

Annexure
**Costing of Treatment Component for conditions covered under the
National Disease Control Programmes : Note on Process & Methodology**

Objective: To estimate the costs that could be incurred for provision of treatment for 10 diseases covered under the National Disease Control Programmes at the level of a health facility having 6-10 beds.

Process

- A Cost Accountant was engaged to undertake the costing of NHP.
- Existing National Disease Control Programmes were reviewed. Programme guidelines which outlined treatment modalities for particular condition were identified. In all, 11 such programmes were identified.
- Thereafter, various costing components for different category of diseases of among these programmes were identified and formats for data collection developed.
- The costing components to be kept in mind during development of the National Disease Control Programmes (e.g. average time spent on one patient, type of personnel, specific tests, specific drugs required, etc) were also outlined.
- The data sources for various cost components were identified
- Meetings were held with Programme Managers/Consultants of the National Disease Control Programmes and other concerned units/ division at the Ministry of Health and Family Welfare/WHO to obtain the necessary information/data.
- Costing sheets were reviewed by identified experts

Costing Methodology

The methodology used for costing provision of treatment for 10 conditions covered under the National Disease Control Programmes could be summarized as follows:

1. Identification of quantitative data for various cost components for selected conditions at the level of a health facility having 6-10 beds. The cost components are:
 - a. Human Resources
 - b. Specific Equipment / Consumables
 - c. Specific Tests
 - d. Specific Medicines
 - e. System Cost (i.e. OPD cost per unit, IPD cost per day and OT cost per hour)
2. Application of rates/costs obtained from various sources
3. Consolidation of estimated costs
4. Preparation of individual cost sheets for each National Disease Control Programme
5. Preparation of summary sheet outlining the nature of costs incurred for treatment of 10 conditions under the identified programmes

The specific methodology and source of data used to collect information is given below:

A. Human Resources

- This includes direct costs of human resources incurred in the treatment of particular condition. Indirect costs of human resources (e.g. time spent on administrative and non-clinical activities) has been considered under system cost
- Human Resources include: Medical Officer, Health worker, Nurse amongst others.

Methodology	Sources of Data
<ul style="list-style-type: none"> • During preparation of costing sheets for each NDCP, discussions were held with clinicians to ascertain the average time taken by medical professional to treat one patient • The medical professionals were categorized as Medical Officer and Specialist. • The salary scales were computed separately for Doctors and Nurses / health workers among others • Mid-point of the scales was considered for computation of human resources costs • The total number of working days considered were 24 • The total number of working hours considered was 7 • Based on these, salary per minute was worked out and applied 	<ul style="list-style-type: none"> • Salary Scales of Central Health Services (as of 2007) • Personal communication with officials from Ministry of Health & Family Welfare, GOI

B. Equipment

Equipment Costs cover per patient cost of specific equipment for treatment of stated condition has been computed using various parameters.

Methodology	Sources of Data
<ul style="list-style-type: none"> • During preparation costing sheets for each condition, discussions were held with clinicians to ascertain the specific equipments required for treatment of particular condition. • Annualized cost for general equipment (e.g. weighing machine, BP apparatus, etc) has been considered under system cost • Estimates for cost per patient was worked out, considering operational costs / repair and maintenance, life of equipment and patient load were worked out in consultation with experts. • Cost of disposable items required for treatment of stated condition was directly allocated, wherever applicable. 	<ul style="list-style-type: none"> • Consultation with experts across clinical specialities at WHO India Office • Data obtained from private distributors / experts

C. Tests

Tests for diagnostics and pathological investigations have been considered.

Methodology	Sources of Data
<ul style="list-style-type: none">• Details on the name and number of tests to be conducted were obtained from clinicians• Obtained rates from above sources were directly allocated	<ul style="list-style-type: none">• Rates from Central Government Health Services (CGHS), as of 2007 - Approved CGHS rates for A class cities (Ahmedabad, Jaipur, Kanpur, Lucknow, Nagpur, Pune) F.No.S.11011/14/2007-CGHS.D-II• Average rates charged for patients admitted in semi private wards in five hospitals across South India were considered• Consultations with experts

4. Medicines

Cost of medicine has been collated, preferably using rates of generic drugs.

Methodology	Sources of Data
<ul style="list-style-type: none">• Direct rates from listed sources have been allocated• In case no generic rates could be obtained from TNMSC/AFMC/NPPA/RML/SDH, rates for brand drugs were taken from various documents, reports and websites.	<ul style="list-style-type: none">• Tender rates of Tamil Nadu Medical Supplies Corporation (TNMSC)• Tender rates of Armed Forces Medical College (AFMC)• Rates for scheduled and non-scheduled drugs from National Pharmaceutical Pricing Authority (NPPA)• Rate contract details from Ram Manohar Lohia (RML) Hospital• Rate contract details from Safdarjung (SDH)Hospital• Drug Today• Websites providing information on Pharmaceuticals• Consultations with experts• M.O.H.F.W.

