Nurses and Surgical Dressers: Medical Students' Impact on Hospital Nursing Work in Philadelphia and London, 1870-1910

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Introduction

Nineteenth-century nurse leader Eva Luckes argued that nursing and medicine were related but were actually separate endeavours with distinct realms of work.[1] Over time, however, boundaries between nursing and medicine have been difficult to define.[2] Examining factors that affected the dynamics of shifting boundaries between nursing and medicine in the past can increase understanding of the nature of nursing and nursing practice today. As hospitals are a major site of nursing and medical practice, they are a useful setting in which to examine boundaries between the two professions. With the development of voluntary[3] hospitals built specifically to care for the sick, and the development of hospital-based medical and nursing schools in the eighteenth and nineteenth centuries, nurses and physicians increasingly worked side by side to provide care. That joint endeavor meant that nursing developed in conjunction with medicine, and nursing practices were juxtaposed to physicians' practices. No doubt, cultural

variations in the division of labour between physicians and nurses also influenced nursing work. In this paper, we examine how differences in hospital medical practice in two distinct geographical and cultural settings—Philadelphia in the United States of America and London in the United Kingdom—affected the development of hospital nursing in these areas. We hypothesize that the constant presence of great numbers of medical students on hospital wards in London and their absence in Philadelphia contributed to nurses assuming more "medical work" in Philadelphia than in London. This difference in who focused on medical work subsequently contributed to divergent developments in American and British nursing. This paper will focus on how differences in clinical training for medical students in the United States versus the United Kingdom in the latter part of the nineteenth century contributed to more "medically focused" nursing in Philadelphia than in London. The role of nurses and medical students in dressing wounds is used as an example of a practice that existed on the boundary between nursing and medicine.

Hospitals in London and Philadelphia were at the forefront of both nursing and medicine in the last few decades of the nineteenth century, and therefore are the focus of this study.[4] In Britain, large hospitals were located outside of London, but their administrators sought guidance from the leaders of the great London teaching hospitals.[5] In America, Philadelphia was at the centre of medical and nursing development. Elizabeth Blackwell, first woman to graduate from an American medical school, stated that in the mid-nineteenth century Philadelphia was "considered the chief seat of medical learning in America."[6]

The nineteenth century was a particularly formative time in the development of modern professional nursing and medicine. In both the United States and the United Kingdom nineteenth-century nurses received professional training in hospitals. Indeed, one of the major

developments associated with the "Nightingale reforms" in the latter part of the nineteenth century was the movement of pupil nurses into hospital-based nursing programs where they lived, studied, and practiced in the hospital.[7] In Britain, most medical students also trained in hospital-based schools while American medical schools were private proprietary schools or university-based institutions, and students had little exposure to patients in hospital settings.[8]

During this time, medical students performed hands-on patient care in British hospital wards, so nurses did less of this medical work, and assumed it belonged to the doctors. Meanwhile in America, as this paper will demonstrate, medical work was an integral part of nursing. In this paper, the terms “medical practice” and “medicine” will refer to the work of both physicians and surgeons. The focus is on surgical work, particularly wound care, because in Britain large numbers of medical student surgical dressers spent substantial amounts of time caring for patients on hospital wards and would, therefore, have had a significant impact on ward work. As the name implies, dressers were responsible—among other duties—for patients’ wounds and dressings. By contrast, in the absence of medical students on American hospital wards, nurses did more “hands-on” medical work. While historians have addressed the history of wound care and dressings, little has been written regarding how wound care affected the development of nursing roles.[9]

The period between 1880 and 1910 was a formative time for both nursing and medical education. Hospital-based nursing schools for young single women proliferated during this time; between 1880 and 1910 the number of hospital-based nursing schools in America grew from 15 to 1,023.[10] This was also a formative time for medical education. Ludmerer points out that American medical education began undergoing major changes in the 1870s that would result in “seismic” developments after 1910.[11] Also, by the 1880s major changes in medical therapeutics

had transformed medical practice from treatment based on patients' symptoms to treatment based on scientific experimentation.[12]

Primary data for specific London hospitals included archival records of St Thomas's Hospital and Guy's Hospital found in the London Metropolitan Archives, London; records for The London Hospital and St Bartholomew's Hospital were taken from The Royal London Hospital Archives and Museum, and St Bartholomew's Hospital Archives and Museum, London. Primary data for the Pennsylvania Hospital and Philadelphia Hospital in Philadelphia included records located in The Barbara Bates Center for the Study of the History of Nursing at the University of Pennsylvania, and the Philadelphia City Archives. Private collections served as another source of primary data. Secondary sources were also used, particularly works by Carol Helmstadter, Thomas Bonner, Charles Rosenberg, John Harley Warner, and Kenneth Ludmerer.

Background

Hospitals have been important institutions in the United Kingdom and the United States for centuries. Some of the great London teaching hospitals, such as St Bartholomew's and St Thomas's, were founded as monasteries in the middle ages and provided important community service as shelters for the destitute. The monasteries were dissolved during the religious reformation in the sixteenth century, but St Bartholomew's and St Thomas's survived due to their important social roles—particularly their role to care for the sick poor.[13] In the eighteenth century, new voluntary hospitals flourished: Guy's Hospital in London was established in 1721, The London Hospital in 1740, and the Leeds General Infirmary in 1771.[14] Public and private hospitals also provided care for the sick poor in the United States. The government established alms-houses with infirmaries for sick inmates, such as the Philadelphia General Hospital (also

known as Blockley) founded in Philadelphia in 1732, while charitable citizens founded voluntary hospitals such as the Pennsylvania Hospital, established in Philadelphia in 1751.[15]

At this time, few medical students or practicing doctors in Britain or America had exposure to hospitals. For centuries, students of medicine learned through apprenticeship with practicing medical providers; and they practiced in patients' homes, as nearly all medical care took place in the home. George Eliot's *Middlemarch,* and Elizabeth Gaskell's *Wives and Daughters* provide examples in which physicians, assisted by apprentices, practiced in private homes.[16] When voluntary hospitals appeared in the eighteenth century, medical education became increasingly associated with hospitals in Britain. In contrast, American medical education became associated with institutions of higher learning, and reputable medical schools in the United States were associated with colleges and universities.[17] Two physicians who had been educated at the University of Edinburgh, Scotland successfully introduced the idea of a medical school to administrators at the College of Philadelphia in 1765.[18] The school, one of the first in the country, became part of the University of Pennsylvania in 1791. Private doctors established many proprietary schools to generate income in nineteenth-century America. Proprietary medical schools' curricula were didactic and usually did not include hospital or laboratory work.[19] After the publication of the Flexner report on medical education in the United States and Canada in 1910, changes in medical education that began in the 1870s accelerated; many proprietary schools closed, regulations regarding education and licensing for medical doctors were developed, and the assumption that reputable medical schools were associated with universities solidified.[20] While many medical schools were available in America, most American doctors did not have a medical degree.[21] Many prospective doctors in a city like Philadelphia

attended some classes at a medical school to improve their knowledge, but state licensing laws were "weak" through the end of the nineteenth century.[22]

