

# **The Medical Record System at Okhaldhunga Community Hospital in Rural Nepal**

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We will never forget you, and hopefully come back some day to OCH.

Oslo, September 2011

Åge Aleksander Skretting  
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## List of abbreviations

CMA	Community Medical Assistant
GNI	Gross National Income
HP	Health Post
MAF	Medical Assistant Fund
MR(s)	Medical Record(s)
MRS	Medical Record System
NIDS	National ID-card System
NOK	Norwegian Krone
NRP	Nepali Rupees
OCH	Okhaldhunga Community Hospital
OD	Okhaldhunga District
OPD	Outpatient Department
SPSS	SPSS Statistics 15
SHP	Sub-Health Posts
TB	Tuberculosis
UMN	United Missions to Nepal
VDC	Village Development Committee
WHO	World Health Organization
1 NOK	= 13,50 NPR (pr. 31/8-2011)

# Abstract

## Background

Okhaldhunga Community Hospital (OCH) lies in a rural area in the east of Nepal<sup>1</sup>. In this area there is no reliable power supply so it is still not possible for this hospital to use a computer based medical record system (MRS) like we do in most western hospitals today. Therefore they have developed their own system, where the patients themselves are responsible for taking care of their own medical record (MR) and bringing it at their next visit to the hospital. We wanted to look at how this medical record system at OCH works today.

## Method

We chose to use a dual strategy to achieve this goal, a quantitative and a qualitative design. In the quantitative part, we developed a questionnaire concerning the MRS and analyzed factors we assumed could influence the patients' compliance in bringing their medical record to the hospital. We hired one of the staff at OCH to interview all the patients coming to the hospital for three different months: January 2010, April 2010 and October 2010. In the qualitative part we did 10 semi-structured interviews with patients at the hospital. To analyze the interviews, we used the principles of systematic text condensation as modified by Malterud<sup>2</sup>.

## Main Results

Most of the patients bring their own Medical Record (MR) to the hospital (89,7 %). Factors increasing this compliance are short travel time to the hospital, many previous visits and short time since last visit. The patients state that the main reason to bring the MR is to get the consultation cheaper. The patients with less education, the patients that have been to the hospital several times before and patients that have visited the hospital a short time ago are significantly more concerned about the price of the consultation. The patients keep their MR at a safe place in their homes together with other important documents. They have a lack of knowledge concerning the content of the MR, and they want to know more about the content.

## Conclusions

OCH has a MRS that challenges our regular way of thinking about MRs due to the fact that they give the patients the full responsibility to take care of their own MR. The study reveals that the MRS has a high functionality concerning the compliance of the patients in bringing their MR to the hospital and it seems like the main motivation for bringing the MR to OCH is to get the consultation cheaper. The study also reveals a lack of knowledge concerning the content of the patients' own MR, and that they hunger for more information. This result may indicate that by giving the patients easy access to their own MR, it could make the patients more concerned about their own health situation.

# 1 Introduction

## *1.1 Background of the study*

In 2008 we heard about some Norwegian medical students who had done a study at Okhaldhunga Community Hospital (OCH) (figure 1) in rural Nepal. We were both interested to find out more about this, and the possibility for us to go there during our medical education. Autumn 2009 we got in contact with Dr. Erik Bøhler, the Medical Coordinator of the hospital. He mentioned for us that it would be of great interest for the hospital if we could conduct a study to evaluate their Medical Record System (MRS).

*Figure 1 – Okhaldhunga Community Hospital*



## *1.2 Nepal – some general facts and background*

Nepal is situated in the southern part of Asia in between China in the north and India in the south. It is known for its famous mountains of the Himalaya in the northern part of the country. The world's highest peak, Mt Everest (8848 m.a.s.l.), is to be found here<sup>3</sup>. Actually, two thirds of the country is covered by mountains, something which brings great challenges in developing the Nepali infrastructure.

The population in Nepal were 29 331 000 in 2009, and the number is increasing every year with a rate of 2,2 %<sup>4</sup>. Nepal is one of the poorest countries in the world and more than a third of the population is living below the poverty line, which is defined as living on less than 1,25 dollars a day<sup>5</sup>. 28 % of the national budget is economic support from other countries. Nepal has the second lowest Human Development Index compared to other countries in the United Nations Development Program South Asia Region<sup>6</sup>.

Farming is the main occupation in Nepal. Agriculture sustains around 80 % of the population, and produce wheat, rice, corn, sugarcane, milk, root crops and buffalo meat. The GNI per capita in Nepal was \$ 440 in 2009<sup>7</sup>. (\$ 440 = 2 390 NOK = 32 300 NPR). After the civil war ended in 2006, tourism has again become an important income for the country.

If you take a closer look at the population of Nepal, you will find a great diversity of ethnic groups. Most people are Hindu or Buddhists, and they used to be placed into a hierarchical system of castes. This system was officially ended in 1963, but is still having a lot of influence on the Nepali society. Not only does it influence the social interaction between the different groups of people, but there are also still obvious differences between the groups. Still, the people from the higher castes are the people with most education, and they are a minority. If we look at Nepal in general, the rate of illiteracy is still high. About two thirds of female adults and one third of male adults are illiterate<sup>7</sup>. Net primary enrollment rate was about 90% in 2009, so the rate of illiteracy is now decreasing. The other differences between the castes are also slowly diminishing.

To say a little bit about the history of Nepal, it has to be mentioned that the country has been a monarchy throughout most of its history. Nepal has been unified as a single kingdom since 1768, but quite a few times they have been threatened by Tibet, Indian kingdoms and the British East India Company. Within the last century there have been different forms of rule, like the traditional monarchy, a hereditary dynasty of autocratic prime ministers and the Panchayat system: a decentralized form of government based on village-assemblies. The Panchayat system governed Nepal until 1989, when the king

was forced to accept constitutional reforms and to open up for a multiparty parliament.

In 1996, the Communist Party of Nepal (Maoist) started a civil war to replace the royal parliamentary system. After the civil war ended in 2006, democratic elections were held in April 2008 and the Maoist Party won. After this, the monarchy was voted to be abolished by the Constituent Assembly, which ended a period of 240 years of royal rule in Nepal<sup>8</sup>. In 2008 the major parties agreed to write a constitution that replaces the interim one. The deadline term was extended by a year in May 2010, the new deadline is the 28th of May 2011. The chairman of the Constitutional Committee, Nilamber Acharya, recently said that it will be difficult to have the constitution ready until the deadline<sup>9</sup>. This implicates that there still is a political turbulence in Nepal.

### ***1.3 Health in Nepal***

In Nepal the life expectancy at birth is one of the lowest in South Asia, 63 years for women and 62 years for men<sup>10</sup>. If we compare these numbers with Norway where it is 83 years for women and 78 years for men<sup>11</sup>, it has to be considered as very low. Concerning the number of doctors in Nepal, they have about 5 per 100 000 inhabitants<sup>12</sup>. In comparison, Norway has 438 doctors per 100 000 inhabitants<sup>13</sup>.

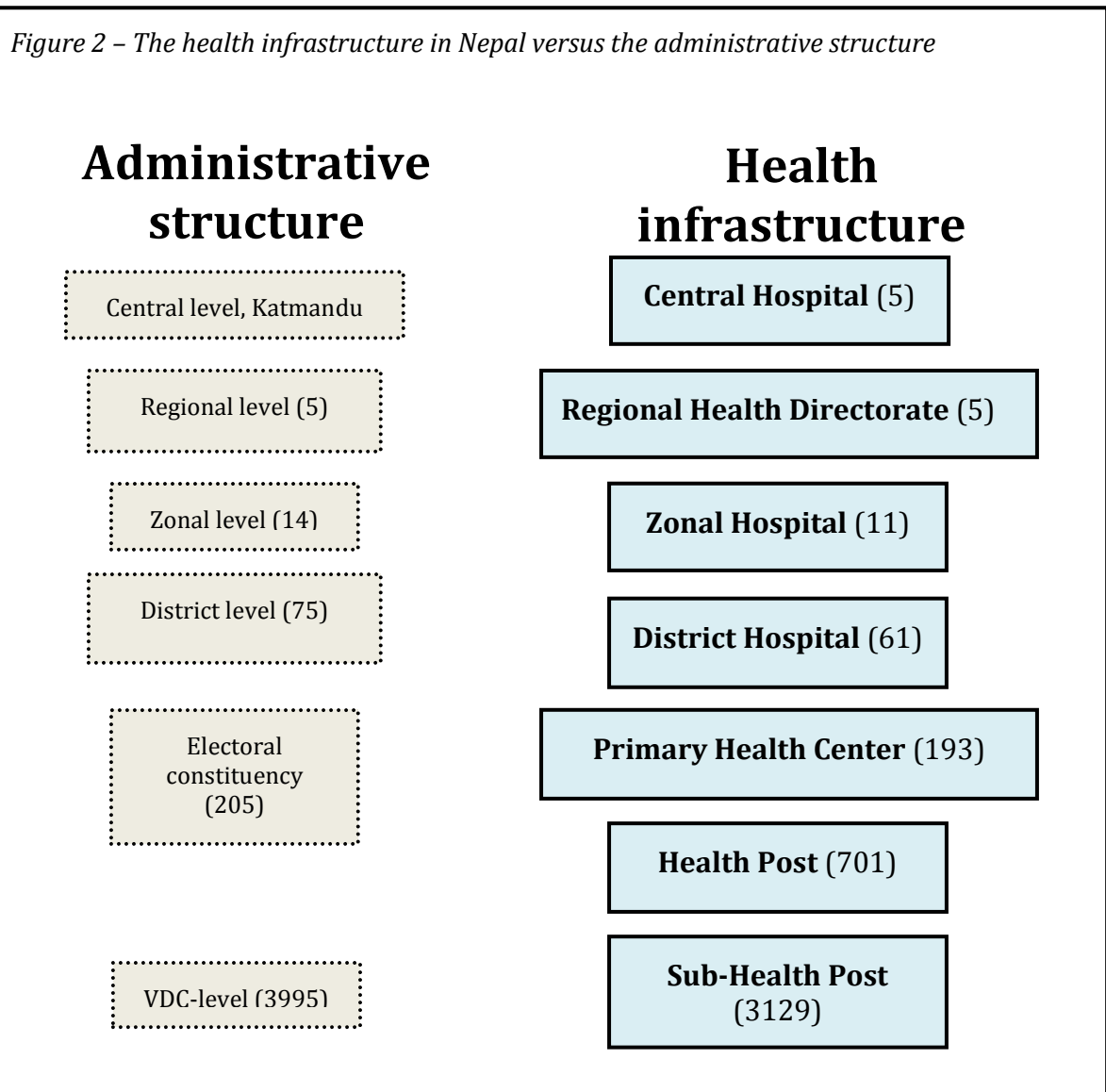
The health infrastructure of Nepal is built up in the same way as the administrative structure of the country. The country is divided into 5 different regions. These regions are divided into 14 zones, which are again divided into 75 districts. The VDC (Village Development Committee) is the lowest part of Nepal's administrative structure. Each district has several VDCs and their purpose is to organize village people structurally at a local level and to interact with the more centralized institutions of governance in Nepal. The health infrastructure is outlined in Figure 2<sup>14</sup>.

