CHISPA

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The 1918 Influenza – Mother of All Pandemics

By Betty Sparagna

There was a little bird
its name was Enza
I opened the window
and in-flu-enza[1]

The deadliest health event in recorded history, the 1918-1919 influenza pandemic circled the globe in eighteen months, infecting one-fourth of the United States and one-fifth of the world's population. Depending on the source, the worldwide death toll estimate is a minimum of twenty million, with some estimates as high as one hundred million dead. Although the epidemic lasted into 1920, most of those deaths occurred in a sixteen-week period from mid-September to mid-December of 1918.[2] In the developed world, the overall mortality rate was about two percent. In less developed countries, mortality rates were much higher. In remote areas more died because there was no one to provide care, even water. Those who were lucky enough to avoid infection had to deal with strict public ordinances in an effort to restrain the spread of the disease.

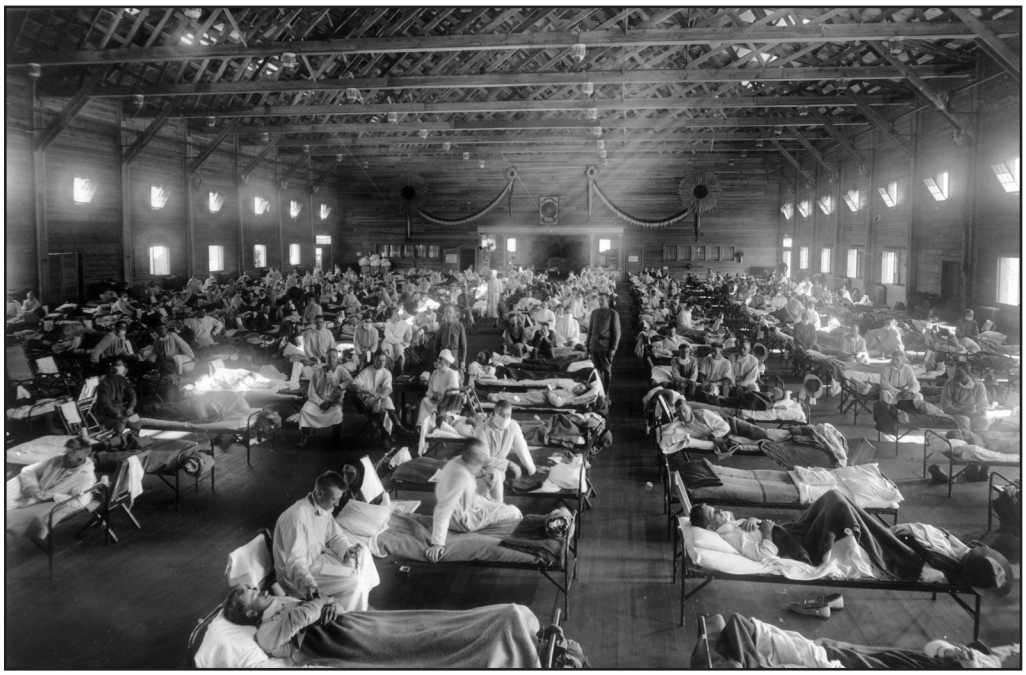
Because of the flu's incubation period, victims were often contagious for several days before showing symptoms. Most victims experienced a weeklong course of fever, aches, chills, and nausea. However, a minority became incapacitated by exhaustion with excruciating earaches and headaches. As the disease progressed, pneumonia set in and victims often began to bleed profusely from their nose, ears, and mouth. Some still recovered unless cyanosis appeared.

This deadly influenza erupted during the final stages of WWI, reaching epic proportions in the fall of 1918. It became known as the "Spanish flu," a misnomer due to the earliest news releases about the flu, which occurred in Madrid, Spain, on May 22, 1918. Spain was one of the few European countries to remain neutral during WWI, which meant the media was free to report the gruesome details of the pandemic without wartime censors suppressing the news of the flu. On the other hand, Allied powers avoided any news that might affect confidence in the progress of the war. On May 16, 1918, the United States Congress passed the Sedition Act, which forbade expression of opinions against the government or the war effort.[3]

Beginning of the Virus

Haskell County, Kansas, is located in the southwest corner of the state near Oklahoma and Colorado. This part of the dry prairie is cattle country, where farmers also raise poultry and hogs. The county also sits on a major migratory flyway for seventeen bird species. Different animals, including birds and pigs, can become hosts to influenza viruses that do not normally infect people, but viruses are constantly mutating, making it possible on rare occasions for non-human influenza viruses to change in such a way that they can infect people and spread person to person.

In late January and early February 1918, Dr. Loring Miner faced an epidemic of influenza in Haskell County. He noted that dozens of the strongest and



(NCP 001603). OHA 250: New Contributed Photographs Collection, Otis Historical Archives. National Museum of Helath and Medicine

Emergency hospital during influenza epidemic, Camp Funston, Kansas

CHISPA

Founding Editor: Donald I. Segerstrom

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CHISPA, the title of the quarterly publication of the Tuolumne County Historical Society, is a word of Spanish origin. Although it has a variety of meanings, ranging from sparks or embers to cleverness or wit, locally it acquired an additional meaning as it was also used to describe any nugget or specimen of gold, especially one of great beauty or high radiance. The term was introduced to the diggings of Tuolumne County by pioneer miners from the State of Sonora, Mexico, and was quickly adopted into the vocabulary of the many nationalities who mined here.

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healthiest people of the county were being infected. When the disease progressed into pneumonia, patients died. Still, editors of the local newspaper were reluctant to report details of the disease, apparently worried about wartime morale. The epidemic got worse; then it abruptly disappeared. People went back to work and children returned to school. Although Dr. Miner was concerned and alerted national public health officials, his warning wasn't published until April by a weekly journal of the United States Public Health Service. This article was the only official reference to the epidemic anywhere in the world during the first six months of 1918.[4]

On March 4, a month prior to Dr. Miner's report, the first soldier at Camp Funston, three hundred miles east of Haskell County, Kansas, was reported to have influenza.[5] The camp was built in the summer and fall of 1917, at Fort Riley, Kansas, as a WWI training center for recruits from Arizona, Colorado, Kansas, Missouri, Nebraska, New Mexico, and South Dakota. Within three weeks, more than eleven hundred others were hospitalized with the virus and respiratory bacteria. Thousands more were treated at the infirmaries. The camp held an average of over fifty thousand troops, which fed a constant stream of soldiers to other locations in the United States and Europe. Historian John M. Barry describes the spread of the disease vividly in the following passage.

