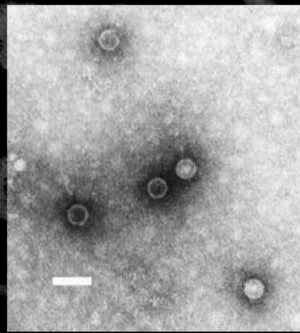


# “A Small Lame Army”

THE POLIO EPIDEMIC IN  
NEWARK A CENTURY AGO



*by Sandra W. Moss, M.D., M.A. (History)*

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## INTRODUCTION

The mid-twentieth-century polio epidemics linger in the memories of many New Jerseyans. Beginning in 1955, the seemingly miraculous Salk vaccine gave back the summers. Today, we encounter polio through reports of terrorist murders of vaccinators, the global eradication initiative, post-polio syndrome, and the potential dangers posed by unvaccinated children. Newark's visceral and public health responses to the long-forgotten 1916 poliomyelitis epidemic provide insight into our remarkably similar responses to modern threats such as SARS and Ebola.

Epidemic diseases were frequent visitors to New Jersey. Diphtheria ("throat distemper") decimated children in the northern colonies in 1735–1736. In the 1790s, yellow fever spread to New Jersey from Philadelphia. In 1832, scores of Irish laborers died of cholera along the Delaware and Raritan Canal. In 1901–1902, smallpox struck 1,288 residents of Newark with 258 deaths.<sup>1</sup>

The first documented poliomyelitis outbreak in the United States occurred in 1894 in Rutland, Vermont.<sup>2</sup> It is now known that poliovirus is transmitted by the fecal-oral route (contaminated water, food, or fingers). About 24 percent of infected individuals (mostly children) develop a minor viral illness after an incubation period of three to six days. Less than 5 percent progress to a transient meningitis-like illness. These asymptomatic and mildly ill children become infectious carriers. In less than 1 percent of cases, the virus attacks the spinal cord, causing muscle weakness and pain with progressive paralysis of one or more limbs. Roughly half the paralytic victims are left with permanent paralysis and muscle atrophy. In the most critical cases, invasion of the brain leads to paralysis of respiratory muscles and death within hours or days. (The iron lung introduced in the 1930s prevented many of these early deaths).<sup>3</sup>

In the six years previous to 1916 there were 95 cases of infantile paralysis reported in Newark with four deaths (4 percent mortality). But in the 1916 epidemic, mortality was 26.7 percent in 1,360 cases and 31.3 percent in infants under one year of age. Charles V. Craster, Newark's vigilant health officer, concluded that "a new and powerful virus has been at work among a susceptible population."

A critical step in making sense of an epidemic for both the public and health officials is the assignment of responsibility, often framed as "blame." In 1916, the logical



Charles V. Craster, M.D.  
Newark Health Officer

Source: *New Jersey and Its Builders*, ca. 1925  
Courtesy: Rutgers University  
Special Collections and University Archives

culprits were the immigrant poor in the squalid tenement districts of Newark. But surprisingly, polio showed little respect for the more "sanitary" middle and upper classes. Craster's analysis of Newark cases showed that "no nationality or condition of social life was exempt from infection."<sup>4</sup>

### THE NEWARK TRAJECTORY

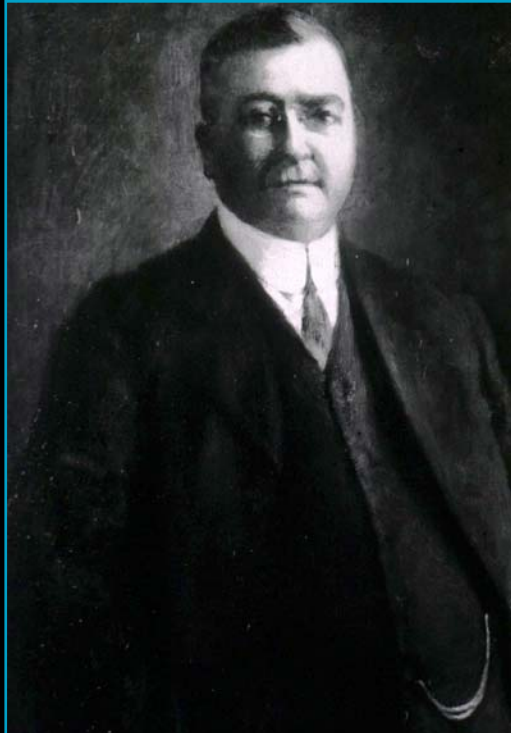
On July 1st, 1916, New York Health Commissioner Haven Emerson notified Newark officials that polio was epidemic in Brooklyn and was spreading to other boroughs. Craster credited this advance warning with giving Newark officials time "to have some of our administrative machinery already in working order" when the inevitable first case crossed the Hudson. Little George Wittenmeyer's case was reported to the health department on July 3rd and he died the following day. On July 4th, a second toddler fell ill. On July 14th, with sixty-four reported cases and seventeen deaths, Newark officials declared that the disease had reached epidemic proportions.<sup>5</sup> Craster hoped for the best and prepared for the worst.

On the front page of the July 14th *Newark Evening News* was a worrisome report of a family with three children who arrived the previous night by "one-horse butcher wagon" from "an infected house in Brooklyn." The family spent the night in the tenement flat of a relative with small children of his own. "Like magic," the news spread through the neighborhood. A local tailor "mobilized his neighbors to take action against the visitors" and notified the police. "We are all afraid of them," the tailor told a reporter, "and unless the Board of Health takes immediate action, we as a body of citizens are going to see that those people leave the neighborhood."<sup>6</sup>

Smaller Essex County towns considered themselves to be in imminent danger from Newark. Less than three weeks after the first reported case, a family with an infant son moved from a Newark district "infected with infantile paralysis" to South Orange. Neighbors reported the family to the police who notified health officials. Following an arraignment, the family was ordered to leave South Orange by that afternoon in accordance with a municipal ordinance passed a week earlier empowering health officials to "refuse admittance to the township of any children coming from any location known to be the focus of infection with infantile paralysis."<sup>7</sup>

Some medical men decried what they viewed as fear-





William S. Disbrow, M.D.  
President Newark Board of Health

Source: National Library of Medicine,  
Images in the History of Medicine

mongering. Two days after the Newark Board of Health formally declared the existence of an epidemic, Dr. William Disbrow, president of the very same board, publically accused Craster and other health officials of being "weaklings when they should be towers of strength." Poliomyelitis was, claimed Disbrow, just the "latest thing to worry about." If an epidemic does develop, it will call for men who "sight their guns before firing." The scare "has even softened the bony portions of health officials' backs and they are running with the crowd instead of trying to stop the stampede."<sup>8</sup> Craster fired back: "As I am the health officer I would like to bring a few facts to the attention of the public. The president of the Board of Health can have all the opinions he wants, but so can the health officer. It is said that I 'scared' the people, but here are conditions that should not be hidden."<sup>9</sup>