In Britain, only a small number of students from upper-class families studied medicine in universities. The ancient, prestigious universities at Oxford and Cambridge both had medical programs dating back to the early 1300s,[23] but few individuals attended. Most students trained through medical apprenticeships with practicing physicians. The apprenticeship model gradually disappeared in the nineteenth century, and British medical training moved to hospital-based medical schools. Bonner notes that even in the first decade of the twentieth century most British medical students trained at medical schools located in hospitals and only "a fraction" of doctors in Britain had university degrees.[24]

In Britain hospital-based medical schools provided opportunities for hospital clinical experience. For all medical students practical experience in a clinical setting was not only important,[25] it was expected. Clinical time was not always productive, however, and medical students in one London hospital often "lounged around" without specific responsibilities.[26] Eventually, administrators developed distinct posts for medical students with assigned tasks and responsibilities. These medical students became an important source of labor for hospitals, as well as a source of revenue because students paid for the privilege of acquiring clinical experience.

Medical Students at Hospitals

Important differences existed between British and American medical schools. Although the way the students learned in classrooms and laboratories was similar in the two countries, clinical instruction was not the same. Medical students in both countries did laboratory work and

received didactic instruction from the hospital medical staff or from the medical school faculty. In the nineteenth century in both countries, medical students listened to an established series of lectures as part of their medical education.[27] Clinical education for medical students, however, was significantly different in the two countries. In London's great teaching hospitals, large numbers of medical students worked with patients in hospital wards, whereas in Philadelphia medical students were scarcely seen in the hospitals.

Hospital practice for medical students had become an important part of medical learning in London by the 1820s.[28] The London teaching hospitals maintained numerous medical student positions. Guy's Hospital "Standing Orders" in 1874, well after the establishment of hospital-based medical training, listed fifty-six official positions including administrative positions, building maintenance workers, and medical and nursing staff, among others. Of these fifty-six positions, seventeen were "appointments in connection with the sick . . . made from amongst the Students."[29] At the same time, Standing Orders for the London Hospital[30] and St Thomas's Hospital[31] also stipulated rules for various medical student appointments. At St Bartholomew's Hospital in the 1890s there were nine hundred and twenty medical student positions.[32] Abraham Flexner's ambitious study of medical schools in Europe published in 1912 reported that the London Hospital appointed over five hundred medical students each year.[33]

In Britain, medical education had become such a major part of hospital life that administrators, medical staff, and the public alike were concerned. They questioned whether their hospitals existed to care for patients or to provide education for medical students. This concern was true for St Bartholomew's Hospital,[34] and Guy's Hospital in the 1880s.[35] At The London Hospital a conflict arose between the nursing staff and the medical staff over the issue. The nurses complained that the doctors, who came to the wards with groups of students, were

interfering with patient care. The doctors responded that they had a need and a right to be on the wards.[36]

In contrast, American medical education was not an integral part of hospital life. Nineteenth-century medical schools in the United States were not hospital-based and did not provide hands-on patient care as part of their medical training.[37] Indeed, some American medical students felt compelled to travel overseas to access clinical training on hospital wards, mostly in Scotland, Germany, and France. Some studied in London, but most who attempted to do clinical work in London hospitals found access impossible as the hospitals charged high fees for clinical experience and were bursting at the seams with their own medical students. [38]

By the last decades of the nineteenth century, American medical schools were moving into colleges and universities and nearly all were separate from hospitals.[39] According to Ludmerer, medical students in America were admitted to a program of medical study at a college or university and had little hands-on training at the bedside until after graduation. [40] At the Pennsylvania Hospital in Philadelphia, hospital rules did not include official positions for medical students, and stipulated that all medical residents be qualified MDs.[41] Similarly, Philadelphia's Presbyterian Hospital did not include official positions for medical students. Records from the Presbyterian Hospital make a brief reference to "Hospital Walkers," who were to accompany the medical staff on their visits to the wards and keep a record of cases.[42]

Although medical students in Philadelphia did not participate in hands-on care of patients, the city's hospitals were involved in training medical students. Philadelphia General Hospital had a revered history of promoting medical education and its medical staff was pleased to comment on the wealth of its "clinical material" (a late nineteenth-century term for medically interesting patients).[43] Clinical teaching of medical students at that time generally consisted of

teachers presenting cases in the clinic room through "clinical lectures." Teachers would lecture or select interesting "cases" from among their patients and exhibit them one by one in an amphitheatre full of medical students while they explained the medical condition, its treatment, and the course of treatment for the case.[44] Hospital administrators routinely refused to allow medical students to have contact with the patients. As historian Charles Rosenberg noted, "Medical schools lacked access to hospital wards . . . Even the most privileged medical students had to contend with a formal curriculum frustratingly devoid of clinical experience."[45]

At the end of the nineteenth century, Dr William Osler lamented the absence of medical students in American hospitals. He stated, "I envy for our medical students the advantages enjoyed by the nurses, who live in daily contact with the sick, and who have, in this country at least, supplanted the former in the affection of the hospital trustees.[46] He further argued that, "The radical reform needed is in the introduction into this country of the system of clinical clerks and surgical dressers, who should be just as much a part of the machinery of the wards as the nurses or the house physicians."[47] Osler, who became a member of the medical faculty at the University of Pennsylvania in 1884, introduced the practice of taking groups of medical students to the University Hospital wards.[48] In addition to the University Hospital, he and his students had access to the Philadelphia General Hospital,[49] however, the rules of the Philadelphia hospital from the 1870s through the first decade of the twentieth century do not mention any official positions for medical students.[50] Moreover, histories and memoirs left by physicians and surgeons who worked in the hospital at this time provide little evidence that medical students worked routinely with patients on the wards.[51]

After five years Osler left Philadelphia for the Johns Hopkins Hospital in Baltimore where he felt he would be better able to implement changes in medical education. He introduced

medical students to the wards of the Johns Hopkins Hospital when the medical school opened in 1893. The Johns Hopkins medical school was unique in the United States from its beginning since the medical school was an integral part of both the university *and* the hospital.[52] This one school in the United States, however, was a small beginning compared to hospital-based medical schools in London where hundreds of medical students cared for patients on the wards.

