Thesis

on

Epidemic Influenza

as occurred

periodically since

1889.

Composed by

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Introduction

The attention of the medical profession and also the public attention having been so much attracted by the sudden and surprising cruiser of the Epidemics of Influenza since 1889, I have thought it that the subject would be most worthy of my consideration, as well as a good opportunity for making observations in order to compile & weigh them in the form of a thesis.

Though I have read much of the literature on the subject, yet there is no doubt very much more to be known, and will be more clearly described in the future.

I do not wish it to be understood that I have made a great many observations of very weighty character, for
My observations have been principally confined to the clinical features of the disease during the epidemics as they have occurred. I have had a fair opportunity of seeing a large number of cases as I have practiced in almost populated districts as well as sparsely inhabited districts.

I have refrained from using quotations from current literature as far as possible because our knowledge as yet is scarcely able to deny or confirm some of the numerous theories that have been, if I may use the word, ventured, on different branches of the subject under consideration.

Many of the clinical observations I have made have already appeared and have been described in the periodical literature by other medical men.
So that any treatise on the epidemiies that have occurred periodically, since the winter of 1889 is more or less a review of the subject i.e. diseases with more striking features & different modes of attacking patients; and the complications & sequelae that have resulted. Therefore also a few observations on its pathology; its mode of spread and the treatment as found to be of the greatest service.

The various names which the epidemics, I am describing, have been designated, have led to much discussion, and there has been a variety of opinion and speculation as to the real cause and pathology of this disease which I prefer to term ‘epidemic influenza,’ not because I believe the epidemics arise from any meteoric influence,
but since the knowledge as to the
cause of these epidemics is
uncertain, it is preferable to
use the above term, which leads
to no misunderstanding as to
the theory of origin or other
pathological characteristics
of the disease designated.

The other names that
have been given to the malady
that are most fashionable
are, Epidemic Catarrh,
Russian Influenza, La Gripe
Epidemic Catarrhal Fever.

Short History
The Epidemic of 1569 was
reported to have arisen in
Central Asia and I believe
there is no doubt that such
was the case. From there
the disease spread, travelling
in a direction, approximately
west, towards Europe which
continent it reached and was
reported from Russia, in the autumn of 1889. It was soon disseminated over the whole continent, i.e., the principal towns being infected first. Most of the European capitals were under its influence. In November of that year, the disease reached England in the middle of December 1889, but some of the cases I expect, were not diagnosed as Epidemic Influenza in the first instance, but were thought to be nothing more than ordinary colds, until the disease assumed an Epidemic form, when there was no room left for further doubt. After the Epidemic had become marked, in our large cities and towns, the disease could be seen
to spread along lines of communication from town to town, though some of the intermediate towns were not affected as soon as others.

For instance, cases were reported from Edinburgh and towns in Ireland about the same time, its being apparently free in some other. But the disease affected those towns first where with communication to others between infected areas was greatest.

The epidemic was at its height about the end of December and first week in January following and it continued its ravages with full intensity for about three or four weeks. It began to abate in February 1580.

It was not long after its arrival in England that 'La Gripppe' had arrived in the
United States where it spread quickly.

In the British Isles the disease first attacked our capitals and after a few cases had become well marked, the ravages of an epidemic were soon seen to be making headway.

These capitals or large towns, were the centres from which the disease spread on lines of traffic most markedly. Smaller towns, having been infected, became the spreading centres from which villages were attacked and these again affected or rather infected the country districts.

When once the disease started spreading it continued to gain in quickness if diminishing its intensity of virulence until, as it were the tide of the epidemic began to ebb.
In towns where the population was dense, the rapidity of spread was great; the occupants of institutions & workshops were stricken one after another very quickly. The Police force & Post Office Staff suffered conspicuously. Spring put an end to the Epidemic and all had disappeared by the advent of Summer.

I did not observe any cases until March 1891 when another cycle, if I conjecture the same Epidemic made its appearance. But where were the organisms or the specific cause lying dormant during the interval?

I am not prepared to speculate this cycle was conspicuous from its Pulmonary Complication. It was as wide-spread as the previous one & bore great resemblance in the mode of spread.
Some cases of Meningeal complications came under my notice at this period. This cycle ended in April but was followed again in Autumn by another which lasted till the end January in 1892. The same characteristic features as before were again noticed, but a little more erratic in its distribution. Why this periodicity is so marked is as yet I believe unathorized.

In this year again was the last attack. But how many more we are to expect if any, I know not. It is remarkable that it should have disappeared for so long a time, and then, when it has reappeared, it should recur in this cyclical manner.
Aetiology

In considering the aetiology of Influenza, we may term it as an epidemic affection, which attacks a large number of persons in a rapid manner, and progressing in a more or less certain and often cyclical course, being well marked in densely populated districts, where the hygienic circumstances and surroundings are not very favourable. But the epidemic does not seem to have any respect of persons of either high or low estate, affecting them equally together.

The epidemic does not seem to be modified or very slightly by either low-lying or mountainous districts.

