

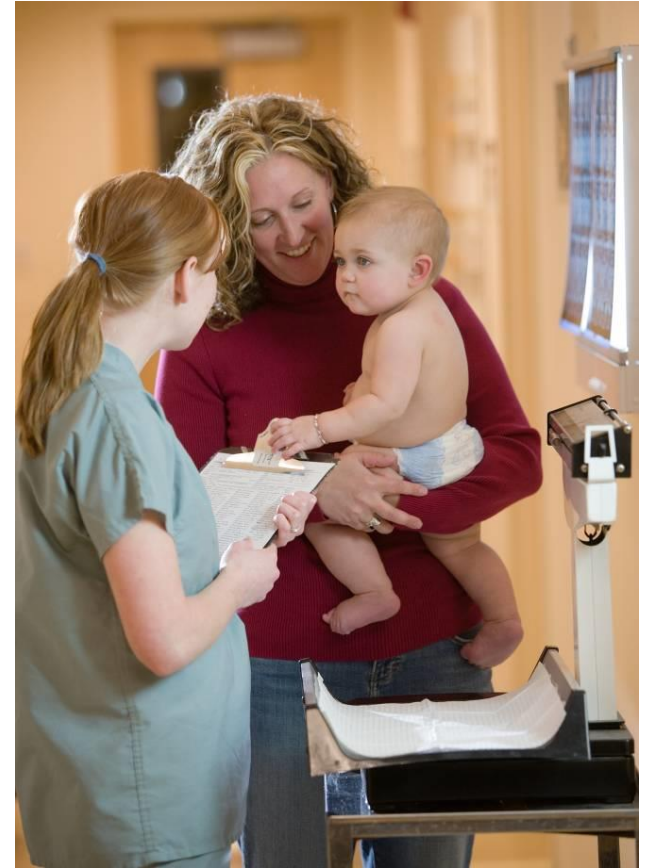


Immunization Update 2017

Tamara Sheffield, MD, MPA, MPH

Highlighted Topics

- Influenza
- 2-Dose HPV
- Hep B
- Meningococcal
- Future Recs
- Zoster
- Yellow fever vaccine access
- Intermountain protocols and resources



INFLUENZA



Influenza

2016-2017 Season

Influenza Positive Tests Reported to CDC by U.S. Public Health Laboratories, 2016-2017 Season

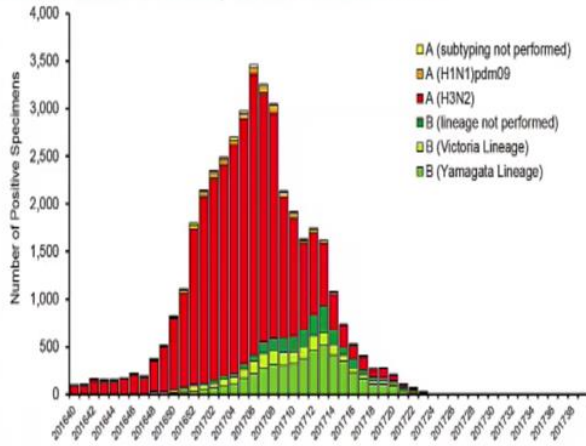


Chart presented at June 2017 ACIP Meeting

2016-2017 Season

- A:H3N2 predominant
- Had the typical second wave of Type B
- Vaccine well matched to all 4 strains

2017-2018 Season - Trivalent

- A/Michigan/45/2015 (H1N1) pdm09-like – **NEW (used in 2017 Southern hemisphere)**
- A/Hong Kong/4801/2014 (H3N2)-like
- B/Brisbane/60/2008-like (B/Victoria lineage)

2017-2018 Season – Quadrivalent

- B/Phuket/3073/2013

(B/Yamagata lineage)

Question:

You have a 75 year old patient wishing to receive an influenza vaccine from you. Which vaccine will potentially provide the greatest protection against contracting influenza?