After completing his study of medical schools in Europe, Flexner studied American medical schools. He visited schools in forty states and in 1910 reported that the only medical school in the country that provided clinical experience for medical students comparable to that of Britain was Johns Hopkins.[53] Flexner noted, however, three medical schools in Philadelphia: the University of Pennsylvania, the Jefferson Medical College, and the Medico-Chirurgical College, were in "sole and complete control of excellent hospitals, more or less adequate in size." He did not see any "insuperable reason" why these schools should not implement the kind of clinical training for medical students that was available at Johns Hopkins.[54] Although these Philadelphia schools were closely associated with excellent hospitals, they had not implemented bedside teaching for medical students at the time that Flexner made his report.

While Philadelphia hospitals did not provide official positions for medical students as their standard practice, they did appoint newly graduated physicians as hospital "internes." Philadelphia General Hospital rules for 1868, 1870, 1883, and 1887 did not include official rules for the position of interne,[55] however, Barton Hirst stated in his memoirs that he was an interne there in the 1880s.[56] Later hospital rules, which included rules for internes, did not specify whether the internes had to have graduated from medical school,[57] but Hirst explicitly stated that internes were medical school graduates.[58] In 1902, Philadelphia General Hospital listed "interne" as an official position in its rule book.[59] A separate rule book for internes stipulated that twenty

internes would be at the hospital serving for fifteen months under the direction of the resident physicians,[60] and that they would admit and care for patients in the various wards of the hospital. The rules for internes of the Presbyterian Hospital stated the following: their tenure was one year, they had to be graduates of a regular medical school, they had to have passed the medical board examination, and they had to provide character references to the Board of Trustees. Regarding their work, they were required to visit their patients twice a day, accompany the attending medical staff on visits, report on any new patients, and follow the attending physicians' and surgeons' orders.[61]

Medical Students' Work

London hospitals had regulations and standing orders that stipulated medical student responsibilities. At Guy's Hospital, official regulations included a section of rules for "The Students."[62] Students who demonstrated the necessary qualities were selected for appointment to official hospital positions which included assistant surgeons' dressers, assistant surgeons' clerks, post mortem clerks, assistant physicians' clerks, dressers in the surgery, aural surgeon's dressers, surgical clinical clerks, surgeons' dressers, clinical assistants, dressers in the eye wards, obstetric out-patient clerks, extern obstetric assistants, dental surgeons' dressers, and medical clinical clerks.[63] According to Flexner, in the London hospitals medical students were given specific patient assignments, and each student was responsible for approximately four or five patients.[64]

To understand how the presence and absence of medical students on hospital wards affected the development of nursing, it is helpful to know what the medical students were doing on the wards. Clerks were students who helped with physicians' work on the medical wards, mostly assessing and making notes of patients with non-surgical conditions, while dressers

helped the surgeons with work on the surgical wards. Clerks and dressers helped physicians and surgeons respectively in outpatient departments.[65] While specific regulations were not included for medical clerks, detailed rules were given for surgical dressers.[66] Dressers spent a great deal of time performing hands-on patient care.[67] Nurses also did a great deal of hands-on patient care; therefore, nurses' work and dressers' work was more similar in a fundamental nature and more prone to overlap than nurses' work and clerks' work. Wound care and dressing work were rife with possibilities for overlapping duties, and tensions arose between nurses and dressers from their uncertainty about who should be doing this work.

Wounds and Dressings

Wound care consumed a significant amount of time and effort in nineteenth-century hospitals. Before the advent of strict asepsis, wounds were expected to suppurate, requiring a great deal of regular dressing and re-dressing.[68] Even after the introduction of aseptic techniques that dramatically reduced suppuration, some surgical wounds became infected, and a variety of wounds continued to require regular dressing changes.[69] The introduction of aseptic techniques brought many benefits as well as a new assortment of time-consuming work. Aseptic surgical techniques included the use of various antiseptic solutions to remove pathogenic organisms from people and objects involved in surgical procedures. Antiseptics included, among others, solutions made with iodine, alcohol, and chorine that removed organisms from the patient's skin, the surgeons' and nurses' hands, towels, sponges, and instruments. Boiling water and steam were also used to eliminate organisms. Surgical dressers implemented these procedures before surgery by preparing the patient's skin, and continued the process until the surgery was completed; then they applied the dressing.[70]

According to surgeon C. B. Lockwood,[71] aseptic wound dressing was crucial to surgical success and required painstakingly meticulous application. Lockwood was passionate about careful technique and described aseptic surgery and dressing in minute detail. His instructions for dressing surgical incisions stated that after the surgeon sutured the incision, the individual applying the dressing should "dust" the area with powdered iodoform crystals, cover the area with carbolic gauze soaked in biniodide lotion, add another covering of alembroth wool (a material containing mercury and ammonium chloride),[72] and finish with an "outside dressing" bandaged in place. [73]

Lockwood also provided specific details for the handling of medical supplies used in this process. The iodoform crystals were dispensed from a bottle with a perforated lid, the bottle being kept in antiseptic solution up to the lid so that the person applying the crystals would not contaminate his or her hands when touching the bottle. The carbolic gauze had to be soaked in biniodide of mercury until just before application. The outside dressing was made of eight layers of carbolic gauze followed by a layer of waterproof jaconet, a specially finished type of cotton cloth.[74] The outside dressing was to be "cut to pattern" with webbing straps and buckles sewn onto the corners to be sure that the dressing would stay in a proper position. Lockwood described several ways of using straps with buckles to keep dressings in place. Keeping the dressing in place to keep air away from the wound was crucial. Some dressings required elastic bandages or "layers of adhesive plaster" to maintain proper placement.[75]

After aseptic surgery, the dressing remained in place for about a week until the incision was completely healed. However, if the dressing needed changing before healing was complete, the practitioner had to follow the same procedures at the bedside as were followed in the operating theatre. Lockwood instructed:

> Everything brought in contact with the wound is sterilised with heat and soaked in antiseptics. Those who perform or assist at the dressing prepare themselves as for an operation. As the wound ought not to be left exposed for a minute longer than is necessary, everything is got ready in advance . . . and the dressing replaced in a smart, workmanlike manner, without dawdling. When the outside dressing has been removed, the field of operation is surrounded with sterilised towels, the gauze removed, the wound soaked with biniodide lotion (1 in 2000) . . . and the wound dusted with iodoform, and a new dressing put on.[76]

Since aseptic dressing changes were complex and time-consuming, The London Hospital officials assigned this work to medical student dressers whom they had carefully selected.

