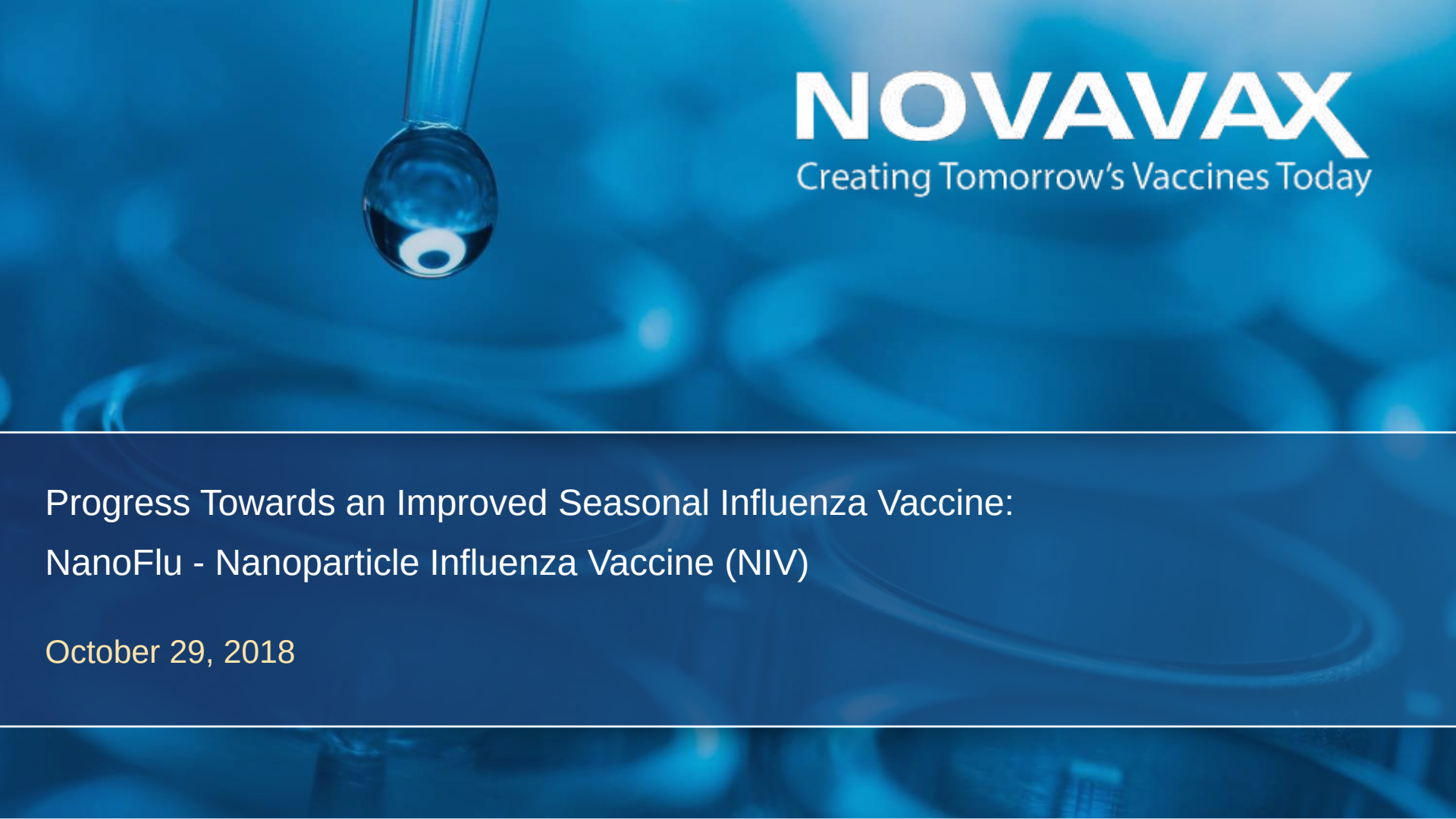


Progress Towards an Improved Seasonal Influenza Vaccine:

NanoFlu - Nanoparticle Influenza Vaccine (NIV)

October 29, 2018

Safe harbor statement

Certain information, particularly information relating to future performance and other business matters, including expectations regarding clinical development, our planned use of the proceeds from the offering, market opportunities and anticipated milestones constitute forward-looking statements within the meaning of the Private Securities Litigation Reform Act.

Forward-looking statements may generally contain words such as “believe,” “may,” “could,” “will,” “possible,” “can,” “estimate,” “continue,” “ongoing,” “consider,” “intend,” “indicate,” “plan,” “project,” “expect,” “should,” “would,” or “assume” or variations of such words or other words with similar meanings. Novavax cautions that these forward-looking statements are subject to numerous assumptions, risks and uncertainties that change over time and may cause actual results to differ materially from the results discussed in the forward-looking statements.

Uncertainties include but are not limited to clinical trial results, dependence on third party contractors, competition for clinical resources and patient enrollment and risks that we may lack the financial resources to fund ongoing operations.

Additional information on Risk Factors are contained in Novavax’ filings with the U.S. Securities and Exchange Commission, including our Annual Report on Form 10-K for the year ended December 31, 2017, our Quarterly Reports on Form 10-Q, and our Current Reports on Form 8-K, which are all available at http://www.sec.gov.

Forward-looking statements are based on current expectations and assumptions and currently available data and are neither predictions nor guarantees of future events or performance.

Current results may not be predictive of future results.

You should not place undue reliance on forward-looking statements which speak only as of the date hereof.

The Company does not undertake to update or revise any forward-looking statements after they are made, whether as a result of new information, future events, or otherwise, except as required by applicable law.

NOVAVAX

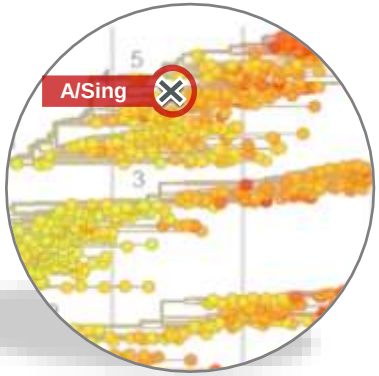
Agenda

- The current need for an improved influenza vaccine
- NanoFlu: Novavax' nanoparticle vaccine and Matrix-M adjuvant
- Broadly cross-reactive A(H3N2) immune responses in ferrets
- Phase 1/2 clinical data
- Phase 2 clinical trial design
- Pathway to licensure

NOVAVAX

H3N2 in the 2017/18 flu season highlights need for better vaccine

Two issues contributing to **MISMATCH** and poor flu vaccine effectiveness



Antigenic evolution and drift

Vaccines are derived from recommended strains, but when viruses “drift” – natural genetic evolution – vaccines may not protect as well

