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RE Proposal P1007 – Review of Raw Milk and its Products

Whenever the case for the pasteurisation of milk is considered, the alternative option of certified raw milk should also be considered. It is often unknown by the majority of people however, this is a very credible alternative that should be considered. Below is an extract from *The Untold Story of Milk* by Ron Schmid, ND, that provides information about these two options and that the certified raw milk option was initially considered the superior choice until the parties behind the solution to unhygienic milk separated into two factions.

“Certified raw milk, supported by a significant percentage of the medical profession and with strong support from legislators and the public, had been established as the standard to which all other milk was compared. Though more and more milk was being pasteurized, pasteurization was seen by many as a stopgap measure that would no longer be needed once the production and distribution of milk was more carefully regulated.”

Pasteurize or Certify: Two Solutions to "The Milk Problem"

By the last decade of the nineteenth century, a growing number of influential people throughout the country believed that American cities had a milk problem. Articles exposing conditions in the so-called swill dairies—urban confinement dairies in which cows in appalling conditions were fed swill from the liquor distilleries—had been followed by the work of other reformers. The yearly death rate of infants in US cities remained around fifty percent of the yearly birth rate, and it was widely believed that this was due at least in part to the poor quality of much of the milk available to the poorer people in the cities. The situation was known as "the milk problem." Politicians spoke of it, journalists wrote of it, and physicians complained of it. But no one did much about it until Henry Coit and Nathan Straus came along. The two men shared deep concerns about the high incidence of infant mortality and the goal of providing safe and healthy milk for the nation's cities.

Coit, a medical doctor, was the founder of the first Medical Milk Commission and the certified milk movement, which resulted in the availability of safe raw milk from regulated dairies for physicians, their patients and the public. Straus, a businessman turned crusader-philanthropist, was the founder and subsidizer of New York City's Milk Depots, outlets that provided pasteurized milk at low cost for the city's poor; he became the chief advocate and spokesperson for the compulsory pasteurization of all milk. At first, Straus exempted certified raw milk from his demand for compulsory pasteurization, but by around 1910 he was insisting that even certified milk must be pasteurized to be safe.

Initially, from around 1890 to 1910, the movements for certified raw milk and pasteurization coexisted and in many ways even complemented one another. From about 1910 until the 1940s, an uneasy truce existed. Certified raw milk, the legacy of Henry Coit, was available for those who wanted it, while the influence of Straus and his allies saw to it that most states and municipalities adopted regulations that required all milk other than certified milk to be pasteurized.

Certified Raw Milk

In 1889, Henry Coit, MD, of Newark, New Jersey, asked the Medical Society of New Jersey to formally investigate what was considered to be an urgent, fundamental question: how do we secure clean milk for our patients and the public? Coit's concern grew in part out of his own experience. For two years he had sought sources of good milk for his own infant son, whose mother had been unable to breast feed successfully. His search culminated in a small suburban dairyman who kept four cows and delivered milk daily to the Coit household. "An honest and industrious man, but without knowledge of hygiene, he became unwittingly a dangerous element in my family life," Coit later said. "The factors of surety and safety for me were destroyed when, on visiting his farm, I found three cases of diphtheria in his house, and he was the patients' caretaker for the night and the dairyman of all work during the day."

The Society formed a committee of forty-two physicians to "inquire into the relations, if any existed, between the mortality among infants in large centers of population and the milk supply. After two years' work, in 1891, the Milk Committee discontinued their futile efforts, having demonstrated the helplessness of ordinary measures to accomplish for the cause of pure milk what physicians require. The State Dairy Commissioner wrote, 'Such a radical reform as you desire in the production and handling of milk may not be accomplished in our generation.' This aroused my indignation. I then devised a plan for a professional body composed of physicians, which should first educate, then encourage, and finally endorse, the work of dairymen who would bring to us milk designed for the most exacting needs of physicians." The plan included a legal contract the dairymen were to agree to, specifying the details about how the milk would be produced, inspected and certified.

Coit then enlisted several other physicians and together they formed the Essex County Medical Milk Commission in April, 1893. Professional dairy experts to act as consultants were selected, and the group then sought and found the first dairyman who would promise to fulfill the requirements of the contract, Stephen Francisco, of Caldwell, New Jersey. Thus was born the first Medical Milk Commission and the certified milk movement.

Coit's plan included three general requirements. First, physicians in the local medical society were asked to select the members of a Medical Milk Commission and support their efforts to bring to the city in which they lived a supply of milk produced under conditions that would assure purity. Second, "approved and trustworthy dairymen possessing honor" would be induced, by reason of promised medical support and an increased price of their milk, to produce and handle their milk in accord with the requirements imposed by legal contract with the Medical Milk Commission. Third, the duties of the Commission would include setting standards of purity for the milk, conducting periodic inspections of the dairies providing the milk, and providing for periodic examinations of the animals and the employees of the dairy by competent physicians. The milk produced was to be subjected to periodic chemical analyses, and to bacterial counts made under the direction of the Commission. The milk was required to be entirely free of pathogenic organisms. Coit coined the term "Certified Milk" to distinguish milk produced through the operation of his distinctive plan.

