

Evaluation of Standardised Parenteral Nutrition for Neonates at Kwong Wah Hospital

Ms Katherine ST Cheung ⁽¹⁾

Dr YY Lam ⁽²⁾

Ms Catherine YS Chan ⁽¹⁾

Dr Daniel KK Ng ⁽²⁾

Mr Freddie MH Poon ⁽⁴⁾

Introduction

- Standardised parenteral nutrition (SPN) is an alternative approach to individualised PN (IPN) in neonates
 - Safe and effective
 - Huge cost-savings
 - Reduction in medication errors
- Not established in HK for neonates

Objectives

- Evaluate the safe and effectiveness in delivering SPN to neonates at KWH

Method – 6 SPN regimens for Dr to choose

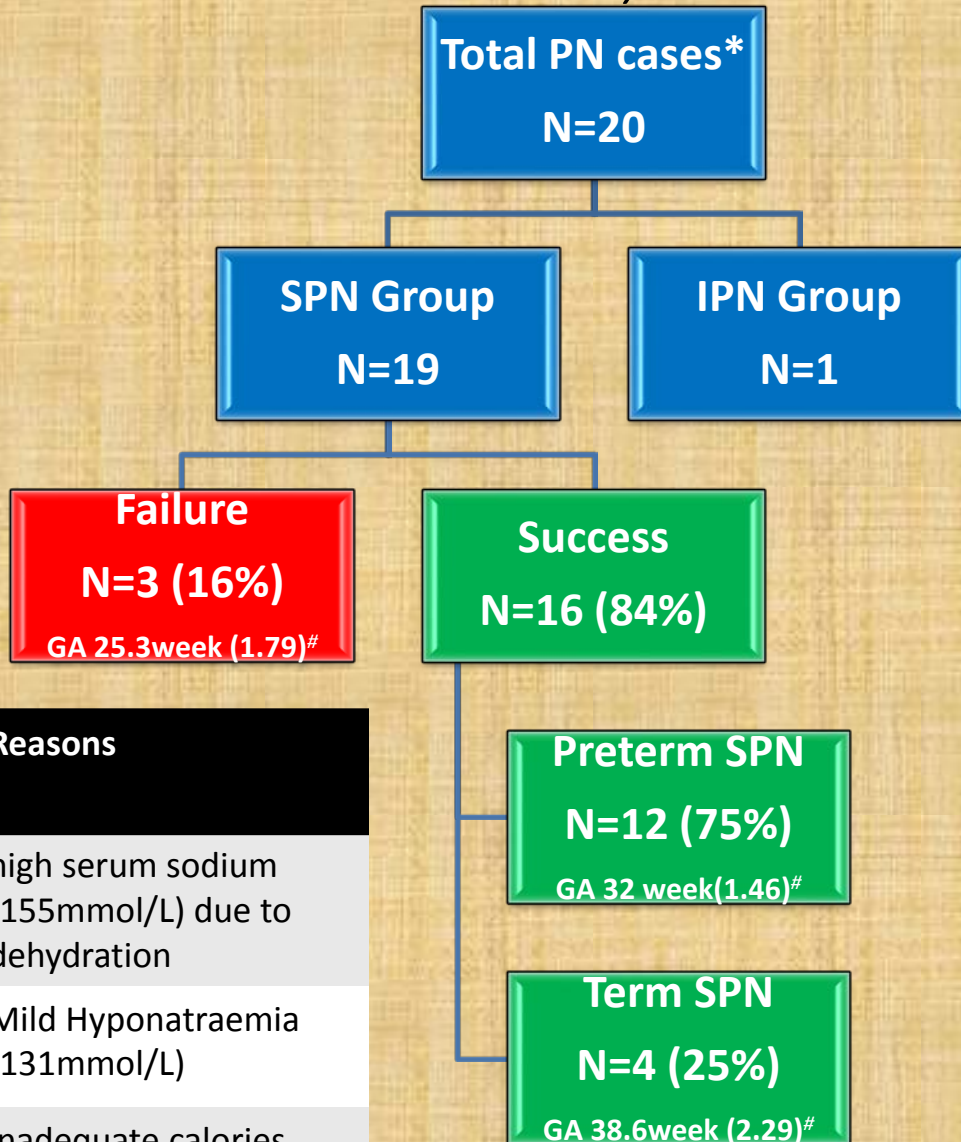
Amino acid/ Dextrose Solution		Fat Emulsion
SPN	Starter PN	Individualised
	Standardised Preterm PN	
	Restricted Fluid Preterm PN	
	Peripheral Preterm PN	
	7.5% Dextrose Preterm PN	
	Term PN	
IPN	Individualised	

