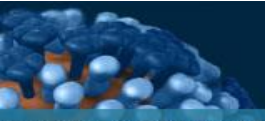


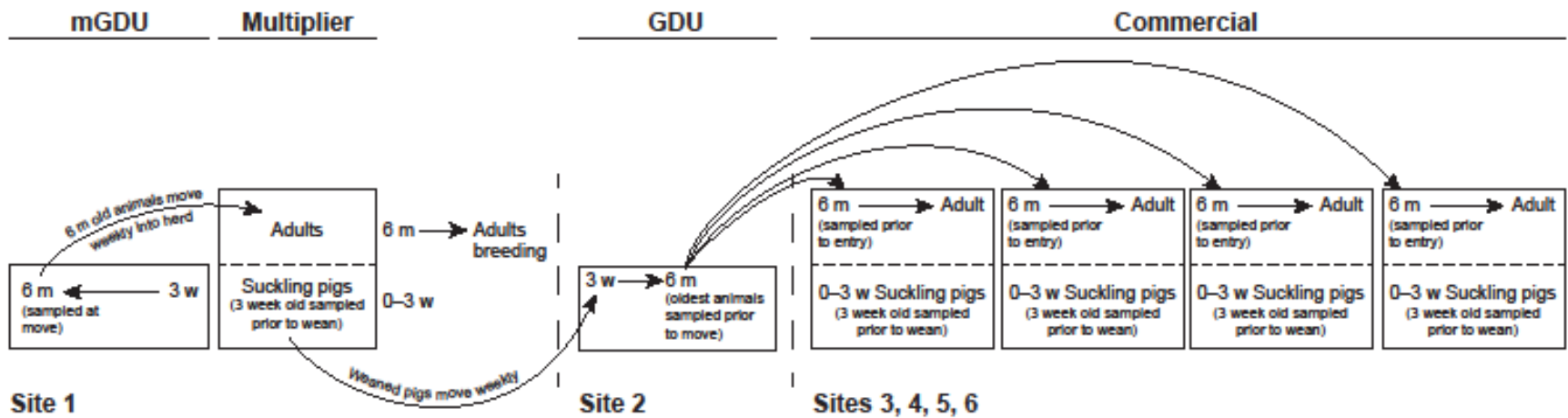
St Jude CEIRS update



CEIRS

NIAID Centers of Excellence for Influenza Research and Surveillance

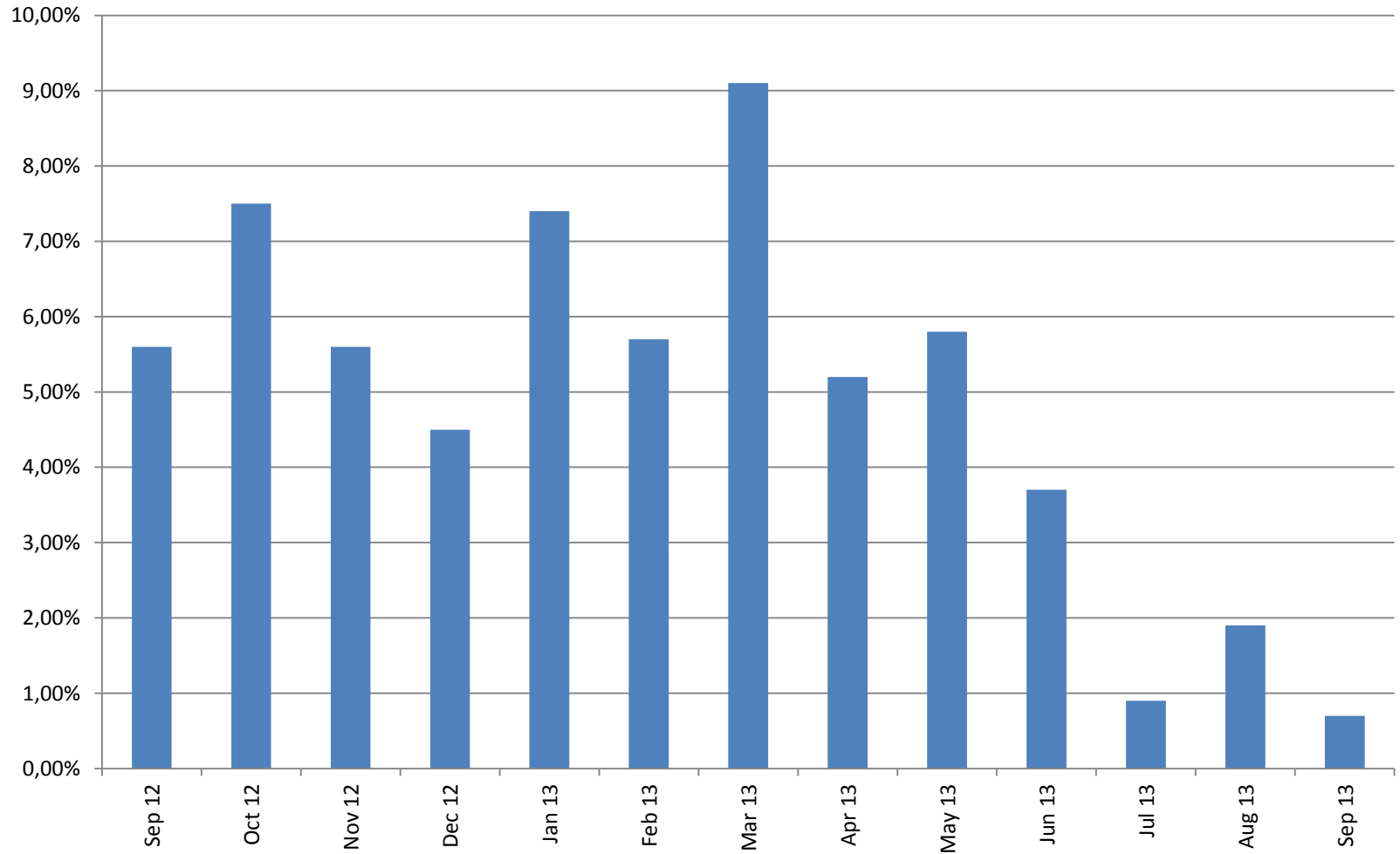
Swine Flow Overview



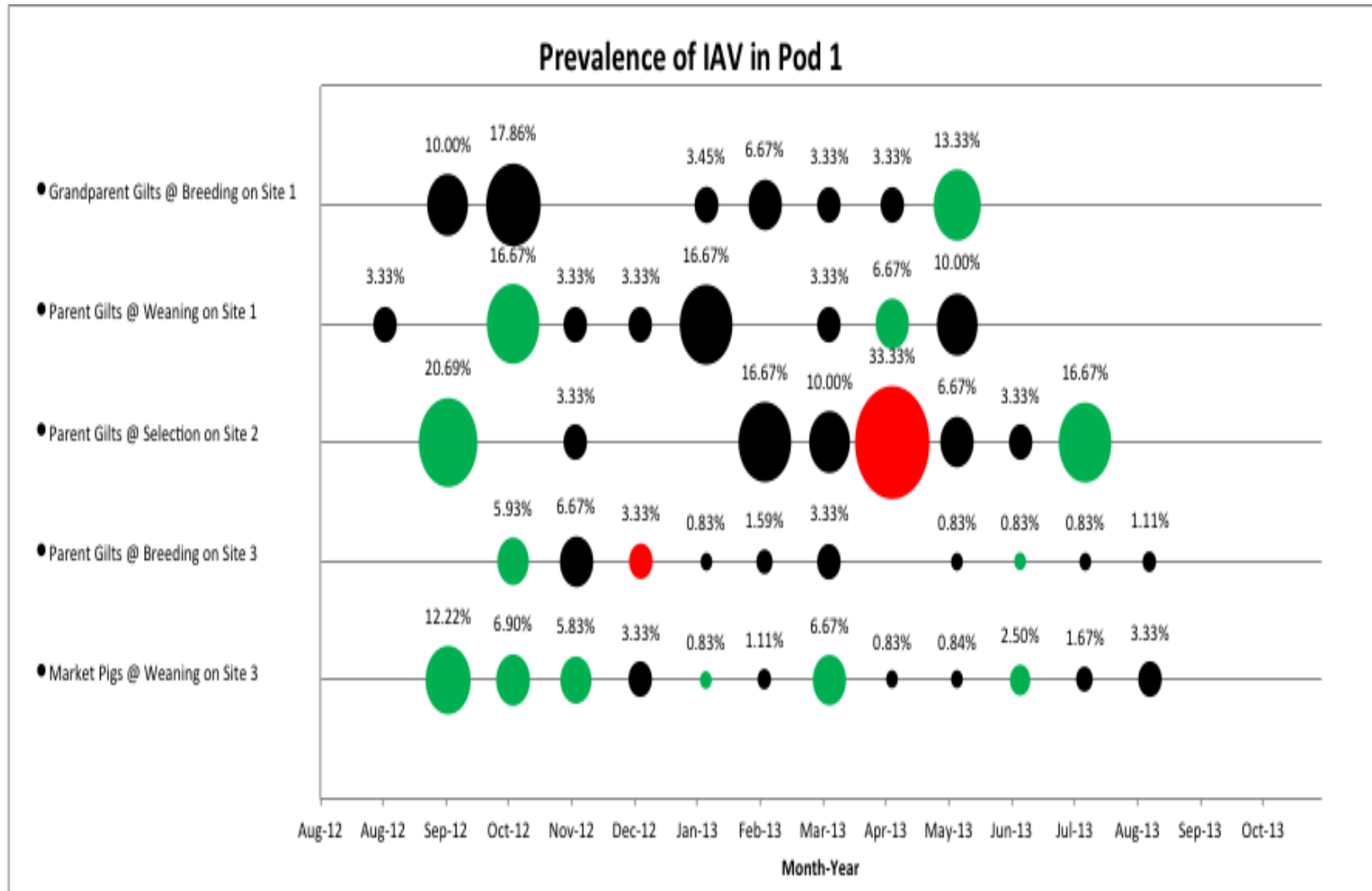
Each month, 30 gilts (~ 6 months) and/or 30 weaned piglets (~3 weeks) were sampled depending on position of farm in production system.

Variable	No. Collected Samples	No. of Influenza-positive Samples (% [†])	P-value
State			
GA	2520	73 (2.9)	<0.001
IL	4490	408 (9.1)	
NE	3894	126 (3.2)	
OK	4050	134 (3.3)	
Age			
Adult	8028	375 (4.7)	NS
Weaned	6926	366 (5.3)	
Farm Type			
MF	1526	67 (4.4)	<0.001
Multiplier	1559	72 (4.6)	
GDU	1455	115 (7.9)	
BTW	10414	487 (4.7)	
Pod			
1	3673	142 (3.9)	<0.001
2	3337	339 (10.2)	
3	4050	134 (3.3)	
4	3894	126 (3.2)	

