

Draft Policy-
Free Essential Diagnostics in Public Facilities of Chhattisgarh

Need for Free Essential Diagnostic Policy in Chhattisgarh

Diagnostic services plays an important role in identification of disease and thus in its management. Providing access to free or affordable diagnostics can help in reducing the out of pocket expenditure for individuals and families.

Election Manifesto of the new government in Chhattisgarh has also included Free Diagnostics as a key measure to strengthen Universal Health Care through public facilities. Free diagnostics along with free generic drugs have moved to the centre of policy and programme prescriptions in India. Government of India has again highlighted these as top priorities. National Health Policy 2017 also put emphasis on free diagnostic services at public health facilities. While, Chhattisgarh brought in free generic drug policy in 2013, it needs to move towards a Free Essential Diagnostics policy soon.

Policy objective

To provide the essential diagnostics services, free of cost, at appropriate level of care for patients coming to government health facilities.

What it will take to realize a Free Essential Diagnostics Policy

The following steps are suggested along with the underlying analysis for realizing a Free Diagnostics Policy in Chhattisgarh:

1. Notifying the list of ‘Essential’ diagnostics

Lists of tests to be considered as ‘Essential’ at four different levels - sub-centre, HWC, PHC, CHC and District Hospital level, needs to be notified as tests which are to be provided free of cost to any patient at these facilities across the state. The list of essential diagnostics should be displayed in health facilities. A proposed list of tests finalized at national level is provided in **Annexure A**.

2. Stopping User Fees

Facility wise listed diagnostic tests in Annexure A should be provided free of cost to the patients in all the public health institutions of the State. User fees should be prohibited. The facilities will be compensated for the loss of revenue by providing funds from state-level.

3a Ensuring essential Equipments

To provide the essential diagnostics list of essential equipments in also needed. Currently 80% of the facilities above PHCs have been supplied the essential equipments though at some facilities installation and repair of those equipments is an issue. List of required equipments, reagents and consumables is enclosed as **Annexure B**. Amongst the equipments needed; the following is the status of availability as updated in 2021:

3b. Maintenance of Equipment:

This was one of the critical weaknesses, affecting the availability of tests. The state has already hired an agency to improve repairs and calibration of equipments. Initial AMC can be built in the purchase agreement. Biomedical Engineers recruited by NHM can be trained to coordinate repairs and ensure that the machines remain functional.

3c. Ensuring essential reagents and consumables:

In order to ensure the above mentioned essential diagnostic tests a list of required diagnostic consumables and reagents should be provided by Department. These supplies should be purchased centrally by CGMSC and they should keep a buffer stock of those items for 3 months. The buffer stock of those items should be determined by DHS. For stock gap arrangements at districts level CMHOs should be allowed to purchase 1 month of stock but it should not be more than 20% of the annual budget on diagnostics.

This can be compensated by budget from DHS and NHM PIP. The above resources given to districts will also imply that facilities have been compensated for stopping User Fees.

4. Human resource for laboratory services:

In 2020-21, 1019 regular LTs and 290 contractual LTs were working in public health facilities. It has a vacancy rate of 20.08% for regular and 13.69% for contractual positions. Though based on case load rational posting of LTs should be done in health facilities.

The recommendation for this policy is to ensure HR as per following norms: 1545 LT required 1309 available.

- DH: 6 Laboratory Technicians, 2 radiographer and 1 ECG technician per District Hospital
- FRU CHC: 4 Laboratory Technicians per FRU, 1 radiographer and 1 ECG technician per FRU
- Non-FRU CHC: 3 Laboratory Technician/ Assistants per CHC (to ensure round the clock availability in case a bleeding or unconscious patient arrives), 1 radiographer per CHC
- PHC: 1 Laboratory Assistant/ Technician per PHC

5. Infrastructure for Diagnostic Laboratories

Apart of HR, equipments and supplies; physical infrastructure is also needed to a good functionality of laboratories. CHCs should have at least 3 sections with sufficient storage space and amenities for sample collection, doing procedure and report dispensing. District hospitals should have one addition section of doing sensitive procedures ex. culture and CBNAAT tests. “Hamar Lab” in Raipur district hospital is an example of functional lab with good infrastructure.

6. Training and orientation on diagnostic services: Training of laboratory technicians will be needed to successfully implement the free diagnostic services. Orientation of Hospital administrators and head of the health facilities should also be done on laboratory services. Medical officers and specialist should also be given orientation on rational use of diagnostics.

