decent for, may require, a learned man]. In this text, he spelled out his program for transforming the traditional female craft into a branch of medical science. According to Roederer, improvement was to be achieved mainly by a change in personnel: learned men were to replace midwives, whom Roederer considered ignorant, and often saw as women from the lower classes. For midwifery, it was a breakthrough to be accepted as a university discipline and as a ‘daughter’ of ‘medical science’ (*medendi scientia*). Young professor Roederer even had the courage to claim his discipline to be the “noblest and most useful science”, because, theoretically, it gathered knowledge about childbirth, the most admirable function of the female body, and, practically, it offered help where it was most needed. The experienced obstetrician Roederer used the masculine form was the angel who saved the mother’s and the child’s lives by diminishing and even abolishing the risks and pains of childbirth. To achieve this aim, educated men were required: men who had learned how to approach a problem in mathematical and philosophical ways, had acquired a thorough knowledge of anatomy, and had concentrated all their endeavours on studying medicine and obstetrics. For such men, practical experience, however, was equally crucial. Solid knowledge had to be based on practice. “I have the strongest doubts”, Roederer exclaimed, “whether one can really understand” the process of childbirth “without lending a hand to parturient painstakingly and tirelessly.”<sup>9</sup>

7 Siebold, *Versuch einer Geschichte der Geburtshülfe*, Vol. 2, 435.

8 Broman, *The Transformation*, 26–66; Geyer-Kordesch, “German Medical Education.”

9 Roederer, *Oratio de artis obstetriciae praestantia*.

The lying-in hospital was the locus where medical men hoped to gain access to practical experience.

Roederer was very successful in establishing himself as an authority in the new field. As early as 1753, he published a textbook in Latin entitled *Elements of the Art of Midwifery, to be Used in University Courses*. In the preface, the young man boldly justified his decision: among the numerous publications of famous authors from several countries, he had found not a single suitable textbook; all of them had too many gaps and errors. For making his own book better, he drew on three sources. First, he mentioned his own observations, although his practice had started only three years before, and he had attended no more than twenty deliveries in his Göttingen hospital in 1751–1752. Second were the doctrines of his teacher in Strasbourg, the “highly renowned Doctor Fried”. Last came the writings of other unnamed authors. Roederer admitted that his book had shortcomings, but he was confident he would eliminate them in the future by “persistent observation”, thanks to the University’s lying-in facility. The textbook was a success. In 1759, a second edition was published, adorned with Roederer’s portrait. In 1765, a French translation was issued, and Italian and German versions followed.

In addition, Roederer authored learned articles, instructive case histories, and treatises on specific subjects. It appears that he was the first obstetrician to systematically weigh all the new-born babies delivered in his hospital. He published the results and related them to the identification of whether a delivery was on term, premature or late. In a quasi-mathematical way, he sought to establish regularities, which were likely to be useful in forensic medicine.<sup>10</sup>

Soon, Roederer’s fame grew in Germany and abroad. As early as 1756, the St Petersburg Academy of Sciences offered him membership, the Stockholm Academy followed a year later, and the Paris Academy of Surgery in 1760. Several universities tried to attract him, but he stayed in Göttingen, where he advanced in status and income.

It was an advantage that Göttingen had the maternity hospital. It was an institution in its own right, not a ward of a general hospital. As part of the University, its main purpose was to give practical training to medical students. In addition, it was to offer courses to women who wanted to become midwives. It was an institution in its own right, not a ward of a general hospital. A general hospital was founded at the University of Göttingen only thirty years later, in 1781.<sup>11</sup>

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10 Roederer, *De temporum in graviditate*; Osiander, *Lehrbuch der Entbindungskunst*, 324–25; Gélis, *La sage-femme*, 274.

