



MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES



ANNUAL REPORT

2016/2017



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List of abbreviations

AIDS	Acquired Immunodeficiency Syndrome
AfDB	African Development Bank
AGCT	Alliance for Global Clinical Training
AOR	Authorized Organization Representative
BMLS	Bachelor of Medical Laboratory Sciences
BPharm	Bachelor of Pharmacy
BSc	Bachelor of Science
BSc N	Bachelor of Science in Nursing
BSc EHS	Bachelor of Science Environmental Health Sciences
BSc RTT	Bachelor of Science in Radiation Therapy Technology
CBE	College of Business Education
HD-CHPE	Haile Debas Centre for Health Professions Education
CEPD	Continuing Education and Professional Development
COTUL	Consortium of Tanzania University and Research Libraries
CIRCLE	Climate Impact Research Capacity and Leadership Enhancement
COSTECH	Tanzania Commission for Science and Technology
CV	Curriculum Vitae
CVCPT	Committee of Vice Chancellors and Principals in Tanzania
DEHS	Diploma in Environmental Health Sciences
DMLS	Diploma in Medical Laboratory Sciences
DN	Diploma in Nursing
DNA	Deoxyribonucleic acid
DCEPD	Directorate of Continuing Education and Professional Development
DRP	Director of Research and Publication
DDS	Doctor of Dental Surgery
DICT	Directorate of Information and Communication Technology
DLS	Directorate of Library Services
DNS	Domain Name Server
DOS	Dean of Students
DUE	Director of Undergraduate Education
DVC	Deputy Vice Chancellor
DVC-PFA	Deputy Vice Chancellor Planning Finance Administration
FYRSP	Five Year Rolling Strategic Plan
HIS	Health Information System
HEI	Higher Education Institution
HESLB	Higher Education Students Loans Board
HKMU	Hubert Kairuki Memorial University
HIV	Human Immunodeficiency Virus
HCMS	Human Capital Management Information System
HR	Human Resource



HRH	Human Resource for Health
HRMA	Human Resource Management and Administration
IAHS	Institute of Allied Health Sciences
IRB	Institutional Review Board
ICT	Information and Communication Technology
IP	Internet Protocol
IT	Information and Technologies
ITM	Institute of Traditional Medicine
IUCEA	Inter-University Council of East Africa
KCMCo	Kilimanjaro Christian Medical College
MAMC	MUHAS Academic Medical Centre
MD	Doctor of Medicine
MMed	Master of Medicine
MPharm	Master of Pharmacy
MNH	Muhimbili National Hospital
MPL	Multipurpose Laboratory
MUHAS	Muhimbili University of Health and Allied Sciences
MUHASSO	Muhimbili University of Health and Allied Sciences Student Organization
MSc	Master of Science
MSc TDC	Master of Science in Tropical Diseases Control
MPH	Master of Public Health
MUCHS	Muhimbili University College of Health Sciences
MOU	Memorandum of Understanding
NHIF	National Health Insurance Fund
NIH	National Institutes of Health
NIMR	National Institute of Medical Research
NHC	National Housing Corporation
NCD	Non-Communicable Disease
OHCEA	One Health Central East Africa
OMS	Oral and Maxillofacial Surgery
OSP	Office of Sponsored Project
OPCD	Orthodontics, Periodontics and Community Dentistry
OPRAS	Open Performance Review and Appraisal
PFA	Planning Finance and Administration
PhD	Doctor of Philosophy
PI	Principal Investigator
PMU	Procurement Management Unit
QA	Quality Assurance
QC	Quality Control
SARIS	Student Academic Records Information System
Sida	Swedish International Development Agency
SOD	School of Dentistry
SPHSS	School of Public Health and Social Sciences



SOPs	Standard Operating Procedures
SHDC	Senate Higher Degree Committee
SUA	Sokoine University of Tanzania
SON	School of Nursing
TACAIDS	Tanzania Commission for AIDS
TAMSA	Tanzania Medical Students Association
TANTRADE	Tanzania Trade Development Authority
TERNET	Tanzania Education and Research Network
TCU	Tanzania Commission of Universities
TFDA	Tanzania Food and Drug Authority
THC	Technical Harmonization Committee
THTU	Tanzania Higher Learning Institutions Trade Union
TBS	Tanzania Bureau of Standards
TIB	Tanzania Investment Bank
TANROADS	Tanzania National Roads Agency
TANESCO	Tanzania Electric Supply Company Limited
UDOM	University of Dodoma
UDSM	University of Dar es Salaam
USA	United State of America
USAID	United States Agency for International Development
UK	United Kingdom
UNESCO	United Nations Educational, Scientific and Cultural Organization
UCSF	University of California at San Francisco
VC	Vice Chancellor



Members of the University Council during the year ended 30th June, 2017.

No.	Name	Status/Title
1.	Ms Mariam Joy Mwaffisi	University Council Chairperson
2.	Prof. Ephata E. Kaaya,	Member, Vice Chancellor,
3.	Prof. Lughano Jeremy Kusiluka	Member, Representative Committee of Vice Chancellors and Principals of Tanzania (CVCPT),
4.	Dr. Gozbert Mutahyabarwa,	Member, Appointee of the Minister of Health, Community Development Gender, Eldely and Children,
5.	Prof. Raphael Chibunda,	Member, Appointee of the Minister of Education, Science and Technology.
6.	Dr. Jamala A. Taib,	Member, Permanent Secretary, Ministry of Health & Social Services, Appointee of the Revolutionary Government of Zanzibar
7.	Mr. Aziz Hassan Kifile,	Member, Assistant Accountant General, Appointee of the Minister of Finance and Planning,
8.	Prof. Lawrence Museru,	Member, Executive Director, MNH
9.	Prof. Charles Mgone,	Member, Representative pf the MUHAS Convocation
10.	Mr. Ali A. Mufuruki,	Member, Chairman of the Grants Committee.
11.	Prof. David Urassa	Member, Appointee of the Senate
12.	Dr. Edith Tarimo,	Member, Appointee of the Senate
13.	Dr. Lulu Fundikira,	Member, Representative of the Academic Staff Assembly
14.	Prof. Febronia Kahabuka,	Member, Representative of the Gender Dimension Committee.
15.	Dr. Method Kazaura	Member, Representative of Workers Union (THTU)
16.	Mr. Mathew Mandawa	Member, Representative of MUHASO.
17.	Mr. Kennedy S. Fussy	Member, Representative of MUHASO



MUHAS Milestones

- 1963 The Dar es Salaam School of Medicine established under Ministry of Health
- 1968 The Dar es Salaam School of Medicine becomes the Faculty of Medicine of the University College of Dar es Salaam a constituent College of the University of East Africa.
- 1969 Faculty of Medicine launches an intensive course in biomedical sciences for diploma students. This was meant to convert the diplomas to the Bachelor of Medicine and Bachelor of Surgery (MB; ChB) degree which was being offered by the University of East Africa.
- 1970 The Faculty of Medicine becomes Faculty of Medicine of the University of Dar es Salaam.
- 1974 Faculty of Medicine launches a three-year Bachelors degree in Pharmacy in the Division of Pharmaceutical Sciences.
- 1974 Traditional Medicine Research Unit is launched within Muhimbili.
- 1976 Faculty of Medicine and Muhimbili Hospital merge to form Muhimbili Medical Centre (MMC).
- 1979 A five-year degree course in Doctor of Dental Surgery starts in the Division of Dentistry.
- 1989 A Bachelor of Science in Nursing degree and Faculty of Nursing established.
- 1991 Faculty of Medicine upgraded into a constituent College of the University of Dar es Salaam and in July of 1991 the Muhimbili University College of Health Sciences becomes established.
- 1991 The Institute of Allied Health Sciences established from the former paramedical schools.
- 1997 Program Management Unit is created to address planning and development issues in the College.
- 2000 Muhimbili Medical Centre is disestablished to create two closely linked but autonomous public institutions known as Muhimbili University College of Health Sciences and Muhimbili National Hospital and the University moves from the Ministry of Health to the Ministry of Science Technology and Higher Education.
- 2001 A Bachelor of Science in Environmental Health starts in the Institute of Public Health predecessor of School of Public Health and Social Sciences.
- 2003 Faculties upgraded into Schools to make them more autonomous.
- 2003 Program Management Unit is upgraded into a Directorate of Planning and Development.



- 2004 University acquires 3800 acres of prime land on the outskirts of Dar es Salaam for future expansion.
- 2004 Two programs, Bachelor of Science Nursing Management and Bachelor of Science in Midwifery, start in the School of Nursing.
- 2005 Establishment of Directorates of Planning and Development for Mloganzila and Muhimbili Campuses
- 2006 Department of Library services is upgraded to a Directorate.
- 2006 Establishment of the Unit of Continuing Education under the Directorate of Postgraduate Studies
- 2007 Established Directorate of Continuing Education and Professional Development
- 2007 The Muhimbili University College of Health Sciences upgraded to a full-fledged University
- 2008 Inauguration of University's Workers Council
- 2009 Establishment of Directorate of Undergraduate Education
- 2010 The Government of the United Republic of Tanzania signed a loan arrangement with the Government of South Korea for construction of the University Medical Centre at Mloganzila campus.
- 2011 The Government of the United Republic of Tanzania signed a loan agreement with the Government of South Korea for supply and installation of the equipments for the University Medical Centre at Mloganzila
- 2014 Construction of MUHAS Academic Medical Centre was initiated and was inaugurated by the fourth President of United Republic of Tanzania Hon Jakaya Mrisho Kikwete in 2015
- 2015 Centre of excellence in Cardiovascular Sciences was officially launched
- 2016 Construction of MUHAS Academic Medical Centre was completed on and was handed over to MUHAS Management.
- 2016 MUHAS University Council Approved Establishment of Muhimbili University Investment Holding Company



Institutional Leadership 1963 – to date

Year	Name of the Head of institution	Position Held
1963-1968	Dr. A. M. Rankin	1 st Dean, Faculty of Medicine
1968-1969	Prof. Gottlieb L. Monekosso.	2 nd Dean, Faculty of Medicine
1969-1973	Prof. Aloysius M. Nhonoli	3 rd Dean, Faculty of Medicine
1973-1977	Prof. Willim J. Makene	4 th Dean, Faculty of Medicine
1977-1981	Prof. Aloysius M. Nhonoli	3 rd Dean, Faculty of Medicine
1981-1988	Prof. William J. Makene	4 th Dean, Faculty of Medicine
1988-1990	Prof. Gabriel M. P. Mwaluko	5 th Dean, Faculty of Medicine
1991-1994	Prof. Samuel Y. Maselle	1 st Principal, MUCHS
1994-2003	Prof. Jacob P. Mtabaji	2 nd Principal, MUCHS
2003-2007	Prof. Kisali J. Pallangyo	3 rd Principal, MUCHS
2007- 2012	Prof. Kisali J. Pallangyo	1 st Vice Chancellor MUHAS
2012 to date	Prof. Ephata E. Kaaya	2 nd Vice Chancellor MUHAS

Current University Management



Prof. Ephata E. Kaaya
Vice Chancellor



Prof. Eligius Lyamuya
**Deputy Vice Chancellor – Academic,
Research and Consultancy**



Prof. Aporinary R. Kamuhabwa
**Ag. Deputy Vice Chancellor – Planning,
Finance and Administration**



Foreword

The year 2016/2017 marked another step forward for the Muhimbili University of Health and Allied Sciences (MUHAS) towards achieving objective stipulated in its Five Years Rolling Strategic Plan, 2015/2016 to 2019/2020. During the year 2016/2017, academic programs continued to grow addressing the need of the Tanzania society and beyond. Currently the University has a total of 91 academic programs. During the reporting period, 1186 students were admitted in various diploma, undergraduate and postgraduate programs, and 955 students were successfully awarded their diploma, undergraduate and postgraduate degrees. This marked a 5.3% increase in graduation rate as compared to the number of students who completed similar programs in 2015/2016.

During the reporting, period the University continued to build capacity of its academic staff to ensure quality training. A total of 68 academic staff pursued further studies in various professions. A total of 28 staff were registered for PhD programs (7 females and 21 males), 14 (5 males and 9 females) were pursuing master degree programs and 4 males were registered for super-specialization and post-doctoral training. Likewise, a total of 23 staff (10 PhD and 8 Master, Degrees, 5 Bachelor degree MSc specializations and one Diploma) completed their studies in different units of the University. During the reporting, period a total of 7 staff at the newly completed MUHAS Academic Medical Centre (MAMC) were also registered in various training programs.

A total of 88 active sponsored research projects and 24 new research projects were implemented during the reporting period. Alongside research implementation, the university maintained its leading edge in research publication in the country. A total of 289 journal articles, 115 conference proceedings and 2 book chapters were published. This achievement was a result of the University's efforts to promote research and innovation as one of its core functions.

The University Council endorsed a proposal for Establishment of Muhimbili Investment Holding Company (MUHIC) for the purpose of improving university investment portfolio and strengthen third stream funding. The Company has been mandated in managing all university income generation fixed assets and innovate new ways to improve university investment and income generation.

During the reporting period construction of MUHAS Academic Medical Centre was completed on 31st August, 2016. External works including construction of internal road network, parking area, paving of pedestrian walkways, and landscaping were also completed. The building was handed over to MUHAS management on 15th September, 2016. A total of 848 of medical equipment had been imported, received and installed at MAMC. This is 98.4% of all medical equipment required to be supplied and installed in the Hospital. The remaining equipment would be installed before commissioning of MAMC in November 2017.



Collaborative efforts among staff and effective leadership at all levels contributed to achievements scored during the year. I therefore wish to congratulate all staff for working efficiently and diligently and for their contributions in the successful implementation of the University core functions. On behalf of MUHAS, I would also like to thank all stakeholders who have supported MUHAS intellectually and financially and facilitated the realization of these achievements.

A handwritten signature in black ink, appearing to read 'E. Kaaya', is positioned above the printed name.

Prof. Ephata E. Kaaya

Vice Chancellor



1.0 Introduction

This is the eleventh MUHAS Annual report, which describes progress in the implementation of the annual planned activities as described in the MUHAS Strategic Plan for the 2015/2016 – 2019/2020. The report shows progress in academic programs, students enrolment, student outputs, examinations and human resource development. The report also shows achievements made by schools, academic institutes and directorates. Research programs, consultancy and public service achievements made by the various units at MUHAS are also reported. In addition, during year 2016/2017, the University made progress towards achievement of its vision and mission through implementation of various development projects, expansion of student intake improvement of the quality of research and teaching, and improved stakeholder's engagement. Construction and equipping of the Academic Medical Centre at the Mloganzila Campus was completed including installation of medical equipment. During the reporting period preparations for operationalization of the hospital had started and various hospital committees were working diligently to ensure that the hospital is in operation by the end of September, 2017.

Due to declining government subvention and the increasing demand for financial resources to fund the core functions of the university, during the reporting period, the university initiated various strategies to boost investment and self-generated income. These included identifying interested private investors to invest in the potential University lands located at Masaki, Chole Road, Kalenga, Kigamboni, Morogoro, Bagamoyo and Vikuruti. Also, the University Council approved the establishment of MUHAS Investment Holding Company (MUIHC).

2.0 Vision, Mission and Functions of the University

2.1 Vision

A university excelling in quality training of health professionals, research and public services with conducive learning and working environment.

2.2 Mission

To provide quality training, research and services in health and related fields for attainment of equitable socio-economic development for the Tanzanian community and beyond.

2.3 The Functions

The functions and activities of the University are guided by the following components: -

- (i) To provide in Tanzania a place of learning, education, research in health and allied sciences
- (ii) To be the main producer of key policy makers, experts and personnel in the health sector.
- (iii) To be a catalyst in the health sector reforms through conducting relevant research and educating the public in health-related issues



- (iv) To prepare students through regular and professional courses in the fields of health and allied health Sciences for degrees, diplomas, certificates and other awards of the Muhimbili University of Health and Allied Sciences.
- (v) To contribute to the intellectual life of Tanzania, to act as a focal point for its cultural development and to be a center for studies, service, and research pertaining to the interests of the people of Tanzania.

2.4 Schools Institutes and Directorates

The University has five Schools, two Institutes, and Twelve Directorates as follows: -

2.4.1 Schools

- (i) School of Medicine
- (ii) School of Dentistry
- (iii) School of Pharmacy
- (iv) School of Nursing
- (v) School of Public Health and Social Sciences

2.4.2 Institutes

- (i) Institute of Allied Health Sciences
- (ii) Institute of Traditional Medicine

2.4.3 Directorates

- (i) Directorate of Planning and Investment, Muhimbili Campus
- (ii) Directorate of Planning and Investment, Mloganzila Campus
- (iii) Directorate of Postgraduate Studies
- (iv) Directorate of Research and Publications
- (v) Directorate of Information and Communication Technology
- (vi) Directorate of Library Services
- (vii) Directorate of Continuing Education and Professional Development
- (viii) Directorate of Undergraduate Education
- (ix) Directorate of Quality Assurance
- (x) Directorate of Finance
- (xi) Directorate of Human Resources Management and Administration
- (xii) Directorate of Estates
- (xiii) Directorate of Vice Chancellor's Office

3.0 Teaching and Learning

3.1 Academic Programs

MUHAS has a wide range of academic programs and the best academic staff profiles in Health and Allied Sciences in Tanzania. The University gives high priority to quality programs' development, delivery and students outcomes. Currently the University offers 10 Diploma programs, 15 Undergraduate programs and 65 Postgraduate programs, which are offered in the five schools and two institutes.

3.2 Student Admissions

3.2.1 Diploma Programs

During the reporting period 222 new students were admitted in the various MUHAS diploma programs. Of the total, 145 (65.32%) were males and 77 (34.7%) were females. The total enrolment of Diploma students was 977 out of this, 639 (65.4%) males and 338 (34.6%) females. Figure1 shows admission trends for diploma students from 2012/13 to 2016/2017.

There was a decrease of students admitted in 2016/2017 (222) compared to 368 students admitted in previous year (2015/2016) (**Figure 1**).

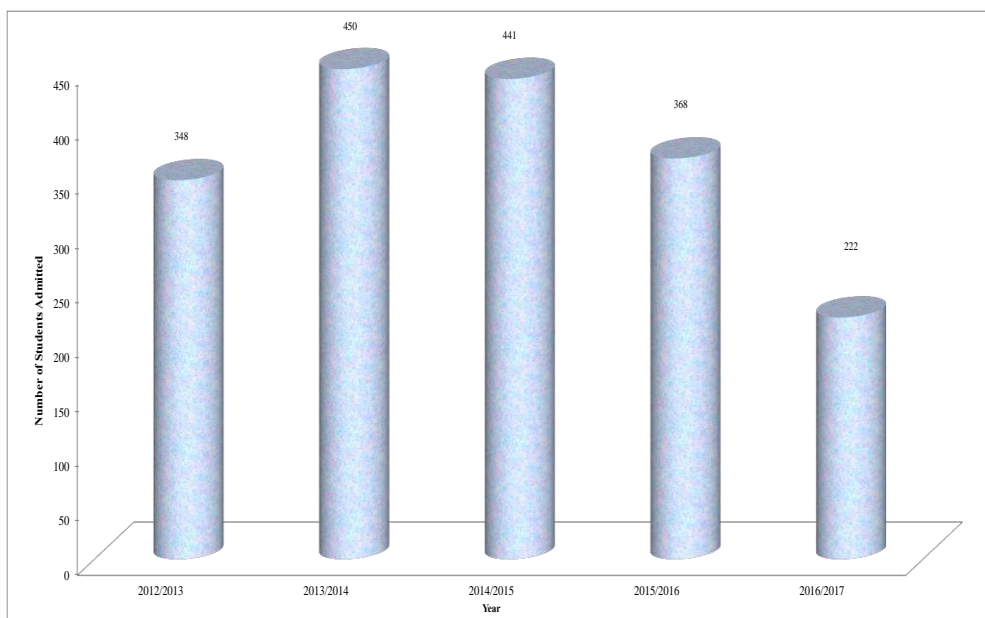


Figure 1: Diploma Students Admission - 2012/13 to 2016/2017

3.2.2 Undergraduate degree programs

Figure 2 shows admission of undergraduate students during 2016/2017 a total of 428 students were admitted into all undergraduate programs, which is a (136) 24.1% decrease compared to 564 students admitted during the year 2015/16. This decrease was in compliance with the directive given by the Joint East African Medical and Dental Councils Committee and TCU, that we make sure admission of students match the available teaching space and human resource. During the academic year 2016/2017, MUHAS enrolled a total of 2093 students into various degree programs. Of these, 30.8% (645) were female students. The female student enrollment in undergraduate programs is still short of the target of 40% aimed in the MUHAS Five Year Rolling Strategic Plan (FYRSP).

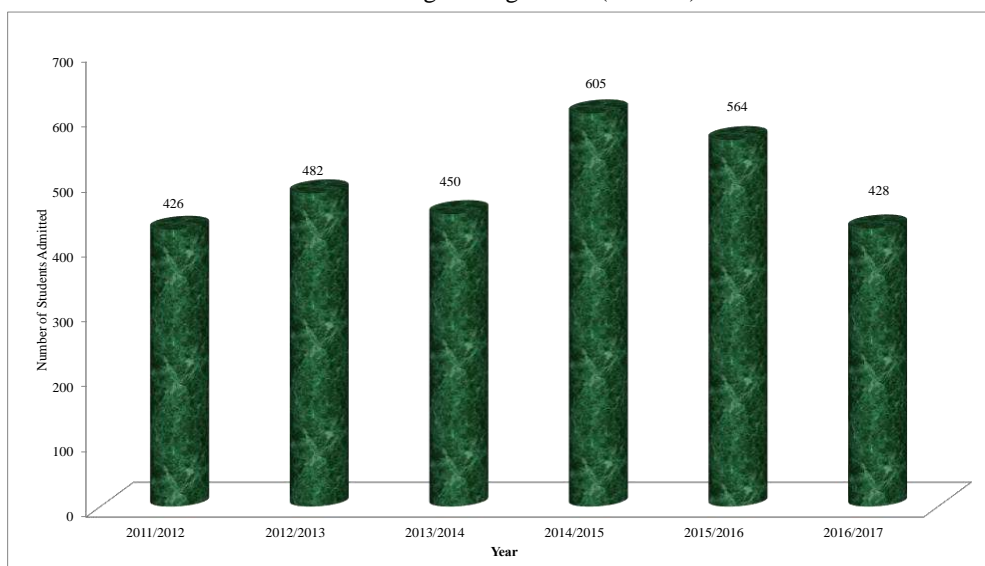


Figure 2: Undergraduate Students Admission - 2010/11 to 2016/17

3.2.3 Postgraduate Programs

During the reporting period 536 postgraduate students were admitted in various postgraduate programs. There was a remarkable increase of 160 (42.6 %) in admission compared to the previous year (2015/2016) during which 376 students were admitted. For the last five years the admission of postgraduate students has been consistently increasing. For example, in 2012/2013 the number of postgraduate students admitted into various programs were 205 compared to 536 admitted in 2016/2017, this is more than two-fold increase - **Figure 3**.

During the reporting time the postgraduate students' enrollment was 745 students, which is an increase of 83 (12.5%) students compared to the previous year when enrollment was 662 postgraduate students. Despite the noted increase. The main obstacle to admission of qualifying postgraduate applicants has consistently been lack of sponsorship but also few qualified staff in the various departments to teach postgraduate students. Despite the noted consistent increase in admission and enrollment of postgraduate students, the numbers are still very small compared to the specialized Human Resource for Health needs of the country.

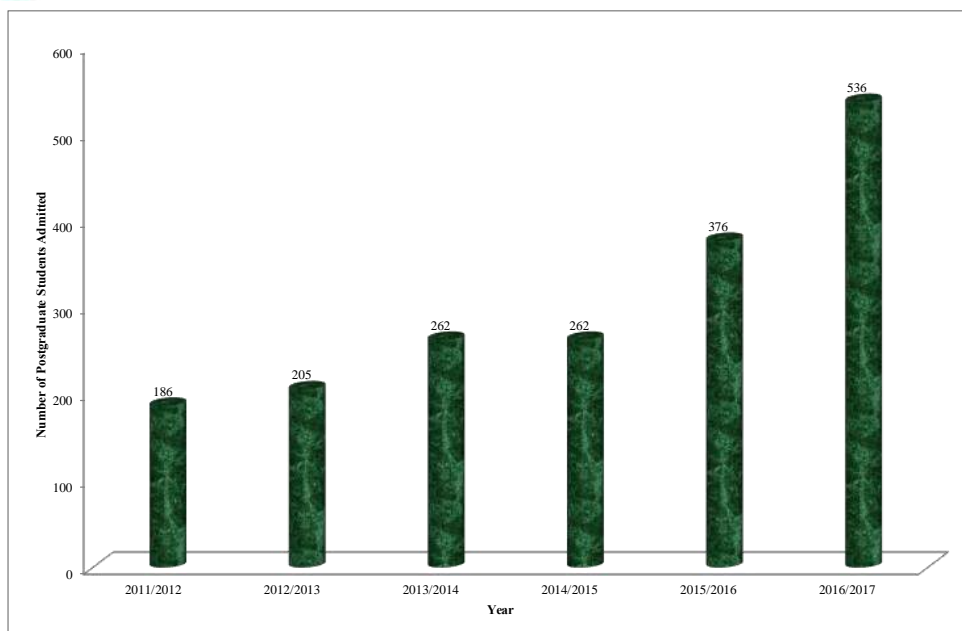


Figure 3: Postgraduate Students Admission - 2011/12 to 2016/17

3.3 Students Enrollment during from 2011/2012 to 2015/2016

3.3.1 Diploma Students

During the reporting period, 977 students, 639 (65.4%) male and 338 (34.6%) female students were enrolled in various MUHAS diploma programs compared to 950 students enrolled in the year 2012/2013. During the past five years there has been a notable increase in diploma student enrollment. However, during the reporting period there was a decrease in enrollment of 55 (5.3%) students compared to the previous year enrollment of 1032 students (**Figure 4**). This was caused by the requirement not to admit evening program students because of inadequate number of teaching staff.

3.3.2 Undergraduate Students

The number of students enrolled during 2016/2017 into all undergraduate programs was 2093, a minimal increase of 3 compared to 2090 students enrolled in 2015/2016 (**Figure 4**). During the reporting period, 30.8% (645) of the total students enrolled in undergraduate programs were females compared to enrollment of 638 (30.3%) female students in 2015/2016 showing slight increase of female students.

3.3.3 Postgraduate Students

The number of postgraduate students enrolled in the universities has been consistently increasing from 2011/12 to 2016/17. During the reporting period 745 students were enrolled in various postgraduate programs in five Schools and one Institute. Among students enrolled in Master programs 288 (39%) were females. Out of 745 enrolled, 736 (99%) were enrolled into Master degree by coursework and dissertation, and 9 (1%) into Master of Science by

Research. There was an increase of 10% compared to the number of students registered 2015/16 (**Figure 4**).

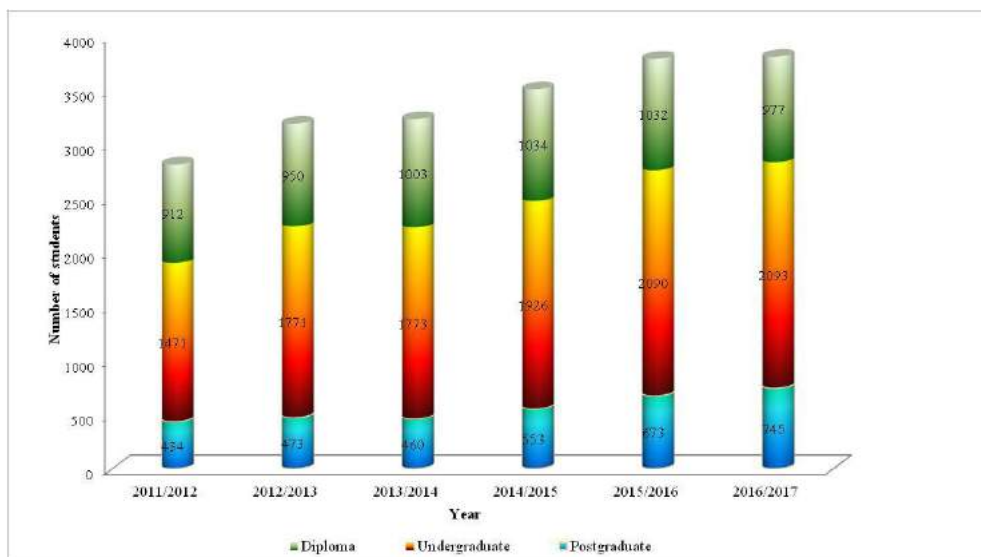


Figure 4: Diploma, Undergraduate and Postgraduate Students Enrollment from 211/12 to 2016/17

3.4 Performance in Examinations during 2016/2017

3.4.1 Diploma Programs

A total of 933 students sat for examination during the reporting period and 610 (65.4%) passed at first sitting. For those who did not pass during the first sitting (323), 220 (68.1%) were referred to do supplementary examinations, 95(29.4%) students had their examination results withheld and seven (7) students had incomplete results and one (1) postponed studies as displayed in **Figure 5**. No students were discontinued from the studies during the reporting period.

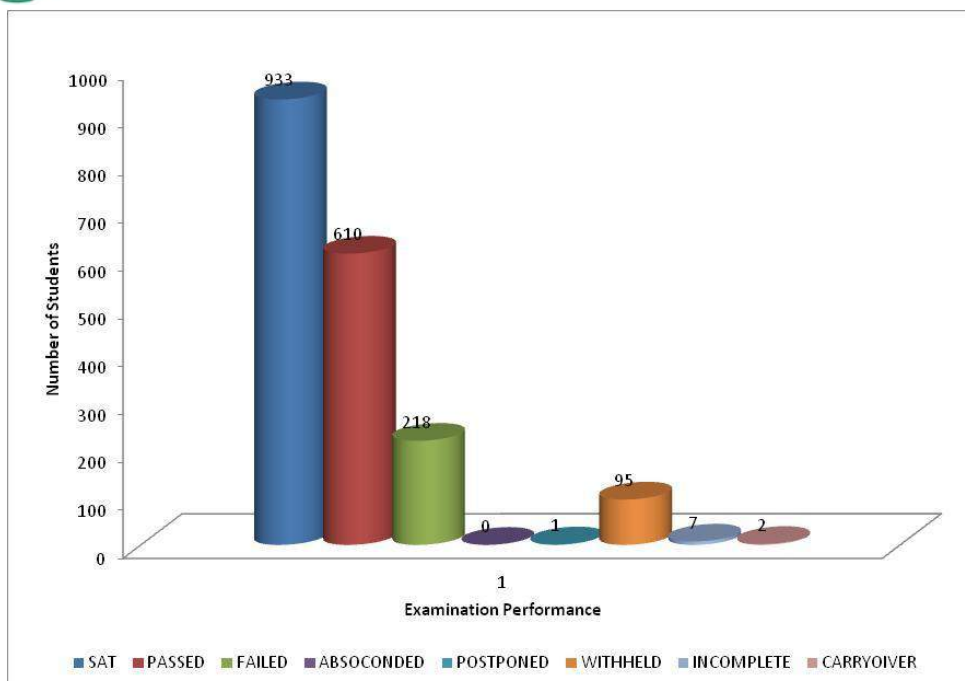


Figure 5: Performamnce of Diploma students during the 2016/17 Examinations

3.4.2 Undergraduate Programs

During the period uder review, 2048 undergraduate students sat for university examinations and 1549 (75.6%) passed at first sitting. Of those who did not pass during first sitting, (499), 416(83.4%) students failed and were referred to do supplementary examinations and fifteen (15, 3.0%) students had their examination results withheld. Thirty-eight (38, 7.6%) students had incomplete results for various reasons and were allowed to complete their courses and sit for examinations. Thirty (30,6.0%) students were discontinued on academic ground (**Figure 6**).

3.4.3 Postgraduate Programs

During the reporting period, a total of 691 postgraduate students who sat for University examinations and 522 (75.5%) passed their examinations at first sitting. Among those who failed during first sitting (169), 112 (66.3%) were referred to do supplementary examinations, nine (9, 5.3%) students postponed examination and 48 (28.4%) students had incomplete results for various reasons and were allowed to complete their courses and sit for examinations. No postgraduate students were discontinued during the reporting period (**Figure 7**).

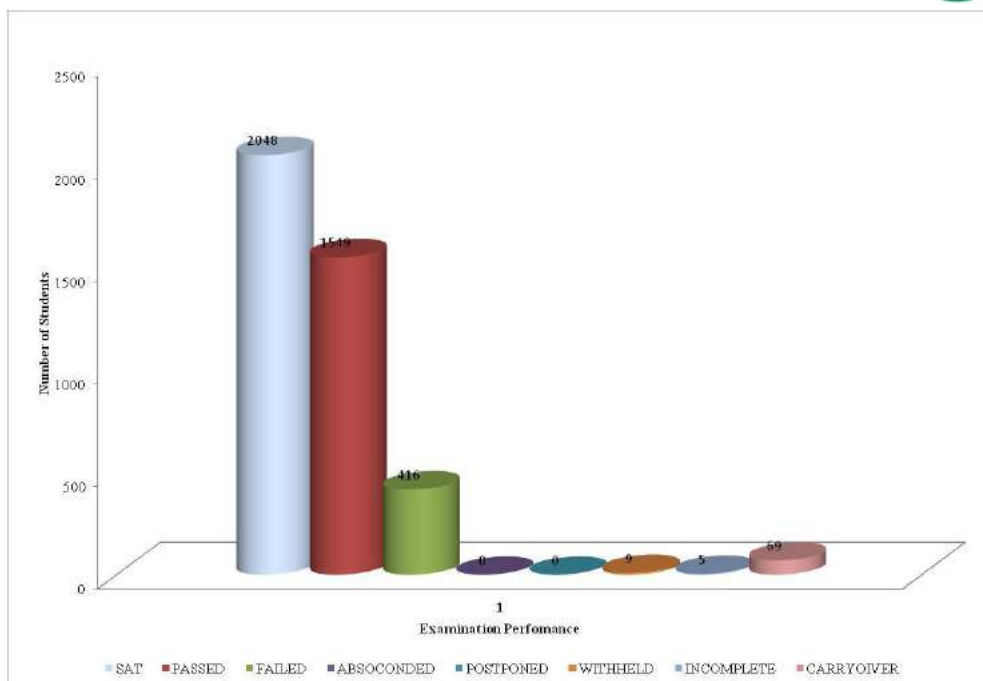


Figure 6: Performance of undergraduates students during the 2016/2017 Examinations

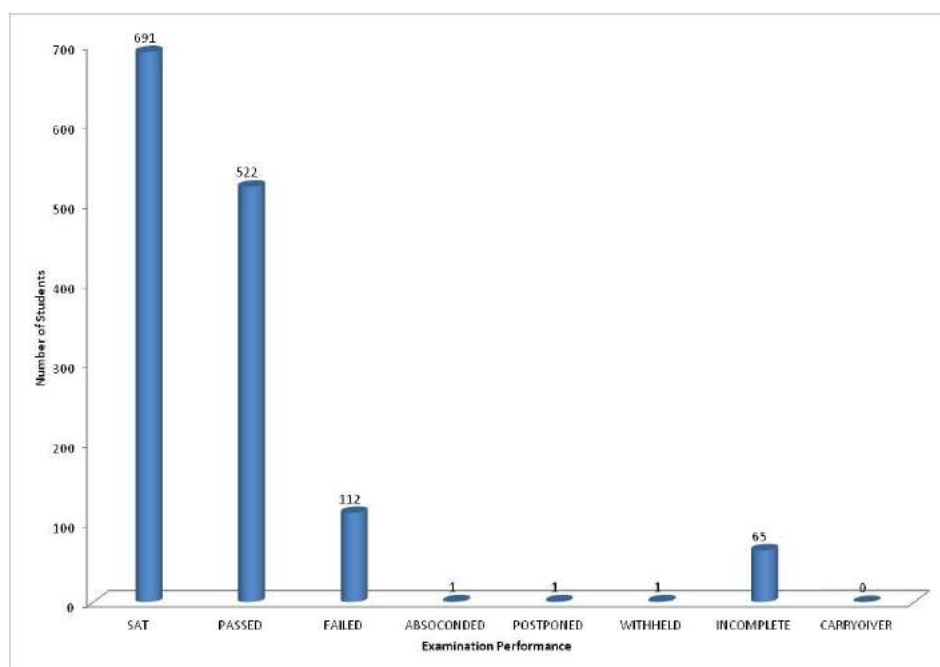


Figure 7: Performance of Postgraduate students during the 2016/2017 examinations



3.5 Students Output

3.5.1 Diploma Programs

During the period under review 358 diploma students completed their studies and the number of qualifying candidates increased by 6 (1.7%) compared to the year 2015/16. Figure 8 shows Diploma, undergraduate and postgraduate outputs from 2011/12 to 2016/17 while Figure 9 shows the trend of students awarded diploma over the past five years (2011/2012-2016/17). It shows that, there has been a gradual increase in the number of qualifying candidates. For instance, in the year 2011/2012, 232 students graduated and there after the trend recorded consistent increase in graduating students until it reached 358 graduates in the year under review.

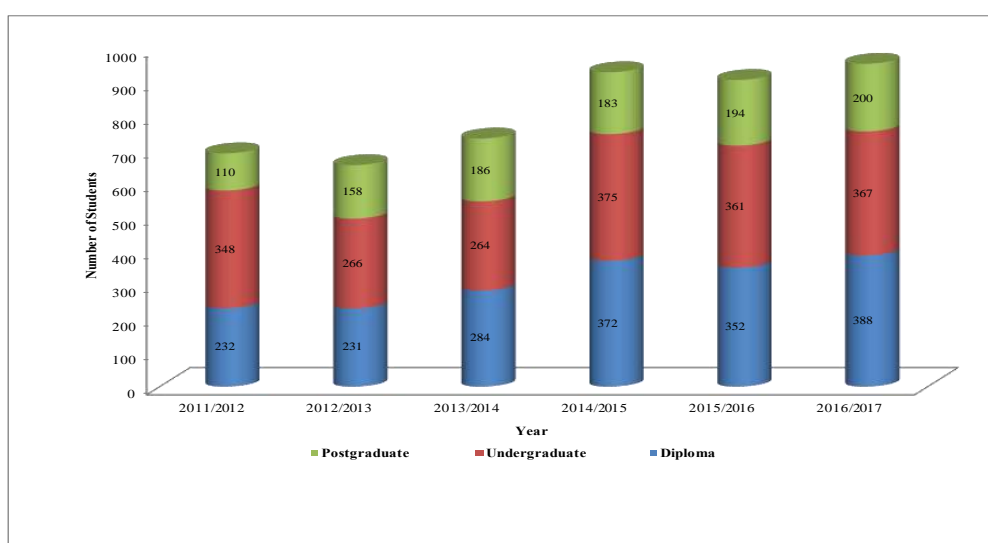


Figure 8: Diploma, Undergraduate and Postgraduate Graduates - 2011/12 to 2016/17.

3.5.2 Undergraduate Degree Programs

The number of graduates during the reporting period (2016/17) was 367 and the number of qualifying candidates slightly increased by 6 (1.6%) compared to 361 students who graduated in the year 2015/2016. Of the total undergraduate students who graduated during the reporting period, 130 (35.4%) were female.

3.5.3 Postgraduate Programs

During the reporting period, a total of 200 students graduated at a master's degree level indicating an increase in number of qualifying candidates by 6 (3.1%) compared to 194 students who graduated in 2015/2016. Out of the total postgraduate graduates 102 (51%) were females.

3.6 Graduation Ceremony 2016

During the reporting period the University marked its 10th graduation ceremony on 3rd, December 2016 during which a total of 955 graduates were awarded degrees and diplomas as follows: - Three hundred eighty-eight (380) diplomas, and 367 first degrees in MD, DDS, BPharm, BSc Nursing (BSc N), BSc N Midwifery, BSc N Management, BSc Environmental Health Sciences, BMLS and BSc RTT.

With regards to postgraduate students, 200 were awarded degrees as follows: - Doctor of Philosophy (7), Master of Science Super-Specialties (2), Master of Medicine (73), Master of Science in Parasitology and Entomology (1), Master of Dentistry (3), Master of Science in Applied Epidemiology (9), Master of Science in Epidemiology and Laboratory Management (5), Master of Science in Tropical Disease Control (1), Master of Arts in Health Policy and Management (4), Master of Science in Parasitology and Entomology (3), Master of Science in Environmental and Occupational Health (4), Master of Science in Traditional Medicine Development (1), Master of Science in Nursing Mental Health (2), Master of Science in Critical Care and Trauma (6), Master of Science in Behavior Change (8), Master of Science in Behavior Change Communication (3), Master of Science in Environmental and Occupational Health (4), Master of Science in Biochemistry (3), Master of Pharmacy in Quality Assurance and Quality Control (3), Master of Pharmacy in Industrial Pharmacy (1), Master of Science in Pharmaceutical Management (4), Master of Pharmacy in Pharmacognosy (1), Master of Science in Pharmaceutical Analysis (1) and Master of Public Health (44).

During the reporting period, the number of female graduates who graduated were 378 (39.2%) compared to the previous year whereby 316 (34.8%) female students graduated. Compared to the previous year the total number of students who completed their studies increased from 907 in year 2015/16 to 955 (5.3%) in 2016/17.

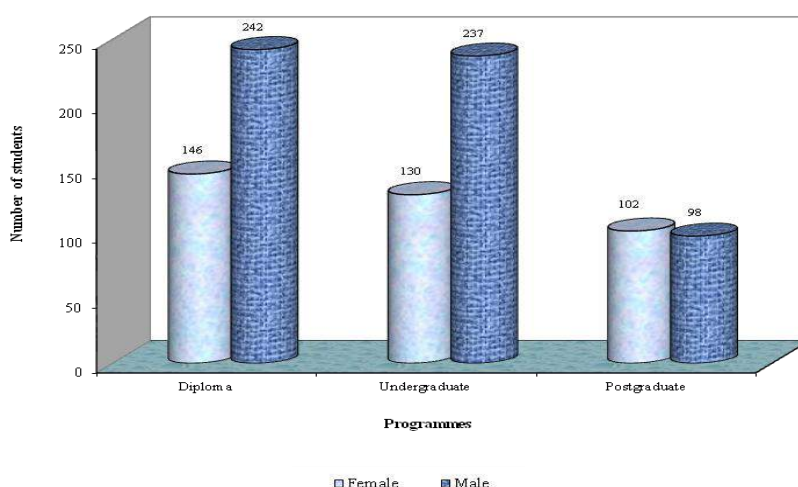


Figure 9: Diploma, Undergraduate and Postgraduate Graduates by Sex (2016 Graduation Ceremony)

4.0 Reports from Schools and Directorates

4.1 School of Medicine

4.1.1 Introduction



Prof. Sylvia F. Kaaya

This is the annual report of activities and events in the School of Medicine at MUHAS, from 1st July, 2016 to 30th June, 2017. This report summarizes activities related to student's registration for undergraduate and postgraduate programs, an overview of graduating undergraduates in 2016, presents summarized information highlighting implementation of teaching and

assessment, research and non-research projects implemented by staff, service delivery by the staff and governance issues in the School during the reporting period.

Functions of the School

The functions of the School and its activities are guided by core components of its mission and include:

- (i) To be directly engaged in the creation, transmission and evaluation of knowledge in medical sciences, laboratory and radiological treatment technologies in the pursuit of excellence in academic scholarship and intellectual inquiry through teaching, research and provision of advisory and public medical related services.
- (ii) To provide a place of learning, education and research in medical sciences, laboratory and radiological treatment technologies and through this provide quality services commensurate with a good medical school.
- (iii) To provide the labor market in Tanzania and Eastern Africa, with highly competent medical professionals and technologists able to contribute effectively to prevention, treatment and management of health-related problems in the society. This is to be achieved through the prime principle of integrating research, teaching and advisory services in the immediate subject areas.
- (iv) To contribute to the intellectual and professional life of Tanzania and Eastern Africa and to act as a focal point for continuing professional development, research and services that are of interest to the people of Tanzania.
- (v) In terms of output, the functions of the School are: -
 - (a) To provide undergraduate education in Medicine, Medical Laboratory Sciences and Radiotherapy technology for degree and non-degree programs.
 - (b) To provide post-graduate education in different specialties and super specialties of medicine.



- (c) Teach of students/trainees from other Schools/Institutes at MUHAS as well as from outside the University.
- (d) To prepare and publish medical educational materials in various fields of medical sciences.
- (e) To conduct medical research and disseminate the findings.
- (f) To carry out scientific educational, professional and technical consultancy services on behalf of third party clients under contract.
- (vi) To engage in cost containment and income generating ventures for sustainability.

4.1.2 Student Registration

(i) Doctor of Medicine (MD) program

During the year 2016/2017 a total of 800 continuing students registered to the Doctor of Medicine program for training in their 2nd to 5th year. Furthermore, 199 (59 i.e. 29.6% female) new first year students were registered, a slightly lower number than the 205 new MD students enrolled in 2015/16. Thus, the total number of students registered for the Doctor of Medicine (MD) program during the reporting year was 999 (284 i.e. 28.4% female).

(ii) Bachelor of Medical Laboratory Sciences (BMLS) and Bachelor of Radiation Therapy Technology (BSc RTT) programs

During the reporting period, a total of 152 students' in the 2nd and 3rd year of training were registered to the six Bachelor of Medical Laboratory Sciences (BMLS) programs. In total, 38 (10, i.e. 26.3% females) first year BMLS students, were registered. In terms of the continuing BMLS students, during this reporting period compared to the last, the School saw an increase in registrations to 170 students (54, i.e. 31.8%) from 112 in 2015/16. In total, 208 students across the first to third year were registered to BMLS programs, 64 (30.8%) being females; these totals not differing from those of students registered in the 2015/16 academic year. Eight (2, i.e. 25% were females) new first year and 30 continuing students were registered to the BSc RTT program, making a total of 38 registered BSc RTT students, six (15.8%) of whom were female.

Table 1 provides a summary of registered undergraduate students by program and sex during this reporting period. Compared to the 2015/16 academic year there was a 1.6% increase in, and a relatively stable proportion of female students, which continues to fall short of the goal of equal proportions of male and female students in the School. This was largely due to fewer female applicants received from TCU, as in most cases female students that applied met criteria to join, suggesting a decrease in females applying for courses in the medical school. Generally, fewer females were registered across programs, but particularly so, for the BSc RTT and BMLS Clinical Chemistry programs.

**Table 1: Summary of registered SOM students by program and sex 2016/17**

S/N	Program	Male N	Female N (%)	Total
1.	MD	715	284 (28.4)	999
2.	BMLS General	39	19 (32.8)	58
3.	BMLS Clinical Chemistry	10	14 (16.7)	24
4.	BMLS Hematology and Blood Transfusion	17	6 (26.1)	23
5.	BMLS Histotechnology	20	5 (20.0)	25
6.	BMLS Microbiology Immunology	38	9 (19.1)	47
7.	BMLS Parasitology & Entomology	24	7 (22.6)	31
8.	BSc RTT	32	6 (15.8)	38
Total		895	350 (28.1)	1245

(iii) First year student's orientation: The white coat ceremony

During the reporting period, the School of Medicine organized its 7th Annual White Coat Ceremony to welcome first year MD, BMLS and BSc RTT program students to the University Community. During the ceremony, the Dean and Associate Deans of the School of Medicine, with faculty and non-faculty and selected student leaders, worked together to welcome new students. New entrants were informed of experiences when teaching and learning, as well as the professional and ethical standing of their selected professions. The event was held on Thursday 27th October, 2016.