Monthly Prevalence

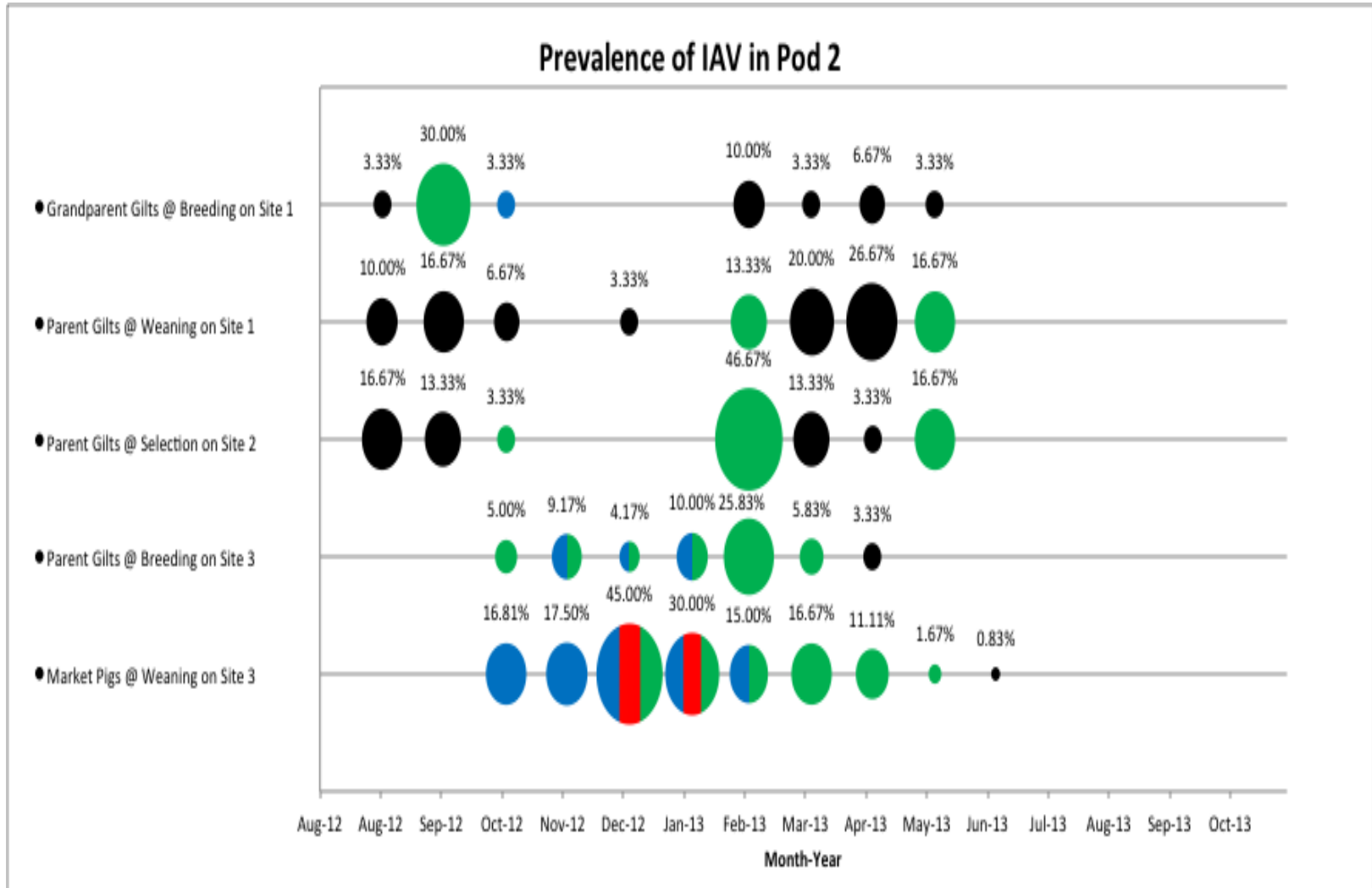


Flow 1 Subtype Breakdown



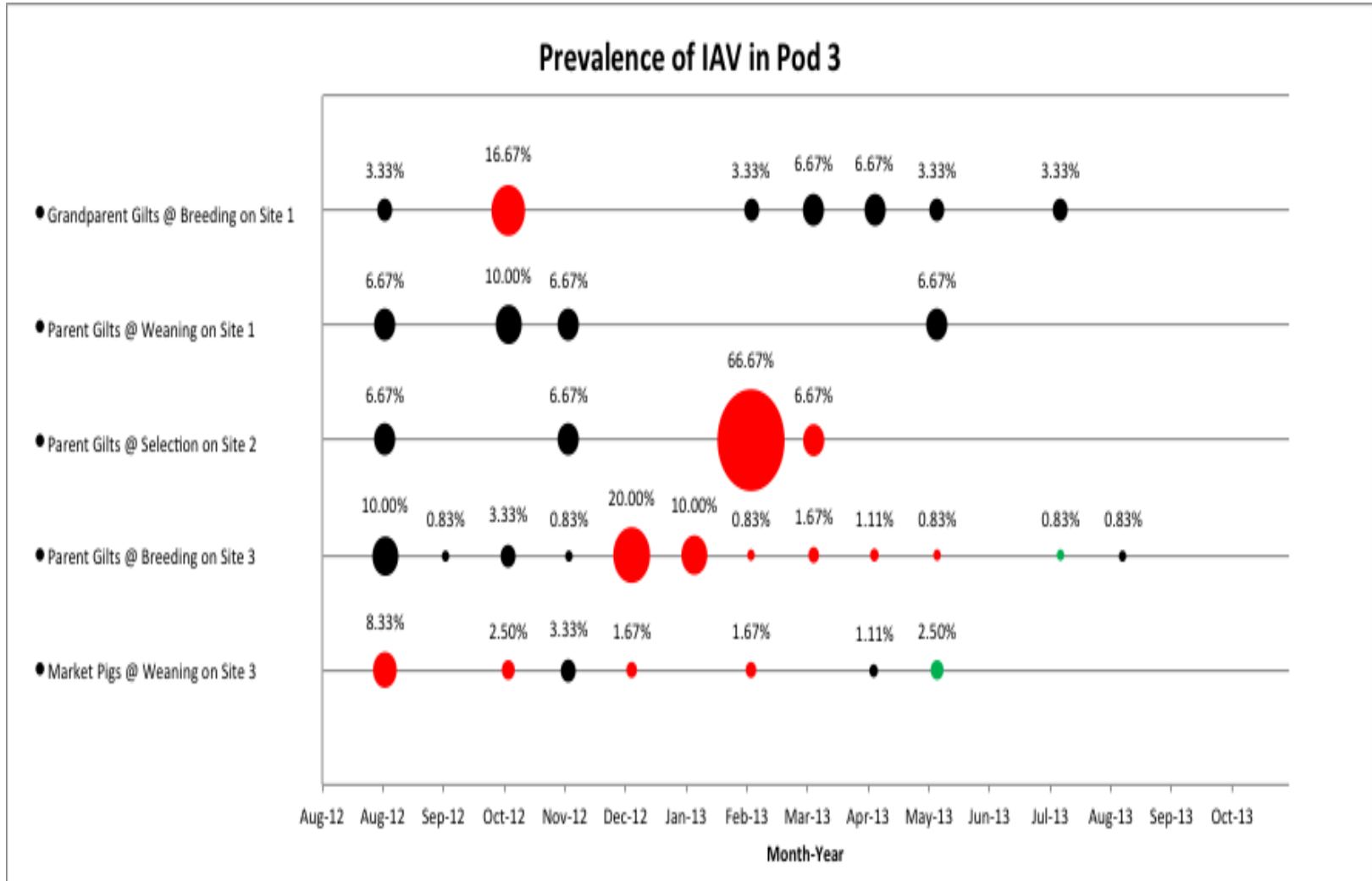
Green = H1N1, Blue= H1N2, Red= H3N2

Flow 2 Subtype Breakdown



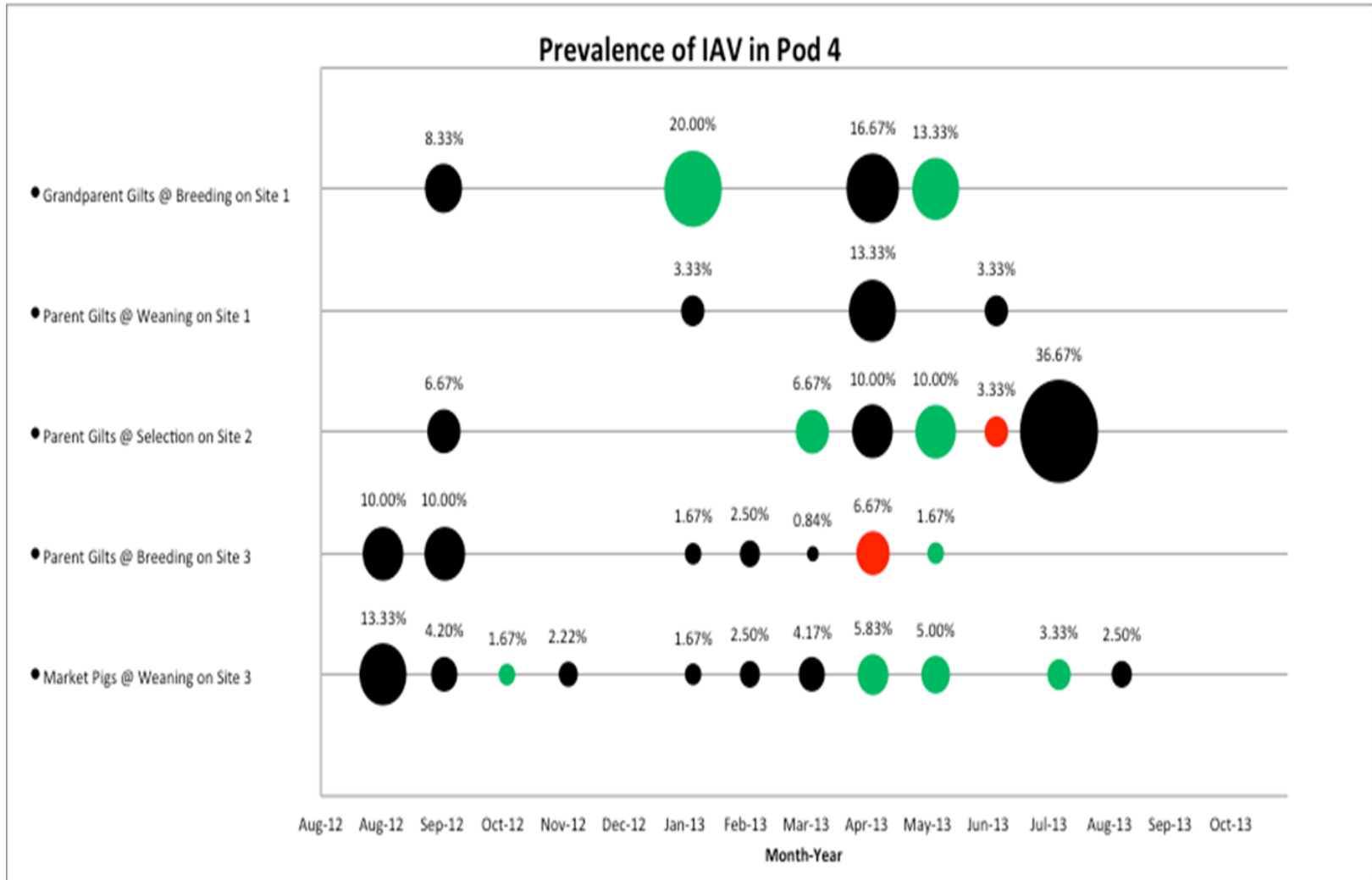
Green = H1N1, Blue= H1N2, Red= H3N2

Flow 3 Subtype Breakdown



Green = H1N1, Blue= H1N2, Red= H3N2

Flow 4 Subtype Breakdown



Green = H1N1, Blue= H1N2, Red= H3N2

2010 Colombia project

- Collect sera, nasal swabs and trachea from abattoir and backyard farms in Villavicencio
- 15.2% positive
- All pdm H1N1 virus

