Mid-term Project evaluation

Of the CBM Funded Project P3851

Strengthening Audiology and Ear Nose and Throat (ENT) services in Zambia Beit Cure Hospital (BCH), Zambia

Period under review: 2018 - 2020

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Published date: 21ST January, 2021

Disclaimer:

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Program/Project Name, Project Number	Strengthening Audiology and ENT services in Zambia 3851 – MYP
Project Location, Country	Southern Province, Zambia
Partner Organisation	Beit Cure hospital, Zambia.
Project start & end dates, Phase of project	01.09.2018 – 31.12.2021
Total cost of project	EUR 871,850.00
Evaluation Purpose	The evaluation will assess the programme to determine: i. What has worked well, what did not work well and why? ii. What lessons can be drawn and how they will shape the current and future ENT interventions. iii. Whether it's necessary to change the project approaches to address emerging issues.
Evaluation Type (mid-term, end of phase)	Mid-Term Evaluation
Commissioning organisation/contact person	Beit Cure Hospital - Martin Chipimo – Project Manager
Names and organisations of the Evaluation Team members	Progress H. Nyanga (PhD), Proff. Lebogang Ramma (PhD), A. Banda (PhD) and Muchimba M. Syamwalu
Primary Methodology	Mixed methods based on desk study and stakeholder interaction.
Evaluation Start and End Dates	9TH November, 2020- 18th March, 2021
Recipient of Final Evaluation Report	Beit Cure Hospital
Date of report submission	21st January, 2021

Executive Summary

Zambia faces multiple challenges with regards to Ear Nose and Throat (ENT) health service provision including low numbers of ENT professionals, low prioritization of ENT training and service provision, low levels of equipment, low levels of investments by both government and non-state actors and low numbers of ENT mentors. One in every three patients visiting a health facility has an ENT related Problem[1]. The policy environment is improving with the National ENT Strategic Plan in place.

Since 2018 Beit Cure Hospital through the support from CBM has been implementing a project 'Strengthening Audiology and Ear, Nose and Throat (ENT) Medical Services in Zambia' whose goal is to influence ENT in Zambia at 3 levels namely: The macro level, the meso level and at the micro level. Some of the key objectives involve building technical capacity of government health staff; improve ENT infrastructure and equipment availability in 3 provinces and increase ENT and Audiology screening in (4) four districts of Southern Province.

This Mid Term Evaluation (MTE) was commissioned to ascertain the project performance towards the end of the third year, that is, 2020. Using mixed methods, the MTE established the following according to the results framework for the project.

Result 1: ***The treatment of ear diseases is permanently embedded in the Zambian health system.***
In terms of the curriculum review, the evidence shows that the revised curricular already exists and that is has sufficient ENT content to enhance practical application but the challenge is the lack of specialized ENT staff to teach ENT components at nursing and clinical medicine training schools in Zambia outside of the University of Zambia School of Medicine in Lusaka District, Michael Chilufya Sata School of Medicine in Ndola District (Copperbelt Province) and Levy Mwanawasa School of Medicine in Lusaka District (the 3 mentioned schools are the only academic institutions with ENT specialized staff to teach the ENT curricular within those schools). The other associated challenge is limited ENT practicum sites linked to few specialists and limited equipment. The intended epidemiological/prevalence survey has unnecessarily delayed due to procurement-related administrative issues between the earlier proposed consultants to conduct the survey and the client in addition to COVID-19 effect. The National ENT Technical Committee has been meeting but not the expanded[2] National ENT Committee. This is because of the formal aspects of the establishment and appointment of the committee members has not been finalized. The delays are partly due to overwhelming responsibilities of the office of ENT National coordinator who has other primary responsibilities and lacks an assistant coordinator.

[1] The Government of the Republic of Zambia (2017), Zambia National Health Strategic Plan (2017-2021).

[2] The extended National ENT Committee includes all other non-technical health care professionals such as Disability People Organizations, cooperating partners, include (Zambia Association for Children With Disabilities, Association of The Deaf, Association of Sign Language Interpreters, The Zambia Agency for Persons With Disability etc.) in addition to the Technical ENT Committee made up of Healthcare professionals (consultants ENT Surgeons, Audiologists and Speech Therapists).

Result 2: ***An increased number of ear specific qualified medical and paramedical specialist are available in target provinces***. The project has trained a total of 36 Clinical officers and Nurses in ENT diagnosis, prevention, and basic treatment with additional 13 nurses trained in speech therapy against a target of 30. Additionally, health planners have also been trained as targeted. The project has exceeded its targets under this result area. However, only 4 out of 8 ENT specialists have been trained which reflects a moderate performance on capacity building directed towards capacitating the ENT specialists in Zambia. This is because the of ENT surgeons available to be trained and the Temporal bone lab is not yet completely equipped to be used in training ENT surgeons within the country. It is worth noting that the training of ENT Specialists was planned at 3 levels i.e. (i) Continuous Professional Development (CPD) training of already qualified specialists (02 Surgeons have undergone CPD within the region) (ii) Capacity support for ENT Surgeons who were already in school but would graduate during the project period (2 have already graduated and the third one is expected to graduate in 2021) (iii) Training of new ENT surgeons under the planned Masters in medicine(MMed) Programme (three candidates are already in training under the mentorship of Dr. Hapunda at the University Teaching Hospital, despite the programme awaiting completion of formalities).

Result 3: ***Ear medical infrastructure is permanently improved in Zambia.***

Significant progress has been recorded on this result with audiometric booth completed at Livingstone Central Hospital; the Temporal Bone Laboratory has reached an advanced stage with most equipment already procured; the University teaching hospital and Kabwe Central Hospital has received the planned essential equipment for ENT health service provision and all nurses and clinical officers trained have been given some necessary equipment for ENT diagnosis and treatment of minor problems. Audiometric booths at Request Muntanga Hospital and Choma General Hospital are yet to be constructed and furnished. Equipment at Livingstone Central Hospital is yet to be provided and the audiometric booth is yet to be commissioned for use. The delay in commissioning was due to the ENT specialist who was being awaited and has since come back from studies. Hence, the investments in ENT at Livingstone Central Hospital is going to increase access to ENT services within Southern province and reduce referrals to University Teaching Hospital and Beit Cure Hospital.

Result 4: ***Outreach activities and screenings have reached more patients.***

Despite COVID 19 and closure of schools that were target sites for screening, the project recorded a total of 9774 out of a target of 22100 (44% achievement) by the end of 2021. Given the government position to open the schools despite the second spike, there is a high likelihood that a 65-70% achievement can realized especially if the outreach team observes the anti-COVID-19 health guidelines on the part of the pupils and themselves. In terms of screening from clinical outreach the project recorded a total of 23570 out of a target of 31800 (74% achievement) by end of 2021.

Conclusion

In general, the project seems to be on track to meet its intended objectives. This is because firstly, the return of an ENT to Livingstone is going to increase the number of ENT surgeries. Secondly the community sensitization and referrals to Livingstone general hospital are likely to increase because of the efforts of community health volunteers that were trained in the fourth quarter of 2020. Thirdly, most of the training for medical professional have been completed and a plan to train the remaining

few is already in place as explained in result 2 above. This tool is likely to increase access to ENT services within the project region. Fourthly, most of the infrastructure needed to enhance the provision of ENT services has been procured. Fifthly, the remaining audio-technicians will be graduating within the course of 2021 and deployed back to run the audiometric booths. Sixthly, the re-opening of the schools creates an opportunity to increase the number of ENT screening beyond the current 44%. Against the foregoing developments it is thus concluded that the project is on the right track towards achieving the intended goals. However, the project has encountered challenges that have negatively impacted progress towards the achievement of some of the intended project goals. This was due to several factors ranging from delays due to COVID-19 that has reduced the number of school outreaches and generally delayed the implementation of project activities due to lockdown, administrative challenges with partners such as consultant for the epidemiological survey where the negotiations took unrealistically longer time (more than a year to come to an agreement) thus delayed the much needed study and some inherent project challenges due to other duties by the project team combined with the aforementioned challenges resulted in most planned activities in the fourth quarter 2020 to be pushed to 2021 including finalization and handing over of the audiometric booth and the temporal bone laboratory.

Recommendations

i. **There is need to improve in data recording and quality management**
   There is need to adopt units in the project that provide exact numbers of persons than multiple counting of the same person due to multiple conditions. The data management system should be able to provide the number of persons and the number of conditions each one has. There is need to improve data management to ensure consistency of the data across various sources; avoiding mixing numbers from multiple projects; eliminate some gaps such as multiple units for age (expressed as M, MT, Y and no unit at all) and inconsistent date format.

ii. **Enhanced efficiency and effectiveness**
   The project must prioritize activities that need relatively less time yet have a huge impact such as completion and operationalization of the Temporal bone lab and audiometric booths

iii. **Continued capacity building**
   The capacity building could be considered for upscaling beyond the current numbers targeted to include critical persons such as directors, principle officers and planners from ministry of Local government/ local authorities (secretariat to overall planning process at District and Provincial level in line with current mandate of Integrated Development Planning and need for Integrated District Plans). Already existing general surgeons and dental surgeons interested in doing some minor ENT surgeries could be considered for training once the temporal bone laboratory is operational.

iv. **Partnering with institutions that can conduct research**
   It is important to have effective and efficient options for conducting national epidemiological studies, such as offering a commissioned research to relevant units at universities given that there is already some collaboration in ENT related issues with some of the Universities.

v. **Development of sustainability framework**
   There is need to increase the ownership of the intervention by the ministry of health and other relevant institutions through active involvement in developing a sustainability plan, increase the awareness over the need for audiology department in health facilities and integration of ENT data collection into the

mainstream health service system. To this end, continued support to the ENT National Coordination Office is important.

Strategic networking

vi. It is important for the project to make strategic collaborations with institutions that add value to ENT service provisions such as ZENTAS, Health Professional Council of Zambia and Ministry of local government (responsible for integrated development planning) to assist in providing quality checks of the training programs supported by the projects, push for the recognition of such trainings in the Ministry of health and also to push for recognition of ENT service provision and investments in the ongoing formulation of Integrated Development Plans (IDPs) for Districts. Above all, the project could consider providing the statistics it has been collecting to the secretariat for the IDP at district level and to health planners as well.

1. Introduction

Zambia is a landlocked country with a population expected to grow from 13. 7 million in 2011 to 17.9 million in 2020[3] thus putting significant pressure to improve access to quality health services for all. The population in rural areas is projected to grow from 8.2 million in 2011 to 10.1 million in, while in urban areas it is expected to grow from 5.6 million in 2011 to 7.8 million in 2020 (Ibid). Rural poverty among household heads rates at 76 per cent for men and women at 79 per cent while in urban areas it is 22 and 30 respectively as of 2015[4].

According to World Health Organization (WHO) Sub-Saharan estimates, Zambia has between 670, 000 and 1 million people affected with a hearing impairment with a country prevalence rate of 4-6 per cent. Meanwhile a study done by Hapunda and others[5] (2020) that looked at prevalence of hearing loss in primary schools in Lusaka presents a higher rate of 11.5% per cent among primary school children in Lusaka than the assumed rate by WHO. The National Disability Survey (2015) found out that out of 2, 377 sample size 16.9 per cent had a hearing impairment with more males affected than females attributed mainly to the work environment they are exposed to.

The Government of the Republic of Zambia (GRZ) has over the years mainstreamed the rights of Persons with Disabilities (PWDs) in its National Development plan: in 2010 ratified the United Nations Convention on Rights of Persons with Disabilities (UNCRPD), Disability Act No. 6 of 2012 and in 2013 approved the National Disability Policy. The current national strategic direction on Ear Nose and Throat (ENT) service provision is guided by the Zambia National Health Strategic plan 2017 – 2021 which has recognized the deficiencies (limited number of trained ENT personnel, challenges in referral system, late diagnosis and treatment and poor infrastructure and equipment) and estimates that in any third patient seeking medical treatment at any health facility presents with an ENT-related condition. The strategy thus aims to:

1- Enhance ENT service delivery through.
a. Provision of Infrastructure, Equipment, and logistical support for ENT health services at all levels
b. Training of ENT Health Personnel and capacity building of existing health personnel to provide excellent ENT health care at all levels.
c. Procurement of all essential medical and surgical consumables (supplies) for ENT health services
d. Reduction of preventable and curable ENT diseases
e. Rehabilitation of people with disability because of ENT conditions
2- Promote Information Technology through strengthening ENT Information System in Zambia in HMIS

[3] ZAMSTAT (2013), Population and demographic projections 2011 – 2035
4 Central Statistics Office (2015), Living conditions monitoring survey.
5 Hapunda R K, Aswani J, Kipingor M and Munthali J (2020) Prevalence of Hearing Loss in Primary School Children in Lusaka, Zambia. Medical Journal of Zambia 47(2) pp 91-97

3- Enhance Research & CME

4- Mobilize resources and develop resource mapping to ensure good governance and management of financial inputs for ENT health services.

