Factors influencing cataract surgical services at Oshakati intermediate hospital in the Northern vision 2020 district of Namibia

Flashman Anyolo

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ABSTRACT

Background: Cataract is the main cause of visual impairments in the Northern Vision 2020 District of Namibia, with 0.95% of the 1.1million inhabitants (10 450 people) estimated to suffer from severe cataract visual impairments and in need of surgical interventions. Presently, only Oshakati Hospital provides permanent cataract services in the entire District

Aim: To explore the productivity and describe factors influencing the overall performance of cataract surgical services at Oshakati Hospital.

Method: An exploratory descriptive study was conducted at the Hospital to fulfil the aims of the study. Both qualitative and quantitative data were collected from a purposely selected sample of 8 key informants and respondents using open ended questionnaires, direct observations and self-administered questionnaires.

Results: The overall cataract surgical outputs stand at 531 surgeries in 2007, (67%) below the average projected target of 1500 surgeries by 2008 as recommended by the country VISION 2020 strategy. The main influencing factors were identified as follow:

1. Limited surgical capacity to provide high volume, high quality cataract surgical services

2. Limited managerial and leadership capacity for the management of available resources and the coordination of interventions

3. Lack of internal policies for efficiency and optimal utilization of available ophthalmic resources

Conclusions: The Hospital authority should revise and reorganise its operational systems and procedures in the efforts to improve the capacity and efficiency of cataract surgical services; appoint a focal unit supervisor and assign appropriate decision-making roles and responsibilities to manage and coordinate ophthalmic interventions; put in place mechanisms for advocacy to lobby for concerted efforts against cataract blindness in the District involving all partners and stakeholders.

Key word: Cataract Surgical Services at Oshakati Hospital

INTRODUCTION

My Name is Flashman Anyolo currently an ICHD student at KIT for the academic year 2007/08. My professional background is Ophthalmic Care where I hold a Degree of Technical Ophthalmology (1994), Diploma of Clinical Ophthalmology (1996), Diploma if Community Eye Health Management (2004), and Advanced Certificate of District Health Planning and Management (2007).

I had worked as in Ministry of Health and Social Services in the last 14 years, first as an Ophthalmic Clinical Officer at Othjiwarongo District Hospital, Rundu Intermediate Hospital and Windhoek Central Hospital between 1994 and 1999 where I held positions of district and regional ophthalmic coordinator and later appointed as the National Programme Health Administrator for the Prevention of Blindness Program under the Directorate of Primary Health Care at national level, a position I held since 2000 until to date. It's expected that I will continue with my work in the same position even after the ICHD training.

LIST OF ABBREVIATIONS

MHSSS	Ministry of Health and Social Services
WHO	World Health Organization
WHOSIS	World Health Organization Statistic Information System
GDP	Gross Domestic Products
PHC	Primary Health Care
PEC	Primary Eye Care
DHCC	District Health Management
RMT	Regional Management Team
NDHS	National Demographic and Health Survey
NPC	National Planning Commission
CSR	Cataract Surgical Rate
LOS	Length of Inpatient Stay
HIS	Health Information System
DALY	Disability Adjusted Life Years
EMRO	Eastern Mediterranean Regional Office
OPD	Out-Patient Department
ICHD	International Course of Health Development

DEFINITIONS

Blindness (WHO, 2005)

Blindness is defined as visual acuity of less than 3/60, or a corresponding visual field loss to less than 10°, in the better eye with the best possible correction.

Visual acuity in the better eye		
From	To	Category
6/6	6/18	Normal
<6/18	6/60	Visual impairment
<6/60	3/60	Severe visual impairments
<3/60	N.P.L.	Blind

Cataract Surgical Rate (CSR)

The cataract surgical rate is the number of cataract operations per million populations per year. It is a quantifiable measure of the delivery of cataract surgical services. It is meaningful, however, only when it includes all cataract operations performed in a country, including those in the private sector and during outreach, and when the population size and age structure can be defined.

Cataract Surgical Coverage (CSC)

Cataract surgical coverage indicates the number of individuals with bilateral cataract causing visual impairment, who have received cataract surgery on one or both eyes, in other words, the proportion who were eligible for surgery and who received it. This indicator is used to assess the degree to which cataract surgical services meet the need. The data are obtained from population-based surveys or rapid assessments.

Cataract Surgical Efficiency, Volume and Capacity

Surgical Efficiency	=	Number of cases per hour per surgeon.
Low efficiency	=	1 case per hour per surgeon.
Medium efficiency	=	2-3 cases per hour per surgeon.
High efficiency	=	4+ cases per hour per surgeon.

Volume	=	Efficiency x time x number of surgeons.
Low volume	=	<20 surgeries per week (<1000/ year).
Medium volume	=	20-40 surgeries/week (1000-2000/year).
High volume	=	>40 surgeries per week (>2000/ year).
Capacity	=	Maximum possible volume.

VISION 2020: The Right to Sight

VISION 2020: The Right to Sight is a global initiative to eliminate **avoidable blindness**. The program is a partnership between the World Health Organization (WHO) and the International Agency for Prevention of Blindness (IAPB), which is the umbrella organization for eye care professional groups and non-governmental organizations (NGOs) involved in eye care.

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CHAPTER 1 INTRODUCTION

1.1. Namibia: Background Information

Namibia is located in the south-western part of Africa and borders with Angola, Zambia and Zimbabwe in the north and far-north east, Botswana in the east, South Africa in the south and the Atlantic Ocean in the west, with Windhoek as the capital city.

Namibia has a relatively young population of 1.8 million inhabitants of which 43% under the age of 15 and 3% of 65 years old and above (Census, 2001). The population is sparsely and unevenly spread with an average density of 2.1 people per km square but highly concentrated in the northern region that is home to more than 50% of the entire population (Census 2001*).* At growth rate of 2, 6% per annum the population is projected to reach 2.1 millions by 2008 and could double by 2030 (MHSS, 2007).

The Namibian economy is predominantly based on the exploitation of natural resources and the fourth largest exporter of non-fuel minerals in Africa. With a GDP of US$ 1980 the country has the highest Gini co-efficiency in the world at approximately 0.6 and 35% people living below poverty line (Nepru, 2006). 5.3% of the total GDP is spent on health (WHO/WHOSIS, 2006).

1.2. Organization of Health Services

The Ministry of Health and Social Services (MHSS) has adopted Primary Health Care (PHC) Approach as the model through which public health services are delivered to the community. PHC programme and services are organised into functional directorates at national and regional levels of the health care system (*Annex 4*).

As part of the health on going health care sector reform, decentralization (delegation) of authority is extended to all the 13 health regions. The 13 Regional Management Teams (RMT) and their respective 34 District Health Coordinating Committees (DHCC) oversee the implementation of health services at the operational levels. Primary Eye Care (PEC) strategy has been incorporated into the main stream of PHC programme for implementation at primary level.

There are 44 public health centres and 265 clinics providing primary level care (*including PEC*) countrywide. Due to the vastness of the country, the sparse population, and distances between smaller

communities and permanent health facilities, outreach (mobile clinic) services are provided at about 1,150 outreach points across the country.

There are 34 public district hospitals proving secondary level of care, this includes 4 Christian mission hospitals. 14 of this hospital are equipped with secondary level ophthalmic services. Tertiary level care is provided at three intermediate referral hospitals namely; Oshakati in Oshana Region, Rundu in Kavango Region, and Katutura in Khomas Region and Windhoek Central Hospital as the overall national referral hospital (MHSS, 2007).

The private sector is mainly urban and provides health care through medium-sized clinics and hospitals; private pharmacies; optical shops; doctor's surgeries and nursing homes. Among them; are 3 private ophthalmic centres with cataract surgical facilities but they are all concentrated in the Capital city.

Health Indicators	Estimate	Sources
Life expectancy at Birth (years) (Male/Female)	48/50	NPC, 2001
Adult Literacy rate (% aged >15)	88.6	NDHS, 2006
Total fertility rate (children per woman)	3.6	NDHS, 2006
Infant mortality Rate (per 1000 life birth)	46	NDHS, 2006
Adjusted Maternal Mortality Ratio (per 100 000 life birth)	271	NDHS, 2006
HIV Sero-Prevalence (%) (15-49 ages)	19,7	NDHS, 2006

1.3. The National VISION 2020 Strategy

Following the country adoption of Vision 2020 strategy in 2002, the national Vision 2020 strategy was developed and coordinated through the national blindness prevention programme in the Department of Health and Social Welfare Policy since 2002. The National Vision 2020 plan of actions was also developed and incorporated into the national development plans (11) and (111) respectively. The national vision 2020 committee was formed with memberships drawn from public, NGO and private sectors, as the central steering organ to oversee the implementation of interventions. The country was then divided into two main Vision 2020 districts namely; the Northern and the Southern Districts to facilitate the implementation process.

1.4. The Northern Vision 2020 District

The northern vision 2020 district consists of 7 northern health regions with a total population of 1, 1 million inhabitants (Census, 2001).

1.4.1. Available Health Services in the District

The district is served by 25 public primary level health centres and 173 clinics providing PHC/PEC services at community level; 14 public secondary level hospitals of which 8 provide permanent ophthalmic services. There are 2 main intermediate referral public hospitals namely Oshakati and Rundu, providing tertiary level cares for the entire district. Apart from public hospitals; centres and clinics, there are a number of private doctors consulting/surgeries, pharmacies, optical shops and clinics mainly concentrated in the main urban centres. So far none of the private health facilities available in the district provides cataract surgery.

1.4.2. Available Cataract Surgical Services in Districts

The two intermediate hospitals (Rundu and Oshakati) are equipped and designated to function as vision 2020 referral surgical centres for the district. However, Rundu Hospital is yet to develop its cataract surgical capacity as it had been undergoing major infrastructural upgrading and renovations.

In the meantime, only Oshakati Hospital is presently providing permanent cataract surgical services in the entire northern district. The ophthalmic unit at Oshakati Hospital boasts of 38 beds, diagnostic and surgical facilities and an ophthalmic team of ophthalmologist, optometrist, ophthalmic nurses and ophthalmic clinical officers. The unit provides both secondary and tertiary levels curative ophthalmic cares include; diagnostic, therapeutic, surgical and optometric services. The hospital is also expected to carryout cataract surgical outreach activities at the surrounding satellite hospitals in order to bring the service closer to the people in the community.

In the efforts to scale up the cataract surgical rate (CSR) in the northern district, the National Blindness Prevention Programme (NBPP) in the Department of Health and Social welfare Policy at national level, provides periodic cataract surgical projects in the district as mean to support Oshakati hospital to cope with the huge backlog of people needing cataract surgery in the district. Such projects will be maintained until such the time that the Rundu surgical programme becomes operational.

CHAPTER 2 PROBLEM STATEMENT

2.1 Visual Impairments in Namibia

In the absence of epidemiological data on the magnitude of visual impairments, the WHO estimates that at least 1.00% of the country population would be blind from various causes, mainly cataract, glaucoma and corneal disorders. Cataract alone is thought to count for at least 50.0% of the total blindness. It's further estimated that at least 2.00% of the total population would suffer from severe cataract visual impairments (WHO, 2002). **(Refer to definitions)**

Namibia with a young population of >40% below the age of 15, about 11.00% above the age of 50 and a relatively higher CSR of 1880 (MHSS, 2005), the prevalence of blindness is expected to be lower than the WHO estimates. This may also conforms to recent evidences from studies conducted elsewhere in Africa suggesting the projection of between 0.4 and 0.5% prevalence of blindness in the region, lower than the WHO estimates (Mathenge et al 2007). Therefore the prevalence of blindness in Namibia had been adjusted to 0.5% for total blindness and 0.7% for severe cataract visual impairments for realistic planning purposes.

2.2. Cataract Visual Impairment in the Northern Vision 2020 District

Based on the later estimates as adjusted for Namibia, The Northern Vision 2020 District is projected to be home to about 5 500 blind people or less from which cataract could account for 2 750 of the total blind. 7 700 more people would suffer from severe cataract visual impairments. Altogether these raise the total backlog of 10 450 people needing cataract operations to regain their functional sights in the entire District.

Cataract induced blindness poses serious socioeconomic challenges in terms of high costs resulting from lost productivity, caring for the blind, the rehabilitation and education of the blind. All these constitute a significant economic burden of the individual blind person, his/her family and the community at large. Apart from both direct and indirect costs of cataract blindness; are the suffering; loss of independence; dignity and premature death as a consequence of blindness.

2.3. Targets and performance indicators for cataract surgery

With 20 beds available for cataract surgery, 3 days average length of stay (LOS) and the surgical room open 300 days per year, Oshakati Hospital is estimated to have a maximum surgical capacity of 2000 cataract surgeries per year if optimally utilized. (Refer to annex 5)

Having taken into considerations other surgeries and local conditions at the hospital, the country vision 2020 recommended the following targets for the hospital (MHSS, 2002).

a) A minimum initial target of at least 1000 cataract surgeries per year during the first three year (2002-2005), to be raised thereafter to reach 1500 surgeries by the end of 2008

b) To attain at least 65% of eyes achieving post operative vision of 6/18 or better presenting visual acuity in the operated eyes by 2005 and thereafter to reach 85% by the end of 2008

It was also projected that once functional; Rundu Hospital would produce at least 500 surgeries by the end of 2008. With surgical inputs from the national surgical projects (camps), this would raise the district cataract surgical rate (CSR) to a minimum 2500 by 2008. The cataract surgical monitoring tools were developed and introduced to monitor the quality of post-cataract visual outcomes.

2.4. Past Cataract surgical Outputs

As per the National Health Information System (HIS) report of 2005, the Oshakati Hospital had only reached an average annual surgical output of 600 surgeries, well short of 40% surgeries to reach its initial projected target of 1000 surgeries per year (HIS, 2005).

The national strategic review for the financial years of 2001/05 further revealed that, the hospital had a long waiting list of 250 confirmed cataract cases awaiting surgeries; the cataract surgical monitoring forms were seldomly completed or reported and the mobile outreach activities were never carried out since the initial stage of the programme. District level ophthalmic staffs have also expressed difficulties with referrals of cataract cases as they could not secure timely appointment for surgery at Oshakati Hospital for their patients (MHSS, 2005).

