

## PharMerica Follow-Up for Insulin Management Webinar

Deb Bostic, RN, MSN, HCAM, CMNL, CDONA, Senior Director of Nurses, Genesis Healthcare  
Matthew Palmer, PharmD, BCGP, Manager of Clinical Operations, PharMerica

Thank you for registering for our recent webinar on March 7th. Our expert speakers Deb Bostic and Matthew Palmer would like to share additional educational content on this important topic.

### Follow Up Questions & Answers

Q. What is the federal CMS tag that can occur with blood glucose monitoring?

A. F880

Q. What is the federal CMS tag often seen with insulin administration?

A. F760 - Residents are free of any significant medication errors.

Q. I have been seeing orders where basal insulin is given parameters and held. I do not think that basal insulin should be held as that will cause blood glucose problems later in the day. What is your opinion?

A. I agree. I cannot think of a reason or instance where it would be appropriate for basal insulin to have parameters for administration like sliding scale. Unless there is an acute change (i.e., illness or refusal of meals), basal insulin rarely contributes to hypoglycemia and holding the dose would definitely affect glucose results later in the day.

Q. What if you are using basal plus 1 and given 10 units only once per day prior to the main meal?

A. When attempting to simplify an insulin regimen, use the general rule of <10 units of mealtime insulin mean prior to each meal or the total daily amount of mealtime insulin (i.e., if 10 units TID prior each meal = 30 units). If the dose is less than 10 units prior to meals (once daily, BID, or TID) it would be safe to discontinue and consider an alternative agent.

Q. I'm finding conflicting information on Metformin and kidney health. Is it still not recommended for those patients with impaired kidney function, and why?

A. The recommendations have been loosened some in recent years. Current guidance states it is generally safe to use Metformin at lower dosages down to a CrCl or eGFR of 30ml/min. Below 30ml/min, Metformin use is contraindicated. The reason is the risk for lactic acidosis, which, while rare, can be fatal.

For more learning opportunities for the long-term care industry, view our [upcoming webinars](#).

	Brand	Generic	Prior-Use Storage	In-Use Storage	When to Inject	Duration	Pen Priming Requirements	
Rapid Acting	Apidra U-100 Vial	I. glulisine	Refrig until expiration date or RT for up to 28 days	Refrig or RT for up to 28 days	Within 15 mins AC or within 20 min after starting a meal	3 to 4 hours	-	
	Apidra U-100 SoloStar			RT for up to 28 days. Do not refrigerate pens or refill cartridges.			2 units	
	Novolog U-100 Vial	I. aspart		Refrig or RT for up to 28 days	Within 5-10 mins AC	3 to 5 hours	-	
	Novolog U-100 FlexPen			RT for up to 28 days. Do not refrigerate.			2 units	
	Fiasp U-100 Vial	I. aspart		Refrig or RT for up to 28 days	At the start of a meal or within 20 mins after starting a meal	~5 to 7 hours	-	
	Fiasp U-100 FlexTouch			Refrig or RT for up to 28 days. Do not refrigerate refill cartridges.			2 units	
	Admelog U-100 Vial	I. lispro		Refrig or RT for up to 28 days	Within 15 mins AC or immediately PC	~6.9 hours	-	
	Admelog U-100 SoloStar			RT for up to 28 days. Do not refrigerate			2 units	
	Humalog U-100 Vial	I. lispro		Refrig or RT for up to 28 days	Within 15 mins AC or immediately PC	5.7 to 6.7 hours	-	
	Humalog U-100 KwikPen			RT for up to 28 days. Do not refrigerate pens or refill cartridges.			2 units	
	Humalog U-200 KwikPen	I. lispro						
	Lyumjev U-100 Vial	I. lispro-aabc			Refrig or RT for up to 28 days.	At start of meal or within 20 mins after starting meal	4.6 to 7.3 hours	-

All information obtained from Lexicomp or Manufacturer Package Insert

RT room temperature (68°F to 77°F (20°C to 25°C)); Refrig: refrigeration (36°F - 46°F (2°C to 8°C))  
 AC: before food; PC: after food