When statistics were collected at the end of the summer, Newark would prove to be the hardest hit city in the nation per capita (3.3 per 1,000 population) compared to New York (1.8 cases per 1,000), and other New Jersey cities (Hoboken and Jersey City, 1 per 1,000). July would end with a total of 327 cases in Newark. A brutal August saw 883 cases. The epidemic lost force in September, small comfort for 150 families with newly afflicted children. The worst single day was August 4th, with forty-five new cases and thirteen deaths. September 24th was the first day since July 5th without a single new case report. The long hot summer saw 1,360 cases with 363 deaths (27 percent mortality).<sup>10</sup>

Males outnumbered females in total cases (788 to 572) and in mortality (28.3 percent to 24.7 percent), consistent with patterns in earlier epidemics. Infants and toddlers under five years of age accounted for 84 percent of cases and 85 percent of deaths. Mortality was high in infants under one year of age (31.3 percent). Children over ten years of age and young adults accounted for only 4 percent of cases. Fewer than 6 percent of victims had direct exposure to a known case. Autopsies performed by city pathologist Harrison Martland confirmed that deaths were due to viral infection of the brain with respiratory paralysis.<sup>11</sup> New Jersey counted a total of 3,711 cases statewide (July to September) with 1,050 deaths. New York City reported 9,345 cases with 2,243 deaths.<sup>12</sup>

As autumn approached, Craster cautiously predicted that the "backbone of the epidemic, locally, is broken."<sup>13</sup> Unlike most epidemics, in which survivors typically return to normal health, poliomyelitis left a bitter burden of residual

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paralysis and sabotaged futures. This, too, was part of the trajectory of polio in Newark in 1916.

### **PUBLIC HEALTH**

On July 5th, the Board of Health formally directed health officer Craster to print and post quarantine placards. The placards, in red ink on white paper, read: "Board of Health of Newark, New Jersey—Keep Out—This house contains a case of infantile paralysis. Any person violating the isolation and quarantine rules and regulations of the board, or who willfully removes, defaces or obstructs this card without authority is liable to a fine of \$50."<sup>14</sup>

Craster quickly ordered a six-week quarantine period for the family of an affected child, complete isolation of the patient in a separate room with a dedicated attendant, and terminal disinfection of the premises at the end of quarantine or after the child's death or removal to a hospital. Later, it was decided that with proper isolation in the home, the wage earner could return to work. Tenement families and others unable to provide a private room would be required to release the child to an isolation hospital (this was the case in 50 to 60 percent of the Newark cases). If the infected child died or was removed to a hospital, disinfection of the home would be followed by an additional two weeks of placarding and quarantine to insure that no family members were incubating the disease.<sup>15</sup>

Most families cooperated with removal of a child to an isolation hospital. Since no visitors were permitted on isolation units, parents must have known that their child might die in the hospital among strangers. A few families defied quarantine and the forced removal of affected children to isolation hospitals. Late in the epidemic, a baby with paralysis was "taken away in an automobile" from a boarding house. Newark health authorities were unable to locate the child or her mother, who went out to make a telephone call, presumably to summon a car and driver.<sup>16</sup>

The poor were particularly hard hit by quarantine restrictions and the closing of the day nurseries mandated by Craster's office. According to the Bureau of Associated Charities, "The cases of near-destitution have greatly increased since the epidemic began." Clean-up campaigns and fly-swatting initiatives were credited by some officials with slowing the epidemic. However, Craster concluded that "dirt does not seem to assist contagion in this epidemic. . . . There was recently conducted in the congested Third Ward a thorough clean-up campaign to which the health



Editorial cartoon: Newark pioneer pitches in to aid clean-up.

Source: *Newark Evening News*, July 13, 1916

authorities gave considerable attention. Figures now show that contagion has been greatest in this ward."<sup>17</sup>

## DIAGNOSIS AND TREATMENT

Because the early stages of paralytic polio resembled a self-limited viral infection, diagnosis was fraught with difficulty. Few local practitioners had experience in diagnosing polio. Dr. Thomas N. Gray, official diagnostician of the Newark Board of Health, assisted local doctors and published a guide to bedside examination in the state medical journal.<sup>18</sup> The severe headaches and painful spinal spasms that marked paralytic polio must have been heartbreaking to parents. There was no laboratory test for polio. Almost all hospitalized children and some who remained at home were subjected to lumbar puncture (spinal tap) and withdrawal of spinal fluid for analysis. Testing of the fluid could confirm inflammation within the spinal canal, but the findings were supportive rather than diagnostic.

Dr. Daniel Elliott and the medical staff at Newark City Hospital treated 580 inpatients in the course of the epidemic. Elliott reached the gloomy conclusion that most treatments were harmful or useless. Medications, some injected directly into the spinal fluid, included Urotropin (urinary antiseptic), quinine (antimalarial), Salvarsan and Neosalvarsan (antisyphilitics), adrenalin, sodium salicylate, iodine preparations, diphtheria antitoxin, and immune blood serum from polio survivors. All proved either "worthless," had "no apparent benefit," or caused "distinct harm." The only treatment of any value at City Hospital was spinal tap with removal of a portion of the spinal fluid, which reduced irritability and relieved headaches, probably by reducing pressure on the brain and spinal cord. Morphine and bromides calmed a few patients. Elliott concluded that "the percentage of recoveries [was] larger among the patients who received the simpler form of treatment." Experts agreed that the best treatment to prevent deformity was "rest, more rest, and still more rest."<sup>19</sup>

Understandably, some parents turned to folk medicine to stave off infection. Early in the epidemic, Newark children were seen wearing two small bags of gum camphor around their necks—one to rest on the chest and one on the back—to repel the contagion. In such a therapeutic vacuum, it was inevitable that hucksters and charlatans would appear to fill the void.

Trenton homeopathic physician Eugene B. Witte arrived in Newark offering a cure. Witte promoted his secret serum,

which "kills the disease germs and rebuilds the paralyzed tissues" He alleged that normal blood "contains the means of fighting and combatting any disease" once his secret serum brings the blood into "perfect condition that creates its own cure" for "any malady." Although barred from treating inpatients at the contagious disease hospital, Witte administered his mystery serum to outpatients upon parental request and with the support of some physicians.<sup>20</sup> Some children improved with Witte's serum, as did many children treated with standard supportive measures.