The ENT strategy also prioritized the following areas as key to be implemented to strengthen ENT service provision in the country:

1. ENT health promotion and disease prevention
2. To reduce avoidable Deafness through
a. Enhancing provision of ENT health at all levels of health care.
b. Provision of school ENT health services
3. Human resource training of all cadres in ENT health services
4. Infrastructure development at all levels
5. Procurement of equipment, surgical instruments, medical and surgical consumables
6. Enhance outreach services in ENT health.
7. Enhance quality data collection and research.

2. Project Background

In 2018 Beit Cure Hospital started implementing a 'Strengthening Audiology and Ear, Nose and Throat (ENT) medical services in Zambia' project (CBM funded project number P3851) funded by BMZ in collaboration with CBM. The project aimed to sustainably establish ENT services in Zambia by 2021.

The expected results and interventions are as follows:

Result 1: The treatment of ear diseases is permanently embedded in the Zambian health system.

Intervention are, to train Public health Planning for ENT; conduct Epidemiological survey; revision of the ENT curriculum; conduct ENT surgeries and conduct ENT coordination meetings for the national plan.

Result 2: An increased number of ear specific qualified medical and paramedical specialist are available in target provinces.

Intervention are training of ENT surgeons (Block and Continuous); training of hearing aid technicians; training of speech therapy assistants; training of general PR actioners, clinical officers, nurses, and training of other nurses.

Result 3: Ear medical infrastructure is permanently improved in Zambia.

Intervention are to furnishing of officers/treatment rooms; equipping hospitals with ENT instruments; establishing temporal bone lab at University Teaching Hospital.

Result 4: Outreach activities and screenings have reached more patients.

The targeted intervention is to conduct ENT Outreaches and School Screenings

Target groups

The project's target group comprised the following.

i. Men, Women, Boys and Girls with Ear, Nose and Throat disability in Choma, Kalomo, Zimba and Livingstone districts of Southern province.
ii. Public health planners at both Central hospital and district
iii. Nurses, Clinical officers, and Surgeons

iv. Community health assistants.

2.1. Purpose of Evaluation

The Mid-Term Review (MTR) provides guidance to the implementing agency (BCH) for the remaining period of the project to maximize the impact of the interventions. The evaluation intended to provide evidence of progress achieved at the mid-term duration of the project with specific focus on what worked and what did not work to allow further maximization of the impact. The specific purpose of this mid-term evaluation is summarized as follows:

i. To assess what has worked well, what did not work well and why?
ii. To determine what lessons can be drawn and how they will be shaped to strategically improve ongoing implementation of the current project as well as future ENT interventions.
iii. Determine whether it is necessary to change the project approaches to address emerging issues.

2.2. Geographical Coverage

The evaluation shall cover all the project catchment areas where implementation took place. In terms of geographical coverage, the evaluation covered the districts of Choma, Kalomo, Zimba and Livingstone as the primary focus areas in the inception meeting. However, the infrastructural aspects covered Lusaka as well.

2.3. Guiding Evaluation Principles

The assessment was consistent with the OECD evaluation criteria[6] (Relevance, Coherence, Effectiveness, Efficiency, Impact and Sustainability) and was conducted based on the principles of the Humanitarian Charter and United Nations Convention of the Rights of Persons with Disabilities (UNCRPD) principles[7] including the CBM Code of Conduct and Child Safeguard Policy.

2.4. Ethical considerations

Before the data collection the evaluation team went through the CBM child safeguard policy, code of conduct and the CBM/BCH consent form to inform the practice of the consultancy team. Every member of the consultancy team in the field signed the statements of oral consent and ensured that informed consent was sought from interviewees before data collection. The CBM ethical consent form for data collection was used to acquire informed consent from the participants. All the datasets shall be surrendered to BCH/CBM and shall not be used for any other purposes apart from, the originally intended purpose, mid-term review unless permission is requested and given in writing.

[6] https://www.oecd.org/dac/evaluation/daccriteriaforevaluatingdevelopmentassistance.htm
[7] https://www.un.org/development/desa/disabilities/convention-on-the-rights-of-persons-with-disabilities.html

3. Methodological Approach

The methodological approach involved strong client participation in a team environment and close dialogue in the process between the client and consultant. A mixed method approach was used to allow a collection of both qualitative and quantitative data.

3.1. Stratification, Sampling and Sample size

Consideration were taken on the geographical dispersion of the survey and equal representation by districts and gender where possible. Thus, the four districts were the strata and from each district a distribution of beneficiaries were interviewed (See table below). Seven (7) out of 30 health facilities were purposively selected taking account of the four districts, level/status of the health facilities, location in terms of urban and rural and accessibility in the rain season since the rain season had already started (Table 1).

Table 1: Distribution of sampled beneficiaries by District and Health facility

Sn	District	Health Facility Selected	Number of Beneficiaries interviewed
1	Choma	Choma Central Hospital	12
		Mbabala Rural Health Centre	7
2	Kalomo	Request Muntanga Level 1 Hospital	7
		Namwianga Mission Hospital	9
3	Zimba	Zimba Mission Hospital	21
4	Livingstone	Livingstone Central Hospital	14
		Simoonga Rural Health Centre	10
TOTALS	**4 Districts**	**7 Health Facilities**	**80 beneficiaries**

An appropriate sample size was determined based on the following formula:

Sample size= $\frac{z^2 \times p(1-p)}{e^2} \div \left[1 + \left(\frac{z^2 \times p(1-p)}{e^2 \times N}\right)\right]$, where z=Z score at 95% confidence level=1.96; p=proportion or prevalence of hearing impairment of 0.05 (5%) the highest available based on literature; e=the error margin of 0.05 (5%) and N=baseline project targeted beneficiary population of 33,344 (23,570 persons screened at outreach, 9774 children screened in school). Thus, a minimum of 73 was recommended. To enhance confidence the sample was increased to 80 with equal distribution across the 4 districts (Table 2). In terms of gender females accounted for 57.5% of beneficiaries interviewed and the rest 42.5 % were males.

Table 2: Distribution of beneficiaries interviewed by type and gender.

		Gender			Type of beneficiaries interviewed		
District		**Female**	**Male**	**Total**	**Primary Beneficiary**	**Secondary**	**Both**
Choma	Count	13	6	19	9	8	2
	Percentage	68.4	31.6	100	47.4	42.1	10.5
Kalomo	Count	7	9	16	12	2	2
	Percentage	43.8	56.3	100.0	75.0	12.5	12.5
Zimba	Count	16	5	21	17	2	2

	Percentage	76.2	23.8	100	81.0	9.5	9.5
Livingstone	Count	10	14	24	21	2	1
	Percentage	41.7	58.3	100	87.5	8.3	4.2
Overall	Count	46	34	80	59	14	7
	Percentage	57.5	42.5	100	73.8	17.5	8.8

The sampling frame were the lists of beneficiaries at the health facilities. The participants were chosen randomly and requested through the health staff at the facilities to come to a health facility on the day of the interviews. This was made possible through advance arrangements among the parties i.e., consultant, BCH, and targeted Health facilities. A questionnaire was administered in the language of the beneficiaries' choosing i.e., English, or local language. Adherence to the set public health guidelines for COVID 19 prevention were always observed during the data collection.

In terms of the inclusion and exclusion criteria, an adult (in the case of a person above 18 yrs.) or a child (in the case of a person below the age of 18yrs) was only interviewed if they had been screened by an ENT primary healthcare worker or an ENT specialist supported by the project in the study site/project catchment area. About 29 per cent of beneficiaries interviewed were below the age of 19 and the rest, 71 per cent were aged 19 years and above.

A total of 20 Key informant interviews from 20 respective institutions (table 3) were done mostly with institutional leadership such as hospital superintendent, district health directors, clinical in charge, secretariat of integrated development planning and district health planners

Table 3: Institutions where key informant interviews were conducted.

SN.	Institutions where key informant interviews were conducted
1	Choma General Hospital
2	Provincial Health Administration
3	Ministry of local government-Provincial Planning office
4	Choma District Health Administration
5	Request Muntanga Hospital administration
6	Kalomo District Health Administration
7	Namianga Mission Hospital
8	Zimba Mission Hospital
9	Zimba District Health Administration
10	Livingstone Central Hospital
11	Livingstone District Health Administration
12	Mulungushi Medical University-Livingstone campus
13	Rusangu University-School of Nursing
14	Ministry of local government-Livingstone-Planning office
15	The University Teaching Hospital
16	CBM-Zambia
17	Beit Cure Hospital
18	Ministry of Health-Office of the ENT National Coordinator
19	Kabwe Central Hospital Administration
20	Zambia Ear Nose Throat Audiology and Speech Society of Zambia

3.2. Data collection, analysis, and quality control

The methodology was reviewed by Beit Cure Hospital (BCH), discussed, and agreed during the inception meeting and all changes were made accordingly. Similarly, the tools for data collection were also submitted to-and reviewed by BCH. Enumerators were trained by the consultant at BCH using both English and local language with oversight from Monitoring and Evaluation Officer for BCH.

Documents reviewed were 2018 fourth quarter report, 2019 first, second, third and fourth quarterly reports; and 2020 first, second and third quarterly reports. The filled in log-frame excel sheet and raw data excel files from Beit cure also used.

Data was inputted into excel and started immediately in the field. Peer to peer data cross-checking and cleaning was done. To enhance the quality of the data, daily debrief sessions were held in the evening. The consultant provided quality checks at the end of every fieldwork day so that errors are minimized. Data analysis was done using descriptive statistics showing the progression over time while the qualitative data was analyzed using thematic analysis.

3.3. Limitations

The evaluations faced the following limitations:

i. Given that data was collected during the rainy season, some remote areas could not be accessed, hence were replaced by a nearest rural health facility that was accessible.
ii. The community health assistants that were trained were not interviewed because their training coincided with the data collection and as such, they were not available.
iii. Focus group discussions could not be held as would have been desired for triangulation purposes due to the COVID-19 pandemic.
iv. The work for the assignment delayed being communicated such that by the time it was confirmed one of the consultants had other commitment and the new schedule coincided with other commitments by the consultancy team. Hope in future the timeframes as advertised should be upheld and the consultants and the clients need to have frequent communications to ensure informed action.

4. Results

4.1. Result 1: The treatment of ear diseases is permanently embedded in the Zambian health system.

The evaluation of the key result area 1 on the treatment of ear disease is permanently embedded in the Zambian health system was based on the five components of activities linked to outcomes as expressed in the log-frame. These were Training public health planning for ENT, Conducting an Epidemiological survey, Revision of the ENT curriculum, Conducting ENT surgeries and holding ENT coordination meetings for national planning. The performance in each of these is explained in the subsections below.

4.1.1. Training Public Health Planning for ENT

The project reports of having trained 10 public health planners but only two confirmed at the districts. Cases of wrong personnel being invited for the training were reported. This implies need of due diligence in the appointment of who must be trained. The project could consider to formally alert the district administration, provincial administration, and office of the ENT coordinator about this anomaly so that in future due diligence and right people are involved in the training.

District and provincial planners, secretariat to overall planning process at District and Provincial level in line with current mandate of Integrated Development Planning and need for Integrated District Plans are not targeted by the project. These officers could be considered in future.

4.1.2. Conduct Epidemiological survey

The Epidemiological survey should have been done in 2019 and has taken more than 24 months, yet recent development shows only the inception meeting. Though the reason given in the BCH reports for the delay is redrafting the TORs and their subsequent review by the National ENT coordinator's office and CBM, the period it has taken is unnecessarily too long due to procurement-related administrative issues between the earlier proposed consultants to conduct the survey and the client in addition to COVID-19 effect. It will be important in the future for BCH to have a clear standard operation procedure for such surveys that need national representativeness and credibility. One option is to offer such studies as commissioned research to relevant departments at universities if the normal open tender method is not yielding any result.

4.1.3. Revision of the ENT curriculum

The results from discussions with key informants all indicated that ENT is already embedded in the revised existing curriculum, but the challenge is a few numbers of specialized personnel to adequately teach the ENT component at various levels. However, initiatives to introduce ENT specializations (MMed) at the University of Zambia Medical School is at an advanced stage (pending University Senate approval). Establishment of a Temporal Bone Laboratory through this project that has been set up at the University Teaching Hospital is likely to be a valuable resource in the training of ENT specialists. Above all, a change request has been approved to focus on 15 nursing training institutions to implement in full the ENT component within the ENT General Nursing Council curriculum.

4.1.4. Conduct ENT surgeries

The actual status of the ENT operations before the project in 2017 was 320 with BCH accounting for 300 cases and UTH 20. The project reports no cases of ENT operation in 2018 because the project was putting in place all logistics and project structures. This will help in accessing the change before and after the intervention. The project has achieved 63% towards the 1970 project target (table 4) from 2018 to end of 2020.

