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CHICKENPOX: MEASUREMENT, MONITORING, CONTROL AND LEGISLATION IN UK

1. INTRODUCTION

Chickenpox is a disease caused by the varicella-zoster virus (VZV), the main symptom is itchy blisters on the back, face and chest that will later spread throughout the body. It is a very contagious disease, 90% of the people who are around someone who has it will be infected. It can be very dangerous, even deadly, in adults, pregnant women, babies and adolescents, before having the vaccine many people died from this disease, but thanks to the vaccine the number of people that have been infected with this varicella-zoster virus has been decreased over the years. (Centers for Disease Control and Prevention, 2019).

Many improvements have been applied in terms of the control and prevention of the varicella virus in recent years. Since 2003 the vaccine in the UK is authorized to be used in susceptible people and other people such as health workers. (Varicella zoster virus, n.d.).

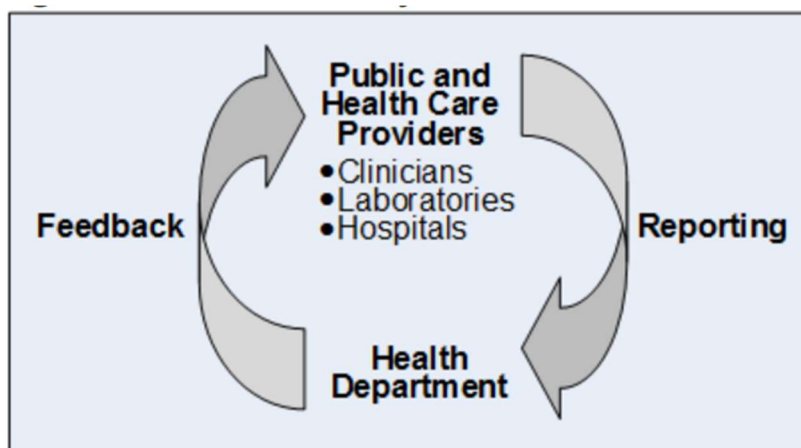
2. EPIDEMIOLOGY

Chickenpox is more common in children in the UK. Almost 90% of adults have already been infected by the virus as confirmed by seratological tests. The climate also affects the age of contagion, for example in tropical and subtropical climates the average age of people who are infected with chickenpox may be higher. It is a disease that you are only obliged to notify in Northern Ireland, while in Scotland, Wales and England there is no obligation to notify cases of chickenpox. (Varicella zoster virus, n.d.).

3. MAIN APPROACHES AND STRATEGIES THAT ARE USED TO MEASURE AND MONITOR CHICKENPOX IN UK.

Chickenpox disease is measured and monitored by a public health surveillance system. The role of health surveillance is to collect, analyze, and interpret disseminated data to help make public health decisions and actions. To monitor chickenpox disease through health surveillance, morbidity and mortality reports; Incidence and prevalence rates, and other relevant health information are systematically collected and evaluated, this will serve to control and make public health decisions. (www.cdc.gov, 2021).

Surveillance cycle



(www.cdc.gov, 2021).

3.1. Data collection.

It is currently difficult to monitor chickenpox more accurately because there is no obligation to notify infection with chickenpox disease in the UK excepting Northern Ireland. Data on confirmed cases can be found at the Royal College of General Practitioners Research and Surveillance Center by sentinel GP practices in England and Wales. (GOV.UK, n.d.)

States are advised to report varicella outbreaks to CDC (Actually called British International Investment) quarterly to support varicella surveillance jurisdictions have been financed to improve varicella outbreak surveillance, this allows CDC to obtain data from all funded entities. (www.cdc.gov, 2019).

3.1.2 Incidence.

The incidence rate describes the speed with which a disease spreads referring to new cases, this analysis is based on person-time. (CDC, 2019).

Method for calculating incidence proportion (risk)

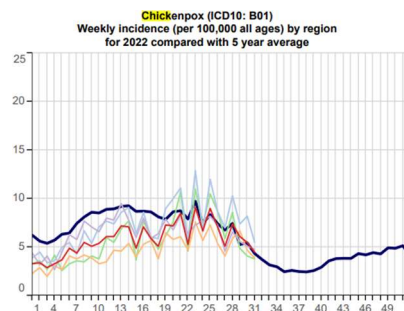
*Number of new cases of disease or
injury during
specified period*

Size of population at start of period (CDC, 2019).