2.4.1. Presumed Influencing Factors

In the absence of any concrete evidences as to what could be the responsible reasons for such under performance, the following barriers and factors were presumed as possible reasons for such problems at the hospital. (Refer to the study problem tree, annex 6).

a) Poor service planning, monitoring and coordination of interventions as well as effective management systems that promote efficiency and optimal utilization of available resources at the Hospital. This includes the lack of clear policy for services delivery, clear job descriptions and monitoring tools.

b) Lack of motivation among the ophthalmic workforce, this could be due to job dissatisfaction, lack incentives and career development opportunities, poor working conditions, recognitions and rewarding systems, etc.

c) Lack of technical capacity in terms of infrastructures, equipment and technology as well as erratic supply and stocks of surgical materials and essential drugs. On the other hand, the overall organization of services, operational and supervisory structures and staff establishment could be possible limiting factors.

d) Lack of systems and mechanisms for social marketing and demand generation could affect the patient flow of patients. Inadequate funding could negatively affect the financial sustainability of cataract surgical services in the long run.

2.5. Literature Reviews

As the economic status and literacy levels improve, the requirement for good vision increases and people demand cataract surgery much earlier than before. Further more the rapid increase in the elderly population will further increase by many times the number of cataract surgeries that have to be performed in order to cope with such huge demand (Thulasiraj et at 1997).

Cataract surgical intervention remain the most reliable available treatment of cataract visual impairments as neither pharmaceutical nor dietary interventions have proved effective in the prevention or treatment of cataract visual impairments (Giosvanni et al, 2008).

Evidence from health economic studies suggested that cataract surgery ranked among the most cost-effective health interventions and thought to be as cost-effective as immunization and can significantly and rapidly reduce avoidable blindness at relatively lower costs in the order of US$ 20–40 per DALY averted. Good-quality, high-volume cataract surgery could even be attained at costs lesser than US$ 10 per DALY in some settings (WHO, 2006).

Cataract surgery has demonstrated to be simple and non sophisticated but highly successful with 95% success rate or more of the operated eyes regaining good vision of > 6/18, with potential for high volume and low costs of surgical consumables (Limburg et al 2005). Available evidences suggest that in well-managed eye units, high-quality, high-volume surgery is possible with one ophthalmologist able to undertake 1000-2000 or even more surgeries/year, pending the availability of appropriate technology, support staff, infrastructure and good patients flow (WHO, 2007).

In the efforts to provide cataract surgical services at a rate adequate to eliminate the backlog of cataract over a number of years, at a price that is affordable for all people, both rural and urban, in an equitable manner, and with a high success rate in terms of visual outcome and improved quality of life, VISION 2020: The Right to Sight has recommended the following targets (VISION 2020, 2006);

a) Cataract surgical rate (CSR): each county's national plan for the prevention of blindness should include achievable targets for increasing the cataract surgical rate to the desired level, which should be the rate required to eliminate cataract-related, severe visual impairment calculated on the basis of data for the local population.

b) Cataract surgical coverage (CSC): To attain the highest possible CSC of at least 85% coverage. Monitoring cataract prevalence at district and sub national level and using cost-effective methods for assessing cataract surgical coverage will allow identification of gaps, so that services are targeted to areas and subgroups at greatest need.

c) Quality of cataract services: To attain at least 85% of eyes achieving post operative vision of 6/18 or better presenting visual acuity in the operated eyes.

Software for monitoring and assessing the quality of cataract surgery are made available, and VISION 2020 encourages the monitoring of quality so that performance continues to improve. High volume but low cost cataract surgical models have also been developed and implemented in many countries but with limited success, particularly in poor countries, due to a number of limiting factors such as the competing private sector and the high costs of technology in local markets.

In addition, increasing the uptake of cataract surgery by the community and maintaining efficiency and the quality cataract surgical services pose the greatest challenges for many counties particularly those from the developing world. This requires a combination of increasing resources and optimizing the utilization of available resources. However, due to eminent factors and barriers such as poverty, the lack of awareness, poor quality of service outcomes, high cost of treatment and limited access, had led to slower up taking of cataract surgery in poor communities than expected (Xu et al, 2002; Cains et al, 2006).

Recent study on monitoring of cataract surgical outcome in Africa has demonstrated that prospective and systematic monitoring of cataract surgical outcomes leads to an improved visual outcomes over times (Yorston et al 2002). Systematic monitoring of cataract surgical outcomes as recommended by the Vision 2020 Initiatives is essential to monitor the quality of cataract surgery by prompt identification and addressing the causes of poor visual outcomes. However, the appropriateness of data collection, processing and interpretation remain a challenge as it requires high degree of appropriate skills and time.

Furthermore, efficiency of cataract surgery depends heavily on the ways services are organised; the management and utilization of both human and material resources are utilized. Efficient use of cataract surgeon time and making use of the best skills in such a way that it optimizes productivity constitute the most sensible part of effective service planning and coordination of interventions (Mpyet 2005).

It is equally imperative, to have in place an ophthalmic team of skilled and motivated personnel, clear policy for service delivery and practical job descriptions and effective leadership. The reality today is that in most communities in developing countries, particularly in Sub Sahara Africa, there are very few well trained eye care workers thus; the few

that exist are overworked, under compensated, unrecognized and poorly motivated (Odusonte, 2005).

Often team leadership and policy for efficient services delivery do not exist in many settings or if any, have limited management and leadership skills to motivate staff and optimally utilize available resources.

As pointed out Helen Roberts in her paper on staff motivation and development, "The success and failure of a project depends heavily on the staff and how well they do their job. Motivating and enabling them to do this is an ongoing part of running a project". The author emphasizes the importance of placing the right people with the right knowledge and skill into right positions to do the right job, backed by a clearly defined roles and responsibility, strong leadership and monitoring system. Equally is the need to create enabling working environment and systems for incentives as means to motivate staff and enhance productivity (Roberts, 2005).

Historically, financial incentives were considered the best way to attain high degrees of staff motivation to perform but emerging evidences from recent studies seems to prove the opposite. A study conducted in Nigeria on the reasons for emigration of health worker demonstrated that, poor remuneration was second distant to limited opportunity for rapid promotion and ranked equal to poor career recognition (Odusonte, 2005). A sustained staff motivation and improved performance results from effective people centred human resources management in which there is respect to what people, work is valued and career development is given due to considerations.

2.6 Study Rationale

The proposed study is intended to review the existing cataract surgical services at Oshakati hospital in order to explore in depth and describe the main factors influencing the performance of cataract surgical services and draw recommendations to advise the Hospital health management and the national vision 2020 coordinating committee for policy interventions to improve the situation.

The study results shall also provide basis for further investigations on exiting cataract surgical cervices in both public and private health sectors as well as the overall impacts of cataract surgery on the overall cataract blindness in the country in future.

2.7 Overall Study Objective

To explore the cataract surgical outputs and describe the factors influencing the overall performance of cataract surgical services at the Oshakati Intermediate Hospital in order to draw recommendation for policy interventions to enhance performance and optimal utilization of resources available for cataract surgical services in the Northern Vision 2020 District.

2.7.1 Specific Objectives:

a) To explore and describe the organizational structures and staff establishment of ophthalmic services at Oshakati Hospital

b) To describe and explore the Hospital capacity to provide tertiary cataract services

c) To explore the trends of productivity and quality of cataract services at the Hospital over the period between 2005 and 2007

d) To identify and describe barriers influencing staff motivation to perform their duties at the Hospital as well as their suggestions for improvements

e) To discuss the research outcomes and draw recommendations to advise the hospital management teams and the national vision 2020 coordinating committee for policy-interventions to improve the situation

CHAPTER 3 METHODOLOGY

3.1. Research Methodology

This is an exploratory descriptive study conducted at Oshakati Intermediate Hospital in the northern Namibia to explore cataract surgical outputs and describe factors influencing the current productivity of cataract surgical services. Both qualitative and quantitative data were collected using open ended questionnaires, direct observations, desk based information reviews and self administered close ended questionnaires. (Refer to the protocol, Annex 1)

The study involved a team of two researchers, namely the ICHD student as the principal researcher with the assistance of a data collector who assisted mainly with transcribing work during the data collection process at the study site. The data collection work took three weeks during the Months of July and August 2008.

3.2. Study population and Sampling Method

The study took Oshakati Intermediate Hospital as the study population from which a sample of 8 individual study respondents was drawn. A purposeful sampling method was considered appropriate to gain insights on issues regarding the objectives of this study. Taking into consideration, the technical nature of the issues to be studied upon, only health personnel who were directly involved into the planning, supervision and actual implementation of cataract surgical services were purposefully selected and grouped into two main sub categories in accordance with their presumed technical expertise or experiences on the study topic. They were as follow;

All available health managers (n=5) including unit supervisors at the hospital who were actively involved either into the planning, management and the supervision of the implementation processes of ophthalmic services at the hospital. This includes; (1) the Chief Control Officer and Human Resources manager who were interviewed on issues pertaining to the organizational and staff establishment of ophthalmic services at the hospital and (2) section or subsection supervisors for Ophthalmic Ward, Theatre and Outpatient sections who provided quantitative data (self-administered questionnaires) mainly on capacity and cataract surgical outputs.

All available technical ophthalmic staffs (n=3) who were directly involved into the actual implementation of cataract services at the Hospital. This includes; the Ophthalmologist and two Ophthalmic Clinical Officers who were interviewed mainly on the capacity of cataract surgical services and staff motivation.
Biological data of study respondents

Respondents	Investigation Method	No.	Sexes	Experiences (Years)
Health managers	Interview	2	M, F	3 and 4 years
Health workers	Interview	3	M, F, F	7, 8 and 13 years
Supervisors	Questionnaire	3	F, F, F	3, 5 and 7 years

3.3. Literature reviews

Internet based search engines mainly Google and Yahoo were used to retrieve evidences of literatures on cataract surgical services and similar information relative to the study objectives.

Key words: cataract blindness, cataract surgical outputs, efficiency of cataract services, Vision 2020: The Right to Sight, Cataract Surgical Rate (CSR), Cataract Surgical Coverage (CSC), cataract surgical outcomes, ophthalmic teams, staff motivation, human resources for health, magnitude of cataract blindness, etc.

3.4. Data Collection Instruments used

3.4.1. Direct Observations

Non-participatory direct observation technique was employed to assess the surgical procedures inside the surgical room, the screening of patients at the, infrastructures and technology at ophthalmic outpatient and the stock of essential materials and supply.

3.4.2. Information Reviews

Desk information review technique was used to review available relevant official documents such as policy guidelines, strategic plans, health reports, system structures and staff establishment, performance appraisal, Labour Acts, work plans and budget outlines, surgical outputs, surgical monitoring forms, Health Information System tools and guidelines, Outreach program schedules and patient registers, job descriptions, etc.

3.4.3. In-depth Interviews

Individual in-depth interviews using semi structured questionnaires were conducted with two health managers and three technical ophthalmic personnel.

3.4.4. Self-administered questionnaires

Structured self administered questionnaires were distributed among the available three unit supervisors to collect quantitative data mainly regarding cataract surgical services.

3.5. Data Processing and Analysis

All quantitative and qualitative data where collected in an integrated manner and were transcribed, organized and summarized as per research objectives, corresponding variables and sub category of respondents, right away from the point of data collection. In addition, all data are carefully cross checked for completeness and relevance, coded and entered into compilation sheets for analysis and interpretation of results.

The study sample being small and limited resources at hands, manual data compilation had been considered appropriate and used in this study for the processing and analysis of the results.

3.6. Ethical Considerations

Ethical clearances to conduct this study were procedurally obtained in the form of written approvals from ethical committee at KIT, the Ministry of Health and Social Services in Namibia and Oshakati Hospital where the study was undertaken.

The researcher had followed and maintained ethical procedures (WHO/EMRO, 2004) to protect the study participants against any form of violations against human rights, free wills, integrity, confidentiality and beneficence. Written informed consents were sought from individual study participants on their own voluntary basis and in accordance with the principles of medical research ethics and human rights.

In addition, a separate room was solicited from the Hospital authority and used as the venue for interviews in order to grant personal

privacy, comfort and confidentiality of the interview process. Other venues to the choices of study subjects were also used during the process of data collection at the study site.
Both Verbal and written reassurance was granted in the forms of written consents to all participants including the Ministry and Hospital Authorities that the study outcomes will be shared with them.

3.7. Gender Issues

The Namibian public health care system is highly dominated by female health providers than males, and so is the ophthalmic service at Oshakati Hospital. This made it less likely to strike a balance between male and female participants as there were only two male as compared to 5 female participants. However, the use of gender insensitive words, phrases or gestures were avoided to eliminate gender biasing or any form of violation.

3.8. Quality Assurance Mechanisms

The researcher had the responsibility to ensure that the research assistant was adequately trained on data collection and processing through supervised practical training sessions to be conducted prior to the conduct of the study. She was also well orientated on research ethics and conducts.

A small scale pilot study was conducted at Windhoek Central Hospital prior to the main study to pre-test the research instruments and techniques to ensure reliability and validity of the study results. The pre-testing of study instruments had also served to refine and eliminate impractical and technical discrepancies and evaluate the conducts, skills and proficiency of the researcher to appropriately execute their tasks in the field.

During this exercise, all data collection tools including consent forms, interviewer's guides and consent forms were all put to test and refined as appropriate. In addition, triangulation of data was attained by employing different data collection techniques to obtain data from different categories of respondents to ensure the validly of results.

In the absence of a voice recorder, qualitative data were transcribed simultaneously as the interviews were conducted by assigning the transcribing role to the research assistant and that of interviewing to the principal researcher. Data were appropriately checked right at the

end of every interview session and cross checked again for completeness and consistency during the processing for analysis.

3.9. Strengths of this Study

This study was unique in the sense that, it has not only focused on the provider's aspects of cataract surgical services in terms of surgical outputs and outcomes but also assessed in depth, the organizational and structures and staff establishments of ophthalmic services; its operational and supervisory systems and the hospital capacity to provide cataract surgical services at the intermediate level. So far no evidence of study in the area of cataract services in Namibia could be found.