1. Trivalent High-dose
2. Quadrivalent regular dose

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Study of high-dose efficacy

IIV3-HD compared to IIV3-SD

Age 65 years and older

Lab confirmed influenza of any subtype

24.2% relative efficacy

NEJM 2014; 371:635-645

Quadrivalent Vaccine

- Adds 1 more B type
- Type B (0-40% - most years 20-25% of circulating virus)
- Each year 30/70 split of Type Bs circulating
- Then multiply by vaccine efficacy

Question:

You have a 75 year old patient wishing to receive an influenza vaccine from you. Which vaccine will potentially provide the greatest protection against contracting influenza?

1. Trivalent high-dose
2. Trivalent adjuvanted
3. Quadrivalent Recombinant

Question:

You have a 75 year old patient wishing to receive an influenza vaccine from you. Which vaccine will potentially provide the greatest protection against contracting influenza?

1. Trivalent high-dose
2. Trivalent adjuvanted – Don't know
3. Quadrivalent Recombinant – Interesting new study

Study of Recombinant Influenza Vaccine (RIV4)

RIV4-HD compared to IIV4 (standard dose)

Age 50 years and older

PCR lab-confirmed influenza of any subtype

30% lower probability of influenza like illness with RIV4 than with IIV4

Sanofi has just purchased Protein Sciences – maker of RIV (Flublok)

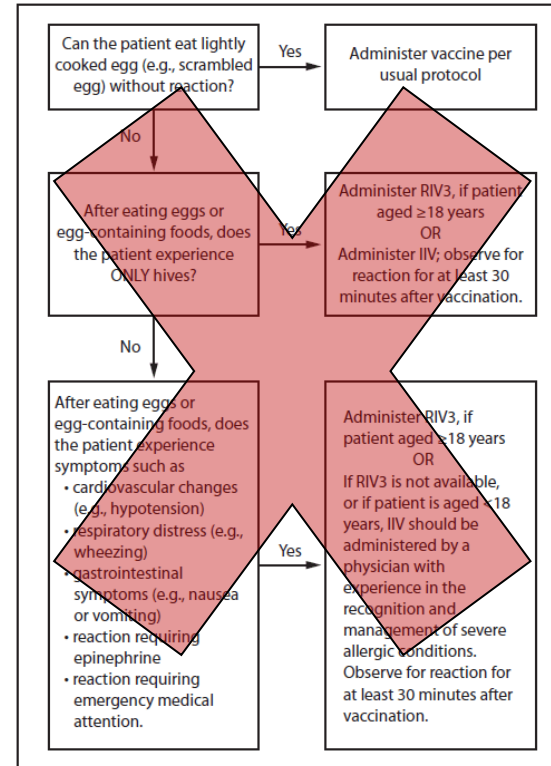
NEJM 2017; 376:2427-36

How about Egg Allergy?

ACIP 2016-2017 Recs

- Remove egg allergy chart
- 30 minute wait down to 15 minute
- All products can be used including LAIV**
- Be able to recognize and treat severe allergic reactions (all allergy symptoms except hives)

**CDC has recommended against providing LAIV (FluMist®) for the 2017-2018 season



MMWR; August 26, 2016;65(5);1-54

2 Dose Recommendation for 2017-18 Season

Same as 2016-2017

Ages 6 months through 8 years:

- Give 2 doses, one month apart, unless child meets criteria for 1 dose

Criteria for 1 dose:

- Previously received 2 doses of seasonal vaccine
 - Doses do not need to have been received in the same season
 - Doses do not need to have been received in consecutive seasons

MMWR; August 26, 2016;65(5);1-54

Question:

If the life-time influenza vaccine history of a 5 year old child is that they received one dose of quadrivalent influenza vaccine in January 2017, how many doses do they need this coming season?

1. One dose
2. Two doses

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If the life-time influenza vaccine history of a 5 year old child is that they received one dose of quadrivalent influenza vaccine in January 2017, how many doses do they need this coming season?