The Dressers' Importance

Dressers provided essential hospital services and supplied needed labour for patient care in hospitals. Their work was governed by detailed guidelines and rules from the standing orders of the London teaching hospitals. They also were supervised by various grades of fully qualified physicians and surgeons, including house physicians, registrars, and house surgeons, as well as assistant physicians and surgeons.[77] The house surgeons attended the surgical wards daily, took care of any dressings that had been neglected by the dressers, and reported any neglect to the surgeon.[78] At Guy's Hospital, standing orders for dressers stipulated the following: they were fourth-year medical students,[79] they served in the Surgical Department and were attached to a specific staff surgeon, they boarded at the hospital, they were in charge of patients admitted under their assigned surgeon, they worked in the out-patient department, and they also cared for all "casualties" admitted during the week from their admission to their placement on a ward.

Dressers were so indispensable that if a dresser was unable to perform his duties, the treasurer needed to approve another pupil to take his place. Hospital rules stressed that dressers had to perform all routine dressings on the wards and specifically stated that they could not delegate this responsibility to the nursing staff without special permission from the surgeons.[80] At The London Hospital the regulations for "Medical Assistants" and "Pupils" were similar to those for clinical clerks and dressers at Guy's Hospital. They too lived at the hospital and had responsibility for all surgical dressings. At The London Hospital, students were required to serve as dressers for at least twelve months to obtain a coveted position as House Surgeon.[81] The work of medical students at The London Hospital and at St Bartholomew's was essential labor for these hospitals as well as a necessary step for students in their pursuit of prestigious careers as London surgeons.[82]

It is not surprising, therefore, that the students competed for the highly sought after dresser positions and were often dissatisfied with how the hospital made the appointments. In 1887 the students at The London Hospital Medical College sent a letter to the college administrators. A "deputation representative of the Full Students" read the printed letter to the hospital college board with a list of grievances regarding the selection of students for clinical appointments.[83] The students made several suggestions that they felt would ensure a fair election process. After lengthy deliberation, the administrators made substantial changes based on some of the students' requests.[84] However, student distress regarding hospital appointments persisted for years and even caused some students to avoid the profession. In July 1892, physician Samuel Fenwick wrote a letter to the College Board addressing the problem. Fenwick outlined some possible reasons for the decline in the number of students applying to The London Hospital Medical College. On the subject of hospital appointments for students he stated:

> The hospital appointments at the London exceed in value those of any other institution in Great Britain, and ought to constitute a great attraction to students desiring to enter the Profession. Nevertheless, there is no part of our system which has been the cause of so much dissatisfaction on account of the general belief among the students that these appointments are often unfairly distributed. Whatever method of election may be hereafter determined upon, the rules regulating these appointments should be fully published in the prospectus, and should be carried out with rigid impartiality.[85]

Due to the importance of hospital appointments, medical school administrators had to carefully consider methods for assigning students to the various hospital positions.

The position of dresser was important in several ways: it was an important step in surgeons' career development, it supplied needed labor for patient care in hospitals, and it supplied income to hospital medical schools as students paid high fees for their clinical experience. "Fees for hospital practice" at the London Hospital in the late 1880s ranged from 25 guineas for a three-month "clerkship" and three-month "dressership" to 50 guineas for a "perpetual appointment" with six months clerkship and six months dressership.[86] A guinea consisted of one pound and one shilling, and fifty guineas in the 1880s had the approximate buying power of 8,000 dollars in 2018.[87] Clinical experiences were less expensive at St Bartholomew's: "surgical practice fees" were 12½ guineas for three months, 19 guineas for 12 months, and 31½ guineas for unlimited practice. Dresserships cost ten guineas for three months and an additional six guineas to extend the dressership to six months.[88] If each medical student paid approximately 10 pounds per month for clinical experience, St Bartholomew's Hospital would have had a monthly income of over 9,000 pounds from student fees—a substantial amount.

Although hospital administrators valued the income the students supplied, they also valued the work the students provided and tried to ensure the dressers were content and remained numerous. The dressers were important enough that when London Hospital administrators created a new house surgeon position and someone suggested that a dressers' room be given over to the newly appointed house surgeon, the hospital administration rejected the suggestion and decided the surgeons would temporarily relinquish their room instead.[89] In the 1890s when the number of entering medical students declined, these administrators became very concerned that not enough students would be available to fill the essential student appointments.[90] At St Bartholomew's Hospital, the administrators were so concerned about dressers that they used scarce resources to develop special preparatory classes for them.[91]

Thus, hospital officials had compelling reasons to employ medical student dressers rather than other members of hospital staff, such as nurses, to engage in important wound care work. One of the most compelling reasons was that cash strapped hospitals relied on the fees that medical students paid for their clinical experience.

Nurses' Involvement with Dressings in London Hospitals

Dressers did most of the dressing work in the large London teaching hospitals, but other staff members, including special probationers and nurses, also helped with this work. At St Thomas's Hospital, for instance, the rules stipulated that the "surgeryman" was responsible for preparing the "dressings requisite for the daily use of the Dressers."[92] Special probationers at St Thomas's Hospital kept daily "horaries" or diaries that included references to others who helped with dressings.[93] Special probationers, who were educated affluent ladies, paid fees for their nursing education and like surgeon's dressers felt entitled to take advantage of learning

opportunities that were not available to ordinary probationers. Special probationers considered themselves capable of performing dressing work. Miss Alladice, who entered St Thomas's in 1891, wrote about going "round" with a surgeon named Mr. McKellar, and with the house surgeons; she also wrote about helping the dressers.[94] Miss Lumby, a probationer in 1890, stated that she "set" dressings for the dressers and "was shown how" to do some of the dressings. She also participated in doing dressings, but the record is sometimes unclear in relation to whether she was doing them herself or helping others. She specifically stated that she helped the sister do a dressing. She also mentioned that while she was working on a particularly odorous dressing on a patient's arm, the dressers were busy doing other dressings.[95] Miss Haig-Brown, a special probationer who later became the Home Sister at St Thomas's, described helping a sister to re-dress a wound and replace a splint on the limb.[96] Several probationers mentioned "setting dressings" for the dressers, watching dressings being done and helping the dressers. As a whole, the sisters occasionally did dressings, but most often probationers prepared dressings for the dressers or assisted them.

