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Training and Development Process at Tata Main Hospital

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The Tata Main Hospital (TMH), located at Jamshedpur, a city in the eastern part of India, catered to the healthcare needs of thousands of employees of Tata Steel and their dependents. Operated by Tata Steel, the state-of-the-art hospital strove to provide its “employees, their families, and dependent relations prompt and expert comprehensive health care services in a customer friendly environment.” TMH had a comprehensive training process and zealously conducted Training Need Assessments twice a year. It collected various types of data pertaining to training needs in the organization. On the basis of these data, skill identification, skill assessment, planning and designing of training method, and evaluation were done.

The data collected from seven departments of TMH for early 2013 was in front of the HR managers. It showed the skill mapping of the complete population of the seven departments. Based on this data, the managers now had to plan and design the training programs for the individual departments.

ABOUT THE TATA GROUP

The Tata Group, which was founded by Jamsetji Tata in 1868, had grown to comprise over 100 companies in seven business sectors – communications and information technology, engineering, materials, services, energy, consumer products, and chemicals. Initially inspired by the spirit of nationalism, the group had pioneered several industries of national importance in India – steel, power, hospitality, and airlines. As of early 2012, the major Tata companies were Tata Steel, Tata Motors, Tata Consultancy Services, Tata Power, Tata Chemicals, Tata Global Beverages, Tata Teleservices, Titan, Tata Communications, and Indian Hotels. The group had operations in 80 countries across the globe, and its companies exported products and services to 85 countries. It had revenues of US\$100.09 billion in 2011-12. Tata companies employed over 425,000 people worldwide. The Tata Group’s contribution to the Indian exchequer for the year 2011-12 was US\$7.72 billion out of the total US\$265.09 billion.¹ Each enterprise in the Tata Group operated independently, with its own board of directors and shareholders.

Since its inception, the Tata Group had sought to function with ethics, integrity, social consciousness, and fairness. The group’s strategy of ‘Leadership with Trust’ sought to achieve higher value for its stakeholders, better returns for society, and an ethical model of business. The guiding mission of the Tata Group was stated by JRD Tata in the following words: “No success or achievement in material terms is worthwhile unless it serves the needs or interests of the country and its people.”² Even earlier, Jamsetji Tata had said, “Community is not just another stakeholder in business but is in fact the very purpose of its existence.”³ The group had always been recognized as a value-driven organization. Considered pioneers in the area of CSR in India, the Tata Group had played an active role in nation building and socio-economic development. A unique feature of the group was that 63% of the equity capital of Tata Sons was held by Tata trusts, which were

¹ www.tata.com/htm/Group_Investor_GroupFinancials.htm

² “‘Visionaries,’ CSR Initiatives of Tata Group,” www.indiannngos.com, December 2004

³ Ibid.

philanthropic in nature. According to JRD Tata, “The wealth gathered by Jamsetji Tata and his sons in half a century of industrial pioneering formed but a minute fraction of the amount by which they enriched the nation. The whole of that wealth is held in trust for the people and used exclusively for their benefit. The cycle is thus complete; what came from the people has gone back to the people many times over.”⁴ Over the decades, these trusts had promoted a number of public institutions of national interest, including hospitals, education and research centers, and scientific and cultural establishments. Besides the trust activities, individual group companies had taken up community development initiatives based on the needs of the local community. Way back in 1895, Jamsetji Tata had stated, “We do not claim to be more unselfish, more generous, or more philanthropic than others, but we think we started on sound and straightforward business principles considering the interests of the shareholders, our own, and the health and welfare of our employees... the sure foundation of prosperity.”⁵

Tata Steel, one of the important group companies, accounted for nearly 28% of the revenues of the Tata Group. It was among the top ten global steel companies with a crude steel production capacity of 27 million tonnes per annum. Tata Steel was the world’s second most geographically diversified steel producer, employing around 80,000 people across five continents in nearly 50 countries. Tata Steel gave much weightage to society and their needs. Tata Steel’s vision was to be the global steel industry benchmark for Value Creation and Corporate Citizenship.

