Chapter 2

Conquered and Almost-Conquered Diseases

Smallpox
Typhoid
Diphtheria
Whooping Cough
Tuberculosis
Brucellosis
Rabies
Parrot Fever

"If we are to maintain the gains made, we must do more and more immunizing, since it is impossible to completely eradicate these diseases." [108]

Dr. Dean Fleming
1958

Dr. Dean Fleming
Director of Disease Prevention and Control, 1947 to 1975

Minnesota Health Department employee, 1937 to 1975

During the 50-year period from 1949 to 1999, the dramatic decline in deaths from communicable disease continued its downward trend in Minnesota. There were no cases or deaths from smallpox during this period, and by 1999 cases of polio or diphtheria had dropped almost into oblivion. Cases of whooping cough, typhoid fever and measles still occurred but deaths were rare. The last reported death from one of

[108] MDH, *Minnesota's Health,* Vol. 13, No. 3, March 1959, p. 1.

these once common childhood killers was reported in 1980. Through public health measures, cases of brucellosis, rabies and parrot fever were also almost drastically reduced or eliminated.

Dramatic drops in the number of tuberculosis cases occurred in the state during the 1950s but underwent resurgence in the 1980s and 1990s. Similarly, the incidence of sexually transmitted diseases declined but began increasing in the 1960s and 1970s.[109]

This chapter describes some of the major communicable diseases that disappeared or declined substantially in Minnesota between 1949 and 1999.

Smallpox

By 1949, there were no cases of smallpox in Minnesota. More than 50 years earlier the disease was so prevalent in the state that Dr. Hewitt, the first secretary and executive officer of the State Board of Health, felt compelled to travel to the Pasteur Institute in France to learn how to make smallpox vaccine from Dr. Louis Pasteur.[110] In his own laboratory in Red Wing, Minnesota, in 1890, Dr. Hewitt began producing smallpox vaccine that he distributed to health officers and doctors throughout the state.[111] The disease peaked in 1924 with 3,125 cases and 307 deaths, before it began declining.[112]

- The last death from smallpox in Minnesota was in 1941.
- The last case of smallpox in Minnesota was in 1947.[113]
- Early in the 1970s Minnesota children no longer received smallpox vaccine as part of their routine immunizations.
- The last case of smallpox in the world was in Somalia in 1977.

Dr. Hewitt's efforts and those of many other public health people contributed to the eradication of smallpox in Minnesota and worldwide.

Typhoid Fever

In 1949, Minnesota reported only one death from typhoid fever, a disease that was once one of the leading causes of death in the state. Although there was an increase in the number of cases from 1948 to 1949, they resulted from vacationers who brought typhoid back from Mexico.

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[109] Sexually transmitted diseases are covered in Chapter 14.
[110] Philip Jordan, *The People's Health,* St. Paul, 1953, pp. 51-53.
[111] Ibid., pp. 53-54.
[112] MDH, *Minnesota's Health,* Vol. 13, No. 3, March 1959, p. 1
[113] Ibid.

A public health challenge in Minnesota that has been conquered

"The house was dark but upon knocking loudly on the one door of the log cabin a woman's voice asked what was wanted. On my replying that I was a doctor come to care for the smallpox cases, a lamp was lighted and a dirty and bedraggled and woebegone old woman opened the door. A fearful stench came with her from the interior. Putting over my head a cloth in which I had cut openings for my eyes to see through, and protected by my rubber coat, I entered the house. It was cold and dark. There were two or three small sticks of wet wood making an ineffectual effort to burn in the kitchen stove, but they had made small impression upon the cold and damp. The whole house was indescribably filthy. The kitchen had a table covered with a few dirty dishes, and two or three chairs, all the cheapest variety. In the other half of the lower part of the house, about twelve feet square, there was one bed and on the floor a mattress and on the two I found eight persons sick with smallpox and ranging in age from twenty-four years to twelve months. Mrs. Mary Smith, 24; daughter of Mrs. Gillan; James G., 21; Michael, 17, Patricia, 8; Dominick, 6; Bridget, 14; Sarah, 4; the Babe of Mrs. Gillan, 1 year. All except the babe had been ill since the 13th, nine days, and the four older ones have the confluent form of the disease with their faces almost black and so swollen as to have little resemblance to human beings. The younger ones have the appearance of being less advanced and the baby has only the scattered eruption of varioloid, and has the appearance of being starved. As a matter of fact, the child was so starved, it had always been weak, that there was no foundation for the development of a floid (sic) case of variola. Mrs. Smith, the eldest female, whose husband died of smallpox on April 11th, miscarried two days ago being two months pregnant. The older ones complain much of their throats and are unable to swallow solid food. They have had no care since Tuesday, five days, when an old demented man left them, except what the poor old mother could do and she is sick and half crazed. The filth and the stench are fearful and all the air holes are stuffed with rags. The only wood in the house and under cover is in the stove trying hard to keep alive a flickering flame in spite of being water soaked. They have had no wood since Wednesday except what the mother has cut and prepared. There is a small pile of rough scrubwood of various lengths, all too long for the stove, in the yard where it has been exposed to the almost constant rain. They have had nothing to eat but flour gruel and some alcohol. They have some other provisions in the house but the mother has been unable to prepare food so they could eat it. They have been unable to get any milk, partly because they had no one to forage for it and as well because the nearer neighbors would not furnish them."[114]

Excerpt from the Diary of Dr. E. J. Brown, Montgomery, Minnesota, 1882

[114] Unpublished diary of Dr. E. J. Brown, 3027 Pleasant, Minneapolis, 1882. Kept in MDH library.

Typhoid epidemics such as those reported in 1908 and 1935 were no longer occurring, thanks to the aggressive approach that had been taken.[115] Isolation of the carrier to limit transmission of the disease was done through quarantine, confining a patient to his or her home, or placement in an institution for persons similarly infected. Typical isolation involved ill persons, but this was not necessarily the case with typhoid carriers. Carriers of typhoid might not show any outward signs of illness but might infect many others with this fecally transmitted disease. This was a particular concern when a typhoid carrier had contact with food eaten by others. In 1952, seven cases of typhoid occurred following a picnic at which food infected by a known typhoid carrier, seemingly healthy, had been eaten.[116]

In the 1930s the Board of Health tried a new and interesting approach in its attempts to isolate typhoid carriers and prevent transmission of the disease. Typhoid carriers were forbidden to work as milk handlers, cooks or in any other occupation where they had direct contact with the food and drink of others. For some typhoid carriers, their livelihood depended on these jobs. To compensate them for their loss and to encourage carriers not to work, the board offered monthly stipends to those typhoid carriers who had to leave their field of work.

The amount of the stipend varied per recipient. Each case was evaluated as to the loss suffered by being unable to work and the availability of other resources for that person. From time to time the amounts increased when the board granted cost of living raises.

Monthly payments to typhoid carriers were not automatic. Each case was reviewed and approved by the board quarterly. By 1949 the board members who approved payments were not the same board members who had made the initial decision to provide this stipend. While payments to the list of typhoid carriers were usually approved without comment, periodically the board would discuss whether or not the department should continue such a policy. Some members questioned whether such stipends were appropriate.

When President Thomas Magath brought the issue forward for discussion at the December 16, 1949, board meeting, there seven persons in the state were receiving monthly stipends:[117]

> Some time ago I raised the issue on this aid to typhoid carriers and I think we might well review it. I have the idea, and I don't know where I got it, that we are entitled to pay compensation to people forced out of jobs which have to do with food handling. One would question whether Mrs. Jackson, age 88, is a person who could be employed and why we should support her. This would be equally true of one 81 and two 71, and I wonder whether we are justified in paying them compensation because they have been robbed of their job.[118]

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[115] Jordan, *The People's Health,* p. 119.
[116] MDH, *Minnesota's Health,* Vol. VI, No. 9, October 1952, p. 4.
[117] BOH, *Minutes*, December 16, 1949.
[118] Ibid.

Board members noted that this group didn't have much earning power because of their ages and wondered if the original rationale for the aid was still valid. They recognized that the carriers had been prevented from accumulating savings for their old age when they were not able to work, but they wondered if they should now be getting support from an old-age assistance group rather than the Board of Health.

The issue was tabled, but brought forward at the board meeting on February 14, 1950[119]. Dr. Fleming, head of the disease prevention and control section, reported that all carriers had been visited within the last six months and the basis for their grants reviewed. He described one visit to the home of an 81-year-old woman who had been receiving aid since January of 1937. She was well but found it difficult to carry water and coal. It was unknown if she had any additional income besides the $49.00 in aid she received each month as a typhoid carrier.

The board again questioned if it was appropriate to continue to provide financial support to a group who could possibly receive old age pensions instead of the stipends:

> Dr. Ruth Boynton: "I think we might be quite vulnerable on this, giving aid to these people who might be eligible for old age assistance or some other form of assistance. Originally it was to compensate them for loss of income because we refused them the right to pursue the occupation which they formerly pursued before they were known carriers. It is a question of policy of the Board, I think, whether we should consider a person once deprived of a means of earning a living as deprived for the rest of their lives. I have always had a feeling that perhaps we ought to have a little more social service type of investigation on this perhaps once a year."
>
> Mr. Leo Thompson: "People past 60 years of age would be past working age. It would seem that they should get what was actually needed."
>
> Dr. Frederic Bass: "If we are to assume responsibility for this amount, it seems to me we should have an analysis of each case, not only with respect to their necessities for living expenses but their other sources of income, if any. Otherwise we can't act intelligently."
>
> Dr. Albert Chesley, Secretary and Executive Officer: "Do you get reports from each one before you send them their checks?"
>
> Fleming: "Yes."
>
> Chesley: "Couldn't you put something into that letter?....some of these people have been on for a long, long time."
>
> Boynton: "I wonder if we shouldn't ask Dr. Fleming to make a complete and careful investigation of the circumstances of each of these individuals. This could probably be done through public health nurses in the community."
>
> Thompson: "We could get that through the welfare societies."
>
> Fleming: "We have had quite a bit of information from the welfare societies about these people because they are persecuted so much. Most of them have been kept out of a job at one time or another in their life because of their condition and would learn something through that. Many of

[119] BOH, *Minutes*, February 14, 1950, MHS, pp. 10-13.

them are still able bodied and if you don't have something to offer them they are going to do work they shouldn't."

Bass: "Mrs. J., 88 years of age, gets $21.00 a month and Mrs. H., 81, gets $49.00. That is just on the face and that raises the question to me why they differ. What does $21.00 a month do for a woman 81 years old? Not much. I would like to know a little more about them."

