

Supplementary Tables

Table 1-A: List of medicines surveyed in comparison to other essential medicines lists and originator brand names identified

<i>Anti-neoplastic essential medicines chosen</i>	Originator Brand names identified	Strength	Dosage form	SIOP List 2013	India NEMLc 2011	India NEML 2015	Delhi EML 2016
Asparaginase	Elspar	10000 IU	Powder for injection	X		X	X
Bleomycin	Blenoxane	15mg	Powder for injection	X		X	X
Carboplatin	Paraplatin	150mg/15ml	Injection	X		X*	X
Carboplatin	Paraplatin	450mg/45ml	Injection	X			X
Carboplatin	Paraplatin	50mg/5ml	Injection	X			
Carboplatin	Paraplatin	600 mg/60 mL	Injection	X			
Cisplatin	Cisplatin/Platinol	100mg/100mL	Injection	X		X*	
Cisplatin	Cisplatin/Platinol	50mg/50ml	Injection	X			X
Cyclophosphamide ¹	Cytoxan/Endoxan	500mg	Powder for injection	X	X	X	X
Cyclophosphamide	Cytoxan/Endoxan	25mg	Tablet	X			X*
Cytarabine ²	Cytosar U	100mg	Powder for injection	X			X*
Dacarbazine	DTIC-Dome	100mg	Powder for injection	X		X*	X*
Dactinomycin	Cosmogen	500mcg	Powder for injection	X		X	X
Daunorubicin	Daunomycin	50mg	Powder for injection	X	X	X*	
Dexamethasone	Decadron	2mg/5ml	Oral liquid	X		X (d)	X (d)
Doxorubicin ³	Adriamycin	10mg	Powder for injection	X		X*	X
Doxorubicin ⁴	Adriamycin	50mg	Powder for injection	X			X
Etoposide	Vepesid	100mg	Capsule	X		X	
Etoposide	Vepesid	100mg/5ml	Injection	X		X	X
Ifosfamide	Ifex/Holoxan	500mg	Powder for injection	X			

Ifosfamide ⁵	Ifex/Holoxan	2g	Powder for injection	X		X	
Ifosfamide	Ifex/Holoxan	1g	Powder for injection	X		X	X
Mercaptopurine	Purinethol	50mg	Tablet	X	X	X	X
Methotrexate	Methotrexate	50mg	Powder for injection	X	X	X	X
Methotrexate	Methotrexate	2.5mg	Tablet	X	X	X	X
Paclitaxel	Taxol	6mg/ml	Powder for injection			X	X
Prednisolone	Delta-Cortef	5mg/5ml	Oral liquid	X	X*	X	X
Prednisolone	Delta-Cortef	25mg	Tablet	X			
Prednisolone	Delta-Cortef	5mg	Tablet	X		X	X
Thioguanine	Thioguanine	40mg	Solid oral dosage form	X			
Vinblastine	Velban	10mg	Powder for injection	X			X
Vincristine	Oncovin	5mg	Powder for injection	X	X		
Vincristine	Oncovin	1mg	Powder for injection	X	X	X	X
Non-cancer essential medicines							
Amoxicillin	Amoxil	250mg	Tablet/Capsule	X	X	X	X
Ciprofloxacin	Ciproxin	500mg	Tablet/Capsule		X*	X	X
Metformin	Glucophage	500mg	Tablet/Capsule			X	X
Omeprazole	Zantac	20mg	Tablet/Capsule		X	X	X

Note 1: X* = different strength; X (d) = different dosage form

Note 2: The following percentages of retail pharmacies stocked OBs: ¹25%, ²3%, ³6%, ⁴9%, ⁵16%

Table 2-A: Local and international prices compared (MPR) for medicines found in private hospital pharmacies (n=2).