ABOUT TATA MAIN HOSPITAL

Tata Main Hospital (TMH) at Jamshedpur, India, catered to the employees of Tata Steel, their families, and dependent relations. It also extended its facilities to patients coming from in and around Jamshedpur and from other associated and contractor companies. Tata Steel funded free comprehensive healthcare for all its employees and their dependents. What started as a primary care in a thatched hut in 1908 had, as of 2013, grown into an 850-bed modern multi-disciplinary hospital (*Refer to Exhibit I for a timeline of TMH*).

Effective systems and procedures had helped the TMH administration achieve and fulfill its quality objectives. The quality objective read:

“We shall constantly strive to provide our employees, their families, and dependent relations prompt and expert comprehensive health care services in a customer friendly environment.”

The hospital achieved these objectives by:

- Anticipating and exceeding the expectations of customers.
- Bringing about continuous improvement in processes, technology, knowledge base, and skills of employees.
- Having professional excellence, ethical behavior, and team work as guiding values.

Hospitals are the key institutions in ensuring a healthy life. They have become an integral part of the comprehensive health services in India, both curative and preventive. Significant progress has been made in improving their efficiency and operations. The effectiveness of a health institution -- hospitals or nursing homes -- depends on its goals and objectives, its strategic location, the soundness of its operations, and the efficiency of its management systems. The administrator’s effectiveness depends upon the efficiency with which he or she is able to achieve the goals and objectives of the institution. Some of the major factors determining the effectiveness of a health institution are patient care management and patient satisfaction.

⁴ “The Quotable Jamsetji Tata,” www.tata.com, March 2008

⁵ “Beyond Business – Back to the People,” www.tata.com, December 2004

Hospitals are very expensive to build and operate. Administrators and professionals have to be extremely cost conscious. Effective computerized systems and procedures need to be implemented to ensure proper utilization of limited resources toward quality health care. It becomes even more important when an in-house medical facility is provided by an industry for its employees, as is the case with Tata Steel.

Patient care management in Tata Steel had fully utilized the power of computers in Medicare, whereby a network of integrated systems maintaining a patient database for the hospital services in the areas of Pathology, Radiology, Medical Research, In-patient Admissions and Billing, Medical Stores & Pharmacy was operational. The implementation of these modules had resulted in user-friendly computerized systems.

TRAINING AND DEVELOPMENT PROCESS AT TMH

TMH employed a set methodology in the second and fourth quarters every year to implement the complete training process. The methodology used to execute the training process was completely based on the primary data collected from doctors and senior officers from which the responsibility profile of each employee was built up. Thereafter, the employees were assessed on the recognized responsibilities. This data helped in identifying the training needs of employees.

The responsibility profile contained:

- Behavioral Skills
- Technical/Clinical Skills

Other than these two types of skills, extracurricular activities were also included for the assessment of employees in order to encourage a healthy working environment. A survey was conducted for skill identification and assessment. With the help of performance rating, the employees' performance was assessed and requisite training provided in the respective field of an organization. The results of this survey helped the management and employees to identify to identify the strong and weak points of the employees. This would help the employees to improve on their weak points. The survey helped in determining whether the employees had achieved the desired skill level to run the organization or they needed training in their respective field.

The study covered all designations in departments such as Radiology, Pathology, Pharmacy, Operation Room Technician, Dental Technicians, Dressing, Senior Nurses, and Staff Nurses of the entire hospital and other key members of critical disciplines in TMH.

The primary data collection method was used and this was compared with the secondary data available from the previous years. Data was collected through descriptive research where direct communication between the respondents and the researcher took place. Questionnaires were used to collect primary information from the employees. Thereafter, computer software and systems were used to analyze the data. The 4-quadrant model was used in skill mapping. By calculating the Skill Index, the company was able to find out the number of employees that needed training by analyzing the rating given in the critical skills of their respective area. A pie chart of the Skill Index was then made.