Most hospitals are located in larger cities. This means that the accessibility of health-care services is not good for the people in the rural part of Nepal. In the Health-Post (HPs) and the Sub-Health Posts (SHPs) there is a lack of trained staff



and medicines. Acharya and Cleland did a study in 1999 where 28 HPs were visited. This study showed that nearly one fifth (18%) of the HPs were judged to be of poor quality<sup>15</sup>.

Although this statistics seem depressing, there has been a great improvement of health services in Nepal the last years. An example is vaccination. In 1996 the percentage of children between 12 and 23 months who were fully vaccinated with BCG, measles and DPT and polio was 71 % for urban areas and 42 % for rural areas. In 2009 these numbers had improved to an overall of 83 % for the country<sup>7</sup>.



## **1.4 WHO: Medical Record Systems in Developing Countries**

Before diving into the study we did on the MRS at OCH, we need to have a common understanding of what a Medical Record (MR) is and why it is so important. Huffmann (1990)<sup>16</sup> have said that the medical record *“must contain sufficient data to identify the patient, support the diagnosis or reason for attendance at the health care facility, justify the treatment and accurately document the results of that treatment.”* This citation gives us some good points about the importance of having a functional MRS at a hospital.

WHO's guide for MRs in developing countries<sup>17</sup> states that the main reason for the MR is *“to record the facts about a patient's health with emphasis on events affecting the patient during the current admission or attendance at the health care facility, and for the continuing care of the patient when they require health care in the future.”* In addition, having a MRS can protect the attending doctors against claims of malpractice, and also protect the hospital against claims for injuries and damage.

In the guide<sup>17</sup> there has also been set up some main objectives of having a MRS:

- to document the course of the patient's illness and treatment;
- to communicate between attending doctors and other health care professionals providing care to the patient;
- for the continuing care of the patient;
- for research of specific diseases and treatment; and
- the collection of health statistics

Having these points in mind, it must be considered to be of great importance to frequently evaluate to which degree a hospital succeeds in reaching these objectives.

## **1.5 Background: Okhaldhunga Community Hospital**

Okhaldhunga Community Hospital is situated in the Okhaldhunga District (Figure 3) which has a population of about 180 000 people. It takes 35 minutes to go by plane from Katmandu to Rumjatar, followed by a 2-4 hours walk from

the airport to reach the hospital. In 2008 there was built a road from the airport to the hospital, but the quality of the road is still very poor.

*Figure 3 - Okhaldhunga District located in the mid-eastern part of Nepal*



OCH was established by Dr. James Dick in 1962. Today about 85 % of the patients are from the Okhaldhunga District, and the rest are from the neighbor districts. Many patients have to walk hours, even days, in order to reach the hospital.

The hospital has 32 registered beds, and in addition they have a department for patients with TB. They also have an Outpatient Department (OPD), a delivery room and a minor and a major operating theatre. At the hospital they are able to do conventional x-rays, ultrasound and they have their own laboratory. There is also to be found a waiting home for pregnant women and a nutrition rehabilitating centre at the hospital.

There are altogether about 40 people employed by the hospital and between 1-4 doctors at the hospital throughout the year. The Medical Coordinator is a Norwegian pediatrician who has worked at the hospital since 2004. The other doctors are Nepali, and they work at the hospital for six months as a part of their specialist program to become specialists in general medicine.

The economy of the hospital is mainly based on the patient's own payments when visiting the hospital. 60 percent of the hospitals expenses are covered by

the patients. 15-20 percent of the expenses are covered by the Medical Assistant Fund (MAF), which is administrated by the hospital. The rest is support from different kinds of organizations throughout the world. Almost 10 percent of all patients get support from MAF to be able to pay their bill. In addition, all patients under 12 kg get their treatment at the hospital for free through MAF.

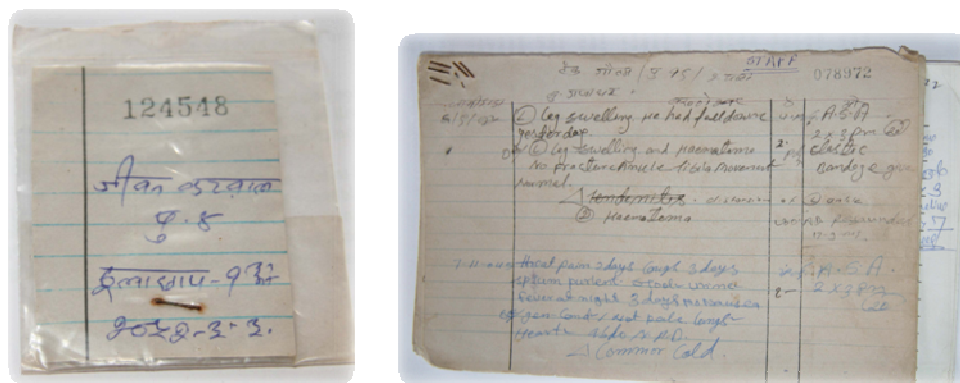
## ***1.6 The Medical Record System at OCH***

What is remarkable about the MRS at OCH, is that the patients themselves are responsible for taking care of their own MR. There is not stored any copy of the MR at the hospital, which means that if the patient lose his/her MR, the information it contains is also lost. After visiting the hospital, the patients are told to bring their MR to their home, take good care of it and bring it back the next time they visit the hospital. If they remember to do so, they will get the consultation cheaper.

A consultation at the OPD normally cost 25 NPR (1,85 NOK). If they remember to bring the MR to the hospital, the consultation costs 15 NPR (1,11 NOK). To get a better impression of this price, it is relevant to mention that a normal daily wage in the area around the hospital is about 200 NPR (14,80 NOK). However, most of the farmers in Okhaldhunga District only make 100-150 NPR (7,40-11,10 NOK) per day, according to our local supervisor.

This system has been in use at OCH since 2002. Before this, the system was different. To gain some more background information about how the MRS used to work at OCH, we met Dr. Bruce Hayes<sup>18</sup> who worked at the hospital from 1993-1999. At that time they used to keep the MRs at the hospital. But there was one problem. In order to find the patients MRs in the archive, they needed a way to identify the patient. This needed to be something that did not change; a unique patient characteristic. Examples of this could be a national identification number, date of birth, a health insurance number etc. It turned out to be difficult to do this at OCH, because many people in Nepal don't have any characteristic like this. Therefore the solution they ended up with was to have a system of unique numbers created at the hospital to identify the patients.

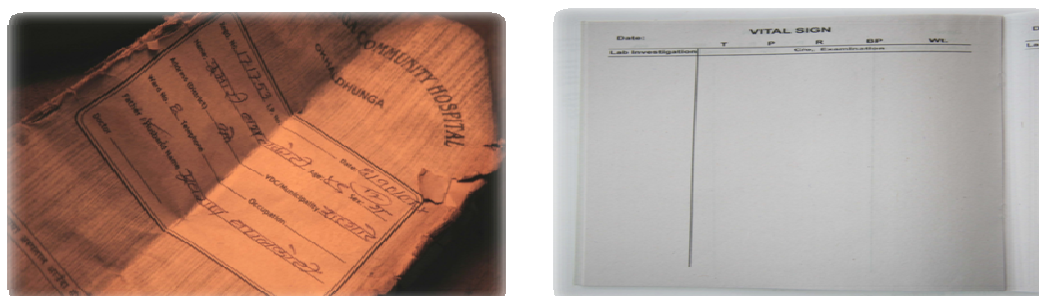
Figure 4 – The former Medical Record System used at OCH until 2002



Dr. Bruce informed us that all of the patients coming to the hospital during his time at the hospital received a little piece of paper with a printed number (figure 4). The patients were told to bring this number whenever they would come to the hospital in the future, and then the man working in the archive at the hospital could easily store the MRs in a proper way. However, for the patients coming to the hospital outside the opening hours, it turned out to be difficult to find their MR because there was not established a 24-hour service in the archive.