Dr. Charles Netz: "They are getting these checks. If we refused them and they applied for old age assistance they might not get it because they might be living with a son or a daughter who can support them. In a case like that the son or daughter is just getting $21.00 a month more. If they have someone to support them, they can't get any old age assistance, I understand."

Dr. Frederick Behmler: "There are a lot of them that could be supported by sons or daughters but aren't."[120]

The issue resurfaced at the April 15, 1952, board meeting as a result of a specific case.[121] This woman had been identified as a carrier in 1936. At that time she was living in Olmsted County where she sold milk. One fatal case and two other cases were traced to her. Initially she received $25.00 a month through the typhoid carrier aid program, and this amount had increased to $49.00 a month by 1952.

The woman was now 84 years old, had cataracts and was almost blind. She had moved to another state to live with her daughter's family. The family had to handle her dishes separately, buy her medicine, and provide for her care. When the department learned she had moved to another state, it notified that state's health officer that she was there and was a typhoid carrier. That health department was now keeping track of her. The department informed the woman that the March 1952 check would be the last, since she was not living in the state. This caused the typhoid carrier great distress, as she had no other source of income. She would have to have five years' residence in the state where she had moved in order to quality for old age assistance.

This led to a discussion on the department's policy in the matter:

Fleming: "...we would have great difficulty in defending our position in paying her aid when she is out of the State. On the other hand, there are some human values there that make it rather difficult to tell people they will get no other money. If we could turn the person over to another agency..."

Dr. Theodore Sweetser: "It used to be that the great majority of people after 60 or 65 became dependent on the next generation. She is living with a daughter now who certainly has some responsibility."

Netz: "It seems to me the fundamental part of the purpose of that act is to protect the people of Minnesota against that carrier. It is not our duty to protect the citizens of Oregon from a typhoid carrier."

Fleming: "The theory of this aid was to reimburse these individuals for the loss of income for the restrictions placed upon them. This payment goes on as long as the person lives, representing a fraction of the income they would have earned."

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[120] BOH, *Minutes*, February 14, 1950.
[121] BOH, *Minutes*, April 15, 1952, MHS, pp. 135-142.

> Boynton: "When this legislation was first passed we had not Old Age Assistance and no means whereby they could get funds available to them. I understand the Social Security Act is considered as a pension and not as charity. I wonder, then, whether this isn't first for the protection of the public health. That was the purpose of the passage of the legislation to compensate these people so that they wouldn't have to engage in food handling work. I wonder if we shouldn't take into consideration the changes that have taken place in the welfare situation I certainly don't see how we can pay aid to these people in another state. I wonder if we are justified in paying these other people of 70 or 75."
>
> Chesley: "Technically I don't think we have any business paying anything to anyone who leaves the State."
>
> Netz: "I feel, too, that we haven't got any defense."
>
> Chesley: "Dr. Fleming sends details to the Health Officer so that they have a complete record of a carrier of this kind. It is up to them to protect their own people."[122]

Payment to the typhoid carrier in question was ended. By September 8, 1955, the number of typhoid carriers was down to four, and the quarterly payment to them totaled $357.[123]

While the board believed it should not be paying to protect the citizens of another state from typhoid, an earlier decision points out the difficulty in determining boundaries in public health matters. The department had supplied Canada with typhoid vaccine it needed. At the April 25, 1950, board meeting the director of disease prevention and control asked what it should charge for the vaccine:[124] "$205.00 worth of typhoid vaccine was sent to Winnipeg. They have asked for a bill. I wonder what the board wishes to do in this situation."[125] Dr. Chesley answered the question with a question: "Where did the water come from?"

The board decided that since the $205.00 for vaccine was expended in the protection of Minnesotans and because of the great movement of people between Winnipeg and Minnesota, the board should not request reimbursement from Winnipeg.

In the interest of reducing the expense of aid for typhoid carriers at the department, the board considered the possibility of transferring some responsibility to another government agency. A suggestion was made that the welfare board handle these cases, and the response gave insights into the difficulties the department might have had in working with other agencies.

> Fleming: "When the welfare board or other agency handles these cases, problems increase because they don't take a very enlightened attitude when supervising carriers. They want to lock these people up in jail practically as soon as they find out they are carriers. As long as they abide by certain restrictions that is not necessary."

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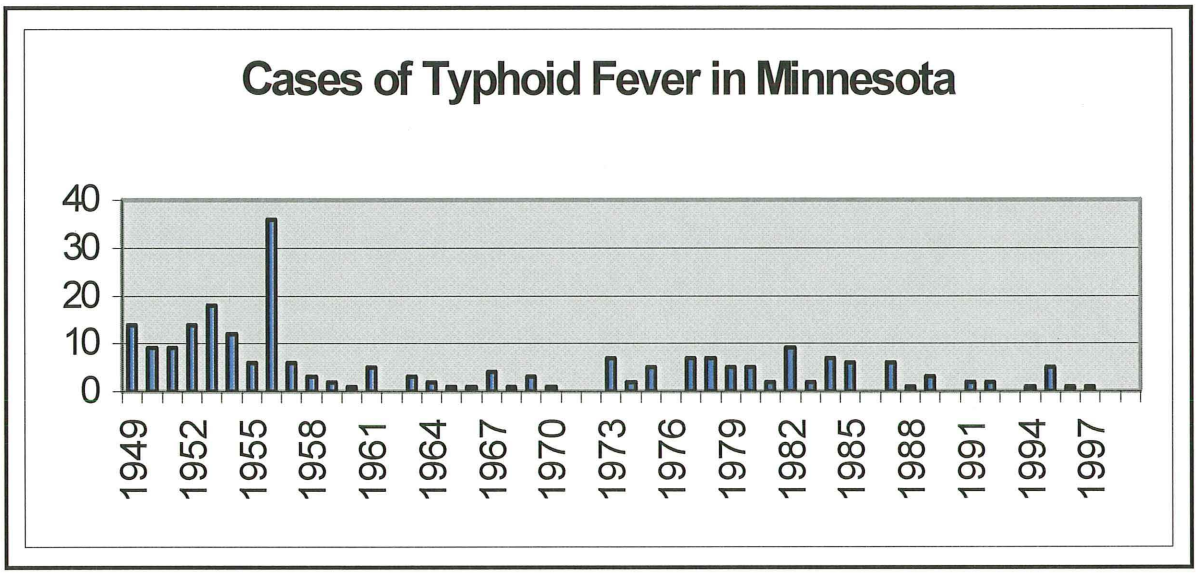
[122] BOH, *Minutes*, April 15, 1952, MHC, p.
[123] BOH, *Minutes*, September 8, 1955, p. 213.
[124] BOH, *Minutes*, June 13, 1950, MHS, p. 253.
[125] Ibid.

> Herbert Bosch: "It seems to me, Mr. President, I don't feel that we should give this consideration primarily as a welfare thing. It was meant originally as a financial help to keep them out of a certain occupation. We are not going to be adding anything more to it. I have a sneaking hunch that if you turn the welfare boards loose on these six or seven people you will probably have as much difficulty as you have now. It amounts to only $200 a month. I just hesitate a little bit to see us turn the county welfare boards loose."[126]

While typhoid was considered under control in the 1940s and 1950s, it remained ready to make an appearance. In 1956 it did. There were 20 cases of typhoid in 12 counties during the first few months of the year. As people were infected with the same type of typhoid organism and many became ill in the middle of January, it was initially believed to have been transmitted during a holiday party.[127] When cases began to occur in March, however, that hypothesis didn't prove true.



The source of the cases was perplexing. No two cases occurred in the same family or among acquaintances. Cases appeared in people living miles apart. No common link was noted. It wasn't the classic outbreak of typhoid traceable to a common factor such as poor sanitation practices or a typhoid carrier. Specialists from the U.S. Public Health Service and Food and Drug Administration were brought in to help, but the source was never discovered.[128]

There have been only six deaths from typhoid in Minnesota from 1949 to 1999. One was in 1949, two were in 1953, two in 1963 and one in 1965. The 1965 death was a non-resident, so the last death of a Minnesota resident was in 1963.[129] The last case of typhoid in the state was recorded in 1997.

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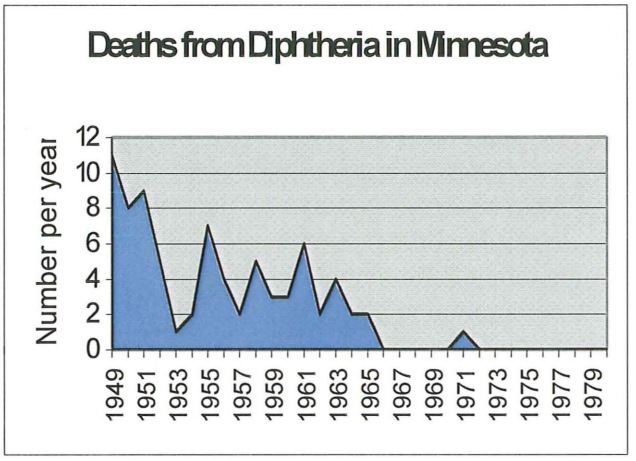
[126] BOH, *Minutes*, April 25, 1952, MHS, p. 140.
[127] MDH, *Minnesota's Health,* Vol. 10, No. 2, February 1956, p. 4.
[128] MDH, *Minnesota's Health,* Vol. 10, No. 9, November 1956, p. 4.
[129] MDH, *Vital Statistics Minnesota, 1963.*

Diphtheria

In 1949, though effective vaccine had been available for about 20 years, diphtheria was not yet fully under control in Minnesota. An average of 222 diphtheria cases and 20 deaths occurred each year between 1946 and 1950.[130] With education and immunization, cases and deaths were dropping, however. In 1950, there were 99 cases of diphtheria in the state.[131] This was the lowest ever recorded to date. By 1953, the number of recorded cases fell to 27.[132] From 1952 to 1960 there were 426 cases of diphtheria and 40 deaths in Minnesota. Cases, most from the northern part of the state, continued to be reported into the 1960s.[133]

A study of students in the fall of 1955, found that in some communities 70 percent of children entering school had not been immunized.[134] As the number of cases declined and the disease became less visible, public health workers began to be concerned about the declining interest in immunizations and the potential for outbreaks.



