

**Bon Secours Richmond Health System  
Pharmacy & Therapeutics Committee  
March 2002**

**Recommendation:**

- Novolog (insulin aspart) will be auto-substituted for Humalog (Lispro) as the onset and duration are similar and Novolog is less expensive.

**Findings:**

- Novolog is a Premier contract item and Humalog is not.
- Regular human insulin stocked throughout Bon Secours Richmond is the Novolin brand.
- One unit of Novolog, Humalog or regular human insulin all have the same glucose lowering effect, but the effect is more rapid and of shorter duration with Novolog and Humalog.
- Novolog and Humalog have less of a tendency to form hexamers as compared with regular human insulin and are more quickly absorbed.
- The acquisition cost of Novolog is \$12.73 less than Humalog for 10 ml vials. Both products are much more expensive than regular human insulin.
- When administered by the IV route the pharmacokinetic profiles are identical and there is no advantage to Novolog or Humalog over regular human insulin.

<b>Insulin Comparison Chart from Package Insert and MicroMedex</b>				
	<b>Regular human Insulin</b>	<b>Humalog (Lispro)</b>	<b>Regular human Insulin</b>	<b>Novolog (Insulin Aspart)</b>
Onset (minutes)		15		15
Peak (minutes)	50-120	30-90	80-120	40-90
Duration (hours)		3-4	5-8	3-5
Hypoglycemic Effect per Package Insert		ND		0.1 U/kg lowers glucose by 37.8 mg/dl
Amino Acid sequence		Lysine (B28), Proline (B29) Normal amino acid sequence is reversed at B28 and B29		Aspartic acid substitution at (B28)
Recombinant DNA technology	Saccharomyces cerevisiae (bakers yeast)	E. coli		Saccharomyces cerevisiae (bakers yeast)
T1/2 SQ Hours	1.5	1	2.4	1.4
T1/2 IV minutes 0.1 U/kg	26	26	ND	ND
T 1/2 IV hours 0.2 U/kg	52	52	ND	ND
Bioavailability SQ	55-77%	55-77%	55-77%	55-77%
Volume of Distribution L/kg	0.26-0.36	0.26-0.36	ND	ND
Price (per 10 ml)	\$9.10	\$40.91		\$28.18

**Cost Analysis:**

A potential cost saving of \$3,831 will be realized by the conversion to Novolog

To: All Pharmacy and Nursing Staff  
From: Marshall Pierce  
Subject: NovoLog® (Insulin aspart injection)  
Date: 2/6/2002

The MEC has approved automatic substitution of NovoLog (aspart) for Humalog (lispro) insulin.

NovoLog and Humalog are rapid acting insulins, which act for a short duration and are equivalent in potency unit for unit.

NovoLog should be given immediately before a meal unless ordered as a sliding scale. When NovoLog is used for sliding scale the patient should also have an order for an intermediate/long acting insulin, as NovoLog's duration is so short to be used alone.

NovoLog may be mixed with human NPH insulin.

NovoLog should not be ordered IV as its unique absorption characteristics are bypassed and it becomes identical in action to human regular insulin at three times the cost of regular human insulin.

NovoLog will be stocked in the pyxis machines and will be charged by the ml.