> *On March 18, Camps Forrest and Greenleaf in Georgia saw their first cases of influenza and by the end of April twenty-four of the thirty-six main Army camps suffered an influenza epidemic. Thirty of the fifty largest cities in the country also had an April spike in excess mortality from influenza and pneumonia. Although this spring wave was generally mild – the killing second wave struck in the fall – there were still some disturbing findings. A subsequent Army study said, 'At this time the fulminating pneumonia, with wet hemorrhagic lungs, fatal in from 24-48 hours, was first observed.' The first recorded autopsy in Chicago of an influenza victim was conducted in early April. The pathologist noted, 'The lungs were full of hemorrhages.'*[6]

At United States training camps, a succession of men rotated in and out of the posts: "This process continuously brought the virus into contact with new hosts – young, healthy soldiers in which it [the virus] could adapt, reproduce, and become extremely virulent without danger of burning out."[7] Even as medical officers re-

Source: Library of Congress

Influenza ward, Walter Reed Hospital, Washington, D.C. [Nurse taking patient's pulse]

alized the need to avoid overcrowding, infected troops carried the virus with them aboard ships to Europe.

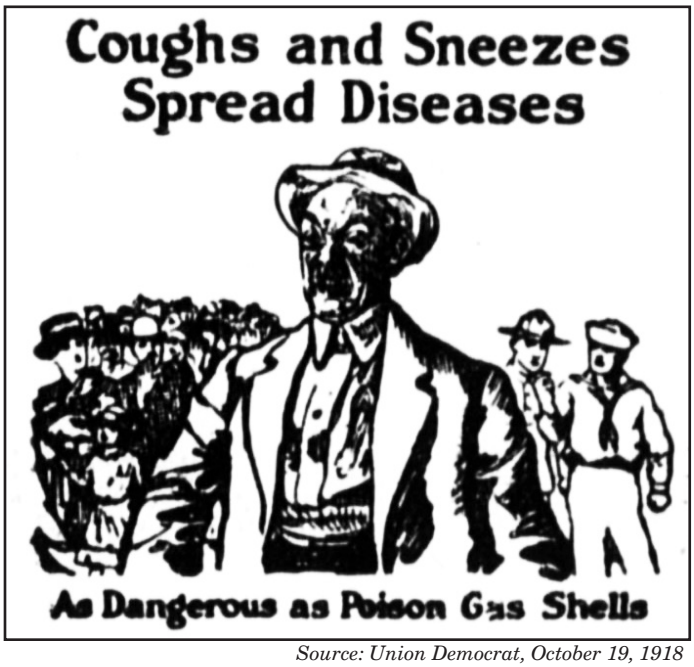
> *Influenza clogged transportation lines along the battlefront, choked hospitals, killed thousands of soldiers, and rendered many more non-effective. The flu depleted and demoralized troops, and may have diverted military and political leaders from fighting the war to combating disease. It ultimately killed more American military personnel than did enemy machine guns and artillery.*[8]

Although General John Pershing, Commander of the American Expeditionary Forces in Europe, pushed relentlessly for replacement troops, Major General Enoch Crowder, who implemented and administered the Selective Service Act of 1917, issued orders on September 27, temporarily canceling training for 142,000 draft registrants between October 7 and 11.[9] This was a sign of the seriousness of the situation.

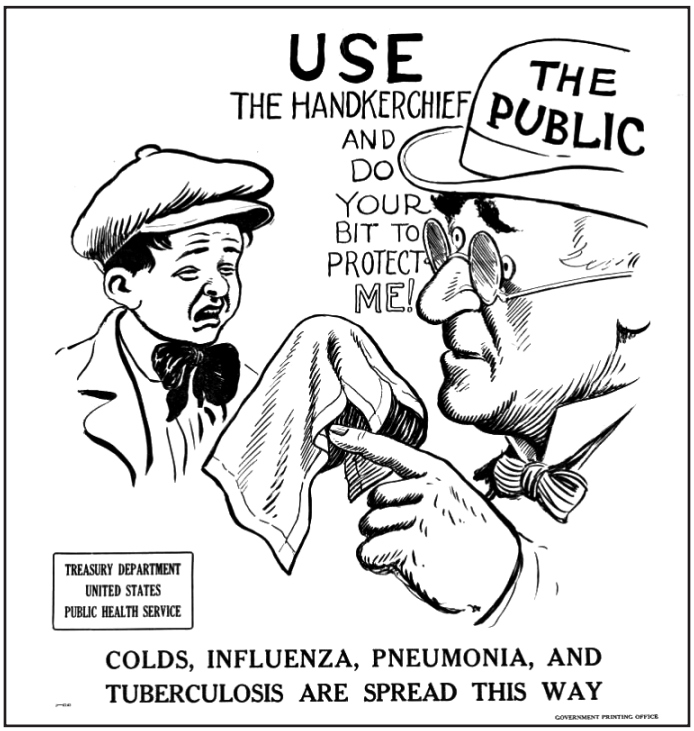
Impact

There were three waves of highly virulent and fatal influenza sweeping the United States from spring 1918 to spring 1919, with the fall-winter wave being the deadliest. Doctors could do little to treat influenza except monitor body temperature and overall condition. They prescribed bed rest and dispensed aspirin and morphine to relieve pain. There was no cure, and although vaccines were devised, they were ineffective for influenza. In 1918, most researchers believed that influenza was caused by a bacteria. It wasn't until 1933 that medical scientists determined influenza to be a virus.

