

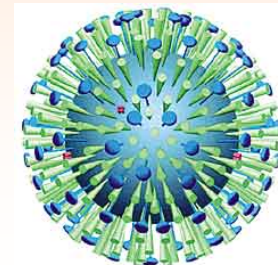
# Influenza Pandemics in Malta

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**Malta; November 2003**

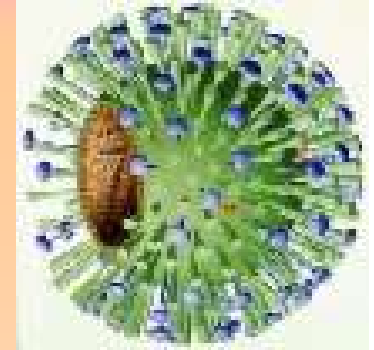


*"The Plague" Arnold Böcklin 1898*



## ***Influenza aetiology***

- **Influenza is caused by RNA *myxoviruses* of three types: Type A, B, and C.**
  - **Type A viruses are the main culprits for influenza pandemics; identified according to surface antigens that are numbered H0N1, H1N1, etc. Virus first isolated in 1933.**
  - **Type B viruses are strain-specific but cross-relationship between strains is high; surface antigens not assigned numbers.**
  - **Type C viruses are not prevalent; serotypes not defined.**



# ***Epidemic patterns***

- The term “Influenza” was first applied to the specific acute viral respiratory disease in 1803 when the infection caused an epidemic in Britain.
  - Infection thought to be the result of a poison or miasma in the air influenced and spread by winds, temperature changes and barometric fluctuations.
- **Type A**: produces sporadic respiratory illness every year; acute nationwide epidemics occur about every 3 years generally in late fall or winter. Major shift in prevalent antigenic type has occurred ~ every decade causing an acute pandemic.
- **Type B**: causes epidemics about every 5 years but is less often associated with pandemics.
- **Type C**: endemic virus sporadically causing mild respiratory disease.



## ***Epidemiology***

- **Spread by person-to-person contact and airborne droplet spray contamination.**
- **The infection is generally characterised by fever, coryza, cough, headache, malaise and an inflamed respiratory mucous membranes; its complications of haemorrhagic bronchitis and pneumonia leads to a significant mortality.**





## ***Influenza pandemics in Malta: 16-17<sup>th</sup> century***

- **Summer 1580**: Presumed influenza epidemic outbreak spread from Asia minor [Turkey] to Sicily, Malta and North Africa; by August spread to mainland Italy and southern France; left a high death toll in its wake especially in the very young and the elderly.
- **Winter 1682**: Gozitan apothecary requested remuneration from Grandmaster for drugs supplied to the sick poor during an epidemic. Document does not however give any information about the duration, clinical features or mortality of the epidemic.

*G.C. Koln: The Wordsworth Encyclopedia of plague and pestilence. NY, 1995, p.158*

*NML: AOM 646, fol.135, 18.ii.1682*

# ***Influenza pandemics in Malta:***

## ***18<sup>th</sup> century***

- ***February 1730***: a “*catharrhal influenza*” with slight fever infected almost the whole population.
- ***March 1733***: a grave “*influenza of catharrhs, headaches and fevers*” affected the population.
- Probably integral part of 1729-30 pandemic that probably started in Russia and spread to affect Europe and the Americas. Associated with high infectivity rate, a high morbidity but comparatively low mortality rates [mostly infants, elderly and those affected with chronic and respiratory conditions]. Pandemic flared-up again during 1732-33 starting in Russia and spreading to remaining Europe reaching southern Italy and Malta in early spring.
  - *V. Laurenza: Giornale dei successi dell'Isola di Malta e Gozo dell'anno 1729 all'anno 1750 scritto da Gaetano Reboul. Malta, 1939, p.11,24.73*
  - *G.C. Koln: The Wordsworth Encyclopedia of plague and pestilence. NY, 1995, p.158-159*
- Other presumed earlier influenza pandemics affecting Europe during early 18<sup>th</sup> century reported in 1708-09, 1712, 1718-22. Caused widespread illness but few deaths. Apparently restricted to Northern Europe and no record of their effects on the Maltese population.

# ***Influenza pandemics in Malta:***

## ***18<sup>th</sup> century***

- ***January 1746***: further outbreak started among the fleet and spread to the civilian population. Many sudden deaths occurred. May have been a local “resurgence” of the 1742-43 European influenza pandemic [Started in Germany in January 1742; affected Sicily in February 1743].