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Influenza Vaccines

Available Products

**CDC has recommended against providing LAIV (FluMist®) for the 2017-2018 season

Age	Type	Trade Name	Manufacturer
6 mo +	IIV4	Fluzone®	Sanofi
6 mo +	IIV4	FluLaval®	GSK/ID Blo
2-49 years	LAIV	FluMist®**	AstraZeneca
3 years +	IIV4	Fluarix®	GSK
4 years +	cclIV4	Flucelvax®	Seqirus
5 years +	IIV3	Afluria®	Seqirus
5 years +	IIV4	Afluria®	Seqirus
18 years +	RIV4	FluBlok®	Protein Science
18-64 years	IIV4	Fluzone® Intradermal	Sanofi
65 years +	IIV3	Fluzone® High-dose	Sanofi

MMWR; August 26, 2016;65(5);1-54
Updated for 2017 - unpublished

FluLaval for Infants

Approved by FDA

FluLaval Quadrivalent™ (IIV4)

New age indication, 6 through 35 months

Different dose than pediatric Fluzone

- FluLaval = 0.5 mL
- Fluzone = 0.25 mL

2017 CPT code determined by dose, not age

- 90686 0.5mL syringe (all ages)
- 90688 0.5mL MDV (all ages)

- 90685 0.25 mL syringe (6-35 mo)
- 90687 0.25 mL MDV (6-35 mo)

FluLaval Package Insert

Afluria QIV

Approved by FDA
as safe and effective

Indicated for age 5+ years (as of 8/31/17)

Studies on going for age 6 months to 5 years

Concerns about fevers and febrile seizures in young children in the TIV formulation (Australia)

Resolved fever concern with change in manufacturing process

- Increased use of TDOC splitting agent in both QIV and TIV
- Reduce lipids connected to mRNA fragments
- Lipids = fevers

Afluria TIV also approved by ACIP down to 5 years

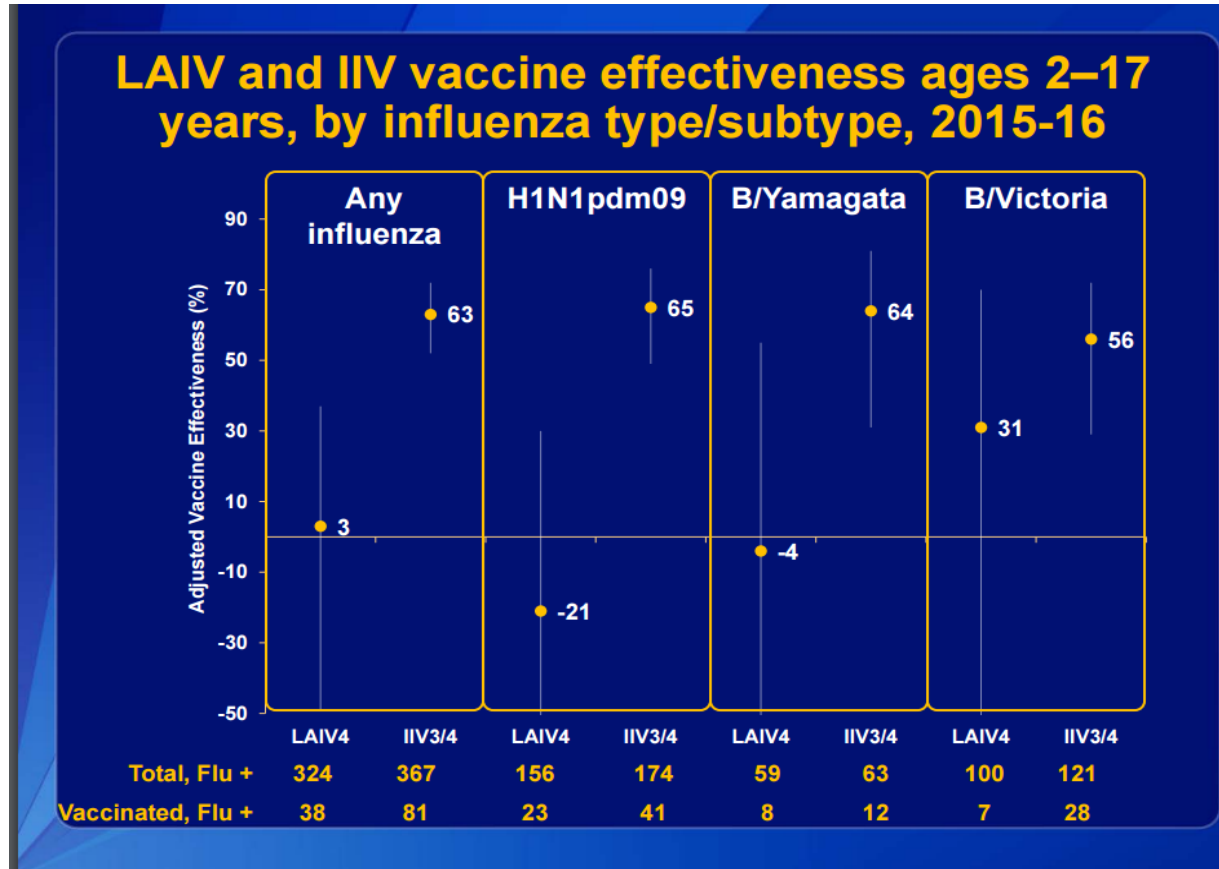
- Previously ACIP limited it to ages 9 years + because of fevers
- FDA approval has always been 5 years +