An outbreak of diphtheria in Bemidji in January 1955 resulted in the death of a 40-year-old man and a six-year-old boy. In July and August of 1958, there were outbreaks at the Cambridge State School and Colony. By the end of the year, 75 cases and five diphtheria deaths had occurred.[135] In 1960, 36 cases of diphtheria occurred, primarily in Becker, Beltrami, Cass, Clearwater, Hubbard, Itasca, Koochiching, Pennington and Polk counties and an area around Bemidji, Deer River, Grand Rapids and extending to Crookston. It followed the same pattern as previous years.[136] In 1961, cases occurred in 11 counties: Becker, Beltrami, Goodhue, Hubbard, Cass, Itasca, Hennepin, Mahnomen, Koochiching, Isanti, and Ramsey. The first nine months of 1961 found only three states – Texas, Louisiana and Florida – with more diphtheria cases than Minnesota.[137] A study of 14 cases and four deaths in 1963 found asymptomatic carriers in 21 counties. The problem was statewide.[138]

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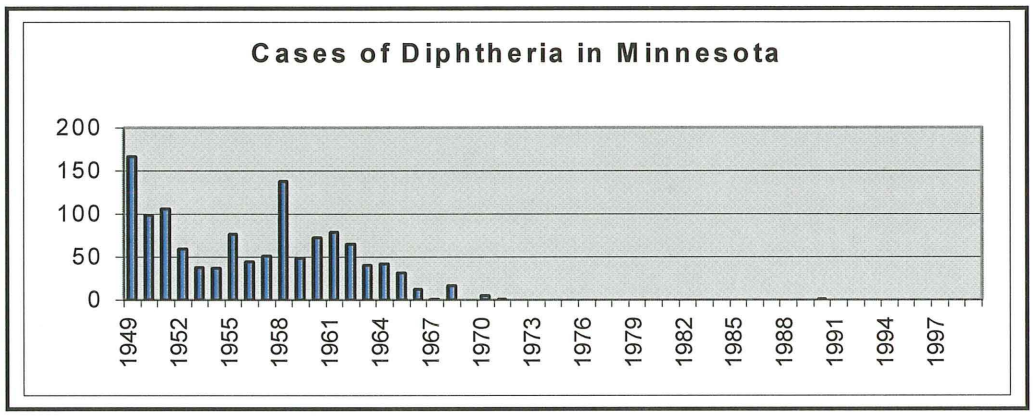
[130] MDH, *Minnesota's Health,* Vol. VI, No. 2, February 1952, pp. 3-4.
[131] BOH, *Minutes*, January 25, 1951, MHS, p. 27.
[132] MDH, *Minnesota's Health,* Vol. 8, No. 7, July-August 1954, p. 4.
[133] BOH, *Minutes*, October 31, 1961, MHS, pp. 466-467.
[134] MDH, *Minnesota's Health,* Vol. 10, No. 2, February 1956, p. 1.
[135] MDH, *Minnesota's Health,* Vol. 13, No. 3, March 1959, p. 1.
[136] BOH, *Minutes*, December 19, 1960, MHS, p. 420.
[137] BOH, *Minutes*, October 31, 1961, MHS, pp. 466-467.
[138] MDH, *Minnesota's Health,* Vol. 18, No. 10, December 1964, p. 4.

Trying to urge the population to be immunized, a report on diphtheria used civil defense to sell their point: "With the threat of a possible nuclear disaster, it would be prudent to attain a high level of protection against diphtheria and tetanus in our civilian population."[139] The federal government's Vaccination Assistance Act of 1962 was a boon to immunization against diphtheria, as well as smallpox, whooping cough, tetanus, polio and measles. Vaccine was provided free of charge to physicians. They could not charge patients for the vaccine, but they could charge for their services. Assistance was also granted communities for establishing school immunization maintenance programs.[140]



Nineteen sixty-six was the first year in the department's history that no death from diphtheria was reported. There has been only one recorded death since then, occurring in 1971. A disease, once treated by every general practitioner in Minnesota is rarely, if ever, seen by today's health personnel, thanks to the efforts of early public health workers and continued vigilance of the current ones.

Whooping Cough

The state's peak year for whooping cough cases was 1933 with 5,272 reported cases and 77 deaths. The most deaths in a year occurred in 1920 when 297 Minnesotans died of whooping cough. [141]

With the availability of vaccine, whooping cough cases and deaths began to decline but not as fast as expected. While the number of cases and deaths in 1949 had dropped considerably, a large increase occurred the following year. There were 1,373 cases and 12 deaths in 1950, compared to 180 cases and six deaths from whooping cough in 1949.

When discussed at the August 1, 1950, board meeting, the lack of immunization was identified as the contributing factor in the increase.

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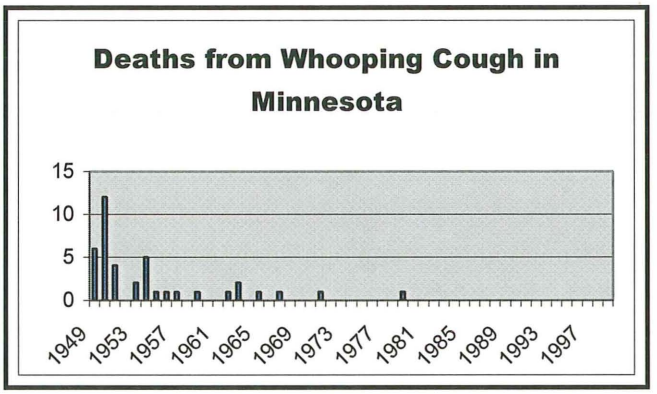
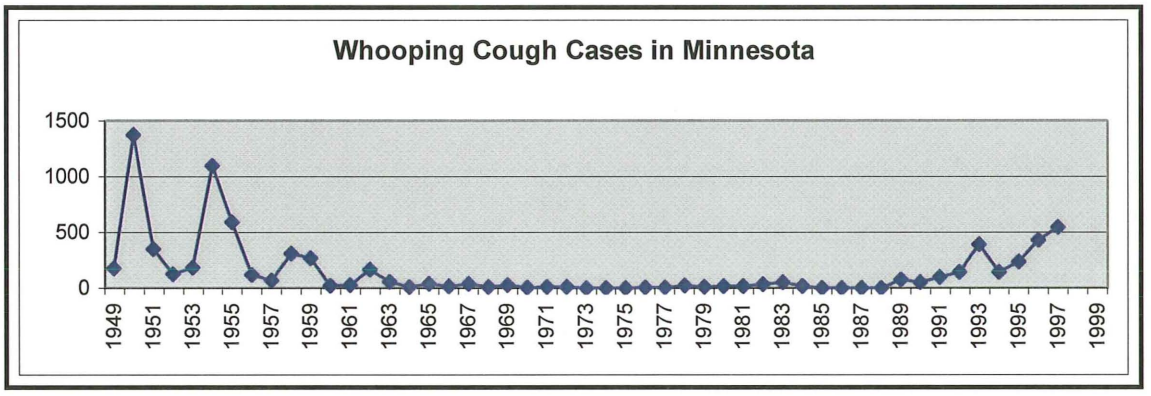
[139] BOH, *Minutes*, October 31, 1961, MHS, pp. 466-467.
[140] MDH, *Minnesota's Health,* Vol. 21, No. 8, October 1967, pp. 2-2.
[141] MDH, *Minnesota's Health,* Vol. 13, No. 3, March 1959, p. 1.

Boynton: "I don't think we are having wide-spread enough immunization in whooping cough to control it."



Chesley: "The trouble is that you have to get them so early that unless there is a death somewhere the people won't come in to get it. The only place we have been able to get them interested is among the Indians. You can't convince the people that they should have that done."

Boynton: "It's really a short time, too, that whooping cough innoculation has been accepted. Of course we provide the immunizing material for the physicians to use."[142]



Cases began decreasing in the 1960s, with an increase in the 1990s. The last death from whooping cough was reported in 1979.

Tuberculosis

According to Dr. J. Arthur Myers, international expert on tuberculosis, Minnesota invited tuberculosis into the state by advertising, in the 1800s, the supposed benefits of its climate. In his book about tuberculosis in Minnesota, "Invited and Conquered," Dr. Myers also recognized the cooperative efforts that led to control of the disease.[143]

The peak year for tuberculosis in the state was 1911 when there were 2,552 deaths, with 119.7 deaths per 100,000 persons. With the introduction of streptomycin and isoniazid, the possibility of eradicating tuberculosis, once the leading cause of death in Minnesota, became a reality.

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[142] BOH, *Minutes*, August 1, 1950, MHS, p. 331.
[143] MDH, *Minnesota's Health,* Vol. III, No. 11, November 1949, pp. 1-2.

By 1949, the tuberculosis death rate had declined to 13.6 deaths per 100,000.[144] Still, it was the most devastating of communicable diseases in the state. Houston County had the lowest death rate in Minnesota between 1946 and 1950, with only one death from tuberculosis during that period.[145] Tuberculosis was still the greatest killer of people aged 15 to 25 in 1950, but the reservoir of infection was in the middle-aged group.[146]

Nineteen-fifty was a red-letter year for tuberculosis. For the first time in the department's history, tuberculosis was no longer one of the ten leading causes of death for Minnesotans. In addition to the availability of drugs for treatment, the reduction in deaths was due to improved methods of treatment, reduced exposure through the isolation of infectious cases in sanitariums, and early case finding. More cases were being treated before they became serious enough to cause death.

Recalcitrant Patients. Like a number of other diseases in the 1940s and 1950s, a method for controlling tuberculosis was the isolation of those infected. Tuberculosis was the only disease, however, which had institutions created specifically for these patients. The first sanitarium for tuberculosis patients in Minnesota was built in 1907 in Walker.

While most persons diagnosed with tuberculosis went to sanitariums willingly, the board was challenged by a number of recalcitrant tuberculosis patients. These patients refused to remain in hospitals and were possibly endangering the health of others. The courts would commit tuberculosis patients, but the facilities weren't able to retain patients against their will. Dr. Hilbert Mark, director of the tuberculosis division of the preventable disease section, reported, "Several cases beat the sheriff home." [147] Guards were needed to insure the patient remained in the hospital. At a cost of $29.00 per day, this was too expensive, so the present legislation was virtually inoperable.[148]

The board was frustrated with this obstacle in its continued fight to reduce tuberculosis, and the issue was discussed at the January 25, 1951, board meeting:

> Dr. Ruth Boynton: "I think our division of Tuberculosis and the Minnesota Public Health Association are interested in seeing whether anything can be done to change the present legislation which will make some institution in the state take these people. We have authority now to put them in an institution but, as I understand it now, none will accept them. The sheriff takes him up there and they walk out."
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> Dr. Theodore Sweetser: "The State Department of Health has police authority to make somebody take care of them."
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> Dr. Albert Chesley: "....No sanitarium will take that kind of a case—the big places where you could segregate them. We tried the place at St. Cloud and they said they can't take them there. We ought to be able to classify the person who is of that type so that they could be committed by

[144] MDH, *Minnesota's Health,* Vol. IX, No. 8, November 1955, pp. 2-3.
[145] MDH, *Minnesota's Health,* Vol. V, No. 12, December 1951, p. 4.
[146] MDH, *Minnesota's Health,* Vol. VI, No. 10, November 1952, p. 1.
[147] BOH, *Minutes*, August 1, 1950, MHS, pp 313-314.
[148] Ibid.

the court and they couldn't get out. Some of these people are just plain cussed. As a rule they are that type of individual. Irresponsible and don't give a whoop for anybody or anything. There are only six or eight of them at a time."