Egg adaptation

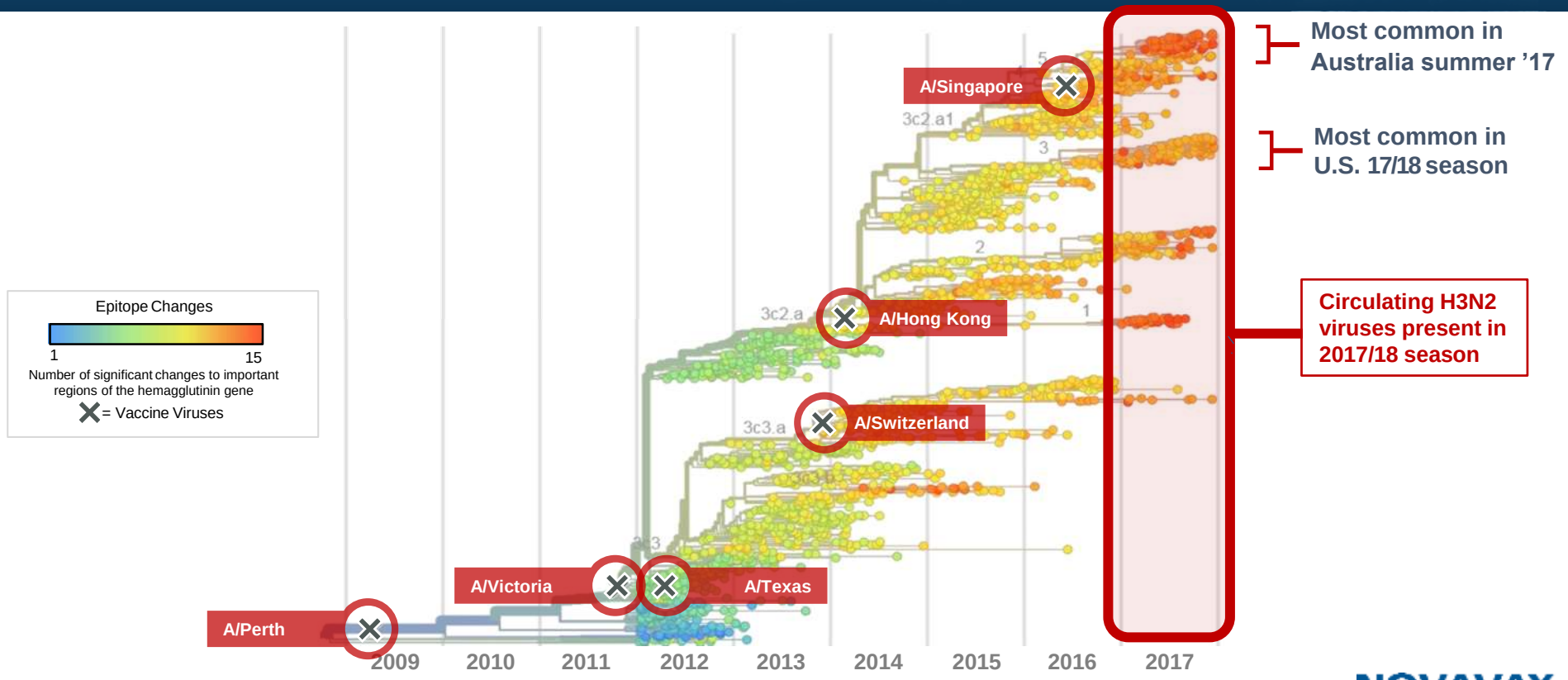
Viruses are modified to grow better in chicken eggs

Over multiple egg-growth passages, these changes can result in mismatch between vaccine and circulating viruses

Image Source: https://www.fda.gov/ForConsumers/ConsumerUpdates/ucm336267.htm
Adapted from CDC Grand Rounds. January 16, 2018. https://www.cdc.gov/cdcgrandrounds/pdf/archives/2018/january2018.pdf

NOVAVAX

Rapid evolution and diversity of H3N2



Adapted from CDC Grand Rounds. January 18, 2018. https://www.cdc.gov/cdcgrandrounds/archives/2018/January2018.htm

Egg adaptation of influenza viruses

> “. . . Egg propagated vaccine viruses acquired changes in the HA that subsequently altered antigenicity against circulating strains. This observation lends credibility to the hypothesis that egg-adapted changes contribute to poor influenza vaccine effectiveness.[1]”

Egg-based flu vaccines are predominant

- ~87% of commercial flu vaccines in U.S. manufactured in eggs[2]
- Same manufacturing technology used for over 50 years

Egg propagation can result in mismatch that impacts vaccine effectiveness

- Flu viruses that infect humans are difficult to grow in eggs
- Egg-based viruses must be passaged numerous times to grow better
- Virus changes across these passages result in mutations and potential mismatch that can lead to poor vaccine effectiveness

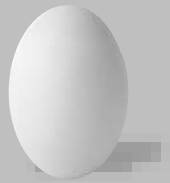
1. Paules, C. Chasing Seasonal Influenza – The Need for a Universal Influenza Vaccine. NEJM November 29 2017
2. CDC Grand Rounds. January 16, 2018. https://www.cdc.gov/cdcgrandrounds/pdf/archives/2018/january2018.pdf

NanoFlu

NOVAVAX | Creating Tomorrow's Vaccines Today

Not all influenza vaccines are the same

~87% of flu vaccine doses are egg-based[1]



Novavax is advancing an improved flu vaccine

NanoFlu is **different**

- ✓ Recombinant nanoparticle
- ✓ Non-egg based
- ✓ Adjuvanted with Matrix-M

- Exact genetic match to recommended vaccine strains
- Broader immune response addresses antigenic drift

1. CDC Grand Rounds. January 16, 2018. https://www.cdc.gov/cdcgrandrounds/pdf/archives/2018/january2018

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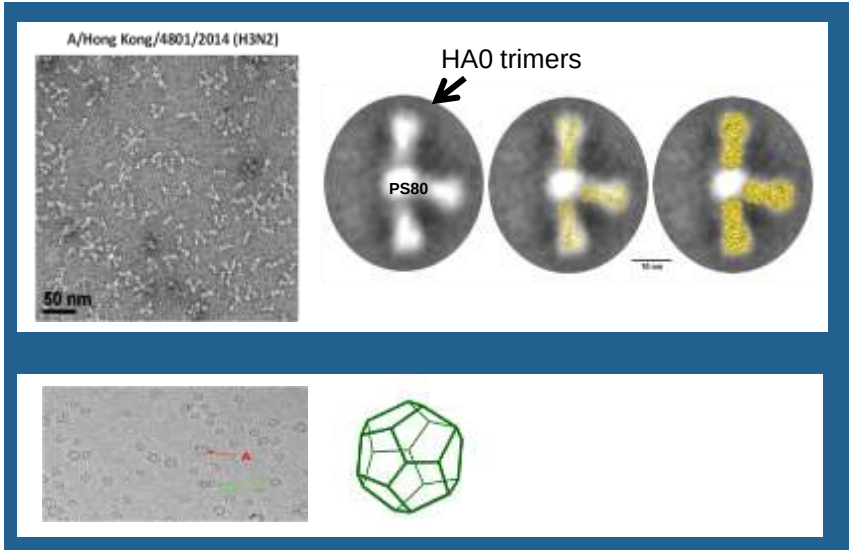
NanoFlu:

Nanoparticle influenza vaccine (NIV) with Matrix-M adjuvant

- **Recombinant hemagglutinin (HA) nanoparticle vaccine**
  - Baculovirus/Sf9 insect cell system
  - Express recombinant, full-length, wild-type HA that assembles into HA homotrimers
  - Purified HA homotrimers form higher order nanoparticle structures of 20-40 nm
  - 2 to 9 HA homotrimers per nanoparticle held together by hydrophobic interactions
  - Rapid, high-yield, high purity, production process

- **Potent saponin-based Matrix-M adjuvant**
  - Saponins extracted from bark of *Quillaja saponaria* Molina
  - Formulated with cholesterol and phospholipid, forming particles
  - Enhanced APC entry into injection sites; expansion of activated T cell, B cell, and APC populations in draining nodes
  - Induction of functional, and broadly cross-reactive antibodies antibodies
  - Induction of polyfunctional T cell responses, both CD4+ and CD8+
  - Antigen sparing in the context of pandemic influenza



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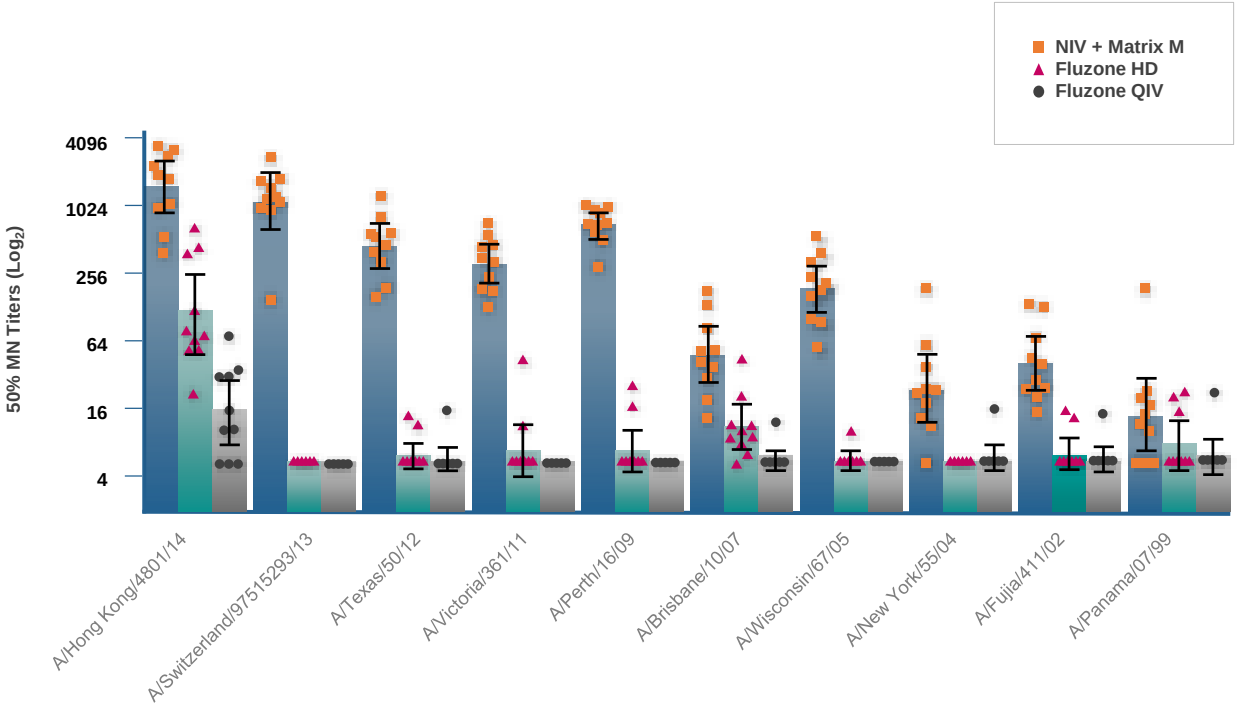
Novel hemagglutinin nanoparticle influenza vaccine with Matrix-M™ adjuvant induces hemagglutination inhibition, neutralizing, and protective responses in ferrets against homologous and drifted A (H3N2) subtypes

G Smith, Y Liu, et al.
Vaccine 35 (2017) 5366-5372

In ferrets, trivalent nanoparticle influenza vaccine (tNIV) induced broadly cross-neutralizing immune responses to drifted A(H3N2) viruses



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NIV derived mouse monoclonal antibodies (mAbs) demonstrate potent, broadly neutralizing, responses against a range of drifted A(H3N2) viruses

Virus Strains A(H3N2)	A2.91.3 mAb (HAI +)	A2.4.1 mAb (HAI –)
Microneutralizing Titers ($TCID_{50}$ ng/mL)		
A/Hong Kong/4801/2014	3.1	57
A/S. Australia/55/2014	2.1	975
A/Switzerland/9715293/2013	7.1	149
A/Texas/50/2012	14.1	118
A/Victoria/361/2011	0.6	134
A/Perth/16/2009	1.8	288
A/Brisbane/10/2007	6.3	176
Hemagglutination Inhibition Endpoint Titers (ng/mL)		
A/Hong Kong/4801/2014	195	Neg.
A/Switzerland/9715293/2013	195	Neg.
Hemagglutinin Binding Affinity (K_d, nM)		
A/Hong Kong/4801/2014	1.2	0.6
A/Switzerland/9715293/2013	1.9	0.5

Monoclonal antibodies derived from mice immunized with NIV containing A/Hong Kong (H3N2) demonstrated potent, broadly neutralizing, HA head-directed responses against a broad range of drifted A(H3N2) viruses.

