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Vaccination Strategies to prevent and control HPAI: Removing unnecessary barriers for usage

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"Developing appropriate surveillance systems that provide confidence that HPAI virus is not circulating in poultry"

BACKGROUND — Increased and extended pressure of incursions of high pathogenicity avian influenza (HPAI) by secondary spread among poultry holdings and/or from infected migratory wild bird populations has been noticed globally. This places vaccination against HPAI into focus as a complementary prevention tool including Europe and North America.

CHALLENGES — Given the necessity of tackling both the genetic flexibility of HPAI viruses and the rapid turn-over rates of large poultry populations, goal-oriented use of HPAI vaccines is highly demanding. Ill-matched vaccine antigens and inappropriate vaccination schemes may induce insufficient or patchy poultry population immunity, potentially fostering the selection and silent circulation of field virus variants escaping vaccination, thereby counteracting the purpose.

PROPOSED APPROACH — Controlled vaccination aiming at reducing clinical sequelae of HPAIV infection and economic losses and at decreasing risk of transfer of zoonotic HPAIV across the avian-human interface must be flanked by appropriate surveillance. Adamant prove is sought that products from HPAIV-vaccinated poultry do not impose any risk of virus spread or exposure. Otherwise, trust of trading partners and consumers might be lost. Therefore, surveillance requires tailoring at several levels: (i) It ensures appropriate

vaccination coverage and presence of an adequate population immunity; (ii) It guarantees absence of HPAIV circulation in vaccinated herds; (iii) It continues to assess HPAI-infection trends in unvaccinated parts of the poultry population.

CONCLUSIONS — Careful planning ahead of any vaccination intention is pivotal. Endeavoring the above-defined goals of surveillance is complex and can become costly. Surveillance strategies fit for purpose must be tailored specific to different geographic, economic and epidemiological situations. Conjecturing HPAI vaccination campaigns should include exit scenarios as well.