4.1.3 Teaching and Assessment of Students:

Competency Based Curricula Implementation: During the reporting year, the School continued with implementation of competency-based curricula (CBC), for both undergraduate and postgraduate programs. For the second year running, the school implemented its junior, intermediate and senior clinical rotations for all MD students in their third, fourth and fifth years of training in relevant clinical departments.

Undergraduates in semesters one to ten and postgraduates in semesters one to six attended scheduled courses as defined by relevant modularized and competency based curricula. With the intention to gradually increase the number of undergraduate students admitted in school programs a number of challenges were recorded in biomedical sciences. Measures to address the challenges encountered in the biomedical sciences and laboratory medicine courses (semesters 1-2), clinical teaching as well as in research training are outlined below: -

Biomedical Science and Laboratory Medicine Courses: During this academic year as in the previous years, major challenges in teaching occurred after the gradual expansion of student enrollment. Challenges included academic, technical and administrative staff shortages and an inadequate infrastructure, particularly large enough lecture halls and teaching laboratory



rooms that were unable to accommodate more than 400 students. The number of 400 to upwards of 500 students, characterizes the student volume handled by the biomedical science departments of the School, as MD, BMLS, and BScRTT students share sessions with peers registered to the Bachelor of Nursing (BSc N - School of Nursing), Doctor of Dental Surgery (DDS – School of Dentistry), Bachelor of Pharmacy (BPharm. School of Pharmacy), and Bachelor of Environmental Health Sciences (BSc EHS-School of Public Health and Social Sciences) programs at MUHAS. This challenge was addressed in two ways, a) by fast-tracking an ongoing process of tailored biomedical science courses for different programs and b) by tailoring examinations to specifically address knowledge and skills gained in areas of relevance to a particular program. Efforts in the future need to focus on adequate staff to allow for parallel teaching; and more use of Information Communication Technologies to improve performance and effectiveness in teaching, and enhancing learning, flexibility and efficiency in curriculum delivery.

Clinical modular courses: The clinical departments in the School of Medicine successfully implemented the competency-based MD curriculum in semesters 3-5 (junior rotations), 7-8 (intermediate rotations) and 9-10 (senior rotations) after phasing out the traditional curriculum in the 2013/14 academic year. With increasing numbers of rotating clinical year students, during the reporting period challenges experienced during the past two reporting years which included overcrowding of students in the clinical areas of the main teaching hospital with whom the University has entered into memorandum of understanding to support clinical training persisted. Many departments addressed this challenge by dividing students into smaller groups and assigning supervisors to each group at the level of clinical department subunits or firm. The CBC for post-graduate students includes a course in health professions education, allowing post-graduates to take on instructor roles for undergraduates in some departments. Nominated adjunct and clinical staff in sister institutions such as the Muhimbili National Hospital (MNH), the Muhimbili Orthopedics Institute (MOI) and the Ocean Road Cancer Institute who engaged in this process are part of the reason for successes in implementation of the clinical components of the Competence based Education.

Student research training: During the reporting period, the School's academic and adjunct staff continued to supervise research training for both undergraduate and postgraduate students. For undergraduate students, protocol development, research ethical clearance, data collection, data analysis and report writing were supervised at department level across the School of Medicine and School of Public Health and Social Sciences for 192 Semester 7 and 8 students undertaking the Elective Research (ME 400) course. During the reporting period, the increasing numbers of students doing the ME 400 course, required innovations in facilitating ethical clearance for elective research proposals. Proposals were discussed at assigned the department and in addition to grading, each proposal was evaluated for its ethical soundness using a pre-developed research ethics clearance form. Proposals which met the set criteria were submitted with filled ethical clearance forms to the Directorate of Research and Publications (DRP), where a formal ethical clearance certification was provided for each student to utilize when seeking permission to conduct research from community gatekeepers.

Supervision of postgraduate student's dissertations was also undertaken for the MMed, MSc, MSc SS and PhD programs in respective departments. The School also recommended through the Directorate of Postgraduate studies to the Directorate of Research and Publications, requests for ethical clearance for completed Masters and PhD research proposals. Students in the MSc super specialization programs that require gaining of advanced and specialized clinical skills, for the second year running, undertake in their final year a clinical audit, the findings of which inform quality improvements in clinical units providing these more specialized treatment and prevention services. As in the year of inception of this activity, in-house staff training occurred to strengthen the supervision of clinical audits with facilitators from both the School of Medicine and the School of Public Health and Social Sciences.

Assessment: During this reporting year formative and summative assessments were held as planned in the different programs and departments. All departments have developed and use formal tools for on-going formative assessment of core competencies, including log-books, assessment blueprints, and objective mark schemes. Some departments have also conducted pilots of use of ICT for post-graduate summative assessment; and an increasing number of clinical departments are developing Objective Structured Clinical Examinations (OSCE) designed to better test clinical skill performance and competence in skills such as communication, clinical examination, medical procedures / prescription etc. End-of-module examinations were all held as scheduled.

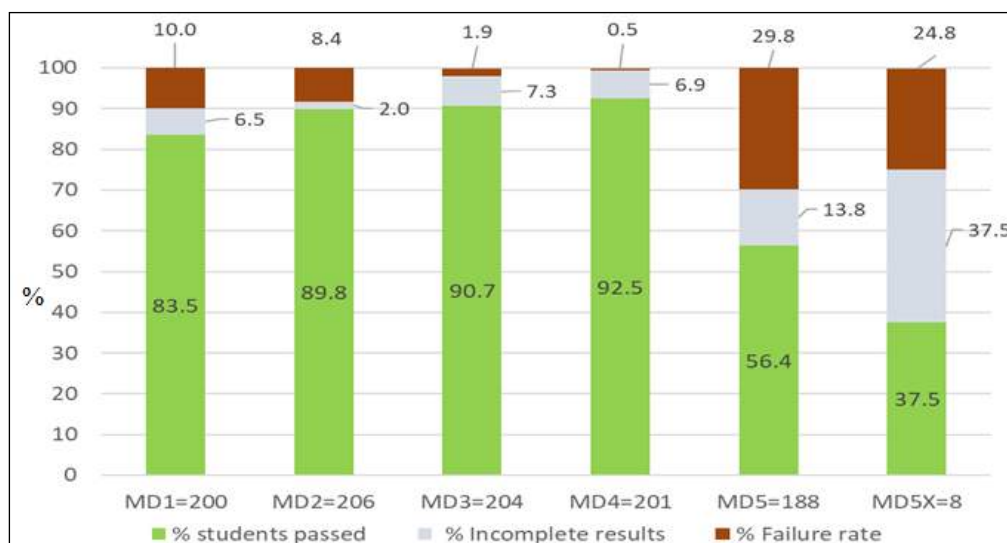


Figure 10: Trends in the Performance of MD program students 2016/17

MD Program: As the third to fifth year of the medical program is predominantly assessed for progression at the end of the audit year, this report will provide performance information for MD years 3 (204 students), 4 (201 students) and 5 (188 students) during the 2015/16 academic year which overlaps with this reporting period. For MD years 1 and 2, performance

is summarized for semesters 1 and 3 in the 2016/17 academic year. In Semester 1 (first year MD) and 3 (second year MD), 200 and 206 students respectively were assessed on knowledge, practical skills and field work of sessions in the 2016/17 academic year. Furthermore, eight fifth year students who had lagged behind and not completed the program were also assessed and a summary of their performance is also shown in figure 10. As occurred in 2015/16, a high proportion of MD1 students (83.5%) passed at first sitting and of the 10% that failed one or more courses, the fail rate in each of the courses taught was less than 10%. For MD 2 students, almost 90% passed their examinations at first sitting, and though 8.4% failed in one or more courses, the fail rate in each course was below the 10% threshold. Of students completing the 3rd, 4th and 5th years of the MD program, 90.7%, 92.5% and 56.4% passed at first sitting and progressed to the next level or were awarded the MD degree. In these clinical years, only the orthopedics and traumatology (OT510) modular course registered a failure rate of more than 10%. The trend observed of fewer students with incomplete modular courses and lower fail rates may be a product of the new competency-based curriculum. For the eight fifth year students lagging behind, five (37.5%) passed and will be awarded the MD degree this year, three (37.5%) continued incomplete clinical rotations, while 24.8% failed in one or two supplemented clinical exams and can make an attempt when these exams are next offered; one did not turn up for scheduled examinations and was discontinued on absconding grounds.

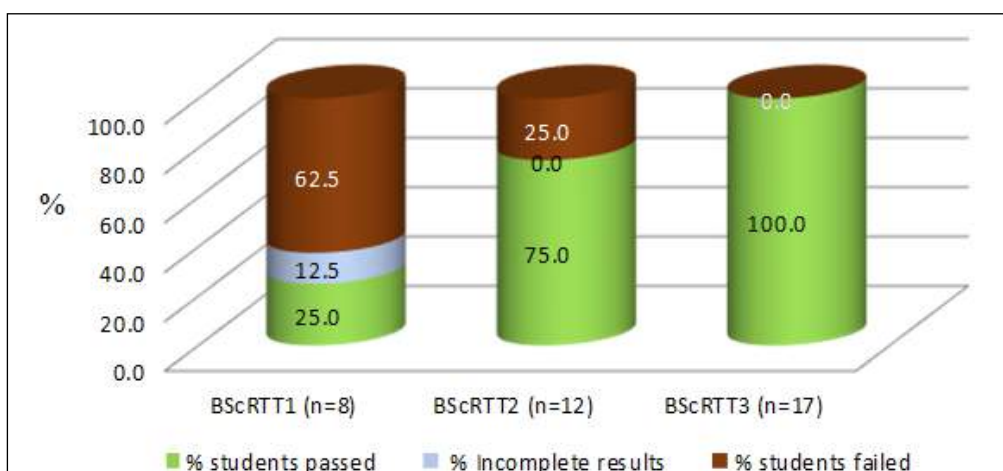


Figure 11: Performance BSc RTT Semester 1, 3 and 5 in 2016/17

BSc RTT program: Contrary to observations in the MD program, this program showed extremely high failure rates in the first and second years of 62.5% and 25.0% respectively as summarized in Figure 11; and all students passing in the final year. This has been a consistent pattern over the year. Contrary also to the MD Program is the lower requirements for this program despite the scope of the program covering some similar material in the first-year courses. The high pass rates in the final year that is predominantly related to practice may suggest lower levels of theory that underlie practice in this program. A different explanation may be need for more tailoring of courses and modular courses taught in the first two years of the BSc RTT program. This has been an ongoing process that needs to be

addressed conclusively during curriculum review. The decreasing number of students enrolling to this program may be reflective of the few radiotherapy units available in the country and saturation of this cadre in the same. Again, this should be a matter for curriculum review in the near future and perhaps development into a BSc Radiography and Radiotherapy technology program that has been requested in response to demand by the department of radiology and imaging.

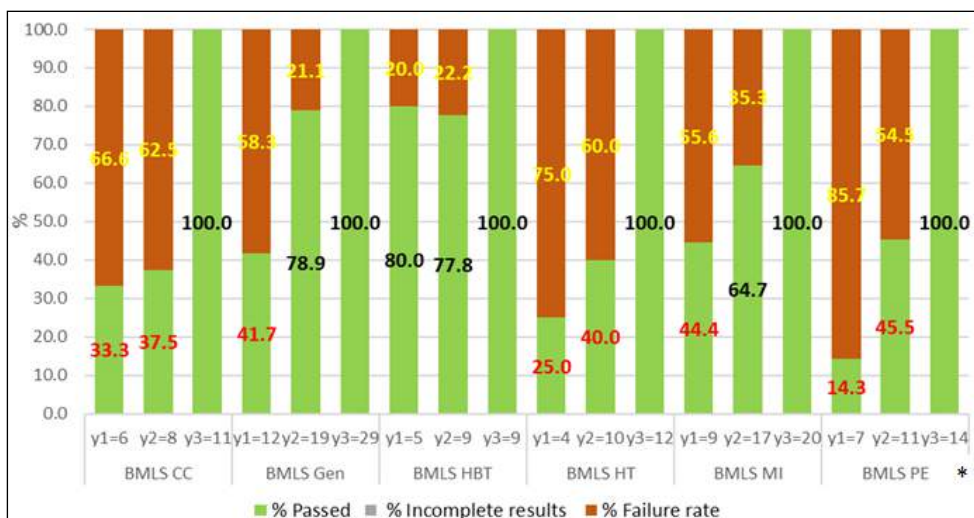


Figure 12: Performance in BMLS program, 2016/17

Key: y1=n (number of students registered), CC=clinical chemistry; Gen=General; HBT=Hematology/Blood Transfusion; MI=Microbiology/Immunology; PE=Parasitology/entomology. * 4 students did not sit for examinations, 3 due to incomplete courses prior to examinations & 1 examination absconder

BMLS programs: In semester 1, 3 and 5 a total of 206 students sat for examinations. The rates of incomplete and pass performance across the six BMLS programs are summarized in figures 12. While still not considered optimal compared to performance in the first and second years in other programs, pass rates ranging from 14.3% to 80% across programs continue to show an improvement compared to pass rates that ranged from 10% to 72% in the previous academic year (2015/16). There were four students with incomplete results for the BMLS PE program, but not for any of the other programs. Of particular concern is the fewer students enrolled, as evidenced by consistent decline in numbers from 3rd to 1st year across programs. This could partly be due to more stringent measures taken when selecting candidates, and observation that could also explain the slight improvements in performance, as well as tailoring of exams to focus on the needs of BMLS students, where tailoring programs proved difficult with insufficient staff to allow for courses across disciplines to be taught in parallel. Of particular note for future tailoring should the School be able to hire teaching staff for the biomedical sciences and clinical laboratory disciplines are the anatomy, physiology, microbiology/immunology and pathology courses, all of which recorded more



than 10% of students failing – though these criteria may have limited use when numbers of students are low.

4.1.4 Graduation ceremony

Teaching and learning activities always culminate in a graduation ceremony. During the reporting year, the MD class of 2011/2012, BMLS, BSc RTT and MMed classes of 2013/2014 and ordinary MSc and MSc Super Specialty (MSc SS) classes of 2014/2015, as well as PhDs were conferred degrees on 3rd December 2016 (Table 2).

Table 2: Summary of graduates by degree program in 2015 and 2016

SN	Program	Year of graduation	
		2015	2016
1.	MD	186	167
2.	BMLS	36	32
3.	BSc RTT	7	4
4.	MSc SS	11	2
5.	MSc	10	5
6.	PhD	1	2

Prize Giving Ceremony

During the reporting period prize giving ceremony was held on Friday 2nd December, 2016 a day before graduation ceremony for those students who excelled their academic performance and eligible for prizes. Ten (10) undergraduate and twenty-six (26) postgraduate students were given their prizes and certificates as per procedure.

4.1.5 Research and Non-Research Collaborations

Scientific Publications during the reporting period: Teaching staff in the School of Medicine continued to conduct research in various projects. During the reporting period, a total of 59 publications were retrieved from PUBMED in which members of the school published as co-author (see appendix 1). With a current staffing level of 142, during the reporting period, the publications per staff is 0.36 publications, down from the 0.69 ratio during the 2015/16 reporting period. This decline is to be expected, as can be seen in section 10.1 of this report, during this reporting period the School saw an increased in recruitment of young scholars to its academic staff ranks, many of whom are tutorial assistants. Developing research capacity building programs for newly recruited staff within departments, and that are linked to staff development activities will be an important activity in subsequent years in the School. The School will also continue encouraging analysis and reporting of research findings including strengthening staff research seminars at department and school levels, and advocating for peer writing groups to support development of scientific writing skills.

Ongoing Research Projects: During the reporting period, staff requests to the Directorate of Research and Publications for financial support to undertake research projects were also

processed. Furthermore, the office of the Directorate of Research and Publications (DRP) with the mandate to grant ethical clearance for sponsored projects, granted to the same for 3 staff initiated new research projects and annual renewal of ethical clearance for 15 ongoing staff research projects. Hence 18 research projects were active in the School during the end June 30 2017 and more than ten (10) symposia were conducted between July 2016 and June 2017.

Research Seminars & Symposia: During the reporting period two symposia were successfully facilitated by department of Internal Medicine and Emergency Medicine: -

(a) Department Internal Medicine Wednesday 20th July, 2016

Topic: Reports on Pregnancy related acute kidney Injury & Adequacy of Hemodialysis therapy in Dar es Salaam.

- (i) Pregnancy Related acute kidney Injury (PRAKI) in Dar es Salaam.
Speaker: Dr. Elizabeth Apollo, MD Resident –Department of Internal Medicine
- (ii) Adequacy of Hemodialysis Therapy in Dar es Salaam
Speaker: Dr. Samina Somji, MD Resident –Department of Internal Medicine

Chairperson: Dr. Paschal Ruggajo, Lecturer/Nephrologist - Internal Medicine

(b) Department of Emergency Medicine

Topic: Cardiopulmonary Resuscitation knowledge and skills at Muhimbili “Time to close the gap”

Chairperson: Prof. V. Mwafongo

- | | | |
|-------------------------------|---|------------------------------|
| Speaker: Dr. Sherin Kassamali | - | Emergency Medicine-MUHAS |
| Speaker: Francis Sakiata | - | Emergency Medicine Residence |
| Speaker: Dr. Ally Akrabi | - | Emergency Medicine Residence |

(c) Department Biochemistry

Topic: Histopathologic and Molecular Based Techniques in Detection of MTB from Formalin-Fixed, Paraffin-Embedded Tissues from Presumptive TB Patients

- | | | |
|-----------------------------|---|----------------------------|
| Presenter: Yunus Ayub | - | BMLS student MUHAS |
| Supervisor: Dr. E. V. Mbugi | - | Department of Biochemistry |

(d) Department of Anatomy Wednesday 30th November, 2016

Topic: Sperm Cells and Regenerative Medicine: Why should MUHAS embrace IT

- | | | |
|--------------------------------|---|-----------------------|
| Chairperson: Prof. A. Ngassapa | - | Department of Anatomy |
| Speaker: Dr. D. Russa | - | Department of Anatomy |
| Speaker: Dr. E. Suluba | - | Department of Anatomy |
| Speaker: Dr. G. Kawishe | - | Department of Anatomy |

Dissemination of research findings at the MUHAS Scientific Conference: During the reporting period the university organized its Fifth Scientific Conference. The goals of the conference were to provide a forum for researchers, practitioners, decision makers,



representatives of special groups, media and trainers to share research findings and experiences in health and health related issues as well as disseminate their findings to relevant stakeholders. The theme of the 5th MUHAS Scientific Conference was “*Translating Health Research Findings into Practice for Achieving Sustainable Development Goals*”. A variety of research areas subdivided into five sub-themes were presented at this conference were: - Non-Communicable Diseases, Infectious Disease, Reproductive Health, Information and Communication Technology, Basic Health Science Research, Traditional and Alternative Medicine and Health Policy

During this conference, it was reported that a total of thirty-five (35) presentations were presented by staff and students from the School of Medicine.

Staff research capacity building: During this reporting period, 23 of 45 staff in need were exposed to a three days research grant writing training program from which three collaborative grant topical areas emerged. These will be developed by the teams in joint seminars and finalized grant requests submitted to DRP for access to any competitive research funding available.

Non-research Collaborations: During the reporting year, the School established collaborations with various institutions and associations as follows: -

(a) MoU between Emergency Medicine Department School of Medicine and Emergency Medicine Association of Tanzania.

During the reporting period, the Department of Emergency Medicine-MUHAS signed a MoU with the Emergency Medicine Association of Tanzania (EMAT). It is reported that EMAT is a non-profit association of the Tanzania Emergency Medicine Physicians and Nurses with active involvement in emergency and critical care in Tanzania. The association was founded in 2011, and successfully attained a permanent registration from the Tanzania registrar of societies. The main objective of EMAT is to work in collaboration with other organizations, dealing with teaching, research and education for emergency medical care, regardless of location, for the benefit of improved emergency care in Tanzania. It further reported that EMAT will support our training program for both undergraduate and postgraduate levels and will bring together and support a network of specialists from South Africa, USA and Canada to provide mentorship to rotating undergraduate students, both in clinical rotations and for elective research projects. Furthermore, it is reported that EMAT will support learning and has donated the Oxford Handbooks of Emergency Care to all undergraduate students rotating in Emergency department and also five copies of the same book to the special reserve of the MUHAS library. In the Postgraduate program, EMAT has provided scholarships to 10 postgraduate students (8 in the MMed Emergency and 2 in MSc Critical Care and Trauma programs). From this academic year (2016/2017), EMAT will provide support to Emergency Medicine (EM) residents in semester five rotating in various emergency medicine (EM) programs in the USA, Canada and South Africa; this will allow trainees from MUHAS, to gain more exposure to more established EM training programs. EMAT

has also supported conference attendance for our residents and faculty, the most recent one being in Cape Town, South Africa in April 2016, in which 11 (eleven) residents attended, and 6 presented their research work.

(b) SSA Regional Partnership for Mental Health Capacity Building – SHARP

During the reporting period the Head, Department of Psychiatry and Mental Health MUHAS developed with collaborators based at UNC-Chapel Hill's, Department of Epidemiology a partnership proposal that aims to address the critical need to close the mental health treatment gap in Malawi, Tanzania and the broader region, with a strong commitment to the professional development of junior faculty, and an emphasis on training, mentoring and pilot grant opportunities for junior researchers. The department of Psychiatry and Mental health has offered a space for training, and will support pilot grant awardees with administrative and technical needs, such as some hours to conduct data analysis and writing.

(c) MoU between the School of Medicine and Boston Children's Hospital

During the reporting period, the School of Medicine at MUHAS through the Department of Hematology and Blood Transfusion signed a MoU with the Boston Children's Hospital (BCH). Through this MoU Dr. Venee Tubman a Pediatrics Hematologist/Oncologist who also was nominated for adjunct staff position in the department of Hematology and Blood Transfusion will collaborate with the department to enhance training in Pediatrics Hematology and to conduct a research study on environmental modifiers of sickle cell disease and services. The investigators investigators in the two departments will collaborate and conduct research studies in the following areas: -

- (i) Splenomegaly in Sickle cell disease: exploring the impact of chronic malaria exposure.
- (ii) Health related quality of life and health care Utilization amongst Tanzanian patients with Sickle Cell Disease

(d) Implementation of MoU and collaboration with Lugalo Military Hospital

During the previous reporting period, a MoU between MUHAS and the Lugalo Military Hospital (LMH) was signed. The nomination of adjunct/honorary staff, by the Head of the Lugalo Military College started during the year under review and so far, 6 of 11 applications were completed and awarded adjunct positions, while further documentation has been requested to complete the remaining. It is planned that all MUHAS appointed adjunct staff will be exposed to the Faculty Development Workshops for competency-based education. It is also planned that MUHAS local (Tanzanian) post-graduate students may in the future rotate at the LMH.

*Student Exchange Activities***(a) Collaboration between MUHAS and Uppsala University**

The MUHAS/Uppsala University (UU) Students and Staff Exchange Program in the School of Medicine has been active for three years since 2014, under the Linnaeus-Palme Program (Sweden).

The rationale of the exchange program was to promote health care professional co-operation by joint understanding of medical education, health care systems and health care financing in Sweden and Tanzania. The main focus of the staff/student exchange was learning the delivery and coordination of services in the disciplines of obstetrics and gynaecology (Obs/Gyn) and paediatrics; though exceptions were not ruled out for other departments to be involved.

The program focuses on MD students in their intermediate to senior rotations (semester 7-10) depending on the possible timing of exchange visits. The criteria for selection of MUHAS medical students were based on performance in the junior clinical practice year (semesters 5-6) where pediatrics and child health, obstetrics and gynecology, surgery and internal medicine junior rotations occur (modular courses). Male and female students with the highest GPA score in each of the pediatrics and child health, obstetrics and gynecology modular courses; and with good character are selected on merit from a list of students with a cumulative GPA (cGPA) >3.0 for that audit year. The focus on gender balance was not however, strict as if only one gender dominated in the high GPA scores, only those would be selected and proposed for the exchange visit to Uppsala University. If a selected student is unable to commit to an elective placement at Uppsala University the student with the next highest GPA in the subject of interest is selected. After completion of their exchange visit to Uppsala, students are required to share what they have learned by each providing a report to the School. The School also receives and places two students from Uppsala University in the departments of pediatrics and child health, obstetrics and gynecology for a student's elective facilitated by the University international links office. So far, the program has run for 3 phases/periods, and this reporting period the under listed students visited Upsala:

- (i) Urrio, Obrey Harold (CGPA 4.0)
- (ii) Mawalla, Walliam Frank (CGPA 3.8)

(b) Three weeks Staff Exchange at Uppsala

The staff exchange program involved four key disciplines including Oby/Gyn, Pediatrics, Surgery and Emergency Medicine. These are very popular departments for external students and to which most apply for clinical rotations at MUHAS. This staff exchange program focused on sharing clinical and teaching experiences between staff in these Departments.

During the reporting period 2016/2017 the following staff exchanged



- (i) *Prof Stefan Thelin (Surgery) – January – February 2017*
Prof Stefan Thelin is an Adjunct professor and Senior Consultant in Cardiothoracic Surgery at University Hospital, Uppsala, Sweden.
- (ii) *Prof Per-Uno Malmström*
A Professor of urology at the University Hospital in Uppsala Sweden visited Surgery Department of Surgery in the teacher exchange program Linnaeus-Palme between our universities on April, 2017.
- (iii) *Dr. Annika Gronberg*
A Doctor in Paediatrics emergency care and endocrinology specialist in Uppsala Sweden visited Department of Paediatrics and Child Health in the teacher exchange program Linnaeus-Palme between our universities.

4.1.6 Service and Consultancy

During the reporting year, teaching staff in the clinical departments of the school continued to provide clinical services at Muhimbili National Hospital, and Muhimbili Orthopedics Institute as per agreement in memoranda of understanding (MoU) with the respective institutions.

Arrangements for clinical teaching for post-graduates at the Lugalo Military Hospital, as well as providing support services at this institution with whom a MoU was signed last year are in progress with pending issues including nomination of adjunct staff for teaching. While a memorandum of understanding between the School and the Bagamoyo District Hospital is in place for a year, challenges remain in organizing for sustainable housing for undergraduate students that will be taught at this facility. Negotiations with the Ministry of Health, Community Development, Gender, the Elderly and Children for placement of specialists that can be nominated to become adjunct staff and provided with health professionals education training and budgeting for MUHAS staff outreach services at BDH have been initiated. This will create a win-win situation in which both quality district level training can be provided for our MUHAS undergraduates, decongesting overcrowded teaching and learning spaces at the Muhimbili campus, while at the same time offering essential outreach clinical services support to a district unit and students learning in a similar environment to which they will be deployed in the future. Activities aimed at reaching this goal will continue to be in the School's action plans in the next financial year.

A number of outreach service activities have been carried out by clinical departments, including supporting Ministry of Health and other stakeholder's clinical services camps in underserved areas of our communities in Tanzania.

Outreach and Consultancy: During this reporting period, the Ministry of Health, Community Development, Gender, Elderly and Children (MoHCDGE&C) sent five teams of professionals to five regions that have been hit hard by cholera in recent years, including Arusha, Morogoro, Mara, Dar es Salaam and Dodoma to assess vulnerability and risks for cholera in these regions. Dr. Grace Shayo Senior Lecturer in the department of Internal Medicine was among of the people who were selected by the MoHCDGE&C in this team for



consultancy.

It is reported that her team had opportunity to assess three Councils in Arusha: Arusha City Council, Arusha District Council and Meru District Council and verify the parameters in a pre-prepared guide. The team assessed demographic characteristics of each Council from the comprehensive Council health plan and other documents; and the epidemiology of the current cholera situation, emergency management preparedness for cholera, vulnerabilities for cholera, including social economic status of council inhabitants (proxy measures: % of the people below the poverty line, literacy and unemployment rate.) The team assessed water sanitation and hygiene, average monthly meteorological data in the past three years and capacity of the Councils to combat cholera. A report was submitted to MoHCDGE&C for further action.

Short Course in Anatomy: During this reporting period, the School of Medicine run a special course in Anatomy in response to State University of Zanzibar. The office of the Dean liaised with the Department of Anatomy and developed with them a content and cost plan for this short course. The focus was on practical skills with a prior assumption that theoretical aspects of the MD Anatomy course were covered by SUZA. This dissection anatomy short course covered two competency domains – Practical skills & Professionalism as follows: -

Name: Short Anatomy Dissection Crash Program (Table 3)

Competency domain: Practical skills

Broad competence statement: The student will be able to identify different anatomical structures and relate them to their functions. The student will be able recognize abnormalities which will result from diseases or dysfunction of the various anatomic structures and use the anatomical landmarks during management.

Competencies (Learning outcomes)

- (i) Locate accurately areas in the body for venipuncture and intramuscular injections, arterial pulse on fellow student.
- (ii) Palpate and locate the various surface landmarks of clinical significance such as the sternal angle, mid-axillary line, abdominal regions, distal end of the spinal cord etc.
- (iii) Identify each of human anatomical structures and organs.

Methods of instruction: Demonstrations on anatomical models, preserved human cadavers and DVD/VCD models. Student volunteers will also be used.

Method of assessment: Objective-structured practical examinations (OSPE) and oral examination, spot practical tests.

Competency Domain: Professionalism.

Broad competence statement: Demonstrate professionalism, honesty and high ethical standards during training and show respect to the dead, the faculty, colleagues and instructors during practical sessions

Competencies (Learning outcomes)

- (i) Adherence to the rules, guidelines and ethics in practical sessions that involve the dead
- (ii) Use prescribed lab attire (white coats, masks, footwear etc.) as required

Methods of instruction: Role modelling, small groups, student-faculty interactions and mentoring.

Methods of assessment: Observational assessment by faculty and rating, instructors feed back

Course duration, outline and time table for sessions

- (a) Duration required: Six (6) weeks intensive short course
- (b) Open dates for Anatomy Department MUHAS: Please select any six (6) weeks duration from these open 11 weeks from Monday 9th January TO Friday 17th March. After that time University Exams will begin followed by a long semester 2 teaching time for MUHAS students till August 2017. No dissection space for visiting students will be available.
- (c) Course outline and hours per topical area Sessions per week

Finalization of the curriculum for the Bachelor Degree (NTA Level 778) program for Nurses anesthetists: The School reported that Dr. E. R. Lugazia from the department of Anesthesiology was invited to attend and participate to finalize curriculum for Bachelor degree (NTA Level 778) for Nurses anesthetists. The task was assigned by MoHCDGE&C at Dodoma from 15th to 25th May, 2017. This task is also in line with MUHAS core function of training needed healthcare providers and social responsibility towards better health care provision in the community.

Table 3: Course duration, outline and time table for sessions

Week	Session	Hours of practical Session
1	Upper limb	35
2	Thorax	35
3	Head & neck	35
4	Abdomen	35
5	Pelvis, perineum & neuroanatomy	35
6	Lower limb	35
Total hours		210



Stakeholder's updates on consultation work on IMAM guidelines for validation: During the reporting period Dr. R. R. Kisenge from the Department of Paediatrics and Child Health attended a review of the National Integrated Management of acute Malnutrition (IMAM) guidelines where by Tanzania Food and Nutrition Centre in collaboration with nutrition stakeholders developed the national guidelines for integrated management of acute malnutrition in 2010 following adoption of the WHO guidelines in 2006. The guideline focuses on management of cases of acute malnutrition among children below five years of age at facility and community levels. In the course of implementation, technical issues that needed to be updated due to new developments in the management of severe Acute Malnutrition (SAM) as per 2013 WHO recommendations.

Outreach program for Pediatric Ophthalmology in Mbeya: During this reporting period a staff from the Department of Ophthalmology, Ms. Redempta Kessy, carried out a pediatrics ophthalmology surgical outreach program in Mbeya referral hospital for children under 15 years from 10th to 15th April, 2017. The program was organized by CBM.

Psychological Crisis intervention at Lucky Vincent School: During the reporting period staff from the Department of Psychiatry and Mental Health Dr. Fileuka Ngakongwa travelled to Arusha Tanzania to provide Psychological First Aid to students, teachers and other staff of Lucky Vincent School affected by a traumatic event (motor vehicle accident) that lead to the loss of the lives of their fellow students. Counseling services and grief work was provided to help those affected better cope with the loss and enable to school to continue with studies.

Facilitation of Training on Prevention of Gender-Based Violence (GBV) and Collection of Forensic Evidence for Survivors of GBV for Health Care Providers and Law Enforcement: It is reported that Dr. Dorothy P. Mushi from the Department of Psychiatry, was invited to be among the facilitators/trainer of trainees attending the above workshop held on 22nd May to 6th June, 2017 in Morogoro. The training was coordinated by the Ministry of Health Community Development Gender Elderly and Children in collaboration with ENGENDER Health. The major aim of this training was to build the capacity of health care service providers and the police to better provide services for survivors of gender-based violence.

Eye Health Surgical Outreach Services in Singida: During the reporting period Dr. Ntsilane Suzan Mosenene from the Department of Ophthalmology participated in an outreach program to supervise Ophthalmology postgraduate student's surgical skills in Singida. The outreach service program occurred from 28th May to 3rd June, 2017.

Accreditation of five resubmitted short courses in Emergency Medicine: During reporting period, it is informed that five short courses have been officially accredited after resubmission of corrected curricula with inputs as suggested by the 16th Senate CEPD committee meeting, held on July 2016. The accredited courses are: -

- (a) Basic Emergency Care
- (b) Advanced life support
- (c) Pediatric Emergency care



- (d) Basic ambulance provider course
- (e) Basic ambulance attendant course

The department is in the process of planning for when these short courses will begin.

4.1.7 Governance issues in the School

Overview of academic staff in the School of Medicine (SoM)

During the year under review, the total number of academic staff in the SoM was 142 a decrease of 11.25% from 160 staff reported in 2015/2016. Figure 13 summarizes the distribution of the 142-academic staff in the school by Age group and gender. The proportion of female staff has gradually increased to the current rate of 32.4%, compared to rates of 23%, and 30% in 2012 and 2015 respectively. Not surprisingly, this gradually increasing hire of female staff, shows fewer to be in older age groups of 56 years and older. Furthermore, when assessed, the variation in female and male staff distribution across academic ranks is not significantly different as summarized in Table 4.

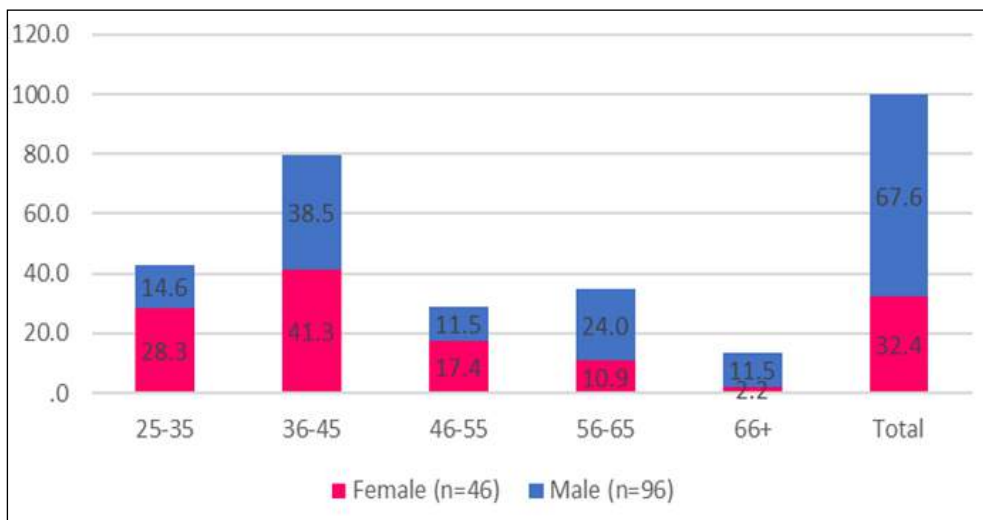


Figure 13: Distribution of Academic Staff by Age groups and Sex June, 2017

The distribution of staff by rank, is a matter of some concern that needs to be addressed. Overall by rank, lecturers comprise the largest proportion and almost half of all academic staff followed by assistant lecturers and senior lectures at 11.3% each, then associate and full professors at 9.9% and 9.2% and finally tutorial assistants at 9.2%. There are many historical factors related to this unfortunate situation and changes in funding sources for postgraduate training in the biomedical sciences, laboratory medicine and clinical medicine, and laboratory and radiotherapy technology fields. Ideally lower ranked staff should be of greater proportion than higher ranked staff to allow for both sufficient supervision of students both in academic and clinical practice areas of the nature of medical education, as well as adequate mentoring of more junior staff in order to ensure effective succession planning.

Table 4: Distribution of academic staff by rank and sex June 2017

Rank	Sex (females 46, Males 96)		Total N (%)
	Female (%)	Male (%)	
Tutorial Assistant	6 (13.0)	7 (7.3)	13 (9.2)
Assistant Lecturer	7 (15.2)	9 (9.4)	16 (11.3)
Lecturer	25 (54.3)	45 (46.9)	70 (49.3)
Senior Lecturer	4 (8.7)	12 (12.5)	16 (11.3)
Associate Professor	3 (6.5)	11 (11.5)	14 (9.9)
Professor	1 (2.2)	12 (12.5)	13 (9.2)

The persistently low proportions of TA and AL in this and previous years, creates risks to clear task clarification by rank and an inherent task share downwards and upwards; a situation that deters from particularly the development of more vibrant research and research training activities focused on National concerns, as well as providing adequate direction for development of needed new academic programs and in concert to developing specialized services.

Despite this short-coming, in this reporting year the school has engaged with other Schools and Directorates at MUHAS in the development of two new undergraduate and three new postgraduate programs, one of which has been submitted to senate (MSc Histotechnology) and two which have been discussed in the School Board and are in various stages of a final draft (BSc Physiotherapy, MSc SS Neuroradiology, MSc Biomedical Engineering (MUHAS in collaboration with the Mbeya University of Science and Technology (MUST)). The department of Anesthesiology has also worked with the Ministry of Health to develop an undergraduate curriculum for nurse anesthetists. Recent efforts of the Ministry of Education, Science and Technology to seek funding for medical and health technology training are very welcome, and would be effective if we are able to make a case for more tutorial assistants and assistant lecturer spots, in particular undersubscribed departments in terms of staff, such as Anesthesia, Clinical Oncology, Hematology and Blood Transfusion, Emergency Medicine, Radiology and Imaging and Ophthalmology just to mention a few with five or fewer staffs.

Table 4 below summarizes the current number of academic staff by departments of the school and provides an indication of staff student ratio in the departments (against the recommended 1:15 for biomedical and laboratory medicine departments and 1:8 for clinical departments set by TCU)



Staff to Student ratio: During the Joint East African Community Medical and Dental Boards/Councils accreditation visit at MUHAS in April 2015, though MUHAS was approved for reaccreditation, concerns regarding low staff to student numbers were raised. This concern was particularly raised for biomedical science and laboratory medicine courses taught in the first and second year, many being core courses across programs in the Schools of Medicine, Nursing, Pharmacy, Dentistry and Public Health and Social Sciences.

Table 5: Summary of current staff: student ratios in the School of Medicine

Department	Number (% of all staff)	Number of impacted students (UG and PG) 2016/2017	Staff: Student Ratio
<i>Biomedical Sciences</i>			
Anatomy	5 (3.5)	537	1:107
Biochemistry	8 (5.6)	546	1:68
Clinical Pharmacology	7 (4.9)	346	1:49
Physiology	6 (4.2)	581	1:97
<i>Laboratory & other Diagnostics Medicine</i>			
Haematology and Blood Transfusion	3 (2.8)	388	1:130
Microbiology & Immunology	11 (7.7)	508	1:46
Pathology	10 (7.0)	515	1:52
Radiology and Imaging	5 (3.5)	254	1:50
<i>Clinical Medicine</i>			
Anaesthesia	1 (0.7)	223	1:223
Clinical Oncology	2 (1.4)	233	1:117
Emergency Medicine	3 (2.1)	214	1:71
Internal Medicine	11 (7.7)	445	1:41
Obstetrics and Gynaecology	11 (7.7)	475	1:43
Ophthalmology	5 (3.5)	211	1:43
Orthopaedics and Traumatology	11 (7.7)	233	1:21
Otorhinolaryngology	6 (4.2)	208	1:35
Paediatrics and Child Health	14 (9.9)	431	1:30
Psychiatry and Mental Health	9 (6.3)	405	1:45
Surgery	13 (9.2)	421	1:33



Table 5 summarizes the observed situation of staff to student ratios as of August 2017. None of the departments meets the TCU ratio of 8-15 staff per students per faculty. The findings in the reporting period if we consider meeting a target of 50% (30-40 students per staff) of the TCU requirement show 4 departments meet this target, with no departments showing an improved ratio. The faculty student ratio has worsened for staff in the anatomy, physiology, hematology, anesthesiology, departments due lack of employment for the past one year and compulsory retirement of staff most at senior lecturer and professor ranks. The departments of the school are challenged with identifying potential staff from qualifying undergraduate students and facilitating post graduate training. The possibility of hiring tutorial assistants will make this a feasible approach.

Technical and administrative staff: Compounding these academic staff shortages is a lack of supportive administrative and technical staff with most departments having limited administrative and secretarial support, and biomedical science and laboratory medicine departments having few technical support staffs for practical sessions. Other than the microbiology and immunology department where technician student ratio was 1:37; in the remaining relevant departments, this ratio ranged for 1: 143-584, being worse again for staffing in the Anatomy department. This means, academic staff time that could be released for teaching, assessment supervision and mentoring is taken up by technical tasks that would have been undertaken by absent cadre. The TCU recommends a ratio of one technical staff to 50 students is not met by almost all departments, which remains a threat to future re-accreditation of the School and the University. Heads of department continue to work closely with the DHRM&A to advocate for funded salaried positions for these cadres.

Meetings in the School of Medicine: School Boards: All scheduled School Boards were held as per Almanac in the reporting year. In addition, a number of extraordinary meetings were held as needed. Weekly meetings of the School Management Committee were held as scheduled at a level of more than 90% of planned meetings.

School Board Committees: Meetings of the School Undergraduate and Postgraduate& Research Committees were held as needed, Teaching and Assessment Quality Committee and the Planning Committee meetings were held as planned by Committee Chairs.

Action Planning and Open Performance Review and Appraisal: During the reporting period, the School of Medicine management committee cascaded the targets of the Deputy Vice Chancellor Academic Research and Consultancy (DVC ARC) and completed its annual action plan and submitted a related budget. The School's annual action plan was shared with all 19 departments, (100%) which also formulated their annual action plans.

These School and departments annual action plans formed the basis of staff's performance objectives. During the reporting period, the office of the Dean signed performance agreements with all Heads of Department for 2016-2017. The process of customizing OPRAS forms to include components of the former Annual Confidential Report forms, as well as a change in the appraisal were done as planned and Heads of departments their

performance objectives. During the 2016/2017 academic year, eight (8) academic staff were recommended for promotion after being assessed at the end of performance appraisal year which were done between 30th June to 3rd July, 2017.

During the reporting period, all staff in the office of the Dean School of Medicine continued to perform activities as planned in their OPRAS forms. All the staff filled the OPRAS forms for performance agreement /objectives for the year 2016/2017. The office anticipated to receive feedback from the Directorate of Human Resources Management and Administration for the annual performance appraisal for year 2015/2016 which was completed by June, 2017.

Staff on Training

During the reporting period three staff registered for PhD as follows:

- (a) Dr. Said Ali from the department of Obstetrics and Gynaecology provisionally registered for PhD studies in the same Department. His proposed PhD research topic is titled: ***“Maternal death surveillance and response; Linking community to health facility to improve quality of health care”***. He will have supervised by Prof. A. B. Pembe (Co-supervisor), Department of Obstetrics and Gynaecology, School of Medicine and Dr. D. Kakoko (Co-supervisor), Department of Behavioral Sciences, School of PHSS.
- (b) During the reporting period Dr. Rajabu Hussein Mnkungwe (MD, MSc) from the department of Clinical Pharmacology registered for PhD studies at Karolinska Institutet. His proposed PhD research proposal title: *“Efficacy and Safety of Praziquantel combined with Dihydroartemisinin-Piperaquine for treatment of Schistosomiasis; Pharmacokinetics and Pharmacogenetics implications of the drugs combination in Tanzania”*. His main supervisor at KI Sweden is Prof. Eleni Aklillu while in Tanzania he will be supervised by Prof. Omary Minzi assisted by Dr. Safari M. Kinunghi of the NIMR Mwanza Centre.
- (c) During the reporting period Dr. H. Sawe registered for PhD in Emergency Medicine (by thesis) at the University of Cape Town, South Africa. The thesis will focus on the one-year on-going Trauma registry project in the Emergency Medicine Department, MNH on which he is the Principal Investigator. The PhD training will use a blended learning approach and be partly delivered via UCT’s online learning platform, commonly known as *“Vula”*.

During the reporting period two staff were of postdoctoral fellowships as follows:

- (a) Dr. Sabina Mugusi from the Department of Clinical Pharmacology, was awarded a postdoctoral fellowship at the Harvard T. H. Chan School of Public Health as part of the HIV Implementation Science (HIS) NIH grant with MUHAS as a subcontractor and Harvard T. H. Chan School of Public Health being the prime on this capacity building training program also this postdoctoral fellowship is aimed at providing opportunities to refine research methodological skills and substantive knowledge in HIV implementation research. The fellowship award will be for nine months divided into two four to five-month periods.
- (b) Dr. Sabrina Moyo, Department of Microbiology and Immunology, continued her



two-year postdoctoral work in Norway.

During the reporting period, eight (8) academic staff were nominated by the University and the Ministry of Health, Community Development, Gender, Elderly and Children (MoHCDE&C) for the Dr. Lee Jong –Wook Fellowship Program for the year 2017 and they traveled to Korea. They are:

- (a) Dr. Aslam G. Nkya,
- (b) Dr. Kahinga A. Aloyce,
- (c) Dr. Ntunaguzi D. Cheche,
- (d) Dr. Said S. Kilindimo,
- (e) Dr. Byomuganyizi Moses,
- (f) Dr. Khamis R. Hassani,
- (g) Dr. Mussa A. Abel
- (h) Dr. Lulu Fundikira

During the reporting period, the following academic staff completed their PhD studies in their disciplines: -

- (a) Dr. Abel Makubi - Department of Haematology and Blood Transfusion
- (b) Dr. Pascal Rugajjo - Department of Internal Medicine

Staff Retirements and applications for post-retirement contracts: During the reporting period one staff in the office of the Dean Mr. Chande Mohamed (Personal Secretary) officially retire from public service in October 2016.

Two (2) academic staffs were removed from the government payroll after their post retirement contracts reached their maximum tenure with effect from 2nd August, 2016. These were: -

- (a) Dr. B. L. Mtinangi (Senior Lecturer) - Department of Physiology
- (b) Dr. J. M. Lwakatare (Senior Lecturer) - Department of Internal Medicine
- (c) Prof. G Kilonzo (Professor) – Department of Psychiatry and Mental health
- (d) Prof. F Mhalu (Professor) – Department of Microbiology and Immunology
- (e) Prof. S Maselle (Professor) – Department of Microbiology and Immunology
- (f) Dr. N. Hogan (Senior Lecturer) – Department of Psychiatry and Mental health

The excellent services afforded to the School by these staff members were much appreciated. The relevant departments and the office of the Dean will continue to update unit succession plans to ensure staff training plans and requests for replacement staff are in line with needs in the units.