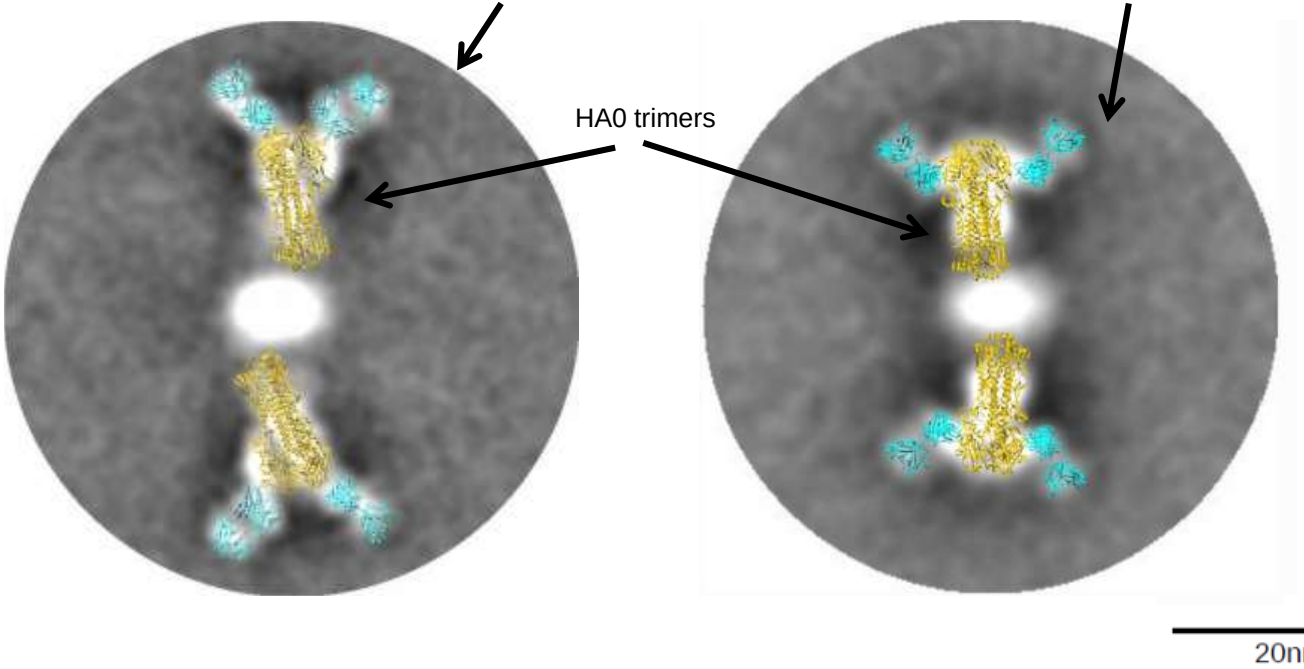
These broadly neutralizing mAbs demonstrated either positive (A2.91.3 mAb) or negative (A2.4.1 mAb) HAI antibody responses, respectively.

NOVAVAX

NIV derived mouse mAbs demonstrated potent, HA head directed broadly neutralizing, responses against a range of drifted A(H3N2) viruses

mAb A2.91.3 Fab
HA head binding interferes with hemagluttination (HAI+)

mAb A2.4.1 Fab
HA head binding does NOT interfere with hemagluttination (HAI-)



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Phase 1/2 clinical trial of NanoFlu in adults ≥60 years of age

The NEW ENGLAND JOURNAL of MEDICINE

CORRESPONDENCE

Improved Titers against Influenza Drift Variants with a Nanoparticle Vaccine

TO THE EDITOR: Paules et al.[1] recently advocated for the development of influenza vaccines "that will protect against seasonal influenza drift variants" and "not be subject to the limitations of egg-based vaccine technology." Improving vac-

NCT03293498). The trial was approved by an institutional review board, and all the participants provided written informed consent. Participants received a single intramuscular injection of tNIV, at a dose of 15 μg or 60 μg of HA per

Shinde et al. NEJM June 14, 2018

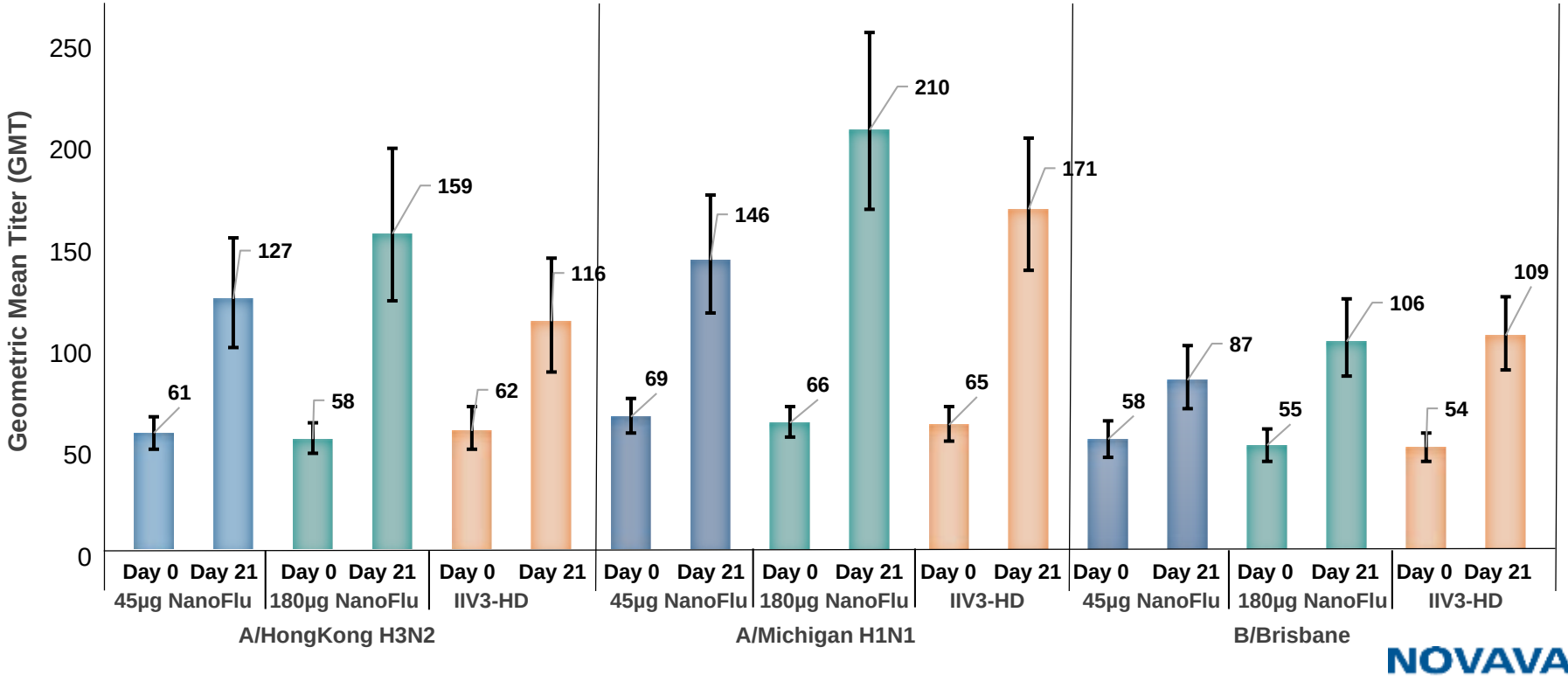
Phase 1/2 clinical trial design

- **Conducted at 3 U.S.[1] clinical trial sites**
- **330 clinically-stable adults ages ≥60 years**
- **Randomized 1:1:1, stratified by age (60-74, and 75+)**
- **Single IM dose on day 0 of:**
  - tNIV: 15µg each HA (45µg total) + 50µg Matrix-M, or
  - tNIV: 60µg each HA (180µg total) + 50µg Matrix-M, or
  - Licensed egg-based high-dose (180µg total), trivalent, inactivated influenza vaccine (IIV3-HD)(Fluzone-HD)
- **Day 21 rescue dose of IIV3-HD or placebo**
- **All 3 vaccines included 2017-18 WHO recommended NH strains:**
  - A/Michigan (H1N1); A/Hong Kong (H3N2); B/Brisbane
- **Objectives**
  - Safety: assessed through Day 21
  - Immunogenicity: HAI and MN against vaccine-homologous and drifted H3N2 strains through Day 21