11 Bueltingsloewen, *Machines à instruire*, 112–19; Winkelmann, “Das akademische Hospital.”

The beginnings of the university lying-in hospital, however, were modest. It was a small institution, but an influential one. It consisted of just one or two rooms located in a late medieval municipal ‘hospital’ for the elderly poor. Roederer had to fight repeated battles with the town authorities, who were unwilling to give up their power over the municipal hospital. He had equally hard fights with the state government for sufficient funds. By the time Roederer died in 1763, hardly aged 37, he had taken care of 232 deliveries in the Göttingen hospital. We know that 160 medical students took Roederer’s course, coming from many German states, and even from abroad, e.g., from the Russian Empire and Sweden. Quite a few of them acquired fame as medical doctors, with some in the field of obstetrics.<sup>12</sup>

From the 1760s, other German states began to follow the example of Göttingen by founding lying-in wards for teaching purposes. In Kassel and Brunswick, Roederer’s former students, Georg Wilhelm Stein (1737–1803) and Johann Christoph Sommer (1741–1802), became directors.<sup>13</sup> If these facilities were not part of universities, in the following decades more and more German universities established obstetrical clinics.<sup>14</sup> Thus, the lying-in hospital of Göttingen University and its first director, Johann Georg Roederer, had a major impact in Germany and beyond.

### A lying-in hospital with extraordinary documentation

In the 1770s and 1780s, the great success of the Göttingen lying-in hospital, as a model followed by other towns and countries, made it fall back in the competition with similar institutions. That is why the University managed to convince the government that a new building was needed. The medieval hospital was finally pulled down, and in 1785–1791 a spacious and fairly elegant one was erected at considerable expense. The new structure housed only the maternity hospital. It had eight rooms for pregnant or lying-in women, with two patients to a room, and a single bed for every woman. In addition, there were rooms for the midwives who were taking their course in the hospital, as well as for the staff which consisted of a servant, a midwife, a manager, and the director. Corridors and staircases were very spacious: light and fresh air were believed to help prevent miasmata and, thus, the spread of disease. In the new building, the annual number of deliveries increased to between 80 and 100. Still, this was a modest figure compared to the lying-in hospitals of Dublin, Paris, or Vienna, each of which registered more than a thousand births a year around 1800.<sup>15</sup>

12 Roederer and Osiander, *Tabellarisches Verzeichnis*.

13 Vanja, “Das Kasseler Accouchierhaus”; Lükewille, *Georg Wilhelm Stein*; Beisswanger, “Accouchierhospital in Braunschweig.”

14 Seidel, *Eine neue ‘Kultur des Gebärens,’* 137–38, 157–60; Schlumbohm, *Lebendige Phantome*, 22.

15 Schlumbohm, *Lebendige Phantome*, 27–51.

In 1792, a few months after the new building was completed, a new director and professor of obstetrics, Friedrich Benjamin Osiander (1759–1822), was called to Göttingen, who held this position for thirty years. He took advantage of the modest size of ‘his’ hospital. Living with his family in the director’s apartment on the top floor, he was able to closely oversee the institution. And he was determined to shape it exactly according to his views. The manager, who was not a medical man, dealt with economic and administrative tasks. The hospital midwife was responsible for the “subordinate supervision of pregnant women and women who had recently given birth” as well as “for order and cleanliness in the living and sleeping quarters.” She was in charge of most of the everyday contact with patients, did easy surgical jobs like administering clysters, assisted the director in deliveries, and took care of the new-born infants. She was clearly subordinated to the director. The patients were of course supposed to obey the director, the manager, and the midwife.<sup>16</sup>

That this distribution of power between the obstetrician and the midwife was not necessarily inherent to the institution becomes evident in a comparison with the maternity hospital of Port-Royal in Paris, founded in the 1790s as a successor to the lying-in ward of the *Hôtel-Dieu*. At Port-Royal, it was the chief midwife, and not the *accoucheur-en-chef*, who actually ran the hospital well into the nineteenth century. The professors of the medical faculty of the University of Paris strove in vain to gain access to Port-Royal and have their students admitted. Port-Royal trained only female midwife apprentices.<sup>17</sup>

All this was quite different at the University of Göttingen hospital. According to Osiander, it had three purposes that he ranked hierarchically:

“The lying-in hospital at Göttingen has, above all, the aim of forming skilful obstetricians, worthy of the name *Geburtshelfer* [‘helper in childbirth’, the German equivalent of *accoucheur*]. A second purpose is the training of midwives, especially midwives who distinguish themselves by their knowledge and their skills, as compared to ordinary midwives. Finally, a third purpose is to provide a safe shelter for poor pregnant women, married or not, during the period of childbirth, and grant them every support and help that might be required for them and their children.”<sup>18</sup>

In an effort to establish order in ‘his’ hospital, Professor Osiander drew up laws and statutes both for the patients and for the students. By the ‘house laws’, printed and posted in all the patients’ rooms, the director prescribed the rules of proper behaviour, cleanliness, and obedience. He insisted on a simple, but nutritious diet,

16 Schlumbohm, *Lebendige Phantome*, 53–72, 115–58.

17 Beauvalet-Boutouyrie, “Die Chef-Hebamme”; Beauvalet-Boutouyrie, *Naître à l’hôpital*, 124–42.

18 Osiander, *Annalen der Entbindungs-Lehranstalt*, Vol. 1, 1, IX.

and asked pregnant women to help care for lying-in and sick patients and do other light work, as was usual in other hospitals as well. Contact with the outside world was strictly limited. Every pregnant woman was obliged to notify the hospital midwife as soon as her labour pains set in. The other patients, too, had to report such an event; by no means could they help to conceal the onset of labour.<sup>19</sup>

The statutes for the students were hand-written by the professor in Latin. He admonished the “noblest and most honourable” gentlemen to behave decently and not to walk into the patients’ rooms. When called to watch a childbirth, they could not enter the delivery room before the professor gave permission. During the sometimes long waiting hours, they were not allowed to play cards or smoke tobacco; instead, they were encouraged to use the scholarly books in the hospital library Osiander had founded.<sup>20</sup>

In his publications, Professor Osiander explained to the public how he organised all the procedures in the hospital with an eye on its main aim, i.e., giving students as many opportunities as possible for practical education. As he made every effort to organise hospital practice according to his notion of order and expedience, he also had the ambition of mirroring these well-ordered practices in a systematic, detailed and exact documentation. He installed a hospital archive in a special room and put the papers into good order. Painstakingly, he composed hand-written catalogues of the hospital library and of his personal collection of instruments and anatomical preparations. The core of the documentation, however, is the case histories in the “hospital diaries”.

In several European countries, ambitious medical men took case notes on the patients they treated and published “observations” on the cases which they considered interesting.<sup>21</sup> Roederer and his students did the same in the Göttingen hospital, and Osiander managed to obtain from Roederer’s heirs these papers, which had been written on loose sheets for the hospital archive.<sup>22</sup> Osiander entered his case histories into half leather volumes in folio size, usually by his own hand. He wanted to be master not only of hospital practices, but also of the documentation and the knowledge accumulated therein. The importance of this point is illustrated by a serious conflict at the big maternity hospital of Port-Royal, Paris, in 1825. There, the fight for supremacy between the chief obstetrician and the chief midwife erupted over the question of who was entitled to keep the hospital’s case book.<sup>23</sup>

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19 Schlumbohm, *Lebendige Phantome*, 144–48.

20 Schlumbohm, *Lebendige Phantome*, 144, 170, 174–75.

21 Aschauer, *Gebärende unter Beobachtung*.

22 They are preserved in *Bibliothek der Abteilung Ethik und Geschichte der Medizin der Universität Göttingen: Archivmaterialien aus dem Bestand der Universitäts-Frauenklinik der Universität Göttingen*.