Application for post-retirement contracts: During the reporting period five (5) post retirement contracts for academic staff across departments were processed. These included: -

- (a) Prof. Muhsin M. Aboud - Department of Surgery
- (b) Prof. C. Yongolo - Department of Surgery
- (c) Prof. Edward Mgaya - Department of Pathology
- (d) Prof. Jane Sayi - Department of Clinical Pharmacology
- (e) Dr. Theodora Kazimoto - Department of Pediatrics and Child Health



Staff appointment: During the reporting period, the department of Hematology and Blood Transfusion has appointed Jill Kent as a Program management Advisor under MUHAS Sickle Cell Program. Her appointment commenced on 1st May, 2017 with the duration of three years.

Awards: During the reporting period Prof. Karim Manji from the Department of Pediatrics and Child Health received a Fellowship award of the Royal College of Physicians (London). This achievement was in part a result of the continued support from MUHAS/MNH and his department in particular for knowledge and skills building to improve pediatric and child health services in Tanzania. The awarding ceremony will take place in London on 25th July, 2017.

4.1.8 Staff Promotions, Retirement and Transfers

Academic Staff Assessments for Promotion: During the reporting year all Heads of Department on the MUHAS payroll, filled their annual OPRAS following training. Ten academic staff members were recommended for promotion from one academic rank to another.

Transfers: During the reporting period Dr. Abel Makubi from the Department of Haematology and Blood transfusion through the Ministry responsible for Public Service Management and Good Governance has seconded Dr. A. Makubi to Bugando Medical Centre (BMC) in Mwanza following appointment as Director General for a period of four years from 2017-2021.

New Staff Appointments: During the reporting period, no new academic staffs were hired.

4.1.9 Resource Mobilization

Short courses: Staff continued to identify priority and demand driven short courses for implementation targeting health care providers in Tanzania and beyond. Five short courses from Department of Emergency Medicine were accredited by DCEPD. A short course in dissertational Anatomy was conducted by the Department of Anatomy and the School will continue to follow-up with heads of department to encourage them to facilitate and report the development of accredited and implemented short courses.

Uporoto Clinic: The School working with other schools and institutes and the office of the Directorate of Planning and Investment continued to seek funds for the construction of a polyclinic at the MUHAS Uporoto site. While clinical skills for post and undergraduates will be developed at this site further contributing to expanding skills use to different clinical care contexts and decongesting the MNH clinical teaching site; clinical services will also be provided to the neighboring communities.

External Student Clinical or Research electives/exchanges in the School: Elective and exchange foreign students continued to be a major source of income generation in the school



of Medicine. The School in its 2nd of a two-year registration as GHLO (Global Health Learning Opportunities – the Association of American Medical Colleges) host institution received no elective student in this reporting year and three completed applicants for 2017/18. During the reporting year the school received a total of 63 students who completed clinical electives in various departments as summarized in Table 6. The Elective study students during reporting year were from Britain, Canada, Denmark, Germany, Belgium, United States and the United Arab Emirates. Most students who apply for electives at MUHAS are usually from Europe organizations such as Work the World and World Unite coordinates elective study student applications and placements.

Most universities from the USA, Canada, Norway, Sweden and some other parts have a formal student exchange arrangement with MUHAS and their elective is centrally coordinated with more or less fixed time for starting in the specific departments where students can do their elective. Many of these may not be paying elective fees; counterpart students from Tanzania (n= 6 every year supported and 2 unsupported slots that our students can rarely afford) are supported to do electives in their countries.

Table 6: Elective students registered by the School in 2016/17

Department	Elective	Exchange	Total
Internal Medicine.	11	1	12
Paediatrics & Child Health	10	1	12
Surgery	16	1	17
Obstetrics & Gynaecology	9	0	9
Psychiatry and Mental Health	1	0	1
Orthopedics & Trauma	5	2	7
Emergency Medicine	1	0	1
Total	53	5	58

NB: Some of students in the School of Medicine rotated in more than one department.

Despite efforts to attract elective students there has been a steady decline in the number of elective students registered by the University. There is a slight decline in the number of elective students 58Vs 63 registered in the 2015/16. This decline in the number of electives students may partly be because MNH has also initiated a separate elective student program since 2014 that operates in the same physical space. The forthcoming space provided by the mloganzila campus Academic Medical Centre, once established should provide an alternative site for student electives in Tanzania. The presence of accommodation on site for



elective students will increase the attractiveness of the venue as a clinical skill building exposure site.

4.1.10 Miscellaneous

Invitation to attend stakeholders meeting by MoHCDGE&C: During the reporting period Dr. R. R. Kisenge and Dr. Lulu Chirande from the Department of Pediatrics and Child Health attended a meeting organized by Ministry of Health, Community Development, Gender, Elderly and Children addressing key issues in Childhood TB treatment and plans for the introduction of new Pediatric fixed dose combinations. It is reported that with new child-friendly formulations now available, there is a need for early planning to facilitate country access to improved therapies. This requires that national stakeholders are aligned with Pediatric TB dosing recommendation changes; are aware of issues pertaining to diagnosis and treatment of childhood TB; are familiar with new Pediatric TB treatment products; and are aware of the steps involved in procurement and introduction of these products. The meeting held on 13-14 July, 2016 provided an opportunity for MUHAS staff to further engage with various stakeholders (e.g. NTP, MCH, NGOs, Pediatrics Associations, TB/HIV sector, and others) in the scale –up a coordinated and integrated responses to childhood TB and to jointly plan for the scale-up of childhood TB activities in Tanzania.

Invitation to attend the first Emergency Medicine conference in Tanzania: During the reporting period, the Dean was appointed to represent the Vice Chancellor at the first conference on Emergency Medicine, which was held on 23rd September, 2016 at LAPF tower, in Kijitonyama, Dar es Salaam. The conference was organized by the Emergency Medicine Association of Tanzania (EMAT), a non-profit professional association of emergency medicine doctors and nurses, which is registered by the government of Tanzania, and is geared towards supporting emergency medical care, through training, advocacy and consultancy, with the primary objective of saving lives in Tanzania. The theme of the conference was “the state of emergency medicine in Tanzania: knowledge, resources and long-term sustainability”.

Participation in the 3rd Tanzania Health summit: During the reporting period, the academic staff in the School of Medicine participated in the 3rd MUHAS health summit annual conference that took place from 14th to 15 November, 2016 at Julius Nyerere International Convocation Centre (JICC). The summit was aimed at bringing together a multidisciplinary group of health professional and other stakeholders to share knowledge and ideas in form of research paper presentation, forum discussion, symposiums, high level meeting and other interesting topics from keynote speakers from in and out the country that is centered around the summit theme. It also gave an opportunity to companies and institutions to make known of their products and services through exhibitions. The theme on this summit was “**Towards universal access to health care, the role of private and public sectors**”.



Invitation to attend five days on the job training on vacuum deliveries at Temeke Hospital from 12th -16th December, 2016

During the reporting period, it is reported that CCBRT in collaboration with Temeke referral Hospital invited Prof. Jos Roosmalen, a Senior Consultant OBGYN from Netherlands for supporting training in Vacuum delivery. Further on the same it is reported that four residents from the department of Obstetrics and Gynecology attended this training from 12th -16th December, 2016. This training will help residents to improve their skills in performing Vacuum deliveries when managing prolonged labour. Also, we note certificates of competency were provided to the residents after the training.

Invitation to the EAC Partner States' National Stakeholders Meeting on the Implementation of the Recommendations of the Second Joint Inspections of the EAC Medical and Dental Schools: During the reporting period it is reported that, the School of Medicine attended a meeting scheduled on 17th -18th October, 2016 at the New Africa Hotel Dar es Salaam. This was pursuant to a decision of the 12th Ordinary meeting of the EAC Sectoral Council of Ministers of Health, held in Arusha on 22nd June, 2016. The EAC Secretariat was directed to collaborate with the Inter University Council of East Africa (IUCEA) and EAC Partner States to convene and facilitate a national multi stakeholders meeting to discuss and fast track the implementation of the relevant recommendations of the second Joint Inspection of the University Medical and Dental Schools and Teaching Hospitals. The meeting was convened by the joint teams of the EAC Partner States' National Medical and Dental Statutory Regulatory Boards/Councils.

Invitation to visit the Tanzania Industries Exhibitions at Mwl. J.K. Nyerere Trade Fair Ground, 7th -11th December, 2016: The Government of United Republic of Tanzania through Tanzania Trade Development Authority (TANTRADE) organized the first exhibition for Tanzania Industries held at the Mwl. J.K. Nyerere Trade fair ground from 7th -11th December, 2016. The main objective of the exhibition was to complement the Government's efforts towards building a semi industrialized Country by 2025 through creating a sustainable domestic market for Tanzanian products. The theme of the exhibition was ***"Tanzania Sasa Tunajenga Viwanda"*** with the strategic focus of sensitizing Tanzania to buy domestic manufactured products. Representatives from the School of Medicine visited the trade fair on 7th -12-2016 and established talks with Mansour Daya industries for collaboration. The representatives were selected by the School and were convened by Dr. F. August:

- | | | | |
|-----|------------------------|---|--|
| (a) | Dr. Furaha August | - | Department of Obstetrics and Gynaecology |
| (b) | Dr. Emmanuel Suluba | - | Department of Anatomy |
| (c) | Dr. Said Kilindimo | - | Department of Emergency Medicine |
| (d) | Dr. Moses Byomuganyizi | - | Department of Surgery |

Terms of Reference (ToRs)

- (a) To identify industrial affiliations with the potential for collaborative work with the School of Medicine
- (b) To enter into initial discussions with industries with which affiliations are feasible



and establish contact persons.

- (c) Write a report and hand over to the office of the dean for further action.

Table 7: Findings by a team from the School of Medicine on Industrial Collaboration

SN	Industry	Product	Opportunity
1	Shelly's Pharmaceuticals Ltd	Different types of pharmaceuticals	School can partner with this company in clinical trials to evaluate drugs/products they are developing. They have experience working with MUHAS in drug trials involving children.
2	Ideal Health Care (IHC)	Alternative Medicine	Collaboration in conducting scientific clinical trials to evaluate the effectiveness of the use of alternative medicinal products.
3	Five Star Printing Company	Printing, stationeries	There are a lot of Masters students and PhD students who need to print their dissertations, the school can partner with this company and charge the students for the printing OR the school could have its own printing company for this as an income generating activity.

Invitation to attend the 48th Medical Association of Tanzania (MAT) National Health Conference from 10th -12th November, 2016: It is reported that during the reporting period the School was invited to attend the above meeting and it was directed to also mobilize undergraduate and postgraduate students to attend the meeting. It is informed that MAT is putting aside its scientific conference and is instead hosting a national health conference to discuss the current health crisis in the country. The theme for this year was 'Crisis in the health Sector-Creating the environment for quality service delivery'.

Participation in the Higher Education Summit 2016: It is reported that during the reporting period the Ministry of Education, Science and technology, the Tanzania Commission for Universities and the committee of Vice Chancellors and Principals Tanzania with the generous support of Trust Africa were jointly organized the higher Education summit which were held at the Julius Nyerere International Convention Centre on 21st -22nd November, 2016 of which academic staff from the School of Medicine participated together with other key stakeholders in higher education including government officials, academics, industry, development partners and other representatives of both the public and private sectors. It was noted that the main objective of the summit was to develop strategies that will enable the higher education sub-sector to accelerate the production of the needed human and research



outputs to support the drive towards sustainable industrialization in Tanzania. Accordingly, the main theme for the summit was “*Enhancing the contribution of Higher education in the Industrialization Process of Tanzania*”.

Invitation to attend a conference on Lean Management: An innovative approach to health care Management in Tanzania: During the reporting period, the Dean and Associate Dean School of Medicine attended a special 2 days conference at the end of February on 27-28th February, 2017 at Kilimanjaro Hyatt, Dar es Salaam which shed light on the use of lean principles in strengthening health management in the Tanzania health context; using as an illustrative example the experiences of the CCBRT (Comprehensive Community-based Rehabilitation in Tanzania) hospital in Dar es Salaam. In a nutshell, Lean Management is an approach for continuous organizational improvement, that was used to streamline the clinical practice process at CCBRT, through identifying and eliminating waste to promote organizational excellence. CCBRT hired a lean manager in 2012 after the concept was introduced to the management in the previous year and Lean practices were rolled out in their maternal health capacity building partner facilities in the Dar es Salaam region. Subsequently (2014), CCBRT eye out-patient department was selected as a model cell for Lean transformation; with a partner being the Kabanga Mission Hospital in Kigoma region. Funds from the Human Development Innovative Fund (HDIF) were successfully applied for to facilitate Lean transformation. A Lean Steering Committee (Model cell development team formed of staff from all departments i.e. HR, IT, Finance, Q&S, Nursing and Doctors) at CCBRT met weekly with eye clinic staff to train them in Lean principles and facilitate culture change and leadership. The training included working together to map eye-OPD services at baseline, collect data through observations where patient's journeys were followed and times and in this way identifying inefficiencies; the information generated was used to brainstorm for development of a map for an ideal state (design and practices) for eye OPD service delivery. An action plan was developed for implementation that included one week of construction, intensive staff training and team building exercises to realize the planned transformation. Post implementation findings showed the new map allowed for an increase by 21% of patients served & a reduction by 73% of eye patients returned without service per week in a streamlined and more efficient eye OPD service delivery system that had previously been overcrowded. CCBRT plans to use lessons learnt to perform Lean transformation of its eye theatre services and the whole Disability Hospital in the future.

Internationally recognized Lean Management, John Allen and Anton Grutter, discussed with workshop participants the potential for transformative change in health care management through lean practices. Hosted by CCBRT, the facilitators introduced the basic principles of Lean Management, typical stages of a transformation process and management behaviors and organizational practices that would make continuous improvement sustainable. The Dean attended the A3 problem solving panel that provided information on this problem-solving method, a systematic way of understanding the problem and identifying/developing effective improvements recommendations. In addition, the most common techniques to do improvement projects were discussed in this workshop. Joined by facilitators from the MoHCDGE&C challenges facing innovation in the healthcare sector in Tanzania were



discussed prior to closing the session.

The national institutionalization of IUCEA Quality Assurance Initiative: a Program level workshop: During the reporting period Associate Dean, Undergraduate Studies, School of Medicine attended the above workshop whereby among the activities involved in the initiatives by IUCEA and EAC include internal and external evaluation of academic programs based on guidelines provided by the IUCEA. These two regulatory bodies implement at regional level initiatives for institutionalizing quality assurance systems in higher education.

A Visit of Delegation from federal republic of Germany on 21st February, 2017: During the reporting period, the office of the Dean School of Medicine and the departments of Pediatrics and Child Health and Otorhinolaryngology hosted delegates from the Leibniz University, Hanover, and senior government officials, including the State Chancellor of Lower Saxony, Federal Republic of Germany; Ms. Birgit Hone. She was accompanied by a delegation of representatives from universities, enterprises and public institutions in Germany. The purpose of the visit was to view activities arising from a MoU between the departments of Pediatrics and Child Health and Leibniz University for the development of training and services in support of management of Speech and Language Disorders at MUHAS/MNH and brainstorm on potential sources of funding to further support developing activities. The delegates visited the newly established Speech and Language Pathology Clinic located on the ground floor of the Children's Hospital, MNH that was followed by a roundtable discussion with faculty from MUHAS, the Ministry of Health, Community Development, Gender, children and Elderly. The main agenda for the round table discussion was to discuss how German Government Funds channeled through DAAD can support MUHAS to establish undergraduate and postgraduate training programs for Speech and Language Pathology and improve the care of children with these pathologies. A particular challenge is the need for speech and language therapy in the management of children deaf from birth to ensure good outcomes after treatment with hearing implants. Through this collaboration MUHAS is planning to first establish speech and language pathology postgraduate level training that will be taught jointly by the departments of Pediatrics and Child Health and Otorhinolaryngology with support from Leibniz University. Once sufficient capacity has developed, the potential for training Speech and Language Pathology therapists at Undergraduate level will be explored, a strategy that will address the current shortage of speech and language pathologist in the country and region. It was further reported that this collaboration will also facilitate and strengthen the current speech language pathology clinic at MNH through human capacity building and purchase and maintenance of necessary equipment.

Pan African Congress of Radiology and Imaging (PACORI) at JNICC: During the reporting period, five (5) members from the Department of Radiology and Imaging MUHAS attended the Pan African Congress of Radiology and Imaging (PACORI) 9th Biennial congress which had the theme **“Increasing access to quality imaging”** “The congress took place on **17th to 19th February 2017 at Mwalimu Julius Nyerere Convention Centre (JNCC), Dar es Salaam, Tanzania.** The PACORI Bi-annual congress brings together the largest gathering



of practitioners in radiation medicine and manufacturers in Africa. Radiologists, radiographers, medical physicists, radio-oncologist and diagnostic equipment manufacturers attended this conference. The major objective of the conference was to offer participants an opportunity to share knowledge and professional experience as well as discuss the current state of imaging and healthcare in Africa, existing challenges and emergent opportunities that will enable achievable, sustainable and quality healthcare.

Technical group workshop to finalize the review and update of the National Drug Resistant TB Management Guidelines: This workshop was attended by Dr. S. Mugusi, Head of Department Clinical Pharmacology. The workshop was organized by the Ministry of Health, Community Development, Gender the Elderly and Children (MoHCDGE&C) through the National Tuberculosis and Leprosy Program (NTLP) and KNCV Tuberculosis Foundation. The workshop was organized to finalize a review and update of the National Drug Resistant TB Management Guideline which were held in Morogoro on 15th to 19th May, 2017.

The Kenya Pediatric Association Annual Scientific Conference: Dr. E. Kija from the Department of Pediatrics' and Child Health attended this 17th annual conference held in Kisumu, Kenya from 25th -28th April, 2017. The theme of the conference was "Beyond Child Survival: Nutrition & Child Development"

Workshop on Research to Address Gaps in International Blood Safety and Availability: Challenges and Opportunities: During the reporting period Prof. Julie Makani from the department of Haematology and Blood Transfusion attended this workshop organized by the national institute of Health (NIH). The aim of this workshop is to identify key research priorities for improving blood safety and availability in low-and mid-income counties. The workshop was held on 18th to 19th April, 2017 at Bethesda, USA.

Annual Partners meeting of Bristol-Myers Squibb Foundation's Secure the future technical assistance program: During the reporting period Dr. Magdalena Lyimo from the Department of Hematology and blood transfusion attended the above meeting which was held in South Africa from 10th -12th April, 2017. The major aim of this meeting was to update partners on the transition of the Secure the Future Program from an HIV/AIDS anchor to one that addresses unmet needs for cancer management within Africa in conjunction with sharing of lessons learned from the current and new partnerships.

Meeting of the International Members Committee (IMC) and Visitor Training Program Study Section of the American Society of Hematology: Prof. Julie Makani from the Department of Haematology and Blood transfusion was invited to attend the above meeting scheduled on 22nd -25th June, 2017 in Madrid, Spain. The meeting was organized by the American Society of Hematology (ASH).

Research Collaborators Meeting, Stockholm: During the reporting period Dr. Abel Makubi from Department of Haematology and Blood transfusion travel to Sweden to attend a research collaboration meeting from 7th to 18th May, 2017.



The 4th Health Laboratory Practitioners Council (HLPC) meeting: Mr. Godfrey Hongoli, a Senior Health Laboratory Scientific Officer from the Department of Pathology, attended the 4th Council meeting of the HLPC that was held on 27th to 30th June, 2017 at AMREF Africa hall in Dar es Salaam.

World Congress of Nephrology: During this reporting period Dr. Francis F. Furia from the Department of Paediatrics and Child Health attended the world Congress of Nephrology held in Mexico from 21st to 25th April, 2017.

Grant writing workshop: During the reporting period, the School of Medicine conducted a workshop on Grant writing. This course was designed to sharpen grant proposal writing skills among academicians and researchers in health and related fields in the School of Medicine. The training was taught by local scientists with significant scientific writing and publishing records of which it which introduce participants with the essential concepts in Grant proposal writing. Constructivism approach and the blooms taxonomy were used in delivering this course. The major objective of this workshop was to enhance grant proposal writing skills among academic staff and researchers at MUHAS and other health related research institutions in Tanzania. It was further noted that twenty-three (23/45 = 51%) academicians from School of Medicine successfully attended this course and they were given their certificates attaining 2.0 credit points.

Sickle cell disease cure and prevention consortium meeting (SCDC) in Germany: It is reported that Prof. Julie Makani from Department of Haematology and Blood Transfusion attended the above meeting in Regensburg, Germany which took place from 29th to 30th June, 2017. The meeting discussed relevant aspects on the cure and prevention of Sickle cell disease.

The Mission of the University (to provide quality training, research and services in health and related fields for attainment of equitable socioeconomic development for Tanzanian community and beyond) outlines the three main activities of the School, research, health professional's education and health and related services.

4.2 School of Dentistry

4.2.1 Introduction



Dr. Elison N. Simon

The School of Dentistry started in 1979 as a Division of Dentistry of the Faculty of Medicine of the University of Dar es Salaam with the following objectives:

- (a) To train undergraduates in all aspects of dentistry and teach theoretical medical and biomedical sciences leading to a degree of Doctor of Dental Surgery (DDS),
- (b) To provide oral health care to patients in and around the city of Dar es Salaam and referral cases from upcountry.
- (c) To function as a research Centre, where epidemiological studies in dentistry were to be made and monitored, and also coordinated with other government agencies such as the Tanzania Food and Drug Authority, other Ministries like Commerce and Industries, Local governments, and the department of Community Medicine in controlling the consumption of cariogenic non-essential foodstuffs, and
- (d) To team up with the Ministry of Health in the training of other oral health personnel who usually work closely with the dental surgeon in rendering services to patients.

The School of Dentistry was established in 1979 and to-date (38 years) it is the only institution in Tanzania where dental education is offered at degree level.

Objectives:

- (i) To provide education and advanced training for oral health personnel
- (ii) To perform research in the field of oral health
- (iii) To provide expert professional services in oral health

Functions:

- (i) To provide graduate dentists and postgraduate specialists in different oral health fields suitable for hospital and community work in Tanzania, regionally and internationally
- (ii) To carry out research in all fields of oral health
- (iii) To cater for continuing education in all fields of oral health
- (iv) To render oral health services to patients
- (v) To provide advisory services to the government in the field of oral health.

4.2.2 Activities During the Reporting Period

In 2016/2017, forty-one (41) undergraduate and 5 postgraduate students were admitted in the School of Dentistry (SoD). This was an increase of 24.3% for undergraduate and a decrease of 25% for postgraduate students compared to previous reporting year (2015/2016). Teaching and fieldwork were conducted smoothly, in August/September 2016 and the



March/April 2017 examinations for both undergraduate and postgraduates were successfully conducted according to the University almanac.

A total of twenty-two (22) undergraduate students, (16 males, and 6 females) successfully completed studies and graduated in December 2016. This was an increase of 18% compared to 2015/16 (in which 18 students graduated). Also, there were three postgraduate students (2 males and one female) who graduated, which was a decrease of 50% compared to 2015/16. The increase of undergraduate enrolment was attributable to efforts made to advertise the programs locally and internationally. All of the postgraduate students who graduated were Tanzanians.

During the academic year 2016/17 all the programs running in the School of Dentistry were Competence Based Curriculum (CBC) programs. The School noted improvement in the mastery of clinical skills among 4th and 5th year students following introduction of CBC 3 years ago. This curriculum provides for a step-wise acquisition of competencies inherent hence fourth year clinical rotations capitalized on foundation of junior clinical rotations during 3rd year.

During the year under review two academic members of staff were on a PhD programs. One of the members is on a program that is offered by MUHAS in collaboration with the University of Turku, Finland and another is pursuing a PhD at Fujian Medical University in China under the sponsorship of Chinese Government. Several academic members of staff attended seminars and conferences within and outside the country e.g. the Annual MUHAS Scientific Conference in June 2017 and the Tanzania Dental Association (TDA) Continuing Education workshop and Annual General Meeting that was held at Morogoro in November 2016 and the World Oral Health week activities conducted at Dodoma in March 2017. One (3) academic members of staff visited Universities outside the country as external examiners.

During the academic year under review, members of staff from the School conducted research that resulted in 9 publications, a decrease of 10% compared to 10 of the previous year. Consultation and clinical services to patients with oral health problems in the School of Dentistry clinics and the Muhimbili National Hospital continued throughout the year with active participation of members of staff from the School working in collaboration with clinical staff of the MNH. Core functions that were conducted by the three departments of the School during the reporting period are as summarized in the Table 7 below:

**Table 8: Departments of the School of Dentistry and their Core functions**

SN	Department	Core functions
1.	Oral and Maxillofacial Surgery (OMS)	<ol style="list-style-type: none"> 1. Teach undergraduate and postgraduate students oral and maxillofacial surgery, oral medicine and oral radiology. 2. Conduct research in the area of oral and maxillofacial surgery. 3. Render services to patients and the public in general in oral and maxillofacial surgery.
2.	Restorative Dentistry (RD)	<ol style="list-style-type: none"> 1. Teach undergraduate and postgraduate students in dental biomaterials, operative dentistry, periodontology, and prosthodontics 2. Conduct research in the area of dental biomaterials, operative dentistry, periodontology, and prosthodontics 3. Render services to patients and public in general in operative dentistry, periodontology, and prosthodontics.
3.	Orthodontics, Paedodontics, and Community Dentistry (OPCD)	<ol style="list-style-type: none"> 1. Teach undergraduate and postgraduate students in paediatric dentistry, orthodontics, and community dentistry 2. Conduct research in orthodontics, paediatric dentistry and community dentistry 3. Render services to patients and the public in general in orthodontics, paediatric dentistry and in preventive and community dentistry which includes outreach programs in Dar es Salaam and Morogoro

4.2.3 Management Profile During the Reporting Period

Table 9: The Management Team of the School of Dentistry

S/N	Name	Position
1.	Dr. Elison N. M. Simon	Dean, School of Dentistry
2.	Dr. Sira S. Owibingire	Associate Dean, School of Dentistry
3.	Dr. Tumaini Simon	Dental Manager, School of Dentistry
4.	Dr. Jeremiah Moshly	Head, Department of Oral and Maxillofacial Surgery (OMS)
5.	Prof. Febronia Kahabuka	Head, Department of Orthodontics, Paedodontics and Community Dentistry (OPCD)
6.	Dr. Lorna C. Carneiro	Head, Department of Restorative Dentistry (RD)



4.2.4 Staff Matters

The total number of staff did not change from that of the previous reporting year with a total of 22 members, of whom 14 (62.5 %) are males and 8 (37.5%) are females. The numbers of academic staff by ranks is as shown in Table 9:

Table 10: Number of Academic Staff in the School of Dentistry

Department	Designation						Total	On Post
	Professors	Associate Professors	Senior Lecturers	Lecturers	Assistant Lecturers	Tutorial Assistant		
RD	0	1	3	5	0	0	9	9
OPCD	0	2	1	4	1	0	8	7
OMS	0	0	4	1	0	0	5	5
Total	0	3	8	10	1	0	22	22

KEY: RD = Restorative Dentistry, OPCD = Orthodontics, Paedodontics and Community Dentistry, OMS = Oral and Maxillofacial Surgery

The overall faculty to students' ratio remained 1:8 for all DDS students, 1:7 in Oral and Maxillofacial Surgery, 1:5 in Restorative Dentistry, and 1:5 in Orthodontics, Paedodontics and Community Dentistry. The number of academic staff and faculty to student ratios were almost static.

Table 11: Number of Administrative, Technical and Support Staff in School of Dentistry

Qualification	Male	Female	Total
Bachelor degree	3	0	3
Diploma	1	3	4
Certificates	0	1	1
Primary education	2	5	7
Total	6	9	15

The number of non-academic staff remained unchanged compared to the previous year 2015/2016. The number of non - academic staff to student ratio is 1:13.

4.2.5 Students Matters

4.2.5.1 Enrolment

Undergraduates: During the reporting year (2016/2017), thirty tree (33) DDS 1 students were admitted (Table 11), which was a decrease of 24.3% compared to the previous reporting year (2015/2016). Despite this decrease in admission the total number of students



in the School increased by 2% since students who graduated in 2015/2016 were less than those enrolled in 2016/2017. The proportion of enrolled female students, slightly decreased from 26.4% in 2015/2016 to 25.1% in the reporting year (2016/2017).

Postgraduates: Five (5) postgraduate students were enrolled in the School of Dentistry (SOD). This was a decrease of 37.5% compared to previous reporting year (2015/2016). This number is by far lower than the capacity of the School. The low enrolment of postgraduate students was related to decrease in government sponsorship through Ministry of Health (Table 12).

Table 12: Enrolment of Undergraduate Students, School of Dentistry

DDS	Sex		Total	Female %
	M	F		
Semester 1 – 2	27	6	33	18.2%
Semester 3 – 4	36	8	44	22.2%
Semester 5 – 6	43	11	54	20.4%
Semester 7 – 8	15	12	27	33.3%
Semester 9 - 10	22	11	33	33.3%
Total	143	48	191	25.1%

4.2.6 External Examiners

The School received external examiners for both the July/August 2016 and March/April 2017 examinations as follows:

- (i) Oral and Maxillofacial Surgery - Prof. Mark Chindia from the University of Nairobi.
- (ii) Department of Orthodontics, Paedodontics and Community Dentistry – Prof. Mary Masiga from the University of Nairobi.
- (iii) Department of Restorative Dentistry - Dr. Penina Kisumbi from the University of Nairobi.

Generally, the external examiners were satisfied with the quality and handling of examinations. All of them expressed satisfaction with students' performance in general and were happy that some of their recommendations given during the previous year's examinations were given considerations and taken on board this year. They appreciated the hospitality extended by their hosts and the University.



Table 13: Enrolment of Postgraduate Students, School of Dentistry

Degree Course	Admission				Registered			
	Sex	Government	Private	Total	Sex	Government	Private	Total
MDent. Community Dentistry	M	0	1	1	M	0	1	1
	F	0	0	0	F	0	0	0
MDent. Oral Surgery	M	2	1	3	M	2	0	2
	F	0	0	0	F	0	0	0
MDent. Restorative Dentistry	M	1	1	2	M	0	0	0
	F	0	1	1	F	0	1	1
MDent. Paediatric Dentistry	M	2	1	3	M	1	0	1
	F	0	0	0	F	0	0	0
Total		5	5	10	Total	3	2	5

4.2.7 Graduation Statistics (Table 13)

During the reporting year 18 undergraduate and 3 postgraduate students graduated. There was no increase or decrease of undergraduate graduates however there was an increase in the number of female candidates who graduated from 2 to 6 (200% increase). On the other side there was a decrease of 37.5% for postgraduate graduates.

Table 14: Undergraduates and Postgraduates SOD Graduation 2016.

Undergraduate Programs (DDS) Total	Number of DDS students graduated		
	M	F	TOTAL
	16	6	22
Postgraduate Programs Total	Number of MDent students graduated		
	M	F	TOTAL
	2	1	3

4.2.8 Major Ongoing Research

Several research projects were in progress during the reporting period some of which are internally funded and some externally funded (Table 14).

**Table 15: Major ongoing Research - SOD**

SN	Title of the Research project	Research Coordinator	Department
1.	Nylon teeth myth	Prof. F. K. Kahabuka	Orthodontics. Paedodontics and Community Dentistry
2.	Amalgam phase down project	Prof. F. K. Kahabuka	Orthodontics. Paedodontics and Community Dentistry
2.	Emergence Pattern of Third Molar Teeth among Tanzanians	Dr. E. A Mugonzibwa	Orthodontics. Paedodontics and Community Dentistry
3	Post Doc TASENE Research Award	Dr. M. Mtaya Mlangwa	Orthodontics. Paedodontics and Community Dentistry in Collaboration with Nijmegen University

4.2.9 Major activities Implemented during the year 2016/2017

4.2.9.1 Department of Restorative Dentistry (RD)

During the reporting period the School of Dentistry implemented various activities through their departments as follows:

- (i) Screening of personnel of some public institutions as part of outreach programs and offering of Atraumatic Restorative Technique (ART) by both undergraduate and postgraduate dental students under supervision.
- (ii) Promotion of research activities among staff through writing grant proposals and concept notes.
- (iii) Promotion of collaboration with other Universities and strengthen existing collaborations.
- (iv) Visits to primary schools by postgraduate students and their supervisors were conducted.

4.2.9.2 Department of Orthodontics, Paedodontics and Community Dentistry (OPCD)

- (i) Promotion of research activities among staff through writing grant proposals and concept notes continued.
- (ii) Provision treatment service to children with special needs.
- (iii) Conducting of outreach services to schools.
- (iv) Promotion of collaboration with other Universities.

4.2.9.3 Department of Oral and Maxillofacial Surgery (OMS)

- (i) Promotion of research activities among staff through writing grant proposals and concept notes.



- (ii) Provision of specialized treatment services to adults and children for both outpatients and inpatients.
- (iii) Promotion of collaboration with other Universities and strengthen existing collaboration

4.2.10 MUHAS - MNH Cooperation and Clinical services

Good working relationship and cooperation was maintained between the two institutions during the reporting period (2016/2017). The MUHAS-MNH staff meetings took place every three months. During 2016/17 the school managed to collect slightly more revenue from NHIF payments compared to the previous year. Most of the routine activities in the School were run using internally generated funds with minimal dependence on government subventions.

4.2.11 Visits

Visit to the school of Dentistry

The Vice Chancellor of the Witwatersrand University in South Africa and the Dean of the School of Dentistry of that University visited our school with the aim of establishing collaboration between the two institutions. An inspection team from the Ministry of Education Science and Technology visited the school for inspection. The team was satisfied with the way the School was running.

Elective students from several Universities in the world including the University of Illinois at Chicago (UIC) in US, Dalan University (China) and University of Zimbabwe visited and worked with our students and faculty in the School.

4.3 School of Pharmacy

4.3.1 Introduction



Prof. G. Kagashe

The School of Pharmacy has five Departments namely; Medicinal Chemistry, Pharmacognosy, Pharmaceutics, Pharmaceutical Microbiology and Clinical Pharmacy and Pharmacology. The school has one undergraduate program (Bachelor of Pharmacy) and seven postgraduate programs, which are MPharm Quality Control & Quality Assurance, MPharm Pharmacognosy, MPharm Industrial Pharmacy, MPharm Pharmaceutical Microbiology, MPharm in Hospital and Clinical Pharmacy, MPharm Medicinal Chemistry and MSc Pharmaceutical Management.

The School continued to provide services in drug quality control through its Pharm R & D Laboratory to clients and assisting the Ministry of Health and Social Welfare as well as its various Agencies in several areas of pharmaceutical service policy formulation and implementation.

4.3.2 Highlights of Major Achievements and Challenges

During 2016/2017 the School recorded various achievements as detailed below: -

Teaching and Learning

Academic programs

In the reporting period, the School advertised its undergraduate program and all its postgraduate programs to attract candidates. Various strategies such as Saba Saba, higher education exhibitions within and outside the country were used for marketing the programs. In the reporting period the school in collaboration with TFDA has developed a comprehensive Pharmacovigilance modular course which will be taught by two departments in the school namely Pharmaceutics department and Pharmacology and clinical pharmacy department. The course will be housed in pharmaceutics department and taught under pharmacy practice.

Admission of Postgraduate Students in the School for 2016/2017

During the academic year a total of 7 postgraduate students (Table 15) were. There was a slight decrease compared to year 2015/2016 which recorded a total of 12 students.



Table 16: Admission of postgraduate students in 2016/2017

Program	Female	Male	Total
MPharm QA & QC	1	1	2
MPharm Hospital & Clinical Pharmacy	3	2	5
TOTAL	4	3	7

Admission of Undergraduate Students for 2016/2017

For the undergraduate program, the School admitted 57 students (14 Females and 43 Males). The actual enrolment capacity is 60 students per year.

Student Registration

New and ongoing student registration during the reporting year is summarized in Table 16 and 17 below: -

Table 17: BPharm Student enrollment in 2016/2017

First Year			Second Year			Third Year			Fourth Year			Grand Total		
F	M	Total	F	M	Total	F	M	Total	F	M	Total	F	M	Total
14	43	57	17	67	84	17	61	78	17	39	56	65	210	275

The figure for the first-year students is slightly less by 3 students than the annual admission capacity (60) which was projected by the School in the year 2016/2017. The School plans to maintain this admission capacity for the next academic year while awaiting expansion at Mloganzila Campus. However, the gender balance does not tally (24% female students) with the strategy of the School which had projected the gender balance of at least 30% female students in the year 2016/2017.

The admitted postgraduate students in the period under review were 7 students, slightly lower compared to previous year (2015/2016) which admitted 12 students.

Table 18: Postgraduate Student Admission in 2016/2017

Academic Year	MSc Pharm Management		MPharm QC & QA		MPharm Hospt & Clinical Pharm		MPharm Industrial Pharmacy		MSc by Research	
2016/2017	F	M	F	M	F	M	F	M	F	M
	-	-	1	1	3	2	-	-	-	-
Percentage	-	-	50%	50%	60%	40%	-	-	-	-



Implementation of the Competence Based Curriculum (CBC) and Performance in Examinations

Teaching of CBC for undergraduate (1st, 2nd, 3rd and 4th years) and postgraduate continued normally. Students sat for ordinary CATs and the end of module examinations as scheduled. End of semester Examinations were conducted in March, 2017. Failure rate for the first-year students in March 2017 was 17.5% which was slightly lower compared to year 2015/2016 which recorded a failure rate of 21.8% (Table 18).

The second year students recorded a failure rate of 25% during the semester, which is also slightly lower compared to the previous year of 37.0%. Third year students recorded the highest failure rate (30%) but still lower compared to the academic year 2015/2016 which recorded the failure rate of 40%. Only one first year student was discontinued on abscondment grounds in the March 2017 examinations.

The teaching for 2nd, 4th, 6th, and 8th semesters continued to the end of the year and the end of audit year examinations are scheduled from 4th September to 15th September, 2017.

The academic performance for post graduate students was generally good (Table 19). Only first year students sat for the March 2017 examinations. The second years are on the dissertation module and their results shall be recorded at the end of audit year.

Table 19: Student performances in examination at first sitting

SUMMARY OF RESULTS	1st year	2nd year	3rd year	4th year
Number sat for Examinations	57	84	78	56
Number passed	45	62	54	46
Number failed	10	21	24	10
Incomplete results	2	1	0	0
Filure rate (%)	17.5	25.0	30.8	19.9

Table 20: Postgraduate Students performance

Number of students	MPhram Hospt. Clin Pharm.	MSc Pharm. Mangt
	Year 1	Year 1
Sat for Exam	2	4
Passed	1	4
Failed	1	0
Failure rate	50%	0%

Student output

A total of 53 undergraduate students and 11 postgraduate students graduated during the December, 2016 graduation ceremonies.

4.3.3 Human Resource Development

During the year under review (2016/17), Two Technical Staff (Health Laboratory Technician and Laboratory Scientific Officer) from the departments of Medicinal Chemistry completed their master's program and had their graduation ceremonies in December 2016.

On the other hand, two academic members of staff graduated in MPharm Hospital and Clinical Pharmacy and MSc Pharmaceutical Management during December 2016 graduation ceremonies. These belong to the Departments of Clinical Pharmacy and Pharmacology and Pharmaceutics respectively. Also, the School had academic staff on studies. The list of the same is as presented in Table 20.

4.3.4 Research and Publications

Research/seminar disseminations: In order to strengthen academic activities, the School conducts symposiums on every Wednesdays from 12.45 to 13.45. In the period under review eight (8) symposia were conducted.

Research and Publications in the School: During the year under review, individual faculty in the School continued to carry out research in various topics and published their results in various journals. A total of 20 scientific publications were published in various peer reviewed scientific journals.

Scientific/Professional conferences/Workshops: A total of 14 members of academic staff attended the 4th MUHAS Scientific Conference held on 23rd to 24th June, 2016 and five (5) Postgraduate Students were invited and these presented their research findings. Three (3) presentations came from Department of Medicinal Chemistry/Pharm R&D Lab and two (2) presentations from Department of Pharmaceutics. The School also plans to participate in the upcoming 5th MUHAS Scientific conference which is scheduled on 29th & 30th June, 2017.

**Table 21: Academic staff training during the reporting period**

S/N	Name	Department	Degree Sought (Institution)	Status
1	Mathias Eulambius	Pharmaceutics	PhD (KIS) Sweden	To graduate in 2020
2	Roggers Mwakalukwa	Pharmacognosy	PhD (Kyushu University) Japan	To graduate in 2021
3	Wigily Mikomangwa	Clinical Pharmacy and Pharmacology	MSc by Research (MUHAS)	To graduate in 2019
4	George Msema Bwire	Pharmaceutical Microbiology	MSc in Medical Microbiology and Immunology (MUHAS)	To graduate in 2018
5	Manase Kilonzi	Clinical Pharmacy and Pharmacology	MSc by Research (MUHAS)	To graduate in 2019
6	Masota, Nelson	Medicinal Chemistry	MSc by research (MUHAS)	To graduate in 2017
7	Dickson Pius	Pharmaceutics	PhD (China Pharmaceutical University) China	To graduate in 2019
8	Fatuma Felix	Pharmaceutical Microbiology	MSc Microbiological Biochemical Pharmacy (China Pharmaceutical University)	To graduate in 2018
9	Ritah Mutagonda	Pharmacognosy	PhD (KIS) Sweden	To graduate in 2017

4.3.5 Five year Rolling Strategic Plan 2014/15 - 2018/19

The School's five years rolling strategic plan has been revised for the upcoming Strategic plan workshop which is scheduled in June, 2017. Inputs from School level and University-wide strategic planning workshop which was held from 19th to 20th June, 2016 were incorporated.

4.3.6 Consultancy and Ppublic services

During 2015/2016, the School received a total of TZS 54,513,144.20 and USD 24,854.89 from various activities carried out in the school through short courses. The University generated USD 3,573.89 and TZS 8,176,971.63 as Institutional Overheads (15%) as shown in Table 21.

**Table 22: Internally generated funds and Institutional Overheads in 2016/17**

S/N	ACTIVITIES	QUARTER	TSHS.	USD.	OVERHEADS 15%
1	Sample Testing	1 st	20,312,651.00		TZS3,046,897.65
2	Sample Testing	2 nd	34,200,493.20		TZS5,130.073.98
		2 nd		4,335.00	USD 650.25
3	Consultancy services	3 rd		9,632.00	USD 1,444.80
	Sample Testing	3 rd		3000.00	USD 450.00
4	Consultancy services	4 th		7,887.75	USD 1,028.84
TOTAL		USD		24,854.75	3,573.89
TOTAL		TZS	54,513,144.20		8,176,971.63

4.3.7 External Examiners

During the March 2016/2017 University examinations, the following External examiners were invited to examine in Departments of the School: -

- (a) Dr. Mahmoud Fahmi Esebai, Mansoura University, Egypt for Pharmacognosy.
- (b) Prof. Gilbert Kongola from CUHAS served as external examiner for Department of Clinical Pharmacy and Pharmacology.
- (c) Dr. Lucy Namkinga from UDSM for Pharmaceutical Microbiology.

The following summary of recommendations was made by the external examiners and pertinent reactions/responses made by the respective Departments: -

Department of Pharmaceutical Microbiology: The external examiner observed a lot of variations (no uniformity) in setting examinations of the same subject but different modules. It seems the Department has no tradition of examination moderation and the School sets no examination formats. The Department concurred and explained that the diversity in exams format was due to the nature of the course content and the Competency based curriculum allows the variation. The external examiner also reported failure of students to follow instruction such as candidate number, course code and names of Departments on the first page of the answer booklet. The Department concurred and will re-emphasize to invigilators to continue spending a few minutes at the start of the exam to remind students to fill the first page. In addition to that the department is requesting the University to revise the wording of the first page of the answer booklet to include straight forward directives and remove words/phrases not required.

Department of Clinical Pharmacy and Pharmacology: The external examiner observed improvement in performance from module one to three for students in the second and third years and associated the trend with the increased attention by the students to the subject and



hence better performance. The external examiner advised that lecturers should counsel students on putting efforts from the very beginning of the course than waiting to initially score low then give more attention. He also suggested that tutorials should be introduced right from the beginning of the first module in order to enhance understanding of the subject and improve performance. Students who miss classes should be counseled by their academic advisors and those who are weak should spend time to discuss with their academic advisors and find ways to help or advise to switch to other activities or apply for other courses to other universities to rescue the time they waste in struggling to re-seat for examination in the course while sometimes they clearly know that they are not going make it. The Department concurred and determined to use a combination of class conveners and academic advisors to sensitize and advise the students on the same. The Department However, has been using both tutorials and student's presentations as training methods. The external examiner also noted that during oral examinations some students could hardly answer any questions and had to be prompted before they could give any answer, and recommended that Oral Performance during oral examinations can be improved if the students can be exposed to tutorials and case presentation during the class time. The department concurred with the external examiner's comments that some students have communications problem when using English Language especially in oral examinations. The department recommends to the University to establish English language course program for undergraduate students.

Department of Pharmacognosy: The external examiner recommended that local plants that are used as pesticides should be taught rather than just teaching known products. This will stimulate research on such products. The department agreed with the external examiner and that they will compile local plants with confirmed pesticide effects and decide which ones to be taught. On the module on Standardization and Quality control of herbal drugs, the external examiner recommended to have well supervised QC practical's on at least one or two local herbal products. This can be carried out continuously for the period of three years to collect sufficient data as an effort to prepare a Tanzanian Pharmacopeia. The department concurred with recommendations. Despite the drawbacks of inadequate facilities, the department will start by working on parameters that are within their limits e.g. Morphological/Microscopical characters, Quantification/Assaying, and Ash values

4.3.8 Challenges Faced by the School during the reporting year

Infrastructure: The School continued to experience severe constraints in infrastructure for all core activities (Teaching, Research and Consultancy) in terms of space, equipment, reagents and funding. The school is trying to address these challenges through writing research proposal and income generation proposal to obtain funds. The school has also been proposing to the University authority to set budgetary support for purchase of undergraduate chemicals and equipment so that the competences stated in the curriculum can be attained.

Staffing: During the reporting time, staffing continued to be inadequate in most of the Departments. Pharmaceutics Department which is responsible for teaching two courses to undergraduate B. Pharm students and two (2) programs for postgraduate has one associate



professor on administrative post, one retired professor, two (2) staff who graduated in year 2015 after completing their PhDs but only one is available for duties whereas one went back to Norway for postdoctoral studies. There are two assistant lecturers of whom one is on PhD studies. This gives a staff-student ratio of 1:112 taking into consideration the two subjects then it gives a ratio of 1: 224. The Department of Pharmaceutical Microbiology had three (3) faculties two of whom also had administrative responsibilities and one is a tutorial assistant. This was therefore a staff-student ratio of 1: 93 for the department. Department of Medicinal Chemistry had two (2) staff with administrative duties and two (2) staff in charge of R&D Laboratory. Other staff without administrative responsibilities included one associate professor and two tutorial assistants. The staff-student ration was therefore 1: 40. The Department of Pharmacognosy had two (2) faculties who were on post-retirement contracts, one (1) Senior lecturer, one (1) associate professor and (1) assistant lecturer. This gave a staff-student ratio of 1:46. The Department of Clinical Pharmacy and Pharmacology had a total seven (7) faculties, two (2) of whom had administrative duties, one was on postdoctoral studies, one (1) was pursuing her PhD studies. It also had one (1) assistant lecturer and two (2) tutorial assistants who were about to receive provisional registration at MUHAS for their master's degrees by thesis under Sida bilateral funding. This therefore translated to staff-student ratio of 1:40 for the Department.