•V. Laurenza: *Giornale dei successi dell'Isola di Malta e Gozo dell'anno 1729 all'anno 1750 scritto da Gaetano Reboul. Malta, 1939, p.11,24.73*

•G.C. Koln: *The Wordsworth Encyclopedia of plague and pestilence. NY, 1995, p.158-159*

- ***1754***: A “*memorable*” influenza caused many deaths at Mdina; required evacuation of the Seminary and suspension of religious ceremonies.

*NML: Manuscript 386, fol.85*

- Other presumed Influenza epidemics affecting Europe [***no record in Malta***] during late 18<sup>th</sup> century reported in 1762 [subsided before reaching S. Italy], 1781-82 [started in China in Fall 1781; widespread pandemic reaching S. Italy in August 1782: high infectivity, low mortality], and 1788-89 [started in Russia March 1788; reached N. Italy August 1788; affected the Americas: high infectivity, low mortality].



## ***Influenza pandemics in Malta: early 19<sup>th</sup> century***

- **1829-32**: Another Influenza pandemic recorded in early 19<sup>th</sup> century occurred in 1829-32: Pandemic started in China in October 1829, spread reaching Russia in November 1830, Europe by February 1831 and Sicily by December 1831. Became dormant during 1832 but re-emerged again in pandemic form in 1833. In re-emergence, Sicily affected in November 1833. High infectivity but low case fatality. **No record in Malta.**

•G.C. Koln: *The Wordsworth Encyclopedia of plague and pestilence*. NY, 1995, p.15, 95

- **1836-37**: Maltese population affected by Influenza; few persons escaped the infection. Cholera epidemic followed the wake of the infection. Pandemic started in Australia in October 1836 and spread to reach Europe in December 1836. Continued to spread to reach S. Italy & Sicily in May 1837 and Malta in June 1837. Infectivity high, mortality high.

•*The Malta Times*, 9<sup>th</sup> November 1847, p.2

•*The Malta Mail*, 19<sup>th</sup> November 1847, p.3

•G.C. Koln: *The Wordsworth Encyclopedia of plague and pestilence*. NY, 1995, p.15-16



## ***Influenza pandemics in Malta: 19<sup>th</sup> century***

- ***November 1847***: “*numbers of persons, afloat and ashore, civil and military, high and low, rich or poor*” were affected with the disease. Outbreak subsided within about a month. Apparently high mortality since recorded that “*the Viaticum is constantly to be seen and the voice of the priest heard on his dismal mission to shrive the dying*”. Pandemic started in Russia in January 1847 and spread throughout western and southern Europe reaching Malta in mid-October; high infectivity and mortality.

•*The Malta Times, 9<sup>th</sup> November 1847, p.2*

•*The Malta Mail, 19<sup>th</sup> November 1847, p.3*

•*G.C. Koln: The Wordsworth Encyclopedia of plague and pestilence. NY, 1995, p.95-96*

# ***Influenza epidemics in Malta: 19<sup>th</sup> century***

- **1864-65**: Maltese population affected by an epidemic of fever accompanied by profuse sweating, lassitude, headache, exanthemata and lumbar pains. Not identified as an Influenza. Cholera epidemic followed the wake of the infection.
- **September 1873**: Epidemic with typical manifestations of influenza. Cases first noted in Senglea and spread to Cospicua, Paola, Zejtun and surrounding villages. High infectivity but low mortality.