	Mean price of both hospitals (INR)	Local price (\$)	IRP supplier price (\$)	MPR
Asparaginase, powder inj, 10000 IU in vial	1468.28	23.31	52.88	0.44
Bleomycin, powder inj, 15mg	556.05	8.83	12.15	0.73
Carboplatin, inj, 150 mg/15 mL	745.60	11.83	14.89	0.79
Carboplatin, inj, 450 mg/45 mL	2266.85	35.98	34.33	1.05
Carboplatin, inj, 50 mg/5 mL				
Carboplatin, inj, 600 mg/60 mL				
Cisplatin, inj, 100mg/100mL				
Cisplatin, inj, 50mg/50mL,	325.97	5.17	6.00	0.86
Cyclophosphamide, powder inj, 500mg in vial	70.18	1.11	8.16	0.14
Cyclophosphamide, tab, 25mg				
Cytarabine, powder inj, 100mg in vial	177.14	2.81	3.11	0.91
Dacarbazine, powder inj, 100mg in vial				
Dactinomycin, powder inj, 500 micrograms in vial	422.50	6.71	8.70	0.77
Daunorubicin, powder inj, 50mg in vial				

Dexamethasone, oral liquid, 2mg/5mL				
Doxorubicin, powder inj, 10mg	165.94	2.63	2.12	1.24
Doxorubicin, powder inj, 50mg	830.67	13.19	7.26	1.82
Etoposide, cap, 100mg				
Etoposide, inj, 100 mg	169.29	2.69	0.39	6.95
Ifosfamide powder inj 500mg				
Ifosfamide, powder inj, 2g vial	1100.06	17.46	47.98	0.36
Ifosfamide, powder inj, 1gm	426.35	6.77	10.78	0.63
Mercaptopurine, tab, 50mg	66.49	1.06	22.36	0.05
Methotrexate, powder inj, 50mg in vial	66.87	1.06		
Methotrexate, tab, 2.5mg	43.30	0.69	1.57	0.44
Paclitaxel, powder inj, 6mg/mL	2300.48	36.52	65.00	0.56
Prednisolone, oral liquid, 5mg/mL	23.06	0.37		
Prednisolone, tab, 25mg				
Prednisolone, tab, 5mg	5.71	0.09	0.11	0.82
Thioguanine, solid oral dosage form, 40mg	237.00	3.76	68.24	0.06
Vinblastine, powder inj, 10mg (sulfate) in vial	185.73	2.95	2.55	1.16
Vincristine, powder inj, 1mg	47.14	0.75	3.25	0.23
Vincristine, powder inj, 5mg				

MPR for anti-neoplastic medicines				0.75
Amoxicillin 250 mg tab/cap	33.60	0.53	0.16	3.33
Ciprofloxacin 500 mg, cap/tab	34.13	0.54	0.37	1.45
Metformin 500 mg cap/tab	14.47	0.23	0.15	1.53
Omeprazole 20 mg, cap/tab	31.11	0.49	0.14	3.50
MPR for non-cancer medicines				2.43

Table 3-A: Median of MPRs comparing prices of public procurement, private hospitals and Jan Aushadhi to retail prices and international reference prices (IRPs).

	<i>Retail price ratio = $\frac{\text{retail price}}{\text{price of each of the 3 outlets}}$</i>			<i>IRP price ratio = $\frac{\text{price of each of the 3 outlets}}{\text{international reference price}}$</i>		
	Public hospital procurement (n=3)	Private hospitals (n=2)	Jan Aushadhi*	Public hospital procurement (n=3)	Private hospitals (n=2)	Jan Aushadhi*
Anti-neoplastic essential medicines	1.3	1	2	0.5	0.46	0.5
Non-cancer essential medicines	2	0.93	2.9	1	2.34	0.7

*Jan Aushadhi medicines available on the website: Doxorubicin powder injection of 10mg and 50mg and Prednisolone tablet of 5mg.

The consumer prices between retail and private hospital pharmacies were more or less the same (ratio of 1.00 and 0.93). The Jan Aushadhi consumer prices were much cheaper; compared to these prices, a patient would pay 2 times and 2.9 times the price in a private-sector retail pharmacy for anti-neoplastic and non-cancer medicines. Private hospitals and Jan Aushadhi had median MPR of 0.46 and 0.5 for anti-neoplastic medicines, respectively and median MPR of 2.34 and 0.7 for non-cancer medicines, respectively. The combined median MPR in retail pharmacies compared to IRPs was 0.72 and 1.92 for anti-neoplastic and non-cancer medicines, respectively. Overall, in comparison to IRPs, median MPR for

public-procurement was ≤ 1 and median MPR was < 4 in the private hospitals, Jan Aushadhi and retail pharmacies (See Table 2 for retail pharmacies).

