



Florence Nightingale: Architect of the Modern Hospital

By Joe Tye

We remember Florence Nightingale as founder of the nursing profession (which she certainly was), but most people are not aware of her many other contributions to the development of the hospital as we know it today.

She was, in a very real sense, the first hospital administrator and architect of the modern hospital. In a 22-month span between late 1854 and early 1856, Nightingale transformed the Scutari Barrack Hospital from being little more than a warehouse for dying soldiers into a forerunner of modern hospital facilities.

In March of 1854, Great Britain and France joined their ally, Turkey, which had been fighting Russian aggression since the autumn of 1853. At stake was control of sites in the Holy Land and stopping Russia's efforts at expansion – which threatened established trade routes.

Having not been in a shooting war for more than 40 years (not since Wellington

defeated Napoleon at Waterloo), British generals seemed to have forgotten one certain outcome of every war: casualties. When the Russian army surprised them by fighting back and casualties mounted, they were completely unprepared. So they petitioned the Turkish government to give them an abandoned army barracks to house the sick, wounded, and dying soldiers who had taken a bullet for their queen.

Even by the low standards of the day, conditions in the Scutari Barrack Hospital were horrendous. Soldiers were laid on bloody cots of straw with a bare 18 inches between them; they were infested with lice and vermin; the water was contaminated; the air was foul, and the food was rancid. Physicians' treatment of choice was amputation, which almost always resulted in death by infection, largely because surgical rags went from one patient to the next without so much as being passed over a bucket of hot water.

In the depths of the crisis, the mortality rate approached 50 percent. One eyewitness observer, the Reverend Sidney Osborne, called Scutari "a vast field of suffering and misery." Yet, as Mark Bostridge wrote in his biography, *Florence Nightingale: The Making of an Icon*: "By the end of the war, the Scutari hospitals had been transformed into efficiently organized, smooth-running operations."

Health Care Transformed

Through her management of the Scutari Barrack Hospital during those two years – and her efforts to reform the entire British health care system over the succeeding five decades – Nightingale did more than lay a foundation for the nursing profession, as remarkable an accomplishment as that was. Nightingale, more than any other person, oversaw the transformation of the hospital from a haphazardly managed building that originally had been designed for some

other purpose (an army barracks, in the case of Scutari) into a facility specifically designed with the care of patients in mind. Her fingerprints are all over some of the most fundamental elements of today's health care system – things that we take for granted but were revolutionary in her time.

