

RAMSEY COUNTY
History
A Publication of the Ramsey County Historical Society

*Harvest of Victims:
St. Paul's Smallpox
Epidemic of 1924*

Page 10

Summer, 2003

Volume 38, Number 2

Fog and a Dark October Night

**The Fabled Wreck of the 'Ten Spot'
In Its Plunge to the River Below**

—Page 4



The wreck of Terminal Railway's No. 10 on October 15, 1912 when the 145,000-pound locomotive, tender, and eight cars plunged off the railroad's swing bridge into the Mississippi twenty-five feet below. Photograph from the Davis, Kellogg and Severance Case Files at the Minnesota Historical Society collections. See article beginning on page 4.

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CONTENTS

- 3** Letters
- 4** Fog and the Dark of an October Night—
The Fabled Wreck of the 'Ten Spot' in
Its Plunge to the River Below
David Riehle
- 10** Fear a Powerful Motivator
A Harvest of Victims: the Twin Cities and
St. Paul's Traumatic Smallpox Epidemic in 1924
Paul D. Nelson
- 21** The Story of Minnie Dassel: Was She a
Mysterious Countess Who Settled in St. Paul?
Paul Johnson
- 22** *Growing Up in St. Paul*
'I Didn't Know If We Were Rich or Poor—
Times Were Idyllic Then . . . We Roamed at Will'
Carleton Vang
- 25** Books

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A Message from the Editorial Board

This issue of *Ramsey County History* returns to the first decades of the twentieth century with two compelling accounts of losses of life: the wreck of the locomotive "Ten Spot" on a foggy night in 1912 and the virulent smallpox epidemic in St. Paul and Minneapolis in 1924–25. In our lead article, labor historian Dave Riehle recounts what happened on the Terminal Railway swing bridge across the Mississippi River on the border of Ramsey and Dakota counties in South St. Paul and how the accident killed the locomotive's engineer. Paul Nelson then tells us how smallpox spread through the Twin Cities, killing many more in Minneapolis than in St. Paul, over a fourteen-month period and how vitally effective vaccination was against that dread disease. In light of current public debate over the need for vaccination of large numbers of the populace against smallpox, Nelson's research provides a cautionary episode from Minnesota's public health records.

Moving from problems in industrial safety and the efforts of public health officials in the prevention of a highly communicable disease, this issue finishes with two charming and nostalgic articles. The first, written by Paul Johnson, is about the enigmatic Minnie Dassel (1852–1925), a long-time St. Paul resident who was well-connected but fell on hard times and yet was always willing to help others in need. This issue concludes with Carleton Vang's recollections of summer swimming holes and the State Fair neighborhood of his carefree youth in the 1930s while growing up in St. Paul's Midway area.

John M. Lindley, Chair, Editorial Board

Fear a Powerful Motivator—

A Harvest of Victims: the Twin Cities and St. Paul's Traumatic Smallpox Epidemic of 1924

Paul D. Nelson

Minnesota's most traumatic encounter with smallpox (for which records exist, at least) took place in the Twin Cities in 1924 and 1925. Beginning in summer and continuing through the following spring, the virus smoldered, flared, and roared, afflicting thousands and leaving hundreds dead. Both cities suffered and both reacted; but they reacted somewhat differently and suffered more distinctly still. Of the nearly 400 who died (out of 504 statewide), fewer than forty died in St. Paul; 90 percent of the deaths, more than 360, occurred in Minneapolis.

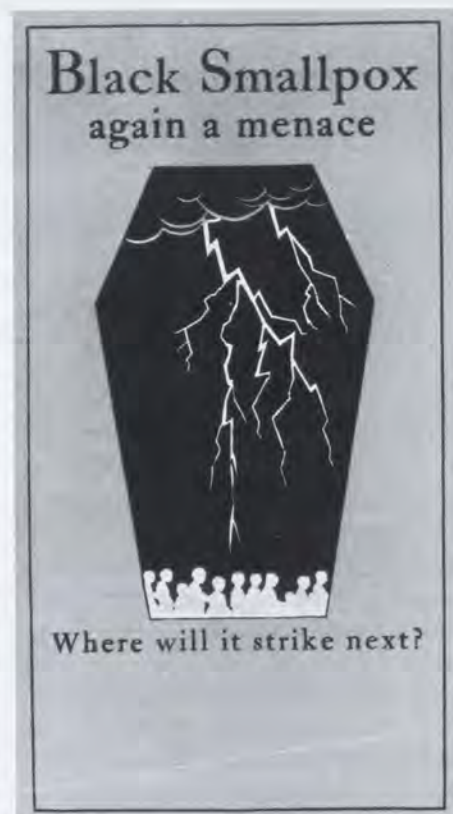
Smallpox, a viral infection that troubles only human beings, had come to America from Europe and reached what became Minnesota long before Euro-American settlement. It arrived through a chain of contacts among the Indian tribes, going back probably to Hernando DeSoto's long expedition in the American southeast, 1539–1542, or through itinerant traders who visited the upper Mississippi in the seventeenth and eighteenth centuries, or both. This and other European diseases reduced native populations, by some estimates catastrophically, before white settlement of Minnesota commenced around 1820. Smallpox also hit the Dakota and Ojibwe hard in 1836, just before the treaties of Mendota (1837) and Traverse des Sioux (1851) that ceded most of what is now southern Minnesota to the United States. One observer of the effects of smallpox in the Mississippi River basin in the late 1830s wrote, "[T]he destroying angel has visited the unfortunate sons of the wilderness with terrors never before known. . . . The mighty warriors are now the prey of the greedy wolves of the prairie." By reducing native populations and weakening their capacities to resist invasion and settlement, smallpox helped shape early Euro-American Minnesota.

Once non-native settlement became established, smallpox became a persistent public health problem. State health

department records go back to the early 1870s; they show smallpox to have been a recurring, familiar presence, one of the wide array of infectious diseases—along with typhoid fever, scarlet fever, diphtheria, cholera, and others—that had been imported from afar but now lurked endemically.

Smallpox came in two major strains, the mild (*variola minor*) and the malignant (*variola major*). The mild strain killed only about one percent of its sufferers, those mainly the very young, the old, and the weakened. The huge majority of documented Minnesota cases before 1924 were of the mild variety. The lethal strain killed 25 percent or more of its victims and left many survivors scarred and maimed. It had popped up from time to time in northern Minnesota, chiefly in the squalid lumber camps. These outbreaks, isolated, killed rather few. Only when the state became more urban, around the turn of the twentieth century, did malignant smallpox afflict cities.