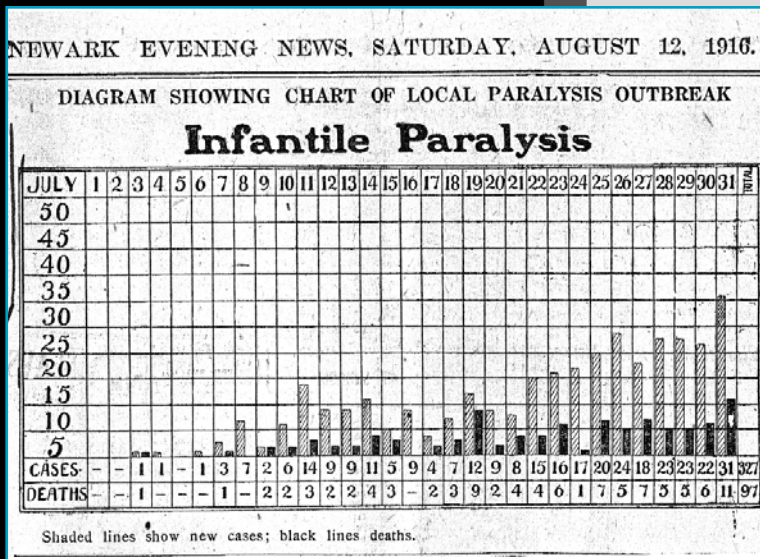
### SHUTTING DOWN SUMMER

Restrictions on children's summer activities began to appear just a week after the first death in Newark. The goal was to keep children from congregating and transmitting the poliovirus. All children under sixteen years of age were forbidden to attend moving pictures, vaudeville theaters, open-air shows, parks, theatres, and other "places of amusement." The threat of enforcement was underlined by a headline in the *Evening News*: "Police to Back Exclusion of Children from Movies." In mid-July, city and county playgrounds were closed. School playgrounds remained open, but were strictly regulated; sandboxes were abandoned, and contact sports forbidden.<sup>21</sup>

The Barnum and Bailey Circus, tents and all, came to town on July 14th. Children were barred from the main tent and sideshows. The *Evening News* marked the day: "For the first time in the history of Newark, so far as memory serves, there will be a childless circus in the city this afternoon." In August, inspectors reported that many children were attending baseball games around the city. The Board of Health ordered police to exclude the children or stop the games.<sup>22</sup>

Of far greater concern, was Craster's mid-July directive to close down Newark's day nurseries. Some working mothers were forced to leave their children locked up at home while they worked. The Bureau of Associated Charities confirmed that closure of the day nurseries was "adding to the hardship of the poorer classes."<sup>23</sup>

As the epidemic waned in September, the *Evening News* welcomed "the first breach in the wall of the embargoes built up by the Board of Health." Open-air movie theaters were reopened to all ages and indoor movie theaters to



Newark Department of Health case reports and deaths for July, 1916

Source: *Newark Evening News*, August 12, 1916



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children over twelve. The following day, municipal and school playgrounds reopened.<sup>24</sup>

### **TRAVEL RESTRICTIONS**

From the first death in Newark, the issue of travel between cities and across state lines absorbed many of the resources of state and local public health authorities. A great deal of energy was expended in "harmonizing, or attempting to harmonize," the confusing patchwork of local regulations.<sup>25</sup>

In mid-July, the Newark Board of Health began issuing certificates of health to children under sixteen years of age who were traveling from the city with their families to summer destinations. Certificates required a doctor's attestation that the children of the family were free of symptoms of poliomyelitis. Children entering the city without certificates were quarantined for two weeks. Health offices were "besieged during the week by parents desiring bills of health to enable them to take their children out of town. Hundreds are leaving daily."<sup>26</sup>

Glaring problems with the certificate of health were immediately apparent to health officials. Most children who became infected with poliovirus remained asymptomatic or recovered quickly from mild illnesses. Such children, who were active carriers of the virus for six to eight weeks, were declared healthy and free to travel. Some Newark children in the pre-symptomatic incubation period developed paralytic polio upon arrival at resort destinations. Travel restrictions did not apply to those over age sixteen, some of whom were undoubtedly carriers. In August, the New Jersey State Sanitary Code was amended to require certificates of health for children of all municipalities prior to travel.<sup>27</sup>

Craster intended to "enforce the [state] law to the letter." Logistically, guarding the multiple transportation routes into Newark—"performing vigilance duty" in newspaper parlance—was a monumental task. Teenagers who came daily into Newark to work were required to present a health certificate "stamped by the health officials of their respective towns once a day." Families returning to Newark from summer retreats also required certificates for their children from their city of origin.<sup>28</sup>

Newarkers were perceived as coming from a plague city. Some families heading for shore resorts were turned away at check points, despite compliance with state law regarding certificates of health. A Newark woman with



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three children and the proper health certificates was detained at the Highlands train station and put back on the next train to Newark. In response to a letter of protest from Craster, Highlands authorities confirmed that all Newarkers were prohibited from entering their borough.<sup>29</sup>

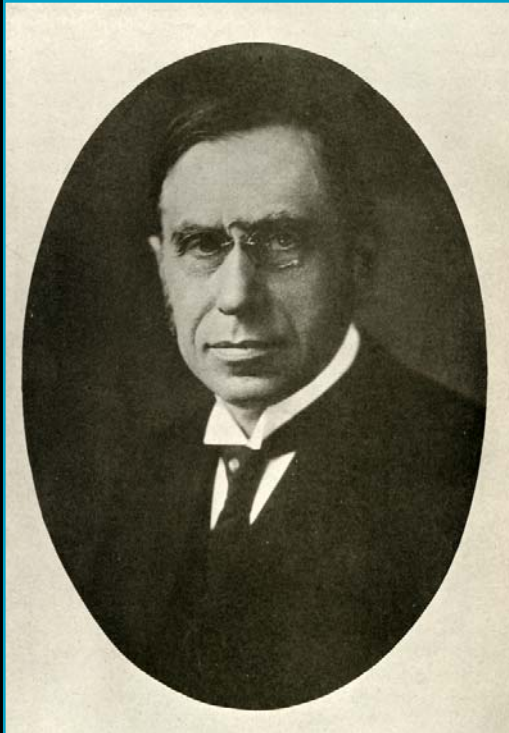
Many religious, ethnic, and social organizations delayed their customary annual train excursions to places such as Asbury Park and Ocean Grove. In early August, the annual excursion of the Clark Thread Works, which drew thousands of employees and families, left Newark on eight trains. However, there was a notable absence of children. The Board of Health did not ban the excursion, but parents elected to keep their children away from the crowds.<sup>30</sup>

### **NEGOTIATING SCHOOL CLOSINGS AND OPENINGS**

The epidemic began in Newark just as the heavily attended summer school session—some 25,000 children, mostly in the lower grades—was getting underway.<sup>31</sup> The question of whether (and when) to close the public schools for summer sessions—and when to open them again in the fall for the regular school year—became subjects of intense negotiation between health and school officials and their respective boards. Craster favored immediate summer school closings at the beginning of the epidemic and delayed opening as the epidemic petered out in the fall.

