MINISTRY OF HEALTH

TEACHING HOSPITALS PERFORMANCE INDICATORS AND ASSESSMENT TOOL

MARCH 2018

Contents

LIST OF TABLES

LIST OF ACRONYMS

- AC - Audit Committee
- ADM. - Administration
- CCTH - Cape Coast Teaching Hospital
- C/S - Caesarean Section
- CYP - Couple Year Protection
- DHIMs II - District Health Information Management System
- DHS - Demographic Health Survey
- Drs - Doctors
- GHS - Ghana Health Services
- HR - Human Resource
- IGF - Internally Generated Fund
- KATH - Komfo Anokye Teaching Hospital
- KBTH - Korle-Bu Teaching Hospital
- LB - Live Birth
- MICS - Multi-Indicator Cluster Survey
- MOH - Ministry of Health
- No. - Number of
- Obs & Gynae - Obstetrics and Gynaecology
- OHS - Occupational Health and Safety
- OPD - Out Patient Department
- POW - Programme of Work
- PPM - Planned Preventive Maintenance
- QA - Quality Assurance
- RUM - Random Use of Medicine
- Sur. - Surgery
- THs - Teaching Hospitals
- TTH - Tamale Teaching Hospital
- WHO - World Health Organisation

1.0 INTRODUCTION

Teaching Hospitals (THs) play important role in quality healthcare delivery in the Ghana. As apex health facilities, these hospitals should provide a leading role in setting high quality clinical standards and means of measuring these standards at all levels of the health sector. The mandate of Teaching Hospitals as contained in the Ghana Health Service and Teaching Hospitals Act 525 of 1996 are as follows:

- To provide Tertiary Service (Specialist Clinical Care)
- To train graduate and post graduate medical students and other health professionals.
- To conduct research

To comprehensively pursue their mandate and achieve their objectives, all the teaching hospitals in the country would have to forge a common front, and work in unionism with the Ghana Health Service (GHS).

This document has been developed by all Teaching, specifically to provide comprehensive indicators to serve as dashboard and reference point for all Teaching Hospitals in Ghana. The document is also intended to be used for brief but well-informed, balanced and transparent assessment of Teaching Hospitals' performances and factors that are likely to have influenced their performances.

The document is in two (2) main parts. One part covers comprehensive indicators developed to serve as a dashboard for monitoring of their respective activities to achieve objectives. The second part deals with tools for performance measurement and assessment using the agreed indicators in part one. The assessment tool makes use of various instruments to determine progress of the Hospitals performance towards the achievement of set objectives. The assessment report generated will be used as the basis for a wider dialogue on performance and peer review among all teaching hospitals.

The main objective of this document is to develop a have common indicators among teaching hospitals for self-assessment of performances, peer reviews of performances, sharing of experiences, leading to improvement in quality of care.

2.0 BACKGROUND

Teaching Hospitals (THs) play important role in quality healthcare delivery in the Ghana. As apex health facilities, these hospitals should provide a leading role in setting high quality clinical standards and means of measuring these standards at all levels of the health sector. To comprehensively achieve these objectives, all the teaching hospitals in the country would have to forge a common front, and work in unionism with the Ghana Health Service (GHS).

In recognition of the above, and in their continuous quest to provide quality of care to all Ghanaians, the Chief Executives of the four teaching hospitals (KBTH, KATH, TTH, and CCTH) in Ghana have created an initiative of fostering a common front by meeting periodically to discuss issues of common interest to their respective facilities and the Ghana Health Services facilities of which they provide support and outreach services.

Since most of the Teaching Hospitals are currently not on DHIMs II platform, agreement was reached to upload the agreed indicators developed, train all stakeholders in the THs to report clinical data through DHIMs II to aid peer review activities, and also, to aid in standardized reporting to the Ministry of Health for its monitoring and performance review activities and holistic assessment reporting.

3.0 COMPREHENSIVE INDICATORS AND PROCESS OF COLLECTING AND ANALYSING DATA

The process of developing these indicators was a collective effort by all Teaching Hospitals (THs). Sixty-Three (63) of indicators developed jointly by all THs, with the support of Ghana Health Service and Ministry of Health. These indicators shall serve as the basis for collection, collation and analysis of data. Routine data in the health sector are collected on daily basis and aggregated monthly for planning and decision making, as well transmitting to the higher levels for information and action.

Tools for daily gathering of service data are diverse among Hospitals in Ghana. Aggregated Public Health and Clinical data are mainly transmitted to the Ministry of Health (MOH) through District Health Information Management System II (DHIMS II) and other mechanism as determine by MOH. DHIMS is Access based software that is currently being used by the Ghana Health Service to collate and analyse data at all administrative levels of the service. It has improved data quality with regards to accuracy and internal consistencies. DHIMS handles mainly aggregated data and thereby has some major weaknesses. These include its inability to handle transactional data, which are very essential for policy. Thus, analysis of data inputted into the DHIMS is limited in scope.

Recognizing the fact that most THs are currently not on DHIMS II, efforts will be made to integrate all onto the system, now that comprehensive indicators have been developed and agreed by all Teaching Hospitals.