The finding of this study has generated valuable inputs for policy interventions as well as hypothetical baselines for broader future investigations in any of the areas covered under this study.

3.10. Limitations in the Study

Due to time constraints and limited resources at hand, inputs from the consumer's perspective could not be covered under this study

Collected data on productivity and quality control of cataract services were incomplete as it fell short of inputs from the (presumed) ophthalmic unit manager who could not be found in the supervisory system of the hospital

It was noted during the data processing and analysis that there were overlapping variables and answers. These variables were therefore combined with matching ones for analysis and interpretations

The fact that, respondents in this study perceived the researcher as a member of the national health team, they could have given answers that the researcher ought to hear. Similarly, the researcher's prior knowledge of the situation of cataract services at the hospital could result into possible bias in the interpretation of study results

In the absence of a voice recorder during interviews, manual transcribing could have in one way or another compromised the quality of the data collected. Research tools, particularly the close ended self administered questionnaire could have limited the amount and quality of data collected

Due to time constraints, the technicality and broad complexity of the study area, it was not possible to have all keys issues addressed comprehensively as expected.

It is therefore essential that these potential limitations are taken into considerations in the conduct of this study, presentation of findings and conclusions.

CHAPTER 4: RESEARCH FINDINGS

4.1. Productivity of Cataract Surgical Services

4.1.1 Modes of Cataract Surgical Delivery

All cataract services provided at the hospital at the time of this study were all hospital based and there were no surgical outreach or any other community eyecare activities observed.

As one respondent (Health worker) explained in agreement, *"Being a tertiary referral hospital, our cataract services delivery is all curative oriented and hospital based. We only provide services to those who can make it to the hospital and those who are being referred to the hospital from other peripheral hospitals in the regions".*

All 3 out of 3 respondents (Health workers) who were interviewed on this issue jointly supported the statement as it was explained that the decision not to embark upon outreach services were based on three main reasons: 1) the flow of cataract patients was good; 2) there is a huge waiting list of patients awaiting surgery, and 3) the hospital has limited capacity (technical and logistic) to embark upon high volume cataract surgical activities or conducting outreach cataract services in the surrounding regions.

As one respondent claimed, *"Well, the first thing that one has to think of before employing whatever strategy for services delivery is whether there is an adequate flow of patients or not and whether the hospital has the necessary capacity to meet such flow or demand".*

They further suggested that, the hospital should improve the surgical capacity and provide adequate financial, technical and material support as necessary to eradicate the waiting list before embarking upon community outreach cataract services.

4.1.2. Cataract Patient Flow

Cataract Patient Flow	2005	2006	2007
Cataract Cases Screened at the Hospital	1410	1597	1525
Cataract Cases Admitted for Operations	450	693	831
Cataract Cases in the Surgical Waiting List	250	No data	260

The study found that, cataract services at Oshakati hospital were hospital-based and provided on the basis of first come, first served

fashion. However, even in the absence of outreach cataract surgical programme or community case finding activities, the patient flow showed significant increase over the past three years. Such increase could either be linked to improved primary eye care activities in the surrounding regions (improved awareness and health seeking behaviours) or client's satisfactions with the quality of services provided at the hospital thereby resulting into increased self referrals.

It was also observed that, despite the fact that there were slightly lesser cataract cases screened in 2007 than in 2006, there were however, more admissions in 2007 than in 2006. This could be as a result of availability of resources as there were surgical camps hosted by the hospital during the same period.

The cataract surgical waiting list showed a slight increase from 250 in 2005 to 260 cases in 2007. However, there were no defined criteria in terms of the degree of visual loss or functional visual impairments to guide the construction of the waiting list and no clear explanation could be obtained on the way the waiting list was managed, raising suspicions that admissions of cataract cases may not had properly followed the waiting list, those who may have reported late for their appointment could have been be replaced with new ones and so on.

In addition, it was very odd that, on average the hospital screened 1000 cataract cases but the waiting list only show 260 cases. There were no clear indications, whether all the other screened cataract cases were inoperable as they were not included into the waiting list

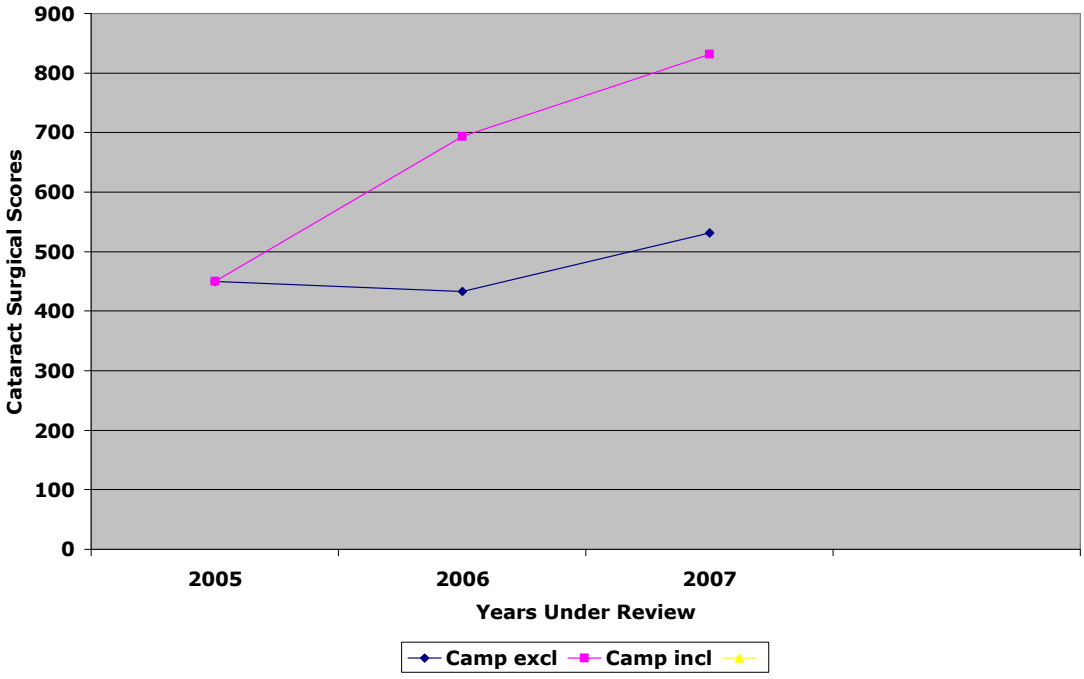
The ophthalmic OPD register did also not distinguish between referred cataract cases from other hospitals and those who were self referrals; neither is distinguished between new and old cases. As a result, the total number of referral cases received at the hospital during this period could not be determined.

4.1.3. Cataract surgical Targets and Outputs

The below presented graphic illustrations, depicts the trends of cataract surgical activities at the Hospital over the past three years.

Cataract Surgical Outputs and Targets		2005	2006	2007
Cataract surgical target sets		No data	No data	No data
Hospital Based cataract surgical outputs	Camps included	450	693	831
	Camps excluded	450	433	531
Regional Cataract Surgical Camps		-	260	300
Outreach-based cataract surgeries		0	0	0
% of female cataract cases operated		No data	No Data	No Data
Cataract surgical rate (CSR) for 2007		-	-	No data

Figure 1 Cataract Surgical Outputs for Oshakati Hospital (2005-07)



This data include surgical inputs from regional cataract surgical camps held at the Hospital in 2006 and 2007 respectively. As illustrated on the graphic presentation, without surgical inputs from the camps, the hospital surgical outputs slightly declined with 3.8% in 2006 and rose sharply again with 22.6% in 2007.

This could be linked to technical and logistical difficulties experienced at the hospital from time to time as raised during interviews. As one respondent (health worker) explained, *"There used to be two sterilizers but now there is only one in working condition, the other one had been broken for some times and had not yet been repaired or replaced".*

Another one added, "As for the intra ocular lenses, we most of the times run out of certain dioptres, and the orders generally take too long before such items are received at the hospital".

However, there were no data available on cataract surgical targets, CSR or the (%) of female cataract cases operated over the past three years. The stated reason for this was cited as the lack of work plan and baseline data on cataract blindness in the District. The national vision 2020 guidelines were also not be found as a guide for the planning of local interventions at the hospital.

As explained one respondent (Health worker), *"Cataract surgical service is just part of our routine hospital work. Without proper estimates of our backlog and plan of action in place one can hardly measure how much was it done and how much still to be done to eradicate cataract blindness in our area".*

4.1.4. Quality of Post Surgical Visual Outcomes

The Hospital had made significant strides to increase the volume of cataract surgery at the hospital as demonstrated by the increased outputs in the past three years. However, the study found neither monitoring tools nor specific data available on the quality of post cataract surgical visual outcomes at the Hospital at the time of this study.

Commenting of the issue, one respondent (Health worker) explained," *I remember the cataract surgical monitoring forms were once introduced but, unfortunately this was not maintained due to the absence of a focal person who could coordinate such activity and ensure that forms are correctly completed and data analyzed and interpreted for possible changes".* He further added*, "In the absence of recorded surgical data, our surgical outcomes are not known".*

The collection of surgical data for quality monitoring of visual out comes requires not only appropriate coordination but also special skills on data collection processing and analysis. It was observed that the units had no advantage of a focal designated technical supervisor and administrative office equipments such as computers that could be used for such data management. This could also serve as the reason why monitoring of visual outcomes never took forms at the hospital.

4.1.5. Utilization of surgical facilities and Time

Despite the fact that there was no dedicated ophthalmic surgical room available at the Hospital, one of the four main surgical rooms was partly made available for ophthalmic use (twice a week) on a sharing basis. It was also reported that, the surgical room was open for ophthalmic use for a minimum of 8 hours per surgical day and available for ophthalmic use for an average of 96 days per year.

However, it was informally learned that, the room was hardly utilized after lunch as all surgical activities ceased at 12: 00 pm, soon after the daily surgical lists were cleared. This report was confirmed during the observations during the time of this study that, the room was seldomly fully utilized after 12:00pm unless in the case of emergency. It was evident that the daily surgical lists contained less cataract cases as it also had to cater for minor surgical needs such as pterygion excisions that could have best managed at ODP should there be a minor surgical room.

The average length of stay in the ward after cataract surgery was reported to be 3 days under normal circumstances but, patients could stay longer depending on the conditions and their surgical outcomes. However, there were no statistical data on the proportion of cases that stayed beyond average.

4.1.6. Surgeon Support available

It observed and also confirmed that two instruments nurses; floor nurses; porters and cleaners were readily made available to assist with ophthalmic procedures per surgical events at the main theatre. However, it was noted during interviews that, the assisting staffs had limited technical skills on certain specialized technical tasks, such as local anaesthesia administration and pre-surgical case management. The surgeon had to do almost everything by himself, thereby increasing the surgeon's workload and eminent loss of surgical time.

Commenting on the issue, one respondent (Health worker) explained, *"The surgeon has to do almost every thing on his own, right from patient reception, pre operative assessment and the administration of local anaesthesia. Such scenario contributes very much to the loss of surgical time low surgical productivity".*

Well defined specific job descriptions could help to guide the allocation of tasks, efficient sharing of workload and the balance between technical and non technical team memberships.

4.1.7. Systems and procedures for service delivery and quality control

There were no specific information found available on systems and procedures such as targets, norms and standards used to enhance productivity and staff performance at the hospital at the time of the study. This could be attributed to the fact there were practical supervisory mechanisms in place for ophthalmic services at the hospital thus, cataract surgical service formed part of the normal hospital routines.

The appointment of dedicated unit supervisor with appropriate management and leadership skills could have had positive impacts in this regard.

Commenting on the issue, one respondent (Health worker) explained, *"As I pointed out earlier on, we operate in a very difficult situation in the way in which our services are being organized. In the absence of a focal unit supervisor or administrator, one can hardly speak of services planning and management including the development of appropriate standards and procedures for services provision".*

Commenting on this issue, one respondent (Health worker) explained, *"Screening for cataract and patient selection for surgery is mainly done by ophthalmic clinical officers (with exception of complicated cases) who also do patient counselling and preoperative case management. All booked patients are revised by the ophthalmologist a day before surgery to rule out any possible unforeseen pre existing conditions or discrepancy that may exist".*

He went on to add that*, "We also try by all means to maintain good standard of sterility and functionality of our surgical equipment and instruments to curb out possible complications during and after surgery"*

In contrast to these statements, the study found no evidence of specific guidelines or tools used for quality control of cataract surgical services at the hospital. The later statement was also found to contradict claims that, there were no systems in place for regular servicing and maintenance of technical equipments at the Hospital.

In addition the study found no specific data on the proportion of cataract operations done with intra ocular lens implants or the proportion on number of post cataract patients who were refracted and

provided with conventional lenses to improve the quality of their visual outcomes.

4.2. Hospital Capacity to Provide Cataract Services

4.2.1. Available Ophthalmic Infrastructures

As per observations, four rooms within the hospital's general Outpatient Subsection were dedicated for ophthalmic use as consulting rooms. In addition, a 38 beds ophthalmic ward stood about 100 meters away from Outpatient section. The ward consists of one main hall divided into two sections, one for male and another one for female patients.

There was no dedicated ophthalmic surgical room found at the Hospital, all major ophthalmic surgeries were carried out at the main general surgical theatre which also stood about 100 meters from Outpatient and about 30 meters from the ophthalmic ward. Such distances between service units had negative effects on the movements of both health workers and patient particularly during the night or the rain. In-patients have to find their long ways to OPD for their reviews every morning and most of them are aged and or disabled.

However, all 3 out of 4 respondents (Health workers) unanimously raised their concerns over the status of existing ophthalmic infrastructures at the hospital citing infrastructural inadequacy in terms of physical structures, office space, and infrastructural design of the buildings.

As commented one respondent, *"On overall basis I would like to point out that the current infrastructural capacity is inadequate and does not comply with the universal standard of a tertiary referral eye care unit".*

The following points were raised as issues of concerns regarding the present ophthalmic infrastructural status at the hospital.