• *Il Barth, 15<sup>th</sup> November 1873, p.342-349*

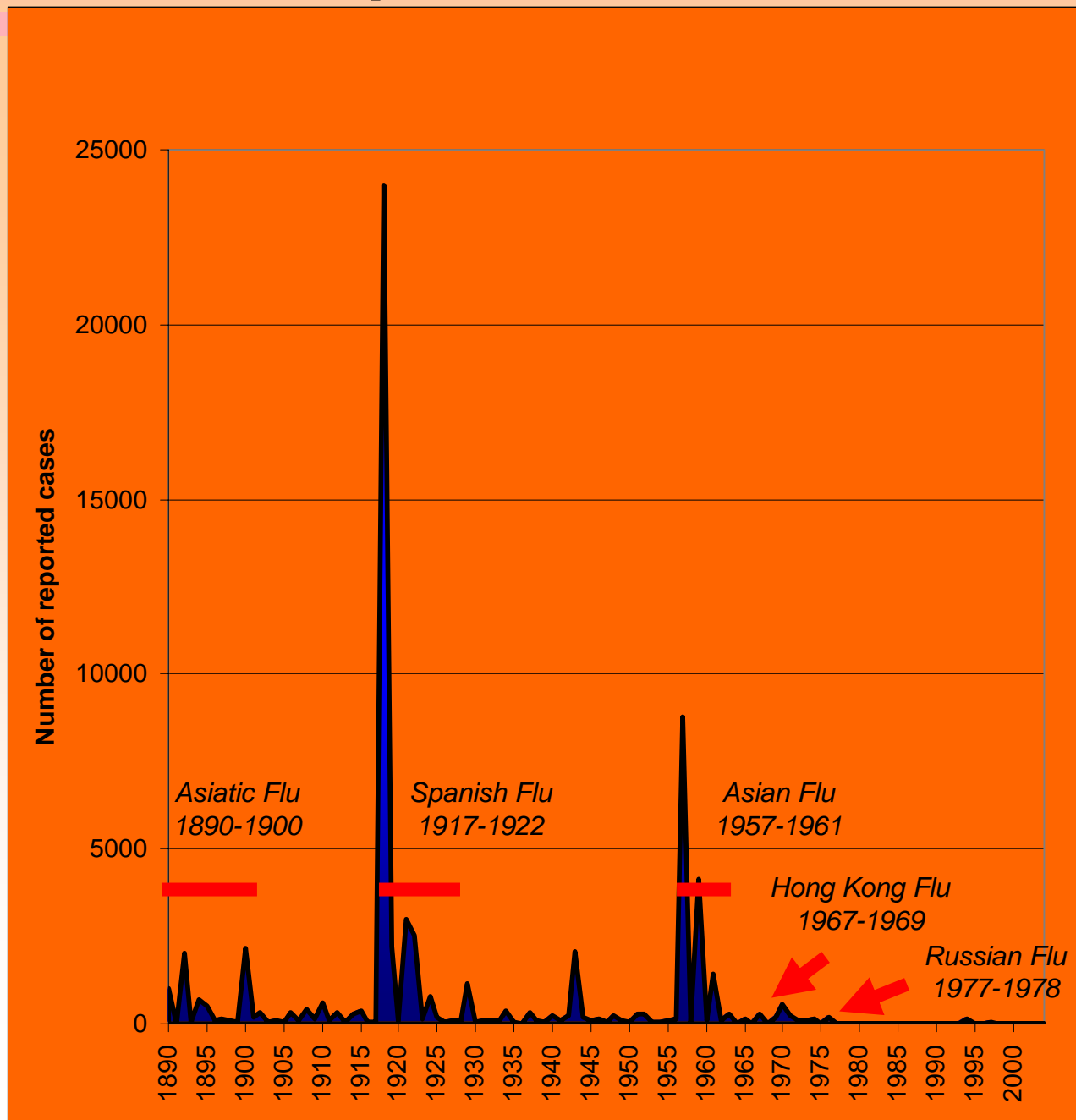
- **Compulsory notification of infectious disease was introduced in Malta in 1871; however the original ordinance [Ord. XI of 1871] failed to include influenza in the list of notifiable infections. Influenza was made a notifiable infection on the 20<sup>th</sup> January 1890.**

• *Government Notice No.9. Malta Government Gazette, 20<sup>th</sup> January 1890, 3372:p.14*



*CGMO: Prof SL Pisani  
1885-1902*

# Influenza epidemics in Malta





# ***Influenza pandemics in Malta: late 19<sup>th</sup> century***

- **1889-90 pandemic – The Asiatic Flu:**
  - pandemic developed in eastern Russia in 1889 and spread quickly to Asia and Europe and eventually to the American, African and Australian continents. Succeeding waves of this pandemic were more severe than the initial outbreak, and even after it had passed, many countries continued to suffer recurrent influenza epidemics during successive years.
  - A similar situation prevailed in the Maltese Islands where resurgences of epidemic influenza can be noted in the following decade.
  - This pandemic affected the Maltese population assuming unusual proportions and stimulated the local health authorities to include influenza as a notifiable disease for the first time.

