

New light shed on world's deadliest pandemic mystery

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University of Queensland research into the world's most deadly influenza pandemic in 1918 has shed light on a major medical mystery.

The study, published a recent edition of [Lancet Infectious Diseases](#), examined US and Commonwealth military records and controversially suggests that the presence of two different [viruses](#) is the reason the second wave of the pandemic was so much deadlier.

The conclusions highlight the importance of acquired immunity and the use of modern vaccinations, lead author and Professor at UQ's Centre for Military & Veterans' Health and Director of the Australian Army Malaria Institute, Dr G. Dennis Shanks said.

He said World War I soldiers and sailors of identical genetic and social backgrounds died at very different rates depending on where they were located.

Geography was thought to have determined what viruses they had previously encountered and conferred resistance on some personnel, while high death rates occurred in other groups.

"There were two major waves of the pandemic, each with very different characteristics," Professor Shanks said.

"Those infected in the first wave were largely protected against death in the second wave, but because some ships in the Southern Hemisphere

did not encounter the first wave, those crews suffered extreme mortality in the second wave, with up to 10 percent dying."

He said a similar second wave of influenza had occurred during the 2009 pandemic and understandings of the virus were still imperfect.

"[Pandemic influenza](#) is one of the few diseases capable of shutting down military operations as well as causing widespread illness and death in civilians," Professor Shanks said.

"We are trying to better understand the most extreme [influenza pandemic](#) in 1918 so we might avoid such consequences in the future."

The study was funded by the US Armed Forces Health Surveillance Center (AFHSC) and co-authored by Dr John Brundage (AFHSC) and Alison MacKenzie and Michael Waller (both of CMVH).

Provided by University of Queensland

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