He had created a private organization of physicians to do what the local or state government had not. Other cities throughout the country began forming Commissions, and in 1906 the Medical Milk Commissions were federated into the American Association of Medical Milk Commissions. In 1909 the governor of New Jersey signed into law the Medical Milk Commission Law, passed unanimously by the New Jersey Senate and House, save one negative vote in the House. The law protected the professional interests of the Milk Commissions in the state and every feature of their activity.

Certified raw milk, supported by a significant percentage of the medical profession and with strong support from legislators and the public, had been established as the standard to which all other milk was compared. Though more and more milk was being pasteurized, pasteurization was seen by many as a stopgap measure that would no longer be needed once the production and distribution of milk was more carefully regulated. Certified milk was the model for the production of better milk everywhere. In writings about milk throughout the first half of the 1900s, time and again one finds references to the essential role the certified milk movement played in raising the standards of the entire dairy industry. This is reflected in the rules and regulations governing dairy production that have been codified in every state's laws, and that today regulate the production of licensed raw milk for sale in retail stores in California, Maine, New Mexico and Connecticut.

Crusading for Pasteurization

The man most responsible for popularizing pasteurization in the years around 1900 was Nathan Straus. Straus (1848-1931) made his fortune in business and then dedicated some thirty years of his life to championing the pasteurization of the milk supply in New York and other cities throughout America and Europe.

He had a powerful ally in Abraham Jacobi, MD, president of the American Medical Association for many of those years. In 1917, Jacobi, Professor Emeritus of Diseases of Children at Columbia University, wrote of his experience during his first year in New York practice over fifty years before. He described visiting a tenement house on a scorching afternoon during the "excessively hot and fatal" summer of 1854, where he saw a baby dying of "summer cholera."

"In my despair I applied to two colleagues for consolation and advice. The first said, 'Give no milk'; the second added, 'Starve them for half a day or a day.' 'No milk' saved many of my babies."

Jacobi goes on to describe the milk available to New York's poor in the 1800s. "Part of New York was supplied by cows fed on brewer's swill in Long Island stables, which no cow had an opportunity to leave at any time after having been imprisoned there. There she was kept in foul air, standing or resting in her own manure, with no other food, sickening until her tail rotted off and her skin broke out in gangrenous ulcers, and she died.

"Such was a goodly part of the milk that reached our households. It was more or less white or bluish, more or less impure—or rather, dirty—half a day or a day old. When it was used for the baby it was rarely strained or boiled, often mixed with water which was more or less impure.

"The vast majority of households were those of working people in small dwellings, or even in tenement houses of four or five stories. What was done with the milk when it reached the household? Of present improvements none existed. Food stuffs would deteriorate rapidly and intensely. Ice could be obtained only by the better situated families. The tenement house people and the poor had none. The milk had to be kept in the coolest part of the dwelling, if there was such a place. I always advised boiling the milk for infants as soon as it arrived, and again once or twice in the course of a day. We knew nothing then of bacteria, but I felt sure that a minute's real boiling would accomplish all I could hope for. At all events, my order was, 'NO RAW MILK.'"

Conditions had only marginally improved by 1893 when Straus established the first of his "Milk Depots" for the distribution of low-priced pasteurized milk. The yearly death rate in infants and young children was about fifty percent of the birth rate. Many of those deaths were from diarrhea and infectious diseases, including typhoid, cholera and diphtheria. Some died of tuberculosis, then

the leading cause of death in the population at large. Straus, Jacobi and others were convinced that many of these diseases were spread by milk and that many deaths could be prevented if the milk supply to the cities were pasteurized. In the absence of official action, Straus began his own crusade to pasteurize the milk supply of New York City.

For Straus and those officials who backed him, pasteurization was a matter of economics and practicality. Most recognized that certified milk was safe and healthy, but it was expensive to produce and sold for two to four times the cost of ordinary milk. As a practical matter, the enforcement of strict rules of hygiene on the 40,000 independent dairy farms that supplied milk to New York City was impossible. Pasteurization was seen as a quick, technological fix that would make New York's milk safe to drink.