Apart from routine data, the Teaching Hospitals shall collaborate with other stakeholders to conduct periodic health surveys such as the Demographic Health Survey (DHS) and the Multi-Indicator Cluster Survey (MICS). Results from these exercises provide the health sector with valuable information for policy formulation and re-strategizing.

4.0 PERFORMANCE INDICATORS

The table below summarizes the performance indicators as agreed by all Teaching Hospitals.

TABLE 4. 1 PERFORMANCE INDICATORS

No.	Mandate / Health System Block	Broad Activities	Areas	Indicator	Definition	Measurement	Data Sources
TO PROVIDE TERTIARY CLINICAL HEALTH CARE							
Provide Outpatient Services							
1	To provide tertiary clinical health care		Out-Patients (Access)	Total Number of OPD cases	Volume of OPD cases (New and Re-attendance)	Total no. of client attending OPDs	Monthly Statement of Out-patient
2			Productivity	OPD cases seen per doctor	Average No. of OPD cases seen per Doctor	Total no. of client attending OPD / Total no. of Drs	Monthly Statement of Out-patient / HR Nominal Roll
3				OPD cases seen per specialist	Average No. of OPD cases seen per specialist (proxy measure for Snr. specialist and Consultants)	Total no. of client attending specialist OPDs / Total no. of Snr. Specialists / Consultants.	Monthly Statement of Out-patient specialist Attendance Register/HR Nominal Roll
Provide Inpatient services							
4	To provide tertiary clinical health care		(Access)	Number of admissions	Volume of admissions (New and Readmissions (patients admitted within one week after discharge)	Total no. of clients admitted.	Monthly Statement of In-patient

No.	Mandate / Health System Block	Broad Activities	Areas	Indicator	Definition	Measurement	Data Sources
5			Referral System (Access)	% of patients admitted due to external referrals	No. of patients referred directly from external facilities (primary, secondary, tertiary and internationally)	No. of Patients admissions due to external referrals / Total admissions	Admission and discharge register
6			Referral System (Access)	% of Neonatal Admissions due to external Referrals	No. of patients referred directly from external facilities (primary, secondary, tertiary and internationally)	No. of Neonatal admissions due to external referrals / Total neonatal admissions	Admission and discharge register
7			Referral System (Access)	% of Maternal Admissions due to external Referrals	No. of patients referred directly from external facilities (primary, secondary, tertiary and internationally)	No. of Maternal external admissions due to referrals / Total maternal admissions	Admission and discharge register
8			Productivity	Nurses and Midwife admission ratio	Total No. Admissions per	Total no. of clients admitted / Total No. of	Monthly Statement of

No.	Mandate / Health System Block	Broad Activities	Areas	Indicator	Definition	Measurement	Data Sources
					nurse and midwives	Nurses and midwives	In-patient/HR Nominal Roll
9			Productivity	Percentage bed occupancy	The percentage of beds occupied by clients in a given period	No. of client days / No. of beds * No of days in the period	Bed States
10			Quality	Average length of stay (C/S; Appendectomy; Severe malaria in children)	The average duration of Discharges	No. of client days / No. of Discharges + Deaths	Bed States
11			Quality	Proportion of in-patients managed on nursing and midwives' care plan	The % of total admissions with nursing care plan developed	No. of admissions with care plan / Total admissions	Nurses notes, bed states
Provide Emergency Services							
12			Emergencies (Quality)	Average length of stay at the emergency wards	The average duration of emergency admissions (mean no. of days from admission. to discharge)	No. of client days at the emergency wards / No. of emergency discharges and death	Bed States reports
Provide Surgical Operations							

No.	Mandate / Health System Block	Broad Activities	Areas	Indicator	Definition	Measurement	Data Sources
13			Surgery (Quality)	Surgical site infection rates	Number of surgical wound Infections occurring within 10 days	Total infected wounds / Total Surgeries * 100	Wound infection tracking book at the dressing room, theatre, surgical wards and Obs & gynae ward
14			(Productivity)	Surgery - Surgeon Ratio	Total surgeries performed by each Surgeons	Total no. of surgeries performed / Total no. of Surgeons	Monthly Surgical Reporting forms/ Theatre register / HR Nominal roll
Provide Maternal Health Services							
15			Obs & Gynae	Total Deliveries	Total Number of Deliveries during the period	Total No. of Deliveries undertaken	Form A
16			(Productivity)	Deliveries to midwives' ratio	No. of deliveries supervised by each midwife	Total Number of deliveries / Total No. of midwives	Form A, HR Nominal Roll and delivery register.
17			(Quality)	Pathograph use rate	Proportion of deliveries done with the support of Pathograph	Assisted Pathograph deliveries / total deliveries * 100	Delivery Room Register
18			(Quality)	Low birth Rate	% of babies with	Total no. of babies <	Form A and