1. Clinicaltrials.gov NCT#03293498

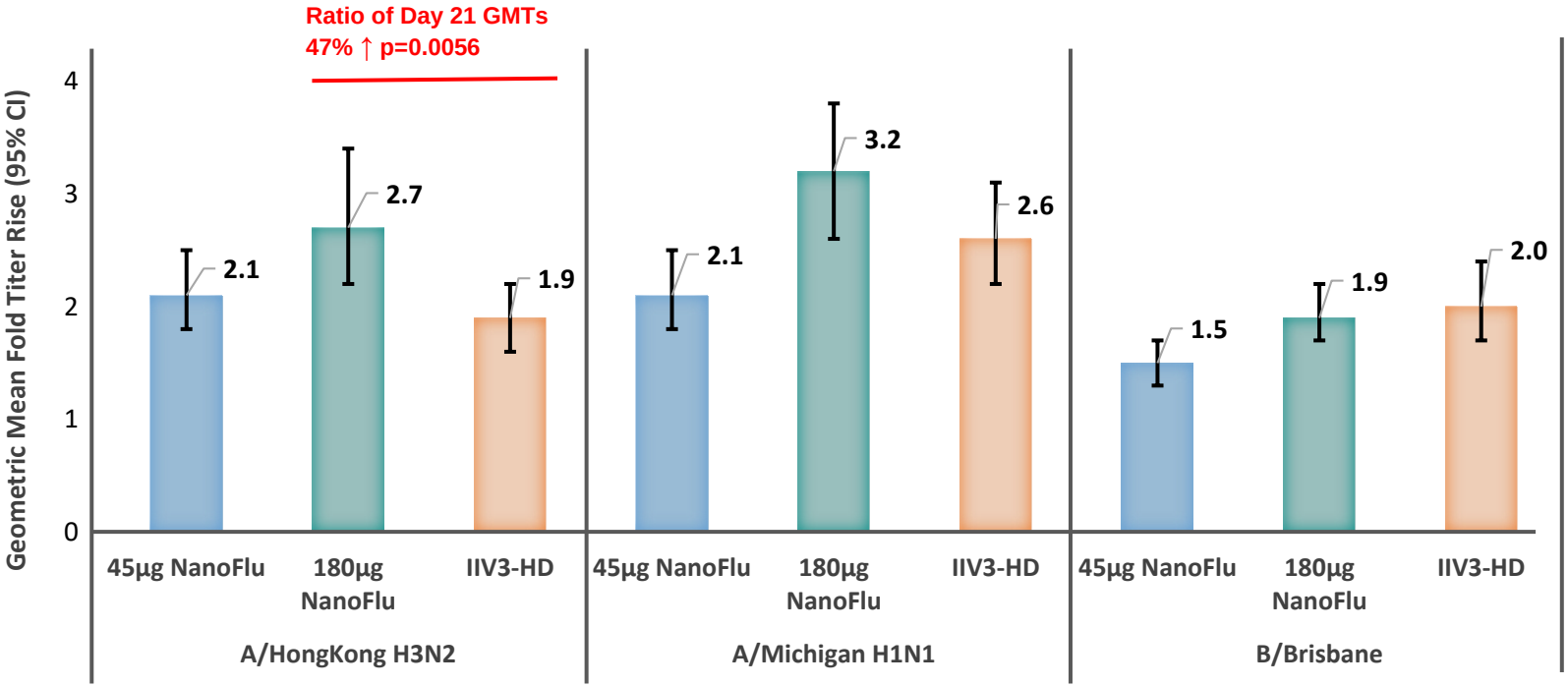
NOVAVAX

HAI antibody responses (GMTs) against *wild-type* vaccine-homologous strains (2017-18)