Two letters written by a St Thomas's probationer named Laura Wilson describe the nurses' involvement in dressing wounds. One of the letters was written from the Nightingale Home on May 13, 1876, when Wilson had been at the hospital for three months and was beginning to feel like "an old hand." She had been working on the men's surgical ward and had just been moved to the women's surgical ward. She found working with women patients more difficult than working with men but was happy to be learning more on the women's ward, as she was prohibited from performing certain aspects of men's care including "stricture of urine, disease of testes, etc."[97] In her other letter, Wilson had written that after a few weeks of working on the ward she had started helping with the patients' dressings. She explained that she assisted

the dressers with morning dressing changes and had to pay close attention to what they did because she would have to “exactly” repeat the process at night. She described several dressings that she had done as her "special dressings for the week."[98] What was meant by special dressings for the week was not elaborated.

Another graduate of the Nightingale School, Jane Deeble, specifically stated that at St Thomas’s Hospital the dressers did the dressings—with the assistance of the surgeryman and under the supervision of the resident surgical staff.[99] Deeble’s insistence that nurses did not do dressing work at St Thomas’s, which is at odds with the special probationers’ accounts, may suggest that special probationers and ward sisters, analogous to head nurses in the United States, did some dressing work while ordinary probationers did not.

Even if the nurses were capable of doing dressing changes, the surgeons and dressers did not regard it as the nurses’ proper work. In a book of helpful hints for new doctors, Christopher Heath, a surgeon and former dresser at Kings College Hospital, suggested that although nurses sometimes did dressing changes, they did so to get on with their daily routines because the dresser hadn’t attended to the task fast enough. He advised dressers to “avoid a certain difficulty with nurses . . . the tendency they have (in order to save trouble) to do all the dressing themselves, instead of leaving them for the proper dressers . . . the dresser must be careful to attend in proper time, so that the general business of the ward is not delayed.”[100] This advice had not changed since an earlier edition of Heath’s book published three decades before.[101] Heath’s comments indicate that although nurses could do dressings, this work did not belong to them. In their textbook on nursing, Williams and Fisher commented that pupil nurses and dressers sometimes had disagreements about who had the “privilege” of doing dressings. They explained

that although pupil nurses might want to do the dressings, they must let the dressers do that work because it rightly belonged to them.[102]

Nurses' Work in Britain Without Medical Students

Medical student clerks and dressers performed bedside patient care in large London teaching hospitals, but in smaller hospitals without medical students, nurses assumed this work. Amy Hughes indicated that the presence of medical students influenced the work of nurses and nursing students in her statement: "the absence of a medical school makes a considerable difference in the routine work of the nursing staff, who have also in this case much more personal responsibility for the prescribed treatment of patients."[103] Hughes also pointed out that "in many small or cottage hospitals there is no resident doctor, and therefore the Matron and nurses have to render first aid, and immediate emergency treatment if need arises."[104]

Members of religious nursing orders frequently provided physician services when doctors were not available.[105] The nursing practice of Sister Dora, a famous nurse who worked in a small provincial hospital in central England, also exemplifies the flexibility and skill of a nurse faced with challenging circumstances.[106] Born Dorothy Pattision, Sister Dora joined an Anglican nursing sisterhood and was placed in charge of the nursing in a small cottage hospital in Walsall, an industrial town near Birmingham. Because no resident medical staff was available, Sister Dora carried out many procedures considered to be in the doctors' domain: setting bones, pulling teeth, saving injured limbs, doing aseptic surgical procedures, and performing a great deal of wound dressing. She conducted daily outpatient clinics in which she treated patients. One of the doctors with whom she worked, Dr. MacLachlan, encouraged her to go to medical school, but

she refused because she felt more fulfilled with nursing. Undaunted, MacLachlan trained her to perform the duties of a house surgeon, which she carried out in addition to her nursing work.[107]

Nurses who worked in Poor Law institutions that did not have resident medical staff also "had to" perform more medical tasks.[108] Nurses were expected to be present continuously and to fill in for the doctor in his absence, which created a challenging situation in which to define the boundaries of nursing. Even Florence Nightingale, who strongly believed that nursing and medicine should be separate spheres of work, once commented that a district nurse must be even more talented than the hospital nurse because the district nurse would be the only person reporting to the doctor on how the patient was doing and would function as his staff of clinical clerks and dressers.[109]

Nurses' Work in Philadelphia Without Medical Students

Medical students were absent on the wards of Philadelphia hospitals, since only qualified physicians were members of the hospital medical staff. The Presbyterian Hospital, for example, stated that new physicians serve as residents for one year, that they be graduates of a "regular Medical School,"[110] that they must have passed the Medical Board examination, and that they had provided "testimonials of good moral character" to the board of trustees. As resident physicians, they were required to visit their patients twice a day, accompany the attending medical staff on their visits, and report on any new patients. The residents then provided medical care according to the attending physicians' and surgeons' "orders."[111]

Without medical students in Philadelphia hospitals, nurses assumed bedside treatments for the patients. Mary Clymer, a pupil nurse at the Hospital of the University of Pennsylvania in 1888, kept a daily diary of her work.[112] Her diary is particularly instructive regarding the work of

dressing wounds on a surgical ward. She recorded that she sometimes helped doctors with dressings in the hospital wards, regularly helped a nurse change dressings, and sometimes handled them on her own.[113] In addition, she cut and prepared antiseptic dressings for the surgeon's use on wounds in the operating room. Some of the dressings were quite complex, as when she "dressed a foot twice with lead water and laudanum on lint, covered it with wax paper and bandaged it."[114] Clymer recorded that she performed dressing changes for both simple and complex wounds on an almost daily basis.

Another example of nurses dressing wounds in American hospitals is found in Dr. Angell's article[115] describing the benefits of the modern hospital in 1901. He stated that when two patients with severe burns had been admitted to the hospital, the attending physician at the hospital "properly ordered the house surgeon to do the dressings." These dressings were so extensive and complicated that it took the house surgeon six and a half hours to do them. Angell continued, "The day following the physician very properly . . . arranged to have one special nurse, day and night, between the two cases, thus relieving the house surgeon from the expenditure of so much time."[116] This account indicates that the nurse was responsible for doing the very complex and time-consuming dressings for these two patients thus acknowledging that it was appropriate to assign this work to nurses.