No.	Mandate / Health System Block	Broad Activities	Areas	Indicator	Definition	Measurement	Data Sources
					weight less than 2.5kg.	2.5kg/ Total live births *100	delivery register.
19			(Quality)	Still birth rate	Proportion of babies born with no signs of life at or after 28 weeks gestation	No. of babies born with no signs of life / Total no. of births in the specified time period	Form A and delivery register.
20			(Access &Quality)	Caesarean Section Rate	Proportion of deliveries performed by C/S at acceptable standards (based on standard indications)	No. of women delivered by CS in a specified time period / Total no. Delivery within a specified time period	Form A, delivery register, theatre register, anaesthetic register and monthly returns on deliveries.
21			Quality	Institutional Maternal Mortality Ratio	Institutional maternal deaths.	No of maternal deaths / total live births * 100 000	Form A, Obs & gynae wards, Emergencies, Female ward.
22			Quality	Maternal deaths audited	Proportion of reported maternal deaths that are audited according to established guidelines.	No. of reported maternal deaths audited according to established guidelines. / Total no. of reported maternal deaths within	Form A/ Audit Report

No.	Mandate / Health System Block	Broad Activities	Areas	Indicator	Definition	Measurement	Data Sources
						a specified period * 100	
Provide Child Health Services							
23			Quality	Institutional Infant mortality rate	The ratio of under one deaths to total LB	No. of children dying under one year of age during a year /total live births in a year* 1000	Statement of Inpatient
24				Couple year protection	The estimated protection provided by contraceptive methods during a one-year period based upon the volume of all contraceptives sold or distributed free of charge to client during that period	Total No. of Commodities dispensed / CYP factor	Form B
25			Quality	Institutional Neonatal mortality rate	Estimation of new born deaths occurring between 0 – 28 days of life in 1,000 live births	No. of Deaths from 0-28 days / Total No. of live births	Statement of Inpatient
Inpatient / Emergencies / Surgery							

No.	Mandate / Health System Block	Broad Activities	Areas	Indicator	Definition	Measurement	Data Sources
26				Institutional All-cause mortality rate	Total deaths occurring in a hospital	Total death / (Discharges + deaths)	Statement of Inpatient
27				Theatre Deaths Rate	Total deaths occurring at theatre (including recovery wards)	Total No. of deaths at the theatre (Including Recovery ward) / Total Surgeries * 100	Theatre books
Provide Pharmaceutical Services							
28			Pharmaceutical care	Tracer Drug availability	A snap shot assessment of the availability of tracer medicines. (Basket of medicines should be determined)	Medicines available / Total medicines in the tracer medicines list * 100	Tracer medicines list
29			Productivity	Prescriptions - Pharmacist Ratio	Total No. of prescriptions assessed and served by Pharmacist	Total no. of prescription served / total no. of pharmacists	Prescription record / Nominal roll
30			Quality	Percentage antibiotic prescribed	Number of antibiotic per prescription	Total number of antibiotic / Total of medicines on a prescription * 100	Rational Use Of Medicine (RUM) survey reports

No.	Mandate / Health System Block	Broad Activities	Areas	Indicator	Definition	Measurement	Data Sources
31			Quality	Percentage injectable prescribed	Number of injectable per prescription	Total number of injectable / Total of medicines on a prescription * 100	Rational Use of Medicine (RUM) survey reports
32			Quality	Utilization of Pharmaceutical Care interventions	Number of interventions per cases seen	Number of interventions / cases seen * 100	Intervention forms
33				Proportion of ward round inputs by clinical pharmacist utilised	Number of ward round inputs by Clinical Pharmacist utilised	Number of clinical pharmacist inputs utilised / Total number of inputs	Clinical Pharmacy Reports
Provide Diagnostics Services							
34				Utilization of Laboratory services	Proportion of laboratory investigations conducted in the hospital.	Total laboratory Investigations / Total Lab request * 100	Consulting Room Register / Lab Register (Tally / Summary forms)
35				Utilization Radiological services	Proportion of Radiological investigations conducted in the hospital.	Total Radiological Investigations / Total Radiology request * 100	Consulting Room Register / Lab Register (Tally / Summary forms

No.	Mandate / Health System Block	Broad Activities	Areas	Indicator	Definition	Measurement	Data Sources
36				Availability of non-drug consumables	A snap shot assessment of the availability of a basket of non-drug consumable (Basket of non-drug consumables to determined)	Non-drug consumables available / Total non-drug consumables in the baskets (Baskets to be determined e.g. Gloves, gauze, syringes etc.)	Non-drug consumable list
Provide OHS / QA Services							
37				Work place related injuries resulting in death or incapacitation	Percentage of work place related injuries resulting in death or incapacitation (Incapacitation – New job re-assignment / permanent incapacitation.	Total work place injuries resulting in deaths or incapacitation / total injuries recorded	OHS report
38				Health Workers who benefited from Occupational health and safety interventions	Proportion of Health Workers who benefited from OHS interventions	Total no. of staff benefiting from OHS interventions / Total no. of staff	OHS report / Nominal Roll
39				Percentage of	This measures	Total no. of client	QA report