Study Population

(Period:16 Nov 2016 to 16 Jan 2017)

**Success: Used
SPN for the
whole duration**

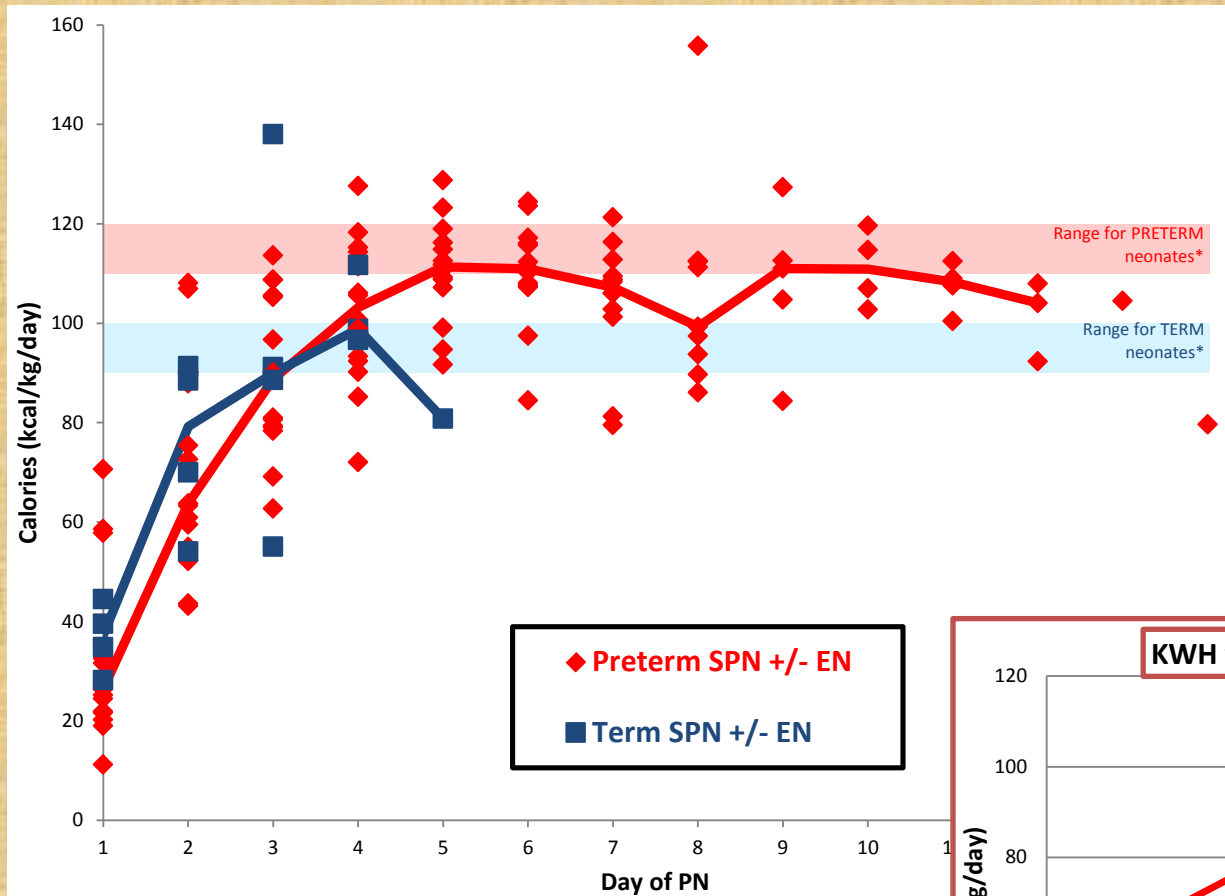
**Failure: Switched
from SPN to IPN**



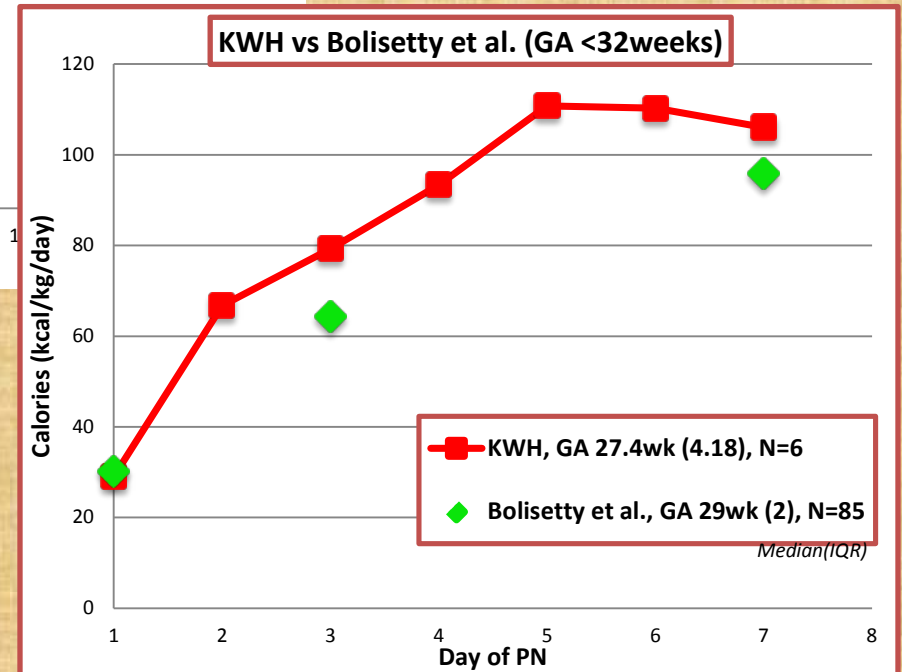
Failure Case	GA (weeks)	Birth Weight (kg)	Reasons
1. (switched on D4)	23.9	0.62	high serum sodium (155mmol/L) due to dehydration
2. (switched on D10)	27.4	1.12	Mild Hyponatraemia (131mmol/L)
3. (switched on D8)	25.3	0.61	inadequate calories

(*All PN refers to AA/DEX solution only, #values in median (IQR))

