

	1. ELIGIBILITY CHECKLIST				
	1.1. Inclusion Criteria				
		YES	NO		
2)	Age between 2 months and 59 months		(ineligible) □		
a)					
b)	Admitted to hospital with an acute non-traumatic illness (Within this time, children requiring CPR or unable to take orally (NPO) will be re-evaluated daily)				
c)	Admitted within 72 hours of admission				
d)	<ul> <li>Severe malnutrition (weight for height &lt; -3z scores of the median WHO growth standards and/or MUAC</li> <li>Age &gt; 6months &lt;115mm</li> <li>2- &lt;6 months &lt;110mm</li> <li>or symmetrical oedema of at least the feet related to malnutrition, i.e. not related to a primary cardiac or renal disorder</li> </ul>				
e)	Parent or guardian able and available to consent				
f)	Able to feed orally in usual state of health				
g)	Presence of two or more features of severity as specified in Table below**				
h)	Primary caregiver plans to stay in the study area during the duration of the study				
	1.2. Exclusion Criteria				
		YES (Ineligible)	NO		
a)	Known congenital syndrome				
b)	Cleft palate				
c)	Known congenital cardiac disease				
d)	Known terminal illness e.g. cancer				
e)	Admission for surgery, or likely to require surgery within 6m				
f)	Admission for trauma?				
g)	Sibling enrolled in study				
h)	Previously enrolled in this trial or currently enrolled in this trial				
i)	Known stomach or duodenal ulcer				
j)	Known liver disorder or exocrine pancreatic disorder – e.g. biliary atresia, history of gallstones, cystic fibrosis or clinical jaundice				
k)	Known intolerance or allergy to any study medication				



#### \*\*Severity characteristics, two or more are required for enrolment

a)	Respiratory distress	<ul> <li>subcostal indrawing or </li> <li>nasal flaring or </li> <li>head nodding</li> <li>grunting</li> </ul>
b)	□ Oxygenation	$\Box$ central cyanosis or $\Box$ SaO <sub>2</sub> <90% (adjusted for altitude)
c)	□ Circulation	□ Limb temperature gradient or □ cap refill >3 seconds
d)	□ AVPU	< "A"
e)	Pulse	> 180 per min [beats per minute]
f)	□ Hb	< 7g/dl [g/dl]
g)	□ WBC	< 4 or > 17.5 x 10 <sup>9</sup> /l [ 10 <sup>9</sup> /l]
h)	□ Blood glucose	< 3mmol/L [mmol/L]
i)	Documented temperature at admission or screening	□<36 or □>38.5°C
j)	□ Very low MUAC	MUAC <11cm

If eligible by 2 criteria, please continue to admission

	2. ADMISSION TO HO	DSPITAL AND TRIAL ENROLMENT
2.1.	DATE arrived at the hospital	/// D D / M M / Y Y Y Y
2.2.	TIME arrived at the hospital	:
2.3.	<b>DATE of enrolment</b> <i>i.e. date consented and seen by research team</i>	/// D D / M M / Y Y Y Y
2.4.	TIME of enrolment	: 24h Clock
2.5.	Sex	Male     Female
2.6.	DOB	$\frac{1}{D} \frac{1}{M} \frac{1}{M} \frac{1}{Y} \frac{1}$
2.7.	Is the DOB:	□ True □ Estimated*
2.8.	Date of consent	$\frac{1}{D} \frac{1}{M} \frac{1}{M} \frac{1}{Y} \frac{1}$
2.9.	Time of consent	: 24h Clock
2.10.	Consented by Initials	