7. Quality Assurance of diagnostics services: Quality management needs to be strengthened through measures like standard operating procedures, training, inspection visits, patient-satisfaction surveys, audits for rational prescription of drugs and review meetings. Gradually, accreditation of laboratories can be attempted through NABL. For External Quality Assurance (EQAS), AIIMS, Raipur or Medical colleges can be involved.

8. Integration of laboratory technicians posted under vertical programs

A large number of laboratory technicians/staff are also posted at CHCs and DH under vertical programmes like Blood Bank, RNTCP, Malaria, Chirayu (RBSK) and HIV programmes. These technical staff can also be utilized in hospitals for routine testing. This step is likely to improve

the overall size of available laboratory Human Resource to meet the needs of free diagnostics policy.

9. Laboratory management and monitoring

State level monitoring should be done by DHS. At the Directorate level, a state diagnostic cell should be formed. A separate State Nodal Officer needs to be designated for Free Essential Diagnostics and under diagnostic cell. This cell will constitute experts on Radiology and pathology, epidemiologist, representative from SHRC, Medicity and Biomedical engineers. The role of state diagnostic cell would be state level implementation and monitoring, deciding specifications for equipments and reagents, review of equipment maintenance agency, guidance to Biomedical engineers, review of annual indents for consumables and district performance.

Similarly, a district nodal Officer needs to be designated at district level by CMHOs to take care of laboratories across the facilities in district.

The role of the laboratory Programme Officers will be to follow-up for required recruitments, training and supplies. Another key role is to review progress in achieving desired number of tests in various facilities in relation to their patient-load.

10. Financial Implications – Budget Required

The major heads required expenditure on free diagnostic services is on diagnostic equipments and reagents/consumables.

In order to provide proposed essential diagnostic services sum of 40 Crore will be needed for essential equipments which can be suffice from the current allotment of DHS for equipments. And for essential consumables and reagents 74.64 crore is expected and that can be allotted from NHM and state budget. There is no need of additional resources.

11. Recognize DMLT (two-year) diploma course on Medical Laboratory Technology

The Para Medical Council needs to recognize Diploma in Medical Laboratory Technology course (DMLT) so that they can get registration in the state. It will be useful to start BMLT and higher courses in medical institutions in Chhattisgarh and the current staff be allowed to upgrade their skills through bridge courses.

Details of health facility based costing of diagnostic services

Operational cost for free diagnostics services in public hospitals was calculated using current OPD/IPD rates. Unit cost per test was taken from the current CGMSC reagents purchase rates and for some tests unit cost was taken from normative costing.

OPD rates: UPHC-2000/month, CHC,-3000/month, DH-6500/month

IPD rates: UPHC-80/month, CHC,-120/month, DH-300/month

Table 1: Details of health facility based costing of diagnostic services

Diagnostic services	Tests	Expected number of tests per month in UPHC	Expected number of tests per month in CHC	Expected number of tests per month in DH	Cost per test (INR)	Annual Cost per UPHC in Lakhs	Annual Cost per CHC+CH in Lakhs	Annual Cost per DH in Lakhs
Pathology	Hemoglobin estimation	212	415	1125	10	0.25	0.50	1.35
CBC	Lyse and Diluents	106	255	1050	50	0.64	1.53	6.30
	E.S.R	37	73	875	10	0.04	0.09	1.05
	Peripheral blood smear	125	244	625	10	0.15	0.29	0.75
	Malaria	200	300	588	12	0.30	0.44	0.87
	Blood grouping/rh typing	87	171	438	20	0.21	0.41	1.05
	Blood cross matching	25	49	125	20	0.06	0.12	0.30
	Solubility test	80	250	500	15	0.14	0.45	0.90
	Electrophoresis	25	49	125	32	0.09	0.18	0.47
	PT INR		24	63	20	0.00	0.06	0.15
	APTT			63	30	0.00	0.00	0.23
Microbiology	Stool for ovacyst (Eh), Miecroscoy	54	106	125	10	0.07	0.13	0.15
	Hanging drop for V.Cholera	11	21	25	10	0.01	0.03	0.03
	Occult blood	11	21	25	20	0.03	0.05	0.06
	Smear for AFB, KLB	22	43	50	10	0.03	0.05	0.06
	RPR	22	43	75	40	0.10	0.20	0.36
	Pregnancy test (urine	22	43	75	30	0.08	0.15	0.27