The pandemic was initially met rather calmly by the public, partly because war restrictions and rationing created an acceptance of government authority. People were willing to allow public health departments



Source: Union Democrat, October 19, 1918



Source: https://play.google.com/books

Poster drawn by cartoonist Clifford Berryman, Washington, D.C., for *Public Health Reports*, November 15, 1918, Vol. 33, No. 46, page 1969

to implement restrictive measures such as quarantine and face masks. Also by 1900, the "Germ Theory" was widely recognized by the public, especially in Europe.[10] The public was well aware of how diseases were transmitted as seen in these cartoons of the time.

Historically, influenza deaths have affected the very young and the very old, with a comparatively low occurrence of deaths at all ages in-between. The 1918 pandemic, however, was unique: nearly half of the influenza-related deaths were young adults twenty to forty years of age. Ninety-nine percent of influenza-related deaths were persons under sixty-five. As stated in a *Union Democrat* editorial:

> *Practically every city, town and hamlet in the world has contributed to the insatiable greed of Spanish influenza, and the strong and vigorous, in the prime of life with greater promise for the future, generally have been its victims. Indeed, the loss of life America has sustained in the great war amounts to little in comparison to the staggering death rate by disease here at home.*[11]

One explanation for why younger people were so affected involves the body's immune responses. People born after 1889—those who were not exposed to the virulent Russian flu—were actually more vulnerable to the 1918 flu than their older relatives since exposure offers some immunity.

Another explanation of high mortality in otherwise healthy individuals is known as a "cytokine storm,"[12] a

Source: Library of Congress

War Bonds and Red Cross pledges were solicited all the way into the lumber camps. [13]

severe immune overreaction to the hyper-virulent influenza. Recent research has found that overproduction of immune cells can lead to a surge of inflammation and fluid buildup in the lungs, ultimately resulting in a secondary infection of bacterial pneumonia.

In other words, the body's own defenses turned against the affected as they tried to fight the flu.

Virus Moves West

While newspapers in the East reported hundreds of people were dying from influenza and pneumonia, the West was bracing for the epidemic. Health boards all over the State of California were sending notices to public school teachers to keep a close watch for students developing symptoms. In mid-September, California saw its first cases of influenza in Southern California when a naval vessel with infected seamen arrived in the Los Angeles harbor.[14]

Later in September, influenza cases began to materialize all over the state. Camp Kearny, San Diego, quarantined two companies of the 31st Infantry when doctors discovered two possible cases.[15] A San Francisco man was reported to have brought the disease from Chicago after a recent visit there. He was the first case in that city, but soon the virus expanded to nearby Oakland, Mare Island, Alameda, and other neighboring cities.[16]

Paradoxically, fundraisers for the war effort may have contributed to the greater incidences of flu outbreaks in certain cities, such as San Francisco. On September 28, 1918, the Fourth Liberty Loan offered over six billion dollars in war bonds at 4.25 percent. Those cities who cancelled their promotions coped much better than those who celebrated, including San Francisco. On October 9, the *San Francisco Chronicle* reported that a crowd of 5,000 workers at the Schaw-Batcher Company's ship works in South San Francisco listened to film star Mary Pickford at a war bond rally. Pickford provided signed photographs to all buyers of war bonds and she was later stricken with the flu. The following Saturday night, the *San Francisco Chronicle* hosted "thirty-seven of the greatest stars of the silent but eloquent screen…in behalf of the fourth Liberty loan." By October 9, San Francisco Health Officer Dr. William C. Hassler reported at least 169 cases of the flu, that number jumping to over 2,000 a week later.[17]

California, as elsewhere in the West, was trying to learn lessons from those cities and states already dealing with epidemic proportions of flu cases. Wearing a gauze face mask became a symbol of wartime patriotism. Red Cross public service announcements called anyone not wearing a mask a dangerous "slacker," a label used to describe men who avoided military service as well as those not contributing to the war effort. Califor-

nia Governor William D. Stephens announced:

> *As an aid in winning the war it is a patriotic duty for every American citizen to assist in preserving the health of himself and his fellow citizens….Our health authorities advise it is imperative that all persons wear a gauze mask over the nose and mouth, thus preventing the spread of this disease. Compliance with this temporary edict means but little discomfort and means a service rendered to our fellow men and to our country. It is most essential to the health of our State."*[18]

Attending a special conference of the Board of Health in San Francisco, Dr. Woods Hutchinson of Boston "called attention to the fact that chiffon veils for women and children have been as satisfactory as the common gauze mask."[19] Perhaps he was enticing fashion conscious women to don masks? As supplies of gauze masks ran low, San Francisco's chairman of the local Red Cross chapter urged women to make masks: "Any woman can make anti-influenza masks just as efficacious as those issued by the Red Cross. Clean gauze or ordinary linen is excellent material for the purpose, or a face veil folded several times would serve. Medication is not necessary….[I]t is the duty of every woman to provide her family with them."[20]