Inoculation, a preventive used for many centuries (known first as variolation) and refined in the late 1790s by Edward Jenner (who named his improvement vaccination), worked well against both strains of the disease. A comprehensive program of vaccination in Minnesota, or just the Twin Cities, would have prevented the 1924-25 epidemic.



Cover page of pamphlet promoting the Mulford Smallpox Vaccine. From the Minnesota Archives Collection, Minnesota Historical Society

But Minnesota never had tried universal vaccination. The legislature had passed a compulsory vaccination statute of sorts in 1883, requiring parents to have their children vaccinated before sending them to public school; but it provided neither resources to pay the cost nor penalty for failure. This law was repealed in 1903 and the repealing act forbade compulsory inoculation.

This did not leave public health authorities entirely disarmed. At the time

the 1924 outbreak struck, the state and major city health departments had the power to declare epidemics and then (but only then) require vaccination of schoolchildren. They also could impose quarantines on infected residences, a measure that could slow the spread of infection, but only when firmly enforced. But no government agency held authority to require adult vaccination under any circumstances. The health departments' main tools had to be education and persuasion—and, when epidemics appeared, fear. In the case of the 1924–25 epidemic, fear worked best.

“Familiarity with the mild form of smallpox breeds contempt for vaccination.” So lamented the Minnesota Department of Health in a 1925 publication. Because the mild form killed so few, people did not fear it and hence did not seek protection. This left them vulnerable to the occasional and unpredictable visits of the malignant strain. Such was the situation in Ramsey and Hennepin Counties when malignant smallpox appeared in 1924: uncounted thousands unprotected and public health authorities powerless to make people submit to the one effective preventive measure.

The Epidemic

On June 20, 1924, Robert Northcott, fifty-four, of Young, Saskatchewan, entered a Duluth hospital for treatment of severe back pain he thought had resulted from injuries sustained in an accident. On June 25 his physicians discovered that Northcott had hemorrhagic smallpox; he died the next day. In his nine days in Minnesota before the diagnosis, Northcott had had contact with many people.

Northcott's contagion had flared quickly in Duluth and the Arrowhead. Twenty-four died in February and thirteen in March. (Northcott's traveling companion from Winnipeg east apparently also went on to spark outbreaks in Windsor, Ontario, and Detroit.) Local public health officials reacted efficiently, tracing contacts, imposing quarantines and promoting vaccinations. By April deaths had fallen to a handful. According to a Minnesota Health Department report, “the outbreak was confined to northeast Minnesota and terminated in July.”



The Dale Street Infirmary (the City Smallpox Hospital sometimes known as the pest house) in Roseville around 1908. All photographs with this article are from the Minnesota Historical Society's collections.

The initial outbreak had been confined, but the infecting agent had not. The microscopic smallpox virus can wait long for a host and travel on a breath or a fiber. Within days it had made its way to Minneapolis and entered the body of plasterer Lloyd Anderson. He then carried the infection home to Fairmont, where he died February 23. Twenty-four more Martin County cases appeared, with four deaths, the last on May 2.

The Twin Cities seemed at first to escape harm. There were a couple of unrelated, mild smallpox cases, but no rapid outbreak as there had been in Duluth. For five months, while outstate health authorities fought it, the smallpox virus either lurked in the Twin Cities or made a roundabout return. The outstate cases did not seem to raise much public concern in St. Paul or Minneapolis, though state and local health officials observed them with alarm.

Charles Stafford entered Minneapolis General Hospital as a patient—broken jaw—and stayed on as an employee, an orderly handling property in the contagious department. In mid-June of 1924

he developed severe back pain and muscle aches, and then a red rash, but no fever. He was treated at his place of work, unsuccessfully, and died there June 23. Only a later autopsy revealed that he had died of hemorrhagic, or “black” smallpox, the one variety of the disease that does not form the characteristic pustules. Charles Stafford, age sixty-three, was the first known victim of the Twin Cities epidemic of 1924–25. Where and how Stafford came in contact with the disease was never determined.

From a public health standpoint, there could not have been a worse beginning—the disease carrier working undiagnosed in a public hospital, a place full of people with weakened immune systems, and endless traffic in and out. One of the next victims, Julia Erickson, had visited General Hospital as an outpatient a few days after Stafford's death, and presumably came in contact with the virus there. Julia Erickson lived at the Scandinavian House of Shelter, a charitable institution, and carried the disease there; in July and August of 1924, five other residents of that home died of smallpox. In Min-

neapolis a pattern had been established: during the worst months of the epidemic, one-sixth of those who died lived or worked in public and quasi-public institutions such as hospitals, shelters, transient hotels, and boarding houses. These centers of infection probably served to spread the disease throughout the city.

But smallpox by no means satisfied itself with the poor and the transient; it harvested victims of all ages, classes, and neighborhoods. After just handfuls of deaths in July, August, and September, mortality in Minneapolis suddenly boomed: twenty-six died in October, fifty-three in November, and a horrific 129 in December. Victims ranged in age from the newborn to the elderly; the middle class and the well-to-do joined the poor in death. There was no telling who would get sick; often people obviously exposed to smallpox remained healthy while others who could have had no hint that they had been exposed, fell ill. Sometimes whole families contracted smallpox; sometimes just single family members. Death seemed equally capricious; people horribly afflicted with the disfiguring lesions might recover, while others showing few symptoms were suddenly carried away. But almost all victims had this in common: they had never been vaccinated or had been vaccinated many years earlier.

While at least a partial pattern prevailed in Minneapolis, St. Paul never developed any discernible pattern of infection at all. Cases and deaths were scattered from the first occurrence, the city never experienced an acceleration like Minneapolis did, and the disease never took hold in hospitals, hotels, shelters, or boarding houses. None of the 1924 smallpox deaths in St. Paul could be connected to any such institution, and only a handful in 1925.

Of course St. Paul had its own nodes of contagion, people or places that spread the disease to several or many, but these were isolated and accidental. One such proved to be the Arbuckle Undertaking Parlor at 1537 University Avenue. Theodore Duncan of Cannon Falls came to St. Paul October 6 of 1924 to work at the Fleischmann Yeast Company and live with a cousin at 950 Cromwell Av-

enue. He fell ill October 20 and was diagnosed first with "*la grippe*" (influenza), then "black measles," the variety that was still killing many people in this pre-measles-innoculation era. The diagnosis may have been influenced by the belief that Theodore had had a mild case of smallpox in 1912, making a second case extremely unlikely. Regardless, Duncan died October 30 of hemorrhagic smallpox. He was twenty-five years old. The body was taken to Arbuckle Undertaking Parlor and hermetically sealed for shipment to Cannon Falls and burial there.