In order to address the staff inadequacy, the school intends to recruit more staff if permission to employ is granted. The School has also been identifying potential final year B Pharm students for recruitment as tutorial assistants and subsequently encouraging them to register for postgraduate studies in the School.

4.4 School of Nursing

4.4.1 Introduction



Dr. Edith Tarimo

The Annual Report for the year 2016/2017 consists of two main sections: Introduction and Highlights of Major Achievements and Challenges. In the academic year 2016/17 the School of Nursing (SON) continued to perform its core functions of teaching, research and public services as well as establishing links

and other collaborative activities. The School is currently running three (3) Undergraduate programs and three (3) Postgraduate programs namely, Bachelor of Science in Nursing, Bachelor of Science in Midwifery, Bachelor of Science Nursing Management (last cohort - planned to be upgraded to MSc Nursing Management in future), Master of Science Nursing in Mental Health, Master of Science Nursing in Critical Care and Trauma, and Master of Science in Midwifery and Women's Health.

4.4.2 Highlights of Major Achievements and Challenges

4.4.2.1 Major Achievements

During 2016/2017 reporting year, the School recorded various achievements as detailed below:

Teaching and Learning: Compared to year 2015/2016, in 2016/2017 the total enrollment of both Undergraduate and Postgraduate students decreased by 13.28% and 9.5% respectively (Table 22)

Table 23: Enrolled Undergraduates and Postgraduates in 2016/17

Programs	Enrolled students in 2015/16	Enrolled students in 2016/17
Undergraduate Programs	241	209 (13.28% decrease)
Postgraduate Programs	42	38 (9.5% decrease)
Total	283	247 (12.72% decrease)

For the year 2016/2017, a total of 56 applicants was registered to join both undergraduate and postgraduate programs in the SON. The distribution was as follows; BSc Nursing thirty-eight (38); MSc Nursing in Mental Health two (2), MSc Nursing in Critical Care and Trauma six (6) and MSc Midwifery and Women's Health ten (10). Overall, there was a decrease in total number of 1st year registered students for both Undergraduate (41.54% decrease) and



Postgraduate (30.8% decrease) programs. The percent decrease for Undergraduate was due to suspension of enrolling new BSc Midwifery students. For Postgraduates, the number of applicants who registered was only 50% of the expected due to lack of sponsorship, and availability of a similar MSc Programs at Kilimanjaro Christian Medical College (KCMC) (Table 23).

Table 24: 1st year Undergraduates and Postgraduates in 2016/17

Program	Registered students in 2015/16	Registered students in 2016/17
Undergraduates		
BSc Nursing	43	38 (11.63% decrease)
BSc Midwifery	22	0 (100% decrease)
Total	65	38 (41.54% decrease)
Postgraduates		
MSc Nursing Critical Care and Trauma	6	6 (No change)
MSc Nursing Mental Health	0	2
MSc Midwifery and Women's Health	20	10 (50% decrease)
Total	26	18 (30.77% decrease)

Performance in examinations: The percent of undergraduate students who passed all courses in the first sitting increased from 77.2% in 2015/16 to 83.9% in 2016/17. Also, supplementing students decreased from 20.5% to 15.7%. The percent of discontinued students in 2015 was very low (2.6%), there were no discontinued students in 2016/17. The pass in first sitting for postgraduate students decreased slightly from 87.9% in 2015/16 to 83.3% in 2016/17. This could be due to quality of students enrolled in the program; however, there was no discontinuation among postgraduate students (Table 24).

Table 25: Undergraduates and Postgraduates Performance in 2015 and 2016

Program	July 2015			July 2016		
	Pass	Supplementary	Disco.	Pass	Supplementary	Disco.
Undergraduates						
BSc Nursing	116/147 (78.9%)	27/147 (18.4%)	4/147 (2.72%)	145/167 (86.8%)	21/167 (12.6%)	1/167 (0.6%)
BSc Midwifery	43/59 (66.2%)	15/59 (25.4%)	1/59 (1.69%)	50/65 (76.9%)	15/65 (23.1%)	0
BSc Nursing Management	11/14 (78.5%)	3/14 (21.4%)	0	3/5 (60%)	2/5 (40%)	0
Total	170/220 (77.2%)	45/220 (20.5%)	0	198/236 (83.9%)	37/236 (15.7%)	1/236 (0.42%)
Postgraduates						
MSc Nursing Critical Care and Trauma	17/19 (89.5%)	2/19 (10.5%)	-	11/12 (91.7%)	2/12 (8.3%)	-
MSc Nursing Mental Health	4/5 (80%)	1/5 (20%)	-	2/2 (100%)	-	-
MSc Midwifery and Women's Health	8/9 (88. (%)	1/9 (11.1%)	-	22/28 (78%)	6/28 (21.4%)	-
Total	29/33 (87.9%)	4/33 (12.1%)		35/42 (83.3%)	7/42 (16.7%)	

Graduation in 2016 for Undergraduates and Postgraduates: Comparing with the year 2015, in 2016, the number of graduates in Undergraduate and Postgraduate programs increased by 42% and 68.75% respectively (Table 25).

**Table 26: Number of graduands in Undergraduate and Postgraduate Programs in 2015 and 2016**

Programs	Number of Graduates in December 2015	Number of Graduates in December 2016
Undergraduates		
BSc Nursing	26	44 (69.2% increase)
BSc Midwifery	15	24 (60% increase)
BSc Nursing Management	9	3 (66.67 decrease)
Total	50	71 (42% increase)
Postgraduates		
MSc Nursing Critical Care and Trauma	13	6 (53.85% decrease)
MSc Nursing Mental Health	3	2 (33.33% decrease)
MSc Midwifery and Women's Health	0	19
Total	16	27 (68.75% increase)

Curriculum: The three MSc curricula (MSc Mental Health Nursing, MSc Critical care and Trauma Nursing and MSc Midwifery and Women's Health) were revised to competence-based and submitted for approval through Senate Higher Degree Committee.

Exhibitions: In June/July 2016, one (1) staff from Community Nursing Department participated in Sabasaba exhibitions whereby SON demonstrated various health checkups. For example, demonstration of first aid for helping a choking baby and counseling about family planning. In June 2017, two (2) staff from School participated in the Sabasaba exhibitions and demonstrated various activities. For example: comprehensive description and demonstration on the use various family planning methods with emphasis on long term methods. All events and procedures attracted many participants.

4.4.2.2 Collaborations and Networking

International Links: In the year 2016/2017, the School received twenty-three (23) Senior level visitors and for (4) external examiners. Most of these visitors were potential collaborators from various academic institutions. The number of visitors in 2015/2016 was forty-two (42) and four (4) external examiners. Therefore in 2016/17 there was a decrease by 42.2%. During these visits, three (3) MoUs focusing on research projects, faculty/students



exchange were signed between the MUHAS, School of Nursing (SON) and collaborating Institutions.

Through the Afya Bora Consortium (ABC), which is formed by nine (9) Universities, MUHAS (Tanzania), Makerere (Uganda), Nairobi (Kenya), Botswana (Botswana), Buea (Cameroon), University of Washington, UCSF, Pennsylvania and John Hopkins (USA), one faculty actively continued to represent the School in the technical working team, and one junior faculty was awarded a prize for her final research report, after completing the fellowship in June, 2017.

NEPI, a collaborative elective exchange within three Universities namely Makerere University, Uganda, Ekwedeni University, Malawi and MUHAS was established in March, 2017. During the reporting period, partnerships for research, teaching and student exchange with various Universities e.g. Bergen University College, Norway ; University College of Southeast Norway, Norway; University of Southern Denmark, Denmark; Uppsala University, Sweden; Department of Health, State of Western Australia, The Global Health Alliance Program; Nagasaki University, Japan; The St. Luke's International University, Tokyo Japan; Hanze University of Applied Sciences, Groningen, the Netherlands; Dalhousie University, Canada; Pennsylvania State University, USA; and Wright State University, USA continued successfully.

Local Links: The School of Nursing continued to collaborate with other Schools of Nursing in the eight Universities of health sciences (public and private) in Tanzania through the Deans Forum. These are: University of Dodoma (UDOM), Dodoma; Catholic University of Health and Allied Sciences (CUHAS), Mwanza; St. Johns University, Dodoma; Aga Khan University, Dar es Salaam; Hubert Kairuki Memorial University, Dar es Salaam; International Medical Technology University, Dar es Salaam; and Kilimanjaro Christian Medical College, Moshi. The Forum intends to collaborate in various activities to promote Nursing and Midwifery Education and Professionalism in Tanzania. The SON therefore strived to maintain and strengthen these links and made concerted efforts to promote International, Regional and Local Links.

Also, the School continued to collaborate with other Institutions such as Muhimbili National Hospital, Dar es Salaam, Municipal Hospitals, Dar es Salaam, Mirembe Referral Hospital and Isanga Institute, Dodoma and Lugalo Military Hospital, Dar es Salaam for students' clinical placements.

The Department of Community Nursing collaborated with Ilala Municipal Council, Nipe Fagio, and Rejuvenation Fund in environmental activities. Activities included: cleaning the mangrove forest of plastic waste at Selander Bridge attended by more than 100 people; and participation in this year's municipal tree planting campaign, including donating 200 of the highly threatened *Dypsis pembana* which enabled Ilala District to become an International Gene Bank for this unusual palm.



Research and Publications: During the year under review, faculty in the School carried out research and submitted proposals for ethical clearance and manuscripts for publications in International Journals and 14 papers were published in peer reviewed Journals. This was an increase by 16.7% compared to twelve (12) papers published in 2015/16. However, the number of publications whereby a faculty member was the first author decreased to 4 which is a 20% decrease compared to 5 in 2015/16. Three (3) Faculty participated and presented papers in the 5th MUHAS Scientific Conference which took place on 29th and 30th June 2017. This was an increase of 50% compared to two (2) Faculty who participated and presented papers during the 4th MUHAS Scientific Conference held between 23rd and 24th June, 2016 in 2015/16.

4.4.2.3 Human Resource Development in the School of Nursing

Staff Recruitment: The school has an obligation to maximize its collaborative opportunities to ensure adequate staffing levels are reached by all means. For example, in 2015/2016, the School recruited only one Peace Corps Volunteer to help teach critical care and trauma, but in 2016/2017 the school recruited two (2) Peace Corps Volunteers to assist teaching Critical Care and Midwifery specialties. The School is also utilizing exchange teachers from existing collaborations such Japan, U.S.A and Sweden. Thus, the School is striving through various means to overcome the challenge of inadequate number of faculty through collaborative efforts.

Staff development: In the year under review 2016/17 two (2) faculty continued with PhD training abroad, at St. Lukes University in Japan (Beatrice Mwilike) and China (Fatima Ramadhan). Beatrice Mwilike is planning to defend her PhD during 2017/18 academic year. In addition, five (5) faculty were locally recruited for postgraduate studies; four (4) for PhD (three (3) males and one (1) female) and one (1) (male) for MSc by research under Sida supported funding. Also, one (1) (female) was registered in MSc MWH, a full-time program.

In addition, during the reporting year, most staff participated in workshops as well as other Continuing Education for professional Developments. In line with the President's Directives on travels, the numbers of local travels increased compared to International travels by overall 50% increase (Table 26). This implies academic staff members were able to interact and render services to the local community and also internationally.

Resource Mobilization: A major source of income for the School during the reporting period was from the elective students' supervision. A total of 66 elective students were registered and completed their attachments at the School which is an increase by 127% compared from twenty-nine (29) in 2015/2016. During academic year 2016/17, a total of TZS 37,665,347/= was generated from elective students compared to TZS 32,371,518/= generated in 2015/2016. The observed increase of 16.4% of the amount generated in 2016/17 has been attributed to more networks and collaborations created resulting to more students applying for elective attachments at School of Nursing, MUHAS.

**Table 27: Number of international travels versus local travels 2016/2017**

Period	International travels (Outside Tanzania)	Local travels (Within Tanzania)	Local travels Percent increase / decrease
July/September 2016 Quarter	6	8	33.3% increase
October/December 2016 Quarter	6	5	16.6% decrease
January/March 2017 Quarter	3	7	133% increase
April/June 2017 Quarter	3	7	133% increase
TOTAL	18	27	50% increase

4.4.3 Challenges faced by the School during the reporting period

Infrastructure: Although the School continued to share facilities (teaching venues, research facilities and clinical placements) with other Schools, Muhimbili National Hospital, and Municipal Hospitals. Another major constrain is office space; only 40% of faculty have office space. The School still lacks a fully adequately equipped Simulation Laboratory with items such as Models and Simulation materials; however, major progress has been made on this lack in that this year, a Simulation Center has been opened and is in use. There are six (6) working manikins and numerous supplies, in the skills lab of the Haille-Debas Center for Health Professions (HD-CHPE) building.

Staff: Staffing is in a crisis situation in all three (3) Departments. Department of Clinical Nursing is responsible for teaching ten (10) Undergraduate and Postgraduate courses, but the Department hosts eight (8) Faculty only two (2) of whom are 80%-time students). The Department of Nursing Management has four (4) Faculty one (1) of whom is an 80% student) who are responsible for eight (8) courses; the Department of Community Health Nursing has six (6) Faculty three (3) of whom are full-time or 80%-time students) who are responsible for teaching ten (10) courses. (These courses exclude the basic science subjects which are taught by Faculty from the School of Medicine.) This is a huge challenge for faculty in the School of Nursing. Senior Faculty do not have adequate time for quality teaching, research, consultancy services and administrative responsibilities (which now include MAMC).

Overall, per total number of two hundred eight three (283) students, by using WHO and TCU ratios, the School has a deficit of five (5) and nineteen (19) Academic Staff respectively. In brief, the School hosts only sixteen (16) Faculty members who are Assistant Lecturers and above namely: four (4) Senior Lecturers, two (2) Lecturers, ten (10) Assistant Lecturers, and of these, five (5) must devote most of their time to their PhD studies.

4.5 School of Public Health and Social Sciences

4.5.1 Introduction



The School of Public Health and Social Sciences continued addressing the core functions of the University which are training, research and community service as well as establishing new links and collaborative activities. The School has a total of 80 staff among, which 67 are academic staff and the rest are administrative and technical staff. The School also has eleven staff supported by projects.

4.5.2 Programs

Prof. David. Urassa

The School hosts one Undergraduate Program namely Bachelor of Science Environmental Health Sciences (BSC EHS) and fourteen postgraduate programs namely, Master of Public Health (MPH) Regular Track, Master of Public Health (MPH) Executive Track and Master of Public Health (MPH) Distance Learning, Master of Arts in Health Policy and Management (MA HPM), MSc in Tropical Diseases Control (MSC TDC), MSc in Applied Epidemiology (MSc-AE), MSc in Epidemiology and Laboratory Management (MSc ELM), MSc in Parasitology and Medical Entomology (MSC PE), Master of Medicine Community Health MMed Com Health), Master in Behavior Change (MSc BC) and Master in Behavior Change Communication (MSC BCC) for Health, MSc. in Environmental and Occupational Health (MSc EOH), MSc in Bioethics and Health Professionalism (MSc BEHP) and MSc Health Information Management (MSc HIM).

Furthermore, the School is in the process to establishing more postgraduate programs including MSc in Project management, monitoring and evaluation (MSc PMMEH), Master of Public Health Online (MPH OL), Master of Business Administration in Health Services Management (MBA HSM), MSc in Biostatistics (MSc Biost) and MSc in Health Care Delivery Science (MSc HCDS).

4.5.3 Human resources capacity of the existing departments

The existing departments have a total of 83 academic and technical staff. Of them 78 are the academic staff and 5 are technical or laboratory staff. Despite the shortage of academic staff, the available workforce has been able to maintain the high academic standards of the SPHSS and the school at large. Table 27 below displays the distribution of such academic members for various departments. Of the 78 academic or teaching staff, 66 faculty are permanent employees while 12 are affiliated staff working in different institutions or schools within MUHAS but not SPHSS. Out of 12 of such staff members, 11 participate in teaching the joint courses in master courses in the department of Epidemiology and Biostatistics. They are from the following institutions: Ministry of Health (5); Center of Disease Control (2); National Institute of Medical Research (2); School of Nursing (1); and Institute of

Traditional Medicine (1). One faculty teaches at the department of Environmental and Occupational Health is a legal officer and a faculty from The Open University of Tanzania.

Table 28: Academic staff by Rank in the departments of SPHSS during 2016/17

SN	Departments	Professor	Associate professor	Senior lecturer	Lecturer	Assistant lecturer	Tutorial assistant	Adjunct Staff	Total
1	Community Health	1	2	1	1	3	0	0	8
2	Behavioral sciences	1	1	2	1	3	1	0	9
3	Development studies	0	1	1	4	4	3	0	13
4	Epidemiology and Biostatistics	1	2	5	1	1	2	11	23
5	Environmental and Occupational Health	0	0	3	5	4	6	1	19
6	Parasitology and Medical Entomology	1	0	3	1	1	0	0	6
7	Bioethics	0	0	0	1	3	0		
	Total	4	6	15	13	16	12	12	78

4.5.4 Workshops/Meetings Attended

- (i) In the year 2016/2017 the department of Epidemiology and Biostatistics had meeting with DANIDA project community advisory board which took place on 29th August, 2016 at MUHAS. Representative from key population, community members and policy makers attended.
- (ii) One member from the department of Parasitology and Medical Entomology attended a workshop organized by NIMR and PATH to finalize clinical trial proposal for monitoring efficacy of antimalarial drugs at sentinel sites Stella Maris Hostel, Bagamoyo District,
- (iii) One member from department of Environmental and Occupational Health attended an Implementing Research Workshop organized by NIMR and WHO/TDR in Morogoro Region and staff from the department of Epidemiology and Biostatistics



- attended National Poliomyelitis Expert Committee Meeting in Morogoro which aimed at reviewing the 2016 Annual Polio Eradication Progress in Tanzania.
- (iv) Prof Anna Farnet, from Division of Infectious diseases Karolinska Institute, Sweden visited the department and presented a paper on Malaria epidemiology in Nyamisati Rufiji.
 - (v) Two members from department of Environmental and Occupational Health organized a Scientific writing workshop for postgraduate students 13th – 17th July 2016 with support from NORHED funds. Two members in the same department attended a key population project evaluation workshop at the University of Oslo, Norway,
 - (vi) Member of staff from different departments attended the Higher Education Summit at the Dar Es Salaam International Conference, Dar es Salaam, Tanzania, also attended training on use of electronic data collection using Open Data Kit (ODK) sponsored by CDC SHARE-IT PROJECT.
 - (vii) Two members from department of Environmental and Occupational Health attended a Global Health Summit on Sustainable Development and Global Health Course Training of Trainers in Manila, The Philippines. Two other members of staff attended the NORAD/NORHEAD Dissemination Seminar on Impact of Education and Research on Occupational Health in Tanzania: From research to public action in Dar-es-Salaam. Other two staff attended NORHED Research group meeting at South Star International Hotel, Hawassa, Ethiopia, 09th – 13th May 2017. Another attended stakeholder meeting on review of guidelines for WASH in health facilities arranged by Ministry of Health
 - (viii) One member of staff from department of Environmental and Occupational Health attended a workshop on MoH Surveillance of Zoonotic diseases in Morogoro. Furthermore, three members of staff attended NIMR-Annual Joint Conference at Mwalimu Nyerere Center. Another from the department of Parasitology and Medical Entomology attended MoH Surveillance of Malaria June 2017 at NMCP and NTD-Annual Joint Meeting Bahari Beach Hotel; May 2017
 - (ix) The Dean together with heads of Departments met with a delegation from Fudan University in China. The meeting aimed at discussing possibilities for areas of collaborations. The Team further met with key staff in research clusters to discuss further on how to build strong collaborations in areas of research. Further discussions will also be held in future.
 - (x) A member of staff from department of Epidemiology and Biostatistics, attended a key population project evaluation workshop at the University of Oslo, Norway. He further attended the Higher Education Summit at the Dar Es Salaam International Conference, Dar es Salaam, Tanzania.
 - (xi) One member from the department of Epidemiology and Biostatistics attended National Poliomyelitis Expert Committee Meeting in Morogoro which aimed at reviewing the 2016 Annual Polio Eradication Progress in Tanzania. Another staff

- from attended the 4th Data safety Monitoring Board (DSMB) meeting of the MaxART project in Swaziland.
- (xii) Two members of staff from the department of Parasitology and Medical Entomology and department of Epidemiology and Biostatistics attended a National Malaria Control Program (NMCP TES) planning and Dissemination meeting and OCHEA workshop to improve MPH module contents in Bagamoyo. Another member from department of Epidemiology and Biostatistics participated in writing workshop also organized by Ocean Bagamoyo.
 - (xiii) One member from the department of Epidemiology and Biostatistics attended several meetings; OHCEA Year 3 work plan kickoff meeting in Kampala, Uganda, National One Health Strategic Plan Costing workshop organized by the One health Coordinating Unit, Prime Minister's Office in Dar es Salaam, the National Stakeholders' Consultation Workshop on Re-Orientation of the Emerging Pandemic Threats Phase 2 (EPT-2) Work Plan to GHSA and National Priorities in Dar es Salaam organized by FAO, the Zoonotic Disease prioritization workshop organized by CDC in Dar es Salaam and the East African Scientific Conference and Trade Fair to present a Keynote Speech in Bujumbura, Burundi.
 - (xiv) One member from the department of Epidemiology and Biostatistics attended the 14th Ordinary Meeting of the EAC Sectoral Council of Ministers of Health, Bujumbura Burundi, represented MUHAS in discussing the progress and challenges in the implementation of the Centres of excellence project.
 - (xv) One member of staff from department of Epidemiology and Biostatistics attended a short course on Implementation Science & Health Economics for Research organised jointly by MUHAS, African Academy for Public Health(AAPH) and Harvard T. Chan School of Public Health, a short course from 14-16 February 2017 on Grant Proposal writing, Research Career Service, Innovation and Clinical Trials Management organised by Karolinska Institute and MUHAS, another from department of Environmental and Occupational Health facilitated Global Medicine Course organized by Kalorinska group in Sweden and MUHAS in Tanzania.
 - (xvi) All members of staff from and SPHSS attended training on Updates on HIV care and treatment, sponsored by CDC SHARE-IT PROJECT, training on use of electronic data collection using Open Data Kit (ODK) sponsored by CDC SHARE-IT PROJECT. Also attended one-week training on SPHSS supervisors' workshop: supervision of post-graduate students, organized by SPHSS. Three staff from the department of Epidemiology and Biostatistics attended training on improving student lecture interactions from 16-19 May 2017, sponsored by CDC SHARE-IT PROJECT and one member facilitated a workshop on monitoring and evaluation for SPHSS staff facilitated by SHARE IT Project
 - (xvii) One member from department of Environmental and Occupational Health and SUA professors facilitated a joint training to BSc Environmental Health sciences (EHS) and sokoine University of Agriculture (SUA) veterinary students at SUA using One health concept to identify Zoonoses of public health importance in the EPT preparedness SUA, Morogoro



- (xviii) Three members from department of Environmental and Occupational Health attended a first meeting of Climate Change committee under the chairmanship of Head of the department.
- (xix) Members of staff from the department of Bioethics and Health Professionalism organized workshop on Scientific Integrity and facilitated the workshop in collaboration with DMRET stakeholder from Dartmouth and University of Pennsylvania. Also conducted a meeting with DMRET project collaborators held on 9th of March 2017 to discuss the progress of the MBE students sponsored by DMRET. Among the issues discussed was transfer of the staff from school of nursing to school of Public Health and department for proper department functioning.
- (xx) One staff from department of Environmental and Occupational Health attended three meetings; Project Regional Meeting on reducing UPOPs and Mercury release from the health sector in Africa arranged by UNDP Istanbul, Turkey from 31st May to 4th June 2017, Working session to develop National Health Adaptation Plan (HNAP) for climate change organized by WHO and Ministry of Health: 15th-16th June 2017 Morogoro and National Environmental Health competition as Assessor in Mara and Mwanza Regions: June 2017.
- (xxi) One staff from the department of Epidemiology and Biostatistics travelled to Rombo to train trainers of trainers for the Resilience project from 8 to 13 May 2017, attended a training workshop for adding engaging activities in video and textual content in e-learning 20/7 to 23/7/2017, attended a workshop on implementation research on 24/7/2017, facilitated the intermediate course of Field Epidemiology Training from 3 to 8 May 2017.
- (xxii) One member from the department of Bioethics and Health Professionalism attended 13th International Clinical Ethics and Consultation Conference 25th to 27th May, 2017- Singapore, Presented a paper: Assessment of Clinical Ethics Oversight in Tanzania 2nd Sickle Cell Disease Ontology workshop 29th May to 02nd June, 2017- University of Cape Town
- (xxiii) Members of staff from department of Environmental and Occupational Health facilitated Global Medicine course in Bagamoyo from 29th May to 2nd June 2017. Ezra Mrema, Gloria Sakwari, Vera Ngowi, Hussein Mwanga and Simon Mamuya submitted abstracts for ICOH conference for 2018.
- (xxiv) One member from department of Environmental and Occupational Health participated in a technical working group meeting for TB in mining sector project at Palace Hotel in Arusha, 08 – 10 June, 2017. Also, Dr Hussein Mwanga and Gloria Sakwari participated in a dissemination workshop for “Elimination of Dust Hazards in the Mines Toolkit” on the 22 June, 2017 at Slipway Hotel, Dar es Salaam.
- (xxv) Several members from different departments participated in Monitoring and evaluation training in June, 2017 conducted under School of Public Health and Social Sciences, also attended supervisors workshop which was held on march, 2017 by School of Public Health and Social Sciences



- (xxvi) Members of department of Behavioural Sciences participated in the supportive supervision workshop facilitated by SHARE IT Project, one member facilitated the supportive supervision workshop supported by SHARE IT Project.
- (xxvii) One member from department of Development studies was among key speakers in International Conference on Community Health Financing which was held in Uganda.
- (xxviii) Four members from department of Development studies attended training on creating interactive sessions which was conducted by School of Public Health and Social Sciences in May and June 2017.
- (xxix) From department of Development studies, three members initiated and conducted short course on Customer care services. This course was conducted under Yepi-See Project in collaboration with department of Development studies. Dr Linda Simon Coordinated a short course on Hospital Management for health professionals in April 2017
- (xxx) Several members from the school Majority from department of Development studies participated in MUHAS scientific conference in June 2017. Some members played a key role in the organizing committees.

4.5.5 Teaching

Teaching and Examinations:

- (i) A total of Seventy-five (109) undergraduate students sat for Semester II, IV and VI University examinations in August, 2016. Out of these 19 (17.4%) students failed in different subjects and were recommended to supplement the failed subjects in October, 2016. The rest of the students passed and the School Board recommended to Senate that they proceed to the next semester. A total of 18 finalist students were recommended to be awarded BSc EHS degree.
- (ii) A total of 123 postgraduate students sat for the University examinations in August, 2016, seventeen (17; 13.8%) students failed different subjects and were recommended to supplement the failed subjects in October 2016. The rest of the students passed and were recommended to proceed to next semester.
- (iii) Fifty-two (52) students submitted their dissertations for examination and defense. Forty-seven (47; 90.4%) students passed subject to making minor corrections and the School Board recommended that they be awarded master degree subject to submission of error free dissertation within one month. Five (5; 9.6%) students passed subject to making major correction and the Board recommended they submit error free dissertation within three months. Students with incomplete results were recommended to sit for the postponed examinations when next offered. A total of five students were discontinued on absconment grounds.
- (iv) Furthermore, members of staff continued with teaching of both postgraduate and undergraduate students within the School and the University at large for those



crosscutting courses. Staff supervised students in writing their dissertations and also travelled to various part of the country to carry out field supervision.

- (v) A total of 81 postgraduate and 18 undergraduate (BSc EHS) students completed their program courses in the academic year 2015/16. Three candidates also completed their PhD training and together with the others they were conferred their degrees by the Chancellor during the 10th Graduation Ceremony held at MUHAS-Graduation Square on 3rd December, 2016.
- (vi) For the academic year 2016/2017 the school admitted 36 undergraduate students and 88 postgraduate students. Total of (147) postgraduate students sat for the University examinations in March, 2017, seventeen (34) students failed different subjects and were recommended to supplement the failed subjects in October 2017. The rest of the students passed and were recommended to proceed to next semester and four (4) MPH executive program students passed and were recommended to be awarded an MPH degree after submitting an error free dissertation.
- (vii) A total of one hundred thirty-five (135) undergraduate students sat for Semester I, III and V University examinations in March, 2017. Out of these 22 students failed in different subjects, nineteen (19) were recommended to supplement the failed subjects in October, 2017 and three (3) were discontinued on the academic grounds. The rest of the students passed and the Board recommended that they to proceed to the next semester.

4.5.6 Short Courses

- (i) Four different short courses were conducted during this reporting year namely; Manuscript writing, advanced epidemiology, nominal data analysis and data management and curriculum development for monitoring and evaluation course. Main participants in the short courses were MUHAS faculty together with postgraduate students and funding was obtained from Strengthening Human Resources for Health through Public Health Training Improvements at MUHAS (SHARE IT) and Office of Directorate of Research and Publication.
- (ii) Proposal development short course was conducted on 21-25 November and 5-8 December 2016 with support from AAPH and Harvard T. Chan School of Public Health. Staff from various departments participated in the facilitation of this short course. More than 80 participants attended the course mainly postgraduate students from various programs across the entire University.
- (iii) A short course on Introduction to Global health was conducted. This three-week course attracted participants from Tanzania Chile Nepal and Finland to make a total of 29 participants.
- (iv) A short course on Basic Laboratory Methods for Parasitology was submitted to the Directorate of Continued Education and professional development for accreditation.
- (v) A review has been made to a short course on training of the Environmental Health practitioner conduct and law enforcement.



4.5.7 Links

New links established during the reporting period include; The School has maintained her linkages but not limited to the following Organizations

- (i) From department of Behavioural sciences; UDSM, SUA (Tanzania); UDOM (Tanzania); JHU (USA); UM (USA); Witwatersrand (SA); Heidelberg (Germany); University of Nairobi, (Kenya); Makerere University (Uganda); Makerere (Uganda), Open University (UK) and University of Oslo, Norway.
- (ii) International Office for migration (IOM), Tanzania, Tanzania Communication Capacity Development Project (TCCP, Tanzania); The Manoff Group (Tanzania); USAID, Pathfinder, Mwanzo Bora; Tanzania Youth Alliance (TAYOA); Economic and Social Research Foundation (ESRF) and Research on Poverty Alleviation (REPOA), Hellen Keller International, IOM, Afrique One-Aspire Consortium, UNAIDS, North Carolina Project on Antimalarial Resistance- funded by NIH, NMCP program (NIMR, MUHAS and IHI and CUHAS)
- (iii) In the department of Community Health; Uppsala University Sweden, Western Cape University, Kumamoto University, Tokyo University, Fudan University, School of Public health, Dartmouth Medical School, HNU Germany, Kilimanjaro Christian Medical University College, Nelson Mandela African Institution of Science and Technology and Cornell University, USA,
- (iv) From department of Bioethics and Health Professionalism Collaboration between MUHAS and Coventry University on genetic ethics teaching through online discussion between the students from the two universities under the supervision of facilitators from both universities.

4.5.8 Research and other Projects

The following are research activities and other projects that were undertaken by faculty in the School of Public Health and Social Sciences: -

- (i) **Dar Urban Cohort Study:** The Dar Urban Cohort Project continued to update vital events migration and pregnancy status. Data collection for the Demographic Dividend study begun in August 2016.
- (ii) **Demographic Dividend Project:** The project's aim was assessing the potential of harnessing the demographic dividend in Tanzania by conducting household surveys and comparative analysis using the existing urban based HDSS of the Dar es Salaam Urban Cohort study (DUCS). Pilot for testing tools was completed and data collection begun in August 2016.
- (iii) **Strengthening health academic and resources for education in Tanzania - SHARE IT:** The project's aim was to strengthen public health training at SPHSS through faculty capacity building, and infrastructural support to enhance delivery of courses/programs by use of the Learning Management systems. Other activities included supporting income generation activities for the school and enhancing alumni ties as well as promoting the Schools visibility in communities. Faculty continued to produce online teaching materials mainly in the form of video recordings of lectures



that were posted on the system/websites for use by students. Alumni network activities have now been revived after the coming back of the Alumni officer who was on maternity leave.

- (iv) **Case Control Study to Determine the Etiology of Esophageal cancer in Tanzania:** Data collection was completed with achievement of a sample size of 466 cases and 466 controls. Analysis was ongoing during the reporting period.
- (v) **Access to health services among MSM in Dar es salaam and Lilongwe. Developing and intervention with them for them:** The project completed both quantitative and qualitative data collection. A total of 472 MSM were recruited using respondent driven sampling. Data entry and cleaning was completed and analysis of quantitative data was in progress during the reporting period.
- (vi) **Genetic Profiling of Esophageal Cancer in Tanzania:** The project initiated data collection during the reporting period and a total of 31 pilot esophageal cancer tissues were collected and analyzed for DNA and RNA amplification. A good yield of quality RNA and DNA was achieved. More data collection is ongoing to achieve the intended sample size of 200.
- (vii) **Female Genital Schistosomiasis and HIV infection in Rural Tanzania:** Follow up three (3rd follow up survey) of a cohort of 670 females with and without FGS is planned to take place during the next quarter. Preparation for the survey was completed during the reporting period.
- (viii) **Access to Health Services among key population in Tanzania (DANIDA):** Recruitment of three PhD students was completed and selected candidates worked on their concept notes for provisional registration at MUHAS. During the reporting period the team developed data collection tools for baseline survey among MSM, FSW and PWIDS.
- (ix) **OHCEA – One Health Central and Eastern Africa Network:** This project is USAID funded and involves eight countries. These are: Tanzania, Kenya, Uganda, Ethiopia, Rwanda, DRC, Cameroon and Senegal. The project currently involves the ONE HEALTH workforce strengthening to enable countries to fight the emerging pandemic threats by preventing, detecting and responding to major infectious diseases including zoonotic. The project is in its second year now of the 5 years of funding. During the reporting year we conducted trainings in the areas mentioned using the One Health approach both to pre-service and in-service personnel.
- (x) **Community Health Workers – Learning Agenda project (CHW-LAP):** This project is supporting the implementation of the Community Based Health program of the MOH through implementation research so as to provide timely recommendations about implementation for improvement of program strategies.
- (xi) During the report period faculty and students in the SPHSS continued to work on the following:
 - (a) **Malaria & NTDs -Sida.** – implementation activities and development of a short course hosted in the department of Parasitology and Medical Entomology



- (b) **Antimalarial resistance study-NIH:** Implementation activities in Bagamoyo District. hosted in the department of Parasitology and Medical Entomology.
- (c) Effects of in utero fetal exposure to *Falciparum* antigens on subsequent immune responses and susceptibility to malaria infection in the first two years of life (PI –D. Gasarasi, Co-PI D. Tarimo).
- (d) Improving malaria case management – SIDA (Deputy Project coordinator Dr. B. Ngasala).
- (e) Four members from the department of Environmental and Occupational Health *revised a peer reviewed manuscript* titled: “Pesticide exposure and health problems among female horticulture workers in Tanzania” *and submitted for possible publication by Environmental Health Insight journal.*
- (f) One member of staff from the department of Environmental and Occupational Health continued to provide support to Youth Spark Innovation Grant (YSiG) and Resilience Innovation Challenge for Conflict (RIC4CONF) awardees conducting their resilience activities in Tanzania. The support provided included needs assessment activity and prototype development. One member from the department of EOH publicized Youth Sparks Innovation Grant – Social Chapter (YSIG - S) call among students at Muhimbili University of Health and Allied Sciences (MUHAS). The grant call was announced by Resilience Africa Network, MUHAS being one of the partners of the network.
- (g) One member from the department of Environmental and Occupational Health supervised and supported the CIRCLE Visiting Fellow, Mr. Gordon Dandeepeo from Development University of Ghana with research topic titled: “*Integrating Climate Change into the Management of Community Health Risks: The Role of community-based health structures in selected districts of the Upper West Region of Ghana.*” The support included reviewing the tools for data collection.
- (h) One member from department of Environmental and Occupational Health coordinated the (NORHED) Norad project on Reduction of occupational disease and injuries among workers in Developing countries for capacity building.
- (i) Department of Bioethics and Health Professionalism conducted Inter-Professional Practice and Education study. This is a collaborative initiative within African countries. The study was at stage of report writing and manuscript preparation.

4.5.9 Consultancy

During the period under review, the SPHSS conducted consultancies as follows: -

- (i) One member of staff participated as a representative of researchers in a dialogue between the Ministry of Health, Community Development, Gender, Elderly and Children and SCOs working on HIV in Tanzania, which was held on 4th and 5th October 2016 in Dodoma Tanzania.



- (ii) One member of staff Participated in a meeting organized by UNAIDS to discuss modalities of improving a center which collects and stores data and information on HIV/AIDS in Tanzania on 22nd November, 2016.
- (iii) Two members of staff conducted consultancy work on barriers and opportunities for accessing medication assisted therapy among injecting drug users in Dar es Salaam, Tanzania: A Qualitative study to inform service scale up. TACOSODE-USAIDS-funded project.
- (iv) One member of the Department of Epidemiology conducted a consultancy for FHI360 on Cross border assessment of health services access among key population for HIV.
- (v) One member of the department of Environmental and Occupation Health conducted a consultancy on drafting of the National Worker's Health profile in Tanzania contracted by MOHSW supported by WHO.

4.5.10 Service Provision

- (i) The department of Behavioral Sciences conduct research on Measuring stigma and discrimination in health facilities in Morogoro region, improving access to Sexual and Reproductive Health Services in Men who have Sex with Men in Tanzania and Malawi: Developing an acceptable and effective intervention.
- (ii) One member of the department of Environmental and Occupation Health organized familiarization meeting for Tobacco control students and stakeholders from the Tanzania Tobacco Control Forum.
- (iii) One member of the department of Environmental and Occupation Health participated in the developing teaching materials for One health training of primary school children (Ebola, rabies, avian influenza and Rift valley fever) that was conducted by One health student's clubs from MUHAS and Sokoine University.

4.5.11 Chalanges and Recommendations

- (i) Major challenge encountered during the reporting year was inadequate funds to implement supervision of fieldwork which required the students to travel up-country for fieldwork.
- (ii) Few number of staff to teach undergraduate and postgraduate programs continued to be a challenge as in previous years.

4.6 Institute of Allied Health Sciences

4.6.1 Introduction.



Mr. Lalison E. Ndolele

The institute of Allied Health Sciences is one of the Academic Institutes, Directorates and Schools of Muhimbili University of Health and Allied Sciences (MUHAS). It is involved in the training of Allied Health Professionals.

The Institute is located within the premises of Muhimbili National Hospital (MNH) and administratively under the Hospital (MNH). The Institute coordinates thirteen (13) schools academically; nine (9) at Muhimbili, two (2) at KCMC Moshi, one (1) at Mpwapwa and one (1) in Tanga. During the year of the report the future administration position of the Institute, after dissolution of the former Muhimbili Medical Centre and Muhimbili University College, remain unresolved by the relevant the Ministry of Health, Community Development, Gender, Elderly and Children (MoHCDGEC), despite efforts initiated in 2012/13.

4.6.2 Student Enrolment and Academic Programs

During the year 2016/17 the Institute enrolled a total of 977 students; 639 (65.4%) males and 338 (34.6%) females. Of those enrolled, 159 (16.3%) were at KCMC, Mpwapwa and Tanga. The remaining 818 (83.73%) were at Muhimbili. The evening programs in the five (5) programs namely; Diploma in Pharmaceutical Sciences (DPS), Diploma in Diagnostic Radiography (DDR), Diploma in Environmental Health Sciences (DEHS), Diploma in Medical Laboratory Sciences (DMLS) and Diploma in Nursing (DN), continued to be provided in the second and third years. First years-intake for evening programs was suspended in 2016/17 due to lack of teaching staff which would impinge on quality and jeopardise the credibility of the University. The courses will only resume after the teaching spooce is renovated and suffiucient full time teaching staff recruited by the Institute.

4.6.3 Student Admission

The number of qualified applicants aspiring to join the programs at the Institute has been increasing from year to year. During the year of reporting, 222 students were admitted of whom 145 (65.32%) were males and 77 (34.7%) were females. There was a decrease of 114 males and a decrease of 87 females compared to 2015/16 academic year.

4.6.4 Teaching Staff, Recruitment and Development.

The Institute has no structured development program for its teaching staff and cannot use the University system because it is not under the staff matters are under the Ministry of Health, Community Development, Gender, Elderly and Children (MoHCDGEC). Therefore, the Institute depends on placement of teaching staff by MoHCDGEC and not through the



University system. During the reporting period, the MoHCDGEC posted tutors to schools but some of the teaching staff went on compulsory retirement (8 staff) and study leave. During the reporting period therefore the Institute of Allied Health Sciences (IAHS) had a total of 87 teaching staff. This created teacher - student ratio of 1:40 for each school. Therefore, the Institute continued to be severely affected by shortage of teaching staff and heavily dependent on part-time teachers, which is contrary to best practices.

4.6.5 Administrative and Technical Staff Recruitment and Development

The Institute continued to utilize administrative and technical staff of the Muhimbili National Hospital who are working in the Institute. The staffing level and requirements for each school were developed and submitted to the MOHCDGEC for support.

4.6.6 Research and Publications

The Institute had no research output during the year under review. Nevertheless, efforts are being made to raise research awareness in this particular area of our responsibilities.

4.6.7 Consultancy and Public Service

Individual staff members were involved in community services and consultancies especially in the Ministry of Health, Community Development, Gender, and the Elderly and Children projects. The Institute was also involved in the Saba Saba and Tanzania Commission of Universities (TCU) exhibitions during the reporting period.

4.6.8 Curricula Review Progress

The process of continuous curricula review to make them competence based and follow TCU guidelines and format continued during the period under review. This process is on the final stages now and registration of other programs was initiated.

4.6.9 Rehabilitation of IAHS buildings

Rehabilitation of the hostel buildings was in progress as well as the plan to rehabilitate the IAHS main building. Efforts are being done to increase one floor on top of the IAHS building to enhance the capacity of space requirement.

4.6.10 Improvement of Cafeteria Accommodation Services at Nurses Hostel

A significant improvement was made during the reporting year, through rehabilitation of the hostels which is going on.



4.6.11 Improvement of Boarding Services at Nurses Hostel

The clean water tanks were installed during the reporting period to address water shortages. The hostel toilets and bath rooms as well as student rooms were renovated. Boreholes were created at all hostels to further curb the shortage of water supply.

4.6.12 Constraints Facing the Institute

During the reporting period, the institute experienced the following constraints: -

- (i) Undefined administrative position of the Institute following the reforms involving the former Muhimbili Medical Centre. The taskforce appointed to negotiate with the Ministry of Health continued with negotiations and it was expected that it would reach a solution to place the Institute under the management of MUHAS.
- (ii) Inadequate funding, which resulted into inadequate and poor state of buildings especially the Institute building which require major rehabilitation.
- (iii) The cost sharing fund from students was not forthcoming thus contributing into the IAHS income inadequacy.

4.7 Institute of Traditional Medicine



Dr. E. Innocent

The Institute of Traditional Medicine started as a Traditional Medicine Research Unit in July, 1974. The unit was later elevated to the Institute of Traditional Medicine in 1991 through an Act of Parliament no. 9, section 10(1)9c); whereby the then, Faculty of Medicine acquired a University College status. The Institute has a reasonable research capacity in the areas of medical botany, natural products chemistry, biological testing, standardization of herbal medicines and pre-clinical drug research that are conducted by both Postgraduate and Research Scientists.

The Institute is charged with the responsibility to research into traditional healing systems, in Tanzania, and identifying *materia medica* which can be modernized and developed into drugs and useful traditional healing practices, which can be adopted for improvement of the health of the people. The institute implement its activities in line with Tanzania Vision 2025, Policies and Strategic Plans in the the Ministry of Education, Science and Technology (MoEST), the Ministry of Health, Community Development, Gender, Elderly and Children (MHC DGEC) and MUHAS focusing improving traditional medicines provision in health sector services.

4.7.1 Highlights of Activities Implemented in 2016/2017

During the reporting year (2016/2017), the Institute continued to offer postgraduate training in Traditional medicine development at MSc and PhD levels successfully where by one Msc and one PhD students graduated. Current enrolled students include eight (8) MSc and (8) PhD students. In addition, continuing education and professional development (CEPD) short course for Traditional Health Practitioners (THP) attracted about twenty seven (27) participants from eleven (11) districts of Tanzania. The aim of continuing education and professional development (CEPD) courses is to instil good practices in professional conducts of THPs. The second level of CEPD course once approved will be training different experts in pharmaceutical aspects of traditional medicine; conservation and propagation of medicinal plants; Quality control regulation and Intellectual property rights that will improve stakeholders of research and development uptake. Through education, the Institute creates a pool of expertise that delivers innovative products and services that aid the integration of traditional medicine in Tanzanian health care system.

The Institute continued with its research to develop, standardize and dispense quality herbal medicinal products, after being proven for their effectiveness and safety. The income accrued from sales of herbal medicine was TZS 62,390,500.00/= (equivalent to 129.98%) against the target of collecting TZS 48 million. The expenditure was TZS 36,467,070/30/= and profit was 25,923,429/70. This was largely contributed to previous efforts of improving packaging and labeling of products as some entered in a competitive market such as Pharmacies. The marketing research that was facilitated under technical support from GAIN-Marketplace was instrumental in identifying market and distribution points. Further, registration of a service



mark *ITMherbo plus* by BRELA and registration of Ravo and Mangifera cream by TFDA as cosmetics, enabled the Institute to enter into a distribution agreement with Cloud9 Wellness for these products.

During the reporting period, the Institute attracted three (3) research grants making a total of 13 currently ongoing Research projects that are at various levels of funding, while six (6) were completed. The Institute produced 15 publications and participated in six (6) exhibitions at National and International levels. The Institute also, participated in 38 workshops and scientific conferences and 8 national or international experts' meetings and seminars.

4.7.2 Students' Matters

Academic Programs: In 2009, the Master of Traditional Medicine Development program was initiated with the intention of accelerating research and generate more research results that will be the vehicle for growth in the area of traditional medicines and, possibly stimulate local herbal medicines production, industrialization and commercialization. During the reporting period the Institute continued offering the following programs and courses: -

- (i) MSc in Traditional Medicines Development,
- (ii) PhD.
- (iii) CEPD courses in Traditional Medicines Development

The MSc Phytomedicines program was submitted for quality assurance, discussion and approval through University committees.

Students Admission and Enrollment: During academic year 2016/2017, Traditional Medicine programs successfully produced one (1) Master of Science (MSc) graduate and one PhD graduate. Eight (8) other MSc and six (6) PhD students continued with their studies at the Institute while one (1) student postponed and one (1) froze his studies (Table 28).

The continuing education and professional development (CEPD) training for Traditional health practitioners was attended by 27 participants from 11 districts of Tanzania whom were instilled with knowledge and skills on good practices in their professional conducts.

Table 29: Students Admission, Enrollment and Achievements

Stage	MSc Trad. Med. Dev	PhD
	2016/2017	2016/2017
Admission (New)	11	2
Enrolment/registration	8	5
Freezing	1	0
Postponement	1	0
Completed/graduated	1	1



Students Output and Performance

During the reporting year two students graduated at MSc and PhD levels. The title of the MSc student's thesis was entitled *Acute Toxicity and Anti-Ulcer Potential of D. canescens extracts on rat aspirin induced-Gastric Ulcer Model* while that of PhD graduate was *Evaluation for efficacy and toxicity of Tanzania medicinal plants used by traditional healers for the treatment of malaria* while that of.