■ = Authorized Generic Available  
 Updated March 2022

	Brand	Generic	Prior-Use Storage	In-Use Storage	When to Inject	Duration	Pen Priming Requirements
Rapid Acting	Lyumjev U-100 KwikPen	l. lispro-aabc	Refrig until expiration date or RT for up to 28 days	RT for up to 28 days. Do not refrigerate pens or refill cartridges.	At start of meal or within 20 mins after starting meal	4.6 to 7.3 hours	2 units
	Lyumjev U-200 KwikPen						
Short Acting	Novolin-R U-100 Vial	l. regular	Refrig until expiration date or RT for up to 42 days	RT for up to 42 days. Do not refrigerate.	30 min AC	4 to 12 hours	-
	Novolin-R U-100 FlexPen		Refrig until expiration date or RT for up to 28 days	RT for up to 28 days. Do not refrigerate.			2 units
	Humulin-R U-100 Vial		Refrig until expiration date or RT for up to 31 days	RT or Refrig for up to 31 days			-
Intermediate Acting	Novolin-N U-100 Vial	l. NPH	Refrig until expiration date or RT for up to 42 days	RT for up to 42 days. Do not refrigerate.	Per written order	14 to 24 hours	-
	Novolin-N U-100 FlexPen		Refrig until expiration date or RT for up to 28 days	RT for up to 28 days. Do not refrigerate.			2 units
	Humulin-N U-100 Vial		Refrig until expiration date or RT for up to 31 days	Refrig or RT for up to 31 days			-
	Humulin-N U-100 KwikPen		Refrig until expiration date or RT for up to 14 days	RT for up to 14 days			2 units
Long Acting	Lantus U-100 Vial	l. glargine	Refrig until expiration date or RT for up to 28 days	Refrig or RT for up to 28 days	Once daily at the same time each day	10.8 to >24 hours	-
	Lantus U-100 SoloStar			RT for up to 28 days. Do not refrigerate.			2 units
	Toujeo U-300 SoloStar/ Max SoloStar		Refrig until expiration date	RT for up to 56 days. Do not refrigerate.		>24 hours	3 units / 4 units (Max SoloStar)

All information obtained from Lexicomp or Manufacturer Package Insert

RT room temperature (68°F to 77°F (20°C to 25°C)); Refrig: refrigeration (36°F - 46°F (2°C to 8°C))  
 AC: before food; PC: after food

■ = Authorized Generic Available  
 Updated March 2022

	Brand	Generic	Prior-Use Storage	In-Use Storage	When to Inject	Duration	Pen Priming Requirements
Long Acting	Levemir U-100 Vial	l. detemir	Refrig until expiration date or RT for up to 42 days	Refrig or RT for up to 42 days	Once or twice daily; Administer once daily doses with the evening meal or at bedtime. For twice daily dosing, administer the evening dose with the evening meal, at bedtime, or 12 hours after the morning dose.	6 to 23 hours (dose dependent)	-
	Levemir U-100 FlexTouch			RT for up to 42 days. Do not refrigerate			2 units
	Tresiba U-100 Vial	l. degludec	Refrig until expiration date or RT for up to 56 days	Refrig or RT for up to 56 days	Once daily (any time of day in adults; same time every day in pediatrics)	42 hours	-
	Tresiba U-100 FlexTouch						2 units
	Tresiba U-200 FlexTouch						2 units
	Basaglar KwikPen	l. glargine	Refrig until expiration date or RT for up to 28 days	RT for up to 28 days. Do not refrigerate	Once daily at the same time each day	>24 hours	2 units
	Semglee (yfgn) U-100 Vial	l. glargine-yfgn	Refrig until expiration date or RT for up to 28 days	Refrig or RT for 28 days	Once daily at the same time each day	At least 24 hours	-
	Semglee (yfgn) U-100 Pen			RT for up to 28 days. Do not refrigerate			2 units
	Insulin Glargine (yfgn) U-100 Vial			Refrig or RT for 28 days			-
	Insulin Glargine (yfgn) U-100 Pen			RT for up to 28 days. Do not refrigerate.			2 units
Rezvoglar U-100 KwikPen	l. glargine-aglr	Refrig until expiration or RT up to 28 days	RT up to 28 days. Do not refrigerate	Once daily at the same time each day	> 24 hours	2 units	

All information obtained from Lexicomp or Manufacturer Package Insert

RT room temperature (68°F to 77°F (20°C to 25°C)); Refrig: refrigeration (36°F - 46°F (2°C to 8°C))  
 AC: before food; PC: after food