Boynton: "I think it might be a good idea if Dr. Wilson sent these two case histories to the legislators."

Mr. Jerome Brower: "There is going to be a meeting on this Monday evening where they will discuss these two big proposals."

Sweetser: "Maybe they could be isolated at St. Peter."

Dr. Robert Barr: "Two possible places were discussed, one was St. Cloud Reformatory and the other was the Anoka State Hospital. We went through that very recently and it would be a difficult thing, although I think if they clapped (sic) one or two of those individuals in a room with some of those other patients he would be awfully glad to behave himself somewhere else. In general it is open wards with a few rooms for disturbed patients. If an individual is just a plain devil—These men are mental cases and also frequently chronic alcoholics plus TB. They are not reasonable individuals and the only thing they understand is force. If the institutions really wanted them, I think they could take care of them."

Sweetser: "Could they be committed as mental cases?"

Barr: " I think it would be a very difficult thing to do. They are maladjusted." [149]

A tuberculosis law (Chapter 314) was passed in 1951. A county board was authorized to commit a person infected with tuberculosis on the basis of the health officer's report of a suspected tuberculosis case.[150] Board members and department staff didn't seem overly optimistic about this law when they discussed it at an April 1951 board meeting:

Dr. Frederick Behmler: "Did the Legislature do anything about control of tuberculosis incorrigibles?"

Dr. Dean Fleming: "Yes. They passed a new bill which is an amendment of the previous bill. It is designed to simplify the application of that law and to clarify which agency is responsible for handling these recalcitrants. In my own mind, the basic thing is setting up a facility where these people will be kept until they are permitted to leave. Both laws, to my mind, won't work so well until that is set up. People are committed under this act or the previous one but escape from the place they are committed to and return home and that is apparently all that can be done about it. These other matters are important also, whether the local county or the State shall pay the cost. The new act is designed to relieve the county somewhat so that the State will assume a larger share of the cost for keeping these people. Many have no legal residence. It does become unfair for a city like Minneapolis which picks up a lot of nonresidents and then has to pay all the costs of those patients in the sanitarium."

Behmler: "What is the procedure on those people now? Just let them run loose?"

Fleming: "They can be picked up and committed under this law and it works very well for those people who will stay in the sanitarium."

Behmler: "What if they leave the State San? Then what happens?"

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[149] BOH, *Minutes*, January 25, 1951, MHS, pp. 54-56.
[150] MDH, *Minnesota's Health,* Vol. V, No. 6, June 1951, p. 3.

Fleming: "That is just what happens. Until there is a suitable facility with lock and bars and a staff to keep the people there neither of these laws is going to work too well. If such a place is set up and these few people know that once they are there they are going to have to stay there... But as long as they know they can get away, they will do it."

Dr. H. Z. Giffin: "How is this new law better than the old one?"

Fleming: "It simplifies the commitment procedure considerably. I don't think it has made any change in the site where they will be kept. The State San didn't work out as a suitable place to lock these patients up. We did hope that the State Mental Hospital at Anoka would be a suitable place to put these people, but their staff is not anxious to take these people. The St. Cloud Reformatory is not suitable."

Giffin: "Why can't the State San do it?"

Fleming: "They don't want to, for one thing. They have difficulties with their staff. The nurses threaten to quit if they have to take care of these patients.

Dr. Viktor Wilson: " We have one here that is already under court order. We have a little game of cat and mouse going on. I am the cat. He walked out of the san and unless we have some place to put him where he can be kept he is just going to ignore the law. So far as I can tell he is a criminal at heart and he is going to stay that way. We have another family where the father in the family about three years ago decided that he was not going to cooperate any longer and he told - that at that time he wouldn't do anything until he was forced by law. He did cooperate for a time to the extent of staying out in his rural place and not mixing with the public. His wife and sons lived there with him. One son now has tuberculosis. He had an x-ray when he was called up for army examination. His wife quit her job in town here and the employees at the place said she was coughing up blood. She won't cooperate to the extent of getting an examination, so we don't really know. This morning one of the local doctors called me to say that one of the neighbors has tuberculosis, positive sputum. Just how much he may have associated with this man, I don't know."

Sweetser: " What about the one who you said was a criminal at heart? Could they send him up to St. Cloud for something else and keep him there for TB?"

Wilson: "No, he is not a criminal, but he has no intention at all of conducting himself so as not to expose other people to tuberculosis."

Fleming: "We have had pretty good cooperation from the county attorneys. They are the assistants to the local health officer in committing these people. In most instances the county attorney is quite willing to go through the rigmarole of these laws, but when the patient comes home after being sentenced to one of those institutions they lose interest."

Wilson: "I could call up the sheriff right now and he would go and pick this guy up if we only had a place to keep him. But if he is going to beat the sheriff back home, what's the use? That actually happened in Dodge County. So far as the State San is concerned, I don't know. I worked up there, as Dr. Chesley said, for two years. I think it is largely a matter of wanting to do it."

Giffin: "Is there any way in which the State San can be required to do it?"

Wilson: "Obviously there are some difficulties in doing it, but I think that could be worked out."

Dr. Netz: "Doesn't the help quit? The personnel doesn't want these patients."

Fleming: The nurses don't like to take care of these people. Some are people that drink a lot and

break things up when they get a chance. Nobody wants to take care of them."

Wilson: "What about the State Prison? They have a hospital at the State Prison and could keep them from leaving."

Fleming: "You recall we had a meeting last October on something like that and at that meeting we had the other State agencies, and under this law we discussed the State mental hospitals and St. Cloud and it seemed there was a wing at Anoka and they were going to use that. But that fell through and there didn't seem to be any particular reason why St. Cloud couldn't be used. The have a dispensary within the walls there. They wouldn't be exposing other prisoners to tuberculosis, which is against the law."

Sweetser: "What about Stillwater? That is what he was asking about. How about having a motion that we approach the Department of Public Institutions asking what they are going to do about it? I think a letter from the State Board of Health might help a little."

Behmler: "Do you want to make that as a motion?"

Sweetser: "Yes."

Netz: "I'll second it."

Barr: "A bill was passed creating a commission composed of one Senator and one Representative and the remaining eight members to be appointed, I believe, by the Governor, to make a survey of the State's tuberculosis facilities. I think that you will find that when this discussion came up before because of all these laws and changes and discussions coming in and all of these groups, they just slackened back. Anoka was asking for enough money to build a separate unit. It is inconvenient to take care of these people and the loss of personnel is not so much due to these people but having difficulty in getting personnel anyway.

Sweetser: "That is their responsibility. I should think that a letter from this Department to the Commissioner would get some results."

Barr: "Or the responsibility of the Department of Social Welfare. I think we should send a copy to the Division of Public Institutions and to the Interim Committee, too, and at least get them on the spot."

Wilson: "The Commission, I suppose, is to report back to the Legislature. That means two years more. We need it now. The doctors and the people and the neighbors don't understand why we can't lock these people up. The people are apparently way ahead of the laws."

Sweetser: "That ought to be a part of the letter."

Wilson: "I wouldn't think there would be much point in sending it to the Commission. I think we should send it to the State agency which has the responsibility."

Fleming: "I think the plan is to centralize them at this new building at Anoka."

Chesley: "Many years ago Dr. Bracken recommended that they have a small hospital inside the walls of the State Prison. When they found that their bluff stuck, they wouldn't need it any more. If the sheriff comes and gets them and brings them back they are going to beat the sheriff home. It is the old, old story and until something of that sort is done I think it will keep on right the way it is. I have circularized the sanitariums from time to time. With Dr. Hilleboe we presented a Joint Resolution to the Senate and the House at one time. In 1935 or something like that. Occasionally one of these fellows will be an alcoholic or use drugs or something of that sort and yet they are not mentally off the beam to the extent where you can commit them to an asylum. The State Board of Control when, we had one, used to have joint

meetings with the State Board of Health. Mrs. LaDu directed the Superintendent of the State Sanitarium to take steps and so on, but it never was done very effectively. The same thing was done in regard to Indians after we got the Indian wing. One fellow got a gentleman who was a county official at one time and quite a high man in his community and got out on habeas corpus. When you get down to brass tacks it is public opinion that has to control it. When you get an Indian woman who calls and says that a child who has been in the State San and has positive sputum has come home and she doesn't want him there. There was another extreme – a postmaster who defied everyone. They got him in for a while and then he moved to one of the other states and he died of tuberculosis. I doubt if there are a dozen cases at any one time in the State that would qualify for any such restraint as that. It does seem a shame that when we get down to 551 deaths a year, and that includes a lot of people in the State institutions, that we can't put the clamps on this thing and bring it down within reason, when a little while ago we had 2700 deaths per year. It is an economic problem anyway. I think this resolution that you propose couldn't do any harm it might cause a little reaction."

Behmler: "Is there any further discussion? We have a motion to be acted on."

Sweetser: "Dr. Fleming might call up the Department of Institutions every week and get in their hair until they do something. I am not joking. Then they might do something in desperation."

Fleming: "The thing that sometimes irritates me is that everyone thinks the State Board of Health is responsible for these people wandering the State. I think someone else should be getting some of the heat."[151]

The state looked for a single secure facility for recalcitrant patients. The attorney general gave power to the public institutions division of Social Welfare to designate an institution as the place for commitment. They chose Anoka State Hospital.

Keeping all recalcitrant tuberculosis patients at one place didn't work either. In 1955, Dr. Fleming and board members discussed the problem:

Boynton: "Nobody wants them."

Fleming: They are a problem to take care of. If it is set up as a jail, these people are still able to tear the doors out of the walls and disappear."

Giffin: "How many do you have in the State?"