The training process was as follows:

Skill Identification of the Employees: To start the process, the skills of employees of different departments were identified at first by the researchers interacting with senior doctors and heads of department. Here, primary and secondary methods of collecting data were used. The collected skill data of each department was then summarized, revised, and classified on the basis of employee designation.

Skill Assessment: In TMH, the assessment of an employee's skill was done by doctors belonging to different departments. In the Nursing department, skill rating was done in a hierarchical manner. For example, the skill rating of staff nurses of different wards was done by the Sister-in-charge of that particular ward and the skill rating of Sister Supervisors and Sister-in-charge was done by the doctors of the respective ward. To rate the employee, five parameters (0-4) of rating were used.

Skill Gap Analysis: The skill gap of an employee at the department was analyzed by calculating the skill index using the four quadrant (4Q) software.

Preparation of Training Modules: After analyzing the skill gap, modules on a subject were planned through interactions with the doctors of different departments for training an employee. The training duration and module preparation was planned on an hourly basis.

- Preparation of Training modules.
- Selecting Trainers.
- Imparting Training.
- Evaluation of effectiveness of Training.
- After the collection of data from the respondents, it was tabulated. From each statement, the opinions of the respondent were elicited and tabulated using the five parameter approach as described here:

No. of Quadrants to be Filled		Definition of Skill Mapping
0		Is not trained on the subject
1		Has been given basic training on the subject.
2		Has working knowledge of the subject and can work under supervision.
3		Has adequate knowledge of the subject and can work independently on the job.
4		Is an expert of the subject and can give training to others.

Calculation

Individual Skill is calculated using the formula,

$$= \frac{\text{Sum of individual rating obtained}}{4 \times \text{no. of modules}}$$

$$\text{Skill index} = \frac{\text{Sum of individual skill of each employee}}{\text{No of employees} \times \text{No. of Skills}}$$

TRAINING NEED ANALYSIS

In the first half of 2013, a survey was conducted in the following departments: Nursing, Pharmacy, Pathology, MOT, Radiology, Dental and Dressing. The total population was as follows:

- Nursing- 373
- Pharmacy- 40
- Pathology- 15
- MOT- 20
- Radiology- 16
- Dental- 8
- Dressing- 36

Each department had its own peculiarities and individual requirements. For instance, Nursing, which was the biggest department under study, comprised Sisters-in-charge (30), Supervisor Sisters (6), Staff Nurses (215), and AMCs (122). Though the AMCs and Staff Nurses had the same responsibilities, there was a difference in their pay systems. Staff Nurses were on the payroll of TMH while AMCs were on contract. The Staff Nurses had been working in TMH for at least 2-3 years, while most of the AMCs were new recruits. The number of AMCs had almost doubled in the past one year.

On the other hand, there were smaller departments such as Dental which had only eight employees out of whom two had been newly recruited after the retirement of a senior employee. The Pathology department too had witnessed the retirement of an experienced hand the previous year. TMH started assessing the Dressing department only in 2010-2011.

All the 508 employees in the seven departments were included in the study. On the basis of employee designation, a table was made for each department (*Refer to Exhibit II a-e for some of the tables*). The 4-Q assessment sheet was created using this data. Then analysis was done on the basis of 5 parameters (0-4).

The total responses of the sample for each skill were counted and then the average for each was obtained with the respective weightage given to them. Then the overall weighted average for each aspect was obtained. The Skill Index of an employee was calculated on the basis of their designation by using the “Four Quadrant Method”. The analysis was done in a similar manner for all the aspects and the training needs were thus identified. (*Refer to Exhibit III for Trend Line of Skill Index from 2008-2013 and to Exhibit IV for department-wise skill mapping*).