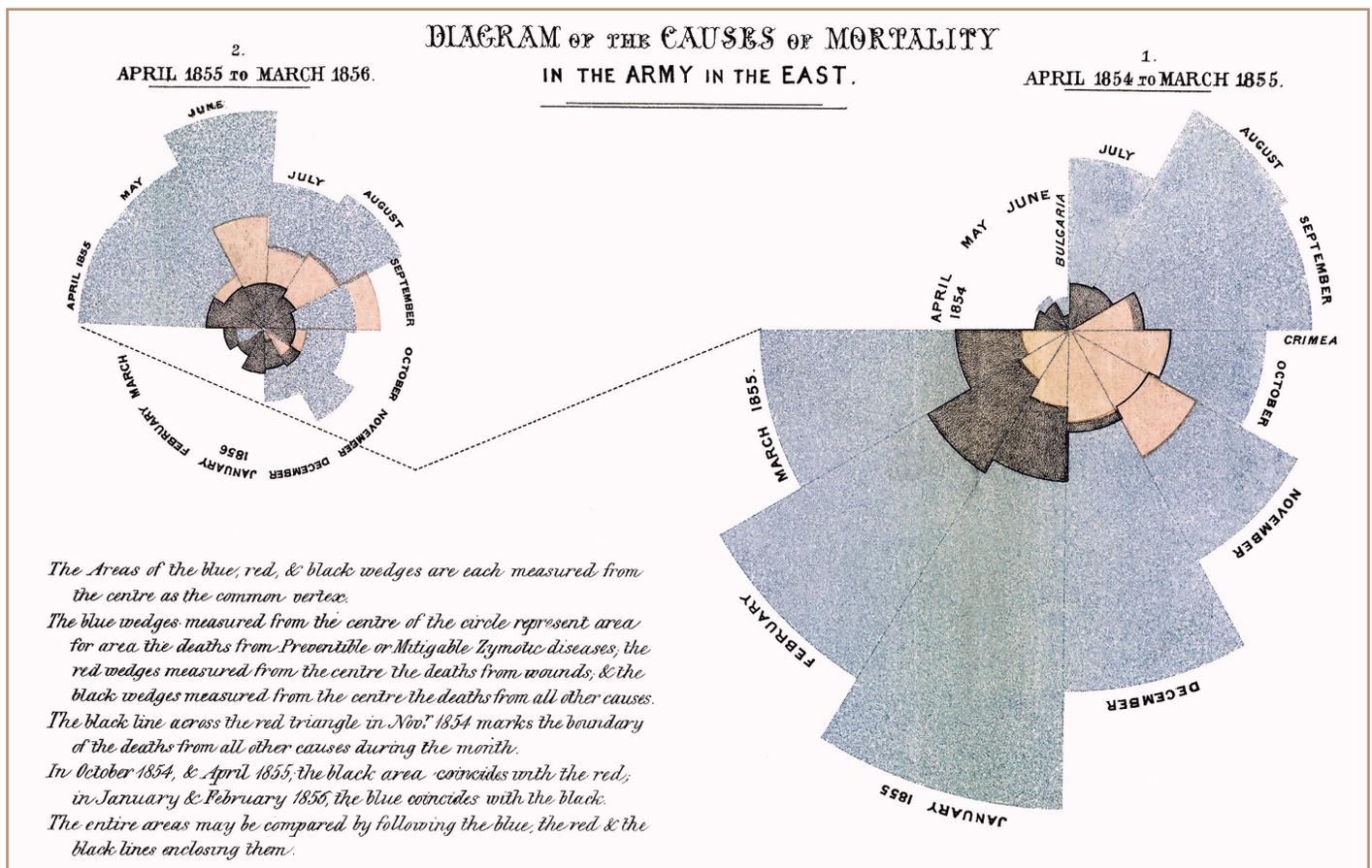
Medical records. One of the first things Nightingale did upon arriving at Scutari was number every patient cot with a piece of chalk. She then saw to it that detailed records were kept on every patient. She recorded physical symptoms, reactions to treatment, and (all too often) the time and manner of death. She wrote to the families of dead soldiers, telling them of the circumstances under which their relatives died, usually with comforting words to the effect that they had died in peace. In her classic work, *Notes on Nursing: What It Is, and What It Is Not*, she wrote that the most important element of being a good nurse – more important than compassion or clinical

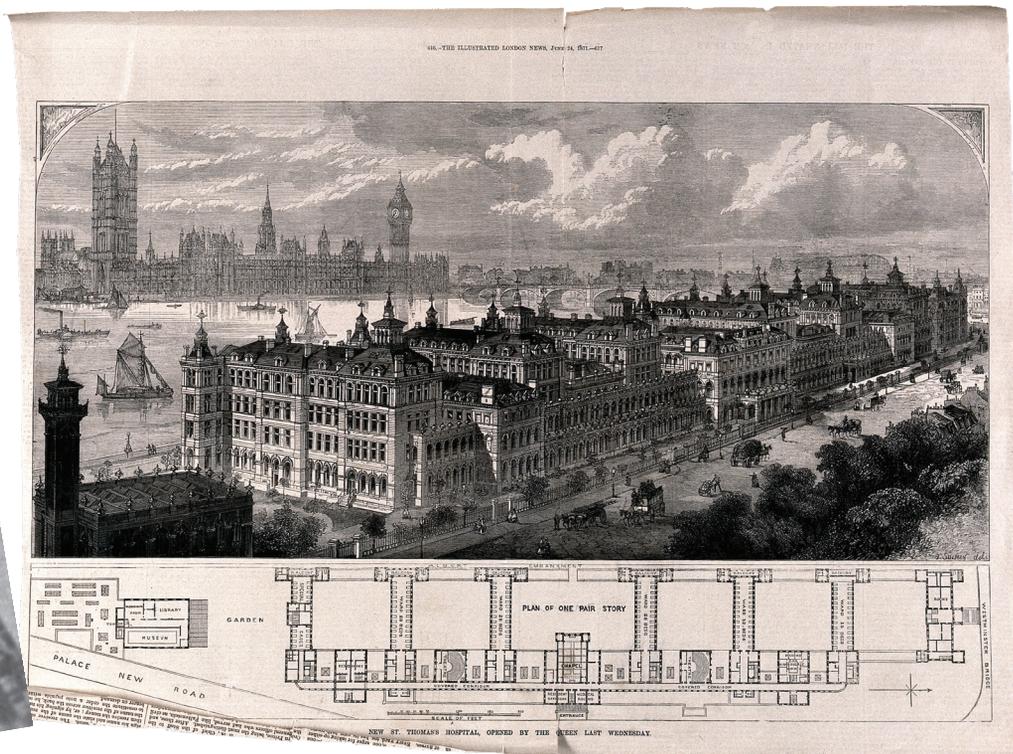
skill – is the ability to acutely observe and record changes in a patient's condition. She certainly would have applauded the move toward electronic health records, though she also would have cautioned against the danger of tending to machines instead of caring for people.