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	WIDAL test	65	128	350	40	0.31	0.61	1.68	
	HbS Ag	22	43	100	40	0.10	0.20	0.48	
	Urine culture			125	40	0.00	0.00	0.60	
	Blood culture			125	40	0.00	0.00	0.60	
	FNAC			25	100	0.00	0.00	0.30	
	Biopsy			25	150	0.00	0.00	0.45	
	Cytology			25	100	0.00	0.00	0.30	
	Blood sugar	400	700	1200	20	0.96	1.68	2.88	
Semi-Auto /Fully Auto Biochemist ry Analyser	Cholestrol	32	77	240	28	0.11	0.26	0.81	
Lipid Profile	Triglyceride	32	77	240	46	0.18	0.42	1.32	
	HDL	32	77	240	60	0.23	0.55	1.73	
	LDL	32	77	240	60	0.23	0.55	1.73	
	VLDL	32	77	240	60	0.23	0.55	1.73	
LFT	SGOT	54	128	390	35	0.22	0.53	1.62	
	SGPT	54	128	390	35	0.22	0.53	1.62	
	T Protein	43	102	240	20	0.10	0.25	0.58	
	Albumin	43	102	240	23	0.12	0.28	0.66	
	T Bilirubin	54	128	240	46	0.30	0.71	1.33	
	D Bilirubin	63	128	240	46	0.35	0.71	1.33	
	Alkaline Phosphate	54	128	390	28	0.18	0.43	1.31	
RFT	Urea	54	128	390	46	0.30	0.71	2.17	
	Creatinine	54	128	390	15	0.10	0.23	0.70	
	Uric Acid	54	128	240	46	0.30	0.71	1.33	
	HbA1C	64	153	240	50	0.38	0.92	1.44	
Electrolyte Analyser	Sodium	32	77	150	60	0.23	0.55	1.08	
	Potassium	32	77	150	60	0.23	0.55	1.08	
	Calcium	32	77	150	35	0.13	0.32	0.62	
Urine Analyser	Strips for Urinalysis (VC)	106	255	450	25	0.32	0.77	1.35	
	TSH			125	80	0.00	0.00	1.20	
	T3/T4			125	60	0.00	0.00	0.90	
	Vitamin B12			63	150	0.00	0.00	1.13	
	CPK			125	60	0.00	0.00	0.90	
	RA factor			125	100	0.00	0.00	1.50	
	ASO Factor			125	100	0.00	0.00	1.50	
Radiology	X-ray		200	824	40	0.00	0.96	3.95	
	ECG		50	235	50	0.00	0.30	1.41	
	USG		50	471	150	0.00	0.90	8.47	
	Annual cost per facility (In Lakhs)						7.97	19.54	68.16

Table 2: Operational cost for facility based diagnostic services

Particulars	No of Health facilities in CG	Current and Mokshit rate	
		Per facility Cost in Lakhs (INR)	Total cost facility wise in Crore (INR)
Annual cost for 1 UPHC	45	8.04	3.62
Annual cost for 1 CHC	187	19.86	37.14
Annual cost for 1 DH	26	68.16	17.72
Total cost (INR)			58.48

Table 3: Operation cost for primary care diagnostic services (rapid kit based)

Name of kit/tests	Number of test Annually	Cost per test (INR)	Annual cost (In Crore)
RD kit	6000000	12.31	7.39
Solubility	3000000	15	4.50
Glucometer	7000000	2.5	1.75
RPR	500000	40	2.00
POC	120000	150	1.80
HbSAG	500000	40	2.00
Sputum AFB (reagents)	200000	15	0.30
Total Annual cost (INR)			19.74

Situational Analysis of diagnostic services in CHCs and District hospitals- January 2020

In order to assess the availability of much needed essential diagnostic, this analysis focuses on a list of 55 important or basic diagnostic/tests for DH and CHCs. List of 55 tests was sent to districts and the numbers of test performed in one month at DH and CHCs were collected in a numerical format. Reports for December 2019/January 2020 form 14 DH and 74 CHCs were received and compiled for this analysis.

Findings:

Whether some of the basic tests are available in our DHs and CHCs?

Table 1 provides a clear picture of availability of key tests. DHs are short in providing HbA1C, Thyroid function, Electrolyte analysis and Electrophoresis. Most CHCs are unable to provide any of the important tests.