LOOKING AHEAD

The management of TMH now had the relevant data that depicted the skill mapping of the complete population of the seven departments. The study revealed that TMH was yet to achieve the desired skill index — 0.75. While the majority of the employees had achieved the desired skill level of 3 in their respective skills, there were employees who were in the skill level of between 0 and 2. Armed with these insights, the HR managers at TMH had to now decide on their next course of action.

Exhibit I

Tata Main Hospital – A Timeline

+ 1907	Birth of the hospital in a tent near the steel work site
+ 1908	Tent hospital turned into 80 Sq.ft. thatched hospital
+ 1910	Spacious brick hospital, 11 beds near factory gate
+ 1916	Bed strength raised to 16
+ 1919	Additional space with more staff
+ 1922	72-bed General Ward and Out Patient Department (OPD) blocks constructed
+ 1923	Front cabins built
+ 1928	Additional block built to include Special Ward & 2 cabins
+ 1931	Other wards, Pathology Laboratory & Radiology Departments constructed; bed strength increased to 260; hospital formally commissioned
+ 1932	Five dispensaries set up in the City
+ 1933	Nurse hostel constructed
+ 1939	School of Nursing started
+ 1947	Hospital had 320 beds, 5 dispensaries, X-Ray Department, Eye Clinic, a physician, a surgeon, 49 doctors, 295 paramedical & a few ministerial staff
+ 1950	Bed strength raised to 415 and Specialty Clinics started
+ 1954	Rehabilitation Center started
+ 1961	Inauguration of full-fledged Eye Clinic
+ 1968-74	Bed strength raised to 600 & 2 more dispensaries added
+ 1974	Five-storied, 256-bed Sir Jehangir Gandhi Memorial Hospital with 6 Operation Theaters commissioned
+ 1977	Tata Main Hospital Employees' Cooperative Society and canteen started
+ 1980	Two-storied Eye and ENT Block inaugurated
+ 1982	Twelve-bed Intensive Care Unit inaugurated
+ 1990	New building for canteen constructed
+ 1992	Nuclear Medicine & New OPD Complex, Hospital Laundry, Burn Care Center, Uliyan Dispensary started
+ 1995	“Suvidha” started
+ 1999	Internal Certificate of TSI 3004-2 received
+ 2002	Critical Care Unit inaugurated
+ 2003	Increased capacity of TMH up to 900 beds
+ 2004	New waiting hall for relatives of ICU patients. Renovation and extra illumination of TMH and JGMH buildings.
Contd...	

Contd...	
+ 2005	Hospital Management System implemented in TMH OPD (Registration Counter, Pathology and Pharmacy).
+ 2005	Nightingale School of Nursing started
+ 2005	ERCP started
+ 2006	Dual head camera installed in nuclear medicine
+ 2006	PICU started
+ 2006	Post doctoral course started in critical care
+ 2006	Pain clinic started
+ 2007	PACS system implemented
+ 2007	Online journals made available to TMH & out location hospitals of Bihar & Jharkhand, thus decentralizing the library.
+ 2008	Telemedicine started for out locations
+ 2008	New canteen started
+ 2008	Electronic attendance recording system started for all employees
+ 2009	Extended OPD (9 am to 6 pm) and extended O.T. started.