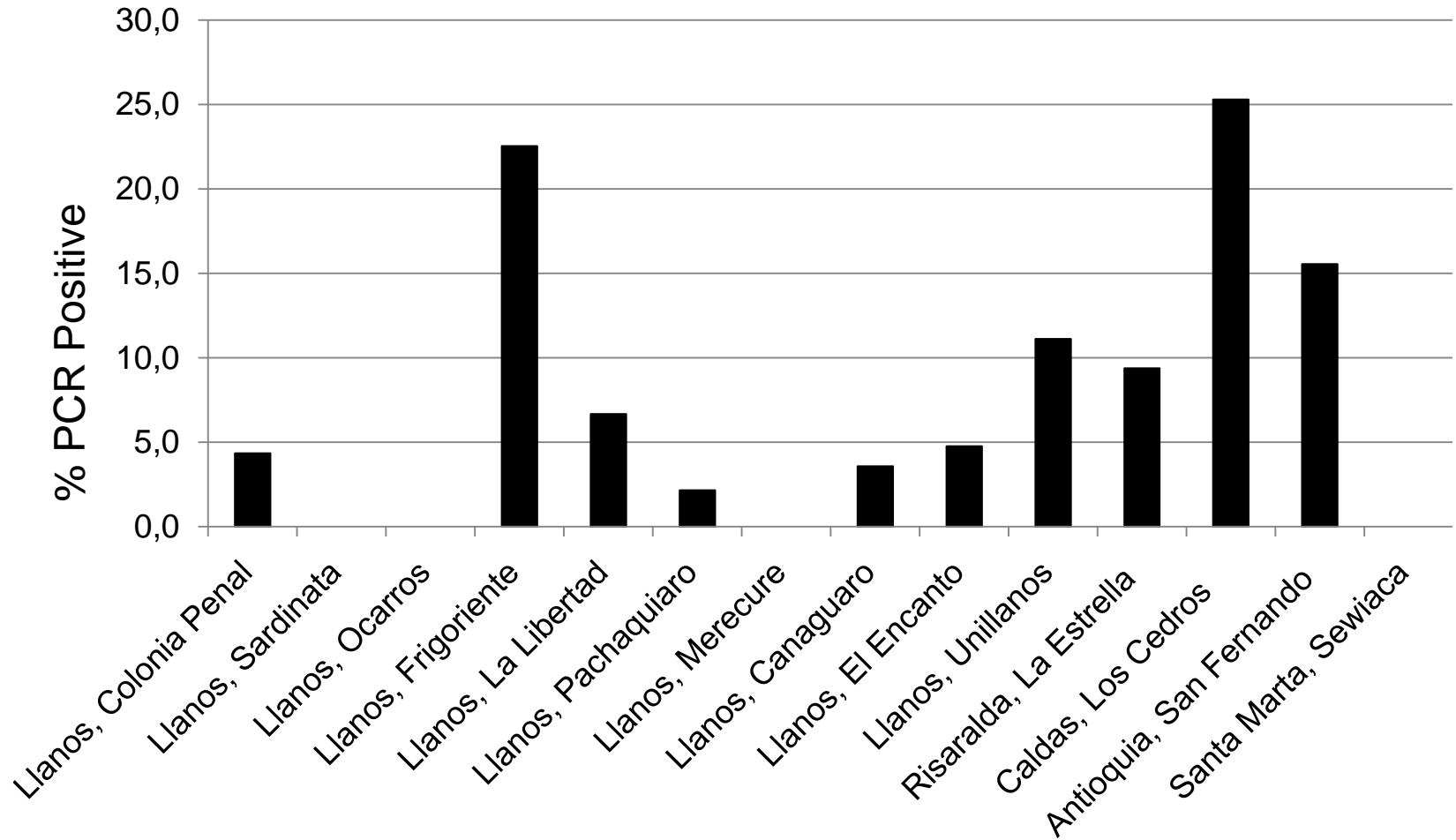


Sites	Total Screened	# Positive	% Positive
Farm	319	8	2.51%
Slaughterhouse	359	83	23.12%

- Collaboration with Carval
- Farms and abattoirs around Medellin and Bogota. Backyard in Santa Marta
- Primarily swabs and rope
- Primary testing at Carval

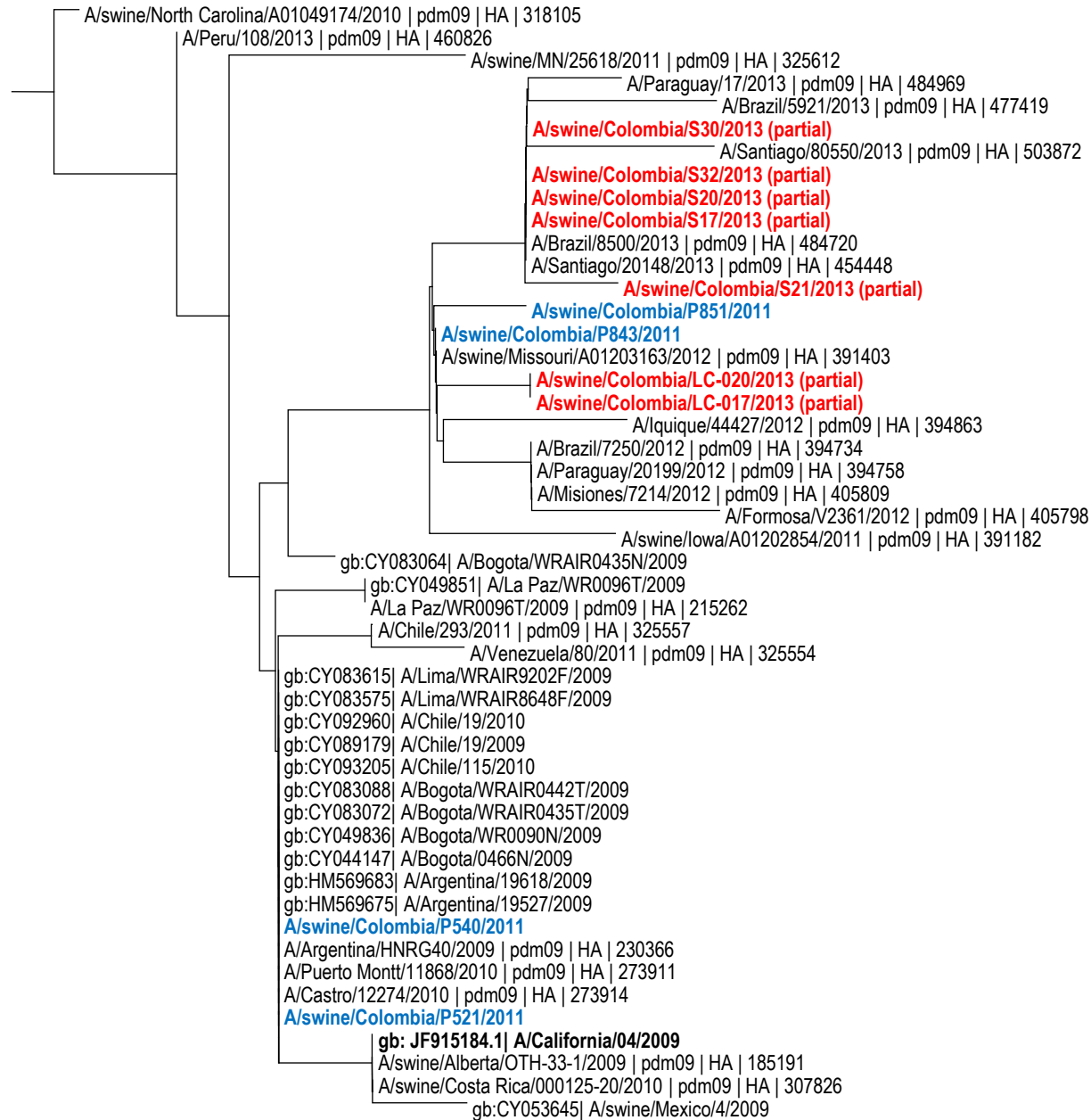
Sample	# Samples Collected	# Samples Tested	Total Positive	Notes
Serum	452	451	106 (NP ELISA)	5 farms +
Nasal swabs	841	555	101	4 farms and abattoir +
Oral Fluids (Rope)	165	3	1	1 farm +
Tracheal swab	49	16	2	Abattoir+