On July 13th, Disbrow, president of the Board of Health, said that his board believed that public health was endangered and requested, through Craster, that the schools be closed. Although he personally did not believe all schools should be closed, Disbrow preferred looking foolishly alarmist to appearing criminally negligent should the epidemic spread through the schools. Both school physician George J. Holmes and school superintendent Addison H. Poland, as well as most members of the Board of Education, believed that school closing would not affect the epidemic and that schools provided medical oversight in a supervised setting. Nevertheless, most members of the Board of Education were prepared to support school closing “once they have convinced themselves that the Board of Health takes the responsibility for it.”<sup>32</sup>

The *Evening News* declared in a front-page subheadline on July 15th: “School Board Still Balks: Epidemic Declared by Health Authorities, but Schools Not Yet Ordered to Close.” At its meeting on July 18th, the Board of Education reluctantly agreed to close the schools to children in grades lower than the fifth, “bowing to the desire of the Board of



Henry Leber Coit, M.D., founder of  
Babies' Hospital, Newark

Source: *Memorial Cyclopedia of New Jersey*,  
v. 4, 1921  
Courtesy: Rutgers University  
Special Collections and University Archives

Health and the health officer."<sup>33</sup> Craster, who did not shy from responsibility, had broad shoulders.

The most prestigious advocate for keeping summer schools open was Dr. Henry Leber Coit, Newark's leading pediatrician and founder of Babies' Hospital.<sup>34</sup> Coit's opposition to closing the schools rested in part on the fact that most victims of paralytic poliomyelitis were infants and toddlers and therefore not of school age. Like school officials, Coit believed that schools would prove much healthier than crowded tenements with unsupervised children.<sup>35</sup>

As autumn approached, the anticipated end of the epidemic created new dilemmas—and new confrontations—for health and education officials. Craster feared a second wave of polio cases as summer vacationers with their non-immune children—the "homecoming hosts"—returned from shore and mountain resorts. He vowed continued vigilance, and insisted on delaying school openings for public, private, and parochial schools until October 2nd.<sup>36</sup>

The Board of Education opposed the October opening supported by Craster and proposed a rolling plan through September. Craster agreed to the opening of grammar and high school classes in mid-September, but "objected strongly to the opening of the primary grades or the admission of children under age 10 before October 2nd." The school board voted on September 14th to open all grades on September 25th and prevailed over Craster's objections. Parochial schools followed suit. Attendance in some districts was down as much as 50 percent, particularly in the primary grades. Principals ascribed the low attendance to fear of polio transmission.<sup>37</sup>

### THE PRESS AND THE PUBLIC

The daily *Evening News* and the weekly *Sunday Call* kept polio on the front pages. The disease was often referred to in headlines as "the scourge" or "child plague." The papers were generally supportive of Craster and public health efforts. Reporters covered committee meetings and briefings by health officials, visited hospitals and clinics, shadowed visiting nurses, and kept an eye out for human interest stories. Pronouncements by health officials and news of school closings and travel restrictions were regularly reported in detail. Early in the epidemic, the *Sunday Call* offered a few bromides: "There is little reason for fear here in Newark. The Board of Health has the

### PARALYSIS GAINS EIGHT NEW CASES; THREE MORE DIE

Effects of Rules Restricting Children Seen in Slower Increase.

STATE REPORTS 130 TO DATE

New Cases in Hunterdon and Middlesex and Two Deaths Outside of Newark.

BROOKLYN FAMILY HERE IN WAGON

### FEWER CASES OF PLAGUE IN THIS CITY

Force of Epidemic Is Weakening, Says Health Officer.

### A GRATIFYING CHANGE

Substantial Reduction in Mortality Rate Began on Wednesday.

### NEW STATE LAW RIGID

In Effect on Tuesday. It May Work Some Hardships, and Will Be Strictly Enforced

### WHERE CASES ARE

The following houses in Newark are now placarded for infantile paralysis:

**SECOND WARD**  
104 Baldwin street.

**THIRD WARD**  
95 Monmouth street.

**TENTH WARD**  
77 Delancey street.  
93 Malvern street.  
103 Walnut street.  
205 Clifford street.  
345 Miller street.  
358 Chestnut street.  
245 Van Buren street.

**TWELFTH WARD**  
31 Niagara street.

**THIRTEENTH WARD**  
33 Norwood street.

**FOURTEENTH WARD**  
361 Fourteenth avenue.

**FOURTEENTH WARD**  
30 Boyd street.

**FIFTEENTH WARD**  
213 Sixteenth avenue.  
60 Norfolk street.

Day	New Cases	Deaths
Tuesday	27	2
Friday	20	5
Thursday	27	12
Wednesday	28	7
Tuesday	42	12
Monday	22	5
Sunday	44	12
<b>Total</b>	<b>258</b>	<b>60</b>
Previous week	247	72
Cases to date	130	70
Deaths to date		210

Typical newspaper coverage at the height of the epidemic.

Source: *Newark Evening News* and *Newark Sunday Call*, 1916

situation well in hand." Above all, said the editorialist unhelpfully, "do not get excited."<sup>38</sup>

July 21st, a week into the officially declared epidemic, was a typical day with respect to case reports. Under the headline "Ten New Victims, Two More Deaths: Day's Record in Infantile Paralysis Outbreak—Boy Succumbs Soon After Being Stricken: Fatalities at Isolation Hospital," the *Evening News* listed the newly placarded addresses, with the majority in the crowded Tenth Ward. In addition, there were fifty-six cases in the County Isolation Hospital; of the seventy-five Newark cases sent there in the first weeks of the epidemic, nineteen had died. On the previous day, three-year-old Frances Cook died shortly after admission, as did four-year-old Richard Hess.<sup>39</sup> Such daily reports reflected the enormous burden of mourning for dead children and fear for the living.

Polio victims of all classes, including the children of the wealthy (and children of physicians) were included in the daily reports. When the twelve-year-old daughter of the wealthy Infalls family of Llewellyn Park near Newark became critically ill, her parents were notified by wireless as they returned from Europe by ocean liner. Aided by expedited quarantine inspection in New York Harbor, a chartered tugboat, and a private car, they sped to their daughter's bedside. On September 23rd, the nine-year-old daughter of Dr. Theodore Teimer, a member of the Board of Health, was diagnosed by her father.<sup>40</sup>

Polio shared the front pages with the usual reports of crime, politics, civic affairs, and the raging war in Europe. Mobilization of Newark's National Guard units in support of Mexican President Carranza's military action against Pancho Villa's renegade army received prominent and prolonged coverage. On July 31st, the devastating explosion of the Black Tom munitions depot near Jersey City pushed polio off the front page of the *Evening News*.