No.	Mandate / Health System Block	Broad Activities	Areas	Indicator	Definition	Measurement	Data Sources
				clients satisfied	client satisfaction in the hospital and data source is survey	surveyed who are satisfied with health care services / total no. client surveyed * 100	
40				Percentage of Staff satisfied	Measures job satisfaction of staff in the hospital	Total no. of workers surveyed who are satisfied with work / total no. of workers surveyed * 100	QA report
41				Percentage of Health Staff with accidental needle prick injury	Percentage of Health Staff with accidental needle prick injury	Total no. of workers reported with needle prick / total no. of workers exposed to needle prick * 100	OHS report/Nominal Roll
Provide Technical Services and Logistical Support Services							
42			Governance	Percentage equipment down time	Equipment productivity Index	Average downtime/Total productive hours	Technical service records book (Summary Form)
43			Governance	PPM output achieved	Proportion of PPM executed	PPM executed/PPM*100	Technical services
44			Governance	Equipment Utilisation	Proportion of available time (expressed usually as a percentage that a piece of	Operation hour * 100 / available hours	Technical services record book

No.	Mandate / Health System Block	Broad Activities	Areas	Indicator	Definition	Measurement	Data Sources
					equipment or a system is operating		
Revenue Mobilization & Financial Monitoring Support Services							
45			Finance	Percentage of submitted claims paid	Percentage of submitted claims paid	Total claims settled / total submission	Financial report
46			Governance	Debtors days	Measures how quickly cash is being collected from debtors	Debtors / credit revenue * 365	Debtors ledger
47			Governance	Creditors days	Measure how quickly creditors are paid	Creditors / total purchases	Creditors ledger
48			Governance	Proportion of IGF revenue spent on PPM	Proportion of IGF revenue spent on PPM	IGF spent on PPM/ Total revenue	Financial statement
49			Governance	Percentage IGF paid as compensation	Percentage IGF paid as compensation	IGF paid as compensation/ total revenue	Financial statement
50				Ratio of cash revenue to NHIA	Compares cash revenue with	Cash Revenue/ NHIS	Financial

No.	Mandate / Health System Block	Broad Activities	Areas	Indicator	Definition	Measurement	Data Sources
				reimbursement	payments from NHIA	revenue	report
51				Percentage of NHIA Claims Submitted on time	Measures how quickly claims are submitted	Total number of claims submitted to NHIS at the end of the ensuing month / Total Number of claims submitted to NHIA by all facilities * 100	NHIS report
52				Percentage of rejection on claims submitted to NHIS	Measures the volume of claims rejected after total claims submitted	Total number of rejected claims received from NHIS / Total Number of claims submitted to NHIA by all facilities * 100	NHIS report
Provide Staff Development, Training & Staff Welfare Support							
53			Governance	Proportion of staff appraised	Proportion of staff appraised	Number of staff appraised / total number of staff * 100	Appraisal report
54			Governance	Consultant: Resident Doctor	Number of	Number of Consultant	Training report

No.	Mandate / Health System Block	Broad Activities	Areas	Indicator	Definition	Measurement	Data Sources
				ratio	residents to one consultant in the hospital	and Senior Specialist / total number of Resident Doctors	
55			Governance	Doctor: Nurse Ratio	Number of patient to one doctor or nurse in the hospital	Total number of Doctors in the hospital / Total of Nurses	Human resource report
56			Governance	Doctor: Pharmacist Ratio	Number of patient to one pharmacy or doctor in the hospital	Total number of Doctors in the hospital / Total number of pharmacist	Pharmacy report
57				No. Of welfare packages available	A snap shot assessment of the availability of a welfare package for staff (Basket of items / products)	Total Number of welfare packages provided for staff	Human resource report
Support Peripheral Health Institutions							
58				Number of visits carried out	Primary facilities visited on mentorship and outreach programme	Total number of facilities visited / Total visit planned	Mentorship report from PPME Unit
Support Teaching and Training of Health Professionals							
59	Train undergraduate			Number of professional pass	Number of final year professional	Percentage of final year professional passes /	Professional training

No.	Mandate / Health System Block	Broad Activities	Areas	Indicator	Definition	Measurement	Data Sources
	and post graduate medical students			rate	passes (proxy: medical and nursing students)	Total number of students enrolled	institution (medical school and nursing school)
Undertake Research Activities							
60	To undertake medical research for emerging medical conditions			Number of operational research conducted	Overall research conducted to improve on clinical care or service delivery at the facility	Total number of operational research conducted / Total research planned	Research and Development Unit
Undertake Financial Audit & Administrative Activities							
61				Proportion audit recommendations implemented	Overall audit recommendations made to the facility for implementation	Total audit recommendations implemented / total audit recommendations	Administrative report
62				Number of AC meetings	Overall audit committee meetings organised	Total meeting organised / total planned	Administrative report

No.	Mandate / Health System Block	Broad Activities	Areas	Indicator	Definition	Measurement	Data Sources
63				Number of Board Meeting	Overall board meeting organised	Total board meeting organised / total planned	Board Secretary

5.0 PERFORMANCE MEASUREMENT AND ASSESSMENT

The Holistic Assessment Model shall be used as a tool for the assessment of performances of the Teaching Hospitals. Holistic Assessment tool serves as an algorithm translating performance of every Teaching Hospital-wide indicators and milestones into a measure of overall Teaching Hospital performance. The assessment requires a combination of quantitative and qualitative method of assessment. The quantitative assessment includes analysis of comprehensive indicators and milestones developed and agreed upon by all Teaching Hospitals, whiles the qualitative assessment involves the determination of the extent to which planned programmes and agreements, such as annual programme of work, Stakeholder recommendations from an earlier dialogue process are implemented.