Table 4-A: Cost of chemotherapy according to InPOG protocol for standard-risk B cell precursor Leukaemia of a child with body surface area of 1 m²

	Duratio n of therap y	Drug exposure	Protocol dosage required (mg/m ² or Units/m ²)	Number of times dosage required	Total dose required (mg/m ² or Units/m ²)	Drug dosage surveyed (mg or Units)	Drug surveyed	Total amount to be bought	Cost (INR) per 10 pack/per vial	Total cost
SR Induction phase	Days 1- 35 inclusiv e (week 1-week 5)	Prednisolone (PO)	60	38.5	2310	5	Prednisolone 5 mg tab	462	6	277.2
		Vincristine (IV)	1.5	4	6	1	Vincristine powder inj, 1mg	8	48	384
		L- asparaginase (IM)	10000	4	40000	10000	Asparaginase powder inj 10000 IU in vial	4	1500	6000
		IT Methotrexat e	12	3	36	50	Methotrexate, powder inj 50mg vial	3	91.6	274.8
SR Consolidati on phase	Days 1- 21 inclusiv e (week	6- Mercaptopur ine (PO)	60	21	1260	50	Mercaptopurin e, tab, 50mg	25.2	68.7	173.124
		IT Methotrexat e	12	2	24	50	Methotrexate, powder inj 50mg vial	2	91.6	183.2

	6-week 8)									
SR interim maintenanc e phase	Days 1- 63 inclusiv e (week 9 - week 17)	Dexamethas one	6	20	60	0.5	Dexamethason e 0.5mg tab	120	2	240
		Vincristine (IV)	1.5	2	3	1	Vincristine powder inj, 1mg	4	48	192
		6- Mercaptopur ine (PO)	60	49	2940	50	Mercaptopurin e, tab, 50mg	58.8	68.7	403.956
		Oral Methotrexat e	20	7	140	2.5	Methotrexate, tab, 2.5mg	56	45	252
		IT Methotrexat e	12	2	24	50	Methotrexate, powder inj 50mg vial	2	91.6	183.2
SR Delayed intensificati on phase	Days 1- 49 inclusiv e (week	Dexamethas one	10	20	100	0.5	Dexamethason e 0.5mg tab	200	2	400
		Vincristine (IV)	1.5	3	4.5	1	Vincristine powder inj, 1mg	6	48	288

	18-week 24)	L-asparaginase (IM)	10000	4	40000	10000	Asparaginase powder inj 10000 IU in vial	4	1500	6000
		IT Methotrexate	12	2	24	50	Methotrexate, powder inj 50mg vial	2	91.6	183.2
		Cyclophosphamide (IV)	1000	1	1000	500	Cyclophosphamide, powder inj, 500mg in vial	2	65	130
		Cytarabine (IV/SC)	75	8	600	100	Cytarabine, powder inj, 100mg in vial	8	150	1200
		6-Mercaptopurine (PO)	60	14	840	50	Mercaptopurine, tab, 50mg	16.8	68.7	115.416
		Doxorubicin (IV)	25	3	75	50	Doxorubicin, powder inj, 50mg	3	510	1530
		SR maintenance phase	12-week cycles; 8 such cycles	6-Mercaptopurine (PO)	60	672	40320	50	Mercaptopurine, tab, 50mg	806.4
Oral Methotrexate	20			88	1760	2.5	Methotrexate, tab, 2.5mg	704	45	3168

		IT Methotrexat e	12	8	96	50	Methotrexate, powder inj 50mg vial	8	91.6	732.8
								Total cost	27850 INR	442 USD

Table 4-B: Cost of chemotherapy according to InPOG protocol for high-risk B cell precursor Leukaemia of a child with body surface area of 1 m²

	Duration of therapy	Drug exposure	Protocol dosage required (mg/m ² or Units/m ²)	Number of times dosage required	Total dose required (mg/m ² or Units/m ²)	Drug dosage surveyed (mg or Units)	Drug surveyed	Total amount to be bought	Cost (INR) per 10 pack/ per vial	Total cost
HR Induction phase	Days 1-35 inclusive (week 1-week 5)	Prednisolone (PO)	60	38.5	2310	5	Prednisolone 5 mg tab	462	6	277.2
		Vincristine (IV)	1.5	4	6	1	Vincristine powder inj, 1mg	8	48	384
		L-asparaginase (IM)	10000	8	80000	10000	Asparaginase powder inj 10000 IU in vial	8	1500	12000
		Daunorubicin (IV)	25	4	100	50	Methotrexate, powder inj 50mg vial	4	91.6	366.4
		IT Methotrexate	12	3	36	50	Methotrexate, powder inj 50mg vial	3	91.6	274.8
HR Consolidation phase	Days 1-63 inclusive	Cyclophosphamide (IV)	1000	2	2000	500	Cyclophosphamide, powder inj, 500mg in vial	4	65	260