Source: Company

Exhibit II

Skill Identification of Employees in Different Departments

a) Pathology Department

Name of Position	Sr. Technical Lab Assistant	Technical Lab Assistant	Laboratory Attendant	Phlebotomist
No. of Employees	8	4	4	3
Technical Skills	1. Blood Collection	1. Blood Collection	1. Cleaning of workplace	1. Preparation of patient for blood collection
	2. Hematology (Routine & Special)	2. Hematology (Routine & Special)	2. Preparation of vials	2. Generation of sticker through HMS
	3. Histopathology (Routine & Special)	3. Histopathology (Routine & Special)	3. Test of: HB, BT, CT, Slide staining	3. Sterilization process & infection control
	4. Clinical Pathology (Routine & Special)	4. Clinical Pathology (Routine & Special)	4. Preparation of: Stool, Semen blood smear, Urine, Bile Salt, Bile Pigment, Albumin, Sugar deposits, Sp. Gravity, Stool, OB, 24 hr. urine albumin, ketone bodies	4. Preparation of vials
	5. Microbiology (Routine & Special)	5. Microbiology (Routine & Special)	5. Cleaning of glassware & sterilization.	5. 5s activities of blood collection
	6. Biochemistry (Routine & Special)	6. Biochemistry (Routine & Special)	6. Disposal of biomedical waste	
	7. Identifying Error	7. Identifying Error	7. Computer use- Test codes, Name of test & Test order	
	8. Corrective & Preventive action	8. Cycle time of investigation	8. Preparation of biochemistry investigation	
	9. 5S	9. TQM		
	10. Store Management			
	11. External & Internal quality control			
	12. TQM			

Source: HR/IR department, Tata Main Hospital

b) Radiology Department

Name of Position	Head Radiographer	Senior Radiographer	Radiographer	X-Ray Attendant
No. of Employees	1	6	4	2
Technical Skills	1. Positioning of patient	1. Positioning of patient	1. Positioning of patient	1. Communication with patient
	2. Setting of factors in taking images	2. Setting of factors in taking images	2. Setting of factors in taking images	2. Assisting positioning of patient
	3. Decision making & communication skills	3. Decision making & communication skills	3. Decision making & communication skills	3. Basic knowledge in computer radiography
	4. Handling PACS & Digital X-Ray machine	4. Handling PACS & Digital X-Ray machine	4. Handling PACS & Digital X-Ray machine	4. Knowledge in bed X-Ray
	5. Human anatomy knowledge	5. Human anatomy knowledge	5. Human anatomy knowledge	5. Computer literacy
	6. Knowledge about X-Ray machine	6. Knowledge about X-Ray machine	6. Knowledge about X-Ray machine	6. Knowledge of quality system
	7. Knowledge of quality system	7. Knowledge of quality system	7. Knowledge of quality system	
	8. Bed X-Ray & handling critical care patient	8. Bed X-Ray & handling critical care patient	8. Bed X-Ray & handling critical care patient	
	9. X-Ray MOT	9. X-Ray MOT	9. X-Ray MOT	
	10. Coordination with Siemens PACS administration department	10. Coordination with Siemens PACS administration department.		
	11. Administrative skills			

Source: HR/IR department, Tata Main Hospital

c) Pharmacy Department

Name of Position	Chief Pharmacist	Senior Pharmacist	Pharmacist	Pharma Hand	Senior Store Keeper-Cum-Console Operator	Senior Store Keeper	Pharmacist-Cum-Data Entry Operator
No. of Employees	1	20	6	13	1	1	3
Technical Skills	Data entry	Data entry	Data entry	Data entry	Data entry	Data entry	Data entry
	HMS activities	HMS activities	HMS activities	HMS activities	HMS activities	HMS activities	HMS activities
	Product knowledge	Dispensing speed	Dispensing speed	Dispensing speed	Product knowledge	Product knowledge	Product knowledge
	Attitude & behavior	Product knowledge	Product knowledge	Product knowledge	Attitude & behavior	Attitude & behavior	Attitude & behavior
	Patient handling	Attitude & behavior	Attitude & behavior	Attitude & behavior	Material management	Material management	Material management
	MS office	5-S	5-S	5-S	Supplier handling	Supplier handling	Supplier handling
	5-S				5-S	5-S	MS office
	SAP awareness				SAP awareness	SAP awareness	5-S
							SAP awareness