The Holistic Assessment report thus generated, increasingly serves to inform and guide policies to improve service delivery among teaching hospitals and improve health outcome. It also serves as an important feedback mechanism to The Ministry of Health and other key stakeholders.

The primary objective of the holistic assessment is to provide a very brief but well-informed, balanced and transparent assessment of Hospitals' performance and factors that likely influenced this performance. Furthermore, the objective is to assess the progress towards meeting the objectives of the Hospitals' Medium-Term Plans. The holistic assessment should also lead to a suggestion of corrective measures when performance is less than anticipated. Its purpose is to facilitate and structure the dialogue between Ministry, the Board, Management, staff and other stakeholders. This will feed into the discussion at the Ministry level. At the agency level, this will feed into discussions at directors' and board level meetings. The agreed indicators shall be the main reference document for assessment of performance of the Teaching Hospitals. However, the following required documents which shall be needed for a successful assessment include following;

- Milestones table in the medium-term plan 2017-2021
- Medium Term Plan 2017-2021 Sector Wide Indicators (Refer to new Teaching Hospitals' wide Indicators in Annex 1)
- Annual POW including indicator targets and the Capital Investment Plan
- Annual budget
- Annual Teaching Hospitals Financial Statement
- Stakeholder Recommendation Matrix
- Hospital Specific Annual Report

To guide the holistic assessment the following elements are important:

- Annual review process from Unit level through wards to Directorate/Sub-BMC levels
- Annual Teaching Hospitals Review meetings
- Annual health summit

5.1 THE PROCESS OF ASSESSMENT

Assessment of Teaching Hospitals performance will follow a peer process where agreed professionals and technocrats will review performance of a teaching hospital other than those work within that particular hospital.

In the first quarter, the review team assembled will compile a preliminary holistic assessment report, which comprises elements listed above and applies the holistic assessment tool to the Teaching Hospital-wide indicators and milestones. This report will be presented and discussed at the individual teaching hospitals review meetings, Teaching Hospitals Review summit and the Ministry of Health Review meetings. The analysis and suggested recommendations in the review report will be discussed at the summits taking into consideration factors, which may have influenced performance. The finalisation of the holistic assessment report will be influenced by these discussions.

5.2 ASSUMPTIONS

For the assessment of indicators and milestones, three important assumptions are made:

1. Objectives are not equal in weight in their contribution towards achieving the overall goal of the Hospital.
2. Indicators are not equal in weight in their contribution towards achieving the objective.
3. For each objective, all indicators collectively contribute 75% of total objective weight towards achieving the objective.
4. For each objective, all milestones collectively contribute 25% of total objective weight towards achieving the objective.

5.3 WEIGHTING OF OBJECTIVES AND INDICATORS

All indicators and milestones were weighted based on predetermined criteria by an expert group comprising Technocrats and experts and approved by the Directors and Chief Executives of all Teaching Hospitals.

The objectives were weighted based on four broad principles; they include the objective's contribution towards

1. Improving health status
2. Improving client satisfaction
3. Improving financial risk protection

4. Improving efficiency of service delivery

The process of weighting included two stages. The first stage was a horizontal rating of each objective according to the principles. For every objective, a score between 0 and 3 is assigned (0 being not relevant and 3 being of highest relevance). The ratings for each objective were summarized to provide the total score for every objective.

5.3.1 EXAMPLE OF HORIZONTAL RATING

The table below shows an example of horizontal rating

TABLE 5.3.1. 1 EXAMPLE: HORIZONTAL RATING

	WHO GOALS for a health system (score 0-3)				Total for rate	Total for all ratings
	Health Status	Client satisfaction	Financial Risk protection	Efficiency		
Objective 1	3	2	0	1	6	81
Objective 2	1	2	3	0	6	94

The second stage was a ranking of each objective (first to 4th) for every principle vertically. For each principle a rank could only be applied to a single objective. The rankings for each objective were summarized to provide the total score for every objective.

5.3.2 EXAMPLE OF VERTICAL RATING

The table below shows an example of vertical rating

TABLE 5.3.2. 1 EXAMPLE: VERTICAL RATING

Objectives	WHO GOALS for a health system (score 0-3)				Total for rating	Total for all ratings
	Health Status	Client satisfaction	Financial Risk protection	Efficiency		
Objective 1	4	1	1	4	10	169
Objective 2	3	4	3	1	11	148
Objective 3	2	1	2	2	7	129
Objective 4	1	2	4	3	10	149

In order to make the weights for the two stages comparable, the results of both stages were standardised by dividing all scores by the lowest score and the average of the standardised results were computed for the combined stages. The average scores were also standardised to ensure all weights are proportional to a minimum weight of 1.

Annex 1 provides more details about the scores and weights.

5.3.3 STANDARD RATING OF THS

The table below presents the standardised weight for each objective for Teaching Hospitals for the period 2017-2021.

