

Index

1. Contact phone numbers:	Page
a. Department of Paediatrics	3
b. Paediatric subspecialists	4
c. Useful phone numbers	5
d. Outside specialists	6
2. Paediatric clinic & outreach schedule	4
3. Normal Values for HR/BP/RR and common calculations	7
4. Calculating Drip Rates	8
5. Growth Charts	
a. Male 0-5 years:	
i. Weight for age & length for age	9
ii. Head circumference & weight for length	10
b. Female 0-5 years:	
i. Weight for age & length for age	11
ii. Head circumference & weight for length	12
c. Calculating weight for length charts	13-14
d. Male 5-10 years: weight & height for age	15
e. Female 5-10 years: weight & height for age	16
6. HIV:	
a. Testing:	
i. Rapid HIV testing algorithm	17
ii. KHB HIV rapid test procedure	18
iii. Uni-Gold HIV rapid test procedure	19
b. Staging:	
i. WHO clinical staging	20
ii. WHO Immunologic staging	21
c. Treatment:	
i. HAART eligibility	21
ii. Cotrim prophylaxis	21
iii. HAART regimens	21
iv. ARV Monitoring Guide	22
v. Paediatric antiretroviral dosing guide	23-24
d. PMTCT for Non-citizens	25
7. Tuberculosis Treatment:	
a. Regimens	26
b. Pyridoxine supplementation	26
c. BCG & IPT	26
d. Steroids in TB treatment	26
e. Fixed dose combinations	27
8. Seizure:	
a. Types	28
b. Treatment	29

9. High Yield Haematology-Oncology:	
a. Haematology	
i. Blood transfusions	30
ii. Transfusion reactions	30
iii. Epistaxis management	30
iv. Hemophilia	31
v. ITP	31
b. Oncology	
i. Body surface area calculation	31
ii. General	31
iii. Neutropenia & fever	32
iv. Tumor lysis syndrome	32
v. Emergent management of obstructive lesions	32
vi. Pain control	33
vii. Anti-emetics	33
viii. Constipation	33
10. Modified formulary	34-38
11. Calendar 2014 & 2015	39-40

PAEDIATRICS DEPARTMENT

Paediatricians:

	<u>Speed Dial</u>	<u>Office</u>	<u>Cell</u>	<u>Email</u>
Dr. Susan Alisanski			72259379	susan.alisanski@bcm.edu
Dr. Tonya Arscott-Mills	578	355-4857	75149720	tonyaarscottmills@yahoo.com
Dr. Francis Banda	540	-----	73572823	fmbanda@yahoo.co.uk
Dr. David Goldfarb	546	355-4606	75348990	dgoldfarb@cheo.on.ca
Dr. Dipesalema Joel	547	-----	72510370/ 72520147	apsalms@yahoo.com
Dr. Dumisani Kamwana		-----	71315526	drdumikamwana@gmail.com
Dr. Andrew Kiboneka	741	-----	75552413	akiboneka@yahoo.com
Dr. Brianna Kirk		-----	71218078	briannakirk@me.com
Dr. Shiang-Ju Kung	549	3907899	72127457	shiang-ju.kung@mopipi.ub.bw
Dr. Ishmael Makone	604	1799	76061713	makone7@hotmail.com
Dr. Loeto Mazhani	544	355-4467	71677145	lomazhani@yahoo.com
Dr. Sanida Mucevic-Kurtagic		-----	71381592	avicenna.bana@yahoo.com
Dr. Seeletso Nchingane	543	1467	74263647	son2018@yahoo.com
Dr. Jeremy Slone	548	319-0083	76926547	jsslone@txch.org
Dr. Andrew Steenhoff	550	317-0933	72126505	steenhoff@email.chop.edu
Dr. Wilfred Valliante	541	1758	71861551	valiantekatende@yahoo.fr
Dr. Kate Westmoreland	978	----	77418877	katewestmoreland@gmail.com
Dr. Qiongzhou Zhang	542	1758	75441696	zqz18400@yahoo.com.cn

Matrons/Nurse Managers:

PNO Il Ikha Mothuti (Head of Paeds Nurses)	1724	74221589	imothuti@yahoo.com.au
CRN Agnes Chitutu (NNU)	1724	71498698	achitutu@gmail.com
CRN Dolly Gagoop Tselaesele (PMW)	1466	71631892	gtselaesele@live.com

Residents:

1st years:

	<u>Speed Dial</u>	<u>Cell</u>	<u>Email</u>
Dr. Oteng Ketshotseng		71705281	ketshotsengo@yahoo.co.uk
Dr. Duduetsang Moilwa		73909620	dsmoilwa@yahoo.co.uk
Dr. Thabang Pitsonyane		76073645	ethabang@yahoo.com

2nd years:

Dr. Mothusi Gaikitse	551	76081460	gaikitse@yahoo.com
Dr. Bojosi Masheto	602	75151257	bmakwape@yahoo.com
Dr. Warona Sethomo	603	72589047	wpset@yahoo.co.uk
Dr. Balebanye Tlhaodi	830	72819543	tbalebanye@yahoo.com

4th years:

Dr. Tiny Mazhani		72973769	tinym106@yahoo.com
Dr. Mbaakanyi Masikara	828	72965803	kristos79@yahoo.com
Dr. Baphaleng Thupiso		72198696	bapsmonocks@yahoo.com

Chief Residents:

Dr. Thuso David	990	72202922	pascaldav@yahoo.co.uk
Dr. Ingrid Mabua	337	71696238	kellymabua@yahoo.com

Medical Officers:

	<u>Speed Dial</u>	<u>Cell</u>	<u>Email</u>
Dr. Thabo Dambe	773	73349549	thibos007@live.com
Dr. Oliver Molemi	798	76060974	ohlivaur@gmail.com
Dr. Kaseba Mwamba	743	76091577	joelkaseba@yahoo.fr
Dr. Lisani Ntoni	789	71242857	lisani.ntoni@gmail.com
Dr. Nightingale Sekgabo	890	77088680	surprisgesture@yahoo.com
Dr. Michael Setsomelo	906	72849877	mikekese@yahoo.com
Dr. Ngoy Wangoy	744	75598113	alphonsengoy@yahoo.fr

Research Coordinators:

Dr. Thato Moses Patlakwe (child mortality)	71224748	thato.patlakwe@mopipi.ub.bw
Mma Banno Moorad (GI study)	72106045	jbmoorad@yahoo.co.uk
Steve Kekwaletswe (TB contact tracing)	75435560	kekwa83@gmail.com
Charity Boiditswe (pneumonia study)	71869568	bcharitysefelani@yahoo.com
Lebo Ntshimane (gastric aspirates)	72614731	lebontshimane@gmail.com

PAEDIATRIC SUBSPECIALISTS

SPECIALITY	NAME	SPEED DIAL	CELL	EMAIL
Allergy/Asthma	Dr. Shiang-Ju Kung	549	72127457	shiang-ju.kung@mopipi.ub.bw
Cardiology (ECHO)	Dr. Loeto Mazhani	544	71677145	lomazhani@yahoo.com
Endocrinology	Dr. Dipesalema Joel	547	72510370 / 72520147	apsalms@yahoo.com
	Dr. Seeletso Nchingane	543	74263647	son2018@yahoo.com
Haematology/ Oncology	Dr. Jeremy Slone Dr. Susan Alisanski	548	76926547 72259379	jsslone@txch.org susan.alisanski@bcm.edu
HIV/AIDS	Dr. Mogomotsi Matshaba		77136472 / 71814939	matshaba@bcm.edu
	Dr. Dipesalema Joel	547	72510370	apsalms@yahoo.com
Infectious Diseases/ TB	Dr. David Goldfarb	546	75348990	dgoldfarb@cheo.on.ca
	Dr. Andrew Steenhoff	550	72126505	steenhoff@email.chop.edu
Microbiology	Dr. David Goldfarb	546	75348990	dgoldfarb@cheo.on.ca
Palliative Care	Dr. Susan Alisanski		72259379	susan.alisanski@bcm.edu

CLINIC SCHEDULE:

	Monday	Tuesday	Wednesday	Thursday	Friday
Morning: Room1	1 st - Rheum (Dr Kiboneka)	Team B (Dr Banda)	Cardiology Clinic (Dr Mazhani)	Endocrine (Dr Joel/ Nchingane)	NNU (Dr Makone)
Morning: Room 2	General Paediatrics (OPD doctor)	Allergy/Immunology (Dr Kung)	NNU (NNU team)	Endocrine (Dr Joel/ Nchingane)	NNU (Dr Zhang)
Morning: ECHO room					ECHO (Dr Mazhani)
Afternoon: Room 1	Resident Clinic (Dr Pitsonyane)	Resident Clinic (Dr Ketshoteng)		Team C (Dr Valiente)	
Afternoon: Room 2	Resident Clinic (Dr Moilwa)		Allergy/Immunology (Dr Kung)		

OUTREACH SCHEDULE

	Tuesday	Wednesday	Thursday	Friday
1 st week	Tsabong*	Mochudi (Banda)	Thamaga (Tonya)	
2 nd week	Hukuntsi*			Kanye (Kiboneka)
3 rd week	Ghanzi*			
4 th week	Goodhope*			Lobatse (Valliante)

*Refer to monthly schedule for covering doctor

USEFUL PHONE NUMBERS

PMH Operator	362 1400/ 362 1401/ 9	Laboratory: *Haematology *Blood bank *Chemistry *Microbiology	1552 1555 1554 1585 1785	Dietary Dietician [Tsepo] Maemo	1735, 1479, 7267783 72265181
Paediatric Medical Ward	1414, 1475	Harvard lab	3902671 Spd dial 213	Home-based care RN [Mma Mmualefe]	P6033
ECHO room (MCH)	1574	-Viral loads [Bedi] -PCR [Kagiso] -Resistance [Toy]	7210 4373 X2114 X2219		
NNU	1763/1724	National Lab	397 4482 or 131	IT helpdesk	911/949/616/ 620/656
A+E	1742/1565	TB lab [Shengai, Tuelo]	390 2368 (139) 390 2713 (fax)	Nutrition Rehab [Boi]	1728/1465/ 1627
ICU	1678	Diagnofirm	395 0007 Sp dial 595	Occupational therapy	P7037
TB nurse, PMH	7217 8881 sp dial 640	Pharmacy: *Farooq *Vitus	1795 1531 71409521	Physiotherapy [Leslie]	1682
TB clinic	396-0239				
MIMS (Matibi)	72584515	GYN nurse [Metlha Nchunga]	7170 3271	Respiratory [Remy Johnson]	7244 3318
ID badges (Peolona)	71472635	Radiology[David]	1551, 1550, 1545	Social Work	1754
Baylor (SI)Ms Kgathi	138 3190083	CT [Keene, Pako]	1700	Speech therapy Audiogram	1598 3190047/8/9
Transport: A+E	1701/2	Paeds OPD	1569/70		
Main Office	1644				

REFERRING HOSPITALS (COMMONEST)

Athlone Hospital	106	Gantsi Primary Hospital	113
Bamalete Lutheran	109	Jwaneng Mine Hospital	126
Bokomoso Private Hospital	3694000 sp 593	Kanye SDA	107
Deborah Retief Memorial	104	Nyangabgwe	100
Gaborone Private Hospital	128 (368-5765) sp 594	Scottish Livingstone Hospital	105

OTHER IMPORTANT NUMBERS

Department	Name of Consultant	Speed dial	Cell number (office)
CT surgery	Dr. Kuskov	559	71849425
Dermatologist	Rotating from USA		72731961
Dental surgery	Dr. Phuthego	610	72497895
ENT	Dr. Cheng Gan Dr. Difela Dr. Mavil	563 979	71386730 74760973 71495580
Haematopathologist	Dr. Datta	517	1798 (o), 7253058
Neurology	Dr. Kolapo		73375157
Neurosurgery	Dr. N. Liu Dr. Marianera	561 630	
Ophthalmology	Dr. Nkomazana Dr. Jemal Shifa Dr. Oduor (Serowe)	568	71346665 74583423 71485916
Orthopaedic Surgery	Dr. Gureja Dr. Thomas Dr. Mmonatau Dr. Singh (peds)	572 606 576 779	72407463 72825848 76958871
Paediatric surgery	Dr. Goutam Dr. George Aziz (visits)	565	75596547 71918439
Pathologist	Dr. Kayembe Dr. Chowdury	631	131, 71849217 75960459
Radiology	Dr. Sesay Dr. Akena, Dr Wu Dr. Krassie Missankova		74206887 1593 (o) 74516554
Vascular surgery	Dr. Michael Walsh	531	75980985
Superintendent	Dr. Molelekwa		3956730 (o), 72931234 (c)
Urology	Dr. E. Liu	567	

OUTSIDE Resources

Camphill		5337224
CRC (educational testing)		3928548/9
EEG (GPH)	Dr Danev	3685796
Endoscopy (GPH)	Churchill Onen	318 8637 (w) 7175 4772 (cell)
Mochudi Resource Center for Blind		5777478
MRI (Village Imaging)	Dr. Silava-Canuta	3912842 (w) 71134240 (cell)
Neonatology (Jhb)	Prof. Vic Davies Prof. Peter Cooper	0027 11 4815196 (w) 0027 11 4849642 (w)
Radiology (GPH)	Dr Ndozi	368-5764
Radiation Oncology (GPH)	Dr. Kasese	3685746 josephkasese@hotmail.co.uk
Paediatrics (Bokamoso)	Dr. Dumisani Kamwana	75199345; 71315526; 3694853
Paediatric Cardiology (Jhb)	Dr. Jeffrey Harrisberg Dr. Greenwood Sinyangwe Dr. Janine Meares	0027 11 234 3140 (w) 0027 11 234 3148 (f) pedcard@mweb.co.za 0027 11 257 2117 (w) 0027 828568632 (cell) greenwood.sinyangwe @drpractice.co.za 0027 11 257 2118 (w) 0027 828534202 (cell) drjaninemeares@gmail.com
Paediatric Endocrinology(Jhb)	Dr. David Segal	0027 11 712 602 (w) 0027 72 488 1318 (cell)
Paediatric Gastroenterology (Jhb)	Dr. Sanjay Lala	0027 11 9338488 (w) 0027 738710002 (cell) sanjay.Lala@wits.ac.za
Paediatric Nephrology (Jhb)	Dr. Peter Thomson Dr. Errol Gottlich (Morningside) Dr. Cecil Levy (Jhb General)	0027 11 8832244 (w) 0027 721503095 (cell) 0027 11 8832244 (w) 0027 836253822 (cell) errolg@discovery.co.za 0027 11 4883296 (w) 0027 827712905 (cell) clevy@netactive.co.za
Paediatric Neurology (Jhb)	Dr. Tiziana Aduc Dr. John Rodda	0027 11 257 2097 (w) 0027 257 2098 (f) 0027 11 9338000+page (w) 0027 824451946 (cell) john.rodde@wits.ac.za
Paediatric Neurology (CHOP)	Dr Dave Bearden	bearden@email.chop.edu
Paediatric Oncology	Donald Gordon Center Dr. Goodwin Dr. Rose Schwyzer	0027 11356116 0027 731730250 0027 824521290
Paediatric Pulmonology (Jhb)	Dr. Debbie White (Jhb Gen) Dr. Steven Ponde (Sunninghill) Dr. Sue Klugman	002711 4883288 (w) Debbie.white@wits.ac.za 0027 11 2572096 (w) 0027 11 7869851 (w)
Paediatric Rheumatologist (Jhb)	Dr. Gail Faller	0027 11 3566000 (w) 0027 826590257 (cell) gail.faller@iburst.co.za
SOS		3953220
Mpilo Bulawayo Pediatric Hospital (Zimbabwe)	Mary Nyathi	263-91222-57160

Transfer/referral to South Africa

- Complete the Request for Referral (Healthshare Solutions specialist services referral/admissions) in triplicate
- Turn in forms to social work (admin bldg, floor 3) to collect necessary signatures
- Make sure patient/parent have PASSPORTS
 - If not, write a letter for an URGENT/EXPEDITED passport to be taken to immigration
- Hospital Superintendent/Ministry of Health needs to give final approval
- Follow the same procedure even if it is for a follow-up visit with the same sub-specialist

Normal Values for HR, Respiratory Rate, BP and Basic Calculations for Paediatrics

*Normal Rates

Age	Respiratory	Heart
2-12 months	<50/min	<160/min
1-2 years	<40/min	<120/min
2-5 years	<40/min	<110/min
6-8 years	<30/min	<110/min

Normal Blood Pressures in Children*

Age	Systolic pressure (mm Hg)	Diastolic pressure (mm Hg)
Birth (12 hr, <1000 g)	39-59	16-36
Birth (12 hours, 3 kg weight)	50-70	25-45
Neonate (96 hr)	60-90	20-60
Infant (6 mo)	87-105	53-66
Toddler (2 yr)	95-105	53-66
School age (7 yr)	97-112	57-71
Adolescent (15 yr)	112-128	66-80

*Blood pressure ranges taken from the following sources:
Neonate: Versmold H and others: Aortic blood pressure during the first 12 hours of life in infants with birth weight 610-4220 gms, Pediatrics 67:107, 1981. 10th-90th percentile ranges used. *Others:* Horan MJ, chairman: Task Force on Blood Pressure Control in Children, report of the Second Task Force on Blood Pressure in Children, Pediatrics 79:1, 1987. 50th-90th percentile ranges indicated.

Calculation of Caloric Requirements in Children*

Age	Daily requirements
High-risk neonate	120-150 Calories/kg
Normal neonate	100-120 Calories/kg
1-2 yr	90-100 Calories/kg
2-6 yr	80-90 Calories/kg
7-9 yr	70-80 Calories/kg
10-12 yr	50-60 Calories/kg

*Ill children (with disease, surgery, fever, or pain) may require additional calories above the maintenance value, and comatose children may require fewer calories (because of lack of movement).

