

Study of HIV increase in Pakistan could benefit other research

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Rates of HIV have increased in Pakistan's general population, as the virus has spread beyond at-risk groups to women and their children, according to an international team of researchers, including a University of Florida scientist.

The researchers raise concern that the transmission across subgroups into Pakistan's general population may serve as indication that the virus may be spreading into populations within neighboring Afghanistan. The team's epidemiological findings were published in July in the journal *PLoS One*.

The technique used to understand the forces that drive the HIV epidemic in Pakistan could also help [health care professionals](#) understand and intervene in other deadly disease outbreaks wherever they occur, researchers say.

"Are the strains in Pakistan and Afghanistan of two different epidemic origins, or are they the same? It's an important question," said paper author Marco Salemi, a UF College of Medicine professor and a member of the UF Emerging Pathogens Institute and the UF Genetics Institute. "Genetic evidence can be used to test how different populations are intersecting. As you can imagine, behavioral data is difficult to get in some countries and this is why [molecular tools](#) are important."

Salemi analyzed [DNA sequences](#) of blood samples from three HIV-

positive groups: intravenous drug users, men who have sex with men, and women who have become infected by their bisexual spouses. By examining the evolutionary makeup of [HIV strains](#), scientists say one of the strongest factors of the disease's spread is through men who sleep with male intravenous drug users.

The study was led by scientists at Aga Khan University and Dow University of Health Sciences, both in Karachi, Pakistan's capital, and the team is part of a larger consortium of researchers worldwide who have published in the last year, further documenting the spread of HIV in predominantly [Muslim countries](#). The scientists say they will continue the epidemiological work in Afghanistan.

Deriving information from molecular studies is also essential to complement information that may not necessarily be accurate, or truthful, from in-person interviews.

"These questions are very sensitive and most of the behaviors we deal with, even in countries outside the Middle East, are illegal behaviors," said Willi McFarland, director of the HIV Epidemiology Section at the San Francisco Department of Public Health.

McFarland is an author of a [PLoS One](#) paper that also appeared this summer. That research was led by scientists from the Qatar branch of Weill Cornell Medical College who examined smaller studies from the Middle East and North Africa of men who hid their sexuality out of fear of prosecution.

Despite certain social and legal limitations that may make conducting similar studies difficult in some parts of the world, McFarland says the trust and confidentiality established between physicians and their patients proved crucial in providing the demographic information needed to conduct international studies such as these.

"Despite the legal consequences, the doctor patient-relationship does seem to be respected," McFarland said.

Provided by University of Florida

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