

GOING

DISEASE IN MELBOURNE'S PAST, PRESENT AND FUTURE

VIRAL



CITY OF MELBOURNE

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City Gallery
Melbourne Town Hall

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Going Viral

**Disease in Melbourne's past,
present and future.**

From the dreaded black plague to flu epidemics of the 21st century, Melbourne continues to encounter the spread of disease across the globe.

Whether arrived by 19th century sailing clipper or a contemporary A380 aircraft, diseases that visit Melbourne always cause fear and can impact with devastating consequences. This illuminating exhibition offers a focused guide to our city and its never ending fight with disease.

Humans have always shared the biosphere with myriad diseases.

In places where people live, travel and congregate in numbers, disease is a part of human experience.

Diseases have visited Melbourne for many generations, and this exhibition invites you to consider some that have impacted the city, touched its people and shaped its response.

From smallpox to the dreaded black plague and flu epidemics of the 21st century, deadly diseases have followed the spread and growth of human populations across the globe. In the 19th century diseases travelled across the sea; today they also arrive by aeroplane. Like visitors, diseases come and go, though some stay and live among us.

The science of bacteriology and improvements to urban sanitation and public health have virtually eradicated the biggest killers, including tuberculosis, typhoid and childhood diseases. But with booming global population growth and around 70 per cent of people expected to live in cities by 2050, protection from mass infections cannot be taken for granted.

At different times in Melbourne's history, the threat of disease has driven ways to better protect and treat the people living here. Today, the rise in chronic diseases such as obesity presents another challenge to health into the future.

Can Melbourne's 'diseased past' be a guide to the city's future? In touching on the ways disease visits the city, the images and anecdotes of this exhibition appear like beacons, illuminating the way for future generations to consider how they can live with disease. After all, disease is always with us.

This 'form guide' to diseases will introduce just some of the infectious characters that have visited the city – and some that have stayed. Like the myriad bacteria on the surface of this page, there are simply too many diseases on the planet to cover in one exhibition or catalogue. Among other diseases, this exhibition gives you a dose of black plague, some typhoid and cholera, and a bit of diarrhoea to contemplate.

So if you're feeling up to it, read on!

SOME DEFINITIONS

Endemic

Diseases found among a particular people or in a certain area

Epidemic

An outbreak or unusually high occurrence of disease or illness in a population or area

Miasma theory

Until the late 19th century, it was believed diseases were caused by the presence in the air of a miasma (a poisonous vapour), in which was suspended particles of decaying matter characterised by the foul smell. Miasma theory was set aside with the discovery of bacteria and viruses.

Bruce Copland

CURATOR

SARS

Severe acute respiratory syndrome
VIRUS
(Coronavirus)

As with cholera in the 19th century, the fear of SARS in the 21st century was more palpable than any actual arrival of the disease in the city.

Despite its brief appearance on the world stage – occurring in Hong Kong, Guangdong, Hanoi, Singapore and Toronto (where there is a large Chinese population) – something of a ‘SARS frenzy’ unfolded in the popular media. This was fuelled when Chinese officials initially suppressed news of the outbreak in 2003 to prevent public panic. Health and immigration authorities in the Asia-Pacific region went into high alert, with passenger-temperature screening points quickly established at regional airport hubs, including at major Australian terminals. In April 2003, four children arrived in Melbourne from Toronto with flu-like symptoms. These suspected sufferers were later found to have another condition, but not before newspaper headlines screamed ‘Four more suspected cases!’

Polio

VIRUS
(Poliovirus) – of types 1, 2 and 3 wild polio viruses, type 2 has been eradicated since 1999

During the 20th century, Australia experienced a number of polio epidemics, affecting many thousands of individuals. Early cases stretched Melbourne’s hospital facilities, including the Fairfield Infectious Diseases Hospital, established in 1904.

The 1937 epidemic in the southern suburbs of Melbourne later spread to all parts of Victoria. Other epidemics occurred in Australia in the early 1940s and 1950s, before effective vaccines were found in the 1950s and comprehensive vaccination programs were delivered from the 1960s. Despite the eradication of polio in Australia (declared polio-free by the World Health Organisation in 2000), the disease has left a legacy; survivors moving here from other countries have replaced childhood infections as the new focus of interest for people suffering from polio. In 2013, more than 100,000 Australians were recorded as living with the later effects of polio. Unlike many other diseases, polio leaves permanent damage. Victoria’s post-polio networks provide a vital support role at local level for survivors, families and carers. Local support groups exist in places where polio first visited the city, before extending across the state. The disease revisits the lives of post-polio survivors as a painful legacy of earlier times.

HIV/AIDS

Human immunodeficiency virus (acquired immunodeficiency syndrome) VIRUS

Early public education campaigns about AIDS played on the primal fear of diseases throughout history. The AIDS and the Grim Reaper television ad lasted 60 seconds and ran for just three weeks, but it became one of the most famous ads in Australia’s history, with alarmist images of the Grim Reaper hurtling a bowling ball indiscriminately towards his next victims.