Wounds and Dressings in Nursing Textbooks

Nursing textbooks from England and the United States also serve as primary sources regarding dressing work in these two countries. Many pupil nurses used two influential British nursing textbooks: Eva Luckes' *General Nursing* and Isla Stewart and Herbert Cuff's *Practical Nursing*.[117] Luckes, the matron of The London Hospital from 1880 to 1919,[118] instructed nurses

in how to prepare dressings for the house surgeon or dresser,[119] thus supporting the idea that dressing changes was dressers' work. Luckes also gave detailed instructions for the nurse who would be "doing dressings herself, or in preparing them for the House surgeon,"[120] which indicates that nurses would perform dressing changes under some circumstances. Stewart also discussed the performance of dressing work in hospitals, stating that the house surgeons would perform dressing work after surgeries while dressings for "granulating wounds" were "often left to the nurse."[121] This suggests that the surgical staff dressed acute wounds while nurses did more long-term dressings.

In the United States, Clara Weeks-Shaw authored a popular nursing textbook that included three entire pages of general instructions regarding wounds and dressings. She concluded by stating that it was "useless to give full directions for different dressings, as each operator has his own methods, and new ones are continually coming in vogue."[122] Even in three pages, Weeks-Shaw could not cover every option for dressing wounds for several reasons: surgeons had particular specifications for their dressings that nurses were expected to follow, common dressing protocols continued to change, and wound care was a complex and dynamic part of patient care.

Weeks-Shaw's book was so popular in the United States that William J. Radford, a senior resident medical officer of Poplar Hospital in London, edited it for British use.[123] In his introduction to the British edition, Radford explicitly stated that he had omitted parts of Weeks-Shaw's original text that seemed to encourage nurses to practice without medical supervision.[124] Radford, however, added several pages of instructions regarding wound care and dressings,[125] that were similar to those found in Luckes' and Stewart's textbooks. Although he did not explain why he added these instructions, he may have considered these brief instructions to be sufficient

for nurses who would be performing only routine dressing changes. The content of these nursing textbooks shows that while nurses in the United Kingdom were expected to do some dressing changes, they did not have extensive information on how to perform the task as did the nurses in the United States. With adequate information and adequate space to practice, nurses in the United States were more involved in dressing work than the nurses in the United Kingdom.

Conclusion

This paper argues that differences in the education of medical students in the United Kingdom and the United States contributed to differences in the development of nursing practice in these two countries, and that the presence of medical students in British hospitals and their absence in American hospitals had a significant impact on nursing development. Division of nursing and medical labor was different in the United Kingdom and the United States. In the United Kingdom large numbers of medical student surgical dressers spent many hours on hospital wards managing complex dressing changes while in the United States medical students were not usually present on the wards, and nurses were expected to dress wounds. Two factors that were instrumental in this difference in division of labour were: first, differing assumptions about the relationship between hospitals and medical education and second, the structure of medical student clinical education. The great London teaching hospitals had integral medical schools, but in Philadelphia, medical schools and hospitals were separate entities. Thus, the great London hospitals had close working relationships with their medical students while Philadelphia hospitals did not. London's hospital administrators took for granted that medical student dressers would provide these services while in Philadelphia, hospital administrators did not expect medical students to provide routine patient care services as their hospitals did not have

integral medical schools or medical student appointments. Instead, when hospital administrators in the United States supplied routine patient care services, they assumed that pupil nurses and their nurse supervisors, the only large-scale integral patient care workforce, would provide them. In both London and Philadelphia, hospitals had integral schools of nursing, however, in Philadelphia nurses provided the care that medical students provided in London hospitals.

Administrators of the great London teaching hospitals and their medical schools assumed that medical students needed clinical training by caring for patients on the wards as part of their medical education; furthermore, the medical students paid fees to the hospital for the privilege of doing so. Since hospitals benefited doubly by obtaining low-cost labor while their medical schools were collecting substantial income, hospital officials in London had little reason to question this system. In the United States, medical students received their clinical education in lecture halls where instructors presented individual patients to groups of students. They were not routinely given access to patients until after they graduated from medical school.

Nurses in London acknowledged the medical students' claims to surgical dresser work, their need to learn, and the high fees the dressers paid for their clinical training. Dressers' hospital clinical work was also an important prerequisite for medical career advancement, and although large London teaching hospitals provided hundreds of positions for medical students, competition for them was fierce. Although nurses were capable of doing dressing work, they were not burdened with this work because medical students claimed the task as necessary for their educational and career requirements. Hospital administrators endorsed the medical students' claims because they benefited from the fees they collected from the medical students for this service. Thus dressing work remained in the medical students' domain. While nursing

staff in London hospitals occasionally did dressing work, they understood that this aspect of patient care belonged to the dressers.

The work that nurses did was affected by the presence of medical student surgical dressers who performed medical work at the patients' bedsides on the wards of London teaching hospitals. Consequently, nurses in influential London teaching hospitals were not hindered by routine medical work and spent their time in other nursing activities. In London teaching hospitals, the boundaries between nursing and medicine were clearer than the boundaries in Philadelphia hospitals. Nurses in Philadelphia blurred the boundaries between nursing and medical tasks as they cared for their patients without the presence of medical students. This proposition and associated implications for continuing nursing and medical boundary dynamics require further research. Further research is needed to discover whether nurses in London focused more on nursing work, as distinct from medical work, than nurses in Philadelphia and if so, whether nursing practice in Philadelphia that was more focused on medical work persisted into the twentieth century.

Notes

[1] Eva Luckes, *General Nursing* (London: Kegan Paul, Trench, Trubner & Co., (1884), pp. 1-3.

[2] See Barbara Melosh, *The Physician's Hand: Work Culture and Conflict in American Nursing.* (Philadelphia: Temple University Press, 1982); Marie Hutchinson, Mary Higson, Michelle Cleary, and Debra Jackson, "Nursing Expertise: a Course of Ambiguity and Evolution in a Concept," *Nursing Inquiry 2016,* 23 (4): pp. 290-304; Sylvia Walby and June Greenwell,

Medicine and Nursing (London: Sage, 1994); Mike Walsh, *Nursing Frontiers: Accountability and the Boundaries of Care* (Oxford: Butterworth-Heinemann, 2000).

[3] Voluntary hospitals were not private hospitals as we would understand today. They were established and supported with donations from wealthy benefactors and free to patients. For patients to be admitted, they needed to be considered "worthy" and have a note of invitation from one of the benefactors.

