

Private sector perspective – animal health/pharmaceutical industry point of view in managing animal influenza & the priorities for animal influenza research

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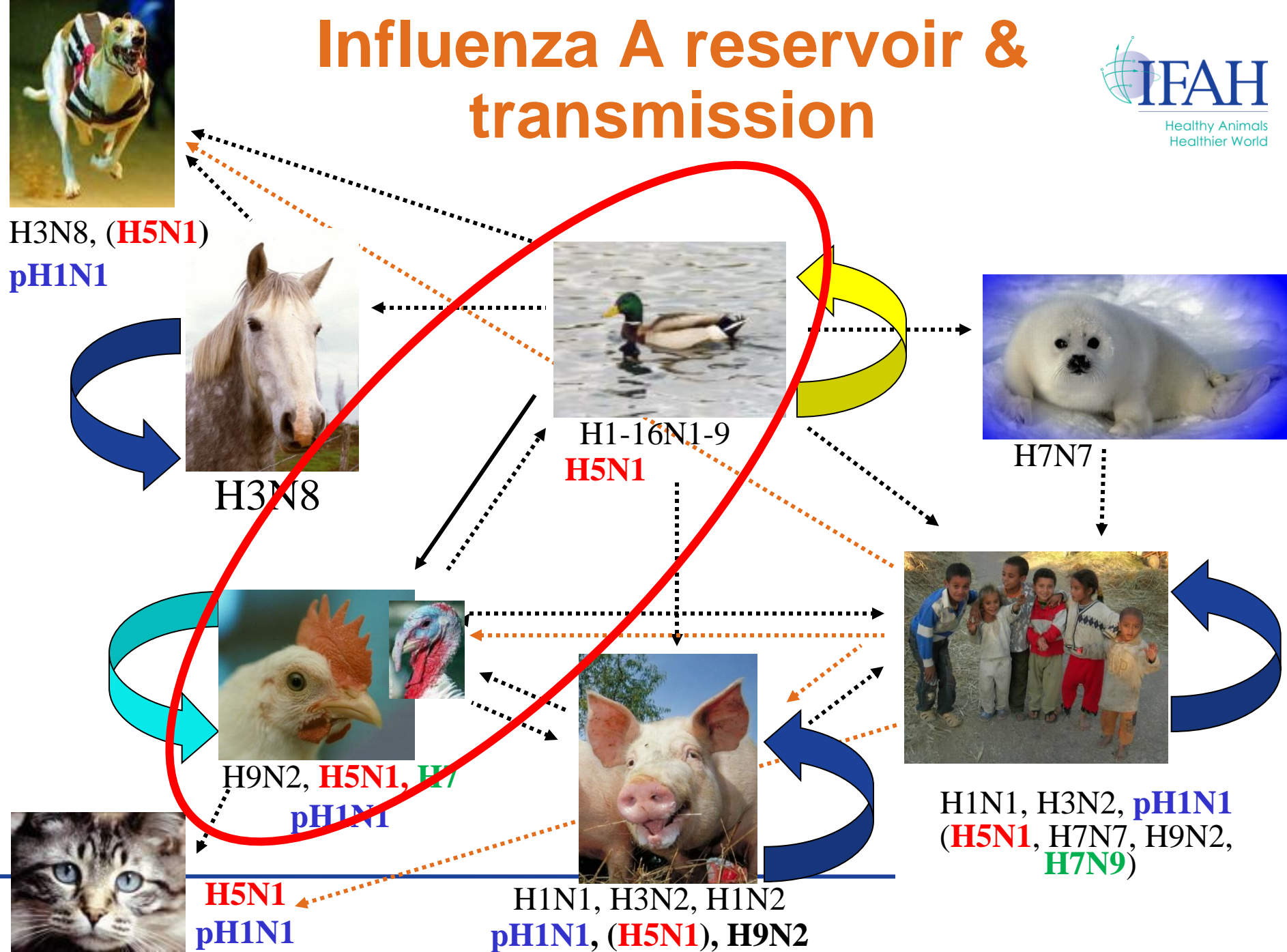
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Global animal influenza research agenda

