Development of an average "fee for service - DRG" for six hospitals and their clinical leprosy services in India

Client:	FAIRMED Switzerland
Field of Business:	International Management, Statistics
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Submission Date:	20 August 2010

Management Summary

This written thesis paper shows the result of the fifth student project carried out based on the cooperation between the University of Applied Sciences Northwestern Switzerland and FAIRMED Switzerland.

The main objective of the project was to develop a feasible average "fee for service - DRG[1]" for six hospitals and their clinical leprosy services in India. The second objective was to propose procedures on how to deal with the range of the "fee for service" costs of the different hospitals. Finally, the 2009 benchmarking-tool, introduced in 2009 for six FAIRMED Indian leprosy hospitals by FAIRMED India, had to be evaluated, changes and adaptations had to be proposed where feasible.

For the data obtaining and an internal process observation, four leprosy hospitals in Kumbakonam, Kathipudi, Tenali, and Palamaner were visited in July 2009, the data from two other hospitals in Coimbatore and Hubli was requested by e-mail.

The evaluation of the 2009 benchmarking-tool revealed that no significant changes had to be done, the tool proved itself to be efficiently working.

In the paper two options for the fee for service are proposed, advantages and weak points for both are given, also standard numbers of treatment days per IP category are prompted.

Finally, it is advised to finalize the fee budgets starting from 2012, when the data from the HIS Software will be available.

[1] DRG = Diagnosis Related Groups and payment

Declaration of Authenticity

I the undersigned declare that all material presented in this paper is my own work or fully and specifically acknowledged wherever adapted from other sources.

I understand that if at any time it is shown that I have significantly misrepresented material presented here, any degree or credits awarded to me on the basis of that material may be revoked.

I declare that all statements and information contained herein are true, correct and accurate to the best of my knowledge and belief.

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Olten

20 August 2010

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1. Introduction

The project was written for FAIRMED Switzerland which counts a long history of helping hospitals with leprosy treatment in Asia, Africa and Latin America (FAIRMED, 2010) both financially and by OBA. With the time the leprosy prevalence rate comes down, but there are still lots of people suffering from the disease and its consequences in tropical climate countries. These are not just medical challenges that LAP have to face with. During decades people died once they were affected by leprosy, as there was no treatment available till year 1995 (WHO, 2010). Nowadays, when MDT exists, there is still a need for stigma finishing as it remains in everybody's minds since that time.

Before 2010 there were several projects based on the cooperation between the UAS and FAIRMED Switzerland during which the fee for service model tool was developed and introduced first to two and the next year in four hospitals (RIDST in Kathipudi, GRETNALTES in Tenali, HHH in Hubli and SHLC in Kumbakonam). Starting from 2010 the tool is being implemented in six hospitals (ESRH&LP in Palamener and PSG in Coimbatore joined the cooperation).

This year project's aim was to evaluate the tool and propose changes if necessary; also, for each patients' category to define a feasible fee for service which is planned to be a primary element for the budget finalization for six hospitals. For the projects having a deficit it was asked to propone procedures how to deal with the range.

In order to accomplish already mentioned desideratum, it was planned to visit six hospitals on the south of India. During the time spent in projects the main vision was to observe the internal processes, the data record and to collect the crucial figures.

The meetings with directors and/or administrators were held in each visited hospitals. Also, the daily hospital work was shown in round-trips, the field visits were conducted where the time was available. Finally, to present the findings and to get a recent feed-

back, on July 27, 2010 the QC Meeting took place in Chennai Head Office with the participants from six hospitals (directors and/or administrators).

In this paper one can find the documentation of the tasks described above, it is divided into following sections: First, there is a brief description of FAIRMED Switzerland and the hospitals visited. Secondly, the tool of 2009 is evaluated, two options of a fee for each category service and a fee per a treatment day for IP categories are proponed. For an easier understanding of computations, the manual on statistical calculations is also included in the paper. Thirdly, a horizontal benchmarking which includes four perspectives: financial, customer, internal business prospective and learning and growth prospective is analyzed. And finally, the recommendations for the future process development are reported.

2. FAIRMED Switzerland

FAIRMED Switzerland, originally found as a Leprosy Relief Emmaus Switzerland with a vision to help LAP, changed its name in 2009 together with the vision to provide health for the poorest (FAIRMED, 2010).

This year four out of six planned hospitals were visited, among them are ESRH&LP (in Palamener), RIDST (in Kathipudi), GRETNALTES (in Tenali), and SHLC (in Kumbakonam) projects. The main purpose of visits was to try understand the process from inside and to get the necessary data for the check-lists. The hospital visit reports can also be found at the end of the underlying paper.

2.1. Hospitals Visited

The next sections describe the hospital visits during which the information was obtained. By the time the author came to Chennai all the financial data was collected and allocated in the OBA tool. For a better understanding of internal processes, it was planned to go to the projects. Originally all six hospitals were planned to be visited, but due to time limitation, only four of them were, the remaining two were asked to submit the answers by e-mail.

All the projects were visited in July from 9th till 20th in 2010.

2.1.1. Sacred Heart Leprosy Center, Kumbakonam

The first hospital visited was SHLC in Kumbakonam. The author went there with the OBA consultant MR. Ram Prakash.

In order to understand the project specifics, the author talked with a doctor, had a hospital tour, and had seen the patients, talked to an administration and to medical record department employees; the check-list for all the hospitals was created.

The Project has a hospital, a nurse collage and a school for children of leprosy affected parents.

2.1.2. RISDT, Kathipudi

In, Kathipudi where the author went alone, most of the necessary data was collected in the first day, so on the second day the time was used to go to the field and to see how the RHC cure works. RISDT is the project, which has a very good organization and cooperates for several years with FAIRMED for tool creation and process efficiency improvement. The data record is maintained proficiently and available within few seconds. The OBA tool is perfectly implemented.

The project has a hospital as well as a school for children studying in first to twelve grades.

2.1.3 GRETNALTES, Tenali

The author also went to GRETNALTES by herself. The project's director Mr. Hemachandu greeted very hospitable and organized the hospital tour. The data collection took not much time, so the last day was planned for PHCs visits on the field.

The data maintenance is very well managed, the OBA tool is fully implemented.

The project has a hospital as well as a school for children of leprosy affected parents and families living below the poverty line, studying in first to tenth grades.

2.1.4., Palamaner

The last but not least, ESRH&LP was visited by author together with the OBA consultant Mr. Ram Prakash. The project head, Dr. Jacob is a post-graduated specialist, works as a director, a doctor and a surgeon. The patients having their

treatment are very happy to be their. From the author's point of view, the quality of the cure they receive is the best from four hospitals visited. The surgeon stays constantly in the project and therefore always available, in case the X-Ray is needed – it is available (that is very beneficial for some cases, where the problem can not be identified from an overlook).

The employee difficulties bear hard on the data record.

3. Data Collection and Validation of 2009 Data

The OBA tool developed in cooperation with RIDST in Kathipudi has now been introduced in all six hospitals supported by FAIRMED situated in the South of India. By 2010 four hospitals (in Kathipudi, Tenali, Kumbakonam and Hubli) already learned how to use the tool; starting from 2010 the system was introduced in two more projects (in Hubli and Palamener). The tool from 2009 works efficiently and is transparent. In 2010 there were no big changes made in it.

3.1. Data Maintenance and Internal Processes

Each hospital fills in the OBA tool. The data consolidation is done by the OBA consultant. A QC Meeting proved to essential for the projects' integration.

The evaluation of an existing tool gave the result that no big changes had to be done.

The main changes concern fee for each category service calculations and a cost per treatment day per category. The way how to calculate the figures mentioned is described in the manual on statistical calculations.

4. Manual on statistical calculations

In this short manual we will explain several statistical concepts which are used for the definition of average costs and a range of admissible costs. We first explain the unweighted median, the second one in weighted interpolated median. We then explain how a range of admissible costs is calculated based on the Interquartile Range (IQR). In both cases an IQR is calculated: unweighted and weighted respectively.

Why is the customary arithmetic mean not considered in this paper? The unweighted median is a numeric value which separates the higher half of a sample from the lower half. The arithmetic mean is calculated by summing all sample values and dividing by the size of the sample. The reason for preferring the median over the mean is that the median is resistant against outliers and the mean is not.

4.1. Unweighted Median and Acceptance Range

An unweighted median cost per case represents a statistical average of a fee for service per each category for each hospital.

To calculate an unweighted median Microsoft Office Excel program was used. To calculate a median manually is more time consuming and therefore not considered in this manual.

All the values (costs per case in hospitals) which fall out of the range are called outliers. They are situated below an acceptance lower limit or above an acceptance higher limit. In order to find the outliers out first unweighted median and unweighted IQR, then lower and upper acceptance limits are calculated.

The first quartile separates the lowest 25% of the sample (lower values) from the upper 75%, i.e. the first quartile is the 25%-quantile of the empirical distribution induced by the sample; the third quartile separates the highest 25% of the sample (upper values) from the lower 75%, i.e. the third quartile is the 75%-quantile of the empirical distribution induced by the sample. The median is the second quartile or the 50%-quantile of the empirical distribution.

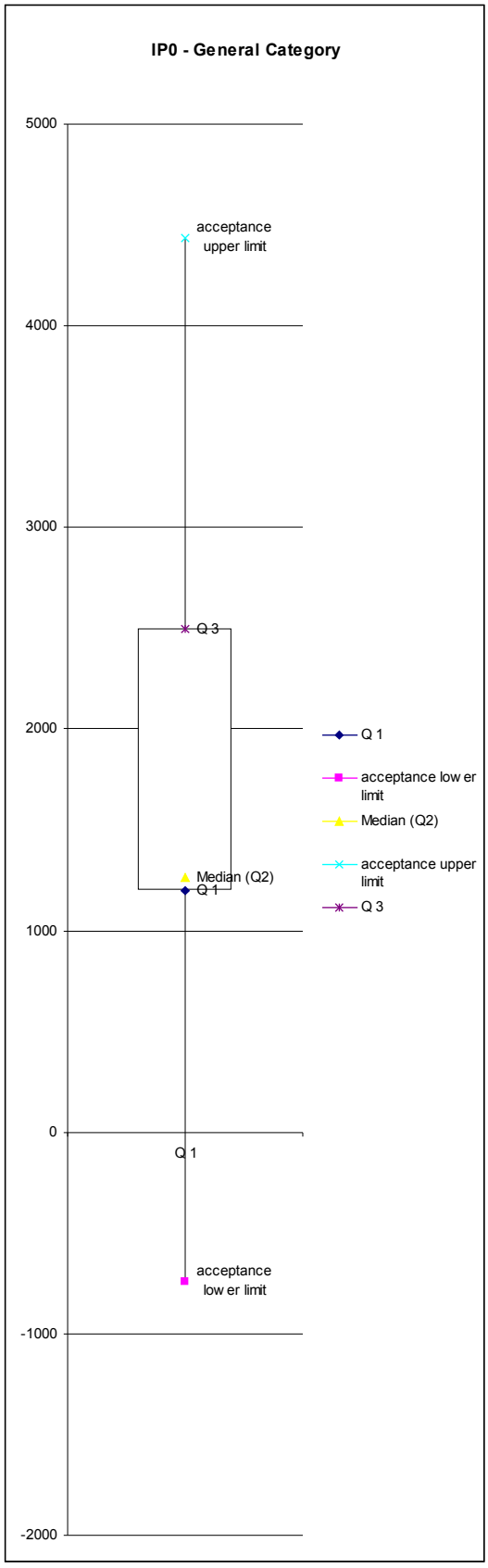


Figure 1: The boxplot for IP0 Category

Source: Author

The formula for an unweighted median is:

=MEDIAN (<value 1> :< value n>)

or

=MEDIAN (<value 1> ;< value 2> ;…;

< value n>).

The formula for an IQR is:

=Q3-Q1, where Q1 is the first quartile mean, Q3 is the third quartile mean.

The formula for Q1 is:

=QUARTILE (<value 1> :< value n>; 1).

The formula for Q3 is:

=QUARTILE (<value 1> :< value n>; 3).

Formula for an acceptance lower limit is:

=Q1-1.5*(Q3-Q1).

Formula for an acceptance upper limit is:

=Q3+1.5*(Q3-Q1).

These limits are derived from the boxplot. The boxplot is a customary graphic to display the distribution of a sample and the limits of the so-called whiskers are convenient acceptance limits. For a normal distribution the acceptance limits of the boxplot are set such that only 0.5% of the data should lie above the upper acceptance limit and only 0.5% below the lower limit.

The original definition of a boxplot exceeds the whiskers only to the “nearest” observation inside the acceptance limit. Here we are interested in the actual acceptance limit and therefore draw them even if no observation lies at the limit.

4.2. Weighted Interpolated Median and Acceptance Range

A weighted interpolated median cost per case represents a statistical average of a fee for service per each category for IP admission or OP visit when the weights per hospital are the number of services in that category of that hospital. The weighting by the number of cases per hospital is justified by the argument that the median should be a median of cost per case. Now since the cost per case are known only as averages per hospital we propose to weight at least these averages.

A possible problem in this procedure is that the averages within a hospital are not resistant to outliers. Therefore a hospital with outlying average cost per case should check whether there is an outlier in their data. By taking the (weighted) median over the hospital averages a certain protection against outlying hospital averages is reached. However, this protection may not hold if the hospital with the largest number of cases has an average cost which is unduely influenced by some outliers. Careful checking of the data is therefore needed in any case.

To calculate a weighted interpolated median also Microsoft Office Excel program was used. To calculate it manually requires the same formula and is more time consuming.

The same as in unweighted median, in weighted interpolated median outliers are situated below an acceptance lower limit or above an acceptance higher limit. In order to determine the outliers, first the weighted median and weighted IQR (both weighted by the number of patients in categories in each hospital), then lower and upper acceptance limits are calculated.

The formula for a weighted interpolated median (Q2) is:

$$\frac{(0.5-W_1)*X_2+(W_2-0.5)*X_1}{W_2-W_1}$$

, where

X_1, X_2 – values (cost per case)

W_1, W_2 – cumulative weights

There are several steps for calculating cumulative weight values. The process describes the calculation in Microsoft Office Excel program.

The calculations should be done separately for all the categories. First, a list with cost per case values is sorted from the lowest to the highest ones. Then, a weight for each hospital is calculated based on the number of cases in this category.

Weight=Number of Cases/Sum (<Number of Cases 1 hospital>: <Number of Cases n hospital>)

After that, we calculate a cumulative weight. For the first hospital the number would equal the weight value, for the second – the sum of the first and the second weight values, for the third the sum of the first, second and third weight values, etc, for the last hospital a cumulative weight would equal one.

Then, for Q2 we have to find the cumulative weight numbers below and above the 0.5 value. The number below is denoted W1, the number above – as W2. The costs per case in respective hospitals are considered as X1 and X2. In case, when the cumulative weight value equals 0.5 exactly then the cost per case value of this hospital equals Q2 (weighted interpolated median).

The formula for a weighted IQR is:

=Q3-Q1, where Q1 is the first weighted quartile , Q3 is the third weighted quartile .

The formula for Q1 is:

$$\frac{(0.25-W_1)*X_2+(W_2-0.25)*X_1}{W_2-W_1}$$

, where
X_1, X_2 – values (cost per case)
W_1, W_2 – cumulative weights

For Q1 we have to find the cumulative weight numbers below and above the 0.25 value. The number below is regarded is W1, the number above – as W2. The costs per case

in respective hospitals are considered as X1 and X2. In case, when the cumulative weight value equals 0.25 - the cost per case value of this hospital equals Q1. When the cumulative weight starts with the value, which is above 0.25, then the upper median is taken and equals the cost per case value of this hospital.

The formula for Q3 is:

$$\frac{(0.75-W_1)*X_2+(W_2-0.75)*X_1}{W_2-W_1}$$

, where
X_1, X_2 – values (cost per case)
W_1, W_2 – cumulative weights

For Q3 we have to find the cumulative weight numbers below and above the 0.75 value. The number below is regarded is W1, the number above – as W2. The costs per case in respective hospitals are considered as X1 and X2. In case, when the cumulative weight value equals 0.75 - the cost per case value of this hospital equals Q3. When the cumulative weight starts with the value, which is above 0.75, then the upper median is taken and equals the cost per case value of this hospital.

Formula for an acceptance lower limit is:

=Q1-1.5*(Q3-Q1).

Formula for an acceptance higher limit is:

=Q3+1.5*(Q3-Q1).

In case of weighted interpolated median there will be more outliers than in unweighted median, as the number is lower and the range is narrower.

4.3. Discussion

It is not an easy question to decide on the method which should be used for the fee for service calculations. The main advantage for the unweighted median is its calculation

simplicity. At the same time, weighted interpolated median gives us an understanding of a more correct picture, as it is calculated considering the number of cases, but more time consuming to calculate.