Maintenance Fluid Requirements in Children

Weight	Formula
--------	---------

Body weight daily maintenance formula

Neonate (<72 hr)	60-100 ml/kg
0-10 kg	100 ml/kg
11-20 kg	1000 ml for first 10 kg + 50 ml/kg for kg 11-20
21-30 kg	1500 ml for first 20 kg + 25 ml/kg for kg 21-30

Body weight hourly maintenance formula

0-10 kg	4 ml/kg/hr
11-20 kg	40 ml/hr for first 10 kg + 2 ml/kg/hr for kg 11-20
21-30 kg	60 ml/hr for first 20 kg + 1 ml/kg/hr for kg 21-30

Body surface area formula

1500 ml/m² body surface area/day

Insensible water losses

300 ml/m² body surface area

Calculation of Circulating Blood Volume in Children

Age of the child	Blood volume (ml/kg)
Neonates	85-90
Infants	75-80
Children	70-75
Adults	65-70

HOW TO CALCULATE DRIP RATES

$$\text{DROPS/MIN} = \text{RATE (ML/HR)} \times \text{DROP FACTOR} \div 60$$

- The drop factor is how many drops per mL the giving set is designed for.
- The giving sets and buretrols are labeled with the drop factor.
- “Micro drop” sets are 60 drops/mL and have a metal pin in the drip chamber which makes the drops small.
- Micro drop sets are best for maintenance drips and allow for easy calculations.
- In a micro drop set, the rate in mL/hr is the same as the number of drops/min. So if you wanted to run ½ DD at 30 mL/hr then you would want 30 drops/min or one drop every other second.
- “Macro drop” sets are usually 20 drops/mL and don’t have a pin in the drip chamber. They are ideal for rapid boluses, but are less precise if you are giving a small infusion rate to a child.
- **Do not trust the rate on the dial-a-flow.** Small cannulas in tiny veins make the device inaccurate. **ALWAYS COUNT THE DROPS!**

DRIP RATE TABLE

Rate (ml/hr)	Drops/min (micro)	Seconds between drops (micro)	Drops/min (macro)	Seconds between drops (macro)
10	10	6	3.3	18
15	15	4	5	12
20	20	3	6.6	9
30	30	2	10	6
45	45	1.3	15	4
60	60	1	20	3
75	75	0.8	25	2.4
100	100	0.6	33	1.8
120	120	0.5	40	1.5

- Drops/min = rate (mL/hr) x drop factor ÷ 60
- Seconds between drops = 60 ÷ drops per minute

GROWTH CHARTS: MALE 0 – 5 years (Weight & Length)

Weight-for-age BOYS

Birth to 5 years (z-scores)

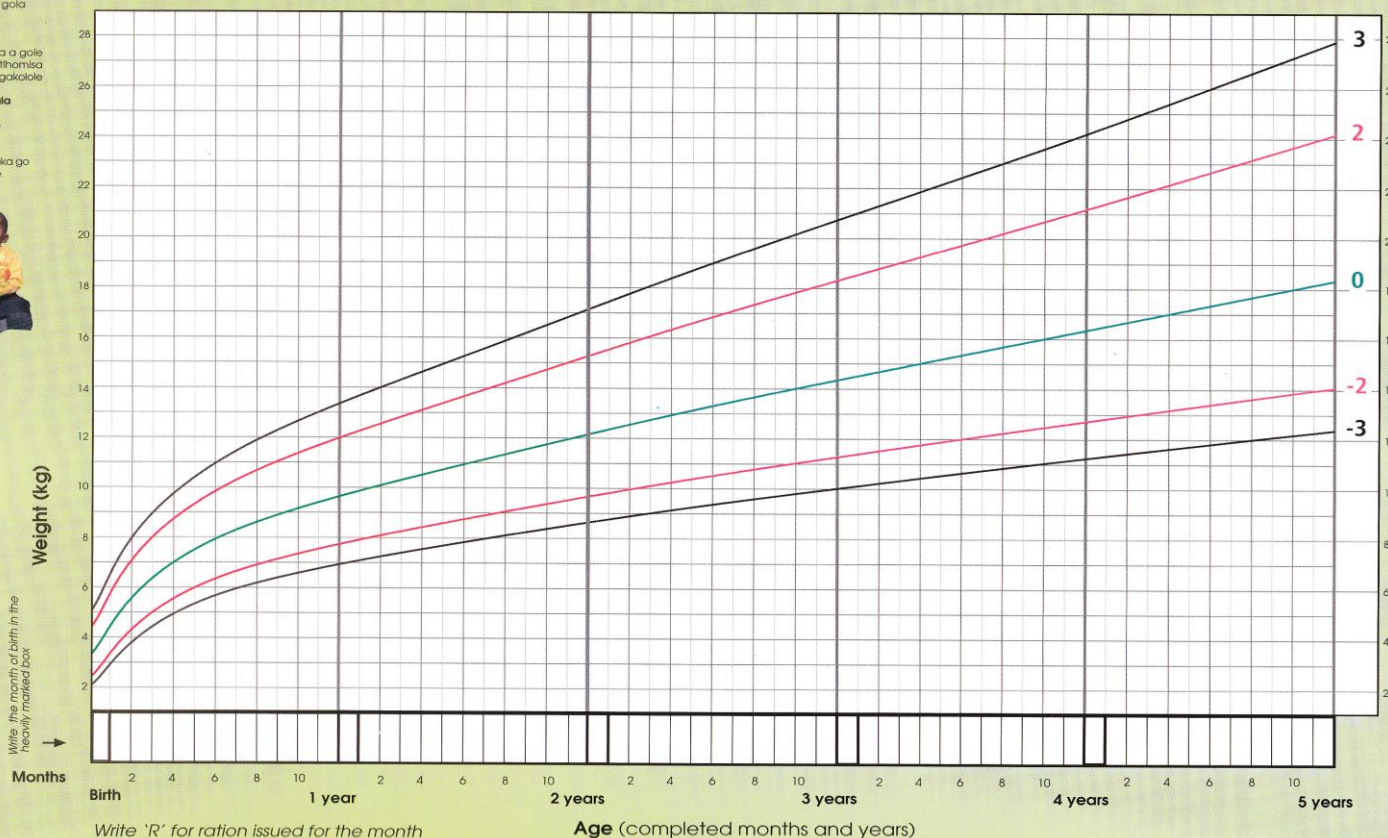
Adapted from WHO Child Growth Standards 2006

la tihoko tselana ya
golo ya ngwana

Ngwana o gola
sentle

Ngwana ga a gale
sentle. Tlhotlhomisa
mathata o gakolole

Oa tihofafala
O tihoka
tlhokomela
a kgolo.
Gakolala
motsadi jaaka go
tshwanetse



Length/height-for-age BOYS

Birth to 5 years (z-scores)

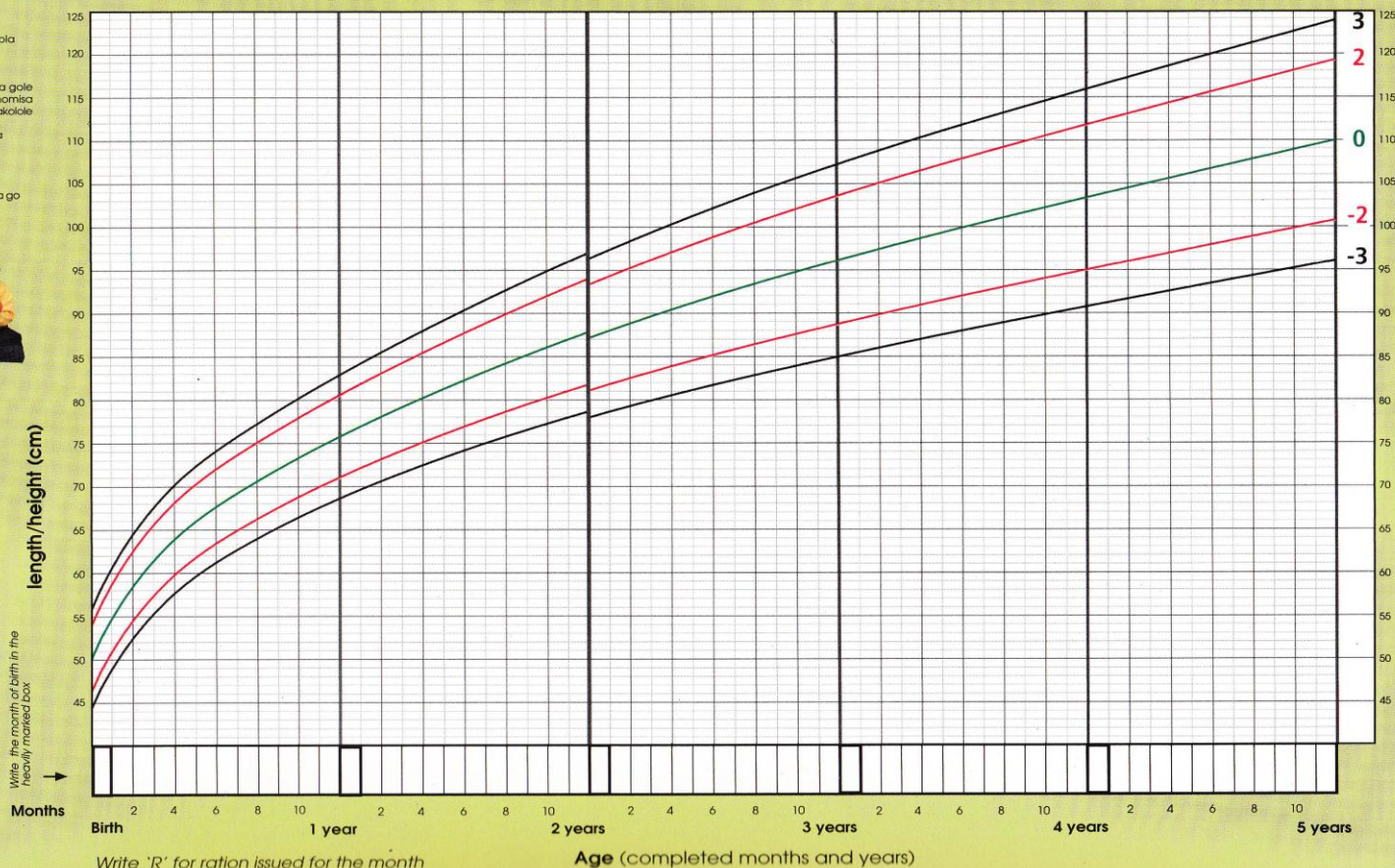
Adapted from WHO Child Growth Standards 2006

la tihoko tselana ya
golo ya ngwana

Ngwana o gola
sentle

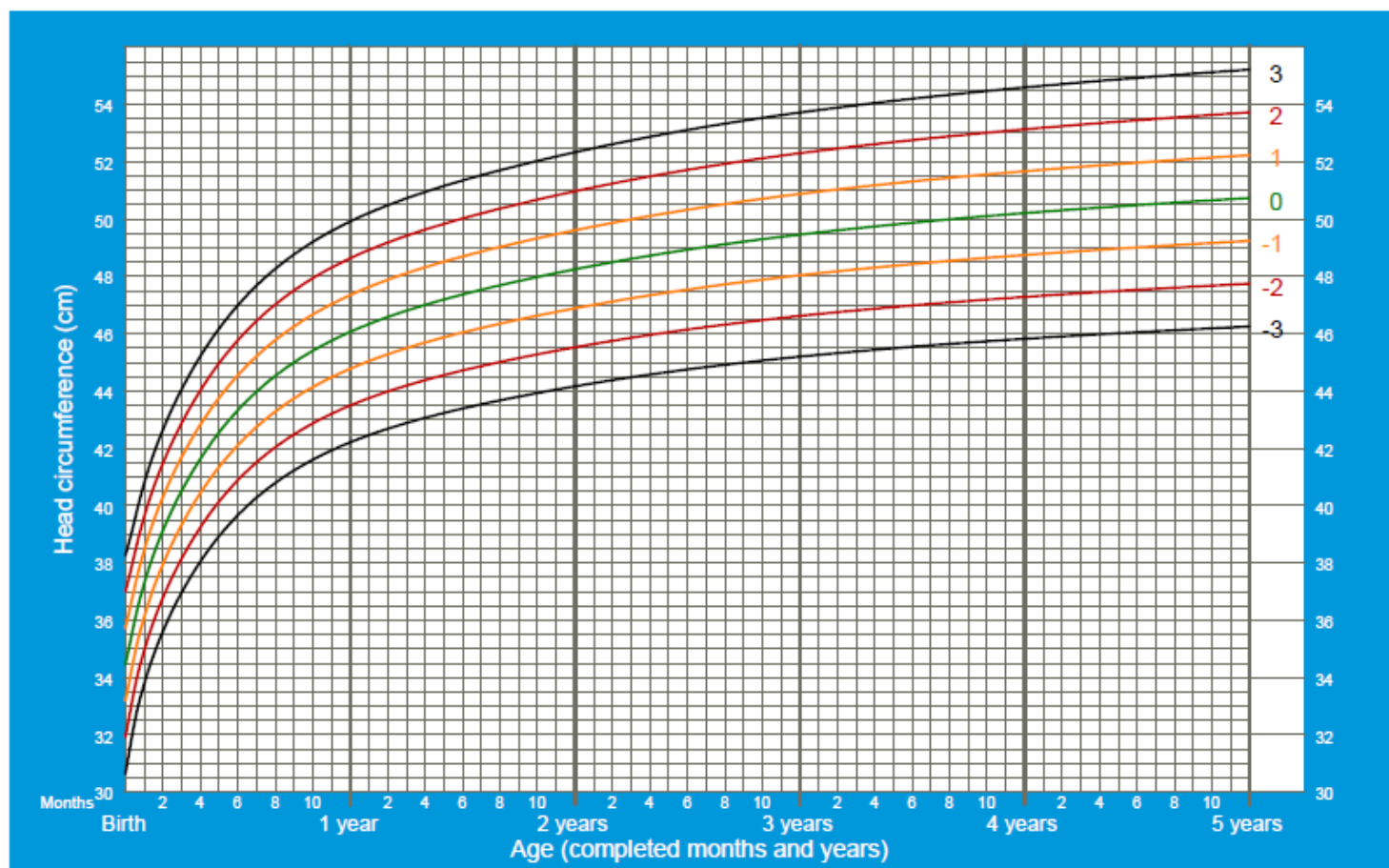
Ngwana ga a gale
sentle. Tlhotlhomisa
mathata o gakolole

Oa tihofafala
O tihoka
tlhokomela
a kgolo.
Gakolala
motsadi jaaka go
tshwanetse



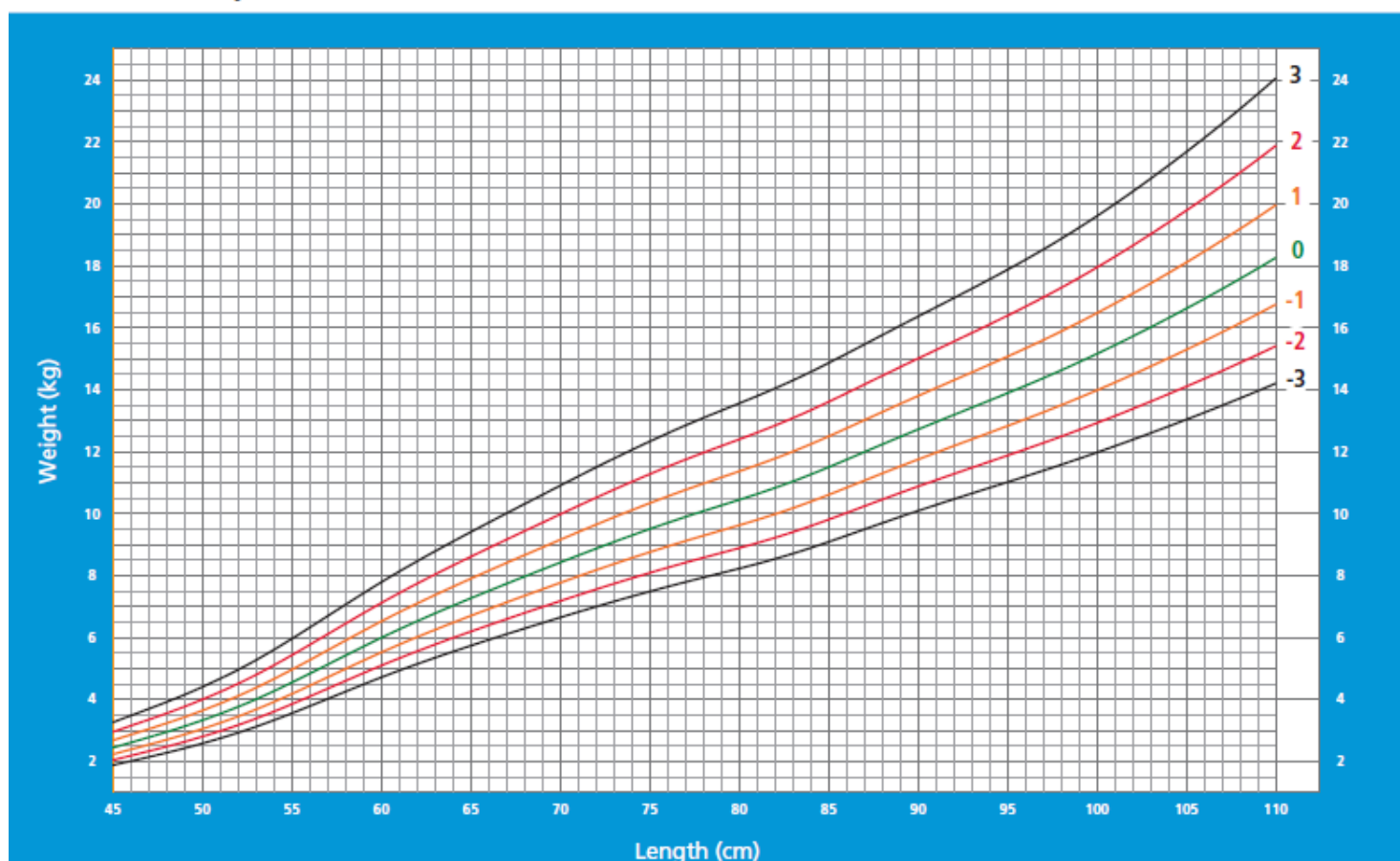
Head circumference-for-age BOYS

Birth to 5 years (z-scores)



Weight-for-length BOYS

Birth to 2 years (z-scores)



GROWTH CHARTS: FEMALE 0 – 5 years (Weight & Length)

