# Challenges in Developing an Effective Bird Flu Vaccine



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**By Sarah Newey and Maeve Cullinan**

On May 14, 2024, health officials assured the public that the risk of H5N1 bird flu spreading to humans remains low. However, preparedness for a potential pandemic is a concern. The UK Health Security Agency (UKHSA) has secured a deal with healthcare company CSL Seqirus to produce over 100 million influenza pandemic vaccines if required. Similarly, the United States has 10 million doses stored and could distribute up to 100 million shots within four months if necessary.

Despite these assurances, experts like Dr. Nicole Lurie from the Coalition for Epidemic Preparedness Innovations (Cepi) and Dr. Richard Webby from the World Health Organization (WHO) Collaborating Centre emphasize the uncertainty surrounding the efficacy and sufficiency of current vaccine stockpiles. Existing supplies might only be adequate for healthcare workers.

An additional challenge is whether current vaccines are effective against new H5N1 strains. Only two of the four stockpiled vaccines are thought to match the current strain, with efficacy possibly as low as 45%. Historical examples, such as the H1N1 swine flu outbreak in 2008/9, highlight that existing vaccines may not provide adequate protection for all populations.

Production timeframes are also a concern, as the traditional egg-based vaccine manufacturing process can take up to six months. While newer technologies like mRNA vaccines show promise, regulatory approval and mass production capabilities remain unresolved issues.

In the event of a pandemic, high-income countries with pre-existing contracts might secure vaccine supplies first, potentially leaving low- and middle-income countries behind. According to a WHO analysis from 2019, only 2% of global vaccine manufacturing capacity is located in these regions, despite them being home to 38% of the world’s population.

Antiviral drugs are another line of defense against H5N1, but experts like Prof. Ian Barr from the WHO Collaborating Centre suggest that reliance on vaccines and antivirals is part of a broader pandemic preparedness strategy.