Influenza Pandemic

The threat of an influenza pandemic is top of the Civil Contingencies Authority Risk Register for the Bailiwick and it is therefore essential that we are well prepared to manage any influenza pandemic.

What is an Influenza Pandemic?

It is important to differentiate between a *pandemic* and an *epidemic.* An epidemic is a serious outbreak in a single community, population or region, something which we see quite frequently. A pandemic is the worldwide spread of a new disease and so is much more serious. A pandemic occurs very infrequently and has the potential to affect millions of people.

An influenza pandemic occurs when a new influenza virus emerges and spreads around the world. Most of the worlds' population will have little or no immunity to this new virus. Influenza pandemics have occurred throughout history. In 1485 numerous cases of "sweating sickness", a flu-like illness, were reported in Britain. Then in 1580 the first influenza pandemic is recorded which was reported to have started in Europe and then spread to Asia and Africa. Several pandemics were subsequently reported in the 1700's and 1800's.

Three worldwide influenza pandemics occurred in the 20th century:

- The 1918/1919 'Spanish flu'
- The 1957/1958 'Asian flu
- The 1968/1969 'Hong Kong flu'.

In the 21st century we saw the H1N1 2009 'swine flu' pandemic.

Spanish Influenza Story (1918/1919)

This pandemic is considered one of the deadliest disease events in human history.

The "Spanish flu" or 1918 influenza pandemic was caused by direct transmission of an avian (bird) influenza virus to humans. This virus caused an unusually severe and deadly illness, towards and soon after the end of World War I.

The origin of the pandemic remains unknown. It was called 'Spanish flu' because the pandemic received greater attention in Spain than in the rest of Europe. Both China and North America are named as possible starting points of the pandemic with the first outbreaks reported in American military establishments in March 1918.

From the USA, the pandemic moved to Europe in April/May 1918. The close proximity of military quarters and the mass deployment and movement of troops during World War 1 may have accelerated its initial spread throughout Europe. The pandemic spread to North Africa and then to India, China, New Zealand, the Philippines and many other parts of the world. A number of countries, including the UK, experienced second and third waves in 1918-1919 of a more virulent (deadly) form of infection.

Every effort was made to control the transmission. These included isolation, personal hygiene, use of disinfectants and the prevention of public gatherings. Many institutions, including schools, were closed. In some places quarantine was enforced with different levels of success. There were no vaccines or antiviral therapy available.

Although no figures exist in many parts of the world, the pandemic is estimated to have infected 50% of the world's population with between 40 to 50 million deaths (some reports indicate that up to 100 million of the Worlds' population perished). There are reports of people waking up well in the morning but dying by nightfall - so rapid was the disease process. The attack rate and mortality rates were highest among healthy adults (20-40 years old). In the USA more than 600,000 people died; in England the figure reached 250,000. Entire villages perished in Alaska.

In Guernsey there were 115 deaths and in 1918, in response to the Influenza pandemic, the Royal Court agreed to close all schools, places of public entertainment and to prohibit all unofficial gatherings of people. The Board of Health also published warning notices in newspapers and posters in both French and English advising people of the precautions against infection which should be taken. The use of "Thalasol", a strong disinfectant manufactured from seawater in St Peter Port, was advocated as a gargle. However, it was hard to enforce measures to prevent transmission of the pandemic virus in a small community. Guernsey's Medical Officer of Health Dr Henry Draper wrote in 1919, "*The visiting of sick people is a constant feature in our community where close relatives are so common ……. many people unfortunately lost their lives as a result of such visiting".*

Asian influenza

The 'Asian flu' started in China in February 1957 and spread worldwide that same year, lasting until 1958. Influenza disease surveillance is more developed now than in the 1950's. Nevertheless, three weeks after the initial outbreak, influenza A H2N2 virus was identified as the cause of the pandemic.

Within six months, the pandemic spanned the entire globe. Infection spread to India, Australia, and Indonesia by May; to Pakistan, Europe, North America and the Middle East by June; to South Africa, South America, New Zealand and the pacific Islands by July; and to Central, West and East Africa, Eastern Europe and the Caribbean by

August. In Europe the epidemic coincided with the September return to school. Cases were concentrated in school-aged children and those crowded together, but in the UK the impact on mortality was in the elderly.

By the end of 1957, the worst seemed to be over. However, a second wave of infection was observed early in 1958, which broke out in numerous regions including Europe (but not in UK), North America, the former USSR and Japan. This wave caused high rates of illness and increased fatalities. Quarantine measures were generally found to be ineffective, at best merely postponing the transmission by weeks.

