



# King of the Queen City: The Urologist Who Saved Buffalo

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When thinking of the great men and women of urology, one might consider the early pioneers in treatment of stones, voiding dysfunction, infertility, or cancer. Throughout history, urologists have also been technological leaders and have been at the cutting edge of medicine and public health. One such leader, Walter D. Greene, emerged in the “Queen City” of Buffalo, New York at the turn of the 20th century, when one of the most serious issues facing American cities was the outbreak of venereal and infectious diseases. Though an expert in genitourinary diseases, his contributions extended well beyond the treatment of urologic conditions. Greene helped to curtail outbreaks of multiple communicable diseases and established strict measures of control that were emulated across the country.

## EARLY LIFE

Walter D. Greene was born in Starksboro, Vermont in 1853, the seventh son of Stephen S. and Lydia Chase Greene. He received his primary education in rural schools in Vermont before relocating to Union Springs, New York in the Finger Lakes region. After receiving his medical degree from the University at Buffalo in 1876, Greene worked for several years as a house physician at Rochester City Hospital. Greene later returned to Buffalo to become the second clinical professor of genitourinary and venereal diseases at the university, where his strong clinical skills were rewarded with an appointment as district physician in 1882. In this role, he served the poorest, sickest patients, and cultivated his interest in public health and communicable diseases. In December 1896, he was appointed Deputy Health Officer for the city of Buffalo, serving under Commissioner of Health Ernest Wende. In 1902, the newly elected mayor Erastus Knight chose not to reappoint Wende, with Greene being named his successor. This move was very controversial, as Wende was well-liked and respected by his peers and in the community. Knight’s decision spurred an extensive canvassing

attempt by Wende’s supporters to keep him in his post. Although their efforts to reappoint Wende failed, Greene’s significant contributions to the community later earned him the reputation of a worthy successor.<sup>1</sup>

## TYPHOID

During the late 1800s, typhoid fever was a public health crisis plaguing cities across America, including Buffalo. In 1899, Greene wrote an article for the Buffalo Medical Journal describing the contaminated water supply as a likely source of typhoid bacillus, which detailed multiple methods of decontamination including oxidation, heat, sedimentation, nitrification, and filtration.<sup>2</sup> He advocated for filtration using the American method, which utilized an inorganic slime augmented with alum, instead of the more popular organic method of the time: slow sand filtration. The American method was 10 times faster, more space efficient, and 10% cheaper, according to Greene’s research. Among several factors, decontamination of the water supply was paramount in decreasing typhoid-related deaths in Buffalo from 60 per 100,000 people to 22 per 100,000 people between 1894 and 1897.<sup>2</sup>

## PAN-AMERICAN EXPOSITION

When the Pan-American Exposition came to Buffalo in 1901, preventing the spread of disease presented public health officials with their most difficult challenge to date.<sup>3</sup> The Buffalo Exposition followed the 1893 Chicago World’s Fair, where efforts were made to conceal the ensuing smallpox epidemic in the interest of protecting commerce and business. Unfortunately, at an estimated cost of \$2 million (equivalent to roughly \$59.8 million in 2019), the impact of the epidemic was difficult to hide. The Buffalo Exposition was to be a “vast camp being occupied for 6 months, inhabited by thousands of people who permanently reside within its lines, and which is visited by millions of others who are coming and going constantly and who must be fed and cared for in various ways.”<sup>4</sup> These complexities led Wende and Greene to advocate for a new, comprehensive municipal quarantine hospital. This healthcare center was constructed on the grounds of the exposition. For his part, Wende acknowledged that every previous exposition host had suffered a smallpox outbreak

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and proclaimed, "Without such a hospital, it is impossible to prevent the spread of disease." Despite this warning, the hospital was still not built when Wende left office in 1901. Wasting no time, Greene orchestrated the successful construction of the exposition hospital early in his term. In stark contrast to Chicago, Greene made it a priority that sanitation at the exposition was managed by medical professionals. As such, the position of exposition medical director was seen as a vitally important responsibility, and Greene was deliberate in his appointment of Dr. Roswell Park. Park's impressive accolades included his roles as the University of Buffalo Medical School's pre-eminent surgeon, the president of the American Surgical Society, and the founder/director of the Gratwick Research Laboratory (later renamed the Roswell Park Comprehensive Cancer Center). The exposition hospital was the site of President William McKinley's emergency surgery following an assassination attempt on September 6, 1901.

Ensuring the safety of foods and beverages at the exposition was another important goal for Greene and colleagues. Restaurants were required to provide the names of food suppliers, and only those complying with Health Department regulations were allowed on the grounds. Everything from milk to soft drinks to snack foods was subjected to meticulous inspections, sometimes as often as twice daily. Equally as scrupulously managed were the bathroom facilities, with an excess of 50 lavatories checked and cleaned several times daily.