The disease has a greater tendency to develop itself during
the time of the year when the temperature is not very low, for during last winter when the frosts was great and the temperature very low, there were no signs of its recurrence, but immediately the thaw came the disease again appeared. Nor climates again are most free from it. Though it would seem that the disease is not dependent upon warmth, from the fact that Russia has been affected during winter. Some have laid stress upon the dampness of the atmosphere as being a sine qua non for its development, and from the epidemics from which I have been able to make observations, the air has been well supplied with humidity. But until we have further proof, I am inclined
to treat this as a mere coincidence and that the disease does not depend on such circumstances.

That ozone in the air, and other impurities in the form of alluvial deposits, electricity charged air, meteoric influences, sunspots, etc., are causes of the outbreak, are impossibilities, and should not be allowed the consideration of scientists for longer time than mere mentioning.

What is most probable, the cause, and the theory most likely, is receive greatest support in the \( \text{A} \) Microbe theory.

Reasoning from what previous investigations have taught us with reference to other diseases, which behave after the same infection, manner or epidemic character
as influenza, we do not feel satisfied with any other theory than that organisms, germs or some sort of living bacille, capable of reproduction in a suitable medium, are the specific cause of the disease and of its transmittance from one person to another.

For from observations of some cases that have come under our notice, the infectiousness of this malady must be very pronounced; for in one case a person, in apparently good health, went to visit another who was suffering from an acute and typical attack of influenza, began to feel ill during his visit and was laid up the same day, with the same complaint.

And in schools this rapid infection passing from one person to another is very marked.
Also in households one has seen this occurrence. I cannot feel convinced, but that some organism or bacillus having entered the system of one person, does there generate or reproduce itself and that it becomes eliminated by the breath and excreta, and that the infection is thereby transmitted, probably, in most cases, by the air, exhaled from the lungs, carrying with it, the organic matter charged with bacilli.

There have been many claimants to the discovery of the specific Bacillus. But each claimant has found a bacillus different in appearance, consequently some of these bacilli have nothing whatever to do with the reproduction of the disease, but that they are accidentally present with the proper organisms.
or infective medium

Dr. R. Pfeiffer, Member of the
staff of the Scientific Institute
in the Department for investigation
of infectious diseases, Berlin,
claims to have discovered bacilli
in the sputum of influenza patients
and was able to demonstrate & photo-
graph them & reproduce them
through different cultures.
They are nodlets with the
extremities coloured more towards
the edge than the centres (Prof. Sir
F. M. Grampius Stuarts Address. British
Med. Assoc. Bristol Aug. 4 1894.)

There is a favourable
outlook for Dr. Pfeiffer's bacilli
as being the cause, because
the bacilli found, are present
in the sputum of influenza
patients only, as far as has
been observed.

Though such brilliant
results as have been obtained
by Dr. Pfeiffer's the experiments,
Yet performed have not given proof conclusive, that
his bacilli are the potent ones
in influenza.

But we must consider
the medium in which these
bacilli live during intervals
of the epidemics that have
occurred during the past five
years, in order that some
prophylactic measures may
be carried out to lessen the
 tendency to epidemics or
prevent them entirely, as has
been nearly achieved in the
case of smallpox.

Defective sanitation plays
a great part in causing
in bringing on these epidemics,
but what points to be attended
to is yet unknown.

I am inclined to think
that subsoil drainage has
some influence. And believe
that subsoil drainage, in
general is defective. i.e. it might be greatly improved. In my mind the ground has some influence.

Predispersing causes may be put down to general ill-health. Fatigue. Working in damp clothes Preventing Diseases of organic nature

Clinical Features

Stage of incubation is very short in duration. As I have mentioned previously it is almost immediate.

Whether it is possible for him to have been infected during his visit it is impossible to say with absolute certainty. I believe that 24 hours is the usual or average time of incubation. In others again it has been as long as five or six days. Even longer
Invasion Stage is generally marked in a typical case by sudden onset of a feeling of cold and chilliness creeping down the spine, though the temperature is normal or slightly raised. Sometimes there is distinct creeping and lacrimation. This is followed almost constantly by frontal headache or feeling of fulness of the orbits. There is pain in the loins and limbs and a general feeling as if one had been bruised all over the body.

Sometimes there is Epistaxis or sore throat. Sickness and vomiting often are the opening symptoms of an attack. Sometimes facial neuralgia occurs early, but generally follow later on.

This stage as a rule lasts for 48 hours or may be, three days. Sometimes there a high temperature. Tongue is usually,
covered with a thin white fur and flabby Bowels 

Eruption Stage. This is very uncertain if there can be a stage of this nature. Anyhow I have often seen a rash, very much like the scarlatina rash, breaking out & distributed nearly all over the body & limbs, especially in children, and it appears as red dots, not raised, and in places confluent.

This rash was accompanied by the usual symptoms of Influenza and lasted about 48 hours though sometimes not so long. There was an albumen in the urine.

I have not noticed any Convalescence, generally follows in uncomplicated cases, in 4 or 5 days and lasts about 10 days but...
Sometimes even three weeks, and often weakness is felt for much longer periods. In more severe cases, the separate symptoms may be very much more pronounced, though all the previous, mental symptoms may not be present in one patient.