Young Theodore's mother, father, and brother visited the Cromwell Avenue residence on October 29 and 30, and Mr. Duncan handled his son's personal belongings. Frank Hague, a plumber, did work there during Duncan's illness. Gilbert Arbuckle, age seventeen, stopped in at the family funeral home on October 30 but was never in the same room as the corpse. Theodore's sister-in-law had no contact with the body or belongings, but she did make a short car trip with one of the victim's brothers on November 2.

Theodore Duncan's illness led to a cascade of sickness and death. His father, who had been vaccinated fifty-four years earlier, died of smallpox November 17. Frank Hague, the unlucky plumber, died November 19 and Gilbert Arbuckle the following day. Theodore's young sister-in-law, age twenty-one, died November

This case, so terribly sad, illustrates three aspects of the epidemic. One is the capriciousness of the disease—poor, unsuspecting Frank Hague! The second is the effectiveness of vaccination even after exposure; the vaccinated almost never became ill. The third is how well St. Paul public health workers reacted in most cases. The Fleischmann Yeast employees, at terrible risk from the cloud of virus particles carried by their co-worker Duncan in late October, all escaped harm due to prompt action. The St. Paul bureau of health also immediately imposed quarantine on all unvaccinated undertakers who buried smallpox victims.

The 1920 census counted 234,698 residents of St. Paul, 380,582 of Minneapolis, and both cities had grown in the intervening years, Minneapolis much faster than St. Paul. The Commerce Department estimated the two cities at 241,891 and 409,125 respectively in 1923; Minneapolis had grown by almost 29,000, compared with a mere 7,000 for St. Paul. Though the cities had their historical, ethnic, and political differences, they comprised, then as now, one urban area in human geographic terms. To the smallpox virus, however, operating as it did on an unfathomable microscopic level, the two cities looked very different indeed—one hospitable, the other not. The 1924 death toll tells the tale: (see Table 1).

	June	July	August	September	October	November	December
St. Paul cases	0	1	5	20	40	83	49
St. Paul deaths	0	1	0	1	1	6	5
Minneapolis cases	2	33	32	43	125	253	372
Minneapolis deaths	2	6	2	1	26	53	129

Table 1. Smallpox illness and death statistics, 1924

22. None of these last three had ever been vaccinated. Duncan's mother, brother, and aunt all got sick but survived; two had been vaccinated and one, the brother, had had a mild case in 1912. St. Paul public health authorities and the Fleischmann Yeast Co. persuaded fifty-six of its fifty-seven employees to submit to vaccination on October 30, the day Duncan died. None became ill.

It is not surprising that the press and public took little note of the deaths that occurred in the summer of 1924, for nothing then suggested a truly dangerous situation. Public health officers in the state and the two cities saw things more clearly, and both cities began to offer free vaccinations in the fall (there is some dispute about which began first). On November 15 the state Department of Public

Health declared an official epidemic.

Though one should be wary of drawing conclusions from newspaper coverage, there was certainly a striking difference in press reaction to smallpox in the two cities, a difference that may have reflected something of popular and official attitudes. Three dailies operated on each side of the river: the *Morning Tribune*, *Journal*, and *Star* in Minneapolis, the *Pioneer Press*, *Dispatch*, and *Daily News* in St. Paul. As the numbers of cases and deaths (and vaccinations) accelerated into November, the Minneapolis press effectively ignored the story. The *Morning Tribune* especially turned a blind eye, publishing nothing prominent at all in November until very late in the month. On the 20th a headline (on page 20) proclaimed, "Smallpox Crisis in Minneapolis Declared Past." Smallpox did not reach the front page until November 30, when the same Minneapolis health officials who had proclaimed the crisis "past" ten days before made a citywide appeal for vaccinations: "smallpox is prevailing in Minneapolis in a form heretofore unknown in the city. . . . The death rate has reached 22 percent and will go higher. . . ."

St. Paul newspapers grabbed onto the story much earlier. The *Daily News* began running regular front page stories on November 1, the *Dispatch* quickly followed, and the *Pioneer Press* finally joined in on November 7, after Governor J.A.O. Preus urged universal vaccination. The St. Paul stories (especially those from the *Daily News*) show a city and citizenry mobilized and perhaps frightened. Free vaccinations began November 1 in the basement of the old Ramsey County Courthouse, then soon moved to the armory to accommodate the throngs. The pace of vaccinations increased from 200 the first day to over 3,500 three days later, and 8,700 three days after that—as many as 22,000 in the first week alone, not counting those given by private physicians (estimated to be many more.) "Armory Locked As Vast Crowds Seek Vaccination" proclaimed the *Daily News* on November 7. The city council appropriated \$15,000 in emergency funds; Dr. Benjamin F. Simon, the city's health director, scoured the region for physicians

available to help with the campaign and soon had fourteen on full-time inoculation duty. On November 8 Dr. Simon estimated that 90,000 St. Paulites, more than a third of the city's population, had already been vaccinated. "It is this kind of cooperation that makes us hope that we can keep down a possible outbreak of malignant smallpox in St. Paul," said Dr. Simon, "Why, even Minneapolis residents are coming over here to be vaccinated."

The Minneapolis health department was conducting a similar effort on the west side of the river. Dr. Francis E. Harrington, that city's health director, estimated that 300,000 had been vaccinated by November 20, a heroic number made dubious by the pileup of corpses. Even as the death numbers soared in Minneapolis, its newspapers denied that any serious problem existed. On December 4, for example, the *Minneapolis Tribune* editorialized that while "a smallpox situation" existed, "it is not at all alarming. It has only been made so by the gossipers and the whisperers. . . . As a matter of fact, Minneapolis . . . is perhaps the safest place in the state today." On the same day the *Minneapolis Journal* asserted that "no large epidemic has developed at any time." The *Minneapolis Star* titled its editorial, "Why Minneapolis Is the Safest City." In that safe and epidemic-free city, thirteen had already perished that week and another 116 would die of smallpox by the end of the month, three times the number who died in St. Paul during the entire outbreak.

