

# KEEPING TABS

Absolute Pharmacy  
is the prescription  
for what ails you.

In each quarterly edition, you'll find the latest news about pharmacy, new medications, technology and more – all through the lens of what is pertinent to the long-term care (LTC) industry.

Absolute Pharmacy has been serving the LTC industry since 1994. We're a part of a dynamic circle of care that consists of rehabilitation, home health care services, hospice care and much more. We have a rich perspective, and we're thrilled to share what we've been learning from industry leaders, our employees and our customers – you!

We are confident you'll find the information useful. If you have a suggestion for a topic you'd like to learn about, let us know at [maryjo.mcelyea@abshealth.com](mailto:maryjo.mcelyea@abshealth.com).

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## Influenza Vaccination

By Amanda Dryden, Pharm. D. Student, Findlay University

The Centers For Disease Control and Prevention (CDC) does not currently recommend one influenza vaccination product over another, therefore it is important to know the differences between the products so the best care can be given based on clinical judgment.

There are two antigen types that are present in the various influenza products. The nuclear antigen material determines the type.

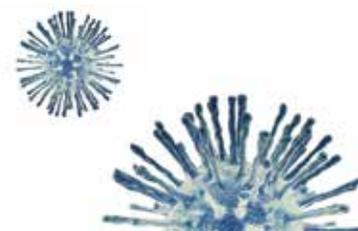
- **Type A** is known to cause a moderate to severe illness in all age groups in both humans and animals.
- **Type B** is known to cause a milder disease that primarily affects children, although there has been an increasing incidence of this strain affecting older adults.

All vaccinations contain two type A antigens and at least one type B antigen. The difference between the trivalent and quadrivalent vaccination is that the quadrivalent contains two type B antigens. A common question asked is, "If there

is a vaccination that contains more antigen types, why is it not recommended over the other with fewer antigens?" The CDC and the Advisory Committee on Immunization Practices (ACIP) acknowledges that the quadrivalent may replace the trivalent in the years to come. However, this past flu season, it was unknown whether there would be enough quadrivalent available, so there was no recommended preference for one product over the other.

The high-dose vaccination is specifically designed for adults ages 65 and older and contains four times the amount of antigen as the regular vaccination. The additional antigen is intended to create a stronger immune response in those receiving this variation than those receiving the normal vaccination. Many question why the high dose is only available for the older population. As we age, our immune response tends to decrease, placing the elderly at higher risk of suffering from a more serious illness if they contract influenza. Clinical trials have revealed that using the high-dose vaccine does indeed create a stronger immune



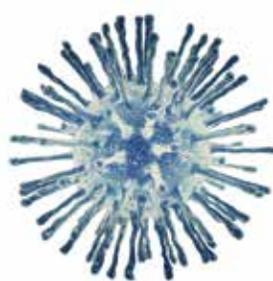


## INFLUENZA VACCINATION

Product	Strains Covered	Dose	Route	Approved Age	Price
Trivalent	2 type A 1 type B	0.5mL	IM/ID	≥ 6 months/ 18-64	\$20.50
Quadrivalent	2 type A 2 type B	0.5mL	IM	≥ 6 months	\$42.00
High Dose	2 type A 1 type B	0.5mL	IM	≥ 65 years old	\$42.00
Live Attenuated	2 type A 1 type B	0.2mL	Intranasal	Non-pregnant persons 2-49	Not currently available

response in the aging population. The question that still remains is whether or not this stronger immune response leads to better protection against influenza. Currently, the CDC/ACIP does not recommend any influenza vaccination over another for those aged 65 years or older.

The live attenuated vaccine contains the same three antigen strains as the trivalent vaccination. It is approved for use in healthy non-pregnant persons aged 2-49. The vaccine is provided in a single dose sprayer with half the dose being sprayed into each nostril. Since this is a live vaccination, the vaccinated individual can theoretically shed the virus for up to three weeks. As of July 2016, the CDC/ACIP recommended that this vaccine should not be used for the 2016-2017 season. This recommendation was based on data that showed poor or relatively low effectiveness of this vaccine from 2013-2016. This recommendation will particularly affect the pediatric population as about 1/3 of pediatrics receive the live vaccination. It is still recommended that everyone six months of age and older receive an influenza vaccination.