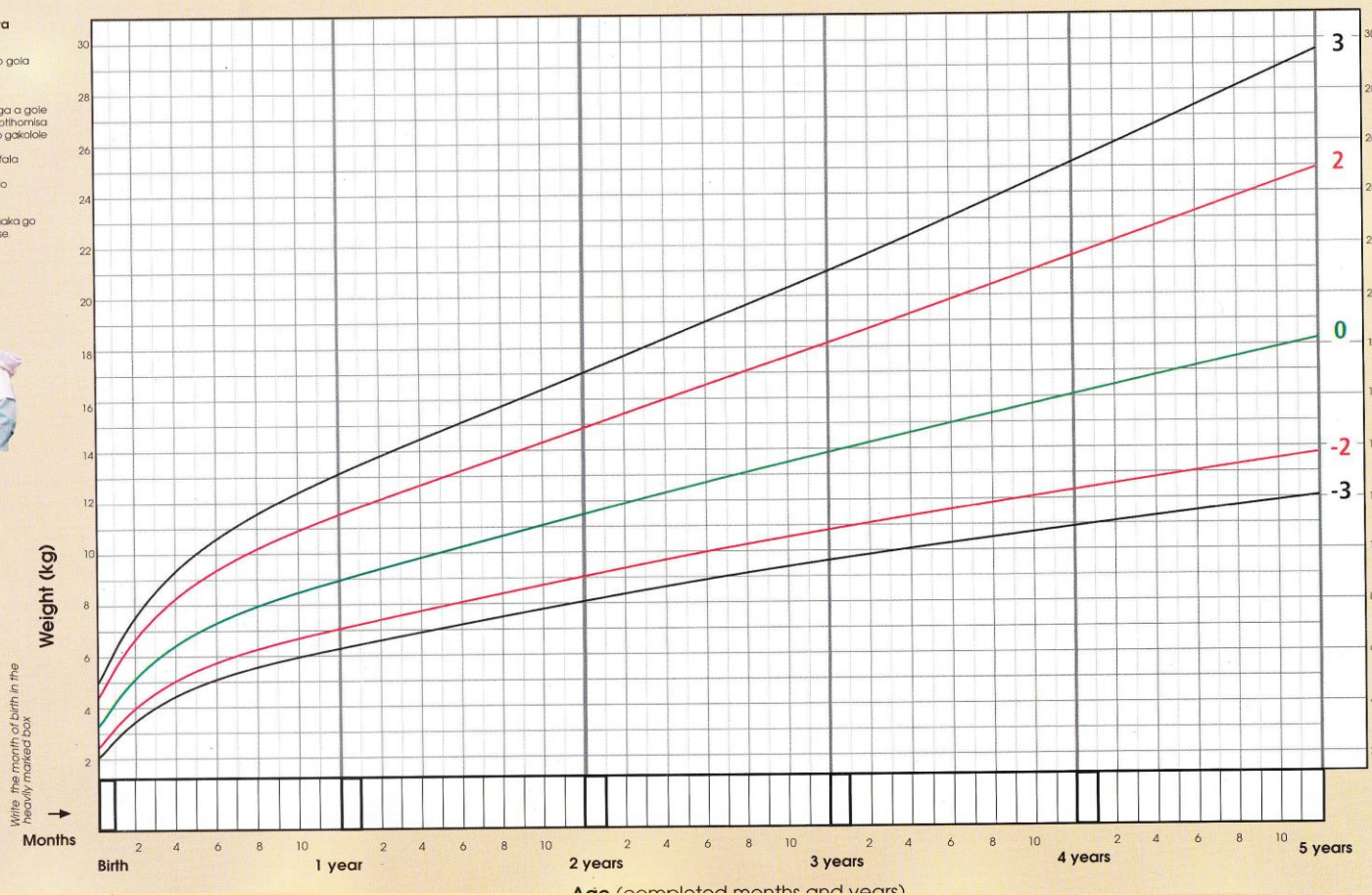
Weight-for-age GIRLS

Adapted from WHO Child Growth Standards 2006

Birth to 5 years (z-scores)

Ela tlhoko tselana ya kgolo ya ngwana

- Ngwana o gola sentle
- Ngwana ga a gale sentle. Tlhotlhomisa mathata o gakolole
- Oa tlhotlhomisa O tlhoka tlhokomelo e kgolo. Gakolola molaodi jaaka go tshwanetse.



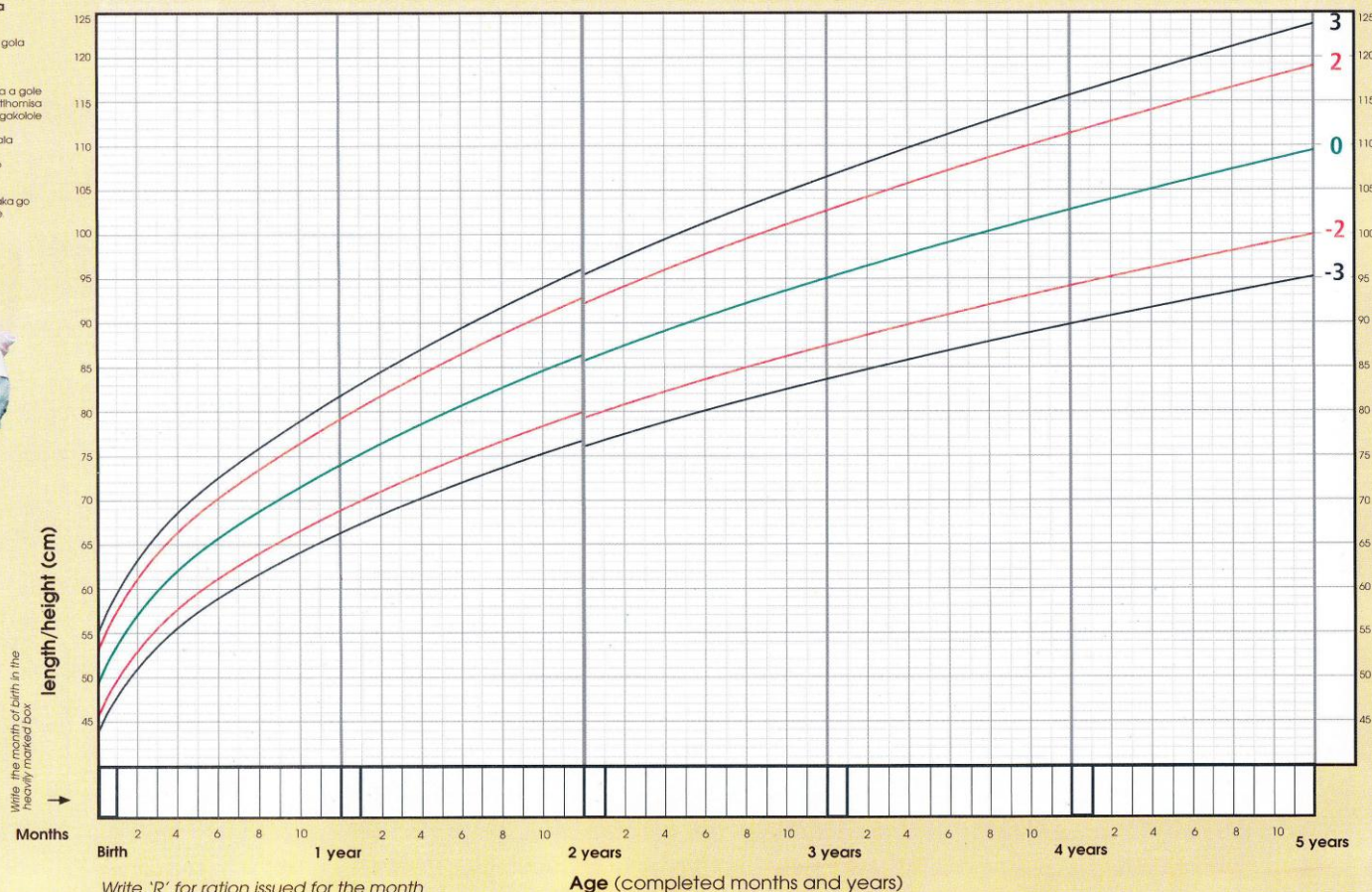
Length/height-for-age GIRLS

Adapted from WHO Child Growth Standards 2006

Birth to 5 years (z-scores)

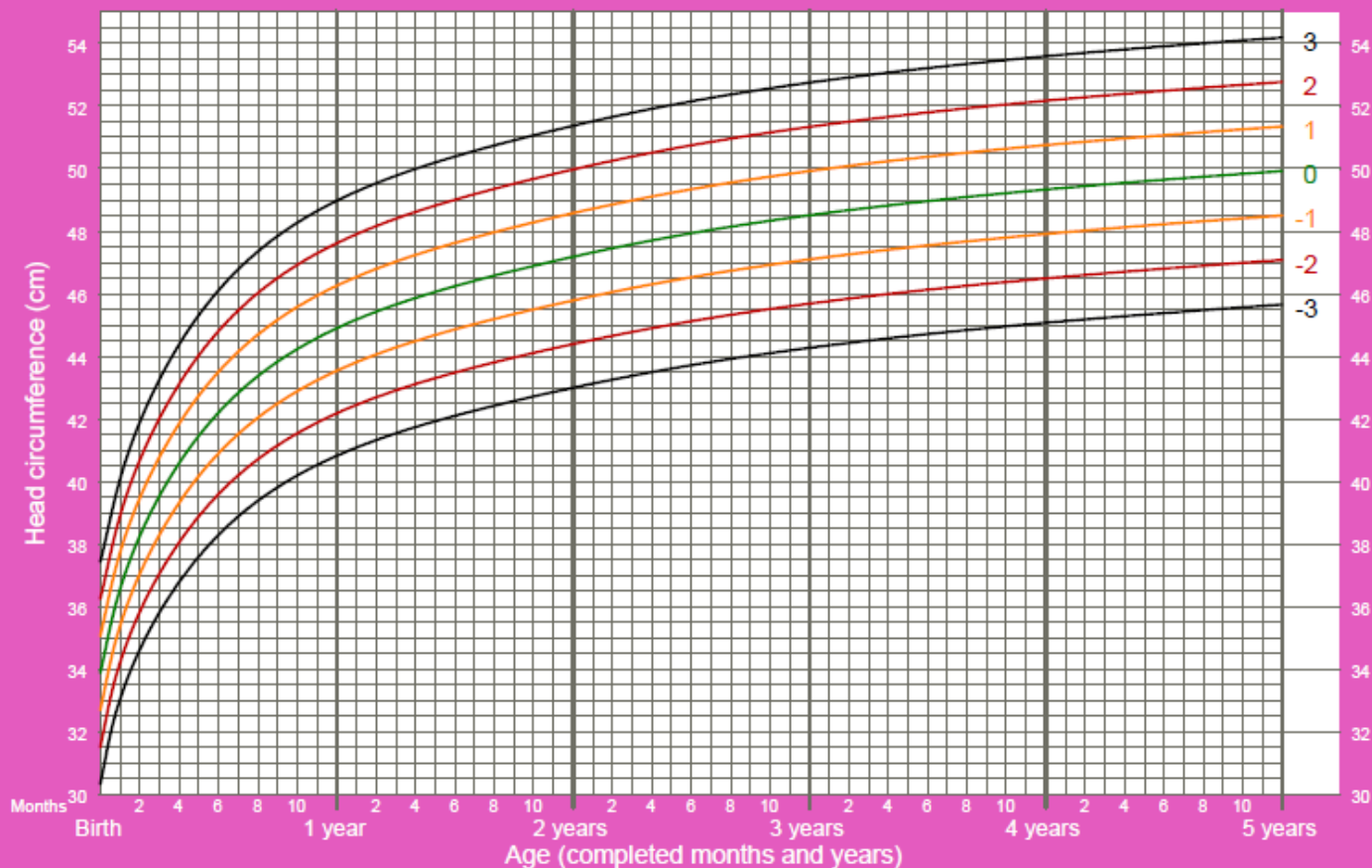
Ela tlhoko tselana ya kgolo ya ngwana

- Ngwana o gola sentle
- Ngwana ga a gale sentle. Tlhotlhomisa mathata o gakolole
- Oa tlhotlhomisa O tlhoka tlhokomelo e kgolo. Gakolola molaodi jaaka go tshwanetse.



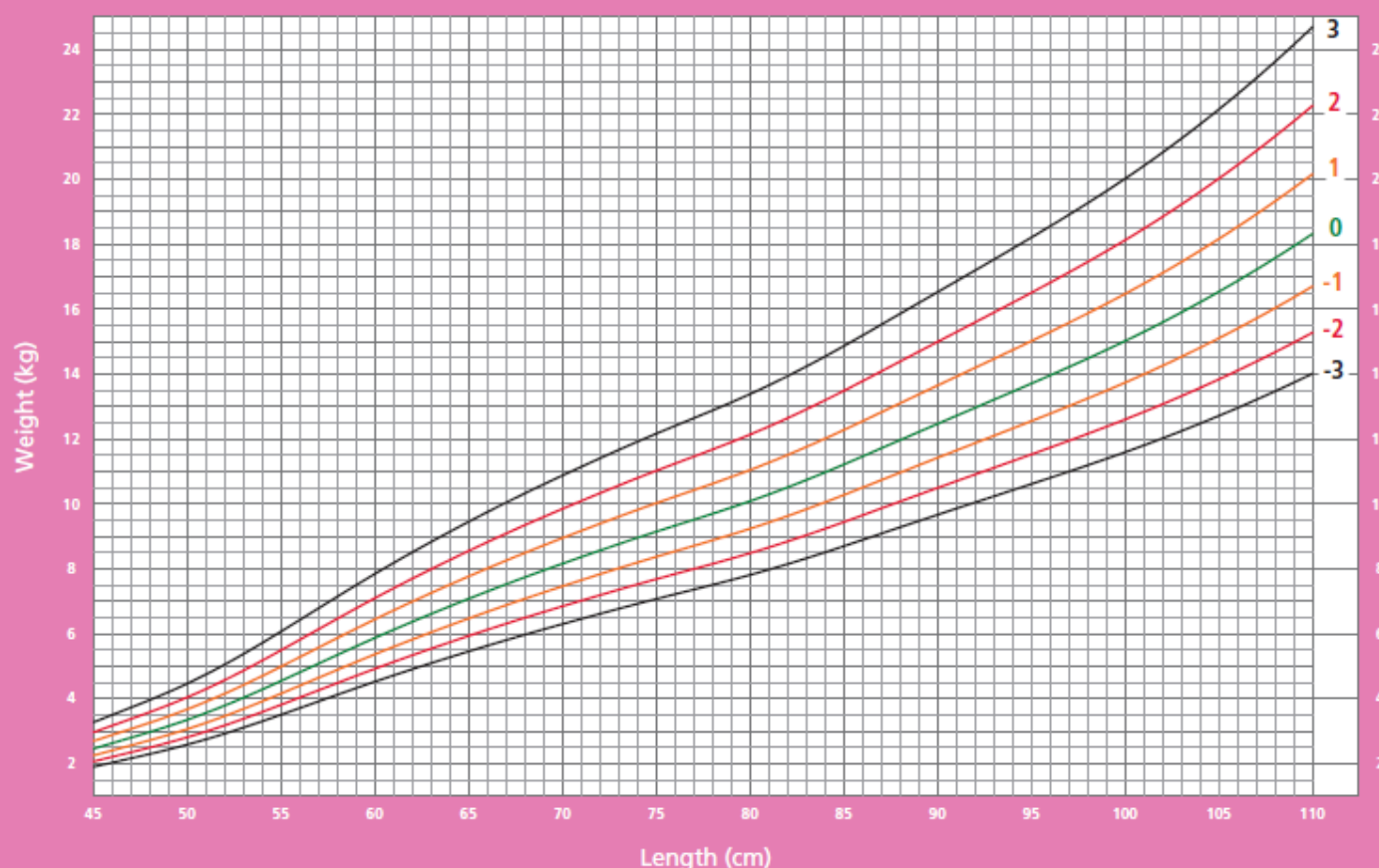
Head circumference-for-age GIRLS

Birth to 5 years (z-scores)



Weight-for-length GIRLS

Birth to 2 years (z-scores)



CALCULATING THE CHILD'S WEIGHT-FOR-LENGTH

Table 35. WHO/NCHS normalized reference weight-for-length (49–84 cm) and weight-for-height (85–110 cm), by sex

Boys' weight (kg)					Length (cm)	Girls' weight (kg)				
-4SD 60%	-3SD 70%	-2SD 80%	-1SD 90%	Median		Median	-1SD 90%	-2SD 80%	-3SD 70%	-4SD 60%
1.8	2.1	2.5	2.8	3.1	49	3.3	2.9	2.6	2.2	1.8
1.8	2.2	2.5	2.9	3.3	50	3.4	3	2.6	2.3	1.9
1.8	2.2	2.6	3.1	3.5	51	3.5	3.1	2.7	2.3	1.9
1.9	2.3	2.8	3.2	3.7	52	3.7	3.3	2.8	2.4	2
1.9	2.4	2.9	3.4	3.9	53	3.9	3.4	3	2.5	2.1
2	2.6	3.1	3.6	4.1	54	4.1	3.6	3.1	2.7	2.2
2.2	2.7	3.3	3.8	4.3	55	4.3	3.8	3.3	2.8	2.3
2.3	2.9	3.5	4	4.6	56	4.5	4	3.5	3	2.4
2.5	3.1	3.7	4.3	4.8	57	4.8	4.2	3.7	3.1	2.6
2.7	3.3	3.9	4.5	5.1	58	5	4.4	3.9	3.3	2.7
2.9	3.5	4.1	4.8	5.4	59	5.3	4.7	4.1	3.5	2.9
3.1	3.7	4.4	5	5.7	60	5.5	4.9	4.3	3.7	3.1
3.3	4	4.6	5.3	5.9	61	5.8	5.2	4.6	3.9	3.3
3.5	4.2	4.9	5.6	6.2	62	6.1	5.4	4.8	4.1	3.5
3.8	4.5	5.2	5.8	6.5	63	6.4	5.7	5	4.4	3.7
4	4.7	5.4	6.1	6.8	64	6.7	6	5.3	4.6	3.9
4.3	5	5.7	6.4	7.1	65	7	6.3	5.5	4.8	4.1
4.5	5.3	6	6.7	7.4	66	7.3	6.5	5.8	5.1	4.3
4.8	5.5	6.2	7	7.7	67	7.5	6.8	6	5.3	4.5
5.1	5.8	6.5	7.3	8	68	7.8	7.1	6.3	5.5	4.8
5.3	6	6.8	7.5	8.3	69	8.1	7.3	6.5	5.8	5
5.5	6.3	7	7.8	8.5	70	8.4	7.6	6.8	6	5.2
5.8	6.5	7.3	8.1	8.8	71	8.6	7.8	7	6.2	5.4
6	6.8	7.5	8.3	9.1	72	8.9	8.1	7.2	6.4	5.6
6.2	7	7.8	8.6	9.3	73	9.1	8.3	7.5	6.6	5.8
6.4	7.2	8	8.8	9.6	74	9.4	8.5	7.7	6.8	6
6.6	7.4	8.2	9	9.8	75	9.6	8.7	7.9	7	6.2
6.8	7.6	8.4	9.2	10	76	9.8	8.9	8.1	7.2	6.4
7	7.8	8.6	9.4	10.3	77	10	9.1	8.3	7.4	6.6
7.1	8	8.8	9.7	10.5	78	10.2	9.3	8.5	7.6	6.7
7.3	8.2	9	9.9	10.7	79	10.4	9.5	8.7	7.8	6.9
7.5	8.3	9.2	10.1	10.9	80	10.6	9.7	8.8	8	7.1