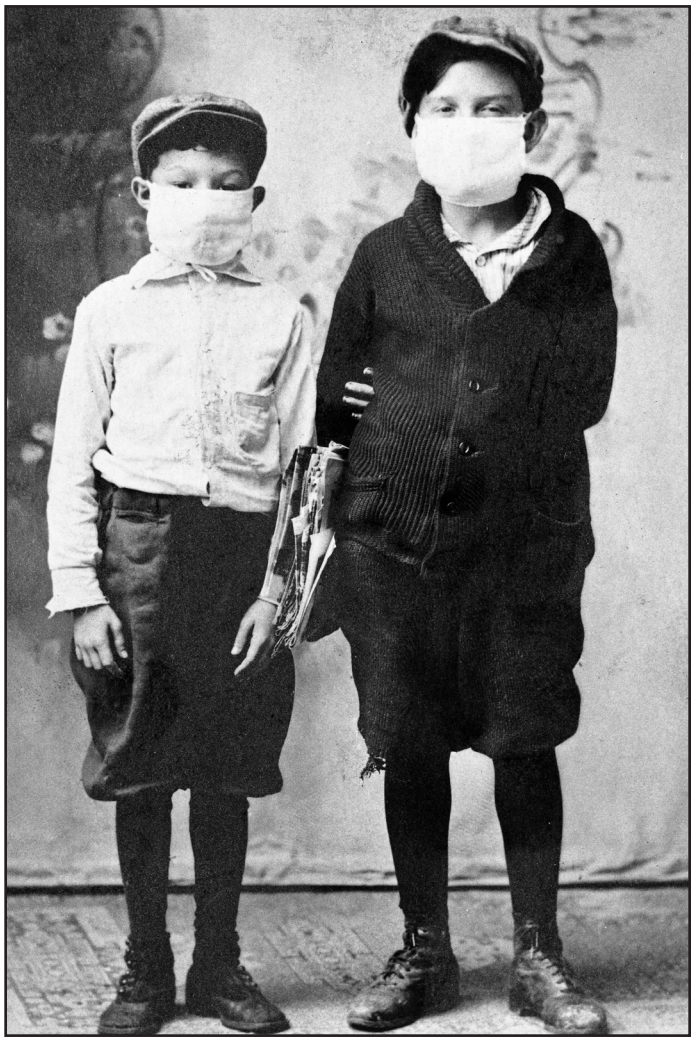
At Home

As in the rest of the country, the epidemic in Tuolumne County was met rather calmly, with restrictions changing as public officials deemed necessary. On October 19, 1918, Sonora's *Union Democrat* reported "Uncle Sam's Advice on Flu," issued by the United States Health Service. This official health bulletin answered some basic questions: What is Spanish Influenza? How can it be recognized? Do people die of it? What should be done by those who catch the disease? An editorial in the same newspaper encouraged people to obey health board orders.

> *The so-called Spanish influenza is claiming more victims than is the war. It is a world wide epidemic. California is now in the grip of it, and the authorities are exercising strict quarantine methods to prevent its spread where in existence, and communities not yet afflicted are taking all the precautionary measures possible to prevent its appearance. It is a hard foe to combat and is exacting a heavy toll.*
>
> *While some doubt existed as to its presence in Sonora, the local authorities took prompt steps to prevent communication with suspected cases and to minimize the danger to public health, by ordering schools and theaters closed and forbidding public gatherings and cautioning against too close association of the people. These restrictions are in effect until Sunday evening at 6 o'clock. In the meantime if conditions warrant they will be extended and continued in force until such time as their removal seems safe. No quarantine methods can be effective unless the people obey the rules and regulations provided, even to the smallest detail. If we are so fortunate as to escape this foe to health and life, which is playing havoc in many places, then indeed are we a lucky community. Any inconvenience to avert or reduce the epidemic should be cheerfully submitted to. Obey the orders of the health board in every particular. They cannot harm you and may be the means of averting great and lasting sorrow in many homes.*[21]

Prior to warnings in the newspaper, Pietro Oliveri had died in Sonora, on October 14, from influenza-related pneumonia, probably the first death of the epidemic in Tuolumne County. Mr. Oliveri, a native of Italy and proprietor of the Europa Hotel in Sonora, was only forty-three years old. According to his obituary, he had been ill for at least a week prior to his death.[22]

Throughout October, the *Union Democrat* reported several flu-related deaths, some in the county, oth-



Courtesy of the State Archives of Florida (PR10498)

Children ready for school during the 1918 flu epidemic

ers stationed at Camp Fremont. The local newspaper also reported that "Guiseppi Cerruti, proprietor of the Ligueria Hotel, formerly Pat Kelly's boarding house and saloon, died of pneumonia at the Sierra Hospital." Mr. Cerruti's wife and two of his three children were also sick with the flu and were patients of the Sierra Hospital. Mr. Cerruti was thirty-eight years old.[23]

While in training at Camp Fremont with other Tuolumne County young men, Ray J. Engelke wrote of the distress of many of his company in a letter published in the *Union Democrat:* "There is certainly a bunch of boys here down with the Spanish 'Pip' – 250 cases. The base hospital over at Fremont is filled with our men and the military authorities are converting all the fraternity houses here at the University into hospitals. There is a strict quarantine on."[24]

Ernest Chester Beal, of Don Pedro, was one of Tuolumne County's young men who died of pneumonia while stationed at Camp Fremont. Ernest, at the age of twenty-seven, had been in camp a brief two months as a member of Company F, Thirteenth Infantry. Beal's remains were accompanied from Camp Fremont by a military escort to Sonora.[25]

Soldiers were not the only casualties at Camp Fremont. Freda Russ, niece of Charles Goelz of Sonora, was stationed at the camp as a Red Cross nurse. She died after only two days of the illness at the age of twenty-nine.[26]

On October 20, a day after the *Union Democrat* had published its health bulletin, local health officers declared all public gathering places, including schools and theatres, to be closed indefinitely to check the influenza epidemic in Sonora.[27]

On October 23, Dr. William L. Hood, Tuolumne County Health Officer, ordered strict enforcement of existing laws regarding the sterilization of drinking glasses and the abolishment of common drinking cups and towels, as well as expectoration in public places. Section 2979A of the county code stipulated "that gauze face masks be worn by all persons who must of necessity come in contact with known influenza cases, also it is recommended to be worn by persons who serve the public."[28] Masks were to be made of four layers of gauze and held firmly over the nose and mouth by tape. It was recommended that masks be sterilized frequently in boiling water for fifteen minutes. Dr. Hood went on to say that as long as the epidemic remained prevalent in Tuolumne County schools would be closed when deemed necessary and parents would be required to keep children at home. Teachers were informed by State Superintendent Edward Hyatt that they would receive their full salaries during the closures and that this time would not need to be made up at the end of the term.[29]

Particularly hard hit by the flu were employees and families of the Sierra Railway, Standard Lumber Company, and West Side Lumber Company. John C. Breen lived near the lime quarry and worked two jobs—during the day at the Standard Lumber factory in Sonora and at night at a local restaurant. The eighteen-year-old continued to work after contracting the flu until he was too weak to continue. He worked up to the day before his death on October 28.