In the more severe typical cases, headache is almost always found to exist, and usually begins early in the attack as a frontal headache and quickly extends over the whole head or it may be of a neuralgic nature.

I have seen many cases where the headache was of the most intense character, causing the patient terrible agony, that the patient almost prays for something to relieve him. De Costa & 123 Med. Dragoon says that if brain symptoms are rare, but those often seen delirium follow this headache and accompany it.
And, which, I believe, to great extent can be explained by the pain experienced.

The throat is often very severely affected with Tonsillitis; the tonsils becoming fleshy, enlarged almost to the Jullianus of swallowing, and I have noticed that the throat symptoms were more common in cases that have occurred at the commencement of an epidemic cycle: for what reason, I don't know. Though the Tonsillitis is occasionally very severe, yet it is very amenable to treatment, and disappears far more quickly than ordinary Tonsillitis. The glands under the lower jaw are affected. These cases are most common in young adults. There is generally high temperature, sometimes 104 °F, but usually about 102 °F.

The tongue in these cases is covered with a thickish, white fur
at the top of your part and
getting brown towards base.

Giddiness very often occurs
as an opening feature in the
disease, but I have never
seen any bad results from
it or any necessity to interfere
with it, and the cases have
gone on to recovery with no
difficulty.

Actual Diaphore may usher in
an attack, but this is not usual
and one begins to look for some
complication, as Pneumonia.
A slight attack of Influenza
rarely noticed by the
patient, may usher in
some complication by a rigor
which is thought to be the
initial stage.

Nasal Catarrh or lacrymation
was not at all a prominent
symptom during the first
epidemic but I noticed a
great deal more during
the last cycle 1893, and
instance in which it did occur.
there was loss of appetite and
genera I was common in almost every
case. Some patients could
not take food in any form
for some time. There was often
present thirst.
The skin after the incision
is well marked becomes very
active and perspiration
pronounced especially after
the acute stage is over.
This action of the skin brings
the temperature down which
is sometimes very high.
The temperature rises very
rapidly as a rule
And from my experience I
find that, the cases where
a sudden rise of temperature
accompany, the onset of the
attack, the patient is likely
ges well without any marked
difficulty. Probably the sudden onset and rise of temperature with other symptoms prevent them from recurring any more frequently to cold. I have not seen any complications of pneumonia follow such case in young adults.

I have seen some cases of very slight character, at first without any appreciable rise of temperature prove fatal from complications. Many cases of this kind are most pitiable in recovery.

Cases are also recorded of Hyperpyrenia, with no apparent trouble (Vide Bull. at April 6, 95, p. 712. D. M. Law.) where the temperature went up to 107.6°. I have never seen a case to my knowledge with temperature over 103°. The urine is characteristic of febrile urine. High colors.
Contains water, and decreases in quantity.

Bowel are usually inaction which are easily rectified by Saline Omeprona. Some time
there is marked diaphoresis. The pulse cannot be
considered to have any
characteristic feature, except
its irregularity. I do not mean in
rhythm, but that the same
characteristic pulse is not found
in every case (Da Costa med. Drago.
772). Pulse is generally lower
in typhus, but I have often seen
this (lemon) good in early stages.
Sometimes the rate is very much
lowered also.

Types of Influenza.

The varieties are nearly as
numerous as there are systems to be attached, and according the symptoms which are most
prominent are due, in a great measure, to the special system affected, and I believe that influenza has special affinity for attacking that system which shows the greatest weakness, or it may be that the system which shows signs of previous weakness is most likely to become complicated.

The Gastric Type

In this particular type the jaundice is often very marked and is felt usually in the umbilical and epigastric areas or regions, and in my opinion children suffer more from this particular type than any other. But be it known that children often refer pain to their "belly" when the real seat of jaundice is in the chest. I have often seen it so in cases of pneumonia in children.
Diarrhoea is common in this class of disease, but I cannot say that the evacuations are characteristic at all. In some they resemble typhoid stools.

There also, during an epidemic, keen cases... where the stools were copious, watery in character, accompanied sometimes by great collapse of coldness of extremities,西班牙
the pulse thready & weak, and great pain in abdomen.
The tongue in these cases was covered with white for breath & brown towards the root. Vomiting, of course sometimes well marked & difficult to allay.

I always look out for being complications where there is obstinate vomiting & rise in temperature.
The Catarfalh Type

This during my experience has been by far the commonest of the uncomplicated types. In this type there is great tendency to pulmonary complications. It affects the mucous membrane of nose, frontal sinuses, conjunctiva, Language often becomes affected. In this type of case, it has been brought before my notice on several occasions.

The nasal mucous membrane does not suffer nearly so much as one would think in this class of cases.

Assume this type of cases shows great deal of nervous depression mixed with the prominent catarrhal symptoms. Insomnia in one case was almost complete for 4 or 5 days, before the catarfalh symptoms showed themselves.
The Serosa Type

I believe that very often the pleura has become affected in this disease, from the very onset; for I have in a few cases, seen, pleurism well-marked without any other, apparently, exciting cause. It may be a complication as it no doubt is, in some cases; but why should it arise almost simultaneously with other symptoms?