23 Beauvalet-Boutouyrie, *Die Chef-Hebamme*, 233–37; Beauvalet-Boutouyrie, *Naitre à l’hôpital*, 130–33.

Osiander recorded the events “faithfully” and without concealing “the errors committed”, as he assured the public. In this way, his notes helped improve his own knowledge, and, when used in courses or publications, that of students and colleagues. Most of the volumes of Osiander’s “hospital diary” have been preserved, although some have been lost over the centuries.<sup>24</sup>

Although the Professor Osiander’s did not use a printed form, his case histories followed a clear pattern, shaped by the obstetrician’s perspective, but handled with some flexibility. A double page was reserved for every case: the left page under the heading “admission”, the right entitled “birth”. Every record had a number and began with the dates when the woman first showed up and when she was admitted to the hospital. Then came the information on the patient: name, age, status, place of birth and residence, physical appearance. For most of these data, the director had to rely on what the woman chose to tell him. She had some room for modelling her identity. The next paragraph contained the anamnesis, the history of her present pregnancy, and eventually, of her earlier pregnancies. The entry always begins with “[she] states”, which makes it clear that the doctor records the woman’s answers to his questions: when she got pregnant, when she last menstruated, how she felt during the pregnancy, when she thought she would give birth. If it was not her first pregnancy, he asked when and where she had delivered, whether the child was still alive, and with whom it lived. The doctor was interested not only in his patients’ physical condition, but also in some social circumstances.

After the anamnesis, it was no longer the woman who spoke. Now the obstetrician did not just ask questions but was willing to give answers himself. He started a physical examination. In the hospital where the patients were treated free of charge, he had more liberty than in private practice: he had the liberty to ask the woman to undress. First came the external, then the internal examination. The doctor sought to determine the position of the foetus and the state of the pregnancy in order to verify, as far as possible, what the woman had said. He wrote down his findings in the last paragraph of the left page.

The right page contained the birth protocol. A short summary in Latin was placed on the margin, with the delivery date and the name of the person who attended. A detailed record took up most of the page. The woman does not appear as an active subject, but her uterus is at centre stage, and it is the obstetrician who plays the active part. The protocol is stylised in a way that the course of action chosen by the obstetrician appears as a logical consequence of the diagnosis concerning the fetal position, the state of the birthing process and possible impediments.

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24 In *Bibliothek der Abteilung Ethik und Geschichte der Medizin der Universität Göttingen: Archivmaterialien aus dem Bestand der Universitäts-Frauenklinik der Universität Göttingen*.



That is what the professor intended to teach his students, and he strove to direct his own conduct accordingly. Quite frequently, the handwriting reveals that the birth protocol was penned in several stages, probably in the waiting time between contractions. In these cases, there is less reason to suspect that the entire text was stylised *ex post*, when the outcome was clear.

At the bottom of the right page, the professor gave detailed data about the new-born child: not only its sex, general state of health, and weight, but, as the taste for quantitative measures had progressed since Roederer's times, also their length, diameters of the head, and shoulder length. Osiander also indicated the length of the umbilical cord and the weight of the placenta. Finally, he added information on the child's baptism and father.

This wealth of information on all deliveries in the Göttingen hospital used thirteen years between 1795 and 1814 records a total of 1327 cases, allows a deeper insight into hospital practices than has been possible for similar institutions elsewhere.<sup>25</sup> One of the issues that can be studied in detail is what practical education actually meant, and how much of it was available for a student or apprentice.<sup>26</sup>

### The practice of practical teaching

It is well known that in the course of the eighteenth century, in most European countries, the practical education of future physicians and surgeons was increasing in importance. 'Practical education' could, however, mean very different things, ranging from studying printed case histories, or following clinical lectures in the classroom where the teacher showed patients and explained their diseases, to actually treating patients under a professor's supervision. Although we know what the regulations of some medical schools were, there is much less knowledge about how the rules were implemented. We have reason to suspect that there may have been a considerable gap between the norms and the actual practice.<sup>27</sup> However, of Professor Osiander's teaching in Göttingen, we have invaluable detailed evidence.