The Ophthalmic Outpatient: The four consulting rooms were too small inadequate in number as they were shared among existing staff; there were no infrastructural provision made for dedicated toilets, stores, conferencing/meeting hall or board room, archive for files storage, patient reception, patient waiting rooms, optometric laboratory and dispensary, pharmaceutical dispensary, special examination and treatment rooms, minor surgical room, kitchen/tea room etc.

The Ophthalmic Ward: It had no provision designated rooms for children; isolations or surgical rooms; no store rooms; no nursing station and offers no separations between patients for privacy purposes and lacks facilities for emergency such as oxygen.

Another respondent raised his concern over distances between ophthalmic units, *"Such infrastructural fragmentation constitute a limiting factor for both health providers and the patients, in terms of distances that exist between separate service components within the hospital, for a example the ophthalmic OPD and the Ophthalmic ward or the pharmacy".*

As for the conditions at the ophthalmic ward reportedly looked clean and well organised but the quality of the buildings were in dire and dilapidated conditions as the buildings were aged and needed renovations. In the search for solution to these problems, one responded demanded,

"An appropriate and dedicated well integrated ophthalmic unit would be necessary with its own infrastructural integrity solely for ophthalmic use. This will help to alleviate the current problem of segregated and displaced ophthalmic infrastructures at the hospital.

4.2.2. Appropriate Technology

As per the observations, the ophthalmic unit was fairly equipped with technical equipment and instruments as compared with the WHO recommended list of equipment and instruments for a referral eye care unit.
However, most of these equipments are aged, exceeded their functional life span, depreciated and malfunctioning and some lack basic accessories. In addition, no equipment maintenance plan or service records were found at the unit during the period of the study.

It was a common feeling among all 3 respondents (Health workers) that equipment both technical and non technical were inadequate in number and types as per the functional requirements of the unit; aged and lacked regular services and replacements.

As one respondent commented, *"The available technical ophthalmic equipment available at the hospital are mostly outdated, poorly calibrated and poorly serviced. I can say that they are in poor*

functional condition and also inadequate in terms of number and types".

And another respondent added, *"As for the non-technical equipment and furniture, yes there is such a huge need. Almost all available equipments need to be replaced and new ones put in place. Furniture, including tables, chairs, drawers, cabinets, linen, curtains and patient benches are also in bad shapes and aged".*

As a solution to the problems, respondents strongly demanded that, appropriate equipment maintenance and replacement plans be put in place at the unit; assign the responsibility of equipment handling and care to those with appropriate skills; develop local skills on equipment maintenance and care as well on new modern technology and the Hospital to improve its planning and management of available resources as immediate measures to reverse the current situation.

4.2.3. Surgical and optical materials and supplies and drugs

As per observations, stocks of essential surgical and optical materials as well as ophthalmic drugs were found to be readily available for use at the hospital as compared to the WHO recommended standard list, except for some isolated items, mainly surgical materials that were reported to fall short of supply from time to time.

As one respondent commented in agreement, *"I see no problems with the supplies of ophthalmic medications but yes there are some reported problems with some types of surgical materials such as IOL's and viscoelastics that sometimes go out of stock for months.*

All 3 respondents (Health workers) jointly agreed that, the problems of short of supply of some items were rather administrative problem than the procurement system itself. They explained that, ophthalmic technical staffs were not involved into the procurement and stock management of ophthalmic materials.

The whole procurement and stock management affairs were handled exclusively by the pharmacists and the procurement clerk officers who, as per feelings of respondents lacked appropriate knowledge and skills on ophthalmic supplies and stock management.

As one respondent claimed, *"You find out that sometimes we do get products that we don't really need simply because someone else ordered for them without proper consultation. It is a really a waste of*

scarce resources to just order and stock items that are not used and expire on the shelves.

Practically there would be no need for a dedicated store manager as the stock keeping and management form part of the eyecare manager responsibilities. The appointment and the involvement of an eye are manager into the procurement and decision making would be ideal for such situation.

As a solution to the problem one respondent suggested, *"The appointment of an eyecare manager and a store manager would just alleviate such problem as he or she will assume such responsibility to ensure that adequate stock of necessary items is maintained and well controlled".*

4.2.5. Ophthalmic Surgical Team (Skill Mix)

As per observation and information collected from respondent on the ground, the ophthalmologist was assisted by two instruments nurses, floor nurses and porters during the surgical events at the surgical room.

However, all 3 out of 3 respondents (Health workers) who were interviewed on this issue strongly felt that there was no dedicated ophthalmic surgical team at the Hospital. Respondents cited limitations both in the number of personnel as well as the skill composition of the nursing staff that assisted with ophthalmic surgical activities both at the ophthalmic ward and the main surgical room. In addition the nursing staffs were not specific to ophthalmic services alone but were utilized on rotation basis and shared with other surgical services.

As one respondent commented, *"From my point of views, the team is very small in size and lacks necessary skill mix that would have boosted the capacity and efficiency to provide services in efficient and more cost effective manners.*
And another respondent added, *"Such nursing rotation contribute very much to delays and slow speed of the surgical process as most of the time, most nurses are new and are not so well seasoned in ophthalmic surgical techniques and procedures and the handling of delicate micro instruments".*

It was also learnt that the two ophthalmic Clinical Officers available at the Hospital were not involved into the actual surgical activities at the

surgical room as they had to share the workload at the ophthalmic outpatient. In the search for solutions, one respondent suggested;

"There is a need for the services of qualified ophthalmic nurses, qualified ophthalmic instrument nurses, trained patient councillors, equipment attendants and other auxiliary staffs to assist with day to day ophthalmic work".

4.2.5. Bed Used for Cataract Services at the Hospital.

20 out of the 38 ophthalmic beds at the ophthalmic ward were available for cataract surgical use.

4.3. Organizational structures of Ophthalmic Services

4.3.1 Operational and Supervisory Structures and reporting lines

According to existing national healthcare system structures as well as the specific hospital organogram, the Oshakati Hospital stands as a Division which is further divided into Sub Divisions, Sections and Sub Section, the later is the smallest unit among others. **(Refer to the annex 7)**

Optometry stands as a Subsection under Paramedical Services which is a Section of the Professional Services Subdivision, whereas the Eyecare unit (Ophthalmic OPD) stands, neither as a section nor as a subsection but a service unit under Outpatient/Casualty Subsection of General Nursing Services which is a Section of Nursing Services Subdivision.

As depicted above, the available ophthalmic services at the hospital did not fall under one dedicated structural component as it is the case with all other health services but were fragmented and followed different supervisory and reporting lines.

This structural system fragmentation of services was strongly cited as the main causal factor responsible for many problems experienced at the hospital as far as the provision of ophthalmic services is concerned. As one of the respondent (manager) explained, *"Officially, Eye care is rather just a function of the general nursing services than an independent health service"*

3 out of 4 other respondents (Health workers) who were interviewed on this issue also shared same feelings. It was generally felt that such

system fragmentation was limiting factor that not only hampered the implementation of ophthalmic activities but also the development of ophthalmic services in the long run, in the sense that as longer as ophthalmic services remained fragmented into small separate units and without a voice in the decision making, the service would never get the priority and recognition it deserved.

They also strongly felt that, existing supervisory channels did not favoured ophthalmic services as it was linked to general nursing services and assigning nursing supervisors with limited technical skills in eye care. , as one protested bitterly, "*The current system structure has it that ophthalmic services are under the administration of general nursing and all supervisors are general nurses".*

4.3.2 Planning, Supervision and Coordination of Ophthalmic Services

As practice in the public health care system, the planning, supervision and coordination of activities are placed under the responsibly of the subsection supervisor with the support of the section and subdivision health managers. The eye care supervisor and that of optometry would take such responsibilities as heads of subsections or unit.

In contrast the study found that, the eye care unit has no dedicated supervisor to undertake such responsibilities. On the other hand, the nursing supervisors responsible for OPD/Casualty could also not be held responsible for the Eye care unit as technically they were not ophthalmic personnel and eye care activities were not part of nursing activities that they were responsible for.

In addition, the study found no specific guidelines and or tools for the planning, supervision or coordination of ophthalmic services. This finding could explain the omission or exclusion of ophthalmic activities from the hospital work plans.

All 4 the interviewed respondents (1 manager and 3 H/worker) commonly felt that, the planning, supervision and coordination of ophthalmic activities at the hospital were inefficient and impractical. As explained one respondent, *"Establish favourable structural systems for eyecare with own structures, managerial and supervisory lines and where eyecare receive its recognition and priority it deserve".*

4.3.3. Budget allocation for ophthalmic surgical activities

Among the hospital operational plans for 2005, 2006 and 2007, neither the work plan nor the budget outlines for ophthalmic activities were found.

This finding is supported by the all three respondents who were interviewed on this issue as they either had no knowledge of the planning process itself or acknowledged that there was no work plan available for ophthalmic activities at the hospital.

Respondents further suggested for the inclusion of ophthalmic services into the hospital top priorities that would allow the unit to function as an entity and determine its budgetary needs, plan and manage its resources.

4.4. Ophthalmic Staff establishment at the Hospital

4.4.1 Number of Posts and Post Designations (Ophthalmic job categories)

The national government staff establishment guideline which is the same that is being implemented at Oshakati Hospital, has made provisions for four (4) posts for ophthalmic personnel. These posts are all basic entries and solely designated for:

(1) Optometrist and,
(3) Ophthalmic Assistant (Ophthalmic Clinical Officers)

The study found that three out of these posts were filled and one (Ophthalmic Assistant) remained vacant since 2000. There is however no provision made for promotional entries posts.

Two respondents (Health worker) argued that, the allocated of posts and post designation for ophthalmic cadres were insufficient in number and designations , adding that there were other ophthalmic job categories such as the Ophthalmic Nurse and Ophthalmologist who had no designated posts to accommodate them in the present staff establishment. They also argued that, they worked for more than ten years and remained in same positions.

In contrast, the manager dismissed such claims, *"I am not aware if we have such job category as "ophthalmic nurse" but if we do then probably could be accommodated into vacant posts of general Nursing".*

But the manager acknowledged that, there were no provisions made for the promotion of ophthalmic personnel in the staff establishment and that she has never seen any official submission by the hospital management for additional posts.

The study later confirmed that there was an ophthalmologist and 2 trained ophthalmic nurses working the hospital. However the two ophthalmic nurses were not dedicated to ophthalmic services but utilized as general nurses.

4.4.2 Salary structures and grading for Ophthalmic Cadres

The existing qualifying criteria for ophthalmic assistants is that, one should posses basic diploma/degree training as a registered nurse, medical assistant or clinical officer plus a post graduate diploma (specialization) in clinical ophthalmology, whereas for optometrist is a three to four years basic diploma/degree in optometry.

According to the official salary grading system for public servants, Ophthalmic Assistant were awarded a salary grade (SP2) which was the same as basic entry salary grade for a general nurse. The optometrist shared same salary grade (2C Level 2) as Clerk Officer.

It was also found that due to the fact that there were no provisions made in the staff establishment for the promotional posts for ophthalmic personnel, they remained in their entry posts and enjoyed same salary grades for as longer as they remained in services.

It was also learnt that, the hospital as a non autonomous Government institution had no power to create its own salary structures and grades but strictly adhere to existing guidelines as approved by the public service commission (central government).

Commenting on the issue, two respondents (health workers) complained bitterly that they were being poorly remunerated. As one demanded, *"Our salaries must be revised and upgraded to match with the kind of work we are doing and we must be considered for promotions, further* training and other benefits".

In response to these charges, one respondent (manager) who interviewed on this particular issue explained in agreement, *"Yes it had been noted that the salary for the optometrist is lower than that of a staff nurse".* And went on to justify that*," but really to this end our section had not yet received any motivation or directives from the*

management to prepare any proposal to advise the national office for salary upgrading for this category, the same applies to all other existing ophthalmic categories".

4.4.3 Human Resource development plan for ophthalmic Personnel

The study found that, existing Hospital human resource development plans for 2005, 2006 and 2007 did not include any ophthalmic training activities. This could be linked to earlier findings in this study that, there were no specific supervisory and coordinating structures for ophthalmic services at the hospital thereby resulting into lack of planning for ophthalmic activities at the hospital.

3 out of 5 respondents (Health worker) who commented on the issue agreed in principles that there were no mechanisms in place for continuous skill development for existing ophthalmic staff neither were there any for the specialization training of new ophthalmic staff at the hospital.

As charged one long serving respondent in frustration, *"As for skill development mechanisms, there is no such thing here at this hospital, there is no plan and there had never been any form of training or refresher course for existing staff in the last 10 or more years".*

Respondents also suggested that an effective human resource development plan for ophthalmic personnel be developed and included in the overall hospital human resource plan as a matter of urgency to facilitate the development of new ophthalmic cadres and the skill development for existing ones.

4.5. Barriers affecting staff motivation to perform their duties

4.5.1 Staff Motivation and Support

All 3 respondents (Health workers) have jointly expressed that their levels of motivation to do their job were low and so is that of the entire ophthalmic team at the hospital. Among stated reasons were;

- lack of promotion and career path,
- poor remuneration and rewarding mechanisms,
- lack of recognition, respect and support from the management
- unfavourable system structures and staff establishment
- shortage of staff and lack of training opportunity

- aged and problematic operational equipment and lack of modern technology and erratic supply

As protested one respondent, *"We face so many problems here and the most painful ones are that we are not recognized or respected for the kind of work we do; our complaints and suggestions for improvement are not taken serious by the management; we have no chances of promotions and are lowly paid maybe with the exception of the doctors, but for ophthalmic clinical officers we are getting peanuts".*

4.5.2 Leadership and management

3 out of 3 respondents (Health workers) who were interviewed on this particular issue, have in one way or another related the many problems affecting ophthalmic services to the management and leaderships, particularly that of the hospital and Oshana region for a number of reasons. As one respondent expressed,

"The most frustrating thing is that we had for years complained of wrong structures, wrong supervisory and reporting lines and other functional and system errors but the management had never taken any positive step to rectify such errors".