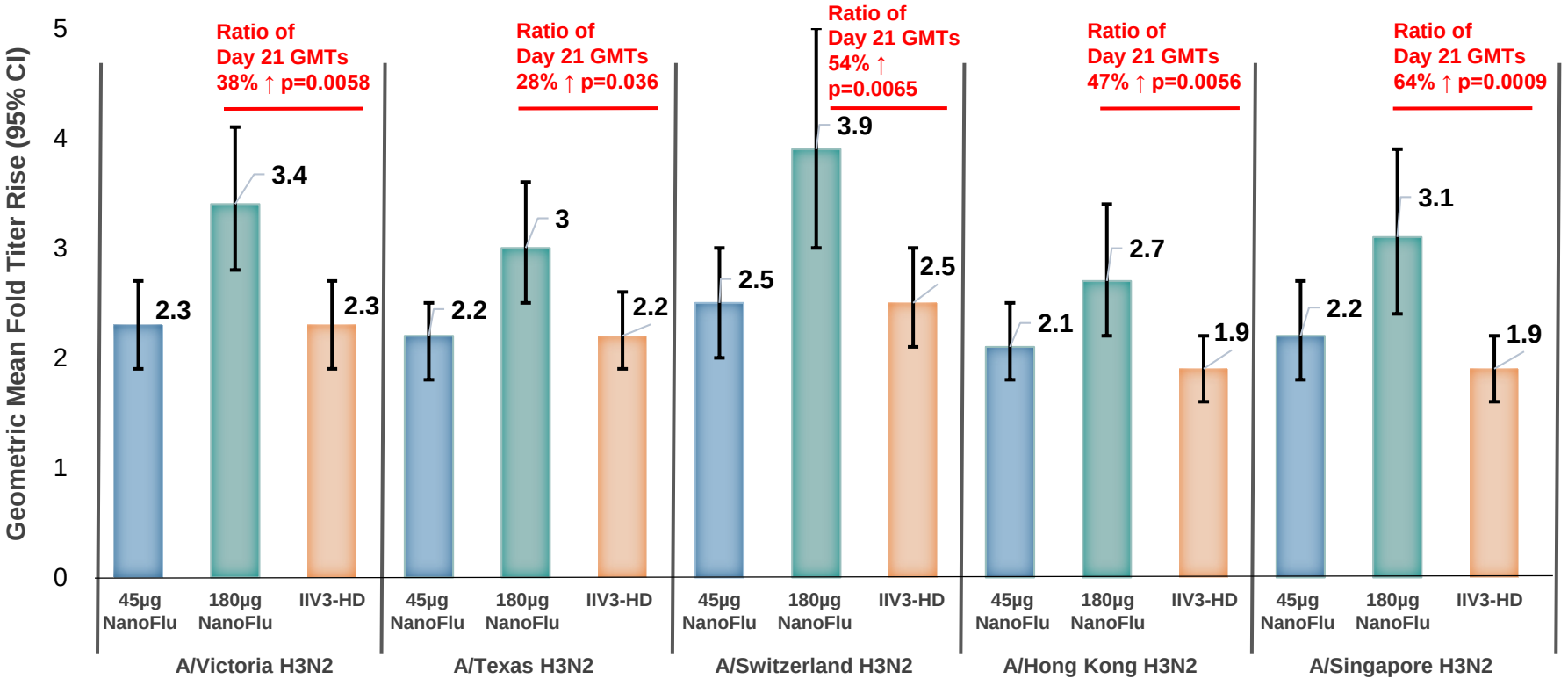


NOVAVAX

HAI antibody response (GMFRs) against *wild-type* vaccine-homologous strains (2017-18)



HAI antibody responses (GMFRs) against 5 generations of drifted *wild-type* A(H3N2) strains



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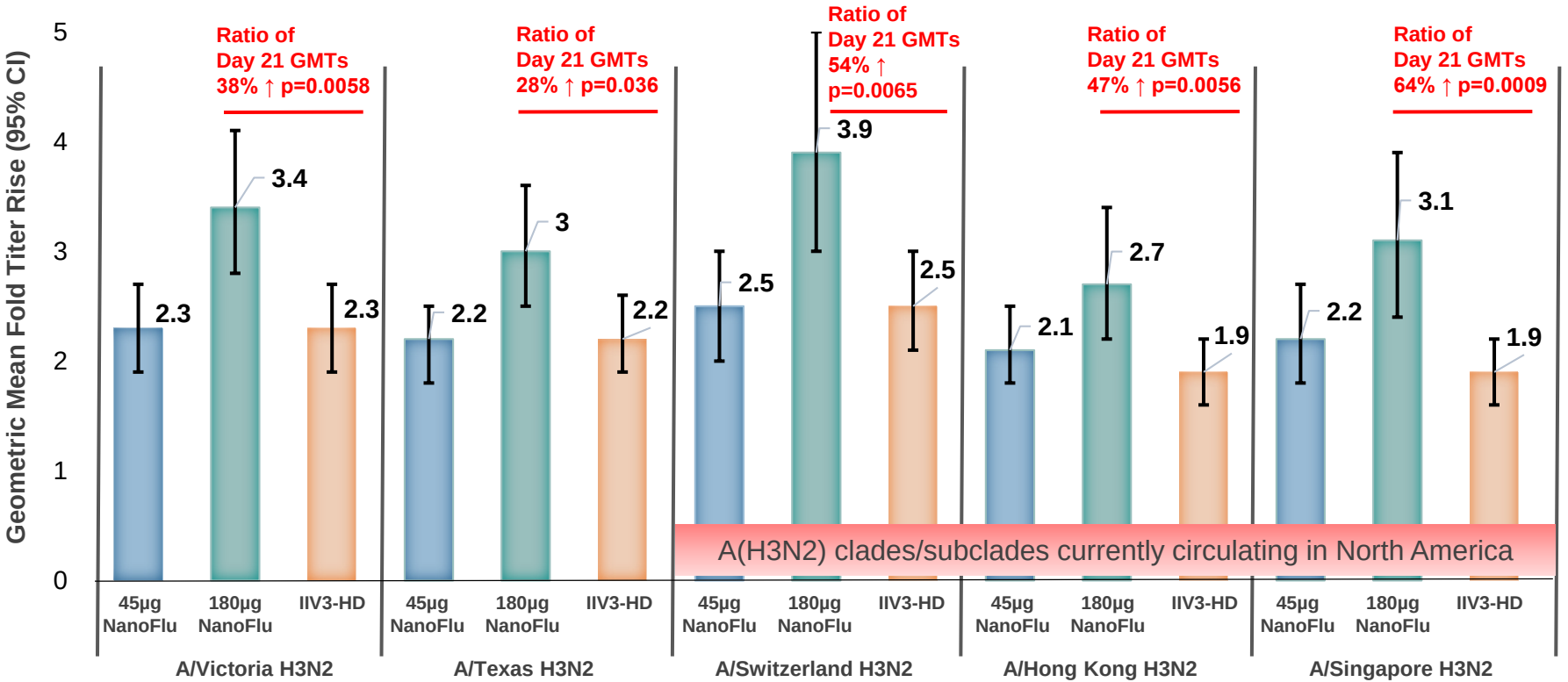
HAI antibody responses (GMFRs) against 5 generations of drifted *wild-type* A(H3N2) strains



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Comparison of HAI responses against H3N2 strains

Addresses both egg-adaptation and antigenic drift

Significantly higher hemagglutination inhibition ("HAI") immune responses against the homologous and four generations of drifted wild-type H3N2 strains:

- 64% higher NanoFlu response against forward-drifted strain (A/Singapore)
- 47% higher NanoFlu response against homologous strain (A/Hong Kong)
- 54% higher NanoFlu response against historic strain (A/Switzerland)
- 28-38% higher NanoFlu response against distant historic drifted strain (A/Texas) and (A/Victoria)