The two waves together affected some 40-50% of people, of which 25-30% experienced clinical disease. The mortality rate was estimated at approximately 1 in 4000. Thus, the total death toll probably exceeded 1 million people.

Hong Kong Influenza

As in 1957, the 'Hong Kong flu' and arose in Southeast Asia. However, this outbreak did not begin in Hong Kong but in China in July 1968, spreading to Hong Kong that same month, from where it spread rapidly across the whole world. Half a million cases were reported in Hong Kong in just two weeks. The virus was rapidly identified as a novel influenza A subtype, H3N2, and in August 1968 WHO warned about the emergence of a possible pandemic. Further spread occurred rapidly throughout most of South-East Asia, although a significant outbreak did not occur until January 1969 in Japan.

The Hong Kong influenza reached the US in September 1968, via US Marines returning from service in Vietnam. By December the illness was widespread and morbidity and mortality was as high as in the 1957-1958 pandemic. In Europe the disease was diagnosed from September 1968 onwards; symptoms were mild and excess deaths negligible. In the United Kingdom the epidemic began in December, and demands on medical services were not excessive. However, the number of fatalities due to influenza sharply increased in Europe one year later, during the 1969-1970 season. Finally, the virus reached South America and South Africa in mid-1969.

Vaccine manufacture began within two months of the virus being isolated. However, only 20 million doses were ready by the time the epidemic peaked in the United States.

Estimates of victims of the 1969 pandemic show a range of 1-3 million fatalities, of which over 30,000 were from the United Kingdom.

Swine Pandemic influenza (2009)

In 2009 the swine pandemic influenza virus emerged in Mexico and caused a world-wide influenza pandemic. In most people swine flu caused a mild illness but in some it caused severe disease and death. The Spanish pandemic influenza of 1918 caused 40 to 50 million death world-wide with 250,000 deaths in the UK and 115 in the Bailiwick. In contrast to this, the 2009 swine pandemic influenza caused 392 deaths in the UK with no deaths in the Bailiwick. You will need to consider the possible reasons for this.

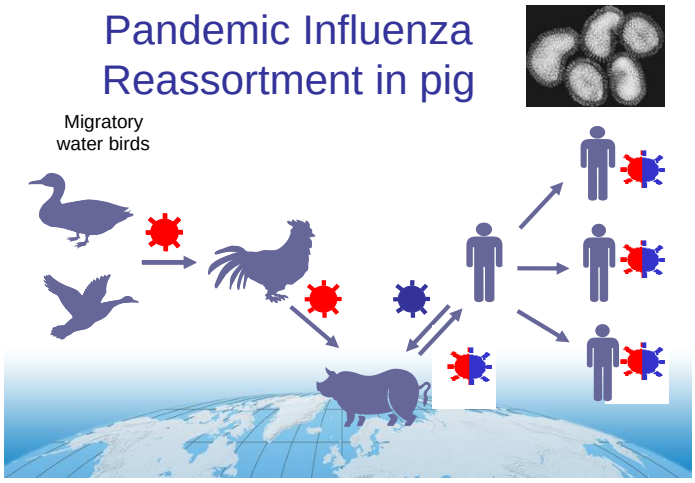
So how did modern scientific research help prevent a repeat of the catastrophic events that occurred world-wide during the Spanish Influenza Pandemic? Or was it just luck?

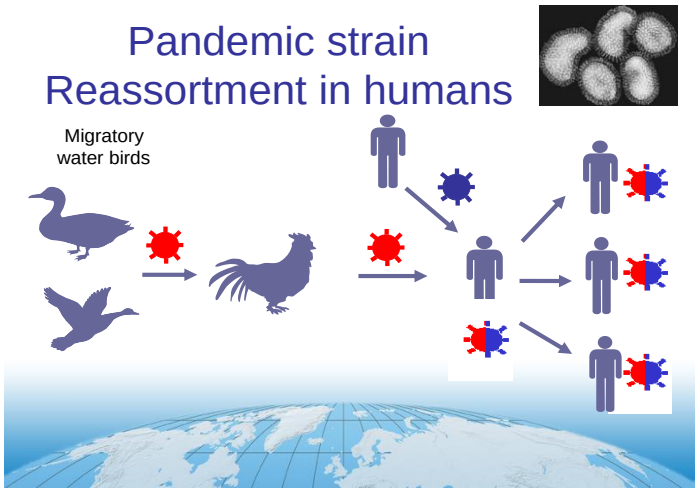
The scientific causes of an Influenza Pandemic

The two types of influenza viruses capable of causing significant human illness are termed **influenza A and B**. Influenza A and B viruses are continually altering through a process of random mutation. This is called **antigenic drift** and causes annual outbreaks of influenza virus infection and, on occasion, epidemics of influenza. So, the antigenic drift in the virus causes the cases of influenza that we see every winter.