	(week 6-week 14)	Cytarabine (IV/SC)	75	16	1200	100	Cytarabine, powder inj, 100mg in vial	16	150	2400
		6-Mercaptopurine (PO)	60	28	1680	50	Mercaptopurine, tab, 50mg	34	68.7	230.83 2
		IT Methotrexate	12	3	36	50	Methotrexate, powder inj 50mg vial	1	91.6	91.6
		Vincristine (IV)	1.5	4	6	1	Vincristine powder inj, 1mg	8	48	384
		L-asparaginase (IM)	10000	8	80000	10000	Asparaginase powder inj 10000 IU in vial	8	1500	12000
HR interim maintenance phase	Days 1-56 inclusive (week 15 - week 22)	6-Mercaptopurine (PO)	25	49	1225	50	Mercaptopurine, tab, 50mg	25	68.7	168.31 5
		IV Methotrexate	3000	4	12000	50	Methotrexate, powder inj 50mg vial	240	91.6	21984
		IT Methotrexate	12	4	48	50	Methotrexate, powder inj 50mg vial	1	91.6	91.6
HR Delayed intensification phase	Days 1-49 inclusive (week 23- week 29)	Dexamethasone	10	20	100	0.5	Dexamethasone 0.5mg tab	200	2	400
		Vincristine (IV)	1.5	3	4.5	1	Vincristine powder inj, 1mg	6	48	288

		L-asparaginase (IM)	10000	4	40000	10000	Asparaginase powder inj 10000 IU in vial	4	1500	6000
		IT Methotrexate	12	2	24	50	Methotrexate, powder inj 50mg vial	2	91.6	183.2
		Cyclophosphamide (IV)	1000	1	1000	500	Cyclophosphamide, powder inj, 500mg in vial	2	65	130
		Cytarabine (IV/SC)	75	8	600	100	Cytarabine, powder inj, 100mg in vial	8	150	1200
		6-Mercaptopurine (PO)	60	14	840	50	Mercaptopurine, tab, 50mg	16.8	68.7	115.416
		Doxorubicin (IV)	25	3	75	50	Doxorubicin, powder inj, 50mg	3	510	1530
HR maintenance phase	12-week cycles; 8 such cycles	6-Mercaptopurine (PO)	60	672	40320	50	Mercaptopurine, tab, 50mg	806.4	68.7	5539.968
		Oral Methotrexate	20	88	1760	2.5	Methotrexate, tab, 2.5mg	704	45	3168
		IT Methotrexate	12	8	96	50	Methotrexate, powder inj 50mg vial	8	91.6	732.8
							Total Cost	70200 INR	1114 USD	

Table 4-C: Cost of chemotherapy according to ICICLE protocol for early and advanced stage Hodgkin disease

	Duration of therapy	Drug exposure	Protocol dosage required (mg/m ² or Units/m ²)	Number of times dosage required	Total dose required (mg/m ² or Units/m ²)	Drug dosage surveyed (mg or Units)	Drug surveyed	Total amount to be bought	Cost (INR) per 10 pack/per vial	Total cost
EARLY STAGE	28 days for 4 cycles	Doxorubicin A (IV)	25	2	50	50	Doxorubicin, powder inj, 50mg	2	510	1020
		Bleomycin B (IV)	10	2	20	15	Bleomycin, powder inj, 15mg	2	540	1080
		Vinblastine V (IV)	6	2	12	10	Vinblastine, powder inj, 10mg (sulfate) in vial	2	200	400
		Dacarbazine D (IV)	375	2	750	100	Dacarbazine, powder inj, 100mg in vial	8	250	1875
				Total treatment cost for 4 cycles (early stage) = 17500 INR (277 USD)						
				Total treatment cost for 6 cycles (advanced stage) = 26250 INR (416 USD)						