Pericarditis again has been noticed on different occasions. I can give no experienced of Pericarditis, though I believe cases have been reported.

Nervous Type

By this type I mean to include all those cases that exhibit most prominently, symptoms that arise from affection of the nervous system. For instance, Meningitis, neuralgia, and
In discussing the above it will be wise to take the different systems as the heading under which the complications will be referred to. And by far the commonest is the Respiratory System.

So this system can most of the worst i.e., most fatal cases be referred to either in the form of Pneumonia.
or Bronchitis; but the respiratory tract is also affected with Laryngitis and Cataract of the Throat. Bronchitis is by far the commonest complication of all that I have seen and mentioned, and so far as we can observe differs in no respects or very slightly (from chest examination) from the ordinary bronchitis due to exposure or other causes.

The cause has given rise to different ideas as to origin as being due to some nervous inequality or influence on the bronchial tubes.

But I do not think there can be a more feasible theory, as to causation of this complication, than that it is due to the extension of the cataract of nervous membrane down the tubes, for it almost always shows itself soon after the attack.
of influenza has pronounced itself. It certainly does not seem to be the result of exposure during the invasion in some cases. Though in eight cases of influenza, I believe that the complication has been due to exposure, without the patient thinking he was running any risk. I have seen it follow influenza, by patient starting to work before convalescence was complete.

As Prof. LeFèvre Granger Stevens used to teach, that bronchitis sometimes precedes an attack of dengue, without apparent exposure, so may bronchitis follow influenza, being due to some systematic changes caused by the disease.

Bronchitis, as a complication, is most likely to occur in those people who have been pre-vious sufferers from it.
in those who have some chronic cardiac affection, and in the delirious and aged; and pregnant women who, in the latter part of the period of pregnancy, suffer from influenza are particularly apt to become affected with bronchitis; though I have not seen any fatal results from such, though the cough is very trying and troublesome and often difficult to allay. There is not much pain in the chest, as a rule, unless the cases are very pronounced; often great oppression is felt.

The expectoration in this complication is very characteristic and often very large in amount and free (more or less) from air, unlike the ordinary bronchial expectoration.
That feature of the expectoration is due, to a great extent, I believe, to the fact that the smaller tubes are not at the time affected, in most cases; but when the smaller bronchi become affected the expectoration becomes more frothy. The expectoration has a greenish-yellow appearance, and remains in the spittoon as separate masses.

In some cases the expectoration is very little and I have seen one case where there was scarcely any i.e. very scanty, and this condition was continued for 6 or 7 days. What expectoration there was, was a very tenacious, mucous, but later on the discharge from the bronchial tubes became more copious & characterized by the patient died after
About fourteen days ill,
the cough in these cases
is very troublesome and
persistent and often febrile
and not at all easy to
allay, by the generally
applied remedies.

In children the smaller
tubes are very likely to become
affected and capillary
bronchitis is not at all un-
common. In old people
with weak hearts action
the complication is very
serious. Delirium I have
noticed, at night, very often
in these cases.

The cough often persists
for some time after recovery
has more or less taken
place. The epidemic of
1891 was marked with
pulmonary complications.
Epistaxis can scarcely be
considered a complication as far as
have seen.
Croupous Pneumonia is no doubt a complication of serious importance and in the cases of young adults as well as in old people affected there must be given a very guarded prognosis. As a complication in old people, I believe it is not nearly so common as bronchitis, but in such cases certainly more fatal in its results. In children this has not been a common complication, in comparison to capillary bronchitis. Croupous Pneumonia is very apt to become a sequel to influenza if the patient exposes himself to the weather before he has thoroughly recovered. I have often found that patients suffering from croupous Pneumonia, have not been well for about a week or so, before they have sent for me, and I have thought that in all
probability, they had been suffering from influenza of a mild type, and had been going about and unconscious, exposing themselves to the vicissitudes of the weather.

The behaviour of Pneumonia is different in some cases of this kind, than in ordinary Pneumonia. The physical signs are as one would expect in some cases: the dulness being in some cases less marked than one would expect from the amount of pus formation especially of the upper parts, though the dulness may be explained by the fact that the central portion of the lung is affected first which I believe is common in this kind of Pneumonia. And I have seen one case where the dulness occurred quite twelve hours before the dulness of the consolidated lung could be
detected, though the chest was examined carefully at each visit and the characteristic rusty sputum was not detected or seen till late in the disease. Though I believe the delirium was due to the complication and not to the influenza which was very mild.

This kind of pneumonia has a great tendency to spread or extend over the whole lung in some cases.

The cough is very distressing, indeed, and irritating. There is usually, great prostration.

The temperature is sometimes very high, 104°F or 105°F but usually, about from 103°F to 106°F.

The sensation of the temperature as felt by the hand when removed from the patient's skin, may be likened to the sensation one gets or feels after blowing one's breath through the loosely closed
first, and which I think is very characteristic of this kind of pneumonia.

Bowel movements are usually inactive. The physical signs are the same as for ordinary pneumonia.

The heart action is usually much weakened during the latter part of the complication.