In 2002 a Dutch doctor, Dr. Marjoleine, worked at the hospital and changed the whole MRS. The change she did to the system was remarkable. Instead of giving a number to the patients and keeping the MR at the hospital, they developed a small booklet (figure 5) that was going to work as the MR and started to let the patients take care of it themselves without keeping a copy at the hospital.

Figure 5 – The personal Medical Record at OCH and how most of the pages are designed.



The reason for changing the system is not totally clear to us. A man, who has worked in the ticket office in the OPD of the hospital for 28 years, told us that a number of patients had proclaimed that they wanted to get hold of their MR so

they could bring it when visiting other hospitals. Whether this was the actual reason or not may be an issue of discussion, so it might be better to say that we don't surely know the reason for changing the system.

### ***1.7 The use of the Medical Record System at OCH***

All of the patients (except the emergencies) coming to the OPD at the hospital during the opening hours, are first seen by a Clinical Medical Assistant (CMA) who has 15-18 months of education. The CMAs read the past history from the MR, write short notes on what has been done this time and they write all the investigations that is needed to be done. Everything is written by hand in English. 10-15 % of the patients are referred to a doctor for further investigations.

If the patient is admitted to the hospital, the doctors will read in the MR what the CMA already has done. They also write all the lab-investigations in the MR, and if the patient is having a surgery they also write a note. When the patient is ready to be discharged, the doctors write a summary note. Daily notes are not written, due to fact that the doctors experience that this is not necessary at a hospital where all doctors are together at the daily visits (Figure 6).

*Figure 6 – All of the doctors are together at the daily visits.*



In some cases patients have sensitive information about themselves that would represent a great risk for the patient's life if others get hold of it. For this kind of information it is necessary to use codes in the MRs, like B24 that is the ICD-10

code for HIV<sup>19</sup>. In even more sensitive cases, like if a girl becomes pregnant outside a marriage, this information will most often not be written in the MR to protect the patient.

### **1.7.1 Challenges with the MRS**

After being on a field trip to OCH for 4 weeks and after having conversations with most of the doctors and CMAs at the hospital, we became aware of some challenges with this system that were important to have as background knowledge when conducting our study.

First, all information in the MR is handwritten. It may sometimes be a challenge to understand what other people write in the MR. Also, most doctors don't sign their prescriptions of medicines, something which could create problems in cases where the wrong medications are given. The fact that everything is written in English, also limits the accessibility to the content both for some of the health personnel and for a lot of the patients who don't know English. In rural areas of Nepal, the knowledge of English language is still very poor.

Secondly, the possibilities of doing research based on the MRs are very limited when having a system where the MRs is not kept at the hospital. However, to do research on handwritten notes is difficult anyways. The solution then would be to have a computerized system, something which still seems to be quite far away from being introduced at OCH. This is mainly due to the fact that the power supply to Okhaldhunga District is quite unstable.

Thirdly, there is a possibility of the patient forgetting or losing their MR. Especially when emergency patients come to the hospital they would often not remember to bring their MR. In these situations the doctors have to rely upon the information given by the people following the patient concerning their past medical history, which often is very limited. However, it has to be remarked that the same problem would occur also with a hospitalized MRS, maybe to an even greater extent, due to the fact that there are very few of the hospitals in rural areas which have 24-hour service in their MR archive.

As we can see, to have a MRS where the patients themselves take care of their own MR, is not totally without problems. Due to the facts given we can agree that there are good and bad sides with the change the Dutch doctor did to the system in 2002. We can't discuss all of them in detail, but there is one question that we find especially relevant to say some more about before we move on to the aim of our study.

### **1.7.2 Who owns the MR?**

According to WHO, the MRs are considered to be the property of the hospital, something which is primarily meant to be for the benefit of the patient<sup>17</sup>.

However, the personal data contained in the MR are the property of the patients themselves. This means that information about the content in the MR cannot legally be released without the consent of the patient. Exceptions for this rule include the use of the information:

- by doctors and other health professionals for the continuing care of the patient;
- for medical research where the patient is NOT identified; and
- for the collection of health care statistics when the individual patient is NOT identified.

This implies that there is no crime committed if the patients themselves lose their MR. But if the hospital loses the MR, this has to be seen as a crime towards the patient. Therefore it doesn't seem to be any legal issues about giving the responsibility of the MR to the patients as they do at OCH.

Based on the background information given, we feel confident to say that it is of great importance to conduct a study to evaluate the functionality of the MRS at OCH. Having a system like this, also gives a unique opportunity to assess the thoughts and knowledge of patients living in a rural area, concerning their own MR. This brings us to the aim of our study.



## **2 Aim of the study**

We chose to have a two-folded aim of our study. First, we wanted to map the patients' compliance of bringing the MR to the OPD and factors influencing their compliance. Secondly, we wanted to assess the patients' thoughts and knowledge about their own MR and the MRS at OCH.

### **3 Method**

We early understood that this was going to be a quite extensive study. As mentioned in the background of the study, WHO has set up a list of objectives for having a MRS<sup>17</sup> (pg 10). In order to evaluate the functionality of the MRS at OCH, it is important to evaluate to which degree the hospital reaches these objectives.

However, in order to evaluate these objectives, you first need to find to which degree the MRs are accessible at the hospital. Due to the fact that the patients themselves at OCH are responsible for taking care of their own MR and bringing it to the hospital, we saw the need to first quantify the patients compliance in bringing the MR to OCH.

We had a limited amount of time at OCH, and therefore we chose to mainly look at the MRS from a patients point of view. Having this in mind, it is probably necessary to conduct other studies to evaluate to which degree the MRS at OCH reaches the objectives in the WHO-guide to obtain a more complete evaluation of the MRS.

Our study was divided into two parts to reach our aims, one quantitative and one qualitative part. The data for the quantitative part were collected by a hired person in three different months, January 2010, April 2010 and October 2010. The data for the qualitative part were collected by the two researchers on a field trip to Okhaldhunga in December 2010 and January 2011.

#### **3.1 Quantitative study**

In this part of the study the purpose was to map the patients' compliance of bringing the MR to the hospital. We also wanted to see if we could find any factors influencing their compliance.

Autumn 2009 we developed a questionnaire (see appendix I) which was evaluated and revised several times based on discussions with our supervisors. The culture in Nepal is different from ours, and therefore we found it challenging to find understandable and adequate questions to fit the local situation. Erik Bøhler who has lived in Nepal for 9 years was of great help in this process.

One challenge we had to deal with while developing the questionnaire was what to do when the subject was unable to answer the questions adequately. The solution we came up with was to make some criteria for when to ask a guardian to answer the questions on behalf of the patient. These criteria were when the patient was under 17 years of age, too sick to answer the questions or if the patient was unable to answer adequately because of a mental problem.

After the questionnaire was finished, Dr. Bøhler helped us to hire a local lady who worked at the hospital to do the interviews with all patients coming to the hospital during three different months in 2010. We wrote a letter to inform her about the study (appendix II) and another letter to explain the questionnaire (appendix III). The purpose of doing this was to ensure the validity of the information given by the patients in the questionnaire, especially concerning whether the patient brought his/her MR to the hospital or not. Therefore the interviewer was informed that she had to physically see the MR if the patient proclaimed that (s)he had brought it to the hospital.

The letters were translated into Nepali by a Nepali doctor at the hospital. Also the questionnaire was translated to Nepali to make sure that she understood everything. After she had done 100 pilot interviews, Erik Bøhler evaluated them and gave her feedback. She was also told to contact him if she had any questions. After the first period (January 2010) Dr. Bøhler sent 130 questionnaires to Norway so that we also could give her some feedback.

When we arrived in Okhaldhunga in December 2010, we found that the local lady we hired had done more than 5900 interviews during the three months she worked for us. After discussing with Erik Bøhler we decided to analyze the first 14 days of each month. We analyzed 845 questionnaires for January 2010, 987 questionnaires for April 2010 and 992 questionnaires for October 2010. This gave us a total of 2819 patients in our cohort.

We excluded 73 questionnaires for January, 37 questionnaires for April and 39 questionnaires for October. All of them were excluded because the questionnaire was not completely filled out.

Our goal was to have data from all patients coming to the OPD during the three different periods of collecting data, but this goal was not completely achieved. In January 94,5 % of the patients in OPD were interviewed, in April the number was 95,2 % and in October 96,0 %. The emergency patients were not included in our study, because they did not go through the OPD when they were admitted.

774 of the patients that were included in our study were first-time visitors. They all received a new MR at their visit and did not have any experience with the MRS at OCH from before. Therefore they could not answer part B of the questionnaire, and were excluded from the study when we did the analysis. This implies that the cohort we analyzed data from, was stripped down to n=2045.

We used SPSS to analyze the answers from the questionnaire. First we calculated the significance of factors from part A of the questionnaire that could have influenced whether the patients brought or did not bring their MR to the hospital, by using cross tabulation. We tested the significance of the variables by using the Chi-square. The same procedure was done to analyze the motivation of the patients for bringing the MR to the hospital. P-value <0.05 was used as the level of significance.

The number of patients that did not bring the MR was low (n=210). In question number nine of the questionnaire, we tried to collect data about the reason for not bringing the MR to the hospital. We decided not to analyze this question in our study, because we during our field trip realized that many of the patients did not understand the difference between “forgot the MR” and “lost the MR”.

### **3.2 Qualitative study**

The aim of this part of the study was to assess the patients’ thoughts and knowledge about their own MR and the MRS at OCH.