And another respondent added conclusively, *"I can say that the hospital leadership has no vision or if they ever had one maybe, they had lost it long ago".*

Among others, respondents jointly felt that they were adequately supported by the management particularly on issues such as;

- not taking the complaint and suggestions from staff members serious and delays in taking actions
- lack of understanding on what ophthalmic services were all about
- lack of support and practical contact with the staff, senior managers and supervisors not seen at the implementation level
- exclusion of staff from important meetings such as those on planning and reviews
- Loss of vision, poor planning and management of resources
- Lack of platform for staff to air their views and problems openly

In the efforts to address the current dissatisfaction with the management, a series of suggestions were made to the management for improvement:

- strengthen the relationship and communication between them and the general staff
- Introduce regular staff meetings and strengthen services planning, supervision and monitoring of services
- Critically look into other motivating issues such as getting recognized and respect we deserve for our efforts.
- Show respect and take our concerns serious.
- Need to be oriented on what ophthalmic services are all about maybe they can get some vision.

One of the three interviewed respondents added that, his only hope was that, the new hospital management team that had recently took over the whim of the hospital would bring new changes to improve the situation. Another one called on the Government to look into issues of competence and accountability for its management teams and put in place mechanisms for proper supervision and maintenance of government properties at the hospital.

4.5.3 Work environment

All 3 interviewed respondents (Health workers) jointly described their work environment as decent and clean but immediately expressed their concerns over the deteriorating status of both technical and non technical operational equipments and office utilities, lack of proper ventilation, all black painted interiors at Outpatient section and the lack of facilities for proper meals and refreshment at the hospital.

One of the respondents also raised her concern over overcrowdings and lack of privacy for both health providers and patients particularly at the ophthalmic outpatients unit. As per observation, the lack of privacy was a general concern that also affecting other health services at the hospital. The ophthalmic consulting rooms were generally found smaller in size as compared to other consulting rooms available at the OPD.

4.5.4 Incentives and other conditions of work

The study found that ophthalmic personnel as public servants were equally entitled to all incentives, employees' benefits and conditions of work as other public servant elsewhere in the government services, as clearly explained during the interview with one the manager, **"** *If I may mention some but just a few examples, are overtimes remunerations, night shits, Sunday and Public holidays, annual and*

compassion leaves, travel and subsistence allowances, housing subsidies and rental allowance, medical aid covers etc".

One respondent (Health worker) commented in agreement, *"Well, one could say that the current rewarding system and overall conditions of work are fair here as compared to many other countries that I know but yes there are still some areas that need to be improved", a*dding that, areas such as salaries for ophthalmic staff and the rewarding system needed improvement.

In contrast to the above statements, one respondent (Health worker) charged in disagreement, *There is form of appraisal or rewarding system in place, the last time such system was in place was 5 years ago and since then we had never heard of any*",

Respondents further urged the hospital management and the public services commission (Central Government), to look into the matter and improve the situation. As demanded one respondent (Health worker), *"It would be quiet encouraging particularly for the staff, if the hospital could put in place internal policy to look into the issues of recognitions and rewarding system for its performing staffs".* He went on to add that*, "I would also suggest if the government could review and amend its standing policy on remuneration and other conditions of work for public servants".*

As per the information review, there were no guiding lines on appraisal system were found but this problem was not specific to Oshakati Hospital alone but the general public service as a whole. There were also no any other non monetary forms of rewarding or recognition method was found.

4.5.5 Career Development Opportunities

All 4 out of 4 respondents who were interviewed on this issue felt strongly about the lack of career development path and lack of promotional opportunities for ophthalmic staff at the hospital, as one respondent lamented*, "We can't even speak of promotions as we are not recognized as other health workers. Among the ranks of Ophthalmic Clinical Officer at our unit none of us hold any senior positions; we had all been working here for more than ten years now and still hold same positions and being paid same salaries,* adding that, *"even among cleaners, one would find a head or senior cleaners but why not among ophthalmic clinical officers, it amazes me".*

The lack of promotional opportunity and career development path were blamed on the current structural gaps in the supervisory system establishment of the hospital. As one respondent suggested, *"Proper career development plan for ophthalmic personnel should be put in place and considered as a matter of urgent priority and this should include promotional ladder. Such plan should also include the development of new ophthalmic cadres"*

CHAPTER 5: DISCUSSION

The study observed a positive increase in the annual cataract surgical outputs scored by the hospital over the period three years (2005-2007) that rose sharply from 450 surgeries in 2005 to as high as 531 in 2007. However, the scored surgical outputs fell short of the projected target of 1000 surgeries set for 2008 and certainly would not reach the target of 1500 surgeries by the end of 2008 as expected. In addition, the quality of the post surgical visual outcomes could not be estimated due to the unavailability of specific data at the hospital.

The exclusion of perceptions and feelings of the general community as services users on their perceived quality of cataract surgical services at the hospital was noted among the most important limitations of this study. However the presence of waiting lists and the high number of cataract cases screened as per the hospital records of 2005-2007 all serve as indications of a good level of community awareness and willingness to uptake cataract surgical services at the hospital.

The study found sufficient evidences to suggest that, there were more organizational factors on the side of the service providers that could be held responsible for the low cataract surgical outputs at the hospital, contrasting findings from some studies in this area such as the ones conducted in China and Cambodia that suggested a series of demand related barriers as the main reasons for low cataract surgical outputs (Xu et al, 2002 and Cains et al, 2006).

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Among others, the three main factors are listed and discussed below:

a) Limited hospital capacity to provide high volume cataract surgical services. The study found that the hospital fell short of the minimum standards (in some aspects) in terms of infrastructures and appropriate technology as compared to the WHO/VISION 2020 recommended standard lists of equipments, instruments and surgical materials and supply of 2007/8 and the minimum recommended ophthalmic teams and physical infrastructures for Vision 2020 District Referral Eye Care unit (WHO, 2007 and VISION 2020 planning manual of 2005)

   Initially, the hospital had a calculated maximum surgical capacity of 2000 surgeries per year taking into accounts, the number beds for cataract surgery, average length of stay and the time that the surgical room available for use during the year. The study found that such surgical capacity had decreased from the initially

projected 2000 to just 640 surgeries per year, was projected to reach 2000 per year and the bed occupancy rate fell from the projected 100 to as low as 32 per year. (Refer to annex 5)

The reason for this reduction in the surgical capacity could be directly linked to the unavailability of a dedicated ophthalmic surgical room at the hospital. As a result, all ophthalmic surgeries were conducted in one of the main surgical room which was only made available for ophthalmic use twice weekly throughout the year, thereby reducing the availability of the surgical room from the initial projection of 300 to only 96 days per year.

b) Technical limitations in the operational and supervisory systems for ophthalmic services at the hospital. The study found that, the ophthalmic unit at the hospital had no focal technical supervisor (an eye care manager) in place; lack of staff motivation and support as well as the lack of planning and coordination of interventions. Thus, supervisory responsibilities were assigned to general nurse supervisors who were not only reported to have limited technical skills but who also felt that eye care was not among their main responsibilities as nurses.

   In this regard, the findings of this study conforms to evidences from the West African Health Organization workshop on human resources development for scaling up CSR, where poor motivation of staff and inefficient leadership were among the most highly rated factors responsible for low CSR than the availability of technology and consumables (Odusonte, 2005).

   The core values of team management depend on the leadership that is not only committed to the people to be served but also to those who provide services. The team leader plays a pivotal role in human resources development and management including leadership and staff motivation to enhance performance to attain organizational goals. (Refer to the job description, annex 8)

   Staffs need fair compensations, respect and values for their inputs as well opportunities to develop their potentials, while recognising that monetary incentives was not the only solution to motivation (The Manager, 1999).

c) Lack of systems and procedures to increase efficiency and volume of cataract surgery at the hospital. The study found that, the

hospital lagged behind in terms of surgical efficiency and the volume of cataract surgery as compared to the Vision 2020 recommended standards (WHO/VISION 2020, 2005) (Refer to definitions).

In terms of cataract surgical efficiency and the required volume of cataract surgery, the hospital produced less than 10 surgeries per week, far below the V2020 recommended minimum average of 20 surgeries per week or 1000 surgeries per year. The were also no systems and procedures in place to enhance productivity such as standards, surgical targets, job descriptions, training and staff motivation and sharing of labour among the surgical team members.

Even though, the shortage of ophthalmic staff and skill mix in the surgical team was cited as the reasons for below average surgical performance at the hospital, it was observed that the surgical team had more than enough personnel as required to increase efficiency, the problems here was more of organizational nature and inappropriate use of available resources than the shortage of staff itself. The surgeon spent most of his surgical time doing all the petty tasks such as IOP control and anaesthesia administration, tasks that could be best done by ophthalmic Assistants.

Evidence has shown that, surgical programs that adopted the vision 2020 principles for efficiency and recommended standards achieved better results with minimum inputs and at relatively low costs. A live example is that of the cataract surgical program at Kitwe Central Hospital in the neighbouring Zambia that could achieve up to 2223 surgeries per year with a surgical team of just 6 personnel (1x surgeon and 5 support members) (CEHj, 2006).

Given the hospital surgical capacity (640 surgeries/year) and available resources at disposal, the hospital could have doubled its surgical outputs to reached the average surgical outputs of 20 surgeries per week and 1040 surgeries/ year by 2007, should they would be well organised with appropriate systems and procedures in place for efficiency optimal utilization of resources available.

It was also noted in study that, given the huge estimated backlog of cataract blindness in the Northern Vision 2020 District and the current surgical capacity of Oshakati Hospital, the Hospital alone will not cope to satisfy the entire district demands for cataract surgery. Therefore, it is imperative that, concerted alliance be forged with all partners and

stake holders (public, private, NGO's) to fight cataract blindness in the district in terms of regular eye camps and enacting the surgical programme at Rundu Hospital and establishing the mobile surgical outreach programme. The national level and 8 political regional councils should be actively involved in advocacy and the mobilization of resources for this course.

CHAPTER 6: CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusion

Based on the findings of this study as discussed in details in the previous chapters, the overall cataract surgical outputs stand at 531 surgeries in 2007, (67%) below the average projected target of 1500 surgeries by 2008 as recommended by the country VISION 2020 strategy. It could therefore be concluded that the overall performance of cataract surgical services at Oshakati Hospital was lower than expected during the period of three years 2005-2007.

6.1.2. Main influencing factors

Limited hospital surgical capacity to provide high volume, high quality cataract surgical services, in terms of;

- Limited organizational structures (supervisory/operational) and staff establishments for ophthalmic services (number of posts and designation)
- Limited infrastructures and appropriate technology for ophthalmic services including maintenance
- Limited surgical time allocated for ophthalmic surgical services
- Limited number of technical ophthalmic staffs and skills

Limited managerial and leadership capacity for the management of available ophthalmic resources and the coordination of ophthalmic interventions at the hospital

- Lack of focal ophthalmic supervisor/leader at the unit level
- Lack of operational plans and monitoring tools
- Lack of leadership and staff motivation

Lack of internal policies for efficiency and optimal utilization of available ophthalmic resources, in terms of;

- Norms and standards for service delivery
- Clear Job descriptions
- Division of labour, assigning roles and responsibilities
- Balancing resources (inputs/outputs)
- Service planning at unit level
- Continuous monitoring and evaluation

6.2 Recommendations

6.2.1 Oshakati Hospital Authority:

Conduct internal need assessment to assess the hospital surgical capacity and identify areas for urgent rectifications.

Review and rectify the supervisory systems for ophthalmic services at the hospital

Explore the possibilities to increase the surgical allocation time from 2 to at least 3 weekly or submit proposals for the upgrading of the hospital to dedicate separate surgical rooms (both sterile and non sterile) for ophthalmic use

Develop appropriate equipment development plan, including regular replacement and maintenance. Such plan should be incorporated into the overall hospital equipment and maintenance plans. Introduce new technology where and when appropriate

Develop and submit proposal to the national level for the creation of additional new posts for different ophthalmic cadres and the upgrading of existing ones to cater for the promotional levels

Fill the vacant ophthalmic post for ophthalmic assistant that is currently vacant

Organise on the job training/orientation workshop, refresher courses for the existing staffs

Develop an ophthalmic human resources development plan and incorporate such in the main HRD plan for the hospital

Collaborate with the national and regional levels to develop and implement the northern vision 2020 district plan of actions.

Rectify the current supervisory and reporting lines for ophthalmic services; appoint ophthalmic managers and delegate administrative and managerial responsibilities.

Assess and incorporate ophthalmic infrastructural needs into the hospital renovation and infrastructural upgrading plan

To encourage the monitoring of the quality of post surgical visual outcomes by introducing the cataract surgical monitoring tools as recommended by the national Vision 2020 strategy.

Develop internal policies, mechanisms and procedures for productivities and optimal utilization of available resources, this should include, operational plans, norms, standards, specific job description and coordination mechanisms.

Explore the possibility to recruit a second ophthalmologist and initiate cataract surgical outreach services to peripheral satellite hospitals

Revise and improve the management of waiting list, including the clear criteria for qualifications based on the functional degrees of visual loss

6.2.2 National and Regional levels:

Revise and amend the current operational and supervisory health care system structures to create favourable structures and mechanisms for the establishment and implementation of ophthalmic services at all levels of the health care system.

Revise and amend the current staff establishment for health care services to allow for appropriate staff establishment for ophthalmic services with adequate number of posts for different professional cadres and job levels as well as the salaries and other incentives.

Pledge adequate financial, human and material support to district vision 2020 programmes and initiate surgical services at Rundu Hospital

Review and amended the health information management system to include essential indicators as per the recommendation of vision 2020 country strategy

Draw and implement an evidence based advocacy plan of actions for concerted efforts and resource mobilizations (public/private sectors)

Create favourable enabling conditions and facilitate the adoption and application of the Vision 2020 concepts to local levels and the development of district based vision 2020 programmes in the Country based on the finding of RAAB and CSC.