From the last weeks of October through November, sick lists and obituaries filled the local newspapers. Heartbreaking stories of bravery in the face of the epidemic were reported. Peter Tarnagna died in late October after leaving his job at the Sierra Railway Company to nurse a friend with the flu. Within days he became ill and was taken to the hospital where he died two days later. Mr. Tarnagna, a native of Italy, was only forty years old.[30]

Tuolumne County Museum TP1580

Dr. William L. Hood, City of Sonora and Tuolumne County Health Officer

Dr. Harry Bradley Smith, a popular Sonora dentist, wanted to enroll in the military dental reserve corps. He was initially refused admission since dentists were not needed, but he continued to communicate with government authorities in Washington. Tragically, just a few days after the October 16 *Union Democrat* reported that Dr. Smith was optimistic about enlistments opening up, he died of influenza and pneumonia, age forty-four.[31]

On November 4, the Board

Tuolumne County Museum, P35605

First Red Cross Committee of Sonora, June 4, 1917, taken in front of Presbyterian Church (now Church of Christ Scientist). Back row, l-r: George Mundorf, Charles P. Jones, Otto Mouron, Charles Segerstrom, Sr., Judge George W. Nicol, Rev. Anson R. Graves, George P. Morgan, Arthur D. Duchow, William Hartvig, Rowan Hardin. Seated, l-r: Adelaide A. Miller, Charles H. Burden, Elizabeth Dorsey, Frances Riorden Rehm, Nettie Rother, Elizabeth Burden Jefferds, Hannah Doyle.

of Trustees of the City of Sonora passed Ordinance No. 77 requiring that all persons in Sonora wear a mask or face-covering where two or more persons were congregated, except in homes where only family members were present. This ordinance stepped up the ruling from only a week before that stated only persons dealing with the public or persons who had come into contact with known influenza cases need wear a mask. Members of the City Board of Health, along with Dr. W. L. Hood, City and County Health Officer, were in attendance wearing masks as an expression of their faith that the masks were effective. Other members of the City Board of Health included C. W. Terry, Miss Maud May, J. C. Webster, and F. J. Ralph.[32] If the ordinance were violated, the person "[would] be deemed guilty of a misdemeanor and...punished by a fine of not less than $2.50 or more than $10 or by imprisonment in the county jail for a period not exceeding ten days, or by both such fine and imprisonment."[33]

One person who chose to violate the ordinance was Jack Kelly. He was fined five dollars and, after refusing to pay the fine, was sentenced to two days in jail. A friend came to his rescue and paid the fine for him, but when Mr. Kelly was released from jail, he was again arrested for the same offense.[34]

On November 11, the County Board of Supervisors likewise passed a resolution.

Whereas, it appears that an epidemic of Spanish Influenza, exists in this County at the present time and that it is necessary that every precaution be taken to avoid the spread of such disease.

And Whereas, it has been determined that one of the efficient methods of preventing the spread of such disease is for the people to wear gauze masks in accordance with the instructions from the State Board of Health.

And Whereas, under the law an ordinance cannot be adopted by the Board of Supervisors short of a two weeks publication of the same,

and that it is necessary, and the condition of such disease makes it urgent that some steps be taken prior to the time in which an ordinance can become effective.

Therefore, be it resolved, that the Health Office of Tuolumne County, demand that all persons outside of Incorporated Cities wear gauze masks for the purpose of preventing the spread of Spanish Influenza and that he declare the County of Tuolumne in a state of quarantine for the purpose of enforcing said order.[35]

Prior to the issuing of the local ordinances, responses to the growing epidemic had mixed results. Otto Mouron, the local chairman of Home Service of the American Red Cross, appealed to the women of Sonora to volunteer a half day or night to care for those sick with the flu. Mouron asked for women "who can help a little by seeing that the patients get their medicine, and treating them as you would some of your own when sick."[36] The appeal apparently worked since the plan to convert the high school into wards, where a single nurse could care for up to a dozen patients, never transpired.[37]

Effective November 9, 1918, by order of the Health Department, Sonora became a dry town with the closing of the saloons. City Trustees adopted the following resolution:

Whereas, the Board of Trustees at a recent meeting instructed the proprietors of the several saloons in the City of Sonora to discontinue the selling of liquor to patrons in an intoxicated condition, and as the request has not been adhered to, and that the condition has become such that it is beyond the control of our officers, and there exists in the City of Sonora an epidemic of Spanish influenza, a contagious disease, and the presence of intoxicated men in the streets of Sonora and in the saloons and other public places, have become a menace to the public health and safety and we deem it advisable, as a health measure, and duly request the City Board of Health to pass such measures as will close the saloons of our city until the epidemic of Spanish influenza will permit their being opened.[38]

The closing of saloons in Sonora didn't have quite the intended results the Trustees had hoped for when the order was implemented. A large crowd of loggers, in town after several months of working in the forest, quickly moved their thirst to Jamestown. Unfortunately, the drunken loggers "would not wear the masks, or rather could not keep them on, would congregate in crowds, and after the officers had filled the jail they acknowledged that they could not cope with the situation."[39]

By November 16, the flu quarantine in Sonora was abolished since fewer new cases developed that week. Restrictions of gathering at theatres, lodges, churches, and saloons were lifted, but the wearing of masks continued as a precaution.[40] Not all establishments were eager to open their doors. The Sonora Theatre, owned by June Knowles and Eric J. Segerstrom, was closed for a month, not opening again until Thanksgiving evening, on November 28. Local doctor William Hood was especially concerned that the county's high school, drawing students from all sections of the county, would combine carriers of the disease with healthy pupils, thus precipitating another epidemic.[41] Sonora Union High School educators didn't return to school with their students until the end of November, a total of six weeks.[42]