■ = Authorized Generic Available  
 Updated March 2022

# PharMerica Insulin Drug Chart

	Brand	Generic	Prior-Use Storage	In-Use Storage	When to Inject	Duration	Pen Priming Requirements
<b>70/30 Rapid acting mix</b>	Novolog Mix 70/30 Vial	I. aspart protamine/ I. aspart	Refrig until expiration date or RT for up to 28 days	Refrig or RT for up to 28 days	Within 15 mins AC (type 1) Within 15 mins AC/PC (type 2)	18 to 24 hours	-
	Novolog Mix 70/30 FlexPen		Refrig until expiration date or RT for up to 14 days	RT for up to 14 days. Do not refrigerate.			2 units
<b>70/30 Short acting mix</b>	Novolin 70/30 Vial	I. NPH/ I. regular	Refrig until expiration date or RT for up to 42 days	RT for up to 42 days. Do not refrigerate.	Approximately 30 minutes AC (usually two divided doses)		-
	Novolin 70/30 FlexPen		Refrig until expiration date or RT for up to 28 days	RT for up to 28 days. Do not refrigerate.			2 units
	Humulin 70/30 Vial	I. NPH/ I. regular	Refrig until expiration date or RT for up to 31 days	Refrig or RT for up to 31 days	30 to 45 minutes AC (usually two divided doses)	18 to 24 hours	-
	Humulin 70/30 KwikPen		Refrig until exp date or RT for up to 10 days	RT for up to 10 days. Do not refrigerate			2 units
<b>75/25 Rapid acting mix</b>	Humalog Mix 75/25 Vial	I. lispro protamine/ I. lispro	Refrig until expiration date or RT for up to 28 days	Refrig or RT for up to 28 days	Within 15 mins AC (typically two divided doses)	14 to 24 hours	-
	Humalog Mix 75/25 KwikPen		Refrig until expiration date or RT for up to 10 days	RT for up to 10 days. Do not refrigerate			2 units
<b>50/50 Rapid acting mix</b>	Humalog Mix 50/50 Vial	I. lispro protamine / I. lispro	Refrig until expiration date or RT for up to 28 days	Refrig or RT for up to 28 days			-
	Humalog Mix 50/50 KwikPen		Refrig until expiration date or RT for up to 10 days	RT for up to 10 days. Do not refrigerate			2 units
<b>U-500 Strength</b>	Humulin-R Vial	I. regular	Refrig until expiration date or RT for up to 40 days	Refrig or RT for up to 40 days	30 min AC	13 to 24 hours	-
	Humulin-R KwikPen		Refrig until expiration date or RT for up to 28 days	RT for up to 28 days. Do not refrigerate			5 units
<b>GLP-1/ Long-Acting Insulin Combo</b>	Soliqua	I. glargine/ lixisenatide	Refrig until date expiration	RT for up to 28 days	Once daily within hour prior to first meal of the day	-	2 units
	Xultophy	I. degludec/ liraglutide		RT or Refrig for up to 21 days	Once daily /same time with or without food)	-	Follow manufacturer instructions

All information obtained from Lexicomp or Manufacturer Package Insert

RT: room temperature [68°F to 77°F (20°C to 25°C)]; Refrig: refrigeration [36°F - 46°F (2°C to 8°C)]  
AC: before food; PC: after food

■ = Authorized Generic Available  
Updated March 2022



## Abridged List of Medications with Shortened Expiration Dates

Once certain products are opened and in use, they must be used within a specific timeframe to avoid reduced stability, sterility and potentially reduced efficacy. Product-specific storage and expiration details can be found in the drug product's Package Insert (PI) under the "How Supplied/Storage & Handling" section. **A drug product's Beyond Use Date (BUD) is the manufacturer supplied expiration date OR the shortened date after opening (see BUD Notes below), whichever comes first.**

*These In-Use medications should be labeled such that the "DATE OPENED" is noted, clearly visible and securely attached to a part of the package to not be discarded. This date is to be referenced when auditing to clear medications prior to expiration.*

This list is abridged to cover some common medications whose package inserts detail shortened expirations once in-use. Users should also be familiar with USP BUD standards that may dictate in-use BUDs for other medications (e.g., eye drops, ear drops, injectable MDVs, etc.).