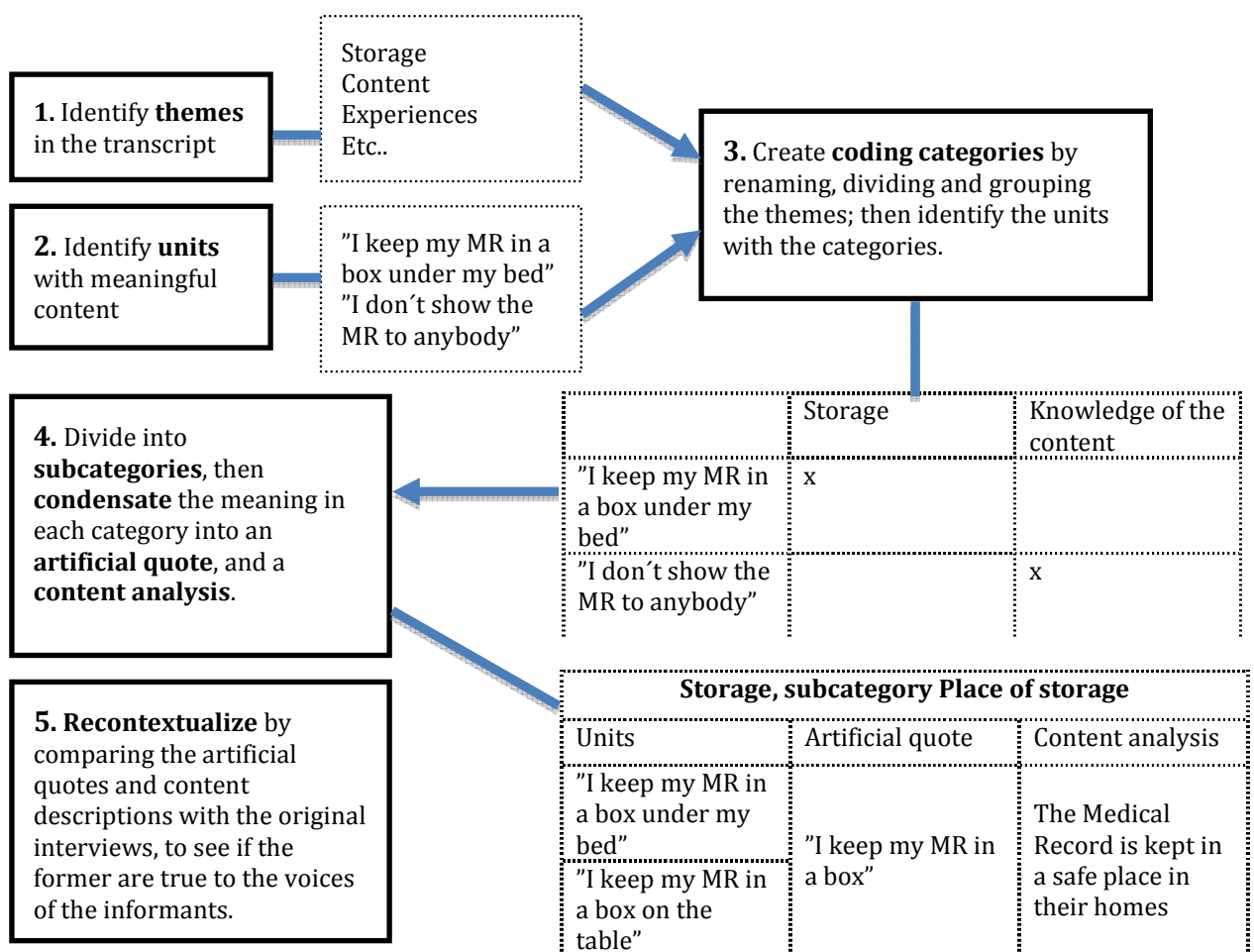
We ended up doing a total of ten semi-structured interviews in order to obtain data concerning these subjects. The sampling was based on the fact that we wanted to include different kind of people in the study, concerning qualities such as gender, age and education. The subjects received information about the study (appendix IV), both orally and written.

We developed a semi-structured interview guide (appendix V). After we had done five pilot interviews, which we did not include in the study, we evaluated and revised the guide together with Dr. Erik Bøhler to better facilitate the local situation.

The patients were interviewed in the waiting hall at the Outpatient Department (OPD) while they were waiting for their consultation. We used the same interpreter for all of the interviews. The interviews lasted from 25-40 minutes.

All the interviews were recorded on a computer and transcribed into English on location. The analysis was done in Norway when we returned from our field trip. We used the principles of systematic text condensation as modified by Malterud<sup>2</sup> (Figure 7).

Figure 7 – Description of the method of qualitative analysis used in this study



## 4 Results

### 4.1 Quantitative results

During the study period we collected data from patients coming to the OPD the first 14 days of January 2010 (n=844), April 2010 (n=985) and October 2010 (n=990), a total number of 2819 patients interviewed. 774 of these were first-time visitors and could therefore not be included in our statistics. That gave us a final cohort of n=2045. In table 1 the compliance of bringing the MR is shown.

#### 4.1.1 Compliance

Table 1: Compliance of bringing the MR

	Frequency	Percent
<b>Did bring the MR</b>	1834	89,7 %
<b>Did not bring the MR</b>	211	10,3 %
Total	2045	100,0 %

As shown in table 1, most of the patients are bringing the MR to the hospital. From the chosen factors we asked about in part A of the questionnaire, table 2, 3 and 4 show the factors which we found significantly influencing whether the patient did or did not bring the MR to the hospital.

Table 2: Cross tabulation: Brought the MR \* Travel time

			Traveltime					Total
			<1 hour	1-3 hours	4-6 hours	7-12 hours	>1 day	
<b>Brought the MR</b>	Yes	Count	392	734	252	253	203	1834
		% within Traveltime	93.3%	91.2%	87.8%	84.9%	86.4%	89.7%
	No	Count	28	71	35	45	32	211
		% within Traveltime	6.7%	8.8%	12.2%	15.1%	13.6%	10.3%
Total	Count	420	805	287	298	235	2045	
	% within Traveltime	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	

Pearson Chi Square: 19,227 (4 degrees of freedom),  $p < 0,01$ ,

Table 3: Cross tabulation: Brought the MR \* Previous visits at the hospital

			Previous visits			Total
			1 visit	2 visits	> 2 visits	
<b>Brought the MR</b>	Yes	Count	153	208	1473	1834
		% within Previous visits	77.3%	88.9%	91.3%	89.7%
	No	Count	45	26	140	211
		% within Previous visits	22.7%	11.1%	8.7%	10.3%
Total	Count	198	234	1613	2045	
	% within Previous visits	100.0%	100.0%	100.0%	100.0%	

Pearson Chi Square: 37.790 (2 degrees of freedom),  $p < 0,001$

Table4: Cross tabulation: Brought the MR \* Last visit

			Last visit (months ago)				Total
			0-3	4-6	7-12	>12	
<b>Brought the MR</b>	Yes	Count	1283	213	98	240	1834
		% within Last visit	95.8%	90.6%	81.7%	68.4%	89.7%
	No	Count	56	22	22	111	211
		% within Last visit	4.2%	9.4%	18.3%	31.6%	10.3%
Total	Count	1339	235	120	351	2045	
	% within Last visit	100.0%	100.0%	100.0%	100.0%	100.0%	

Pearson Chi Square: 235,234 (3 degrees of freedom),  $p < 0,001$

Table 2-4 show that short travel time, several previous visits and if the last visit was short time ago are factors which increase the probability that a patient will bring the MR compared to the average compliance.

#### 4.1.2 Motivation for bringing the MR to the hospital

Table 5: Reason for bringing the MR

	Frequency	Percent
<b>(1) Somebody at the hospital told me to bring the MR</b>	368	20,1 %
<b>(2) Because I get the consultation cheaper</b>	1133	61,8 %
<b>(3) Because I know the importance of the content</b>	283	15,4 %
<b>(4) Family/friends told me that it was important</b>	50	2,7
Total	1834	100,0 %

As shown in table 5, most of the patients state that the most important reason for bringing the MR to the hospital is to get the consultation cheaper. Table 6, 7 and 8 show the factors that we found significantly influencing the answers the patients gave to this question.