[4] For Philadelphia, Patricia D'Antonio, *American Nursing: A History of Knowledge, Authority, and the Meaning of Work* (Baltimore: The Johns Hopkins University Press, 2010), xiv. For London, Thomas Bonner, *Becoming a Physician: Medical Education in Britain, France, Germany, and the United States, 1750-1945* (Baltimore: The Johns Hopkins University Press, 1995); John Harley Warner, *Against the Spirit of System: the French Impulse in Nineteenth-century American Medicine* (Princeton: Princeton University Press, 1998).

[5] Carol Helmstadter and Judith Godden, *Nursing Before Nightingale* (Farnham, England: Ashgate, 2011), xiv.

[6] Elizabeth Blackwell, *Pioneer Work for Women* (London: J. M. Dent & Sons, 1914), 47.

[7] Monica Baly, *Florence Nightingale and the Nursing Legacy: Building the Foundation of Modern Nursing and Midwifery,* Second Edition, (Philadelphia: Bainbridge Books, 1998).

[8] Bonner, *Becoming a Physician,* p. 318; Charles Rosenberg, *The Care of Strangers: The Rise of America's Hospital System* (Baltimore: The Johns Hopkins University Press, 1987), p. 201; Kenneth M. Ludmerer, *Learning to Heal: the Development of American Medical Education* (New York: Basic Books, 1985), pp. 152-160.

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[10] Tricia Owsley, "The Paradox of Nursing Regulation: Politics or Patient Safety?" *Journal of Legal Medicine*, 34, (2013): pp. 483-503.

[11] Ludmerer, *Learning to Heal*, p. 29.

[12] John Harley Warner, *The Therapeutic Perspective: Medical Practice, Knowledge, and Identity in America, 1820-1885* (Cambridge, MA; Harvard University Press).

[13] Nicholas Orme, *The English Hospital 1070-1570* (New Haven; London: Yale University Press, 1995), p. 161.

[14] G. Barry Carruthers and Lesley A. Carruthers, *A History of Britain's Hospitals* (Sussex, England: Guild Publishing).

[15] John Welsh Croskey ed., *History of Blockley: a History of the Philadelphia General Hospital from Its Inception* (Philadelphia: F. A. Davis, 1929); Thomas Morton, *The History of the Pennsylvania Hospital, 1751-1895* (Philadelphia: Times Printing House, 1895).

[16] George Eliot, *Middlemarch* (London: Penguin, 1994), First published as a serial from 1871-72; Elizabeth Gaskell, *Wives and Daughters* (London: Penguin, 1997), first published as a serial from 1866-68. In *Middlemarch*, one of the main characters, Dr. Lydgate, cares for patients in their homes and contemplates taking on an apprentice in chapter 71. In *Wives and Daughters*,

main character, Dr. Gibson, makes rounds to many residents of the area and has a succession of "pupils." One of them plays an important role in the story.

[17] Elizabeth Fee, "The First American Medical School: the Formative Years," *Lancet*, 385, no. 9981 (May 16, 2015): pp. 1940-41.

[18] Ibid.

[19] Thomas P. Duffy, "The Flexner Report—100 Years Later," *Yale Journal of Biology and Medicine*, 84 (2011): pp. 269-276.

[20] Ibid, pp. 271-273; Ludmerer, *Learning to Heal*, p. 102; Bonner, *Becoming a Physician*, pp. 288-289; Paul Starr, *The Social Transformation of American Medicine: The Rise of a Sovereign Profession and the Making of a Vast Industry* (New York: Basic Books, 1982), p. 119.

[21] Warner, *Against the Spirit of System*, p. 30.

[22] Ludmerer, *Learning to Heal*, p. 30.

[23] Oxford University, "About Us," https://www.medsci.ox.ac.uk/about/history/oxford-medical-sciences-through-the-centuries/1300s-1400s.

[24] Bonner, *Becoming a Physician*, p. 295.

[25] Oxford University, "About Us."

[26] Ernest William Morris, *A History of the London Hospital Second Edition* (London: Edward Arnold, 1910), p. 187.

[27] Bonner, *Becoming a Physician*, p. 217.

[28] Keir Waddington, *Medical Education at St. Bartholomew's Hospital 1123-1995* (Woodbridge, Suffolk: Boydell, 2003), p. 42.

[29] Guy's Hospital, Regulations for Management of the Hospital, London, 1874, London Metropolitan Archive, H09/GY/A/053, London Metropolitan Archive (hereafter cited as LMA), p. 67.

[30] The Charter of Incorporation, the By-Laws of the Governors, and the Standing Orders of the House-Committee of the London Hospital, London, 1874, LH/A/1/17, Royal London Hospital Archives and Museum and St Bartholomew's Hospital Archives and Museum (hereafter cited as RLHASBHA).

[31] St Thomas's Hospital Rules 1872, HI/ST/A28/4/1, LMA.

[32] Waddington, *Medical Education,* p. 117.

[33] Abraham Flexner, *Medical Education in Europe: A Report to the Carnegie Foundation for the Advancement of Teaching, Bulletin Number Six* (New York: Merrymount Press, 1912), p. 209.

[34] Ibid.

[35] Margaret Lonsdale, "The Present Crisis at Guy's Hospital," *The Nineteenth Century* 7 (1880): 677-683.

[36] The London Hospital Medical Council: minutes, 13 November 1880-86 December 1890, RLHLM/1/1, RLHASBHA, p. 74.

[37] Charles Rosenberg, *The Care of Strangers: The Rise of America's Hospital System* (Baltimore: Johns Hopkins, 1987).

[38] Warner, *Against the Spirit of System,* p. 73.

[39] Ludmerer, *Learning to Heal,* p. 102.

[40] Ibid, p. 152.

[41] Rules and Regulations of the Pennsylvania Hospital on Pine Street, Board of Managers Minutes, Eleventh Mo. 28th '87, Philadelphia, 1887, Section I, Series 1, Board of Managers, 1751-1975, Minutes, v.11, Pennsylvania Hospital Historic Collections (hereafter cited as PHHC).

[42] *Fifteenth Annual Report of the Presbyterian Hospital in Philadelphia, Presented at the Annual Meeting held January 19, 1886, together with Charter and By-Laws*, (Philadelphia: Henry B. Ashmead, 1886), MC 35, I, 77, Center for the Study of the History of Nursing, School of Nursing, University of Pennsylvania (hereafter cited as CSHN). The subject of "hospital walkers" is worthy of further research.