Supposing that the number of cases for the same category equals 400, and in others spreads from 3 to 20, in such a case the unweighted median will not be representative at all (as it gives the median per a project regardless the case numbers).

5. Statistical Calculations of a Fee for Service

Below one can find the results, for the calculations themselves please refer to the Excel flie “Fee for service.xls” in the Appendix 14 – Software CD.

5.1. Unweighted Median and Outliers

All the unweighted median numbers for fee for each category and an acceptance range, both IP and OP were calculated with the method described in a previous chapter.

Table 1: Unweighted Median Fee for Service

UNWEIGHTED MEDIAN											
	GENERAL	REACTION	SIMPLE ULCER	COMP. ULCER	ULCERSEVERE	FRCS	HRCS	EYE SURGERY	GENERAL	ULCER	REACTION
	IP0	IP1	IP2	IP3	IP4	IP5	IP6	IP7	OP0	OP1	OP2
Q 1	1199	1765	2006	4287	11081	12529	9804	2796	198	217	215
acceptance lower limit	-744	-6005	1675	603	1862	7270	2899	1249	104	41	108
Median (Q2)	1262	2809	2123	5326	12382	14833	11962	3392	213	245	283
acceptance upper limit	4436	14715	2558	10426	26447	21294	21313	5374	354	510	393
Q 3	2494	6945	2227	6742	17228	16035	14408	3827	260	334	286

Source: Author

Table 2: Outliers Based on the Unweighted Median Calculations

	GENERAL	REACTION	SIMPLE ULCER	COMP. ULCER	ULCERSEVERE	FRCS	HRCS	EYE SURGERY	GENERAL	ULCER	REACTION
FAIRMED PROJECTS	IP0	IP1	IP2	IP3	IP4	IP5	IP6	IP7	OP0	OP1	OP2
PALAMANER	In Range	In Range			In Range	In Range	In Range	In Range	In Range	In Range	In Range
TENALI	In Range	In Range	In Range	In Range		In Range	In Range	In Range	In Range	In Range	In Range
KUMBAKONAM	In Range	In Range	In Range	In Range	In Range	In Range	In Range		In Range	In Range	In Range
HUBLI	Outlier	In Range	Outlier	In Range	In Range	In Range	In Range		Outlier	Outlier	Outlier
KATHIPUDI	In Range	In Range	In Range	In Range	In Range	In Range	In Range	In Range	In Range	In Range	
COIMBATORE	In Range	In Range	In Range	In Range	In Range				In Range	In Range	In Range

Source: Author

5.2. Weighted Interpolated Median and Outliers

All the weighted interpolated median numbers for fee for each category and an acceptance range, both IP and OP were calculated with the method described in a previous chapter.

Table 3: Weighted Interpolated Median Fee for Service

WEIGHTED INTERPOLATED MEDIAN											
	GENERAL	REACTION	SIMPLE ULCER	COMP. ULCER	ULCERSEVERE	FRCS	HRCS	EYE SURGERY	GENERAL	ULCER	REACTION
	IP0	IP1	IP2	IP3	IP4	IP5	IP6	IP7	OP0	OP1	OP2
Q 1	1199	1765	2006	4287	11081	12529	9804	2796	198	217	215
acceptance lower limit	545	-6607	948	1696	8446	4107	9468	-240	114	95	157
Median (Q2)	1 095	1919	1845	4588	11622	12137	9769	3392	202	223	259
acceptance upper limit	1698	14725	2827	7216	14560	21749	10042	6267	295	395	360
Q 3	2494	6945	2227	6742	17228	16035	14408	3827	260	334	286

Source: Author

The Outliers will lie out of the range meaning that the cost per case is below the lower acceptance limit or above upper acceptance limit. In this case there are no lower outliers, so only upper outliers will be presented.

Table 4: Outliers Based on the Weighted Interpolated Median Calculations

	PROJECTSFAIRMED	PALAMANER	TENALI	KUMBAKONAM	HUBLI	KATHIPUDI	COIMBATORE
GENERAL	IP0	Outlier	In Range	In Range	Outlier	In Range	In Range
REACTION	IP1	In Range	In Range	In Range	In Range	In Range	In Range
SIMPLE ULCER	IP2		In Range	In Range	Outlier	In Range	In Range
COMP. ULCER	IP3		In Range	In Range	Outlier	In Range	In Range
ULCERSEVERE	IP4			In Range	Outlier	In Range	Outlier
FRCS	IP5	In Range	In Range	In Range	In Range	In Range	
HRCS	IP6	In Range	In Range	Outlier	Outlier	Outlier	
EYE SURGERY	IP7	In Range	In Range			In Range	
GENERAL	OP0	In Range	In Range	In Range	Outlier	In Range	In Range
ULCER	OP1	In Range	In Range	In Range	Outlier	In Range	In Range
REACTION	OP2	In Range	In Range	In Range	Outlier		In Range

Source: Author

5.3. Points to be mentioned

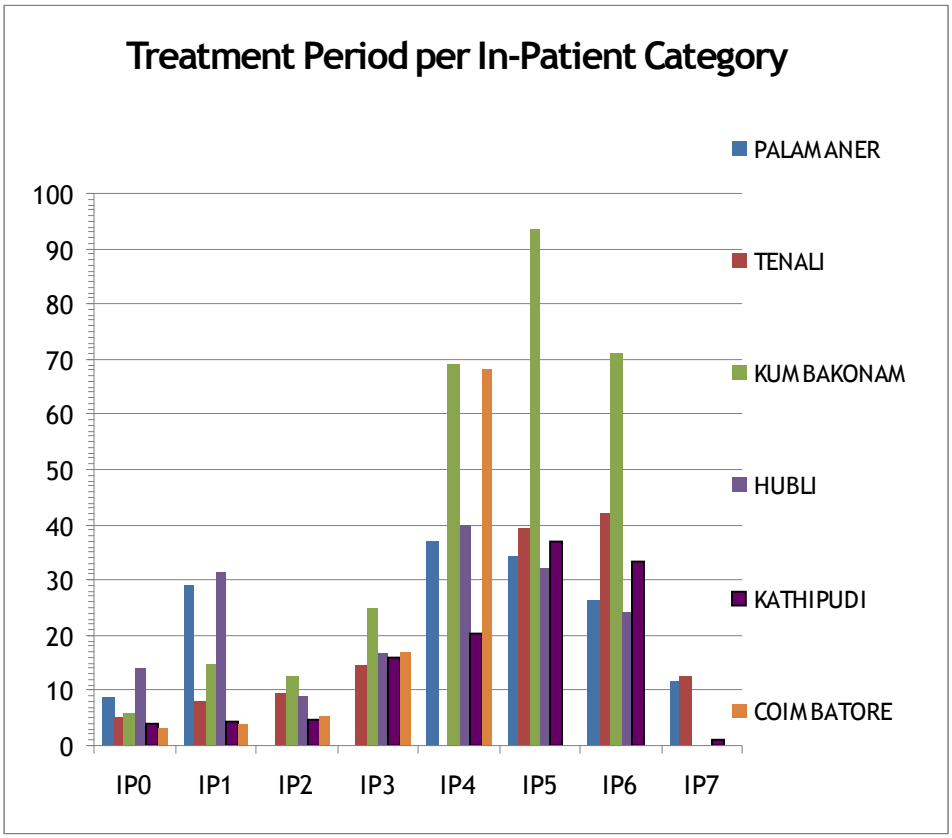
It needs to be mentioned that for all the calculations there were some adjustments made. For Palamener that cases in category IP3 – COMPLICATED ULCER were moved to IP4 – SEVERE ULCER, as an average number of days is 37 that is much higher then number of treatment days proposed in this thesis, and there are no cases in IP2 – SIMPLE ULCER and IP4 - SEVERE ULCER. The strategy in ESRH&LP is to treat all the simple ulcer cases as OP, septic cases in 2009 were recorded as complicated ones. The second point that has to be mentioned is that the DPMR cost of 860 000 INR was not taken out of the OBA.

6. Standard Number of Days for Each IP Category and Cost per Day

6.1. Treatment Period for IP categories in 2009

It was found out that for the same categories the numbers of treatment days differ. As an understanding of categories[2] as well as the complexity of cases look-alike in all the hospitals, it was proposed to define a standard number of days for each IP category.

Figure 2: Average Length of Stay per In-Patient



Source: Author

[2] For the detailed description of each category for the begining of 2010 please refer to

6.2. Proposed Number of Treatment days for Each IP Category

The standard numbers of days for IP categories were defined by calculating the unweighted median with the same method as shown above for an unweighted median cost per case values.

For an easier classification, the standard days are defined as in table below.

Table 5: Standard Number of Days for Each Category

		Median Length of Stay	Days per category (proposed)
IP0	GENERAL	5.54	7
IP1	REACTION	11.43	14
IP2	SIMPLE ULCER	8.98	10
IP3	COMPLICATED ULCER	17	20
IP4	SEVIRE ULCER	39.87	40
IP5	FOOT RECONSTRUCTION	37	35
IP6	HAND RECONSTRUCTION	33.5	35
IP7	EYE SURGERY	12.18	12

Source: Author

In most of the cases the standard day's numbers exceeds the unweighted median values.

6.3. Cost per Day for Each Category

To calculate the cost per day for each category one has to take the unweighted median or weighted interpolated median cost per case and to divide it the number of proposed treatment days

6.4. Discussion

It is proponed to establish a standard number of treatment days, which generally speaking should not be exceeded; except for the cases, when patients come for an amputation, but the leg can be saved or other exceptional cases that requires longer period of stay. As such cases can not be foreseen in a next year budget, it is advised to

make a budget correction having actual numbers at the end of the year. Doctors are to defend the necessity for a longer stay.

There is one more thing that has to be mentioned. Since the recommended number of treatment days for each category starts from one and goes up, it provides potential possibility for recording a simple ulcer as a complicated one or a complicated as a septic one in order to receive bigger budget.

7. Horizontal Benchmarking

An Excel-based Tool, which is used now, works very well. It shows very transparently all the hospital's expenses according to OBA. Very few things were added to the Tool.

All the data was collected during the hospitals visits. The author visited four out of six hospitals. The remaining two hospitals were asked to fill in the file with questions, which was sent by e-mail. Unfortunately, despite the description, some of the questions were misunderstood or no answer was provided.

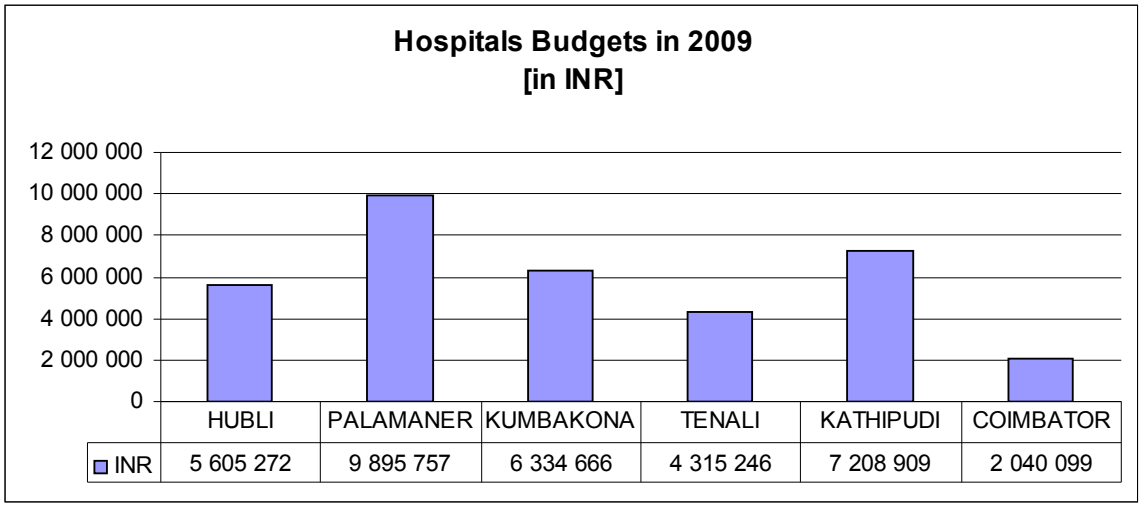
All the figures describe the year 2009, unless something else is stated.

7.1. Basic Figures about the Four Hospitals and Financial perspective

For an overview of the six hospitals' expenses and size represented by number of patients, some basic information is presented.

Hospitals Budgets

Figure 3: Hospitals Budgets, in INR

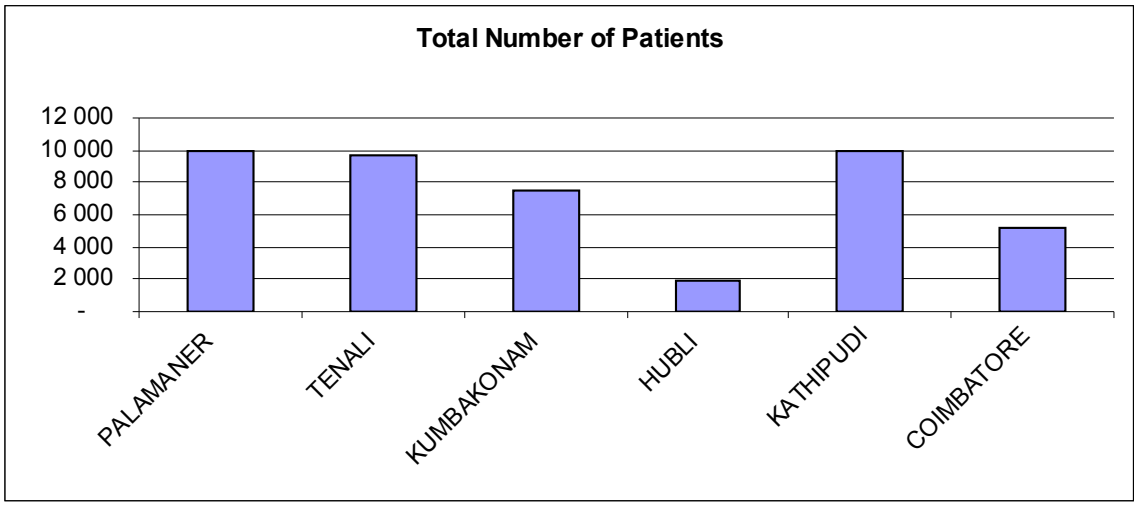


Source: Author

As it is seen above, the hospital in Palamaner had the highest budget in 2009, followed with Kathipudi and Kumbakonam.

Total Number of Patients

Figure 4: Total Number of Patients

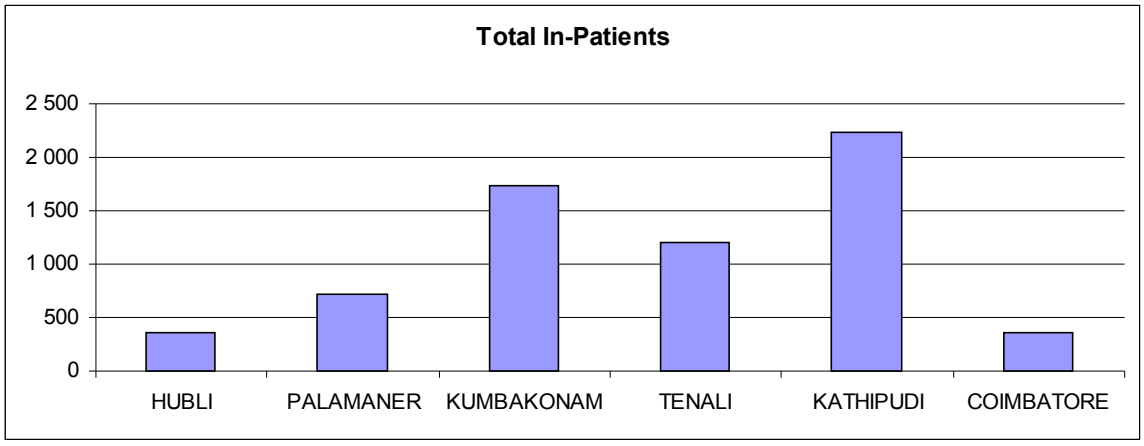


Source: Author

Number of patients (both IP and OP) does not follow the same order as graph above. More or less ne same number of patients is Palamaner, Tenali and Kathipudi, the smallest is in Hubli followed with Coimbatore.