### References:

"ACIP Votes down Use of LAIV for 2016-2017 Flu Season." *Centers for Disease Control and Prevention*. Centers for Disease Control and Prevention, 22 June 2016. Web. 25 Mar. 2017.

"Ask the Experts: Diseases & Vaccines." *Ask the Experts about Influenza Vaccines - CDC Experts Answer Q&As*. Immunization Action Coalition, 19 Feb. 2017. Web. 25 Mar. 2017.

"Child and Adolescent Schedule." *Centers for Disease Control and Prevention*. Centers for Disease Control and Prevention, 06 Feb. 2017. Web. 25 Mar. 2017.

"Fluzone High-Dose Seasonal Influenza Vaccine." *Centers for Disease Control and Prevention*. Centers for Disease Control and Prevention, 01 Aug. 2016. Web. 25 Mar. 2017.

## Warfarin and Antibiotic Interactions

By Amanda Smith, Pharm. D. Student, NEOMED University

Drug Class	Interaction
<b>Aminoglycosides</b> Gentamicin Tobramycin Amikacin Neomycin Streptomycin	Neomycin may enhance the anticoagulant effect of Warfarin. <sup>11</sup>  No effect on all other medications in this class.
<b>Cephalosporins</b>	First, second and third generation Cephalosporins may enhance the anticoagulant effect of Warfarin by inhibiting the production of vitamin K-dependent clotting factors and other mechanisms. Monitor blood clotting or international normalized ratio (INR) if a Cephalosporin is started, stopped or change in therapy. <sup>4</sup>
<b>Carbapenems</b> Doripenem (Doribax) Imipenem/Cilastatin (Primaxin) Meropenem (Merrem) Ertapenem (Invanz)	No interaction with Warfarin. <sup>3</sup>
<b>Fluoroquinolones</b> Moxifloxacin (Avelox) Levofloxacin (Levaquin) Ciprofloxacin (Cipro) Ofloxacin (Floxin) Gatifloxacin (Zymar) Gemifloxacin (Factive)	Fluoroquinolones may enhance the anticoagulant effect of Warfarin. Increase in INR is especially seen during the first few days of concomitant therapy. Monitor INR if a Fluoroquinolone is started, stopped or change in therapy. <sup>7</sup>
<b>Glycopeptide</b> Vancomycin (Vancocin)	No interaction with Warfarin. <sup>17</sup>
<b>Glycylcyclines</b> Tigecycline (Tygacil)	Tigecycline may enhance the serum concentration of Warfarin. Monitor INR if Tigecycline is started, stopped or changed in therapy. <sup>16</sup>
<b>Griseofulvin</b>	Griseofluvin may decrease the serum concentration of Warfarin. Monitor for decreased INR if Griseofluvin is started, stopped or changed in therapy. <sup>8</sup>
<b>Ketolide</b> Telithromycin (Ketek)	Telithromycin may enhance the anticoagulant effect of Warfarin. <sup>14</sup>
<b>Lincosamides</b> Clindamycin (Cleocin)	No interaction with Warfarin. <sup>5</sup>