Table 1 – Whether key diagnostic services being provided at CHCs and DHs

Type of testing	No. of CHCs Providing the service (N=74)	No. of DHs Providing the service (N=14)
Complete Blood Count	20%	86%
RFT	0%	93%
LFT	0%	93%
Lipid profile	0%	74%
Thyroid function	0%	21%
HbA1c	0%	0%
Electrophoresis	18%	64%
Electrolyte analysis	0%	42%
Ultrasound	0%	100%
X-ray	50%	93%
Dental X-ray	20%	86%

Table 2: Average number of diagnostic tests conducted against expected volume per DH and CHCs

Diagnostic tests	Expected number of test /month in DH	Number of tests Conducted in (DHs)	Expected number of test /month in CHC	Number of tests Conducted in (CHCs)
Hemoglobin estimation	1125	1958	415	437
Complete Blood Count (CBC)	1050	601	255	41
Blood cross matching	125	162	50	10
Solubility test	500	476	250	129
Electrophoresis	125	42	50	30
Widal test	350	365	130	86
Malaria	590	253	300	113
Bloodsugar (Random/Fasting/PP)	1200	1175	700	334
HbA1C	240	32	153	2
Blood urea	390	385	128	10
S. uric Acid	240	114	128	8
S. Creatinine	390	342	128	9
S. Bilirubin (T)	240	324	128	8
S. Bilirubin (D)	240	324	128	10
SGPT/SGOT	390	361	128	6
S. Alkaline Phosphates	390	234	128	7
S. Total Protein	240	251	102	6
S. Albumin	240	331	102	5
S. Total Cholesterol	240	122	77	5
S. Triglyceride	240	121	77	5
S. VLDL	240	144	77	6
S. HDL	240	144	77	6
Thyroid function test	125	81		
ECG	235	188	50	18
X-ray	825	700	200	74
Ultra-sonography	470	366	50	0

District wise status of 55 important tests in DHs and CHCs:

Table 3 shows that out of 55 important tests, average 72% are provided in district hospitals and only 32% are provided in CHCs. Narayanpur, Mahasamund and Bijapur DHs performed more than 80% of the 55 important tests. Not a single CHC in the state is providing even 50% of the 55 important tests.

Table 3: Status of 55 important diagnostic tests in 14 district hospitals and 74 CHCs			
	District	Percentage of important diagnostic tests performed at DH	Percentage of important diagnostic tests performed at CHCs
1	Balod	51%	28%
2	Bemetara	73%	27%
3	Bijapur	82%	23%
4	Mahasamund	85%	39%
5	Dantewada	73%	22%
6	Dhamtari	60%	45%
7	Durg	78%	no report
8	Jangir -champa	65%	no report
9	Kabirdham	62%	no report
10	Kondagaon	78%	31%
11	Mungeli	76%	35%
12	Narayanpur	87%	no report
13	Surajpur	64%	29%
14	Raipur	78%	33%
15	Surguja	NA	33%
16	Gariyaband	no report	39%
17	Rajnandgaon	no report	27%
	State Average	72%	32%

Essential diagnostic equipments available and needed

Table 4 shows the availability of essential diagnostic equipments at DH and CHC level. This data has been collected for entire state from the web portal of Mediciti, the agency responsible for repair and maintenance of equipments) available in cghealth.nic .in website. This shows that all the district hospitals have CBC machine (either 5-part or 3-part), Biochemistry analyzer (either semi-auto or fully automated), Electrophoresis machine, ELISA, dental X-ray, X-ray and ultrasound machine. Whereas only 40% has electrolyte analyzer and 25% have HbA1c.

Analysis of availability of these essential equipments at CHC shows that CBC machine was available only in 20% of CHCs, biochemistry analyzer in 50%, electrophoresis in 50%, X-ray in 50%, dental X-ray in 60%, whereas Ultrasound, HbA1c, electrolyte analyzer and ELISA not available in any of the CHCs.

Table4: Essential diagnostic equipments available and needed across the state			
Particular	Available in DH and CHC	More Needed to cover all DHs and CHCs in CG	Indent issued 2020
CBC Machine	114	100	41
Biochemistry analyzer	159	55	27
Electrophoresis Machine	143	116	50
HbA1C	10	19	13
ELISA	30	0	6
Electrolyte analyzer	20	6	10
Urine analyzer	56	144	78
ECG	185	60	81
USG	18	35	
Dental X Ray	115	99	
Mobile X ray	105	109	
Mobile X-ray	105	109	
General X ray 300 mA	107	62	
General X ray 500 mA	17	9	

Table 5: Reagents availability – Situation on January -2021

Type of testing	No. of CHCs Providing the service (N=74)	No. of DHs Providing the service (N=14)	Available through CGMSC
Complete Blood Count	Moderate	Good	Yes
RFT	Poor	Moderate	No
LFT	Poor	Moderate	No
Lipid profile	Poor	Moderate	No
Thyroid function	Poor	Poor	No
HbA1c	Poor	Poor	Yes
Electrophoresis	Poor	Poor	No
Electrolyte analysis	0% Poor	Moderate	No
Ultrasound	Poor	Good	Yes
X-ray	Moderate	Good	Yes
Dental X-ray	Moderate	Good	Yes