St. Paul had been losing the battle with Minneapolis for wealth, population, and supremacy on the Upper Mississippi for over forty years, so its citizens were always on the lookout for anything that proved the capital city's moral superiority (or superiority of any kind). The smallpox story served this need nicely. The disparate death rates eventually brewed up into an entertaining volley of insults and accusations flung back and forth across the Mississippi.

On December 16, 1924, Dr. Simon and St. Paul Mayor Arthur Nelson met with Dr. Albert J. Chesley, the state's chief public health officer, to discuss actions to be taken against the epidemic—



Dr. Albert J. Chesley, head of Minnesota's Department of Health, in 1925.



Dr. Benjamin F. Simon, St. Paul's public health officer during the smallpox epidemic of 1924.

or, as some preferred to see it, how to protect St. Paul from that slough of contagion, Minneapolis. The *Pioneer Press*, which had been restrained in its coverage of the outbreak so far (it had not even reported the November 15 declaration of an official epidemic), placed the meeting story on the next day's front page.

According to the *Pioneer Press*,

Mayor Nelson put the meeting into proper focus: "When the infection spreads, due perhaps to the inactivity of officials elsewhere [read, Minneapolis], it is our duty to protect our people and those who come here." In the course of the meeting Dr. Chesley explained "how cases have been spread throughout the state through infection from Minneapolis sources, many deaths being directly traced to Minneapolis contacts" While St. Paul officials had done "all that can be done," Dr. Chesley said, "Minneapolis has until recently followed a policy of silence."

The article provoked a howl of protest from across the river. The *Minneapolis Journal*, an afternoon paper, replied the same day, accusing the *Pioneer Press* of "publishing a gross libel on the smallpox situation in Minneapolis for the sole purpose of frightening people from the country away from Minneapolis for the Christmas trade!" Mayor George Leach of Minneapolis made precisely the same charge in his formal statement, and called Mayor Nelson's comments, "the most vicious in character that I have ever seen since I have been in public office." He asserted that smallpox was actually worse in St. Paul (though he admitted that "it is true that there have been more deaths in Minneapolis. . .") He blasted Dr. Chesley and called for his "immediate removal."

After the exchange of attacks, state and city leaders calmed down enough to get to work on the problem, at least ostensibly. The two mayors, their respective health officers, Governor J.A.O. Preus, and state health leaders met December 18 to plan further action, consisting primarily of the one thing that worked—more vaccinations, this time with a unified plan under the direction of a committee from both cities and the state. But even at this conference, the sniping continued. Dr. Chesley hypothesized that perhaps Minneapolis had started its vaccination campaign late, or conducted it poorly, or that its followup methods were poor. In any event, "so far as criticism of either city is concerned, the figures [that is, the vastly higher death rate in Minneapolis] speak for themselves."

It is not clear that in fact the meeting (nor the one that followed it, on January

23) produced much change. Though no one yet knew it, the epidemic already had crested. Deaths in Minneapolis fell to eighty-one in January, thirty in February, and by June to one. The infection had followed a recognized pattern: a series of waves carrying off the vulnerable unvaccinated, growing as each infected person infects another twenty, on average, and culminating in a large wave of deaths; then a fairly rapid decline as the virus runs out of easy victims and runs into the wall of resistance formed by recent vaccinations. By August, the epidemic was over. In the course of fourteen months, Minneapolis had experienced 1,296 identified cases, resulting in 363 deaths: in St. Paul, 274 cases and thirty-six deaths. Of the 400 Twin Cities deaths, 328 had occurred in five months, October 1924 through February 1925 (see Table 2).

	January	Feb.	March	April	May	June	July	August
St. Paul cases	16	7	15	10	9	10	5	3
St. Paul deaths	7	0	3	1	4	2	5	1
Minneapolis cases	207	107	55	27	28	11	1	0
Minneapolis deaths	81	30	14	10	8	1	0	0

Table 2. Smallpox cases and deaths, 1925

The vaccination campaigns had been effective. One contemporary estimate had it that by early 1925 only 22,000 to 28,000 permanent residents (to be distinguished from the uncountable transients) remained to be inoculated—out of a Twin Cities population of over 650,000. While all such figures are speculative, certainly enough vaccinations were carried out to erect an effective bulwark against the disease.

Just as the epidemic began its decline, investigation into its causes and course geared up. In January of 1925 State Public Health Director Dr. Albert Chesley assigned Dr. Orianna McDaniel to lead the investigation and write what proved to be the most ambitious and complete analysis of a smallpox outbreak ever done in Minnesota.

Dr. McDaniel had been born in New Hampshire in 1872 and graduated from the University of Michigan Medical School in 1894. She interned at North-

western Hospital in Minneapolis, then began her public health career as a part-time bacteriologist for the state Health Department in 1896. Whether she landed in this branch of medicine due to preference or limited opportunities for women, no one can now say; what can be said for certain is that Dr. McDaniel created for herself an extraordinary and productive career. From her part-time laboratory job she rose to acting head of the state's Division of Preventable Diseases in 1918, then permanent head in 1921, a post she then held until she retired in 1946. She died in Minneapolis in 1975 at the age of 102.

Dr. McDaniel was charged with making an epidemiological analysis of the Twin Cities epidemic covering the period between October 1, 1924 and March 31, 1925. Though not explicitly stated, one

of the main questions Dr. McDaniel had to answer was, why so many deaths in Minneapolis and so few in St. Paul?

Her page report, eighty-three pages plus with another 100 pages of supplementary documents, contains most of what is known and preserved about the epidemic.

Because most deaths occurred in Minneapolis, she concentrated her efforts there. Assisted by Drs. J.N. Gehlen, George D. Haggard, and A.R. Blakey, Dr. McDaniel investigated 110 cases (and fifty-five deaths) "occurring in 39 public or semi-public institutions in Minneapolis, including 11 hospitals, 24 hotels, lodging houses, Union City Mission, Salvation Army Home, County workhouse and County Jail. . . ." What she found at least partly answers the "Why Minneapolis?" question. A few examples will illustrate.

The first known death, that of Charles Stafford, had occurred at General Hospi-



Dr. Orianna McDaniel, assigned to lead the investigation of the 1924 outbreak of smallpox.

tal. At least thirty-six more people were infected there, of whom seventeen died. Over 200 more people, infected elsewhere, died at Minneapolis General, and hundreds more must have been treated there and survived. Virus particles by the billions would have inhabited the patients, the corpses, the bedding, the furniture, even the walls and ceilings, making the task of decontamination colossal. What is more, at the time Dr. McDaniel began her investigation, January 16, 1925, "no investigation had been made by the [Minneapolis] health department and no advice or directions given regarding vaccination of patients, nurses and employees . . . and the follow-up of visitors and discharged patients." It seems likely that Minneapolis General was as much or more a source of contagion as it was a place of treatment.