"Every semester a complete course is held on the practical and theoretical parts of midwifery", Osiander informed the medical reading public.<sup>28</sup> According to the textbooks of the period, including his own, the "theoretical" part dealt with female genitals, pregnancy, the embryo, and childbirth, in particular "natural childbirth". The "practical" part, in turn, covered "contranatural and difficult cases",

25 Schlumbohm, *Lebendige Phantome*; Schlumbohm, *Verbotene Liebe*.

26 Schlumbohm, "The Practice of Practical Education."

27 Schlumbohm, "Gesetze, die nicht durchgesetzt."

28 Osiander, *Denkwürdigkeiten für die Heilkunde*, Vol. 1, 1, CVI.

as well as “manual” and “instrumental operations”.<sup>29</sup> Osiander had, however, more to offer in terms of practical teaching. In addition to the lecture course, he gave “practical sessions”: demonstrations and exercises with a manikin or “phantom”, a female pelvis covered with leather. Compared to mere lectures or even to pictures, this form of practise, developed in Britain and France, was considered a major improvement. Göttingen students were keenly interested in practising on the dummy. Having taken the lecture course once, many participated in the exercises several more times. With the phantom, Osiander taught two things: first, the semiotics of foetal positions, i.e., how to discover the position of the unborn in the uterus by touching it with one or several fingers through the vagina, and second, how to intervene in difficult cases. In particular, he demonstrated and let his students try how to deliver a child presenting the feet, to turn a child in the uterus, and to use the forceps.

Above all, the hospital made living patients available for teaching purposes. The students were thus trained in palpation not only on the phantom, but also on the pregnant women in the clinic. They learnt how to perform both external and internal manual examinations, and in this way to determine the state of the pregnancy and the position of the foetus. A man touching a woman’s womb and genitals clearly transgressed a strong shame taboo, and that was not easily allowed in private practise.

Deliveries were the most important item the hospital offered for students’ practical education. Osiander pointed out: “It is my intention to derive as much benefit for teaching as possible from the births which occur here. If we do this, a hundred births can be more instructive than thousands in another lying-in hospital.”<sup>30</sup> Implicitly, he compared his institution with huge maternity hospitals, such as those in Vienna or Paris, which had more than a thousand births a year, most of which were, however, attended by midwives and midwife apprentices, not the medical director. Osiander described to the medical public how he organized this core of practical teaching: when a woman had gone into labour and her *orificium uteri* was open four fingers wide, the hospital’s servant called in the students. Now the parturient woman was led from her bed to the delivery room and placed on the birth stool. The students assembled in the adjacent room, as did the apprentice midwives, if it was the season when their course took place. Osiander called some of the advanced students into the delivery room, one by one, and had them examine the woman. They told him what they found out about the position of the child and the state of the birthing process. Next, the professor explained the situation to the whole audience in the adjacent room, using the dummy and an artificial head of a baby. He showed the child’s position and pointed out any impediments to the delivery, as

29 Stein, *Theoretische Anleitung*; Stein, *Practische Anleitung*; Osiander, *Grundriss der Entbindungskunst*.

30 Osiander, *Denkwürdigkeiten für die Heilkunde*, Vol. 1, 1, CX–CXI.

well as indications for intervention. Then he demonstrated the course of action he had chosen. As he underlined in his publications, he was always the one to take the final decision.

When Osiander decided to “leave the delivery to nature”, he asked one of the apprentice midwives to assist. If he opted for “artificial” help, he called upon one of the advanced students. Now the entire audience entered the delivery room. They found the upper half of the parturient’s body hidden behind a green curtain. This was to protect her not only against blinding light, but also against “the annoying sight of many spectators”: the patient’s “shame was spared, at least as much as the circumstances allowed.” She was “naked up to her genitals so that the audience could observe the procedure and the kind of assistance offered.” The hospital’s midwife stood at her side and “instructed her how to push skilfully during contractions.” The professor sat next to the student or apprentice whom he had invited to attend. He directed the ‘business’ and took over when he wanted to show the correct way to proceed as soon as the attendant experienced difficulties or made an error.<sup>31</sup>

As this description makes it clear, there were several levels at which students participated in the deliveries: watching, examining, helping in a natural birth, assisting in an artificial delivery. The higher the level, the smaller the number of those who had access to it.