CALCULATING THE CHILD'S WEIGHT-FOR-LENGTH

WEIGHT/HEIGHT

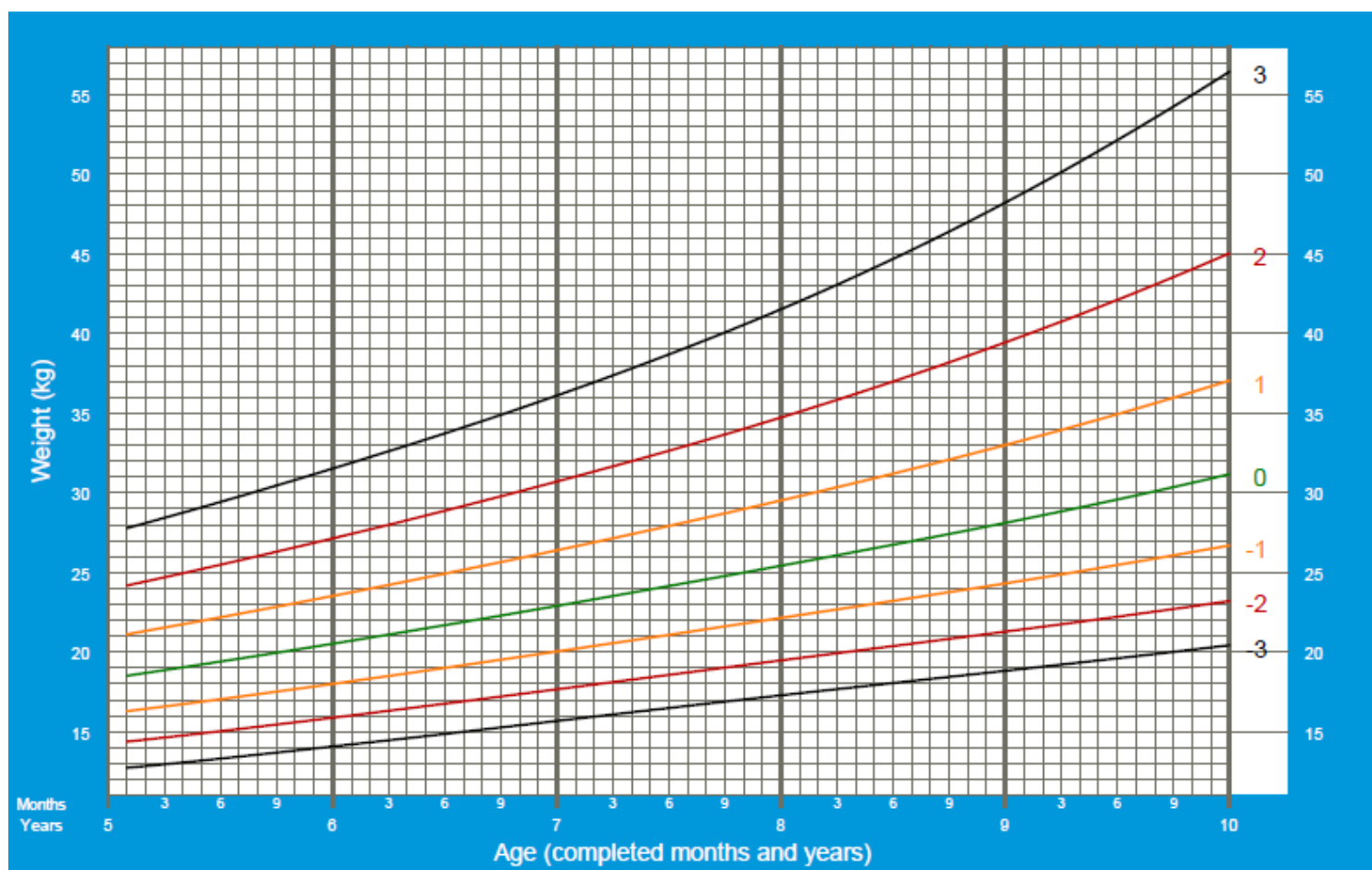
Boys' weight (kg)					Girls' weight (kg)					
-4SD	-3SD	-2SD	-1SD	Median	Length	Median	-1SD	-2SD	-3SD	-4SD
60%	70%	80%	90%		(cm)		90%	80%	70%	60%
7.6	8.5	9.4	10.2	11.1	81	10.8	9.9	9	8.1	7.2
7.8	8.7	9.6	10.4	11.3	82	11	10.1	9.2	8.3	7.4
7.9	8.8	9.7	10.6	11.5	83	11.2	10.3	9.4	8.5	7.6
8.1	9	9.9	10.8	11.7	84	11.4	10.5	9.6	8.7	7.7
7.8	8.9	9.9	11	12.1	85	11.8	10.8	9.7	8.6	7.6
7.9	9	10.1	11.2	12.3	86	12	11	9.9	8.8	7.7
8.1	9.2	10.3	11.5	12.6	87	12.3	11.2	10.1	9	7.9
8.3	9.4	10.5	11.7	12.8	88	12.5	11.4	10.3	9.2	8.1
8.4	9.6	10.7	11.9	13	89	12.7	11.6	10.5	9.3	8.2
8.6	9.8	10.9	12.1	13.3	90	12.9	11.8	10.7	9.5	8.4
8.8	9.9	11.1	12.3	13.5	91	13.2	12	10.8	9.7	8.5
8.9	10.1	11.3	12.5	13.7	92	13.4	12.2	11	9.9	8.7
9.1	10.3	11.5	12.8	14	93	13.6	12.4	11.2	10	8.8
9.2	10.5	11.7	13	14.2	94	13.9	12.6	11.4	10.2	9
9.4	10.7	11.9	13.2	14.5	95	14.1	12.9	11.6	10.4	9.1
9.6	10.9	12.1	13.4	14.7	96	14.3	13.1	11.8	10.6	9.3
9.7	11	12.4	13.7	15	97	14.6	13.3	12	10.7	9.5
9.9	11.2	12.6	13.9	15.2	98	14.9	13.5	12.2	10.9	9.6
10.1	11.4	12.8	14.1	15.5	99	15.1	13.8	12.4	11.1	9.8
10.3	11.6	13	14.4	15.7	100	15.4	14	12.7	11.3	9.9
10.4	11.8	13.2	14.6	16	101	15.6	14.3	12.9	11.5	10.1
10.6	12	13.4	14.9	16.3	102	15.9	14.5	13.1	11.7	10.3
10.8	12.2	13.7	15.1	16.6	103	16.2	14.7	13.3	11.9	10.5
11	12.4	13.9	15.4	16.9	104	16.5	15	13.5	12.1	10.6
11.2	12.7	14.2	15.6	17.1	105	16.7	15.3	13.8	12.3	10.8
11.4	12.9	14.4	15.9	17.4	106	17	15.5	14	12.5	11
11.6	13.1	14.7	16.2	17.7	107	17.3	15.8	14.3	12.7	11.2
11.8	13.4	14.9	16.5	18	108	17.6	16.1	14.5	13	11.4
12	13.6	15.2	16.8	18.3	109	17.9	16.4	14.8	13.2	11.6
12.2	13.8	15.4	17.1	18.7	110	18.2	16.6	15	13.4	11.9

SD = standard deviation score or Z-score; although the interpretation of a fixed percent-of-median value varies across age and height, and generally the two scales cannot be compared; the approximate percent-of-the median values for -1 and -2SD are 90% and 80% of median respectively (*Bulletin of the World Health Organization*, 1994, **72**: 273-283).

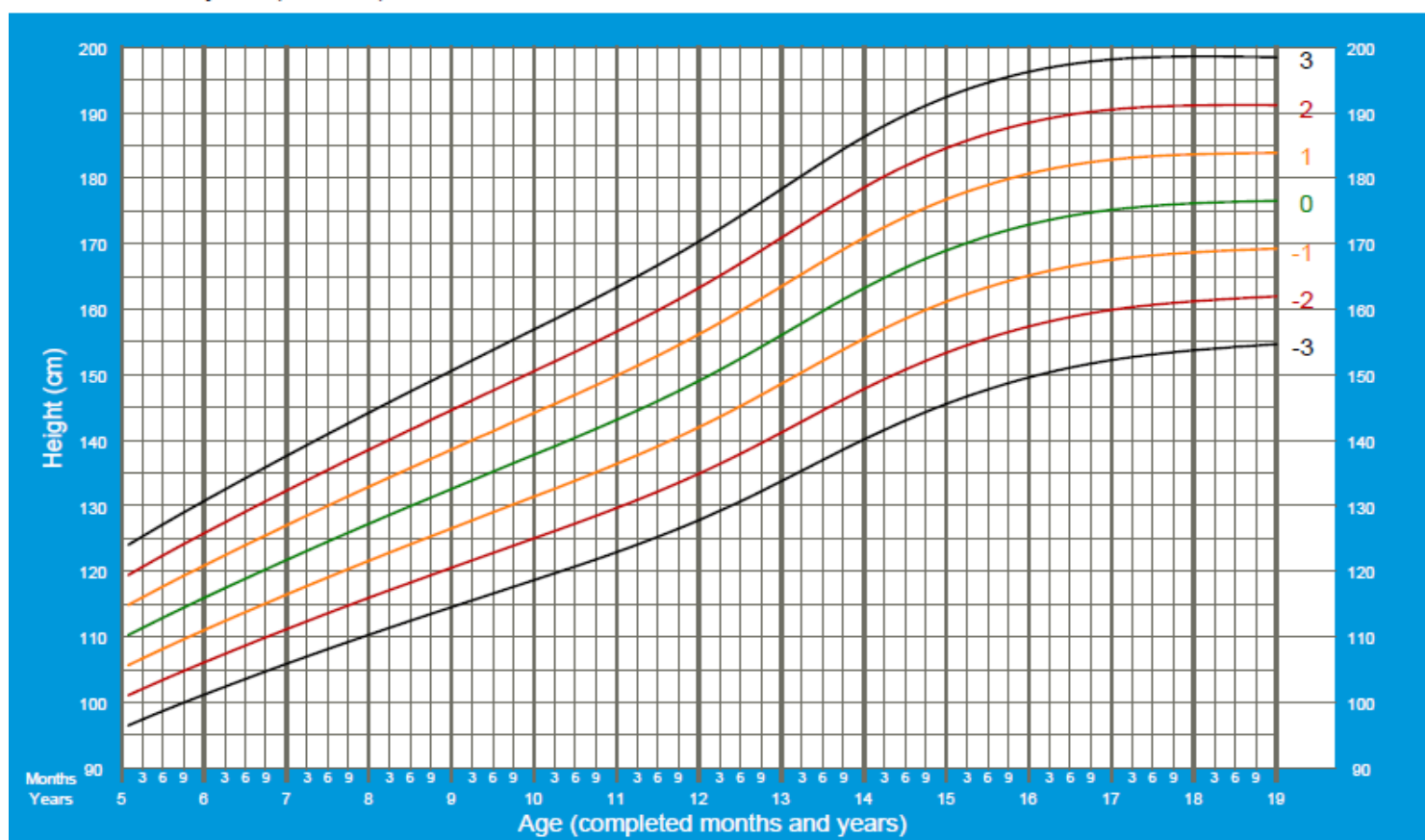
Length is measured below 85 cm; height is measured 85 cm and above. Recumbent length is on average 0.5 cm greater than standing height, although the difference is of no importance to the individual child. A correction may be made by deducting 0.5 cm from all lengths above 84.9 cm if standing height cannot be measured.

Weight-for-age BOYS

5 to 10 years (z-scores)

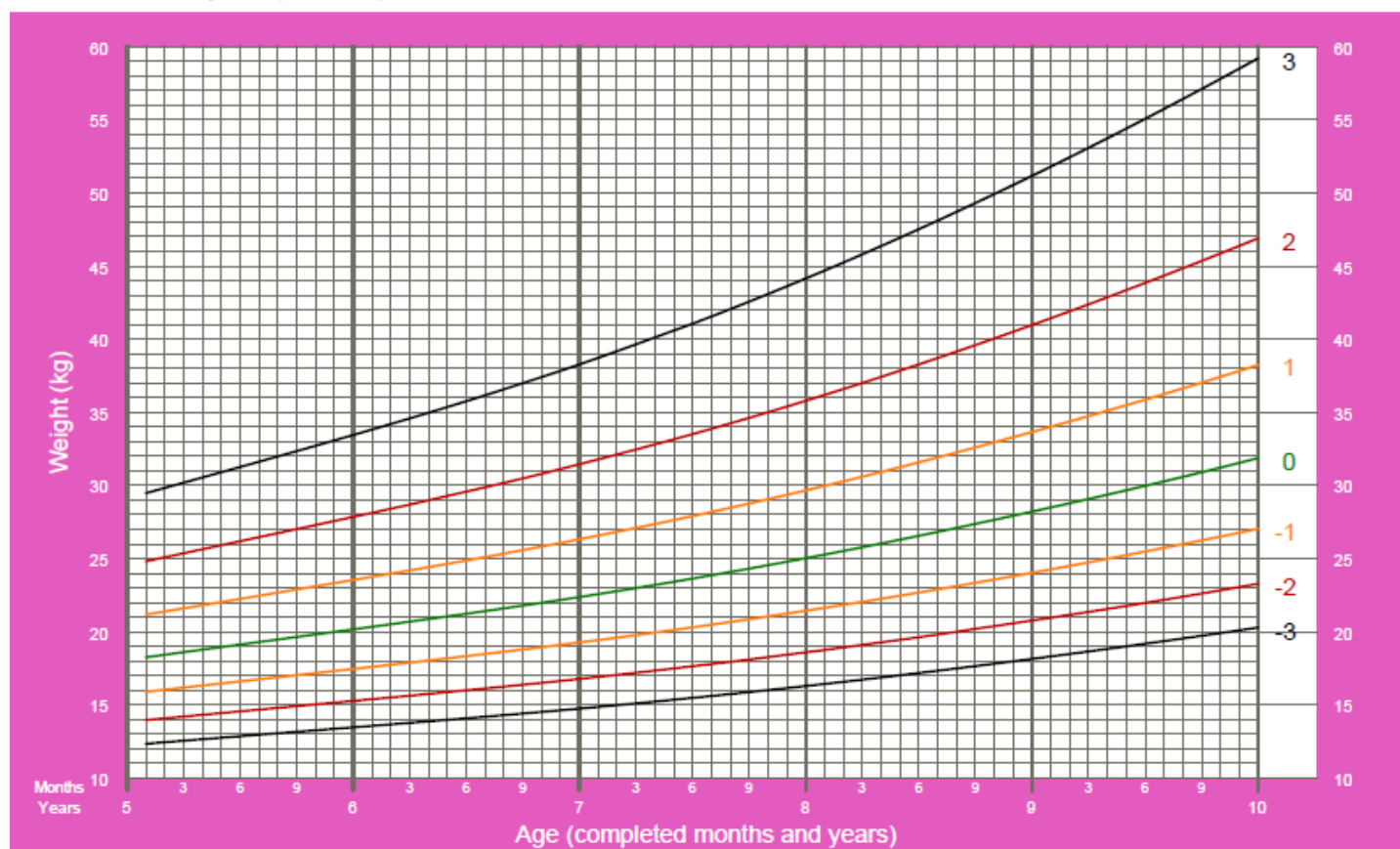
**Height-for-age BOYS**

5 to 19 years (z-scores)



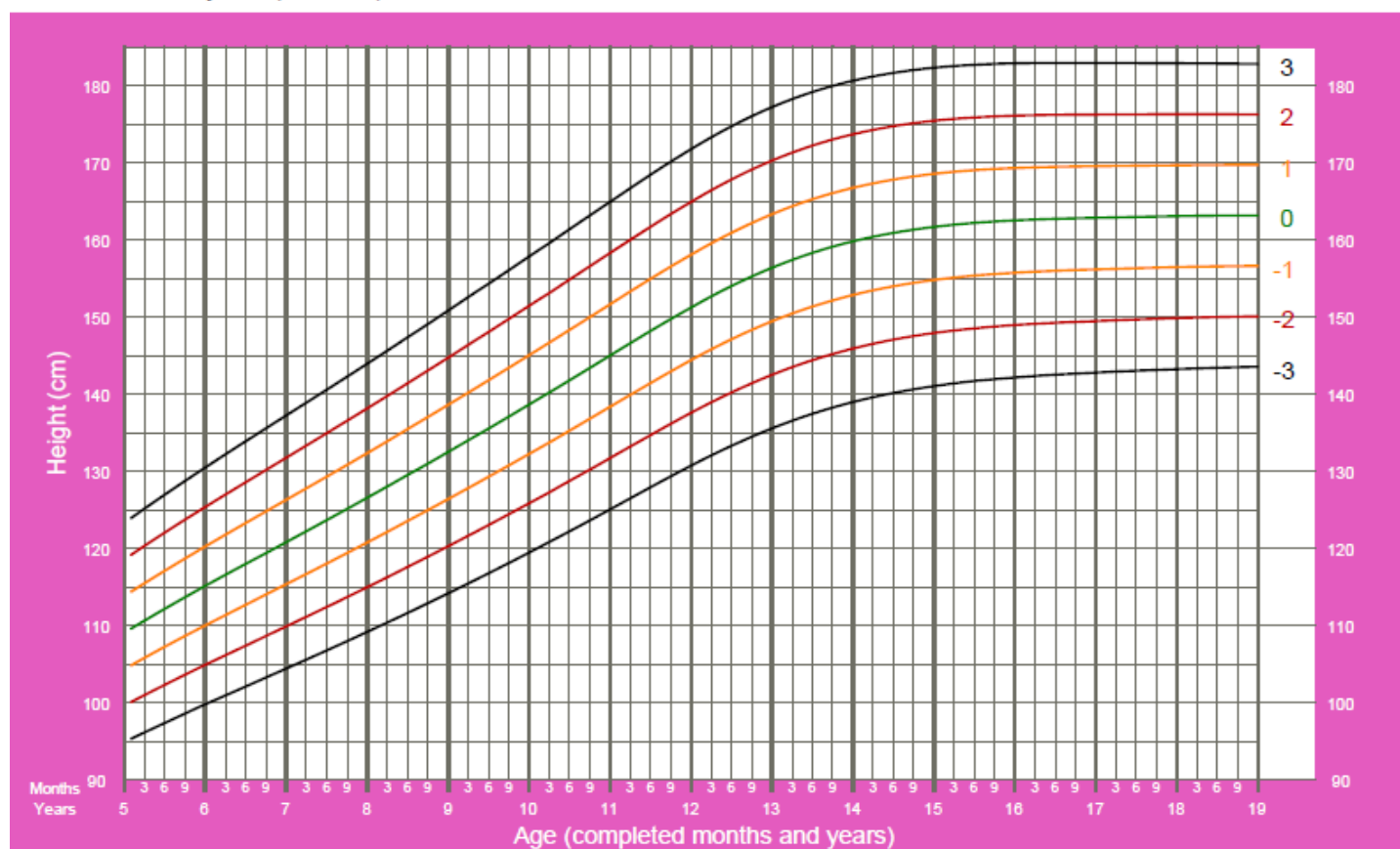
Weight-for-age GIRLS

5 to 10 years (z-scores)