Influenza A (but not influenza B) can change substantially which may result in a new subtype of the virus being formed. The world's population will not have any immunity to this new virus. This can result in a pandemic affecting millions of people worldwide and is called an **antigenic shift.**

Pandemic Influenza may occur as a result of:





Protecting the population of the Bailiwick

During an influenza pandemic the Bailiwick will activate its Influenza Pandemic Interisland Strategic Plan and work closely with national and international organisations such as Public Health England, the Department of Health in England and the World Health Organisation.

The good news is with effective planning, modern infection prevention and new drugs and vaccines we can hopefully avoid this modern plague (Spanish Flu) scenario in the Bailiwick.

First steps in Pandemic Control

1. General Public

Influenza viruses can spread:

- Person to person via the respiratory route when an infected person coughs and sneezes;
- Through hand-to-face (nose, mouth or eye) contact after a person or surface that is contaminated with infectious respiratory droplets has been touched.

To protect others and reduce the spread of infection, anyone ill with pandemic influenza should:

- Stay at home.
- Minimise close contacts.
- Adopt thorough respiratory and hand hygiene practices,
  - Cover the nose and mouth with a tissue when coughing and sneezing,
  - Disposing immediately of that tissue after use,
  - Washing hands frequently with soap and warm water, or alcohol gel if water is not readily available.
  - Contact your GP Practice by telephone do not present with flu like symptoms during a influenza pandemic as you will spread the virus to other susceptible patients.
  - Listen to the radio as the GP practices will be advertising influenza specific clinics.

2. Healthcare workers

- Implement immediate infection prevention procedures e.g isolation of suspected cases, wearing of protective clothing by healthcare personnel.

- Introduction of influenza like illness surveillance e.g swabbing affected patients to see how the virus is progressing in the island.

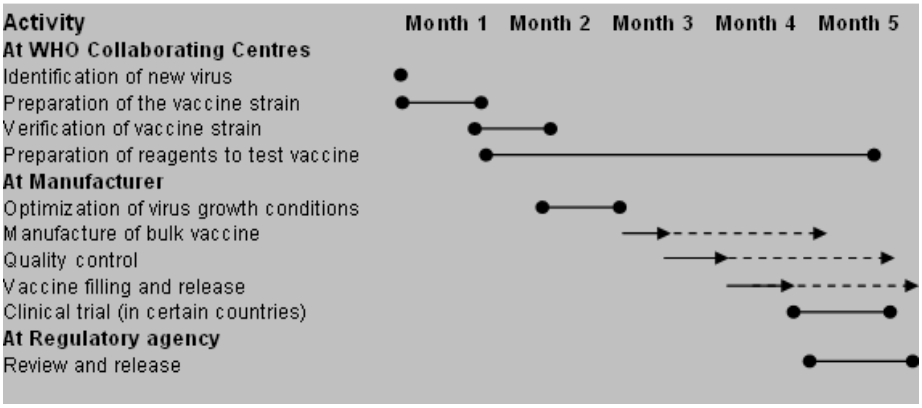
- The use of antiviral medication will be introduced, this will help reduce symptoms of the flu and reduce secondary transmission of the virus while we are waiting on the development of a new vaccine, which could take 6 months to develop.

3. Producing a vaccine

- Because the virus will be new, there will be no vaccine ready to protect against pandemic flu;

- A specific vaccine cannot be made until the virus has been identified;

- 'Ordinary' flu vaccine or past flu jab will not provide protection.Identification of the pandemic strain of virus will allow for the manufacture of an effective vaccine. A decision will also need to be made about who the virus is affecting the most .This will based upon who is being affected in terms of severe illness so these patients will be prioritised as receiving the vaccine when it is first available.



Command & Control in Guernsey

It is important that someone takes overall responsibility for leading the Bailiwick's response to an influenza pandemic. A Strategic Coordinating Group will be set up to oversee the multi-agency response. The Strategic Coordinating Group will meet regularly to ensure that all key organizations within the Bailiwick work together.