\*if DOB is estimated, and the day is uncertain, write '15' for DD



complaints at admission? (Select all that apply)       Difficulty breathing       Diarrhoea <14 days       Convulsi         Diarrhoea >14 days       Cough<14 days       Cough>14days       Poor fee         Diarrhoea >14 days       Altered consciousness       Blood in stool       Poor fee         skin changes (fill in 3.2)       Body swelling (oedema)         Hair changes (fill in 3.3)       Other		3. PRESENTING AND CURRENT COMPLAINTS					
(Select all that apply)       □ Cough<14 days       □ Cough>14 days         □ Diarrhoea >14 days       □ Diarrhoea >14 days       □ Diarrhoea >14 days         □ Altered consciousness       □ Blood in stool       □ Poor fee         □ skin changes (fill in 3.2)       □ Body swelling (oedema)         □ Hair changes (fill in 3.3)       □ Other	3.1.	What were the presenting	□ Fever / Hotness of body	□ Vomiting	Lethargy		
<ul> <li>Diarrhoea &gt;14 days</li> <li>Diarrhoea &gt;14 days</li> <li>Altered consciousness Blood in stool Poor fee</li> <li>skin changes (<i>fill in 3.2</i>) Body swelling (oedema)</li> <li>Hair changes (<i>fill in 3.3</i>)</li> <li>Other</li> <li>3.2. Skin changes (<i>if checked at 3.1</i>)</li> </ul>		complaints at admission?	Difficulty breathing	🗆 Diarrhoea <14 days	Convulsions		
Altered consciousness       Blood in stool       Poor fee         skin changes ( <i>fill in 3.2</i> )       Body swelling (oedema)         Hair changes ( <i>fill in 3.3</i> )       Other	1	(Select all that apply)	Cough<14 days	Cough>14days			
Image: Skin changes (fill in 3.2)       Image: Body swelling (oedema)         Image: Image: Image: Skin changes (if checked at 3.1)       Image: Image: Skin changes (if checked at 3.1)         Image: Skin changes (if checked at 3.1)       Image: Rash Image: The provided at 1 and the provided at 3.1)			Diarrhoea >14 days				
Image: Steps of the state			Altered consciousness	Blood in stool	Poor feeding		
3.2.       Skin changes (if checked at 3.1)          □ Other         □ Rash □ Hyperpigmentation □ Hypopigmentation □ Peeling			□ skin changes ( <i>fill in 3.2</i> )	□ Body swelling (oedema)			
<b>3.2.</b> Skin changes ( <i>if checked at 3.1</i> )			□Hair changes ( <i>fill in 3.3</i> )				
			🗆 Other				
🗆 Blisters 🗆 Thickening of skin	3.2.	Skin changes (if checked at 3.1)	🗆 Rash 🗆 Hyperpigmentat	ion 🗆 Hypopigmentation 🗆	Peeling		
		-	Blisters Thickening of skin				
How long have skin changes been present Days/ Months			How long have skin changes been present Days/ Months				
<b>3.3.</b> Hair Changes ( <i>if checked at 3.1</i> )  Reddened colour  Light colour  Straighter than usual	3.3.	Hair Changes (if checked at 3.1)	□ Reddened colour □ Light colour □ Straighter than usual				
□ Thinner than usual		<b>-</b> ,	с с				

	4. TR			
4.1.	Have you visited a hospital for this	🗆 No	Outpatient	Inpatient (Overnight stay)
	illness? (Select any that apply)			

		5.	<b>BIRTH HISTORY</b>	
5.1.	Birth details	Premature	□ Born small <2.5kg	□Twin/multiple birth
	(Select any that apply)	🗆 Born at term	🗖 Unknown	

	6. ANTHROPOMETRY					
6.1.	Weight					
	(to be taken using SECA scales for CHAIN study)	<u></u> kg				
6.2.	Length/Height	□ Length □ Height				
	(to be taken using SECA 416 infantometer provided for study)	Measurer 1: cm Measurer 2: cm				
6.3.	MUAC					
	(To be taken using MUAC tape for CHAIN study)	Measurer 1: cm Measurer 2: cm				
6.4.	Head circumference					
	(To be taken using CHAIN measuring tape)	Measurer 1: Cm Measurer 2: Cm				
6.5.	Staff Initials					
		Measurer 1: Measurer 2:				

NB: If the child is unwell the Length and Head Circumference can be taken at a later time.

		7. PREVIOUS HEALTH
7.1.	<b>Previously admitted to hospital.</b> (Includes other hospitals / health centres. Select 1)	□ No □ < 1 week ago □ 1 week-1month ago □ >1month ago
7.2.	Any medication last 7 days before admission. (Select all that apply)	<ul> <li>□ No medication</li> <li>□ Antibiotic</li> <li>□ Antimalarial</li> <li>□ Traditional</li> <li>□ Deworming</li> <li>□ Vitamin</li> <li>□ Yes, but unknown</li> <li>□ Other (Specify)</li> </ul>
7.3.	Has the child previously had oedema (body swelling)?	
7.4.	Urine production in last 24hrs? (Select 1)	□ Normal or greater □ Less than normal □ Not passing urine
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	8. LONG TERM MEDICATION					
8.1 Was child on any long term medication before	ARV's					
hospitalization?						
(select any that apply)						
	Neuro					
	Phenobarbital Valproic acid Levetiracetam Lamotrigine Other					
	Sickle cell					
Hydroxyurea 🗌 Other						
	Anti-TBs					
	Isoniazid Rifampin Pyrazinamide (PZA) Ethambutol Other					