Table 4 ENT Surgeries conducted based on quarterly reports and BCH raw datasets

Age category**	Gender	2019 Quarters				2020 Quarters				2018-2020
		1	2	3	4	1	2	3	4	Overall
Children (not more than 18 years old)	Male	40	58	20	49	62	62	61	56	408
	Female	36	68	16	59	80	43	45	63	410
Adults (Above 18 years old)	Male	2	1	1	2	2	1	2	4	15
	Female	4	1	1	1	6	3	0	1	17
Total Male		42	59	21	51	64	63	63	60	423
Total Female		40	69	17	60	86	46	45	64	427
Overall Total		82	128	38	111	150	109	108	124	850

Note: ** There may be misclassification of age, age units were not standard in the project datasets and quartet reports.

It is important to note that there are some variances observed in the previous draft of this report were largely due to some data sets that were not submitted to the consultant and the non-inclusion of plastic surgeries in ENT surgeries by the consultant. It was explained in the latest meeting that BCH includes facial plastic surgeries because they affect ENT related aspects. Therefore, all the variances including the datasets for fourth quarter for 2020 have been verified as presented in the table 4.

At the current project performance, the remaining 37 % is likely to be achieved within a year provided first, the data from UTH and Kabwe Central Hospital is correctly and regularly captured and secondly, the ENT surgeons start working at Livingstone and Kabwe. The interviews with ENT specialist at UTH indicated that the equipment especially the Microscope was already being used in operation and the project reported that they are currently working on a system for capturing the data i.e. engaging UTH management so that the staff could be collecting and availing data to Beit cure using the same system that other health facilities under the project are already using.

4.1.5. Conduct ENT coordination meetings for the national plan.

No meeting was held in the last three years for the expanded National ENT Coordinating Committee. This is because the formal aspects of the establishment and appointment of the committee members have not been finalized. The delays are partly due to overwhelming responsibilities of the office of the ENT National coordinator who has other primary responsibilities and lacks an assistant coordinator.
It is unlikely that the committee would spearhead the reviewing of the current National ENT Health Strategic Plan 2017 – 2021 before it expires if the committee is not functional by early first quarter 2020. The options to this include the project to strategically support the office of the ENT coordinator to have an assistant (short-term 1-2 years) with specific TORs and goals to accomplish including formalization of the National ENT Coordinating committee and review of the ENT strategic plan.

4.2. Result 2: An increased number of ear specific qualified medical and paramedical specialist.

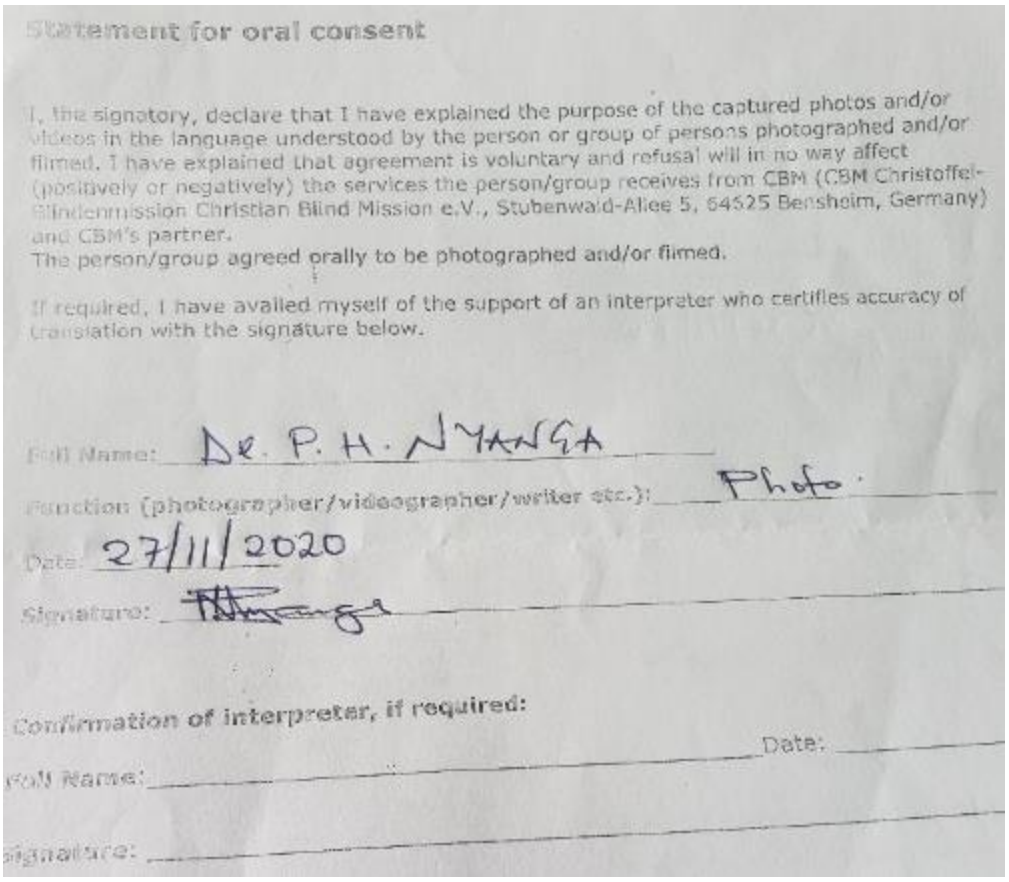
4.2.1. Training of ENT surgeons

Two out of eight ENT surgeons have been trained. The training of the other six ENT surgeons is planned for 2021, once the temporal bone lab at The University Teaching Hospital (UTH) is operational. The return of the second surgeon in December, 2020 is hoped to increase the likelihood of achieving the target.

4.2.2. Training of hearing aid technicians

One hearing aid technician has been trained and working at Livingstone Central Hospital (figure 1).

Figure 1 Male Nurse trained in ENT and as an Audio technician doing some screening and hearing test.



Statement for oral consent

I, the signatory, declare that I have explained the purpose of the captured photos and/or videos in the language understood by the person or group of persons photographed and/or filmed. I have explained that agreement is voluntary and refusal will in no way affect (positively or negatively) the services the person/group receives from CBM (CBM Christoffel-Blindenmission Christian Blind Mission e.V., Stubenwald-Allee 5, 64625 Bensheim, Germany) and CBM's partner.
The person/group agreed orally to be photographed and/or filmed.

If required, I have availed myself of the support of an interpreter who certifies accuracy of translation with the signature below.

Full Name: Dr. P. H. NYANGA

Function (photographer/videographer/writer etc.): Photo

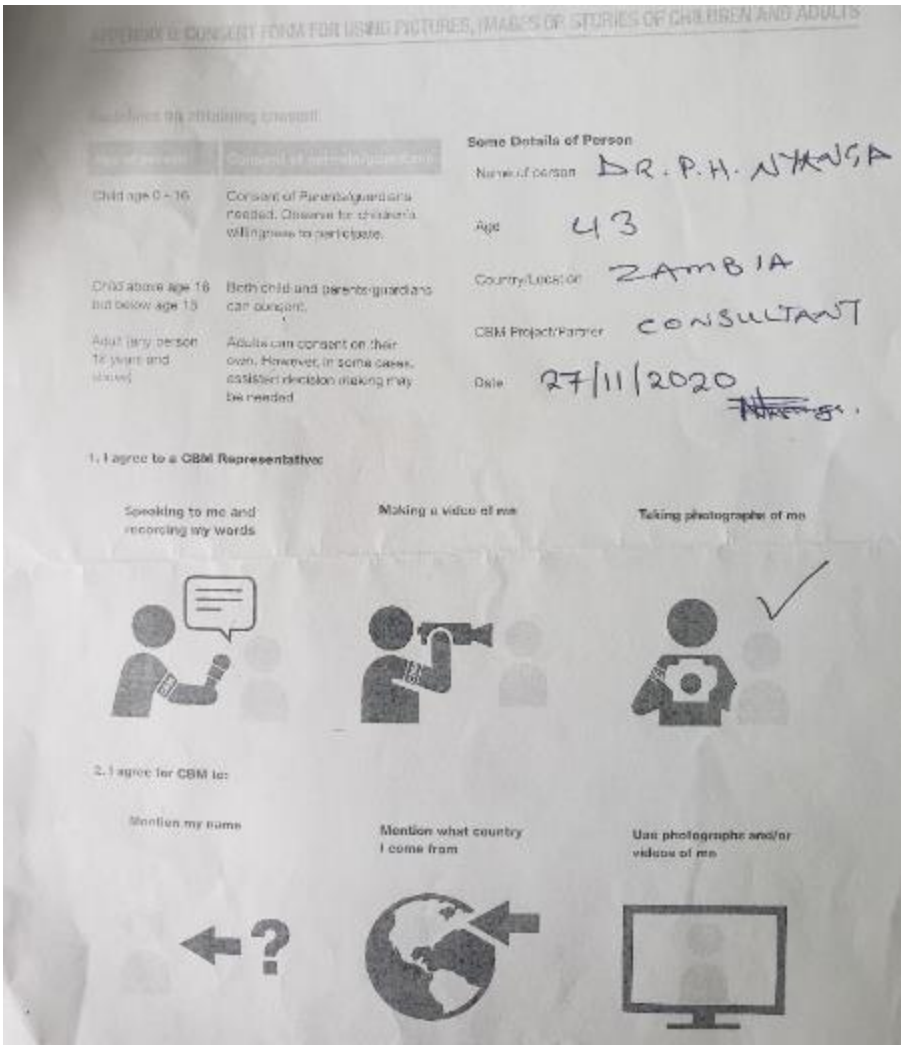
Date: 27/11/2020

Signature:

Confirmation of interpreter, if required:

Full Name: Date:

Signature:



Three others are in training at the Starkey Hearing Institute in Lusaka and these include 2 males and 1 female from Livingstone Central (Livingstone District), Request Muntanga Level 1 Hospital (Kalomo District) and Choma General Hospital (Choma District). This implies an achievement rate of 25% in terms of training completion. Discussion with the trainees indicated that they have completed their theoretical components and were remaining with six weeks of practical component before they graduate within the first half of 2021. However, their graduation is also dependent on when the institute opens given the severe second wave of COVID-19 that has led to training institutions to extent their opening for the residential sessions.

4.2.3. Training of General Practitioners, Clinical Officers, and Nurses

A total of 36 Clinical officers and Nurses have been trained in ENT diagnosis, prevention, and basic treatment against a target of 30. Additional 13 nurses were trained in speech therapy. However, no general practitioner was among the trained notwithstanding the two ENT surgeons reported earlier. This gives an over achievement rate of 120%. This was possible due to availability of trainers, effective support from the Ministry of health through the District and provincial offices and availability of the medical staffs to be trained.

4.2.4. Training of community health assistants:

The training of the 30 Community Health Assistants that was conducted in the last phase of the fourth quarter of 2020. This shows an achievement rate of 100 % due to the aforementioned factors. This pool of community health assistants is vital for community based inclusive development and data collection as well. However, the role of the community health assistants need to be formally recognised and they must be compensated (at least a stipend or formal salary) like in other health programs and projects.

4.3. Result 3: Ear medical infrastructure is permanently improved in Zambia.

4.3.1. Furnishing of offices treatment rooms

Furniture and desktop computers were purchased for three health facilities but only delivered to Livingstone. The furniture for UTH has not been procured because BCH awaits UTH to identify the office. UTH seems not to be aware of this component. The project should engage UTH both through verbal and in writing over the matter. The Visit at UTH showed that there is a second complete audiometric booth at UTH that lacks furniture and that could be furnished subject to discussion with UTH. The furniture for the ENT Clinic at Kabwe Central Hospital has not been procured because BCH was waiting for a bigger space to be allocated for and ENT clinic. Discussion with the Kabwe Central Hospital administration indicated that they had allocated a new building for ENT Clinic and were waiting for Beit CURE Hospital to provide the needed furniture. Against the above context, the project coordinator or manager must ensure effective communication between/amongst all stakeholders involved in this project to ensure that the project achieves its goals in a timely manner. The treatment rooms that are being used in the health facilities in Southern Province are those already existing with office furniture and fittings.

4.3.2. Equipping hospitals with ENT instruments

All the health facilities that were visited had benefitted from the necessary equipment for basic diagnosis through the personnel. The University Teaching Hospital received a state-of-the-art ENT surgical microscope (figure 3) and the needed equipment for the Temporal Bone Laboratory lab. The Surgical microscope is currently being used in the surgeries at UTH and it was reported that the quality in terms of accuracy and precision has been enhanced. However, a concern was raised over the accessories and consumables that may not be available within Zambia once they are depleted (figure 4). There is a need for the project to have discussions on sustainability of the equipment including options for integrating the maintenance, repair, and procurement of accessory on the existing health facility funding systems. These initiatives and discussions should have been done much earlier, preferable at the project proposal stage between Beit Cure Hospital and Ministry of health as budget changes take time to be affected in government.

