

## Infectious Disease: Chickenpox

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### Abstract

Communicable and infectious diseases require unending attention by healthcare providers to promote optimal outcomes for the health of the population. Although Chickenpox outbreaks have drastically reduced due to the introduction of a vaccine, the disease has not disappeared therefore healthcare providers such as advanced practice nurses (APN) must stay informed to provide the best evidence-based practice to properly care for their patients and the health care community. Chickenpox, also known as varicella, is caused by the Varicella-zoster virus (VZV). When a patient is exposed the typical presentation involves a pruritic rash on the trunk and face along with body aches, fever, and lethargy that can last for a week or longer. More severe complications can be an infection among the lesions and pneumonia. After exposure, the virus becomes dormant and resides within neurons. The virus can become reactivated later in life in the form of shingles, also known as herpes zoster.

**Keywords:** Chickenpox; Infectious disease; Epidemiology

### Introduction

The virus is spread when a patient has active lesions and the virus becomes airborne spreading from person to person. Diagnosis is made through assessment, contact history and occasional culture samples. Treatment generally includes symptom supportive care and the antiviral medication acyclovir. Prevention may be achieved through administration of a live vaccine [1].

The virus is generally spread among children under the age of 10 in areas where the vaccine is not given or available, however, adult and immune compromised patients are at the most risk for greater complications. With the introduction to the varicella vaccination in 1995, there has been an approximate 90% reduction in chickenpox cases, including death and hospitalizations caused by the disease. Surveillance of the disease is reported to the Center for Disease Control and Prevention (CDC) [2].

### Commentary

#### Determinants of Health

Determinants of health are those factors that influence a person's health outcome whether they have control over those aspects of life or not. There are several determinants of health regarding Chickenpox. The largest being direct access to care to receive the vaccination. Populations in rural areas without access due to unavailability of providers or transportation may be unable to receive the vaccine. Foreign-born individuals within the United States has been reported to account for approximately 25% of deaths caused by Chickenpox. Children under the age of 10 are also at the greatest risk of contracting the disease especially when there are other members of the family or close community that are infected [3].

#### Host Factors

The epidemiological triad is used to give account for causation and includes three factors, the agent, the host, and the environment. When one factor is disturbed, disease is more likely to invade. The agent in chickenpox is the varicella zoster virus and the factors that effect it are its ability to spread and infect others. The host is the human that carries the infection and multiple factors can determine the hosts level of severity and sensitivity or reaction to the disease. Age is the biggest determinant of ease of contractibility; however, adults and immune compromised patients are at the greatest risk for severe complications. The environment is in which chickenpox is affected can depend upon close contact exposure, availability of vaccination, and knowledge and acceptability of immunization [4].

#### Role of Family Nurse Practitioner

Family Nurse Practitioners (FNP) provide a pivotal in the care and prevention of communicable diseases such as chickenpox. It is important for the FNP to adapt a practice model within their care plans to ensure the best evidence-based practice is being implemented to assure the best patient outcomes. The Advancing Research and Clinical Practice through Close [5].

## Conclusion

Collaboration (ARCC) Model is an example of a model an FNP may follow that integrates academia and healthcare to focus on the health within the community. The FNP serves as a leader within the community to promote best practice guidelines. Regarding chickenpox, the FNP plays an important role in promoting vaccination coverage. They must not only ensure proper reporting, or surveillance, of the disease and exposures but must also educate the population on the importance of vaccinations. They also must assess the population for any determinants to make sure the vaccination is available for all. The FNP is a frontline provider and advocate to lead the way to a healthier future and population.

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