Source: HR/IR department, Tata Main Hospital

d) MOT Department

Name of Position	Incharge ORT	Senior ORT	Operation Room Technician
No. of Employees	1	7	7
Technical Skills	1. Operating room up-keep	1. Operating room up-keep	1. Operating room up-keep
	2. Infection control & Sterilization methods (autoclave)	2. Infection control & Sterilization methods (autoclave)	2. Infection control & Sterilization methods (autoclave)
	3. Knowledge base Peri anesthesia care	3. Knowledge base Peri anesthesia care	3. Knowledge base Peri anesthesia care
	4. Anesthesia related procedure & techniques	4. Anesthesia related procedure & techniques	4. Anesthesia related procedure & techniques
	5. Surgery related Procedure & techniques (ERCP, Laparoscopy, urology, neurosurgery, gynecology, orthopedics, general surgery)	5. Surgery related Procedure & techniques (ERCP, Laparoscopy, Urology, Neurosurgery, Gynecology, Orthopedics, General Surgery)	5. Surgery related Procedure & techniques (ERCP, Laparoscopy, Urology, Neurosurgery, Gynecology, Orthopedics, General Surgery)
	6. Management of Emergency cases	6. Management of Emergency cases	6. Management of Emergency cases
	7. Equipment maintenance & their knowledge	7. Equipment maintenance & their knowledge	7. Equipment maintenance & their knowledge
	8. Immediate post operative care	8. Immediate post operative care	8. Immediate post operative care
	9. CPR	9. CPR	9. CPR
	10. TQM Activities	10. TQM activities	10. TQM activities
	11. Computer related skills & HMS Use Proficiency	11. Computer related skills & HMS use proficiency	11. Computer related skills & HMS use proficiency
	12. Administrative & organization skills	12. Administrative & organization skills	12. Communication skills
	13. Communication skills	13. Communication skills	13. Replacement surgery THR, TKR
	14. Replacement surgery THR, TKR	14. Replacement surgery THR, TKR	14. ERCP
	15. ERCP	15. ERCP	15. Urology
	16. Urology	16. Urology	