Fleming: "Not more than four or five at a time. As long as they know they can break away and get back home before the sheriff, they stir things up." [152]

In 1955, legislation was passed creating a tuberculosis security facility at the Anoka State Hospital. The locked wards in this 30-bed unit made it possible to isolate contagious patients.[153]

TB – Mass Survey. Aggressive case finding was a large contributor to the reduction of tuberculosis in Minnesota. The Legislature provided the department with funds for mobile units, which traveled throughout the state, offering free chest x-rays to all citizens. This massive case-finding effort began in 1947, and Dr. Hilbert Mark, state tuberculosis control officer, was one of the chief organizers of the program.[154]

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[151] BOH, *Minutes*, April 31, 1951, MHS, pp. 95-102.
[152] BOH, *Minutes*, December 21, 1950.
[153] MDH, *Minnesota's Health,* Vol. 9, No. 8, November 1955, pp. 2-3.
[154] MDH, *Minnesota's Health,* Vol. I, No. 1, January 1947, p. 1.

Any abnormality found through mass screenings was reported back to physicians. The county public health nurse followed up to see if the patient was seen by a doctor. If he or she did not come in for a visit, the public health nurse visited the patient's home. Once a case was designated non-tuberculosis, further follow-up was dropped. [155]

Dr. Mark appears in the comics. This Smorgy strip was one of those used by the Minneapolis Tribune to publicize community X-ray surveys.

By 1948, 509,602 persons in the state had received a free x-ray through the mass-screening program for tuberculosis. By 1949, nearly all Minnesotans had had an opportunity to receive a chest x-ray.[156] By the end of 1950, nearly a million people – about a third of the population – had received an x-ray.[157] Out of each 1,000 x-rays, an average of five people would be identified as having positive tuberculosis, two had suspected tuberculosis and eight had other diseases discoverable by x-rays, including heart conditions, tumors and cancer.[158]

The case finding was successful, and tuberculosis deaths and cases began to decrease. Then, to Dr. Chesley's and other's dismay, the Legislature did not fund continued mass screening in 1951. Dr. Chesley and Dr. Mark commented on the situation:

> Dr. Chesley: "Now you got down to 502 deaths (TB) in 1949, so you can see there has been considerable progress made and it is only these last few years that we have had these means of picking out early cases, and certainly this is no time to let down on our TB control program. When you consider the cost for care of these cases....Get them early and then compare that with what it means on the long continued hospitalization and eventual death, as well as spread of infection to others. It seems to me we are getting along fine with it and this is a heck of a time to lose Dr. Mark. I don't know what we are going to do."
>
> Dr. Mark: "...even with the decreasing deaths, Minnesota has been one of the highest states in the number of cases found per death. Last year we found about six per annual death and the year before about seven. We have more beds filled with TB patients than ever before. And there are fewer vacancies, except in the small sanitariums. The larger institutions are running pretty close to capacity. St. Louis County found, during their first survey, that they had to increase their

[155] BOH, *Minutes*, August 1, 1950.
[156] MDH, *Minnesota's Health,* Vol. III, No. 5, May 1949, pp. 5-6.
[157] MDH, *Minnesota's Health,* Vol. VI, No. 5, May 1952, p. 3.
[158] MDH, *Minnesota's Health,* Vol. IV, No. 6, June 1950, p. 3.

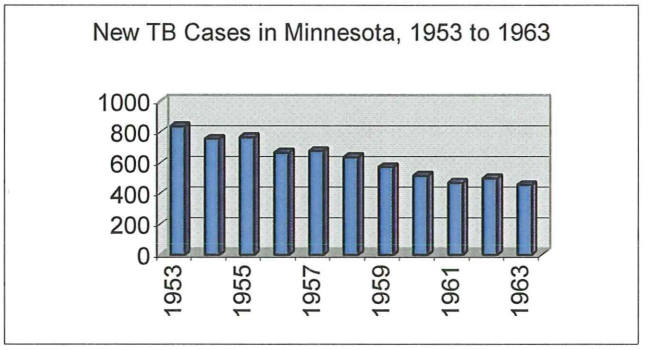
capacity. Now they have about a 35 or 40 bed vacancy. They are now taking over cases on a contract basis from other counties."[159]

Dr. J. Arthur Myers also advocated for continued case finding:

> ***"If we could find all infectious tuberculosis cases existing today, it would still be at least 70 years before the disease could be wiped out. From now on, we need to place emphasis on finding the tubercle bacilli themselves and keep on corralling them."***[160]
>
> **J. Arthur Myers, M.D., 1953**

Dr. David Smith, president of the National Tuberculosis Association and professor of bacteriology at Duke University spoke in St. Paul on April 12, 1954, and expressed his concern about the stoppage of x-ray programs in the states. He thought the decline in death rates was misleading, and the screening programs should continue until there was complete elimination.[161]

When the state's mass-screening program for tuberculosis ended in 1954, the equipment was dispersed. The x-ray equipment went to the Department of Public Welfare for twice-yearly surveys of all inmates in state hospitals and institutions. Another set of equipment was given to the University of Minnesota Student Health Service.[162]



With the loss of its tuberculosis mobile x-ray unit program, the department's role in tuberculosis control evolved into one of coordination and monitoring of patients. Dr. D. S. Fleming, chief of the preventable diseases section said:

> Perhaps the most important function of the Health Department in the control program is to act as a center for receiving information about persons with tuberculosis and for exchanging these reports with other workers and agencies concerned with other aspects of control of the disease. Thus, if the Veteran's Hospital discharges a man with tuberculosis to his home, this information is sent to the Health Department, which in turn notifies the health officer and the public health nurse in the Veteran's Home are, and supervision of the case is continued. This constant interchange of information is the key to successful control and prevention, involving and cutting across the special interests of all workers and agencies. Continuous effort and support from every possible source are needed if eventually we are to eliminate tuberculosis from Minnesota.[163]

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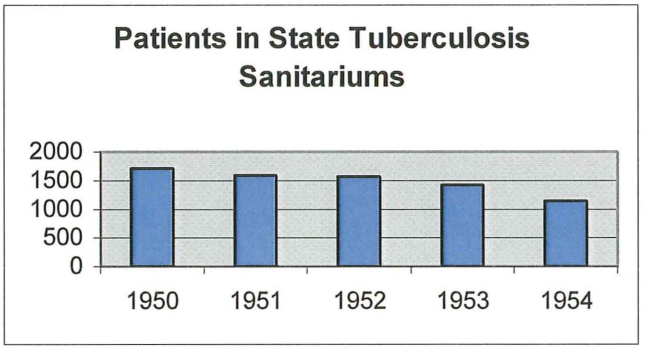
[159] BOH, *Minutes*, November 14, 1950.
[160] MDH, *Minnesota's Health,* Vol. VII, No. 10, November 1953, p. 4.
[161] MDH, *Minnesota's Health,* Vol. 8, No. 5, May 1954, p. 4.
[162] MDH, *Minnesota's Health,* Vol. 8, No. 10, November 1954, p. 3.
[163] MDH, *Minnesota's Health,* Vol. V, No. 11, November 1951, p. 2.

The department encouraged tuberculosis case finding in other ways. It joined with the Minnesota Medical Association and the Minnesota Hospital Association to advocate the use of routine hospital admission chest x-rays for patients. About one-fourth of all hospitals were participating in December 1954. A year later half were giving chest x-rays to all patients being admitted.[164] By 1961, 75 percent of the state's general hospitals provided routine admission chest x-rays for the detection of tuberculosis and chest abnormalities.[165] By January 1, 1964, 82 percent of the state's 188 general hospitals provided admission chest x-ray services.[166] This increased to 92 percent in 1967.[167]

Another method of case finding used was tuberculin tests. More than one million tuberculin tests were given from 1958 to 1962. Of these, slightly over 1.5 percent were positive.[168] Many of these tests were organized and sponsored by communities. For example, during the period from May 10 to May 14, 1954, 6,000 persons in Wright County received skin tests for tuberculosis and histoplasmosis.[169]



A study was undertaken in Polk County and the East Grand Forks area, as part of a U.S. Public Health Service study of tuberculin reactions in the general population. Dr. Carroll Palmer, who was conducting the study, believed that some reactions were due to the Battey strain and did not indicate tuberculosis. The population with the Battey strain was in the southeastern United States, so Minnesota was being used as a control. More than 20,000 Minnesotans were involved in this study in March and April of 1960.[170]

In 1957, the Legislature enacted a law that granted a county sanitarium commission authority to hire tuberculosis control officers.[171] Case finding was to concentrate on targeted groups: migrant workers, low-income groups where the incident was higher, and mental hospitals where the disease was often spread easily. One out of every seven tuberculosis deaths was a patient in a mental hospital in 1949. With no provisions for segregating patients, the disease was easily spread. In 1950, a 252-bed hospital for tuberculosis patients from state mental hospitals was opened in Anoka.[172]

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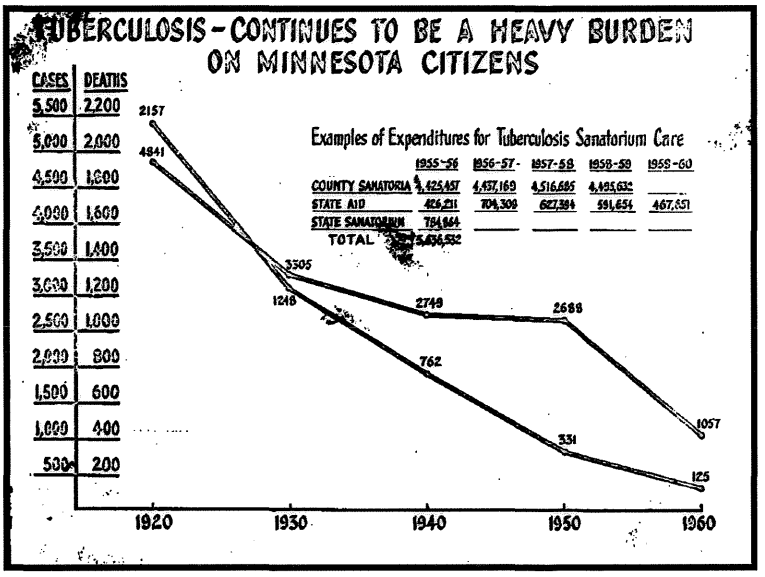
[164] MDH, *Minnesota's Health,* Vol. 10, No. 6, June-July 1956, p. 2.
[165] MDH, *Minnesota's Health,* Vol. 15, No. 5, May 1961, p. 3.
[166] MDH, *Minnesota's Health,* Vol. 18, No. 7, August-September 1964, p. 1.
[167] MDH, *Minnesota's Health,* Vol. 21, No. 9, November 1967, p. 4.
[168] MDH, *Minnesota's Health,* Vol. 17, No. 6, June-July 1963, p. 4.
[169] MDH, *Minnesota's Health,* Vol. 8, No. 6, June 1954, p. 2.
[170] BOH, *Minutes*, January 12, 1960, MHS, p. 9.
[171] BOH, *New Dimensions for Minnesota,* 1976, pp. 21-22.
[172] MDH, *Minnesota's Health,* Vol. V, No. 4, April 1951, pp. 1-2.

