



Pre-Emptive Cull: Scientists Discuss Chilling Ways To Stop A Zombie Outbreak

One might think this is a spoof article, but it is quite serious. The author, Joanna Verran, is a Professor of Microbiology at Manchester Metropolitan University. That anyone would even have such a discussion in this context, with such rampant speculation, is incredulous. We are not comforted by the suggestion of a pre-emptive cull of the population. □ TN Editor

Imagine if a new 'zombieism' disease broke out that spread through the commonly portrayed method of infected saliva that enters a person's bloodstream after being bitten by a zombie.

This kind of direct contact spread would normally be quite an inefficient method for disease transmission compared to airborne infections, which can be spread much more easily.

But zombieism is interesting because, like rabies, its symptoms can

include anxiety, agitation, paranoia and terror that alter the behaviour of the infected individual.

So zombies will actively try to bite or eat their victims, thereby spreading the disease faster.

The original source of the zombie outbreak is rarely a concern in horror films, whereas epidemiologists spend a lot of time using analysis and models to track back to the first case of disease.

For example, a biological agent released into the air or contaminated food consumed at a large social event might cause a large number of infected individuals at one time.

A laboratory accident, on the other hand, might initially affect a reasonably small, possibly contained number of individuals, in a small area.

These parameters, as well as the mode of transmission, will affect the disease's spread.

Four Strategies

Quarantine: An obvious strategy is to quarantine the infected individuals, possibly with the hope of developing a cure or vaccine.

Run and hide: A strategy often seen in zombie stories is for the uninfected to hide away, essentially isolating those who are healthy from those who are infected.

Selective cull: A selective cull that involves attempting to remove the infected individuals from the population permanently is another option.

Destroy infected areas: If all else fails, governments could eradicate the infected area with a pre-emptive cull, with little to no concern for who, or what, is destroyed in the process.

Armed with an understanding of the transmission method, we can consider how fast the disease could move through a population.

For any epidemic, epidemiologists will try to calculate a basic

reproduction ratio that describes the average number of additional cases an infected individual will generate.

This number (often referred to as R_0) describes how severe an outbreak is. One with an R_0 of less than 1 will eventually die out, but greater than 1 will spread through a population.

Our zombies do not expire naturally and require the removal of their head or destruction of their brain for permanent death.

So the main consideration in a zombie epidemiology model is how many people a zombie can bite before it either runs out of victims or is destroyed.

This is a function of many other variables including population density and people's ability to destroy zombies.

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