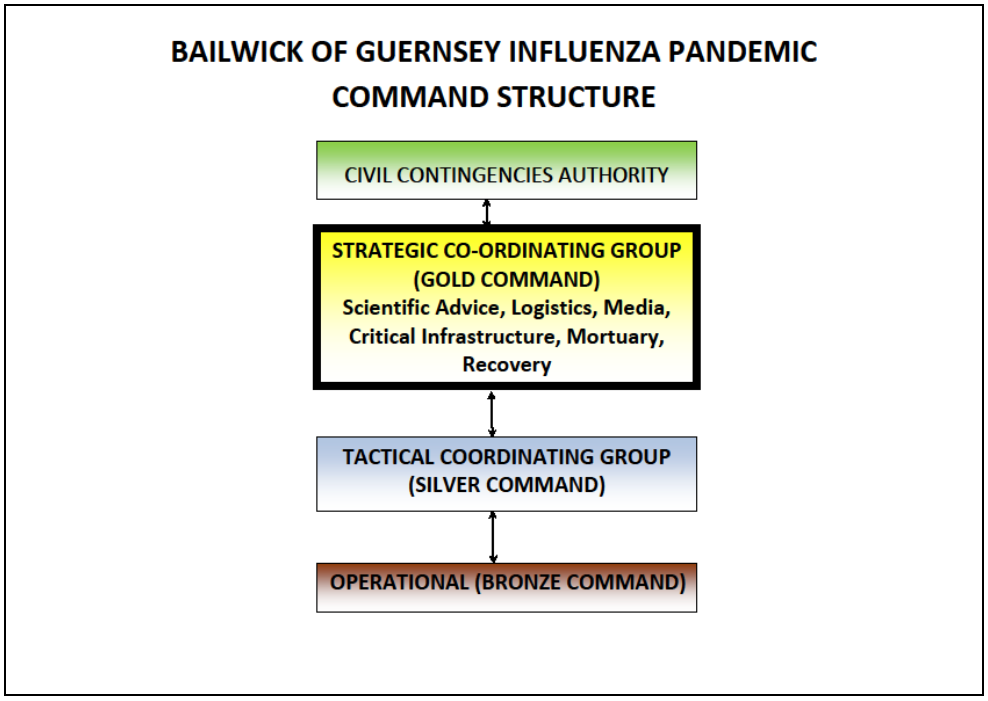
The aim of the Strategic Coordinating Group is to:

- Save and protect life;
- Relieve suffering;
- Contain the incident – prevent escalation and spread;
- Provide warning, advice and information for the public;
- Protect the health and safety of personnel;
- Maintain critical services;
- Promote/facilitate self-help in the community;
- Facilitate recovery;
- Liaise with other Channel Islands.

Before a pandemic occurs it is important that essential States Departments and other critical infrastructure service providers ensure that they have suitable business continuity plans in place in order to be able to respond to pandemic influenza.

Worst case scenario planning assumptions suggests that, up to 50 per cent of the population (30,995 in Guernsey) could experience symptoms of pandemic influenza during one or more pandemic waves lasting four weeks in our islands. The nature and severity of the symptoms would vary from person to person. (These are planning assumptions only and are based on reasonable worst case which does not take account of modern medicine and Bailiwick response arrangements).

The Civil Contingencies Law places a duty on certain responders to produce business continuity plans which will address staff shortages.



The Role of the Emergency Services

A pandemic will inevitably place substantial pressures on small island health services and emergency services sooner than would happen within the UK where support from services in neighboring towns and cities can be readily utilised.

Emergency Services will be affected by:

- The success of treatment in reducing the severity of the illness;
- The success of the vaccine in preventing new infections.

The management teams of all emergency services will need to consider what non-essential services it can reduce in order to continue to provide its core services.

Although all emergency services will be affected by an outbreak of influenza it anticipated that; due to the increase in patients there will be a greater demand on the ambulance service and the wider health.

St John Ambulance & Rescue Service (SJARS) will activate its contingency plan to assist in dealing with the increased demand on the service.

Affects on Ambulance Control

As more people become sick there will be an increase in the demand on the ambulance control, the calls will range from calls for advice to the request for an emergency ambulance.

All emergency calls are monitored and prioritised to ensure the 'right patient' receives the 'right response' at the 'right time'.

The response may include;

- Providing telephone advice
- Referring the caller to a doctor surgery
- A single manned response car
- A fully equipped emergency ambulance

There may become a time when the demand is so high that non-emergency cases are rescheduled or cancelled to assist with dealing with the increased emergency calls.