Generic Name	Brand Name	Beyond Use Date (BUD) Notes
Acetylcysteine	Mucomyst	Store unopened vials at room temperature; once opened, store under refrigeration and use within 96 hours. A color change may occur in opened vials (light purple) and does not affect the safety or efficacy.
Acridinium	Tudorza	45 days after opening pouch, when device locks out, or when dose indicator displays 0.
Acridinium/Formoterol	Duaklir Pressair	2 months after opening bag, when device locks out, or when dose indicator displays 0.
Arformoterol	Brovana solution	Prior to dispensing, store in protective foil pouch under refrigeration at 2°C to 8°C (36°F to 46°F). Protect from light and excessive heat. After dispensing, unopened foil pouches may be stored at 20°C to 25°C (68°F to 77°F) for up to 6 weeks. Only remove vial from foil pouch immediately before use.
Albuterol	ProAir RespiClick	13 months after opening foil pouch or when counter reads 0.
	Ventolin HFA	12 months after removal from foil pouch or when counter reads 0.
Albuterol/Budesonide	Airsupra	12 months after opening foil pouch or when dose indicator displays 0.
Albuterol/Ipratropium	Combivent Respimat	Respimat: 3 months after first actuation.
	Duoneb	Duoneb: Store in foil and away from heat and light. Unit-dose vials should remain stored in protective foil pouch at all times. Once removed from the foil pouch, the individual vials should be used within one week. Discard if the solution is not colorless.
Budesonide	Pulmicort Respules	Respules: 2 weeks after removal from aluminum packaging.
Budesonide/Formoterol	Symbicort	3 months after removal from foil pouch.
Fluticasone	Flovent Diskus	Diskus - 50mcg strength: 6 weeks after removal from protective foil pouch; Diskus - 100mcg and 250mcg strength: 2 months after removal from foil pouch
	ArmonAir Digihaler	Digihaler: 30 days after removal from protective foil pouch.
	Arnuity Ellipta	Ellipta: 6 weeks after removal from foil pouch.

Asthma | Allergy | COPD

## Abridged List of Medications with Shortened Expiration Dates

Generic Name	Brand Name	Beyond Use Date (BUD) Notes
Fluticasone/Salmeterol	Advair Diskus	Diskus: 30 days after removal from protective foil pouch or when counter reads 0.
	AirDuo Digihaler	30 days after removal from foil pouch or when the counter reads 0.
	AirDuo Respimat	30 days after removal from foil pouch or when the counter reads 0.
	Wixela Inhub	30 days after removal from foil pouch or when the counter reads 0.
Fluticasone/Vilanterol	Breo Ellipta	6 weeks after removal from foil tray.
Formoterol	Foradil Aerolizer	Capsules should always be stored in the blister and only removed immediately before use, discard by the manufacturer's expiration date on product.
	Perforomist Inhalation Solution	Prior to dispensing, store in refrigerator at 2°C to 8°C (36°F to 46°F). After dispensing, store in refrigerator at 2°C to 8°C (36°F to 46°F) or room temperature at 20°C to 25°C (68°F to 77°F) for up to 3 months. Protect from light and heat. Unit-dose vials should always be stored in the foil pouch and only removed immediately before use.
Glycopyrrolate	Lonhala Magnair	Store vials in the protective foil pouch. After opening the foil pouch, unused unit-dose vials should be returned to, and stored in, the foil pouch. Once a foil pouch is opened, discard the vials if not unused within 7 days. An opened unit-dose vial should be used right away. Discard any unit-dose vial if the solution is not colorless.
Indacaterol	Arcapta Neohaler	Remove capsule from blister immediately prior to use.
Levalbuterol	Xopenex Solution	Solution: 2 weeks from when foil pouch is opened. Vials removed from the pouch, if not used immediately, should be protected from light and used within 1 week.
Mometasone	Asmanex Twisthaler	Twisthaler: 45 days after removal from foil pouch or when the counter reads 0.
Olodaterol	Striverdi Respimat	3 months after cartridge is inserted into inhaler.
Salmeterol	Serevent Diskus	6 weeks after removal from foil pouch.
Tiotropium	Spiriva Respimat	Respimat: 3 months after first use.
	Spiriva Handihaler	Handihaler: Only remove from foil immediately before use, once removed, the capsule should be used immediately; if capsule is not used immediately it should be discarded.
Tiotropium/Olodaterol	Stiolto Respimat	3 months after cartridge is inserted into inhaler or when locking mechanism is engaged.
Umeclidinium	Incruse Ellipta	6 weeks after opening the foil tray or when the counter reads 0.
Umeclidinium/Vilanterol	Anoro Ellipta	6 weeks after opening the foil tray or when the counter reads 0.