In a separate trial, IIV3-HD vs. IIV3-SD demonstrated 80% better ratio of GMTs

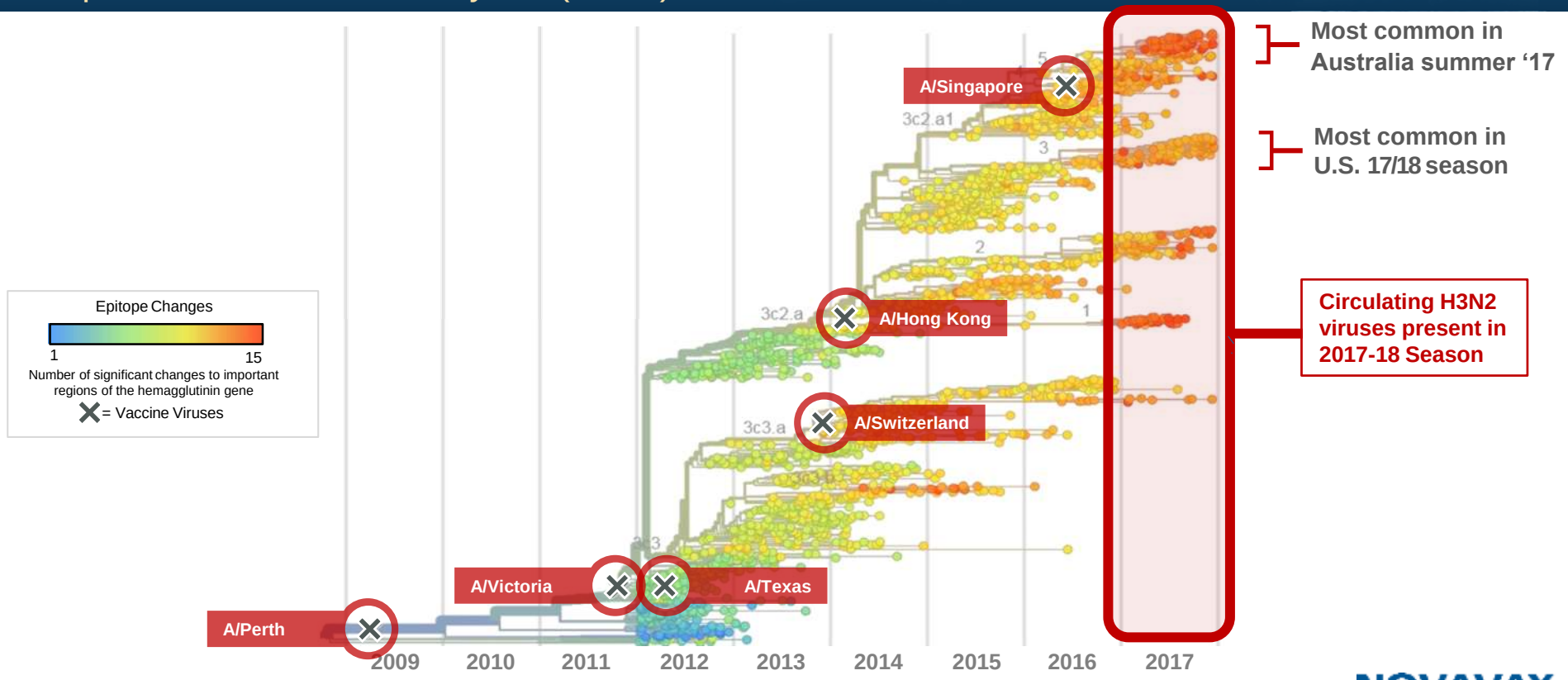
- Which translated into 23% better relative efficacy[1]

1. Fluzone-HD [package insert]. Sanofi Pasteur, Swiftwater, PA; 2017

NOVAVAX

Playing catch-up and does “one strain fit all”?

Rapid evolution and diversity of A(H3N2) viruses



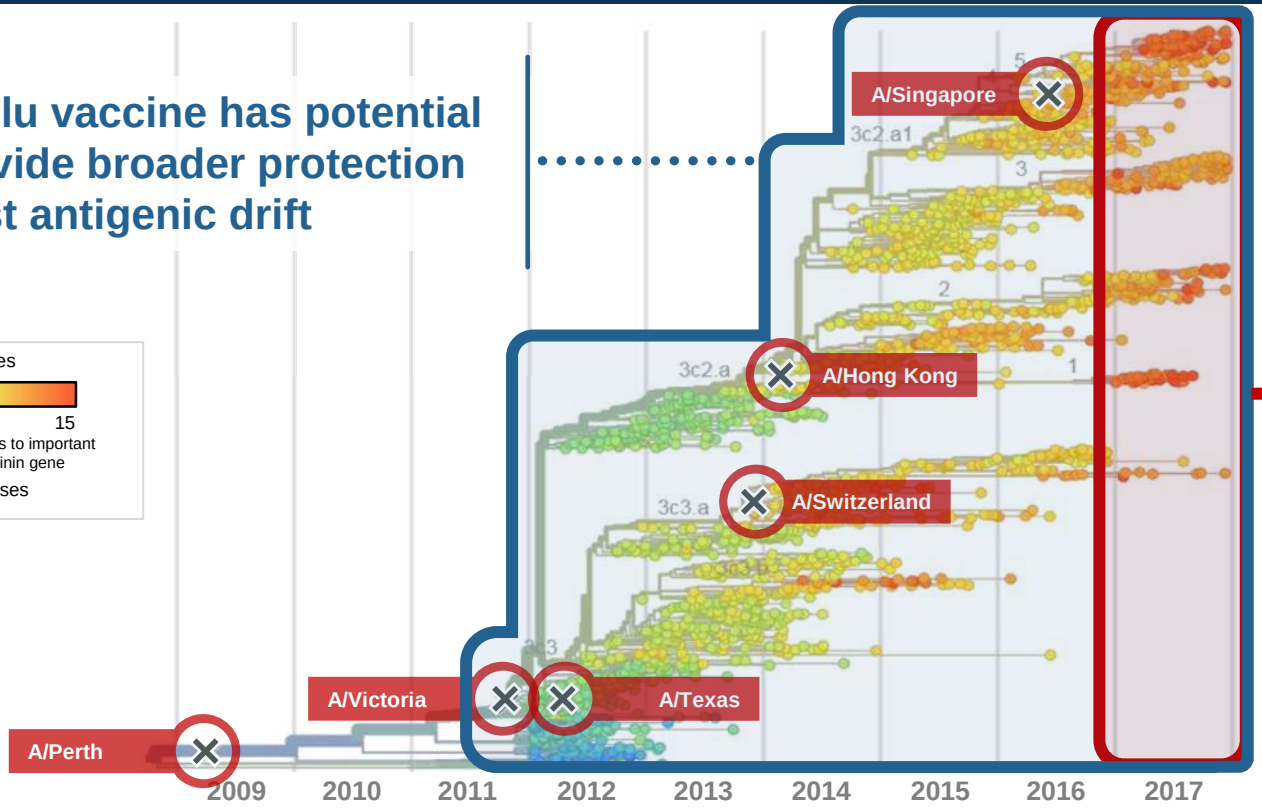
Adapted from CDC Grand Rounds. January 18, 2018. https://www.cdc.gov/cdcgrandrounds/archives/2018/January2018.htm

NOVAVAX

Playing catch-up and does “one strain fit all”?