Grohskopf presentation, ACIP June 2017

FluMist (LAIV)

Concerns of Efficacy

- Heat stability
- HA activation pH
- Replicability



Grohskopf presentation, ACIP June 2016

Preventing Vaccine Errors

Changes to Influenza Plan

One dose for Influenza vaccine (0.5mL)

Use single dose syringes rather than multi-dose vials

Scan vaccine bar code prior to administering – iCentra prompts

Refer to USIIS forecast before administering

“Registry Import” button

iCentra removed “General” influenza choice when ordering

Documents to assist vaccine providers

Influenza Immunization Plan Plan Summary (1pg. 2 side)

- Flulaval dosing (0.5mL)
- Table of start and stop times
- Access

**INTERMOUNTAIN SEASONAL INFLUENZA IMMUNIZATION PLAN
2017-2018 FLU SEASON**

SUMMARY

Key changes to the "Flu Plan" for the 2017-2018 season include:

- Timing:** New guidelines for the timing of when vaccine entries within Intermountain will include the administration of vaccine and when those entries will stop providing vaccine (see chart on back).
 - Principles guide start and stop times and are included in the main Flu Plan document, pg. 3.
 - When supply is present at an entry and a patient requests a vaccine, they should not be turned away due to timing.
 - Clinicians have the discretion to vaccinate some patients earlier (e.g. pregnant patients, 1* dose for young children needing 2 doses, etc.).
 - Large events should take into consideration having enough supply on hand.
- Dosing:** Determined by product. Our system has moved to ordering a product allowing for one dose amount of vaccine using FLUAVAL® 0.5mL product for ages 6 months and older. High-dose for seniors and specialty vaccines such as recombinant egg-free and intradermal products have also been ordered.
 - In previous seasons, staff were used to giving children age 6-8 months Fluorix® at a 0.25mL dose. It is possible that 0.25mL Fluorix® product may find a way into the system through channels such as Supplies for Children (SFC). When more than one product is located in a clinic, staff should use the vaccine CPT specialty products.