	9. TREATMENT GIVEN BEFORE ARRIVAL AT STUDY HOSPITAL					
9.1.	Intravenous Antibiotics Given? (select any that apply)	<ul> <li>Not given</li> <li>Benzylpenicillin</li> <li>Co-amoxiclav</li> </ul>	☐ Gentamicin ☐ Flu/Cloxacillin ☐ Amikacin		□ Ceftriaxone □ Chloramphenicol	
		Ampicillin			Meropenem	
		Levofloxacin     Other	U Vancomy	cin	Metronidazole	
9.2.	<b>Oral Antibiotics Given?</b> (select any that apply)	□ Not given         □ Amoxicillin       □ Erythromy         □ Co-trimoxazole       □ Metronida         □ Cefalexin / cefaclor       □ Co-amoxic         □ Penicillin       □ Flucloxaci		lazole iclav	<ul> <li>Azithromycin</li> <li>Ciprofloxacin</li> <li>Nalidixic acid</li> <li>Levofloxacin</li> <li>Other</li> </ul>	
9.3.	<b>Initial treatment <u>given</u></b> (Select any that apply. For IV fluid bolus, and IV fluids specify type and volume in ml, and duration)	<ul> <li>IV Fluid Bolus</li> <li>Oxygen</li> <li>IV Glucose</li> <li>Oral glucose</li> <li>Blood transfusion</li> <li>Phenobarbitone</li> <li>Diazepam</li> <li>Paracetamol</li> <li>Ibuprofen</li> <li>Antimalarial</li> <li>ReSoMal</li> <li>ORS</li> </ul>		<ul> <li>Warmth</li> <li>Comme</li> <li>Comme</li> <li>Locally</li> <li>Local pr</li> <li>Express</li> <li>Dilute F</li> </ul>	ercial F100 prepared F75/ milk suji repared F100 / milk suji 100 red breast milk	



	10. ENROLMENT VITAL SIGNS					
10.1.	Axillary temperature	°C				
10.2.	Respiratory rate					
	(Count for 1 minute)	/minute				
10.3.	Heart rate					
	(Count for 1 minute)	/minute				
10.4.	SaO2					
	(To be taken from finger or toe using pulse oximeter)	%				
		Leave blank if unrecordable				
10.5.	Where was SaO2 Measured?	Measured on Oxygen Measured in Room Air				
		Unrecordable				

	11. EXAMINATION				
	Examination should be performed by CHAIN study clinician trained in clinical examination of children, and able to formulate a				
	diagnosis based on clinical history and findings. Re				
11.1.	Airway	Clear	Needs active support		
	(select one)	Obstructed/Strid			
11.2.	Breathing	🗆 Normal – no con	□ Normal – no concerns, (move to circulation)		
	(select all that apply)	Central cyanosis	Nasal flaring	□ Reduced air-	
		entry		'	
		UWheeze Acidotic Gruntin		□ Grunting	
		Breathing			
		□ Lower chest wall indrawing	Crackles	percussion	
		Head nodding		percussion	
11.3.	Circulation:	-			
-	a) Cap Refill	□ < <b>2s</b> □ 2-3	3s □>3s		
	(select one)	U Warm peripherio	es 🛛 Cold peripheries		
	b) Peripheral temperature		—		
	(select one) c) Pulse Volume	□ Normal	□Weak		
	(select one):				
11.4.	Disability:				
	a) Conscious level (select one)	🗆 Alert	🗆 Voice 🛛 🗆 Pain		
				Unresponsive	
	b) Fontanelle (select one)	□ Normal	□ □ Sunken	🗆 Not	
			Bulging	present	
	c) Tone (select one)	Normal	□ Hypertonic	Hypotonic	
	d) Posture (select one)	Normal	□ Decorticate □Dece	rebrate	
	e) Activity (select one)	Normal	□ Irritable/Agitated □ Letha	argic	
11.5.	Dehydration: a) Sunken eyes? (Select one)	<b>Π</b> Υ <b>Π</b> Ν	<u>_</u>		
	b) Skin pinch (Select one)				
		Immediate	□ <2 seconds	□ >2 seconds	