TB – Closing of Sanitariums. Because of a decline in cases, in 1949 legislation was passed permitting the closing of small county sanitariums no longer needed for tuberculosis patients. Deerwood Sanitarium, serving Crow Wing and Aitkin counties, was the first to close. It was converted to a nursing home.[173]

There were 15 county TB sanitariums in 1951, and they were reduced to five by 1961. The remaining five were Mineral Springs at Cannon Falls; Nopeming in St. Louis County; Ancker Hospital in Ramsey County; Riverside in Granite Falls and Sunnyrest in Crookston. Cost for care was $27.65 per day at Glen Lake and $25.00 per day at Nopeming in 1960. Tuberculosis patients were also cared for in the Veterans Administration Hospital at Fort Snelling. Sunnyrest Sanitarium at Crookston closed July 1, 1967, after 50 years of continuous treatment of tuberculosis.[174] By 1969, only two county sanitariums remained – Nopeming near Duluth and Mineral Springs at Cannon Falls.[175]

Up until 1962, Ah-Gwah-Ching at Walker had been the state sanitarium, but it was converted to an institution for the care of non-psychotic mental patients. On January 1, 1962, Glen Lake became the state tuberculosis sanitarium.[176] A total of 564 patients remained in sanitariums in 1962.[177] With the closure of TB sanitariums, private physicians began caring for an increasing number of tuberculosis patients. The department's medical laboratory provided them with technical laboratory support.



Graph used to demonstrate to the Legislature the value of tuberculosis preventive efforts

Legislation in 1963 authorized a grants-in-aid program that enabled the board to assist counties in the development of local tuberculosis control programs, especially outpatient clinics. As of March 15, 1964, seven tuberculosis outpatient clinics were operating or approved: The seven facilities served 36 counties. They were: Mineral Springs Sanitarium in Cannon Falls, Nopeming Sanitarium near Duluth, Ramsey County Pavilion in St. Paul, Sunnyrest Sanitarium in Crookston, Hennepin County Chest Clinic in Minneapolis, Riverside Out-Patient Clinic in Granite Falls, and Central Minnesota Out-Patient Clinic in St. Cloud. The local tuberculosis control programs were under the direction of county sanitarium

[173] MDH, *Minnesota's Health,* Vol. V, No. 4, April 1951, pp. 1-2.
[174] MDH, *Minnesota's Health,* Vol. 21, No. 9, November 1967, p. 4.
[175] MDH, *Minnesota's Health,* Vol. 23, No. 8, October 1969, p. 1.
[176] MDH, *Minnesota's Health,* Vol. 15, No. 8, October 1961, p. 1.
[177] BOH, *Minutes*, May 23, 1962, MHS, p. 214.

commissions. The out-patient clinics assisted local physicians with diagnostic problems, served as evaluation centers for known cases, provided consultation with a chest specialist on a referral basis, and focused on case finding.[178] An out-patient clinic was added in Bemidji in 1965.[179]

TB – Cooperative Worldwide Effort. While cases had declined, tuberculosis was considered the most important infectious disease confronting public heath officials in Minnesota in 1962. The previous year, 1961, there had been 97 deaths from tuberculosis. Tuberculosis was expensive for the state. In 1960 an estimated $5 million in public funds was spent for tuberculosis problems. This did not include funds spent for the burns unit at Anoka, the state sanitarium or the cost to take care of American Indians with tuberculosis.[180] Research and studies on tuberculosis were done at the University of Minnesota Medical School, the Mayo Clinic in Rochester and the Minneapolis General Hospital.

Public health workers emphasized Minnesota couldn't operate independently. The department's newsletter stated, "When American servicemen are stationed in countries where TB is rampant, the world problem becomes our problem."[181]

The fight against tuberculosis was a group effort, involving county boards of welfare and county commissioners, public health agencies, voluntary agencies and private practitioners of medicine. A voluntary agency that played an important role in the reduction of tuberculosis in the state was the Minnesota Tuberculosis and Health Association. It had chapters in all 87 counties. This organization gave support and aid, getting funds through the sale of Christmas seals.

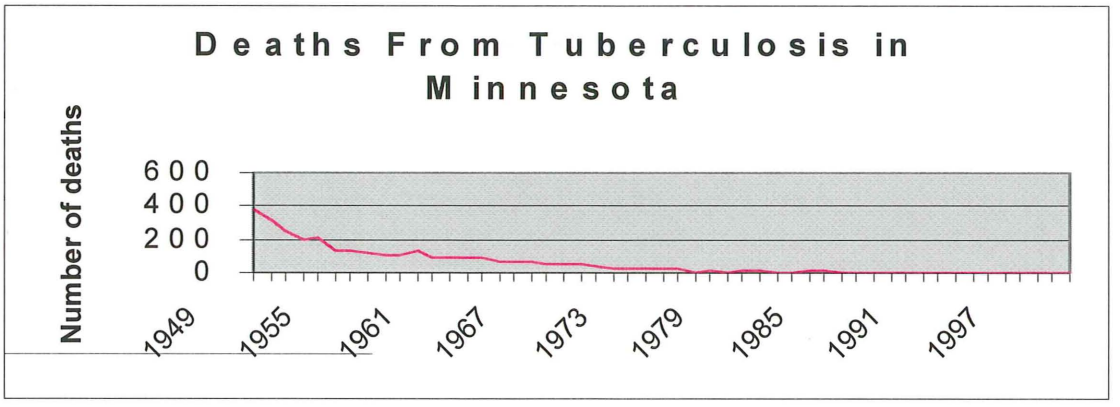
Several state agencies worked together to control tuberculosis: Public Welfare was responsible for the state institutions; Health maintained a case registry of infected persons and conducted follow up activities; Education was responsible for rehabilitating patients; and the Minnesota State Livestock Sanitary Board was responsible for control of tuberculosis in animals.[182] Effective July 1, 1969, Public Welfare's tuberculosis control section was transferred to Health. The department assumed control for tuberculosis control in all state institutions and general administration of the contract with the federal government for the care of tuberculosis patients on land owned by American Indians. Welfare retained responsibility for the direction of the state sanitarium at Glen Lake and assistance to non-residents with tuberculosis. [183]

Minnesota received national kudos for its work on tuberculosis. A representative of the U.S. Public Health Service said:

> No other state has worked more vigorously than Minnesota to banish tuberculosis. Progress in controlling tuberculosis has been achieved here because you have been wise enough to adopt a

[178] MDH, *Minnesota's Health,* Vol. 18, No. 5, May 1964, p. 1.
[179] MDH, *Minnesota's Health,* Vol. 19, No. 5, May 1965, p. 1.
[180] BOH, *Minutes*, December 19, 1960, MHS, p. 421.
[181] MDH, *Minnesota's Health,* Vol. 8, No. 7, July-August 1954, p. 4.
[182] MDH, *Minnesota's Health,* Vol. 15, No. 8, October 1961, p. 1.
[183] MDH, *Minnesota's Health,* Vol. 23, No. 8, October 1969, p. 1.

coordinated cooperative approach to the problem. It is your working partnership of professional and voluntary organization of public and private institutions that has cut the mortality rate so drastically. Physicians alone can't control tuberculosis. The final responsibility for complete eradication rests with the entire community." [184]



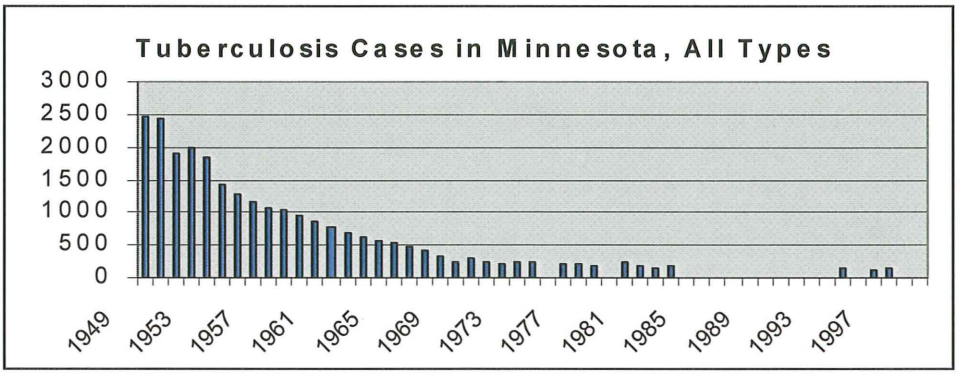
While the control of tuberculosis was a community effort, a number of individuals deserve special recognition. Dr. Mary Ghostley was the director of the Lake Julia Sanitarium at Puposky from 1930 until it closed in December 1952. She promoted school tuberculin tests, chest x-rays of reactors and education.[185] Dr. Walter J. Marcley devoted his life to fighting tuberculosis, beginning as the director of the first state sanitarium in the country at Rutland, Massachusetts in 1897. He was the first superintendent of Minnesota's first state sanitarium at Walker in 1907. In 1941, he began working for the department as a tuberculosis consultant to the Board of Health, the department and physicians and health officers throughout the state.[186] Dr. Ejvund Fenger headed the tuberculosis control program at the Public Welfare and Health departments. He died in 1969, after devoting his life to the field of tuberculosis control.[187]

TB – Resurgence. Tuberculosis reached a historical low of 91 cases (2.2 per 100,000 population) in 1988, but the downward trend reversed itself. In 1999, 201 new cases (4.3 per 100,000 population) were reported in Minnesota. This is the largest number since 1980.[188] Minnesota's upward trend in tuberculosis cases does not match the national trend in which the incidence of tuberculosis has declined since 1993.

The majority of new tuberculosis cases in Minnesota in the 1990s occurred in the seven-county metropolitan area. Data suggested the increase was related to increased immigration to Minnesota, as 67 percent of the new cases from 1995 to 1999 were foreign-born. The percentage of new TB cases that were foreign born increased to 78 percent in 1999.[189] Managing the disease presented cultural challenges. For example, people in the Somalia community believed tuberculosis was incurable and tended to

[184] MDH, *Minnesota's Health,* Vol. V, No. 12, December 1951, p. 3.
[185] MDH, *Minnesota's Health,* Vol. VII, No. 4, April 1953, p. 3.
[186] MDH, *Minnesota's Health,* Vol. 9, No. 4, April 1955, p. 2.
[187] MDH, *Minnesota's Health,* Vol. 23, No. 8, October 1969, p. 1.
[188] MDH, *Disease Control Newsletter,* Volume 28, Number 1, January/February 2000, p. 1.
[189] Ibid.

keep the disease a secret. People from the Vietnamese community, on the other hand, spoke candidly about tuberculosis and readily sought treatment.[190] To address the growing problem of tuberculosis, Commissioner Anne Barry created a special task force on tuberculosis.