Figure 2 State-of-the-art ENT surgical microscope

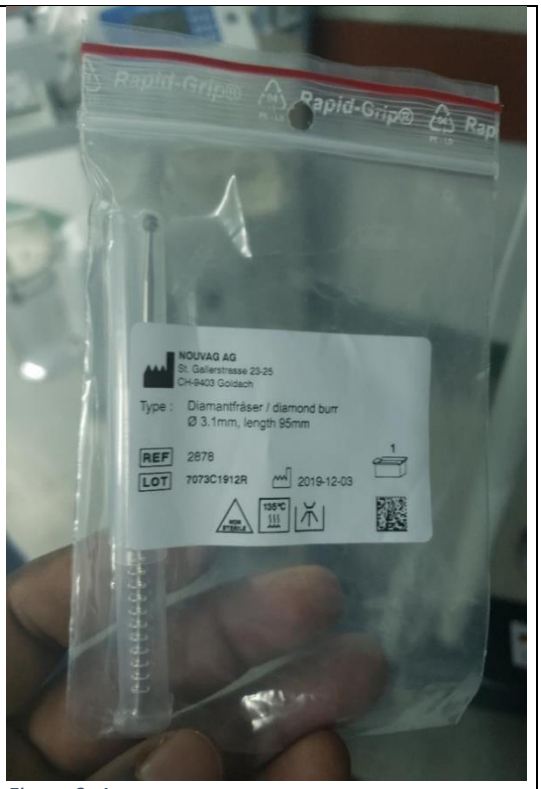


Figure 3: An accessory

It was also observed that UTH has two audiometry booths but one of them is non-functional due to lack of equipment and the one that is functional has very old equipment (figure 4). This could be an option for support.

Figure 4: Old equipment for audiometric test

At Livingstone, the equipment has been procured but it is yet to be delivered during the first quarter of 2021 since the specialist arrived in December 2020. The hospital authorities have secured the physical space for the equipment. It was reported that similar equipment was procured for Kabwe Central Hospital, but it is not being used because the ENT specialist left the country on maternity leave. An interim solution is to engage the ENT national coordinator to explore the possibility of having visiting rotating ENT surgeons to Kabwe Central Hospital

or train the general surgeons already at Kabwe Central Hospital once the Temporal bone lab is operational to be able to do some minor ENT surgeries.

4.3.3. Establishing bone lab at University Teaching Hospital.

Observations at the University Teaching Hospital indicated that the Temporal Bone Laboratory had reached an advanced stage with a few things needed yet to be procured. The UTH indicated that they were waiting for Beit Cure Hospital to complete the procurement and set up of the lab. The head of ENT at UTH indicated that the Temporal bone lab will be of benefit for Zambia and the region given that UNZA is also participating in regional capacity building. A probe into the delay in operationalization of the lab indicated that the master's program for the doctors is not yet approved by the senate.

4.4. Outreach activities and screenings have reached more patients.

There were no outreach activities for both Clinical and School screening in 2018 as the project logistics such as the administrative tasks such as conducting a feasibility study, hiring a dedicated project manager, engaging the Ministry of Health were still being put into place.

4.4.1: Conduct Clinical Outreach Activities

Inconsistencies have been noted in the reported numbers for the Clinical outreach. The total figure for 2019 quarter four is 1,854 in the report. This figure should be reflected in the 2020 first quarter as the achievement from the previous quarter. Instead, in 2020 first quarter, what is reflected as an achievement from the previous quarter (2019, 4th quarter) is 7674. This is because BCH forgot to add 5820 cases from outreach activities in Lusaka and surrounding areas to 1854 in the 4th quarterly report of 2019 to make it 7674. This correction can be done on the 4th quarter report of 2019 so that the records can be easily understood in future. However, adding numbers from the project sites and numbers from Lusaka district and its surrounding, the project based on verified figures has a total of 28,982 the whole project period up to September 2020 against a project target of 31,800 (table 7). This shows an achievement rate of 91%. This is largely due to the intensification of outreach within Lusaka where logistics are easier and cheaper. Given that figures from Lusaka, a non-project area with separate funding, were included in the quarterly reports the performance of being recorded is essentially from two projects. It would be important in future the BCH to declare to consultants and avail all the necessary information and datasets from all related projects during the inception meeting for the purposes of transparency and efficiency in the evaluation process.

Table 5 Clinical Outreach in Project areas and Lusaka

2019 in project areas						2019 in Lusaka and surrounding				Total 2019
Gender	1	2	3	4	Total 2019	No raw data was availed to verify the following figures (totals for the 4th quarter in the report)				
Male	0	0	499	193	692	0	0	0	1,510	2,202
Female	0	0	472	209	681	0	0	0	2,273	2,954
Boys	0	0	132	107	239	0	0	0	921	1,160
Girls	0	0	136	106	242	0	0	0	1,116	1,358
Total	0	0	1239	615	1854	0	0	0	5,820	7,674

Clinical out Reach Project areas-2020 quarters based on the raw data excel files up to September 2020						Lusaka and surrounding-2020 quarters based on the raw data excel files up to September 2020				Total up to September 2020
Gender	1	2	3	4	Total	1	2	3	Total	
Male	772	798	834	Not part of raw data given for MTE and neither raw data nor report was availed to verify the latest figures	2404	116	891	1434	2441	4845
Female	892	1001	1241		3134	115	1143	3349	4607	7741
Boys	320	516	774		1610	43	858	1554	2455	4065
Girls	312	660	878		1850	106	971	1730	2807	4657
Total	2296	2975	3727		8998	380	3863	8067	12310	21,308
Overall total 2018- sept 2020										**28,982**

Variances were observed among the reports, raw datasets and the log frame data set (shown in table 8). Additionally, BCH provided latest figures of 29,116 including the fourth quarter of 2020. Not all BCH new figures were not included in table 7 because, firstly the third quarter figures are different from those that were originally submitted and are not consisted with the raw data (see tables 9 and 10 the basis of the original data set and reports submitted). Secondly, the raw data for fourth quarter was not ready at the time of evaluation hence this dataset was not submitted to consultants nor the fourth quarter report submitted so that the figures could be verified independently.

Table 6 : Extract from project excel log-frame data sheet

					Indicators for achievement of Results									
Description	Indicator Type (empty	Baseline	Target Total	Total Achieved	*Cumulative % Progress*	2018	2018 Achieved	% Progress	2019	2019 Achieved	% Progress	2020	2020 Achieved	% Progress
Number of person's screened during outreach screening activities	Number	7,500	31,800	23,570	**74**	7900	0	**0**	8200	8964	**109**	8300	14606	**176**
Number of children screened during school screening activities.	Number	5,360	22,100	9,774	**44**	5400	0	**0**	5600	7554	**135**	5900	2220	**38**

Table 7 2019 Clinical outreach annual summary-extract from BCH excel data files

Adults > 18 years																									
Month	Number of Outreach	WAX		CSOM		DRY P		AOM		OME		EO		FB		HL		other		Nose		Throat		Totals		
		male	fem	male	fem	male	fem	male	fem	male	fem	male	fem	male	fem	male	fem	male	fem	male	fem	male	fem	male	fem	male + fem
Jan	1 outreach	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb	1 outreach	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar	1 outreach	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apr	1 outreach	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May	1 outreach	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
June	1 outreach	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
July	5 outreach#	8	14	0	2	0	0	0	1	0	0	1	5	0	1	0	0	3	19	1	0	0	2	13	44	57
Aug	6 outreach	95	70	13	9	2	3	16	8	9	8	31	22	7	4	15	25	114	122	6	5	17	18	325	294	619
Sept		61	59	10	13	0	0	8	7	6	7	0	3	5	1	3	0	37	29	12	9	19	6	161	134	295
Oct		7	7	0	0	0	1	5	3	0	0	0	0	2	1	0	0	0	0	1	1	2	1	17	14	31
Nov		14	13	0	5	3	6	4	0	6	2	3	2	0	0	2	0	5	4	0	0	0	0	37	32	69
Dec		58	69	7	15	5	0	15	14	1	3	2	4	6	6	2	0	32	37	4	7	7	8	139	163	302
Total		243	232	30	44	10	10	48	33	22	20	37	36	20	13	22	25	191	211	24	22	45	35	692	681	1373

Children < 18 years																									
Month	Number of outreach	WAX		CSOM		DRY P		AOM		OME		EO		FB		HL		other		Nose		Throat		Totals		
		male	fem.	male	fem.	male	fem.	male	fem.	male	fem.	male	fem.	male	fem.	male	fem.	male	fem.	male	fem.	male	fem.	male	fem.	male+fem.
Jan	5 outreach#	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb	4 outreach	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar	4 outreach	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apr	5 outreach#	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mai	5 outreach#	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
June		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
July		8	1	0	1	0	0	0	1	6	2	0	0	1	1	3	2	1	6	0	2	0	0	19	16	35
Aug		33	34	4	6	0	0	3	5	3	1	6	1	4	4	4	6	22	23	4	2	8	9	91	91	182
Sept		2	3	2	4	0	0	5	2	1	0	0	0	0	0	0	8	3	8	1	4	8	0	22	29	51
Oct		35	32	0	0	0	0	11	4	0	0	4	0	1	2	0	0	0	0	3	8	0	1	54	47	101
Nov		0	0	0	0	0	0	4	6	2	0	1	0	2	1	0	0	0	0	0	0	0	2	9	9	18
Dec		9	10	3	0	0	0	3	7	0	0	0	2	8	9	0	0	8	13	4	4	9	5	44	50	94
Total		87	80	9	11	0	0	26	25	12	3	11	3	16	17	7	16	34	50	12	20	25	17	239	242	481

Table 8 2020 Clinical outreach annual summary-extract from BCH excel data files

Adults > 18 years

Month	Number of Outreach	WAX		CSOM		DRY P		AOM		OME		EO		FB		HL		other		Nose		Throat		Totals		
		male	fem	male	fem	male	fem	male	fem	male	fem	male	fem	male	fem	male	fem	male	fem	male	fem	male	fem	male	fem	male + fem
Jan		49	69	15	10	8	1	14	7	1	4	6	8	2	7	3	3	58	90	2	7	5	9	163	215	378
Feb		47	37	8	5	1	0	13	15	6	7	0	0	4	1	1	1	130	159	4	3	17	35	231	263	494
Mar		107	93	11	17	5	6	61	49	9	7	4	9	26	16	8	13	73	109	25	28	49	67	378	414	792
Apr		49	65	29	13	12	4	29	34	10	11	14	15	2	1	15	8	126	152	9	22	31	50	326	375	701
May		25	41	0	3	0	2	5	5	0	1	2	0	1	0	1	4	125	154	1	4	10	40	170	254	424
June		45	53	16	7	0	0	16	31	2	2	2	7	16	9	6	9	170	206	6	9	23	39	302	372	674
July		5	11	3	6	0	0	0	2	0	0	0	5	4	0	0	0	111	151	10	5	9	24	142	204	346
Aug		9	11	3	3	0	0	6	7	1	1	0	9	0	0	0	1	162	190	2	3	12	22	195	247	442
Sept		58	72	2	6	2	1	15	19	3	2	3	16	4	4	3	5	305	544	28	54	41	67	497	790	1287
Oct		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total		394	452	87	70	28	14	159	169	32	35	31	69	59	38	37	44	1260	1755	87	135	197	353	2404	3134	5538

Key to Note: **1961** new patients have been reported in this quarter compared to what was reported. ENT professionals have back dated stats that they previously did not submit.

Children < 18 years

Month	Number of outreach	WAX		CSOM		DRY P		AOM		OME		EO		FB		HL		other		Nose		Throat		Totals		
		male	fem.	male	fem.	male	fem.	male	fem.	male	fem.	male	fem.	male	fem.	male	fem.	male	fem.	male	fem.	male	fem.	male	fem.	male + fem.
Jan		16	10	7	4	1	0	8	8	0	0	0	3	4	4	0	1	29	43	7	3	8	8	80	84	164
Feb		3	18	2	0	0	0	11	8	0	0	0	2	3	0	0	0	134	131	4	3	9	4	166	166	332
Mar		22	30	14	6	2	0	12	9	6	3	0	0	5	3	1	0	0	0	2	0	10	11	74	62	136
Apr		14	11	10	6	0	0	24	36	2	7	2	3	16	16	0	4	102	175	10	4	52	43	232	305	537
Mai		14	2	7	3	0	1	10	7	0	1	2	2	5	3	0	0	77	113	1	3	14	17	130	152	282
June		11	15	14	8	0	0	19	15	0	0	1	4	6	8	0	2	83	132	4	4	16	15	154	203	357
July		4	3	2	3	0	0	2	6	0	0	1	2	1	1	0	1	72	114	1	3	12	11	95	144	239
Aug		4	6	0	2	0	0	14	10	0	0	0	0	3	6	0	0	93	118	3	8	11	16	128	166	294
Sept		15	13	5	6	1	3	17	19	1	1	4	6	5	7	2	66	400	389	37	29	34	29	551	568	1119
Oct		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nov		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total		103	108	61	38	4	4	117	118	9	12	10	22	48	48	3	74	990	1215	69	57	166	154	1610	1850	3460

4.4.2: Conduct School Screening Activities

A check in the quarter reports and interviews with the project implementing team revealed that School Screening activity was impeded due to the unavailability of school going children as schools closed on the awake of Corona Virus. While the log frame data provides a total of 9774 screened, the analysis from the reports provide a total of 8801 where 450 came from project areas at Maramba and Ngwenya schools in Livingstone (table 11) and 8351 from BCH clinical outreach activities in and around Lusaka (table 12).