IP and OP absolute and relative figures

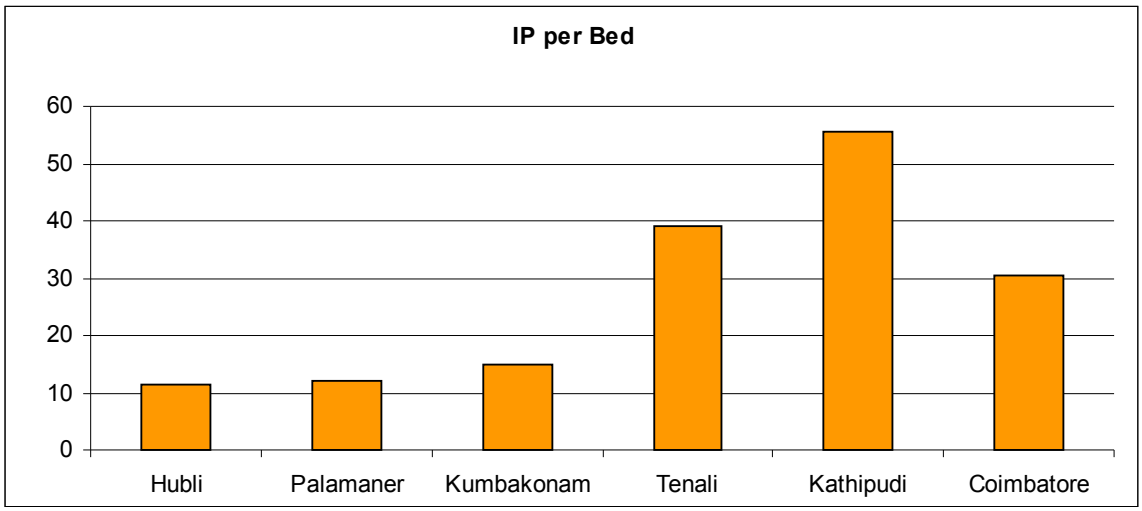
Figure 5: Total In-Patients



Source: Author

The biggest number of In-Patients is in Kathipudi, although the number of beds is just 40 and the budget is not the highest. In Hubli and Coimbatore the number of IP in 2009 is relatively small, what corresponds to the budget and the size of two hospitals.

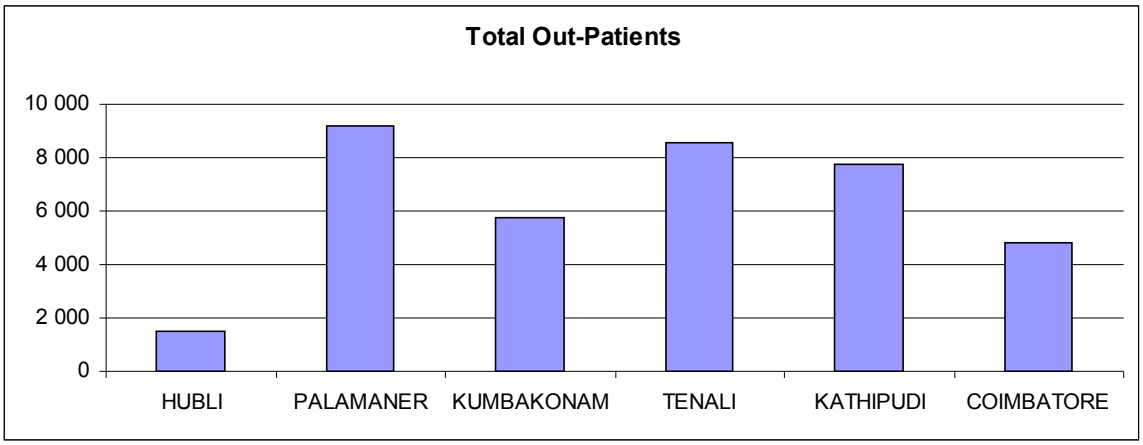
Figure 6: In-Patients per Bed



Source: Author

Relatively, but not exactly the same picture as in figure above one can see in a figure 6. The highest number of the IP per bed is in Kathipudi, but hospitals, where the amount of patients is the lowest are Hubli, Palamaner and Kumbakonam.

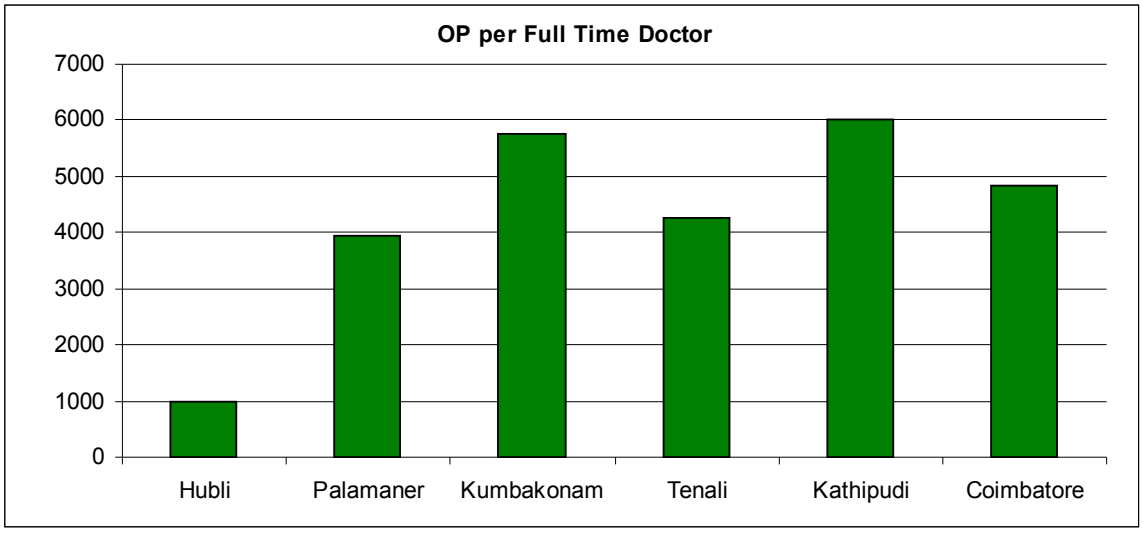
Figure 7: Total Out-Patients



Source: Author

From the graph above, it is possible to say that he number of total OP is very less in Hubli. In Palamaner and Tenali, the number is the highest.

Figure 8: Out-Patients per Full Time Doctor



Source: Author

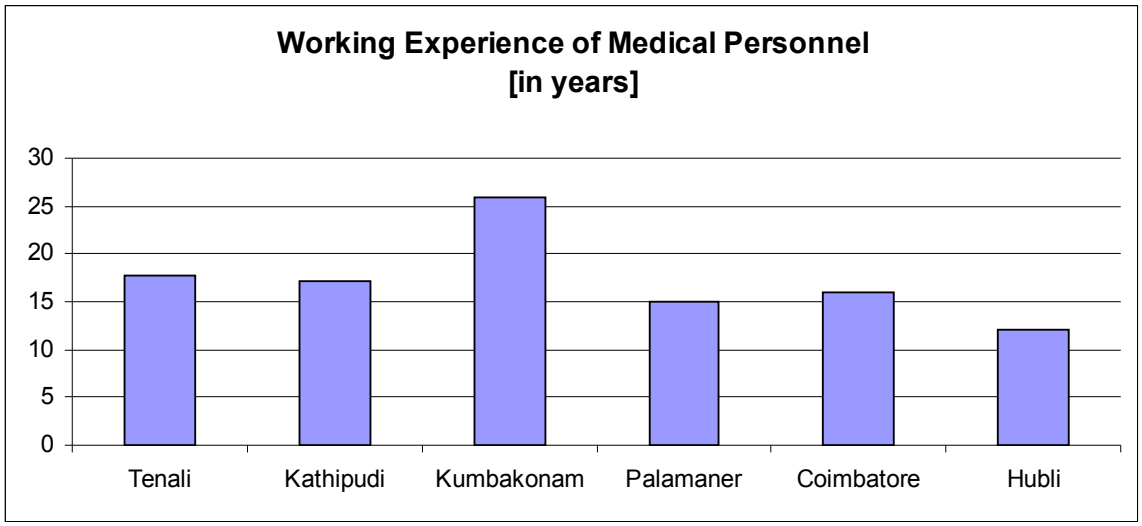
The relative picture of OP (OP per full time doctors) is different. The highest number can be found in Kumbakonam and Kathipudi, the lowest in Hubli.

7.2. Customer Perspective

Working Experience of the Medical Personnel in Years

Looking from customer perspective, it is not possible to not to mention working experience of employees, in particular medical ones. It is assumed that the more experience one has, the better the quality becomes.

Figure 9: Working Experience of Medical Personnel in years Figure



Source: Author

Everywhere working experience was calculated as total experience [in years], not just working period in the hospital itself. As we can see on the Figure 9, in SHLC, Kumbakonam on average medical employees work for the longest time – for more than 25 years. In Hubli doctors treating leprosy patients have just 12 years of experience. In other hospitals medical staff has more or less 16 years of experience.

It should also be noted that the Sacred Heart Leprosy Center is the oldest hospital, starting its history from 1916. Once employed, practically everyone stays there till retirement. Over the years the figures can change, as an average working period in other hospitals will get longer. At the moment the best quality of service according to the assumption above, is provided in Kumbakonam.

More detailed data about working experience of employees in four hospitals can be found in “Appendix 4 – Education Level and Working Experience of Hospital Employees in GRETNALTES, Tenali”, “Appendix 5 – Education Level and Working Experience of Hospital Employees in SHLC, Kumbakonam” as well as “Appendix 6 – Education Level and Working Experience of Hospital Employees in HHH, Hubli” and “Appendix 7 – Education Level and Working Experience of Hospital Employees in RISDT, Kathipudi”.

Education Level of the Medical Practitioners

As it was remarked by Luethi (Luethi, 2009), it is assumed that the higher education level leads to a better service a doctor can provide to a patient. In five hospitals out of six all the doctors have Bachelor Degrees. In Palamaner, Dr. Jacob has a Master Degree. So according this assumption in ESRH&LP, in Palamaner patients benefit the most.

For more information please refer to “Appendix 4 – Education Level and Working Experience of Hospital Employees in GRETNALTES, Tenali”, “Appendix 5 – Education Level and Working Experience of Hospital Employees in SHLC, Kumbakonam“, “Appendix 6 – Education Level and Working Experience of Hospital Employees in HHH, Hubli” and “Appendix 7 – Education Level and Working Experience of Hospital Employees in RISDT, Kathipudi”.

Aid Activities in Hospitals

Some hospitals help leprosy patients to get self-esteem and/or to change the environment, which in many cases helps towaards not developing an ulcer. In Kumbakonam, when patients get treated and can work, some of them help the hospital by working in it or giving small donations. Few leprosy patients are helped to get a profession in order to have an opportunity to change their job. Self esteem and self-respect is gained. In Palamaner, Tenali and Kathipudi loans are provided to patients in order to start their own business. In Palamaner and Tenali some cured patients are employed. Also, children whose parents suffer from leprosy have an opportunity to attend school for free in Kumbakonam, Tenali and Kathipudi; some pupils in Tenali even receive some financial aid to studying in 11^{th} and 12^{th} grades outside, as there no such classes in local school.

In Hubli and Coimbatore no data was obtained.

Table 6: Aid Activities in Hospitals

	Tenali	Kathipudi	Kumbakonam	Palamaner
Employment in the hospital	V		V	V
Loans for business	V	V	V	V
Possibility for children to study at school	V	V	V	
Small donations to hospital (possibility to get a self-esteem)			V	
Financial aid for children studies	V			
Help to get profession			V	

Source: Author

As one can see above, the biggest variety of help that patients can receive is in Kumbakonam, following with Tenali. The author supposes that the list of aid activities may be augmented in further research; the data from Hubli and Coimbatore can give a broader overview.

7. 3. Internal Business Process Perspective

Employee turnover rate

We assume that the lowest the turnover rate, the better the organization works (employees are not willing to leave). But here it is recommended to consider separately three different factors that contribute to turnover rate: employees who retire, ones who leave and those who are fired. Only having taken all the factors in consideration, can we get a clear picture of the employee turnover rate.

This time the data collection was not so detailed.

In 2009 the turnover was 0% in Palamaner, Tenali and Kathipudi. In Kumbakonam the direcor left and the new one came. In Coimbatore 2 employees resigned.

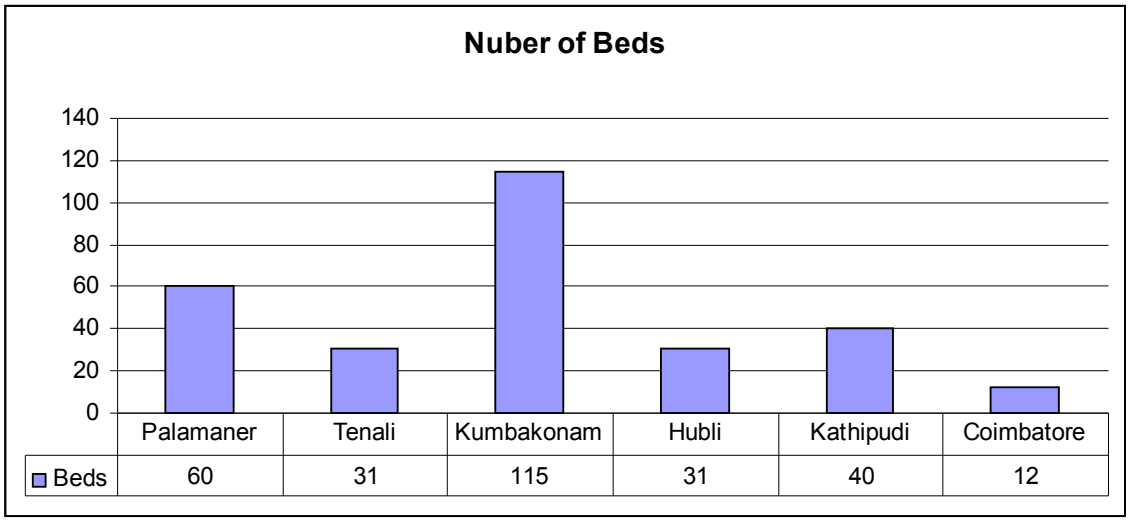
For the last five years the turnover in Palamener, was 0%, in Kumbakonam close to 0%, in Tenali and Kathipudi 10% on average. In Coimbatore there were 13 employees who retired and 4 were appointed.

No data from Hubli has been obtained.

Due to the fact the data collected differs a lot, it is impossible to have a definite comparison.

Number of Beds

Figure 10: Number of Beds in six Hospitals

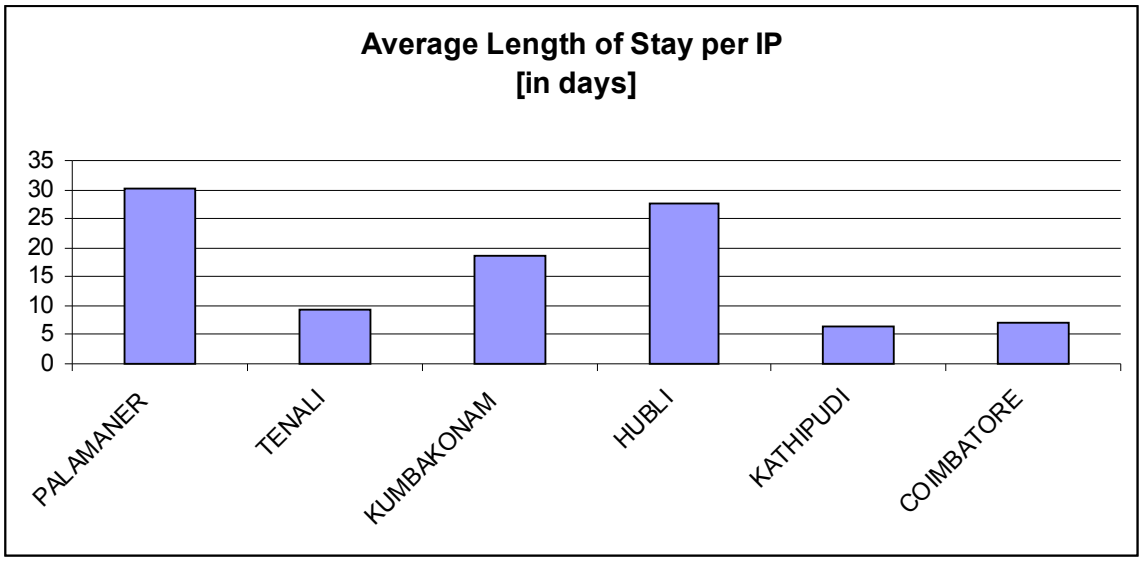


Source: Author

The number of beds differs significantly in the six hospitals. Here the author wants to remark that the number of districts related to the hospital is three in most of places with an exception in Kathipudi, where the number is five and Hubli with 15 districts. The history of each hospital differs (Kumbakonam once used to be a big leprosy hospital), as well as the climate (which causes more cases of ulcer in some places). The question is whether there is a need for the current number of beds today. Should the number be incremented or reduced (by allocating some beds to TB or any of other diseases) should be decided based on the bed occupancy rate, number of districts and number health organizations which are situated in the districts covered by each hospital.