Source: HR/IR department, Tata Main Hospital

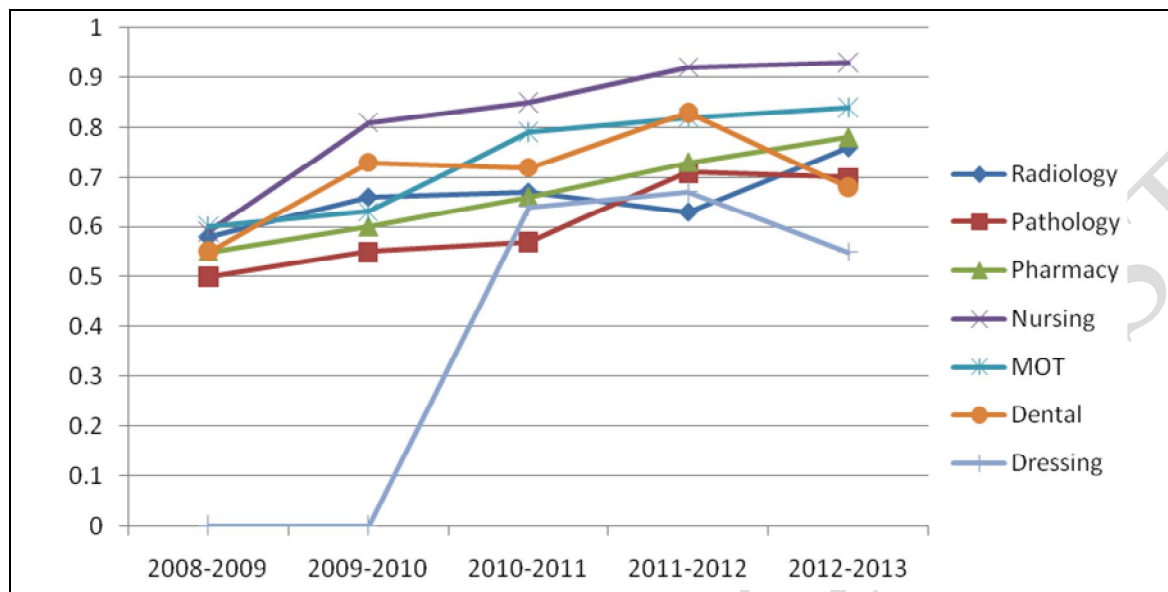
e) Nursing Department

Name of Position	Supervisor Sister	Sister in Charge	Staff Nurse	AMC
No. of Employees	6	30	215	122
Technical Skills	1. Protocol Awareness	1. Protocol Awareness	1. Protocol Awareness	1. Protocol Awareness
	2. Knowledge And Administrative Skills of Commonly Used Drugs	2. Knowledge And Administrative Skills Of Commonly Used Drugs	2. Knowledge And Administrative Skills of Commonly Used Drugs	2. Knowledge And Administrative Skills of Commonly Used Drugs
	3. Patient Assessment & Ability to Foresee Complication	3. Patient Assessment & Ability to Foresee Complication	3. Patient Assessment & Ability to Foresee Complication	3. Patient Assessment & Ability to Foresee Complication
	4. Procedure Related Skills & After Care	4. Procedure Related Skills & After Care	4. Procedure Related Skills & After Care	4. Procedure Related Skills & After Care
	5. Knowledge Of Infection Control Practices & Waste Management	5. Knowledge Of Infection Control Practices & Waste Management	5. Knowledge Of Infection Control Practices & Waste Management	5. Knowledge Of Infection Control Practices & Waste Management
	6. Routine Patient Care	6. Routine Patient Care	6. Routine Patient Care	6. Routine Patient Care
	7. Preparation Skills for Procedure Tray, Crash Cart	7. Preparation Skills for Procedure Tray, Crash Cart	7. Preparation Skills for Procedure Tray, Crash Cart	7. Preparation Skills for Procedure Tray, Crash Cart
	8. Computer Related Skills & HMS	8. Computer Related Skills & HMS	8. Computer Related Skills & HMS	8. Computer Related Skills & HMS
	9. Administrative & Organization Skills	9. Administrative & Organization Skills	9. Administrative & Organization Skills	9. Administrative & Organization Skills
	10. Professional & Institutional Ethics	10. Professional & Institutional Ethics	10. Professional & Institutional Ethics	10. Professional & Institutional Ethics

Source: HR/IR department, Tata Main Hospital

Exhibit III

Trend Line of Skill Index from 2008-2013



Source: HR/IR department, Tata Main Hospital

Exhibit IV
Skill Mapping – Department Wise

Department	Designation	No. of Employee	Skill Index	Total Skill Index Dept. Wise
Radiology	Head Radiographer	1	0.97	0.76
	Sr. Radiographer	4	0.82	
	AMTs	8	0.74	
	X-ray Attendant	3	0.52	
Pathology	Sr. Technical lab assistant	8	0.69	0.70
	Technical lab assistant	2	0.67	
	Laboratory attendant	5	0.73	
Pharmacy	Chief Pharmacist	1	0.78	0.78
	Sr. Pharmacist	16	0.9	
	Pharmacist	5	0.87	
	Pharmacy Hand	13	0.89	
	Sr. Storekeeper Console Operator	1	0.68	
	Sr. Storekeeper	1	0.75	
	Pharmacist Data Entry Operator	3	0.74	
Operation Theater	In charge Operation Room Techs.	1	0.89	0.84
	Sr. ORT	10	0.85	
	ORT	9	0.78	
Nursing	Supervisor Sister	6	0.98	0.82
	Sister	30	0.9	
	Staff Nurse	215	0.9	
	AMC Nurse	122	0.7	
Dental	Mechanic	1	0.91	0.68
	Associate Dental Mechanic	2	0.8	
	Dental Attendant	5	0.34	
Dressing	Head Dresser	1	0.62	0.55
	Sr. Dresser	12	0.65	
	Dresser	14	0.61	
	Dressing Room Attendant	9	0.31	
Total Employees		508		
Positional index of Tata Medical Services(TMh) on the basis of six dept.				0.73

Source: Calculated from the Information collected during the first half of 2013.