Catastrophic pneumonia and pneumonia of small lobes I believe is more common than we are able to detect it. In consequence of the bronchitis, masking the catastrophic pneumonia. These catastrophic pneumonia patches often lead to Phlegm, I believe.

Phlegm I believe is not so common a complication by any means. Though I have seen a few cases during the epidemics. The physical signs of phlegm are as follows.
cases of ordinary Pleurisy, Effusion or Empyema may follow from careful Phthisis pulmonalis as a sequela. I believe that a great deal of Phthisis pulmonalis has originated in influenza. I believe due to the fact that small patches of catachol pneumonia occurred in the lungs during the attack of influenza and that these patches did not resume their healthy condition. And is it not possible that under such conditions, if weakness after influenza, the inflammatory patches would form a suitable nidus for the development & generation of tubercle bacilli? I am inclined to give an affirmative answer.

I have had several cases of marked Phthisis pulmonalis and the histories pointed to this
Cause. I have repeatedly heard patients say, "I have never yet thoroughly well or rid of the cough completely, since influenza."

There can be no doubt that previously phthisical cases often take a rapid course during an epidemic wave. The process seems to augmented in some way, either mental or physical. Asthma which has been quiescent for sometime has been aroused during these epidemic waves. I believe this to be due to the hemorrhagic irritation which is so common.

It may as well be mentioned here that the cough in influenza in at least 50 per cent of cases, is due to inflamed and elongated uvula (W. J. B. Donnelly, B. M. D., p. 583, 16-3-95).
I am not prepared to accept this theory in itself, for in more than 50 per cent. of influenza cases with cough, there exists distinct bronchial irritation or affection as is shown by the amount of expectoration that results therefrom.

Circulatory System

This system has also been the field for investigation in reference to complications that have resulted from influenza.

Marked depression of the heart action has been observed in many cases, but I have not seen one so worthy of note, as one I shall record, except that of fainting prior to the attack. Prof. Les Thomas Grampier, Stewart, B.M. D., Aug. 4th 94, p 243 mentions
a case where the pulse rate was as low as 30 per minute, with occasional abortive beats. I have no doubt but the cause was due to loss of nerve power in the motor nerves of the heart, although I am inclined to think that muscular fibers of the heart also become weakened in such cases and may have played some part in this lowered condition of the pulse rate.

It is not probable that the inhibitory influence would be increased in such cases, where nervous depression is so much marked in other respects.

It is not infrequent to have an increased pulse rate.

Pericarditis, I have seen in one case but it form
Passed away under ordinary treatment.

Fainting during an attack is not uncommon and I believe is due to the great muscular weakness that shows itself in ordinary muscular locomotion affecting the heart also coupled with the nervous preoccupation.

I have seen cases of Endocarditis in children which I could not explain in any other way than through influenza. But these cases I believe are not common.

Urinary System

The complications of this system are not common though during the last cycle, I had a case of Aphasia in an elderly
man, without any paralysis, followed by cephalics which he had not previously suffered from. It was not very acute and passed away in about a week.

Prof. Sir John Fraser, Stewart B.M.O. O.C. Address mentions a case of passing albuminuria which I have not seen any albumin in such cases, though I have repeatedly made examination for such in the urine.

Alimentary System

Vomiting in some cases is very marked and persistent and difficult to allay: it sometimes continues long after the attack is over, especially in the morning, there is then no pain: this I believe is due to gastric catarrh which has been set up.
Diarrhoea is frequently a troublesome complication and often gives rise to a great deal of pain and sometimes passing mucus discharge.

But usually these complications pass gradually under appropriate treatment.

There is sometimes great jaundice to arise.

Reproductive System

As a rule there is nothing of very marked importance in the way of complications that affects this system in the malakas, beyond loss of activity.

Ovaritis may occur but very rarely.

In the feminal sex the case is different for there are cases where the menstrual flow has been caused to become irregular after an
attack of influenza; and occasionally dysmenorrhoea has been observed to follow. But I should not like to attribute this to be the sole cause, perhaps it may have become more noticeable at the time.

That abortions occur from this cause, there is no doubt whatever, but they usually go on the same as from other causes. The time for abortions to occur is about the 30th or 4th month, but many time at a labor period. Labour also has been induced before the period of pregnancy is up. I believe this is due to a great extent at any rate to the feeble state induced, and to the weakness caused by the disease.

The child or foetus in all cases was not dead though...
I believe this is usually the case.

Nervous System

The nervous system I believe shows more marked, than any other system, the effects left after an attack of influenza; often influenza leaves the patient in a great state of nervous depression, and marked prostration and weakness. But I am inclined to think that the weakness to great extent is brought about by the destructive action of the influenza poison on the muscular system, as well as the nervous system, after the same manner as Scarlet fever in adults. Though certain cases suffer evidently from great
depression of spirits and of course, due to the special affinity of the poison to attack the nervous system, in such cases depression often lasts for some time after the attack has passed, and very often a kind of melancholia has become developed as I have seen in one case.

In one case of insanity a history of previous influenza was elicited which left a deal of depression of spirits was followed some months after by mania.

In this case there was a distinct history of insanity in the family and the co-incident make me feel, that very probably, the mania was awakened, as it were, by the influenza; and that it might have been the
cause of bringing about a tendency which was lying dormant in the nervous system.

