

S14 Table. Comparison of factors in NeoOBS Sepsis Severity score with existing scores and sepsis criteria.

Mortality prediction, sepsis criteria & sepsis severity scores in neonates										
		General mortality prediction scores			Existing Sepsis Criteria			Sepsis severity scoring		
		High income example	LMIC based						nSOFA sepsis severity score ^{1,2}	NeoSep Sepsis severity & recovery scores
		CRIB II mortality prediction score (& CRIB)	NMR 2000 ³	SAWS score ⁴	Modified sick neonate score ⁵	pSBI criteria ⁶ <i>(* = critical illness sign)</i>	EMA ⁷	NeoOBS inclusion criteria		
Purpose of score/criteria		Mortality prediction in LBW neonates	Mortality prediction in LBW neonates	Mortality prediction in LBW neonates	Mortality prediction in neonates	Clinical diagnosis of sepsis	Enrolment in clinical trials for sepsis	Enrolment in observational study of sepsis	Severity of organ failure and mortality prediction in sepsis	
Number of neonates from LMIC context included to generate score		-	550 <i>(110,176 from high income)</i>	428	585	-	-	-	None <i>(679 from high income)</i>	3204
Relevant age for use of score		<12 hrs	<24hrs	<72hrs	Majority <2 days	<60 days	<28 days	<60 days	4-120 days (95% <60d)	<60 days
Weight category of included babies		LBW	<2kg	<1.5kg	Majority <2kg	>1.5kg	Any	Any	Majority <1.5kg (88%)	Any
Specifically developed for sepsis?		No	No	No	No	Yes	Yes	Yes	Yes	Yes
Adapted to LMIC context		No	Yes	Yes	Yes	Yes	No	Yes	No	Yes
Predominantly community or hospital based		Hosp	Hosp	Hosp	Hosp	Comm	Hosp	Hosp	Hosp	Hosp
Factors in score / criteria	Baby characteristics	Birth weight, Sex, <i>Congenital malformation</i>	Gestation, Weight, Sex	Sex, Age, Weight, Gestation	Birth weight, Gestation	-	-	-	-	Birth weight, Time in Hospital, Gestational age, Congenital anomalies
	Vital signs	Temp	SpO2 at admission	-	HR, SpO2, Glucose, CRT,	Temp <35.5C ≥38C	Temp <35.5C ≥38C, Temp instability,	Temp <35.5C ≥38C,	-	Abnormal temp (<35.5, ≥38 – <39 °C, ≥39°C)

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				Temp,		HR<10 th centile HR >2SD above normal	Temp instability, HR >180 HR <100		
Respiratory signs	Min/Max FiO2 <12hrs	Max respiratory support	-	Increased respiratory effort	Fast breathing, Severe indrawing	Apnoea, Tachypnoea, Increased O2 requirement, Ventilatory support	Apnoea, Grunting, Cyanosis, Severe chest indrawing, Increased O2 requirement, Ventilatory support	SpO2/FiO2 ratio, Requirement for Invasive ventilation	O2 or ventilation support, Cyanosis (recovery score only)
Circulatory signs	-	-	-	-	-	Bradycardia, Tachycardia, Rhythm instability, Reduced urine output, Hypotension, Mottled skin, Impaired perfusion	CRT >3 or Mottled skin or Other evidence of shock	Requirement for inotropes, Requirement for steroids for hypotension	Evidence of shock (including any of: CRT >3secs, mottled skin, cold peripheries or 'other')
Gastrointestinal signs	-	-	-	-	Poor feeding <i>Not feeding at all*</i>	Feeding intolerance, Poor sucking, Abdominal distension	Difficulty feeding Or Feeding intolerance, Abdominal distension	-	Difficulty feeding/ feeding intolerance, Abdominal distension

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Neurological signs	-	-	-	-	Movement only when stimulated Or <i>no movement at all*, Convulsions*</i>	Irritability, Lethargy, Hypotonia	No movement or Movement only when stimulated, Bulging fontanelle, Lethargy or drowsiness, Hypotonia / floppiness, Abnormal posturing, Convulsions, Irritability		
Skin / umbilicus	-	-	-	-	-	Petechial rash, Sclerema	Petechial rash, Multiple or severe skin pustules, Pus from umbilical stump	-	
Laboratory signs	Max base deficit <12h	-	-	-	-	WBC <4 x10 ⁹ >20 x10 ⁹ cells/mL IT ratio >0.2 Platelets <100x10 ⁹ cells/mL	WBC <4 x10 ⁹ >20 x10 ⁹ cells/mL Neutrophils <1.5x10 ⁹ cells/mL IT ratio >0.2	Severity of thrombocytopaenia	-

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							CRP >15mg/L Procalcitonin ≥2 ng/ml Glucose intolerance Metabolic acidosis (BE <-10 mEq/L, Lactate >2mMol/L)	CRP >10mg/L Metabolic acidosis (BE <-10 mEq/L, Lactate >2mMol/L)	

References

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