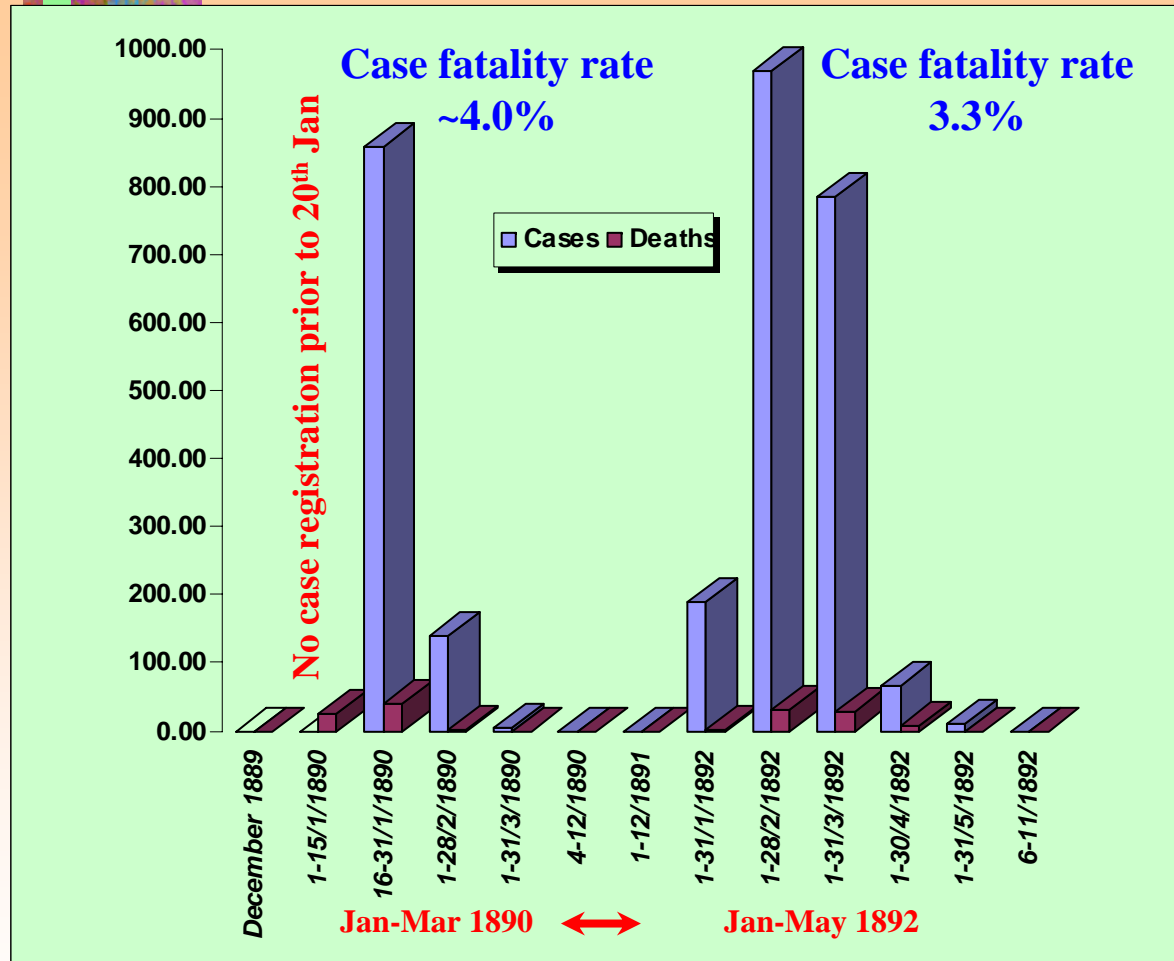
• *Fortnightly reports published in Malta Government Gazette, February 1891 – April 1896*

• *Annual Reports published as Malta Government Gazette supplements, 1897-1990*

• *G.C. Koln: The Wordsworth Encyclopedia of plague and pestilence. NY, 1995, p.95-96*

# Influenza pandemics in Malta:

## 1889-90 pandemic – The Asiatic Flu



▪ The infection appeared in December 1889 or beginning of January 1890

➤ deaths in 1-15<sup>th</sup> Jan = 24; no deaths in December 1889

➤ 1<sup>st</sup> wave peaked – 15-31<sup>st</sup> Jan 1890 with 859 cases; 39 deaths

➤ The wave abated by the end of March 1890.

▪ A resurgence of the infection became apparent in January-May 1892

➤ 2017 cases; 66 deaths.