Affects on General Practice

GPs are often the first point of care for all patients during an influenza pandemic. Following extensive planning primary care have plans in place such as:-

- Providing telephone advice
- Will activate designated "flu clinics"
- Will prescribe appropriate first line treatment
- Have appropriate personal protective equipment to protect healthcare personnel.
- Will administer the pandemic vaccine when available

The media

The media plays a central role in providing clear information and advice during a pandemic. Scientific knowledge will at first be limited, the pattern of disease spread may be variable across the UK and Channel Islands and public concern may be high.

Pandemics require the whole of society to respond as:

- Consistent, clear public messaging, is critical to a successful response.
- This will help to maintain public trust and support, as well as in increasing uptake of recommended actions, such as good respiratory and hand hygiene practices, effective and responsible use of antiviral medicines, and uptake of vaccination.

Openness and transparency is central to an effective pandemic response. People are likely to respond better and are more likely to take effective and appropriate action if they trust both the advice given and the person or organisation offering it.

Effective communication is essential as research suggests that people are more likely to take up recommended behaviours when they clearly understand the risk the pandemic poses to them (e.g. understanding they could become infected with influenza themselves.)

A public service broadcaster, like the BBC, will aim to deliver essential information in the interests of public safety across radio, TV and online services. The BBC will work with emergency planners, but editorial judgments may still need to be made to ensure accuracy and independence – and avoid panic.

The audience will expect the information they get from the media to be clear and trustworthy. They will also expect journalists to ask challenging and searching questions. As a pandemic or civil emergency develops more probing questions may well be asked as decision makers are held to account.

A journalist may consider using a variety of sources of information, but will need to be cautious about unofficial or unverified accounts, such as eyewitnesses or social media. Print and broadcast media organisations have to follow the law and codes of conduct, however there are fewer checks or rules in place on social media.

In terms of reporting a pandemic there are all sorts of practical and safety considerations. A TV reporter will want to get pictures, but will it be safe for them to be mixing with infected people? Is it OK to invite guests into the studio or should you interview them on the phone or on Skype? What extra precautions do journalists need to take to prevent becoming a casualty of spreading the virus?

Education

School closure may be effective both in terms of protecting individual children from infection and in reducing overall transmission of the virus in the population. However, to be effective prolonged closures are required. This may involve schools

over a wide area, but carries a risk that social mixing of children outside school would defeat the object of the closures.

Such closures should be guided by the following planning principles:

- Using a precautionary approach in the early stages of an influenza pandemic and depending on the public health risk assessment, the Director of Public Health may advise individual school closures. The purpose would be to reduce the initial spread of infection locally while gathering more information about the spread of the virus.
- Once the virus is more established in the islands, the general policy would be that schools should not close – unless there are specific local business continuity reasons (staff shortages or particularly vulnerable children). This policy will be reviewed in light of information about how the pandemic is unfolding at the time.

However, individual schools may need to close because of insufficient staff numbers rather than any clinical decisions.

The Ports

The Foreign and Commonwealth Office will issue advice regarding travel to affected countries.

During a pandemic, ports will play an important role. Consideration should be given to:

- How supplies reach us;
- The effect on business;
- That 98% of everything arriving in Guernsey comes by sea.

- That 1/3 of all passengers arrive by air, 1/3 of all passengers arrive by sea.
- That 10% of visitors are on board yachts and boats in St Peter Port.
- That “Commodore Goodwill” arrives at 0300 every day. This delivers every imaginable item, particularly the daily fresh food deliveries for the shops. Commodore Clipper” arrives 1600 each day carrying, a mixture of containers and several hundred vehicles and passengers.
- That Guernsey has an obligation to support the smaller islands (Alderney, Sark, Herm, Brecqhou and Jethou).
- That all passengers from Europe are checked by Immigration, some are stopped for checks by Customs. There are no facilities or permanent arrangements available to undertake heath checks.
- That Guernsey cannot act in isolation from Gatwick Airport, Weymouth or Jersey.

In the UK, in general, normal port health arrangements will apply during a pandemic. Given the expected two to three day incubation period for pandemic influenza, there is no evidence of any public health benefit to be gained from meeting planes from affected countries or similar pro-active measures such as thermal scanning or other screening methods. Such measures are largely ineffective, impractical to implement and highly resource intensive.

Passengers should be encouraged to self-report symptoms to crew and ground staff to enable information gathering, investigations and treatment to be undertaken. This will be accompanied by an information campaign at ports of entry, reminding passengers of the symptoms of influenza, what to do should they become ill, and to defer travel if unwell. Communications to the general public to explain the basis for the policy, as well as to reassure them, will also be important.