Drug Class	Interaction
<b>Lipopeptide</b> Daptomycin (Cubicin)	No interaction with Warfarin. <sup>6</sup>
<b>Macrolides</b> Azithromycin (Zithromax) Clarithromycin (Biaxin) Erythromycin Fidaxomicin (Dificid)	Azithromycin, Clarithromycin and Erythromycin may enhance the anticoagulant effect of Warfarin. Monitor the INR if started or stopped. <sup>10</sup>  Fidaxomicin has no interaction with Warfarin. <sup>10</sup>
<b>Monobactam</b> Aztreonam (Azactam)	No interaction with Warfarin. <sup>1</sup>
<b>Oxazolidinones</b> Linezolid (Zyvox)	Linezolid may enhance the anticoagulant effect of Warfarin. Monitor INR if Linezolid is started, stopped or change in therapy. <sup>9</sup>
<b>Penicillins</b>	Nafcillin and dicloxacillin may decrease the anticoagulant effects of Warfarin, consider choosing a different antibiotic. <sup>12</sup>  Penicillins may enhance the anticoagulant effect of Warfarin. If used, monitor INR when therapy is started, stopped or dose is changed. <sup>12</sup>
<b>Rifampin</b>	Consider therapy modification. Warfarin clearance would increase and the serum concentrations would decrease. If used, monitor IRN when therapy is started, stopped or dose is changed. <sup>13</sup>
<b>Sulfonamides</b> Trimethoprim/Sulfamethoxazole (Bactrim)	Sulfonamides may enhance the anticoagulant effect of Warfarin. Consider reducing warfarin dose by 10-20 percent to start the sulfonamide. Monitor INR to further guide dosing. <sup>2</sup>
<b>Tetracyclines</b> Doxycycline (Vibramycin) Minocycline (Minocin) Tetracycline	Doxycycline, Minocycline and Tetracycline may enhance the anticoagulant effect of Warfarin. If used, monitor INR if started, stopped or changed in therapy. <sup>15</sup>

References:

<sup>1</sup> Aztreonam. Lexi-Comp Online. 2017.  
<sup>2</sup> Bactrim. Lexi-Comp Online. 2017.  
<sup>3</sup> Carbenem. Lexi-Comp Online. 2017.  
<sup>4</sup> Cephalosporin. Lexi-comp Online. 2017.  
<sup>5</sup> Clindamycin. Lexi-Comp Online. 2017.

<sup>6</sup> Daptomycin. Lexi-Comp Online. 2017.  
<sup>7</sup> Fluoroquinolones. Lexi-Comp Online. 2017.  
<sup>8</sup> Griseofulvin. Lexi-Comp Online. 2017.  
<sup>9</sup> Linezolid. Lexi-Comp Online. 2017.  
<sup>10</sup> Macrolide. Lexi-Comp Online. 2017.  
<sup>11</sup> Neomycin. Lexi-Comp Online. 2017.

<sup>12</sup> Penicillins. Lexi-Comp Online. 2017.  
<sup>13</sup> Rifampin. Lexi-Comp Online. 2017.  
<sup>14</sup> Telithromycin. Lexi-Comp Online. 2017.  
<sup>15</sup> Tetracyclines. Lexi-Comp Online. 2017.  
<sup>16</sup> Tigecycline. Lexi-Comp Online. 2017.  
<sup>17</sup> Vancomycin. Lexi-Comp Online. 2017.

# Absolute Insights

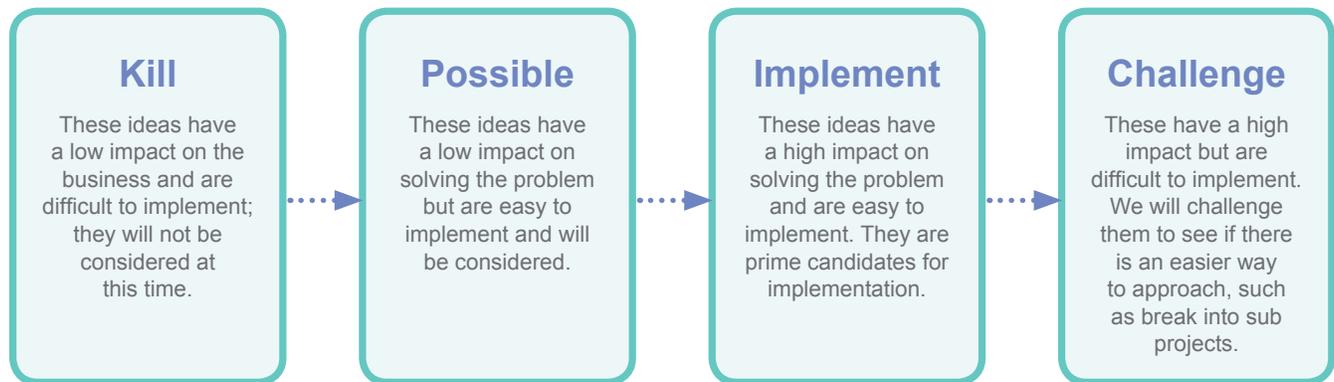
## Pharmacy Order Entry and Billing Lean Team