Osiander usually divided his students into two groups, at least when there were more than thirty, so that only half of them were present at each birth, except in especially complicated cases when all were summoned. The students appear to have kept a careful eye on getting their fair chance of observing deliveries. The professor assured them that he followed an impartial and transparent order in distributing opportunities. But deliveries were a scarce resource compared to the growing number of students, which could exceed sixty a semester.

Assisting a delivery or intervening in one was the highlight of practical education, usually reserved for one student or apprentice per case, rarely to more than two. Since the case histories in the hospital diary always give the name of the birth attendant, we can see how much hands-on experience students could get at Göttingen. For quite a few semesters, the list of students in Osiander’s course is also available. Comparing the two sources, it appears that a third of his students are never mentioned as birth attendants. Another third was in charge only once, less than one in six could do two deliveries, and less than one in ten was active more than three times.

Some lists of the midwife apprentices also survive. Their course lasted for only three months, but they had the advantage of living in the hospital and being only about four in a course, but rarely more than six. Of all the apprentices, only one out

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31 Osiander, *Denkwürdigkeiten für die Heilkunde*, Vol. 1, 1, LXXXIX.

of ten is never mentioned as birth attendant. Less than one third was in charge only once, another third did two or three deliveries, and over 25 percent were active more than three times.<sup>32</sup>

Given Osiander's insistence that the training of male medical practitioners was the main purpose of the University's lying-in hospital, these figures come as a surprise. It is true though that there were far more medical students taking Osiander's course than his midwife apprentices. Moreover, among those mentioned as birth attendants, 78 percent were male and only 22 percent female.

If, however, we turn to the experience of individual students and apprentices, we see that the women had more opportunities to practise. Many medical students attended Osiander's lectures for only one semester, exercised a couple of times on the phantom, did a few physical examinations, and watched a small number of births. One-third of his students never took an active part in any delivery in the hospital. Most of those who did were in charge of just one birth, and only a small minority, i.e., five percent of all students, attended more than four deliveries. In this respect, midwife apprentices were clearly privileged. Since their number was much smaller, they did more exercises with the phantom, examined patients every week, and took care of more births.

We have to take into consideration, however, that female apprentices and male students were not taught the same skills. This is what Osiander pointed out in his publications, and this is also confirmed by the birth protocols in the case books. In the theoretical part of the course and in the exercises with the phantom, the emphasis for midwives was on assisting "natural" births. Using the phantom, Osiander taught midwives how to deliver a child presenting by the feet or the breech, and even how to turn a foetus in the uterus, but the medical case books contain only very few indications that he allowed them to practise these manoeuvres during real births. Never did he allow them to use the forceps. On the other hand, regarding medical students, the teaching concern most visible in the hospital diary is showing them how to use the forceps, because Osiander was firmly convinced that a forceps operation, performed skilfully, was the best assistance in most protracted and difficult births. Although leading English obstetricians had opposed this view since the mid-eighteenth century, and even French *accoucheurs* were beginning to give it up, Osiander proudly declared to the public that he hardly ever let a lingering or painful delivery, "whether caused by the umbilical cord wrapped around the foetus, or by a first degree of obstruction, slip by without the forceps being applied, either by myself in front of the students, or by a student who is already well-practised on the phantom". This was not an overstatement: in the thirty years of his directorship of the Göttingen maternity hospital, the forceps were used in forty per cent of all deliveries.<sup>33</sup>

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32 Schlumbohm, "The Practice of Practical Education."

33 Schlumbohm, "The Pregnant Women," 70–72; Osiander, *Denkwürdigkeiten für die Heilkunde*, Vol. 1, 1, CX–CXI.

The effective use of the forceps, however, could only be learnt by extensive practice, guided by an experienced practitioner.<sup>34</sup> It is questionable whether it was sufficient to see them used by the professor, exercise a couple of times on the phantom, and try them once or twice on a real patient.