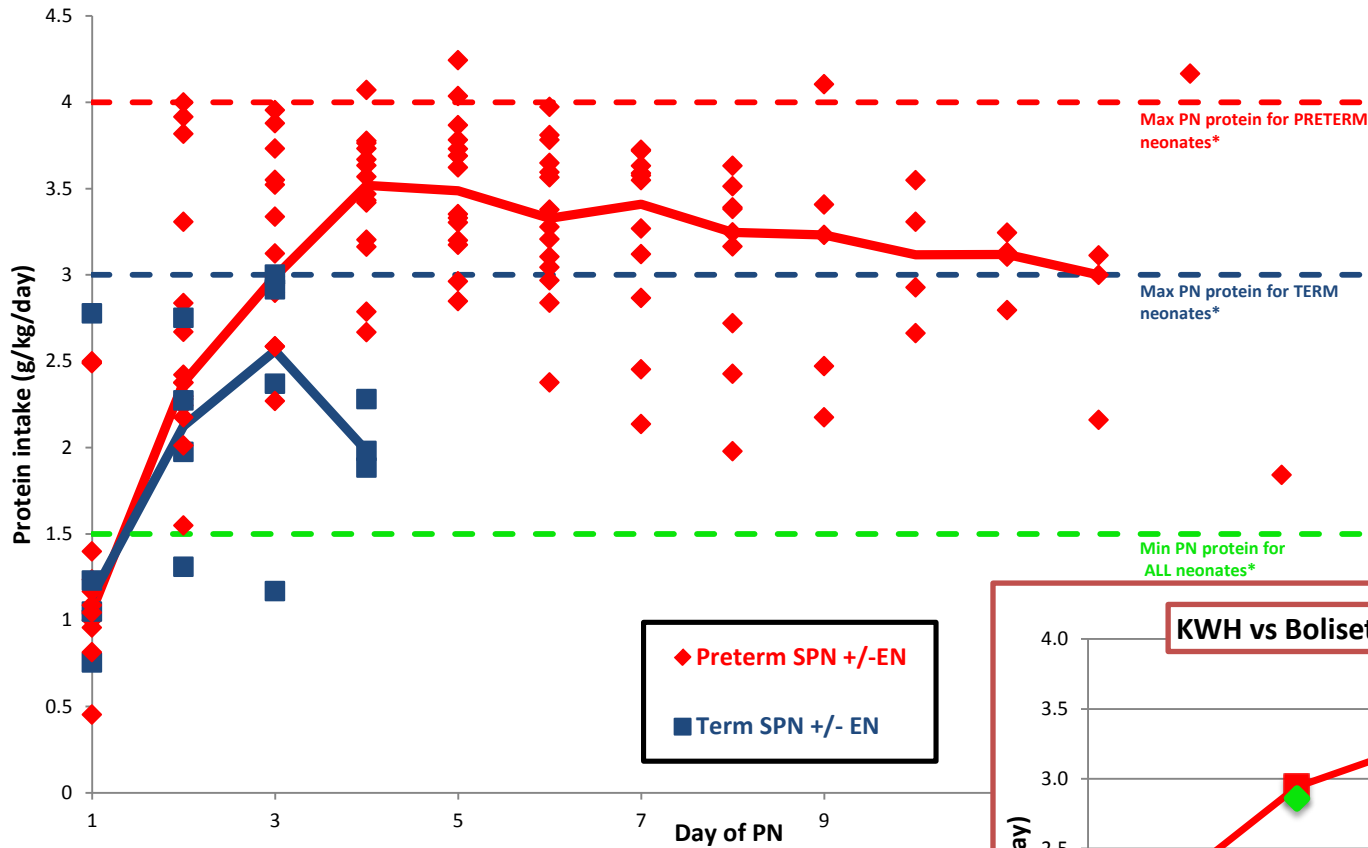
Median Daily Caloric Intake



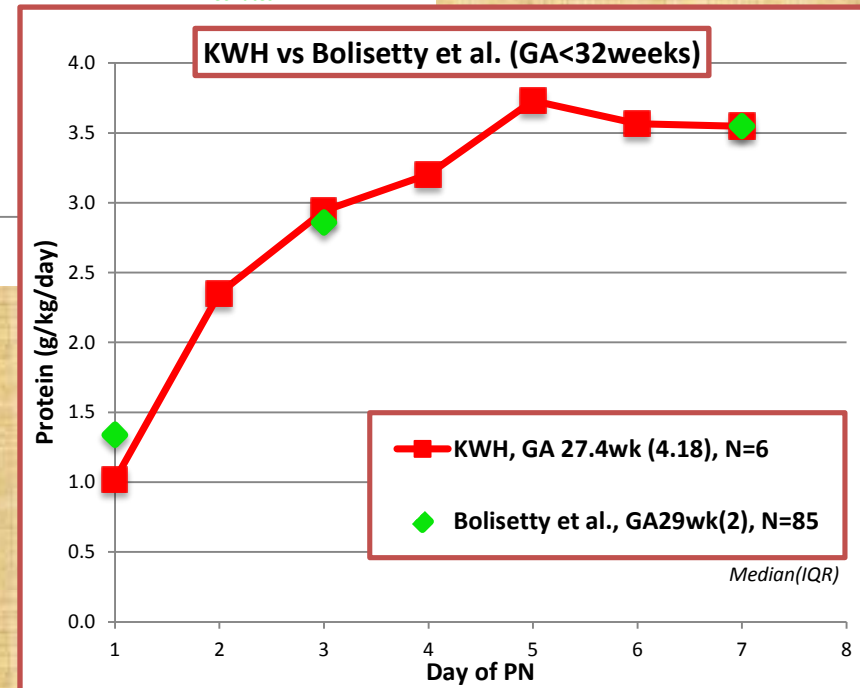
*ESPGHAN guidelines 2005



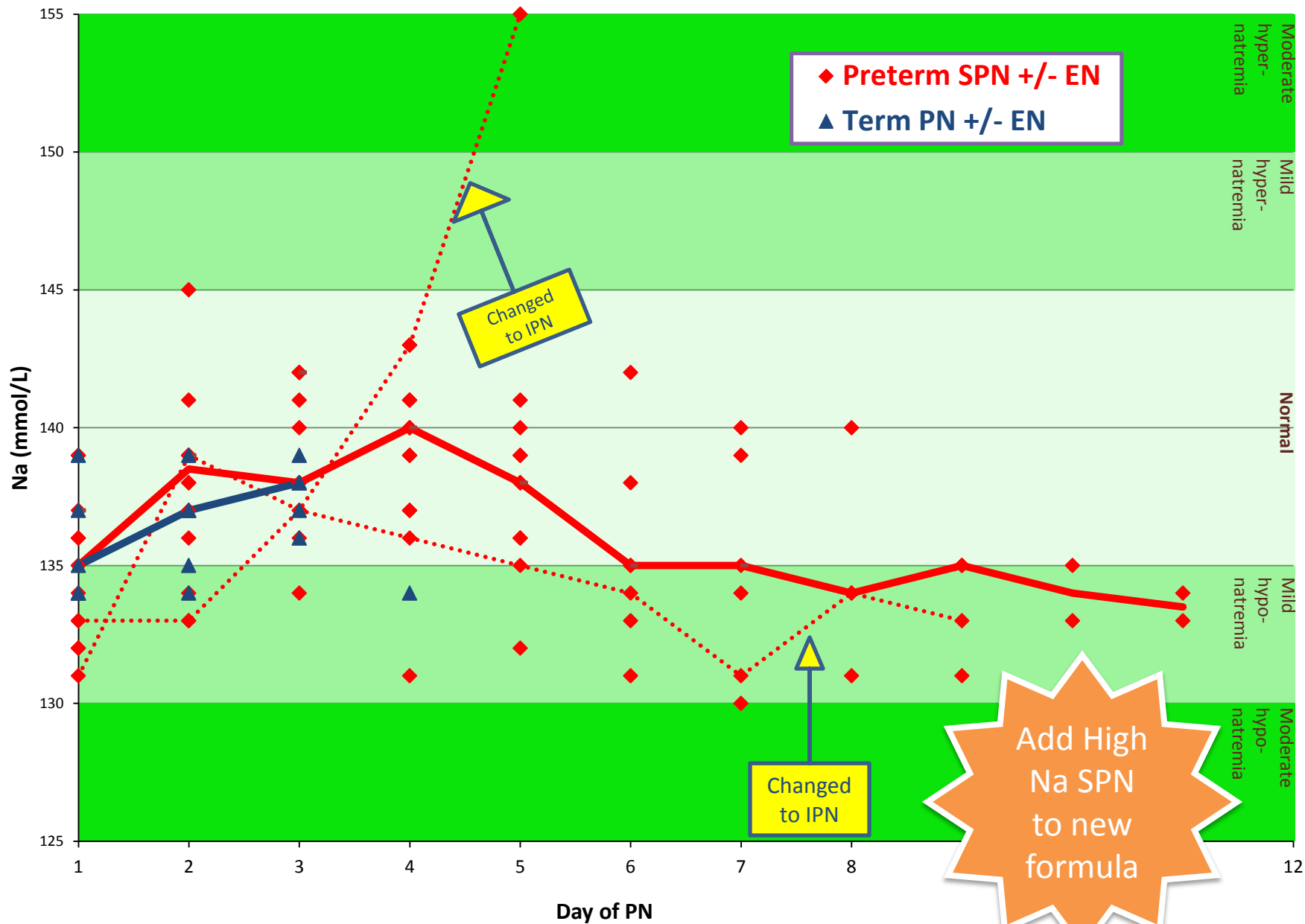
Median Daily Protein Intake



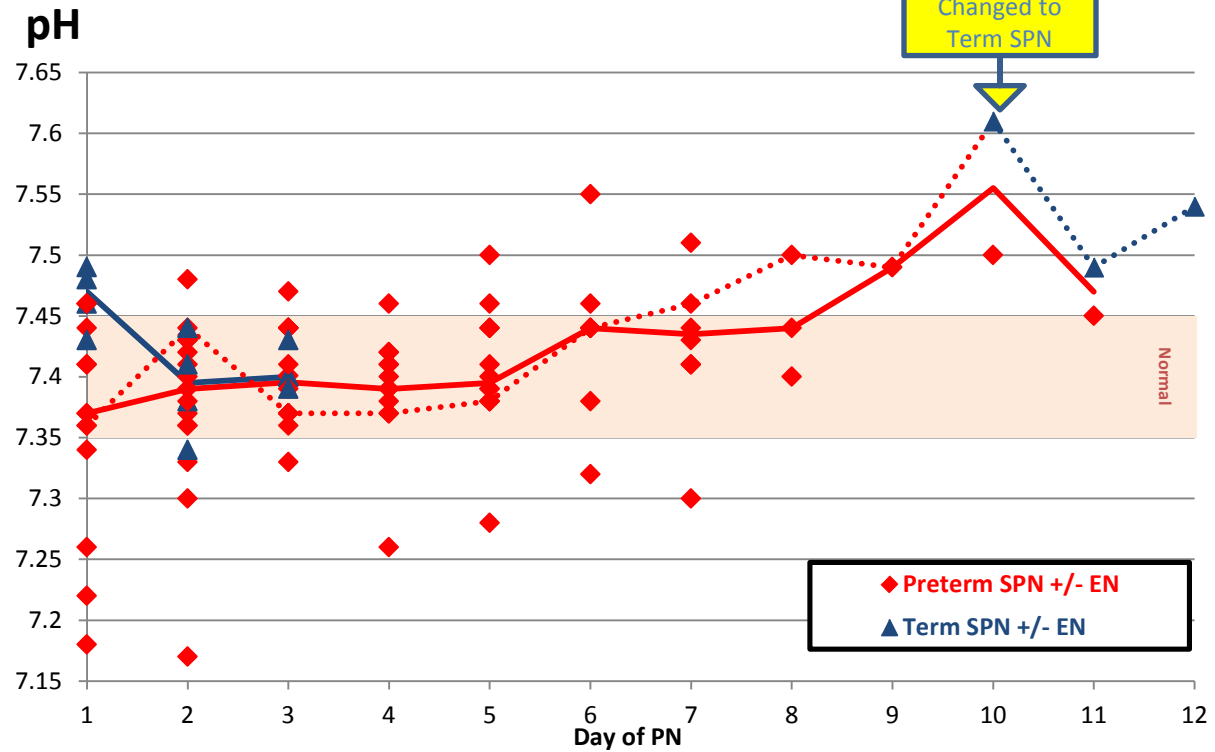