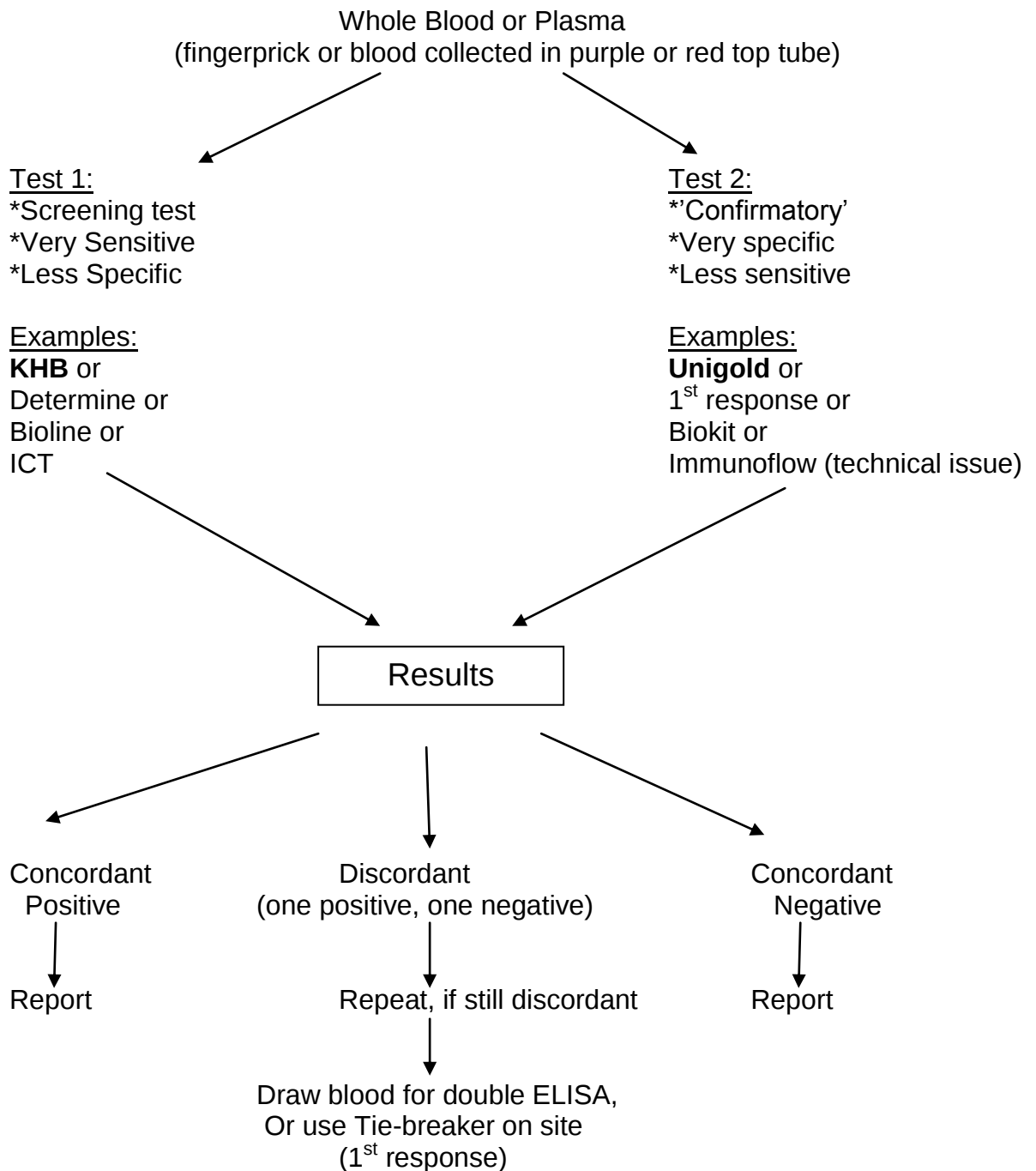


Height-for-age GIRLS

5 to 19 years (z-scores)



Botswana HIV Rapid HIV Test Algorithm



- NB: Do not mix up the buffer – may give you a false positive
- Use pipette to get precise amount of blood on test kit (too little or too much will both give false results)

KHB HIV Rapid Test

For use with whole blood, serum, or plasma

Store Kits: 4 - 30° C

- Check kit before use. Use only items that have not expired or been damaged.
- Bring kit and previously stored specimens to room temperature prior to use.
- Always use universal safety precautions when handling specimens. Keep work areas clean and organized.

This outline is not intended to replace the product insert or your standard operating procedure (SOP).



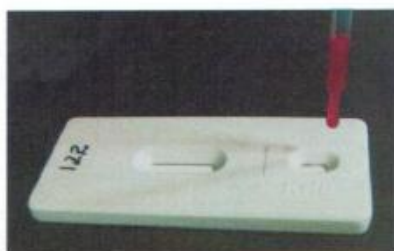
1. Collect test items and other necessary lab supplies.



2. Remove device from package and label device with client identification number.



3. Collect specimen using the disposable pipette.



4. Add 1 drop (approx. 40µl) of specimen to the sample port in the device.



5. Add 1 drop (approx. 40µl) of the appropriate sample diluent to sample port.



6. Wait for 15 minutes (no longer than 30 min.) before reading the results.



7. Read and record the results and other pertinent info on the worksheet.

KHB HIV Rapid Test Results

Reactive

2 lines of any intensity appear in both the control and test areas.



Non-reactive

1 line appears in the control area and no line in the test area.



Invalid

No line appears in the control area. Do not report invalid results. Repeat test with a new test device even if a line appears in the test area.



Use of trade names and commercial sources is for identification only and does not imply endorsement by WHO, the Public Health Service, or by the U.S. Department of Health and Human Services (2005).



Uni-Gold HIV Rapid Test

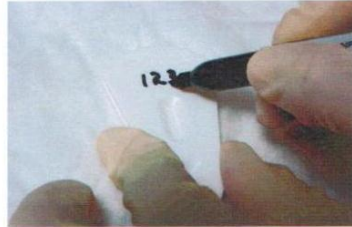
For use with whole blood, serum, or plasma
Store Kits: 2 - 30° C

- Check kit before use. Use only items that have not expired or been damaged.
- Bring kit and previously stored specimens to room temperature prior to use.
- Always use universal safety precautions when handling specimens. Keep work areas clean and organized.

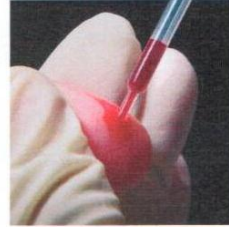
This outline is not intended to replace the product insert or your standard operating procedure (SOP).



1. Collect test items and other necessary lab supplies.



2. Remove device from package and label device with client identification number.



3. Collect specimen using the disposable pipette.



4. Add 2 drops (approx. 60µl) of specimen to the sample port in the device.



5. Add 2 drops (approx. 60µl) of the appropriate wash reagent to sample port.



6. Wait for 10 minutes (no longer than 20 min.) before reading the results.

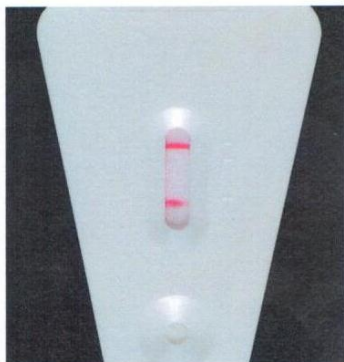


7. Read and record the results and other pertinent info on the worksheet.

Uni-Gold HIV Rapid Test Results

Reactive

2 lines of any intensity appear in both the control and test areas.



Non-reactive

1 line appears in the control area and no line in the test area.



Invalid

No line appears in the control area. Do not report invalid results. Repeat test with a new test device even if a line appears in the test area.



PEDIATRIC WHO CLINICAL STAGING

Clinical Stage 1: ASYMPTOMATIC
Asymptomatic
Persistent generalized lymphadenopathy
Clinical Stage 2: MODERATE DISEASE
Persistent unexplained hepatosplenomegaly
Papular pruritic eruptions
Extensive HPV infection
Extensive molluscum contagiosum
Recurrent oral ulcerations
Unexplained persistent parotid enlargement
Lineal gingival erythema
VZV
Recurrent or chronic upper respiratory infections (otitis media, tonsillitis, sinusitis)
Fungal Nail infections
Clinical Stage 3: ADVANCED DISEASE
Unexplained moderate malnutrition
Unexplained persistent diarrhea for 14 days
Unexplained persistent fever for 1 month
Persistent thrush after 6 weeks of age
Persistent oral hairy leukoplakia
Acute necrotizing ulcerative gingivitis/peridontitis
Pulmonary or lymph node TB
Severe recurrent bacterial pneumonia
Lymphoid interstitial pneumonitis
Chronic HIV-related lung disease, including bronchiectasis
Unexplained anemia (<8gm%), neutropenia (<500/ μ L) or thrombocytopenia (<50,000/ μ L)
Clinical Stage 4: SEVERE DISEASE
Severe wasting, stunting, or malnutrition
Pneumocystis pneumonia
Severe recurrent bacterial infections, excluding pneumonia (e.g., meningitis, osteomyelitis)
Chronic HSV infection >1 month
Extra-pulmonary TB other than lymph node TB
Kaposi's sarcoma
Esophageal candidiasis
CNS toxoplasmosis
HIV encephalopathy
CMV infection (e.g., retinitis, gastroenteritis)
Extra-pulmonary cryptococcosis, including meningitis
Disseminated endemic mycosis
Chronic cryptosporidiosis or isosporiasis
Disseminated non-TB mycobacterial infection
Cerebral or non-Hodgkin's lymphoma
Progressive multifocal leukoencephalopathy
HIV-related cardiomyopathy or nephropathy

WHO Immunologic Classification

WHO Immune Stage	12-35 Months	36-59 Months	5 Years
Mild	25-30%	20-25%	350-499 cells/ μ l
Advanced	20-24%	15-19%	200-349 cells/ μ l
Severe	<20% or <750 cells/ μ l	<15% or <350 cells/ μ l	<15% or <200 cells/ μ l

Eligible for HAART

Based on either:	<24mo	>24mo	Teens/adults
CD4	ANY	Advanced immunosuppression Severe immunosuppression	<350
WHO Clinical Stage	ANY	3, 4	3, 4

Cotrim Prophylaxis

	HIV-exposed	HIV+ 0-5yo	HIV+ >5yo	HIV+ Adults/Teens
Initiate	All at 4-6wk	All <12mo CD4 <25%	CD4 <200 or <15%	CD4 <200 WHO Stage 3, 4
		Active WHO Stage 2, 3, 4 Virologic failure HAART-eligible (not yet on) On ATT		On ATT
Stop	HIV excluded and not breastfeeding	Reassess at 5yo	CD4 >200 x3mo + WHO Stage 3, 4 stable x6mo	CD4 >200 x3mo + WHO Stage 3, 4 stable x6mo

2012 Botswana HAART Regimens

For adolescents (Tanner scale I, II or III), first line ART regimens contain NVP or EFV plus 2 NRTIs.

Table 8.4 Regimens for Children and Pre-Pubertal Adolescents (Tanner scale I, II or III)

Regimen	ART	
	NRTI backbone	NNRTI component
Preferred 1 st line	AZT + 3TC +	NVP or EFV ¹
Alternative 1 st line ²	ABC + 3TC +	NVP or EFV ¹
Preferred Second line	ABC + 3TC +	LPV/r ⁴

1 The preferred regimen for adolescents with tuberculosis is EFV + the 2 NRTI backbone.
2 Use the alternative 1st line regimen only if there are contraindications to AZT (for example, severe anaemia, <7 g/dl; or neutropenia, <500 cells/mm³).

Paediatric monitoring – if meds in parentheses, check only if on that medication

Pediatric Laboratory Monitoring for the Following 1st Line ART Regimens:

AZT+3TC+ NVP or EFV or LPV/r, ABC+3TC+ NVP or EFV or LPV/r, TDF+3TC+ NVP or EFV or LPV/r

	Baseline	2 wks	1 month	3 months	6 months	9 months	12 months	Thereafter
CD4 count or %	X			X	X		X	q6 months
Viral Load	NONE			X	X	X	X	q3 months
FBC	X		AZT only	X			X	q12 months
Chemistry	X							As indicated
AST/ALT	X	NVP only		X				As indicated
Glucose, TC/TG	LPV/r only						LPV/r only	q12 months
Growth and development	X		weight only	X	X	X	X	q3 months

Pediatric Laboratory Monitoring for 2nd Line ART Regimens:

	At Switch	6 wks	3 month	6 months	9 months	12months	Thereafter
CD4 count or %	X If not done in prior 6 months		X	X		X	q6 months
Viral Load	If not done in prior 3 months	X	X	X	X	X	q3 months
FBC	If not done in prior yr	If switch to AZT only	X AZT only			X AZT only	q12 months
Chemistry	If not done in prior yr						As indicated
AST/ALT	If not done in prior yr	If switch to NVP only	X NVP only				As indicated
Glucose, TC/TG	LPV/r only					LPV/r only	q12 months
Growth and development	X	Weight only	X	X	X	X	q3 months

Dosing Recommendation for Cotrimoxazole for infants and Children

Age Range	Suspension 40 mg TMP/200mg SMZ per 5 ml	Single Strength Tablet 80 mg TMP/400 mg SMZ
< 6 months	2.5 ml daily	¼ tablet Daily
6 months to 5 years	5 ml daily	½ tablet Daily
5-14 years	10 ml daily	1 tablet daily
>14 years		2 single strength or 1 Double strength daily

					1 cap pm			caps				
20-24.9		1 tab am 0.5 tab pm		1 tab am 0.5 tab pm		2 caps	0.5 tab	200mg + 100mg caps		1 tab		1 tab
25-29.9		1 tab		1 tab		2 caps	1 tab am 0.5 tab pm	200mg + 100mg + 50 mg caps		1 tab		1 tab
30-34.9		1 tab		1 tab		3 caps	1 tab	200mg cap (x2)		1 tab		1 tab
35-39.9		1 tab		1 tab		3 caps	1 tab	200mg cap (x2)		1 tab		1 tab

17-19.9	2.5ml	2 caps am 1 cap pm	1 tab	5 tabs	2 tabs			0.5 tab	0.5 tab
20-24.9	3ml	2 caps	1 tab	5 tabs	2 tabs			1 tab am 0.5 tab pm	1 tab am 0.5 tab pm
25-29.9	3.5ml	2 caps	2 tabs am 1 tab pm	5 tabs	2 tabs			1 tab am 0.5 tab pm	1 tab am 0.5 tab pm
30-34.9	4ml	3 caps	2 tabs	5 tabs	2 tabs			1 tab	1 tab
35-39.9	5ml	3 caps	2 tabs	5 tabs	2 tabs			1 tab	1 tab

Feeding

Unless the family meets AFASS criteria (see list below), the infant should exclusively breastfeed. **Most non-citizen mothers will need to breastfeed, as formula is very expensive.** Formula costs about P350 per month and this will need to be sustained for 12 months. This is a total cost of about P4000. Baby should *not* start mixed feedings (breastmilk + formula), as this may increase the risk of HIV transmission. **Inappropriately advising formula feeding to mothers who cannot afford and sustain it often results in diarrhoea, malnutrition, and even death.**

- **Acceptable:** The mother perceives no problem in replacement feeding. Potential problems may be cultural, social, or due to fear of stigma and discrimination.
- **Feasible:** The mother (or family) has adequate time, knowledge, skills, resources and support to correctly mix formula or milk and feed the infant up to 12 times in 24 hours.
- **Affordable:** The mother and family, with community or health system support if necessary, can pay the cost of replacement feeding without harming the health or nutrition status of the family.
- **Sustainable:** Availability of a continuous supply of all ingredients needed for safe replacement feeding for up to one year of age or longer.
- **Safe:** Replacement foods are correctly and hygienically prepared and stored, and fed preferably by cup.

Medication

1. Infants

(a) *Infants (being **breastfed** by HIV positive mothers)*

If mother is taking ARVs for her own health, the baby should get 6 weeks of daily NVP after delivery. If mother is not on ARVs for her own health, the baby should get daily NVP until 1 week after stopping breastfeeding. NVP is very inexpensive and can be bought at Marina or private pharmacies, including Independence Surgery. It should cost about P80 for 240 ml or P20 per month. Start cotrimoxazole at 4-6 weeks of age.