Ultimately, Greene's innovative approaches to public health and sanitation at the Buffalo Pan-American Exposition proved successful. Surrounded by significant outbreaks of smallpox throughout the Midwest and elsewhere in the Northeast, Buffalo was able to stifle a smallpox epidemic within its own borders. By way of comparison, New York City had nearly 2000 incident cases and 410 deaths during the 6-month run of the Buffalo exposition, while Buffalo experienced only 355 incident cases and 6 deaths. It would be difficult to conclude that the endeavors to limit outbreaks at the Pan-American Exposition and the fair's resultant success were anything but a direct result of Greene's hard work and foresight.<sup>5</sup>

## PLACARDING/SCHOOL BOOKS

As evidenced by his work during the Pan-American Exposition, Greene prioritized communicable diseases throughout his term as Health Commissioner. In 1889, he introduced a new system of placarding homes inhabited by individuals exhibiting signs of smallpox, scarlet fever, tuberculosis, or diphtheria as a way to mitigate the spread of these illnesses. As noted in a 1902 article, owing to the institution of these methods, "the smallpox situation has improved perceptibly. Few cases are reported and they are only of a mild type."<sup>6</sup> Upon identification of a case, it was standard practice to quarantine the patient and their family members, post a placard on the home, and suspend all food deliveries and laundry services. School principals were notified of any child's absence until death or

convalescence, after which time a thorough cleaning of all property with formaldehyde gas and a bichloride mercury solution was performed.<sup>7</sup> At the same time, a record of all cases was maintained, and instructional pamphlets were distributed in various languages as a reference for when infection befell a household.<sup>8</sup>

Concomitant with his efforts to distinguish affected homes, Greene worked to decrease transmission of endemic illnesses by targeting a population especially vulnerable to disease: school children. Though his theories regarding what he considered to be the protozoal nature of scarlet fever were incorrect, the methods he used to eradicate the microbes were quite effective. In 1902, his attention turned to the materials children used for schooling. Books from the city's grade school classrooms were disinfected at low cost using formaldehyde gas. After a single disinfection using Greene's method, only 15% of the original microbes remained, reducing the average number of reported scarlet fever infections from 875 to 528 in a year, and similarly halving the number of deaths from 36 to 18.<sup>8</sup> These measures were made possible by the near doubling of budget and increased autonomy of the department to target communicable diseases, which had taken effect under a new city charter in 1891.<sup>7</sup>

## MILCH (DAIRY) COWS

Bovine tuberculosis was yet another major health threat at the turn of the century. At that time, it was no secret that there were "diseased cattle being shipped to market. As soon as a farmer discovers that tuberculosis is about to ravage his cows, he immediately ships them off to market to get rid of them before they die on his hands."<sup>9</sup> It was predicted that 5%-10% of the 15 million cows supplying the country with milk were tuberculous-positive at the time of slaughter. Greene wanted assistance in restricting the ingress of infected milk into the city, and he took his fight to the state legislature. Though early efforts at the state level were in vain, he eventually persuaded the Buffalo city council to act on the matter. Milch cows were banned within city limits, and 3 milk inspectors were placed in the countryside surrounding Buffalo by 1903. Each farm or dairy was inspected methodically, and every cow was examined. Milk from substandard farms and dairies was refused admittance to the city.<sup>10</sup> Though Ithaca and New York City would later take up the fight against germ-infested milk as well, much of the early credit and success in this domain belonged to Greene.

Initially, public health officials presumed that inspection of milch cows and certification of a clean milk supply was enough to prevent an epidemic, similar to the way in which typhoid had been controlled. Unfortunately, this was not the case. The bovine tuberculosis epidemic endured and remained a source of disagreement and controversy in the public health community. Even the members of the 1905 International Tuberculosis Congress in Berlin could not agree on whether bovine tuberculosis was transmissible to humans, resulting in more confusion. By



TWENTIETH CENTURY BUFFALO.—FINANCIAL MUNICIPAL OFFICIALS.

**Figure 1.** Circa 1902. Erastus Knight (top middle) is elected mayor of Buffalo and appoints Walter D. Greene (top left) to be Commissioner of Health.

this time, authoritative data revealed that 300,000 of the 1.7 million cows furnishing milk to New York were known to be infected with tuberculosis. Various methods of breeding cows and identification of illness were attempted, but none were successful. In 1907, it was Greene's opinion, along with other leading experts of the day, that pasteurization was the only viable option for protecting people from tainted milk. This was a major shift in thinking at that time and had long-lasting, positive consequences on countless areas within the realm of food sanitization.<sup>11</sup>

## CREMATION

Cremation for the management of the deceased was brought to the United States from Italy in 1876. It was seen as a strategy for controlling the outbreak of diseases that could be spread from overcrowded cemeteries in urban centers. The first crematorium in the United States was built in Washington, Pennsylvania, with more erected in Pittsburgh, Cincinnati, Detroit, Los Angeles, and Buffalo over the ensuing 14 years. Not surprisingly, urologists were among the first supporters of cremation in Buffalo, as they recognized the threat to the ground water supply. Seeing another opportunity to improve the health of his city, Greene served as a founding trustee of the Buffalo Cremation Company until his death in 1917. This crematorium continues to operate to this day and is incorporated as part of the Forest Lawn Cemetery, a national historic landmark. As an aside, the Forest Lawn Cemetery also happens to be the final resting place of Walter D. Greene, along with such notable individuals as Millard Fillmore, Rick James, and Roswell Park.<sup>12</sup>



WALTER D. GREENE, M. D.  
Health Commissioner of the City of Buffalo. Successful Physician and Surgeon. Honored member of many professional and other societies. Promoted to American citizenship, subsequently serving the Public in the United States by Chapter Naturalization Citizens.

**Figure 2.** Circa 1902. Dr. Walter D. Greene sitting at his desk shortly after his promotion to Health Commissioner of Buffalo.

## CONCLUSION

Urologists have been and continue to be leaders in their communities, with far-reaching and diverse contributions. Walter D. Greene is a prime example of this legacy. Throughout his tenure as health commissioner, he weathered a scandalous appointment, utilized innovative sanitation strategies, and addressed multiple epidemics. With a mind for public health, he played a definitive role in improving the wellbeing of a major metropolitan center along a prominent trade route at the turn of the 20th

century. His measures were strict, but his outcomes were undeniable. For a time, he was the King of the “Queen City.” (Figs. 1 and 2)<sup>13</sup>

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