Between November 10, 1924 and January 13, 1925, twenty-five smallpox cases were reported among residents of the Union City Mission and the Salvation Army Home in Minneapolis. Of the twenty-five infected, ten died, and nine of those ten had been placed in the shelters by Minneapolis city authorities. In at least three of those cases, the men had

been sent to the residences *after* developing smallpox symptoms. At the Mission, the larger of the two institutions, men assigned there by the city slept in an eighty-room ward. Filled with men mostly in their fifties and older, suffering bad luck and poor health, the ward was a slaughterhouse for the viral butchers. Both the Mission and the Home reported their cases promptly to the Minneapolis Health Department and asked for help in getting their residents vaccinated. According to Dr. McDaniel, "the Mission's request for assistance in carrying out general vaccination was refused, the Health Department advising that voluntary vaccination be undertaken by the Mission itself." The Mission did its best, but its efforts "ended in failure, as only about seventy-five men submitted to vaccination, while a much larger number promptly disappeared." Only after three more appeals did the city provide help: the superintendent of General Hospital sent doctors, assistants, and vaccine enough to vaccinate 300. In the meantime, an uncounted number of infected men had fled to spread the disease in Minneapolis and beyond.

The situation had been just as bad, or even worse, at small hotels (possibly transient hotels) and rooming houses in the city. At the Acme Hotel, four men got sick from smallpox and two died; at the Manhattan, five fell in a three-week period, and three died; and at a rooming house located at 21-25 Grove Street, seven residents contracted smallpox in the two weeks before Christmas, 1924, and five of them died.

Dr. McDaniel found the response of the Minneapolis Health Department to have been consistently deficient, if not negligent. It had "put forth little effort in searching for sources of infection and following up contacts to cases." Where working people were known to have been infected, their employers were rarely given advice or direction about vaccinating other employees; sometimes they were not notified of the peril at all. At four schools infected students were known to have attended, "no investigation was made to check up on the vaccination status of those closely associated" with those students. These failures to trace sources and follow up contacts

meant that many people exposed to smallpox could not have learned of their danger until too late to do anything about it. Vaccinations done within a few days of infection still worked very well, but once symptoms appeared, a patient could only wait to find out if he or she would live or die.

The city did quarantine some private residences where the disease had been found, but in many of these cases supervised the quarantines poorly, giving bad or incomplete information, raising the quarantines early, or neglecting the very nature and purpose of quarantine—isolation. "[I]n nearly all homes investigated written permits had been given to supposedly protected adult members of the household to go and come at will and also in some homes to children to attend school, although the patient was in no proper sense isolated from them. . . . In one instance the chief nurse [of a sick child] was the father, who mingled with the members of his own family living in another house nearby, while one of his daughters was permitted to continue teaching in a private school." In one publicized case a St. Paul nurse, Emma Hilsberg, worked eleven days caring for a doomed young victim, Boyd Monroe, in his quarantined Minneapolis home; and on ten of those days returned to her parents' home to sleep. She infected her mother, who died of hemorrhagic smallpox.

Dr. McDaniel declined to draw conclusions, or at least to put them in her report. She simply described what she and her co-workers had observed. One can imagine, though, a restrained and perhaps sardonic smile on her lips as she wrote these words near the end of her submission to Dr. Chesley:

[W]ithin about ten days after the beginning of our investigation it was evident that the [Minneapolis] Health Department was beginning to follow up contacts. It was learned that two physicians had been employed to make investigations and in certain instances it was learned that they vaccinated contacts rather than merely advised persons to be vaccinated, as apparently had been done up to that time.

Why had things gone so wrong in Minneapolis? There may have been a certain

PLEASE POST IN A CONSPICUOUS PLACE

Vaccination Prevents Smallpox

These persons afflicted with Smallpox were never vaccinated. If they had been recently and successfully vaccinated they would have escaped this loathsome disease



Confluent Smallpox
Taken June, 1924

Smallpox prevails to an alarming extent in malignant form in parts of the state at the present time. You may contract the disease at any moment by coming in contact with a Smallpox patient or a person who has been exposed to the disease, or with any article of clothing or merchandise which has come from infected premises, or even by receiving a letter from a house where there is Smallpox.



Severe case of Smallpox
in a woman

The experience of a century has taught that vaccination is a positive preventive against Smallpox

Why Not Avail Yourself of This Certain Protection?

Physicians, Nurses and Attendants in Smallpox Hospitals, when properly vaccinated, never contract Smallpox. THEIR SOLE PROTECTION IS VACCINATION. Let it be yours.



Two children in same family. Vaccination still visible on leg of child who escaped Smallpox

REMEMBER

THAT you may contract a malignant and fatal case of Smallpox from a very mild case.

THAT Smallpox is no longer mild. It has assumed its old malignant and fatal type and the percentage of deaths is high. In one locality 10 deaths occurred among 50 persons afflicted; in another, 13 among 58!

THAT even if you recover from Smallpox, the disease may leave you with shattered health and badly pock-marked.

THAT if you contract Smallpox, it means quarantine and isolation for several weeks, danger to your family and friends, loss of time and loss of business.

THAT a proper VACCINATION is a certain and absolute protection against Smallpox.



This man contracted Smallpox from a bowling alley

For additional information concerning Vaccination and Smallpox, address your local Health Officer or

THE DEPARTMENT OF HEALTH

culture of dysfunctionality in the city health department. After a much milder turn-of-the-century smallpox outbreak in the Twin Cities, Minnesota's then-chief health officer, Dr. H.M. Bracken, had complained that the Minneapolis Health Department "does not report the occurrence of infectious diseases to me as required by law. Minneapolis is the only city in the state that neglects its duty." He wrote the mayor, "I cannot see that your commissioner of health is doing much to control the spread of smallpox. . . . In fact, so far as I can determine, the whole affair is handled in a most slipshod manner."