▪ In the subsequent decade, a number local epidemics occurred

➤ January-May 1894 [615 cases]

➤ August 1895 [552 cases; 13 deaths; case fatality 2.4%]

➤ February-June 1900 [2160 civilian cases; 78 deaths; case fatality 3.6%]



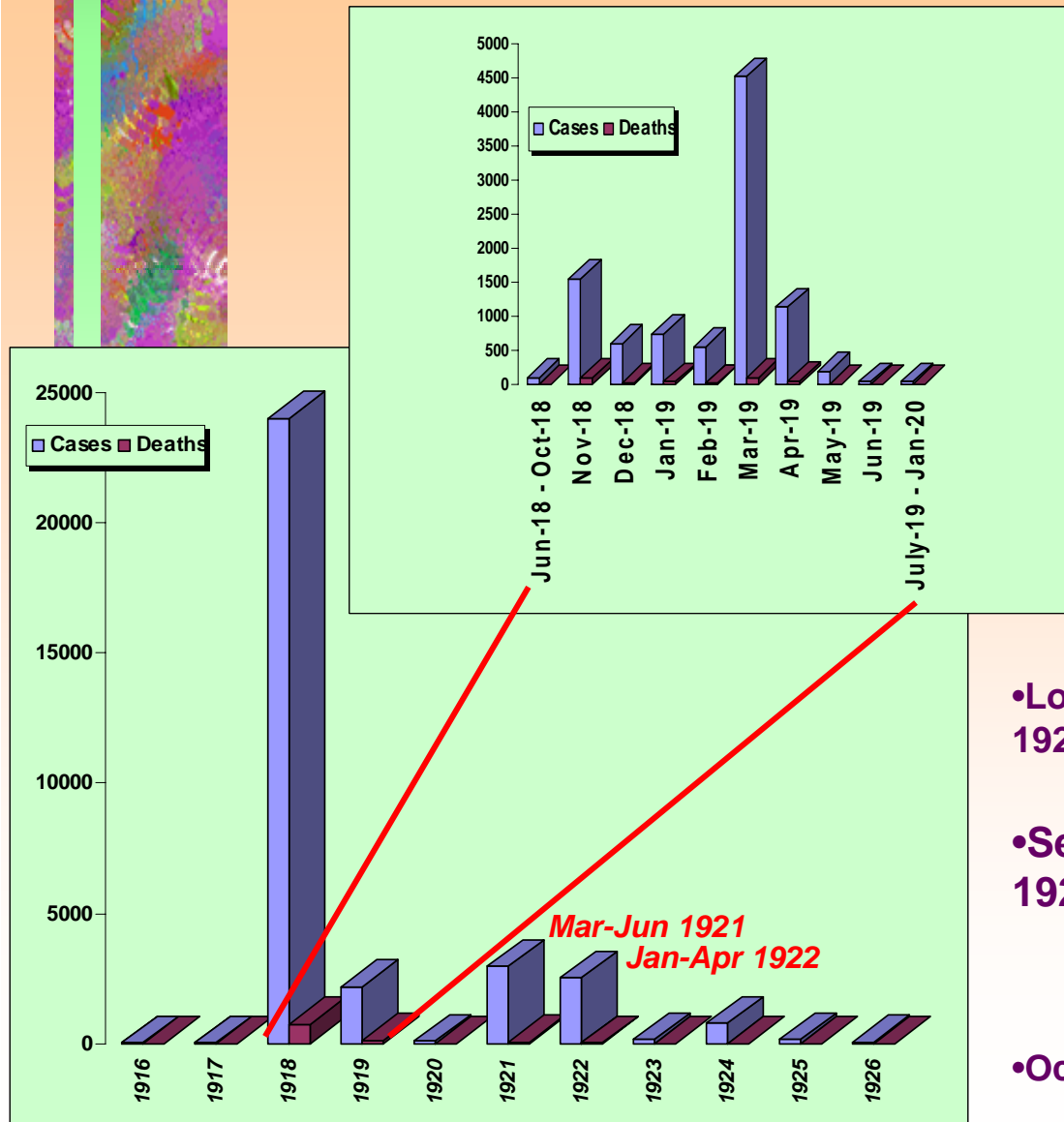
# ***Influenza pandemics in Malta:***

## ***20<sup>th</sup> century***

- **1917-19 pandemic – The Spanish Flu [H1N1 virus]:**
  - Pandemic affected a world population that was in the grips of a worldwide conflict.
  - This virulent viral infection was estimated to have caused the loss of more than 20 million lives.
  - The massive movement of troops across the continents helped the spread of infection. An estimated 200-500 million individuals were affected by the infection.
  - The focal origin of the infection remains undetermined; but the first serious point of attack was in Spain where some 8 million Spaniards fell ill during 1917-18. It spread out striking military bases throughout Europe putting tens of thousands of combatants out of action. Country after country fell to the ravages of the disease.
  - The Maltese Islands during World War I served as a "Nurse of the Mediterranean" caring for wounded soldiers, as a dockyard for the British Navy, as a place of internment for prisoners-of-war, and as a home for refugees from Egypt and other neighbouring countries.