NanoFlu has the potential to provider broader protection

NanoFlu vaccine has potential to provide broader protection against antigenic drift



Epitope Changes

1 — 15

Number of significant changes to important regions of the hemagglutinin gene

= Vaccine Viruses

Most common in Australia summer ‘17

Most common in U.S. this season

Circulating H3N2 viruses present in 2017-18 season

Adapted from CDC Grand Rounds. January 18, 2018. https://www.cdc.gov/cdcgrandrounds/archives/2018/January2018.htm

NOVAVAX

Need for a better influenza vaccine

Preliminary adjusted vaccine effectiveness against medically attended influenza by age group, 2017–18

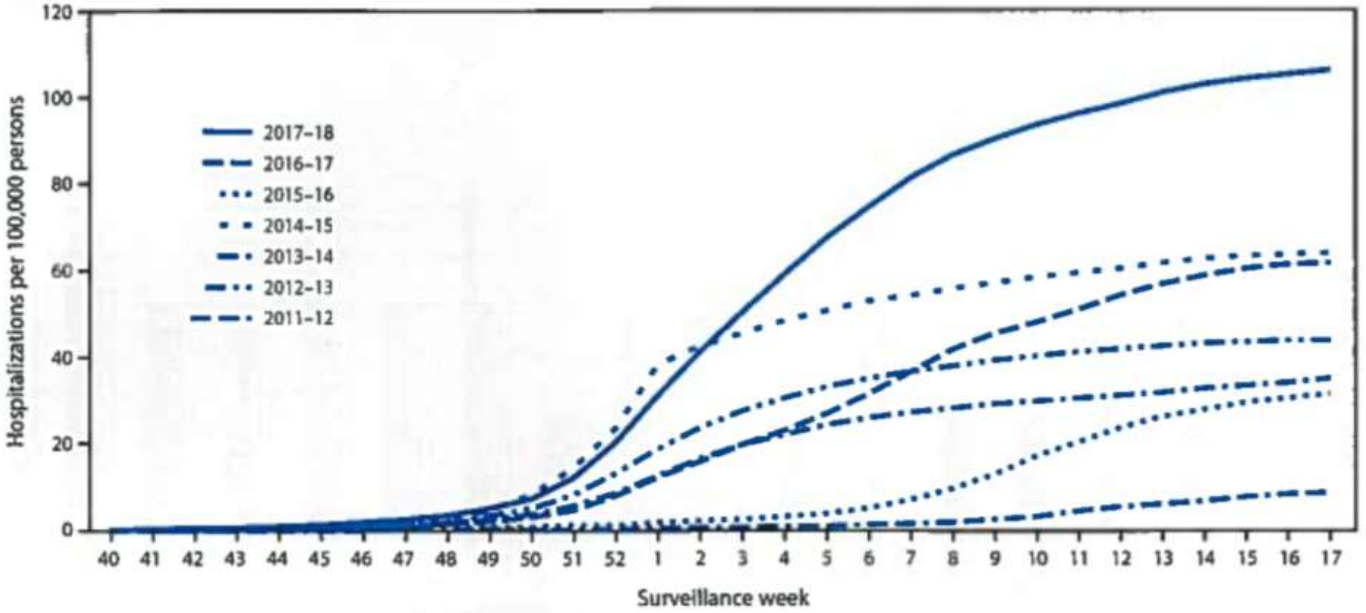
	Influenza positive		Influenza negative		Vaccine Effectiveness			
					Unadjusted		Adjusted*	
Any influenza A or B virus	N vaccinated /Total	(%)	N vaccinated /Total	(%)	VE %	95% CI	VE %	95% CI
Overall	1296/3097	(42)	2969/5538	(54)	38%	(32 to 43)	**40%**	**(34 to 46)**
Age group (yrs)								
6 mos–8	201/616	(33)	760/1380	(55)	60%	(52 to 68)	**53%**	**(42 to 62)****
9–17	166/529	(31)	221/584	(38)	25%	(4 to 41)	**29%**	**(8 to 46)**
18–49	315/966	(33)	813/1893	(43)	36%	(24 to 45)	**35%**	**(23 to 46)**
50–64	301/571	(53)	583/938	(62)	32%	(16 to 45)	**33%**	**(17 to 47)**
≥65	313/415	(75)	592/743	(80)	22%	(-4 to 41)	**20%**	**(-9 to 41)**

* Multivariable logistic regression models adjusted for site, age, sex, race/ethnicity, self-rated general health status, interval from onset to enrollment, and calendar time. ** P-value <0.001 for age group-VE interaction term compared to all other ages combined.

NOVAVAX

Several factors conspired to make a bad flu season; it is undeniable that VE needs to improve

FIGURE 2. Cumulative rates of hospitalizations for laboratory-confirmed influenza by season and surveillance week — FluSurv-NET,* United States, 2011–12 through 2017–18 influenza seasons†



* FluSurv-NET conducts population-based surveillance for laboratory-confirmed influenza-associated hospitalizations in children aged <18 years (since the 2003–04 season) and adults aged ≥18 years (since the 2005–06 season). FluSurv-NET covers >70 counties in the 10 Emerging Infections Program states (California, Colorado, Connecticut, Georgia, Maryland, Minnesota, New Mexico, New York, Oregon, and Tennessee) and three additional Influenza Hospitalization Surveillance Project states (Michigan, Ohio, and Utah).

† As of June 1, 2018.

NOVAVAX

NanoFlu Phase 2 clinical trial goals and design

Primary and secondary objectives	Determine the dose and formulation, demonstrate Matrix-M adjuvant effect, and evaluate the safety and tolerability of a single intramuscular injection of NanoFlu in quadrivalent formulations with or without Matrix-M1 adjuvant in older adults ≥65 years of age, as compared to two licensed influenza vaccines	
Design	Randomized, observer-blinded, active-comparator controlled trial	
	Vaccine strains	• All vaccines contain the WHO recommended 2018-19 Northern Hemisphere influenza vaccine strains
	Stratification	• History of receipt of 2017-18 influenza vaccine
	Number of participants	• 1,375 clinically-stable adults ≥65 years of age
	U.S. study	• Multiple sites
	Length of study participation	• 1 year
	Safety assessment	• Through 1 year
	Immunogenicity assessment	• Hemagglutinin inhibition (HAI) antibody assessment through Day 28

NOVAVAX

NanoFlu accelerated approval pathway

FDA agreed that the accelerated approval pathway could be available for NanoFlu

- Granted for certain biological products that have been studied for their safety and effectiveness in treating serious or life-threatening illnesses

- For seasonal influenza vaccines, the HAI antibody response may be an acceptable surrogate marker of activity that is reasonably likely to predict clinical benefit

We plan to discuss the Phase 2 clinical trial data and the proposed Phase 3 study design, and reach agreement on the use of accelerated approval, with the FDA during an End-of-Phase 2 meeting in the first half of 2019.

If Nanoflu is granted accelerated approval, our NanoFlu BLA would include results from a well-controlled Phase 3 trial designed to meet immunogenicity endpoints, with a commitment to conduct confirmatory post-marketing trials to demonstrate clinical effectiveness.

NOVAVAX

NanoFlu completed and next steps

PUBLISH / PRESENT	DISCUSS	ONGOING	REPORT	INITIATE
Phase 1/2 trivalent clinical trial results	Data and Phase 2 quadrivalent clinical trial design with FDA	Phase 2 quadrivalent clinical trial	Data from Phase 2 clinical trial	Phase 3 clinical trial
Completed	*Completed*	*Completed enrollment*	*Projected for 1Q 2019*	*Projected for 2H 2019*

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Thank you
NOVAVAX
Creating Tomorrow's Vaccines Today