Bracken's successor, Dr. Chesley, had serious doubts about Dr. Harrington and his department in 1924 and 1925, as his comments to the press suggest. One has the impression of Dr. Chesley straining to be diplomatic but only intermittently succeeding. In fact, Chesley held Commissioner Harrington in contempt. Four years after the Twin Cities epidemic, he exchanged letters with Charles Chapin, superintendent of health in Providence, Rhode Island. Dr. Chesley's letter is lost, but Chapin's reply provides sufficient information:

Harrington is a good deal worse than I thought he was, and that is saying a good deal. It was perhaps well that you did not throw a monkey wrench into machinery, but I am surprised that you could refrain from chucking one at the head of the Health Commissioner of Minneapolis. . . . I wonder if she [a Miss Hildegard Schwinghamer] could pound any sense, or epidemiological knowledge into his head.

Though Dr. Harrington and other Minneapolis officials defended their work, it does seem to have been incomplete, inconstant, and accompanied by denials that any serious problem actually existed. Dr. Harrington must have regretted his department's declaration, reported November 20, 1924, that "there is little likelihood of a dangerous spread" of the disease. Harrington apparently did not enlist the help of the Minneapolis press, which did nothing to promote or publicize vaccination. Certainly some crucial staffing decisions were made in Minneapolis that proved unwise when smallpox struck. "In St. Paul part time

Variola major: *symptoms and varieties*

Variola major, the malignant strain of smallpox, came in three varieties: discrete, confluent, and hemorrhagic, distinguished from one another by their symptoms. All three had a similar initial course: After infecting a person the virus would incubate for about ten days before symptoms appeared; the infected person could spread the disease from a day or two before the appearance of symptoms until recovery or death.

The effects of smallpox on the human body have inspired appallingly expressive language in its chroniclers. In his book, *Scourge, The Once and Future Threat of Smallpox*, Jonathan Tucker describes the onset of symptoms in the discrete and confluent varieties:

[S]mallpox racked the body with high fever, headache, backache, and nausea, and then peppered the face, trunk, limbs, mouth, and throat with hideous, pus-filled boils. Patients with the infection were in agony – their skin felt as if it was being consumed by fire, and although they were tormented with thirst, lesions in the mouth and throat made it excruciating to swallow.

The boils, or pustules, gave the disease the pox (originally pockes) part of its name and gave its sufferers in the most hideous cases the characteristic bumpy skin, "resembl[ing] a cobblestone street." The pustules actually split the skin and, wrote Richard Powers in "The Demon in the Freezer" in the July 12, 1999 issue of *The New Yorker*,

[T]he pain of the splitting is extraordinary. People lose the ability to speak, and their eyes can squeeze shut with pustules, but they remain alert. Death comes with a breathing arrest or a heart attack or shock or an immune-system storm, though exactly how smallpox kills a person is not known.

The difference between the discrete and confluent forms was that in the former the pustules were fewer and remained separate; in the confluent form they ran together (hence confluent) into a mass. The confluent form killed more. In those who survived, the pustules turned to scabs, then left permanent, sometimes disfiguring, scars.

The hemorrhagic or "black" variety could be even worse, though mercifully quicker to kill. Its victims rarely lived long enough for pustules to form. Their skin developed sometimes just reddish spots, or in other cases would

darken until it looks charred, and it can slip off the body in sheets. In hemorrhagic smallpox, black, unclotted blood oozes or runs from the mouth and other body orifices. . . . Fatal smallpox can destroy the body's entire skin—both the exterior skin and the interior skin that lines the passages of the body.

Because black smallpox did not form pustules, physicians often missed the correct diagnosis. This was the case with Minneapolis's first known 1924 smallpox victim, Charles Stafford, whose smallpox was identified in autopsy. Undiagnosed cases made the public health menace even worse, disguising the extent of an outbreak, frustrating quarantine efforts, and confusing the search for sources and contacts.

medical epidemiologists, as district deputy health inspectors, are employed. They are assisted by full time non-medical health inspectors and nurses. All epidemiological work and control measures are carried out by this force. In Minneapolis, public health nurses are used for this purpose and no medical epidemiologists are employed." In other words, when the epidemic struck, Minneapolis had no epidemiologists on hand.

The state Health Department team also investigated cases in St. Paul, where they found a very different situation. In the first place, there were no large nodes of contagion to examine, no hospitals, hotels, or boarding houses with many cases. In the second place, Dr. McDaniel found that St. Paul city health officials had acted in most cases swiftly, professionally, and effectively.

Four cases of smallpox had appeared at St. Joseph's Hospital in St. Paul in late October and early November of 1924. Two of the four came to the hospital already ill; one, a pregnant woman, was sent home after diagnosis of smallpox; the other, a priest, was sent to the Dale Street Infirmary after diagnosis. One of the nurses of the pregnant woman got smallpox, probably in the course of her work; when symptoms developed, hospital authorities immediately isolated her in the nurses' residence. The other secondary case was a patient who had left the hospital before symptoms developed, so no action was required by hospital authorities. None of these patients died. Dr. McDaniel's team found that the city Health Department had not investigated the first three cases, giving as an excuse that at that time it "was bending every effort to get the public vaccinated." No matter. "The Hospital authorities . . . vaccinated all employees and nurses who had not been recently vaccinated. Vaccination of all patients was urged and carried out as far as possible."

Two cases of smallpox—one on December 26, another December 29—had appeared among employees of the Schoch Grocery Store, one of St. Paul's biggest grocery retailers and hence a potentially dangerous source of infection. It seems that the city's health director himself, Dr. Benjamin Simon, upon learning

of the first case immediately went to the Schoch store (and returned several times thereafter). "He advised vaccination of all employees and checked over vaccinations." All but three or four of Schoch's 152 employees immediately were vaccinated. After the report of the second case, the unvaccinated employees were given a choice: vaccination or discharge. All chose vaccination. One of the two infected employees lived in St. Paul; his house then was held in strict quarantine for twenty-one days. Both employees recovered and no further cases traceable to Schoch appeared.

Late in the outbreak, ten cases associated with Ancker Hospital, St. Paul's public hospital, came to light when Herman Haaf, a hospital orderly, died on April 29, 1925. Five of these cases had occurred in January and February and were unrelated to Haaf. The Haaf case and four others were traced to a man named Hugo Johnson, admitted April 9 with an initial diagnosis of secondary syphilis. Smallpox was soon suspected, but Johnson and his belongings were nevertheless carelessly handled by interns and staff. None of the doctors got sick but two employees and two staff members, including Haaf, did. Only Haaf died. Of these ten, six were sent home or transferred to the Dale Street Infirmary promptly after their smallpox diagnosis. What was done with other three was not reported. The St. Paul Health Department, immediately upon learning of the Haaf death, required vaccination or quarantine of all patients before discharge. No visitors were permitted except in extraordinary situations and upon proof of vaccination. Sterilizing and disinfecting measures were taken.