Conduct a district based Rapid Assessments of Avoidable Blindness (RAAB) including indicators for Cataract Surgical Coverage (CSC) to ascertain the magnitude of visual impairment and the cataract surgical needs per district

Conduct an impact evaluation study in the Northern Vision 2020 District to assess the impact of cataract surgical services on the quality of life of beneficiary and draw recommendations for improvement

Annex 1 Study Protocol

Research Methodology

An exploratory descriptive study design is considered employing both qualitative and quantitative data to explore the surgical productivity and describe possible factors influencing the overall performance of cataract surgical services at Oshakati Intermediate Hospital.

Study variables and issues
(Please refer to the attached table)

Target Study Population and Sample

The target study population is the Oshakati Intermediate Hospital from which a sample of 8 individual study subjects will be drawn.

Sampling Method and Recruitment to the Study

Considering the nature and technicality of data to be collected to answer the specific technically defined study objectives/questions, the purposeful sampling method is considered appropriate to enlist the required types and categories of study subjects. Based on this sampling method of choice, a sample of (8) subjects is purposefully selected and grouped into three main sub categories in accordance with their presumed technical expertise or experiences on the study topic.

Due to the technicality and specificity of this study only those health providers who are actively involved into the provision of cataract surgical services at the hospital and would be recruited into the study. They would be as follow;

All available health managers (n=5) including unit supervisors at the hospital who are actively involved either into the planning, management and the supervision of the implementation processes of ophthalmic services at the hospital.

This includes the Chief Control Officer, Human Resources manager and section or subsection managers (Ophthalmic Ward, Theatre and Outpatient).

All available technical ophthalmic staff (n=3) members who are directly involved into the actual implementation of cataract services at

the Hospital. This would consist of 1x Ophthalmologist and 2x Ophthalmic Clinical Officers.

Data Collection Techniques

Observation

Non-participatory direct observation technique will be conducted to assess the surgical procedures inside the surgical room, the screening of patients at the, infrastructures and technology at ophthalmic outpatient and the stock of essential materials and supply.

Information Reviews

Desk information review technique will be conducted to review available relevant official documents such as policy guidelines, strategic plans, health reports, system structures and staff establishment, performance appraisal, Labour Acts, work plans and budget outlines, surgical outputs, surgical monitoring forms, Health Information System tools and guidelines, Outreach program schedules and patient registers, job descriptions, etc.

In-depth Interviews

Individual in-depth interviews using semi structured questionnaires with flexible open ended questions and probing options, will be conducted with selected health workers and managers as specified in the sampling method.

Self administered questionnaire

Self administered structured questionnaires will be distributed among unit supervisors to collect quantitative data regarding cataract surgery.

Data Collection Procedures

Due to resources and time limitations, a research team consisting of the principal researcher (the ICHD student) and one assistant data collector to be recruited at site will be undertaking the research work within a minimum of two weeks at the study site.

Data Processing and Analysis

All quantitative and qualitative data will be collected in an integrated manner and transcribed, organized and summarized as per research objectives, corresponding variables and sub category of respondents, right away from the point of data collection. In addition, all data will be carefully cross checked for completeness and relevance, coded and entered into compilation sheets for analysis and interpretation of results.

The proposed study sample being of a small size and the eminent limited resources at hands, manual data compilation will be undertaken in this study for the processing and analysis of the results.

Ethical Considerations

Ethical clearance to conduct this study would be sought from KIT ethical committee before the proceeding of the study work. In addition a special authorization would be sought from the Ministry of Health and Social Services in the host country to obtain authorization to undertake this study at the Government Health facilities.

The researcher would follow and maintained ethical procedures to protect the study participants against any form of violations against human rights, free wills, integrity, confidentiality and beneficence. Written informed consents would be sought from individual study participants on their own voluntary basis in accordance with the principles of medical research ethics and human rights.

In addition, a separate room would be secured from the Hospital authority and used as the venue for interviews in order to grant personal privacy and comfort during the interview process. Other venues to the choices of study subjects would also be considered for used during the process of data collection at the study site.

Local customs, institutional cultures and values would be respected during the conduct of the study work and arrangement would be make before hand, to insure that the outcomes of this study will be shared with all parties involved including the Hospital management, staff members and the national health authority.

Gender Issues

The Namibian public health care system is highly dominated by female health providers than males, and so is the ophthalmic service at Oshakati Hospital making it less likely to strike a balance between

male and female participants. However special caution would be taken into considerations during the conducts of study work, the use of gender insensitive words, phrases or gestures would be avoided to eliminate gender biasing or any form of violation.

Quality Assurance Mechanisms

The researcher had the responsibility to ensure that the research assistant was adequately trained on data collection and processing through supervised practical training sessions to be conducted prior to the conduct of the study. She/he would also well orientate on research ethics and conducts.

A small scale pilot study will be conducted at Windhoek Central Hospital, in Windhoek prior to the main study to pre-test the research instruments and techniques to ensure reliability and validity of the study results. The pre-testing of study instruments would also served to refine and eliminate impractical and technical discrepancies and evaluate the conducts, skills and proficiency of the researcher to appropriately execute their tasks in the field.

During this exercise, all data collection tools including consent forms, interviewer's guides and consent forms would be put to test and refined as appropriate. In addition, triangulation of data would applied in the form of employing different data collection techniques to obtain data from different categories of respondents to ensure the validly of results.

Recording tools and interviewers guides would be developed and used during the events of data collection, particularly the qualitative data collection. It's expected that the principal researcher would take care of the interview as the interviewer and the assistant would record the interview process. Collected data will be appropriately checked right at the end of every interview session and cross checked again for completeness and consistency during the processing for analysis.

Annex 2 Research Framework

Specific Objectives	Issues and Variables	Data Collection Techniques	Respondents/Key Informants
To explore and describe the Hospital capacity to provide cataract services	Infrastructures (Ward, OR and OPD) Ophthalmic surgical team (Skill mix) Appropriate technology and non technical office equipment Surgical and optical materials and drug supplies Modes of cataract service delivery Planning and Budget allocations Supervision and coordination Beds used for cataract surgery	Direct observations In-depth interviews	Key Informants Unit managers Key Respondents: Oph. Clinical Officers Ophthalmologist
To explore and describe the organizational structures and staff establishment of ophthalmic services at Oshakati Hospital.	Operational and supervisory structures for Eyecare Supervisory and reporting lines Planning and coordination of eyecare activities Posts allocated for ophthalmic staff (basic and promotional entries) Job categories for different ophthalmic cadres Salary structures and grading for ophthalmic staffs Human resources development plan	Desk based information reviews In depth interviews	Sources of information: Official working documents and publications Key Respondents: Hospital Chief Control Officer and HR Manager
To explore the trends of productivity and quality control of cataract services at the Hospital	Cataract patients flow Surgical targets and outputs Quality of Post-surgical visual outcomes Utilization of surgical facility and time Surgical waiting list Cataract surgical rate (CSR) Utilization of surgeon and support available	Self-Administered questionnaire Direct observation In-depth interviews	Key Informants: Unit managers Key Respondents: Ophthalmic unit manager (OPD) and

	Systems and procedures for service delivery (standards, norms, teaming) Quality control mechanisms		ophthalmologist
To identify and describe the perceived barriers influencing staff motivation to perform their duties at the Hospital as well as their suggestions for improvements.	Staff motivation and support Leadership and management Work environment and job security Incentives and other conditions of work Career development opportunity	In-depth interviews	Key informants: HR Manager, Key Respondents: Ophthalmic Clinical Officers and Ophthalmologist
To discuss the research outcomes and draw recommendations to advise the hospital management and the national vision 2020 coordinating committee for policy-interventions to improve the situations.	Conduct a briefing meeting with the national Vision 2020 committee and all other key participants to discuss the research outcomes and draw necessary recommendation for changes.	Presentation and plenary discussion.	National Vision 2020 Committee Members, hospital management and key participants

Annex 3 Research Instruments

Consent forms

Written Consent form for health managers, supervisors and staff members

Good Morning Sir/Madam

We are a research team from the Royal Tropical Institute in the Netherlands conducting a study on cataract surgical services at your Hospital.

The purpose of the study is to explore and describe factors influencing the overall performance of cataract surgical services at the Hospital. Based on your roles and responsibilities as the Health Manager, Unit Supervisor or health provider, we would like to kindly request you for your voluntary participation in this study to share with us your knowledge and experiences on some of the issues concerning the ophthalmic services, in particular the cataract surgical activities at the Hospital as well as your personal opinions and suggestions for the improvement of such services.

The findings of this study will be shared with the Ministry of Health and Social Services to develop system and programs aimed at improving cataract surgical services at the Hospital in the interests of improving eye health of the general population. You are also hereby reassured that, your valuable contributions shall solely be used for the purpose of this study and the content of your contributions shall be kept highly confidential. Please also be kindly informed that your name or personal particulars will not be recorded and your participation or identity shall be kept confidential and not revealed to anyone at any point during and after the study.

You have all the right not to answer any questions that you may not feel comfortable to answer and or withhold/ withdraw your participation from the study at any time as the situation may deem necessary. At the end of this study, important finding shall be shared with the entire hospital management for the benefit of improving cataract surgical services.

A private office at the outpatient department is made available for the interviews but you are also free to choose you own venue where we could sit and discuss. The researchers may also need your permission to undertake direct observations at different units to acquaint themselves with certain procedures and environment at different units of the Hospital. Interview sessions shall take approximately 30 minutes but may take longer depending on the issues under discussions.

We thank you very much in advance for your kindness and cooperation in this regard and your valuable inputs will be highly appreciated.

Participant Code ……...
Investigator Name……..
Date …/07/ 2008

INTERVIEW GUIDE **Code No…….**

Topic Guide for Key Respondent

Respondent Number	……
Date of Interview	……
Name of the Hospital	……
Interviewer Name	……
Interview Time	……

Background information

Sex	Male/Female
Occupation	……..
Position Held	……..
Service Unit	……..
Experience in the current position	..Years/Months

Organization and structural establishment of eye care services at the Hospital

The Oshakati Hospital is so far the only public facility providing tertiary eyecare services in the entire northern regions. This being the case, could you please describe existing organizational structures for eyecare service delivery at the hospital?

What are the main structural components of eyecare services at the Hospital?

Diagnostic and treatment (OPD)
Dedicated Wards
Dedicated Operating Room (OR)

What systems are there in place for the planning, supervision and coordination of eyecare activities at the hospital?

Eyecare planning and coordination
Supervisory and reporting lines

What do you perceive as the main causes of such problems (if any) and what measures would you propose to improve the situation?
Any other important point that you would like to rise in this regard?

Thank you very much for your valuable inputs and time,
I will be around for sometimes, and I may come back for any clarification or additional information, should there be any need to do so.

INTERVIEW GUIDE **Code ……..**

Topic Guide for Key Informants

Respondent Number ……
Date of Interview ……...

Name of the Hospital ……
Interviewer Name ……
Interview Time ……

Background information

Sex ……
Occupation ……
Position Held ……
Service Unit ……
Experience in the current position
…….Years/Months

Eyecare Staff Establishment at Oshakati Hospital

Oshakati Hospital is the main referral hospital in the entire northern regions, and the only health facility providing tertiary eye care services. This being the case, could you please describe and elaborate on the following points, in relation to the present staff establishment of eyecare services at the hospital.

a) Posts for ophthalmic cadres in the hospital staff establishment

Total in numbers
Basic entries
Promotional entries

b) Ophthalmic cadres and job categories presently recognized in the staff establishment

Technical and managerial cadres
Junior, middle and senior job categories

What are the present rewarding and motivating systems and mechanisms are there to enhance staff performance and productivity

Salary structures and grading for ophthalmic cadres
Other incentives and condition of works
Clear staffing policies and Job descriptions
Regular staff meetings and communication

What career development and promotional opportunities are there for ophthalmic personnel?

What do you perceive as the main problems with the present staff establishment for eye care services and if any, what measure would you suggest to improve the situation?

Any other important point that you would like to rise in this regard?

Thank you very for your valuable inputs, your time and ultimately, your kindness

By the way, I am still around for some times and would pop in for some clarifications or additional information, should there be a need to do so. I would appreciate it very much if I would still be welcome to do so!

INTERVIEW GUIDE **Code No.....**

Topic Guide for Key Respondents

Respondent Number ……
Date of Interview …… July, 2008

Name of the Hospital ……..
Interviewer Name ……..
Time Start the interview Starts at……Ends at…

Background information

Sex Male…..
Female…….
Occupation ……
Position Held ……
Service Unit ……
Experience in the current position
…….Years/Months

Hospital capacity to provide cataract services

1. Oshakati Hospital is the main referral hospital in the entire northern regions and the only health facility providing tertiary eyecare services. This being the case, could you please describe and elaborate on the following points, in relation to the present infrastructural capacity of the eyecare services at the hospital.

   OPD section
   Ophthalmic surgical section
   Ophthalmic wards

1a. What do you perceive as the main problems if any and what measures would you suggest improving the situation?

2. Could you please describe and elaborate on the status of the ophthalmic technical equipment at the hospital in terms of availability and functionality? (Particularly those that, are necessary for cataract services)

   Diagnostic and biometric equipment

Surgical equipments and instruments for cataract services
None technical equipment
Appropriate technology

2a. What do you perceive as the main problems if any and what are the causes of such problems?
2b. What measures would you recommend to improve the situation?

Could you please describe the size and the skill compositions of the current ophthalmic team at the hospital?

Surgeons
Ophthalmic clinical Officers
Optometrists
Instrument nurses
Equipment technicians
Patient Councillors
Ophthalmic nurses

3a What do you perceive as the main problems in relation to the size and skill composition of the team, if any?
3b What are your personal opinions on the staff competency (technical and managerial skills)
3c What measures would you suggest to improve the efficiency and competency of the ophthalmic team?

Could you please describe the procurement and stock keeping mechanisms for surgical and optical materials necessary for cataract surgery at the hospital?

Sutures; viscoelastics; BSS; Drapes, Cauteries; Micro sponges; Swabs; needles; Syringes
Pre/intra and post surgical medications
Intra ocular lenses, aphakic and conventional lenses

4a What do you perceive as the main problems with the procurement and stock management if any?
4b What measures would you suggest to improve the situation?