Average Length of Stay per In-Patient

Figure 11: Average Length of Stay per In-Patient

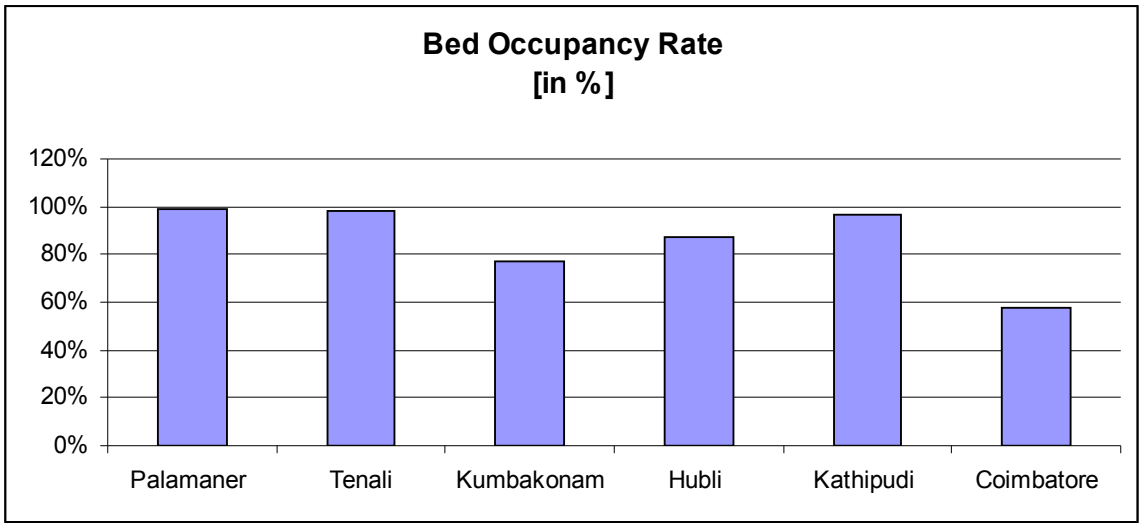


Source: Author

Doctors in Hubli have a strategy to keep the patient until he/she is completely cured, in Palamaner Dr. Jacob takes very complicated cases (which sometimes can not even be treated in Government Hospita)l; often that requires more treatment days. In Kathipudi the strategy is to cure the complicacy of a disease and to give the patient a sufficient amount of medicaments and dressing materials, to send the patient home and then to help the next one.

Bed Occupancy Rate

Figure 12: Bed Occupancy Rate



Source: Author

In most places the bed occupancy rate is high, close to 100%. Especially it is like that in hospitals with a low number of beds. The rate differs significantly in Coimbatore, where the number is just 58%, although the number of beds is only 12. In Hubli the rate is 87%; according to a statement by administration the prevalence rate came down.

Three last figures above are related to each other: number of beds, average length of stay per In-Patient and bed occupancy rate. The smaller the number of beds is, the shorter the lengths of stay. One can also assume that the smaller the number of beds, the higher is the bed occupancy rate, but it is not always like that: in Coimbatore there are just 12 beds, but still the bed occupancy rate is the lowest.

Average Number of Repetitious Admissions per In-Patient (per year)

It is important to understand the repetitious cases of admissions in all the hospitals. This figure represents the dependency of patients on hospital. In is assumed that the higher the number is, the more dependent the patients on hospital are.

Table 7: Repetitious Admissions per In-Patient (in 2009)

	Repetitions	Total	Repetitions %
Palamaner	20	723	2.77%
Tenali	258	1209	21.34%
Kumbakonam	774	1728	44.79%
Hubli	N/D	N/D	N/D
Kathipudi	17	2218	0.77%
Coimbatore	N/D	N/D	N/D

Source: Author

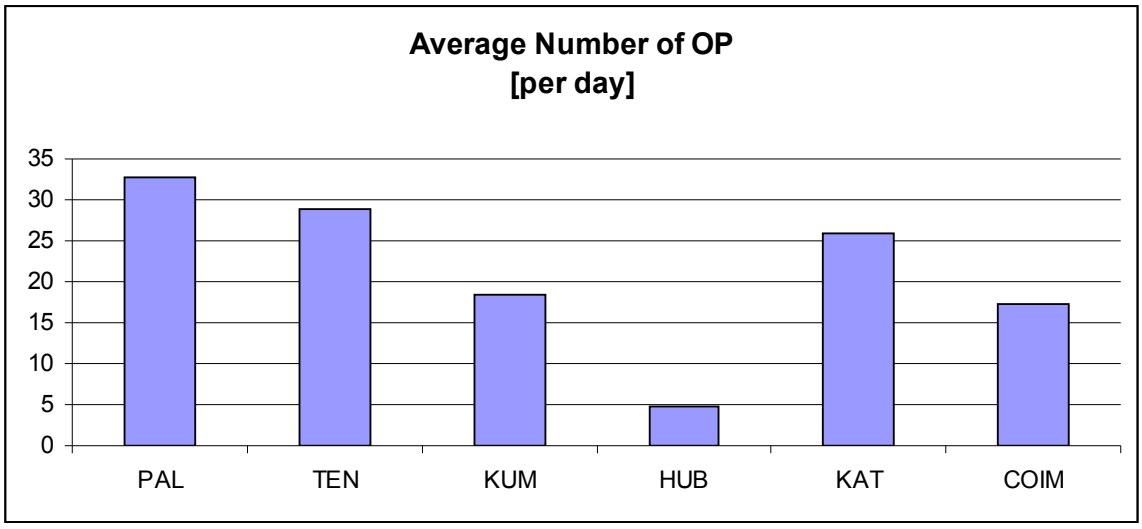
In Hubli and Coimbatore no data was obtained.

Out of this result one can read the main aspect: the number of repetitious admissions varies decidedly. In the “Figure 5: Average Length of Stay per In-Patient” it was seen that the smallest number of treatment days is in Tenali, Kathipudi and Coimbatore, so it is possible to say that the number of repetitions should be more as the patients are not cured and therefore come back in several weeks. But the table above shows us quite a different result: in Kathipudi, where an average length of stay per IP is the lowest, the number of repetitious admissions also the lowest: just 0.77%. The number of repetitious admissions is also low in Palamaner, where an average treatment period is the longest one.

So, the conclusion can be that the number of repetitious admissions does not depend on the number of treatment days. The Author does not insist on the only one conclusion as considers that a more detailed comparison should be done: an average length of stay per category with the number of repetitious admissions per category.

Average Number of Out-Patient Visits per day

Figure 13: Average number of OP [per day]



Source: Author

It is remarkable to compare an average number of OP visits per day. As one can see, it differs a lot. The highest number is in Palamaner – almost 33 patients every day following with Kathipudi – 26 patients. The lowest number is in Hubli, although this hospital is related to 15 districts. The reason can be a transport difficulty. The Hubli Hospital for Handicapped is situated in a very difficult-to-reach area. Perhaps it would be useful for the hospital to organize some kind of transport for patients or to support financially those who can not reach hospital because of lack of money, though it will lead to a cost increase. A POD program can also be very useful in this area.

Table 8: Average Number of OP [per day] and a Number of Working Days in 2009

	OP per Working Day	Working Days in 2009
Palamaner	32.63	281
Tenali	28.75	297
Kumbakonam	18.5	300
Hubli	4.78	313
Kathipudi	26	300
Coimbatore	17.2	281

Source: Author

Not only did the number of OP visits per day differ from hospital to hospital in 2009, but the number of working days as well. Please find them in the Table 3. In Palamaner and Coimbatore the number of working days was calculated by (52weeks*5.5days)-5public holidays=281. For these two hospitals Saturdays is a half-working day. In Kathipudi a rough number was given by Mr. Praveen.

Average Number of Repetitious Visits per Out-Patient [per year]

As one can see below, the data in the table is not fully obtained; nevertheless the author decided to include the figures to make an investigation next year better.

Table 9: Average Number of Repetitious Visits per Out-Patient [per year]

	Number of Repetitious Patients, %	Average Number of Repetitious Visits per OP
Palamaner	N/D	3
Tenali	16.4%	2.56
Kumbakonam	59.28%	2.25
Hubli	N/D	N/D
Kathipudi	1.20%	N/D
Coimbatore	N/D	N/D

Source: Author

The numbers show that in Kumbakonam there were only 40.72% of new Out-Patients in 2009, the remaining patients come to the hospital repeatedly. It is also a consequence of the fact that no treatment is done on the field, as in other hospitals. In Kathipudi is the lowest per cent of recurring Out-Patients (from the data available). The number of repetitious visits per year is more or less the same.

The author's recommendation for the next year is to find out the number of new patients for each OP category and an average number of visits per OP per category in 2010.

Death Rate

Table 10: Death Rate (death number/IP cases, per year)

	2009	Average for last 5 years
Palamaner	0.96%	0.35%
Tenali	0.08%	0.03%
Kumbakonam	0.4%	0.49%
Hubli	0%	0.11%
Kathipudi	0%	0.02%
Coimbatore	0%	0%

Source: Author

The death rate is another important measure of Internal Business Process Perspective and at the same time it is the one which is difficult to compare. The reason is that in some cases the number of deaths can be low, as patients with severe cases are not admitted, but sent to the nearest Government Hospital (as in Kathipudi, as the GH is situated in 26 km from RIDST), in othesr – high, as simple cases are treated as Out-Patients and those who are admitted have very serious health problems.

As it is stated in Table 5, the death rate in Palamaner tripled in 2009 compared to the average of the last five years. The reason is that during the last year an ESRH&LP increased the number of awareness programs, so there were more new patients and more severe cases, which led to a higher death rate.

Generally in six hospitals the death rate is quite low.

Gender rate

Table 11: Gender Rate for IP and OP

	IP		OP	
	Male	Female	Male	Female
Palamaner	76%	24%	63%	37%
Tenali	65%	35%	70%	30%
Kumbakonam	76%	24%	74%	26%
Hubli	76%	24%	78%	22%
Kathipudi	61%	39%	58%	42%
Coimbatore	65%	25%	65%	35%

Source: Author

It is definite that the number of male patients exceeds the number of female patients twofold, in some cases even threefold. There two main reasons for that: one is tradition, the second one is circumstances.

Due to tradition women stay more at home, while men work, which leads to more bacteria propagation among men. Therefore ulcers on the hands are more common among females due to cooking or other home-based activities, among males - ulcers on the feet due to working in the fields or other places where MCR footwear is not used.

In some hospitals like Hubli and Kumbakonam, where the number of females is less – it can also mean that the distance to the hospital is bigger. In villages women remain at home even if the problem occurs. Some of the women do not have enough money to come, those who do come have a worse condition.

Dr Jacob mentioned that on average women stay less than men as they have to return back home to do the household. There were some cases when women got divorced because they stayed in hospital for two long – 2-3 weeks.

Special attention should be given to women, as they may remain at home even if they have a health problem. The author also recommends comparing an average length of stay in hospitals for men and for women.

Where are all the materials purchased and how often (medicaments, shoe material, dressing, else)? Bulk purchasing for all the hospitals possible?

It was found that not all the hospitals purchase all the materials locally. Some get the MCR sheet or/and dressing materials as well as medicaments from other state(s). Also, the frequency of materials purchase differs.

Table 12: Procurement of MCR, Medicaments and Dressing

	MCR	Medicaments	Dressing
Palamaner, AP[3]	Tamil Nadu state **1/6 month**	Chennai (NGO Comprehensive Medical Services India) **1/3 month**	Tamil Nadu (Ragapalyam – specialize themselves on dressing) **1/6 month**
Tenali, AP	Tamil Nadu state **1/3month**	local state **1/1 month**	local state **1/1 month**
Kumbakonam, TN	local state **1/3 month**	local state **1/3 month**	local state **1/3 month**
Hubli, KT	distributers from Kerala and Tamil Nadu	local state	local state
Kathipudi, AP	local state	local state	local state
Coimbatore, TN	GREMALTES, Tamil Nadu	N/D	N/D

Source: Author

The recommendation is to make a unified purchase for:

1. MCR sheet and other shoe materials,
2. Dressing Materials

It is more difficult to make a single procurement for medicaments, as in different hospitals doctors use different tablets and ointments for the same health problems. Even if the components are the same, the name can differ.

For five hospitals (except Coimbatore), MCR sheet and other shoe materials are recommended to be purchased from either KARIGIRI TML (the supply should be improved) or GLRA PROFORMA (the quality should be improved, which is easier to implement, as remarked by Mr. Slesser Babu). For Coimbatore the supply of ready-made MCR shoes can be continues from GREMALTES hospital.

It is recommended to buy dressing materials in RAGAPALYAM, Tamil Nadu state as they specialize themselves on dressing and the quality is very high (declared by Dr. Jacob).

[3] AP stands for Andra Pradesh, TN for Tamil Nadu, KT stands for Karnataka

For reasons of cost both shoe and dressing materials procurement frequency is suggested once per six months, but this is debatable.

Concerning medicaments, in a long term perspective it is also recommended to have a unique procurement.

Leprosy Awareness Programs in Hospitals

The leprosy awareness programs do not bear such big resemblance in the hospitals; they are intricate to compare and therefore the programs will be given in the table separately for each project.

Table 13: Leprosy Awareness Programs in Hospitals

Palamaner	• District leprosy officer and collector and local media are invited three times a year for an awareness conference • Local newspaper 1/year • Leaflet (villages 100 km radius) • 40 people in the field (volunteers)
Tenali	• Leaflet: OP, fields • Loud Speaker on the vehicle is done once a month on the street • Slide shows: patients (OP), medical, collage students, health workers • Demonstrations in the field on anti leprosy week: Jan 30-Feb 5
Kumbakonam	• Leprosy Awareness Programs: • Radio, TV, Newspapers (small adds in local newspapers on local language), • Medical Camps in the villages • The message spread (passes) is about leprosy prevention: "AN EARLY TREATMENT PREVENTS NERVE DAMAGE"
Hubli	• Leprosy I.E.C. (Information Education Communication) in Slums, Schools. • Film Shows in fair. • Posters. • Flash Cards.
Kathipudi	• Leaflets (!) are given to OP and patients in rural area. • Posters (display medical centers and hospitals) – bus stops, railway stations • Local Newspapers (ad showing the facilities, what is done, how to treat leprosy)
Coimbatore	• Leprosy Orientation program for medical, nursing, physiotherapy and social work students from different colleges in Coimbatore. • Leprosy sensitization for medical officers from different PHCs • Training in Leprosy for target groups for NSS students, MSW, English students from different colleges • Awareness campaigns conducted for mother groups and self help groups • Regular IPC programs were conducted in the allotted areas covering 15 districts (160000 people) • During IPC pamphlets are distributed on a door to door basis in order to educate the people for voluntary reporting.

	• Every year anti leprosy day/week is being conducted by way of rally, awareness camps etc to mark the death anniversary of Mahatma Gandhiji • Health education about self care management being given to leprosy affected

Source: Author

7.4. Learning and Growth Perspective

Training Budget

Table 14: Training Budget in 2009 and an Average Number for the Last 5 Years, in INR

	2009	5 years average
Palamaner	0	0
Tenali	2400	2500
Kumbakonam	0	3500
Hubli	15 000	11 000
Kathipudi	6 727 OBA 16 816 non OBA	6 000 OBA 15 000 non OBA
Coimbatore	50 000	15 000

Source: Author

The training budget is one of perspective measures for learning and growth. It shows an investment that was done for training employees in 2009 and for the last five years.

As one can see in the Table 8, the financial figures differ notably. In Palamaner, there has been no employee training for the last five years, in Kumbakonam the rough numbers were given by administrative sister Mrs. Vinitha Mary, an investment was relatively small. In Tenali a budget spent for medical personnel training is more or less stable and remains even.

The biggest budget for training in 2009 was spent in Coimbatore, despite the fact that it is the smallest project, and was worth 50 000 INR.

In Kathipudi two numbers are given: a training budget for OBA and the whole training budget. It is challenging to analyze this year's data as the figures above (except Kathipudi) do not state whether it was an OBA training budget or non-OBA training

budget. For the next year it is advised to collect the numbers for both OBA and Non-OBA training budget separately.