Dr. McDaniel wrote four summary comments on the work of St. Paul health officers:

1. That the Bureau of Health assisted in making diagnoses, put forth much effort in searching for sources of infection and in the follow-up of contacts
2. That private homes were strictly quarantined and that privileges of entering and leaving quarantined premises, commonly granted to persons protected by vaccination when dealing with mild smallpox, were withheld.

3. That places of business in which smallpox developed in workers were promptly investigated and advised as to vaccination, and that a later check up on successful vaccinations was made.

4. That in hospitals, prompt investigations were made, assistance in diagnosis rendered, advice re isolation, vaccination, and disinfection given, a follow-up of contacts carried out and a later check up on all successful vaccinations made.

In another example of Dr. McDaniel's dry humor, she concluded the published version of her report with these words: "Owing to the different personnel and to the different methods employed in St. Paul and Minneapolis, these comments should be of special interest to health workers."

It is clear, then, that the superior public health measures taken in St. Paul contributed to the lower smallpox death rate there. But the report does not tell us how much difference these measures made. The report does not get to the heart of why the citizens of Minneapolis suffered so much more than did their neighbors across the river. This writer will, therefore, with an amateur's anxiety at the probability of error, offer a few guesses.

St. Paul officials had access to, and used, an anti-smallpox weapon that Minneapolis lacked: a pest house. This was a popular term for the Dale Street Infirmary, a separate building on the city outskirts where the ill contagious were held until they recovered or died. St. Paul hospitals moved most of their smallpox sufferers home or to the pest house as soon as they could, for the protection of their staff and other patients and the public at large. At least partly for this reason, St. Paul hospitals never became major sources of infection. Minneapolis and Hennepin County had no counterpart to the Dale Street Infirmary; smallpox sufferers there were sent to General Hospital to recover or die and in either case endangered those around them.

The malignant strain of the smallpox virus may have been more prevalent in Minneapolis than St. Paul. The evidence for this is the much lower deaths-per-case rate in St. Paul. Presuming the accuracy of the reported figures, only about 13 per-

Ramsey County's Roll of Sorrow

The Minnesota Department of Health compiled two listings, of sorts, of those who died in the epidemic of 1924–25. Dr. Orianna McDaniel listed them in her report, and the department also made a book of death certificates, held now in the Minnesota Historical Society archives. The two lists are not exactly the same. What is more, both include names of people for whom smallpox was a secondary cause of death. The list below includes only those for whom smallpox was the primary cause of death. Those marked with an asterisk are cases whose origins were traced to Minneapolis.

- July 28: Amanda Jarus, age 41, housewife, 1117 Pleasant Avenue. Variety of smallpox unreported.
- Aug. 31: Walter Schell, age 2, 605 East Third Street. Hemorrhagic.
- October 29: Theodore Duncan, age 25, driver, 950 Cromwell Avenue. Hemorrhagic.
- Nov. 3: Mary Alma Myers, housewife, age 33, 95 Prior Avenue. Confluent.
- Nov. 11: Charles Bagan, age 33, electrician, 977 St. Clair Avenue. Hemorrhagic.
- Nov. 19: Frank E. Hague, age 39, plumber, 956 Russell Street. Hemorrhagic.
- Nov. 20: Gilbert Arbuckle, age 19, office boy, 1537 University Avenue. Confluent
- Nov. 22: Alvina Hilsberg, age 52, housewife, 841 Otto Avenue. Hemorrhagic.*
- Nov. 29: John Thompson, age 21 days, 2229 Doswell Street. Hemorrhagic.
- Dec. 4: Charley Grund, age 42, auto mechanic, 854 Aurora Avenue. Hemorrhagic.*
- Dec. 7: Ruth Silva Campbell, age 20, housewife, 1914 University Avenue. Hemorrhagic.
- Dec. 12: Verner Andreas Lauritzen, age 22, sign painter, 1236 Churchill Street. Hemorrhagic.
- Dec. 13: Frank Gosiak, age 25, tile setter helper, 745 Cromwell Avenue. Hemorrhagic.
- Dec. 22: Clara Picha, age 47, IRS clerk, 585 Dayton Avenue. Hemorrhagic.
- Dec. 22: Lynn Elliott Cree, age 4, 2417 Bourne Avenue. Confluent.*
- January 3, 1925: Ruth G. Smith, age 22, waitress, 489 Broadway Avenue. Confluent.
- Jan. 7: Kjalmar Hendricks, age 23, medical student, permanent residence, Minneapolis.*
- Jan. 7: Alexander Auld McDonald, age 39, locomotive engineer, 1282 Seminary Avenue. Hemorrhagic.
- Jan. 9: Oscar Kjelsberg, age 49, grocery clerk, 1624 Roblyn Street. Discrete.
- Jan. 10: Mrs. Theodore Kay, age 36, 973 Hague Avenue. Hemorrhagic.
- Jan. 15: Joseph Alfonse Yzerman, age 3 months, 783 Sherburne Avenue. Confluent.
- Jan. 18: Otto Frederick Johnson, age 23, laborer, Scandia Hotel, 2225 University Avenue. Hemorrhagic.
- Jan. 28: Leo Grimes, age 24, salesman, 1604 Ashland Avenue (City Directory gives his address as 303 Nelson Avenue). Hemorrhagic.
- March 16: Ellis Cheney, age 42, trimmer, 4 Langford Park Place. Hemorrhagic.
- March 17: Ella May Martenson, age 39, housewife and nurse, 1415 Sherburne Avenue.
- March 26: Lemar Dale Hauschildt, age 3 months, 597 North Dale Street. Confluent.
- April 29: Herman Haaf, age 26, hospital orderly, permanent residence, Minneapolis. Confluent.
- May 5: Thomas Gibson, age 67, chef, 107 Lyton Place. Variety unreported.
- May 12: Olive Louvina Parker, age 67, housewife, 665 North Snelling Avenue. Confluent.
- May 14: Robert Leaf (or Lee), age 5 months, Salvation Army Home, 1471 Como Avenue. Confluent.
- May 20: Alfred Weber, age 15, 328 Maple Avenue, North St. Paul. Confluent.
- May 26: Margaret Elizabeth Barnes, age 72, housewife, next-door neighbor of Olive Parker, above, 667 North Snelling Avenue. Confluent.
- June 7: Rita (or Rina) May Lang, age 4 months, 273 Annapolis Street. Confluent.
- June 10: Yvetta (or Ydeppe) Wells, age 2 years, 201 Ramaley Avenue, White Bear Lake. Confluent.
- July 2: Arthur Del Perchio, 21 months, Catholic Infants Home, 342 North Dale Street. Hemorrhagic.
- July 17: Ruth Elaine Laureys, 46 days, Salvation Army Home, 1471 Como Avenue. Hemorrhagic.
- July 24: Ada Bomgaars, age 18, nursemaid, 899 Denny Street. Hemorrhagic.
- July 25: Frank Pavlicek, age 18, candy dipper, 453 Michigan Avenue. Hemorrhagic.
- July 26: Bernadine Belanger, age 3 months, Catholic Infants Home. Hemorrhagic.
- Aug. 1: Marie Joan Pavlicek, age 1 month, daughter of Frank Pavlicek, above, 453 Michigan Avenue. Hemorrhagic.