The popularity of Straus's milk depots grew rapidly, and several more were established in the city. Coincident with the increasing use of pasteurized milk, the death rate among infants and young children dropped dramatically, circumstantial evidence that poor quality, contaminated raw milk was indeed the cause of much illness. Infant mortality began dropping in the years immediately following the establishment of the first milk depots. With widespread pasteurization, it fell further, from a rate of 160 deaths under one year of age for every 1,000 births in 1906 to 90 in 1916. Deaths from typhoid fever in New York fell as well, from 15 per 100,000 in 1908 to 4 in 1916. But chlorination of the water supply to New York City began during these years, eliminating a potential source of typhoid. Automobile use grew, and fewer horses and their excrement polluted city streets and water supplies. Other changes as well led to more sanitary conditions in New York and other cities, and it is impossible to know to what degree these factors and pasteurization itself affected the mortality figures.

The push for pasteurization in the late 1800s and the early 1900s is best understood in light of an understanding of the conditions of the era. Some advocates for raw milk argue that the pasteurization of milk is an unmitigated evil, that all raw milk is safe, and that there was never any reason for public health authorities to advocate pasteurization. The authoritarian and often deceitful excesses of the push for compulsory pasteurization of all milk came later, in the 1930s. Advocates for raw milk should understand, however, that sloppily produced and contaminated raw milk in America's circa 1900 cities caused considerable disease and death. Pasteurization began as an apparent solution to this acute problem.

Making Pasteurization Compulsory

Straus saw milk as a problem because "it is the only animal food taken in its raw state. When milk is used raw the germs are taken into the human system alive. The milk problem is to prevent this without cooking the milk." Pasteurization was seen as the solution. From the very beginning, we see that proponents of pasteurization failed to understand fundamental nutritional principles. They did not see that germs per se are not the problem, that every traditional culture that has ever existed has emphasized the importance of raw animal foods in the maintenance of human health, resistance to disease and optimal reproductive capacity. Proponents also failed to recognize that the heat of pasteurization fundamentally alters the nutritional value of milk. And they failed to realize that only by creating conditions for healthy cows could a truly healthy milk supply be created.

Be that as it may, pasteurization appears to have provided some relief to a national problem of immense proportions. In 1910, President Howard Taft said, "It is not possible to overstate the far-reaching importance of the question of the reduction of infant mortality. Every man and every

woman of every civilized country should feel a deep and personal interest in it." The scope of the problem is measured by the fact that in 1914, twenty percent of all deaths were of babies under two years of age.

Contaminated raw milk was implicated in hundreds of outbreaks of scarlet fever, diphtheria and typhoid. Many cases of tuberculosis in both children and adults were blamed on raw milk. This was detailed in numerous official publications, particularly including Bulletin Number 41 of the Hygienic Laboratory in Washington, "Milk and Its Relation to Public Health," published in 1914.

We have no way of knowing today just how much of the problem really was caused by raw milk. But two conclusions seem clear. One, raw milk, particularly in the cities, frequently caused disease in infants and at least sometimes caused outbreaks of infectious disease. Two, public health authorities perceived raw milk as a tremendous problem, leading them to push for compulsory pasteurization of all milk except certified raw milk.

Straus made it a point to sell his pasteurized milk at a cost well under that of production and distribution, absorbing the difference himself. His lifelong philanthropy in this cause and others made him a legend in his own time, hailed by statesmen and editorialists for his generosity. His own prose seems a curious mixture of preaching the necessity of pasteurization and self-aggrandizement, sprinkled with numerous phrases about his saving the lives of tens of thousands of babies. By 1916, his milk stations had over the course of twenty-five years dispensed some 43 million bottles of pasteurized milk.

In 1910, the Ontario Government Milk Commission published a report that said: "In visiting the Nathan Straus Laboratories in New York your Commission doubtless visited what might be described as the chief center of pasteurization influence on the continent. The milk is sold at actually what it costs on the farm, and so the cost of the expensive pasteurization plant, doctors and distribution machinery, must be borne by someone. It is borne by Nathan Straus and it is said to cost upwards of \$100,000 a year. This is Mr. Straus' philanthropy."

The control of the milk supply in New York City when Straus began his work in 1892 was largely in commercial hands. While the production of swill or distillery milk had been prohibited in 1873, distillery dairies continued to operate in nearby Brooklyn (then a separate city) and to ship their milk to New York. In 1894, a year after opening his first milk depot, Straus' first article was printed in a publication called *The Forum*. A year later the Health Department set chemical standards for milk and in 1897 began to require all milk shop dealers to take out a permit. In 1900 the Department required the cooling of milk in transit, and in 1906 the first systematic governmental inspection of dairies began.

Straus meanwhile was demanding that New York require or provide for pasteurization of the city's milk supply. The Women's Municipal League supported this demand, and the *New York Medical Record* too demanded pasteurization in a series of editorials. In 1907, both the Academy of Medicine and the New York City Federation of Women's Clubs urged the adoption of pasteurization. An ordinance requiring the pasteurization of the city's milk supply was introduced, but was defeated by a coalition of milk distributors, physicians, social workers and Health Department officials who argued for clean raw milk and more inspection.