*ESPGHAN guidelines 2005



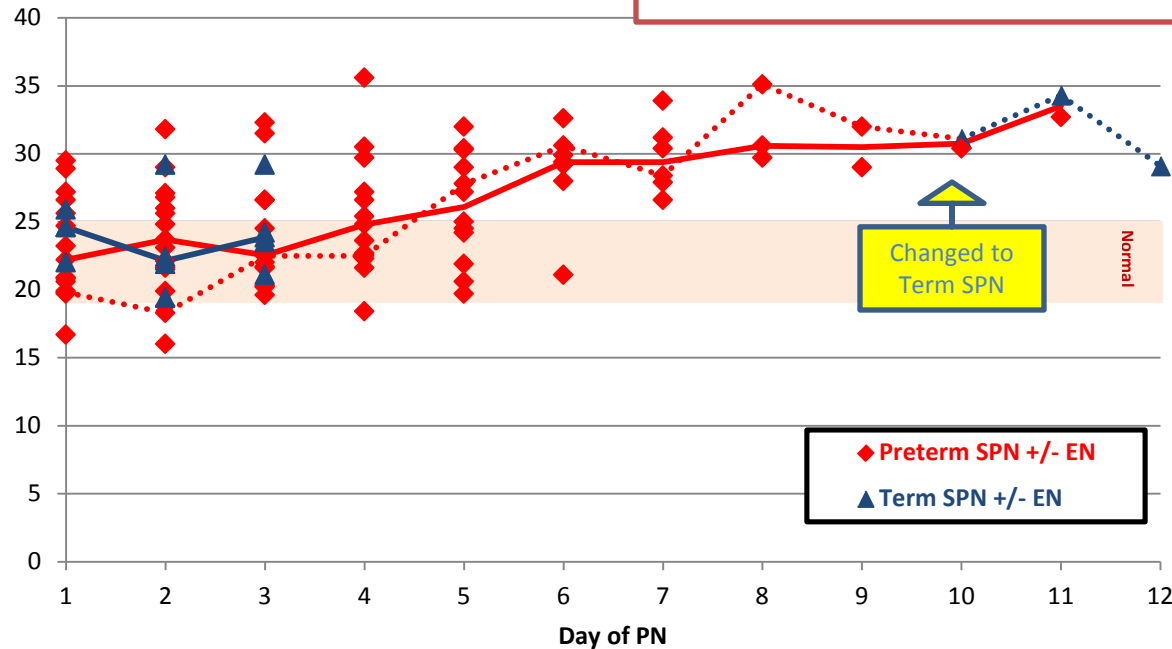
Median Daily Serum Na



Median Daily pH and HCO₃

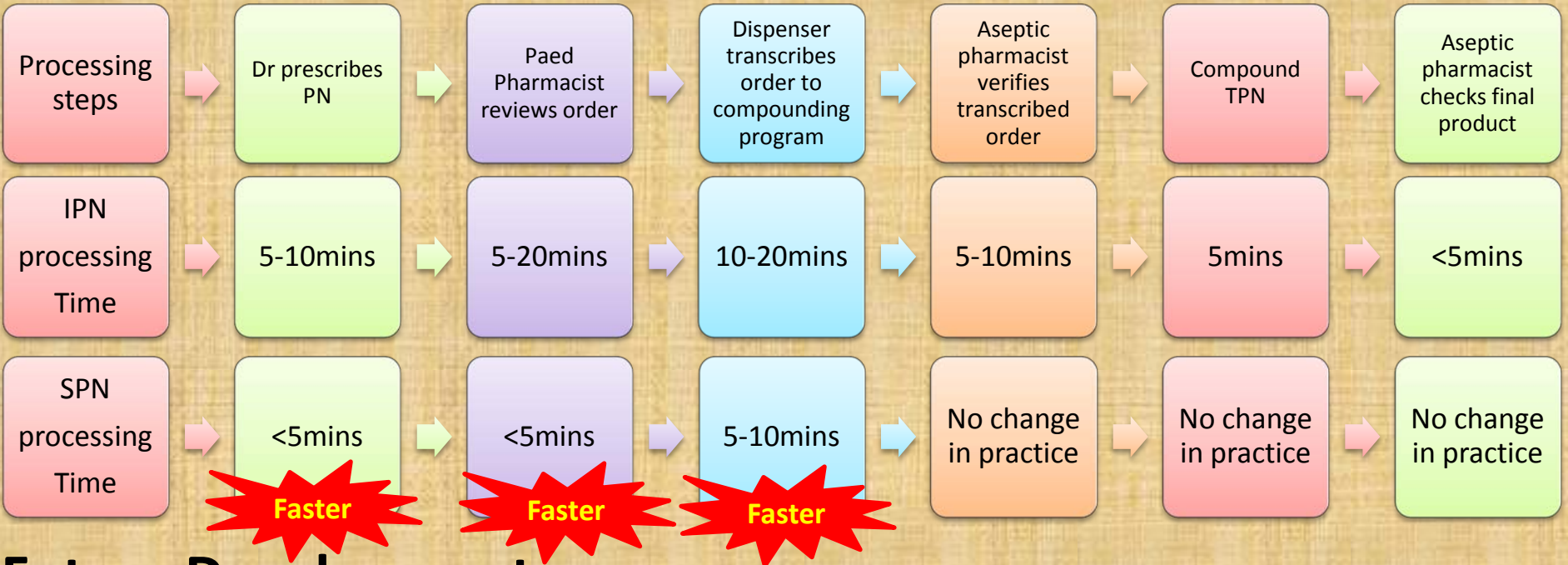


HCO₃ (mmol/L)



Reduce acetate in new formula

Improvement of processing time of IPN vs SPN



Future Development



Electronic order with built in nutrition monitoring and safety measures



One-Click order generation, reduce transcription and calculation error and time



Preset formulas in the form of barcodes for quick compounding and improves safety



Batch production, readily available, quality assurance, time and cost-saving

Summary

- SPN was successfully used in majority (84%) of neonates.
- SPN can be safely administered and delivered adequate nutrition to the majority.
- Enhancement programs are in progress at Kwong Wah Hospital to improve the formulations, monitoring nutritional parameters and logistics in ordering and preparation of SPN.
- We believe SPN is the future direction in PN for neonates.