TABLE 5.3.3. 1 STANDARD RATING OF THS

No.	Objectives	Weights
1	Objective 1: Bridge the equity gaps in geographical access to health services	1.07
2	Objective 2: Ensure sustainable financing for health care delivery and financial protection for the poor	1.11
3	Objective 3: Improve efficiency in governance and management of the health system	1.07
4	Objective 4: Improve quality of health services delivery including mental health services	1.00

5.3.4 INDICATOR WEIGHTING

The indicators were weighed according to four (4) principles; they include the indicator's contribution towards:

1. Achieving its objective`
2. Improving Health status
3. Strengthening the health system, and
4. Type of Indicator (Input, process, Output, Outcome and impact)

Each indicator received a score from 0 to 3 for each of the first three principles. Indicators were scored by a fourth principle based on its type:

- Input indicator – score 1
- Process indicator – score 2
- Output indicators – score 3
- Outcome Indicator - score 4
- Impact indicator - score 5

All scores were reached by consensus within the expert group.

6.0 ASSESSMENT

The holistic assessment tool is applied to routinely collected data. Each indicator is ideally progressing towards the Medium-Term Targets.

The Medium-Term Health Objectives are assessed based on the trend of related indicators compared to the previous year, attainment of set targets and the realization of the related milestones indicated in the Annual Programme of Work of the Hospitals.

The assessment is in three steps: First the individual indicators and milestones are assessed; this then feeds into the appraisal of the health objectives, which provides the basis for the overall Teaching Hospital performance assessment.

6.1 STEP ONE: ASSESSMENT OF INDICATORS AND MILESTONES

6.1.1 ANALYSIS: 1ST STAGE

Each indicator and milestone are assigned a numerical value of -1, 0 or +1 depending on realization of milestones and trend of indicators.

Milestones are assigned the value **+1** (colour coded green) if the review team is provided with evidence from the relevant authority on the complete realization of the milestone; otherwise it is assigned the value **-1** (colour coded red).

Indicators are assigned the value **+1** (colour coded green) if

- The indicator has attained the specified annual target regardless of trend, or
- The indicator has experienced a relative improvement by more than 5% compared to the previous year's value

Indicators are assigned the value **-1** (colour coded red) if

- The indicator is below the annual target and has experienced a relative deterioration by more than 5%, or
- No data is available

Indicators are assigned the value **0** (colour coded yellow) if

- The relative trend of the indicator compared to previous year is within a 5% range, or
- The indicator was not reported the previous year

6.1.2 ANALYSIS: 2ND STAGE

- The relative indicator score is determined by multiplying the assigned value (-1,0, +1) by the indicator's individual weight. See annex for indicator weights
- The relative score of the milestone is determined by calculating the average score for all milestones and multiplying the result by the assigned weight for milestones.

Assessment of indicators, 1st stage:

Example 1: If proportion of deliveries performed with the support of Partograph for 2016 was 55.0% and 55.3% in 2017, this represents an improvement of 0.6%. This is within the 5 percentage-point range for neutral performance, and the value is 0.

Example 2: If the proportion of babies born with no sign of life at or after 28 weeks of gestation at the Cape Coast Teaching Hospital in 2016 was 5.1% and 5.8% in 2017, this represents a deterioration of 13.7%. Since the deterioration is more than the 5 percentage-point range, the trend is interpreted as underperforming and assigned a value of -1

Example 3: If the proportion of reported maternal deaths that are audited according established guidelines was 85% in 2016 and 83% in 2017 and the target for the period is 80%, the value of +1 is assigned. Although the performance represents a deterioration of 2.4% the target for the period was achieved.

Example 4: If proportion of deaths occurring in theatres including recovery wards was 0.42% in 2016 and 0.32% in 2017, this represents an improvement of 28.1% and a value of +1 since the improvement is more than the 5-percentage point range.

Estimation of relative indicator score, 2nd Stage:

Example 1 – Partograph use rate: Indicator value (0) x weight (3.36) = 0

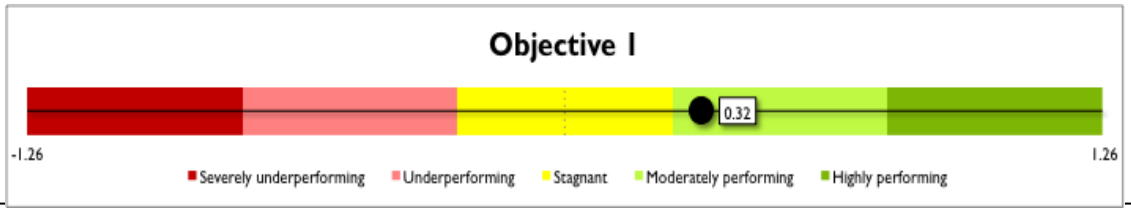
Example 2 – Still Birth Rate: Indicator value (-1) x weight (2.76) = -2.76

Example 3 – Maternal death audit rate: Indicator value (+1) x weight (3.06) = +3.06

Example 4 – Theatre death rate: Indicator value (1) x weight (1.72) = 1.72

Assessment of Health Objectives:

Example – objective 4: If the sum of all weighted indicator and milestone scores for 2016 was 14.34 out of a possible score of 44.8. Adjusted to the objective weight of **1.00**, the objective score is 0.32. On a scale from -1.00 to +1.00 the performance falls into second highest quintile representing *moderate performance.*



6.2 STEP TWO: ASSESSMENT OF THE HEALTH OBJECTIVES

The indicators and milestones are grouped under Health Objectives as defined in the HSMTDP and the sub total of indicators and milestone values are calculated for each group. The objective score is then projected to a scale with a range from the negative to the positive value of the objective weight, i.e. for objective one the scale is from -1.24 to 1.24. The range is divided into five quintiles, and the performance of each objective is interpreted within these quintiles.