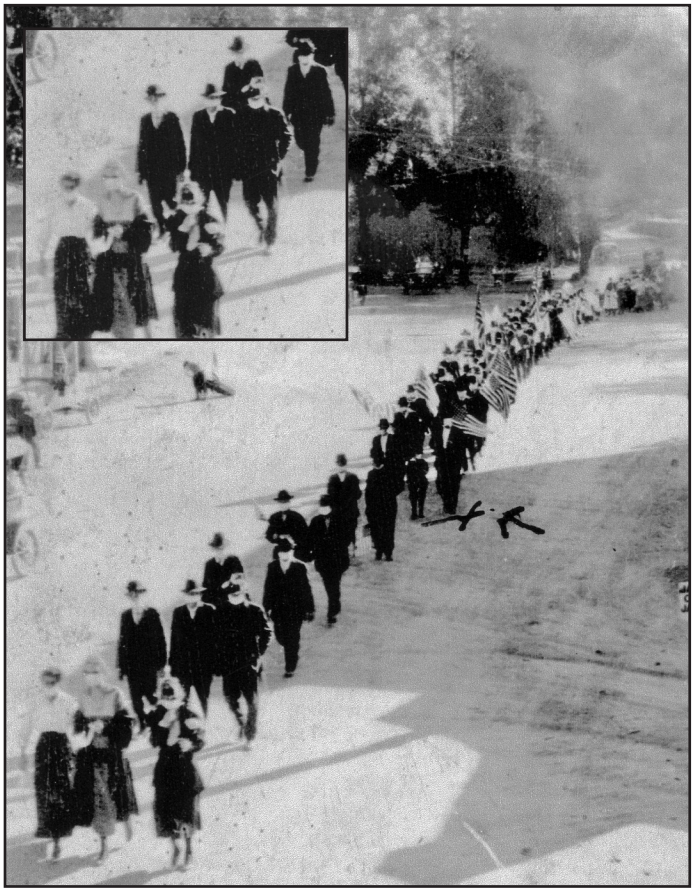
Cases of the flu had overwhelmed Tuolumne County Hospital during the month of November. As many as twenty-one flu patients were cared for at one time. As reported in the *Union Democrat* of November 23, Miss Anna Kroos,[43] a nurse on staff, was stricken with influenza "but the knowledge that her services were badly needed nerved her to re-gather her shattered strength and within five days she was again leading the limited nursing force in ministering to the afflicted."[44] When a second nurse, Miss Goldie Turner, came down with the flu, Miss Kroos and her two sisters, Cornelia Aldridge and Christine "Tennie" Ghiorso, tended to the sick until one of the sisters became ill with the disease. Again reported in the same *Union Democrat* article, a Dr. Hamilton, most likely Pickney Hamilton, who lived in Milton, Calaveras County, came to the rescue, helping the two nurses.

Through it all, however, not a patient was neglected, even if it did require that Matron Kroos was obliged to put in many 16-hour shifts, and sometimes longer hours. Disease and death was stalking through the great building, but there was an angel there in the person of the patient, faithful nurse, with her heart and her soul in her work, who labored heroically with the afflicted and watched with joy the return of health to the many, and with sorrow the passing of the few into the shadowland.[45]

On the lighter side, the *Union Democrat* published a tongue-in-cheek article on December 21, 1918.

Some Cheerful Dope on How to Cure Influenza

The best treatment for the influenza, as outlined by the eminent physician, Dr. Cutaman Chargem: Swath the head in eight thicknesses of gauze, which have been first sterilized by burning, and retire to the top of a high mountain, remote from human habitation. Spray the surrounding air three times daily with an antiseptic solution, eat only onions, and gargle every thirty minutes with vinegar, carbolic acid, formaldehyde, soft soap and nitroglycerine. Smile happily and believe you will escape, as you will have it anyway and you may as well enjoy living while you can.



Tuolumne County Museum P32776

Parade on Washington Street, Sonora, on November 11, 1918, celebrating the end of WWI, taken from the Hotel Victoria veranda. Note the face masks in the inset. The arrow is pointing to Frank McCormick (boy) and his step-father, Bert Rehm.

Sadly, however, by January 1919, the town of Tuolumne appeared to be hit again with the flu. Seventy to eighty new cases were reported, although thought to be a milder form than what occurred six weeks prior. Children were the largest number of victims, even though the schools were closed.[46]

In the neighboring town of Columbia, flu cases striking in early January 1919 were light compared to nearby towns.[47] Not being the county seat, Columbia's relatively small population and physical isolation from other towns possibly spared it from the worst of the epidemic. It also helped that Columbia did not have the Sierra Railway running through town, with an influx of passengers and mining and lumber workers to spread the virus.

Aftermath of the Epidemic

Although WWI, one of the deadliest conflicts in history, ended in November 1918, the influenza epidemic would rage on for months. Still, the jubilation welcoming an armistice was immense. As reported in the November 16 issue of the *Union Democrat*,

> [N]*ews that the armistice had been accepted by the German empire was received here early in the morning, but that it might have time to circulate and give everybody a chance to participate in the public demonstration….Hundreds of people gathered at the courthouse at that hour, and with a corps of boy drummers and G. P. Morgan with a cornet, the procession of men, women and children, with American flags in hand and the flags of the allied nations, marched and counter-marched the full length of Washington street, their shouts of gladness mingling with the noise of booming giant powder and exploding firecrackers, the clanging of the bells and the blowing of whistles…Sonora did not have a monopoly of the celebrating business. Every town in the county staged a creditable demonstration in celebration of the big event.*[48]

These types of celebrations spontaneously erupted all over the world. With the influenza virus at its peak, mortality rate from October through December of 1918, Armistice Day (November 11) was extremely problematic in terms of the spreading of the flu—but note the adjacent photo in which celebrating people in Tuolumne County donned masks while marching down Washington Street.

Just during the month of October, the State of California Board of Health reported that 4,420 people died of influenza and 961 died of related pneumonia, for a total of 5,381 deaths. Of those who died, 3,541 were male and 1,840 were female; 3,477 deaths occurred to persons twenty to thirty-nine years old.[49]

It is impossible to know exactly how many families in Tuolumne County lost loved ones to the epidemic. Each week, from October 1918 through May 1919, local newspapers carried news of influenza-related deaths and illness. Many died at home in Tuolumne County, while others died visiting friends and family throughout the country. At least seven local servicemen died from influenza and related pneumonia.[50] As the war ended, people began to return to their ordinary lives, often without husbands, wives, or other family members. The epidemic was demoralizing for everyone. Research scientists and health care individuals had been unable to effectively treat patients. Public health officials' attempts at preventing the spread of the virus had basically failed. Many people had to watch loved ones, or people they knew, die from this devastating disease.