Limitations (barriers) in each project:

(infrastructure equipment, administrative, technical, medical doctor or others)

In Palamaner the issue was discussed with the project holder, Dr. Jacob. In his judgment, the main limitation of the project is foreseen in the future: now the main person of ESRH&LP is Dr. Jacob. He works as a Project Head, a doctor and a surgeon. In some years when he retires someone should take over his positions. As it is very difficult to find a person who is willing to devote him/herself to patients with a similar qualification, it is more likely that several people will take the positions. That would lead to cost-increase and possible reorganization. Doctors who work in ESRH&LP at the moment gain some years of experience and leave to get a post-graduation education. They do not plan to work for 10 years or longer.

In Tenali the question was answered by the project holder, Mr. Hemachandu. V. FAIRMED is the only one supporting agency for GRETNALTES. Local fundraising is very challenging. It is more difficult to get some financial sources to Hindu organization compared to Christian ones due to fewer funds available.

There are several possibilities how to make the project financially sustainable. First, it can be possible to get funds from general patient's treatment department, which does not exist in GRETNALTES at the moment.

Then, there is a potential for "Mother and Child care", as it could attract more patients. There is a thread for that option: one Private Medical Collage (PMC) is situated nearby, but if the fee is lower than in PMC, patients would rather come to GRETNALTES than to PMC, which is seen as an opportunity that would lead to an extra income for the project. It is important to note that for the second suggestion an investment is needed:

infrastructure (building) is not available. A recommendation from the author is to require a detailed project plan for an investment.

Third, there is a potential in school extension. At the moment only ten out of twelve years exist, pupils are leprosy patients' children and children from families below the poverty line. Charging a fee from "normal" families' pupils could be an additional fund for a leprosy hospital. It is crucial to mention that for the third suggestion an investment is also needed: infrastructure (building) is not available. A recommendation from the author is the same as above: to require a detailed project plan for an investment.

In Kumbakonam the project holder Fs. A. Maria Francis and the administrative sister Mrs. Vinitha Mary declared that the main limitations are seen as budget deficit, especially in the recession time; and an increase of 25% in material cost (for footwear materials the figure is nearly 30%) for the last five years.

The principal barrier that is seen in Kathipudi by general supervisor Mr. Praveen is the number of beds: it would be advantageous to add ten more beds to the existing number. But as mentioned by the project holder Mr. Slesser, in several years the demand will go down, so he is not willing to increase the bed number.

Another limitation that was mentioned by Mr. Slesser is a medical salary (for doctors): for Dr. P. John Prabhakar the salary included in OBA is 31020 INR, whereas in reality it is 40000-45000 INR, for Dr. P.R.S.G. Varma the OBA salary is 27817 INR (75% Employment) in reality 35000 INR is paid. The numbers differ towards increase as it is not possible to get the doctors employed otherwise.

No answer was given by Coimbatore employees for the question above, whereas in Hubli no limitations were shown.

7. 5. Other Points

Districts covered by hospitals

Table 15: Districts Covered by Hospitals

Palamaner	3
Tenali	3
Kumbakonam	3
Hubli	15
Kathipudi	5
Coimbatore	3

Source: Author

As one can assume, all the hospitals cover more or less the same number of districts. In case of six South-Indian hospitals supported by FAIRMED the assumption is more or less correct with an exception in Hubli, where 15 districts are covered. So, besides treatment in HHH hospital in Hubli extra attention should be paid to the LAP on the field.

How many and which hospitals are situated one hour away? How many from them have leprosy treatment? (employment possibility competition, treatment competition)

A brief overview of the medical system in India: in each village there is a number of Primary Health Centers (PHC) which has OP only. If there are any health problems, patients come there to receive simple medical treatment. If the problem is serious, then the patient is sent to Government Hospital (GH), which is situated in the nearest town; GH has OP as well as IP. If the health problem can not be solved, a patient is sent to Government Medical Collage (GMC), which is more specialized. GMC is also situated in the town (same or the town nearby). In each state there are 9-10 GMCs, all are approximately one hour away from each other. There the latest medical technology is available. PHC, GH and GMC are all free for all the patients. Also, there are Private Hospitals (PH) for those, who have money and can afford to pay for the treatment.

Table 16: Medical Organizations within One Hour Travel from Hospitals

	PHC	GH	GMC	PH	PMC	LTH
Palamaner	15	> 1 hour away	> 1 hour away	> 1 hour away	N/D	0
Tenali	1	> 1 hour away	> 1 hour away	> 1 hour away	1	0
Kumbakonam	10	1	1	20	0	0
Hubli	26	2	1	N/D.	N/D	29
Kathipudi	2	> 1 hour away	> 1 hour away	10	N/D	0
Coimbatore	9	1	1	60	N/D	1

Source: Author

In the year 2011 it is advised to collect the data not within one hour travel time, but for the districts related to the hospital (in some hospitals they are indicated as project area).

Record system (IP record, OP record)

All the files for patients are recorded and kept in writing (manually on paper). After an introduction of an OBA, all the numbers (IP, OP) in most of the hospitals are held in Excel files as well.

An example of data record in Kathipudi:

All the OP data is first recorded in writing and then transferred into Excel. The following data is collected:

Number, Hospital number of patient, Name, Farther/Husband (Family name), Date, Age, Sex, Village, Complication, Category (OP0, OP1, 0P2)

For IP the following columns are filled in:

Number, Hospital number of patient, Name, Village, Age, Sex, Date of admission, CATEGORY (IP0, IP1, IP2 …), Name of the month (with dates: 1,2,3…), Bed days during the month, Discharge date, Total bed days during the patient admit to discharge, Drug amount.

In all the hospitals IP and OP categories do not differ much. After visiting all the hospitals the author had an idea to standardize the fields in Excel for an easier data collection. After meeting in Chennai on the 26th and 28th, it became clear that starting from the year 2011 all the hospitals plan to exercise a HIS (Hospital Information System). With the help of HIS, which is easy to use and collect the data from, all the recording system will become more transparent.

Now (summer 2010) three hospitals are supposed to test the software: in Kathipudi, Tenali and Hubli. The program should work very simply after installation. In reality it needs an Internet connection, therefore does not allow work in it to start.

Bookkeeping system for financial accounting

All the financial data in six hospitals is maintained in “TALLY” Software, ERP (Enterprise Resource Planning) based, is famous in India for medium-size organizations. For OBA study the database was taken from this program. The program is very transparent and makes easy to find all the data.

All 6 hospitals use the same software for financial records.

In Kathipudi previously “EX NET GENERATION” Software was used. Since 2010 “TALLY“Software is used.

Leprosy Footwear

In India the leprosy problem has a long history. After the treatment became available, the footwear for LAP had to be both not expensive and helpful. Now as before an MCR sheet is used as an upper-layer of the footwear. Most of the patients are unwilling to wear the shoes as then they are immediately identified as LAP and suffer from stigma in people’s minds. The stigma exists from the time when the MDT treatment was not available and those who were affected died.

To make sure patients will use the footwear, it is tried to make it more attractive. The most desirable footwear seen by author was is GREMALTES in Chennai and ESRH&LP in Palamaner.

For LAP who has the possibility it is counseled to buy any brand shoes and to add an MCR insole; for others – to add some decorative element to make the shoe model more attractive.

7.8. Review of the Points Discussed

Here are the points which were discussed in this chapter in brief:

- An educational level and an experience in six hospitals can be found in appendixes at the end of this document.
- Besides treatment in all the hospitals patients can find an aid activities such as possibility to get a help for a future profession or a loan for a business, a possibility for children to study at school or others.
- The employee turnover rate is very low, but not the same in all the hospitals, once employed, not many people change their job afterwards, but stay in a project for decades.
- The number of bed differs from hospital to hospital, in future has to planed based on the bed occupancy rate, and the number of districts related to hospital. In some projects it will can be reduced after standardization of an average treatment period due to highr rotation of patients.
- The number of OP per day and the number of working days differs.
- It was not confirmed that the shorter length of stay of IP leads to a higher number of repetitious admissions.
- A special attention should be paid to ladies, as the number of female patients both IP and OP exceeds the number of male patients twice or even three times.
- The bulk purchasing procedure for footwear materials, dressing and in future medicaments was found to be possible.
- There is considerable difference in training budget within six projects.

The number of districts related to the hospitals is not the same.

9. Summary

9.1. Summary of the results

The OBA tool which was developed based on the cooperation of RISDT project and FAIRMED Switzerland work very well and is very transparent. It was evaluated this year and required no big changes. The only change necessary is to insert the calculations of a fee for service. The file with calculations can be found in the Appendix 14.

Two statistical medians are proposed for the cost per case figures. The advantages of each are explained. Also, numbers of a treatment period for In-Patients is proponed, exceptional cases are explained.

The following perspectives: Financial, Customer, Internal Business perspective and Learning and Growth perspectives are examined.

9.2. Recommendations

For all the hospitals in a long term perspective it is recommended to have a service diversification. Leprosy cases decrease over time, so the number of new cases goes down. It is advised to have additional health facilities for dermatology, ophthalmology, orthomobility, HIV/AIDS: VCTC, Diabetes, TB, ENT and others. The limitation here is a leprosy stigma, but with the leprosy awareness programs this limitation can be overtaken, what takes several years.

During a filed visit the author observed some cases when a patient used a bath sponge, but it could not remove the dead skin. So the solution was to do it by fingers. In the field it is advised not to distribute a bath sponge, but a pumice stone.

A special attention on the field should be paid to ladies, as the percentage of coming them to hospital is much lower.

Many hospitals use self-made ointments. They are more efficient and cost 20-30 times less than already bought ones.

The name of IP4 category is advised to redefine as SEPTIC/SEVERE ULCER or SEVERE/SEPTIC ULCER.

The author had an idea to standardize the record system in all the hospitals, but found out that starting from 2011 a new HIS software will be available. Now this software is being tested in three projects: Kathipudi, Tenali and Hubli. It is prompted to include photographic evidence in order to avoid potential budget maneuvers. For the data record it is advised to ask IT hardware produces to donate six laptops.

As remarked by Mr. von Stamm, there is an idea to create a single organization unit from six hospitals with leprosy treatment in the South of India; this concept appears very promising. An existing problem with an educated employee's turnover can be solved by offering long-term contracts for doctors, who can have an opportunity to work on all the projects for several months. This kind of agreement is very attractive for doctors, as they can get experience of working in 6 hospitals within a few years and for an employer, as it will be easier to find more qualified staff for all the hospitals to work for several years. The only challenge the Author sees for the doctors is their family. It can be difficult for all the family members to move every year from one place to another. Perhaps, for that kind of position most of the specialists will be single.

Unique procurement procedure for six hospitals for Footwear Materials and Dressing materials one per six month is advised. In a long-term perspective it is recommended to make medicament purchase also unique for all the hospitals. At the moment doing so is quite challenging as tablets, lotions, ointments names differ, but with time finding out the best ones can become easier as doctors with a special agreement will spend some time in every project.

Finally, it is advised to finalize the fee budgets starting from 2012, when the data from the HIS Software will be available.

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12. Glossary of Terms

AIDS	Acquired Immune Deficiency Syndrome
ENT	Ear Nose Throat
ERP	Enterprise Resource Planning (Financial Software)
ESRH&LP	Emmaus Swiss Referral Hospital & Leprosy Project, Palamaner
GH	Government Hospital
GMC	Government Medical Collage
GRETNALTES	Greater Tenali Leprosy Treatment and Education Scheme Society, Tenali
HHH	Hubli Hospital for Handicapped, Hubli
HIS	Hospital Information System Software
HIV	Human Immunodeficiency Virus
INR	Indian Rupees
IP	In□Patients
LAP	Leprosy Affected People
LCU	Leprosy Cost Unit
LTH	Leprosy Treatment Hospitals (Hospitals with a Leprosy Treatment possibility)
MCR	Micro Cellulose Rubber
MDT	Multi Drug Therapy
OBA	Output□based Aid

OP	Out□Patients
PH	Private Hospitals
PHC	Primary Health Center
PMC	Private Medical Collage
PSG	A Unit of Leprosy Relief Work Emmaus Switzerland, Coimbatore
QC Meeting	Quality Circle Meeting
RISDT	Rural Indian Self Development Trust, Kathipudi
SHLC	Sacred Heart Leprosy Center, Kumbakonam
TB	Tuberculosis
UAS	University of Applied Sciences Northwestern Switzerland
VCTC	Voluntary Counseling and Testing Centre

13. List of Tables and Figures

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13.2. List of Figures

14. Appendices

14.1. Appendix 1 – Categories Description in 2010

IP

Leprosy affected patient having general health problems, severe reaction, ulcer problems, need for foot/hand reconstruction and eye surgery due to leprosy consequence with a need for hospital admission.

OP

Leprosy affected patient having general health problems, mild reaction, ulcer problems with no need for hospital admission.

GENERAL IP0

Leprosy patient having general health problems like fever, diabetes, dermatitis, hypertension, etc.[4] and need for admission based on the patient's health condition.

REACTION IP1

Severe reaction (ENL (Erythema Nodosum Leprosum)=Type 2 or severe neurological Type 1) to bacillary bacteria.

SIMPLE ULCER IP2

A leprosy patient having an ulcer, who stays in a hospital for 14 days or less.

COMPLICATED ULCER IP3

A leprosy patient having an ulcer, who stays in a hospital for 15 days or more.

SPTIC ULCER IP4

A leprosy patient having an ulcer, which needs an operation and/or amputation of any kind (sometimes with a need for more expensive antibiotics).

FOOT RECONSTRUCTION IP5

Leprosy patients with a need for foot surgery as a consequence of leprosy.

HAND RECONSTRUCTION IP6

Leprosy patients with a need for hand surgery as a consequence of leprosy.

EYE SURGURY IP7

Leprosy patients with a need for eye surgery as a consequence of leprosy.

[4] See Appendix 3 for the category IP0 - General diseases description

GENERAL OP0

Leprosy patient having general health problems like fever, diabetes, dermatitis, hypertension, etc.[5] and no need for admission based on the patient's health condition.

ULCER OP1

A patient having an ulcer, hospital admission not required.

REACTION OP2

Mild reaction due to bacillary bacteria.

14.2. Appendix 2 – Proposed Categories Description from 2011

IP

Leprosy affected patient having general health problems, severe reaction, ulcer problems, need for foot/hand reconstruction and eye surgery due to leprosy consequence with a need for hospital admission.

OP

Leprosy affected patient having general health problems, mild reaction, ulcer problems with no need for hospital admission.

GENERAL IP0

Leprosy patient having general health problems like fever, diabetes, dermatitis, hypertension, etc. and need for admission based on the patient's health condition.
Duration of stay 7 days or less.

REACTION IP1

Severe reaction (ENL (Erythema Nodosum Leprosum)=Type 2 or severe neurological Type 1) to bacillary bacteria .
Duration of stay 14 days or less.

SIMPLE ULCER IP2

A leprosy patient having an ulcer, who stays in a hospital for 10days or less.

COMPLICATED ULCER IP3

A leprosy patient having an ulcer, who stays in a hospital for 20 days of more.

SPTIC ULCER IP4

A leprosy patient having an ulcer, which needs an operation and/or amputation of any kind.

[5] See Appendix 3 for the category IP0 - General diseases description

Duration of stay 40 days or less.

FOOT RECONSTRUCTION IP5

Foot surgery needed for leprosy patients as a consequence of leprosy.

Duration of stay 35 days or less.

HAND RECONSTRUCTION IP6

Hand surgery needed for leprosy patients as a consequence of leprosy.

Duration of stay 35 days or less.

EYE SURGURY IP7

Eye surgery needed for leprosy patients as a consequence of leprosy.

Duration of stay 12 days or less.

GENERAL OP0

Leprosy patient having general health problems like fever, diabetes, dermatitis, hypertension, etc. and no need for admission based on the patient's health condition.

ULCER OP1

A patient having an ulcer, hospital admission not required.

REACTION OP2

Mild reaction due to bacillary bacteria.