PCR positives by location



HA

*based
on ~500nt
alignment

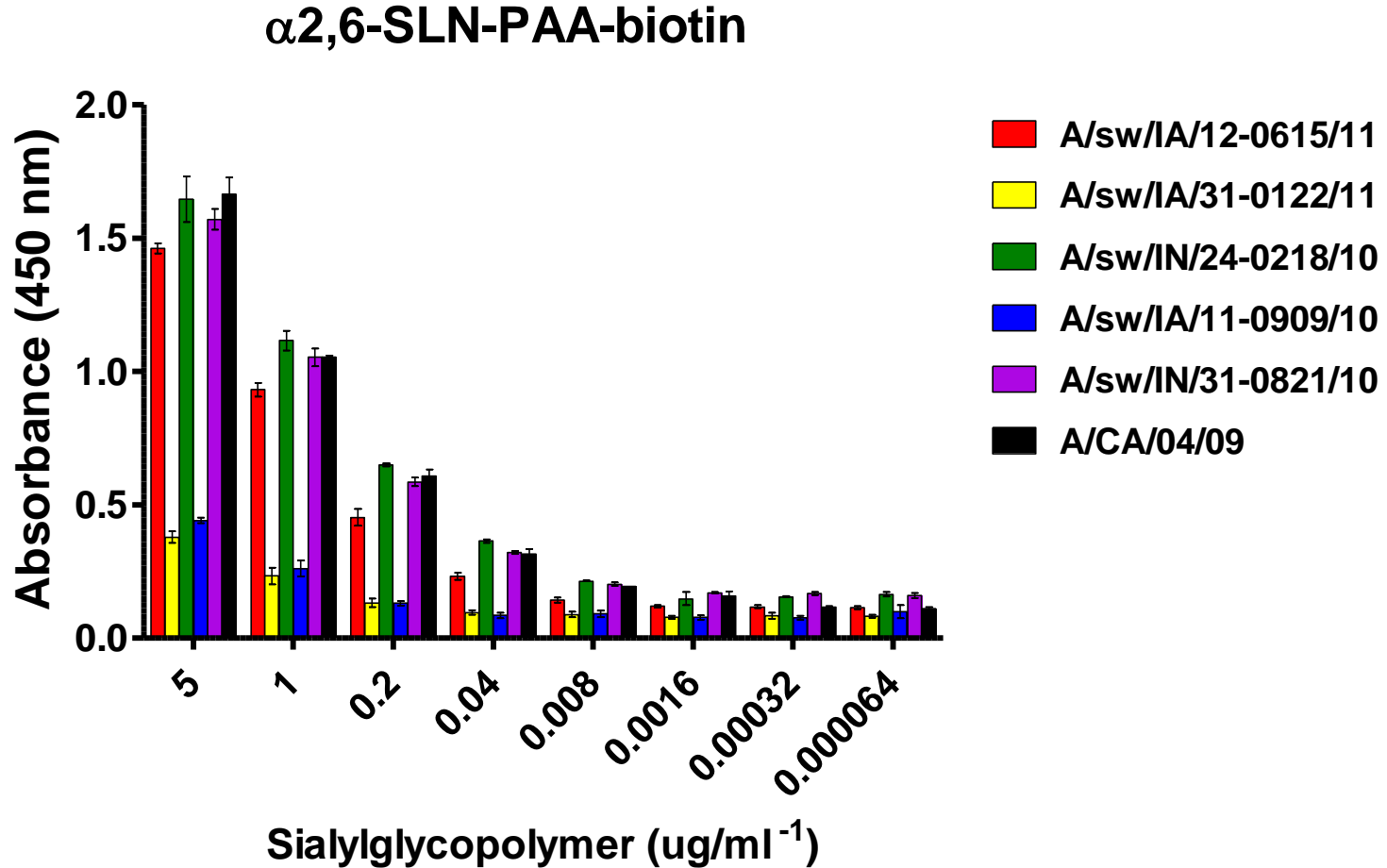


0.001

Country	# samples	% positive
Benin	120	0
Bulgaria	452	0
Cote d'Ivoire	2274	0
Ghana	2393	0
Sri Lanka	5839	1.9%
Uganda	2689	0.9%