4.7.3 Research and Publications

Research Projects and Links

In the reporting period, six projects were completed and three (3) new projects were initiated (Table 29), making a total of 13 on-going research projects that were under different MUHAS clusters. The research outputs in forms of publications were 15 papers.

Table 30: Research Projects in ITM

S/N	Research project completed during 2015/2016 academic year	Funder	Year
THEME 1: HIV and AIDS			
1.	Effect of climate differences on antifungal activity and chemical composition of plants used to manage fungal infections in Tanzania	AAS	2015-2016
THEME 3: MALARIA			
1.	Conserving repellent plants in Enduement Wildlife Management Area of Longido Division: A sustainable strategy to vector-borne disease control and climate change mitigation in nomadic herder societies	UNDP	2014-2016
2.	Comparison of Isolated mosquito larvicidal compounds from ethanolic extracts of <i>Kotschyia</i> species collected between wet and dry season	Sida-MUHAS	2014-2015
3.	Evaluation of efficacy and safety of medicinal plants traditionally used in the treatment of malaria	Sida-MUHAS	2011-2015
THEME 4: REPRODUCTIVE HEALTH			
1.	Impact of home based lifesaving skills in rural area of Tanzania on awareness of danger signs, birth preparedness, facility delivery access to emergency obstetric care and cost effectiveness: a cluster randomized trial	Sida	2010-2015
THEME 6: NON-COMMUNICABLE DISEASES			
1.	Phytochemical and Biological investigation of <i>Carissa spinarum</i> root extracts used in the treatment of chronic illnesses	Sida- MUHAS	2015



SNo	New Research project attracted during 2015/2016 academic year	Funder/Donor	Year
THEME 1: HIV and AIDS			
1.	Phytochemical and Antifungal Investigation of Tanzanian Combretum Species for Potential Formulations against Fungal Infections”	COSTECH/NR F-Korea	2016-2018
THEME 8: HEALTH SYSTEM RESEARCH			
1.	Empowering Tanzanian Communities to achieve economic sustainability and resilience. A trainer of trainer approach for value addition of Avocado and Rosella products	(RAN)	2016-2017
THEME 9. NEGLECTED TROPICAL DISEASES			
1.	The influence of climate change and dynamics in bio-control of enteropathogenic Cholerae”	CIRCLE	2016-2017
SNo	Ongoing Research project for 2015/2016 academic year	Funder/Donor	Year
1.	Investigation of Traditional use of medicinal and food plants in northern Tanzania for their sustainable use.	NIRB of S. Korea	2016-2018
2.	Search for Antifungal Compounds from Tanzanian Medicinal Plants for managing Fungal infections	SRC	2014-2017
3.	Antimicrobial activity of extracts of Combretaceae family plants against drug resistant and biofilm forming bacteria and Candida species isolated from HIV/AIDS patients	NIMR	2014-2016
4.	Assessment of bioactivity of roots and leaves of Carissa spinarum extract from two geographical locations in two seasons in Tanzania against some pathogenic bacteria and fungi	AAS	2016-2017
5.	Fformulation and standardization of herbal medicine from Garcinia and Combretum plant species growing in Tanzania for managing HIV/AIDS and related diseases	COSTECH	2013-2016
THEME 3: MALARIA			
1.	Phytochemical studies of mosquito larvicidal compounds from ethanol extracts of four Kotschya species	IFS	2014-2016
2.	Laboratory and semi-field mosquito larvicidal activity of some Tanzanian medicinal plants formulations	DAAD	2015-2018
THEME 5: CHILD HEALTH			
1.	Scale up Cell phones and Psychosis: a pilot study connecting traditional healers and Bio-medical staff in six administrative regions, Tanzania	Canada Grand Challenge	2016-2017

THEME 8: HEALTH SYSTEM RESEARCH

1.	Identifying and monitoring trade in Tanzanian wild-harvested medicinal plants using innovative genomics-based DNA barcoding.	SRC	2015-2018
2.	Use of DNA Technology in Combating Illegal Trade and Promoting Conservation and Sustainable Use of Plants in Kenya and Tanzania.	USAID	2015-2018

4.7.4 Consultancies and Public Services

During the year under review the Institute of Traditional Medicine staff carried out the following consultancies and public services:

- (i) Prof Rogasian L. A. Mahunnah served in a technical committee to Draft National Intellectual Property Policy of the Ministry of Industries and Trade, Dar es Salaam.
- (ii) Dr. Edmud Kayombo Served as Chairman of the Traditional and alternative practitioners Council of the MoHWS for a 3-year tenure.
- (iii) Dr. Pax Jessey Masimba and Dr. Joseph. N. Otieno served as members of the Research and Development committee of the Traditional and Alternative Practitioners Council of the Ministry of Health, Community Development, Gender, Elderly and Children for 3 years (22/09/2015-22/09/2018).
- (iv) Dr Ester Innocent served as a member of the Academic committee of the Traditional and Alternative Practitioners Council of the Ministry of Health, Community Development, Gender, Elderly and Children to serve for 3 years (22/09/2015-22/09/2018).
- (v) Dr. E. Innocent served as a national expert of the African organization standardization (ARSO) technical harmonization committee (THC-13 of ARSO) for African Traditional Medicine Standards.
- (vi) Dr Ester Innocent was appointed as chairperson of traditional medicines technical committee (CDC 20) of the Tanzania Bureau of standards.

4.7.5 Staff Development

Training leading to degree award: During the reporting period three staff continued with PhD studies and two with MSc studies at MUHAS. Two more staff pursued BSc and PhD at the University of Dar es Salaam while one staff is pursuing PhD at Nelson Mandela Institute of Science and Technology.



Staff training attachments to other Institutions: During the year under review, Mr. Baraka Samwel attended Education and Research Oriented Training in Health Sciences (EARTHS) Summer School on Scientific Research Methods and Teaching Skills in Health Sciences, from 1st to 28th June 2017 at the Hamburg University of Applied Sciences Bonn, in Germany.

4.7.6 Procured Items, Work and Services

During the academic year 2016/2017, the interior of the Institute building was renovated (Offices, Departmental Laboratories and corridors). Procurement of contractor for renovation of the exterior of the whole building was initiated. This has significantly minimized dust and created conducive sterile working environment.

The Department of Biological and Pre-Clinical Studies procured a -86°C deep freezer for storage of biological samples. The operationalization of the class II Biological Safety Cabinet, whose installation was initiated, will offer personnel, samples, and the environment, protection to airborne biologicals or particulate contaminants. The lab is also expected to benefit students and researchers of the *in-vitro* research work especially in the discovery of anti-malarial, anti-cancers and anti-infectious agents. The Department of natural products and formulations completed the installation of a cream homogenizer. The machine is now available for research, products development and production of creams formulations hence also contributing to generation of funds for the Institute.

The Department of Medical Botany, Agronomy and Plant Breeding continued with the cultivation experimentation of important medicinal plants and supply raw materials for herbal products development and production for the Institute.

	
<p><i>The -80°C Deep freezer in the Department of Biological and Pre-Clinical Studies</i></p>	<p><i>Labeling of Cream products in the GMP lab of the Department of Natural Products and Formulations</i></p>

4.7.7 Infrastructure Development

The institute developed and submitted proposals to potential donors for its two major projects, which are establishment of a medicinal plant botanical and scaling up production of



herbal medicines. The proposals were mostly submitted as small to medium grants requests addressing one or some of the components in the two big proposals.

4.7.8 Workshop and Conferences

During the reporting period the staff of the Institute participated in the following workshops and conferences: -

- (i) Siri Abihudi, Boniface Charles, Jackson Mollel attended ICT Training workshop on Open Data, Open Access and Open service held at MUHAS on 16-17th July, 2016.
- (ii) Dr Edmund Kayombo and Dr Joseph Otieno, were involved in a planning meeting of a collaborative project on exploring medicinal and Food plants of Northern Tanzania, involving delegates from Tanzania Wildlife Research Institute, Institute of Traditional Medicine and National Institute for Biodiversity Research of Korea that was held at TAWIRI, in Arusha on 19th July 2016.
- (iii) Dr Pax Masimba, Mr. Jackson Thomas and Zaituni Msemwa attended a lecture on Extraordinary Opportunities in Biomedical Research held at MUHAS on 1st, August, 2016
- (iv) All ITM staff attended the Public Diplomacy Forum - on Traditional Medicine organized by the Chinese Embassy at the Julius Nyerere International Convention Centre on 9th August, 2016
- (v) Dr. Edmund Kayombo was involved in Training in Global health program for international students on the topic “*Traditional beliefs and health*”, also Interview: traditional healer and excursion: to traditional health practitioners and slave trade route at Bagamoyo, 23rd -24th August 2016.
- (vi) Dr. Esther Innocent attended the Advanced Training and Advisory Program on Intellectual Property Rights in the Global Economy for the Least Developed Countries (LDCs) organized by the World Intellectual Property Organization (WIPO) in cooperation with the Swedish Patent and Registration Office (PRV) and with the assistance of the Swedish International Development Cooperation Agency (Sida) in Stockholm, Sweden, on August 28 to September 16, 2016.
- (vii) All members of the department were involved in training Traditional Health Practitioners at MUHAS from 19 -23rd September 2016.
- (viii) Mr. Mourice N. Mbunde attended training on One Health Workforce (OHW) Communications and Monitoring and Evaluation organized by One Health Central and Eastern Africa (OHCEA) and University of Minnesota held on 13th -14th October 2016 at MUHAS.
- (ix) Dr. Joseph Otieno, Siri Abihudi and Leah Haule attended Training on Botanical Garden Management: Building Capacity for tree conservation on 19th-21st October 2016, at Southern Sun Hotel.



- (x) Mr. Mourice N. Mbunde, Dr Machumi F, Mr. Credo D and Dr Pax Masimba and Zaituni Msengwa attended a training workshop for Early Career Researchers on 2nd Nov 2016 at HD-CHPE building organized by Climate Impact Research Capacity Leadership Enhancement (CIRCLE).
- (xi) Mr. Baraka S. Ndiege attended the Open access and institutional repository to academic staff held on 25/11/2016 at MUHAS.
- (xii) Mrs. F. Uiso and Dr. Kapingu MC attended training on Medium Term Expenditure Framework (MTEF) Budget Preparation on 2nd to 3rd November 2016, at MUHAS, facilitated by Ministry of Finance and Planning.
- (xiii) Dr. Otieno J.N, Prof. Innocent E, Dr. Pax Masimba, attended a PhD Supervision training course MUHAS 19th -21st November, 2016 at MUHAS.
- (xiv) Mr. Ismail Athuman and Zaituni Msengwa attended a two days' workshop for junior staff on academic fellowships, collaborative research, research funding, grant writing and academic publishing held on the 23rd and 24th Nov, 2016 at MUHAS.
- (xv) Mrs. F. Uiso and Ms. Siri Abihudi attended workshop on Open Data, Open Access and Open Access Policy review; on 25th November 2016, at the Directorate of Library Services, MUHAS.
- (xvi) Dr. Innocent attended the champion meeting of the Climate Impact Research Capacity Leadership Enhancement (CIRCLE) that advocate for early career guidance in Research on Climate change organized by Africa Academy of science, on 1st to 3th December, 2016, NAIROBI, KENYA.
- (xvii) Dr. Pax J Masimba attended a four days training of Ethics Teacher's Training Course that took place at MUHAS from 13-16 December, 2016 under UNESCO Ethics Education Program.
- (xviii) Ramadhan Nondo participated in the review of the Traditional and Alternative Medicine Act, 2002. The review was organized by Traditional Medicine Unit of Ministry of Health, Community Development, Gender, Elderly and Children (MoHCDGEC) from 17-21st January, 2017.
- (xix) Dr. Ester Innocent and Dr Joseph Otieno attended training at MUHAS on supervision of PhD students organized at MUHAS from 21st-22nd January 2017.
- (xx) Dr. Ramadhan S.O. Nondo, Dr. Joseph Otieno, Dr Francis Machumi, Mr. Mourice Mbunde, Dr Edmund Kayombo, Ms. Uiso Febronia, Ms. Zaituni Msengwa and Benson Peter Mugaka attended the consultative meeting on unveiling intellectual property right gaps in traditional medicine in Tanzania for socio-economic growth from 23-24th January, 2017
- (xxi) Benson Peter Mugaka Attended Intellectual Property training hosted by Danish Embassy in Dar es Salaam collaboration with Denmark Institute of Technology from 23rd -24th January, 2017.



- (xxii) Dr. Ramadhan S. O. Nondo, Dr. Joseph Otieno, Dr Pax Masimba, Dr Francis Machumi, Dr Edmund Kayombo, Mr. Mourice Mbunde, Ms. Uiso Febronia and Ms. Zaituni Msengwa attended training on Health Research and Innovation for Sustainable Developments: Intellectual property rights issues. Training conducted at MUHAS and from 20-21st February, 2017.
- (xxiii) Dr. Otieno attended training on Bioinformatics at Sokoine University of Agriculture organized by PEER project under USAID, from 2nd – 4th March 2017.
- (xxiv) Dr. Ester Innocent is taking part of International Training Programs held by Sida, arranged by Swedish Patent and Registration Office March 3rd, 2017 – March 10th, 2017 in Phnom Penh, Cambodia.
- (xxv) Dr. Joseph Otieno, Dr Pax Masimba, Dr Edmund Kayombo, Ms. Uiso Febronia Attended the Ethics: Scientific and Research Integrity at Muhimbili University of Health and Allied Sciences, from 8-9 March 2017.
- (xxvi) Dr. Ester Innocent attended the International Workshop on Standardization of Traditional Chinese Medicine, at Hua Ting Hotel and Towers, March 16-18, 2017
- (xxvii) Dr. Ester Innocent attended an International training on capacity to innovate at the International Centre for Insect Physiology and Ecology (ICIPE), Nairobi, Kenya, arranged by Sida on March 27th-31st, 2017
- (xxviii) Dr. Pax Masimba and Dr. Francis Machumi attended the 6th East African Health and Scientific Conference & International Health Exhibition and Trade Fair: organized by East Africa health research Commission of East Africa Community (EAC), in Bujumbura, Burundi on 29-31st March, 2017
- (xxix) Dr. Francis Machumi and Dr. Ramadhan Nondo attended training on Results-Based Research Management from 2nd to 3th May, 2017 at FETA Mbegani, Bagamoyo. The training was organized by COSTECH.
- (xxx) Dr. Ramadhan Nondo and Dr. Pax Masimba attended a short course on Systematic Review and Meta-analysis from 08th to 12th May, 2017. The course was conducted at MUHAS and was organized by the School of Public Health and Social Sciences in collaboration with Directorate of Library Services, and Africa Academy of Public Health.
- (xxxi) Dr. Francis Machumi, Dr. Modest Kapingu and Dr. Ester Innocent attended PhD Supervision Course from 24th to 26th May 2017 at HD-CHPE MUHAS
- (xxxii) Dr Pax Masimba attended a two days' workshop on Digital Village E-Health Pilot Concept Creation on 16-17 May, 2017 at MUHAS Center for Health Professional Education
- (xxxiii) Dr. Modest C. Kapingu, Dr Joseph N. Otieno, Dr. Ester Innocent and Dr Pax Masimba attended OPRAS Training on 22nd to 23rd May 2017 at MPL Board room.
- (xxxiv) Dr Joseph Otieno attended Bioinformatics training at Sokoine University of Agriculture from 2nd to 4th April 2017



- (xxxv) Dr Joseph Otieno attended Mid-Year PEER Project review in Nairobi on 20th May 2017. Dr Joseph Otieno organized two days Legal Standards workshop on the use of molecular markers in legal proceedings in the court at MUHAS-SOSMED from 4th - 5th June 2017.
- (xxxvi) Dr. Modest C. Kapingu, Dr Joseph N. Otieno, Dr. Ester Innocent and Dr Ramadhan Nondo attended the MUHAS review of the Implementation of 5YRSP from 22nd to 23rd June 2017 at Mloganzila Campus.
- (xxxvii) Dr Pax Masimba attended 2017 BIO International Convention in San Diego, California, USA from 19-23 June, 2017.
- (xxxviii) Dr. Innocent, E, Dr Joseph N. Otieno, Dr Ramadhan Nondo and Mr. Ismail Athman attended the MUHAS Scientific conference on 29-30th June 2017.

Technical Meetings

- (i) The Institute conducted training of Traditional Health Practitioners from 19/09-23/09/2016.
- (ii) Dr. Edmund J. Kayombo Attended Dissemination Report on impact of UNESCO's intervention on people with Albinism on 7th November 2016 Protea Courtyard Hotel, Dar-es-Salaam.
- (iii) Dr. Edmund J. Kayombo attended and chaired the meeting of the Traditional and alternative health practice council on 15th - 17th December, 2016, at NIMR Dar-es-Salaam Tanzania.
- (iv) Dr Kaduri P and Kayombo EJ presented during the Medical Association of Tanzania National health conference on "*Can traditional health practitioners collaborate with biomedicine staff? A case of Cell Phones and Psychosis: A Pilot Study Connecting Traditional Healers and Bio-medical Staff at Pangani District, Tanga region Tanzania*" on 10th -12th November 2016, at Julius Nyerere International Conventional Center, Dar-es-Salaam.
- (v) A two-day meeting was facilitated by Dr. E. Innocent the Director of the Institute of Traditional Medicine-MUHAS, together with guidance of a WIPO consultant, Dr. Matsabisa G. Motlalepula who also serves as a research program director of the indigenous knowledge system (IKS (health) at the university of the free state, south Africa on unveiling intellectual property right gaps in traditional medicine in Tanzania for socio-economic growth-.
- (vi) Dr. Otieno NJ, and Dr. Masimba, participated in Research and development technical committee of the Traditional and Alternative Health Practitioner's council (TAHPC) of the Ministry of Health, Community Development, Gender, Elderly and Children (MoHCDGEC) on 8th June, 2017.
- (vii) Dr. Innocent, participated in Academic technical committee of the Traditional and Alternative Health Practitioner's council (TAHPC) of the Ministry of Health,



Community Development, Gender, Elderly and Children (MoHCDGEC) on 9th June, 2017

- (viii) Dr. Innocent attended the National Traditional Medicine Technical Committee (CD 20) meeting on 12th June 2017 at TBS Headquarters

4.7.9 Finances and Investment Activities

Internally Generated Funds: The institute continued to generate income through sales of herbal medicine from the outlet allocated at the Institute building. The income accrued from sales of herbal medicine was TZS 62,390,500.00/= (equivalent to 129.98%) against the target of collecting Tsh. 48 million. The expenditure was TZS 36,467,070/30/= and profit being 25,923,429/70. This was largely contributed to previous efforts of improving packaging and labeling of products as some entered in a competitive market such as Pharmacies. Further contributing factor being registration of the *ITMherbo plus* under NICE class 44 (service provider in Traditional medicine); Also encompasses class 5 (manufacturer of medicinal plant products and nutritional supplements) and class 44 (Cosmetics). Further two more products, Ravo cream (TAN 16 CP 0772) and Mangifera cream (TAN 16 CP 0773) were registered by TFDA as cosmetics thus gaining consumers trust as are were being distributed by Cloud9 wellness.

Exhibitions

- (i) The Institute extended Exhibition at the Parliament in Dodoma on 31st August 2016.
- (ii) The Institute extended Exhibition during MUHAS convocation event that took place on 1st of December, 2016 at MUHAS, Dar es Salaam.
- (iii) The Institute represented the University to exhibited its academic programs and herbal products during the 6th East African Health and Scientific Conference & International Health Exhibition and Trade Fair: organized by East Africa health research Commission of East Africa Community (EAC), in Bujumbura, Burundi on 29-31st March, 2017.
- (iv) The Institute represented the University to exhibited its academic programs and herbal products during the BIO International Convention, 2017 organized by BIO Ventures for Global Health (BVGH) and facilitated by the East Africa Health Research Commission of East Africa Community (EAC) on 19th-23rd June, 2017.
- (v) The institute exhibited at the MUHAS Scientific Conference 29th- 30th June 2017, at LAPF, Dar-es Salaam.
- (vi) The institute participated in the Mwalimu Nyerere Trade Fair exhibitions on 28th June 10th July, 2015, Dar es salaam



Dr Pax Masimba (sitting on the far left) in the East African Pavilion during the 2017 Bio International Convention which was held in San Diego, California, USA from 19-23 June, 2017. Sitting on the far right, is the Executive Secretary for East Africa Health Research Commission, Professor Gibson Kibiki.

4.7.10 Visitors to the Institute

Students

- (i) Marietha Sebastian Kikude, undergraduate student taking bachelor of Pharmacy at Kampala International University, was conducting research project titled *Phytochemical analysis and hypoglycemic activity of grewia holstii used by traditional health practitioners in bagamoyo for the management of diabetes mellitus* in the Department of Biological and Pre-Clinical studies, ITM.
- (ii) The following student had attachment during August/September 2016 practical training (TP) in the Department of Natural Products Development and Formulations
 - (a) Ms. Hanna Wikidzi and Joyness Rwamalamba from Bagamoyo University
 - (b) Mr. Kelvin Myolele, Mr. Hamis Ngelejaand, Mr. Godwin Ngoro and Ms. Annastazia Urassa university of Dodoma from (UDOM).
 - (c) Ms. Anette Christopher Nandi from University of Dar es Salaam (UDSM)



Researchers/professionals.

- (i) On 28th July 2016, Dr. Harriel Namata from Makere University visited the Institute for exploration during the Resilience Africa project recruitment.
- (ii) On 10th August 2016 Guo Chingli His excellence former Ambassador to Kenya lead a Chinese delegate during the China-Africa public diplomacy forum visited the institute for exploration of areas of collaboration.
- (iii) On 19th August 2016, Fredo C. Mwenyegoha, Leah N. Kevin, Japhet E. Moshi, Dorice Mbunda from Mabibo Secondary School visited the Institute during the secondary school student study tour.
- (iv) On 23rd August 2016, Mr. Menno VO. Oeven from ANATECH and Mr. John D. Angira from ChromAfrica visited the Institute for marketing chromatographical facilities offered by their companies.
- (v) On 2nd September 2016, Prof. Ephrem Engidawork from the School of Pharmacy, Addis Ababa University visited the institute as an external Examiner.
- (vi) On 5th September, Prof Sakamoto Kumiko from Utsunomiya University in Japan visited the ITM seeking for research collaboration on Medicinal Plants of Tanzania.
- (vii) On 23rd September 2016, Dr. Magreth Mhando, the director for curative and hospital services and Dr. LiggyVumilia, the national coordinator of traditional medicine in Ministry of Health, Gender, Community Development, Elderly and Children visited the Institute during closing ceremony of CEPD training for traditional practitioners.
- (viii) On 11th October 2016 Mr. Praful Deshani from Estec LTD Kenya visited the Institute to introduce chromatographically equipment's supplied by the company.
- (ix) On 7th November 2016, Anke Weisheit, Mr. Erejo Alex, Dr Joseph Boguza and Prof George B. Kiya, from THETA Uganda Kampala, visited the Institute for Benchmarking the Establishment of an Institute similar to ITM.
- (x) On 29th November 2016 Prof. Mauli K. Mugisha and Kaisindye Noah from Bishop Stuart University Mbarara visited the institute for exploration of Institute activities and seek for collaboration.
- (xi) On 1st December, 2016 Dr. Alexander Kocyan from Potsdam, Germany visited the institute for a collaborative project work.
- (xii) On 17th February 2017 Dr. Bwalya A.G. from the department of pharmacology, faculty of health sciences, UNZA Zambia, visited the institute for exploration of the areas of collaboration.
- (xiii) On 2nd March 2017 Dr. Fikira Kimbokota from Mkwawa University college of Education, Iringa visited the Institute to discussed possible co-drafting a book chapter.
- (xiv) On 23rd January 2017. Dr. Matasabisa MG the Director of the Indigenous Knowledge System (IKS (Health) at the University of the Free State, South Africa



- visited the Institute for a WIPO consultative meeting on IPR and traditional medicinal knowledge.
- (xv) On 23rd March 2017 Dr. Alexander Kocyan from Potsdam, Germany visited the institute for a collaborative project work.
 - (xvi) On 23rd March 2017 Mr. Selwin T. Haule and Emmanuel Mlay from the Ministry of Health, Community Development, Gender, Elderly and Children visited the Institute for inspection fault machinery and instruments that can be revamped by repair.
 - (xvii) On 13th April 2017 Prof. Dong Chan Oh and Dr. Yern-Hyrk Shin from Gwanak-ro Gwanak-Gu Seoul 08826, Republic of Korea visited the Institute for discussions on the excursion of the joint project with Dr. F. Machumi and Dr. R. Nondo. During the visit they demonstrated isolation of bacteria from soils and made a presentation on novel natural products from bacterial extracts.
 - (xviii) On 16th June 2017 Ms. Amber Zheng from President's Office-Regional authority and local government (PO-RALG)- Chinese language unit; Dr. Liggyle Vumilia and Dr. Paulo Mhame from the Ministry of Health, Community Development, Gender, Elderly and Children visited the Institute for discussion about introducing Confucius training as a bilateral program with HENAN Traditional Chinese Medicine University

4.7.11 Key Constraints Faced the Institute

- (i). Limitation of allocated staff for recruitment (Inadequate technician and academic staff): which lead to poor staff succession
- (ii). Poor government funding to run institute activities as planned in the 5YRSP.

4.8 Directorate of Postgraduate Studies

4.8.1 Introduction



Prof. A. Pembe

The Directorate of Postgraduate Studies (DPGS), in collaboration with the Schools, Institutes and other Directorates, has the responsibility of promoting, marketing and monitoring the conduct of postgraduate training at the University. During the reporting period, DPGS processed admissions of postgraduate students in various programs, reviewed postgraduate proposals, processed examination results and facilitated revised curricula to align with the Tanzania Commission for University (TCU) format.

4.8.2 Enrolment into Postgraduate Programs

(a) PhD degree programs

During academic year 2016/2017, a total of 3 students were granted full PhD registration and 10 were provisionally registered. Together with 27 existing students, this makes a total of 40 PhD students. Among them 13 (33%) were females.

(b) Master degree programs

During academic year 2016/2017 a total of 745 students were enrolled in Master degree programs in five Schools and one Institute. Among students enrolled in master programs 288 (39%) are females. Out of 745 enrolled, 736 (99%) were enrolled into master degree programs by coursework and dissertation, and 9 (1%) by Research. There was an increase of 10% compared to the number of students registered last year. Table 30 summarizes the number of master degree students enrolled in the different Schools and Institute of Traditional Medicine (ITM).

Table 31: Enrolment of Postgraduates for Academic Year 2016/17

School/Institute	Male	Female	Total
Medicine	289	162	451
Pharmacy	9	9	18
Dentistry	15	6	21
Nursing	10	33	43
School of Public Health and Social Science	128	75	203
Traditional Medicine	4	1	
Master of Science by Research	7	2	9
Total	462	288	745



4.8.3 Students Research Proposals

DPGS facilitated the review of Master and PhD proposals for ethical clearance in collaboration with the Directorate of Research and Publications. A total of 371 master students' research proposals were reviewed.

4.8.4 Postgraduate Selection

During the reporting year, the Directorate through the Joint Postgraduate Selection Committee under the Directorate of Postgraduate Studies recommend applicants for postgraduate studies for the year 2017/2018. There were 730 applicants out of whom 536 (73%) were recommended for admission. Majority of the applications were in the School of Medicine and School of Public Health and Social Sciences. Table 31 shows the number of applicants recommended according to the school and institute.

Table 32: Applicants recommended for admission for postgraduate studies for 2017/18

School/Institute	Applicants Recommended	Applicants not recommended	Total Applicants
Medicine	245	62	307
Pharmacy	13	2	15
Dentistry	6	4	10
Nursing	24	0	24
Public Health and Social Sciences	238	126	364
Traditional Medicine	10	0	10
Total	536	194	730

4.8.5 Examinations Results

The Directorate of Postgraduate Studies through Senate Higher Degrees Committee (SHDC) processed University Examinations results as follows: -

- (a) A total of 582 postgraduate students sat for Semester 2, 4 and 6 University examinations in July 2017. Out of these 457 (72%) passed their examinations in the first sitting. Table 32 shows a summary of students' performance in the various programs.


Table 33: Postgraduates results for the July 2017 examination

SN	School/ Directorate	Sat for examination	Failed (%)	Passed (%)	Postponed examination	Froze	Resume Studies	Discontinued on Abscondmen t basis
1	Medicine	348	91 (26.15)	257 (73.85)	4	7	0	9
2	Pharmacy	16	5 (31.25)	11 (68.75)	5	0	0	0
3	Dentistry	17	3 (17.6)	14 (82.4)	0	0	0	0
4	Public Health and Social Sciences	156	19 (12.18)	137 (87.82)	10	7	0	9
5	Nursing	42	7 (16.7)	35 (83.3)	1	0	0	0
6	ITM	3	0	3 (100)	0	2	0	0
TOTAL		582	125 (21.5)	457 (78.5)	20	16	0	18

- (b) A total of 606 postgraduate students in semester 1, 3, and 5 sat for University examination in March, 2017. Five hundred nineteen 519 (85.6%) passed their examinations as indicated in Table 33 below: -

Table 34: Summary of the students' results for the March 2017 examination

S/N	SEMESTER 1, 3 AND 5	TOTAL	School of Medicine	School of Pharmacy	School of Dentistry	SPHSS	School of Nursing	ITM
1	Number sat examination	606	408	6	19	134	36	3
2	Passed	519	348	5	19	111	33	3
3	Failed	87	60	1	0	23	3	0
4	Postponed examination	7	4	0	0	2	1	0
5	Incomplete examination	21	8	1	0	11	1	0
6	Results withheld	14	14	0	0	0	0	0
7	Absconded	1	1	0	0	0	0	0
8	Passed Examinations	85.6%	85.3%	83.3%	100%	82.8%	91.7%	100%
9	Failed Examinations	14.4%	14.7%	16.7%	0%	17.2%	8.3%	0%

4.8.6 Postgraduate Graduands 2016

The 10th University graduation was held on 3rd December 2016. Two hundred (200) students graduated in various postgraduate programs. Seven (7) candidates were awarded PhD degree. Among the candidates who graduated, 119 (60%) were females. Details of graduands from the various Schools and Institutes are indicates in Table 34 below: -

**Table 35: Postgraduate graduands in the year 2016 by gender**

S/No	School/Institute/Program	Male	Female	Total
1	PhD	3	4	7
2	School of Medicine	38	49	80
3	School of Dentistry	2	1	3
4	School of Pharmacy	3	8	11
5	School of Public Health and Social Sciences	38	43	81
6	School of Nursing	3	14	17
7	Institute of Traditional Medicine	1	0	1
Grand Total		88	119	200

4.8.7 New Programs

During the reporting period two new postgraduate programs were introduced. These are Master of Science in Project Management, Monitoring and Evaluation in Health (MSc PMMEH) – Executive track in the School of Public Health and Social Sciences and MSc in Histotechnology (MSc HT), Department of Pathology, School of Medicine.

4.9 Directorate of Planning and Investment – Muhimbili Campus

4.9.1 Introduction



Dr. E. J. Mmbaga

The Directorate of Planning and Development Muhimbili Campus was established in 2013 as part of improving efficiency and functions at the University. In 2015 the name of the Directorate was changed from Directorate of Planning and Development to Directorate of Planning and Investment. The Directorate has three

departments which includes Planning, Investment and Resource Mobilisation. The Directorate continued with the responsibility of coordinating the development and monitoring of the University strategic plan. It ensures that all Schools and Directorates develop strategic actions plans in line with the University Corporate Plan. It

is also responsible for monitoring and coordinating timely unit specific implementation of the five-year rolling strategic plan (FYRSP) and reporting on progress of Implementation.

During the review period the Directorate promoted, engaged and monitored investment activities at the University for the purpose of income generation and growth. The directorate focused on developing MUHAS investment portfolio through identification of potential investment avenues and improving productivity on already available investments.

4.9.2 Review of University wide Strategic Plan

During the reporting period, the Directorate organized MUHAS annual strategic planning workshop which was held on 22nd and 23rd June 2017 at the auditorium room at MAMC. The Objectives of the workshops were to: -

- (i) Review University-wide Five Year Rolling Strategic Plan (2016/2017 – 2020/2021)
- (ii) Receive and Discuss Annual Implementation Report of the University-Wide Five Year Rolling Strategic Plans (2016/2017 – 2020/2021).
- (iii) Review MUHAS Vision and Mission in line with operationalization of *MUHAS Academic Medical Centre*
- (iv) Review MUHAS Strategic Objectives for effective implementation



A group photo during Strategic Planning Workshop held on 22nd and 23rd June 2017 at MUHAS Academic Medical Centre

4.9.3 Promotion of University Activities

During the period under review MUHAS through the DPI was invited by TANTRADE and participated in the 41st Dar es Salaam International Trade fair which was held between 28th June to 13th July 2017. During exhibitions, all Schools and some of the directorates prepared brochures and roll up banners that summarized different products and services offered by the respective units. Some of the research projects were able to display various achievements and impacts of their studies through poster presentation. In total, the University prepared 13 roll up banners, 6500 brochures, 2000 flyers and 1000 Information booklets.



MUHAS Exhibitors poses for group photo during 41th International Trade Fair at Mwalimu Nyerere Exhibition Ground



MUHAS Pavilion at Mwalimu Nyerere Sabasaba Grounds: Exhibitors demonstrates to visitors During 41st International trade Fair

During the reporting period MUHAS participated in the 12th Higher Education Institution Exhibitions organized by TCU, which took place from 26th to 29th July 2017 at Mnazi mmoja.



His Excellency the prime Minister of the United Republic of Tanzania Visiting MUHAS Pavillion at Mnazi Mmoja Dar es Salaam July, 2017



MUHAS Pavilion at Mnazi Mmoja Grounds: Exhibitors demonstrates to visitors During 12th Higher Learning International Trade Fair

4.9.4 Eengagement of Real Estates Developers for Development of Various MUHAS Lands

During the period under review the Directorate organized a conference between MUHAS and Real Estates Developers and Investors. The conference was held on 12th April, 2017. Investors who attended the conference expressed interest to engage in investment with MUHAS. Meetings between Directorate of Planning and Investment and prospective Investors to discuss in detail various investment avenues and modalities are ongoing.

4.9.5 Resource Mobilization

During the reporting period, the Directorate on behalf of the University made negotiation and prepared a contract between MUHAS and EXIM bank who intend to construct two banking facilities one at Muhimbili and another at Mloganzila to serve as their bank Branches. The engagement will be on Build Operate and Transfer (BOT) basis where their cost of construction will be recovered from the rental fee and at the end the buildings will be transferred to MUHAS. Approval for signing the contract for EXIM to establish branches at Muhimbili and Mloganzila Campus was approved by Government.

4.9.6 MUHAS Investment Holding Company

During the period under review the University Council approved the proposal for establishment of Muhimbili University Investment Holding Company (MUIHC). The Existing staff under Directorate of Planning and Investment are overseeing the implementation of various activities of the company. The process of registering the company as a legal entity at BRELA is ongoing and this will allow the company to enter into contract with prospective investors that MUHAS is willing to engage.

Various income generating fixed assets are placed under MUIHC for management, sustainability and development, these include; HD-CHPE rented facilities, Kalenga House, NMB house, Posts house Management and hiring of all other university conference and seminar rooms/halls. A portion of proceeds will be used to sustain activities of MUIHC initially until it is self-sustaining.

4.10 Directorate of Planning and Investment – Mloganzila Campus

4.10.1 Introduction



Dr. Pilly Chillo

In order to address the shortage of Human Resource for Health (HRH) in the country, MUHAS has started developmental activities for establishing a New Campus at Mloganzila. The development of MUHAS campus at Mloganzila has received considerable support from the government and development partners. During the reporting period, a number of developmental activities and initiatives were undertaken as follows: -

4.10.2 Construction of MUHAS Academic Medical Centre (MAMC)

MUHAS Academic Medical Centre was completed on 31st August, 2016. The building was handed over to MUHAS management on 15th September, 2016.



The state-of-art MUHAS Academic Medical Centre at Mloganzila Campus

4.10.3 Supplying and installation of Medical Equipment at MAMC

Total of 848 of medical equipment were imported, received and installed at MAMC. This was 98.4% of all medical equipment to be supplied and installed in the Hospital. The remaining 14 medical equipment were delayed due to delay in the approval of the contingency fund and will be delivered and installed in July-August 2017. The contingency funds were approved on 28th April, 2017. Completion of installation of MRI machine was pending awaiting delivery and installation of 250 KVA dedicated electricity generator in July 2017.



A CT Scanner Installed at MAMC

4.10.4 Construction of academic and support facilities

During the period under review, the University submitted a revised proposal for phase one Mloganzila campus infrastructure development to the Ministry of Education Science and Technology (MEST) in January 2017. MEST agreed to support construction of Phase one of Academic and Support facilities at Mloganzila Campus in order to double the students' intake for the academic year 201/18 and to support MAMC operationalization. MEST had engaged Tanzania Building Agency (TBA) to construct phase one of the academic and support facilities at new campus. The TBA technical staff visited Mloganzila campus on 8th February, 2017 to study the land and identify the required areas for constructions of the buildings as per Mloganzila campus's master plan. Basic information for preliminary preparations of the establishment of infrastructure at Mloganzila was submitted to TBA in February, 2017 as requested. This information included; Master Plan of Mloganzila Campus and coordinates, Environment Impact Assessment (EIA) report and certificate, topographical survey report, topographical map and soil investigation report.

MUHAS and TBA met on 5th April 2017 to receive and discuss the progress of the work. TBA prepared the architectural briefs and cost estimates for construction of phase one facilities that were submitted to MEST for approval. The first estimates however, exceeded the budget available at MEST and TBA was asked to revise the numbers and sizes of phase one facilities to match with the available budget.

MUHAS, TBA and MEST met again on 20th April 2017 to discuss and agreed to construct the following facilities at Mloganzila campus during phase one: -

- (i) 1 lecture theatre (200-students' capacity)
- (ii) 4 seminar rooms (50-students' capacity)



- (iii) 1 Anatomy lab (100-students' capacity)
- (iv) 1 Pathology lab (150-students' capacity)
- (v) 1 block of students' hostel (to accommodate 1000 that will initially cater for Undergraduates, Postgraduates and Interns in the same block).
- (vi) A kitchen and cafeteria (to accommodate 250 students)
- (vii) 1 building to accommodate offices for staff (lecturers and administration offices – at least 32 offices)

As of 30th June, 2017, the contract between MEST and TBA was being scrutinized by the Attorney General for approval, which would allow the beginning of construction of phase one between August and September 2017.

4.10.5 Establishment of the Centre of Excellence in Cardiovascular Sciences at Mloganzila

During the reporting period the activities towards establishment of the Center of Excellence for Cardiovascular sciences for East Africa at MUHAS continued as planned as follows: -

(i) Construction of the Multipurpose Building for the Center of Excellence in Cardiovascular Sciences at Mloganzila Campus

No objection of the draft of contract of the consultant for designing and supervision of the construction of multipurpose building was obtained from the African Development Bank (AfDB) on July 2016. The contract between Consultant Hab Consult and MUHAS was signed on 4th August 2016. The meeting with the Consultant to present the schedule of activities was done on 5th, August 2016. A concept design and the design layout of the building were presented to the Project Coordinating Unit (PCU), academicians and MUHAS technical personnel on 27th October 2016. After incorporating comments and suggestions provided the final concept design was approved by the meeting of Committee of Deans and Directors held on 11th January, 2017 at MUHAS.

Bidding documents for procurement of the contractor for construction of multipurpose building were completed on 13th March, 2017 and subsequently approved by MUHAS tender Board on 25th May, 2017. The bidding documents were submitted to African Development Bank for no objection on 1st June, 2017 after approval by MUHAS Tender Board.

The bidding documents received No Objection from the Bank on 21st June, 2017 with few comments to address before advertisement of the tender. The comments were addressed and invitation from eligible bidders to construct the building was advertised on the *Daily News* on 29th June 2017. As of 30th June, 2017 more, than 5 bidders had collected the bidding documents from the PMU office.

(ii) *Training of 24 Staff in Cardiovascular Sciences and collaboration with other Institutions*

During reporting period, a total of twenty one (21) candidates were admitted in various local and international training Institutions. Out of 21, nineteen (19) candidates had started training in various training Institutions in the world and they were progressing well. Two more candidates will start training in August and October, 2017.



Apollo Trainees in Group Photo with Chairman of Apollo Hospitals, Dr. Pratap Reddy

(iii) *Development of Curricula for Masters, Super-specialty and PhD training programs in the fields of cardiovascular sciences (CVS)*

Priority Training programs (primary, secondary and tertiary prevention) have already been identified. The terms of reference for development of each curriculum were developed jointly by the East African Partners States and these have to be followed during development of the curricula. Four curricula drafts have been developed. The appointed committees were continuing with improvement of the curriculum documents before being finalized.

(iv) *Project Management, Coordination, Monitoring and Evaluation*

One steering committee and nine (9) Project Coordinating Unit (PCU) and four (4) steering meetings were conducted in the reporting period. Monitoring and Evaluation forms were developed and circulated to members for monitoring implementation of the planned activities on quarterly basis. Annual work plan and Procurement plan for the year 2016/2017 were developed and approved by the AfDB.



(v) *Research in Cardiovascular Sciences to improve the quality of care of patients with cardiovascular diseases*

During the period under review one research proposal on Rheumatic Heart Disease prevalence in the community was approved by the Director of Research and Publications (DRP) for ethical clearance. Three letters of intent were developed and submitted to GlaxoSmithKline Africa NCD Open Lab Call for funding. Two concept notices were approved for detail proposals. The proposals were developed and submitted to GlaxoSmithKline Africa for funding.

(vi) *Audit*

The external Auditor completed auditing the project in December, 2016. Audit report was submitted to Control and Audit General (CAG) in January, 2017 for review and approval. A report was submitted to African Development Bank (AfDB) on 22nd March, 2017.

4.11 Directorate of Research and Publication

4.11.1 Introduction



Dr. Joyce Masalu

Directorate of Research and Publications is the University's hub for coordinating research and innovations. Since its inception in 2003 the directorate has been developing structures and policies for improving research management. A number

of policies were developed since 2011: including Research Policy Guidelines, Intellectual Property Policy and Guidelines, and Guidelines on Conflict of Interest and Research Integrity. Likewise, the University Research agenda was developed in 2011.

During the reporting year the directorate continued to review all its guiding documents that were developed in 2011. In addition seven new policies were planned for development including; the Data Sharing Policy, Research Chairs' Policy, Publishing Student Research Data Policy, and Institutional Overheads and Effort Compensation Policy for staff working in research projects. During the reporting period the Institutional Overheads and Effort Compensation Policy was finalized.

4.11.2 Organizational matters

During the period under review, the University revised its organizational structure leading to formation of new units. The Directorate of Research and Publications was one of the units whose structure was revised leading to approval of 4 sub units: (a) Institutional Review Board (IRB); (b) Research Development (c); Office of Sponsored Projects (OSP) and (d) Intellectual Property Management Unit. The Directorate has only one Senior Administrator for OSP unit. The other two units are yet to get administrators.

4.11.3 Capacity Building

Through Sida support the Directorate supported 2 in-house training of 47 PhD supervisors facilitated by the four faculty who attended one-week Training of trainer's course in Sweden on PhD supervision. All these capacity building initiatives were done in order to support the training of postgraduate training at MUHAS for the period of 2015-2020 agreement contribution No 51170072; between Sida and MUHAS. In addition, the directorate in collaboration with the Karolinska institute; organized a grants writing course whereby 27 participants were trained. Further training on Research Administration was organized in collaboration with Dartmouth college of Medicine, University of Carolina San Francisco; 30 participants were trained



4.11.4 Progress in Development of Policies and Guidelines

Professorial Research Chairs Policy: The University recognizes the role played by its senior academic staff in promoting research, mentoring young faculty and supporting the core functions of the University through indirect costs deducted from research grants. The University intends to establish funded research chairs to facilitate retention of productive senior staff and continue to tap their expertise and experience to bring social economic development to the nation. The Directorate appointed a team to draft a Professorial Research Chairs Policy to be processed through the University machinery and eventually be approved.

Review of IRB Standard Operating Procedures: In the reporting period the Directorate reviewed the SOPs for the MUHAS Institutional Review Board with the main purpose of making our IRB independent. The revised SOPs will be approval through the University machinery after developing a proposal to disengage the IRB from the SRPC.

Development of a University Policy Briefs Committee: During the reporting period, the Directorate continued to support the Policy Briefs Committee consisting of representatives from the five (5) Schools, Directorate of Library Services, Institute of Traditional Medicine and Institute of Allied Health Sciences. The Committee Chair is a member of the Senate Research and Publications Committee; and through this Committee it will channel its proceedings to Senate. The 2015-2020 Sida grant will continue to support the training of the policy briefs committee and newly graduated PhD candidates. Based on respective PhD findings, Sida will support the publishing of MUHAS policy briefs handbooks which will be disseminated to stakeholders from time to time.

4.11.5 Research Management Activities

Building capacity for Office of Sponsored Projects: During the reporting year the Directorate in collaboration with the Swedish International Development Agency (Sida) supported two in house training to research administrators at MUHAS. Further mentorship by Swedish counterparts will continue during the 2015- 2020 Sida funding to MUHAS.

One-day Research Seminars: During the year under review, the Institute of Traditional Medicine, Directorate of Library Services, and the School of Medicine conducted one-day research seminars. The research seminars were supported by Sida under its Research Training Support Program. The schools focused on improving skills for staff grant writing and postgraduate student proposals writing. The institute of traditional medicine conducted training on intellectual property rights related to herbal medicines. Library conducted training on online resources management.

Small Grants application processing: Six small grants applicants received ethical clearance and funding. The funding was made available to junior staff using peer review system. The maximum support that was offered is 20,000,000 Tanzanian shillings through Sida support. This is seed money meant to support junior staff to advance in research career and be able to



apply for bigger grants. The funds were made available through Sida Research Training Support Program

Review of Proposals Review of Proposals: The Directorate coordinated the review of proposals submitted by faculty and students through the Senate Research and Publications Committee and its Expedited Review Sub-Committee. It also monitored the progress of clinical trials implemented by faculty and collaborators at the University. In total 740 proposals (as compared to 433 for 2015/16) were reviewed during this reporting period. This is a 71% increase over previous year's reviews. These included postgraduate and undergraduate students' proposals. Below (Table 35) is a summary of the requests submitted in 2015/16 for review: -

Table 36: Summary of the proposals submitted for review:

Type of Submission		Number
Students	Postgraduates	600
	Elective students	5
	Undergraduate	80
Others	Request for Ethical Clearance only	40
	Protocol Amendments	8
	Requests ethical clearance and funding for Funding	7
Total		740

International Collaborative Projects: Research conducted at the University continued to be largely funded by foreign donors. In the period of July 2016– June 2017, the University had 85 active international collaborative projects; out of which 24 were new projects. Project funds awarded during the financial year were TZS 718,629,217.19 and \$ 5,329,731.58. The overheads retained by the university as institutional cost amounted to TZS 78,390,734.35 and USD 379,992.64 respectively.

Publications Output: During the reporting period, the Directorate of Library Services compiled and published the MUHAS Research Bulletin Volume 19 (1) of July 2017. This volume contains publications recorded from July 2016-June 2017. During the reporting period, a total of 186 journal articles, 155 dissertations, 8 conference proceedings were published. Compared to last year there is a fall of journal publications from 261 to 186 (15% fall), also a decrease was in postgraduate dissertations (from 173 to 155). Furthermore, there has been a significant fall of number of conference papers from (142 to 8) in the previous year. There were no books reported during the reporting year.