For Newark's large German-American community, the *New Jersey Freie Zeitung* (*Free Press*) reported daily on the epidemic. As news about the "Kinderlähmung" ("Children's Lameness") began trickling in from New York, the headline read "Vorsicht Geboten" ("Caution is Imperative"). On July 12, there was a "Schlimme Wendung," ("Turn for the Worse") as three deaths and thirteen new cases were posted in a single day. The promise of autumn brought hoped-for relief: "Andauernd Günstig: Die Kinderlähmung in Stadt, County, und Staat im Landsamen Erlöschen Begrissen" ("Continuing Favorable, Polio in City, County, and State is Slowly Decreasing").<sup>41</sup>





Home for Crippled  
Children, Newark

Source: *Twenty-fifth Annual Report, Home for Crippled Children, 1916*  
Courtesy: Newark Public Library collection

Many recent immigrants to Newark were Eastern European Jews. Some would have read the Yiddish language daily *Forverts* (*Forward*) published in New York. As the disease spread across Manhattan and other boroughs, a headline evoked the Biblical metaphor of the children's "*malekh ha-movis*"—"angel of death."<sup>42</sup>

The Newark Department of Health printed and distributed thousands of informational leaflets in English, German, Italian, Polish, and Yiddish "in which the public was informed about the danger of infection and the necessity of remaining away from placarded and quarantined homes."<sup>43</sup>

### ISOLATION HOSPITALS AND BABY CLINICS

Historically, "plague" or isolation hospitals were often little more than places for the indigent poor to die in squalor and misery. Perhaps some Newark immigrants remembered stories of such places. Early in the epidemic, the newspapers reported on a scene of neighborhood resistance, noting that the "foreign element" made life especially difficult for health inspectors. "Some excited women" attacked two inspectors as they moved a child to the isolation hospital ambulance. One inspector was struck in the arm by a brick and the second suffered kicks and bruises. Once the child was safely in the ambulance, the inspectors "took it on the run, with the excited women in pursuit."<sup>44</sup>

The massive Essex County Isolation Hospital was erected in 1905 in the Soho section of Belleville, which bordered Newark on the north. Hospital superintendent Dr. Henry Ricketts hastened to make provision for the anticipated influx of polio cases, possibly in the smallpox pavilion. Within weeks, two temporary wooden barracks, with fifty beds each, were erected on the hospital property. In early August, the hospital announced it would accept no more Newark patients, as the quota of 75 percent had been reached.<sup>45</sup>

With the County Isolation Hospital at maximum capacity, the burden fell on Newark City Hospital, which did not normally accept contagious cases. Craster recalled the



Rehabilitation ward at Home for  
Crippled Children, Newark

Source: *Twenty-fifth Annual Report, Home for Crippled Children, 1916*  
Courtesy: Newark Public Library collection



On August 14, 1916, families of quarantined polio victims, mostly infants and young children, were allowed a brief glimpse of their quarantined babies and toddlers from the grounds at Newark City Hospital. Parents whose babies were too sick to be brought to the windows by nurses were simply sent home.

sequence of events as the city hospital hurriedly added a polio isolation unit:

*It happened . . . that a large wing of the City Hospital had been recently rebuilt and was waiting for the proper furniture to be installed at the time of our epidemic. The consent of the city administration was obtained to use this rebuilt wing for poliomyelitis cases and it was quickly furnished with children's cots and an increased staff of nurses provided.<sup>46</sup>*



By late July, a second ward was opened in an unfinished wing of City Hospital. A week later, with over forty new "little paralysis patients" admitted daily, Craster and the hospital superintendent toured the wards and determined that an additional three hundred cribs could be squeezed into "odd corners" and the

solarium. Recruitment of additional trained and untrained nurses, "safeguarding the lives and physical usefulness of the children who are being stricken down by the scourge," proved difficult.<sup>47</sup>

Source: *Newark Evening News*, August 14, 1916;  
images courtesy Newark Public Library





Editorial cartoon: Joint public and private fight against poliomyelitis

Source: *Newark Evening News*, August 8, 1916

The polio ward and its staff and patients were strictly segregated from the rest of the hospital. From July 4th to September 2nd, the polio wards admitted 580 cases, almost all infants and children. Of these 438 lived to discharge (mortality 24.5%) with 46 percent having some paralysis on discharge. Of thirteen hospitalized adults, five died and seven suffered extensive paralysis at discharge. Hospital staff, including nurses and "ward maids," apparently escaped illness and did not transmit it to households outside the hospital.<sup>48</sup>

August 14th was appointed a visiting day for parents. "Visit" for an estimated 3,500 family members meant gathering outside on the hospital grounds while attendants held patients up to the windows. Older children exchanged waves with their parents and blew kisses. The *Evening News* published heartbreaking photographs under the headline: "Crowd Hospital Lawn for Look at Their Loved Ones: Joy and Grief As Parents Get Glimpse of Afflicted Tots at Windows; Some Too Ill to Leave Beds." A woman in a "shabby black suit," was told her child was desperately ill and she could not see him; the crowds of more fortunate parents "made way for the weeping woman, and the silence and bowed heads eloquently told of the sympathy."<sup>49</sup>

Out-patient services were severely affected by the emergency measures. Far more problematic than school and theater closings was Craster's order to close children's clinics, dispensaries, and mother's consultation stations with the goal of limiting exposure of non-immune children in waiting rooms full of sick children. Coit, whose clinics at Babies' Hospital were affected, opposed the closures: "Children are safest where a nurse and the trained eye of a physician may detect suspicious cases and steps may be taken to isolate them from the multitudes of healthy children."<sup>50</sup> The clinics remained closed.

#### AFTER-CARE: HENRY COIT AND THE SUB-COMMITTEE ON RELIEF

As the epidemic gathered force, a citizens' committee was formed to aid the Board of Health in caring for hundreds of surviving children following their release from quarantine. The project was to be funded by public subscription, administered through the *Evening News* with a goal of \$25,000. While supportive of the mission of the committee, Board of Health president Disbrow, took issue with the committee's projection of six hundred paralyzed children, charging "too much publicity had been given to the



Editorial cartoon: Appeal for donations to fund braces

Source: *Newark Evening News*, August 16, 1916

outbreak. . . . It is almost as if we promised every mother a paralyzed limb for her child." Disbrow favored meeting the need as the cases—possibly much fewer than six hundred—came along.<sup>51</sup>

Pediatrician Coit, became the tireless guiding force behind what was officially named the Sub-Committee on Relief of the Citizens' Health Committee. The subcommittee's remarkable extra-governmental initiative to provide organized rehabilitation—"after-care" in the language of the day—for hundreds of survivors with residual paralysis was the most lasting legacy of the 1916 epidemic. In Coit's words, the city faced "an appalling mass of helpless cripples."<sup>52</sup> The work of after-care would go on long after the daily toll of cases and deaths and the burdens of quarantines and restrictions on daily life faded from public memory.