A challenge to the control of tuberculosis in the 1990s was one foreseen 30 years earlier in the department. The department's October 1961 newsletter warned:

> ***"If tuberculosis is to be eradicated it must be done before the bacillus produces so many drug resistant mutants that drug therapy is no longer effective."*** [191]
>
> ***Minnesota's Health***
> **October 1961**

Of the TB cases identified in the last five years of the century, 16 percent were resistant to TB drugs.[192]

Animal-to-Man Diseases

In the 1940s and 1950s the department increased its emphasis on the investigation and control of animal-to-man diseases. As director of the department's laboratory, Dr. Henry Bauer was one of the detectives who hunted down the sources of all diseases in Minnesota, including those transmitted through animals. Dr. Bauer pointed out that any disease transmittable to lower animals is potentially a threat to people. Those known to cause disease in humans, existing in Minnesota, included brucellosis, toxoplasmosis, bovine tuberculosis, Q fever, anthrax, trichinosis, tularemia, rabies, salmonella infections and psittacosis.

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[190] American Lung Association of Minnesota, *Breathe Easy,* "TB on Increase in Minnesota," Vol. 1, No. 2, Winter 2000, pp. 1 and 4.
[191] MDH, *Minnesota's Health,* Vol. 15, No. 8, October 1961, p. 1.
[192] MDH, *Disease Control Newsletter,* Volume 28, Number 1, January/February 2000, p. 1.

To help with the challenge of animal–to-man diseases, in the 1950s Dr. Joe R. Held, a veterinarian from the U.S. Public Health Service, was brought in to study the relationship between humans and animal diseases. He worked with the department's divisions of disease prevention and control and medical laboratories, the state Livestock Sanitary Board, Minnesota Livestock Breeder's Association, the University of Minnesota School of Veterinary Medicine, and private practicing veterinarians.[193] Together they focused on the source of disease – be it animal or human – and control.

Minnesota became one of three centers in the Western Hemisphere that participated in a worldwide information and training program on animal-to-human diseases. The department and the University of Minnesota's veterinary medicine and medical schools were chosen by the World Health Organization for this center. The head of the center was Dr. Wesley W. Spink, professor of medicine at the University of Minnesota School of Medicine, and expert on brucellosis. One of the department's main contributions was an extensive collection of epidemiological data on brucellosis.[194]

Brucellosis

By 1949, as a result of antibiotics, there had been no deaths from brucellosis in the Minnesota population since 1944. Brucellosis, an infectious disease sometimes called "Bang's disease" in cattle and "undulant fever" in humans, still caused disability and illness to the 300 and more cases that occurred each year. There were two agreed-upon reasons for the continued existence of the disease: the sale of raw milk in the state and infected cattle herds. These were the two areas the department targeted.

Public health workers had been imploring the public not to drink raw milk for as long as the department existed. In 1873, Dr. William Budd, early authority on typhoid fever said, "Drinking unboiled milk is like eating raw meat and is open to consequences of the same pathological order."[195]

In 1949, unpasteurized milk was still being sold in the state. In addition to brucellosis, it could carry typhoid and paratyphoid fevers, scarlet fever, septic sore throat, food poisoning, diphtheria, dysentery and tuberculosis. Health workers advocated pasteurization – heating the milk to 143 degrees F. for 60 minutes or 160 degrees F. for 30 minutes – to kill the germs.

Not everyone supported the pasteurization of milk. A pamphlet, "The Truth About Pasteurized Milk," circulated in 1949. It decried the loss of nutritional value in pasteurized milk and discredited the work done by the department. The pamphlet was produced by the "National Nutrition League," an agency in Seattle. Health department staff made a phone call and discovered there was no such organization. The address

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[193] *St. Paul Pioneer Press*, "Job for a Team," January 6, 1957.
[194] MDH, *Minnesota's Health,* Vol. V, No. 3, March 1951, pp. 1-2.
[195] MDH, *Minnesota's Health,* Vol. III, No. 2, February 1949, p. 3.

given was that of a stationery store, being used as a front. The U.S. Public Health Service was contacted, and it obtained suspension of the publication and got copies on hand destroyed.[196]

State legislation passed in 1949 required all milk and all fluid milk products sold on or after July 1, 1950, to be pasteurized.[197] Even before the legislation, the number of persons drinking raw, unpasteurized milk had dropped significantly. The estimated number of cases of brucellosis contracted from drinking raw, unpasteurized milk was 85 percent in 1947. In 1949, only 25 percent of all cases were believed to be contracted from raw milk.[198]

As milk was no longer responsible for transmitting most of the cases of brucellosis, in 1950, Dr. Dean Fleming, director of the disease prevention and control division; and Dr. Wesley Spink, University of Minnesota professor and expert on the disease; identified brucellosis as an occupational disease. Infected persons tended to be cattle raisers, packing plant employees and veterinarians.[199] In 1956, 47 of the 63 cases were packinghouse workers or farmers.

At a board meeting in 1950, Dr. Barr said, "The statement was made – I don't know how much truth there is in it – that Gov. Youngdahl wasn't interested in this program until someone told him that a number of the cases in his mental institutions may have been victims of brucellosis." [200] The governor created a committee on brucellosis, comprised of: Mr. Frank B. Astroth, Minnesota Livestock Breeders Association; Dr. W. W. Spink, University of Minnesota; Dr. Gaylord W. Anderson, University of Minnesota; L. D. Peckham U.S. Public Health Service, and Dr. R. N. Barr, Minnesota Department of Health.[201]

Like many others, Dr. Robert Barr, executive officer for the department, believed the only way to eradicate brucellosis in humans was to get rid of Bang's disease in animals. A statewide plan to eliminate brucellosis in cattle had been adopted in 1939, and testing of herds began the same year. Costs were shared by the federal government through the U.S. Department of Agriculture. The program didn't get fully under way, however, until after the war years. By May 1, 1949, 28 counties were "modified accredited disease free areas." A county was declared modified brucellosis free, if the number of reactor animals in the country did not exceed 1.0 percent and the percentage of herds infected did not exceed five.[202] The Minnesota Livestock Sanitary Board recommended that all cattle in the state be tested and those that tested positive be slaughtered.[203]

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[196] BOH, *Minutes*, January 25, 1951, MHS, p. 50.
[197] MDH, *Minnesota's Health,* Volume 11, No. 2, February 1957, p. 3.
[198] MDH, *Minnesota's Health,* Vol. III, No. 10, October 1949, p. 2.
[199] BOH, *Minutes*, August 1, 1950, MHS, p. 326.
[200] Ibid.
[201] Ibid., pp. 324-326.
[202] MDH, *Minnesota's Health,* Volume 11, No. 2, February 1957, p. 2.
[203] MDH, *Minnesota's Health,* Vol. II, No. 8, August 1948, pp. 3-4.

Legislation in 1951 required all cattle over six months old to have certification proving they were free of brucellosis in order to be sold.[204] Minnesota herds were expected to be clean within five years. Other agencies joined the campaign. The theme of the Minnesota Public Health Conference (now the Minnesota Public Health Association) on September 28 and 29, 1951, was brucellosis and the quality of milk.[205]

Like so many aspects of public health, brucellosis was an economic issue, as well as a health issue. Brucellosis was a costly expenditure to the livestock and dairy industry. Unchecked, brucellosis could have disastrous consequences for the dairy industry. Because of it, Minnesota was already unable to sell milk in some states. Dr. Robert N. Barr, chief of the special services section, stated:

> ***"I think it is an accepted recommendation in both the feeders and shippers of dairy cattle and the dairy people that there must be more done in the control of Brucellosis, if Minnesota is going to retain and regain its status as a milk producing state."*** [206]
>
> **Dr. Robert Barr, 1959**

Based on USDA estimates, brucellosis was costing the livestock industry about $4 million annually in Minnesota.[207] The eradication program from 1946 to 1957 cost far less. At a total cost of $9 million for those 12 years, the annual cost was about $831,000 a year – a far cry from $4 million.[208] The gains also included better production. Despite a reduction in infected cattle, milk production increased markedly. There were 3,636,000 cattle in Minnesota in 1946. This compared to 4,018,000 in 1956.[209] Other benefits not measured include person-hours saved, and prevention of human suffering.[210]

The effort to reduce brucellosis was a joint effort, as noted in a 1957 issue of *Minnesota's Health*:

> Success of the eradication and control program is closely associated with the close working relationship and subsequent accomplishments of the Minnesota Live Stock Sanitary Board and the Minnesota State Board of Health. The two agencies also received the far-sighted cooperation of such groups as legislators, physicians, veterinarians, county agents, and the livestock owners through organizations such as the State Livestock Breeders Association, the Minnesota Farm Bureau, and others.[211]

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[204] MDH, *Minnesota's Health,* Vol. V, No. 5, May 1951, p. 4.
[205] BOH, *Minutes*, July 23, 1951, MHS, p. 227.
[206] BOH, *Minutes*, August 1, 1959, MHS, pp. 324-325.
[207] MDH, *Minnesota's Health,* Volume 11, No. 2, February 1957, p. 3.
[208] Ibid.
[209] Ibid.
[210] BOH and Minnesota State Livestock Sanitary Board, "A Milestone Toward the Eradication of Brucellosis in Minnesota," 127.H.12.8F, BOH, *Minutes* attachment, MHS, pp. 181-182.
[211] MDH, *Minnesota's Health,* Volume 11, No. 2, February 1957, p. 2.