Misplaced blame for the pandemic immediately followed the ending of the war. The following article, originally published in the *Stockton Independent,* shows how little was known about what had just occurred around the world.

Epidemics are Preventable

> *It has been suggested more than once that the next great war should be upon disease. Far better that the nations now assemble a health*

commission, to arrange sanitary laws which shall forever dispose of epidemic diseases as the peace conference hopes to dispose of war.

*The **Scientific American** is authority for the statement that the scourge of influenza sweeping this country is directly due to laxity in observance of quarantine regulations along the Atlantic seaboard. Although the ravages of the disease in Europe were known, instead of enforcing the strictest quarantine on the first ships arriving with cases of influenza aboard, just as would have been done had it been yellow fever, 'influenza cases by the score were taken ashore and placed in public hospital wards, while fellow passengers who must inevitably have been exposed and many of whom were carrying the disease were allowed to land and go their way.'*

The result has been a loss of life at home greater than the deaths caused in our armies by the war. This is deplorable and humiliating to consider when, through many agencies, we are supposed just now to be fighting illness and disease with particular intelligence.

Most illness is preventable. All epidemics are. What is needed is public education, and a general agreement that failure to safeguard the public health shall be a punishable offense in the individual and in the authorities having the public health in charge.[51]

It was more than eighty years before scientists would understand the 1918 virus. In 2005, researchers at the Centers for Disease Control and Prevention and at the Armed Forces Institute of Pathology announced that they had isolated, decoded, and replicated the entire sequence of the 1918 flu virus, known as H1N1. They worked with tissue samples of flu victims from autopsy archives and with the infected lung tissue of an Alaskan woman whose body had been preserved in Arctic permafrost, a scientific first.[52]

One last impact of the pandemic occurred on April 3, 1919, at the Versailles Peace Conference, when President Woodrow Wilson collapsed halfway through the assembly. Although some historians thought Wilson's confusion was due to a minor stroke, he had all the symptoms of influenza. At the time, influenza was widespread in Paris, and the flu had killed one of Wilson's aides. According to Smithsonian contributor John M. Barry, Wilson's "sudden weakness and severe confusion halfway through that conference—widely commented upon—very possibly contributed to his abandoning his principles. The result was the disastrous peace treaty, which would later contribute to the start of World War II."[53]

In Memory

The following list of 1918-1919 influenza-related victims associated with Tuolumne County families was compiled from death records, obituaries, and transfer-of-burials. According to unpublished research located in the Carlo M. De Ferrari Archive, "Death Certificates were filed for only those who died while under the care of a physician, and others undoubtedly passed away and their deaths never appeared in the local newspapers."[54] Since the majority of deaths during the influenza pandemic were not caused by the flu virus acting alone, but in tandem with the bacterial pneumonia following the viral infection—sometimes developing within hours—I have listed victims who died from influenza and/or pneumonia.[55]

Anderson, Cora
Bailey, William
Barkley, William
Barnum, William Griswold*
Beal, Ernest Chester*
Boitano, Frank
Boyle, Toomie (aka Susie)
Breen, John C.
Brusie, Annette
Carlton, Chester
Casenave, John E.*
Carsner, Freddie (son)
Carsner, Rosa (mother)
Caulfield, Guy L.
Cerrutti, Joseph
Collinson, Clyde C.
Collett, Catherine
Cossett, Edward D.
Crane, Fonda
Crane, Ellendra Mary
Creswell, Walter*
Curran, Andrew C.
Dane, James R.
Dondero, Josephine
Doyle, Colin Albert
Ferretti, Joseph Augustus
Flanders, Addison S.
Gianelli, Edwin Ernest
Gisby, Frank
Hall, Bud
Hall, Charles*
Hartvig, William Henry
Haywood, Nancy
Heid, Henry H.
Hodge, Matthew
Hoesly, Esias
Halllendale/Hollandall, Eva
Hopper, Emma Yost
Huber, John
Hughes, Florence
Inch, Jr., Shelley
Kearney, James C.
Kennan, Lee
Ketcham, Emma Henrietta
Kimball, Roland S
Kinney, Levi G.
Klotz, Mildred
Krovich, John
Laveaga, Joseph Vincent
Lawler, David B.
Lockinish, Tony
Lovely, Mitchell
Lyon, Bertha
MacDonald, Leola Black
Mangani, Mrs. J.
Marconi, George Franklin*
Martinez, Emma George
McCabe, John Peter
McCormick, M.
McPherson, Irene
Miller, Richard Charles
Moorshead, Rita
Morgan, Thomas
Olivieri Pietro
Pagan, Margaret Winifred
Phillips, Walter H.
Picinini, Mary
Pierce, Daisy Marion
Pierce, James
Renfro, Norma
Renfro, Raymond
Rice, Carl
Robinson, Belle
Rocco, Rachel (née Oneto)
Rosani, Mrs. Charles
Rosasco, John Frederick
Romo, Alvin Abraham
Romo, Kate Lacey (née Pedro)
Ruiz, Patricio
Russ, Freda
Ryan, Neal L.
Schurtz, Mrs. F.
Stephens, Laura (née Siebert)
Sierra, Melvin Robert

Note: Numbers on second column should shift one line.