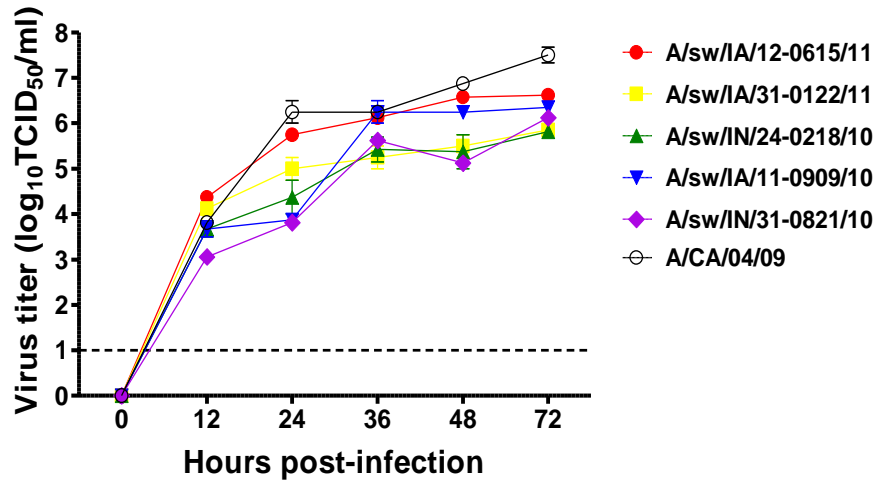


VIRUS NAME	SUBTYPE
A/sw/ Indiana/ 24-0218/2010	H1N2
A/sw/Indiana/31-0821/2010	H1N1(SW)
A/sw/Iowa/11-0909/2010	H1N1(SW)
A/sw/Indiana/31-0122/2011	H1N1
A/sw/Iowa/12-0615/2011	H1N1

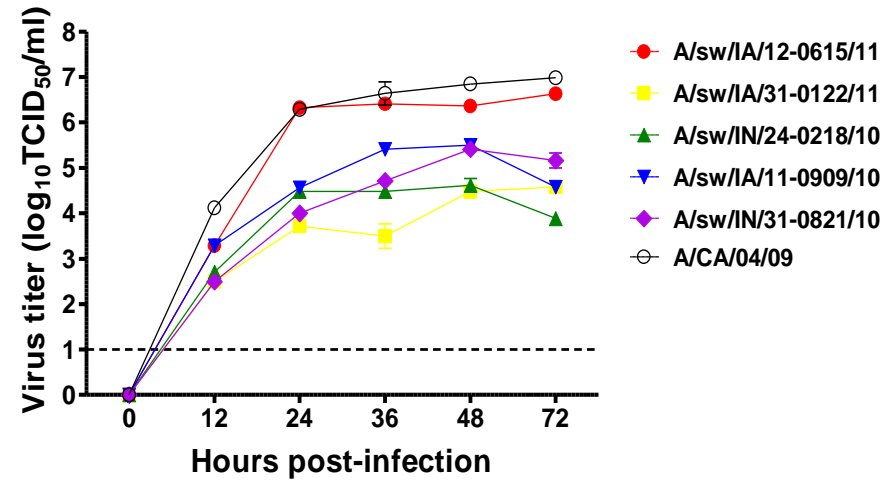


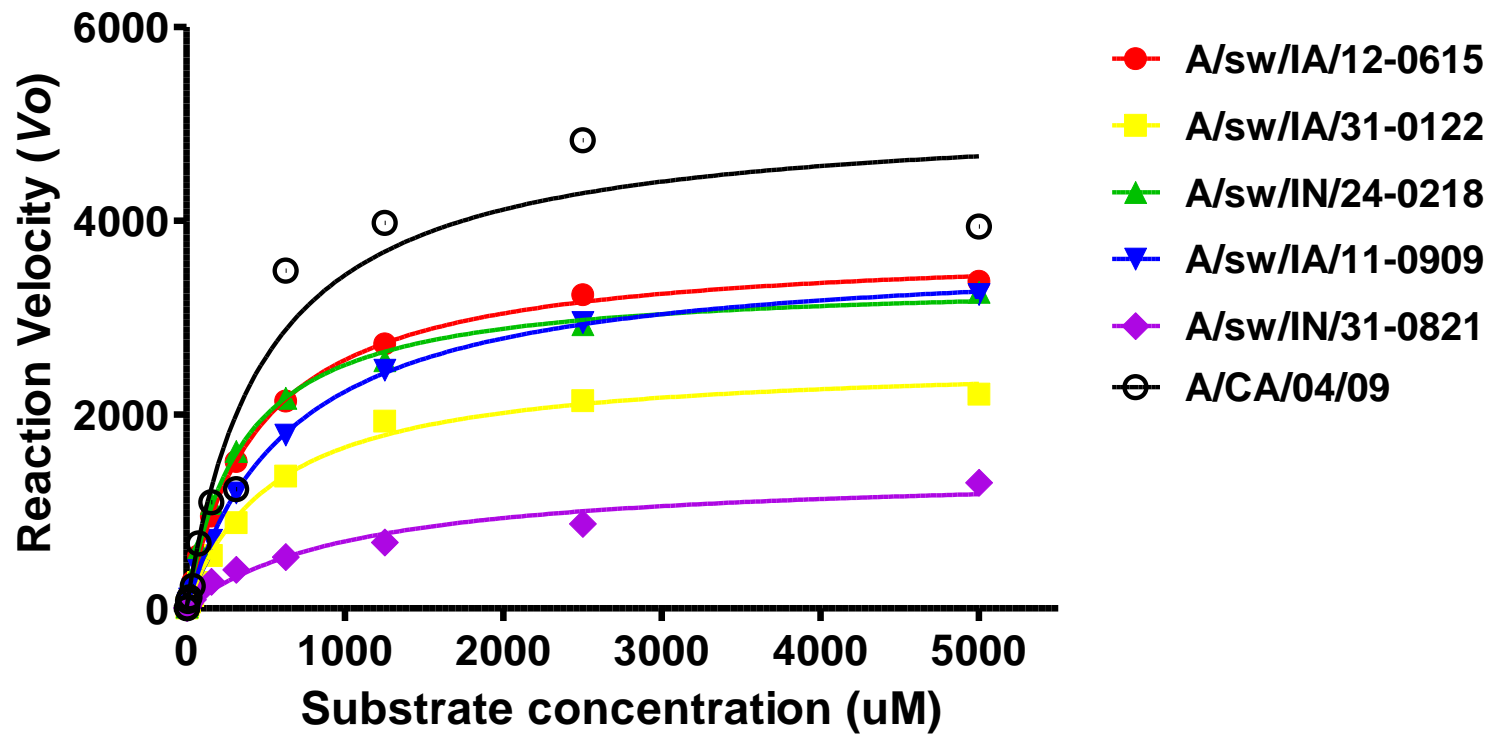
Virus growth

MDCK (MOI=0.01)