Table 9: Screening from schools

	2018		**2019**		**2020**		**Totals**
	Male	Female	Male	Female	Male	Female	
Children	0	0	220	226	0	0	446
Adult	0	0	1	3	0	0	4
Totals	0	0	221	229	0	0	**450**

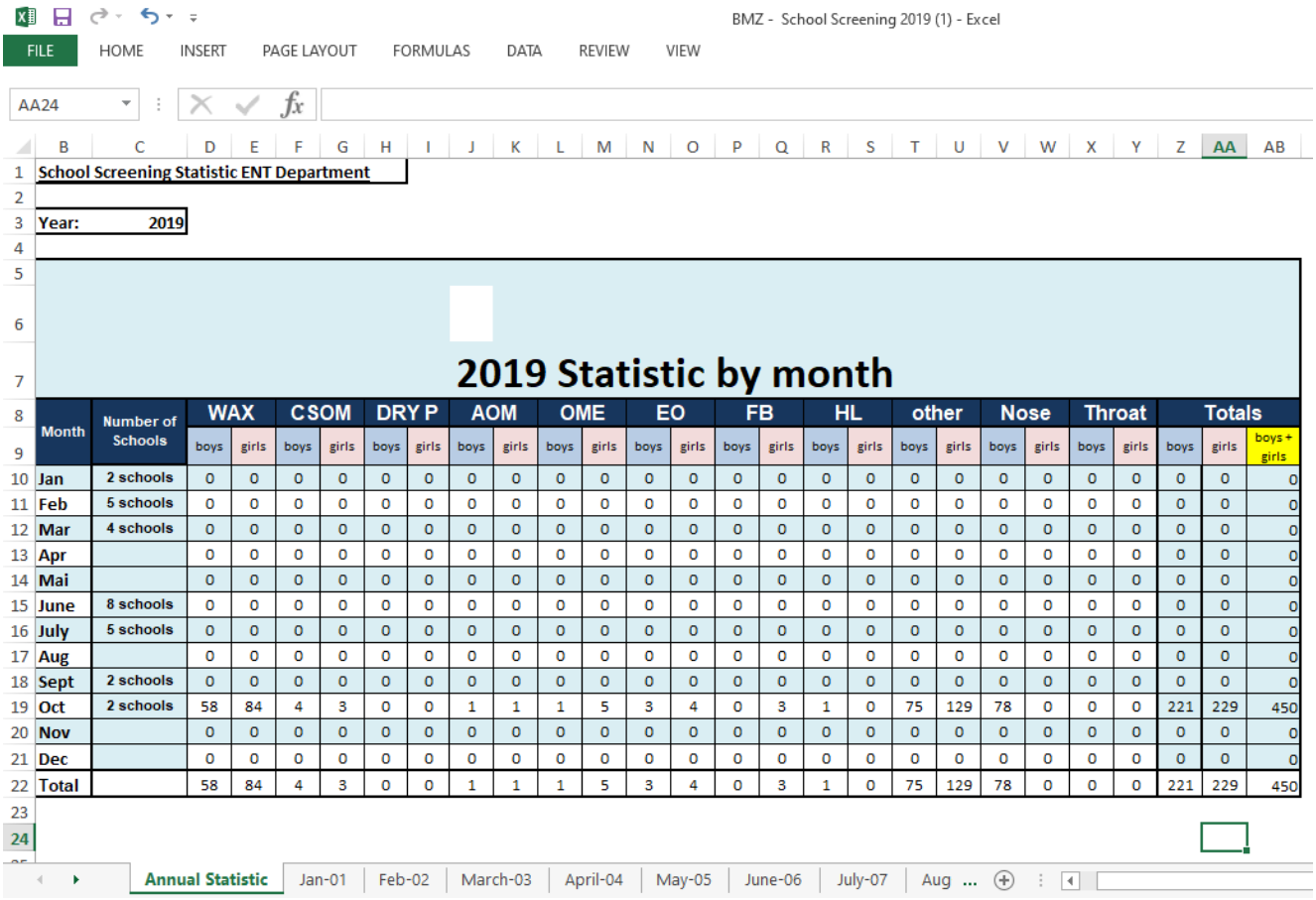
This data is consistent with the raw dataset as shown in table 13 and independently verified through the monthly figures. These results are for the project areas. No school screening was done in 2020 in the project areas because of COVID-19.

Table 10: Screening outreach around Lusaka from Clinical outreach

	2018		2019		2020		Totals
	Male	Females	Male	Female	Male	Female	
Children	0	0	3410	3476	1046	108	8040
Adult	0	0	76	141	26	68	311
Totals	0	0	3486	3617	1072	176	**8351**

This data from Lusaka is misplaced as it belongs to the Clinical outreach activities not school screening as provided in the excel dataset from Beit Cure hospital. Above all, since the project focus area for such activities is Southern province, this data is for another similar project for Lusaka. On further probing on this matter Beit Cure indicated that they provided supplementary resources to the existing Lusaka project for the clinical outreach activities in Lusaka. Thus, these numbers reflect resources from two projects.

Table 11: 2019 School screening statistics for ENT (extract from BCH excel file)



BMZ - School Screening 2019 (1) - Excel

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AA24

School Screening Statistic ENT Department

Year: 2019

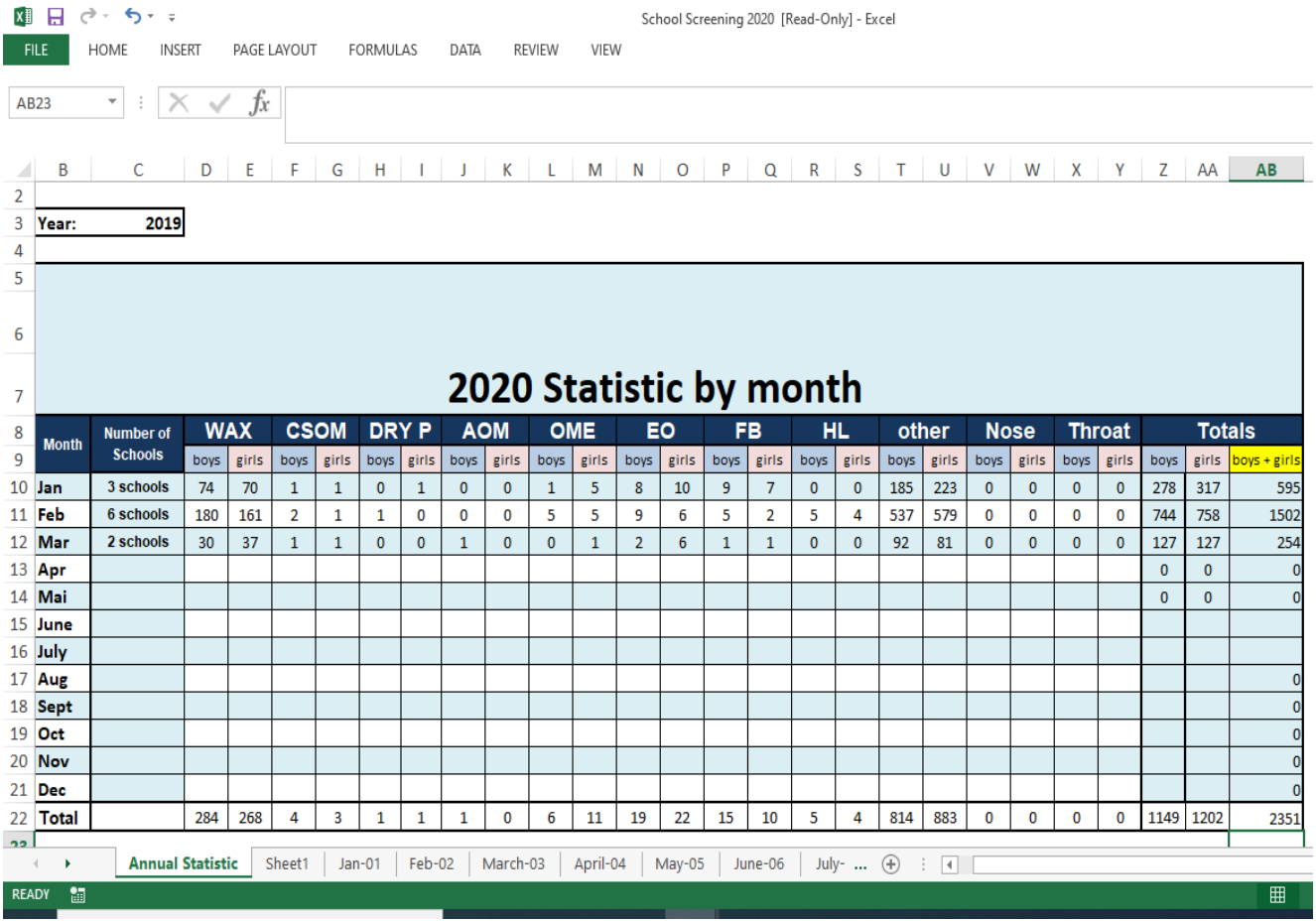
2019 Statistic by month

Month	Number of Schools	WAX		CSOM		DRY P		AOM		OME		EO		FB		HL		other		Nose		Throat		Totals		
		boys	girls	boys	girls	boys	girls	boys	girls	boys	girls	boys	girls	boys	girls	boys	girls	boys	girls	boys	girls	boys	girls	boys	girls	boys + girls
Jan	2 schools	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb	5 schools	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar	4 schools	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apr		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mai		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
June	8 schools	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
July	5 schools	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sept	2 schools	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct	2 schools	58	84	4	3	0	0	1	1	1	5	3	4	0	3	1	0	75	129	78	0	0	0	221	229	450
Nov		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total		58	84	4	3	0	0	1	1	1	5	3	4	0	3	1	0	75	129	78	0	0	0	221	229	450

Annual Statistic | Jan-01 | Feb-02 | March-03 | April-04 | May-05 | June-06 | July-07 | Aug ...

If the school screening for 2020 from Lusaka, project site for another similar project, the raw data set evidence shows 2351 (table 14) against BCH latest claims a total of 2220 screened excluding 4th quarter (table 15). Equally the 2020 fourth quarter shows a total screening of 398 in the newly submitted table from BCH (table 15) at variance with the raw data excel files indicating a total of 351 for the month of October 2020 (table 16) and 879 for the month of November (table 17). The month of December 2020 is missing as the data was not available at the time the files were sent to the consultants. These variances as earlier suggested are most likely due to lapses/challenges in data recording and data quality management.

