

Study: Polio Vaccination Programs In Af-Pak Not Working

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AsianScientist (Jul. 16, 2012) - A new study finds that vaccines are struggling to have an impact in Afghanistan and Pakistan due to the lack of mass immunization campaigns.

Polio, caused by the poliovirus, has been eradicated by sustained vaccination programs in most parts of the world apart from Afghanistan, Pakistan, and Nigeria.

The poliovirus exists in three strains, with type 1 the most prevalent and type 2 unseen anywhere in the world since 1999. It mainly affects children under five and causes paralysis in about one in 200 cases.

The Global Polio Eradication Initiative (GPEI), launched in 1988, has relied on mass campaigns using the trivalent oral poliovirus vaccine, which contains all three types of the virus.

The presence of the type 2 strain in the trivalent vaccine, however, makes it less effective against the other types. In 2005, monovalent vaccines of types 1 and 3 were introduced by the GPEI and in 2009 a bivalent vaccine containing both types was first used.

In a recent study published in *The Lancet*, researchers from Imperial College London and the World Health Organization (WHO) assessed the effect of immunization campaigns in the Afghanistan and Pakistan by analyzing data collected by national surveillance programs.

The effectiveness of the three varieties of polio vaccine were also assessed against the predominant type 1 strain of the virus.

The study found that the monovalent vaccine was more effective than the trivalent vaccine against type 1 poliovirus, while the bivalent vaccine was comparable in effectiveness to the monovalent vaccine. The difference between the bivalent and trivalent vaccines was not large enough to be statistically significant.

Afghanistan and Pakistan have seen an increase in the number of poliovirus infections between 2006 and 2011 - in 2011 there were 198 cases in Pakistan and 80 cases in Afghanistan compared with 40 cases in Pakistan and 31 in Afghanistan in 2006. This is thought to be due to the decline in vaccine coverage in southern Afghanistan and parts of Pakistan, including Balochistan and the Federally Administered Tribal Areas (FATA) from 2006 to 2011.

To address this issue, both countries are currently implementing national polio emergency action plans, including measures such as increasing technical support to the worst-performing areas; creating accountability mechanisms for district-level leadership; and engaging with communities to increase demand for immunization.

"Our findings show it's not just small pockets where vaccine coverage decreased from 2006 to

2011," said lead author Dr. Kath O'Reilly of Imperial College London.

"The new vaccines appear to be more effective than the trivalent vaccine, which offers encouragement that polio eradication is achievable. But the best vaccine in the world will not work unless it reaches the children it is intended to protect," she added.

The article can be found at: [O'Reilly KM et al. \(2012\) The effect of mass immunisation campaigns and new oral poliovirus vaccines on the incidence of poliomyelitis in Pakistan and Afghanistan, 2001—11: a retrospective analysis.](#)

Source: [Imperial College](#); Photo: World Bank Photo Collection/Flickr.

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