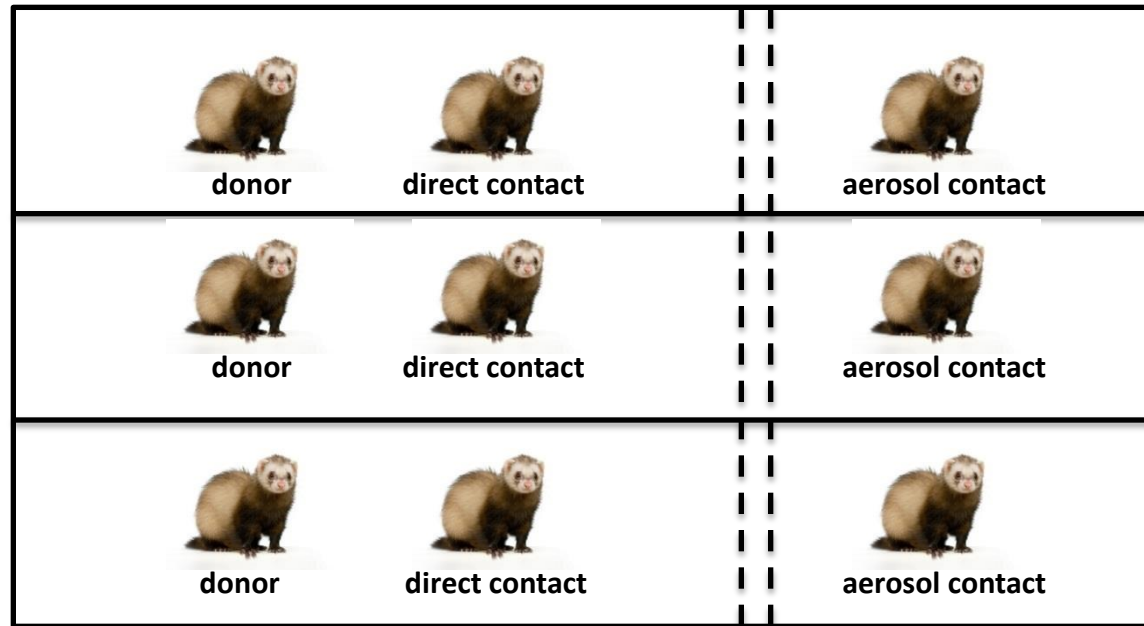
dNHBE (MOI=0.01)



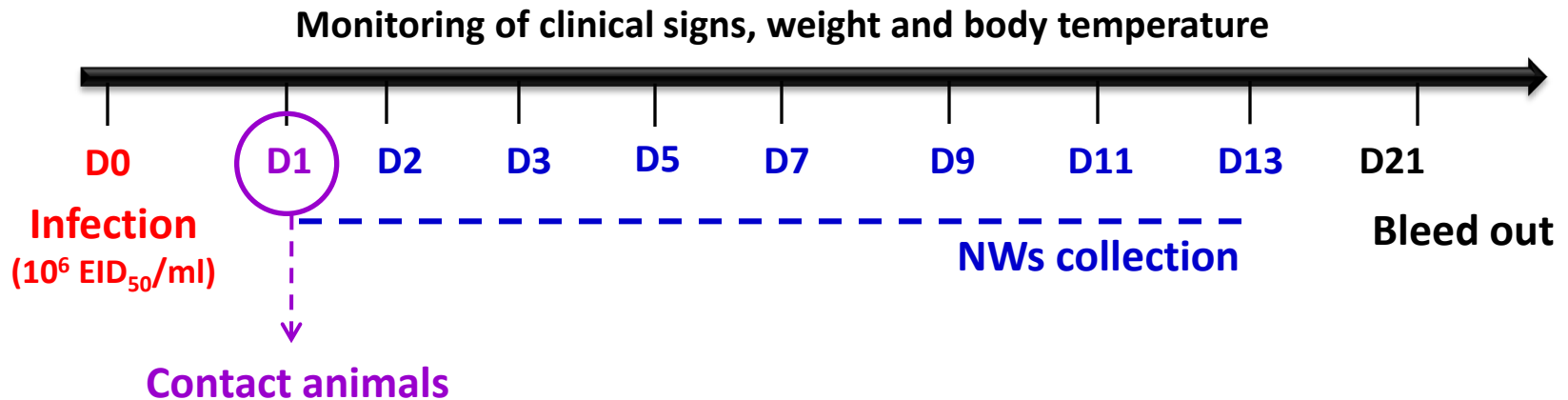


Transmission in ferrets

❖ Cubicle setup



❖ Experimental design



Preliminary summary

	HA binding*	Growth kinetics (dNHBE)*	NA kinetics†	Transmission in ferrets
<i>A/sw/IA/12-0615/11</i>	S	S	H	100 D; 50 A
<i>A/sw/IN/31-0122/11</i>	L	L	M	100 (delay) D; 0 A
<i>A/sw/IN/24-0218/10</i>	S	L	H	50 D; 0 A
<i>A/sw/IA/11-0909/10</i>	L	L	H	100 D; 50 (delay) A
<i>A/sw/IN/31-0821/10</i>	S	L	L	50 D; 0 A

abbreviation : S; similar, L; lower, H; higher, M; middle, N.D; not done

* Compare to CA/09 virus

† Compare to each virus

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