Prior to its closure in 1996, the Fairfield Infectious Diseases Hospital provided valuable treatment and palliative care to people suffering from HIV and AIDS in Melbourne. Other facilities have since taken over, with advice and other support for people in the Victorian community. Victorian AIDS diagnoses peaked in 1992–95, with 180 new cases (a vastly different scenario than in Sub-Saharan Africa). Treatments available since the 1990s have led to a drop to around 50 cases annually. Australia’s commitment to ending the HIV epidemic, both nationally and in the wider Asia-Pacific region, plus Melbourne’s credentials in science and medical research, were among the reasons the City of Melbourne and its partners were chosen to host the 20th International AIDS conference in July 2014.

Ebola

VIRUS

With significant death rates in West Africa, Ebola exemplifies the present-day fear of disease, challenging both border controls and disease tracking across porous international borders.

The threat of Ebola entering Australia responded to quickly. Typically, less than 20 people arrive in Australia each week from Ebola-affected countries of Sierra Leone, Liberia and Guinea. Australia began screening travellers from these countries on 9 August 2014, and was the first country to do so. Stronger border controls were also put in place. The Department of Immigration announced on 28 October 2014 that it would temporarily suspend assessment of visa applications for citizens of Ebola-affected countries, meaning they cannot enter Australia. Australians and citizens of other countries who have visited the affected areas are also carefully assessed. As an infectious disease still not under control, Ebola is one of several actively monitored internationally. It is presently included in Victoria’s emergency plans for managing a potential epidemic outbreak. The Victorian Infectious Diseases Reference Laboratory, in Carlton, safeguards Melbourne’s future protection from this and other virulent diseases. It forms part of the national and international network of frontline health facilities responsible for early detection and emergency response to worldwide epidemics.

Obesity

Overweight and obesity (not formally recognised as a disease by the AMA and various medical colleges); body mass index (BMI) is a simple index of weight for height commonly used to classify weight and obesity in adults

Melbourne is home to a highly urbanised population. The city is on track to overtake Sydney as Australia’s biggest city by 2056, when its population is expected to hit between eight and nine million people. En route to reaching that figure, the Hoddle grid will be vertically challenged; private dwellings in the CBD are expected to increase from around 16,000 today to more than 40,000 by 2035.

Melbourne’s projected growth rates and expanding urban form are its own metaphor for parallel increases in obesity in the city’s population. The challenges of the 19th century were to overcome communicable diseases by providing a plentiful and clean water supply, sewerage, better diet and roomier housing, with well-drained streets. Protecting the future health of our growing urban population will require maintaining safe food, open space and clean urban environments – challenges facing Melbourne today.

Zika

VIRUS

Zika is known to circulate in Africa, Asia and the Pacific. The virus is spread by some species of Aedes mosquito, which can also be found in parts of northern Queensland.

Melbourne’s Infectious Diseases Reference Laboratory has tested 1500 Australians returning from overseas with an illness, with only seven testing positive for Zika since 2012.