Age of Infant	NVP Daily Dose (10 mg/ml syrup)
Birth to 6 weeks weight 2-2.5 kg	1 ml po once daily
Birth to 6 weeks weight > 2.5 kg	1.5 ml po once daily
6 weeks to 6 months	2 ml po once daily
6 months to 9 months	3 ml po once daily
9 months to cessation of breastfeeding	4 ml po once daily

(b) *Infants (meet AFASS criteria and are **formula fed**):* Follow usual Botswana PMTCT guidelines, ie SD NVP and 1 month AZT. Cotrimoxazole at 4-6 weeks of age.

2. Mothers

Most HIV positive non-citizen mothers at Marina will be detected at delivery. However, if mothers present earlier, they should be encouraged to follow national guidelines and pay for PMTCT if they are able.

- Mother's CD4 count < 250 cells/ μ L (or WHO stage III or IV), start HAART for their own health.
- If CD4 count $\geq$ 250 cells/ μ L (& WHO stage I or II), start AZT from 28 weeks gestation 300 mg po BD.
 - o During labor, they should get AZT 300 mg po Q3H to maximum of 1500 mg.
 - o If they have received > 4 weeks AZT, they should get no SD NVP but if they have received < 4 weeks of AZT they should get NVP 200 mg po x 1.

1st line ATT

Drug	Dose (range) mg/kg od	Maximum per day	Formulation
Isoniazid (H)	10 (10-15)	300	100mg tab 10mg/ml soln
Rifampicin (R)	15 (10-20)	600	150mg cap 100mg/5ml syrup
Pyrazinamide (Z)	35 (30-40)	2g	500mg tab
Ethambutol (E)*	20 (15-25)	1.2g	400mg tab 25mg/ml soln
Streptomycin (S)	15 (12-18)	1g (if <40yo)	1g injection

Recommended ATT Regimens**Standard treatment regimens (regardless of smear results or disease severity):**

- New Patients < 30kg: 2HRZE/4HR
- New Patients ≥ 30kg: 2HRZE/4HRE
- Retreatment patients: 2SHRZE/1HRZE/5HRE

Longer duration of total therapy:

- **TB meningitis, bone, joint & spinal TB:** Treat for 12 months: 2HRZE/10HR

Pyridoxine (B6) supplementation:

INH may cause peripheral neuropathy, especially in severely malnourished &/or HIV-infected children on ART.

Provide supplemental pyridoxine to the following children:

- < 2 years: multi-vitamin syrup (5ml daily)
- 2-12 years: multi-vitamin syrup (10ml daily) or pyridoxine 12.5mg daily
- > 12 years: pyridoxine 25mg daily

Contraindications to BCG vaccination:

- Children born to mothers taking ATT*
- Known HIV infection
- Simultaneous vaccination for measles. Allow 4-6 weeks between the 2 vaccines.
- Within 24 hours after stopping isoniazid therapy (ATT or IPT)

*If newborn (< 1 month) baby has a mother with smear positive PTB – do not give BCG at birth. Give INH (10mg/kg/day) for 6 months, then give BCG at least 24 hours after stopping INH. Start full ATT if child develops signs of TB.

IPT in children: (INH 10mg/kg/day x 6 months)**1. Indications:**

- < 5 years (all of the following):
 - No evidence of TB disease
 - Contact with an adult or adolescent with smear positive PTB
- > 5 years (all of the following):
 - No evidence of TB disease
 - HIV positive
 - Contact with an adult or adolescent with smear positive PTB

2. Contraindications:

- Contact with a suspected or confirmed case of drug-resistant TB
- Clinical evidence of hepatitis

Indication for steroids in TB:

1. TB meningitis (decreased LOC, neurological deficits, spinal block)
2. TB pericarditis (with effusion or constriction)
3. Massive lymphadenopathy with pressure effects eg airway obstruction

Dose: Prednisone 2mg/kg/day (maximum 60mg/day) for 4 weeks. Taper off over 2 weeks.

TUBERCULOSIS TREATMENT CATEGORIES

Table A7.1: Treatment for New Cases in Adults and Children > 30 kg: 2HRZE/4HRE

Weight (kg)	Intensive Phase for 2 months	Continuation Phase for 4 months
	R ₁₅₀ H ₇₅ Z ₄₀₀ E ₂₇₅ ¹	R ₁₅₀ H ₇₅ E ₂₇₅ ²
30 – 39	2 tabs	2 tabs
40 – 54	3 tabs	3 tabs
55 – 70	4 tabs	4 tabs
>70	5 tabs	5 tabs

¹R₁₅₀H₇₅Z₄₀₀E₂₇₅ = Adult fixed-dose combination of Rifampicin 150mg, Isoniazid 75mg, Pyrazinamide 400mg and Ethambutol 275mg

²R₁₅₀H₇₅E₂₇₅ = Adult fixed-dose combination of Rifampicin 150mg, Isoniazid 75mg and Ethambutol 275mg

Table A7.2: Treatment for New Cases in Children ≤ 30 kg: 2HRZE/4HR**

Weight (kg)	Intensive Phase for 2 months		Continuation Phase for 4 months
	R60H30Z150 ¹	Ethambutol (400mg tab)	R60H30 ²
2-2.9	½ tab	---	½ tab
3-5.9	1 tab	do not use if <4kg ¼ tab if wt 4-7.5kg ½ tab if wt 7.5-11.9 kg	1 tab
6-8.9	1 ½ tab		1 ½ tab
9.0-11.9	2 ½ tab		2 ½ tab
12-14.9	3 tab	¾ tab	3 tab
15-19.9	4 tab	1 tab	4 tab
20-24.9	5 tab	1 tab	5 tab
25-29.9	6 tab	1 ½ tab	6 tab

**For children with TBM, severe TB or TB/HIV co-infection, consider adding additional INH to optimise the INH dose to 10-15mg/kg daily.

¹R60H30Z150 = Paediatric fixed-dose combination of Rifampicin 60mg, Isoniazid 30mg and Pyrazinamide 150mg

²R60H30 = Paediatric fixed-dose combination of Rifampicin 60mg and Isoniazid 30mg

Table A7.3: Treatment for Retreatment Cases in Adults and Children > 30 kg: 2SHRZE/1HRZE/5HRE

Weight (kg)	Intensive Phase for 2 months		Intensive Phase for 1 month	Continuation Phase for 5 months
	Streptomycin (mg)	R ₁₅₀ H ₇₅ Z ₄₀₀ E ₂₇₅ ¹	R ₁₅₀ H ₇₅ Z ₄₀₀ E ₂₇₅ ¹	R ₁₅₀ H ₇₅ E ₂₇₅ ²
30 – 39	500	2 tabs	2 tabs	2 tabs
40 – 54	750	3 tabs	3 tabs	3 tabs
55 – 70	1000	4 tabs	4 tabs	4 tabs
>70	1000	5 tabs	5 tabs	5 tabs

¹R₁₅₀H₇₅Z₄₀₀E₂₇₅ = Adult fixed-dose combination of Rifampicin 150mg, Isoniazid 75mg, Pyrazinamide 400mg and Ethambutol 275mg

²R₁₅₀H₇₅E₂₇₅ = Adult fixed-dose combination of Rifampicin 150mg, Isoniazid 75mg and Ethambutol 275mg

Seizure Types

Seizure Type/Syndrome	Features	EEG	Meds	Prognosis
-----------------------	----------	-----	------	-----------

PARTIAL

Simple Partial	Tonic/clonic - face/neck/extremities Conscious throughout No post-ictal state May have aura	May be normal or have focal sharp waves	Carbamazepine Na Valproate Phenytoin	Variable—often associated with focal brain lesions
Complex Partial	Automatisms May have aura Post- ictal Frequent- temporal lobe abnormality 2 ^o Generalization	Temporal sharp wave spikes 20%- normal	Carbamazepine Na Valproate Phenytoin Phenobarb	Variable
Benign Rolandic Epilepsy	Onset: Age 2-9 (most occur age 3-5) Simple partial seizures - face, mouth, arms Normal exam and development 75% have seizure during sleep often involve face and same sided arm—may be confused with stroke Consciousness- normal to impaired 2 ^o Generalization (rarely)	Spike in the centro-temporal area on normal background	Carbamazepine If infrequent, may not need to medicate	Good prognosis. Normal development, tend to outgrow seizures by puberty.

GENERALIZED

Absence	Onset: > 5yrs Blank stare and eye flickering- few seconds Many a day No post-ictal state F>M Provoked by hyperventilation Normal development	3 per second spike and wave	Na Valproate or lamotrigine Avoid carbamazepine, phenobarb, phenytoin	40% develop generalized tonic clonic seizures
Benign Myoclonus Epilepsy of Infancy	Onset: Infants. Patients may have very frequent myoclonic seizures but normal development. Usually stops by age 2	Normal interictal EEG. Brief gen spikes w/seizures.	No meds	Normal
Myoclonic-Astatic epilepsy of childhood (Doose syndrome)	Onset: 6 mo-4 yrs (freq age 2). Patients present with drop seizures and myoclonic seizures, often multiple daily seizures - difficult to treat. Normal development at onset in many but some do have delay May have other seizure types	Fast spike of 2-2.5 hz on normal background	Valproate > 2 yrs (avoid carbamazepine, phenytoin)	> 50% seizure free after several yrs May develop learning and emotional problems
Complex Myoclonic	Preceded by generalized sz at < 1 yr with 1/3 -Developmental delay- history of HIE, microcephaly/CP 75% have delay after dx		Difficult to control- Valproate	
Lennox gastaut	Intractable seizure – various type Mental retardation Drop (atonic) seizures common	Slow spike wave	Difficult to control— start with valproate	Poor prognosis Consider helmet if drop seizures
Juvenile Myoclonic	Onset: 8-16yrs Myoclonic jerks on awakening Then generalized seizure- early morning Normal exam	4-6/sec spike and wave	Valproate- life long	Life long treatment
Infantile Spasms	Onset: 4mo-8mo Brief symmetric contract of face, neck and trunk 80%- underlying pathology, e.g. tuberous sclerosis (TS) If untreated usually associated with developmental regression	Hypsarrythmia	Steroids (requires careful monitoring)— Prednisone 20-30 mg bid Sodium valproate Vigabatrin (1 st line if TS)	85%- developmental issues
Landau-Kleffner Syndrome	Onset: 5 yrs M > F Loss of language and seizures Seem deaf but normal hearing Behavioral abnormalities (ADHD)	High amplitude spike and wave during sleep	Valproate (note methylphenidate can worsen seizures if not on antiepileptic) or benzodiazepines.	Can regain some language function but often have abnormal speech function

Treatment of seizures:

Table 1: Initial AED choice for monotherapy

Seizure	First line	2 nd line	3 rd line
Localization related seizures (simple partial seizures, complex-partial seizures, or secondarily generalized seizures.)	Carbamazepine	Phenytoin	Phenobarbital, Valproic acid or gabapentin
Primary generalized seizures in patients >2 years old	Valproate	Phenobarbital	Phenytoin or lamotrigine
Primary generalized seizures in patients <2 years old	Phenobarbital	Phenytoin	Lamotrigine or can give trial of valproate, but be aware of increased risk of hepatotoxicity.
Absence seizures	Valproate	Lamotrigine	Ethosuxamide (special order)
Infantile Spasms	Prednisone	Vigabatrin (first line for spasms associated with tuberous sclerosis)	

Table 2: AED dosages and adverse effects

AED	Starting	Usual Dose	Escalation	Max Dose	Adverse effects / Cautions
Phenytoin	5mg/kg/day or 20mg/kg load	4-8mg/kg/day (bid-tid)	As needed	300mg/day (bid-tid)	Gingival hyperplasia, nystagmus, ataxia, very difficult to maintain levels in young children
Carbamazepine	5-10mg/kg/day (qd-bid)	15-20mg/kg/day (bid-tid)	Weekly: 5-10mg/kg 100mg max	35mg/kg/day or 2400mg	Hyponatraemia, dizziness, hepatotoxic, agranulocytosis. Significant hepatic enzyme induction – lots of interactions
Valproate	15mg/kg/day (tid-qid) or 20mg/kg/day	15-30mg/kg/day (bid-qid)	As needed	60mg/kg/day or 3000mg/day	Weight gain, hepatotoxic, GI side effects, tremor, teratogenic
Phenobarbitone	3-5mg/kg/day (qd-bid) or 20mg/kg load	3-7mg/kg/day (qd-bid)	As needed	Side effects or <250mg/day	Sedation, rash, long half-life, dependence
Gabapentin (special order)	10-20mg/kg/day (bid-tid)	30-60mg/kg/day (tid-qid)	Limited by sedation	60mg/kg/day (tid-qid) 4800mg/day	Weight gain, fatigue, ataxia
Lamotrigine (special order)	0.6mg/kg Max 25mg/day	5-15mg/kg/day (bid)	0.6mg/kg/day weekly Max 25mg q 2 weeks	400mg/day (bid)	RASH (SJS), dizziness, headache, avoid use with valproate, takes a long time to titrate up

HIGH YIELD PAEDIATRIC HAEMATOLOGY-ONCOLOGY

Please refer to the complete “Pediatric Haematology/Oncology Ward Officer’s Handbook” for more details as these are only essentials for the on-call physician

**** Call the oncology line at any time 24 hours a day, 7 days a week****
72259379 or speed dial 548

HAEMATOLOGY

Blood Transfusion Therapy

- **Packed Red Blood Cell (pRBC) transfusion of 10 to 15ml/kg IV over 3-4 hours**
 - Indication: Hb <7g/dL in most situations, especially for acute anaemia
 - New leukemia patient with hyperleukocytosis (WBC >100,000) should only receive pRBC transfusion after consultation with a paediatric haematologist-oncologist
- **Platelet transfusion of one random donor unit per 10 kg of body weight IV over 1 hour**
 - Indication:
 - platelet count <10,000
 - platelet count <50,000 and with bleeding or before performing LP, IM injection, surgery, or central line placement
 - No benefit in patients with Idiopathic thrombocytopenia purpura (ITP) *unless there is life-threatening bleeding* but should be only given after a bolus dose of steroids (Methylprednisolone 30 mg/kg IV) or IVIG (0.8 g/kg IV)
- **Fresh Frozen Plasma transfusion of 15ml/kg IV over 1 hour**
 - Indication: active bleeding, DIC or surgery with prolonged PT/PTT and/or elevated PTT secondary to factor deficiency and no specific factor replacement available.

Transfusion Reactions

- Signs & symptoms: fever, hives, chest pain, nausea/vomiting, anxiety, shortness of breath, hypotension, sepsis
- Treatment:
 - **Stop transfusion, change IV tubing, flush line & start normal saline (NS)** at maintenance rate
 - If *febrile or urticarial* reaction give:
 - **Paracetamol** 15 mg/kg PO (Max dose 650 mg/dose)
 - **Hydrocortisone** 2 mg/kg IV (Max dose 100 mg/dose). **Note:** if unavailable, use another steroid, eg methylprednisolone (Solu-Medrol) or dexamethasone
 - Antihistamine:
 - **Chlorpheniramine** 1mg (2-5 years), 2mg (6-11 yrs), 4mg (>12 years) PO
 - **Promethazine** 1mg/kg/dose (max: 25mg) PO/IV
 - In patients with **anaphylaxis**, adrenaline should be given:
 - **Adrenaline** 1:10,000, give 0.1 mL/kg IV
 - Adrenaline 1:1000, give 0.01 mL/kg IV

Epistaxis management

- Place patient ideally in the **sitting position**. Do not let the child lie flat. Ensure the head is above the heart.
- **Flex neck** anteriorly with chin touching the chest
- With thumb and index finger **pinch the soft parts of the nose on the lower half** of the nose and hold pressure for **20 minutes** continuously to allow for clot formation to occur
- Nasal packing may be placed if source of bleeding not well visualized or bleeding is profuse

Hemophilia and acute bleeding

- Patients with hemophilia can have spontaneous bleeding and/or excessive bleeding with trauma.
- It is **imperative to treat hemophilia patients *within 30 minutes of presentation*** with factor and then consider diagnostic testing.
- Factor replacement:
 - **Factor VIII deficiency (Hemophilia A):**
 - Give **50 units/kg of factor VIII IV** as frequently as Q8 depending on location & severity of bleed. Treat usually for at least 3 days for an acute bleed, then weekly until back to baseline
 - **Factor IX deficiency (Hemophilia B):**
 - Give **100 units/kg of factor IX IV Q day**, for at least 3 days, then Q week until back to baseline
 - Where Factor VIII or Factor IX is unavailable or not immediately available in emergency situations then give:
 - **FFP at 10-20 ml/kg IV Q day** to run over 1 hour
 - **Factor VIIa (NovoSeven) 90mcg/kg IV Q8 hours**

Immune Thrombocytopenic Purpura (ITP)

- Mechanism: Shortened platelet survival due to platelet **autoantibody** production
- Diagnosis of exclusion - must rule out leukemia
- Platelet transfusions are NOT indicated in ITP as the auto-antibodies will also consume the donor platelets

Recommendations:

- May consider observation if: No bleeding or mild petechiae.
- Give **prednisone** 1mg/kg BID x 5 days :
 - If <5 years AND platelets <20,000 (*WITHOUT CONCERN FOR LEUKEMIA*)
 - If platelets < 50,000 and any bleeding present (especially mucocutaneous bleeding - nose/mouth)
- Give **methylprednisolone** 30mg/kg once daily x 3 days IV and/or **IVIG** 0.8 g/kg/dose IV with or without post-steroid/IVIG platelet transfusion if:
 - Life-threatening bleeding – unexplained headache, neurological changes, or head trauma.