**Influenza Vaccine Timing by Month (Start and Stop)
2017-2018 Season**

Start 2017 – All "Starts" depend on sufficient supply

	August	September	October	November	December-Spring
If requested by patient		If requested by patient	If requested by patient	If requested by patient	If requested by patient
Clinics	Clinics	Clinics	Clinics	Clinics	Clinics
All clinician discretion	All clinician discretion	All clinician discretion	All outpatients (including seniors, children needing second dose, pregnant women)	All outpatients	All outpatients
Examples of appropriate patient types:	<ul style="list-style-type: none"> Pregnant women Children ages 6-8 months needing 2 doses (1* dose) Any patient coming for visit if they are not yet vaccinated 	<ul style="list-style-type: none"> Pregnant women Children ages 6-8 months (1* dose) Any patient coming for visit if they are not yet vaccinated 	<ul style="list-style-type: none"> PCP – Centra Centra advisories and MatHealth positions. 	<ul style="list-style-type: none"> PCP – Centra advisories and MatHealth positions. 	<ul style="list-style-type: none"> PCP – Centra advisories
Hospital inpatient	<ul style="list-style-type: none"> ICU Hospital inpatients Community Pharmacies 	<ul style="list-style-type: none"> Hospital inpatients Community Pharmacies 	<ul style="list-style-type: none"> Hospital inpatients Community Pharmacies 	<ul style="list-style-type: none"> Hospital inpatients Community Pharmacies 	<ul style="list-style-type: none"> Hospital inpatients Community Pharmacies
Other	<ul style="list-style-type: none"> Maternal Health Infectious disease reminders, (S2) In Employee worksite, start if sufficient supply Large community events Intermountain employees (in an reception when needed), and if supply is available 	<ul style="list-style-type: none"> Maternal Health Infectious disease reminders, (S2) In Employee worksite, start if sufficient supply Large community events Intermountain employees 	<ul style="list-style-type: none"> Maternal Health Infectious disease reminders, (S2) In Employee worksite, start if sufficient supply Large community events Intermountain employees 	<ul style="list-style-type: none"> Maternal Health Infectious disease reminders, (S2) In Employee worksite, start if sufficient supply Large community events Intermountain employees 	<ul style="list-style-type: none"> Maternal Health Infectious disease reminders, (S2) In Employee worksite, start if sufficient supply Large community events Intermountain employees

Stop 2018

	April	May	June
(S1) Hospital inpatient			
(S1) PCP – Centra	Outpatients and community settings that are out of supply	Outpatients and community settings that are out of supply	All vaccine is used
(S2) In Employee worksite	Intermountain employees (in an reception when needed), and if supply is available	Intermountain employees (in an reception when needed), and if supply is available	Intermountain employees (in an reception when needed), and if supply is available

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Healthcare**

**INTERMOUNTAIN SEASONAL INFLUENZA
IMMUNIZATION PLAN
FOR THE 2017-2018 FLU SEASON**

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Timing

Based on Principles
Clinical/Supply/Quality

Start

Stop

Influenza Vaccine Timing by Month (Start and Stop)
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Stop 2018				
<p>April</p> <p>(4/1) Hospital inpatients</p> <p>(4/1) PCCP - iCentra advisories</p> <p>Intermountain employees stop when masking ends</p> <p>Outpatient and community settings that run out of supply</p>		<p>May</p> <p>Outpatient and community settings that run out of supply</p> <p>Some vaccine that is expired</p>		<p>June</p> <p>6/30 All vaccine is expired</p>

Documents to assist vaccine providers

Influenza Immunization Plan Plan Summary (1pg. 2 side)