5 How do you describe the current planning process and budget allocation for cataract surgical activities at the hospital as observed in the past three years?
Strategic and operational plans for cataract services
Operational and capital budget allocations

External sources of support if any,

5a What do you perceive as the main problems if any and what are the main causes?

5b What measures would you suggest to improve the situation?

6 How do you describe the current supervision and coordination of ophthalmic activities at the hospital in relation to?

Supervisory and reporting lines
Supervisory tools and guidelines

6a From your past personal observation and experiences, what do you perceive as the main problems and causes if any in the supervisory system of ophthalmic services at the Hospital?

6b What measures would you propose to improve the current situation?

Could you please describe the current modes of cataract service delivery at the hospital?

Outreach cataract screening services (opportunistic case finding)
Outreach cataract surgical services
Hospital based cataract services

7a What do you perceive as the main problems and causes if any and what measures would you recommend improving the situation?

8 Any other important point would you like to share with me or further clarification on any of the points discussed?

Thank you very much for your valuable inputs, your time and kindness!

By the way, I will still be around for sometimes and I may pop in at any time should there be a need for more information or clarifications on certain points that we have discussed, please allow me to do so.

INTERVIEW GUIDE **Code No……**

Topic Guide for Key Respondents

Respondent Number	……
Date of Interview	…… July, 2008
Name of the Hospital	……..
Interviewer Name	……..
Interview time at…	Start at……Ends

Background information

Sex	Male….. Female…….
Occupation	……
Position Held	……
Service Unit	……
Experience in the current position	Years…Or Months……

Overall staff motivation to perform

1 As a member of the team, how do you rate your level of motivation to perform your duties and how about that of the entire team?

Personal motivation	High…… Medial……. Low…….
Team work and motivation	High…….Medium……..Low …..

1a What do you perceive as the main factors affecting your performance at work and that of other members of the team?

1b What measures would you recommend to help boost the staff moral and motivation to perform their duties more efficiently?

2 How do you describe the kind of leadership style under which you work, in relation to?
Vision
Understanding
Listen to team member's inputs and suggestions
Flexibility to changes, new innovations and ideas
Team building and support
Recognition and respect for your inputs and efforts

2a What do you perceive as the main leadership gap if any and what measures would you suggest to improve the situation?

3 What career development mechanisms are there in place to insure continuous education and skill development for ophthalmic staff members at the hospital?

Workshops and symposiums
In cervices training
Long and short term training
Promotions and recognitions

3a What do you perceive as the main problems and causes if any and what measure would you suggest to help improve the situation?

4 How do you perceive your work environment in terms of the following points and how does this influence your overall performance and productivity at your work place?

Decency and cleanness
Availability of modern functional of equipments
Appropriate technology
Infrastructural design and maintenance
Office furniture and equipment
Availability of meals or refreshment facility

4a What do you perceive as the main problems and causes if any and what measures would you recommend to improve the situation?

5 How do you describe the current rewarding systems and other conditions of work available for you and how does this influence your level of motivation and performance at your place of work?

Appraisal system
Allowances (overtimes, S/T, subsidies)
Salary grading and job category
Annual and compassionate leaves

5a What do you perceive as the main problems and causes if any and what measures would you suggest to improving the situation?

6 Any other important point would you like to raise or share with me in this regard?

Thank you very much for your valuable time, inputs and kindness

INTERVIEW GUIDE **Code No……**

Topic Guide for Key Respondents (Unit managers, Ophthalmologist,)

Respondent Number ……
Date of Interview …… July, 2008

Name of the Hospital ……..
Interviewer Name ……..
Interview time Start at ……Ends at…

Background information

Sex Male…..
Female…….
Occupation ……
Position Held ……
Service Unit ……
Experience in the current position Years……Or Month…….

PRODUCTIVITY AND QUALITY CONTROL

As a unit head, what systems and procedures are there used to enhance staff productivity and quality of cataract surgical out comes?

- Work plan
- Sharing of workloads
- Standard procedures and norms
- Regular review meeting
- Teaming and sharing of responsibilities
- Job descriptions

What do you perceive as the main problems and causes if any and what measures would you suggest improving the situation?

What mechanisms and systems are used for quality control of cataract services at the hospital?

- Screening and selection

Patient counseling
Pre operative case management
Actual surgery
Post operative care and follow ups

What mechanisms are there in place for the monitoring of post-surgical visual outcomes following cataract surgery?

Cataract surgical monitoring forms and software
Who fill the forms?
Data analysis and reporting

How satisfactory were the surgical outcomes for 2007 and what were the main observed obstacles and challenges that had affected the results?

What measures had so far been taken to improve the post surgical visual outcomes if any?

What were the main problems and causes observed in this areas and what measures would you recommend to improving the situation?

What was your cataract surgical target for 2007 and what challenges did you face into meeting such target, if any?

What suggestions would you make to remove such obstacles and improving the situation?

What was your cataract surgical rate (CSR) for 2007 and what were your main strategies for further increase?

What were the main challenges and obstacles into meeting such target and what suggestions would you recommend improving the situation?

Any other point would you like to raise or share with me in this regard or ant point for clarification?

Thank you very much for your time, kindness and valuable inputs!

SELF ADMINISTERED STRUCTURED QUESTIONAIRE

Key Informants Code No……

Respondent Number ……
Date of Interview …… July, 2008

Name of the Hospital ……..
Interviewer Name ……..

Background information

Sex Male…..
Female…….
Occupation ……
Position Held .....
Service Unit ……
No. of years in the current position ……

Productivity of cataract surgical services at Oshakati Intermediate Hospital

Flow of cataract patients at the Hospital

1 Number of cataract cases screened at the Hospital in 2005, 2006, 2007

2 Number of cataract cases admitted at Hospital for surgery in 2005; 2006; 2007
3 Number of cataract referrals received at Hospital in 2005; 2006 and 2007
4 Utilization of surgical facility and time

1 Number of days the surgical theatre is open for ophthalmic surgery per year
2 Number of days allocated for ophthalmic surgery per week
3 Standard operational time (open from….. and close at ……) per day
4 Number of hours allocated for ophthalmic surgery
5 Average length of stay in the wards (days) after surgery

Utilization of surgeon and supports

1 Number of surgeons available at the hospital
2 Number of surgical days allocated per surgeon
3 Number of cataract surgery per surgeon per year
4 Number of surgical assistants per surgeon
5 Number of cataract surgical instrument sets per surgeon

6 Number of surgical tables
7 Number of ophthalmic operating microscopes

Cataract surgical outputs

1 What was the cataract surgical target for 2005, 2006 and 2007?
2 Number of cataract operations performed at the Hospital in 2005, 2006 and 2007
3 Number of cataract operations performed on Outreach surgical services in 2005, 2006 and 2007
4 Proportion of female cataract cases operated at the Hospital over the past years.
5 What was the CSR for the northern vision 2020 Districts in 2007?
6 Number of cataract cases currently in the Hospital surgical waiting list (2008)

Post surgical visual outcomes

1 Proportion of post cataract patients who completed their three compulsory follow ups
2 Proportion of cataract cases with post cataract visual outcomes:

a) Good vision (6/18-6/6); Borderline vision (6/60-6/6/18) and Poor vision (<6/60)

d) Specify your figures per year (2005-2007)

Post-cataract visual corrections

1 Proportion of cataract operations with IOL implants in 2005, 2006 and 2007
2 Proportion of post cataract patients refracted and provided with corrective ophthalmic spectacles following surgery over the past years (2005-2007).

OBERVATION GUIDE LIST

Key Informants: OPD Supervisors
Ward Supervisor
Main Theatre Supervisor

Availability of Functioning Diagnostic/Surgical Equipment and technology

1 Number of Slit-Lamp Bio-microscopes available
2 Number of Direct ophthalmoscopes available
3 Number of Keratometers
4 Number of A-Scanners
5 Number of surgical tables
6 Number of operating microscopes
7 Number of phaco-emulsifier
8 Number of complete sets of cataract surgical micro instruments
9 Number of sterilizers and sterilizing circle time
10 Number of V/A projectors
11 Number of Retinoscopes

Infrastructural capacity

1 Number of OPD screening rooms available
2 How many beds are there in the ophthalmic wards?
3 How many of the total ophthalmic beds are solely used for cataract service
4 Number of surgical rooms available for ophthalmic surgery at the Hospital
5 Number of surgical assistants per doctor
6 Average time spent per cataract surgical procedure
7 How many hours is the operating theatre open in a day

Availability of surgical and optical materials and essential drugs

1 Intra Ocular Lenses
2 10/0 Nylon and 4/0 Silk Sutures
3 Micro sponges
4 Basal salt or Ligal Lactate solution
5 IV Lines (BSS administration sets)
6 Covocol (Charbacol) injection vials (Myotic drugs)
7 Visco-elastic materials
8 Diamox, Cycloplegics, anti inflammatory and Anti-biotic drugs
9 Aphakic and conventional ophthalmic lenses

DESK INFORMATION REVIEW

Key Informants:

<u>National Official Documents</u>
National Development plan 11 (2001-2005)
V2020 Cataract Control Strategies

- Human resources
- Equipment and Technology
- Infrastructures
- Procurement and stock management (surgical, optical materials and drugs)
- Strategic work plan

Health Care System Structures and Staff Establishment
- Operational and supervisory structures for Eyecare
- Supervisory and reporting lines
- No. of posts for ophthalmic staff (Both vacant and filled posts)
- Job categories for different ophthalmic cadres
- No. of promotional posts for senior ophthalmic staff
- ng for different ophthalmic cadres
- Job descriptions for ophthalmic services providers

Human Resources Development Plan
- Long and short term training
- Career Development Plan

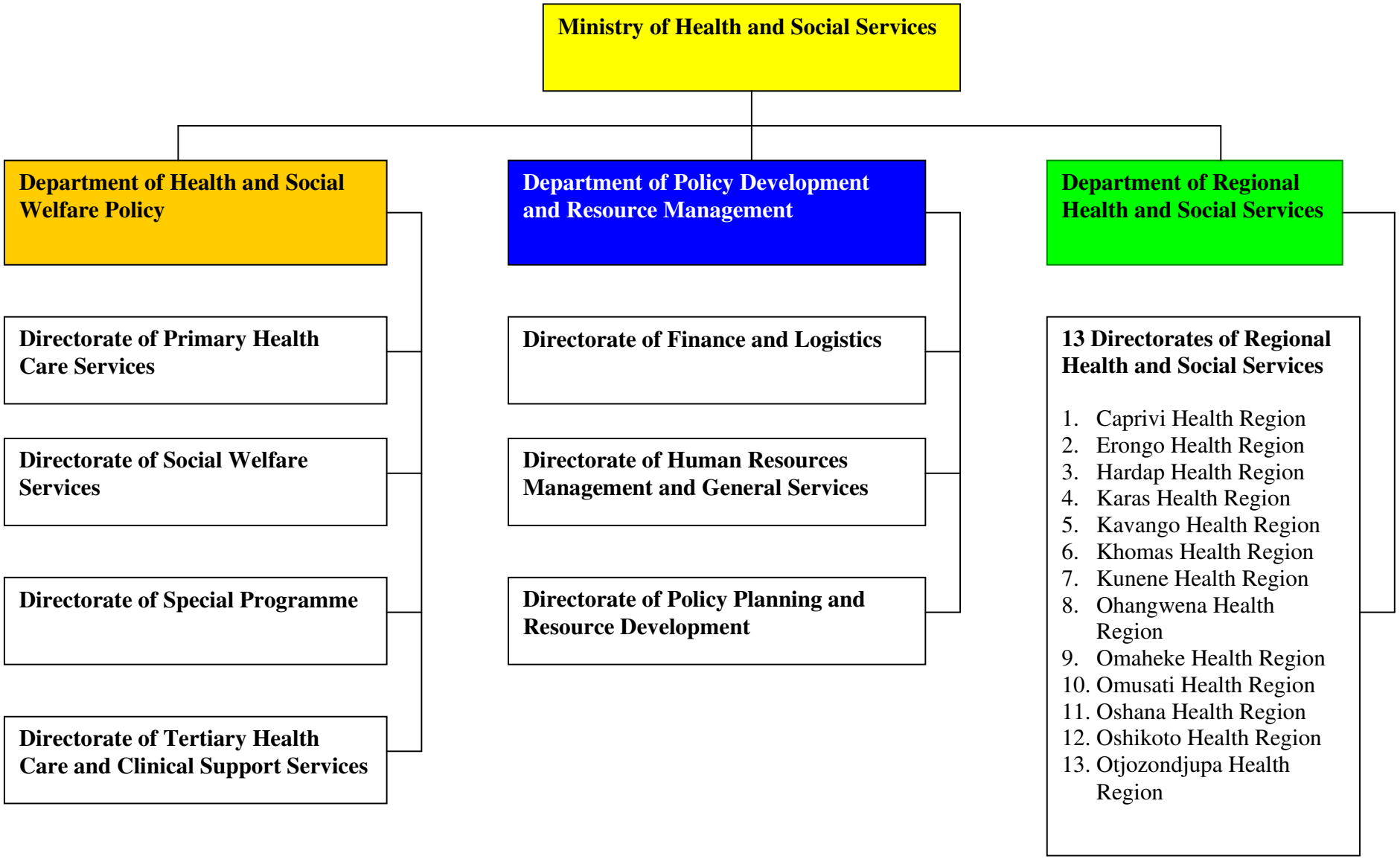
Other conditions of services
- Labour act guidelines
- Performance appraisal mechanism
- Rewarding systems (bonus, allowances, subsidies etc)

Procurement guidelines and procedures
- National Essential Drug list (ophthalmic drugs)
- Government Medical Store itemized list (ophthalmic materials: sutures, IOL, drapes, etc)
- Procurement guidelines

Health Information Management System
- Main ophthalmic indicators
- Tools for ophthalmic data collection and reporting guidelines (surgical data)

Monitoring and Supervision of cataract surgical services
- Annual Work Plans
- Job Descriptions
- Monitoring tools and performance indicators
- Post surgical Visual Outcomes Monitoring tools
- Inventory lists of equipment and maintenance plan
- Evaluation plan