In one case the mental depression was so marked, that the patient would not rise from bed for three or four days at a time, as he was afraid of (to use a vulgarism) "bringing something else on."

A case of Paralysis of the Dorsal (general) was told to me, of a doctor, as being due to influenza also. Suicide have been referred to it.

Delirium is a common complication of influenza both in bronchitis and pneumonia, and sometimes in cases of severe headache or meningitis.

Da Costa in Med. Diagnosis.
Neuralgia is a very common occurrence and it is due to a great extent to the system being worn down by the virus of the disease. There may be some structural changes in the nerves themselves, but this is doubtful. The nerves that are most often affected are the cranial. The supra-orbital and the facial nerves being the most commonly affected. The pain is excruciating in many cases.

There is usually a notable predisibility about the kind of neuralgia also; and it very often continues to affect the patient for some time after the influenza attack has passed. It suppose this is due to heat tindiness of neuralgia to show...
itself in a debilitated subject

The neuralgic pains in the stomach and in the abdomen generally, I believe are from the same cause. Hypnosis and the closeness of the head space was sometimes noticed.

Pain in the back is very common.

Of the Spastic Paralysis, I take to be the cases those I have had. I could not elicit any change caused by influenza. Meningitis is a complication which I have had chance of observation. In one case under treatment—by me and have had about a dozen reported to me by medical friends. I will give the clinical features of the one treated. The patient, a boy 16 years old, complained of
not feeling very well on the previous day.

The patient was taken suddenly early in the morning with a chill which was soon followed by headache & sickness. The headache very shortly became very intense. The patient was crying out with pain in the head & beneath occiput.

He was vomiting a bile-like, looking fluid mixed with food, and the temperature was when I saw him 100°F.

Within a few hours he became unconscious, but not comatose; occasionally crying out; head was fixed, occasional twitching of arms. There was no rash or eruption of any kind to the skin & face more or less flushed at first.

Pulse was 96 during early
Part of the day (first visit) it was well filled with normal tissue, but later it became weak almost baddly filled.

Patient towards night (6 o'clock) was quite unconscious. Couldn't be roused in the least. He was not in a coma state exactly. There were no tetanic spams.

In the ear, part there was distinct delirium. Pupils did not act. Temperature rose to 103°F. The pupils were contracted.

Patient died during the early hours of the following morning.

I consulted Dr. Edwards, Cardiff who without hesitation pronounced it meningitis complication. One other case happened.
close by which was described
time by Dr. Wright, but the
symptoms were more pronounced
especially the spinal
symptoms; there was acheing
of back & neck, speech
impaired. Temperature
went up to 105° F.
Unconsciousness was reached.
Patient died in about 2½ days
from onset.

The cases reported to me
were all of the same nature
varying in intensity.
Dr. Bland told me of a case
which occurred in an old
fracture of the base of skull
case, which had all the
symptoms of the above
but unconsciousness did not
come on so early. He believed
the meningitis was due to influenza.
The base had been fractured
about a year before.

I shall describe the
Postmortem changes under the heading of Pathology later on.

Other Complications

Cataract of the eustachian tube together with Rhinitis I have seen once case. Deafness was marked for some time but with ultimate recovery.

Deafness Middle Ear happens in many cases. In some the tympanum was perforated and I have seen the ossicles swept away with the discharge. As a rule however the cases recover with out much difficulty.

Secondary abscess & over mastoid has formed occasionally.

The epi inconveniences have presented a peculiar conjunctivitis in which there was
great photophobia.

The conjunctiva was not bright red as seen in ordinary
congestions, which is due
to congestion: in these cases
there was very little actual
congestion, but the white of
the eye, had changed to
a distinct and characteristic
pink appearance; it was
usually, in one eye only. It
usually lasted for a week or
may be a little more.

I have heard, but cannot
say, bow far it is true, that
such conditions are found
in horses during influenza
epidemics.

Liquor Atropia seemed to
be the only application that
gave relief.

Optic Atrophy has been
said to be due to this malady.
With reference to immunity rendered by one attack is only very short duration, though I believe certainly that there is some immunity rendered.

Many cases that were attacked by the first epidemic cycle were attacked by the ones following and in contradistinction to which there were many who were not sufferers from the cycle that followed the first, though exposed to the same condition.

Relapses are not uncommon especially I believe in the Catarhal type, even a few or 3 days after the patient seems convalescent.
Pathology

That there is any definite known characteristic modes of death in influenza, in influenza can scarcely be asserted; beyond the pathological changes that characterize other diseases when a special organ becomes affected, i.e. the changes (post mortem) that occur in the lungs and other organs, in influenza, might be brought about by other diseases.

Dr. Pfeiffer's bacillus which seems as present to claim part support as being the cause of the disease. I am afraid it must be pleasant to say, leave but few uncomplicated cases for post-mortem research.

Consequently, the mortal anatomy is as yet, not thoroughly known.

The post-mortem examination
reported true, of the case of Dr. Davids, where the meningitis complications proved fatal was as follows, the pathological changes were:

The meninges were much congested, and the sinuses contained a dark reddish fluid. The subarachnoid spaces contained more serous than usual and some emulsion at the base of the brain.

