



## Experimental Medications and Vaccines for Ebola

There are currently no FDA-approved medications or vaccines for the treatment of Ebola.

The primary focus for physicians at this time is to provide general medical care and support in a safe setting where further spread of the infection can be contained. The general medical care would include things such as intravenous fluids, nutrition, and treating other infections if they occur.

FDA Website with general information on Ebola:

<http://www.fda.gov/emergencypreparedness/counterterrorism/medicalcountermeasures/ucm410308.htm>

CDC site with information for healthcare workers:

<http://www.cdc.gov/vhf/ebola/hcp/index.html>

World Health Organization Website on Ebola:

<http://www.who.int/csr/disease/ebola/en/>

Although several medications and vaccines for Ebola are currently being developed and tested, this research is for the most part in early stages. Some have been tested only in laboratory setting, some in animals, and some in healthy individuals to see if they are safe. None of these investigational treatments have been adequately assessed to be able to say they are safe and effective in the treatment of patients with Ebola.

CDC site with questions and answers on experimental treatments and vaccines for Ebola:

<http://www.cdc.gov/vhf/ebola/outbreaks/2014-west-africa/qa-experimental-treatments.html>

While no medications or vaccines are FDA-approved for Ebola, there is an emergency process in place to allow for use of these products while they are being evaluated. The FDA has a system for experimental products to be used for patients in certain circumstances, even when there is limited available information. In the case of Ebola, this is due to the lack of alternatives for treatment combined with the significant risk of severe illness and death.

## Examples of Current Investigational Medications, Vaccines and Products

Investigational product	How it is thought to work
ZMAPP (Mapp Pharmaceuticals)	Contains 3 different antibodies which bind to the virus so the immune system can clear the virus.
Brincidofovir (Chimerix)	Oral antiviral drug that stops the virus from making additional copies of itself.
TKM Ebola (Tekmira)	Intravenous antiviral drug that stops the virus from making additional copies of itself.
Ebola Vaccine (NIAID/GSK)	Stimulates an immune response by the body to Ebola.
VSV Ebola Vaccine (Public Health Agency of Canada & Newlink Genetics)	Stimulates an immune response by the body to Ebola.
Convalescent Plasma	Blood product collected from Ebola survivors, which contains antibodies to the virus to help the immune system clear the virus

One of the difficulties, in addition to the lack of information available about these potential treatments, is the lack of availability of the study drug/vaccine itself. Since many of these products are at a early stage of development, there is often-times very limited supplies of the medication or vaccine. As was seen in the case of ZMAPP, this limited the availability even for emergency use of the product.

It is important to note that use of these products in an emergency setting may provide some information regarding safety and effectiveness of treatments, but the information is often of limited use. This is due to fact that several treatments are often combined in the care of the individual patient. The use of several treatments at the same time makes it difficult to decide what specifically helped or didn't help. Because of this, structured clinical studies involving larger numbers of patients are very important to better understand the safety of these experimental drugs and vaccines, as well as the role they might play in the treatment and prevention of Ebola.