[43] Rosenberg, *The Care of Strangers*, p. 53; Shryock Richard, *The Development of Modern Medicine* (Madison: University of Wisconsin Press, 1936), p. 45.

[44] William Shainline Middleton, "Clinical Teaching in the Philadelphia Almshouse and Hospital," in *"Old Blockley": Proceedings of the Bi-Centenary Celebration of the Building of the Philadelphia Almshouse*, various contributors, (New York: Froben Press, 1933), MC 71/III/5, pp. 92-119, CSHN; Rosenberg, *The Care of Strangers*, pp. 193-194; Bonner, *Becoming a Physician*, p. 319; Abraham Flexner, *Medical Education in the United States and Canada: A Report to the Carnegie Foundation for the Advancement of Teaching, Bulletin Number Four* (New York: The Carnegie Foundation, 1910).

[45] Rosenberg, *The Care of Strangers*, p. 201.

[46] William Osler, "The Hospital as a College," in *Aequanimitas: With Other Addresses to Medical Students, Nurses and Practitioners of Medicine, Third Edition* (London: H. K. Lewis, 1904), p. 333.

[47] Ibid, p. 336.

[48] Harvey Cushing, *The Life of Sir William Osler* (Birmingham, Alabama: Gryphon Editions, 1982, originally published in 1924), p. 235.

[49] NIH U. S. National Library of Medicine, "William Osler: the William Osler Papers" https://profiles.nlm.nih.gov/spotlight/gf/feature/philadelphia

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[51] Agnew, "The Medical History of the Philadelphia Almshouse," MC 71/III/5, CSHN.

[52] Cushing, *The Life of Sir William Osler*.

[53] Flexner, *Medical Education in the United States and Canada,* p. 107.

[54] Ibid.

[55] Guardians of the Poor, *Rules for the Government of the Medical Board of the Philadelphia Hospital, 1870,* A-5431, 35-3-7,27, PCA; Guardians of the Poor, *Rules for the Government of the Board of Guardians of the Poor in the City of Philadelphia,* 1887, A-5431, 35-3-1.4, PCA.

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[58] Hirst, p. 127.

[59] Guardians of the Poor, *Rules of the Department of Charities and Correction for the Government of the Bureau of Charities*, Philadelphia, 1902, A-5431, 65.3, PCA.

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[61] *Fifteenth Annual Report of the Presbyterian Hospital in Philadelphia. Presented at the annual meeting held January 19, 1886, together with Charter and By-Laws* (Philadelphia: Henry B. Ashmead, 1886).

[62] Guy's Hospital, "Regulations for Management of the Hospital, 1874," H09/GY/A/053, LMA.

[63] Ibid.

[64] Abraham Flexner, *Medical Education in Europe: A Report to the Carnegie Foundation for the Advancement of Teaching, Bulletin Number Six* (New York: Merrymount Press, 1912), p. 210.

[65] Waddington, *Medical Education at St Bartholomew's,* p. 97.

[66] Ibid.

[67] St Bartholomew's Hospital Pupil' Appointments, SBHMS/E/1/10 MS 20 1890/1-1899/1900 St Bartholomew's Hospital and College, RLHASBHA, p. 31.

[68] Carol Helmstadter, "Doctors and Nurses in the London Teaching Hospitals: Class, Gender, Religion, and Professional Expertise 1850-1890," *Nursing History Review,* 5 (1997): pp. 161-197, quote on p. 163.

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[70] Ibid.

[71] Ibid.

[72] Chest of Books, "Alembroth wool," https://chestofbooks.com/health/materia-medica-drugs/Pharmacy-Pharmacology-And-Therapeutics/13-Sal-Alembroth.html.

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[75] Lockwood, "Notes on Aseptic Surgery," pp. 2-7.

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[77] Guy's Hospital, "Regulations for Management of the Hospital, 1874," H09/GY/A/053, LMA.

[78] Ibid.

[79] Ibid.

[80] Ibid.

[81] The Charter, By-Laws, and Standing Orders of the London Hospital, 1874, LH/A/1/17, RLHASBHA.

[82] Archibald Edmund Clark-Kennedy, *The London: A Study in the Voluntary Hospital System, Volume Two, The Second Hundred Years 1840-1948* (London: Pitman Medical Publishing Co. Ltd., 1963), p. 16; Waddington, *Medical Education*, p. 48.

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[84] Response from the London Hospital Medical College, RLHLM/ 1/1, RLHASBHA.

[85] Letter to the College Board from Samuel Fenwick in July of 1892, RLHMC/A/4/2, RLHASBHA, no page.

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[90] The London Hospital College Board Minutes 1885-1893, RLHMC/A/4/2, RLHASBHA**,** p. 162.

[91] *St Bartholomew's Hospital Journal*, 1894, SBHMS/E/1/10, RLHASBHA p. 65

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[93] Horaries of special probationers at St Thomas's Hospital, HI/ST/NTS/C39, LMA.

[94] Horary of Miss Alladice at St Thomas's Hospital, HI/ST/NTS/C39/13, LMA.

[95] Horary of Miss Lumby at St Thomas's Hospital, HI//ST/NTS/C39/15, LMA.

[96] Horary of Miss Haig-Brown at St Thomas's Hospital, HI/ST/NTS/C39/14a, LMA.

[97] Laura Wilson letters from St Thomas's Hospital 1876, HI/ST/NTS/Y17/2, LMA.

[98] Laura Wilson letters from St Thomas's Hospital 1876, HI/ST/NTS/Y17/1, LMA.

[99] Monica Baly, *Florence Nightingale and the Nursing Legacy; Building the Foundations of Modern Nursing and Midwifery, Second Edition* (Philadelphia: BainBridgeBooks, 1998), p. 115.

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[108] Baly, *Florence Nightingale,* p. 50.

[109] Ibid, p. 126.

[110] Rules and Regulations of the Pennsylvania Hospital.

[111] Presbyterian Hospital rules.

[112] Mary V. Clymer Papers 1888-1889, transcript, MC 16, CSNH.

[113] Ibid.

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[115] Edward Angell, "The Modern Hospital: Its Value to the Patient and to the Physician," *American Journal of Nursing*, 1 (July, 1901): pp. 703-712.

[116] Angell, "The Modern Hospital," p. 710.

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[120] Ibid, p. 139.

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[125] Ibid, p. 152-156.

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