OIE headquarters - Paris

April, 8th-9th, 2014

Influenza A reservoir & transmission



Different types of licensed influenza vaccines



Vaccine type	Human H1N1, H3N2, B + pand.	Avian H5N1, H5N2, H9N2, H7N3	Equine H3N8	Swine H1N1, H3N2, H1N2	Canine H3N8
Inactivated	+	+	+	+	+
Rev. Gen. inactivated	+	+	-	-	-
Attenuated	+	-	+	-	-
Subunit	+	-	-	-	-
Vector	-	Fowlpox Av. Paramyxov. Herpesvirus	Canarypox	Alphavirus Replicon	-

Inactivated vaccines

Avian & swine autogeneuous vaccines

- Swine flu (example = H1N2)
- Avian flu (example = H9N2)
- Local approach
- Evidence for antigenic drift within sub-clusters
- Combinations with other components?

Local approach –
variable
registration
constraints

Avian inactivated vaccines in oil emulsion

- Produced on eggs
 - BPL-inactivated
 - Non-purified whole virus
 - Mineral oil adjuvant
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- 3 major factors:
 - Antigen content
 - Adjuvant
 - Vaccine strain choice



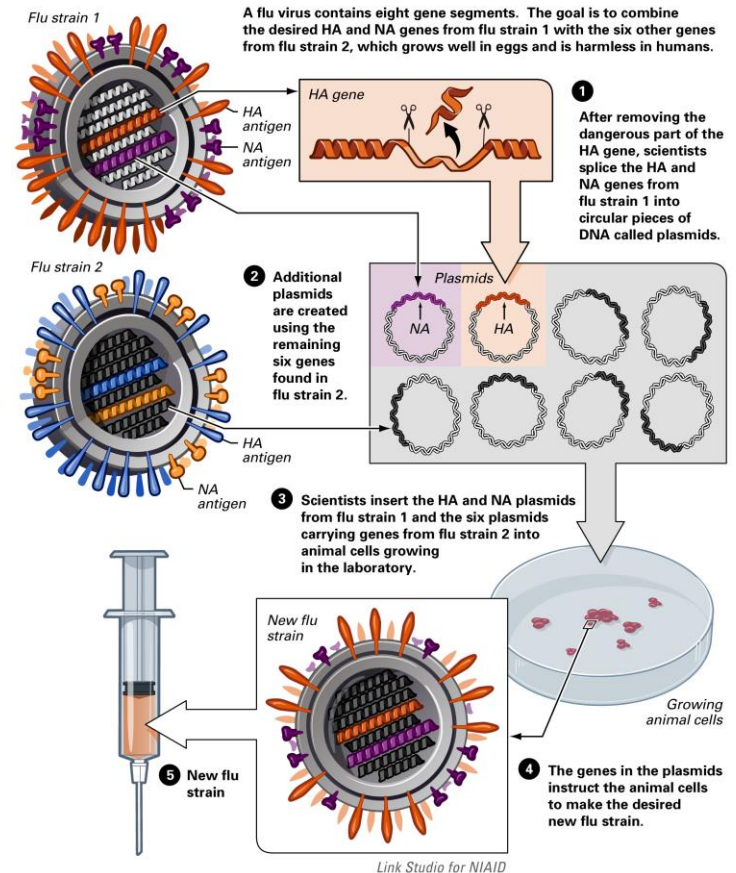
Supply of eggs
– sanitary
status



Avian vaccine reverse genetics technology

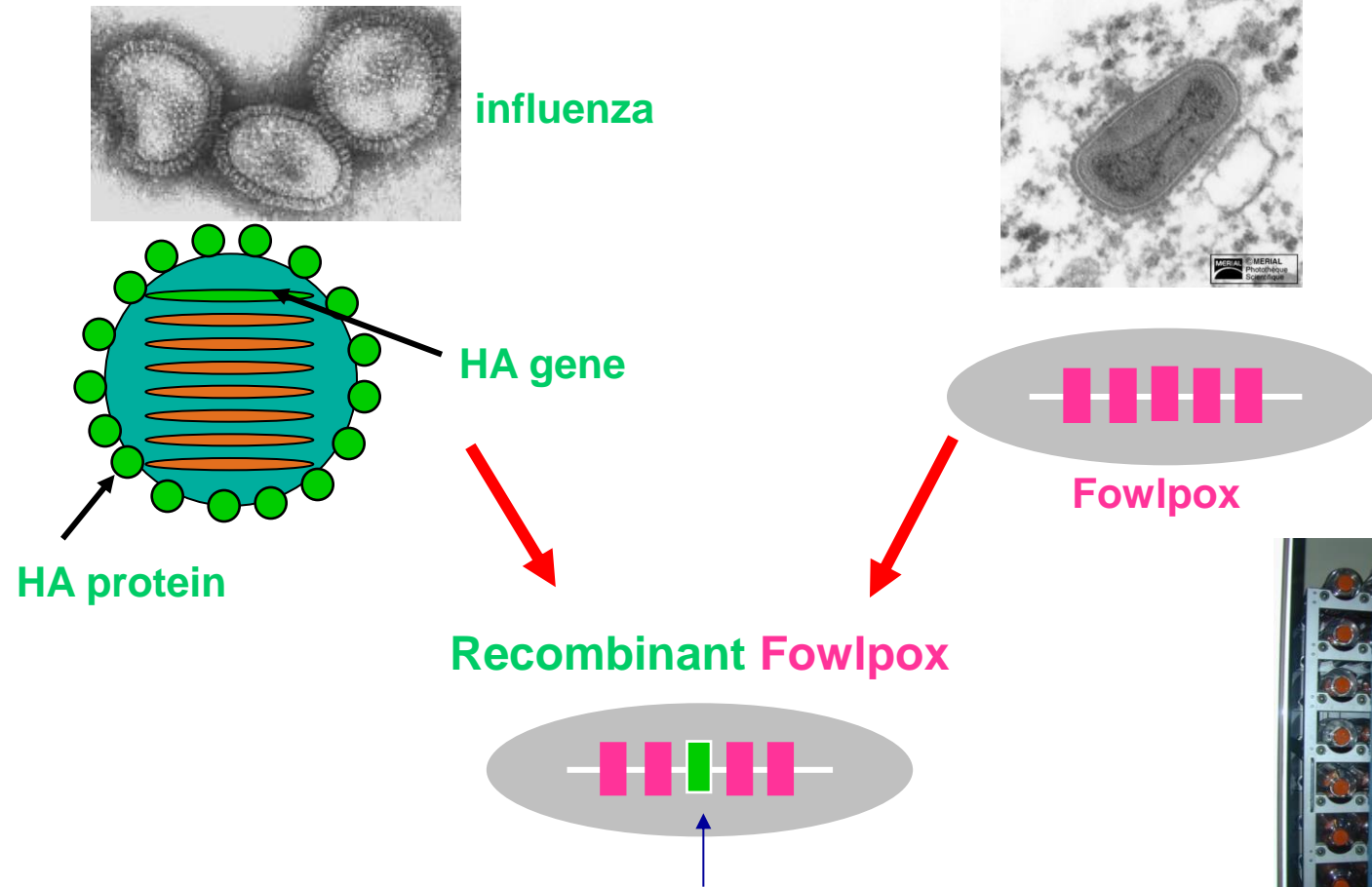
- Re vaccine series in China
- Avian H5N1 backbone
- Generation of constructs according to the antigenic drifts

Need of structured epidemiological monitoring



Vector vaccines

Example of generation of Fowlpox recombinant vaccines for avian species



Vector vaccine technology for avian vaccines

- Fowlpox vector vaccines
- Live herpesvirus of turkeys vector vaccines
- Live Newcastle disease vector vaccines