By Megan Graebert, Triage Services Manager

In support of The Schroer Group's continuous improvement efforts, the Pharmacy Order Lean Team is working on a project to create a more efficient prescription order process from medication order through label production. The goal is to balance Absolute Pharmacy's excellent customer service and business growth with improved efficiency while maintaining accuracy. The team has created a flow chart of the current process steps and has identified common

delays, loop backs and reasons for re-work. They are currently evaluating potential process improvement action items.

The broad change/improvements topics include streamlining high costs, standardizing training and electronic prescription enhancements. Part of the process includes charting and organizing the improvement ideas into the following strategies:



If you have improvement suggestions or questions, please contact Megan Graebert, Project Leader, at [megan.graebert@abshealth.com](mailto:megan.graebert@abshealth.com).



*Pharmacy Order Lean Team: (From left) Brandon Robinson, Amanda Smith, Casey Persinger, Veronica Willis, Megan Graebert (Project Leader), Kirsten Kiser and Diana Evans (Lean Facilitator).*

*The team has also received assistance from: Kevin Fearon (Project Champion), Jodi Hull, Jerry Liliestedt, Scott Haas/Navarre, Beth Griffith/Nobles Pond, Aaron Durell, Rebecca Toomey and Robert Gardner.*

# Using an IV Pump

Infusion pumps may be used for the following:

- 1 administration of medication orders requiring blood level monitoring (i.e., Vancomycin)
- 2 medications administered through a central line
- 3 inotropic therapy
- 4 pain management
- 5 total parenteral nutrition (TPN).

A flow meter device attached to the tubing (i.e., “Dial a Flow”) can be used, or an IV can be infused via gravity in most other circumstances. Always refer to the facility policy on when to use an IV pump.



## TAKE OUR SURVEY!

What's your input on the services we provide at Absolute Pharmacy? Join others who have already provided theirs. Please take this brief survey, and we will use the information to continue providing the services you like and identify areas for improvement. We want to hear from you!

[www.abshealth.com/absurvey](http://www.abshealth.com/absurvey)



# Absolute Insights



## Put a Face to a Name: Robert Demay

**Q:** What do you do for Absolute Pharmacy?

**A:** I'm one of the Account Managers for the Pharmacy. I get to travel around and visit our various customers and make sure things are going well.

**Q:** What do you absolutely love about working for Absolute Pharmacy?

**A:** The travel. I love being on the road every day visiting our various accounts.

**Q:** What's your favorite quote or saying?

**A:** Yesterdays are over my shoulder, so I can't look back for too long. There's just too much to see waiting in front of me, and I know that I just can't go wrong.  
~Jimmy Buffett

**Q:** What chore do you absolutely hate doing?

**A:** Cleaning up the kitchen after cooking.

**Q:** What do you enjoy doing the most?

**A:** Anything fantasy sports related, and cheering on the Cavs, Indians and Browns.

**Q:** If you could be any fictional character, who would you choose?

**A:** James T. Kirk

**Q:** If you could take a vacation anywhere in the world, where would it be?

**A:** Italy

## UPCOMING EVENTS

### **OALA SPRING TRADE SHOW**

May 22

Columbus, OH – *See our table.*

### **OHIO COUNTY HOME SHOW**

May 23

Salt Fork, OH – *See our table.*

### **LEADINGAGE PA**

June 21-23

Hershey, PA – *Booth 108*