Table 6: Cross tabulation: Reason for bringing the MR \* School

		School		Total	
		Yes	No		
<b>Reason for bringing the MR to the hospital</b>	1*	Count	165	203	368
		% within School	23.1%	18.2%	20.1%
	2**	Count	331	802	1133
		% within School	46.3%	71.6%	61.7%
	3***	Count	210	73	283
		% within School	29.4%	6.5%	15.4%
	4****	Count	9	41	50
		% within School	1.3%	3.7%	2.7%
Total	Count	715	1119	1834	
	% within School	100.0%	100.0%	100.0%	

Pearson Chi Square: 207,441 (3 degrees of freedom),  $p < 0,001$

- \* Because somebody at the hospital told me to
- \*\* Because I get the consultation cheaper if I bring the MR
- \*\*\* Because I know that the information the MR contains is important for the hospital
- \*\*\*\* Because somebody among my family/friends told me that it is important to bring the MR

Table 7: Cross tabulation: Reason for bringing the MR \* Previous visits

		Previous visits			Total	
		1 visit	2 visits	> 2 visits		
<b>Reason for bringing the MR to the hospital</b>	1*	Count	48	54	266	368
		% within Previous visits	31.6%	26.0%	18.1%	20.1%
	2**	Count	70	108	955	1133
		% within Previous visits	46.1%	51.9%	64.7%	61.7%
	3***	Count	32	44	207	283
		% within Previous visits	21.1%	21.2%	14.0%	15.4%
	4****	Count	2	2	46	50
		% within Previous visits	1.3%	1.0%	3.1%	2.7%
Total	Count	152	208	1474	1834	
	% within Previous visits	100.0%	100.0%	100.0%	100.0%	

Pearson Chi Square: 41,625 (6 degrees of freedom),  $p < 0,001$



Table 8: Cross tabulation: Reason for bringing the MR \* Last visit at the hospital

			Last visit (months ago)				Total
			0-3	4-6	7-12	>12	
<b>Reason for bringing the MR to the hospital</b>	1*	Count	266	46	23	33	368
		% within Last visit	20.8%	21.6%	23.5%	13.8%	20.1%
	2**	Count	835	127	51	120	1133
		% within Last visit	65.0%	59.6%	52.0%	50.2%	61.7%
	3***	Count	177	38	20	48	283
		% within Last visit	13.8%	17.8%	20.4%	20.1%	15.4%
	4****	Count	6	2	4	38	50
		% within Last visit	.5%	.9%	4.1%	15.9%	2.7%
Total	Count	1284	213	98	239	1834	
	% within Last visit	100.0%	100.0%	100.0%	100.0%	100.0%	

Pearson Chi Square: 202,232 (9 degrees of freedom),  $p < 0,001$

\* Because somebody at the hospital told me to

\*\* Because I get the consultation cheaper if I bring the MR

\*\*\* Because I know that the information the MR contains is important for the hospital

\*\*\*\* Because somebody among my family/friends told me that it is important to bring the MR

Table 6 shows that the patients with no education are more concerned about getting the consultation cheaper. The patients with education are more often stating that they know the importance of the content. Table 7 shows that the patients who have been to the hospital several times before, are more often saying that the main motivation for bringing the MR is to get the consultation cheaper compared to the patients that have been to the hospital only one or two times before. Table 8 shows that the patients who visited the hospital a short time ago are more concerned about getting the consultation cheaper.

Table 9: Reason for not bringing the MR

	Frequency	Percent
<b>Forgot the MR</b>	59	28,1 %
<b>Lost the MR</b>	99	47,1 %
<b>Did not get a MR at the previous visit</b>	7	3,3 %
<b>Other reason</b>	45	21,4 %
Total	210	99,9 %

As shown in table 9, most of the patients state that the most important reason for not bringing the MR to the hospital is because they have lost it.

## **4.2 Qualitative results**

Finally we chose to present the data in 3 categories: Storage of the Medical Record, Understanding of the Content and Compliance. These were the three main themes that the interviews turned out to focus around. All subjects interviewed were patients coming to the OPD during our stay at OCH.

## 4.2.1 Storage of the Medical Record

Subcategory	Content analysis	Artificial quote
Place of storage	All of the patients stated that they keep their Medical Record in a safe place in their homes.	<i>"I keep my medical record in a box under my bed."</i>
Important documents at home	Citizenship certificate, land certificate, child birth certificate, school certificate and other health documents are kept together with the Medical Record.	<i>"I keep my medical record together with my other important documents."</i>
Preferred place to keep the MR	Concerning where the patients prefer to keep their MR, the opinions were split. 5/10 said that it was best to keep the MR at the hospital, and the rest said that they wanted to keep it at home. It did not seem like whether they had education or not impacted their opinions.	<i>"I prefer to have the MR kept in a safe place."</i>
Reasons to keep the MR at home	The most common reason that was given for keeping the MR at home, was that it would make it easier to bring it when they were visiting other hospitals. One of the patients also said that it was good to keep it at home, because then they could read about their own disease and symptoms.	<i>"I prefer to keep my MR at home, because then it is easier for me to bring it to other hospitals."</i>
Reasons to keep the MR at the hospital	Most of the patients that wanted to keep the MR at the hospital, said it was because it was safer to keep it there and then they would not be in danger of losing or forgetting their MR. Some also said that it would be better for emergency situations to keep it at the hospital, when the patients most probably would not bring their MR.	<i>"I would rather prefer to keep the MR at the hospital. There it is safer and not in danger of being lost or destroyed."</i>

## 4.2.2 Understanding of the content

Subcategory	Content analysis	Artificial quote
Knowledge about the content	<p>All the patients stated that the content is important for the hospital, but none of them knew the full content of their own MR. All of them knew that their medicines are written in the MR. Most of the educated patients also knew that their past history, their symptoms and investigations are written in the MR.</p>	<p><i>"The MR is important for the hospital. I don't know so much about the content, but I think my medicines are written there and the time for when to take them."</i></p>
Information given about the content	<p>All the patients said that they have received little or no information about the content of the MR. The patients that had received a little bit information, said that the only thing they were told was when to take their medicines. One patient stated that a doctor had given him a summary of the content.</p>	<p><i>"Nobody at the hospital have given me information about the content of my MR. They only tell me when to take my medicines."</i></p>
Hunger for more knowledge	<p>All of the patients said that they wanted more information about the content of their MR, but only two of them had asked for more information. The uneducated patients seemed to be more reluctant to ask for information than the educated patients.</p>	<p><i>"I would like to have more information about my disease, because then I would have possibility to care more about my health."</i></p>
Secrecy	<p>Most of the patients will not allow other than close friends and/or their family to read in their MR. However, they also stated that most probably nobody would care to read in it because very few people know how to read English. A few patients think it is a good thing to let other read in the MR because then they can get advices if others are suffering from the same disease.</p>	<p><i>"Nobody has asked me to read in my MR. Most people would not care to read in it because they don't know English."</i></p>

### 4.2.3 Compliance

Subcategory	Content analysis	Artificial quote
Price	To get the consultation cheaper, seemed to be the main motivation for most of the patients to bring their MR to the hospital. The patients with most education, were less concerned about the price.	<i>"The main reason for bringing the MR to the hospital is because I get the consultation cheaper."</i>
Importance of the content	Most of the patients said that one important reason for bringing the MR to the hospital is that they believe the information it contains is important for the hospital. Some of the patients also added that they know it makes it easier for the doctors to compare the past history with the present findings.	<i>"Nobody at the hospital have given me information about the content of my MR. They only tell me when to take my medicines."</i>
Information given about bringing it	Most of the patients said that someone at the hospital told them to bring their MR at their next visit to the hospital. Only two patients said that they did not get any information about bringing the MR at their next visit.	<i>"The doctors adviced me to bring the MR at my next visit to the hospital."</i>

## **5 Discussion**

### ***5.1 Discussion of method***

#### **5.1.1 The quantitative method**

Concerning the quantitative part of our study, there are some obvious remarks that is needed to be done.

The number of subjects in our cohort was large. After excluding the first time visitors (n=774), we had a cohort of n=2045. In total, 149 questionnaires were excluded from our analysis due to the fact that they were incompletely filled out (5,3 %). It is difficult to say whether these errors were systematical or not. Due to the fact that we have such a large cohort, we believe that they do not have big analytical implications.

Secondly, we did not include the emergency patients coming to the hospital. This means that we can not say anything about the general compliance of all patients coming to the hospital based on our results. However, according to the hospital registers, more than 96 % of the patients coming to the hospital go through the OPD and/or do bring their old MR, which means that it could not have influenced our results much.

Either were not all patients coming to the hospital in the periods of collecting the data recorded. In January 94,5 % of the patients in OPD were interviewed, in April the number was 95,2 % and in October 96,0 %. The interviewer explained to us that this was because of limited time. However, we can not exclude the option that these patients represent a group of people that the interviewer found it more difficult to communicate with or establish contact with, for example due to subjective qualities such as education or caste. In that way it could represent a bias in our study.

Third, the interviewers understanding of when to ask the guardian to answer on behalf of the patient could be different from ours. Our criteria to ask a guardian to answer were if the patient was less than 17 years of age, or if the patient was unable to answer adequately. The first criteria can not be misunderstood, but the

second one can be interpreted in different ways. In Nepali culture the man is often the one that speaks on behalf of the family. He may have found his wife unable to answer the questions in a proper way. Therefore we may find the guardian answering more often than we had in mind, something which could create a bias if the guardian answers on behalf of him/herself. However, the guardian was always asked by the interviewer to answer on behalf of the patient and we must assume that most of them did so.

When we hired a person to do the collection of data we were aware of the possibility that she could misunderstand the questions in the questionnaire. Due to the facts that we wrote her a letter of information about the study and a letter where we explained what we meant with each question in the questionnaire, we do not believe that she misunderstood the questions. Our local supervisor, Dr. Bøhler, evaluated 100 pilot-interviews with her, and she was free to ask Dr. Bøhler questions at any time during the period of the samplings.

The questionnaire was developed in Norway by the two researchers before arriving Nepal. At the time when we started to develop the questionnaire, we had little insight in the cultural setting of rural Nepal and the setting at OCH. However, we got the questionnaire revised several times with the help from both our supervisors. Still it is possible that the patients could have misunderstood some of the questions.

### **5.1.2 The qualitative method**

The selection of patients was done by asking patients in the OPD if they wanted to take part in our study. The interpreter asked the subjects on behalf of us. We wanted to have a selection of different kind of patients due to factors as gender, age and education. Some patients who were asked to participate did not have time to be interviewed, but there was nobody who refused to join our study.

We wanted to interview approximately the same number of educated as uneducated people. Our experiences from the five pilot interviews, were that the patients with less education seemed to give a bit different answers than the more

educated people. In order not to miss these eventual differences, we saw the need of doing this selection of patients.