In early September, as the rehabilitation work got underway in earnest, Coit's committee estimated that four to five hundred children would be left with some degree of paralysis. Committee funds covered nurses, social service workers, rehabilitation apparatus, and clerical expenses. Procedures were in place to prevent fraud: "To protect the committee and parents from pretenders, all applications for orthopedic appliances are made to the committee on blanks requiring definite knowledge of the need and of the surgeon before releasing funds for this purpose." Applications were distributed "only to registered physicians in the city and to all orthopedic clinics." By October, committee headquarters would be processing about twenty orders a day for braces and other "mechanical appliances."<sup>53</sup>

After administrative delays at the Board of Health and under pressure from Coit's committee, Craster ordered all pediatric clinics, public and private, to reopen on September 5th for evaluation of children with residual paralysis. In addition to the public out-patient clinics, the orthopedic clinics and inpatient facilities at Babies' Hospital and the Home for Crippled Children immediately began evaluation and treatment. The subcommittee thoughtfully hired automobiles to transport the more severely affected children to the clinics.<sup>54</sup>

Within days of the health department's order, some thirty to forty patients were being seen thrice weekly at the city clinic housed in the Board of Health building. Many were triaged to supervised home treatment, while others were admitted for in-patient rehabilitation at Babies'



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Hospital and the Newark Home for Crippled Children. Some parents resisted recommended (but not mandated) hospitalization, despite the fact that parental visits were permitted for their no-longer-infectious children: “The mothers, however, cannot bear to see their children being taken away again, the memory of the six-week quarantine being still too vivid.”<sup>55</sup>

Rehabilitation modalities included massage, splinting, casting, hydrotherapy, muscle retraining, and a range of electrical muscle simulating techniques. An “electrotherapeutic apparatus” was purchased for the Home for Crippled Children by the relief committee for a hefty \$500.<sup>56</sup> Late in convalescence, a minority of children underwent orthopedic surgery to improve function, stabilize joints, or reduce deformity.

Trained nurses made regular visits to homecare children and their families. Coit's committee set high standards. In addition to training, experience, and state credentials, nurses were required to possess “mental poise and judgment mature enough to manage the terror stricken mother and to divert her from unwise methods of treatment.” During regular home visits, nurses gave massages, alcohol baths, and other time-consuming treatments. Each nurse attended about twelve patients daily, visiting each active case two or three times weekly. In October, the *Evening News* reported that Coit's committee was overseeing more than four hundred home-care and hospital patients—a “small lame army.” After-care work was expected to last eighteen months to two years.<sup>57</sup>

Just a few months after the end of the polio epidemic and the beginning of after-care work, Coit died in March 1917 at age sixty-two. The front-page obituary in the *Newark Evening News* suggested that overwork in the service of the after-care committee contributed to his death.<sup>58</sup>

### **LOOKING BACK**

In the course of epidemics, public health mandates, by their very nature, restrict freedom of movement, forcibly remove victims from their homes and isolate them from their families, and threaten livelihoods. The balance between preserving the public health and creating a medical police state is tenuous. Craster was compelled to make urgent decisions based on rapidly evolving events and limited scientific knowledge. Adding to the burden was the fact that nobody, including the United States Public



Health Service, knew how to treat or control epidemic polio.

Decision making was hampered and sometimes wisely moderated by negotiations with other civic authorities. Public school officials in Newark successfully challenged some of Craster's edicts on school closure. The Essex County Medical Society supported Craster, although Coit challenged him on several points and Disbrow was openly confrontational. Even as they dutifully listed the grim statistics, local newspapers conveyed a sense of bustling competence by health officials.

Coit looked back at the epidemic and what he called the "grip of terror": "The panic of the people was not due so much to the fear of death as to the dread of possible deformities and the crippling effects upon the subjects as late consequences of the disease."<sup>59</sup> Over the centuries and into modern times, epidemics such as plague, cholera, Ebola—and now Zika, seemingly out of nowhere and cruelly targeting infants—have a unique power to terrify.



## SELECTED BIBLIOGRAPHY

### NEWSPAPERS

*Forverts* (Yiddish Daily Forward)

*Newark Evening News*

*Newark Sunday Call*

*New Jersey Freie Zeitung* (New Jersey Free Newspaper)

### BOOKS, ARTICLES, MANUSCRIPTS

Amon, James C. *Delaware and Raritan Canal State Park, Master Plan*. 2nd ed. Trenton: Delaware and Raritan Canal Commission, 1989.

*Babies' Hospital/Coit Memorial 1896–1930* (booklet). Newark Public Library, Newark, NJ.

Bowen, D. C. "Report of the Bureau of Local Health Administration: Poliomyelitis." In *Fortieth Annual Report of the Department of Health of the State of New Jersey*. 43–61. Trenton: State Gazette Publishing, 1916.

Caverly, Charles S. "Notes of an Epidemic of Acute Anterior Poliomyelitis." *Journal of the American Medical Association* 26 (1896): 1–5.

Centers for Disease Control and Prevention. "Vaccines and Immunizations."

<http://www.cdc.gov/vaccines/pubs/pinkbook/polio.html#features> (accessed August 20, 2016).

Coit, Henry Leber. "The Newark Plan for the After-care of Victims of Infantile Paralysis: Its Organization and Practical Working." *Transactions of the Seventh Annual Meeting of the American Association for the Study and Prevention of Infant Mortality* (1917): 192–96.

\_\_\_\_\_. "Chairman of the Sub-Committee on Relief of the Mayor's Citizens' Health Committee, Report on 'Infantile Paralysis,' January 22, 1917," Typed draft, National Library of Medicine, box 15, folder 20.