- Flulaval dosing (0.5mL)
- Table of start and stop times
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Hospital inpatient	0/00 Hospital inpatients	0/00 Hospital inpatients	Hospital inpatients	Hospital inpatients	Hospital inpatients
Community Pharmacies	Community Pharmacies	Community Pharmacies	Community Pharmacies	Community Pharmacies	Community Pharmacies
Other Settings	<ul style="list-style-type: none"> 0/00 Sept) Infectious disease reminders, 0/21) In Employee workplace start if sufficient supply 0/00 Sept) Intermountain employees (in an reception when needed), and if supply is available 	<ul style="list-style-type: none"> 0/00 Sept) Infectious disease reminders, 0/21) In Employee workplace start if sufficient supply Large community events Intermountain employees 	<ul style="list-style-type: none"> 0/00 Sept) Infectious disease reminders, 0/21) In Employee workplace start if sufficient supply Large community events Intermountain employees 	<ul style="list-style-type: none"> 0/00 Sept) Infectious disease reminders, 0/21) In Employee workplace start if sufficient supply Large community events Intermountain employees 	<ul style="list-style-type: none"> 0/00 Sept) Infectious disease reminders, 0/21) In Employee workplace start if sufficient supply Large community events Intermountain employees
Stop 2018					
0/00) PCP – Centra	April	May	June		
Intermountain employees (in an reception when needed), and if supply is available	Outpatient and community settings that are out of supply	Outpatient and community settings that are out of supply	0/00) all vaccine is needed		

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Access

Reduce variability of clinic process – walk-in v. established only

Now:

Provide vaccine to all comers or “Warm” transfer to Intermountain Community Pharmacies

AMGA – MyHealth Portal Notification with reply to Message Center

INTERMOUNTAIN SEASONAL INFLUENZA IMMUNIZATION PLAN 2017-2018 FLU SEASON

SUMMARY

Key changes to the “Flu Plan” for the 2017-2018 season include:

- 1. Timing:** New guidelines for the timing of when various entities within Intermountain will initiate the administration of vaccine and when those entities will stop providing vaccine (see chart on back).
 - a. Principles guide start and stop times** and are included in the main Flu Plan document, pg. 3.
 - When supply is present at an entity and a patient requests a vaccine, they should not be turned away due to timing.
 - Clinicians have the discretion to vaccinate some patients earlier (e.g. pregnant patients, 1st dose for young children needing 2 doses, etc.).
 - Large events should take into consideration having enough supply on hand.
 - 2. Dosing determined by product:** Our system has moved to ordering a product allowing for one dose amount of vaccine using FLUOLAVAL® 0.5mL product for ages 6 months and older. High-dose for seniors and specialty vaccines such as recombinant egg-free and intradermal products have also been ordered.
 - a.** In previous seasons, staff were used to giving children age 6-35 months Fluzone® at a 0.25mL dose. It is possible that 0.25mL Fluzone® product may find a way into the system through channels such as Vaccines for Children (VFC). When more than one product is located in a clinic, and those products have different infant dosage requirements, staff should be alerted about the potential risk for errors.
 - b.** The 2017 CPT codes have removed ages from influenza vaccine descriptions and influenza vaccine CPT codes are determined by dose and by preparation (syringe, multi-dose vial (MDV), specialty products such as recombinant or intradermal).

CPT 90685 – 0.25 mL syringe	CPT 90663 – High-dose 0.5 mL syringe
CPT 90686 – 0.5 mL syringe	CPT 90673 – Recombinant 0.5 mL syringe (Flublok®)
CPT 90687 – 0.25 mL vial	CPT 90630 – Intradermal 0.1 mL syringe
CPT 90688 – 0.5 mL vial	
 - c.** As a system of delivery we have shifted primarily to pre-mixed syringes rather than MDVs.
 - a.** LAV FluMist® is still not being used this season in the U.S.
- 3. Access:** Make every attempt to accommodate all who request a vaccine, and when not able to provide it, create a “warm hand-off” to another service such as an Intermountain pharmacy.
- 4. Employees:** Employees with an allergy to egg will no longer be exempted from the requirement to get an influenza vaccine. An egg-free product, Flublok® will be made available to them.
- 5. Questions:** Contact – Amanda Holder for supply questions, Tamara Sheffield, MD or Stacey Lunt, RN for clinical questions.