ONCOLOGY

Body Surface Area Calculation:

$$\text{BSA (m}^2\text{)} = \sqrt{\frac{\text{weight [kg]} \times \text{height [cm]}}{3600}}$$

General

- **Nothing per rectum** (digital rectal exam, thermometer, suppositories, enema) in oncology patients
- **No procedures** such as incision & drainage of lesions, NG tube, urine cath, or LP without approval by oncologist
- Prior to blood work or IV please prep area with **betadine/spirits**
- **Do NOT give live vaccines (MMR, Varicella, Yellow Fever, nasal Influenza vaccines)**
- **All patients on chemotherapy** should receive **PCP prophylaxis** with **Co-trimoxazole/Bactrim** (TMP/SMX) until 3 months after completion of chemotherapy using this table. (note: can be given once daily every day or twice daily three times per week)

BSA (m ²)	Regular Strength Tab (80/400)	Liquid (mL) 40/200 per 5 ml
<0.3	N/A	2.5
0.3 – 0.79	0.5	5
0.8 – 1.39	1	10
1.40 – 1.89	1.5	15
>1.9	2	20

Neutropenia

- Absolute Neutrophil Count (**ANC**) = $\text{total WBC} \times (\% \text{ neutrophils} + \% \text{ bands})$
- Define neutropenia:
 - Mild: ANC <1,500
 - Moderate: ANC < 1,000
 - Severe: ANC <500

Fever and Neutropenia

- Patients should be assessed immediately upon arrival to the clinic/emergency center, and antibiotic therapy instituted **immediately** after obtaining blood work
- Work up:
 - Complete physical exam (including visual perianal exam remembering that physical signs of infection may be subtle in the neutropenic patient).
 - Full Blood Count (FBC)
 - Type & Cross
 - Blood Culture (before giving antibiotics)
 - Place IV cannula
- Treatment:
 - Immediately initiate both: **cefotaxime** 50 mg/kg/dose IV Q 8 hours (max: 2g per dose) AND **gentamicin** 2.5 mg/kg/dose IV Q 8 hours; (max: 120 mg/dose)
 - If having acute abdomen then add **metronidazole** 7.5mg/kg/dose IV Q6 (max: 500mg/dose). Note: if having GI symptoms (oral sores, vomiting, diarrhea, abdominal pain) then may consider adding.
 - If still febrile for >24 hours despite cefotaxime and gentamicin or septic at presentation, then add **vancomycin** 10 to 15 mg/kg/dose IV Q 8 hours (max: 2 g/day)
 - If ANC <500, then give **G-CSF (Neupogen)** at 5 micrograms/kg/day IV or SQ until ANC >2000

Tumor Lysis Syndrome

- Lysis of tumor cells releases electrolytes & urea cycle products resulting in **hyperuricemia**, **hyperkalemia**, **hyperphosphatemia** & resultant hypocalcemia
- Severe TLS Labs (minimum daily)
 - **Urea & Electrolytes, Calcium, Magnesium, Phosphate, and Uric Acid**
- TLS seen with large tumor burden including (but not limited to): Burkitt Lymphoma, Acute Lymphoblastic Leukemia, AML, and Neuroblastoma
- Treatment:
 - **Hydration** with 125 ml/m²/hour (roughly 2.5 x maintenance) with fluids *not containing potassium* (e.g. DNS, NS, D5W, etc.)
 - **Allopurinol** 100 mg/m²/dose PO given three times daily (Max dose 600 mg/day for age <10 yrs, 800 mg/day for >10 yrs.)

Emergent Management of Obstructive Lesions

- **Mediastinal mass/upper airway lesion**
 - **Avoid sedation**, elevate head of the bed, consult anesthesia for procedures, may need emergency chemo prior to full diagnostic work up
- **Intracranial mass/spinal cord compression**
 - Emergently give **Dexamethasone**: (Give even before imaging!)
 - < 20 kg = 2 mg IV every 6 hours
 - > 20 kg = 4 mg IV every 6 hours
 - Taper over one week. Low daily dose may be necessary.
 - For signs of **increased intracranial pressure**
 - Fluid restrict to 0.75 x maintenance
 - Acetazolamide 5mg/kg/dose every 6 hours
 - Mannitol 0.25 to 1g/kg/dose IV
 - Emergent CT scan

Pain Control

Perform pain assessment with all vital signs



- STEP 1: Non-opioid Analgesics
 - **Paracetamol** 15mg/kg/dose PO q4-6 hours (max single dose 650mg, 4g/day). Avoid if liver disease.
 - **Ibuprofen** 10 mg/kg/dose PO every 6-8 hours (Max single dose 800 mg, 2400 mg/day). Avoid if thrombocytopenia or renal disease.
- STEP 2: Weak Opioids
 - **Codeine** 0.5-1mg/kg/dose PO every 4-6 hours as needed (max single dose 60mg/dose, starting dose for an adult is 15-30mg)
- STEP 3: Strong Opioids
 - Intravenous: **Morphine** sulfate 0.05 mg/kg/dose IV every 4-6 hrs
 - For opioid-naïve patients, the dose for patients <10 kg should not exceed 0.5 mg; 10-20 kg should not exceed 1mg; 20-40 kg should not exceed 2mg and >40mg should not exceed 4mg. Further titration should be done in consultation with the attending
 - Note: IV to PO dosing conversion for morphine is: 1:3 (1 mg IV is = 3 mg PO).

Anti-Emetics

- **Granisetron (Kytril)** 10mcg/kg/dose (typically 0.5 mg if <50 kg and 1mg if >50kg, max 1mg) IV or PO once or twice daily
- **Dexamethasone** 6 mg/m²/dose (max 10mg/dose) IV or PO given daily or Q12 hours
- **Promethazine (Phenergan)** 1 mg/kg/dose (max: 25mg child) IV or PO every 6 hours as needed or scheduled

Constipation Management

- Most commonly caused by vincristine, inactivity & opioid medications
- **No digital rectal exam, rectal temperature, enemas, or suppositories!**
 - **Bisacodyl (Dulcolax)**
 - 3 - 12 yrs: 5 mg PO once daily (max:10mg)
 - >12 yrs: 10 mg PO once daily (max: 30mg)
 - **Docusate sodium (Colace)**
 - < 3 yrs: give 30 mg by mouth divided once daily to 4 times daily
 - 3 – 6 yrs: give 60 mg by mouth divided once daily to 4 times daily
 - > 6 yrs: give 150 mg by mouth divided once daily to 4 times daily
 - **Lactulose**
 - 1-3 mL/kg/day PO twice daily (max: 60 mL/day)
 - **Mineral Oil (Paraffin)**
 - Child: 5-15 mL/day PO divided once to twice daily, adolescents: 15-45mL/day
 - **Polyethylene glycol 3350 (Miralax/Movicol)**
 - 1-1.5 g/kg/day (max 17 g/day) in 4-8 oz. of liquid by mouth daily.
 - *Avoid mixing in milk or formula.*
 - **Klean-Prep** is an option- read the sachet for dosing instructions.
 - **Senna**
 - 2-6 years: 4.3 mg dose PO once to twice daily
 - 6-12 years: 8.6 mg dose PO once to twice daily
 - Age >12 years: 17.2 mg dose PO once to twice daily
 - Not to be used on a regular basis

Commonly Prescribed Drugs on Formulary (subject to availability)

*indicates special order form needed – consultant to sign

all dosages are mg/kg/dose unless specified

Drug	Forms	Dosage
Acetazolamide	250mg tab	5mg/kg/dose q8 po max 100mg/kg/day incr by 25 mg/kg/day neonate: 5 mg/kg/dose q6 hrs
*Acyclovir	200mg tab 250mg inj	Neonatal HSV: 20mg/kg/dose IV q8 if CNS dz treat for 21 days Neonatal varicella: 20 mg/kg/dose q 6 for 5 days Zoster in HIV+: 10mg/kg/dose IV q8 <u>or</u> 800mg PO 5x/24hr ≥12yrs [max po 80mg/kg/24hr]
Adrenaline (epinephrine)	1mg/ml inj (1:1000)	0.01mg/kg/dose (Dilute to 1:10,000), IV or 0.1mg/kg ET q3-5min Anaphylaxis 0.01 mg/kg/dose (1 :1000) Croup neb : 0.5 ml (1 :1000) /kg in 3 ml NS (max adrenalin 5ml)
Albendazole	400mg tab	1-2yo: 200mg x1; x3 if severe >2yo: 400mg x1; x3 if severe
Aminophylline	25mg/ml	Neonatal apnea: Load 6 mg/kg IV over 20 minutes then 2mg/kg/dose IV/PO given over 5-10 minutes Q6 to 8 hrs
Amoxycillin	250mg tab 125mg/5ml mixture	Infant < 3 mo: 10-15 mg/kg/dose PO q12 Child: Std Dose 12.5-25 mg/kg/dose PO q12 High Dose 40-45 mg/kg/dose PO q12 [max 2-3g/24hr] Pneumonia divide q 8 hrs
Amphotericin B (not liposomal)	50mg inj	Prehydrate IV 20 ml/kg then 0.5-1mg/kg diluted to 0.1mg/mL in D5W q24hr (protect from light) run 1 st dose over 6hr [max 1.5mg/kg/24hr]. Follow Cr, K, Mg, Plt. Cryptococcal Meningitis: 1 mg/kg/dose
Ampicillin	250mg inj	Neonate: <7 days: 150 mg/kg/dose IV/IM q12 hrs ≥7 days: <1200gm 100 mg/kg/dose IV/IM q12 hrs ≥7 days: 1200-2000gm 50 mg/kg/dose IV/IM q 8 hrs ≥7 days: > 2 kg 50 mg/kg/dose IV/IM q 6 hrs Child: 25-50mg/kg/dose IV/IM q6 Meningitis: 75-100 mg/kg/dose IV/IM q6 [max 12g/24hr]
Aspirin	300mg tab	AVOID in children <16 yrs, unless: Kawasaki: 20-25mg/kg/dose po q6 till defervesce then 3-5mg/kg/dose od
Atropine	?	Prolonged resuscitation: 0.01-0.3 mg/dose q 10-15 min x 2-3 doses For organophosphate poisoning: 0.03mg-0.04mg/kg IV, repeat half dose in 15 minutes and hourly till toxic
Augmentin (Amoxycillin+ clavulanic acid)	250 + 125 tab 250 + 6.25/5ml mix 500 + 100mg inj	Dosing based on <u>amoxycillin</u> component: <3 months: 15mg/kg/dose PO q12 ≥3 months: 6-15 /kg/dose q8 Severe infections: 50mg/kg/dose IV q6 Adults: 250-500mg po q8
Baclofen		<5 yrs: 2.5mg PO q8 >5 yrs: 5mg PO q8
Beclomethasone	100mcg MDI	Use with spacer & mask < 5 years: 50-100mcg 2-4 times daily [max 500mcg/24hr]
Beclomethasone nasal spray	50mcg spray	1 spray each nostril 1-2 x daily
Bendroflumethiazide	2.5mg tab	<12 yr: initially 400mcg/kg qd PO, then 50-100mcg/kg qd PO >12y: 2.5-5mg PO qd [dose from package insert]
Benzyl benzoate	25%	Apply x2, 1wk apart (scabies)
Betamethasone	0.1% cream 0.1% ointment	Potent topical steroid. Apply sparingly 1-2x daily, not to face or nappy area. Discontinue as soon as possible.
Bisacodyl	5mg Tab 10mg supp	0.3mg/kg/24h PO or 5-10mg PO q6h before desired effect. [max 30mg/24hr po] Rectal (as a single does): <2 yr: 5mg PR 2-11 yr: 5-10mg PR >11yr: 10mg PR
Biperiden	5mg/ml	For drug induced acute dystonic reaction: Slow IV, < 1year: 1mg; 1-6 years: 2mg; 6-10years: 3mg

Caffeine Citrate		Neonatal apnea: 20 mg/kg loading dose over 30 min, then maintenance 5-12 mg/kg/dose q 24 hrs																		
Calcium gluconate	300mg tab 100mg/ml inj	Neonate: 50-200 mg/kg/dose q6 Infant: 50-125 mg/kg/dose IV q6 100-200 mg/kg/dose PO q6 Child: 50-125 mg/kg/dose PO/IV q6 Arrhythmia: 60-100 mg/kg q 10 min max 800 mg/dose Avoid mixing with bicarbonate and ceftriaxone																		
Captopril		6mo: 0.01-0.5mg/kg/dose q8-12 PO Child: 0.3-0.5mg/kg/dose q8-12 PO																		
Carbamazepine	200mg tab 20mg/ml mix	See AED dosing table																		
Cefotaxime	500mg, 1g inj	1 mo-12 yr: 25-50 mg/kg/dose IV q6-q8 >50kg:1-2gIVq6-12 Meningitis: 75 mg/kg/dose IV q6 [Max 12g/24hr] Neonates: <table><tr><th>Age</th><th>Weight</th><th>Dosage (IV/IM)</th></tr><tr><td>All neonates</td><td><1,200 g</td><td>50 mg/kg/dose IV/IM q12h</td></tr><tr><td>Postnatal age <7d</td><td>1,200-2,000g</td><td>50 mg/kg/dose IV/IM q12h</td></tr><tr><td>Postnatal age <7d</td><td>>2,000 g</td><td>50 mg/kg/dose IV/IM q8h</td></tr><tr><td>Postnatal age >7d</td><td>1,200-2,000g</td><td>50 mg/kg/dose IV/IM q8h</td></tr><tr><td>Postnatal age >7d</td><td>>2,000 g</td><td>50 mg/kg/dose IV/IM q6h</td></tr></table>	Age	Weight	Dosage (IV/IM)	All neonates	<1,200 g	50 mg/kg/dose IV/IM q12h	Postnatal age <7d	1,200-2,000g	50 mg/kg/dose IV/IM q12h	Postnatal age <7d	>2,000 g	50 mg/kg/dose IV/IM q8h	Postnatal age >7d	1,200-2,000g	50 mg/kg/dose IV/IM q8h	Postnatal age >7d	>2,000 g	50 mg/kg/dose IV/IM q6h
Age	Weight	Dosage (IV/IM)																		
All neonates	<1,200 g	50 mg/kg/dose IV/IM q12h																		
Postnatal age <7d	1,200-2,000g	50 mg/kg/dose IV/IM q12h																		
Postnatal age <7d	>2,000 g	50 mg/kg/dose IV/IM q8h																		
Postnatal age >7d	1,200-2,000g	50 mg/kg/dose IV/IM q8h																		
Postnatal age >7d	>2,000 g	50 mg/kg/dose IV/IM q6h																		
Cefpodoxime*	40mg/ 5ml 100mg tab	15 d - 6mo: 4 mg/kg/dose po BD 6 mo - 2 yrs: 40 mg/dose po BD 3 - 8 yrs: 80 mg/dose po BD 9 - 12 yrs: 100 mg/dose po BD 12 - 18 yrs: 100-200 mg/dose po BD																		
Ceftriaxone	Inj	50-150mg/kg/dose q12-24 IM/IV Meningitis (& penicillin resistant pneumococci): 50mg/kg/dose IM/IV q12 or 100mg/kg/dose q24 [Max 4g/day] neonates: <table><tr><th>Age</th><th>Weight</th><th>Dosage (IV/IM)</th></tr><tr><td>Postnatal age <7d</td><td>All weights</td><td>50 mg/kg/dose IV/IM q24h</td></tr><tr><td>Postnatal age >7d</td><td><2,000 g</td><td>50 mg/kg/dose IV/IM q24h</td></tr><tr><td>Postnatal age >7d</td><td>>2,000 g</td><td>75 mg/kg/day IV/IM q24h</td></tr></table> Avoid with IV calcium, caution if on Ringers Lactate Gonococcal: Prophylaxis 25-50 mg/kg/dose x 1 Disease: 25-50 mg/kg/dose q 24 hrs x 7days (14 days for CNS disease) Ophthalmia uncomplicated: 50 mg/kg/dose x 1	Age	Weight	Dosage (IV/IM)	Postnatal age <7d	All weights	50 mg/kg/dose IV/IM q24h	Postnatal age >7d	<2,000 g	50 mg/kg/dose IV/IM q24h	Postnatal age >7d	>2,000 g	75 mg/kg/day IV/IM q24h						
Age	Weight	Dosage (IV/IM)																		
Postnatal age <7d	All weights	50 mg/kg/dose IV/IM q24h																		
Postnatal age >7d	<2,000 g	50 mg/kg/dose IV/IM q24h																		
Postnatal age >7d	>2,000 g	75 mg/kg/day IV/IM q24h																		
Cephadrine (1 st gen cep)	250mg cap 1g inj	Moderate: 6.25-25/kg/dose PO q6-12 Severe: 12.5-25mg/dose PO q6																		
Chloramphenicol	1g inj	12.5-18mg/kg/dose IV/IM q6 Meningitis: 18-25/kg/dose IV/IM q6																		
Chlorpheniramine (antihistamine)	4mg tab 0.4mg/ml syrup 10mg/ml inj	6-12months: 1mg/dose po q12 1-5 yr: 1-2mg/dose po q8 6-12yr: 2-4mg/dose po q6 >12yr: 4mg po/dose q6-8																		
Cimetidine	200mg inj	Infant: 2.5-5mg/kg/dose PO/IM/IV q6-12 Child: 5-10mg/kg/dose PO/IM/IV q6 Dilute to 10 mg/mL, give over 10 minutes																		
Clindamycin	600mg/ 4ml inj	Child: 6.25-10 mg/kg/dose q 6 IV (2.5-7.5mg/kg/dose PO q6) Neonate: <table><tr><th>Age</th><th>Dosage</th></tr><tr><td>Postmenstrual age <29 wk</td><td>7.5 mg/kg/dose IV q12h</td></tr><tr><td>Postmenstrual age >29 wk</td><td>7.5 mg/kg/dose IV q8h</td></tr></table>	Age	Dosage	Postmenstrual age <29 wk	7.5 mg/kg/dose IV q12h	Postmenstrual age >29 wk	7.5 mg/kg/dose IV q8h												
Age	Dosage																			
Postmenstrual age <29 wk	7.5 mg/kg/dose IV q12h																			
Postmenstrual age >29 wk	7.5 mg/kg/dose IV q8h																			
*Clonidine	0.1 mg	ADHD/Autism: 27-40 kg -0.001-0.0015 mg/kg/dose tid-qid Start at 0.05 mg qhs inc 0.05 mg/day q 3-7 days max 0.2 mg/ day																		
Clotrimazole	1% cream	Apply q12																		
Cloxacillin	250mg cap 25mg/ml mix	12-25mg/kg/dose IV/IM/PO q6 Severe infection: 50mg/kg/dose IV/IM/PO q6 [max 500mg/dose]																		
Codeine phosphate	30mg tab	0.5-1mg/kg/dose po q4-6 [max 60mg/dose]																		
Cotrimoxazole (TMP + SMZ)	80 + 400 tab 40 + 200/5ml susp	Dosing based on TMP component: (write out dose in ml) Mild infection: 4-5mg/kg/dose PO q12																		