1. *If objective score is within the highest quintile, then the objective is highly performing and assigned a colour code dark green.*
2. *If the objective score is within the second highest quintile, the objective is moderately performing and assigned a colour light green*
3. *If the objective score is within the middle quintile, the objective has stagnated and assigned a colour code yellow.*
4. *If the objective score is within the second lowest quintile, the objective is underperforming and assigned a colour code light red*
5. *If the objective score is within the lowest quintile, the objective is severely underperforming and assigned a colour code dark red*

6.3 STEP THREE: THE OVERALL ASSESSMENT OF THE TEACHING HOSPITAL

After calculating the score for each of the Health Objectives, the scores are added to determine the overall score. The overall teaching hospital performance is also assessed on a scale with 5 quintiles.

As with step two:

a) *If the overall teaching hospital score is within the highest quintile, then the hospital is highly performing*
b) *If the overall score is within the second highest quintile, then the hospital is moderately performing*
c) *If the overall hospital score is within the middle quintile, then the hospital performance is stagnant*
d) *If the overall score is within the second lowest quintile, then the hospital is underperforming*
e) *If the overall score is within the lowest quintile, then the hospital is severely underperforming.*

6.4 Output:

The output of the holistic assessment process is a holistic assessment report indicating:

1. An analysis of progress of each indicator over the past three years.
2. An assessment of each Health Objective and of the overall teaching hospital performance.

3. The extent to which hospital-wide priority activities and directorates/sub-BMC plans and programmes have been implemented
4. The extent to which other agreements in the of the hospital have been implemented

For each health objective, and Teaching Hospital's Indicator, the following will be discussed in the analysis:

- The factors which most likely have contributed to the progress and/or regression
    - If necessary, corrective measures to be considered
    - If necessary, issues which should be brought up to Business, Management, Board and Inter Teaching Hospitals meetings.
- The level of implementation of planned programmes and activities

The holistic assessment will also result in a short paper on progress among the teaching hospitals, taking into consideration the agreed indicators.

7.0 ANNEX

7.1 Annex One: Objective Weighting

7.1.1 Objective Weighting Stage 1

Annex One: Table 7.1.1. 1 Objective Weighting Stage 1

	Health Status	**Client satisfaction**	**Financial risk protection**	**Efficiency**	Total Score	Std Weight
Objective 1:	32	28	26	22	108	1.10
Objective 2:	29	25	32	27	113	1.15
Objective 3:	24	29	24	30	107	1.09
Objective 4:	29	29	16	24	98	1.00

7.1.2 Objective Weighting Stage 2

Annex One: Table 7.1.2. 1 Objective Weighting Stage 2

WHO GOALS for a health system	**Health Status**	**Client satisfaction**	**Financial risk protection**	**Efficiency**	Total score	Std. weight
Objective 1:	36	31	31	35	133	0.24
Objective 2:	33	30	35	36	134	0.24
Objective 3:	35	38	30	38	141	0.26
Objective 4:	34	37	35	35	141	0.26

7.1.3 Objective Weighting Stage 3

Annex One: Table 7.1.3. 1 Stage 3: Average of method 1 and 2

	Method 1(Horizontal)	**Method 2 Vertical)**	**Average**	**Adjusted weight**
Objective 1	**1.10**	**0.24**	**0.67**	**1.07**
Objective 2	**1.15**	**0.24**	**0.70**	**1.11**
Objective 3	**1.09**	**0.26**	**0.67**	**1.07**
Objective 4	**1.00**	**0.26**	**0.63**	**1.00**

7.2 Annex Two: Indicator Weighting

Annex Two: Table 7.2. 1 Indicator Weighting

		Contribution to the Objective	Contribution to improve health status	Contribution to strengthening Health	Input, Process, output, Outcome Impact	Score	Weight	Standardized Weight
Objective 1: Bridge the equity gaps in geographical access to health services								
1.1	Total Number of OPD cases	22	24	27	3	219	0.05	**3.08**
1.2	OPD cases seen per doctor	27	28	25	3	240	0.06	**3.38**
1.3	OPD cases seen per specialist	25	27	26	3	234	0.06	**3.30**
1.4	Number of admissions	17	20	23	3	180	0.04	**2.54**
1.5	Couple year protection	18	19	21	4	232	0.06	**3.27**
1.6	Tracer Drug availability	28	28	29	1	85	0.02	**1.20**
1.7	Prescriptions - Pharmacist Ratio	24	24	25	4	292	0.07	**4.11**
1.8	Utilization of Laboratory services	24	28	29	3	243	0.06	**3.42**
1.9	Utilization Radiological services	22	27	28	3	231	0.06	**3.25**
1.10	Availability of non-drug consumables	23	26	26	1	75	0.02	**1.06**
1.11	Number of facilities supported	28	26	26	3	240	0.06	**3.38**
1.12	Number of visits carried out	26	26	25	2	154	0.04	**2.17**
1.13	Number of Beneficiaries recorded	24	27	24	3	225	0.05	**3.17**
1.14	Number enrolled in postgraduate colleges	19	22	22	3	189	0.05	**2.66**
1.15	Caesarian Section Rate	20	21	19	4	240	0.06	**3.38**
1.16	Deliveries to midwives' ratio	27	29	28	3	252	0.06	**3.55**