Brain substance near the surface was congested. There was also softening of the brain substance of the temporal sphenoidal lobe. Ventricles contained some fluid.

The rear of the old fracture was observed from which patient had completely recovered for some months.

He did not examine the spine.
I made a postmortem on a case which died from complications of influenza, but there was a claim against an accidental insurance company for supposed death due to injury to head. Hence the reason for postmortem examination. I found no brain changes or meningeal changes.

The lung was consolidated in the lower lobe and presented the ordinary features of consolidation. The bronchi were congested and contained mucous frothy and more or less tinged with red. There were old pleuritic adhesions.

Benehites of a characteristic influenza type was noticed in the clinical features.

The consolidation was limited in area which alone would scarcely be thought to be sufficient to prove fatal.
There can be no doubt that there is some change in the nervous system, but what that change is, has yet to be demonstrated.

There is as yet not sufficient evidence as to the pathology of the disease to confirm or deny the nervous theory. It seems to me that some organism (or way be Dr. Pfeiffer) enters the system and I believe mostly through the air passages and then generates or develops and which organism produces some toxic chemical changes in the blood, as long as there is any food or pabulum fit for its germination and that these toxic changes produce the symptoms of uncomplicated influenza. It must be very rapid.
in its action worse cases because, as I have said, the symptoms seemed to follow very shortly after the exposure to infection. It is rather like Diphtheria in its rapidity of infection and also its tendency to depress temporarily. I believe also there is a tendency, or the poison or germs have a peculiar affinity, in some cases to affect one system more than the other.

Mode of Spread

This, from what investigation, previously made on Epidemics of somewhat similar nature, have taught us, resolves itself into only two possible ways, and these are divided under the contagious theory.
And the theory that it is air-borne like Malarial fever. If the origin could be proved to be telluric then there would be no necessity for argument.

But the manner of spread of influenza does not behave after the same manner as Malarial fever. For instance, this epidemic started in Asia and travelled across Europe to America. Malarial fever is common in Asia, but I do not know that there are any records of it reaching beyond about two or three miles at the outside, from the place of origin, and if there are forest or lakes intervening between the place of origin of Malarial fevers it will not pass over and infest those areas beyond such safe guards or barriers.
Then again if such were the causes of spread, why are not towns and country affected simultaneously, that are, and I believe must be, subject to the same atmospheric influence.

Again, it is true the rapidity of spread is well-marked and great, but the rapidity of spread is not by any means greater than people can travel, and it has been noticed, as previously mentioned, that the spread in the first onset, has been most rapid in line of communication or traffic.

The greater the rapidity of spread being noticed the most marked in the direction where there is greatest communication between infected areas. The rapidity of spread is very pronounced.
in thinly populated districts of towns, where marsh-miasm "is rendered innocuous by the air of large cities" (Robert Practice of Med. 10th Ed. p. 228)

And the county districts & villages are often affected later than the large centres.

This, of itself, looks very much as if the disease were contagious (Denote word contagious as bearing the same meaning as infection)

And what medical man practicing since 1889, in this country, has not seen members of households or institutions, struck down one by one, with this disease malady?

Scaresly any is the natural answer.

And again, households who live in the country, some distance from an infected area, town or village, as the
case may be, being infected later on or not at all, perhaps.

Again one often sees, one or two cases gradually conveying infection to others, and this increases in ratio by arithmetical progression until an epidemic appears with all its ravages.

Also I do not know of any cases having been reported during the epidemic, where influenza has broken out, where there has not been communication between infected areas, as might be the case for some time at any rate, in distant small islands, or among lighthouse keepers or ship crews.

The case in which meningitis complication was observed by O'Wright was, I believe infected by going down to an infected area some nine or ten miles distant; there were
In cases of influenza as far as we knew at the time, in the place where she lived (and died), I believe that in most instances the infection is transmitted by the breath of patients, though it may be by means of infected articles as parcels, clothes, etc.

I think that the evidence is greatly in favour of the Contagion theory.

**Differential Diagnosis**

This has been made between influenza and Scarlet Fever, Ophthalmia, Typhus Fever, Influenza, Acute Rheumatism, and ordinary Colds or Cataracts or Cold. Cataracts has symptoms common with influenza, but they are limited as a rule to the eye and head, and the coryza
Dengue, as a rule lasts so long in the affection. There is no back pain or feeling of having been bruised and the fever is only slight. There is not any prostration worthy of mention. Dengue is soon thrown out by the fact that in this country it is not known to occur, while influenza is most common or commonest in temperate climates. Dengue in hot or tropical.

Then again, there is the characteristic fact in Dengue. Scarlet fever gives one more trouble to eliminate, especially in children, where a description of the state of the feelings is vague or misleading.

The rash in Scarlet fever is characteristic and rarely absent while the rash in influenza is rarely present though somewhat similar in appearance.
And the attack does not last so long as Scarlet Fever if uncomplicated. And complications do not come on so early in Scarlet Fever.

The influenza rash does not last longer than 24 hours. Scarlet fever rash lasts three or four days.