	16 + 80/ml inj	PCP prophylaxis: 2.5-5mg/kg/dose PO q24 PCP treatment: 5mg/kg/dose PO/IV q6																					
Dexamethasone	0.5mg tab 4mg/ml inj	Croup: 0.6mg/kg PO/IM/IV x 1 Inflammatory: 0.02-0.1mg/kg/dose PO/IM/IV q6-q12 Hib meningitis: 0.4mg/kg/dose IV q12 x 2days Cerebral Oedema: Loading 1-2mg/kg IV/IM x 1, then 0.25-0.5 mg/kg/dose q4-6 [max 16mg/24hr] Neonatal Chronic Lung Disease Dosing FrequencyDuration Day 10.1 mg/kg q12h x Two total doses Day 20.075 mg/kgq12h x Two total doses Day 30.05 mg/kg q12h x Two total doses																					
Diazepam	2mg, 5mg tab 5mg/ml inj	Status: 0.2-0.5mg/dose IV q15-30min [max 5mg <5y, 10mg >5y] Status: 0.5mg/kg/dose PR x1 (use iv prep) [max 20mg] Sedation: 0.1mg/kg/dose IV x1 [max 10mg]																					
Doxycycline	100mg tab	NOT for children < 8 yr ≤45 kg: 2.2mg/kg/dose PO qd-bd >45 kg: 100mg/dose day PO qd-bd [max 200mg/day]																					
Enalapril	5mg, 20mg tab	0.05-0.25mg/kg/dose PO q12-q24 [max 40mg/day]																					
Erythromycin	250mg tab 125mg/5ml susp	10-15mg/kg/dose PO q6-8 Neonate: <table border="1"> <thead> <tr> <th>Indication</th><th>Dosage</th><th>Comment</th></tr> </thead> <tbody> <tr> <td>Systemic infections</td><td>Erythromycin estolate (Ilosone): 10 mg/kg/dose PO q8h. Erythromycin ethylsuccinate (ESS, EryPed): 10 mg/kg/dose PO q6h</td><td>Administer with feeding to enhance absorption of Erythromycin ethylsuccinate and to reduce possible GI upset</td></tr> <tr> <td>Severe systemic infections/NPO</td><td>5-10 mg/kg/dose, IV q6h. (Dilute to 1-5 mg/mL and infuse >1 h)</td><td>Use only preservative-free IV erythromycin formulations</td></tr> <tr> <td>Ophthalmia neonatorum</td><td>Prophylaxis: 0.5-1 cm ribbon of 0.5% ointment into each eye x 1</td><td>Administered at birth</td></tr> <tr> <td>Chlamydia conjunctivitis</td><td>0.5-1 cm ribbon of 0.5% ointment into each conjunctival sac q6hx7d</td><td>PO therapy is preferable to topical therapy for eradication of nasopharyngeal carrier state. Treat mother and her sexual partner</td></tr> <tr> <td>Prokinetic agent</td><td colspan="2">Initial: 3 mg/kg/ IV >60 min, followed by 4-5 mg/kg/dpse PO in 3-4 doses 30 min pre-meals</td></tr> </tbody> </table>	Indication	Dosage	Comment	Systemic infections	Erythromycin estolate (Ilosone): 10 mg/kg/dose PO q8h. Erythromycin ethylsuccinate (ESS, EryPed): 10 mg/kg/dose PO q6h	Administer with feeding to enhance absorption of Erythromycin ethylsuccinate and to reduce possible GI upset	Severe systemic infections/NPO	5-10 mg/kg/dose, IV q6h. (Dilute to 1-5 mg/mL and infuse >1 h)	Use only preservative-free IV erythromycin formulations	Ophthalmia neonatorum	Prophylaxis: 0.5-1 cm ribbon of 0.5% ointment into each eye x 1	Administered at birth	Chlamydia conjunctivitis	0.5-1 cm ribbon of 0.5% ointment into each conjunctival sac q6hx7d	PO therapy is preferable to topical therapy for eradication of nasopharyngeal carrier state. Treat mother and her sexual partner	Prokinetic agent	Initial: 3 mg/kg/ IV >60 min, followed by 4-5 mg/kg/dpse PO in 3-4 doses 30 min pre-meals				
Indication	Dosage	Comment																					
Systemic infections	Erythromycin estolate (Ilosone): 10 mg/kg/dose PO q8h. Erythromycin ethylsuccinate (ESS, EryPed): 10 mg/kg/dose PO q6h	Administer with feeding to enhance absorption of Erythromycin ethylsuccinate and to reduce possible GI upset																					
Severe systemic infections/NPO	5-10 mg/kg/dose, IV q6h. (Dilute to 1-5 mg/mL and infuse >1 h)	Use only preservative-free IV erythromycin formulations																					
Ophthalmia neonatorum	Prophylaxis: 0.5-1 cm ribbon of 0.5% ointment into each eye x 1	Administered at birth																					
Chlamydia conjunctivitis	0.5-1 cm ribbon of 0.5% ointment into each conjunctival sac q6hx7d	PO therapy is preferable to topical therapy for eradication of nasopharyngeal carrier state. Treat mother and her sexual partner																					
Prokinetic agent	Initial: 3 mg/kg/ IV >60 min, followed by 4-5 mg/kg/dpse PO in 3-4 doses 30 min pre-meals																						
Ferrous fumarate	45mg Fe/5ml	Treatment: 3-6mg Fe/kg/dose PO od (may divide q8) Prophylaxis: 1-2mg Fe/kg/dose qd (may divide q8)																					
Ferrimed	50mg Fe/5ml	Treatment: 3-6mg Fe/kg/dose PO od (may divide q8) Prophylaxis: 1-2mg Fe/kg/dose qd (may divide q8)																					
Ferrous sulfate	60mg Fe/tab	Treatment: 3-6mg Fe/kg/dose PO od (may divide q8) Prophylaxis: 1-2mg Fe/kg/dose qd (may divide q8)																					
*Fluconazole	50mg, 200mg tab 50mg/5ml susp 2mg/ml inj	Oral/esophageal Candidiasis: loading 6mg/kg PO/IV x1 → Maint 3mg/kg PO/IV q24 Cryptococcal meningitis: loading 12mg/kg PO/IV x1 → Maint 6-12mg/kg q24 Neonate: Postmenstrual agePostnatal ageDosing interval <table border="1"> <tbody> <tr> <td>≤29 wk</td><td>0-14 d</td><td>72 h</td></tr> <tr> <td></td><td>>14 d</td><td>48 h</td></tr> <tr> <td>30-36 wk</td><td>0-14 d</td><td>48 h</td></tr> <tr> <td></td><td>>14 d</td><td>24 h</td></tr> <tr> <td>>37-44 wk</td><td>0-7 d</td><td>48 h</td></tr> <tr> <td></td><td>>7 d</td><td>24 h</td></tr> <tr> <td>>45</td><td>All ages</td><td>24 h</td></tr> </tbody> </table>	≤29 wk	0-14 d	72 h		>14 d	48 h	30-36 wk	0-14 d	48 h		>14 d	24 h	>37-44 wk	0-7 d	48 h		>7 d	24 h	>45	All ages	24 h
≤29 wk	0-14 d	72 h																					
	>14 d	48 h																					
30-36 wk	0-14 d	48 h																					
	>14 d	24 h																					
>37-44 wk	0-7 d	48 h																					
	>7 d	24 h																					
>45	All ages	24 h																					

Folic acid	5mg tab	Severe Malnutrition: Day 1: 5mg PO x 1 → then 1 mg/d x 2 weeks
Furosemide	10mg/ml 40mg tab 10mg/ml inj	1-6mg/kg/dose PO q12-24 0.5-2mg/kg/dose IV q6-12 (replace with KCl 1meq to 1mg furosemide)
Gancyclovir		5 mg/kg/dose IV every 12 hours Congenital CMV: 5-7.5 mg/kg/dose q12 hrs x 4-6 weeks
Gentamycin	10mg, 40mg inj	5mg/kg/day IV/IM q24 neonate: Age IV Dosage <35 wk postmenstrual age 3 mg/kg/dose q24h ≥35 wk postmenstrual age 4 mg/kg/dose q24h
Granisetron (Kytrel)		10 mcg/kg/dose PO/IV Q12-24H [Max 2 mg PO/day 3 mg IV/dose or 9 mg IV/day]
Griseofulvin	125mg, 500mg tab	20-25mg/kg PO qd with fatty food (may div q12) [max1g/day]
Hydrochlorthiazide	25mg tab	<6mo: 1-2 mg/kg/dose PO bd >6mo: 1-2 mg/kg/dose PO bd
Hydrocortisone	100mg inj	Asthma: 2mg/kg/dose IV q6 Inflammatory: 1-5mg/kg/dose IV q12-24
Hydrocortisone	1% cream/ ointment	Weak topical steroid. Apply 1-2 x daily
Ibuprofen	400mg tab	10mg/kg/dose PO q6 Neonates: PDA: 10 mg/kg day1, 5 mg/kg days 2 and 3
*IVIG		Guillain Barre: 400mg/kg IV od x5 days Kawasaki 1-2g/kg IV x 1 or 400mg/kg/day IV x 4days
Ketamine	50mg/ml inj	1-2mg/kg IV (onset ½-2min, last 20-60min) 4-5mg/kg IM (onset 5-10min, last 30-90min)
Mannitol	20% soln	Cerebral edema: 0.25-0.5g/kg/dose IV q4-6 (over 20-30min) May give furosemide 1mg/kg concurrently or 5min before mannitol. May increase gradually to 1g/kg/dose IV if needed
Mebendazole	100mg tab 200mg/ml mix	Enterobius (pinworm) >2yr: 100mg PO x 1 Hookworm/ascaris/trichuris: 100mg po BID x 3days or 500mg po x 1.
Methylphenidate	10 mg	0.15 to 1.5 mg/kg/dose bid/tid >6 yrs start 2.5-5 mg/day incr. 0.1 mg/kg/dose or 5-10 mg/day q 7 days max 2 mg/kg/day (60 mg/day)
Methotrexate		0.6mg/kg po weekly, eg Friday (add folic acid 5mg Mon/Tues/Wed) [max 20mg]
Methylprednisolone	80mg/ml inj	Asthma: 2mg/kg/dose – loading, then 0.5mg/kg/dose IV q6
Metoclopramide	10mg tab 5mg/ml inj	GERD: 0.1-0.2mg/kg/dose IV/PO/IM up to q6 Antiemetic: 1-2mg/kg/dose IV/IM/PO q2-6
Metronidazole	200mg tab 200mg/5ml susp	C Diff/Bacterial Infxn: 7.5mg/kg/dose PO/iv q6 x 10days Amebiasis :11.5-16.5mg/kg/dose PO q8 x 10 days Giardia: 5mg/kg/dose PO q8 x 5days
Midazolam	5mg/ml inj (in PMH lockbox)	0.05-0.1mg/kg/dose IV [max 2mg]
Morphine sulfate	15mg/ml inj	0.1-0.2mg/kg/dose IV q2-4 prn [max 15mg] IV:PO = 1:3 (<3 yrs, 0.1-0.2mg/kg/dose; >3yrs, 0.2-0.4mg/kg/dose)
Multivitamin		2.5-5 mL PO OD
*Mupirocin	ointment	TDS x 1 week
Nalidixic acid	500mg tab 60mg/ml mix	>3 months age:12.5-15mg/kg/dose po qid x5d (dysentery)
Omeprazole	20mg tab	1mg/kg PO od (may divide BD) Or: ≥ 2 years: <20kg – 10mg po qd ≥20kg – 20mg po qd
Paracetamol	500mg tab 24mg/ml syrup	10-15mg/kg/dose po q4-6
PCN benzathine	2.4MU inj	Congenital Syphilis: 0.05MU/kg IM qwk x3 Rheumatic Fever Prophyl: 0.025-0.05MU/kg IM q3-4wk
PCN benzyl (x-pen)	1MU, 5MU inj	50,000 U/kg/dose IV q6 Meningitis: 100,000 U/kg/dose IV q6

Pen V	250mg tab 125mg/5ml powder	<12yo: 6.25-12.5mg/kg/dose q6-8 [max 3g/day] >12yo: 250-500mg po q6-8																		
Pethidine (Demerol)	50mg/ml inj	0.5-1 mg/kg/dose IM q4-6 prn; for IV dilute to 5-10 mg/mL and give over 2-5 min [max 100mg/dose]																		
Phenobarbitone	30mg, 60mg tab 3mg/ml mix 200mg/ml inj	15-20mg/kg IV x1 (load for status), may repeat in 10 mg/kg to total of 40 mg/kg load. Maintenance of 2.5-5 mg/kg/dose PO/IV q12 (See AED chart)																		
Phenytoin	25mg, 100mg tab 25mg/ml mix 10mg/ml inj	15-20mg/kg IV (load for status) [max 1500mg/day] Maintenance 2.5-5 mg/kg/dose PO/IV BD Give at a rate at ≤1 mg/kg/min, diluted in NS to 10 mg/mL or less Pt should be on ECG monitor during infusion (see AED chart)																		
Pipercillin-tazobactam		90mg/kg/dose iv q6-8 [max 45g q6]																		
Prednisolone	1mg tab 5mg tab 15mg/5ml liquid	0.5 to 1 mg/kg/dose po qd-bid (asthma) 0.5-2mg/kg/dose po qd(may divide up to q6) (inflammatory)																		
Pyridoxine	25mg tab	25-50mg po od (while on INH)																		
Ranitidine	150mg tablet	1 mo-16 yr: GERD 2.5-5 mg/kg/dose po bid [max 300mg/day] neonate: oral: 2 mg/kg/dose q 8 hrs IV: 0.5 mg/kg/dose q 6-8 run over 30 min																		
Salbutamol	100mcg inh 5mg/ml neb soln	1-5 yr: 1.25-2.5mg/dose q4-6 neb 5-12yr: 2.5mg/dose q4-6 neb >12yr: 2.5-5mg/dose q6 neb (0.5ml-1ml solution with 2ml saline)																		
*Sildenafil		PPHN: Start 250-500 mcg/kg PO/NG every 4-8 hrs Max 2 mg/kg every 4 hrs																		
Silver sulphadiazine	1% cream																			
Spironolactone	25mg tab	0.5-1.5mg/kg/dose po bid (may div up to qid) [max 200mg/day]																		
Survanta		Surfactant Doses Comments Beractant 4 Divided into four aliquots, with up to (Survanta) mL/kg/dose three additional doses (four total), administered q6h if needed																		
Thiamine		10-25mg iv daily																		
Trenexamic Acid		1 month – 18 years: 15-25mg/kg/dose 2-3x daily																		
Trihexyphenidyl	2mg tab	Dystonia: 1-2 mg po/Dose q24H (may div q12)																		
Valproate	200mg tab 40mg/ml mix	See AED Dosing Table IV: only if PO not possible, same dose div q6, convert back to PO ASAP																		
Vancomycin	500mg inj	31-60 days 10mg/kg/dose IV slow infusion q8 >2m: 10-15mg/kg/dose IV infusion q8 Meningitis: 15 mg/kg/dose IV infusion Q6H [max 1g/dose, 4g/day] Neonate: Postnatal ageWeight (kg)Dose (mg/kg/dose) <table> <tr><td><7 d</td><td><1.2 kg</td><td>15 mg/kg IV q24h</td></tr> <tr><td><7 d</td><td>1.2-2 kg</td><td>10 mg/kg IV q12h</td></tr> <tr><td><7 d</td><td>>2 kg</td><td>15 mg/kg IV q12h</td></tr> <tr><td>>7 d</td><td><1.2 kg</td><td>15 mg/kg IV q24h</td></tr> <tr><td>>7 d</td><td>1.2-2 kg</td><td>15 mg/kg IV q12h</td></tr> <tr><td>>7 d</td><td>>2 kg</td><td>10 mg/kg IV q8h</td></tr> </table>	<7 d	<1.2 kg	15 mg/kg IV q24h	<7 d	1.2-2 kg	10 mg/kg IV q12h	<7 d	>2 kg	15 mg/kg IV q12h	>7 d	<1.2 kg	15 mg/kg IV q24h	>7 d	1.2-2 kg	15 mg/kg IV q12h	>7 d	>2 kg	10 mg/kg IV q8h
<7 d	<1.2 kg	15 mg/kg IV q24h																		
<7 d	1.2-2 kg	10 mg/kg IV q12h																		
<7 d	>2 kg	15 mg/kg IV q12h																		
>7 d	<1.2 kg	15 mg/kg IV q24h																		
>7 d	1.2-2 kg	15 mg/kg IV q12h																		
>7 d	>2 kg	10 mg/kg IV q8h																		
Vitamin K		0.1-0.3mg/kg/day (chronic liver disease)																		
Warfarin	1, 2, 3, 5mg tab	Titrate to effect																		
Zinc		< 6 mo: 10 mg po od for 10-14 days ≥ 6 mo 20 mg po od for 10-14 days																		

If any errors or suggestions, please contact

Shiang-Ju Kung
72127457
Shiang-ju.kung@mopipi.ub.bw

Tonya Arscott-Mills
75149720
tonyaarscottmills@yahoo.com

Calendar for year 2014 (United States)

January

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

February

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	

March

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

April

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

May

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

June

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

July

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

August

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

September

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

October

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

November

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

December

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

Calendar for year 2015 (United States)

January

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

○: 4 ●: 13 ●: 20 ●: 26

February

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28

○: 3 ●: 11 ●: 18 ●: 25

March

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

○: 5 ●: 13 ●: 20 ●: 27

April

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

○: 4 ●: 11 ●: 18 ●: 25

May

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

○: 3 ●: 11 ●: 18 ●: 25

June

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

○: 2 ●: 9 ●: 16 ●: 24

July

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

○: 1 ●: 8 ●: 15 ●: 24 ○: 31

August

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

○: 6 ●: 14 ●: 22 ○: 29

September

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

○: 5 ●: 13 ●: 21 ○: 27

October

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

○: 4 ●: 12 ●: 20 ○: 27

November

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

○: 3 ●: 11 ●: 19 ○: 25

December

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

○: 3 ●: 11 ●: 18 ○: 25

Jan 1 New Year's Day
Jan 19 Martin Luther King Day
Feb 14 Valentine's Day
Feb 16 Presidents' Day
Apr 5 Easter Sunday
Apr 13 Thomas Jefferson's Birthday
May 10 Mothers' Day

May 25 Memorial Day
Jun 21 Fathers' Day
Jul 3 'Independence Day' observed
Jul 4 Independence Day
Sep 7 Labor Day
Oct 12 Columbus Day
Oct 31 Halloween

Nov 11 Veterans Day
Nov 26 Thanksgiving Day
Dec 24 Christmas Eve
Dec 25 Christmas Day
Dec 31 New Year's Eve