1.17	% of Neonatal Admissions due to external Referrals	21	23	20	4	256	0.06	**3.61**
1.18	% of Maternal Admissions due to external Referrals	23	24	22	4	276	0.07	**3.89**
1.19	Surgery - Surgeon Ratio	24	25	25	3	222	0.05	**3.13**
1.20	Nurse and Midwife admission ratio	23	25	23	1	71	0.02	**1.00**
Objective 2: Ensure sustainable financing for health care delivery and financial protection for the poor								
2.1	Percentage of submitted claims paid	32	31	30	4	372	0.22	**1.94**
2.2	Debtors days	26	26	26	5	390	0.23	**2.03**
2.3	Creditors days	27	26	26	5	395	0.23	**2.06**
2.4	Proportion of IGF revenue spent on PPM	21	26	28	5	375	0.22	**1.95**
2.5	Percentage IGF paid as compensation	19	22	23	3	192	0.11	**1.00**
Objective 3: Improve efficiency in governance and management of the health system								
3.1	Work place related injuries resulting in death or incapacitation	22	24	24	4	280	0.05	**1.94**
3.2	Health Workers who benefited from Occupational health and safety interventions	27	29	26	5	410	0.07	**2.85**
3.3	Percentage of clients satisfied	30	29	28	5	435	0.07	**3.02**
3.4	Percentage of Staff satisfied	29	30	28	5	435	0.07	**3.02**
3.5	Percentage of Health Staff with accidental needle prick injury	22	21	20	4	252	0.04	**1.75**
3.6	Percentage equipment down time	26	27	25	5	390	0.06	**2.71**
3.7	PPM output achieved	28	29	29	5	430	0.07	**2.99**
3.8	Equipment Utilization	26	28	28	5	410	0.07	**2.85**
3.9	Proportion of staff appraised	25	19	26	4	280	0.05	**1.94**
3.1	Consultant Resident Doctor	26	28	29	3	249	0.04	**1.73**
3.11	Doctor Nurse Ratio	29	30	30	5	445	0.07	**3.09**
3.12	Doctor Pharmacist Ratio	27	30	29	4	344	0.06	**2.39**
3.13	No. of welfare packages available	27	21	24	2	144	0.02	**1.00**
3.14	Proportion of operational research / Total research	26	29	28	5	415	0.07	**2.88**
3.15	Number of Research published	27	30	29	4	344	0.06	**2.39**
3.16	Proportion audit recommendations implemented	27	23	27	4	308	0.05	**2.14**
3.17	Number of AC meetings	23	23	26	5	360	0.06	**2.50**

3.18	Number of Board Meeting	26	24	27	3	231	0.04	**1.60**
Objective 4: Improve quality of health services delivery including mental health services								
4.1	Percentage bed occupancy	29	23	24	3	228	0.04	**1.70**
4.2	Average length of stay (C/S; Appendectomy; Severe malaria in children)	31	29	27	4	348	0.06	**2.60**
4.3	Proportion of in-patients managed on nursing and midwifery care plan	30	31	28	5	445	0.07	**3.32**
4.4	Average length of stay at the emergency wards	27	27	25	4	316	0.05	**2.36**
4.5	Surgical site infection rates	26	26	25	3	231	0.04	**1.72**
4.6	Total Deliveries	25	24	24	4	292	0.05	**2.18**
4.7	Partograph use rate	30	31	29	5	450	0.07	**3.36**
4.8	Low birth Rate	22	24	21	2	134	0.02	**1.00**
4.9	Still birth rate	27	24	23	5	370	0.06	**2.76**
4.10	Institutional Maternal Mortality Ratio	28	28	26	5	410	0.07	**3.06**
4.11	Maternal deaths audited	28	28	26	5	410	0.07	**3.06**
4.12	Institutional Infant mortality rate	28	26	25	5	395	0.07	**2.95**
4.13	Institutional Neonatal mortality rate	28	26	25	5	395	0.07	**2.95**
4.14	Institutional All-cause mortality rate	27	25	24	3	228	0.04	**1.70**
4.15	Theater Deaths Rate	27	26	24	3	231	0.04	**1.72**
4.16	Percentage antibiotic prescribed	24	23	25	3	216	0.04	**1.61**
4.17	Percentage injectable prescribed	26	24	24	3	222	0.04	**1.66**
4.18	Utilization of Pharmaceutical Care interventions	27	28	26	5	405	0.07	**3.02**
4.19	Number of professional pass rate	20	25	26	4	284	0.05	**2.12**