Clinical Guideline:	**IV Fat Emulsion Clinical Practice Guideline SUMMARY***
Effective Date:	December 2019; Revised June 2020

*Refer to IV Fat Emulsion Clinical Practice Guideline for full guideline and references

IV Fat Emulsion (IVFE)	Composition				Major Fatty Acid Profile					Vitamin E	Phytosterols	Aluminum	Warning for Preterm Infants
	Soybean Oil	MCT Oil	Olive Oil	Fish Oil	LA n-6	ALA n-3	ARA n-6	EPA n-3	DHA n-3	Alpha-tocopherol	*(pro-inflammatory, may contribute to liver injury)*	*(toxic to liver and bones)*	
IntraLipid	100%	-	-		+++	++	None	None	None	+	+++	≤ 25 mcg/L aluminum	Yes
SMOFlipid	30%	30%	25%	15%	++	+	+	++	+	++	+		
Omegaven	-	-	-	100%	+	+	++	+++	++	+++	Minimal		

LA = Linoleic Acid; ALA = alpha-Linolenic Acid; ARA = Arachidonic Acid; EPA = Eicosapentaenoic Acid; DHA = Docosahexaenoic Acid

	IntraLipid 20%	SMOFlipid 20%	Omegaven 10%
Indication*: (IFALD = intestinal failure-associated liver disease) **Refer to full guideline for medication compatibility info*	**Standard IVFE for preterm infants**	**Delay/Prevent onset of IFALD in setting of prolonged PN course:** ✓ Anticipated PN ≥ 21 days OR ✓ Anticipated PN ≥ 14 days with rising Direct Bili (1-1.9 mg/dL)	**Treatment for established IFALD:** ✓ Anticipated PN ≥ 14 days with Direct Bili >2 mg/dL
Initial Dose:	1 g/kg/day	1 g/kg/day OR max IntraLipid dose	1 g/kg/day
Advance Increment:	1 g/kg/day	1 g/kg/day	n/a
Goal Dose:	3 g/kg/day	3 g/kg/day* *__Avoid__ doses < 2.5 g/kg/day for more than 2-3 days, due to concern for essential fatty acid deficiency	1 g/kg/day
Lab Monitoring: (TG = Triglyceride T/DB = Total/Direct Bilirubin LFTs = Liver Function Tests)	✓ **Baseline TG once on goal dose** (Consider checking during initial advancement, if clinical concern e.g. hyperglycemia or ELBW infant) ✓ **Any infant on goal dose:** Weekly TG, T/DB and LFTs	✓ Fatty Acid profile after 2-4 weeks of SMOFlipid therapy; follow-up Fatty Acid profile q2-4 weeks if concerning for EFAD ✓ Weekly ***fasting**** TG **hold SMOFlipid for ≥ 4 hours* ✓ Weekly T/DB and LFTs	✓ Fatty Acid profile upon initiation of Omegaven; follow-up Fatty Acid profile q2-4 weeks if concerning for EFAD ✓ Weekly TG ✓ Weekly T/DB and LFTs
Hypertriglyceridemia Management: >250 mg/dL = Hypertriglyceridemia <200 mg/dL = goal for preterm infants	If TG > 250 mg/dL: ✓ Decrease to 1 g/kg/day ✓ Consider adding Carnitine in PN ✓ Monitor TG daily ✓ Once < 200 mg/dL, resume advances of 0.5-1 g/kg/day back to ✓ Avoid doses <1 g/kg/day if possible	See IntraLipid management. If unable to advance to 2.5-3 g/kg/day within 3-5 days of SMOFlipid initiation, AND Direct Bili < 2 mg/dL: ✓ Change to IntraLipid 1 g/kg/day. AND Direct Bili ≥ 2 mg/dL: ✓ Change to Omegaven 1 g/kg/day. If EFAD on follow-up lab monitoring: ✓ Change to Omegaven 1 g/kg/day.	If TG > 250 mg/dL: ✓ Consider checking a *fasting** TG level before decreasing dose to 0.5 g/kg/day **hold Omegaven for ≥ 4 hours*
Essential Fatty Acid Deficiency (EFAD): Triene:Tetraene > 0.2 (clinical signs present with chronic elevation > 0.4)	If EFAD or suboptimal growth on lipid restriction, consider increasing by 0.5 g/kg/day to max of 3 g/kg/day, while weighing benefit of EFAD or slow growth vs. degree of IFALD.	Change to Omegaven 1 g/kg/day	EFAD or suboptimal growth on 1 g/kg/day: Increase to 1.5 g/kg/day EFAD or suboptimal growth on 1.5 g/kg/day: Change to IntraLipid 1 g/kg/day
Suboptimal Growth Management: Per RDN assessment. (Refer to Enteral Nutrition CPG)		Optimize other macronutrients as able	