This is also true of practical education in general. There is no doubt that a maternity hospital like the one at the University of Göttingen allowed more practical training than had previously been possible. And it may well be that in the medium-sized hospital, under the close control of professor Osiander, opportunities for medical students were better than in some of the big maternity hospitals where midwives were in charge of most deliveries. Nevertheless, the great majority of medical students probably had much to learn on the job after their years at university. Osiander hoped to build the foundation for such continuing education by the enlightened principles expounded in his lectures and demonstrated in the obstetric activity of his hospital. But he was aware that a man will become a “master of the art” only by exercising on his own in private practise, and by continued lifelong learning.<sup>35</sup> Hands-on practical experience with deliveries was a scarce resource in the hospital, and only a small amount could be allocated to each student.

### The patients in the lying-in hospital

Professor Osiander liked to use forthright words and was quite explicit about the patients' place: “It is by no means true that this hospital exists for the sake of unmarried pregnant women. Not at all! Pregnant women, be they married or not, are here for the sake of the teaching institution.” The hospital was not a welfare institution, but a scientific and educational one. That is why its doors were flung wide open: “Every pregnant woman can be admitted to this institution, married or not, native or foreign, Christian or Jewish, white or negro.”<sup>36</sup> This lack of prejudice is in striking contrast to the principles prevalent in poor relief. There, usually all non-natives were excluded, and only members of the community were admitted. It was the very fact that in the maternity hospital patients were treated as teaching material that actually enabled such a liberal admission policy.

The admission books (*Aufnahmebücher*) of the hospital confirm that the liberal principles were followed in practice. As far as religion is concerned, 61 percent of

34 Wilson, *The Making of Man-Midwifery*, 71–72, 96. See also Osiander, *Grundriss der Entbindungskunst*, Vol. 2, 69–70.

35 Osiander, *Grundriss der Entbindungskunst*, Vol. 1, 11–12.

36 Osiander, *Denkwürdigkeiten für die Heilkunde*, Vol. 1, 1, XC–XCI. Cp. Schlumbohm, “The Pregnant Women.”

patients were Lutheran, 28 percent Calvinist, 10 percent Catholic, and 1 percent Jewish.<sup>37</sup> More foreigners than residents of the Electorate of Hanover were admitted. Almost all patients shared, however, one characteristic. They were *not* married. Out of the almost 3,600 women delivered at the Göttingen maternity hospital in the years 1791–1829, only 2 percent declared that they were married, and another 2 percent said that they were widowed. But many of them did not name their husband as the child's father. Thus, about 98 percent of the children born in the hospital were illegitimate. Similarly, in most lying-in hospitals of Continental Europe the great majority of patients were unmarried.<sup>38</sup>

Most women who gave birth in the Göttingen hospital were servants in towns or villages, who could be fired without notice when they fell pregnant. For pregnant single women of the lower classes, the hospital was attractive because it offered free accommodation and food during the difficult time of childbirth. Like most German lying-in hospitals, but unlike those in Vienna, Paris, and Turin,<sup>39</sup> Göttingen had no foundling hospital. Mothers had to take their babies home.

Osiander shocked some of his contemporaries and posterity by his statement about the patient's role in the clinic: since practical education of medical students and midwife apprentices is the main goal, "the pregnant and delivering women who are admitted to our hospital are regarded, as it were, as living manikins, with which everything is done that is useful for the students and midwives and that facilitates the labour of childbirth (always however with the greatest protection for the health and life of the patients and their children)."<sup>40</sup> These words about patients as living manikins are more forthright than was usual. But, in principle, the attitude towards patients who were treated in hospitals free of charge was shared by many medical men in Britain and France: "Hospital patients are [...] the most proper subjects of an experimental course."<sup>41</sup>

There is no doubt about the professor's intention, but there is evidence that the women were sometimes able to set limitations to the realization of his project.