There is very often Albumin in urine in Scarlet Fever, as a rule none in influenza.

The tongue too is characteristic in Scarlet Fever. Sensibility is may be due to influenza but the treatment would be little altered. The constitutional symptoms are more marked in influenza and more steadily disappear under appropriate treatment. Acute chlorolism may be doubtless occasionally but the joint symptoms and the movable character of the
Pains soon explain the cause
The pains in the limbs generally, and the body in influenza is more muscular, diffused, and bruise-like than in Rheumatic fever.

The perspiration in Acute Rheumatism is more acid in its smell. Head symptoms again in Rheumatism are not so pronounced as in influenza.

Headache in influenza is the rule. Time soon distinguishes the two. Tongue is whiter in Rheumatism as a rule.

Typhus Fever this should not be the cause of much trouble. The skin is dry, and the rash is typical blotting or maculae, which comes on about 4th day. When uncomplicated influenza symptoms begin to abate, the fear of an Epidemic will clear ones diagnosis.
Prognosis—

This in the uncomplicated influenza cases may safely be said to be good, but where the cases are complicated with pneumonia or bronchitis or meningitis, it is feared or perhaps, grave.

When meningitis shows itself prominently the prognosis is bad.

In old people the prognosis is not so good as in young adults, and the same may be paid of the cases with previous organic mischief of heart or lungs.

It is serious also in infants.

It is very difficult to arrive at a correct estimate of the mortality, because the disease generally proves fatal from complications which might have arisen from other causes.
The mortality may be considered very small.

Treatment

This, to the ordinary practitioner and patient is very important indeed, and it may be laid down on the same lines as those for other fevers of a similar nature.

Preventative Treatment: This can only be carried out to a limited extent. It is clear, impossible for every body, in the first report of an epidemic likely to arise to use all the prophylactics that have been recommended by different medical men. For instance, to inhale Eucalyptus oil. To use Antiseptic lotions or to take Quinine once or twice a day.

This is beyond our power of...
expectation from the public at large. It is difficult enough to persuade them to take advice when ill, leave alone when they are well. There may be useful as reported by Dr. Coghill (P. M. J., 6-4-95) where the inmates of an institution took 5 grains of quinine daily, the report favoured of his treatment, but that is impracticable to expect the whole community to be taking quinine, at least it is not likely to happen. Isolation as far as possible certainly ought to be insisted upon, especially in private homes, where there is room and I believe this would decrease its spread. Isolation in hospital during an epidemic I believe would severely be possible.
But very often mild cases, not under treatment perhaps, often infect themselves, or other people’s risk, and thereby convey infection.

Complete isolation is no doubt of great value, but I am afraid it cannot be carried out as desired. The patient from these patients should be destroyed by fire. Clothes, & such like, should be disinfected by heat, from patients.

Preventative medicines in the hands of the public would be useless or practically so.

Immediate Treatment—It may be said that medical men vary a great deal in this department, and nearly every one has a favorite drug; but I think, that the indications
are, for medicine, that tend to clean away from the system, the poison and other products, that result from this, by giving a stimulus to the eliminatory organs for action.

But I believe all agree that the patient should be put to bed and kept in a well ventilated room at a warm and equable temperature about 65°F. The next step to be taken into consideration, is to relieve any disturbing symptom, first having seen that the bowels are regulated.

The medicine in the form of a purgative is indicated in most cases and the drug I use are Per. Brom. Iqg. Aminen Acet Fort. Per. nit. or even Sod. Salicylate if necessary, as recommended by Dr. Rawlings James, 31. 1. 92.
In fact I believe that soda felspar which brings on diarrhoea, and lowers the temperature is more active and relieves the pain in the back and head wonderfully. Treatment of separate symptoms. Headache; this is very often relieved very quickly with Antifebrine. Antipyrin, Phenacetin and soda felspar.

I don't think it wise to use Antipyrin indiscriminately in all cases of influenza. It may depress too much. Vomiting is often soon relieved by effervescent mixtures, but not in all cases which is sometimes difficult to allay. Pyrexia is often easily relieved by anthphanethes but for hyperpyrexia is best treated by cold baths as recommended by Dr. Kincaid McLean, Belfast.
Cinnabim has been recommended by Dr Grant (B.W. J. p 583. 16.3.55) with fair results. I know very little of this treatment.

Feveritis is best treated by soda bicarbonate internally, and an astringent gargle.

Depression of the heart action should be accompanied by ammonia and alcohol per rectum, effervescent stimulants, with some ordinary febrifuge, any depressing drugs should be avoided.

Diarrhoea should be stopped by opium and chalk mixture which usually does so easily.

The condition of the patient after the acute symptoms have passed, should be watched, and all risks of a relapse should be avoided, by not going out too soon. The prostate
should be attended to by administration of nourishments of any description that are local, digested, and small quantities of alcoholic stimulants may be recommended at meal times.

Medicines in the form of ferri et albi. This is to be used if borne well and if the patient does not become well or these are any signs or likelihoods of pulmonary troubles a rest, or simply to be recommended, to the warmer climates as Madeira or the Mediterranean or Cape, and which would be found to be of the greatest benefit.