14.3. Appendix 3 – IP and OP General Diseases Description

General IP0

- Kathipudi
  - Fever
  - Cold and cough
  - Body pain
  - Motions and Vomiting
- Palamaner
  - Respiratory infection
  - Diabetics
  - Arthritis
  - Hypertension
  - Diarrhea
  - Muscular pain
  - Dermatitis
  - Fungal Infection
- Tenali
  - Fever
  - Cold and cough
  - Body pain
  - Motions and Vomiting
  - Skin infection
  - Arthritis
  - Neuritis
  - Burning in feet
- Hubli
  - Gastritis
  - Gastroenteritis
  - Enteric fever
  - Diabetics
- Coimbatore
  - Gastritis
  - Gastroenteritis
  - Enteric fever
  - Diabetics
- Kumbakoman
  - Diabetics
  - Hypertension
  - Gastritis
  - Diarrhea

In some hospitals “more complicated” diseases are not taken and referred to the nearest GH (Government Hospital)

General OP0

- Kathipudy
  - Same as IP0
- Palamaner
  - Same as IP0
- Tenali
  - Fever
  - Cold and cough
  - Body pain
  - Motions and Vomiting
  - Skin infection
  - Arthritis
  - Neuritis
  - Lost of appetite
  - Anemic
  - Dietetics
  - Hyper Acidity
  - Asthma
  - Head Ache
- Hubli
  - Respiratory infection
  - Diarrhea
  - Muscular pain
  - Dermatitis
  - Fungal infection
- Coimbatore
  - Respiratory infection
  - Diarrhea
  - Muscular pain
  - Dermatitis
  - Fungal infection
  -
- Kumbakoman

- Same as IP0

14.4. Appendix 4 – Education Level and Working Experience of Hospital Employees in GRETNALTES, Tenali

NAME	FUNCTION	QUALIFICATION	TECHNICAL QUALIFICATION	EXPERIENCE
ADMINISTRATION				
V.Hemachandu	Project Director	M.S;		6
V.L.K.J.Murthy	Accountat	B.COM;		15
J.Kalyan	Accountat	B.Sc;		2
Y.Vijaya Lakshmi	Admni.Assistant	B.A;		2
AVERAGE ADMINISTRATIVE EMPLOYEES				**6**
MEDICAL TREATMENT				
Dr. C.Babu Rao	Surgeon	M.B.B.S;	TRAINED IN LEPROSY	42
Dr.C.S.R.K.Prasad	Medical Officer	M.B.B.S;	TRAINED IN LEPROSY & T.B	32
Dr.D.Narasimha Rao	Medical Officer	B.H.M.S;	TRAINED IN LEPROSY	25
Dr.K.Kalyan	Anaesthesist	M.B.B.S;D.A;		15
R.Venkateswara Rao	Medical Supervisor	INTERMEDIATE	N.M.S TRAINED	25
V.Rajeswari	Nurse	M.P.H.W		5
Haveela Rani	Nurse	STAFF NURSE		2
Ch.L.Sarada	Nurse	B.A; MPHW		16
Miss.M.Baby Sujatha	Clinic Assisant	INTERMEDIATE		8
K.Deepa	Dispensary Assist	B.A, PGDCA		6
Ch.Ramesh	Theater Assistant	INTERMEDIATE		8
Chukamma	Nursing Orderly			4
LABORATORY				
K.Swarna Kumari	Lab Technician	D.L.T	TRAINED IN LEPROSY	12
PHYSIOTHERAPY				
A.V.Basha	Physio	B.COM;	N.M.A, S.T.S & PHYSIO TRAINED	15
Ch.Siva Kumar	Physio	INTERMEDIATE	N.M.A & PHYSIO TRAINED	25
G.Ramarao	Physio	INTERMEDIATE	N.M.S & PHYSIO TRAINED	25
DRESSING				
S.Venakteswaralu	Dresser		TRAINED IN LEPROSY	30
COBBLER				
N.John	Cobbler		TRAINED IN LEPROSY	25
AVERAGE MEDICAL EMPLOYEES				**18**
MAINTENANCE				
K.Suribabu	Driver			10
G.Sambasiva Rao	Attender			5
J.Pothuraju	Ward Boy			2
K.Maruti Prasad	Watchman			21

T.Jnasi	Sweeper			7
B.Padma	Sweeper			1
Lakshmana Rao	Washer Man			1
AVERAGE MAINTENANCE EMPLOYEES				**7**

14.5. Appendix 5 – Education Level and Working Experience of Hospital Employees in SHLC, Kumbakonam

NAME	FUNCTION	QUALIFICATION	EXPERIENCE
ADMINISTRATION			
Fs. A. Maria Francis	Director	2 bachelor degrees in India (psychology, sociology), 1 master degree in Rome, Italy (Religious Law)	25
Religious Sisters 3 Nos	Department Incharge	3,5 years Nursing course	25
Mr. M. Muthu Samy	Stano Typist	Typing course	32
Mr. P. Pandiarajan	Clerk Cum Typist	Typing course	28
Mrs. Mary Amala	Clerk	Typing course	16
Mr. S. Arockia Samy	Accountant	Master degree in commerce	10
Mr. Ramamoorthy	Clerk Cum Typist	Typing course	24
Mr. M. Kuppu Samy	Driver	driving qualification	28
Mr. M. Ramasamy	Driver	driving qualification	26
Mr.K.Manoharan	MRD Attender	HSLC (high secondary education, secondary school)	10
AVERAGE ADMINISTRATIVE EMPLOYEES			**22**
MEDICAL TREATMENT			
Dr. M .A .Rajan	Doctor	Master (MBBS) in Ophthalmology	30
Dr. A . Subramanian	Doctor	Master (MBBS) in Surgery	30
Religious Siters 4 nos	Ward Incharge	3,5 years Nursing course	30
Mrs. A. Fathima Rani	Nurse	3,5 years Nursing course	25
Mrs. I. Fathima Motcha Mary	Nurse	3,5 years Nursing course	25
Mrs. Amudha Rose Marieceline	Nurse	3,5 years Nursing course	25
Mrs. K. Kanagambujam	PMW Nurse	3,5 years Nursing course	25
Mrs.Kulandai Therse	Nurse	3,5 years Nursing course	25
Mrs. Kalaiselvi	Nurse	3,5 years Nursing course	25
Mrs. Fathima Mary	Nurse	3,5 years Nursing course	25
Mrs. Sagaya Jayanthi	Nurse	3,5 years Nursing course	25
Mrs. Thangamani	Opthomology Technician	1 year Ophthalmology Technician course	20
Mrs. P. Louisa Mary	Pharmacisy by Experience	1 year Pharmacy Technician course	20
Mr.U.Anson Raj	X-Ray Technician	1 year X-Ray Technician course	20
LABORATORY			

Mr. K. Pandi	Lab Technician	1 year Lab Technician course	20
PHYSIOTHERAPY			
Mr. Josphe	Physio technician	1 year Physio Technician course	30
Miss.T.Lalitha	Assistant Physio	2 year Physio Technician course	25
DRESSING			
Religious Sisters	Senior Dresser	3,5 years Nursing course	25
Mrs.Lilly Joseph	Nurse	3,5 years Nursing course	25
COBBLER			
Mr.M.Kannadasan	Cobbler	1 year shoe making course	18
Mr. Munusamy	Shoe Maker	2 year shoe making course	50
AVERAGE MEDICAL EMPLOYEES			**26**
MAINTENANCE			
Contract Staff at Leprosy Hospital (Cleaning, gardening, guarding, washing)		secondary school and 1 year training	10
AVERAGE MAINTENANCE EMPLOYEES			**10**

14.6. Appendix 6 – Education Level and Working Experience of Hospital Employees in HHH, Hubli

NAME	FUNCTION	QUALIFICATION	EXPERIENCE
Dr. Maneesha Godbole. M.D.	Doctor	M.D.	21
Dr. Viveakanand Dhaded	Doctor	B.A.MS.	3
AVERAGE MEDICAL EMPLOYEES			**12**

14.7. Appendix 7 – Education Level and Working Experience of Hospital Employees in RISDT, Kathipudi

NAME	FUNCTION	EXPERIENCE OUTSIDE RISDT	EXPERIENCE IN RISDT	TOTAL EXPERIENCE
ADMINISTRATION				
Mr. Ch.S.T.Krupa Rao	Project Holder	5	26	31
Mr. N. Slesser Babu	Coordinator	14	25	39
Mr. S. S. R.Swamy	Manager	28	4	32

Mr. R. Praveen Dass	Gen.Supervisor	3	21	24
Mr. G.D. Vijai Babu	Office-Asst.	4	20	24
Mr. Ch. Suresh	Office-Asst.	4	9	13
Mr. K. Tata Rao	Accountant	0	12	12
Mr. T. Sathish	Driver	3	14	17
Mr. K. Kumar	Driver	8	13	21
Mr. P. Srinu Babu	Driver	5	7	12
Mr. K. Bhaskar Rao	Office Boy	0	18	18
Mr. B. Narasimha Rao	Assistant	4	8	12
Mr. A. Rama Krishna	Assistant	1	7	8
Mr. Y. Ravi Kumar	Assistant	1	3	4
AVERAGE ADMINISTRATIVE EMPLOYEES		**6**	**13**	**19**
Dr. B. Raja Rao	M.O	32	3	35
Dr.P.R.S.G.Varma	M.O	10	4	14
Mr. N.J Prasad Kumar	Supervisor	0	21	21
Ms. K. Subadra	Nurse	5	16	21
Ms. K. Nalini	Nurse	7	12	19
Ms. N. Sree Lakshmi	Nurse	4	4	8
Ms. N. Subba Lakshmi	Nurse	7	4	11
Mr. P. Satyanarayana	Disp-Inch	2	17	19
Mr. G.Raja Babu	Reh.asstistant	1	6	7
Mr. G. Jaya Raj	Physio-Tech	1	12	13
Mr. K. Satyanarayana	Asst. P.T.	3	19	22
Mr. P. Koteswara Rao	Cobbler	12	7	19
Mr. G. Gopalam	Sr. Dresser	10	4	14
Mr. R. S. Pradhan	Jr. Dresser	12	12	24
Mr. Y. Srinivas	Lab-Tech.	2	12	14
Mr. Ch. Mallleswara Rao	Lab-Tech.	5	7	12
AVERAGE MEDICAL EMPLOYEES		**7**	**10**	**17**

14.8. Appendix 8 – SHLC Hospital Visit Report

KUMBAKONAM (Sacred Heart Leprosy Center),
Visited on 09-10 July 2010
Visited by Kaklyugina Maria and OBA consultant Mr. Ram Prakash

09.07.2010 information is given by Administrative sister Mr. V. Moorthy:
BRIEF HOSPITAL HISTORY
Founded by Belgium priest Mr. In 1916 as a shelter for leprosy affected people, who were provided with a food and lodging. Over the years a center became bigger, more people came. Later besides food and lodging medical treatment was introduced. Nearly 20 years ago there were roughly 800 patients, 10 years ago government regulated that there should not be a separate leprosy hospitals, they should have general patients departments.

In the very beginning of the hospital tour, I talked to the director. The discussion was quite brief. He warmly welcomed me in SHLC, told some jokes. The main message from him was definite: budget deficit, especially in the recession time.

09.07.2010 information is given by Administrative sister Mrs. Vinitha Mary:

Working efficiency of each hospital:

1) Customer perspective,

qualitative and quantitative data

- Number of Positions in Patient Care per 1'000 Patients

2 Doctors = 1 working full time (Dr. M. A. Rajan 3 hours a day, Dr. A. Subramanjan hours a day, 6 days per week: Monday to Saturday)

8 Nurses, all full time

4 Technicians (1 Laboratory, 1 Ophthalmology, 1 Pharmacy, 1 X-Ray), all full time

- Number of Part-time Positions in Patient Care per 1'000 Patients
- Working Experience of the Medical Personnel in Years

Doctors (2) 30 years experience on average

Nurses (8) 25 years experience on average

Technicians (4) 20 years experience on average

- Education Level of the Medical Practitioners

Dr. M. A. Rajan Master (MBBS) in Ophthalmology

Dr. A . Subramanian Master (MBBS) in Surgery

Nurses (all) Diploma in Nursing (3,5 years previously, now system modified: 4 years), Bachelor

Technicians (4):

Laboratory (1): 1 year Lab Technician course,
Ophthalmology(1): 1 year Ophthalmology Technician course,
Pharmacy(1): 1 year Pharmacy Technician course,
X-Ray(1): 1 year X-Ray Technician course,

- Employee turnover rate

Medical employees in 2009 was 0% turnover rate, for the last 25 years there was employment turnover rate close to 0%.

- Else (help to get a self-esteem, profession)?

When patients get treated and can work, some of them help hospital by working in it or giving small donations. Few leprosy patients are helped to get a profession in order to have an opportunity to change the job. Self esteem and self-respect is gained.

2) Internal Business (Hospital) Process perspective

qualitative and quantitative data

- Bed Occupancy Rate

77% (89 from 115)

- Average duration of stay per **In-Patient** in days

Information is provided on 09.07.2010 in MRD (Medical Record Department) by assistant:

Average for all the categories 41.77 days

- Average Number of Admissions per **In-Patient** (per year)

1728 cases total, from them: 954 first time, 774 repetitions)

IP0	170
IP1	22
IP2	351
IP3	115
IP4	116
IP5	0
IP6	0

IP7 0

- Average Number of **Out-Patient** Visits (daily average, monthly average)

Daily 18-19 visits per day (300 working days per year)
Monthly 480 visits (26 working days per month)
Year in 2009 5754 visits

- Average Number of **Repetitious Visits** per **Out-Patient** (per year)

3411 repeated OP visits
2.25 times repeated on average per 2009 year

OP0	1235	
OP1	2100	
OP2	76	

IP record is kept for 60 years, OP 40,5 years from now (total approximately 25 000 records, from them more than 5 000 are OP).

- Death rate (death number/IP cases, per year)

In 2009 7 IP died – 0.4%
An average number of deaths is 7-10 (8.5) for the last 5 years – 0.49%

- Gender rate for OP, IP in 2009

OP		
Male	4284	74%
Female	1470	26%
Total	5754	100%
IP		
Male	1312	76%
Female	417	24%
Total	1728	100%

Why is there so big difference, 3 times (discussed with Dr. A. Subramanjan):
Due to social custom women stay more at home, while men work, what leads to more bacteria propagation among men. Within females ulcer on hands is more common due to cooking or other home-based activities, within males - ulcer on feet due to working on the field or other places where MCR footwear is not used.

10.07.2010 information is given by Administrative Sister Mrs. Vinitha Mary:

- Where are all the materials purchased and how often (medicaments, shoe material, dressing, else)?)? (bulk purchasing for all the hospitals possible?)

Medicaments: local distributor within a state, 1/3months
Shoe material: intermediate (wholesaler), MRC sheet from manufacturer, 1/3months
Dressing: from a manufacturer, 1/3months
Else: local distributer

- What Leprosy Awareness Programs exist, what media is used?

Leprosy Awareness Programs:
Radio, TV, Newspapers (small adds in local newspapers on local language), Medical Camps in the villages. The message spread (passes) is about leprosy prevention: “AN EARLY TREATMENT PREVENTS NERVE DAMAGE”

3) Learning and growth perspective
qualitative and quantitative data

- Training Budget

0 INR in 2009, other years on average 3500 INR
Addition field training is related to latest technology in medical/technical field (usually someone comes to teach).

4) Benchmarking

- How many hospitals (and which ones) are situated one hour away? How many from them have leprosy treatment? (employment possibility competition, treatment competition)

Brief overview of medical system in India: in each village there is a Primary Health Center (PHC) which has OP only. If there are any health problems, patients come there to receive simple medical treatment. If the problem is more serious, then the patient is sent to Government Hospital (GH), which is situated in the nearest town; GH has OP as well as IP. If the health problem can not be solved, a patient is sent to Government Medical Collage (GMC), which is more specialized. GMC is also situated in the town (same or the town nearby). In each state there are 9-10 GMCs, all are approximately one hour away from each other. There the latest medical technology is available. PHC, GH and GMC are free for all the patients. Also, there are Private Hospitals (PH) for those, who have money and can afford to pay for the treatment. (LTH stands for Leprosy Treatment Hospital).

Kombakonam:

10 PHC (in the nearest villages, OP only), 1 GH (in the nearest town: Kumbakonam, OP and IP), 1 GMC (in the nearest town: Kumbakonam), around 20 PH: 10 in the town and more that 10 in the area. No LTH are one hour away from SHLC.

10.07.2010 information is given by Administrative Sister Mrs. Vinitha Mary:

General Check-list:

- ☐ What are the limitations (barriers) in your project? (infrastructure-equipment, administrative, technical, medical doctor or others)

Material cost increase, for the last 5 years ~25%, shoes ~30% increase

- ☐ Record system (IP record, OP record)

All the files for patients are recorded and held in a written way (manually). Also, after introduction of OBA, all the numbers (IP, OP) are held in Excel files as well.

IP

When a patient is admitted, he is recorded in an admission book. The following columns are filled in: Name, year of birth, gender, hospital number of patient, subdivision of leprosy (medical terminology), patient category, day of admission, day of discharge, duration of stay (days), reason for admission, discharge condition.

Transfer patients (from some other hospital or aimed at other hospital for the service not available in this hospital) are marked with red ink.

When the person is discharged the number of a record in the admission book is outlined.

OP

In the OP file the is a record with drawings of left and right hand as well as left and right foot. On these drawings a development ulcer is recorded. Dr. A. Subramanjan commented that in other hospitals for OP this record system with drawings does not exist.

There is one file per each patient, all the information about visits as OP as well as about admissions as IP is recorded there.