37 Schlumbohm, "Verheiratete und Unverheiratete," also for what follows.

38 Seidel, *Eine neue 'Kultur des Gebärens,'* 164–68; Metz-Becker, *Der verwaltete Körper*, 149–52, 192–200; Labouvie, *Beistand in Kindsnöten*, 290–94; Pawlowsky, "Ledige Mütter"; Hilber, *Institutionalisierte Geburt*, 240–42; Beauvalet-Boutouyrie, *Naître à l'hôpital*, 142–47; Cavallo, *Charity and Power*, 199–201; Filippini, "Sous le voile." This was different in most of the London maternity hospitals which were based on private donations, see Schlumbohm, "Poor Relief," 26–27; Wilson, *The Making of Man-Midwifery*, 146–147; Croxson, "The Price of Charity," 29–30.

39 Seidel, *Eine neue 'Kultur des Gebärens,'* 223, 232–37; Pawlowsky, *Mutter ledig*; Beauvalet-Boutouyrie, *Naître à l'hôpital*, 87–97, 272–76; Cavallo, *Charity and Power*, 196–201; Filippini, "Sous le voile."

40 Osiander, *Denkwürdigkeiten für die Heilkunde*, Vol.1, 1, CIX–CX.

41 Aikin, *Thoughts on Hospitals*, 79; Foucault, *Die Geburt der Klinik*, 99–101.

A considerable part of those who were not immediately admitted when they first showed up in the hospital never returned. Voting with their feet, they seem to have had enough after the very first physical examination by the director. Quite a few arrived when they were already in labour, so that the students could not be summoned for the delivery, let alone for practising examinations. Others tried to hide their labour although they were already staying at the hospital.

### Success and failure

Beginning in the late eighteenth, and definitely in the nineteenth century, the directors of maternity hospitals and professors of obstetrics in Germany achieved their goal: they were, at least in the eyes of governments and the educated male public, acknowledged as the leading experts in childbirth. The main reason Roederer and his colleagues had given for entering the field of midwifery was that they were able to save the lives of mothers and children jeopardized by the alleged incompetency of 'ignorant' midwives. Did they keep their promise?

As far as maternity hospitals are concerned, this is more than doubtful. In Germany and throughout Europe, the maternal mortality rate was usually higher in hospitals than for normal home deliveries attended by midwives. For Göttingen's lying-in hospital, the record is better than for its larger counterparts.<sup>42</sup> In the years 1791–1829, forty-seven parturients did not survive in 3,561 deliveries, that is a maternal mortality rate of 132 per 10,000. During Roederer's period, however, at least five women died in 232 deliveries, which constitutes a rate of 216. Data for villages, towns, and cities show that in home deliveries, attended by midwives and other women, maternal mortality was not worse, but was often better.

Many of the mortality data were published, and publicly discussed by experts from the late eighteenth century. Some argued that childbearing women should not be hospitalised because of the elevated risk of childbed fever. In fact, from the mid-eighteenth century out-patient charities became an attractive alternative to both parturient women and benefactors in Britain.<sup>43</sup> In Germany, however, lying-in hospitals were accepted as indispensable for generating expert knowledge and providing obstetric education. Eduard von Siebold, professor of obstetrics and director of the Göttingen University lying-in hospital in 1833–1861, ascribed exactly this double purpose to the maternity hospitals of German universities: they "introduce students into their future practice", and they "enable the teacher to gain relevant

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42 Schlumbohm, "Saving Mothers' and Children's Lives."

43 Croxson, "Foundation and Evolution", 45–53; Wilson, *The Making of Man-Midwifery*, 197–98; Loudon, *Death in Childbirth*, 193–203.

scientific results by continuous impartial observation, in a way impossible in private practice, and thus to work for the true progress of their discipline”<sup>44</sup>

In sum, the transformation of midwifery into a branch of medical science was a success story for medical men. It enhanced their standing in the eyes of political authorities and an enlightened male public. Although the amount of practical training which was available for a student was quite limited, it was sufficient for educating a growing number of doctors who were accepted as experts in midwifery. For parturient women, however, the transformation was a mixed blessing, both in terms of their position in the delivery room and mortality risks.

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44 Siebold, *Geschichte der Geburtshülfe*, Vol. 2, 705–6.



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