Smith, Dr. Harry Bradley
Speers, Arthur M.
Stagg, Earl M.*
Summers, Robert Frank
Tadd, Ernest (son)
Tadd, Minnie (née Maas) (mother)
Tarnagna, Peter
Tappendorff, Bernice Eleanor (daughter)
Tappendorff, Millie Ethel (mother)
Terzich, Alfred
Thomas, Emma
Thomson, Edna
Thornton, Isabel I.
Vargas, John
Vieira, George Washington
Volke, Rose
Vukojlovich, John
Walgreen, Alex
Walters, Arthur J.
Winfred, Margaret
Wulf, Olga
Young, Alicia Bridget
Zabala, Maria
Zulkens, Imogene
* Servicemen who died of influenza / pneumonia

Endnotes:

1. American skipping rhyme, 1918.
2. J. M. Barry "The site of origin of the 1918 influenza pandemic and its public health implications." *Journal of Translational Medicine*, (20 January 2004): *2*, 3. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC340389.
3. Open discussion of the toll of the pandemic on allied forces would have been interpreted as obstructing the war effort—a crime punishable by a fine "not more than $10,000 or imprisonment for not more than 20 years, or both…." The Sedition Act of 2018, Digital History ID 3903, www.digitalhistory.uh.edu/disp_textbook.cfm?mtID+&psid+3903.
4. Barry, *Translational Medicine*.
5. Ibid.
6. Ibid.
7. Carol R. Byerly, PhD. "The U.S. Military and the Influenza Pandemic of 1918-1919." *Public Health Reports*, 125, (Suppl 3), (2010) 82-91. https://www.ncbi.nlm.nih.gov/pmc/articles PMC2862337/.
8. Ibid.
9. "Influenza Not to Halt Army Draft Scheme," *San Francisco Chronicle* (San Francisco, CA), September 28, 1918. Men between 18-45 years of age were required to register at their local draft boards on 9/12/1918.
10. The germ theory of disease states that many diseases are caused by microorganisms too small to see without magnification. The growth and reproduction of these micro-organisms can cause a disease within humans, animals and other living hosts.
11. *Union Democrat* (Sonora, CA), December 7, 1918.
12. John M. Barry, *The Great Influenza The Story of the Deadliest Pandemic in History* (London: Penquin Book, ltd., 2004), 248-249.
13. Mark Steven Francis, "The Sawmill at Sammy Merrill Springs," *Chispa* 48, no. 4 (2009): 1752.
14. *Influenza Encyclopedia, Los Angeles, California*, http:/www.influenzaarchive.org/cities/city-losangeles.html. Accessed July 15, 2017.
15. "Influenza Not to Halt Army Draft Scheme," *San Francisco Chronicle* (San Francisco, CA), September 28, 1918.
16. "First Influenza Case Is Discovered in S.F.," *San Francisco Chronicle,* September 24, 1918.
17. "Influenza *Encyclopedia, San Francisco, California*, http://www.influenzaarchive.org/cities/city-sanfrancisco.html. Accessed July 15, 2017.
18. Gov. Stephens Calls on All People to Wear Gauze Masks," *San Francisco Chronicle*, Oct 23, 1918.
19. "All Persons on Streets Urged to Wear Masks," *San Francisco Chronicle*, October 20, 1918.
20. "Women Urged to Make Influenza Masks at Home," *San Francisco Chronicle*, October 23, 1918.
21. "Uncle Sam's Advice on Flu," *Union Democrat*, October 19, 1918.
22. "Pietro Oliveri Dies From Pneumonia," *Banner* (Sonora, CA), October 18, 1918.
23. "Death Follows After a Short Illness," *Banner*, October 25, 1918.
24. *Union Democrat*, October 19, 1918. In preparation for WWI, Camp Fremont was established in 1917 on leased land owned by Stanford University and much of the city of Menlo Park.
25. "Pneumonia Cause of Death," *Banner*, October 25, 1918.
26. "Red Cross Nurse Dies of Influenza," *Banner*, October 25, 1918.
27. "Meeting of Board of Health," *Banner,* October 25, 1918.
28. "Public Health Notice," *Union Democrat*, October 26, 1918.
29. "Teachers Will Not Lose Their Salaries," *Union Democrat*, October 26, 1918.
30. "Nursed Friend to Health Takes Disease and Dies," *Union Democrat*, November 1, 1918.
31. "Death Claims Dr. H. B. Smith," *Banner*, November 8, 1918.
32. "City Trustees Hold Session," *Union Democrat*, November 9, 1918.
33. "Ordinance No. 7," *Union Democrat*, November 9, 1918.
34. "Refused to Wear Mask," *Banner*, November 8, 1918.
35. Tuolumne County Board of Supervisors, *Minutes,* November 11, 1918, vol.10, 306, Carlo M. De Ferrari Archive, Sonora, CA.
36. "An Appeal to Women of Sonora," *Union Democrat*, November 2, 1918.
37. "Situation of the Epidemic," *Union Democrat*, November 2, 1918.
38. "Close Season For Saloons," *Union Democrat*, November 11, 1918.
39. Ibid.
40. "Public Places to Re-open," *Banner*, November 15, 1918.
41. "Sonora Schools Will Not Open For a Week," *Union Democrat*, November 23, 1918.
42. "Sonora Union School News," *Union Democrat*, November 30, 1918.
43. Anna went on to marry Edgar Ryden and moved to San Francisco where she died in 1947.
44. "Matron Busy at Hospital," *Union Democrat*, November 23, 1918.
45. Ibid.
46. "Tuolumne Has Another Epidemic of Influenza," *Union Democrat*, November 11, 1919.
47. "Brief Local and Personal Mention," *Banner*, January 24, 1919.
48. "End of the War Celebrated," *Union Democrat*, November 16, 1918.
49. "Health Board on Influenza," *Union Democrat*, March 15, 1919.
50. Service men who died of influenza have an asterisk behind their name on pages 2076, 2077.
51. "Epidemics Are Preventable," *Union Democrat*, December 28, 1918.
52. NIH/National Institute of Allergy and Infectious Diseases. "Scientists Describe How 1918 Influenza Virus Sample Was Exhumed In Alaska." *Science Daily*. July 4, 2007.www.sciencedaily.com/releases/2007/07/070702145610.htm
53. John M. Barry, "Journal of the Plague Year," *Smithsonian*, November 2017, 41.
54. "Flu Epidemic 1918," 4670-0061, Carlo M. De Ferrari Archive.
55. Author would like to thank Patricia Perry, City of Sonora Historian, and Andy Mattos, Records Manager at Carlo M. De Ferrari Archive, for their help in providing research material.

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Source: https://commons/wikimedia.org/wiki/file:1918_flu_in_Oakland

1918 flu epedimic: the Oakland Municipal Auditorium in use as a temporary hospital. The photograph depicts volunteer nurses from the American Red Cross tending influenza sufferers in the Oakland Auditorium, Oakland, California, during the influenza pandemic of 1918.