The mayor appointed a special Milk Commission headed by Dr. Jacobi. The commission reported that "raw milk may be harmful on account of its containing the germs of tuberculosis, typhoid fever, scarlet fever, diphtheria and diarrhea diseases in infants." The members called for the Board

of Health to "require pasteurization of all milk it finds unsafe for consumption as raw milk."

All of these demands for pasteurization allowed for the continued production and sale of clean raw milk. No one was claiming that all milk should be pasteurized, as even the most zealous proponents of pasteurization recognized that carefully produced raw milk from healthy animals was safe. Their assumption was that a sufficiently low bacterial count offered safety from milk-borne infection. Not until the 1930s did commercial dairy interests, segments of the medical community, politicians and public health agency officials and their allies in the media begin a campaign first to smear all raw milk and then to eliminate its availability and sale.

Straus found an important ally when his insistence on the dangers of raw milk led President Theodore Roosevelt in 1907 to order a thorough study of the milk problem by the Public Health Service. Twenty government "experts" made the investigation and reported publicly in 1908 that raw milk posed a danger. They further stated as fact that pasteurization does not change the chemical composition, taste, digestibility or nutritive qualities of milk. These "facts" have been repeated for nearly one hundred years and persist in government and medical literature about raw milk to this day, despite overwhelming evidence to the contrary.

The United States Surgeon General summed up the investigation with these words: "Pasteurization prevents much sickness and saves many lives." This simple statement was true on its face, yet it epitomizes the difficulty in understanding the meaning and implications of pasteurization and the milk problem. Given the sorry state of city milk supplies in early twentieth century America, pasteurization appears indeed to have prevented much sickness and death. But with widespread pasteurization came the notion, fostered by the public health authorities and the media, that all milk must be pasteurized, the good with the bad, and that somehow pasteurization would take unhealthy milk and make it not only safe to drink but also healthy. The acceptance of this mantra led to compulsory pasteurization, confinement dairying, and the demise of milk and its products as vital and health-sustaining foods, and was thus a significant influence in the epidemic of cancer, heart disease and other chronic illnesses that ensued. The irony is that now, looking back, one can stand the Surgeon General's 1908 statement on end and accurately state that pasteurization has caused much sickness and cost many lives.

In 1911, the New York Milk Committee was instrumental in forming a National Commission on Milk Standards. That Commission then held that pasteurization should be compulsory for all milk either not certified or inspected according to standards the Commission set. The National Association for the Study and Prevention of Tuberculosis stated that milk from tuberculous cattle was "the medium through which transmission of bovine tuberculosis to human beings most commonly takes place," and recommended "the efficient pasteurization of milk as a safeguard against the transmission of bovine tuberculosis to mankind."

Also in 1911, the American Medical Association warned that milk must come from tuberculin-tested cows or be pasteurized. That same year, the Commissioner of the Health Department of the City of New York announced that the Department would require the pasteurization of all milk except certified milk. Milk distributors selling raw milk not of certified quality managed to delay and modify this order to such a degree that a large proportion of the city's milk continued to be raw milk that was not produced under sanitary conditions and was not certified.

In 1912, the National Commission on Milk Standards issued another report stating that "Pasteurization is necessary for all milk at all times excepting certified milk or its equivalent. The majority of the Commissioners voted in favor of the pasteurization of all milk, including certified.

Since this was not unanimous, the Commission recommends that the pasteurization of certified milk be optional." Note that as early as 1912, powerful voices already were crying for the compulsory pasteurization of all milk, including certified milk.

An epidemic of typhoid in New York City in 1913, allegedly caused by the milk of one dairy, involved over a thousand people. In 1914 an outbreak of foot and mouth disease was blamed on raw milk. The Commissioner of Health then ordered the pasteurization of the entire milk supply, with the exception of certified raw milk. There were only 37 certified dairy farms supplying milk to New York City.

An estimated 100,000 people involved in supplying New York with milk were affected by that order. The daily milk supply consisted of over 2 million quarts supplied by some 400,000 cows on 44,000 farms in seven states. There were 60 pasteurizing plants and 14,000 milk shops.

Pasteurization by this time was big business and getting bigger. Large sums of money had been invested in plants and equipment for the new technique, and a great deal of money was to be made on further implementation of the technology. The federal government had released Hygienic Report Number 41 and the Surgeon General had issued his statement about the desirability of pasteurization. Clearly, the weight of the public health and medical establishments had been thrown behind efforts centered in the largest cities of every state to require pasteurization of most or all of the milk supply. The handwriting, so to speak, was on the wall, and physicians, newspaper writers and editors could read the message.

Excerpted from *The Untold Story of Milk* by Ron Schmid, ND,

Kind Regards

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