10.07.2010 information is given by the OBA consultant Mr. Ram Prakash:

- ☐ Bookkeeping system for financial accounting

All the financial data is maintained in TALLY Software, ERP (Enterprise Resource Planning) based (famous in India for medium-size organizations). For OBA the database was taken from this program. The program is very transparent, easy to find all the data.

All 6 hospitals use the same software for financial records.

10.07.2010 information is given by Administrative Sister Mrs. Vinitha Mary:

Specific Check-list:

- ☐ Why 23% bed under utilization? (89 utilized out of 115 bed available)

During 4 months many patients have a field work (mostly males, because of social custom). Even if there is a need for admission, they still do not come to visit the doctor, as they have to earn for their family. In case of ulcer, the problem gets worse, so when patients comes to the hospital, in most cases a minor or major surgery is needed and a longer duration of stay.

The Hospital tour:

Laboratory

Analyses are done in the same place for general and leprosy patients, for leprosy patients material is taken from the place where they stay.

Dressing

Dressing is done every day twice a day. Medicine is put and bandage is changed.

Cobbler (MCR footwear)

Raw materials are purchased from the wholesaler, MRC sheet from manufacturer. MCR footwear is assembled by cobbler and shoe maker. Also, artificial leg is done in the same department.

Operation Theatre

Minor Operation theatre is for small operations as simple ulcer, Major Operation Theatre is for more complicated operations.

Ophthalmology

Is situated in general patient's section.

Physiotherapy department

Is situated in a separate building, physiotherapy is done separately for leprosy patients. IP and OP receive treatment.

Nurse Station.

(*Vax*

Wax is used for both hand and foot. This therapy stimulates the sensitivity, increase a blood circulation, and reduce pain during Multi-Drug Therapy.

Wax is warmed up till 37□C, applied locally on hand or foot purely or on the cotton (cotton is plunged into wax and then applied) for 25 minutes.

POP Lumbrical Slab

POP Lumbrical Slab is put on a hand for correction.

Exercises

Exercises are done daily, twice a day: one hour in the morning and one hour in the evening for those who need. Patients get instructions how to do the exercises.)

X-Ray

Is situated in a separate building, X-ray is done separately for leprosy patients.

Pharmacy

All the medicaments are bought (except Multi Drug) in bulk once/3 months and stored together with medicaments for General patients. Once a week the medicaments needed are transferred to the Nurse Station.

Categories descriptions are discussed with Dr. A. Subramanjan on the 09.07.2010.

Understanding of IP and OP categories is practically the same as in categories description of 2010. The only difference is that in IP3 – COMPLICATED ULCER depending on the response, can include surgery.

The treatment of IP and OP also includes consequences treatment (medical rehabilitation, surgery rehabilitation), health education, provision of shoes (for ulcer patients), social welfare department helps financially (during the rehabilitation period when a patient can not work)

I saw one patient (OP), who is cured in the SHLC since 1996; in 2009 he had 3 admissions as a General IPO. 3-4 times a year he comes as an OP. The patient changed his job from field work to a fish-seller, what allowed him to wear MCR Footwear.

Another patient (IP) was with a complicated ulcer case. Because of social reasons some patients do not complete the treatment, which cause readmission after some time.
One case was a patient (IP) with both hand and foot reconstruction.
Leprosy can be:

- MB Multi Bacillary
- PB Passy Bacillary

By Dr. A. Subramanjan, a repetition of admission for ulcer IP happens not purely because of short duration of previous stay, the reason can also be that besides hospital treatment they get, in social life they have to work or to perform their daily activities. If a cut happens, as their nerve-reaction is broken (which usually happens when leprosy is not diagnosed correctly or ignored for a long time – more than one month after first symptoms) a patient does not feel pain and infection gets in. To prevent permeation of infection, MCR footwear is provided to patients. The problem occurs when a patient has to work on the field or somewhere else where he/she can not use MCR shoes. When a patient takes the shoes off and infection happens to get in, there is no signal for pain, with the time an infection spreads, and that leads to repeated ulcer development and probable readmission.
Conclusion:
1. To avoid multiple readmissions, it is recommended for all the potential patients to know the leprosy symptoms (health education) and not to ignore leprosy at an early stage. To visit to a doctor immediately or at least within one month time from the beginning of symptoms and to get treatment is a must.
2. To avoid ulcer, patients need to change the job to one that will allow them to wear MCR footwear at work.
Before 1995, when MDT (Multi-Drug Therapy) was not available, leprosy progressed, that lead to sensitivity decrease first locally, then an area grew, with the time nerve-reaction disorder happened. There are lots of patients 40-50 years old with leprosy problems from that time. Now, if leprosy is diagnosed on an early stage, MBD treatment is available, so the disease can be treated.

14.9. Appendix 9 – RISDT Hospital Visit Report

KATHIPUDI (RISDT)
Visited on 13-14.07.2010
Visited by Kaklyugina Maria

The information is provided by Mr. Praveen, General Supervisor.
BRIEF HOSPITAL HISTORY
RISDT began its activities in 1983 by introducing a people's clinic to provide a treatment to Leprosy patients. In 1993 a Referral Hospital was established. The POD program was first introduced in 1999.

Working efficiency of each hospital:
1) Customer perspective,
qualitative and quantitative data

- Working Experience of the Medical Personnel in Years

Data is provided in a separate appendix
Dr. B. Raja Rao used to work in Government

- Education Level of the Medical Practitioners

Bachelor degree

- Employee turnover rate

0% in 2009, 10% average for the last 5 years.

- Else (help to get a self-esteem, profession)?

Loans are provided to patients in order to start their own business.

2) Internal Business (Hospital) Process perspective

qualitative and quantitative data

- Bed Occupancy Rate

97%

- Average Length of Stay per **In-Patient**

6.5

- Average Number of Admissions per **In-Patient** (per year)

17 patients – repetitive cases (0.77%)

- Average Number of **Out-Patient** Visits (daily average, monthly average)

300 working days,
OP 7781 patients in 2009
Daily average is 26 patients

- Average Number of **Repetitious Visits** per **Out-Patient** (per year)

92 patients (1.2%)

- Death rate (death number/IP cases, per year)

0% in 2009, 0.4 for the last 5 years (2 persons) – 0.018%
Complicated cases are sent to Government Hospital

- Gender rate for OP, IP in 2009

OP

Male	58%
Female	42%
Total	100%

IP

Male	61%
Female	39%
Total	100%

- Where are all the materials purchased and how often (medicaments, shoe material, dressing, else)? (Bulk purchasing for all the hospitals possible?)

All the materials are purchases locally from Distributed and Wholesalers of the state.
Medicaments, Shoe material, Dressing, Else

- What Leprosy Awareness Programs exist, what media is used?

Leaflets (!) are given to OP and patients in rural area.
Posters (display medical centers and hospitals) – bus stops, railway stations
Local Newspapers (ad showing the facilities, what is done, how to treat leprosy)

3) Learning and growth perspective

qualitative and quantitative data

- Training Budget

6600 INR in 2009

OBA	non-OBA	total
6727	10090	16816

Someone coming to give lecturers, improve the skill development, capacity building

4) Benchmarking

- How many hospitals (and which ones) are situated one hour away? How many from them have leprosy treatment? (employment possibility competition, treatment competition)

How many:
2 PHCs, GH is more than 1 hour away, GMC is more than 1 hour away, 10 PHs,
From them 0 are LTH

General Check-list:

- ☐ Brief discussion about patient category (description the same?)! (Reaction IP1,)

Luethi page 7

- ☐ What are the limitations (barriers) in your project? (infrastructure-equipment, administrative, technical, medical doctor or others)

Number of beds: it would be great to add 10 more, but in several years the demand will go down, so there will be no need.
Medical salary (for doctors):
Dr. P. John Prabhakar, salary is 31020 INR in reality 40-45000 is paid
Dr. P.R.S.G. Varma, salary is 27817 INR (75% Employment) in reality 35000 is paid,
Otherwise it is not possible to get them employed.

- ☐ Record system (IP record, OP record)

All the OP data is first done in a written way and then transferred into electronic way. The following data is collected:
Number, Hospital number of patient, Name, Farther/Husband (Family name), date, age, sex, village, complication, category (OP0, OP1, 0P2)
For IP the following columns are filled in:
Number, Hospital number of patient, Name, Village, Age, Sex, Date of admission, CATEGORY (IP0, IP1, IP2 …), Name of the month (with dates: 1,2,3…), Bed days during the month, Discharge date, Total bed days during the patient admit to discharge, Drug amount.

- ☐ Bookkeeping system for financial accounting

Previously EX NET GENERATION Software was used. Since 2010 TALLY Software is used.

- ☐ Review and study each department
  - IP, OP, Administration, Laboratory, Dressing, Cobbler (MCR footwear), Surgery division (Operation Theatre), Physiotherapy department, Pharmacy

Specific Check-list:

- ☐ All IP categories Average Number of Treatment Days is much less compared to other hospitals. How do you treat patients for shorter stay?

Health awareness and Self Care Kit, relatives help, in the village someone who knows about leprosy and had similar case comes and checks whether all the recommendations (exercises, dressing, soaking, etc.) are done.
After discharge patients with complicated ulcer (or other problems at the day of admission) are taken care at PHC. Staff from the hospital educate people in PHC to take care of patients. New Leprosy and other cases are identified here. Complicated cases are sent to hospital.

14.10. Appendix 10 – GRETNALTES Hospital Visit Report

TENALI (GRETNALTES)
Visited on 15-17.07.2010
Visited by Kaklyugina Maria

15.07.2010 information is given by director, Mr. Hemachandu V:

BRIEF HOSPITAL HISTORY
Founded in 1981 by Mr. Venkateswara Rao Vangara, who was previously affected by leprosy. After recovering from the disease he decided to found a leprosy hospital. Now Mr. Venkateswara is retired and his son (Mr. Hamachandu Vangara) took over the direction of GRETNALTES project (stands for Greater Tenali Leprosy Treatment and Education Scheme Society).

Working efficiency of each hospital:

1) Customer perspective,
   qualitative and quantitative data
   - Working Experience of the Medical Personnel in Years

Separate appendix

   - Education Level of the Medical Practitioners

Separate appendix

   - Employee turnover rate

0% in 2009, 10% on average during the last 5 years.

   - Else (help to get a self-esteem, profession)?

Loans for business
Education help for children (11th and 12th grades)
Working possibilities, employment of leprosy patients.

2) Internal Business (Hospital) Process perspective
   qualitative and quantitative data
   - Bed Occupancy Rate

98%

   - Average Length of Stay per **In-Patient**

21 day

   - Average Number of Admissions per **In-Patient** (per year) 2009

CATEGORY	REPETITIONS	NUMBER OF CASES
IP0	114	524
IP1	0	47
IP2	119	491
IP3	20	96
IP4	0	0
IP5	5	12
IP6	0	36
IP7	0	3

   - Average Number of **Out-Patient** Visits (daily average, monthly average)

297 working days in 2009 (raining days are considered as working days)
8539/297=28.75 OP per day on average in 2009

   - Average Number of **Repetitious Visits** per **Out-Patient** (per year)

CATEGORY	REPETITIONS	NUMBER OF CASES	
OP0	752	4309	1,5times on average
OP1	697	4184	4 times on average
OP2	46	46	2 times on average

   - Death rate (death number/IP cases, per year)

1 patient in 2009 (0.08%)
2 patients in the last 5 years (0.03%)

   - Gender rate for OP, IP in 2009

OP

Male	5956		70%	
Female		2583		30%
Total	8539		100%	
IP				
Male	786		65%	
Female		423		35%
Total	1209		100%	

- Where are all the materials purchased and how often (medicaments, shoe material, dressing, else)? (Bulk purchasing for all the hospitals possible?)

Medicaments, Shoe material, Dressing, Else
MCR sheet: 1/ 3 month, distributer from another state: Tamil Nadu
Medicaments: 1/ month, local distributer
Dressing: 1/ month, local distributer

- What Leprosy Awareness Programs exist, what media is used?

Leaflet: OP, fields
Loud Speaker, vehicle: once a month on the street
Slide shows: patients (OP), medical, collage students, health workers
Demonstrations on the field on antileprosy week: Jan 30-Feb 5

3) Learning and growth perspective
qualitative and quantitative data

- Training Budget

2400 INR in 2009
2500 INR on average for the last 5 years
Spent for medical staff: someone came to hospital

4) Benchmarking

- How many hospitals (and which ones) are situated one hour away? How many from them have leprosy treatment? (employment possibility competition, treatment competition)

How many:
1 PHC, GH is more than 1 hour away; GMC is more than 1 hour away; PH is more than 1 hour away.
[Primary Health Center (PHC)
Government Hospital (GH)
Government Medical Collage (GMC)
Private Hospitals (PH)
Leprosy Treatment Hospital (LTH)]

Leprosy Treatment Hospitals (LTH) = 0.
REMARK: 1 Private Medical Collage (PMC).
15.07.2010 discussed with director: Mr. Hemachandu. V.

General Check-list:

- ☐ What are the limitations (barriers) in your project? (infrastructure-equipment, administrative, technical, medical doctor or others)

Only one supporting agency: FAIRMED. Local fundraising is very challenging. It is more difficult to get some financial sources to Hindu organization (fewer funds comparing to Christian organizations available).
There are several possibilities how to make the project financially self-sufficient:
1) At the moment there is no general patient's treatment => not possible to get funds from there.

2) There is a potential for “Mother and Child care”, as it could attract patients. Thread: 1 Private Medical Collage (PMC) is nearby. Opportunity: if the fee is lower than in PMC, patients would rather come to GRETNALTES that would lead to an extra income for the project.
REMARK: Investment needed: infrastructure (building) not available.
RECOMMENDATION: for an investment detailed project plan is a must.
3) Also, there is a potential in school extension. At the moment 10 years exist, pupils are leprosy patients’ children and children from below the poverty line families. Charging a fee from “normal” pupils could be an additional fund for leprosy hospital.
REMARK: Investment needed: infrastructure (building) not available.
RECOMMENDATION: for an investment detailed project plan is a must.

☐ Record system (IP record, OP record)

IP record categories:
Number, Date of admission, Hospital number of patient, Name, Gender, Age, Type of Leprosy, Patient Category, Link to a patient’s card.
OP record categories:
Number, Date of visit, Hospital number of patient, Name, Gender, Age, Type of Leprosy, Patient Category, Link to a patient’s card.

☐ Bookkeeping system for financial accounting

TALLY Software is used for 5 years.

☐ Review and study each department

Specific Check-lists:

☐ Why is there no category septic ulcer?

Septic ulcer was treated as a complicated ulcer. Cases with a need for operation intervention were treated as a hand/foot reconstruction patients’ category.

14.11. Appendix 11 – ESRH&LP Hospital Visit Report

PALAMANER (ESRH&LP)
Visited on 19-20.07.2010
Visited by Kaklyugina Maria and OBA consultant Mr. Ram Prakash

15.07.2010 information is given by director, Dr. Jacob:

The hospital is situated on the border of two states.

Working efficiency of each hospital:

1) Customer perspective,
qualitative and quantitative data
- Working Experience of the Medical Personnel in Years

15 years on average
- Education Level of the Medical Practitioners

Nurses: World-aid or Nursing Aids and diploma staff nurse
Technicians: 2 years
Doctors: graduate (bachelor), Post-graduate (master)
- Employee turnover rate

2009 – 0%
For the last 5 years 0%
- Else (help to get a self-esteem, profession)?

Employment in the hospital

Loans for business

2) Internal Business (Hospital) Process perspective

qualitative and quantitative data

- (Fulltime Positions per 1'000 Patients in brief)
- (Fulltime Positions per 1'000 Treatment Days in brief)
- Bed Occupancy Rate

99%

- Average Length of Stay per **In-Patient**

24.6 days on average

- Average Number of Admissions per **In-Patient** (per year)

20 readmissions within 688 IP in 2009

- Average Number of **Out-Patient** Visits (daily average, monthly average)

(5.5*52-5 national days)
281 day
9171/281=32.63 patients per working day on average

- Average Number of **Repetitious Visits** per **Out-Patient** (per year)

3

- Death rate (death number/IP cases, per year)

Total IP 723
7 patients in 2009 – 0.96%
2.6 On average in the last 5 years – 0.35%
(The number increased as the hospital had more advertisement activities and patient with more complicated health conditions came, also complicated cases were sent from GH)

- Gender rate for OP, IP in 2009, why so big difference

OP				
Male	1752		63%	???
Female		1016	37%	???
Total	2768		100%	
IP				
Male	484		76%	???
Female		156	24%	???
Total	723		100%	

In villages women suppression takes place. Women remain at home, even when the problem occurs they tend not to go to hospital; in many cases hospital is situated far away and to get there they need money for transport, but their husbands do not give them money.
In some hospitals where the number of females is less – can mean that the distance to the nearest hospital is bigger. Some of the women do not have enough money to come, those who do come – have worse condition.
That would be a good question to compare an average length of stay in hospitals for men and for women.
On average women stay less than men as they have to return beck home to do the household. There were some cases when women got divorced because they stayed in hospital for two long – 2-3 weeks.