The interviews were done in a corner of the waiting hall in the OPD while the patients were waiting for their consultation. This choice of location was based on discussions with our local supervisor and the interpreter who know more about the local culture. In their opinion it would feel less dangerous for the patients to be outside than inside a closed room together with the interviewers and the interpreter. Hopefully the subject would be able to speak more freely outside. One challenge was that sometimes people gathered around us during the interview and this could have influenced the patients' answers. However, we did not ask any sensitive questions which means that this should not be a problem.

To say a little bit about the interview guide, it has to be remarked that it was made before we arrived in Nepal. It was revised after we had done five pilot interviews based on advices from our interpreter and Dr. Erik Bøhler. This was done to make the guide more suitable for the cultural setting of rural Nepal. Taken into consideration that these kinds of in-depth-interviews are completely dependent on the interviewer to guide the subject, facilitate the flow of information and to pursue the themes from various angles (Malterud), it was necessary for us to have some background information before we started the interviews. We got this through conversations with most of the doctors and CMAs at the hospital. However, we still had to deal with some possible factors that might have influenced our results.

First, we have to say that making a patient discuss his/her own thoughts around subjects which (s)he had never thought so much about before, turned out to be a bit challenging. We sometimes found that the patients gave short, specific answers instead of discussing their thoughts around the different subjects of the interview. Having an interpreter made it even more difficult to have a flowing conversation. Some information was probably also lost in the translation, and it was difficult for us to gain other information during the interviews than what we got through the interpreter. The interviews were recorded, but this did not seem



to affect the subjects during the interviews. Afterwards we listened to the recordings and added the information that we missed during the interviews.

To check if the interpreters' translation were done correctly and accurately, we took some randomly picked samples which we played to a second interpreter. The interpretations of our own interpreter were found to be totally consistent with those of the second interpreter.

Secondly, the interpreters' subjective qualities had some influence on the interview situation. This could be factors like his education, gender, caste and experience of interpretation. To minimize these possible biases we chose to have the same interpreter for all of the interviews, and we also strived to find an interpreter who had experience from interpreting in-depth-interviews. The interpreter we ended up to use turned out to have most of the qualities we were looking for. However, he was a man with more education than the average Nepali. This could have influenced the subjects to not answer as freely as possible.

In Nepali culture, men have generally higher status than women. Our impression was that the ladies in the interviews were more reluctant and reserved to share their experiences and thoughts concerning the MRS. This could rely to the fact that women are in general more reserved in the Nepali culture, but could maybe have been avoided if the interpreter was a woman.

Thirdly, the "eager to please" bias is difficult to avoid in most studies in rural areas. We tried to pursue the themes from different angles and to ask the questions in different ways to minimize the possibility of this. The patients also got an information letter in Nepali (appendix V) which told them that participating in the study would not influence their treatment at the hospital in any way and that all the information they gave would be used anonymously.

## **5.2 Discussion of results**

### **5.2.1 The quantitative results**

The cohort consisted of 2045 patients that had visited the hospital previously. 89,7 % of the patients brought their MR to the hospital, and 10,3 % did not bring it. This implies that the MR is a document of great importance to the patients, and must be considered as a high compliance from the patients in general.

We found several factors that significantly influenced whether the patients did or did not bring their MR to the hospital. First, let's consider travel time. The patients with less than one hour of travelling to the hospital showed the best compliance in bringing the MR (93,3%). The patients with 7-12 hours travel time showed the worst compliance in bringing the MR (84,9 %). We expected this to be the other way around, that the patients with long travel time more often remembered to bring their MR. It could be due to the fact that these groups were different concerning age, school etc., but we did not find any significant differences in these groups that could have influenced the results. Due to the fact that OCH are close to a marketplace, one could believe that some patients are visiting the hospital when they are in the neighborhood without planning the visit.

As we expected, we found that how many times the patient had visited the hospital before, significantly influenced their compliance. The patients with only one previous visit had a compliance of 77,3 %, and the patients with more than two previous visits had a compliance of 91,3 %. We also expected to find a significant difference in the compliance concerning the patients' last visit to the hospital. 95,8 % of the patients that had been to the hospital 0-3 months ago brought their MR, compared to 68,4 % of the patients that had last time visited the hospital more than a year ago.

Concerning the main motivation for the patients for bringing the MR to the hospital, we also found some significant differences. 71,6 % of the patients that had not been to school at all stated that the main motivation for bringing the MR was to get the consultation cheaper. Only 6,5 % of these patients said that the

main motivation was because that they knew the importance of the content. In the group of patients that had been to school, 46,3 % stated that the most important reason for bringing the MR was to get the consultation cheaper. 29,4 % of the patients stated that the main motivation was because they knew the importance of the content. This implies that educated people have more knowledge of the content in their own MR.

We also found that the number of previous visits influenced the motivation for bringing the MR. The patients with most previous visits are also most concerned about getting the consultation cheaper. This is not difficult to understand due to the fact that most of these patients are probably suffering from chronic diseases and coming to the hospital several times a year, spending a lot of money at the hospital. This is also indicated in table 8, where we find a significant difference in the motivation for bringing the MR due to when the patient last visited the hospital. 65,0 % of the patients that visited the hospital 0-3 months ago state that the main motivation for bringing the MR is to get the consultation cheaper, compared to 50,2 % of the patients that visited the hospital last time more than a year ago.

As a general comment to the quantitative results, it seems like the social class the patient comes from may explain a lot of our findings. There is a great chance that almost all of the factors we have collected data on could represent proxy indicators for poverty. The poorest people usually live the furthest from the city centre, they are probably more often sick and must be considered to have the greatest interest about saving money when visiting the hospital. This is of course important to have in mind when reading our study.

### **5.2.2 The qualitative results**

The MR is considered as an important document for the patients. They keep it in a box together with other important documents, like for example their citizenship certificate and their land certificate. The patients know that by taking care of their MR, they will get the consultation cheaper at their next visit to OCH. This implies that they think it is important to take care of the document, but it doesn't say anything about their knowledge about the importance of the content.

However, by keeping it together with other important documents it gives a strong indication that it is considered to be a document of great value to them.

So what makes the MR a document of great value? The patients gave two main reasons to this question; importance of the content and cheaper consultations. It seemed like the patients with most education were more concerned about the importance of the content than about getting a cheaper price of the consultation. This was also the result of the quantitative part of our study (see page 24). The educated patients also knew more about the specific content of their own MR than the non-educated. It is natural to believe that this could be due to the fact that everything in the MR is written in English, something which seems to create a wall between the patient and the content of their MR. However, all of the patients stated that they know the content of their MR is important for the hospital in order to give them better treatment.

Concerning why the MR is considered to be an important document, it is also relevant to discuss to which degree the MR plays a role in identifying who the patient is. In Norway we have some documents that everybody think is important to identify who we are, like our VISA card, driving license or passport. Considered the fact that Nepal until now have not had a National ID-card System (NIDS)<sup>20</sup> it is natural to believe that other documents, like for example the MR, will be of greater importance in identifying who they are. However, the National Election Commission is working with a NIDS, but it is still unclear when the NID cards will be introduced nationwide in Nepal.

In the introduction of our study, we wrote about the fact that WHO consider the MR itself the property of the hospital. They also state that the personal data contained in the MR are the property of the patients themselves. This could seem like contradicting statements, and it may seem difficult to achieve both things at once. With a hospital-based MRS, you have to have very secure systems of handling the MRs at the hospital to make sure that no unauthorized person gain access to them. At the same time it must be easy for the patients themselves to get access to their own MR, and there must always be somebody available to explain the meaning of the content. This seems to us very difficult to fully

achieve, even with a computer based system, without first having established a nationwide identification system in Nepal.

A MRS where you place the full responsibility of taking care of the MR in the hands of the patient will on the other hand have to face some other obvious challenges, like mentioned in the introduction. Firstly, it is not possible to do research on the MRs or to collect data for public statistics. Secondly, there will also always be a greater possibility of losing or forgetting the MR. Especially for the emergency patients it will often be difficult to get immediate access to the MR, because it is not usual to carry your MR wherever you go. We did not include the emergency patients in our study, because our study was limited to only include patients coming to the OPD. Therefore we can not say so much about the extent of this hypothetical problem.

What we can say, is that with the existing MRS at OCH it is difficult to completely avoid the mentioned challenges. Still, some things can be done. To do their best to avoid the possibility of the patients losing or forgetting the MR, it is crucial to make them understand that the MR is an important document. The result from the quantitative part of the study show that 89,7 % bring their MR to the OPD (see page 21). This indicates that OCH succeeds in this area, but it doesn't say anything about how much the patients understand of the content.

All of the patients stated that they want to receive more information about the content of their MR, revealing a hunger of more knowledge about their disease and symptoms. Taken into consideration the lack of knowledge about the content among the patients, it must be assumed that there is room for improvement at OCH, concerning their effort in informing the patients about their disease and prognosis. There is a medical Code of Ethics<sup>21</sup>, which all doctors in Nepal have to abide by. Paragraph 3:3 says:

*"A physician should explain the nature of the illness to the patient. S/he should neither exaggerate nor minimize the gravity of a patient's condition but should always be sympathetic to the patient and his/her family."*

Studies show that having sufficient knowledge about your own disease and prognosis, improves the patients compliance and the quality of life<sup>22</sup>.