Table 12: 2020 School screening statistics for ENT by month (extract from BCH excel file)



School Screening 2020 [Read-Only] - Excel

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AB23

Year: 2019

2020 Statistic by month

Month	Number of Schools	WAX		CSOM		DRY P		AOM		OME		EO		FB		HL		other		Nose		Throat		Totals		
		boys	girls	boys	girls	boys	girls	boys	girls	boys	girls	boys	girls	boys	girls	boys	girls	boys	girls	boys	girls	boys	girls	boys	girls	boys + girls
Jan	3 schools	74	70	1	1	0	1	0	0	1	5	8	10	9	7	0	0	185	223	0	0	0	0	278	317	595
Feb	6 schools	180	161	2	1	1	0	0	0	5	5	9	6	5	2	5	4	537	579	0	0	0	0	744	758	1502
Mar	2 schools	30	37	1	1	0	0	1	0	0	1	2	6	1	1	0	0	92	81	0	0	0	0	127	127	254
Apr																								0	0	0
Mai																								0	0	0
June																										
July																										
Aug																										0
Sept																										0
Oct																										0
Nov																										0
Dec																										0
Total		284	268	4	3	1	1	1	0	6	11	19	22	15	10	5	4	814	883	0	0	0	0	1149	1202	2351

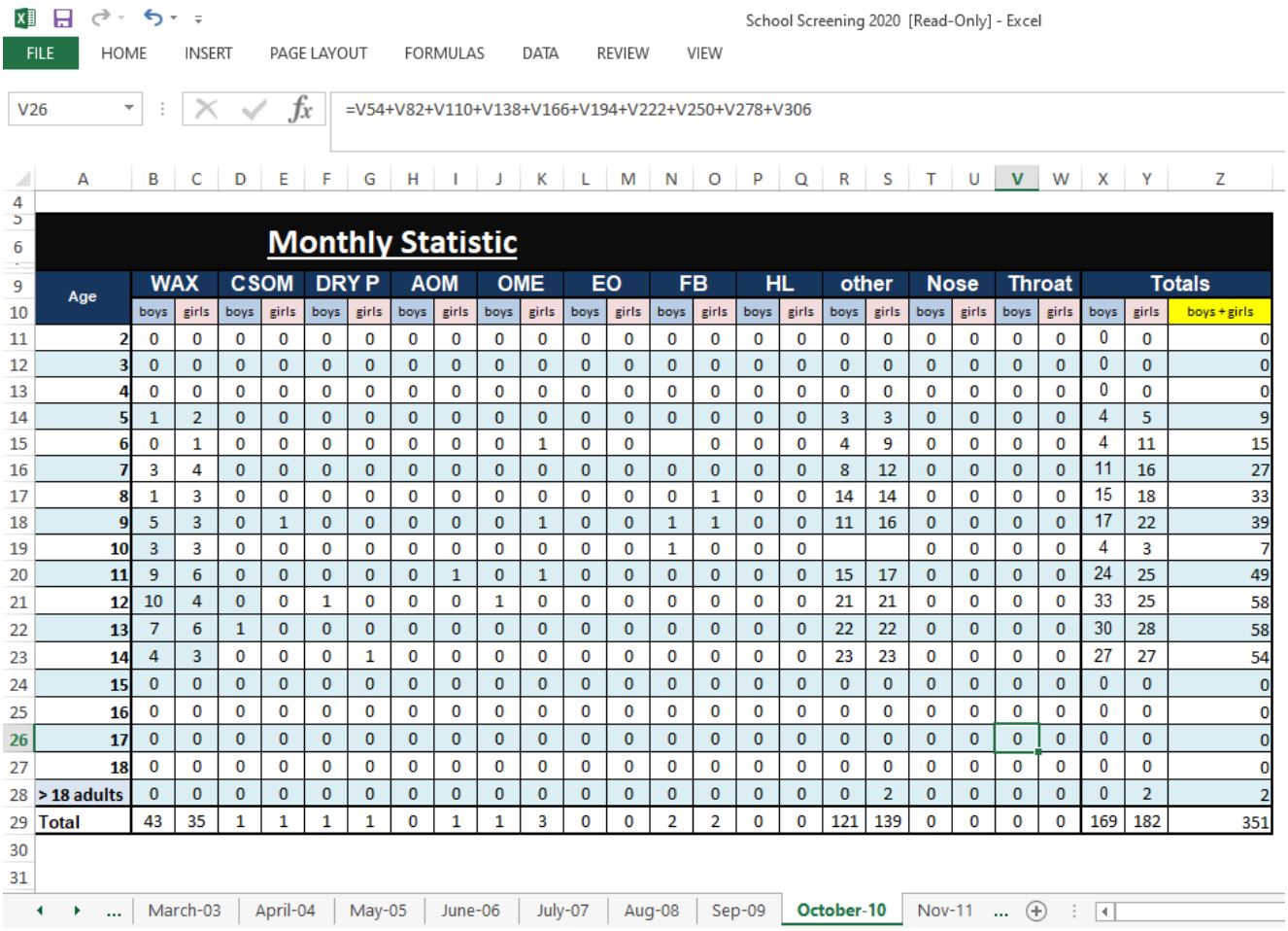
Annual Statistic | Sheet1 | Jan-01 | Feb-02 | March-03 | April-04 | May-05 | June-06 | July- ...

READY

Table 13: School screening activities statistics 2018 -2020 (additional table from BCH).

Gender	Southern Province				BCH 2020 (Lusaka and its surrounding)					SP 2019 Total	BCH 2019 Total	Total 2018-2020
	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr4	Total			
Male	-	-	-		26	-	-	11	37	1	1,510	1,585
Female	-	-	-		68	-	-	14	82	3	2,273	2,440
Boys	-	-	-		1046	-	-	166	1,212	230	921	3,575
Girls					1080			207	1,287	216	1,116	3,906
TOTAL	-	-	-		2220	-	-	398	2,618	450	7,104	10,172

Table 14 2020 October School screening statistics for ENT (extract from BCH excel file)



School Screening 2020 [Read-Only] - Excel

FILE HOME INSERT PAGE LAYOUT FORMULAS DATA REVIEW VIEW

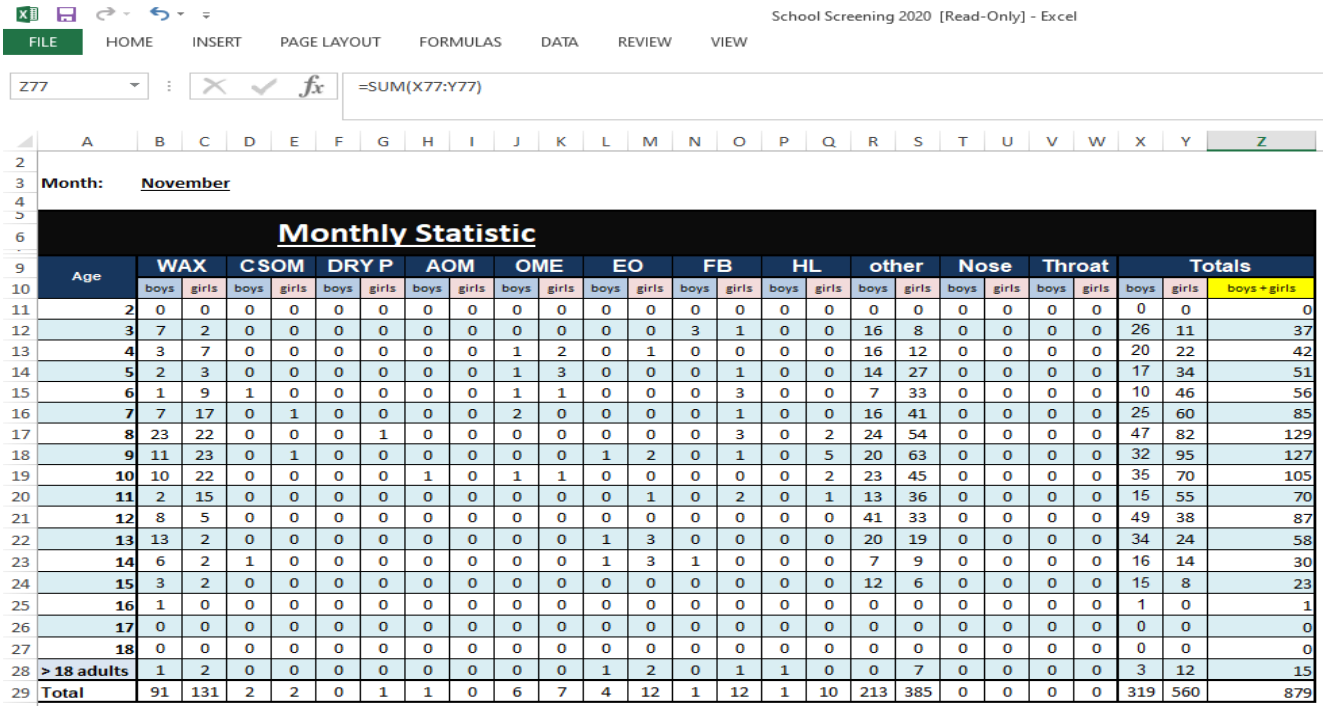
V26 =V54+V82+V110+V138+V166+V194+V222+V250+V278+V306

Monthly Statistic

Age	WAX		CSOM		DRY P		AOM		OME		EO		FB		HL		other		Nose		Throat		Totals		
	boys	girls	boys	girls	boys	girls	boys	girls	boys	girls	boys	girls	boys	girls	boys	girls	boys	girls	boys	girls	boys	girls	boys	girls	boys + girls
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0	0	4	5	9
6	0	1	0	0	0	0	0	0	0	1	0	0		0	0	0	4	9	0	0	0	0	4	11	15
7	3	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	12	0	0	0	0	11	16	27
8	1	3	0	0	0	0	0	0	0	0	0	0	0	1	0	0	14	14	0	0	0	0	15	18	33
9	5	3	0	1	0	0	0	0	0	1	0	0	1	1	0	0	11	16	0	0	0	0	17	22	39
10	3	3	0	0	0	0	0	0	0	0	0	0	1	0	0	0			0	0	0	0	4	3	7
11	9	6	0	0	0	0	0	1	0	1	0	0	0	0	0	0	15	17	0	0	0	0	24	25	49
12	10	4	0	0	1	0	0	0	1	0	0	0	0	0	0	0	21	21	0	0	0	0	33	25	58
13	7	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	22	22	0	0	0	0	30	28	58
14	4	3	0	0	0	1	0	0	0	0	0	0	0	0	0	0	23	23	0	0	0	0	27	27	54
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 18 adults	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	2
Total	43	35	1	1	1	1	0	1	1	3	0	0	2	2	0	0	121	139	0	0	0	0	169	182	351

... March-03 | April-04 | May-05 | June-06 | July-07 | Aug-08 | Sep-09 | October-10 | Nov-11 ...

Table 15 Table 16 2020 November School screening statistics for ENT (extract from BCH excel file)



Month: November

Monthly Statistic

Age	WAX		CSOM		DRY P		AOM		OME		EO		FB		HL		other		Nose		Throat		Totals		
	boys	girls	boys	girls	boys	girls	boys	girls	boys	girls	boys	girls	boys	girls	boys	girls	boys	girls	boys	girls	boys	girls	boys	girls	boys + girls
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	7	2	0	0	0	0	0	0	0	0	0	0	3	1	0	0	16	8	0	0	0	0	26	11	37
4	3	7	0	0	0	0	0	0	1	2	0	1	0	0	0	0	16	12	0	0	0	0	20	22	42
5	2	3	0	0	0	0	0	0	1	3	0	0	0	1	0	0	14	27	0	0	0	0	17	34	51
6	1	9	1	0	0	0	0	0	1	1	0	0	0	3	0	0	7	33	0	0	0	0	10	46	56
7	7	17	0	1	0	0	0	0	2	0	0	0	0	1	0	0	16	41	0	0	0	0	25	60	85
8	23	22	0	0	0	1	0	0	0	0	0	0	0	3	0	2	24	54	0	0	0	0	47	82	129
9	11	23	0	1	0	0	0	0	0	0	1	2	0	1	0	5	20	63	0	0	0	0	32	95	127
10	10	22	0	0	0	0	1	0	1	1	0	0	0	0	0	2	23	45	0	0	0	0	35	70	105
11	2	15	0	0	0	0	0	0	0	0	0	1	0	2	0	1	13	36	0	0	0	0	15	55	70
12	8	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41	33	0	0	0	0	49	38	87
13	13	2	0	0	0	0	0	0	0	0	1	3	0	0	0	0	20	19	0	0	0	0	34	24	58
14	6	2	1	0	0	0	0	0	0	0	1	3	1	0	0	0	7	9	0	0	0	0	16	14	30
15	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	6	0	0	0	0	15	8	23
16	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
> 18 adults	1	2	0	0	0	0	0	0	0	0	1	2	0	1	1	0	0	7	0	0	0	0	3	12	15
Total	91	131	2	2	0	1	1	0	6	7	4	12	1	12	1	10	213	385	0	0	0	0	319	560	879

5. Synthesis and discussion

5.1. Relevance

The project's intentions are very relevant and consistent with the needs of the population given that every third person receiving medical attention is diagnosed with and ENT related problem.

The first objective "The treatment of ear diseases is permanently embedded in the Zambian health system" with the associated activities-training Public Health Planners, conducting an Epidemiological study, conducting of ENT surgeries and facilitation of coordination meetings for the National ENT coordination committees are still valid and relevant. This is because health planners are cardinal in ensuring that ENT is included in the National Health planning processes and implementation of the ENT strategic plan; the Epidemiological study is needed to provide the much needed national wide status of ENT conditions to inform policy and practice, Support towards ENT surgeries is a key component of treatment and support towards National ENT coordination is critical for policy and strategic planning. However, the activity relating to nursing and medical training schools offering revised ENT curriculum training may not be valid in its current expression because all nursing and medical training schools have the new curriculum, but the challenge is few qualified staff to teach the ENT component and the low levels of ENT equipment in the health training institutions. Hence, the activity could be expressed as Enhancing practical skills in ENT training in health training institutions, and the project can focus on supporting health training institutions with basic diagnostic equipment, participation of students in community outreach activities as part of their practical and giving a specialized continuous professional development course on ENT to lecturers.