Asthma | Allergy | COPD - Continued

## Abridged List of Medications with Shortened Expiration Dates

		Generic Name	Brand Name	Beyond Use Date (BUD) Notes After Accessing Insulin for First Use
		Rapid Acting (RA)	I. glulisine	Apidra
I. lispro-aabc	Lyumjev		vial - 28 days / pen - 28 days	
I. aspart	Novolog		vial - 28 days / pen - 28 days	
	Fiasp		vial - 28 days / pen - 28 days	
I. lispro	Admelog		vial - 28 days / pen - 28 days	
	Humalog		vial - 28 days / pen - 28 days	
Short Acting (SA)	I. Regular	Novolin-R	vials - 42 days / pen - 28 days	
		Humulin-R	31 days	
Intermed. Acting	I. NPH	Novolin-N	vials - 42 days / pen - 28 days	
		Humulin-N	vials - 31 days / pen - 14 days	
Long Acting	I. glargine	Lantus	28 days	
		Toujeo	56 days	
		Semglee	28 days	
		Basaglar	28 days	
	I. detemir	Levemir	42 days	
	I. degludec	Tresiba	56 days	
70/30 RA MIX	I. aspart protamine susp / I. aspart	Novolog 70/30	vials - 28 days / pen - 14 days	
70/30 SA MIX	I. NPH / I. Regular	Novolin 70/30	vials - 42 days / pen - 28 days	
		Humulin 70/30	vials - 31 days / pen - 10 days	
75/25 RA MIX	I. lispro protamine / I. lispro	Humalog 75/25	vial - 28 days / pen - 10 days	
50/50 RA MIX	I. lispro protamine / I. lispro	Humalog 50/50	vial - 28 days / pen - 10 days	
U-500 Strength	I. Regular	Humulin-R U-500	vials - 40 days / pen - 28 days	

Please see the [PharMerica 2022 Insulin Comparison Chart](#) for further detailed information, such as pre-use and in-use storage temperature requirements, injection timing recommendations, and pen priming requirements.



## Abridged List of Medications with Shortened Expiration Dates

		Generic Name	Brand Name	Beyond Use Date (BUD) Notes
Miscellaneous	Eye	Latanoprost	Xalatan	6 weeks (42 days) after opening or moving to room temp
		Latanoprostene Bunod	Vyzulta	8 weeks (56 days) after opening or moving to room temp
		Generally, all other eye drops/ointments (unless individual products' Pls state otherwise)		60 days after opening, per PharMerica Nursing Care Center Pharmacy policy and procedures
	Nasal	Miacalcin Nasal Spray	Calcitonin Nasal Spray	30 doses OR 35 days at room temp (opened or unopened)
	Solutions	Epoetin Alfa	Epogen (Multidose) Procrit (Multidose)	Store unused portions of Epogen/Procrit in multiple-dose vials at 36°F to 46°F (2°C to 8°C). Discard 21 days after initial entry.
		Furosemide Soln.	Lasix	Discard open bottle after 90 days
		Lorazepam Soln.	Ativan Intensol	90 days after opening [REFRIGERATED]
	Subcutaneous	Liraglutide	Victoza Saxenda	30 days at controlled room temperature (15°C to 30°C) or in a refrigerator (2°C to 8°C). Keep the pen cap on when not in use and protect from excessive heat and sunlight.
		Semaglutide	Ozempic	56 days after opening at controlled room temperature (15°C to 30°C) or in a refrigerator (2°C to 8°C). Do not freeze, keep the pen cap on when not in use, and protect from excessive heat and sunlight.
			Wegovy	If needed, prior to cap removal, the single-use Wegovy pen can be kept from 8°C to 30°C up to 28 days.
	Tests	Tuberculin Tests	Tubersol	30 days after opening [REFRIGERATED]
	Bulk	Bulk PO Meds	I.e., Tylenol, Miralax, etc.	Store and discard per manufacturer instructions, unless more stringent Beyond Use Date is applied per adopted policy or local regulation.
Injectable MDV's	Generally, all Injectable Multi-Dose Vials (unless individual products' Pls state otherwise)		30 days after opening [REFRIGERATED] Note: <i>Influenza Vaccine MDVs</i> generally have a BUD of 28 days after first access. Package inserts for vaccines can be found at <a href="http://www.immunize.org/fda">www.immunize.org/fda</a>	
DM Supplies	Glucose Control Solutions and Test Strips	I.e., Accu-Chek, FreeStyle, etc.	Most: 90 days after opening. CHECK BRAND and that particular manufacturer's recommendation	