Annex 4 **STRUCTURAL ORGANIZATION OF HEALTH AND SOCIAL SERVICES**



Annex 5

HOSPITAL SURGICAL CAPACITY AND UTILIZATION RATES

1. Projected maximum surgical capacity for Oshakati Hospital

- 300 days, room available for surgery/year
- 3 days (average length of stay)
- 20 Beds for cataract only

Bed Occupancy rate	=	300/3	**=**	100
Surgical Capacity	=	100 x 20 beds	=	2000 surgeries

2. Current calculated Capacity of Oshakati Hospital

- Room available for ophthalmic surgery only for 96 days
- Average length of patient stays 3 days
- 20 beds exclusively for cataract use

Bed Occupancy Rate	=	32
Surgical Capacity	=	640 surgeries/ year
Current facility utilization rate (2007)	**=**	83%

3. Projected Maximum Surgical Outputs (Dedicated Room)

- Surgical room available for 300 days a year
- Average Surgical Volume 40 surgeries per week

Maximum Surgical Volume	=	2080 surgeries/ year

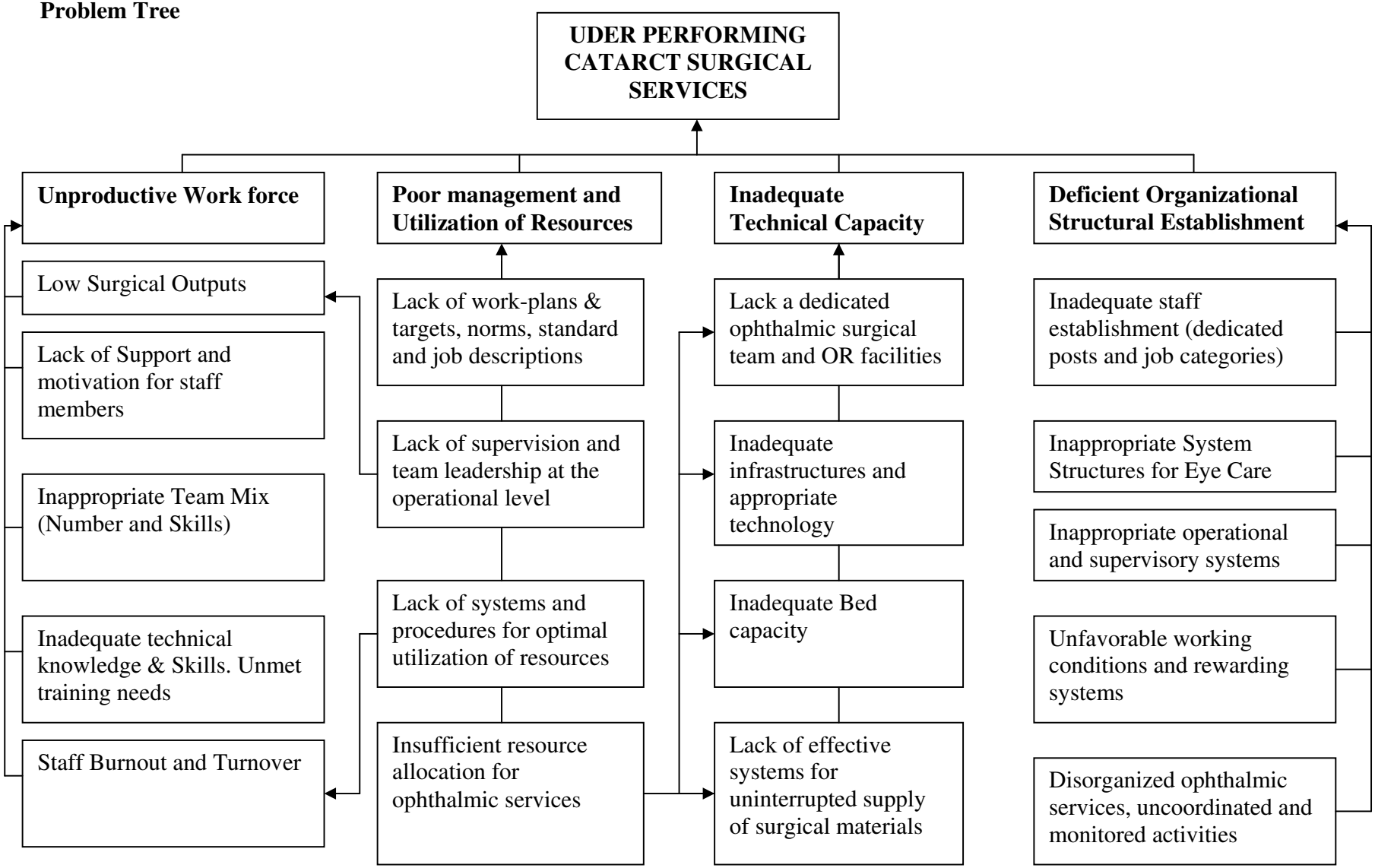
4. Current Surgical Outputs (Shared Room)

- Surgical room available for 96 days a year
- Average efficiency 10 surgery per week

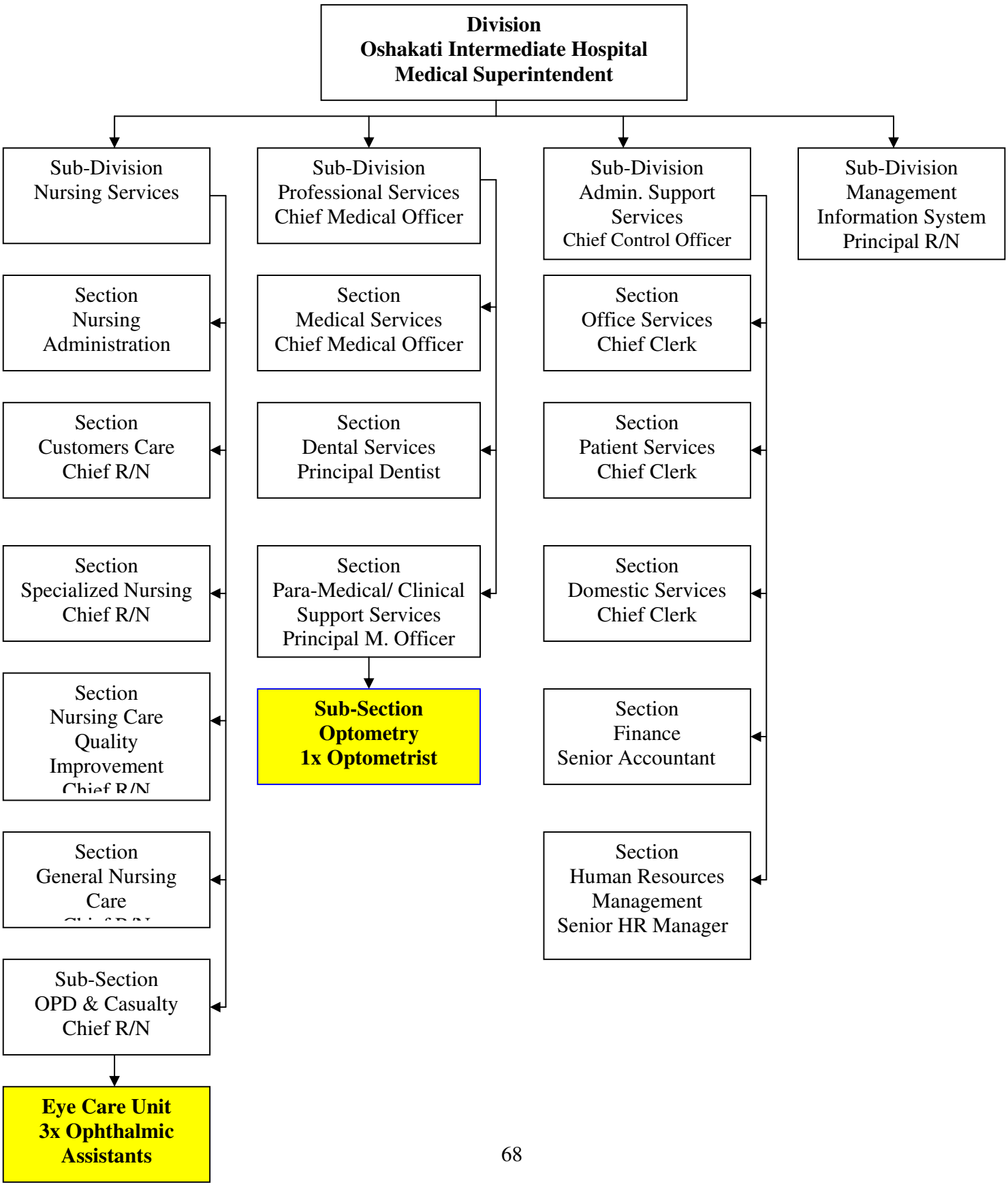
Actual Surgical Volume	=	520 Surgeries/year

Annex 6

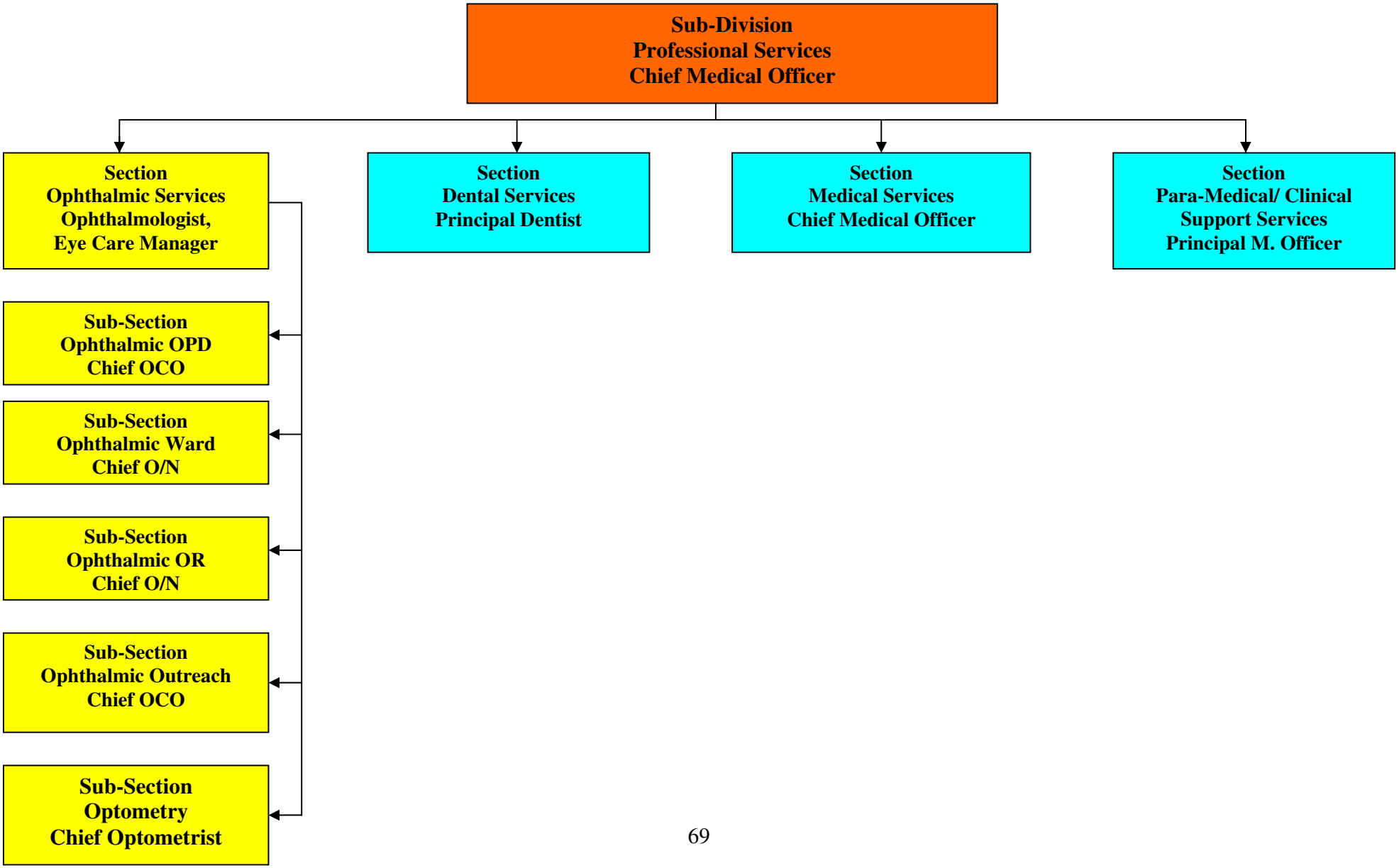
Problem Tree



Annex 7 **ORGANOGRAM OF OSHAKATI INTERMEDIATE HOSPITAL**



Annex 7 b **IDEAL ORGANOGRAM OF OPHTHALMIC SERVICES AT OSHAKATI HOSPITAL**



Annex 8

Programme manager for district VISION 2020 programme

Job description

1 Bridging strategy (outreach)

1. Plan schedule for existing sites
2. Make contacts (with all stakeholders) for establishing new sites e.g. or obtaining support for existing sites (e.g. basket funds)
3. Prepare budget for activities (promotion, follow up, patient and staff transport)
4. Ensure that supplies are ready
5. Organize patient transport after surgery (to home)
6. Attend and coordinate activities
7. Prepare and submit reports to district medical officer, sub-district medical officer, supporting NGO, participating groups (e.g., service clubs)

2 Stores

1. Receive and issue all stores that will supply bridging strategy, OT, OPD ward, (includes spectacles)
2. Make regular inventory reports and reorder when necessary to ensure that supplies are in stock

3 Programme Accounting

1. Keep track of accounting for overall eye care programme and produce reports including cost recovery report
2. Bank account reconciliation
3. Track and report on bridging strategy costs
4. Receives money from nurse or counselor from patient fees on a daily basis.
5. Negotiates for and pays hospital agreed flat fees (bed, board, files) for eye in- patients treated in hospital

Training

1. Training (or organizing training with stakeholders) health workers about bridging strategy and taking vision

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