## 6 Conclusion

Okhaldhunga Community Hospital has a Medical Record System that challenges our regular way of thinking about MRs. The patients themselves are totally responsible for taking care of their own MR. They are also responsible to bring it at their visits to the hospital, and there is not kept a copy of the MR at the hospital. The aim of our study was to map the functionality of this system concerning the compliance of the patients in bringing their MR to the hospital and to find eventual factors influencing their compliance. Secondly, we wanted to assess the patients' thoughts and knowledge about their own MR.

What is the most remarkable finding in our study is that 89,7 % of the patients that has been to the hospital before, brought their MR to the hospital. We did not find any similar studies to compare our results with, but taken into consideration that Okhaldhunga Community Hospital is situated in a very rural area of Nepal where most people live in mud huts, it is sensational that most of the patients are handling their own MR so carefully.

We discovered several factors that impacted the patients' compliance in bringing their MR to the hospital. Factors that increased the compliance were short travel time to the hospital, many previous visits and short time since the last visit at the hospital. Concerning the motivation of the patients for bringing the MR, most of the patients stated that it was to get the consultation cheaper.

There are about 10,3 % of the patients who forget or lose their MR. This could be a problem in the medical cases where the information it contains is crucial in order to give the patient the correct treatment. If OCH kept a copy of the MR at the hospital, this would probably increase the functionality of the system in the way that it will secure the access to the MR in emergency situations. It will also make it possible to do research and collect statistical data based on the MRs, which is difficult to do with today's MRS.

The main finding in the qualitative part of the study was that the patients keep their MR at a safe place together with other important documents, which

indicates that it is a document of great value to the patients. This supports the findings in the quantitative part of our study.

Other important findings in the qualitative part of the study were that none of the patients knew the full content of their MR, and they all said that they wanted more knowledge about the content. Most patients stated that they did not dare to ask for this information. By improving the routines of informing the patients in a proper way, OCH may increase the patients' compliance.

We want to emphasize that to give the patients ownership of their own health information like OCH does, is in our opinion an example worthy of imitation. We believe that to give the patients easy access to their own health information, helps the hospital to gain relationships of trust with the patients, and it may also contribute to create a hunger for more information among the patients concerning their own health situation. These are both important factors in order to give the patients the best treatment as possible and should be emphasized as important advantages with the MRS at OCH.

From our point of view, the MRS at OCH is surprisingly functional. However, it is not possible to have a complete evaluation of the functionality of this MRS until other studies are conducted to cover other aspects of importance in this matter. Still, it is an amazing finding that the doctors and the CMAs in such a rural area have easy access to the MR in almost 90 % of the consultations in the OPD.

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## 8 Appendices

### APPENDIX I



#### The Medical Record System at Okhaldhunga Community Hospital

Date: \_\_\_\_\_

No: \_\_\_\_\_

**Please note:** If the patient is a child (0-16 years) or unable to answer adequately, ask the guardian to answer the questions on behalf of the patient.

If the patient is a child (0-16 years) or unable to answer adequately, we would also like information about the guardian himself/herself on question 1-3.

#### A. Background information

##### 1. Age:

If the patient/guardian doesn't know his/her age, please make an estimation.

Patient: \_\_\_\_\_ Guardian: \_\_\_\_\_  
\_\_\_ years \_\_\_\_\_ years  
\_\_\_ month(s) (If the patient is <1 year)

##### 2. Gender:

Patient: \_\_\_\_\_ Guardian: \_\_\_\_\_  
 male  male  
 female  female

##### 3. Has the patient/guardian ever been to school?

Patient: \_\_\_\_\_ Guardian: \_\_\_\_\_  
 yes  yes  
 no  no

##### 4. How far did the patient travel to get to the hospital?

- < 1 hour
- 1-3 hours
- 4-6 hours
- 7-12 hours
- more than 1 day

##### 5. How many times has the patient visited the hospital?

- first visit
- 1
- 2
- more than 2

If the patient is a first-time visitor, please skip part B (question 6-10)

#### B. Additional questions for previous visitors

##### 6. When was the patient's last visit to the hospital?

- less than 1 month ago
- 1-3 months ago
- 4-6 months ago
- 7-12 months ago
- more than 1 year ago

##### 7. Last time the patient visited the hospital, was (s)he or the guardian told to bring the medical record at the next visit?

- yes
- no
- don't remember

##### 8. Did the patient bring the medical record?

- yes
- no

##### 9. If no is answered on question 8, what is the reason for not bringing it?

- forgot the medical record
- lost the medical record
- did not get a medical record at the previous visit
- other reason: \_\_\_\_\_

##### 10. If yes is answered on question 8, which of these statements are true, concerning the main reason for bringing the medical record to the hospital?

Please read the statements for the patient, and make him/her choose just one of the following alternatives:

- because somebody at the hospital told me to do so
- because I get the consultation cheaper if I bring it
- because I know that the information the medical record contains is important for the hospital
- because somebody among my family/friends told me that it is important to bring the medical record
- other reason: \_\_\_\_\_



आखलदुङ्गा सामुदायिक अस्पतालमा  
चिकित्सासम्बन्धी अभिलेख प्रणाली

मिति: \_\_\_\_\_

नं: \_\_\_\_\_

कृपया टिप्पणी गर्नुहोस्: यदि बिरामी बच्चा हुनुहुन्छ (० देखि १६ वर्षसम्मको) अथवा पूरा जवाफ दिन नसक्ने हुनुहुन्छ भने बिरामीको तर्फबाट प्रश्नहरूको जवाफ पाउन बिरामीको अभिभावकलाई सोध्नुहोस्।

यदि बिरामी बच्चा हुनुहुन्छ (० देखि १६ वर्षसम्मको) अथवा पूरा जवाफ दिन नसक्ने हुनुहुन्छ भने हामीहरू प्रश्न नं १ देखि सम्म अभिभावक आफैको बारेमा जानकारी लिन चाहन्छौं।

क. पृष्ठभूमिबारे जानकारी

१. उमेर:

यदि बिरामी / अभिभावकलाई उनीहरूको उमेर थाह छैन भने, कृपया उनीहरूको उमेर अन्दाज लगाउनुहोस्।

बिरामी: \_\_\_\_\_ अभिभावक: \_\_\_\_\_  
\_\_\_\_\_ वर्ष \_\_\_\_\_ वर्ष  
\_\_\_\_\_ महिना (यदि बिरामी १ वर्षभन्दा मुनि उमेरको हुनुहुन्छ भने)

२. लिंग:

बिरामी अभिभावक:  
 पुरुष   पुरुष  
 महिला  महिला

३. के कहिलै बिरामी / अभिभावक विद्यालय जानु भएकोछ?

बिरामी अभिभावक:  
 छ   छ  
 छैन  छैन

४. अस्पतालसम्म आउन बिरामीलाई कति टाढाबाट हिंडी आउनुपर्छ?

- < १ घण्टा (१ घण्टा भन्दा कम)  
 १ देखि ३ घण्टा  
 ४ देखि ६ घण्टा  
 ७ देखि १२ घण्टा  
 १ दिनभन्दा बढी

५. बिरामी यसपल्ट समेत गरी यो अस्पतालमा कति पटक आईसक्नुभएको छ?

- पहिलो पल्ट  
 १ पटक  
 २ पटक  
 २ पटकभन्दा बढी

यदि यदि बिरामी पहिलो पल्टको आगन्तुक हुनुहुन्छ भने, कृपया खण्ड ख (प्रश्नहरू ६ देखि १० सम्म) छोड्नुहोस्।

ख. पहिलाका आगन्तुकहरूको लागि थप प्रश्नहरू

७. बिरामी यसभन्दा ठीक अगाडि यस अस्पतालमा कहिले आउनु भएको थियो?

- १ महिना अघि भन्दा कम  
 १ देखि ३ महिना अघि  
 ४ देखि ६ महिना अघि  
 ७ देखि १२ महिना अघि  
 १ वर्ष भन्दा अघि

७. गएको समय बिरामी अस्पताल आउँदा, अर्को पटक आउँदा बिरामी / अभिभावकलाई अस्पतालको औषधीसम्बन्धी अभिलेखहरू (पूर्जा समेतका कागत पत्रहरू) ल्याउनुपर्छ भनिएको थियो?

- अँ  
 अँहँ  
 सम्झँदिन

८. के बिरामीले औषधीसम्बन्धी अभिलेख (कागत पत्र) ल्याउनुभयो?

- अँ  अँहँ

९. यदि प्रश्न नं ८ को जवाप अँहँ हो भने, अस्पतालको औषधीसम्बन्धी अभिलेखहरू (पूर्जा समेतका कागत पत्रहरू) नल्याउनुको कारण के हो?

- औषधीसम्बन्धी अभिलेख (कागत पत्र) बिसियो  
 औषधीसम्बन्धी अभिलेख (कागत पत्र) हरायो  
 औषधीसम्बन्धी अभिलेख (कागत पत्र) यसभन्दा अघिल्लो भ्रमणमा पाईएन  
 अरु नै कारणले:

१०. यदि प्रश्न नं ८ को जवाप अँहँ हो भने, औषधीसम्बन्धी अभिलेख (कागत पत्र) ल्याउनुको प्रमुख कारण बारेका यी कथनहरूमध्ये कुन कुन सत्य छन्?