- Cowen, David L. *Medicine and Health in New Jersey: A History*. Princeton: D. Van Nostrand Co., 1964.
- Craster, Charles V. "Administrative Control of Poliomyelitis in Newark 1916." *Transactions of the Seventh Annual Meeting of the American Association for the Study and Prevention of Infant Mortality* (1916): 187–91.
- . "Poliomyelitis: Some Features in City Prevalence." *Journal of the American Medical Association* 68 (1917): 1535–40.
- Department of Health of the State of New Jersey. *Fortieth Annual Report of the Department of Health of the State of New Jersey*. Trenton: State Gazette Publishing, 1916.
- Elliott, Daniel. "Poliomyelitis." *Journal of the Medical Society of New Jersey* 14 (1917): 5–8.
- G[ray], T[homas] N. "Anterior Poliomyelitis." *Journal of the Medical Society of New Jersey* 13 (1916): 430–31.
- Hunt, A. Clark. "Report of the Bureau of Medical Supervision." *Fortieth Annual Report of the Department of Health of the State of New Jersey, 1916*. 39–41. Trenton: State Gazette Publishing, 1917.
- "Infantile Paralysis (Acute Anterior Poliomyelitis, Atrophic Spinal Paralysis)." *Public Health News (New Jersey)* 1 (July 1916): 271–77.
- Moss, Sandra W. "This Destroying Scourge: Yellow Fever Epidemics of the 1790s in New Jersey." *New Jersey Heritage* 5 (2006): 10–23.
- Price, J. C. "Report of the Director." In *Forty-First Annual Report of the Department of Health of the State of New Jersey, 1917*, 1–37. Trenton: State Gazette Publishing, 1918.
- Reports of City Officers of the City of Newark, New Jersey, for the Year 1903*. Newark: Baker Printing, 1903.
- Rogers, Fred B. "Henry Leber Coit: 1854–1917: Pioneer in Public Health." *Journal of the Medical Society of New Jersey* 52 (1955): 36–39.

## ENDNOTES

1. David L. Cowen, *Medicine and Health in New Jersey: A History* (Princeton: D. Van Nostrand Co., 1964), 2; Sandra W. Moss, "This Destroying Scourge: Yellow Fever Epidemics of the 1790s in New Jersey," *New Jersey Heritage* 5 (2006): 10–23; James C. Amon, *Delaware and Raritan Canal State Park, Master Plan*, 2nd ed. (Trenton: Delaware and Raritan Canal Commission, 1989), 1; *Reports of City Officers of the City of Newark, New Jersey, for the Year 1903* (Newark: Baker Printing, 1903), 1022.
2. Charles S. Caverly, "Notes of an Epidemic of Acute Anterior Poliomyelitis," *Journal of the American Medical Association* 26 (1896): 1–5; Jean C. Ross, "The First Polio Epidemic in the U.S., 1894," *Rutland Historical Society Quarterly* 22 (1992): 59–71.
3. Centers for Disease Control and Prevention: Epidemiology and Prevention of Vaccine-Preventable Diseases—Poliomyelitis, <http://www.cdc.gov/vaccines/pubs/pinkbook/polio.html#features> (accessed August 20, 2016).
4. Charles V. Craster, "Poliomyelitis: Some Features in City Prevalence," *Journal of the American Medical Association* 68 (1917): 1535, 1539.
5. "Sends Warning of Children's Danger," *Newark Evening News*, July 1, 1916; Charles V. Craster, "Administrative Control of Poliomyelitis in Newark 1916," *Transactions of the Seventh Annual Meeting of the American Association for the Study and Prevention of Infant Mortality*

- (1917): 187; "Deadly Paralysis Kills Child Here," *Newark Evening News*, July 5, 1916; "Paralysis Gains Eight New Cases; Three More Die," *Newark Evening News*, July 14, 1916; "Health and School Boards to Act at Special Meetings," *Newark Evening News*, July 14, 1916; "Diagram Showing Chart of Local Paralysis Outbreak," *Newark Evening News*, August 12, 1916.
6. "Brooklyn Family in Tenement Here," *Newark Evening News*, July 14, 1916.
  7. "Order Family to Quit South Orange," *Newark Evening News*, July 21, 1916.
  8. "Dr. Disbrow Condemns Paralysis Excitement: President of Board of Health Says Community is Suffering from an Outbreak of Hysteria That Has Little Cause," *Newark Sunday Call*, July 16, 1916.
  9. "Dr. Craster Replies to Dr. Disbrow," *Newark Sunday Call*, July 23, 1916.
  10. Craster, "Poliomyelitis," 1537, 1538 (bar graph).
  11. *Ibid.*, 1535 (table), 1536, 1538.
  12. "Morbidity and Mortality From Infantile Paralysis," *Public Health News* 2:72, 2:103-4, 2:135-36; C. H. Lavinder, A. W. Freeman, and W. H. Frost, *Public Health Bulletin 19: Epidemiologic Studies of Poliomyelitis in New York City and the Northeastern United States During the Year 1916* (Washington: Government Printing Office, 1918), 122.
  13. "Decided Drop in Paralysis During Week," *Newark Sunday Call*, September 3, 1916.
  14. "Deadly Paralysis Kills Child Here," *Newark Evening News*, July 5, 1916.
  15. Craster, "Administrative Control of Poliomyelitis," 187-89.
  16. "Ill from Paralysis; Child Said Spirited Away in Car," *Newark Evening News*, September 1, 1916.
  17. "Think Force of Epidemic is on the Wane," *Newark Sunday Call*, August 20, 1916; "First Ward's Low Epidemic Record Suggests Value of Preventive Work," *Newark Evening News*, August 23, 1916; "Decided Drop in Paralysis During Week," *Newark Sunday Call*, September 3, 1916.
  18. A. Clark Hunt, "Report of the Bureau of Medical Supervision," *Fortieth Annual Report of the Department of Health of the State of New Jersey, 1916* (Trenton: State Gazette Publishing, 1917): 39; Thomas N. Gray, "Anterior Poliomyelitis," *Journal of the Medical Society of New Jersey*, 13 (1916): 430-31.
  19. Daniel Elliott, "Poliomyelitis," *Journal of the Medical Society of New Jersey* 14 (1917): 7-8; "Infantile Paralysis (Acute Anterior Poliomyelitis, Atrophic Spinal Paralysis)," *Public Health News* 1 (July 1916): 274-75.
  20. "Precautions Give Hope of No Epidemic," *Newark Sunday Call*, July 9, 1916; "Won't Let Witte Treat Boy While He's Patient at Hospital," *Newark Evening News*, August 19, 1916; "Credits Dr. Witte with Child's Cure," *Newark Evening News*, September 7, 1916; "Dr. Witte Treats Two More," *Newark Evening News*, September 18, 1916.
  21. Charles V. Craster, "Administrative Control of Poliomyelitis," 189; "Police to Back Exclusion of Children from Movies," *Newark Evening News*, July 13, 1916; "Paralysis Gains Eight New Cases; Three More Die," *Newark Evening News*, July 14, 1916.
  22. "Children under Sixteen to be Excluded from Circus," *Newark Evening News*, July 13, 1916; "Paralysis Gains Eight New Cases," *Newark Evening News*, July 14, 1916; "New City Cases 31; Death List is 10," *Newark Evening News*, August 28, 1916.