# Influenza pandemics in Malta:

## 1917-18 pandemic – The Spanish Flu [H1N1 virus]



- Appeared in Malta around June 1918 and persisted until June 1919.

- Affected a total of 20388 civilians [incidence 90.8 per 1000 population]; 807 deaths [case fatality rate: 4.0%]

- The incidence higher in Gozo [108.2 per 1000 pop.] than Malta [88.6 per 1000 pop.].

- Case fatality rate in Gozo higher [4.3%] than in Malta [3.9%].

- A further 5798 cases with 109 deaths affected personnel of the Naval and Military British Services. Low case fatality rate [1.9%].

- Low Influenza rates during April 1920 – March 1921

- 94 cases; six deaths.

- Second smaller scale epidemic during 1921-22

- 5508 cases [incidence: 25.6 per 1000 population] with 99 deaths [case fatality rate: 1.8%]

- Occasional subsequent high annual case loads

- 1929 [1130 cases; 16 deaths; case fatality 1.4%]

- 1943 [2066 cases; 3 deaths; case fatality 0.15%]

# ***Influenza pandemics in Malta:***

## **1917-18 pandemic – The Spanish Flu [H1N1 virus]**

In response, the Department of Health undertook a number of precautionary measures:

### ➤ **General prophylactic measures:**

- Prevention of overcrowding in public places; ensuring also that these localities were kept clean, well aerated, and disinfected.
- Reducing visiting times in the various Charitable Institutions.
- discontinuing the pawning of clothes at the Monte de Pieta`.
- Closure of government-run schools.
- Increasing visits to suspect dwellings by Sanitary Inspectors.
- Temporary surveillance of arrivals from overseas with disinfection of belongings were necessary.

### ➤ **Individual prophylactic measures:**

- A public propaganda campaign to emphasis the contagiousness of the infection, its mode of transmission, the necessity of maintaining personal and domestic cleanliness
- Simple isolation at home of early non-severe cases.
- Forcible isolation of severe cases in the home or the Infectious Disease Hospital with disinfection of their habitations and property.
- All cases occurring in the Charitable Institutions, prisons, and ships in harbour were isolated at the Infectious Disease Hospital at Manoel Island.