In UK, due to the covid-19 pandemic, there has been a decrease in cases of chickenpox in the last two years, but a regular seasonal increase is being observed, as a result, a greater number of susceptible children has accumulated. (GOV.UK, n.d.).

Here are the incidence data from July 2022 to the beginning of August 2022:

(RCGP, n.d.)



(RCGP, n.d.)

3.1.3 Prevalence.

The prevalence ratio is the number of people within a population who have a disease for a specific period of time. Prevalence measures new cases and pre-existing cases. (CDC, 2019).

Method for calculating prevalence of disease

*All new and pre-existing cases
during a given time period* $\times 10^n$

*Population during the same
time period*

(CDC, 2019).

3.1.4 Morbidity.

Morbidity is usually measured by incidence (number of new cases of s disease) and prevalence (already existing cases in a specific period of time). (CDC, 2019).

3.1.5 Mortality.

Mortality rate refers to the number of times a death occurs from a given disease in a period of time. The formula for measuring mortality is:

$$\frac{\text{Deaths occurring during a given time period}}{\text{Size of the population among which the deaths occurred}} \times 10^n$$

(CDC, 2019).

Chickenpox-related mortality rate in people under 20 years of age from 2015 to 2020 in the UK:

Age	2015	2016	2017	2018	2019	2020
total (all ages)	14	8	17	13	9	4
Aged under 1	0	0	0	0	0	0
Aged 1 to 4	2	2	3	2	0	0
Aged 5 to 9	1	0	1	1	1	1
Aged 10-14	1	0	0	2	0	0
Aged 15-19	0	1	0	0	0	0

(www.ons.gov.uk, n.d.)

3.1.6 Vaccination

According to studies made based on vaccination data in the UK, we know that the effectiveness of the chickenpox vaccine is very high, 9 out of 10 children will be immunized with only one dose, the vaccine is less effective after childhood. (nhs.uk, 2019).

4. STRATEGIES AND LEGISLATION USED IN THE UK TO CONTROL THE INCIDENCE OF CHICKENPOX.

As a Control and prevention measures for chickenpox infection in the case of children, it is advisable to notify the school or nursery and that the child stay at home for five days. In the case of chickenpox in adults, it is advisable not to go to work until the last blister has a scab, it will be then when the individual is no longer infectious, this will occur five or six days after the first blister. People who have chickenpox are encouraged to stay away from pregnant women, new-born babies, and anyone with a weak immune system. If they have been exposed to the virus, they will not be able to visit the sick in a hospital, you should check first. (www.nidirect.gov.uk, 2017).

a. How to treat a case of chickenpox at home:

- Use paracetamol for pain.
- Cover your child's hands at night to prevent scratching.
- Ask your pharmacy about medicines for itching.
- Do not wear tight clothing.
- Use cold water to calm the itching.
- Do not use ibuprofen if not prescribed by a doctor as it can be bad for the skin.
- Do not scratch
- Stay away from high-risk people.

b. Chickenpox vaccine.

The chickenpox vaccine is not included in the routine childhood immunization schedule. This vaccine is currently only available to people close to someone vulnerable to chickenpox because of their disease or condition, as well as health care workers (including cleaners, laboratory workers, etc.), restaurant and reception staff). The two brands available today are VARIVAX and VARILRIX.

c. How the chickenpox vaccine works:

It is administered in two doses six to eight weeks apart and contains a small dose of weakened virus to stimulate the immune system and create antibodies that will protect us against the virus. (NHS Choices, 2019).

In the UK, vaccine safety is overseen by the Yellow Card Scheme regulated by the Medicines and Healthcare products Regulatory Agency (MHRA) and the Commission on Human Medicines. Most of the reported adverse effects have been mild. (nhs.uk, 2019).

5. CONCLUSION.

As a conclusion after the study of the measures used in the UK to control outbreaks of chickenpox I think that although notification of infection by this virus is not currently mandatory, the government makes all kinds of tools available to us such as notification, guides to know how to treat the disease, financing to obtain more data, and vaccination for vulnerable people and their environment so that among all citizens we can control or at least help control and measure the spread of a virus such as chickenpox.

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