Infectious diseases that we have learned *not* to live with in the UK – Factsheet

There is much misinformation about how infectious diseases such as Covid-19 are controlled. Examples include "Smallpox is the only infectious disease that has been eliminated", or "There is no credible way to eliminate Covid-19", and "We have to learn to live with Covid." [1]

This factsheet gives details of some of the infectious diseases that we have learned *not* to live with in the UK.

Diseases eliminated from the UK

Cholera reached the UK from India in 1831. There were many outbreaks with thousands of deaths before the cause was identified (water supplies contaminated by sewage). It was eliminated from the UK in the late 1800s through improved sanitation (provision of safe drinking water and safe disposal of sewage). [2][3]

Polio used to be a problem in the UK because the virus can be life-threatening or cause permanent disability. It has been eliminated through improved hygiene and vaccination of children. There hasn't been a case of polio caught in the UK since the mid-1980s. [4].

Plague was a major problem for centuries - half the population of England died during the Black Death of the 1300s. Plague is spread by fleas on rats. It was controlled and then eliminated through anti-rodent measures, better housing and quarantine of travellers from plague areas.

Rabies can be caught from infected animals, especially dogs. It was a problem in the UK until it was eliminated early in the twentieth century by a combination of licensing of dogs and control of strays. The UK has since been kept free of rabies, first by a six-month quarantine for all dogs entering the UK, and more recently by vaccination. [4]

SARS (severe acute respiratory syndrome) is caused by the SARS-CoV-1 coronavirus. This is related to the SARS-CoV-2 virus which causes Covid-19. SARS originated in China in 2002, apparently from a mutation of a coronavirus found in small mammals. The disease quickly spread to other Asian countries, but was controlled and then eliminated by a combination of isolation of suspected cases and screening of air passengers from affected countries. Four cases occurred in the UK but were contained and not allowed to spread. [4]

Smallpox was eradicated worldwide in 1979. The last UK outbreak was in 1962 in Bradford. It was eliminated through contact tracing and vaccination.

Terminology

***Control**

Reduction of the number of people currently infected with the disease to a low level and the capacity to maintain that control indefinitely.

Elimination

Reduction to zero new infections spread among people living in a country and the presence of the measures necessary to prevent or deal with imported cases and associated spread from new arrivals.

Eradication

Permanent reduction to zero worldwide incidence of infection (as has been achieved with smallpox and almost with polio through mass vaccination programmes).

*Independent SAGE would suggest that a seven day rolling average of one new case per million population per day could represent "control".

Source: Independent SAGE, "A Better Way to Go: Towards a Zero Covid UK", July 2020. https://www.independentsage.org/wp-content/uploads/2020/07/20200717-A-Better-Way-To-Go.pdf

Diseases controlled in the UK

Measles used to kill hundreds of children in the UK each year, but vaccination eliminated the disease from the country in 2014. A drop-off in vaccination rates, caused by misinformation, has since allowed a resurgence. [4]

Tuberculosis caused about 1 in 8 UK deaths in the mid-1800s, but is now rare, as a result of better housing and nutrition, early detection and isolation of cases, and effective treatments. [5]

Typhoid causes diarrhoea and organ failure, and used to be a major problem in the UK – Prince Albert (Queen Victoria's husband) is thought to have died from it, aged 42. UK cases are now rare and almost entirely caught abroad. It has been controlled by improvements in sanitation and personal hygiene (washing hands after using the toilet and before preparing food). [3]

Many children spent long periods away from home in TB hospitals

Methods of control/elimination

For centuries, people in the UK have strived to reduce the deaths and ill health caused by infectious diseases.

History shows that enormous progress has been possible through various combinations of the following:

- improved living conditions
- quarantine of incoming travellers
- isolation of cases
- contact tracing
- control of animals or insects involved
- vaccination.

Many control measures are now taken for granted, such as regulations around safe drinking water, disposal of sewage, and preparation and sale of food. Most people do not see these as impositions but as sensible precautions that protect the whole of society.

Relevance to Covid-19

Covid-19 has already been eliminated from some countries, e.g. New Zealand, Australia, Taiwan and China, using standard public health measures such as testing, contact tracing, quarantine and support from health officials. Subsequent outbreaks of Covid-19 due to incoming travellers have been extinguished.

It is encouraging that one part of the British Isles (the Isle of Man) has been kept free of Covid-19 by extinguishing outbreaks of the infection, and others (e.g. the Orkney and Shetland islands) have been free of the virus for weeks at a time. There are no technical barriers to extending this throughout the UK.

Objections

It might be said, for example: "Of course we don't have plague in the UK" – but that misses the point. We take the absence of plague and other diseases for granted, but they were eliminated from the UK through vision, persistence and a strategic approach.

Source of misinformation

It is unclear why there is so much misinformation on the possibility of control and elimination of Covid-19 from the UK, but travel restrictions during epidemics have long been unpopular among merchants and the better-off members of society.

Conclusion

In the past, people in the UK did not accept that they had to learn to live with cholera, measles, polio, plague, rabies, SARS, smallpox, tuberculosis or typhoid – they looked at the possibilities of control and elimination. The idea that that we have to learn to live with high levels of Covid-19 needs to be challenged.

References

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[3] Public Health Matters "Are Victorian diseases making a comeback?", Blog, Public Health England, 28 March 2019, https://publichealthmatters.blog.gov.uk/2019/03/28/are-victorian-diseases-making-a-comeback/

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