- Where are all the materials purchased and how often (medicaments, shoe material, dressing, else)? (Bulk purchasing for all the hospitals possible?)

Medicaments Chennai (NGO Comprehensive Medical Services India) 1/3 month
MCR Tamil Nadu state 1/6 month
Dressing Tamil Nadu (Ragapalyam – specialize themselves on dressing) 1/6 month

- What Leprosy Awareness Programs exist, what media is used?

District leprosy officer and collector and local media are invited 3/ year
Local newspaper 1/year
Leaflet (villages 100 km radius)
40 people on the field (volunteers)
World of Mouth advertising

3) Learning and growth perspective
qualitative and quantitative data
- Training Budget

0 in 2009, 0 for the last 5 years

4) Benchmarking
- How many hospitals (and which ones) are situated one hour away? How many from them have leprosy treatment? (employment possibility competition, treatment competition)

How many:
15 PHC, GH is more than 1 hour away; GMC is more than 1 hour away, 1 PMC (Private medical Collage), 0 LTH

MCR sheet: not all the MCR sheets are of the same quality. The aim of MCR is that the weight is distributed in a better way. The bigger number of cells per sm^2, the better. Companies claim to have the same number of cells per sm^2, but in reality it differs.
In Palamaner the shoe sole consists of 3 layers (on other hospitals there are only 2 layers):
MCR, metal, simple rubber. Metal in between prevents from extra bending of a sole, from bounds.

Patients come from up to 800 or even 1200 km away. They came to ESRH&LP hospital according to their own wish or they are also sent from PHCs, surgery (reconstruction) patients are all sent by government.
In Andra Pradesh state there are 3 Leprosy Treatment Hospitals, 2 of them have only coming surgeons, in ESRH&LP have a permanent one.
In Palamener some preoperational and post-operational exercises are done before and after foot/hand reconstruction. Without exercises only cosmetic effect of reconstruction can be achieved. In ESRH&LP both cosmetic and functional effects are achieved.

15.07.2010 information is given by director, Dr. Jacob:

General Check-list:

☐ What are the limitations (barriers) in your project? (infrastructure-equipment, administrative, technical, medical doctor or others)

The main limitation of the project is seen in the future:
Now the main person of ESRH&LP is Dr. Jacob. He works as a Project Head, a doctor and a surgeon. In some years when he retires, someone should take over his positions. As it is very difficult to find a person who is willing to devote him/herself to patients with a similar qualification, it is more likely that several people will take the positions. That would lead to cost-increase and possible reorganization.
Doctors who work in ESRH&LP at the moment gain some years of experience and leave to get a post-graduation education. They do not plan to work for 10 years or longer.

☐ Record system (IP record, OP record)

OP
Done in a written way (paper), following categories are filled in:

Name, hospital number of patient, village, date of visit (first visit in the hospital, registration)
IP
Name, Address, Age, Gender, Hospital number of patient, date of admission, religion, area (project area, non-project area), Type of leprosy, Diagnosis, Date of Operation, Date of Discharge.
After collecting the data in a written way it is then transferred into Excel and Access.
In Access IP and IP categories:
Number, Date of Admission(visit), Hospital number of patient, Name, Fathers Name (Family name), Address, Age, Gender, Case code (internal hospital code), description of a case code.
Patient card (from Kathipudi) needs to be improved. Treatment field (and other?) need to be added.

- ☐ Bookkeeping system for financial accounting

TALLY Software?
yes

- ☐ Review and study each department
  - IP, OP, Administration, Laboratory, Dressing, Cobbler (MCR footwear), Surgery division, Ophthalmology, Physiotherapy department, Pharmacy, X-Ray

In Palamaner a self-made ointment is done (8 different kinds). If bought, the price would be 30 times higher.

Physiotherapy
Wax, electrotherapy, oil massage, splints, others

Specific Check-lists:

- ☐ Why no simple ulcer, severe ulcer: no patients or no categories? IP2, IP4 Why all ulcer patients are treated as complicated ulcer?

Simple ulcer cases are treated as OP, septic ulcer is treated as complicated or reconstruction cases.

- ☐ DPMR cost is not removed form OBA (860 000 INR)

Categories description: was discussed with Dr. Jacob. Sometimes a patient is recorded in the OP4 - SEPTIC ULCER category in case when a more costly antibiotic is needed, the patient may or may not need an operation.

14.12. Appendix 12 – HHH Hospital Report

HUBLI (Hubli Hospital for Handicapped)
A document received by e-mail from HHH administration in July 2010

BRIEF HOSPITAL HISTORY
Please refer to Annexure 1

Working efficiency of each hospital:

1) Customer perspective,
   qualitative and quantitative data
   - Working Experience of the Medical Personnel in Years
   - Education Level of the Medical Practitioners

   A and B are listed as Annexure 2

- Employee turnover rate
  i. In 2009-----**66**
  ii. For the last 5 years
  65 on average for the last 5 years

2008	2007	2006	2005	2004
70	63	60	66	55

2) Internal Business (Hospital) Process perspective
qualitative and quantitative data

- Bed Occupancy Rate-----**87%**
- Average Length of Stay per **In-Patient----**24 Days
- Average Number of Admissions per **In-Patient** (per year) by category

IP0 37
IP1 38
IP2 56
IP3 36
IP4 154
IP5 5
IP6 31

- Average Number of OP per working day (rainy days are considered as working days)

313 days
1495/313=4.78 patients per working day on average

- Average Number of **Repetitious Visits** per **Out-Patient** (per year)

OP0- 821
OP1- 330
OP2 - 344

- Death number/IP cases
  i. in 2009…Nil
  ii. average for the last 5 years 0.4 – 0.11%

- Gender rate for OP, IP in 2009

OP
Male 1168 78.12%
Female 327 21.88%
Total 1495 100%
IP
Male 271 75.91%
Female 86 24.09%
Total 357 100%

- Where are all the materials purchased and how often? (distributer/wholesaler, local/other (which) state)
  Purchases are made depending up the requirements- usually weekly and monthly purchases are done.
  i. Medicaments—For Local Main Distributors and wholesaler, & Retailers
  ii. Shoe material—Local Wholesaler and Main Distrbutors from Kerala and Tamilnadu.
  iii. Dressing ---Local Wholesalers
  iv. Else Nil

- What Leprosy Awareness Programs exist, what media is used? (E.g. leaflets (to OP, on the field), posters (on bus stops), demonstration on antileprosy week etc.)
  Leprsoy I.E.C. in Slums, Schools. Flim Shows in fair. Posters.Flash Cards.
- Footwear:
  i. how many standard models …. 7 Models
  ii. press is used or cut manually? … Manually

3) Learning and growth perspective
   qualitative and quantitative data
   - Training Budget
     i. in 2009---Rs.15000/-
     ii. average for the last 5 years—Rs.11000/-
     iii. what was it spent for? Short Medical Orientation courses.
4) Benchmarking
   - How many hospitals (and which ones) are situated one hour away? How many from them have leprosy treatment? (employment possibility competition, treatment competition)

How many:
Primary Health Center (PHC) 26
Government Hospital (GH) 2
Government Medical Collage (GMC) 1
Private Hospitals (PH) Data N.A.
Other Hospitals Data N.A.
How may from them are Leprosy Treatment Hospitals (LTH)? 29

General Check-list:

- ☐ What are the limitations (barriers) in your project? (infrastructure-equipment, administrative, technical, medical doctor or others)
  Nil
- ☐ Record system (IP record, OP record): how is it done: in a hard version or soft (excel), what columns are used for IP and for IP? (E.g. number, Patient's name, date of admission, village, age, gender, etc.)
  Manual Register Format enclosed
- ☐ Bookkeeping system for financial accounting: is TALLY Software used? If not, which one?
  TALLY SOFTWARE USED
- ☐ Is anything done on the field? If yes, then what exactly? ---IEC Activities.
- ☐ Are OP provided with a self-care kit? If yes, then what components are inside? Description. Photo if possible.
  No
- ☐ Are patients provided with any physiotherapy tools (if needed) when they go home? With which ones? Photo if possible.
  NO

Specific Check-list:

Hubli, HHH

- ☐ Why 13% bed under utilization ? (27 utilized out of 31 bed available)

Prevalence rate came down.

- What is the reason for small number of patient? (IP, OP)—
  Prevalence rate came down.

Annexure 1

Brief Report of the Activities of the Trust of the
"The Hubli Hospital for the Handicapped", Hubli
describing its activities from its inception in 1976

In fulfilling the above objectives the Trust has through Survey, Education and Treatment 5660 Leprosy Patient in the village of Hubli and Dharwad taluks and old Hubli urban area, covering a population of 373900. 2580 patients completed treatment and were declared cured.

Since the hospital's inception in 1976, 13057 patients were admitted for varying periods from 3 weeks to 1year, for various complications related to leprosy such as ulcers of the hands and feet, reactions and reconstructive surgery for paralysed feet and fingers and were discharged on being cured. 4434 pairs of footwear were supplied since 1973.

The Trust has been recognized for training Leprosy Paramedical workers. 158 numbers of trainees completed their training and are working in the institution that sponsored them. The trust also runs a sheltered workshop to rehabilitate the handicapped from leprosy and other diseases. Since the beginning of the workshop, 393 trainees have completed their training.

The success of the project can be gauged by the number of new cases of leprosy appearing each year. Whereas it was 7 per thousand per year in 1970, it is now only 0.63 per thousand per year.

All the cured patients live in the community and have not taken to begging. They have not been ostracized by their relatives or population in their villages.
Since 2002, we have added General health care and Maternity services. These services are provided to the poor community at affordable rates.

Annexure 2

Work Experience of Medical Personnel			
Sl. No.	Name	Work Experience	Education Level
1	Dr. Maneesha Godbole. M.D.	21 years	M.D.
2	Dr. Neela Dixit	20 Years	M.B.B.S, DGO
3	Dr. Miliand Deshpande	14 Years	M.S. Ortho.
4	Dr. Vasant Mygeri	33 Years	M.S.
5	Dr. Basalingappa R. Mooli	6 Years	B.A.Ms.
6	Dr. Viveakanand Dhaded	3 Years	B.A.Ms.
7	Dr. Shivleela Dhotrat	10Years	BDS
8	Dr.V.R.Bhupali.	30Years	MBBS.DMR.
9	Dr. Prasanna Shetti.	10 Years	MBBS.MD.
10	Dr.Vrinda	20Years	MBBS.D.A.

14.13. Appendix 13 – PSG Hospital Report

COIMBATORE (PSG, A Unit of Leprosy Relief Work Emmaus Switzerland)
A document received by e-mail from HHH administration in July 2010

Working efficiency of each hospital:

1) Customer perspective,
   qualitative and quantitative data
   - Working Experience of the Medical Personnel in Years (total, not just PSG)
     16 years
   - Education Level of the Medical Practitioners MBBS (The Bachelor of Medicine and Surgery). Leprosy trained at Karigiri and TB trained by State TB Division

   A and B are done in a separate Excel file
   - Employee turnover rate
     i. In 2009 - 2 employees resigned from admin
     ii. For the last 5 years - 4 appointments and 13 resignation/retirements
   - Else (help to get a self-esteem, profession)?
2) Internal Business (Hospital) Process perspective
   qualitative and quantitative data
   - Bed Occupancy Rate

58%

   - Average Length of Stay per **In-Patient**

24.58 days
(no hand/foot reconstruction, no eye surgery)

   - Average Number of Admissions per **In-Patient** (per year) by category

   IP0 - 153
   IP1 - 3
   IP2 - 136
   IP3 - 74
   IP4 - 1

   - Number of working days in 2009 (rainy days are considered as working days) 365
   - Average Number of **Repetitious Visits** per **Out-Patient** (per year)

   OP0 - 3097
   OP1 - 135
   OP2 - 1601

   - Death number/IP cases
     i. in 2009 - nil
     ii. average for the last 5 years (or total for the last 5 years, indicate) - nil
   - Gender rate for OP, IP in 2009

OP			
Male	3141	65%	
Female	1692		35%
Total	4833	100%	
IP			
Male	238	65%	
Female	128		35%

Total 366 100%

- Where are all the materials purchased and how often? (distributer/wholesaler, local/other (which) state)
  i. Medicaments distributor
  ii. Shoe material gremaltes
  iii. Dressing distributor
  iv. Else - local
- What Leprosy Awareness Programs exist, what media is used? (E.g. leaflets (to OP, on the field), posters (on bus stops), demonstration on antileprosy week etc.)

Leprosy Orientation programme for medical, nursing, physiotherapy and social work students from different colleges in Coimbatore.

Leprosy sensitization for medical officers from different PHCs

Training in Leprosy for target groups for NSS students, MSW, Eng students from different colleges

Awareness campaigns were conducted for mother groups and self help groups

Regular IPC programme were conducted in the allotted areas covering a population of 160000
During IPC pamphlets were distributed on a door to door basis in order to educate the people for voluntary reporting

Every year anti leprosy day/week is being conducted by way of rally, awareness camps etc to mark the death anniversary of Mahatma Gandhiji

Health education about self care management being given to leprosy affected persons

- Footwear:
  i. how many standard models 2 models (Bata and Y model)
  ii. press is used or cut manually? Purchase from Gremaltes

3) Learning and growth perspective
   qualitative and quantitative data
   - Training Budget
     i. in 2009 - Rs.50,000.00
     ii. average for the last 5 years – Rs.15,000.00
     iii. what was it spent for? Training different categories of people about leprosy, deformity , self care and voluntary reporting
4) Benchmarking
   - How many hospitals (and which ones) are situated one hour away? How many from them have leprosy treatment? (employment possibility competition, treatment competition)

How many:
Primary Health Center (PHC) - 9
Government Hospital (GH) - 1
Government Medical Collage (GMC) - 1
Private Hospitals (PH) - 60
Other Hospitals - 7
How many from them are Leprosy Treatment Hospitals (LTH)? - 1

General Check-list:

- ☐ What are the limitations (barriers) in your project? (infrastructure-equipment, administrative, technical, medical doctor or others) other
- ☐ Record system (IP record, OP record): how is it done: in a hard version or sot (excel), what columns are used for IP and for IP? (E.g. number, Patient's name, date of admission, village, age, gender, etc.) Manually – as described above
- ☐ Bookkeeping system for financial accounting: is TALLY Software used? If not, which one? TALLY software
- ☐ Is anything done on the field? If yes, then what exactly? POID,Health Education
- ☐ Are OP provided with a self-care kit? If yes, then what components are inside? Description. Photo if possible - NO
- ☐ Are patients provided with any physiotherapy tools (if needed) when they go home? With which ones? Photo if possible – Yes – cotton,gauze,bandage cloth, betadin,acriflavine,Vaseline etc

14.14. Appendix 14 – Software CD

This underlying document is accompanied by a software CD containing the following files:

1) The OBA horizontal benchmarking tool with actual 2009 figures for all the hospitals (SHLC, RISDT, GRETNALTES, ESRH&LP, HHH, PSG).

2) Fee for service

- includes unweighted median and acceptance range
- weighted interpolated median and acceptance range
- unweighted median for days of stay and acceptance range

14. Acknowledgements

First of all, I would like to thank FAIMED Switzerland, Thomas von Stamm in particular, for giving me an opportunity to work on such an interesting project and the help during the project. It was incredible to have a chance to spend four weeks in India, to see a different culture and to work with wonderful people. An experience of working in an Asian country will be a definite asset, which is not possible to get if someone goes as a tourist.

It is important to mention, it was a great opportunity for the author to refresh her statistical knowledge.

Secondly, the author wants to thank cordially everyone who works in Channai in Swiss Emmaus Head Office for a proficient organization of the process which included four hospitals visits and two meetings in Chennai as well as for a warm atmosphere and readiness to help in everything the author needed. Warm-hearted people will remain in my thoughts as a Chennai family.

Third, I would like to give my gratitude to all the Hospital employees and patients, who gave me an opportunity to get to know the specifics of work and values in Indian hospitals. There are many things that European society could learn from them.

Also, despite the fact that the time in each project was very limited, the process was organized in such a way that all the questions were answered, the hospitals were shown, in some projects an author even got an opportunity to go to the field.

Last, but not least I would like express my sincere thanks to Prof. Dr. Beat Hulliger for all the support throughout the project. It would have been much more difficult to complete the project without his assistance.