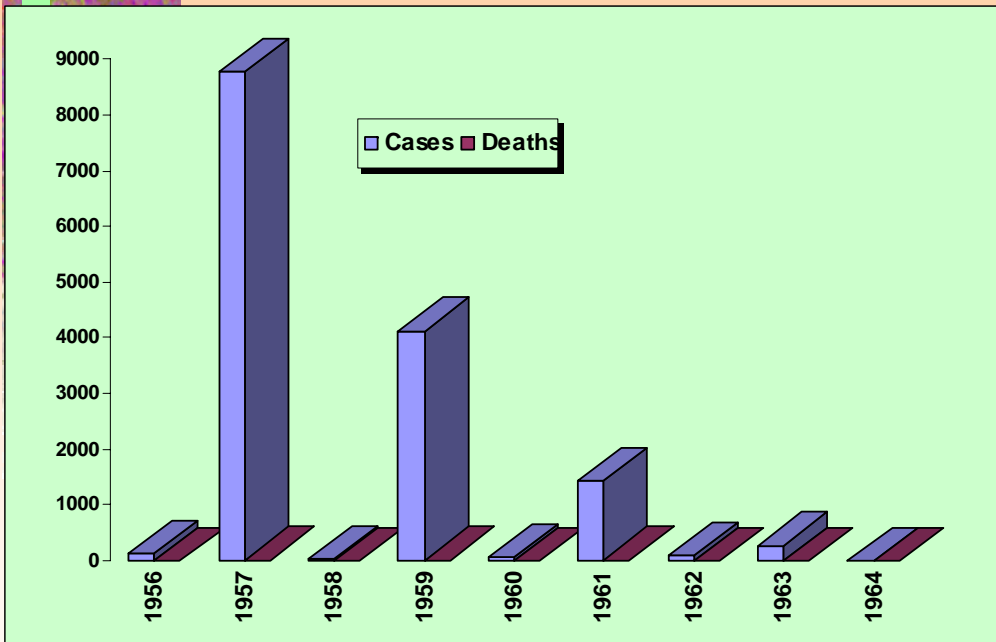


CGMO: Dr A. Critien  
1917-1936

# Influenza pandemics in Malta:

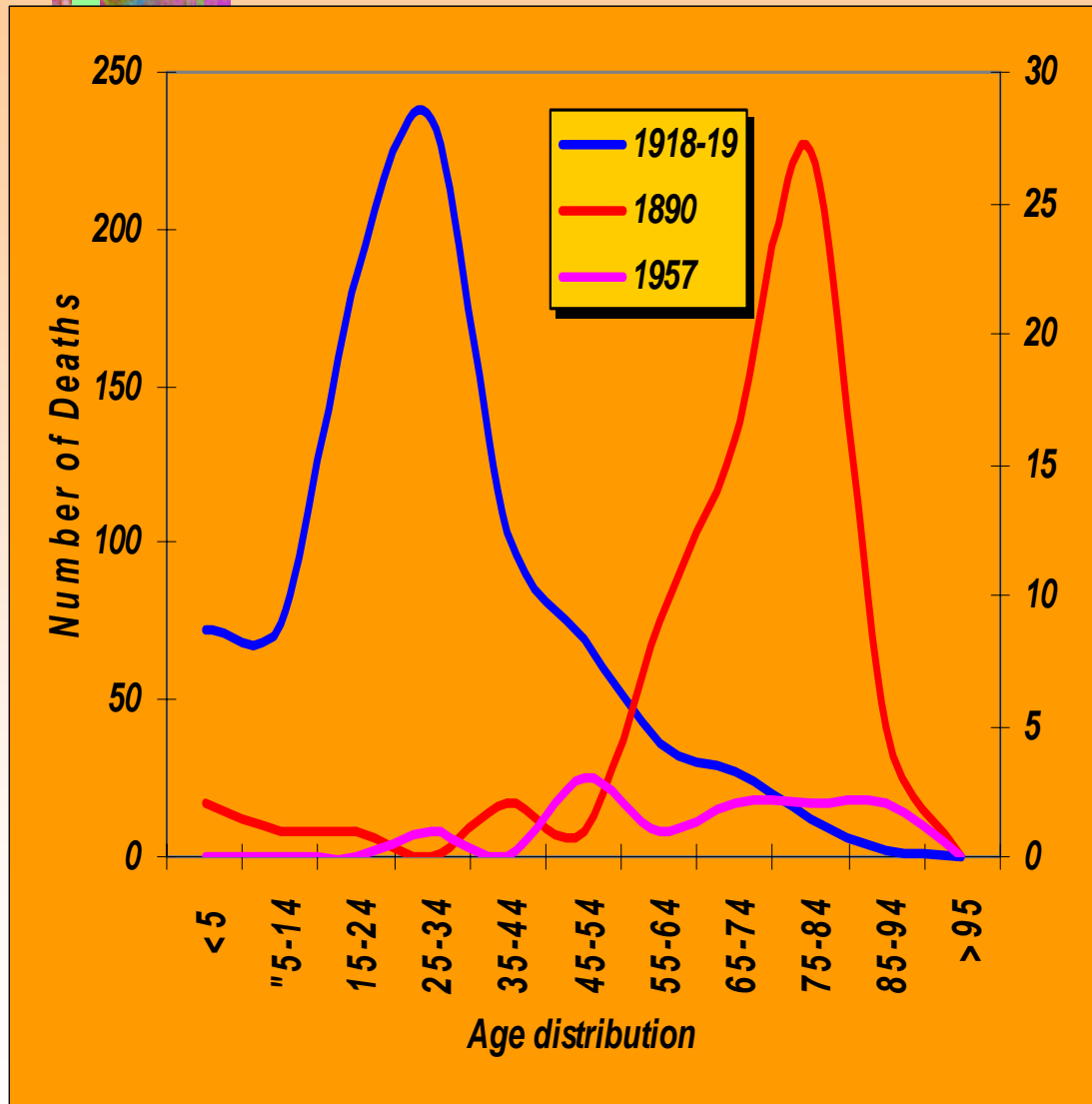
## 20<sup>th</sup> century

- **1957-58 pandemic – The Asian Flu [H2N2]:**
  - Pandemic affected the Asian, European, North American and African continents.
  - Significantly affected the Maltese population; first observed in August 1957 in crew of a ship docked in Malta.
    - peaked in September → apparent decline → 2<sup>nd</sup> wave in November →tailed off in December.
    - 8783 cases; 11 deaths; case fatality rate 0.13%
    - case load probably greater since cases with minor clinical symptoms often did not require professional help and went unreported.
  - quiescent during 1958
    - 39 cases, 4 deaths
  - Resurges in alternate years
    - 1959: 4124 cases; 10 deaths; case fatality 0.24%
    - 1961: 1424 cases; 9 deaths; case fatality 0.63%.