The second objective on “An increased number of ear-specific qualified medical and paramedical specialists are available in the target provinces” is still valid and relevant because there is still a big need to build capacity in terms of number of ENT Surgeons; number of speech therapy assistants trained, and number of general practitioners, clinical officers and nurses trained. Such a human resource spread near to communities is essential for improved access to ENT services for all and is critical in provision of improved prevention, diagnosis, treatment and rehabilitation of hearing loss in Zambia in general in relation to the national objective of improving access to quality health care for all (inclusive development).

The third objective “Ear medical infrastructure is permanently improved in Zambia” could be expressed as Ear medical infrastructure is significantly improved in the project areas” because first, the project coverage area is less than 10% of Zambia and claiming that a focus on 4 districts out of 13 districts in Southern Province to represent 117 districts of Zambia is not realistic hence a suggestion to limit the objective to the project areas. Secondly, infrastructure cannot be permanently improved because it will need rehabilitation generally every five years and possibly being replaced or expanded but certainly the project, can significantly improve the infrastructure. However, this objective on significant improvement of infrastructure is still valid because quality infrastructure is fundamental to provision of quality health care as demanded in the national health policy. Thus, the supply of furniture for offices and treatment rooms, construction of audiometric booths, construction of the Temporal bone lab clearly demonstrates a significant and important development in the health service provision landscape of Zambia with respect to ENT.

With regards to the fourth objective “Outreach-activities and Screenings have reached more patients” The school outreach and clinical outreach activities are important public health proactive strategies for early diagnosis, preventions and treatment of ENT conditions. Given that the “New normal” declaration by the president of the republic of Zambia and subsequent reopening of schools, this objective and its associated activities are still valid and relevant. Despite, COVID-19 this is consistent with the national health

The project’s focus to influence policy and decision making through training of District health planners without active and real involvement of critical offices such as directors, senior planners, principal planners, district integrated development planning unit not only to have a buy-in but enhance common vision and ownership of the interventions may not yield desired changes.

The project is also relevant in generation of statistics for decision making notwithstanding the need to improve the quality of the data. Moreover, most of this data is not accessible by the district health planners because the persons who were trained are not the actual district health planners (only one in the four districts visited was the correct person sent for the training). Some district health planners expressed ignorance of the entire project. They did not have any information about the project, never attended any training yet the project was operating in the district without involvement of the office of the district health planner.

The importance of increased infrastructure and equipment for ENT services cannot be over emphasized. However, the relevance of such investments is compromised if the equipment is not in use as the case in Kabwe Central Hospital because the ENT surgeon who was an expatriate had returned to her home country on maternity leave and the hospital administrations seemed not to know when she was going to come back.

It is no longer relevant to invest in curricular review because the curricular already exists that incorporates ENT. What is needed is capacity building of the trainers/Lecturers and institutional change to introduce and ENT and Audiology specializations at various levels of qualifications one hand and foster institutional change to recognize such qualifications in the Zambian health sector in terms of employment on the other hand.

5.2. Coherence

There is coherence between the intentions of the project and the national policy framework. This project contributed to the realization of the national health strategic plan in terms of need to increase infrastructure and equipment for ENT services, capacity building, strengthening the ENT information system and sensitization of the public on ENT conditions the project is well aligned towards increasing access to quality health care services for all-leaving no one behind as articulated in the national policy.

The relationship with the University teaching hospital of the University of Zambia-, Levy medical university teaching hospital and the Copperbelt University School of medicine presents strategic partnerships/networks for capacity building for ENT staff. This is because these institutions have strong support from the government and also have regional linkages and projects for ENT capacity building. There is need to have strategic linkages with the Health Professional Council of Zambia, to ensure that the trainings and qualifications that the project is providing are recognized officially, regulated and quality controlled by the responsible institutions and the employers. The synergies with Zambia Ear Nose and Throat Association also adds value in terms of lobbying and advocacy for policy support. Other opportunities that exist for creation of synergies is at donor level. The big donors such as USAID funding programs like HIV AIDS and control of TB would be important strategic networks so as to reduce or mitigate the ototoxicity.

However, the promotion of CBM Child Safeguarding policy and expectation of partners to follow it as expressed in the TORs for the MTE may not be necessary because the Health Professional Council of Zambia and various laws in Zambia provide a more robust guidance. Caution is needed on the extent to which CBM would want to push its CBM Child safeguard policy in the health facilities without prior engagement with relevant national institutions and reflecting on legal implication that may arise.

5.3. Effectiveness

The project was very effective in terms of trainings for the nurses and clinical officers. The beneficiaries were asked to state the level of the problem before and after the treatment to assess the effectiveness of the capacity built among the nurses and clinical officers. Results showed that 67.6% of beneficiaries reported not having any difficulty in hearing after treatment; the 44.1% who reported a lot of hearing problems before treatment reduced to significantly low rate of 4.4% after treatment and about a quarter still reported some difficulty after treatment (figure 5).

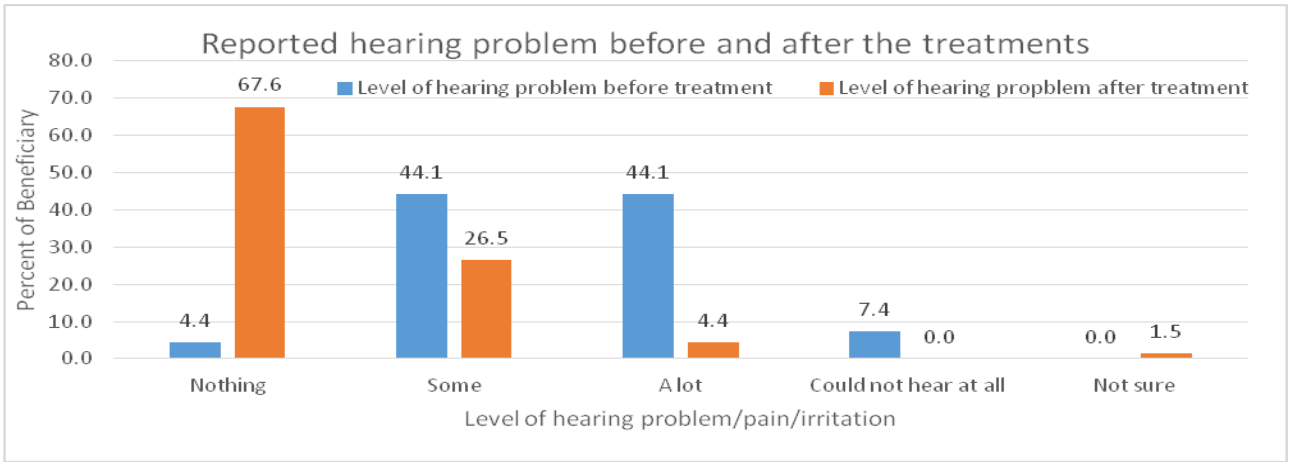


Figure 5 Reported effect of ENT treatment.

5.4. Efficiency

The synergies between this project and two other similar projects implemented by Beit cure Hospital for Lusaka and Central Province is an efficient model for resource use and sustainability. The Temporal bone lab also provides an opportunity for synergies between the investments from with other sources by the University Teaching Hospital (UTH) in capacity building given that UTH is a regional center for ENT capacity building. However, the project has moderately performed generally in terms of efficiency with respect to timely completion of activities. This assessment is based on the fact that a number of activities were being postponed to future periods even after the relaxation of the COVID work restrictions. For example, completion of the epidemiological survey, handover of the infrastructure and equipment, delays in operationalization of the ENT coordination committee. The overall fund utilization rate is at 69.2 % (table 9).

Table 16 Fund utilization rates

SN	Description	Approved Budget (EUR)	All Years Total expenditure EUR)	All Years Balance (EUR)	Budget utilization Rate (%)
A	**Investment Cost**	**390410.00**	**361244.92**	**29165.08**	**92.53**
1.1.1	Medical Equipment	293740.00	292540.25	1199.75	99.59
1.1.2	Furniture and Learning Equipment	7160.00	7378.65	-218.65	103.05
1.1.3	Project Vehicle	36000.00	34115.19	1884.81	94.76
1.1.4	Construction at University Teaching Hospital	53510.00	27210.82	26299.18	50.85
B	**Running Cost**	**310940.00**	**157242.25**	**153697.75**	**50.57**
1.2.1	Implementation ENT Plan	30160.00	4437.54	25722.46	14.71
1.2.2	Trainings	153010.00	113677.07	39332.93	74.29
1.2.3	Project Monitoring (local)	38450.00	16925.62	21524.38	44.02
1.2.4	Outreaches and School Screenings	71620.00	15564.17	56055.83	21.73
1.2.5	Audit and Bank Costs	17700.00	6637.85	11062.15	37.50
C	**Personnel Cost**	**143500.00**	**79437.90**	**64062.10**	**55.36**
1.3.1	Project Management	77000.00	45116.17	31883.83	58.59
1.3.2	Medical Personnel	66500.00	34321.73	32178.27	51.61
D	**EVALUATION**	**27000.00**	**5586.35**	**21413.65**	**20.69**
	TOTAL	**871850.00**	**603511.42**	**268338.58**	**69.22**

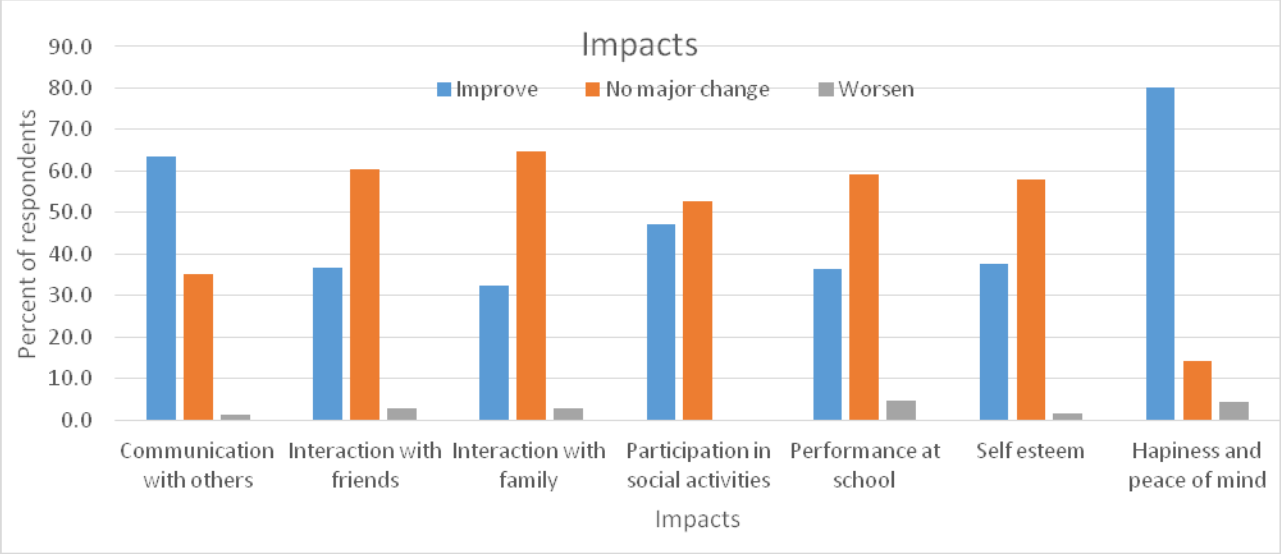
The funds for the implementation of the ENT strategic plan with the lowest utilization rate, can be used to get an assistant to the national coordinator on a short-term contract to facilitate the operationalization of the ENT national committee and initiate the review of the ENT strategic plan. Secondly, given the less likelihood of school screening due to the second wave of COVID-19 some of the funds (two third of the budget line) could be used to make the ENT clinics more accessible by people with disabilities e.g. constructing of access ways for the wheel chairs on the entrances. Thirdly, some of the funds (one third of the budget line) for the budget line for the evaluations could be used in developing sustainability framework with key stakeholders and support the realization of the epidemiological survey. Additionally, more health centers could be added for training in primary ENT health care.

5.5. Impact

The positive impact of the project has been firstly the capacity building among the nurses and clinical officers who are able to do some diagnosis and treatment of basic or minor ear problems. This has been possible due to the equipment that each of the trained staff is given in addition to the training. This capacity in basic diagnosis,

basic treatment and referral of complex cases by the nurses and clinical officers will continue beyond the project period. Additionally, audiometric service provision will continue beyond project period and so are the surgeries done by the new equipment. The outreach activities, visible work of the trained staff at the health facilities has increased the community awareness of the ENT services, causes of hearing impairment e.g. foreign bodies during the farming season as opposed to traditional superstitions believed as causes. The community health assistants (trained at the end of 2020) are expected to further contribute positively towards the changing the attitudes knowledge and practices with regards to ENT at community level beyond the project period.

Secondly, among the primary beneficiaries, the reported impacts were increased happiness and peace of mind followed by the increased ability to communicate, then increased participation in social activities such as playing with others and participation at church. Other reported positive impacts were increased sense of self-esteem, education performance. The secondary beneficiaries mostly reported increased peace of mind and happiness; reduced worrying about the affected person (patient) and increased time to do other things as opposed to providing health care before the treatment.