11.6.	<b>Oedema</b> (select any that apply)	□ None □ both feet/ankles □ lower legs □ hands or lower arms □ face		□ lower legs
11.7.	Drinking/Breastfeeding (Select one)	□ Normal	D Poorly	□ Not □ Eager / drinking Thirsty
11.8.	Abdomen (select any that apply)	Normal – no concerns	□ Distension	□ Hepatomegaly
		□ Tenderness	□ Splenomegaly	□ Other abdominal mass
11.9.	Signs of Rickets (select any that apply)	□ None	□ Wrist widening	g 🛛 Rachitic rosary
		□ Swollen knees	□ Bow legs	□ Frontal bossing
11.10.	Jaundice (Select one)	<b>П</b> Ү <b>П</b> М		
11.11.	ENT/Oral/Eyes (select any that apply)	☐ Mouth Normal ☐ Stomatitis	□ Oral ulceration	🗆 Oral candidiasis
		<b>Ears Normal</b> ear (mastoiditis)	□ Pus from ear □ Lymphadenopa	□ Tender swelling behind athy
		<b>Eyes Normal</b> Visual impairmer	□ Conjunctivitis nt	□ Eye discharge
11.12.	Skin	Normal	□ Hyperpigmenta	ation Depigmentation
	a) Type of skin lesion (select any that apply)	<ul> <li>□ Broken skin</li> <li>□ Cellulitis</li> <li>□ Vesicles</li> </ul>	<ul> <li>Dermatitis</li> <li>Impetigo</li> <li>Desquamation</li> </ul>	• •
	<b>b)</b> Site of skin lesions. (select any that apply)	□ Not applicable (I □ Face / scalp □ Legs □ Bu	No rash) □ Palms / ttocks □ Arms	soles 🛛 Trunk

	12. SUSPECTED CHRONIC CONDITIONS				
Select co	onfirmed, suspected or none for all conditions:	Confirmed/Suspected (diagnosed previously/ recorded/ clinician's impression)	None		
12.1.	Cerebral palsy/neurological problem/epilepsy (Select one)				
12.2.	Sickle Cell disease (select one)				
12.3.	Thalassaemia (Select one)				
12.4.	Visual problem / Blindness (select one)				

#### **13. FEEDING PRIOR TO ADMISSION**



13.1.	Prior to this admission child actively attending	□ Suppleme	entary (corn soy blend, RUSF, khichuri, halwa)	
	outpatient nutrition program? (Select one)	□ Therapeut	tic (RUTF, Plumpy-nut)	
		□ None		
13.2.	Has the child eaten solid food in last 24 hrs (Select one)	□ Yes	□ No	
13.3.	Has child taken liquids or breastfed in last 24 hrs (Select one)	□ Yes	□ No	
13.4.	Is the child usually breastfeeding? (Select one)	□ Yes	□ No	
13.5.	<b>Does the child usually have other feeds other than</b> <b>breastmilk?</b> (Select one)	□ Yes	□ No	
13.6.	If NOT breastfeeding at all, age stopped in months?	□ N/A (still breastfeeding)		
	(select one)	□ 0-3m	□ 4-6m □ 7-12m □ >12m	
		🛛 Unknown		

	14. IMMEDIATE CLINICAL INVE	ESTIGATIONS AND HIV STATUS AT ENROLMENT
14.1.	Malaria RDT? (select one)	Positive Negative Not done
14.2.	HIV status known?	<ul> <li>No, child not previously tested, not known to be exposed</li> <li>Yes, known PCR positive</li> <li>Yes, antibody positive, unknown PCR status</li> <li>Yes, known exposed, known PCR negative</li> <li>(children under 18m with PCR result SEEN BY RESEARCH TEAM. If not seen select below and perform HIV RDT</li> <li>No, child untested, but known to be HIV exposed</li> </ul>
14.3.	a) If not known positive, HIV RDT results now? (select one)	Reactive / positive       Non-Reactive / Negative         Indeterminate       Declined testing         Testing not offered by study team (e.g. culturally not sensitive)
	b) If RDT results now is positive, was PCR sample sent? (select one)	☐ Yes ☐ No missed ☐ No referred
14.4.	Biological mother present at enrolment? (select one)	Yes No
14.5.	HIV test offered to caregiver? (Offer if only biological mother)	<ul> <li>Yes, Reactive</li> <li>Yes, Non-reactive</li> <li>Yes, but Declined</li> <li>No, mother is known positive</li> <li>Missed</li> <li>N/A child in care home</li> <li>Not offered by study team (e.g. culturally not sensitive)</li> <li>Not applicable (mother not available)</li> </ul>