23. "Cool Spell Hits Spread of Disease," *Newark Sunday Call*, July 16, 1916; "Think Force of Epidemic Is on Wane," *Newark Sunday Call*, August 20, 1916.
24. "Ban is Taken Off Playgrounds Here," *Newark Evening News*, September 13, 1916.
25. J. C. Price, "Report of the Director," *Fortieth Annual Report of the Department of Health of the State of New Jersey, 1916* (Trenton: State Gazette Publishing, 1917): 4.
26. Charles V. Craster, "Administrative Control of Poliomyelitis," 190; "Dr. Craster Replies to Dr. Disbrow," *Newark Sunday Call*, July 23, 1916.
27. D. C. Bowen, "Report of the Bureau of Local Health Administration: Poliomyelitis," *Fortieth Annual Report of the Department of Health of the State of New Jersey, 1916* (Trenton: State Gazette Publishing, 1917): 51.
28. "Fewer Cases of Plague in This City," *Newark Sunday Call*, August 13, 1916.
29. "Think Force of Epidemic Is on the Wane," *Newark Sunday Call*, August 20, 1916.
30. "Dr. Craster Replies to Dr. Disbrow," *Newark Sunday Call*, July 23, 1916; "Children Barred from Big Outings," *Newark Evening News*, August 5, 1916.
31. "Close All Grades under the Fifth in Public Schools," *Newark Evening News*, July 19, 1916.
32. "Health And School Boards to Act at Special Meetings," *Newark Evening News*, July 14, 1916; "Cool Spell Hits Spread of Disease," *Newark Sunday Call*, July 16, 1916.
33. "Twelve Cases of Paralysis Report of Day in Newark," *Newark Evening News*, July 15, 1916; "Close All Grades Under the Fifth In Public Schools," *Newark Evening News*, July 19, 1916; "Dr. Craster Replies to Dr. Disbrow," *Newark Sunday Call*, July 23, 1916.
34. Fred B. Rogers, "Henry Leber Coit: 1854–1917: Pioneer in Public Health," *Journal of the Medical Society of New Jersey* 52 (1955): 36–39.
35. "Dr. Coit Would Combat Paralysis By Keeping Children under Experts' Eyes," *Newark Evening News*, July 27, 1916.
36. "New City Cases 31; Death List Is Ten," *Newark Evening News*, August 28, 2016; "Paralysis is Losing Its Grip Rapidly," *Newark Sunday Call*, September 10, 1916.
37. "School Next Week for Older Pupils," *Newark Evening News*, September 14, 1916; "City Schools Open Next Monday Week," *Newark Evening News*, September 15, 1916; "Enrollment Halved in Some Schools," *Newark Evening News*, September 26, 1916.
38. "Infantile Paralysis," *Newark Sunday Call*, July 9, 1916.
39. "Ten New Victims, Two More Deaths," *Newark Evening News*, July 21, 1916.
40. "Ingalls Child Improves; Parents Hurry from Ship," *Newark Evening News*, September 18, 1916; "Quick Trip to Reach Daughter's Bedside," *Newark Sunday Call*, September 17, 1916; "Health Board Member's Child among New Paralysis Cases," *Newark Evening News*, September 25, 1916.
41. *New Jersey Freie Zeitung*, July 7, July 12, August 29, 1916. German translations courtesy Professor Heinz Roth, Rutgers University.
42. "The Children's Angel of Death Remains Unsated," *Forverts*, August 2, 1916. Yiddish translation courtesy Professor Kenneth Moss, Johns Hopkins University.



43. Craster, "Administrative Control of Poliomyelitis," 190.
44. "Cool Spell Hits Spread of Disease," *Newark Sunday Call*, July 16, 1916; "Twelve Cases of Paralysis Report of Day in Newark," *Newark Evening News*, July 15, 1916.
45. "Deadly Paralysis Kills Child Here," *Newark Evening News*, July 5, 1916; "Cool Spell Hits Spread of Disease," *Newark Sunday Call*, July 16, 1916; "Federal Aid May Be Sought Here Against Scourge," *Newark Evening News*, July 26, 1916; "Ask Volunteers to Nurse Victims of Child Scourge," *Newark Evening News*, August 5, 1916.
46. Craster, "Administrative Control of Poliomyelitis," 189.
47. "Paralysis Cases Have Increased," *Newark Sunday Call*, July 30, 1916; "Asks Volunteers to Nurse Victims of Child Scourge," *Newark Evening News*, August 5, 1916.
48. Elliott, "Poliomyelitis," 5, 7.
49. "Crowd Hospital Lawn for Look at Their Loved Ones: Joy and Grief as Parents Get Glimpse of Afflicted Tots at Windows; Some Too Ill to Leave Beds," *Newark Evening News*, August 14, 1916.
50. Craster, "Administrative Control of Poliomyelitis," 189; "Dr. Coit Would Combat Paralysis By Keeping Children under Experts' Eyes," *Newark Evening News*, July 27, 1916.
51. Henry Leber Coit, "Newark Plan for the After-Care of Victims of Infantile Paralysis: Its Organization and Practical Working," *Transactions of (the Seventh Annual Meeting of) the American Association for the Study and Prevention of Infant Mortality* (1917): 192–93. "Publicity and Relief as the Committee's Slogan," *Newark Evening News*, August 12, 1916.
52. Coit, "Newark Plan," 192.
53. "Believe 500 May Need After-Care," *Newark Evening News*, September 6, 1916; Coit, "Newark Plan," 194; "Small Lame Army Now Under Care," *Newark Evening News*, October 10, 1916.
54. "Open Clinics for Paralysis Victims," *Newark Evening News*, September 4, 1916.
55. "Paralysis Is Loosening Its Grip Rapidly," *Newark Sunday Call*, September 10, 1916; "Relief Fund Gets New Spurt Today," *Newark Evening News*, September 28, 1916; *Twenty-fifth Annual Report of the Home for Crippled Children in the City of Newark, January, 1917* (Newark: Baker Printing Co., 1917).
56. "Relief Work Now Coming in Flood," *Newark Evening News*, September 29, 1916.
57. Coit, "Newark Plan," 195; "Paralysis Nurses Need Automobiles," *Newark Evening News*, September 30, 1916; "Small Lame Army Now Under Care," *Newark Evening News*, October 10, 1916; Coit, "Newark Plan," 196.
58. "Dr. Henry L. Coit Dead; Ill One Day," *Newark Evening News*, March 13, 1917.
59. Henry Leber Coit, "Chairman of the Sub-Committee on Relief of the Mayor's Citizens' Health Committee, Report on 'Infantile Paralysis,' January 22, 1917," Typed draft, National Library of Medicine, MSC 35, box 15, folder 20.