SIGNS & SYMPTOMS	ORIGINS	TRACK RECORD	RISK FACTORS	PREVENTION & TREATMENT
Fever, chills, muscle aches and occasionally diarrhoea, progressing to high fever, dry cough, shortness of breath.	SARS first appeared in the highly populated Guangdong Province, China, in 2002. The coronavirus (from the same family as the common cold) is capable of a high mutation rate and is able to evolve into new strains. It is thought to have ‘jumped’ to humans from a pool of animal viruses living and mixing in local poultry and pig farms.	Between 2002 and 2003 the SARS outbreak peaked, with 8000 falling sick worldwide, although the fatality rate of two to three percent was low. Unsuspecting travellers carried the disease, passing it on through face-to-face contact and contaminated objects. No fresh cases have been recorded anywhere since 2004.	SARS is generally harder to catch than flu, and person-to-person infection from air travel was unlikely during the outbreak. To place the SARS epidemic into context, viral respiratory outbreaks commonly occur every two to three years in Asia, resulting in tens of thousands of deaths from influenza. Overcrowding, poverty and lack of housing infrastructure mean that once a virus has mutated into a new strain, it can spread rapidly in the population.	Antibiotics are ineffective on viruses, and antiviral drugs provided limited benefits during the outbreak. Vaccines remain untested on humans.
From mild flu-like symptoms (fever, fatigue, headache, vomiting, stiffness in neck and limb pains) to life-threatening paralysis (in less than one percent of cases), when breathing muscles become immobilised; post-polio syndrome can occur years after initial infection, with new symptoms of weakness, joint and muscle pain, and fatigue.	Polio infections extend to prehistory, and the disease has caused paralysis and death for much of human history. Epidemics were unknown until the 20th century, when it became one of the most feared diseases.	This highly infectious disease can cause paralysis in a matter of hours; the virus invades the nervous system, affecting the brain and spinal cord. It is transmitted person-to-person, mainly through faecal-oral pathways, and at its peak, in the 1940s and 1950s, polio paralysed or killed more than 500,000 people worldwide each year. Cases have decreased by more than 99 percent since 1988, from an estimated 350,000 cases to 416 in 2013. Polio survivors are one of the largest disabled groups in the world, with 10–20 million survivors worldwide.	Risk is through contact with infected individuals and poor personal hygiene.	There is no cure for polio; it can only be prevented through multiple vaccinations beginning in early childhood.
May include swollen lymph nodes, weight loss, fever, diarrhoea and a cough (availability of antiviral treatments means that HIV is no longer a gradual progression to AIDS, and then to death).	First isolated in 1983, early strains of the disease are believed to have originated with chimpanzees and monkeys in remote Africa, before jumping to human populations.	HIV, not AIDS, is transmitted between people via the exchange of body fluids from infected individuals, such as blood, breast milk, semen and vaginal secretions. The virus targets the immune system and weakens people’s defence systems against infections and some types of cancer. The World Health Organisation reports that in 2014, 36.9 million people were living with HIV in the world, many living in Sub-Saharan Africa. In that part of the world, tuberculosis is a leading opportunistic infection responsible for killing nearly 360,000 people living with HIV each year.	These include having unprotected sex, sharing contaminated needles and other injecting equipment when injecting drugs, receiving unsafe blood injections, transfusions or medical procedures that involve unsterile equipment.	Prevention measures include avoiding the risk factors. Antiviral drug treatments are also available for infected people.
Can include high fever, muscle aches, stomach pain, diarrhoea, sore throat, hiccups, and red and itchy eyes; and later, vomiting blood, bleeding nose, massive internal bleeding and death.	Ebola first appeared in 1976, simultaneously in Sudan and the Democratic Republic of Congo. The latter occurred in a village near the Ebola River, from which the disease takes its name.	This highly contagious disease is transmitted by contact with blood, faeces, or body fluids from an infected person, or from objects that have been in contact with an infected person. The current outbreak in West Africa (first notified in March 2014) – most severely affecting Guinea, Liberia and Sierra Leone – is the largest and most complex since the disease was discovered, involving urban and rural areas. Around 15,000 cases have been confirmed, with the death rate exceeding 10,000. Case fatality rates have varied from 25 to 90 percent in past outbreaks, with the average now around 50 percent.	Risks can be reduced by avoiding contact with infected people, including body fluids and infected corpses.	Early supportive care with hydration and symptom treatment improves survival. A range of blood, immunological and drug therapies are being developed for treatment, and good hygiene and a clean environment assist in prevention.
Abnormal or excessive fat accumulation that may impair a person’s health; World Health Organisation definition of ‘overweight’ is a BMI greater than or equal to 25, ‘obese’ defined as greater than or equal to 30 BMI.	Worldwide, obesity has more than doubled since 1990. Once considered a high-income-country problem, obesity is now on the rise in low- and middle-income countries, particularly in urban settings.	In Australia, approximately one person in four is affected by obesity. Worldwide in 2014, more than 1.9 billion adults were overweight. Of these, more than 600 million were obese. Some 42 million children under the age of five were overweight or obese in 2013.	Obesity is much more complex than an imbalance between what is consumed and the energy expended, although these are important underlying factors. Other ‘drivers’ include genetic, physiological, metabolic, social, environmental and psychological factors.	Obesity is preventable.
While there are often no symptoms, in around one-fifth of cases the infection can cause an illness with fever, rash, conjunctivitis, severe headache and muscle pain.	Zika, a mosquito-borne virus, was first detected in rhesus monkeys in Uganda in 1947, before being identified in humans in 1952. Recent outbreaks have occurred in French Polynesia (2013) and Brazil (2015).	On 2 February 2016, the World Health Organisation declared the Zika virus a global health emergency, following concern the virus could spread explosively and infect up to four million people in the Americas.	Contact with mosquitoes potentially infected with Zika virus should be avoided. Specific concerns have been raised that in pregnant women the virus may cause certain birth defects (microcephaly in babies).	Infections don’t normally require hospitalisation, but until a vaccine is developed, the best form of prevention is to avoid being bitten by mosquitoes when in countries affected by Zika.

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Images:

- ‘Kill that Rat’ Poster (detail)
City of Melbourne, Art and Heritage Collection
- ‘Honorary Help. The only physician who is regular in his attendance at the Melbourne Hospital’
Melbourne Punch, 6 September 1877 (detail)
State Library of Victoria
- Glass Lantern Slide (detail)
City of Melbourne, Art and Heritage Collection
- Premier entering condemned house, c. 1935 (detail)
Photographer: F. Oswald Barnett.
State Library Victoria



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SIGNS & SYMPTOMS	ORIGINS	TRACK RECORD	RISK FACTORS	PREVENTION & TREATMENT
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