	15. TREATMENT IN STUDY HOSPITAL BEFORE ENROLMENT				
15.1.	Admitted to: (select one)	□ Admission to ward	□ Admiss	ion to HDU	Admission to ICU
15.2.	Date and time First antibiotics given	///		::	── □Not given
15.3.	Intravenous Antibiotics	□ Not given			
	Given?	Benzylpenicillin	🗖 Gentamicin		Ceftriaxone
	(select any that apply)	🗖 Co-amoxiclav	□ Flu/Cloxacillir	ı	Chloramphenicol
		🗖 Ampicillin	🗖 Amikacin		□ Meropenem
		Levofloxacin	□ Vancomycin		□ Metronidazole
		D Other			
15.4.	Oral Antibiotics Given?	□ Not given			
	(select any that apply)	Amoxicillin	Erythromycin		Azithromycin
		🗖 Co-trimoxazole	🗖 Metronidazo	le	Ciprofloxacin
		Cefalexin / cefaclor	🗖 Co-amoxiclav	,	□ Nalidixic acid
		□Penicillin	□ Flucloxacillin		□ Levofloxacin
					🗖 Other
15.5.	Initial treatment given	□ IV Fluid Bolus			tenance Fluids
	(Select any that apply. For IV fluid bolus, and IV fluids	Oxygen		□ Warmth (heater, warmed fluids)	
	specify type and volume in ml,	□ IV Glucose □ Oral Glucose		Commercial F75	
	and duration)	Blood transfusion		Commercial F100	
		Phenobarbitone			prepared F75/ milk suji
		🗖 Diazepam		□ Local prepared F100 / milk suji 100	
		Paracetamol		Expressed breast milk	
		🗖 Ibuprofen		Dilute F100	
		🗖 Antimalarial		□ Other milk/ formula/ feed	
		□ ReSoMal		D Other	
		□ ORS			

#### 16. SUSPECTED INITIAL DIAGNOSES:

Clinical di	Clinical diagnosis should be based on examination and investigation findings. Tick the <u>three most likely</u> diagnoses.				
16.1.	General	🗆 Anaemia 🛛 🛛 S	ickle Cell Disease	🗖 Thalassaemia	
	(select any that apply)	🗆 Renal impairment 🗆 N	ephrotic syndrome	Nephritis	
		🗆 Ileus 🛛 🗆 L	iver dysfunction		
		Not applicable			
16.2.	Respiratory	🗆 LRTI/pneumonia 🗆 B	sronchiolitis 🛛 🗆	URTI 🛛 Pulmonary TB	
	(select any that apply)	🛛 Otitis media 🛛 🗛	lsthma 🗆 🛙	Not applicable	
16.3.	Infection	□ Gastroenteritis	Sepsis	🗆 Malaria 🛛 Extra pulmonary TB	
	(select any that apply)	Soft tissue infection		HIV related illness	
		Measles	Varicella	Osteomyelitis	
		Febrile illness unspeci	fied	🗆 Enteric fever	
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		Not applicable		
16.4.	CNS (select any that apply)	<ul> <li>Febrile convulsions</li> <li>Other encephalopathy</li> <li>Cerebral palsy</li> </ul>	<ul> <li>Epilepsy</li> <li>Hydrocephalus</li> <li>Not applicable</li> </ul>	<ul> <li>Probable meningitis</li> <li>Developmental delay</li> </ul>
16.5.	Other suspected diagnosis (select any that apply)	□ Other □ Unknown □ Failed appetite test only □ Suspected Toxicity □ Not applicable		

	17. ADMISSION INVESTIGATIONS AND SAMPLE COLLECTION				
17.1.	<b>CBC with differential taken?</b> (As part of routine clinical care; select one)	Yes No			
17.2.	Clinical chemistry taken (iSTAT) (Kilifi and Dhaka; select one)	Yes No			
17.3.	EDTA blood taken (Select one)	Yes No			
17.4.	Blood culture taken (if available at site as oart of routine care; select one))	□ Y BEFORE ABX □ Y AFTER ABX □ No			
17.5.	Unable to take all blood samples, why? (Select one)	<ul> <li>Not applicable (all bloods taken)</li> <li>Difficult venepuncture</li> <li>Child uncooperative</li> <li>Parent refused</li> <li>Other</li> </ul>			
17.6.	Rectal swab taken (Select one)	□ Y BEFORE ABX □ Y AFTER ABX □ No			
17.7.	Time Rectal swabs taken	: Hrs 24 h clock			
17.8.	<b>Stool sample taken?</b> (Must be Taken within first 48h of enrolment; select one))	Yes No			
17.9.	Date stool sample taken	$\frac{1}{D} \frac{1}{D} \frac{1}{M} \frac{1}{M} \frac{1}{Y} \frac{1}$			

	18. SAMPLES TAKEN BY			
18.1.	Blood Samples taken by (initials)			
18.2.	Rectal Swabs taken by (initials)			
18.3.	Stool taken by (initials)			

#### **19. CRF COMPLETION** a) CRF Completed by (Initials) – to be 19.1. signed when complete. Do not sign if any fields are empty b) Date \_\_\_/\_\_/\_\_\_/\_\_\_\_ \_\_\_/\_\_\_/\_\_\_/\_\_\_\_\_ c) Time 24 h clock