In 1957, all 87 counties in Minnesota were certified as modified brucellosis free, and Minnesota became an accredited state. Dr. Henry Bauer, director of the medical laboratories division, described the accomplishment as:

> ***"...a beautiful illustration of what years of work, coordination, good planning and stick-to-itiveness results in."*** [212]
>
> **Henry Bauer, PhD, 1957**

Deaths from and cases of brucellosis steadily declined in the 1950s and 1960s. While there had been 149 cases of brucellosis in humans in 1954, there were only 19 cases in 1961.[213] The last death from human brucellosis was reported in 1963.[214] In 1969, 11 cases were reported.[215]

In 1978, Dr. J. G. Flint, secretary and executive officer of the Minnesota Livestock Sanitary Board, reported that Minnesota had been certified free of bovine brucellosis since July 9, 1970.[216]

Rabies

In 1949, rabies was not a significant health concern. A case of human rabies had not been reported since 1917, and the state was relatively free of animal rabies. There were no cases of animal rabies in 1943, 1945 and 1946. Of the 104 cases reported between 1940 and 1950, all but five were in domestic animals. [217]

The situation began to change early in the 1950s. Dr. Dean Fleming noticed it: "We seem to be sitting on a powder keg so far as this rabies situation in concerned." He questioned whether there should be a program to eradicate skunks, as many of the cases involved skunks.[218] A case in a dog was reported in November 1950, and during the next year cases were discovered in cattle, cats, civet cats, gophers, horse, fox, groundhog, muskrat, raccoon, in addition to skunks and dogs.[219]

While there were five cases of animal rabies in 1948, there were 245 cases in 1951 and 264 in 1952.[220] It had reached epidemic proportions and affected the whole state. Rabies was considered a greater problem than polio. Rabid skunks were reported as attacking people and chasing children.[221] Rabid animals appeared throughout the

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[212] BOH, *Minutes*, July 30, 1957, MHS, p. 124.
[213] MDH, *Vital Statistics Minnesota, 1954* and *1961*.
[214] Ibid., 1963.
[215] Ibid., 1969.
[216] *Duluth News and Tribune,* "St. Paul: Minnesota Certified Free of Brucellosis Since 1970," November 4, 1978, p. 2A.
[217] MDH, *Minnesota's Health,* Vol. 18, No. 2, February 1964, p. 3.
[218] BOH, *Minutes*, December 21, 1950, MHS, pp. 539-542.
[219] BOH, *Minutes*, October 16, 1951, MHS, pp. 313-318.
[220] MDH, *Minnesota's Health,* Vol. VII, No. 2, February 1953, pp. 3-4.
[221] BOH, *Minutes*, July 23, 1951, MHS, pp. 215-217.

state, including metropolitan areas. A skunk was captured at 55th and Colfax in Minneapolis.[222] A rabid cat appeared at 42nd and Pillsbury in Minneapolis.[223]

New rabies regulations became effective January 27, 1953. Regulation 1100 required that the attending physician or health officer determine as soon as possible if the person attacked should receive treatment. The suspected animal was to be observed two weeks and not killed unless it could not be safely secured.[224]

Education of the public was a critical method of intervention with rabies. A pamphlet for distribution was prepared in collaboration with the Twin Cities Veterinary Society and the Livestock Sanitary Board.[225]

Department staff were dismayed when, in the midst of their efforts to protect the public from rabies, Allen Gray, a WCCO radio announcer, read an article on the air which questioned whether rabies existed. The article, "Rabies – Fact or Fancy," was produced by Nature's Path magazine in New York. Veterinarians, representatives of the department and other listeners called to complain. Dr. Dean Fleming, director of the disease prevention and control division, wasn't quite satisfied with the response. He said that Allen Gray "retracted his statements in such a way that it sounded as though he was being awfully put upon by the authorities."[226]

Allen Gray wrote to Dr. Chesley and explained his act:

> ...I assume you've since read the article quoted, and you must certainly admit that to the layman it appears unusually well documented. That is precisely the way it was presented, even to the qualification that we had never previously heard of the magazine, could not vouch for its authenticity, did not necessarily presume it to be true, but that it was, if true, rather startling. The press and radio is flooded with amazing claims of new medical discoveries, therapies and wonder drugs. And for that reason it's difficult to draw the line between fact and controversy....I promise in the future to get in touch with medical authorities before launching into that kind of story.[227]

While the radio message might have hurt the department's fight against rabies in this case, the media were of great help in tracking a rabies case four years later. A doctor from Le Mars, Iowa had phoned the department to report that rabies had been found in a dog that had bitten a 14-year-old boy. The boy and his father were on their way to Minnesota when they stopped at Le Mars to look at a trailer that was for sale. A dog bit the boy, and after first aid, the two continued their trip to Moorhead, Minnesota. The dog died and examination of the brain at Iowa State College revealed rabies. Trying to locate the boy quickly, the newspapers and radio stations made many announcements. Relatives of the boy, listening to a Sioux Falls, South Dakota, station, heard the report

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[222] BOH, *Minutes*, February 5, 1952.
[223] BOH, *Minutes*, May 15, 1957, MHS, p. 69.
[224] MDH, *Minnesota's Health,* Vol. VII, No. 2, February 1953, pp. 3-4.
[225] BOH, *Minutes*, May 28, 1951, MHS, p. 183.
[226] BOH, *Minutes*, October 16, 1951, MHS, pp. 313-318.
[227] Letter from Allen Gray to A. J. Chesley, M.D., October 2, 1951.

and called the family. Within a few hours the boy was being treated to prevent rabies.[228]

WCCO, KSTP and WTCN radio stations and the Minneapolis Star and Tribune and the St. Paul Dispatch and Pioneer Press newspapers all received letters of appreciation from the department for their assistance.[229]

The number of rabies cases in the state reached an all-time high in 1958 when 461 cases from 77 counties were reported.[230] Half of these involved skunks, but raccoons, squirrels, foxes, gophers, cattle, cats, dogs, swine and horses were affected as well. Minnesota was second only to Texas in the number of cases of animal rabies. Though there were no human cases in 1958, at least 260 people received anti-rabies vaccination treatment.[231]

Rabies was an economic problem to farmers who would have to destroy milk-producing cows or other livestock. The treatment of 14 injections given under the skin of the abdomen on 14 successive days was costly and unpleasant and carried a risk of severe reaction for humans.

With so many cases of animal rabies in the state, the department was expecting a case of human rabies. It happened in 1964. A ten-year-old boy in Wabasha County was bitten on the wrist and fingers by a skunk early in the morning, as he was sleeping in a tent with two other children in the farmyard.[232] Treatment was begun immediately, but the boy developed rabies and died a month later. The 1964 death was the first in Minnesota since 1917. A second death occurred in 1975, and there were no human deaths from rabies in Minnesota between 1976 and 1999.

"Parrot Fever" (Psittacosis /Ornithosis)

At the January 25, 1951, board meeting Dr. Viktor Wilson, head of the Rochester district office, said:

> Just before Christmas my boy said, 'Can I get a parakeet?' And I said, 'No, it's against the law.' And he said, 'Well, there are at least 20 of my friends who have them.' So I started to investigate. There is a Mrs. H. raising and selling parakeets in Rochester and a dentist's wife, Mrs. L., doing the same, and another woman doing the same....Mrs. H. sold about 50 just before Christmas for Christmas presents. Some of the additional information I got was that there was one in Jim O'Connor's clothing store in the boys' department, and he said, 'They are safe; there is even one in St. Mary's Hospital.' Out at St. Mary's there were two polio patients, one in a respirator, Representative Madden's son, had a canary. The other boy, who had been in a respirator for 4 ½ years, had a parakeet. Well, I called up Dr. Fleming about the regulation and he said it is not being enforced. The regulation prohibits the importation, purchase, breeding, sale or giving away of birds of the psittacine family. I talked with people, and they said it is going

[228] MDH, *Minnesota's Health,* Vol. 9, No. 4, April 1955, p. 2.
[229] BOH, *Minutes*, March 17, 1955, MHS, p. 50.
[230] MDH, *Minnesota's Health,* Vol. 18, No. 2, February 1964, p. 3.
[231] MDH, *Minnesota's Health,* Vol. 13, No. 5, May 1959, pp. 1-3.
[232] BOH, *Minutes*, October 13, 1964, MHS, p. 506.

> on all over Minnesota. They say there is a woman in Fergus Falls, one in St. Charles, one in Winona, and many stores in the Twin Cities selling them.[233]

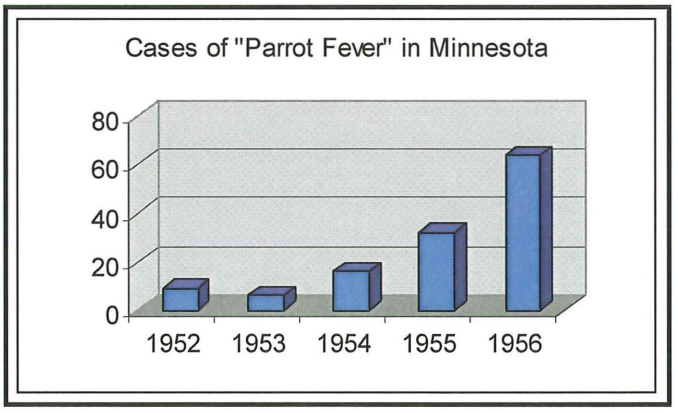
Dr. C. Barton Nelson, assistant director of disease prevention and control, added that parakeets, prohibited by state legislation, were listed in the classified directory of the telephone book.

The disease was brought to Minnesota in 1932 when a traveling carnival company gave parakeets or "love birds" as prizes. Later that year, there were 22 positive cases, one death and five suspected cases of psittacosis.[234] Four cases were reported in Minnesota between 1933 and 1949. A young boy in St. Paul who raised pigeons had a severe case of ornithosis in 1949.

A state health regulation prohibited the import and purchase, breeding, sale or giving away of birds of the psittacine family. As Dr. Wilson pointed out, the regulation was being openly ignored. The board debated whether it should even exist. "Parrot fever" was widespread among all birds, not just those of the psittacine family. The regulation was difficult or impossible to enforce. Under such circumstances the board decided there was no need to continue with the regulation. It was rescinded on May 23, 1952.

During the next few years, cases increased. The increase in cases was believed due to the popularity of parakeets and improved case finding. Symptoms resembled pneumonia, so in 1952 the department's public health laboratory began to test every sample with a diagnosis of virus pneumonia for psittacosis as well.[235]

Concerned over outbreaks of psittacosis in turkey flocks in other states, the Board of Health, the State Livestock Sanitary Board, the University of Minnesota School of Veterinary Medicine and the Minnesota Turkey Growers Association banded together to monitor the situation in Minnesota in 1957.[236]



There were a total of eight confirmed cases of psittacosis in Minnesota from 1972 through 1980. Then, the numbers increased. During the first 11 months of 1982 there were eight cases, and from December 1982 to February 1983 there were 15 cases in Minnesota. The department conducted tests of members of bird fancier clubs, workers at veterinary clinics and pet shop employees. The results indicated about a third or more were infected.[237]

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[233] BOH, *Minutes*, January 25, 1951, MHS, pp. 50-51.
[234] MDH, *Minnesota's Health,* Vol. 11, No. 4, April 1957, pp. 1-3.
[235] Ibid., p. 3.
[236] Ibid., p. 1.
[237] *St. Paul Pioneer Press,* "Bird-Carried Disease Proving Widespread," February 18, 1983, p. 1C.