Medical triage. At a time when officers looked down on enlisted men as "scum of the earth" (the term the Duke of Wellington used to describe the men who won his victories against Napoleon), the Anglican Church discriminated against Catholics, and non-Christians were treated as something less than human, Nightingale insisted that medical care should be provided on the basis of a patient's clinical condition and not his religion, military rank, or social standing – a radical idea in Victorian England. She ran into considerable opposition from the class of officers and gentlemen but stood her ground and established a principle that has guided the healing professions ever since.

Infection control. When Nightingale's nursing corps arrived at Scutari, she told her ladies that the strongest among them would not be wanted at the bedside but at the washtub. She made it her mission to clean up the deplorably unsanitary conditions of the Scutari Barrack Hospital, going so far as to use her own money to hire a Turkish work crew to refurbish a burned-out wing of the building before it was used to accept new patients. Her methods set the stage for the laundry, housekeeping, and maintenance functions in today's hospitals and firmly established the relationship between physical facilities and clinical outcomes.

Hospital epidemiology. Following her return to London after the war, Nightingale was haunted by the specter of the outrageous death rate among British soldiers at the Scutari Barrack Hospital. Completing the first-ever hospital epidemiological study – during which she invented the famous Coxcomb diagram, a





precursor to the pie chart – Nightingale documented the dominant role that basic sanitation played in reducing mortality rates, giving a major boost to the emerging sanitation movement. In recognition of her work, she was the first woman ever admitted as a fellow of the Royal Statistical Society.

Nutrition services. Nightingale had an intuitive appreciation of the link between nutrition and healing. When she arrived at Scutari, soldiers were being fed whatever the officers refused to eat, which was thrown into a pot and boiled. She hired a famous British chef who traveled to Scutari to create nutritious recipes for the men; to prepare these recipes, she helped him create one of the most sophisticated hospital kitchens seen up to that time.

Hospital financial management. At Scutari, Nightingale transformed a haphazard and ineffective supply procurement process into a well-run and efficient materials management system. She calculated, then worked to reduce, cost per patient day, setting a precedent that has been followed by every hospital CFO ever since. She had an intuitive understanding that productivity and

compassion are complementary, not opposing, qualities of an effective hospital. When confronted with a mandate to “do more with less,” rather than complain about the lack of resources, she rolled up her sleeves and figured out how to use more effectively the resources she had and to act entrepreneurially to obtain the additional resources she needed.

Hospital architecture. The first structure built specifically to be a hospital (as opposed to another building being converted for that purpose) was London’s Herbert Hospital, constructed in 1865 for the care of Crimean War veterans. Its design was based on Nightingale’s concepts, many of which were detailed in her book, *Notes on Hospitals*, and her philosophy of separate pavilions was a central element of hospital design for the next 150 years. When I was a junior administrator at the University of Iowa Hospitals and Clinics, back in the mid-1970s, our last remaining open wards had 32 beds – the number that had been prescribed by Nightingale more than 100 years before as being optimal for sanitation, ventilation, and communication.

The First Hospital Administrator

Other than her late-night rounds through the Scutari Barrack Hospital, where she often would stop to massage the feet of a dying soldier, “the lady with the lamp” gave relatively little direct nursing care. Her administrative responsibilities did not allow her the time.

It has been argued, with some merit, that Jamaican nurse Mary Seacole did more to advance clinical nursing care during the Crimean War than did Florence Nightingale. But that misses the point of Nightingale’s real contributions. While we rightly remember her as founder of the nursing profession, her legacy was also shaped by her prodigious administrative skills and her vision for what a hospital should be. It’s a vision that, in the years since, has become a reality. ✚

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