4.11.6 Research Dissemination

The directorate participated in the 5th MUHAS scientific conference held in June, 2017. The conference was largely supported by the DRP through its Sida Research Training Support Program. Other avenues for dissemination included the publications outlined under item 16.5.6. Likewise, repository offers an online dissemination of research findings. The overall impact is to contribute to improvement of medical practice and influence policy change.

Networking: The Directorate participated in monthly teleconferences with Dartmouth Medical College and UCSF to discuss collaborative activities to improve the performance of the Office of Sponsored Projects (OSP) through NIH grant for strengthening MUHAS OSP. In addition, the Directorate in collaboration with the Karolinska Institute (KI); Sweden strengthened the office of sponsored projects through in-house training at MUHAS. This initiative is also Sida supported through the 2015-2020 agreement.

4.12 Directorate of Undergraduate Education

4.12.1 Introduction



Prof. M. Moshi

The Directorate of Undergraduate Education supports the educational mission and vision of the University. It maintains and periodically updates the Central Timetable and Timetables Management System and coordinates all Undergraduate matters

related to admissions, curriculums development and review and management of examinations including submission through SUEC and later to SENATE for approval.

4.12.2. Main Functions of the Directorate

To support and promote excellence and professionalism in training of human resources for health that lead to the attainment of equitable socioeconomic development for the Tanzanian community and beyond.

4.12.3 Organizational matters

The Directorate made good progress in formalizing its organizational structure. The Admissions Office was formally approved by the CDD and Ms. Renista Wilbert Mkoba was formally appointed as the University Admissions Officer. Additional staff are needed to fill the vacancies for the Admissions Office. The Examinations and Master Timetable Unit is not yet formally established, but currently Mr. Erick Mghamba is heading the Unit. Formation of the Undergraduate Programs Unit still awaits recruitment of suitable staff.

4.12.4 Students Admission for the year 2016/2017

The total number of students selected in the academic year 2016/17 was 447 of which 428 (95.78%) students were registered (Table 36). The Directorate of Undergraduate Education also processed the applications of both Diploma and Advanced Diploma programs for various programs. A total number of 384 students were selected and among them 212 (55.21%) students were registered. The discrepancy between selected and registered diploma and undergraduate students is due to various reasons including inability to pay school fees, transfers to other universities and some students who did not report.

**Table 37: Number of Undergraduate candidates selected and registered**

Program	Number of selected Applicants	Number of students registered/On studies
Doctor of Medicine	206	200
Bachelor of Medical Laboratory Sciences	55	51
BSc Radiation Therapy Technology	10	9
Doctor of Dental Surgery	33	32
Bachelor of Environmental Health Sciences	40	36
Bachelor of Pharmacy	59	57
Bachelor of Science in Nursing	44	43
Total	447	428

During the academic year 2016/17 the Directorate of Undergraduate Education enrolled of 3141 students into various programs, 2093 students in degree programs and 1048 in diploma programs. A total of 1088 (34.64%) among enrolled were females. This represents an increase by 1.74% compared to the 2015/16 academic year enrollment. During the 10th University graduation ceremony which was held on 3rd December 2016, a total of 944 students graduated in various diploma and undergraduate programs, of which 342 students (39.4%) were females.

4.13 Directorate of Information Communication Technology

4.13.1 Introduction



Dr. Felix Sukums

The Directorate of ICT is mandated to harness and mainstream information and communication technologies (ICT) into all the University's operational and management functions. The directorate ensures that new developments in ICT are embraced and used to promote the vision, mission, and core functions of the University. To achieve this goal, MUHAS has implemented and maintained various ICT infrastructures, systems, and services. During the year under review the directorate in collaboration with its Swedish collaborators through Sida support conducted a comprehensive technical assessment of ICT services at MUHAS.

The audit aimed at understanding requirements of users as well as number and status of existing ICT infrastructures, systems and services being offered at MUHAS. A service catalogue consisting of 84 ICT services, which are at different stages of development, was prepared as per Figure 1. Large proportions (83%) of the services are hosted and managed locally at MUHAS as shown in figure 2.

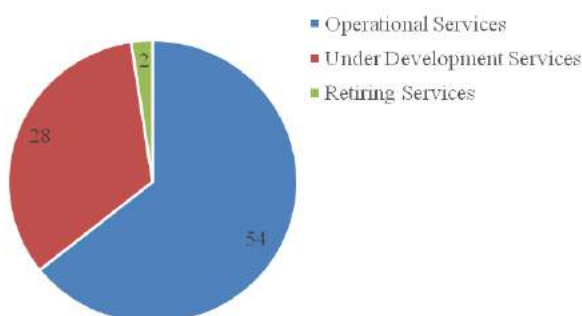


Figure 14: Number and Status of ICT service at MUHAS

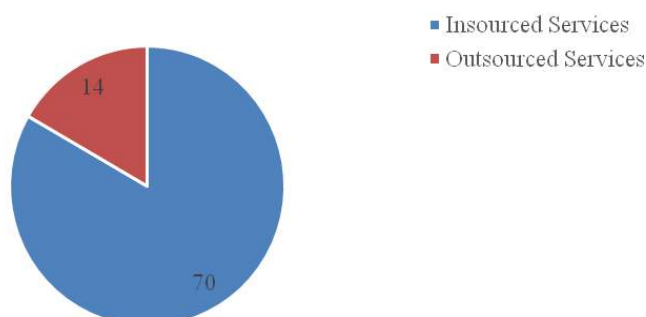


Figure 15: Number of Locally hosted/sourced versus outsourced services



In-line with the mandate, the Directorate continued to maintain and support use of the ICT infrastructure, systems and services. Some of the activities carried out during the reporting period 2016/17 are described in the sections below: -

Network Infrastructure and Internet Connectivity and Access

The Directorate of ICT managed and maintained the ICT infrastructure to ensure reliable access to intranet and Internet services. In addition, significant network expansion and improvements to meet the growing Internet demands took place. This includes maintaining the link that was established at Chole hostels from the National ICT Backbone through fibre optic cable. Functional wireless access points and other supportive structures at Chole and MUHAS main campus have continuously been increased (13 wireless access points, 11 network switches).

During the year under review Internet connectivity at MAMC was established through Optic Fiber cables but also VSAT back up link. At MUHAS a 30Mbps Internet back up connection was established. All these have significantly contributed in improving the Internet speed and reliability. Furthermore, the Directorate continued to manage and maintain the MUHAS LAN through troubleshooting of network problems, upgrading network active components and installation of new network links. Moreover, internet and telephone connection were installed and is functional at HD-CHPE. A new server room was also established at HD-CHPE as a backup data Centre for the University.

The university procured 50 computers for installation into different computer rooms for increases accessibility to internet services and e-resources.

Management and Maintenance of Video Conferencing and Training Facility

MUHAS has a Video Conferencing facility located at the Library building previously acquired through the Dar Dar and Academic Learning (ALP) Projects. During this reporting period, DICT continued to maintain the infrastructure and support users to effectively utilize the facility. This facility enabled interaction during trainings and conferences with other remote participants and collaborators. During the period under review DICT facilitated and supported the use of this facility for Gastroenterology trainings (conducted every Thursday of the week), TRIM-TB trainings (conducted once every month) and Research ethics course that happened more than ten times. The directorate has also developed requirements for procuring and installing a modern video conferencing facility at HD-CHPE building.

MUHAS Website and Mail System

During the period under review, DICT continued to maintain MUHAS website, and mailing system. MUHAS social media sites that were developed have been effectively utilized and are on a continuous update. This includes the Facebook page <https://www.facebook.com/muhimbiliuniversity/>. Furthermore, redevelopment and improvement of the University Website has continued by updating information/content on a regular basis. Improvements of the re-constructed website that was tentatively handed over

by e-government is ongoing under e-Government Agency in collaboration with our ICT team.

In order to improve email communication, the directorate installed and configured a new mail system. The new MUHAS mail system is based on “Zimbra” which is an enterprise-class email, calendar and collaboration solution”. The new mail system has many improved features like User-friendliness, Calendar, Tasks, Briefcase, more disk space/Mailbox size, and more Security. The new mail system is accessible via <https://mail.muhas.ac.tz>. The process of integrating the email system to online file storage and sharing system (<https://str.muhas.ac.tz>) is ongoing.

During the review year the university was ranked the 2nd in Tanzania and 25th in Sub-Saharan Africa according to Web metrics (Raking Web of Universities) http://www.webometrics.info/en/Ranking_africa/Sub_saharan_Africa.

4.13.3 Management Information Systems Implementation and Support

During the period under review, the Directorate introduced, managed and supported a number of electronic management information systems (MIS) in the University. These included the Student Academic Records Information System (SARIS), the EPICOR based Integrated Financial Management Information System (IFMIS), Human Capital Management Information System (HCMIS), e-learning management system (Moodle), Library Information Systems, Institutional Repository (DSpace) and Dental Information Management Systems (Dentrix) at the University Dental clinic. We are currently in the process of upgrading SARIS to latest new version with online application, selection and admission features that will help applicant apply to various programs. Furthermore, newly system for storage and file sharing among departments within MUHAS has been installed and configured during the period under review. This system allows users to store and share their files within departments and also outside while maintaining the system control. Currently it is in operational to Finance department to start with. The system can be found through <https://str.muhas.ac.tz>

We continued to support various activities related to computerization of the central timetabling in which DICT installed and configured Computerized Central Timetabling System (CELCAT) to centralize and enhance preparation and management of teaching timetables. Almost all timetables have been uploaded ready for use in the coming semester. The directorate continued to improve the installed and customized online ticket management system/helpdesk, and online telephone directory. In the reporting period, the directorate continued with the process of centralizing or clustering of printing and photocopying services in which 7 units are currently sharing the services. DICT continued to work with the HIS consultant to ensure efficient and cost-effective hospital systems are installed at the new hospital.

Biometric Time and Attendance System

The installation and configuration of a biometric time and attendance has been finalized and will be operationalized after registration and training during the first quarter of the coming academic year.

Student Academic Records Information System (SARIS)

In the year under review, DICT carried out a number of improvements in the SARIS including improving of role-based access (RAC) and audit trail to enhance security and data quality, customization for transcripts and program/course setup. Two training sessions and one-on-one trainings and support to all SARIS users were provided. Furthermore, online registration was done

using SARIS for all undergraduate and diploma students.



Fig. 16: Students making use of available wireless network to facilitate their discussions

Integrated Financial Management Information System (IFMIS)

The Directorate continued to support EPICOR based IFMIS system operations in collaboration with the directorate of Finance and the software vendor (Soft-Tech Consultants Limited). The activities conducted include technical support, end-user support, troubleshooting and data backup and recovery. A total of 2 auditors were connected and supported to use the system. During this review year, EPICOR was handed over to MUHAS and a service level agreement was signed and is being implemented.



Human Capital Management Information System (HCMIS)

The directorate continued to support HCMIS (LAWSON) system operations in collaboration with the Directorate of HRMA. Seven HR officers were supported to access and use the system. The activities included maintenance of virtual private network (VPN) link, technical support, end-user support, troubleshooting and data backup and recovery.

Library Information Systems

In collaboration with the Directorate of Library Services (DLS), DICT continued to host, maintain, upgrade, train and support a number of free and open source based Library Information Systems including Integrated library information system (KOHA), Institutional repository system (DSpace) and Open Journal System.

Dental Clinic Computerized Management Information Systems

DICT managed and maintained the Dental Clinic Computerized Management Information Systems (Dentrix and Dexis). The activities carried out included managing user accounts, training new and existing users, user training and support, database administration, conducting data quality checks and backup as well as managing NHIF Claim management system.

ICT Teaching, and Learning Activities.

The DICT in collaboration with the DLS offered computer skills and information literacy under the Information Technologies (IT 100) course to all first year undergraduate and diploma students. During the period under review, 545 students were trained through lectures and hands-on exercises.

DICT participated in teaching the health management information system (HMIS) module for masters' students in the Schools of Pharmacy and Public Health and Social Sciences.

The DICT in collaboration with the DLS conducted a training needs assessment (TNA) for ICT among MUHAS staff and students. Figure 4: DICT also maintains 3 computer labs at MUHAS

Practical Training and Internship

The directorate continued to offer practical training to ICT students from different Universities and colleges in the country. In the year under review, twenty (20) students were accommodated by DICT to do field work (13 field students, and 7 interns).

Collaboration, Research and Publication Activities

The directorate continued to participate in research activities in the year under review in which one manuscript has been submitted and one abstract was accepted in scientific conference.

The MUHAS Conference Management System was updated and fully operational for the 5th MUHAS Scientific Conference, <http://conf.muhas.ac.tz>. The system was used for online registration, abstracts submission and review. DICT staff also participated in organizing the conference.

DICT continued to participate in a number of research grant writing in which 3 grants applications were submitted. The directorate with collaboration with DLS continue to lead the research program on strengthening the use of ICT at MUHAS, Project-Period: 2015-2020 funded by Swedish International Development Agency (Sida). The Directorate in collaboration with DLS and the Harvard Medical School are still running a project that gives medical students access to online medical resources (Up-to date database). In addition, the directorate continued to provide ICT support to various research activities including support on data management.

The Directorate in collaboration with the UNESCO Dar Office organized a two-day workshop on eHealth Concept Creation Workshop held at MUHAS Campus in Dar es Salaam in the May 16 and 17 2017. This is in line with a collaborative telehealth program between UNESCO, MUHAS and MoHCDGEC for the operationalization of telemedicine services under the Digital Village in a remote Maasai village of Ololosokwan in Arusha Region.



Fig. 17: A group photo with the Guest of Honor (Dr. U. Mpoki), during the eHealth Workshop at MUHAS

Staff development



During the year under review, The University has continued to encourage and support DICT staff to pursue further studies in different ICT disciplines. Two technical staff (Mr. Sixmund Amsi and Ms. Daisy Lweitaka) are progressing well with their postgraduate studies (master level) during the period under review. Furthermore, two academic staff, Mr. Twaha Kabika and Mr. Omary Pindawere transferred to MUHAS, fortunately they have managed to enroll for masters in biomedical engineering in Germany.

Twelve staff attended at least one short course in various ICT areas and three in-house trainings as well as one study tour were organized during the period under review. Four DICT staff attended training on MUHAS website management and maintenance organized by eGA. All these are targeted towards building the capacity of ICT staff.

Two staffs attended external training, one in Dodoma on Network and System security and one in India on Database management and web programming

ICT Services at MAMC

In the year 2016/2017, the directorate continued to supervise and inspect the installation of different ICT infrastructures and systems in MUHAS Academic Medical Center (MAMC). The aim was to make sure all systems and infrastructures are installed entirely and according to specifications as per contract. Some of the infrastructure and systems which have been installed including LAN, wireless network, Internet, Telephone and interphone, nurse call, public address and audio visual, access control, CCTV and Fire alarm security systems.

DICT staff attended trainings on management and maintenance of these infrastructure and system as well as user support. The directorate to provide support to staff on different ICT services including internet connectivity, setting audio visual system in auditorium for presentation of workshops and meeting, demonstration of the system to visitors and making announcements using public addressing system. During the year under review 35 and 45 staff were trained on how to use nurse call system and fire alarm system respectively.

The directorate continues to provide technical support and requirements gathering and analysis for customization of various management information systems for the hospital including hospital information system (HIS), and EPICOR based integrated financial management information system (IFMIS).

ICT User Support

User support is one of the core activities of the DICT to ensure efficient and effective use of ICT infrastructure, systems and services. During the period under review, the directorate continued to offer technical support to staff and students in the use of ICT systems and services. The directorate has provided user support and troubleshooting, our technical crew attended 950 problems related to hardware, software, Saris (492), telephone and the Internet

services in 2016/2017 as figure shown below as compared to 706 problems in 2015/2016 and 515 problems in 2014/2015.

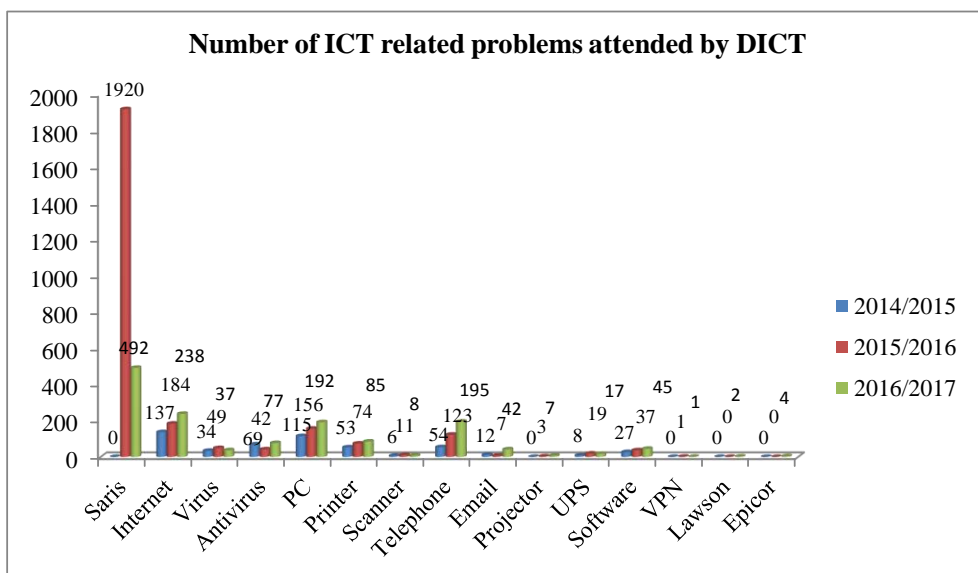


Figure 18: Number of ICT related problems attended by DICT

Challenges facing the directorate

Some of challenges hindering the directorate to adequately and efficiently support the use of the ICT resources

- (i) Inadequate staff in terms of number and qualifications.
- (ii) Rapid advancement of ICT and inadequate experience and skills among some ICT staff in management and maintenance of the modern ICT infrastructure and systems
- (iii) Inadequate funding to support ICT services
- (iv) Poor response rate on web content deliverance (especially from departments) and unclear/incomplete ICT requirements.

4.14 Directorate of Library Services

4.14.1. Introduction



Prof. E. T. Lwoga

During the reporting period, the library continued to implement activities aimed at achieving its objectives as outlined in its Five Years Rolling Strategic Plan. Again, due to an insufficient local budget, financial support for the activities came mainly from donors, particularly Sida whose aim is to strengthen the teaching and research capacity at the University.

4.14.2 User Needs

The library continued to compile user profiles to give guidance on user needs. Academic departments and staff were contacted for suggestions and views on materials to be acquired, particularly books and journals. Library statistics were taken on daily basis to give guidance on library use and for decision - making.

4.14.3 Collection Development

Books

During the reporting period starting from July, 2016 to June, 2017, the library through its acquisition section received 664 books and 207 dissertation and theses as shown below:

- (i) 644 books from Book Aid
- (ii) 20 books from Essential of orofacial anatomy donated by Prof. David Ngassapa
- (iii) 2017 dissertations and theses from Directorate of Postgraduate Students, MUHAS

Periodicals

During the reporting period starting from July, 2016 to June, 2017, the library through its periodicals section received 74 periodicals as shown below:

- (i) 18 journals from African journals
- (ii) 9 journals from Lepra
- (iii) 10 journals from WHO
- (iv) 8 bulletins from WHO
- (v) 1 bulletin from KARGER
- (vi) 28 newsletters from MUHAS

Electronic library services

- (i) The library has subscribed to about 34 online databases that provide access to e-journals and e-books through the joint subscription under the Consortium of Tanzania University Libraries (COTUL).
- (ii) The library has subscribed to about 12 online databases that provide access to e-journals and e-books through the Electronic Information for Libraries (EIFL).
- (iii) The library has subscribed to Research for Life Program, which provides free access to electronic journals in health, environment, social sciences and related fields to



developing countries. The Research for Life Program includes the following databases: Access to Research in Health Program (HINARI), Access to Global Online Research in Agriculture (AGORA), Online Access to Research on the Environment (OARE) and Access to Research for Development and Innovation (ARDI).

- (a) HINARI provides access to 15,000 journals (in 30 different languages), up to 47,000 e-books, up to 100 other information resources;
- (b) AGORA provides access to 6,100 journals and up to 5,800 e-books;
- (c) OARE provides access to 5,710 peer reviewed journals and 1,119 online books and other information resources; and
- (d) ARDI provides access to around 20,000 journals, books, and reference works.

The library provides access to The Essential Electronic Agriculture Library (TEEAL), a searchable, offline, digital library which contains mainly agriculturally focused reference journals updated annually and delivered by the TEEAL Project Office at Cornell University's Mann Library. TEEAL contains a full-text and searchable database of articles from more than 325 high-quality research journals in agriculture and the related sciences, including health and life sciences. The Library also provided access to other open access journals and books as catalogued on Library website

4.14.4 Usage of e-resources

The library subscribes to a about 34 online databases but unfortunately, we can only access usage reports from only four (4) online databases. This is because there have been some challenges in retrieving usage statistics of e-journals from other online database publishers. But the library has been making effort to communicate with those publishers in order to get usage reports from all online databases. The library was unable to get statistics from May to June 2017 due to temporary changes of MUHAS IP range that limit access to these usage reports. This was caused by breakdown of national fiber optic cable that resulted to lack of internet connectivity from TTCL. It can be seen from Table 37 that Wiley library had higher article downloads as compared to other databases.

Table 38: Usage of online databases subscribed by MUHAS library

Months/Year	Full text Downloads for MUHAS subscribed online databases			
	Sage	Central Index System	Emerald	Wiley Online Library
July-2016	0	33	35	369
August 2016	0	7	13	263
September 2016	0	0	52	224
October 2016	2	1	49	186
November 2016	1	51	160	406
December 2016	4	29	39	287
January 2017	2	54	127	604
February 2017	0	28	55	524
March 2017	6	45	38	568
April 2017	0	3	8	53
TOTAL	15	251	576	3484

Institutional repository

The library continued to create awareness and conducting training on the use of an institutional repository (<http://ir.muhas.ac.tz:8080/jspui/>) to students and academic staff at MUHAS. Currently the MUHAS Institutional Repository (IR) has a total of **1,685** research works and still the library staffs continue to populate the IR with research works produced by MUHAS faculty members and students. During the period under review a total of **2,735** users accessed the institutional repository with the total of **3,834** sessions. (Session is the amount of time users stayed on the MUHAS IR which is counted using minutes (see Table 38 below): -

Table 39: Institutional Repository Usage Statistics

Months/Year	Users	Sessions
July-2016	265	385
August-2016	183	251
September-2016	153	208
October-2016	220	277
November-2016	363	578
December-2016	252	345
January-2017	215	262
February-2017	241	338
March-2017	187	313
April-2017	176	210
May-2017	227	299
June-2017	253	368
TOTAL	2,735	3,834

Table 39 indicates original countries where users who were using MUHAS IR. It is clear that the MUHAS IR is widely used across the world. A large number of users came from Tanzania with a total of **3008 sessions**.

Table 40: Institutional Repository Usage Statistics by Country in Sessions

Country	Tanzania	United Kingdom	Not set	UK	USA	Kenya	India	Uganda	Austria	Netherlands	Total
Sessions	3008	126	306	91	87	55	28	27	26	26	3,834
% Sessions	78.46	3.29	9.39	2.37	2.27	1.43	0.73	0.70	0.68	0.68	100

Library website

The library website is available on the internet (library.muhas.ac.tz). The library continued to catalogue the free electronic resources on the internet. The catalogue is available on the library website. The catalogue comprises of links to free online journals, books, evidence based practice databases, educational materials, statistics, tutorials on information searching other health gateways. During the period under review, a total of **5,401 users** visited the library website with a total of **7,939 sessions**. Session is the amount of time users stay on the library website, which is counted in minutes (see Table 40 below): -

Table 41: Library Website Usage Statistics

Months/Year	Users	Sessions
July-16	458	654
August-16	414	552
September-16	347	456
October-16	459	568
November-16	736	1199
December-16	486	727
January-17	461	677
February-17	501	758
March-17	414	647
April-17	191	265
May-17	393	591
June-17	696	1079

Table 41 indicates original countries of users of library website. It is clearly depicted that the library website is widely accessed by various countries. A large number of users came from Tanzania with a total of **6,504 sessions**.

Table 42: Library Website Usage Statistics by Country in Sessions

Country	Tanzania	Not set	USA	Russia	India	Kenya	UK	Netherlands	Nigeria	Sudan	Total
Sessions	6,504	854	187	143	129	99	90	64	55	46	8,171
% Sessions	79.60	10.45	2.29	1.75	1.58	1.21	1.10	0.78	0.67	0.56	100

MUHAS Library news blog

The MUHAS library maintains a library news blog that is meant for marketing of library information resources and services. The library blog is used for promoting use of e-resources, new print books, workshops and uploading online tutorials. The library news blog is available online and it can be accessed through this link i.e. librarymuhas.blogspot.com. During the period under review a total of **1,196 users** visited the library blog with a total of **1,519 sessions**. (Sessions are the amount of time users stay on the blog, which is counted in minutes) (Table 42 below): -

**Table 43: Library blog Usage Statistics**

Months/Year	Users	Sessions
Jul-16	131	145
Aug-16	111	117
Sep-16	58	67
Oct-16	80	91
Nov-16	126	247
Dec-16	134	189
Jan-17	97	109
Feb-17	99	136
Mar-17	100	126
Apr-17	89	100
May-17	91	101
Jun-17	80	91
TOTAL	1,196	1,519

Table 43 indicates countries where users originate. It is clearly portrayed that the library news blog is widely accessed across various countries. A large number of users were from Tanzania with a total of 836 sessions.

Table 44: Library news blog Usage Statistics by Country.

Country	Tanzania	USA	Russia	UK	Not Set	Pakistan	Italy	Saudi Arabia	Philippines	Ethiopia	Total
Sessions	836	137	139	81	222	43	20	16	13	11	1,518
% Sessions	55.07	9.03	8.76	5.34	4.83	2.83	1.32	1.05	0.86	0.72	100

Usage of Computer lab

During the year under review, the computer lab usage statistics show that a total of **2,424** undergraduate students used library computers to access subscribed e-resources and other educational materials as shown in Table 44 below. Postgraduate students more often used the library ICT lab perhaps because they have their own laptops and a designated postgraduate ICT lab.

**Table 45: Usage of Computer Laboratory**

Month/Year	Undergraduate students
July 2016	154
August 2016	202
September 2016	75
October 2016	203
November 2016	163
December 2016	247
Jan 2017	504
Feb 2017	305
March 2017	285
April 2017	86
May 2017	99
June 2017	101
TOTAL	2,424

Circulation services

A total of 1,060 books were borrowed from the library. The borrowing statistics show that undergraduate students were the main users of library books more than other categories of patrons (Table 45).

Table 46: Library circulation statistics

Month/Year	Student Category	SUB –TOTAL	TOTAL
July 2016	Undergraduate students	87	89
	Postgraduate students	1	
	Staff	1	
August 2016	Undergraduate students	46	51
	Postgraduate students	4	
	Staff	1	
September 2016	Undergraduate students	0	0
	Postgraduate students	0	
	Staff	0	
October 2016	Undergraduate students	4	4
	Postgraduate students	0	
November 2016	Undergraduate students	202	202
	Postgraduate students	0	



December 2016	Undergraduate students	140	140
	Postgraduate students	0	
Jan 2017	Undergraduate	127	76
	Postgraduate	0	
	Ext Borrower	0	
Feb 2017	Undergraduate	139	139
	Postgraduate	0	
March 2017	Undergraduate	76	76
	Postgraduate	0	
April 2017	Postgraduate	0	56
	Undergraduate	56	
May 2017	Staff	0	132
	Postgraduate	0	
	Undergraduate	132	
June 2017	Staff	0	95
	Postgraduate	0	
	Undergraduate	95	
TOTAL			1060

4.14.5 Teaching

During the period under review, the Directorate of Library Services taught the following courses to Undergraduate students:

- IT 100: Information and learning technologies course is taught to all 416 first year undergraduate students.
- Literature search and reference management topic to 63 Medical students in semester 7/8 Community Medicine rotation.
- Information literacy topics to 23 second year students who are doing a Bachelor of Nursing.
- Basic introduction and application to computer course (CL 100.01) to 32 diplomas in Medical Laboratory Science students.
- Communication Skills to 416 first year undergraduate students
- 57 students who are doing Bachelor of Science in Nursing were taught Literature search.

The Library also taught Information literacy and reference management topic to the following postgraduate courses:

- 15 Postgraduate students who are doing a Master's program of Applied Epidemiology under a course of Research methodology and computers in public health (AE 603).



- (ii) All first-year Postgraduate students (n=254) were taught a reference management topic in a course of teaching methodology (HE 600).

4.14.6 Continuing professional development programs for Postgraduate students

During the period under review, the Directorate of Library Services conducted eight (8) workshops on online search and retrieval of literature, reference management and plagiarism issues and literature review skills were conducted to postgraduate students at MUHAS. A total of **347** postgraduate students attended these workshops as summarized in Table 46 below: -

Table 47: Postgraduate and undergraduate trainings

S/N	DATES	PROGRAM	NO OF STUDENTS ATTENDED
1	30 th November, 2016	Online search and retrieval of literature and reference	162 students
2	4 th January, 2017	Reference management and Plagiarism issues	45 Students
3	22 nd February, 2017	Citation and reference management	35 Postgraduate students
4	8 th March, 2017	Literature review skills and plagiarism	39 Postgraduate students
5	10 th March, 2017	Literature search and reference management	10 Postgraduate students
6	21 st April, 2017	Literature search and reference management and citation	18 Postgraduate students
7	7 th June, 2017	Literature search and reference management and citation	13 Postgraduate students
8	21 st June, 2017	Literature search and reference management and citation	25 Postgraduate students
TOTAL			347

4.14.7 Workshops for faculty

During the period under review, the Directorate of Library Services conducted five (5) professional development training programs to academic staff. A total of **101** faculty were trained on open data, open access and open science, advanced search techniques, reference management and systematic review and meta-analysis as shown in the Table 47 below:

**Table 48: CPD Programs Conducted by faculty**

S/N	Names of the workshop	Workshop dates	Workshop Participants Category	Number of Participants trained	Funder
1	19 th to 20 th July, 2016	Open data, open access and open science	MUHAS academic staff	17	Sida
2	25 th November, 2016	Open data, open access and open science	MUHAS academic staff	27	Sida
3	24 th to 25 th January, 2017	Advanced search techniques and reference management	MUHAS academic staff	13	Sida
4	16 th to 17 th March, 2017	Research training workshop on open data, open science publishing and cloud computing tools	MUHAS academic staff	17	Sida
5	8 th to 12 th April, 2017	Systematic review and Meta-analysis	MUHAS academic staff	27	Sida
TOTAL				101	

4.14.8 Workshop for Librarians

During the period under review, the Directorate of Library Services conducted three (3) workshops on application of integrated system (KOHA), advances literature and customer care services to Library staff. A total of 20 Librarians attended the workshop as shown in the Table 48 below:

Table 49: Workshop for Librarians

S/N	Names of the workshop	Workshop dates	Workshop Participants Category	Number of Participants trained
1	5 th to 6 th December, 2016	Application of integrated system (KOHA)	Library staff	11
2	16 th to 17 th February, 2017	Application of integrated system (KOHA), advanced literature and customer services	Library staff	12
3	29 th to 30 th May, 2017	Application of integrated system (KOHA)	Library staff	10



4.14.9 Human Resources Development

During the reporting period one library staff reported back to work with a Bachelor of Library and Information Science (Mr. Julius Magessa) and four library staff were on further studies as follows: -

- (i) Mr. Bernard Sengo, MSc Computer Science, UDSM (admitted 2016/2017 academic year and is expected to complete in 2018.
- (ii) Mr. William Mviombo, Masters of information studies at the UDSM. He is a continuing student and is expecting to complete in 2017
- (iii) Mr. Charles Marwa is a PhD student in Information Studies, at the UNISA. He is progressing well, and is expecting to complete in 2019
- (iv) Ms. Tatu Majaliwa, is a continuing student pursuing Diploma in Library and Information Science at MoCU and is expecting to complete in 2017.

4.14.10 Resource mobilization

During the period under review, the Directorate of Library Services conducted a total of five (5) workshops for income generating activities during the academic year 2016/2017. A total of 46 participants attended the workshops (10 participants were from MUHAS and 36 participants were from different Institutions). A total of 2,047,206 was generated from the workshops as shown in the

Table 49 below: -

Table 50: Income generation workshops

S/N	Names of the workshop	Workshop dates	Number of participants trained	15% paid to University as institutional fees
1	KOHA Library intergrated system	9 th to 11 th August, 2016	7 participants from outside MUHAS	367,500/=
2	Marketing and promotion of information services	4 th to 6 th October, 2016	4 participants from outside MUHAS	210,000/=
3	Digital Repository training conducted by Library staff at Tengeru, Arusha	27 th to 29 th February, 2017	6 participants from Tanzania Wildlife Research Institute	309,000/=
4	Digital Repository training and Web 0.2 technologies	18 th to 20 th April, 2017	13 from outside MUHAS and 10 from MUHAS	845,706/=
5	Marketing and promotion of information services application of web 2.0 tools and other technologies	27 th to 29 th June, 2017	6 participants from outside MUHAS	315,000/=
TOTAL			46	2,047,206

4.14.11 Current Projects in the DLS

During the reporting period, the Directorate of Library Services was awarded two (2) new research grants as listed below: -

MUHAS Centre for Evidence Synthesis (MCES)

Principal Investigator: *Prof Edda Tandi Lwoga*,

Co-investigators: *Dr. Bruno, Sunguya, Dr Doreen Mloka, Prof Karim Manji, Dr. Reuben Mutagaywa.*

The University became a member of the GESI network, called *MUHAS Center for Evidence Synthesis (MCES)*. Through funding support from GESI network, the MCES with the leadership from the DLS will be able to do the following: -

- (i) Provide training and professional development in research synthesis methods for existing researchers and analysts in low and middle-income countries;
- (ii) Provide seminars, workshops and conferences to develop the capacity to undertake research synthesis, and a culture of research-based evidence;
- (iii) Work with policy makers and development practitioners in low and middle-income countries, to establish and build the demand for research synthesis products;



- (iv) Develop research synthesis projects and programs across the whole range of policy and practice sectors and substantive topic areas, drawing on the social, economic, political, agricultural, environmental and health sciences;
- (v) Manage Calls for Research Syntheses, drawing on their GESI seed funds, and ensure that review grants are contracted and managed efficiently with contractors that have the required skills to deliver on time and within budget;
- (vi) Undertake in-house reviews and other research synthesis products to the highest possible standard;
- (vii) Quality assure research protocols, draft reports and final reports to ensure they meet the standards required by the research synthesis and the policy and practice communities;
- (viii) Disseminate the findings of research synthesis products in a range of formats, and in language that is easy to comprehend by a non-researcher;
- (ix) Establish realistic and implementable plans for research synthesis products to influence policy and practice.

Maternal health information seeking behavior of pregnant women in selected districts of Tanzania

Period: 2017-2018.

Funder: CODESRIA Comparative Research Network Competition

Principal Investigators: Prof Edda Tandi Lwoga, Dr. C. Mbekenga and Dr. R. Mutagaywa.

Budget: USD 25,000

4.14.12 Ongoing research project

There was only one ongoing project as shown below: -

Building a stronger MUHAS in supporting research and innovation

Period: 2015-2020

Funder: Sida

Principal Investigator: Prof Edda Tandi Lwoga & Felix Sukums

Collaborator: DSV/SPIDER, Stockholm University, Stockholm, Sweden

Budget: SEK 2,290,000

4.14.13 Workshop/Conferences Attended by Library Staff

The Library staff attended the following workshops during the period under review: -

Attended an Institute of Development Studies (IDS) Planning and learning event: During the year under review two Library staff (Prof. Edda Tandi Lwoga and Dr. Mboni A. Ruzegwa) attended and Institute of Development studies (IDS) Planning and learning event took place at Strathmore University from 25th to 28th July, 2016

Open access for students and Early Career Researchers: During the year under review, one Library staff (Prof. Edda Tandi Lwoga) facilitated a workshop on open access for students and early researchers at Bagamoyo, Pwani from 14th to 15th September, 2016



Open Access Workshop: During the year under review one Library staff (Mr. William Mviombo) attended a workshop on Open Access and Institutional repository on 15th September, 2016 at Bagamoyo.

Training Workshop on the Management and Use of E-resources: During the year under review, two Library staff (Prof. Edda Tandi Lwoga and Dr. Sydney E. Msonde) attended the training workshop on the Management and use of e-resources at Teofilo Kisanji University (TEKU) in Mbeya from 27th – 29th September, 2016.

TEEAL and AGORA Training of trainers: During the year under review, one Library staff (Dr. Mboni A. Ruzegea) facilitated the Teal and Agora Training of trainers at the Saint Augustine University (SAUT) in Mwanza from 27th to 29th September, 2016.

Carnegie CPD program: During the year review, one library staff (Mr. William Mviombo) attended Carnegie program in Pretoria, South Africa from 29th October to 26th November, 2016

Scientific writing and publishing workshop: During the year under review, one library staff (Prof. Edda Tandi Lwoga) attended scientific writing and publishing workshop at Nelson Mandela African Institute of Science and Technology (NM-AIST) in Arusha from 28th to 30th November, 2016

Writing in Science workshop: During the year under review, one library staff (Prof. Edda Tandi Lwoga) attended Writing in Science workshop at Karolinska Institute, Sweden from 5th to 9th December, 2016

A task force meeting to finalize a Diploma in health information sciences curriculum: During the year under review, one library staff (Dr. Rehema C. Mallya) attended a task meeting to finalize a diploma in health information science curriculum at TTSA, Morogoro from 13th to 17th December, 2016.

The 2016 Comparative Research Networks and National Groups Joint Methodology Workshop supported by CODESRIA: During the year under review one library staff (Prof. Edda Tandi Lwoga) attended the 2016 Comparative research network and national group joint methodology workshop supported by CODESRIA in Harare, Zimbabwe from 7th to 11th February, 2017

The TLA Professional workshop and 2017 annual general meeting (AGM): During the year under review three Library staff (Dr. Sydney E. Msonde, Mr. Christom Mwambungu and Ms. Catherine Chibanda) attended TLA professional workshop and 2017 annual general meeting (AGM) at Shinyanga from 22nd to 24th February, 2017

Facilitated workshop on Accessibility and usage of E-resources: During the year under review two Library staff (Prof. Edda Tandi Lwoga and Dr. Sydney E. Msonde) facilitated the workshop on accessibility and usage of E-resources at the State University of Zanzibar from 15th to 18th March, 2017.



A doctoral workshop on Research and Publication: During the year under review on Library staff (Mr. Charles Marwa) attended a doctoral workshop on Research and Publication from 16th to 22nd May, 2017 in Pretoria.

Finalization of the curricula for Bachelor Degree (NTA LEVEL 7&8): During the year under review on Library staff (Mr. William Mviombo) participate in finalization of curricula for Bachelor Degree (NTA LEVEL 7&8) in Dodoma region from 15th to 25th May, 2017

The 5th Annual Secretarial Conference: During the year under review one library staff (Ms. Mariam Hashim) attended the 5th Annual Secretarial Conference conducted by TAPSEA in Dodoma region from 18th to 20th May, 2017

Monitoring and attestation of form six National Examination: During the year under review one Library staff (Dr. Sydney E. Msonde) participated in monitoring and attestation of form six National examinations in Dodoma region from 27th May to 5th June, 2017

4.15 Directorate of Continuing Education and Professional Development

4.15.1 Introduction



Dr. D. Mloka

The Directorate of Continuing Education and Professional Development (DCEPD) is a Unit of MUHAS committed to the improvement of coordination, development and effective delivery of Continuing Education (CE) programs and activities so as to play an effective and leading role in human resource development and capacity building for health in Tanzania.

The Vision of the Directorate of Continuing Education and Professional Development is to be a national and regional Centre of excellence in provision of quality and sustainable continuing education and professional development in health and related disciplines. The directorate envisages realization of this vision

through its mission which is to provide quality, demand driven CPD through facilitation, regulation and promotion of CEPD for the health sector and beyond. In implementing its mission during this academic year, the Directorate conducted a number of activities: These include the following:

4.15.2 CPD Courses and Quality of Teaching and Learning

The Directorate continued to conduct various Faculty development workshops focusing on Interactive teaching and teaching and assessment of additional competencies aiming at enabling faculty to better implement the competency-based curricula. These include the following: -

- (i) The Directorate, in collaboration with the HPEG Group continued to run the Post Graduate Teaching course on Educational Principals and Practice for Health Sciences Professionals (HE 600) that started on 20th April 2017 and it will end on 17th August 2017. A total of 277 Post graduate students will be trained.
- (ii) The Directorate of Continuing Education and Professional Development, Directorate of Post Graduate Studies and Directorate of Research and Publications in collaboration with the Karolinska Institute facilitated the first PhD supervision course from 21st to 22nd November 2016. It was attended by 22 staff from MUHAS. The purpose of this courses was to assist supervisors of PhD candidates from MUHAS and other Medical Universities in Tanzania to understand their roles and responsibilities as supervisors and students and how to become better supervisors. The courses covered various aspects of doctoral supervision including; roles of the supervisor, mentor and student, how to handle difficult situations and give feedback, how to develop a PhD study plan and learning objectives. The courses were organized and facilitated with support from Sida.



- (iii) Directorate of Continuing Education and Professional Development, Directorate of Postgraduate Studies and Directorate of Research and Publications in collaboration with the Karolinska Institute facilitated the 2nd PhD supervision course from 24th to 26th May 2017 at MUHAS. It was attended by 23 participants in total, whereby 18 staff were from MUHAS, 3 staff from Ifakara Health Institute and 2 staff from National Institute of Medical Research (NIMR) in Dar es Salaam.

4.15.3 Accreditation of CPD Courses

A total of 9 short courses were accredited by the Directorate during the reporting period. The accreditation follows the accreditation guidelines developed by the Directorate and approved by the relevant University organs. Courses accredited during the year academic included: -

- (i) Short course on Clinical Pharmacokinetics (SOP)
- (ii) Short course on Advanced Life Support (SOM)
- (iii) Short course on Basics of Emergency Care (SOM)
- (iv) Short course on Pediatric Emergency Care. (SOM)
- (v) Short course on Basic Ambulance Provider (SOM)
- (vi) Short course on Basic Ambulance attendant (SOM)
- (vii) Short course on PhD Supervision (DCEPD, DPGS & DRP)
- (viii) Legal Compliance and Enforcement for Environmental and Occupational Health Practitioners (SPHSS)
- (ix) Scientific Writing and Information Literacy (DLS)

4.15.4 The 5th MUHAS Scientific Conference

The Directorate held its 5th MUHAS Scientific Conference with support from Sida and other development partners from 29th to 30th June 2017 at LAPF International Conference Centre in Dar es Salaam, Tanzania. The conference was officiated by the Dr. Hamisi Kigwangalla, Deputy Minister of Health, Community Development, Gender, Elderly and Children, representing Her Excellency, the Vice President of United Republic of Tanzania, Vice President of the United Republic of Tanzania, H.E. Samia Suluhu Hassan.



Fig 19: Group Photo with guest of honor, Dr. Hamisi Kigwangalla, Deputy Minister of Health, Community Development, Gender, Elderly and Children at the official opening of the 5th MUHAS Scientific Conference

The conference attracted 405 participants both local and international to share research findings and experiences in health and health related issues and to disseminate their research findings to relevant stakeholders.



Figure 20: International and Local Conference participants exchanging views and ideas at the 5th MUHAS scientific conference



The theme of the conference was *Translating Health Research Findings into Practice for Achieving Sustainable Development Goals (SDGs)*. Covering the following subthemes:

- (i) Reproductive, Maternal, New born and Child Health
- (ii) Pharmaceutical Care and Practice
- (iii) Oral Health
- (iv) Gender and Health
- (v) E-health, M-health and Health Information System
- (vi) Health Professional Education and Skills Development
- (vii) Basic Science and Clinical Research
- (viii) Infectious Diseases
- (ix) Traditional, Complementary and Alternative Medicine
- (x) Non-communicable Diseases(NCD)
- (xi) Health Policy and Health Systems Research

4.15.5 Quality Control & Assurance

During this academic year, The Directorate in collaboration with the Directorate of Quality Assurance continued to review curricula of various post and undergraduate graduate programs from various schools as the way of improving and strengthening the quality of teaching and learning at the University.

4.15.6 Infrastructure Development and Income Generation Activities

In an attempt to ensure sustainability of its activities, DCEPD continued with the following strategies to enhance teaching and learning and generate income: -

- (i) The Kalenga House continued to provide quality and affordable short-term accommodation for various visitors and the Directorate continued to generate income for the university through lodging fees.
- (ii) The Directorate was awarded a grant amounting to 34,517 USD from S the Resilient Africa Empowering Tanzanian Communities Project for curriculum development and training of local communities in value added rosella and avocado products
- (iii) The construction of the Haile Debas Centre for Health Professionals Education (HD-CHPE) was completed. The offices, conference rooms and skills laboratory were partially furnished and equipped.

4.15.7 The 41th Dar es Salaam International Trade Fair and Exhibitions

The Directorate planned participates in the 41th International Trade Fair Exhibitions that scheduled to start from 28th June to 13th July 2017 as the way of strengthening linkages, partnerships and networks at the national and international level.

4.16 Directorate of Quality Assurance

4.16.1 Introduction



Dr. GH. Leyna

The Directorate of Quality Assurance was established as a unit in 2013 and has grown into a full directorate under the office of the Vice Chancellor. This positioning has enabled the directorate to work closely with both Deputy Vice Chancellors for Academic, Research and Publications, and for Planning, Finance and Administration, to ensure 'fit for purpose' of all University activities.

The directorate continued to work with the Tanzania Commission for Universities (TCU), the Inter-University Council of East Africa (IUCEA) and other Universities inside and outside the country to learn best practices in the provision of higher education. Its main priority has been quality assurance in teaching and learning but has also gradually moved to include research and public service in its portfolio in light of completion of the MUHAS Academic Medical Centre (MAMC) at Mloganzila.

MUHAS intends to be ISO certified in the near future. During the year, the directorate initiated steps for MUHAS to fulfill this intention by familiarizing itself with the ISO system and requirements to advise the University on how best to approach this process. The directorate was able to identify areas that need to be strengthened or improved for the University to successfully go through the ISO certification process. Currently, the directorate is searching for an eligible consultant to assist the University to navigate the ISO certification process.

The directorate continued to receive its 20% share of the student quality assurance fees retained by the University to support its activities. This provided a great boost to the directorate to implement planned activities such as supporting more staff to receive training on quality assurance systems in education institutions.

4.16.2 Reporting Period Achievement

During the academic year 2016/17, the directorate was able to successfully achieve several planned activities as follows: -

Office space: The directorate is now housed in a fully furnished office space. However, this is not adequate to the proposed directorate staffing level of at least five (5). There is still a deficit of 3 rooms (Deputy Director's Office, Administrator/QA officer's office and a meeting room).



Capacity building: The director and deputy director participated in three National and International forums on QA including the 7th East Africa Quality Assurance Network Forum held from the 8-12th May 2017 in Dar es Salaam. The deputy director attended two workshops on how to conduct and report a program self-assessment.

Nine MUHAS staff participated in a training on “*Total quality management skills for higher learning institutions*” at the Mwalimu Nyerere Memorial Academy in Kigamboni Dar es Salaam. Upon their return, they shared knowledge acquired to members in their respective units.