Vector vaccines
part of
vaccination
programs

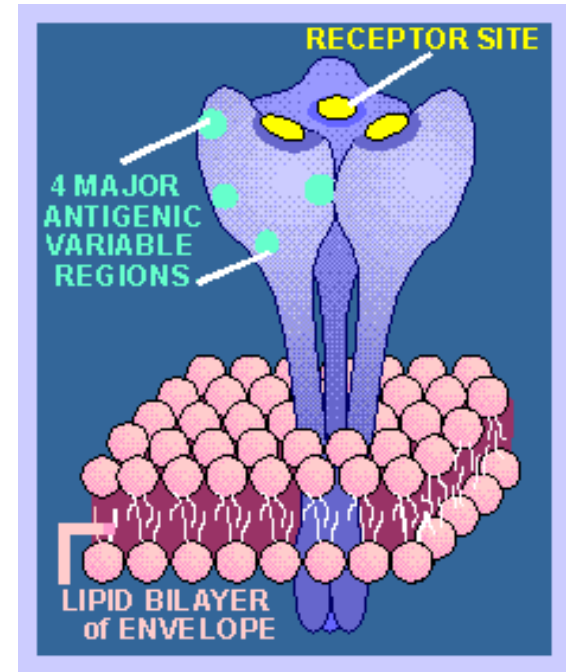
Need of
improved
efficacy -
approach for
local
immunization

Antigenic shift & drift – the main topic

Antigenic drift

- Mutations of HA & NA genes within the same sub-type
- Mutants may escape the immune response

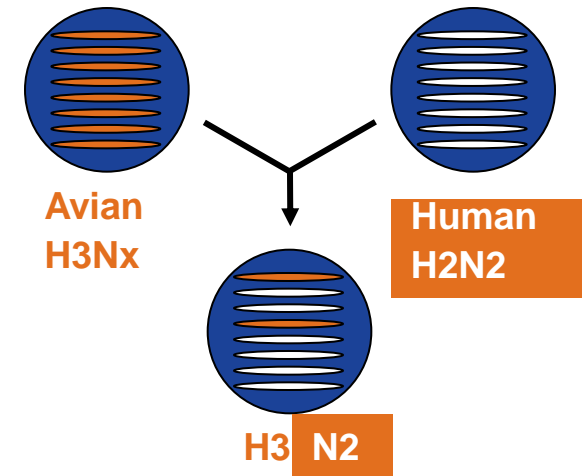
PROTECTION?



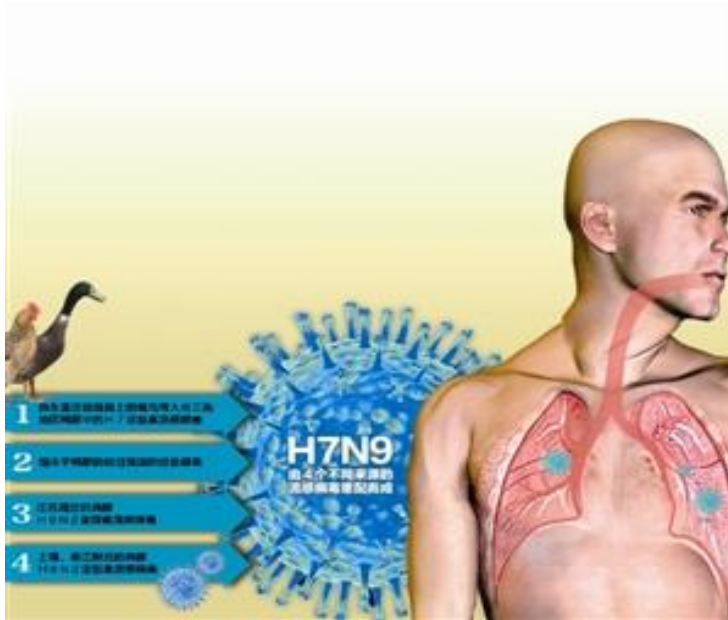
Antigenic shift

- New sub-type HA and/or NA
- Reassortment

PROTECTION?



Antigenic shift



NEED OF A VACCINE FOR CHICKENS?

Thank you for your attention!