कृपया बिरामीको लागि तलका भनाईहरू फर्दनुहोस्, र निम्नानुसारको विकल्पहरूमध्ये केवल एउटा छान्न लगाउनुहोस्।:

- किनकि अस्पतालका कसैले यो ल्याउन भन्नु भएको थियो।  
 किनकि मैले यो ल्याएँ भने सस्तोमा मेरो जाँच हुन्छ।  
 किनकि मलाई थाह छ कि औषधीसम्बन्धी अभिलेख (कागत पत्र) मा भएका जानकारीहरू अस्पतालको लागि महत्वपूर्ण छ।  
 किनकि मेरो परिवार / साथिहरूमध्येका कसैकसैले औषधीसम्बन्धी अभिलेख (कागत पत्र) साथै मैजानु महत्वपूर्ण हुन्छ भनी भन्नु भयो।  
 अन्य कारण:

## APPENDIX II

Åge Aleksander Skretting  
and Daniel Stenberg Saxe  
Duehaugveien 5A  
0851 Oslo, Norway  
e-mail: aaskretting@gmail.com



Ms Sumitra  
Okhaldhunga Community Hospital  
Okhaldhunga District  
Nepal

### **The medical record system (MRS) project at Okhaldhunga Community Hospital (OCH)**

First we would like to thank you for helping us with this important project at Okhaldhunga Community Hospital, concerning the medical record system at the hospital. We could never have done this without your help. As you might already know, our main goal with this project is to look at how the medical record system works today, and what could be done to improve it. To achieve these goals, we have chosen to split the project into two main parts:

1. In the first part, we want to map the functionality of the MRS at OCH concerning the patients' compliance in bringing the MR to the OPD and factors influencing this.
2. In the second part, we would like to assess the patients' thoughts and knowledge about their own MR and the MRS at OCH.

Your job will be to help us with the first part. In December 2010 we (Åge Aleksander Skretting and Daniel Stenberg Saxe) will come to Okhaldhunga Community Hospital to interview the hospital workers and to work with the data that you have collected. We look very forward to meet with you, and hopefully we can stay in touch with you during the periods that you are working with the project to help you and follow how the work is going.

As Erik may have told you, your job will be to fill out the questionnaire that we have made. Every year 20-25 000 patients visit the OPD at the hospital. It's not necessary to collect data from all of these patients, so we have chosen to register every patient coming to the OPD during the months of January, April and October. This will be the months that we need your help and hopefully we will be able to include approximately 3-5000 patients to our study during these months.

In addition to this letter we have made another sheet of paper with some more detailed information about your work, which it is very important that you read and understand. This will make it easier for you to fill out the questionnaires properly.

Again, we will like to thank you and wish you good luck with the work.

Yours sincerely,

---

Åge Aleksander Skretting

---

Daniel Stenberg Saxe

## APPENDIX III



### Concerning the questionnaire

---

The questionnaire itself consists of 10 questions to the patient. It has two parts;

1. **part a** is background information
2. **part b** is additional questions only for previous visitors

If the patient is a first time visitor, you will only have to fill out part a. To specify what we mean by the term “first time visitor”, it is a person that has never been to the hospital as a patient before.

What we also would like to emphasize, is that the questionnaire is suppose to concern the patient himself/herself. Anyways, we know that sometimes the patient can't answer in a proper way. In these cases, you should ask the guardian to answer on behalf of the patient. Still, we also need you to get some information about the guardian himself/herself in question 1,2 and 3. To specify in what cases you need to ask the guardian, we have made some categories:

1. children from 0-16 years
2. a patient that is too sick to answer your questions
3. a patient that has a mental problem that is affecting his/her ability to answer your questions adequately

#### A guideline through the questionnaire:

1. Before you start filling out the questionnaire with a patient, always remember to fill out the date and the number of the questionnaire.
2. Find the patient and tell him/her that you are a part of a project concerning the use of the medical record system at the hospital. Show the patient a copy of the medical record, to be sure that the patient knows what you are asking about.
3. Fill out part A of the questionnaire. Remember to collect data also from the guardian, if the patient is in one of the three categories we specified earlier.
4. If the patient has been to the hospital as a patient before, continue to part B. If it is a first time visitor, you are finished with the questionnaire and may proceed to the next patient.
5. In question number 8, ask the patient to show you the medical record to be sure that (s)he has actually brought it.
6. In question number 10, it is *very important* that you make the patient understand that (s)he can only choose the reason that (s)he thinks is the most important one. Even though they may have more than one reason, make them only pick one.

# APPENDIX IV

## INTERVIEWGUIDE

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### **Main goal and method**

*The sequence is performed as a longer conversation build up as a semi structured interview with 8-12 patients to try to get an impression of their thoughts and experiences with the medical record system and how it works. After we finish the interview we will go through the questionnaire with the patient to gain some background information.*

### **Establish the fundament for the interview**

First we will inform about the project and what we plan to use the interview for. We will spend some time to explain that this is not a test of their knowledge, and give the patient information that (s)he could withdraw from the study at any time. In the end the patient will be given a letter of information. The interview will be recorded.

**Age:**

**School:**

**Know how to read:**

**Travel time:**

**Last visit:**

**Told to bring the MR:**

**Main reason to bring the MR:**

- a. **Storage of the medical record**
  - place of storage
  - which important documents do you keep at home
  - thoughts about keeping the medical record at the hospital
- b. **Understanding of the content**
  - knowledge about what is written
  - information given about the content
  - who do they allow to read in their medical record
- c. **The patients experience of the medical record system**
  - motivation to bring the medical record to the hospital
  - main reason for others to bring it
  - compliance of bringing the medical record
  - information given about bringing it
- d. **Improvement potential**
  - experience from other hospitals
  - good and bad sides with this system
  - ideas for change
  - comparision to the old system
- e. **Ethical reflections**
  - where to keep sensitive information

# APPENDIX V

## Letter of Information – English version Medical Record Study 2011

The District Hospital of Okhaldhunga is participating in a study conducted by two students from the Medical Faculty of the University of Oslo in Norway, Daniel Stenberg Saxe and Åge Aleksander Skretting. The study will evaluate the medical record system at the hospital from a patients' point of view. This study might aid to improve the use of the medical record system in the future.

As a part of the study, 10-12 patients coming to the hospital during the start of January 2011 will be asked to give an interview about their thoughts concerning the medical record system. The interviews will be conducted in the waiting hall when the patients are waiting for a consultation. It will be conducted by two students, through an interpreter, and recorded on a record program at a computer. After transcribing the interviews, the original tapes will be destroyed.

The information obtained from the interviews will be analyzed and used to examine how the medical record system works at the District Hospital of Okhaldhunga seen from a patients' point of view.

All information obtained from the interviews will be treated completely confidentially. Participants will be anonymous by using participant-identification codes only known by the two investigators. None of the staff at the hospital will have access to the interviews.

You are invited to take part in this study. Whether you take part or not, the treatment given to you at the Okhaldhunga Community Hospital will not be affected in any way. If you choose to take part, you may at any time withdraw from the study. Please feel free to contact the investigators directly or through the Medical Coordinator at the hospital, Erik Bøhler, if you have any questions.

### **Contact information:**

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Erik Bøhler (Supervisor/Medical Coordinator at the District Hospital of Okhaldhunga)  
Okhaldhunga District Hospital  
Okhaldhunga, Nepal

## जनकारी पत्र

### औषधी अभिलेख अध्ययन २०११

नर्वेका ओस्लो विश्वविद्यालयका मेडिकल संकायका दुई विद्यार्थीहरू डेनियल स्टवर्ग र एज अलेकस्यान्डर द्वारा गरिएको औषधी अध्ययनमा जिल्ला अस्पताल ओखलढुंगा ले सहभागीता जनाएको छ ।

यो अध्ययनले बिरामीहरूको दृष्टिकोणअनुसार औषधी अभिलेख प्रणाली को मुल्यांकन गर्ने छ । यो अध्ययनले भविष्यमा औषधि अभिलेख प्रणाली को सुधारमा सहयोग गर्ने छ ।

अध्ययनको एक भागको रूपमा सन् २०११ वो जानकारी महिनाको शुरुको अवधिमा १० १२ बिरामीहरूले औषधी अभिलेख प्रणाली सम्बन्धमा आफ्नो अन्तरवार्ता दिनेछन् । बिरामीहरू प्रतिकालयमा consultation को लागि प्रतिक्रम रहेका बेला अन्तरवार्ता लिने छ । यो अन्तरवार्ता दोभाषेको सहयोगमा दुई विद्यार्थीहरू द्वारा लिई कम्प्युटरमा अभिलेख राखिनेछ । अन्तरवार्ताको तथ्यांक संग्रह पछि original टेप वनाइने छ ।

जिल्ला अस्पताल ओखलढुंगा मा औषधी अभिलेख प्रणाली ले कसरी काम गर्छ भन्ने जानकारी लाई बिरामीहरूको दृष्टिकोणबाट विश्लेषण गरिने छ । अन्तरवार्ता बाट प्राप्त सबै जानकारी गोप्यरूपले राखिने छ । सहभागी परिचय संकेत प्रयोग गरी सहभागीहरूको प्रत्यक्ष परिचय दिइने छैन । यस्तो संकेत दुई जना अध्ययन कर्ता लाई मात्र थाहा हुनेछ ।

यस्तो अध्ययनमा सहभागीताको लागि तपाईंलाई निमन्त्रणा गरिनेछ । तपाईंले यस अध्ययनमा भाग लिए पनि नलिए पनि ओखलढुंगा सामूदायिक अस्पतालले तपाईं प्रति गर्ने व्यवहारमा फरक गर्ने छैन । यदि तपाईंलाई केही जिज्ञासा छ भने निसंकोच अध्ययनकर्ताहरूलाई प्रत्यक्ष वा मेडिकल संयोजक एरिक वोल्डर मार्फत सम्पर्क गर्न सक्नु हुनेछ ।

#### सम्पर्क जानकारी

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