In collaboration with the Directorate for Continuing Education and Professional Development, the directorate facilitated two (2) 5-day workshops on PhD supervision with support from Sida. Participants were MUHAS faculty and honorary members of the faculty from different institutions (NIMR, MNH, etc.).

Policy development: The University Council approved the Quality Assurance Policy. Initial processes for printing and distribution to the wider University community and other stakeholders have been started.

Teaching and Learning: The University Senate approved the MUHAS examination handbook developed to guide all University assessments. The handbook aims to harmonize all assessments in the University taking into account the expansion and different modes of examination. It also accounts for modules that may be completed before the designated University examination period.

The directorate has initiated formatting of all undergraduate curricula to meet Tanzania Commission for Universities (TCU) requirements. So far only the Institute of Allied Health Sciences have completed this activity.

Course evaluation tools have been distributed to all schools for re-introduction in the 2016/17 academic year. Although students have shown some interest in filling in the course evaluations, fear amongst faculty and some students still exist. The directorate plans to run sensitization workshops and introduce innovative approaches acceptable to all stakeholders to administer the evaluations.

The MD program has undergone a self-assessment with support from TCU and IUCEA. A team from the school of medicine was constituted and responsible for carrying out the assessment. The IUCEA and TCU provided initial comments to the draft as did members of the school of medicine management. The final document will be submitted to CDD for further discussion by end of August.

Research: The directorate participated in the development of a “SPHEIR” proposal aimed at harmonizing medical education in the country. Although, the proposal was ranked fairly high, it was not successful.



Consultancy and Services: The MAMC quality assurance manual was developed and disseminated to clinical and other University stakeholders. It is in its final stages receiving reviews from the MAMC clinical team prior to onward submission to CDD and Senate.

Links with National and International organizations: The directorate initiated contacts with Academics Without Borders (AWB), an organization that provides technical support to tertiary institutions. Initial conversations are around strengthening core QA activities with the support of an external expert to ensure fit for purpose of the QA framework that is being developed at MUHAS.

4.16.3 Reporting Period Challenges

Lack of support staff in the directorate due to inability to recruit the planned officers and limited awareness amongst staff on quality assurance remained as the major challenges in implementation of QA activities at the University.

4.17 Dean of Students

4.17.1 Introduction



This report outlines the events and activities of the office of the Dean of Students that took place from 1st July 2016 to 30th June 2017. During the reporting period, the The Dean of Student's Office (DOSO) ocontinued to provide various services to students including: health, accommodation, cafeteria, games and sports, counseling and guidance as well as overseeing the students' organization (MUHASSO).

4.17.2 Staff Matters

Dr. Tumaini Nyamhanga

During the reporting period, a total of fifteen (15) DOSO staff continued to provide services to students.

Staff Recruitment, appointments and resignations: During the reporting period, there were no staff recruited, appointed or resigned.

Staff Development: DOSO staff continued to pursue various Master degree programs as indicated in Table 50 below: -

Table 51: Deans of Students Office Staff Training Status

S/N	Name	Position/Rank	Dept.	Course	Status
1	Ms. Gladness Willy	Senior Warden	DOS	Master of Public Administration	Graduated
2	Mr. Ireneus Rwiza	Senior Warden	DOS	Master of Leadership and Management	Writing Dissertation
3	Mr. Titus Mhokole	Senior Janitor II	DOS	Master of Social Work	Writing Dissertation
4	Ms. Rehema Mwaituka	Warden	DOS	Master of Social Work	Writing Dissertation
5	Ms. Juliana Masatu	Janitor II	DOS	Master of Social Work	Writing Dissertation



Staff Promotion: For the reporting period there were no promotions.

Staff Transfer: Ms Tausi Nasoro-Personal Secretary was transferred to the office of Depute Vice Chancellor – Hospital Services. The vacant post was filled by Ms Hermo J. Mallya from Department of surgery who reported to work on 8/2/2017.

Temporary transfer: Mr. Jitikayoa Ndunguru was transferred to Estates Directorate on 23rd January, 2017.

Retirements: During the reporting period two staff; Ms Amina Mushi a Principal Administrative Officer (PAO) and Ms. Semajuto, a secretary retired from public service after reaching the compulsory retirement age.

4.17.3 Students' Affairs

Orientation for first year students: The office of Dean of Students organized a one-week orientation for the new students for 2016/17 academic year. The event took place from 22nd to 28th October, 2016. All activities were successfully accomplished as planned.

Guidance and Counseling Services: The guidance and counseling services were provided to students. A total of 150 (96 males and 54 females) clients were counseled from various school and the Institute of Allied Health Sciences. Matters of concern which were reported to the counseling unit were Academic, Social, Psychiatric, Psychosocial, Health, Financial and Spiritual.

Coordination of Mentorship: The Counseling Unit facilitated mentorship of students by writing letters to the Deans of Schools and the Director of the IAHS reminding them to allocate students to mentors in their respective units. Students and mentors were encouraged to meet regularly.

Supports to Students with disabilities: During the reporting period, the office of the Dean of students compiled information regarding students with special needs. MUHAS received financial support from the Ministry of Education, Science and Technology amounting 4,603,668/=. Three special motorcycles worth 1,300,000/= @ (total=3,900,000/=) were purchased and given to 3 needy students. The rest were used to purchase back rest and special contact lenses. A request to support needy students for this financial year (2017/18) was submitted to the Ministry of Education, Science and Technology.

4.17.4 Accommodation Services to Students:

Enforcement of Tenancy Agreement: During the reporting period, the Students Services Bureau (SSB) allocated rooms to eligible students at both Muhimbili and Chole Road Hostels. SSB also enforced tenancy agreement and Students Bylaws pertaining to accommodation.

4.17.5 Hostel Maintenances:

During the reporting period Hostels were renovated and some tasks are on-going. Completed tasks include: major renovation of the Kitchen at Muhimbili Hostel, replacement of toilet doors, fixing of water pipes (plumbing works), and purchase of water tanks. Another major task was cleaning [unclogging] of sewage system. The on-going major task is replacement of leaking sewage pipes at Chole Road Hostel



Fumigation exercise: During the reporting period recurrence of bedbugs was noted despite fumigation efforts.

In response, the University Management approved procurement of a company that shall facilitate fumigation at Chole Road and Muhimbili hostels during long vacation particularly in September, 2017. This exercise shall be supervised an expert from Tropical Pesticides Research Institute (TPRI) based in Arusha.

Cafeteria Services: The Runners Collection Company won the tender of providing catering services for both Chole Road and Muhimbili hostels. The service provision progressed well despite some challenges that were resolved as they arose. However, this contract was terminated in Early May 2017 due to problems between the Director of the catering company and her creditors. An interim arrangement was made and Magnus Catering Services is a new Company operating cafeteria since 4th May, 2017.

Health Services: The student's services bureau supported sick students by facilitating availability of insurance cards and closely following up those who were hospitalized. Out of 2575 students, 2343 had health insurance cards. This is about 91% coverage of the total undergraduate and postgraduate students. Between July 2016 and June 2017, 111 students fell sick – of whom 65 sought medical care at outpatient departments of main hospitals in the City including Emergency Medicine Department of Muhimbili National Hospital. Unfortunately, during this time period two postgraduate students passed on.

4.17.8 Students' Leadership and Governance

MUHASSO Government continued with their activities harmoniously to a large extent. The students' government received necessary support from the University Management as need arose. The 2016/17 MUHASSO leadership completed its tenure in May 2017. The new government was elected and assumed powers in early June 2017. The top MUHASSO office bearers for 2017/18 are Mr. Yohane Kihaga, MD4, (President) and Mr. Elisante Tarimo, BPharm 3 (Vice President).

4.17.9 Security Issues at the Hostels

At the University security is taken oversight by Univesity Auxiliary Police in collaboration with SUMA JKT Security Company. Although theft indents were occurring, the frequency declined considerably after deployment of more security guards around the halls of residence. This was particularly so at Muhimbili Hostel where a security guard was deployed to each of the five main entry points.

4.17.10 Special Events and Recreational Activities

Sports activities: Several sport competition, particularly football and Volleyball were organized by MUHASO and professional Associations such as TAMSA.

SSB senior staff attended TUSA (Tanzania Universities Sports Association) meetings which deliberated and strategized on how to strengthen sports and games among University students.

4.18 Directorate of Estates

4.18.1 Introduction



The Estates Directorate is a technical Directorate that is responsible for supporting core Institutional functions by providing and ensuring that the teaching, research and consultancy services are rendered within a safe environment at the University.

As such, the Directorate has a function of maintaining grounds, i.e soft and

Mr. Lugano E. Kyejo hard landscaping, managing both outsourced and in house minor rehabilitation as well as supervising new construction projects.

4.18.2 Works Projects

Construction of Security post at Makuti main gate: To enhance security at the University Makuti gate to Muhimbili National Hospital (MNH), M/S Kiko Investment Ltd was awarded Tender for constructing a security post at a contract sum of **TZS. 4,499,864 VAT inclusive**. The construction was successfully completed and handed over on the 12th October 2016.



Figure 21: Security Post at Makuti Gate showing side, front and Back Views.

Construction of Garbage Storage Shed at MUHAS: The work for constructing the garbage storage shed at MUHAS Muhimbili campus was carried out by the Contractor M/S Kiko

Investment Ltd. at a contract sum of **TZS 9,341,727 VAT inclusive**. The project commenced on the 29th August 2016 and was successfully completed on the 29th September 2016.



Figure 22: Front and Side Views of the Garbage Storage Shed

Rehabilitation of Seminar Room No.45 in the MPL building: In efforts to overcome the problem Staff office shortages, the University awarded the contractor M/S Sepro Engineering and General Traders to rehabilitate the seminar room No 45, and partition it into academic staff offices at a Contract Sum of **TZS 11,801,475/= VAT inclusive**. The Directorate of Estates supervised this project, which commenced on the 24th March, 2017 and was successful Completed on the 28th April 2017.

Rehabilitation of the Seminar Room at Pathology Department at MPL building: In order to increase the number of offices for academic staff and mitigate the existing shortage of offices, Contractor M/S Sepro Engineering and General Traders was awarded contract for rehabilitating and converting the Seminar Room at Pathology Department at MPL building into offices. This contract was worth a **Sum TZS 18,227,800/= VAT inclusive**. The works commenced on the 23rd December, 2017 and were completed on the 10th March 2017.

Renovation works for House No. MUHAS/RES/003 located at senior staff flats: During the period under review the University embarked on an exercise of renovation staff houses which had stayed un-attended for a long while due to lack of adequate funds. The Directorate of Estates supervised the renovation works for House No. MUHAS/RES/003 located at senior staff flats at the Muhimbili campus. The renovation was carried out by M/S Kiko Investment Ltd at a contract sum of **TZS 25,339,230 VAT inclusive**. The works commenced on the 23rd September 2016 and were completed on the 8th December 2016.



Figure 23(a) Living Room before Renovation



Figure 23 (b): Living Room after Renovation

Repair and Maintenance of House No 508 at Madaktari Street, Masaki 5: During the reporting period the University carried out repair work for Masaki staff house. The contract was awarded to M/S Kiko Investment Ltd at a contract sum of **TZS 14, 576,730 VAT Inclusive**. The Directorate supervised the project, which commenced on 15th August 2016 and was successfully completed and handed over on the 30th September 2016.

Rehabilitation of House No UPA 5-849/00 along Mazengo Road: The works was carried out and accomplished successfully by M/S KIKO Investments Limited at a contract sum of

TZS 19, 160,940 /= VAT inclusive. The project commenced on the 26th August 2016 and was successfully completed and handed over on the 12th September 2016.

Repairing the floor of the Students Kitchen Floor: In its efforts to create improve student services, the University awarded the contractor to M/S PIA Company Limited to carry out renovations of the student's canteen kitchen floor at a contract Sum of **TZS 14,997,800/= VAT inclusive.** The works commenced on the 15th March 2017 and was completed on the 27th March, 2017.

Replacement of Damaged PVC Rain Gutter and Window Locks in the Library Building:

The contract sum of this project was **TZS 8,217,045/= VAT inclusive** and was awarded to M/S Sepro Engineering and General Traders on the 9th March 2017. The replacement was successfully completed and handed over on the 9th April 2017.

Rehabilitation of ICT Server Room and MPL Roof Top: The contract sum of this project was **TZS 5,064,413/= VAT inclusive** and was awarded to M/S Pia Company Limited on the 28th December 2015. Works were successfully completed and handed over on the 15th March, 2017.

Rehabilitation of Accounts Building at MUHAS: The renovation was carried out by the contractor M/S Sepro Engineering and General Traders at a contract sum of **TZS 41,480,520 VAT inclusive.** Works commenced on the 7th October 2016 and were successfully completed on the 8th November 2016.



Figure 24: Accounts Building Before Renovation



Figure 25: Accounts Building after Renovation

Renovation of the Institute of Traditional Medicine: This renovation work was carried out by the Contractor M/S Kiko Investment Ltd at a contract sum of **TZ 107,432,195.50 VAT inclusive**. The work commenced on the 23rd September 2016 and complete on the 23rd December 2016.

Renovation of SABASABA Building: The Contractor M/S Sepro Engineering & General Traders Ltd was awarded the works to carry out the renovation of MUHAS 's pavilion located at the SABASABA grounds. The contract sum of the works was **TZS 7,973,968 /= VAT inclusive**. Works commenced on the 18th June 2017 and were successfully completed and handed over on the 1st July 2017.

Renovation of Washed Away Fencing Wall near HD-CHPE Building: The project was awarded to M/S Sepro Engineering Limited, at a contract sum of TZS 10,903,200 VAT Inclusive. The works involved renovating part of a fencing wall that had been washed away by soil erosion. Works done included building a new block reinforced wall and creating a storm water drain. The works started on the 13th April 2017 and were successfully completed and handed over on the 18th April 2017.



Figure 26: Wall Renovation at excavation stage, rebar setting and the final completed wall stage

Repainting of GTZ Building: The project was awarded to M/S JECCS Construction & Supplies on the 7th June 2017 at a contract sum of 11,943,300/= VAT inclusive to carry out the external and internal painting of the GTZ building. Repainting was successfully completed and handed over on the 6th July 2017.



Figure 27: Renovated GTZ Building

Renovation of Administration Office – Microbiology: The Contractor M/S Pia Company Ltd was awarded the works to carry out the Renovation of Administration Office located in the Microbiology building. The works commenced on the 12th June 2017 and were successfully handed over on the 11th July 2017. The contract sum of the works was **TZS 12,005,414/= VAT inclusive.**

Renovation of Toilets at Library Building: The project was awarded to the Contractor M/s Pia Company Ltd at a contract sum of **TZS 18,285,634.00/=VAT Inclusive.** The works involved renovating public toilets located on the ground and the first floor. Works started on the 6th June 2017. Final inspection was done on the 5th July, 2017, and handover was done on the 19th July 2017.

Fixing of Security Grills at HD-CHPE building 1st and 2nd floors: The contract sum of this project is TZS 39,721,064/=, VAT inclusive and was awarded to M/S Sepro Engineering & General Traders Ltd on the 19th May 2017. The Contractor handed over the works on the 21st July 2017.

Overlaying with Tarmac the Road Stretching from MTC to HD-CHPE Building: The work was carried out by the Contractor AJAX Associates Limited at a contract sum of TZS148,767,000 VAT inclusive. Works commenced on the 14th November 2016 and were successfully completed and handed over on the 30th December 2016.



Figure 28: Cutting of Pot Halls and Tarmac laying at the Stretch of Road from MTC gate to HD CHPE building.



4.19.3. Preventive Maintenance Contracts

Replacement of Spare Parts for Existing lift located at MPL Building: The service contractor M/S Derm Elevators was awarded the contract to service and replace spare parts in the MPL elevator at a contract sum of TZS 55,288,251/= VAT inclusive. The replacement commenced on the 15th July 2016 and was successfully done and complete on the 16th July 2017.

Annual Comprehensive Services of Library Solar Power System: The service contractor M/S Rex Investment was awarded the contractor for carrying out the Annual comprehensive services of Library solar power system at a contact sum of **TZS 1,000,000 VAT inclusive**. The service commenced on the 1st July 2016 and was successfully completed on the 30th June 2017

Servicing of Generators: M/S MDI was awarded the contract of servicing Generators twice a year at contract sum of **TZS TZS17,626,200/= VAT inclusive**. The service commenced on the 08th February 2017 and was completed on the 07th February 2019.

Servicing of Air Conditioners: During the reporting period, the service provider M/S AC Technology Services carried the preventive maintenance of air conditioners at Muhimbili Main Campus. The contract sum of this task was **TZS Amount TZS 5,270,000/=VAT inclusive**. The preventive maintenance is done twice per year. The first quarter that started on the 19th April, 2017 and ended on the 19th May 2017 involved servicing and cleaning of 527 pieces of air conditioners. The preventive maintenance also involved gas flushing and re-filling of air conditioners as well as replacement of defective capacitors, control cards and compressors.

4.18.4 Ground Maintenance and Cleaning Service Projects

Provision of Cleaning and Gardening Services at Muhimbili Campus: During the reporting period, the contractor M/S Care Sanitation and Suppliers Limited has continued carrying out ground maintenance of gardens and footpaths as well as offering cleaning services in student hostels and offices at a contract sum is **TZS 14,721,064 (VAT Inclusive)** per month. The service provider's contract started on the 1st June 2016 and will end on the 31st May 2018. During the reporting period, the service provider performed assigned duties as per contract and successfully.



Figure 29: Well Designed Green Areas Provide Conducive Environment for Extra Curricula Activities for Staff and Students.

Provision of Cleaning and Gardening works at Bagamoyo Training Unit and Chole Road Students Hostels: During the reporting period, the service provider M/S Kibwe Company Limited has been carrying out cleaning and garden services at Bagamoyo Training Unit (BTU) at a contra sum of **TZS 5,477,560 (VAT inclusive per month)**. The two years long contract started on the 1st June, 2016 and will end on the 31st May, 2018. The service provider has been offering cleaning services in staff houses as well as in student hostels, offices and cafeteria at University Bagamoyo Training Unit. The service provider has also been providing cleaning services in student hostels and cafeteria as well as cleaning grounds at Chole Road student hostels in Masaki. There has been substantial improvement in the work done by the service provider during the reporting period.

Provision of garbage collection services at MUHAS Campus and Chole Road Students hostels: The contractor M/S K-Environment Sanitation Services has continued offering garbage collection services at MUHAS main Campus and Chole Road student hostels as per contract. The contract sum of this garbage collection services is **TZS 4,200,000/= (VAT Inclusive) per month**. The service provider has been delivering services sufficiently well as per specifications of the contract.



Figure 30: Garden and Cleaning Services Provider at Work



Figure 31: Cleaning services staff at work



Figure 32: Garbage Collection Services Provider at Work

Renovations and Installations: The Directorate carried out a number of in house minor renovations such as Cost estimates for painting fencing wall from Super Star area along the United Nations Road to MPL building at a cost of **TZS 313,500/=**. To enhance security in the student's hostels, heavy duty mortise locks were fixed in doors leading into student's rooms in the hostels at a cost of **1,335,320/=**. To ensure reliable electrical power supply in the main campus, electrical works were carried out the at Substation at a cost of **TZS. 800,000/=** to replace worn out electrical parts. Likewise, electrical materials costing **TZS 4,636,000/=** were purchased to replace defective electrical parts at the University Library.

Furthermore, the Directorate also renovated two seminar rooms and the office of the Dean, School of Pharmacy at a cost of **TZS 4,838,000/= and TZS 2,124,000/= respectively**. The Directorate also carried out the phase two renovation of environmental II seminar room, this involved conversion of this seminar room into offices to create 4 offices for staff the cost for this renovation was **TZS 5,000,000/=**.

4.18.5 Events During the Reporting Period

Staff Affairs: During the reporting period, the directorate of estates welcomed two staff members, Eng. Juma Msengi Akanawa, a mechanical engineer by profession and Mr Alberto Peter, Health Attendant II. Two plumbing technicians were trained in management of the sewerage water treatment and are now working in the Estates Section of the MUHAS Academic Medical Centre (MAMC) sewerage water treatment sytem at Mloganzila campus. Staff participated in various sports such as netbal, volleyball, football and rope pulling in the UMSHUMITA Inter Univeristy competitions and contributed immensely in winning several cups.

4.18.6 Work Projects Implemented

Construction of Haile Debas CHPE Building: During the reporting period, the Haile Debas Center for Health Professions Education (HD-CHPE) building was practically completed and the handover ceremony was held on 26th August, 2016.



Figure 33: Haile Debas Center for Health Professions Education (HD-CHPE) building

Renovation of Third floor of the Dental Building: During the reporting period, the renovation work of the Dental Clinic in the school of Dentistry was carried out by the contractor M/S Kimberlite Investments Limited, at a contract sum of **TZS 31,612,640**. The work was successfully completed and handover was scheduled for September, 2016.

Rehabilitation of Electrical network at Chole and Main Campus Hostels: During the reporting period, the Directorate Supervised M/S Demax Company Limited that was awarded a tender for rehabilitation of electrical fittings and wiring of the system at both Chole and the Muhimbili campuses. The project whose contract sum was **TZS 12,180,000 VAT inclusive** was successfully completed and handed over in December 2016.

4.18.7 Services Project Implemented

In University's efforts to improve environmental cleanliness, the Directorate of Estates was asked to supervise various service providers doing grounds maintenance, cleaning and garbage collection. During the reporting period, the following were implemented: -

Cleaning Services: During the reporting period, the M/S Kishengweni Enterprises provided cleaning services inside and outside of the buildings as well as maintaining gardens at Chole



Road student hostels at a contract sum of **TZS 48,480,000 per annum VAT Inclusive**. The offered cleaning services at the Dental building at a contract sum of **TZS 39,240,000 per annum VAT inclusive**. In addition, the company cleaned inside and outside of the School of Pharmacy building at a contract sum of **TZS 33,600,000 per annum, VAT inclusive**. All these contracts were executed between July 2016 and June 2017.

Grounds Maintenance and Cleanliness at Muhimbili Main Campus: During the reporting period, M/S Care Sanitation and Suppliers Limited provided cleaning services which included footpaths and roads as well as maintenance of gardens around Muhimbili main campus at a contract sum of **TZS 88,200,000 per annum VAT inclusive** during the period June 2016 and July 2017.

4.19 Directorate of Human Resources Management and Administration

4.19.1 Introduction



Mr. A. Nnko

The Directorate of Human Resource Management and Administration (DHRMA) is mandated to execute various Human Resource Functions for the University. Among others, the Directorate has to ensure that the University Human Resource needs have been fulfilled. The Directorate promotes the University performance through effective and efficient

administration of the Human resource functions. It has the duty to maintain a working environment that encourage employees to achieve the University goals as well as the individual professional goals. The is comprised of three departments as listed here under: -

- (i) Department of Human Resource Planning and Development
- (ii) Department of Human Resource Salaries and Benefits
- (iii) Department of General Administration Services.

4.19.2 Activity Report Highlights for 2016/2017.

Staff Establishment and Recruitment: During the period under review, the Directorate did not receive any work permit from Permanent Secretary, Public Service Management and Good Governance. This made the Muhimbili campus to have a total number of 627 staff as at 30th June, 2017 from 656 in July 2016. Among these, 298 were academic staff and 329 administrative and technical Staff.

During the period under review, The Directorate received work permit to recruit staff 263 for of MUHAS Academic Medical Center (MAMC). Out of these, 50 were new positions and 49 staff were employed. A total of 213 positions were approved to be filled through transfer and 127 positions were covered as at June, 2017. In May 2017 MUHAS received another permit of 104 positions for MAMC.

Code of Ethics and Conduct for University Council Members: During the reporting period the Directorate facilitated development of Code of Ethics and Conduct for University Council members, which was directed by the Treasury Registrar and customized to suit MUHAS and guide University Council Members to act in an ethical and professional way while observing compliance with rules and regulations during decision making and implementation of the same. The purpose of the code was to enable Council members to understand clearly what is required of them in terms of ethical conduct and standard of performance. The Universities and all other Public Corporations are required to adopt and make use of the code after customization.



4.19.3 Staff Training and Development

During the period under review the Directorate continued to ensure that competent, functional, relevant and adequate human resource with appropriate skills-mix and competencies are in place. In recognition of the importance embodied in the staff training, the University continued to train its employees both locally and overseas and it continued to encourage and support individual's efforts. In this respect employees were trained on the job and others attended Form four, Diploma, Undergraduate degree, Masters and Postgraduate programs. A total of 110 staff were trained as shown in Table 51 during the Financial Year.

Table 52: Staff on training as at 30th June, 2017.

Staff	Status of Training	Gender	PhD	Master	Degree	Diploma	Others (Post Doc, MSc-SS)	Total
Academic	On training	M	21	5	-	-	4	30
		F	7	9	-	-	-	16
	Completed	M	6	3	-	-	-	9
		F	4	4	-	-	-	8
Admin & Technical	On Training	M	7	7	3	1	-	18
		F	5	5	2	1	-	13
	Completed	M	1	1	2	-	-	4
		F	-	-	3	-	-	3
MAMC staff	On training	M	1	1	1	3	-	6
		F	1	1	-	1	-	3
Total			53	36	11	6	4	110

In addition, a total of thirty-four (34) staff attended short courses locally and internationally during the reporting period. Such trainings include customer care course, human resource audit, accounting and research, the environment of work organization, conduction of mediation and arbitration, electronic records management and e-Government.

4.19.4 Management and Leadership Training.

Corporate Governance Training for Deans, Directors and Heads of Major Administrative Units: During the reporting period, Corporate Governance Training in respect of Deans, Directors and Heads of Major Administrative Units was conducted for two days from 1st and 2nd June, 2017 and 29 leaders attended the training. The training was facilitated by Tanzania Institute of Directors.

OPRAS Training for Deans, Directors, Heads of Departments and Administrators: During the period under review, OPRAS training for MUHAS Deans, Directors, Heads of Departments and Administrative officers was organized and conducted on 22nd and 23rd, May, 2017 and it was facilitated by Mzumbe University. Among other things, participants were equipped with skills on how to cascade objectives.

Induction Training for Newly Recruited Staff both for MUHAS and MAMC: During the reporting period, Induction training for newly employed staff was conducted. A total number of One Hundred and Fifty (150) were trained for four (4) days i.e. 15th, 16th, 17th & 18th May, 2017 by Tanzania Public Service College and the training was successful. This went hand in hand with taking oath which was administered by the Vice Chancellor.

Records Management Training: During the reporting period, Records Management Training for Records Management Assistant, Personal Secretaries and some of Administrative staff was conducted. A total number of Thirty-Nine (39) were trained in five days i.e. 7th, 8th, 9th, 12th and 13th June, 2017 by Tanzania Public Service College. The training aimed at introducing a new, modern and centralized system of record keeping and management.

4.19.5 Staff Promotions

During the reporting period (Table 51), thirty-two (32) staff were promoted to higher ranks. Among the period's promotions, academic staff were twenty-three (23) while administrative and technical staff were nine (9). The promotions were subject to approval by PO-PSM&GG through HCMIS.

Table 53: Staff Promotions 2015/16 and 2016/17

Year	Academic Staff (%)	Administrative and Technical Staff (%)	Total
2015/2016	20 (23.3)	66 (76.7)	86
2016/2017	23 (71.9)	9 (28.1)	32
TOTAL	43	75	118



The promotion for Administrative and Technical staff was far better during 2015/2016 compared to 2016/2017.

4.19.6 Retirement

Retirement & End of Contract for Academic staff: During the reporting period, post retirement contracts in respect of eight (8) retired academic staff ended and the same were not approved for renew by President's Office, Public Service Management due to age limit.

Retirement of Administrative staff: During the reporting period, a total of sixteen (16) administrative staff retired due to compulsory retirement age for civil servants.

Post Retirement Contracts: Twenty three (23) staff were given post retirement contracts by President's Office - Public Service Management and Good Governance, which makes a total of fifty six (56) academic staff who are on post retirement contracts as of 30th June, 2016.

4.19.7 Staff Turnover and Retention.

During the year under review, a total of five (5) staff resigned from employment. The attrition rate was 0.76 % while the retention reached 99.24 %.

4.19.8 Staff Disciplinary Issues.

During the reporting period, disciplinary hearings were conducted for seven (7) staff due to various disciplinary disciplinary issues. Five (5) staff had forged secondary school certificates, one had received two salaries and one had acted unprofessionally during performance of his daily work.

4.19.9 Staffing of the Directorate of Human Resource Management and Administration.

With increased workforce at the MUHAS Academic Medical Center (MAMC) which started during the reporting period the current establishment in the directorate was inadequate. The establishment, (Table 52) needed a minimum of twenty-three (23) staff for Muhimbili campus. During the reporting period, there was a deficit of nine (9) staff. The Human Resource office at MAMC was manned by only three staff.

**Table 54: Staffing of the Directorate**

Office	Title	Required Number	Available during the period	Deficit
Direcors's Office	Director	1	1	0
	Office MGT Secretary	1	1	0
	Records Management Assistant	2	1	1
	Office Assistant	1	1	0
	Driver	2	2	0
Department of HR Planning and Development	Head	1	1	0
	Senior Human Resource Officer II	1	0	1
	Human Resources Officer I	1	0	1
	Human Resource Officer II	2	2	0
Department of Salaries and Benefits	Head	1	1	0
	Senior Human Resource Officer II	1	0	1
	Human Resource Officer I	2	1	1
	Administrative Officer II	2	0	1
Dept of General Admin. services	Head	1	1	0
	Senior Administrative Officer II	1	0	1
	Administrative Officer I	2	1	1
	Administrative Officer II	1	1	1
TOTAL		23	14	9

4.19.10 Obituary

During the reporting period, one Administrative Staff passed away. May her soul Rest in Peace.

4.20 External Relations Unit

4.20.1 Links and Collaborations



Dr. B. Balandya

The External Relations Unit received and processed applications for elective period of study in different departments within the Schools of Medicine, Pharmacy, Dentistry, Nursing and the School of Public Health. A total of 114 elective and 14 exchange students were received, registered and allocated into different schools. This number is similar to what was observed in the last financial year. We also received 6 staff from different universities, and two (2) MUHAS staff went to visit University of Zambia as part of staff mobility programs.

Efforts to increase the quality of services provided by the unit are underway, with the hope that this will increase the number of elective students in the near future.

4.20.2 Elective Study Activities

During the period under review the University received applications from individual elective students, as well as from international coordinators of universities. A smaller group of students had their applications sent through GHLO, WORK THE WORLD and WORLD UNITE. During the year there were two new organizations/programs namely Projects Abroad and Global Education in Medicine Exchange (GEMx) that also started coordinating elective students coming to MUHAS. During this period, the University received 149 elective students from sixteen countries, and 38 universities. Most of the students came from from Austria, Sweden and USA (Table 53).

Table 55: Number of elective students according to the country and university.

Country (Total)	University	Number of Students
China (5)	Xi'an Jiaotong University	1
	Tianjin Medical University	2
	Jinzhou Medical University	1
	Dalian University	1
Germany (8)	Rheinische Friedrich-Wilhelms University	1
	Universitätsmedizin Greifswald University	1
	Ruprecht Karls University Heidelberg	1
	Universität Klinikum Hamburg Eppendorf	1
	Heinrich-Heine Universität, Düsseldorf	1



	Aachen University Technology	1
	Heidelberg University	1
	Regensburg University	1
Austria (31)	Salzburg University	1
	Graz University	1
	Innsbruck University	1
	GHAWA Nursing Students Project	28
United Kingdom (3)	St. Andrews University	1
	Kingston University	1
	University College London	1
Norway (15)	Norwegian University of Science and Technology	7
	Bergen University College	8
Sweden (43)	Umea University	18
	Uppsala University	22
	Gothenburg University	3
Egypt (1)	Ain Shams University	1
South Africa (2)	Stellenbosch University	2
Canada (2)	McMaster University	1
	Dalhousie University	1
The Netherlands (1)	Groningen University	1
Belgium (10)	Antwerp University	10
USA (16)	Uniformed University of Health Sciences	2
	Geisel School of Medicine at Dartmouth	2
	University of Illinois at Chicago	2
	Duke University	1
	The Pennsylvania State University	9
Zimbabwe (2)	University of Zimbabwe	2
Denmark (1)	University of Southern DK	1
France (1)	Bordeaux University	1
Japan (8)	Mie University	8
TOTAL	38	149

Most universities where the elective students come from have a formal agreement with MUHAS. These universities have a pre-determined period that is more or less fixed to start the rotations, and units where they can do their elective.

4.20.3 Institutionally Arranged/Coordinated Elective Studies

MUHAS received applications from coordinators of elective students from different universities that have an MOU with MUHAS. The following number of students came to MUHAS under such agreements:

- (i) A group of 16 students from Umea University and Uppsala University, Sweden did a one-month clinical nursing rotation at the Buguruni Health Centre under the agreement with the School of Nursing. Another group of 8 students from Bergen University, Norway also came under an agreement with the school of Nursing.
- (ii) Through an agreement with Pennsylvania State University and the Palme Exchange, the School of Nursing received 9 students and the School of Medicine received 2 students.
- (iii) The school of Dentistry also has an agreement with the University of Illinois Chicago USA, for elective placements. This year it received 2 students under this agreement.
- (iv) The Paediatrics department received 8 students under an exchange program with Mie University, Japan.
- (v) The Dartmouth University, USA sent 2 students to the School of Medicine that rotated in the Internal Medicine department.
- (vi) MUHAS also received 2 students under the IAESTE program which is coordinated by the Open University of Dar es salaam. The students rotated in different departments within the School of Medicine.
- (vii) The School of Medicine also received 3 students from the Norwegian University of Science and Technology under an agreement with the School of Medicine.
- (viii) MUHAS also received 2 students under the TAPSA program which is coordinated by the students in the School of Pharmacy. The students rotated within the School of Pharmacy.
- (ix) The school of Nursing also received 28 students in this reporting year from the Nursing Students Project Western Austria (GHAWA) Program.

4.20.4 Student Initiated Elective Study Arrangements

A number of students apply themselves for the elective studies after seeing the information in the MUHAS website or after having heard about it from others who has been here before. Their universities will then be involved during the application process by filling the last part of the application forms for each student and writing a recommendation letter.

At times the students apply directly to the school/department of their choice, and they are then advised to bring their applications to the foreign relations unit.



4.20.5 Number of Elective Study Students

In the reporting period, the unit received a total of **149** (see Tables 53 and 54) students. Some of these students rotated in just one department, but others rotated in more than one department (in the School of Medicine)

- (i) The school of Nursing received and supervised the largest number of students (72) followed by the school of Medicine (Table 54).
- (ii) Within the school of medicine, most students rotated in Paediatrics and Child health (16), Internal Medicine (15), Surgery (15) and Obstetrics and Gynecology (9) (Table 54)

Table 56: Total number of Elective and Exchange Students in Departments, 2016/2017.

Department / School	Elective	Exchange	Total
Internal Medicine.	12	3	15
Paediatrics & Child Health	5	11	16
Surgery	8	7	15
Obstetrics & Gynaecology	6	3	9
Psychiatry.	2	0	2
Radiology.	0	0	0
Orthopedics & Trauma	6	0	6
Emergency Medicine	2	1	3
ENT	1	0	1
Neurology	0	0	0
Otorhinolaryngology	0	0	0
Nephrology	0	2	2
Urology	0	4	4
School of Dentistry	4	0	4
School of Nursing	68	4	72
Parasitology	0	0	0
Total	114	35	149

NB: Some of the students in the School of Medicine rotated in more than one department.

4.20.6 Student Exchange Activities

The External Relations Unit together with the School of Nursing is coordinating a Global Education in Medicine Exchange (GEMx). Through this, MUHAS will also be able to send students to other African universities.

The unit is currently reviewing 2 MOUs that have the potential of having few MUHAS students sent to other universities as part of an exchange program.

Among the ongoing collaborative research and student exchange agreement include that of MUHAS and North South - South Higher Education Network Program (school of public health and social sciences), UMCG/FMS – Groningen University, Netherlands (school of Medicine), HAN University of Applied Sciences (school of Nursing), The St. Radboud University College Holland (community medicine), UCSF (DCEPD), Mie University, Japan (Paediatrics and Child Health), University Medical Centre, The Netherlands (School of Medicine), The Linneus Palme student exchange program (MUHAS) and The University College of London (School of Medicine).

Staff Mobility: Mobility of staff within universities is one of the mechanisms to ensure internationalization of a university. This financial year, the unit received 6 staff as part of staff mobility within universities, and 2 MUHAS staff went to University of Zambia. Of the staff who came to MUHAS, 2 were from the University of Zambia, 1 from Ebonyi State University of Nigeria, 1 from Federal Medical Center Keffi Nigeria, 1 from University of Development Studies of Ghana and 1 from Uppsala University.

New Programs in the Unit: The External Relations Unit planned and conducted District Hospital Experience and Tourism for elective students. The program aimed at diversifying learning for the elective students, as well as giving them a short touristic experience.



Figure 34: Elective students with community health workers, MUHAS and Bagamoyo district hospital staff.

This one-week activity took place on 12th to 18th March, 2017. This was the first group for the new program which had a total of 9 students. The students were from Belgium, Denmark, Norway, Tanzanian students studying in China and Liberian student studying in China. The activity included clinical practice at Bagamoyo District Hospital and a tour of Bagamoyo ancient town and Saadani National Park. The Externa Relations Unit (ERU) will host this program twice, in February and July of each year.



Figure 35: One group of elective students and MUHAS ERU Head during the home-based care visits



Figure 36: Elective students during a tour of the Bagamoyo ancient town

4.20.7 Support for Resident Permit Class C, Visitor's pass and/or Visa Application

Foreign students and staff coming to Tanzania for studies or research were required to have a Resident Permit Class C (previous immigration guidelines). Thus, the Unit has had to process and submit applications for Resident Permit Class C for elective, occasional, foreign degree and diploma registered students and staff on exchange at MUHAS. Recently our students have been facing a lot of disturbance on which type of visa/resident permit they should take, as different immigration officials give conflicting information, thus some students have been given visa class B and another C. The ERU has been trying to sort out this problem with the Immigration Office but we have not yet succeeded to get clear information. The office is continuing to dialogue with immigration office to correct this problem.

4.20.8 Generated Fees

The unit reviewed the fee structure for elective studies, together with the distribution of elective bursaries. The approved new fee structure was as follows:

Undergraduate students:

Application fee: 20 US \$

Registration fee: 100 US\$

Tuition fee: 90 US \$ / week (Non- Tanzania citizens)

45 US \$ / week (Tanzanian citizens studying outside Tanzania)

Supervision fee: 35 US \$ / week (for research oriented elective period)

Ethical clearance fees US\$100 (for research proposal)

Postgraduate students:

Application fee: 20 US \$

Registration fee: 100 US \$

Tuition fee: 120 US \$ / week

60 US \$/ week (Tanzanian citizens studying outside Tanzania)

Supervision fee: 70 US \$ / week (for research oriented elective period)

Ethical clearance fee: US\$100 (for research proposal)

Some of the students coming under formal exchange arrangements are exempted from the registration and/or tuition/research supervision fees depending on the Memorandum of Understanding between the two universities/schools.



Previously, the External Relations Unit was not receiving any money from the elective bursaries. The distribution of the elective bursaries was reviewed, and the current approved distribution is as seen in the table 55 below:

Table 57: Distribution of elective bursaries

Unit	Previous	Current
University	10%	10%
School	20%	10%
Department	70%	65%
External Relations Unit	0%	15%

Income Generation

In the current financial year, the unit generated a total of **38,265 USD** and **4,190,760/= TZS** from student activities as summarized in the Table 56 below: -

Table 58: Income Generation by the ERU

Fee Type	USD	TZS
Application fee	340	
Registration fee	9000	1,095,300
Tuition fee	27,315	3,095,460
Research supervision fee	1,610	
Total	38,265	4,190,760

Other Developments

During the financial year, Dr. Belinda Balandya, the Head of External Relations Unit, was trained on a one-year course on “**Management of Internationalization**”. This was a very productive course as it helped to understand internationalization, the systems and structures, internationalization strategies and a chance to learn from case studies of other universities. This knowledge will be used to increase the quality of services of the ERU.

4.21 Directorate of Finance

4.21.1 Introduction



Mr. A. Mwaduga

Directorate of Finance is one of the thirteen directorates of the Muhimbili University of Health and Allied Sciences (MUHAS). The Directorate is responsible for financial planning, directing and controlling of the financial accounting operations of the University. The directorate is also responsible for coordinating the preparation of budgets and provides fundamental financial analysis and feedback on the budget performance and assessment of the financial accounting operations.

4.21.2 Audited Accounts for 2016/17 Financial Year.

The directorate prepared Financial Statements for the year 2016/2017 for statutory audit. During the reporting period MUHAS complied fully with all International Public-Sector Accounting Standards (IPSAS) as directed by the office of the Accountant General. The audit for the year started before the end of September 2017. MUHAS statutory auditor is the Controller and Auditor General (CAG) who is currently represented by M/S KLM Consult. Financial Statements for the following projects were also prepared to be audited in the reporting period: -

Table 59: Audited Project Accounts for 2016/17

S/N	Name of Project	Auditor
1	Sida Programe	KLM
2	Share IT Project	PWC
3	Tasene	KLM
4	TAPP Project	KLM
5	Norhed - Norad Project	KLM

4.21.3 Trainings, Seminars, Workshops and Conferences

During 2016/17, the directorate organized Medium Term Expenditure Framework (MTEF) training for key staff and internal auditors. The training provided details of how MTEF budget should be prepared and how this should link to the strategic plan. The objective of the training was also to build capacity to various members of staff who are involved in



budget preparation and execution. Some staff were supported to attend seminars and workshops on International Public-Sector Accounting Standards (IPSAS).

Other specific seminar and workshops attended by various staff of the Directorate included:

- (i) Record Management and filing system
- (ii) Governance and Open Performance Review and Appraisal Systems (OPRAS)

4.21.4 Achievements

- (i) All staff of the Directorate set objectives and targets of performance and evaluated through OPRAS.
- (ii) Electronic Fund Transfer (ETF) was initiated and implemented.
- (iii) Internet banking was initiated with NBC and requests were lodged with NMB and CRDB
- (iv) Web based shared folder in finance was created and its use implemented
- (v) Timely submission of annual and bi annual tax returns and payments was achieved
- (vi) Timely handling of student issues and complaints was achieved
- (vii) NHIF forms processing backlog was cleared at the School of Dentistry
- (viii) Bank reconciliations statements for the University and projects accounts were completed on time
- (ix) Increased revenue collection at Dental Clinic was realized
- (x) Revenue collection system at Dental Clinic was improved from manual to electronic

4.21.5 Challenges

The following challenges were experienced in the reporting year.

- (i) Inadequate funding of the University budget.
- (ii) Delay in payment of tuition fees by Ministry of Health, Community Development, Gender, Elderly and Children.
- (iii) Inadequate staff in terms of number and qualifications in the Directorate.
- (iv) Low level of knowledge in application of EPICOR and MS office applications e.g. excel.
- (v) Unstable internet connection and EPICOR connectivity.
- (vi) Frequent power interruptions

**4.21.6 Audited Financial Statement for 2016/2017**

**MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES
FINANCIAL STATEMENTS FOR THE YEAR ENDED 30TH JUNE 2017**

5.1 STATEMENT OF FINANCIAL POSITION AS AT 30TH JUNE 2017

ASSETS	NOTES	30.06.2017 TZS	30.06.2016 TZS
NON-CURRENT ASSETS			
Property, plant and equipment	4	272,933,682,473	73,102,326,807
Intangible assets	5	313,480	313,480
Capital works in progress	6	107,190,032	61,187,034,970
Total		273,041,185,985	134,289,675,257
Current Assets			
Inventories	7	113,824,114	110,975,033
Trade and other receivables	8	3,083,212,060	4,931,060,549
Investments	9	-	3,022,693,046
Cash and cash equivalents	10	20,280,252,820	20,203,637,934
		23,477,288,994	28,268,366,562
TOTAL ASSETS		296,518,474,979	162,558,041,819
EQUITY AND LIABILITIES			
Equity			
Capital fund	11	29,029,722,438	29,029,722,438
Revaluation reserves	12	55,669,886,352	55,669,886,352
Accumulated surplus/ (Deficit)	13	(19,454,720,808)	(6,872,505,738)
Total Equity		65,244,887,982	77,827,103,052
LIABILITIES			
Non-Current Liabilities			
Capital grant	14	218,086,101,115	71,494,755,149
Current Liabilities			
Trade and other payables	15	13,179,289,372	13,227,987,108
Other short term liabilities	16	8,196,510	8,196,510
		13,187,485,882	13,236,183,618
TOTAL EQUITY AND LIABILITIES		296,518,474,979	162,558,041,819

The accounting policies and the notes on page 29 to 48 form an integral part of these financial statements

CHAIRPERSON Mwafisi COUNCIL MEMBER Amis
DATE: 2/2/2018 DATE: 2/2/2018



**MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES
FINANCIAL STATEMENTS FOR THE YEAR ENDED 30TH JUNE 2017**

5.2 STATEMENT OF FINANCIAL PERFORMANCE FOR THE YEAR ENDED 30TH JUNE 2017

	NOTES	30.06.2017 TZS	30.06.2016 TZS
REVENUE FROM EXCHANGE TRANSACTIONS			
Fees and charges	17	6,466,386,416	6,961,346,481
Rental Income	18	241,626,957	240,878,000
Interest Income	19	82,980,921	395,642,123
Sundry income	20	19,068,662,454	2,485,103,284
		<u>25,859,656,748</u>	<u>10,082,969,888</u>
REVENUE FROM NON - EXCHANGE TRANSACTIONS			
Exchequers/transfers/subsidies from Government	21	29,486,221,703	22,396,602,263
Donor Research Grants	22	12,940,017,807	15,492,575,802
Project Income	23	1,267,073,107	953,494,103
		<u>43,693,312,617</u>	<u>38,842,672,168</u>
TOTAL REVENUE		<u>69,552,969,365</u>	<u>48,925,642,056</u>
EXPENDITURES			
Academic expenses	24	16,769,281,066	15,624,130,547
Staff emoluments	25	24,789,917,360	23,176,290,089
Administrative expenses	26	10,263,218,213	8,320,833,638
Depreciation and amortization	27	17,145,765,162	1,710,502,946
		<u>68,968,181,801</u>	<u>48,831,757,220</u>
SURPLUS FOR THE YEAR		<u>584,787,564</u>	<u>93,884,835</u>

The accounting policies and the notes on page 29 to 48 form an integral part of these financial statements.