We know their names, where they lived, and when they died. We do not know how they suffered.

ST. PAUL'S SMALLPOX SCARE

St. Paul is doing its best, or worst, to create a scare over the smallpox situation in Minneapolis.

It remains for the St. Paul Pioneer Press to descend to the lowest method in trade competition by publishing a gross libel on the smallpox situation in Minneapolis for the sole purpose of frightening people from the country away from Minneapolis for the Christmas trade!

The Pioneer Press says today: "Minneapolis Censured for Concealing Facts," when the newspapers of Minneapolis print daily the record of all contagious diseases in the city—new cases, deaths and dismissed as cured—statistics that the papers of St. Paul decline to print for St. Paul. Where is the secrecy in Minneapolis?

Minneapolis is a vaccinated city except as to those who for religious reasons do not act. There is no epidemic in Minneapolis.

Let us look again at the record of cases as given by the State Board of Health:

From the Minneapolis Journal for December 17, 1924. Minnesota Historical Society archives.

cent of those infected with what was believed to be malignant smallpox in St. Paul died. The generally accepted mortality rate for malignant smallpox is 25 to 33 percent. The death rate in Minneapolis was 25.5 percent, precisely what might have been expected in a malignant smallpox outbreak. The state Health Department admitted in its report that both *variola major* and *variola minor* were present in the Twin Cities and that there was no practical way, once the outbreak took hold, to distinguish between the two varieties. What is more, a man very close to the facts, St. Paul's Dr. Simon, insisted well into November 1924 that no cases of hemorrhagic smallpox had yet appeared in the city—and that strain was by then well established in Minneapolis.

Probably most important, though, were demographic and accidental factors. Minneapolis was bigger, growing faster (about 600 people per month, compared to 200 in St. Paul), had more manufacturing and other productive industry, and a superior economy. It attracted more transients and immigrants, and thus probably had more shelters, flophouses, and low-rent boardinghouses. Smallpox lodged in these places early in the epidemic and spread from there. The residents of these places, poor, rootless, depressed, alcoholic, were those most at risk of disease and the least amenable to voluntary vaccination. As reported in the case of the Union City Mission, when urged to get vaccinations most mission residents simply disappeared, wandering off to spread

disease (and there was no doubt that many cases in St. Paul and elsewhere had their origins in Minneapolis). While St. Paul had its share of shelters and flophouses too, smallpox never took hold there. Smaller, growing relatively more slowly, sluggish in economy, St. Paul simply offered smallpox many fewer attractive targets. This, in turn, made the city's public health task vastly simpler from what faced Minneapolis. It may also be that St. Paul enjoyed some simple good luck.

For more than a hundred years St. Paul has looked for areas to claim superiority—cultural, esthetic, moral, whatever category may plausibly asserted—over Minneapolis. The smallpox epidemic of 1924–25 offers an inviting target of inquiry. Certainly St. Paul had better leadership in its Health Department, was better prepared for the crisis, and handled it much better than did the health authorities of Minneapolis. Whether St. Paul would have done as well if confronted by the precise circumstances that faced Minneapolis is an unanswerable question. It may be precisely St. Paul's inferiorities to Minneapolis in population that protected it from the worst of the epidemic. Good luck played a big part too. Good luck may not be evidence of any kind of civic superiority, but it is certainly superior to bad luck.

Paul D. Nelson is a frequent contributor to Ramsey County History and a member of the Ramsey County Historical Society's Editorial Board.

About the Sources

Most of the information in this article comes from three sources: "Minnesota's Experience With Smallpox," "Minnesota's Experience With Smallpox of the Malignant Type," both 1925 publications of the Minnesota State Board of Health, and "Report on Special Investigation of Smallpox in Minneapolis and St. Paul, 1924–1925," upon which the two publications were based. All are available to the public in the files of the Minnesota Department of Health at the Minnesota Historical Society (MHS) library. Other useful information came from those files, among them a compilation of smallpox death certificates and the files of Dr. Albert J. Chesley.

Articles from the daily press of the time were useful in tracking the public and official reactions, including the vaccination campaigns, to the outbreak. Most of the quotations from public officials come from the newspapers.

There exists an enormous literature on smallpox, smallpox epidemics, and public health responses, and smallpox comes up in many histories of native peoples of North America. I used Guy C. Gibbon, *The Sioux, the Dakota and Lakota Nations* (Malden, Mass.: Blackwell Publishing Co., 2003), Donald R. Hopkins, *Princes and Peasants, Smallpox and History* (Chicago: University of Chicago Press, 1983), Evan Jones, *Citadel in the Wilderness, The Story of Fort Snelling and the Northwestern Frontier* (Minneapolis: University of Minnesota Press, 2001), Roger Kennedy, *Hidden Cities, The Discovery and Loss of Ancient North American Civilization* (New York: The Free Press, 1994), Jonathan B. Tucker, *Scourge, The Once and Future Threat of Smallpox* (New York: Atlantic Monthly Press, 2001), Sheldon Watts, *Epidemics and History* (New Haven: Yale University Press, 1997), and Richard Powers's article, "The Demon in the Freezer," in the July 12, 1999 issue of *The New Yorker*.

A fully annotated version of this article is available at the Ramsey County Historical Society.

THESE KIDS WON'T HAVE SMALLPOX

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Hundreds Take Advantage of School Holiday to Get Vaccinated at City Hall



Photograph from the St. Paul Daily News for November 5, 1924. Minnesota Historical Society, Collections. See article beginning on page 10.

R.C.H.S.

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