CGMO:  
Dr J. Galea  
1951-1961

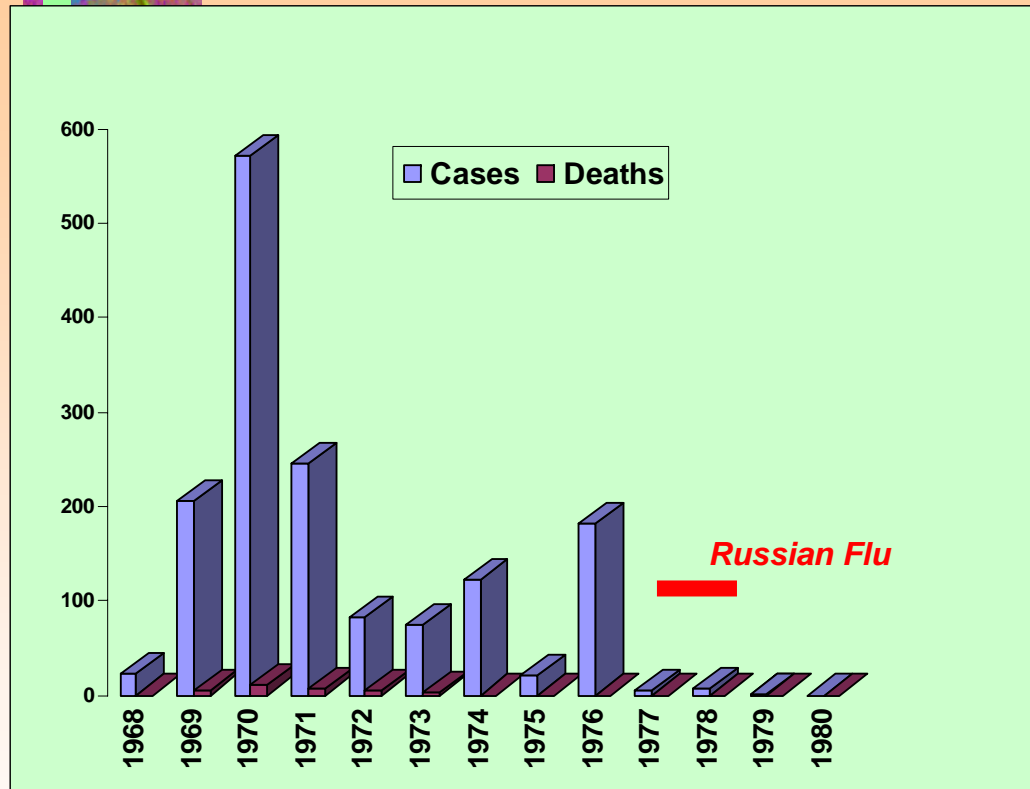
# Influenza pandemics in Malta: 20<sup>th</sup> century – Mortality patterns



- Different mortality patterns in various epidemics:
- 1890 and 1957 epidemics locally apparently caused the deaths of the elderly >45 years.
- The 1918-19 epidemic caused the deaths mainly of the younger generation <45 years.

# Influenza pandemics in Malta: 20<sup>th</sup> century

- **1968-69 pandemic – The Hong Kong Flu [H3N2]:**



- Associated with increased cases of influenza during 1969-71.
  - 1024 cases; 23 deaths; case fatality 2.3%. Possible underreporting of cases



CGMO:  
Dr A. Cuschieri  
1968-1973

- **1977-78 pandemic – The Russian Flu [H1N1]:**

- No evidence of any effect in Maltese Islands. Possibly due to lack of adequate registration.

# Conclusions

- The history of Influenza epidemics in the Maltese islands serves to emphasize the need of tackling the infectious disease “dragon” on two fronts:

- **Prevention**

- Surveillance system with accurate registration → enforce current legislation.
- Vaccination protocols for high risk individuals.
- Quarantine procedures for infected and contacts; stop all wild and domesticated avian hunting/trapping/importation.
- Avoid unnecessary “mass meetings”.

- **Cure**

- Plan for increased hospital space
- Use of antiviral agents
- Treat complications early



*“St George with the dragon” Mattia Preti 17th cent.*