5. System Costs

- System cost represents Infrastructure Cost for Out Patient Care, In-patient Care and Operation Theatre. The costs of building, equipment for general use (that had not been included in costs for managing a case of diseases / health conditions under consideration) and salary of staff (as explained earlier) were included as systems cost.
- OPD Cost per Visit, IPD Per Day and OT Cost per hour is computed and considered

Methodology	Sources of Data
<p>Calculation of provisional system cost at PHC level (NCMH 2005):</p> <ul style="list-style-type: none"> • Financial data in respect of various public health care facilities, across levels was obtained • In addition to attending to patients, medical (doctors) and paramedical staff (nurses, ANMs, etc.) are also involved in administrative work. 25% of salaries of doctors and 50% of salaries of paramedical staff (based on actuals as surveyed by NPC) were apportioned for administrative work and were included in systems cost. • Data consisted of revenue and capital expenditure and data on patient load across OPD, IPD and OT • Revenue data and annualized capital data was allocated / apportioned to OPD, IPD, OT and common facilities, based on weightage (as discussed with experts) • Costs for common facilities were again apportioned to OPD, IPD and OT • The OPD per visit cost, IPD per day cost and OT per hour cost was worked out based on patient load and weightages assigned to determine equivalent factor. • This data was updated to the current levels, by using a cost inflation index. 	<ul style="list-style-type: none"> • Provisional system cost computed as part of National Commission on Macro-Economics & Health (NCMH) has been used for level 2, after suitable modifications.

Assumptions

Any attempt at costing of health services is based on certain assumptions. Some of the assumptions are:

- Treatment is provided under 'ideal' condition – i.e. equipment was working, drugs and supplies were available as needed, staff was willing and able to provide treatment according to guidelines
- The costing was done assuming that the patient is treated at PHC level. Only in case of treatment for ART, the costs have been calculated at the level of district hospital and above as ART Centers are attached to District Hospital or health care facility at higher level
- The cost of treatment for the different categories of disease within the stated National Disease Control Programme has been computed.
- It is assumed that the patient weighs 60 kg and is an adult, unless specified otherwise.
- In case of IMNCI, cost has been computed assuming that the age of the child is 1 year. However, the guidelines have been provided for child aged below 2 months & 2 months -5 year.

- As blood donations in the country are primarily voluntary in nature, remuneration provided for blood donors has not been accounted for in the costing estimates. However, cost of tests for blood has been considered.
- Per patient equipment cost may differ across the levels of care, depending on the patient load.
- Specific assumptions with relation to the specific disease, if any, have been given in the specific costing sheet.
- The rates for Path Lab tests have been obtained from CGHS/other sources / a private laboratory. In case of private laboratory, 80% of the rates provided have been considered.
- In case of HIV ART Therapy & Post Exposure Prophylaxis, the cost of medicine for 100 persons has been computed and average cost per person has been applied.
- In case of HIV Opportunistic Infection, system cost has not been computed. This is because, due to the complex nature of disease, the no. of OPD visits or IPD treatment cannot be ascertained.

Limitations

No study is free from limitations. While using these findings, it needs to be borne in mind:

- The costing exercise provides estimated costs only.
- In costing, normally, the figures are reconciled with financial figures, but here as the financial data cannot be used fully, the reconciliation cannot be made. The bottom-up approach has been used in the costing
- Profit margins are in-built in the data obtained from private sector (e.g. data used for tests). Hence, the actual costs may differ.
- The rates of medicine differ from manufacturer to manufacturer and customer to customer. As far as possible rate for generic medicines have been used normally but at some places, the brand rates have also been used.
- The data relating to medicine costs/equipment costs, its life and usage was not available at one source, so experts at different locations were contacted to work out the costs. The rates may differ depending upon quality/make and other factors
- System cost data at level 2 has been obtained from a public health facility. Hence, data on rent, return on investment, etc has not been considered.
- The OPD/IPD/OT cost per patient will vary depend upon the location and other factors. Presently, the data from the public health facilities has been used to work out these costs.
- For working out the cost, the disaggregated financial data is required. While several consultations were held with experts, some financial data was not found in the desired manner. Hence, existing published data has been used after suitable modifications.
- The treatment cost per patient for a particular disease has been worked out. In case the disease is prolonged (extending more than one year), the per patient per year cost has been worked out
- For some programmes, data for some components was not available because of the complexity of the subject, so, the same has been mentioned in each of the costing sheets wherever applicable.