5.6. Gender and Inclusion

The project performed well on gender and inclusion because the data for the project was segregated by gender and both men and women nurses and clinical officers participated in the trainings. However, it was noted that speech therapist's trained are dominated by women as they are more interested, more patient with children than men generally which was an efficient criterion used in the selection of the trainees.

In terms of access to ENT services, the results show that there are minimal gender gaps in terms of ENT operations among children than among adults (figure 6). This is because the adults could have leaved and adapted with an ENT problem such that the urgency for treatment is not as high as for the children. Also Beit cure is more concerned with offering free ENT treatment to children than to adults. Thirdly the increasing awareness among parents is helping them to take their children for ENT services.

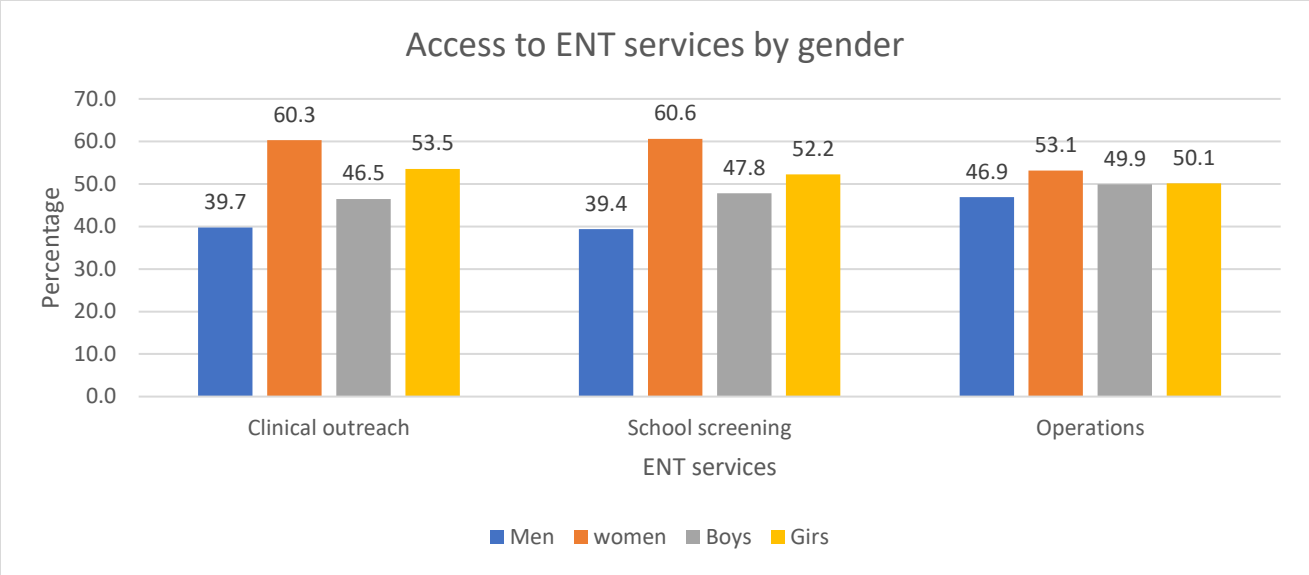


Figure 6 Access to ENT services by gender groups

Generally, men seem not to be accessing the ENT services as much as the women do. This could be because women are more open to seeking medical attention generally than men due to personal and cultural disposition. Additionally, the ENT problem such as foreign bodies could be affecting more of women than men in rural areas because the women are more involved in activities that make them vulnerable to foreign body infection such as seed/grain processing and hand weeding than men.

5.7. Sustainability

The project sustainability has recorded success in terms activities that are in line with the intentions of the national ENT strategic plan that is increasingly becoming recognized by both state and non-state actors. The project's collaboration with the office of the ENT national coordinator adds value to sustainability through institutionalization of the ENT service provision and education at National level.

At micro-level there are few autonomous initiatives to streamline ENT Service provision at health facilities largely depends on dedication of individual medical staff rather than as a strategic management decision and direction. These initiatives such as setting a day for ENT clinic, creating synergies with other health activities such as under five clinic, child health week, joint outreach with other projects, recognition by administration of etc. A lot of responsibilities for institutional changes have been left with the office of the national coordinator and this office may need concerted effort from the grassroots for it to succeed in increasing attention towards ENT service provision in Zambia.

However, the sustainability component from within the project is poorly implemented. This is because there is no sustainability plan or document or framework that could be used as a guide along the project value chain. The provision of supplies for ENT services to health facilities, lack of clearly agreed upon (between the MoH and BCH/CMZ) approach and process of integrating ENT service provision and data capture at health facilities, lack of active involvement of key decision makers such as directors erodes the sense of ownership and sustainability. Some district health management offices expressed low level of involvement of senior most district health management personnel like district health directors and the provincial health planners apart from their involvement in submission of names of nurses and clinical officers for training. They expressed ignorance of the

statistics that was being collected by the trained nurses and clinical officers. As such this data is not being used for decision making yet it is critical in influencing decision making and priorities in the health sector. The provincial office is also not preview to this critical data for their use.

Some of the key threats to sustainability is low numbers of mentors, experts to conduct training, lack of recognition of ENT, Audio technician and assistant speech therapist for the Nurses and Clinical officers notwithstanding the initiatives by the national ENT coordinator's office that are underway to change this situation.

5.8. Child safeguarding

According to the TORs for the MTE, the consultant was supposed to assess the awareness level of the stakeholders of child protection/safeguarding policy and degree to which the CBM child safeguarding standards are known and understood by the various stakeholders. It is worth noting that this requirement is not reflected in any of the project objectives, activities, and reporting framework. However, the project provided training on the child safe guard policy in all the trainings sessions that were conducted under the project including the consultancy team went through the child safeguard policy. BCH from a previous project on infrastructure build several consultation rooms to enhance the privacy and built a shelter or lobby for waiting. The safeguard environment has also been enhanced by the presence of consultation booths within the wards. Above all, BCH has a clear reporting mechanism in place. Furthermore, the physical inspection of the audiometric booth in Livingstone and physical plans for the booths at Request Muntanga Hospital and Choma General Hospital all showed that there is a room for consultation ensuring privacy before going into the main compartment for testing and there is a space for clients to wait/que.

Despite the fact that, all medical staff in Zambia undergo a comprehensive training on ethics and protection of patients including children and on annual basis they must renew their health practicing license the evaluation found that all medical staff interviewed were aware of the patient safeguard principles not only for the nation and but also those from CBM. Although the CBM child safe guard policy has been questioned by some stakeholders as it implicitly suggests that the CBM child safeguard policy is better than what is in place in the health sector in Zambia, the stakeholders indicated that it is still an essential component to reinforce and remind the staff of the need for child safeguard measures within the project and its partners. It is important to emphasize in the trainings under the project and to partners that CBM child safeguard policy is not a replacement of the national ethical guidelines on how to care for patients but it augments and reinforces the need to put practical measures to safeguard the children in the project.

6. Lessons learnt.

The following are lessons learnt.

i. The capacity building is the projects most effective and efficiently implemented component of the project. This shows opportunities for upscaling of the same intervention to other nine districts within the project region (Southern Province). The government is very supportive of capacity building for the medical staff. Factors contributing to these results include high interest among the medical staff, effective procurement process and supportive district and provincial health administrations to allow their staff to attend the training.

ii. The success of ENT services at health facilities depends on two major factors i.e., the performance of the person in charge of ENT and recognition of the importance of ENT trained nurses and clinical officers by the health administration at various levels.
iii. Some factors that contributed to failure to achieve that targets as desired include, COVID-19 pandemic, government low levels of ownership of the project, postponement of the activities due to overwhelming work on other projects, overwhelming work load of the office of the ENT national coordinator that lacks an assistant, inefficient tendering and negotiation over the epidemiological survey.
iv. The currency gains from exchange rate has a positive effect on the funds available for the project
v. Peer to peer training in some health facilities such as in Livingstone and Choma districts is an essential component for sustainability at health facility level.
vi. It is important for the project at the project conceptualization and planning stage to involve key stakeholders such as the Ministry of Health, Key medical/health training universities, Zambia Ear Nose and Throat Association and Health Professional Council of Zambia.
vii. In terms of gender, it is important to use accepted terms and concepts consistently. That is either use term such as men and women, boys and girls to denote the gender groups by age rather than male and female to refer to adults yet boys and girls are also male and female.
viii. The need to maintain a consistent data base from various sources is very cardinal for respective projects.
ix. When activities are being implemented from more than one project, it is always good practice to declare that at the beginning of the evaluation and transparently provide all needed data sources.

7. Conclusion

The project has encountered challenges that have negatively impacted progress towards the achievement of some of the intended project goals. The challenges include COVID-19 that has reduced the number of school outreaches and generally delayed the implementation of project activities due to lockdown; administrative challenges with partners such as consultant for the epidemiological survey where the negotiations took unrealistically longer time than expected (more than a year to come to an agreement) thus has delayed the generation of the much needed information from study; and some inherent project challenges due to other duties by the project team combined with the aforementioned COVID-19 challenge resulted in most planned activities in the fourth quarter 2020 being pushed to 2021.

Despite the above challenges, the project generally is on track to meet its intended objectives. This is because firstly, the return of an ENT to Livingstone is going to increase the number of ENT surgeries. Secondly the community sensitization and referrals to Livingstone general hospital is likely to increase because of the efforts of community health volunteers that were trained in the fourth quarter of 2020. Thirdly, most of the training for medical professional have been completed and a plan to train the remaining few is already in place as explained in result 2 above. This tool is likely to increase access to ENT services within the project region. Fourthly, most of the infrastructure needed to enhance provision of ENT services has been procured. Fifthly, the remaining audio-technicians will be graduating within the course of 2021 implying that the all the audiometric booths will be operational within 2021. Sixthly, the re-opening of the schools creates an opportunity to increase the number of ENT screening beyond the current 44%. Against the foregoing developments it is thus concluded that the project is in the right track towards achieving the intended goals.

8. Recommendations.

Based on the afore-explained and discussed results the evaluation presents recommendation based on with decreasing order of priority. The prioritization criteria is based on the easiness of implementation coupled with high degree of control by the project.

i. There is need to change either the units from number of patients/beneficiaries to number of ENT conditions attended to because the numbers collected by BCH do not show the number of patients, but conditions and number of consultations as earlier explained or adopt a more robust approach showing both the number of patients and the conditions attendant to per patient. Otherwise, the number of beneficiaries reached will always be less than the reality since one beneficiary can have more than one medical condition or consultations per time.

ii. Similarly, some gaps in the data sets were observed such as multiple units for age (expressed as M, MT, Y and no unit at all) and inconsistent date format. There is a need to review the process of the data capturing at BCH and consider ways of ensuring quality of the data in all forms.

iii. The project must prioritize activities such as completion and operationalization of the Temporal bone lab because candidates to use the facility are awaiting and it will be an asset for both Zambia and the region.

iv. Also commissioning the audiometric booths or handovers are critical as some health facilities are waiting for the same. All this could be done within a month in the first quarter.

v. The capacity building could be considered for upscaling beyond the current numbers targeted to include critical persons such as directors, principle officers and planners from ministry of Local government/ local authorities (secretariat to overall planning process at District and Provincial level in line with current mandate of Integrated Development Planning and need for Integrated District Plans). The project could consider having a 1-2-day workshop in Southern province for the key decision makers such as Hospital superintendents, Clinical in-charge District health directors, Provincial Health Planners, ENT Specialist and Human resource. This is important for such key people to come up with a framework or model on how to integrate ENT Service provision beyond the project period.

vi. It is important to have effective and efficient options for conducting national epidemiological studies, such as offering a commissioned research to relevant units at universities with options to attach appropriate master's students in the actual data collection and expose them to the ENT aspects in the process in addition to using the medical staffs that the projects have trained who are in various health facilities. Another option is to assemble an interdisciplinary team (researchers/consultant and Beit Cure team), to collection data using a model of major outreach in spatially distributed and nationally representative targeted regions thus pooling resources (outreach and survey) to achieve more than one goal.

vii. The dependence on the few and sometimes external experts to conduct trainings sometimes lead to delays. Therefore, initiatives such as blended approach i.e., use of virtual platforms and physical means in training and pairing the external experts with local ones could be explored if the capacity building will be continued.

viii. There is need to increase the ownership of the intervention by the ministry of health and other relevant institutions through active involvement in developing a sustainability plan, increase the awareness over the need for audiology department in health facilities and integration of ENT data collection into the mainstream health service system.

ix. There is an opportunity to push for recognition of ENT service provision and investments in the ongoing formulation of Integrated Development Plans (IDPs) for Districts. The project could consider providing the statistics it has been collecting to the secretariat for the IDP at district level.