This guideline has been prepared with reference to the following:

Clarke, S. Guidance for Iron and Vitamin Supplementation (Neonatal Network (SWMMNN). 2015

White A, Cook P, Thompson L et al. Initiation of Breastfeeding: Transition from tube to breastfeeding on the NNU or TCU (Neonatal Network (SWMMNN). 2015

Ben XM. Nutritional management of newborn infants: practical guidelines. World J Gastroenterol 2008;14:6133-9

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2761573/

At what rate should enteral feeds be increased?
A Cochrane systematic review (Morgan, 2014) concluded that advancing enteral feed volumes at daily increments of 30 ml/kg to 35 ml/kg does not increase the risk of necrotising enterocolitis in very preterm or VLBW infants. Advancing the volume of enteral feeds at slow rates resulted in several days delay in regaining birth weight and establishing full enteral feeds. The applicability of these findings to extremely preterm, extremely low birth weight, or growth-restricted infants is limited.
Approximately 90% of infants developing necrotising enterocolitis (NEC) do so after being fed, with some authorities linking this to rapid incremental rates of enteral feeding (Berseth, 2003). A randomised trial in 141 preterm infants (Berseth, 2003) comparing a minimal (20 mL/kg/d for 10 days) feed group with an advancing (20 mL/kg/d on day 1, increased by 20 mL/kg/d up to 140 mL/kg/d) group was closed early after 7 of the advancing group vs 1 of the minimal group developed NEC.
Other randomised trials have found no difference in incidence of NEC between “fast” and “slow” groups. A prospective randomised trial in 185 infants with birth weight 501-1500g ((Rayyis, 1999) found that a greater than twofold difference in the rate of feed advancement (from 15 cc/kg/d to 35 cc/kg/d) resulted in a 9% incidence of NEC in the “fast” group (n=87) compared to 13% in the “slow” group (n=98). The authors concluded that “Factors other than feed advancement appear to be more important in the pathogenesis or progression of NEC”.
Another randomised trial, in 53 infants <1250g (Salhotra, 2004) compared “slow” (increments of 15 mL/kg/d, n=26) and “fast” (increments of 30 mL/kg/d, n=27) groups, finding that the “fast” group reached full enteral intake (180 mL/Kg/d) considerably earlier (10 +/- 1.8 days) than did the “slow” group (14.8 +/- 1.5 days), without any difference in the incidence of NEC.
Other trials and reviews have also reported better growth with no adverse effects from the use of more “aggressive” enteral feeding programmes (Ziegler, 2002; Evans, 2001; Wilson, 1997).
A randomised controlled trial in 100 neonates (Krishnamurthy, 2010) found that “rapid enteral feeding advancements of 30 mL/kg/day are well tolerated by stable preterm neonates weighing 1000-1499 g.”

Berseth CL, Bisquera JA, Paje VU. Prolonging small feeding volumes early in life decreases the incidence of necrotizing enterocolitis in very low birth weight infants. Pediatrics 2003;111:529-34

Evans RA, Thureen P. Early feeding strategies in preterm and critically ill neonates. Neonatal Netw 2001;20:7-18

Morgan J, Young L & McGuire W. Slow advancement of enteral feed volumes to prevent necrotising enterocolitis in very low birth weight infants. The Cochrane Database of Systematic Reviews 2014. Art. No.: CD001241 http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD001241.pub5/full

Krishnamurthy S, Gupta P, Debnath S, et al. Slow versus rapid enteral feeding advancement in preterm newborn infants 1000-1499 g: a randomized controlled trial. Acta Paediatr 2010;99:42-6

Rayyis SF, Ambalavanan N, Wright L, et al. Randomized trial of “slow” versus “fast” feed advancements on the incidence of necrotizing enterocolitis in very low birth weight infants. J Pediatr 1999;134:293-7

Evidence Level: I

Does delaying the introduction of progressive enteral feeding help prevent necrotising enterocolitis (NEC) in VLBW infants?
An updated Cochrane Review of 9 RCTs in a total of 1106 infants (Morgan, 2014) concluded that: “delaying the introduction of progressive enteral feeds beyond four days after birth did not reduce the

risk of developing NEC in very preterm or VLBW infants, including growth-restricted infants. Delaying the introduction of progressive enteral feeds resulted in a few days' delay in establishing full enteral feeds but the clinical importance of this effect was unclear.

Morgan J, Young L, McGuire W. Delayed introduction of progressive enteral feeds to prevent necrotising enterocolitis in very low birth weight infants. Cochrane Database of Systematic Reviews 2014. Art. No.: CD001970.
http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD001970.pub5/full

Evidence Level: I

What probiotic products are available in the UK?

	Labinic	Proprems	Infloran
Preparation	Liquid	Powder sachets	Powder capsule
Dose	0.2 mL 24-hrly	0.5g 24-hrly (1 sachet)	250 mg 24-hrly (1 capsule)
Administration via N/OGT	5 drops	Mix with 1-3 mL MEBM	Dissolve in 1 mL MEBM
Active ingredient	*Lactobacillus acidophilus* *Bifidobacterium bifidum* *Bifidobacterium Infantis*	*Bifidobacterium infantis* *Bifidobacterium lactis* *Streptococcus thermophilus*	*Bifidobacterium bifidum* *Lactobacillus acidophilus*

WMNODN Nutrition Group & Clarke S. West Midlands Neonatal ODN Probiotic Guideline 2021. West Midlands Neonatal Operational Delivery Network

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