CHAIRPERSON Mwaffisi COUNCIL MEMBER [Signature]
DATE: 2/2/2018 DATE 2/2/2018



MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES
FINANCIAL STATEMENTS FOR THE YEAR ENDED 30TH JUNE 2017

5.4 STATEMENT OF CASH FLOWS FOR THE YEAR ENDED 30TH JUNE 2017

	30.06.2017 TZS	30.06.2016 TZS
Cash flows from operating activities		
Receipts		
Fees and charges	6,460,502,416	8,452,098,273
Rental income	268,277,957	205,972,000
Interest income	82,980,921	395,642,123
Other revenue	18,853,500,680	1,935,523,179
Exchequers/transfers/subsidies from Government	30,405,834,892	20,929,236,824
Donor Research Grants	12,932,208,415	15,448,355,322
Project income	1,267,073,107	953,494,103
Gain/(Loss) on foreign exchange transactions	1,130,439,465	512,295,447
	71,400,817,854	48,832,617,270
Payments		
Wages, salaries and employee benefits	(27,278,497,608)	(23,439,528,624)
Social benefits	(104,553,417)	(144,575,200)
Teaching and examination expenses	(402,730,010)	(463,824,136)
Supplies, services and consumables used	(22,662,653,363)	(13,512,151,375)
Maintenance expenses	(1,321,597,615)	(729,340,893)
Bank charges and interest expenses	(103,931,443)	(34,096,122)
	(51,873,963,456)	(38,323,516,350)
Prior year adjustment	(13,938,912,584)	(50,958,534,522)
SIDA appropriation	771,909,949	-
Net cash flows from/(to)operating activities	6,359,851,762	(40,449,433,601)
Cash flows from investing activities		
Acquisition of property and equipment	(216,977,120,828)	(747,220,070)
Additional work in progress	(31,881,412,642)	(15,496,473,468)
Transfer of PPE (Note 6)	92,961,257,580	-
Proceeds from sale of motor vehicles	-	62,345,000
(Increase)/decrease in investments	3,022,693,046	1,089,261,381
Net cash flows used in investing activities	(152,874,582,844)	(15,092,087,157)
Cash flows from financing activities		
Donor grants	146,591,345,966	65,674,390,368
Net cash flows generated from financing activities	146,591,345,966	65,674,390,368
(Decrease)/Increase in cash and cash equivalent	76,614,886	10,132,869,608
Cash and cash equivalents at beginning of the year	20,203,637,934	10,070,768,326
Cash and cash equivalent at the end of the year	20,280,252,820	20,203,637,934

The accounting policies and the notes on page 29 to 48 form an integral part of these financial statements.

5.5 STATEMENT OF COMPARISON OF BUDGET AND ACTUAL AMOUNT FOR THE YEAR ENDED 30TH JUNE 2017

Details	Original Budget {A} TZS	Final Budget {B} TZS	Actual on Comparable Basis {C} TZS	Difference {B-C} TZS	Difference in %	Notes
REVENUE						
Fees and charges	6,520,346,000	6,520,346,000	6,460,502,416	59,843,584	1	
Rental Income	241,532,000	241,532,000	268,277,957	(26,745,957)	-11	
Interest Income	82,980,921	82,980,921	82,980,921	0	0	
Other revenue	584,552,000	584,552,000	18,853,500,680	(18,268,948,680)	-3,125	i
Exchequers/transfers/subsidies from Government	30,692,702,173	30,692,702,173	30,405,834,892	286,867,281	1	
Donor Research Grants	-	-	12,932,208,415	(12,932,208,415)	-100	ii
Project Income	706,000,000	706,000,000	1,267,073,107	(561,073,107)	-79	iii
TOTAL REVENUE	38,828,113,094	38,828,113,094	70,270,378,388	(31,442,265,295)		
EXPENSES						
Wages, Salaries and Employee Benefits	44,301,111,357	44,301,111,357	27,278,497,608	17,022,613,749	38	
Social Benefits	157,000,000	157,000,000	104,553,417	52,446,583	33	
Teaching and Examination Expenses	612,693,000	612,693,000	402,730,010	209,962,990	34	
Supplies, and Consumables Used	3,794,372,200	3,794,372,200	22,662,653,363	(18,868,281,163)	497	iv
Maintenance Expenses	1,964,870,000	1,964,870,000	1,321,597,615	643,272,385	33	
Bank Charges and Interest Expenses	-	-	103,931,443	(103,931,443)	-100	v
OTHER GAIN AND LOSSES						
Gain (Loss) on foreign Exchange Transactions	-	-	(1,130,439,465)	1,130,439,465	100	vi
TOTAL EXPENSES	50,830,046,557	50,830,046,557	50,743,523,991	86,522,566		
SURPLUS/ (DEFICIT) FOR THE YEAR	12,001,933,463	12,001,933,463	19,526,854,397	(31,528,787,861)		

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**Appendix I: Projects Progress report during the reporting period (July 2016-June, 2017)**

S/N	PI Name	Project Donor/ Collaborator	Project Title	Objectives	Brief Progress Report
1	Dr. Jessie K.K. Mbwanbo	CDC	Tanzania AIDS Prevention program (TAPP2)	The Tanzanian AIDS Prevention Project aims to reduce HIV/AIDS transmission in injecting drug users and their networks in Dar es Salaam	Year Four of Implementation of the project; contracting of NGOs concluded, community Injection Drug Users Program re-initiated, HTC ongoing, Methadone Assisted Therapy (MAT) recruitment of 1500 heroin users
2	Dr. Samwel Likindikoki	Save the Children/ John Hopkins Universtiy	Evaluating an integrated approach to reduce intimate partner violence and improve psychosocial health in refugee camps in Tanzania	Conducting a controlled randomized trial of an intergrated intervention that simultaneously target intimate partner violence and its psychosocial health consequences in a refugee camp in lower-medium income country	FORMATIVE PHASE completed. Free listing interviews, key informant interviews, community consultation workshops, qualitative data analysis, design intervention manual, design RCT measures. On PILOT PHASE: Translate measures, pilot evaluation tools/measures and pilot intervention manual done. On INTERVENTION PHASE: Randomized Controlled Trial: baseline data collection completed now finalizing with endline data collection. Intervention has been completed. Preliminary results from data analysis for baseline data will be presented in London September 2017.



3	Dr. J. Makani/Dr. R. Sangeda	University of Cape town	H3ABioNet: a sustainable African Bioinformatics Network for H3Africa	To provide bioinformatics infrastructure and support for the H3Africa Consortium. The network aims to support genomics and bioinformatics components of H3Africa research projects and Collaborative Centers, to contribute to improved patient outcomes across the continent.	MUHAS node co-created Genomics research proposals, published the proceedings of the Sickle cell ontology, installed the H3ABionet Server, collaborated with TERNET to connect the Tanzania Supercomputer to our servers and increase the computational power. We continue to conduct data analysis of Genome Wide association studies (GWAS) following completion of internship fellowship at University of Cape Town and in collaboration with Pasteur Institute of Tunisia. We have completed data migration at the sickle cell program. We installed REDCap server at MUHAS and hosted some databases/registries of Sickle cell program projects.
4	Prof. Julie Makani/Dr. Siana Nkya Mtatiro	University of California San Francisco	Global Health Fellowship Program	To conduct detailed investigation of genetic patterns in sickle cell disease patients with extreme fetal hemoglobin level	Custom panel for next generation of known genetic and epigenetic panel has been designed and purchased, next generation sequencing technology has been identified in Tanzania. Sequencing to be completed by the end of September. Individuals with SCD with extreme HbF levels have been identified. This project has also supported development of SCD-DNA database at MUHAS.



5	Prof Julie Makani	University of Western Australia (UWA)	Effects of sickle cell disease and trait on the pharmacokinetic properties of artemether-lumefantrine in African children	To investigate difference in PK properties of ARM-LM in children with normal and variant hemoglobin's, specifically SCD and SCT	IRB approval received. Protocols developed. Data collection for 3 months: July, Aug Sep 2017.
6	Prof. Julie Makani	NHI	Sickle Pan-African Research Consortium (SPARCO)	To form a consortium that will analyze standard of care for sickle cell disease patients, develop skills and database for sickle cell disease information	Project initiated in May 2017. Completion of sub-awardees agreements (Nigeria and Ghana) and establishment of governance structures. Reviewing the existing standards of care guidelines and existing training programs available for short term and long-term training in SCD. A web based SCD database has been developed, and is in the trial phase. Enrollment of individuals in the database will start in October 2017.
7	Prof. Julie Makani/Furahini Tluway/Lucio Luzatto/ Abel Makubi	Wellcome Trust	Haematology Program of anaemia and its therapy (PAST	The role of anaemia and fetal hemoglobin in SCD: Clinical epidemiology to establish the evidence base for interventional trials of blood transfusion and Hydroxyurea.	Completed in March 2017. Enrolment of study participants completed Dec 2015 - May 2016: 378 (38.7%) enrolled from 957 hospitalized SCD patients. Clinical and some laboratory data have been collected. Data generation of laboratory samples completed in 31st October, 2016. Analysis plan has been developed. Protocol manuscript accepted for publication by 16 September, 2016. Research article under development. Manuscript for epidemiology of anemia completed in June



8	Prof. Julie Makani/Ms. Daima Bukini/Dr. Columba Mbekenga	University of Cape Town	H3Africa ELSI Project	Advance understanding of the perspective of researchers, health professionals and community population concerning genomic research and public health aspect of sickle cell disease	The project has been completed. Manuscript development is in progress, 16 manuscripts expected in total. 1 manuscript on methodology has already been published. A Writing workshop was done in May 2017 where we expect to produce 4 manuscripts
9	Prof. Julie Makani/Promise Mwakale	Wellcome Trust	Provision of Public engagement	Determining the best way of public engagement	Project completed in March 2017. 10 media professionals and 8 researchers have been trained in engaging the public in science.
10	Prof J Makani /Vene Tubman	Texas Children's Hospital	Splenic function in sickle cell disease: understanding implications on the disease and interactions with malaria	To characterize splenic immune function in children with SCD and to collect data to elucidate the interactions between malaria exposure and splenic function in patients with SCD in malaria-endemic regions.	IRB from MUHAS and NIMR received. Study protocols developed. Review manuscript developed



11	Prof J Makani /Haddy Fye	University of Oxford	Proteomics pathways of Sickle Cell Anemia	Identify a total of 120 well characterized individuals from existing SCA cohorts in East Africa with known Hb genotypes AA, AS or SS and utilize erythrocytes from these patients to explore the major proteins and functional pathways correlated to genotype and or established clinical correlates of sickle cell (e.g. HbF).	IRB approval. Data collection and analysis completed. Methods manuscripts written Research article under development
12	Prof Julie Makani /Prof. Japheth Killewo	HDIF, DFID	Newborn screening for sickle cell disease	Screening newborns for sickle disease to facilitate early intervention	Completed in 2016 under HDIF funding. Screened 4,000 babies. Trained 96 health professionals. Developed draft of newborn screening policy. Construction and opening of Haematology Clinical Research laboratory in 2017. Renewal for 2017 with alternative funding
13	Prof. Muhsin Aboud	NIH	DMRET- Dartmouth- MUHAS Research Ethics Training Program	Capacity Building Grant in the Bioethics, provides support to train Masters Students	Second cohort of 6 trainees were enrolled in 2016/2017. Ten trainees have successfully been selected to enroll in 2017/2018. Nine students from first cohort will graduate in December 2017 (5 have pass their exam). All second cohort students have pass their course work



14	Prof. Killewo	Japhet	MUHAS-Harvard, Funds from NIH	DAR cohort study	To establish and maintain a health and demographic surveillance system for the study of environmental exposures among residents of all ages in DSM region. Surveillance is going on.	Completed one round of updating events (births, deaths, migrations etc) as well as completed one nested study called Building Evidence and Capacity for Demographic Dividend in Africa (BEC-DDA). Started analysing the data and now in preparation for dissemination in a planned workshop. Plans are under way to initiate data migration of the DUCS database from HRS2 to Open DSS in August 2017
15	Prof. Killewo	Japhet	The Hopkins University	John Community Health Worker (CHW-LAP)	To support the MoHSW in implementing a national CHW cadre	During the reporting period the project continued with ice cream sales and developed various incubation projects. Several short courses were run on customer care. These courses were well attended and completion certificates were awarded. The PI, Prof. Japhet Killewo attended the international conference on entrepreneurship which took place in Vera cruz, Mexico during the week of 19th and 23rd.



16	Prof. Japhet Killewo	USAID through the One Health Central and East Africa Network (OHCEA)	One Health Workforce Project (OHW)	Improving worldwide capacity to prevent, detect and respond to infectious disease threats. The project is focused on strengthening training and educational programs using a trans-disciplinary approach known as One Health.	Implemented 14 out of the planned 18 activities geared at capacity strengthening One Health Workforce in Tanzania. Importantly have been able to engage government and universities at the highest levels by developing an action plan for strengthening the One Health Workforce in Tanzania.
17	Prof. Mainen Moshi	NIH	Establishing Office of Sponsored Projects at MUHAS	To establishing and strengthen Office of Sponsored Projects at MUHAS through North South partnership	Conducted 3 Research Administration training programs. Mentorship programs ongoing for administrators and researchers at MUHAS. Grants management officer presented a topic on international collaboration during NCURA Post Award Administration conference
18	Prof. Kisali Pallangyo	NIH/Darmouth College	Tuberculosis Research Institute at MUHAS	Establishing Infectious Diseases Institute	Approval given by the Council to establish the Institute. Allowed to use the Trim TB space at HD-CHPE to temporarily house the Institute



19	Prof. Innocent	Ester	Stokholm University	Natural products with anti HIV properties	Search for herbal drugs that cure fungus in HIV patients	This project is implemented as part of PhD student research training. The student progress is good since he has presented results during the 3 rd MUHAS scientific conference, 2015 and Publication one paper in the <i>Journal of Intercultural Ethnopharmacology</i> , 2017 , 6 (1), 84-96. Two other manuscript drafts are been prepared for submission. Further, two isolated compounds from one plant has been identified and tested against fungal isolates. Five compounds are still on spectral analysis and studies of formulation process of anti-fungal hebal products
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20	Prof. Innocent Ester	UNDP	Conserving repellent plants in Enduimet wildlife	Conserve plants which are repellent and used as vector of diseases	This project was a laboratory and community based and it has come to an end since June, 2017. Community awareness training on propagation and conservation of repellent plants was done in (1) Lesingita primary school (Initiated an environment club), (2) Tingatinga secondary school (having Environment club called MALIHAI) and (3) Kitendeni Village (having environmental group called EKENYWA ASHENGAI) of the Engalenaible ward and Enduiment ward in Longindo district, Arusha Region. Dissemination of project results; include Two publications in the <i>European J. Med. Plant Research</i> 2016 ; 12(2): 1-12. and <i>International Journal of Mosquito Research</i> , 2016 ; 3(1): 04-08; one conference presentation during the 4 th MUHAS scientific conference, 2016 ; a pictorial training poster in form of a calendar; Further, three draft publication papers and a draft hand book being under final compilation.
21	Prof. Karim Manji	Fogarthy /TH-Chan HSPH	Global Infectious Disease Training Grant. (GID)	Pediatric Infectious Disease Training Grant and Mentorship activities	Ongoing: Trained 3 MD and MMED students Biostatistics and Epidemiology Course. Conducted Pediatrics Diarrhoea course. Mentored 3 students on infectious disease theses. 2 elective students undertaking infectious disease studies. Course on Grant writing, manuscript preparations, Meningitis, and other related fields are ongoing.



22	Prof. Karim Manji	CIH, Norway	Vitabeginning Effect of B12 I ⇒ Neurodevelopment in a research cohort	Neurodevelopmental assessments in children aged 5-12 years from the previous PNS and Child 2 cohort	Field activities have completed in April 2017. Study Closed Data cleaning, Statistical analysis and manuscript are ongoing.
23	Prof. Karim Manji/Dr. David Sando/Dr. Alfa Muhihi	MDH/TH Chan Harvard SPH	TOV5 Design: Randomized, double-blind, placebo-controlled trial of Vitamin D supplements for HIV-infected pregnant women (ALL on ART due to Option B+)	Primary Efficacy Outcomes Maternal HIV Progression: Any Upgrade in WHO HIV Stage or Death Small-for-gestational Age: <10% percentile birth weight by gestational age and sex Child Stunting at 1 year: HAZ < -2 Primary Safety Outcome: Maternal Hypercalcemia: Albumin adjusted calcium >2.6 mmol/L of Vitamin D	Randomized- HIV-infected pregnant women in 2nd trimester N=1,579 (Target 2,300) . 69 Fetal Losses (Miscarriage or Stillbirth) 4 Maternal Deaths in Pregnancy 1,144 Live births. 8 Infant HIV Infection.33 Child Deaths 0 Maternal Hypercalcemia



24	Prof. Karim Manji and Dr. Rodrick Kisenge	WHO/Boson Children's Hospital	Zinc Therapeutic Dose Trial.	<p>A Randomized Control trial with 3 different doses of Zinc in Diarrhoea.</p> <p>Main Objective: To reduce the vomiting 2. Improve diarrhoea outcome</p> <p>3. "Optimal dose of therapeutic zinc supplementation for the treatment of acute diarrhea."</p>	<p>All IRBs approved by 13th February 2017. Recruitment started on 8th of March 2017</p> <p>Since study initiation, 410 (target 2250) children with diarrhea have passed eligibility criteria and have been enrolled and randomized in the study.</p> <p>Deaths: 2 deaths, unrelated have been reported since the beginning of the study.</p> <p>Currently 39 Tanzanian citizens are working in this trial. Some are part-time at MUHAS and Temeke and Mbagala Hospitals. Others full time. Training on research, laboratory, GCP, Electronic Data entry and transmission has enabled a good capacity building.</p>
25	Prof. Karim Manji, Dr. Rodrick Kisenge and Prof. S Aboud.	WHO/BCH	ABCD Antibiotic in Severe Childhood diarrhoea	<p>Main Objective:</p> <p>To reduce death among malnourished children with diarrhoea using Azithromycin, in a placebo controlled RCT.</p> <p>Sub study: To study Antimicrobial Resistance among the cohort. (AMR)</p>	<p>The original protocol was approved by all MUHAS and NIMR by the 1st of November 2016. Included a 3 arm (Cipro, Azithro and Placebo). The amended amendments was resubmitted and approved with only 2 arms. All approvals have been obtained including TFDA. Training on protocol, data entry and lab procedures have been completed.</p> <p>Recruitment expected in Mid-September 2017.</p>



26	Dr. Godfrey Mbaruku/Dr. Nahya Salim/Prof. Karim Manji/	LSMTH/IHI	ENAP (Every Newborn Action Plan)	Facility Based Observation on the basic Newborn Interventions	Training of Data collectors, Observers, Trackers, Supervisors and Computer based data entry done on 60 young Tanzanian health workers. Based in 2 hospitals MNH and Temeke, full time, 24 hr. data collection. Stated in June 2017, expected to complete by June 2018.
27	Dr. Elia Mmbaga	Volkswagen Foundation	HIV and NTD in Lower, Moshi Tanzania	To determine the association between Female genital schistosomiasis and HIV infection as well as evaluating the role of Mass drug administration in the prevention of FGS in Kahe ward, Kilimanjaro, Tanzania	This is a population based community trial where baseline and three follow up data have been collected. Data analysis is ongoing and two manuscripts have been submitted for publications
28	Dr. Elia Mmbaga	DFID/University of Malawi	Access to sexual and reproductive health among men who have sex with men in Tanzania and Malawi	To work with MSM to determine factors affecting access to health services among them for them	Data collection has been completed from MSM, health care workers and policy makers. Analysis is ongoing



29	Dr. Elia Mmbaga	NIH/University of California San Francisco	Genetic profiling of Esophageal Cancer in Tanzania	To determine the genetic etiology, of esophageal cancer in Tanzania	The study has recruited 153 cases of esophageal cancer cases seen at MNH out of the planned sample size of 200 cases. The initial genetic analysis yielded adequate and high-quality DNA and RNA of potential interest for the genetic analysis.
30	Dr. Elia Mmbaga	DANIDA	Access to health services among Key population in Tanzania	To determine pull and push factors affecting access to sexual and reproductive health services among key population for HIV in Dar es Salaam and Tanga	This is quasi-experimental study design with three PhD students planned to be trained. Three PhD students have been recruited and have received their provisional PhD registration at MUHAS. They are now working on completing their PhD full proposals alongside developing data collection tools for the baseline survey planned to take place from October, 2017
31	Dr. Elia Mmbaga	DUODECIM	GLOBOFINTA	To train a cadre of global health leaders in Africa, Asia and Europe through creating awareness on global health issues	This is an ongoing collaborative project where a total of 4 global health courses have been conducted in Tanzania in collaboration with colleagues from Finland, Nepal, Chile and Philippines.
32	Dr. Elia Mmbaga	NIH	Esophageal Etiological study	To determine environmental, dietary and lifestyle risk factors for esophageal cancer in Tanzania	A total of 450 cases and control have already been recruited and data analysis completed. One manuscript has been developed for publication and results presented in various forum within and outside the country



33	Prof. Twalib Ngoma/Dr. Elia Mmbaga	COSTECH	Downstaging cancer in Tanzania	Down stage and Cure more cancer patients so that they contribute to the Social Economic Development of Tanzania rate using simple innovative educational program combined with digital technology	Baseline and follow up data collection completed. One MPH student has been successfully trained and results presented during the MUHAS scientific conference. Manuscript development ongoing
34	Dr. Joseph Otieno	USAID	DNA Barcoding	Produce data which will assist in monitoring biopiracy of plants in Tanzania	Ethnobotanical survey of traded medicinal plants is almost complete. Data analysis is halfway. DNA samples already collected for extraction
35	Dr. Phillip G. Sasi	Pittsburgh University	Effect of Mobile-Directly Observed Therapy (MDOT) on Adeherence to Hydroxyrea Treatment in Adult HbSS Patients at Muhimbili Hospital (MNH) in Tanzania: a Pilot Study	To evaluate the effect of mobile DOT on adherence to HU treatment, by medication possession ratio (MPR) in adult HbSS patients	The study has three phases: three months of pretreatment observation; three months of hydroxyurea treatment; and two months of post treatment observation. Screening and enrollment is completed and the majority of patients has completed the three months pre-treatment follow up and has started hydroxyurea treatment. Data collection during study visits is ongoing and we anticipate having the last patient visit in January 2018.



36	Prof. Kisali Pallangyo	GHIT Fund/Dartmouth College	Whole Cell Booster Vaccine to Prevent TB Infections in Adolescents (DAR-PIA)	To determine the safety and efficacy of a 3 dose series of DAR-901 for the prevention of infection with TB among healthy adolescents in Tanzania previously immunized with BCG.	Recruitment of study subjects was completed in February 2017. Vaccination with three doses has been completed. Follow of the study subjects started in March 2016, is progressing well and is scheduled to end December 2018. During the period under review 65 study participants tested IGRA positive i.e were newly infected with TB but had no clinical disease. Eight more participants had borderline IGRA test results. Regular monitoring of the study subjects continues. The study is monitored by Triclinium of South Africa- and has had seven visits at the time of this report. The data safety and monitoring board has met twice and the Community advisory board met twice since the last report.
37	Dr. Joseph N. Otieno	Uppsala University	Innovative Genomics-Based DNA Barcoding	To generate plant trade data on vulnerable species by providing correct taxonomic verification and utilize DNA barcoding technique as an identification tool in combating wildlife poaching and trafficking, in order to promote sustainable wildlife conservation & management	DNA samples are collected for quantitative analysis. The living collections of Hypoxis species established behind the ITM building. Research results shared at AETFAT and 5 MUHAS Scientific Conference. One manuscript prepared for submission



38	Dr. Anne Outwater	World Learning Wild General	Rukajuu Beekeeping Entrepreneurship for Young Men	Inspiring Young people to take charge of their lives by creating an opportunity for them to enhance their knowledge and understanding of entrepreneurship, finance and how to evolve their livelihood activities	The ten-session intervention has been completed. Follow up data are now being gathered at month 3, 6, and 12 from last intervention
39	Dr. Anne Outwater	Sida	Injury Prevention and Care Tanzania: Road Traffic Injuries	To develop research expertise in order to decrease the high rate of road traffic deaths and injuries in Tanzania.	Funding received for 5 years. 3 PhD and 3 Master have been chosen and are in the process of writing their research proposals.
40	Dr. Anne Outwater	Sida	Nursing students' knowledge and experiences with snake bite	To explore health care providers' experiences of snakes and snakebite in order to improve care and prevention of snakebite	Data have been collected from 4 consecutive nursing classes. The N is 200+



41	Prof. Luzzato	Lucio	MUHAS-SIDA, MAGI Grant	In vitro Cultivation of Plasmodium Falciparum	To set up an in vitro culture of Plasmodium falciparum at MUHAS.	<p>The laboratory has been set up for the project. 3 approaches were used (a) Frozen parasites: these were obtained from KEMRI (Kilifi, Kenya), and from Ifakara Health Institute (Bagamoyo, Tanzania). (b) Live cultures: these were obtained from Johannesburg (University of Witwatersrand) and NIMR- Korogwe). (c) Samples from patients with acute malaria (<i>P. falciparum</i>) were obtained from the Muhimbili National Hospital (MNH) Emergency, with consent from the patients. 2) The quality of the frozen samples received has been sub-optimal. However, from live cultures we have been able to obtain live parasites on two occasions; and over the next several days both early forms (rings) and mature forms (trophozoites and schizonts) of <i>P falciparum</i> were observed: therefore, it can be confidently stated that on these occasions the entire intra-erythrocytic cycle was able to be reproduced in our laboratory.</p>
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Appendix II: Summary of papers published by staff during 2016/17

During the reporting period, the university published a total of 406 publications. These included 289 journal articles, 115 conference papers and 2 book chapters. The following is the list of some publications produced in local, regional and international journals during the reporting period.

A: Journal Articles

S/N	Authors	Title of Publication
1	Abeid M, Muganyizi P, Mpembeni R, Darj E, Axemo P.	Evaluation of a training program for health care workers to improve the quality of care for rape survivors: a quasi-experimental design study in Morogoro, Tanzania. <i>Glob Health Action</i> . 2016 Jul 14; 9:31735. doi: 10.3402/gha.v9.31735. eCollection 2016.
2	Abicho TB.	Perceptions of Trainees toward Leadership, and Change Managment Training, at Tikur Anbessa Specialized Hospital, Department of Emergency Medicine, April 2015. <i>Prehospital and Disaster Medicine</i> . 2017 Apr;32(S1): S98-.
3	Abicho TB.	Disaster and Emergency Medicine 2017. <i>Prehosp Disaster Med</i> . 2017;32(1): s43.
4	Aklillu E, Habtewold A, Ngaimisi E, Yimer G, Mugusi S, Amogne W, Reuter T, Meid A, Hoffmann MM, Weiss J.	SLCO1B1 gene variations among Tanzanians, Ethiopians, and Europeans: Relevance for African and worldwide precision medicine. <i>Omics: a journal of integrative biology</i> . 2016 Sep 1; 20(9): 538-45.
5	Akoko BM, Fon PN, Ngu RC, Ngu KB.	Knowledge of Hypertension and Compliance with Therapy Among Hypertensive Patients in the Bamenda Health District of Cameroon: A Cross-sectional Study. <i>Cardiology and therapy</i> . 2017 Jun 1;6(1): 53-67.
6	Alao, A., Chigona, W. and Lwoga, ET. 2017.	Telecentres use in rural communities and women empowerment: case of Western Cape. The 14th International Conference on Social Implications of Computers in Developing Countries, May 22 – 24 May 2017, Yogyakarta, Indonesia



7	Alatise OI, Kingham TP.	Cancer: Primary, Translational Research and Clinical Trials in Sub-Saharan Africa. In Cancer in Sub-Saharan Africa 2017 (pp. 65-77). Springer International Publishing.
8	Amare BL, Lutale J, Derbew M, Mathai D, Langeland N	The Impact of a Model Partnership in a Medical Postgraduate Program in North–South and South–South Collaboration on Trainee Retention, Program Sustainability and Regional Collaboration. International Education Studies. 2017 Feb
9	Amare BL, Lutale J, Derbew M, Mathai D, Langeland N.	The Impact of a Model Partnership in a Medical Postgraduate Program in North–South and South–South Collaboration on Trainee Retention, Program Sustainability and Regional Collaboration. International Education Studies. 2017 Feb 27;10(3): 89.
10	Ambrose EE, Makani J, Chami N, Masoza T, Kabyemera R, Peck RN, Kamugisha E, Manjurano A, Kayange N, Smart LR.	High birth prevalence of sickle cell disease in Northwestern Tanzania. Pediatric Blood & Cancer. 2017 Aug 2.
11	Ariga ES, Mujinja PG.	Impact of source of information and awareness on health seeking behaviour of cervical cancer patients in Dar es salaam, Tanzania.
12	Atkins S, Marsden S, Diwan V, Zwarenstein M,	ARCADE consortium. North–south collaboration and capacity development in global health research in low-and middle-income countries—the ARCADE projects. Global health action. 2016 Dec 1;9(1): 30524.
13	August F, Pembe AB, Mpembeni R, Axemo P, Darj E.	Effectiveness of the Home-Based Life Saving Skills training by community health workers on knowledge of danger signs, birth preparedness, complication readiness and facility delivery, among women in Rural Tanzania. BMC pregnancy and childbirth. 2016 Jun 2;16(1):129.
14	Auld AF.	Trends in Prevalence of Advanced HIV Disease at Antiretroviral Therapy Enrollment—10 Countries, 2004–2015. MMWR. Morbidity and Mortality Weekly Report. 2017; 66.



15	Azevedo MJ.	Africa's Health System (s) Performance on the Millennium Development Goals (MDGs). In Historical Perspectives on the State of Health and Health Systems in Africa, Volume II 2017 (pp. 75-111). Springer International Publishing.
16	Baker N, Van Acker K, Urbancic-Rovan V, Abbas ZG, Morbach S.	The worldwide implementation of the 'Train the Foot Trainer' program. Diabetic Foot Journal. 2017 Jun 1; 20(2).
17	Balaji D, Mlunde LB, Tran OC, Lambdin B, Mbwanbo J, Nyandindi C, Matiko E, Copenhaver M, Bruce RD.	First report of gender based violence as a deterrent to methadone access among females who use heroin in Dar es Salaam, Tanzania. AIDS and behavior. 2017 Jul 1; 21(7): 2093-100.
18	Balandya E, Reynolds T, Aboud S, Obaro S, Makani J.	Increased memory phenotypes of CD4+ and CD8+ T cells in children with sickle cell anaemia in Tanzania. Tanzania Journal of Health Research. 2017; 19(2).
19	Balandya E, Reynolds T, Aboud S, Obaro S, Makani J.	Increased memory phenotypes of CD4+ and CD8+ T cells in children with sickle cell anaemia in Tanzania. Tanzania Journal of Health Research. 2017; 19(2).
20	Balandya E, Reynolds T, Obaro S, Makani J.	Alteration of lymphocyte phenotype and function in sickle cell anemia: Implications for vaccine responses. Am J Hematol. 2016 Sep; 91(9):938-46. doi: 10.1002/ajh.24438. Epub 2016 Jul 14.
21	Bauer A, Podola L, Mann P, Missanga M, Haule A, Sudi L, Nilsson C, Kaluwa B, Lueer C, Mwakatima M, Munseri PJ.	Preferential Targeting of Conserved Gag Regions after Vaccination with a Heterologous DNA Prime-Modified Vaccinia Virus Ankara Boost HIV-1 Vaccine Regimen. Journal of Virology. 2017 Sep 15; 91(18): e00730-17.
22	Bei AK, Ahouidi AD, Dvorin JD, Miura K, Diouf A, Ndiaye D, Premji Z, Diakite M, Mboup S, Long CA, Duraisingh MT.	Functional analysis reveals geographical variation in inhibitory immune responses against a polymorphic malaria antigen. The Journal of Infectious Diseases. 2017 Jun 9.
23	Bekele F, Sinaga M, Quadri JA, Kumar A, Shariff A, Malik T.	Factors associated with outcomes of severe pneumonia in children aged 2 months to 59 months at jimma university specialized hospital, southwest Ethiopia. Current Pediatric Research. 2017; 21(3).

24	Bloch EM, West SK, Mabula K, Weaver J, Mrango Z, Munoz B, Lietman T, Coles C.	Antibiotic Resistance in Young Children in Kilosa District, Tanzania 4 Years after Mass Distribution of Azithromycin for Trachoma Control.
25	Boniface R, Lugazia ER, Ntungi AM, Kiloloma O.	Management and outcome of traumatic brain injury patients at Muhimbili Orthopaedic Institute Dar es Salaam, Tanzania. The Pan African medical journal. 2017; 26.
26	Buser JM.	The need for Hematology nurse education in Low-and middle-income Countries: a Community Case study in tanzania. Frontiers in public health. 2017;5.
27	Chande-Mallya and Charles Marwa	Knowledge management in higher Learning Institutions. A case of Mbeya University of Science and Technology, 17 th to 21 st October 2016, AHILA Kampala, Uganda.
28	Chande-Mallya, R., Msonde, S. E. , Mtega, W. P., Lwoga, E.T.	Health Information on the Internet. (2017). In:Quah, S.R. and Cockerham, W.C. (eds.), <i>The International Encyclopedia of Public Health</i> , 2 nd edition. vol. 3, pp. 414–417. Oxford: Academic Press.
29	Chigona, W. and Lwoga, ET. 2017.	“Telecentres bridging digital divide of women in rural areas: Case of Western Cape, South Africa”, Partnership for Progress on the Digital Divide 2017 International Conference, 24-26 May 2017, San Diego, California USA
30	Child HB, TO MI, Provincial HI, Guinea SI.	Exclusive Breast-Feeding Significantly Reduces The Risk Of Vertical Hiv Transmission Through 12 Months Of Age In Tanzanian Children. August, 2016.
31	Chiyangi H, Muma JB, Malama S, Manyahi J, Abade A, Kwenda G, Matee MI.	Identification and antimicrobial resistance patterns of bacterial enteropathogens from children aged 0–59 months at the University Teaching Hospital, Lusaka, Zambia: a prospective cross-sectional study. BMC Infectious Diseases. 2017 Feb 2;17(1): 117.



32	Chiyangi H, Muma JB, Malama S, Manyahi J, Abade A, Kwenda G, Matee MI.	Identification and antimicrobial resistance patterns of bacterial enteropathogens from children aged 0–59 months at the University Teaching Hospital, Lusaka, Zambia: a prospective cross-sectional study. BMC infectious diseases. 2017 Feb 2;17(1): 117.
33	Croke K, Ishengoma DS, Francis F, Makani J, Kamugisha ML, Lusingu J, Lemnge M, Larreguy H, Fink G, Mmbando BP.	Relationships between sickle cell trait, malaria, and educational outcomes in Tanzania. BMC Infectious Diseases. 2017 Aug 15;17(1):568.
34	Dadgar S, Sobouti F, Armin M, Esnaashari N.	Correction of Skeletal Openbite Using Zygomatic Miniplates. mechanics.;2(6): 7.
35	Daneau G, Aboud S, Prat I, Urassa W, Kestens L.	Performance of FACSPresto Point-of-Care Instrument for CD4-T Cell Enumeration in Human Immunodeficiency Virus (HIV)-Infected Patients Attending Care and Treatment Clinics in Belgium and Tanzania. PloS one. 2017 Jan 27;12(1): e0170248.
36	Daneau G, Aboud S, Prat I, Urassa W, Kestens L.	Performance of FACSPresto Point-of-Care Instrument for CD4-T Cell Enumeration in Human Immunodeficiency Virus (HIV)-Infected Patients Attending Care and Treatment Clinics in Belgium and Tanzania. PloS one. 2017 Jan 27;12(1): e0170248.
37	Darling AM, McDonald CR, Urassa WS, Kain KC, Mwiru RS, Fawzi WW.	Maternal dietary l-arginine and adverse birth Outcomes in Dar es Salaam, Tanzania. American Journal of Epidemiology. 2017 Aug 4;1-9.
38	Darling AM, Mugusi FM, Etheredge AJ, Gunaratna NS, Abioye AI, Aboud S, Duggan C, Mongi R, Spiegelman D, Roberts D, Hamer DH.	Vitamin A and Zinc Supplementation among Pregnant Women to Prevent Placental Malaria: A Randomized, Double-Blind, Placebo-Controlled Trial in Tanzania. The American journal of tropical medicine and hygiene. 2017 Apr 5;96(4): 826-34.
39	Darling AM, Mugusi FM, Etheredge AJ, Gunaratna NS, Abioye AI, Aboud S, Duggan C, Mongi R, Spiegelman D, Roberts D, Hamer DH.	Vitamin A and Zinc Supplementation among Pregnant Women to Prevent Placental Malaria: A Randomized, Double-Blind, Placebo-Controlled Trial in Tanzania. The American Journal of Tropical Medicine and Hygiene. 2017 Jan 23;16-0599.

40	Devries KM, Knight L, Allen E, Parkes J, Kyegombe N, Naker D.	Does the Good Schools Toolkit reduce physical, sexual and emotional violence, and injuries, in girls and boys equally? A cluster-randomised controlled trial. <i>Prevention Science</i> . 2017;1-5.
41	Dike NO, Momade E, Kotey SN.	Medical Simulation as an Educational Tool: The Bridge Between the What-To and How-To. <i>Prehospital and Disaster Medicine</i> . 2017 Apr;32(S1): S98-9.
42	Dunn SB.	<i>Investigating the challenges and benefits of traditional medicine: Case study Tanzania</i> (Doctoral dissertation, Stellenbosch: Stellenbosch University).
43	Edda Lwoga, Gloria Sakwari, Mboni Ruzagea, Lorna Carneiro, Said Salehe, Stephen Kishinhi, Juma Magogo, Jovine Bachwenkizi.	Effectiveness of problem-based learning in improving acquisition of clinical skills among dental students. PROSPERO 2017:CRD42017065830 Available from http://www.crd.york.ac.uk/PROSPERO/display_record.asp?ID=CRD42017065830
44	Eggers SM, Mathews C, Aarø LE, McClinton-Appollis T, Bos AE, de Vries H.	Predicting Primary and Secondary Abstinence Among Adolescent Boys and Girls in the Western Cape, South Africa. <i>AIDS and Behavior</i> . 2017 May 1;21(5):1417-28.
45	Elias M, Mmbaga EJ, Mohamed AA, Kishimba RS.	Male partner involvement in the prevention of mother to child transmission of HIV infection in Mwanza Region, Tanzania. <i>The Pan African Medical Journal</i> . 2017;27.
46	Elias M, Mmbaga EJ, Mohammed AA, Kishimba RS.	Male partner involvement in the prevention of mother to child transmission of HIV infection in Mwanza Region, Tanzania. <i>Pan African Medical Journal</i> . 2017 Jun 6;27(90).
47	Elsayed MH, Awooda EM.	Knowledge and Attitude of Diabetic Patients towards the Oral Complications of Diabetes Mellitus and Factors Associated with Their Knowledge in Khartoum State, Sudan.
48	Epiu I, Tindimwebwa JV, Mijumbi C, Ndarugirire F, Twagirumugabe T, Lugazia ER, Dubowitz G, Chokwe TM.	Working towards safer surgery in Africa; a survey of utilization of the WHO safe surgical checklist at the main referral hospitals in East Africa. <i>BMC anesthesiology</i> . 2016 Aug 11; 16(1): 60.



49	Ezekiel MJ, Chitama D.	Magnitude and factors associated with intimate partner violence in mainland Tanzania. BMC public health. 2016 Jun 10; 16(1): 494.
50	Ezekiel MJ, Kisanga F, Mosha IH, Anaeli A, Kamazima SR, Mpembeni R, Muhondwa EP.	Factors associated with child sexual abuse in Tanzania: a qualitative study. Tanzania Journal of Health Research. 2017;19(2).
51	Frambach JM, Manuel BA, Fumo AM, Groosjohan B, Van Der Vleuten CP, Driessen EW.	How innovative and conventional curricula prepare medical students for practice in Sub-Saharan Africa: A comparative study from Mozambique. Education for Health. 2017 Jan 1; 30(1): 3.
52	Frumence G, Nathanaeli S	Health System Barriers to Provider-Initiated HIV Testing and Counselling Services for Infants and Children: A Qualitative Study From 2 Districts in Njombe, Tanzania. HEALTH RESEARCH JOURNAL. 2017 Jul:123.
53	Frumence G, Nyamhanga TM.	Social capital and self-rated health: experiences from Makete district, Tanzania. Tanzania Journal of Health Research. 2017;19(3).
54	Fujita W, Leshabari S, Mlay ED, Ohashi K.	Tanzanian women's coping and understanding of labour: A qualitative study at the Amtulabhai Antenatal Clinic. International Journal of Africa Nursing Sciences. 2017 Jun 1.
55	Gupta D, Mital P, Meena BS, Benwal D, Singhal S, Ainani R.	Comparative assessment of fetomaternal outcome in twin pregnancy with singleton pregnancy at tertiary care centre. International Journal of Reproduction, Contraception, Obstetrics and Gynecology. 2017 May 25;6(6):2395-400.
56	Hiatt RA, Engmann NJ, Ahmed M, Amarsi Y, Macharia WM, Macfarlane SB, Ngugi AK, Rabbani F, Walraven G, Armstrong RW.	Population health science: A core element of health science education in Sub-Saharan Africa. Academic Medicine. 2017 Apr;92(4):462.
57	Hill LM, Maman S, Kilonzo MN, Kajula LJ.	Anxiety and depression strongly associated with sexual risk behaviors among networks of young men in Dar es Salaam, Tanzania. AIDS care. 2017 Feb 1;29(2):252-8.



58	Ishengoma JM.	The Role of African Flagship Universities: The Case of the University of Dar es Salaam. In Flagship Universities in Africa 2017 (pp. 373-423). Palgrave Macmillan, Cham.
59	Iwata JJ, Hoskins RG.	Managing Indigenous Knowledge in Tanzania: A Business Perspective. In Managing Knowledge Resources and Records in Modern Organizations 2017 (pp. 198-214). IGI Global.
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**C: Conference Proceedings**

S/N	Authors	Title of Publication
1	Alao, A., Chigona, W. and Lwoga, ET.	Telecentres use in rural communities and women empowerment: case of Western Cape. The 14th International Conference on Social Implications of Computers in Developing Countries, May 22 – 24 May 2017, Yogyakarta, Indonesia
2	Ali Mohamed Ali, Melissa Penny, Said A. Jongo, Seif A. Shekelaghe, Salim Abdulla, Lesley Workman, Philip Sasi, Thomas Smith, Nathalie Gobeau, Karen I. Barnes, Paolo Denti4 and WWARN Amodiaquine PKPD study group	Population Pharmacokinetic Modelling and Simulation of Anti-Malaria drugs to optimize dosing in neglected populations
3	Amos R. Mwakigonja, Happiness Rabel, Naboth A. Mbembati, Leonard E. K. Lema	The pattern of prognostic and risk indicators among women with breast cancer undergoing modified radical mastectomy in Dar es Salaam, Tanzania.
4	Amos Rodger Mwakigonja, Nyanda Elias Lushina, Ally Mwanga	Hormonal receptors and human epidermal growth factor receptor-2 in biopsies of women with breast cancer at the Muhimbili National Hospital, Dar es Salaam, Tanzania
5	Aneth V. Kalinjuma, Tracy R. Glass, MajaWeisser, Selarine J. Myeya, Bryson Kasuga, YassinKisung'a, George Sikalengo, Andrew Katende, Manuel Battegay and Fiona Vanobberghen, on behalf of the KIULARCO study group	Rates of and factors associated with loss to follow-up of HIV-infected persons in rural Tanzania
6	Angela Samwel, W. Mchwampaka, D. Tarimo, R. Kishimba, J. Mghamba	Trend of pneumonia among out-patient children-Arusha, Tanzania, 2013–2016



7	Anifrid Mahenge, Wilbert Mbuya, Jacklina Mhidze, Antelmo Haule, Mkunde Chachage, Ruby Mcharo, Beatrice Komba, Leonard Maboko, Otto Geisenberger, Elmar Saathoff, Michael Hoelscher, Kathrin Held, Arne Kroidl, Christof Geldmacher	Characterizing systemic HPV-specific T-cells in treated and untreated HIV+ women in relation to cervical cancer
8	Anifrid T. Mahenge	Characterizing Systemic HPV-Specific T-Cells in Treated and Untreated HIV+ Women in Relation to Cervical Cancer
9	Anne H. Outwater, Abel Thobias, Peter Shirima, Notikela Nyamle, Greyson Mtavangu, Lusajo Bujile, Mwanahawa Ismaili, Tanya van Braekel, Joseph Lekule, Mary Justin-Temu	Initial treatment of burns in Tanzania
10	Arne Kroidl, Frederic Ello, Jimson Mgaya, Tessa Lennemann, Raoul Moh, Lucas Maganga, Serge Eholie, Alain Pruvost, Elmar Saathoff, Pierre-Marie Girard, Ralph Zuhse, Friedrich von Massow, Xavier Anglaret, Michael Hoelscher and Christine Danel	Virological efficacy of 24-week fozivudine-based regimen in ART-naïve patients from Tanzania and Côte d'Ivoire
11	Beatrice Mushi, John Greer Msiba Selekwa, Charles Cahalane Ally Mwanga, Larry Akoko, Katherine Van Loon, Eric Collisson, Elia Mmbaga	A pilot study to establish procedures for dna and rna isolation from african esophageal tumor specimens
12	Benignus Abel Otmar, Daudi Katopola, Daudi Kitomo	The Contribution of Mobile Health Investment to the growth of health sector in Tanzania
13	Betty Maganda, Eleni Aklillu, Apolinary Kamuhabwa, Billy Ngasala, Omary Minzi	Malaria patients on antiretroviral therapy need a prolonged anti-malarial treatment
14	Boniphace Sylvester	In Utero Exposure to Plasmodium falciparum Modulates Interferon- and IL-10; Responses during Clinical Malaria Episodes in the First Two Years of Life.



15	Boniphace Sylvester	Effects of in-utero Exposure to Plasmodium falciparum on Parasite Density during Clinical Malaria Episodes in the First 2 years of Life
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17	Boniphace sylvester, Dinah Gasarasi, Said Aboud, Donath Tarimo, Sirel Massawe, Rose Mpembeni, Gote Swedberg	Prenatal exposure to P. falciparum Modulates Interferon- and IL-10 Responses; during Clinical Malaria Episodes in the First 2 Years of Life
18	Bruno F. Sunguya, David P. Urassa, Linda B. Mlunde, Krishna C. Poudel, Namala P. Mkopi, Omary S. Ubuguyu, Junko Yasuoka, and Masamine Jimba	Improving feeding practices and nutrition status of HIV-positive children in Tanga, Tanzania: The roles of health workers' nutrition training.
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20	Bryan N. Patenaude	Value of Life: Reconsidering WHO Cost-Effectiveness Thresholds based on Evidence from Tanzania.
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23	Chigona, W. and Lwoga, ET.	“Telecentres bridging digital divide of women in rural areas: Case of Western Cape, South Africa”, Partnership for Progress on the Digital Divide 2017 International Conference, 24-26 May 2017, San Diego, California USA
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25	Daniel Zacharia Matata, Olipa Ngassapa, Francis Machumi and Mainen Julius Moshi	Brine shrimps toxicity and phytochemical screening of plants used by Traditional Practitioners for the treatment of cancer.
26	Dativa Pereus, Nicolao Joseph Otieno, Abdolbaset Ghorbanidahaneh, Hugo de Boer	Ethnobotanical Study of Hypoxis Species in Tanzania
27	Denis Kapinga, Bakari Omary, Ahmed Abade, Loveness Urio	Trend of anti-Tb drugs resistance among re-treated cases, Tanzania, 2009-2014
28	Doreen Mutemi, Victor Yman, Grace Wandell, Manijeh Vafa Homann, Cleis Nordfjell, Leah Mhoja, Marita Johansson, Salome Jesaja, Ulf Hammar, Ingegerd Rooth, Billy Ngsala, Anna Färnert	Longitudinal study on the epidemiology of malaria in Nyamisati village in the Rufiji River Delta, Tanzania
29	Edda Tandi Lwoga, Felix Sukums	Faculty usage behaviour of electronic resources and their information literacy practices
30	Edith A.M Tarimo, Candida Moshiri, Joel Ambikile, Patricia Munseri, Muhammad Bakari, Ezekiel Matola, Hamisa Mangara, Theodora Daniel, Kisali Pallangyo, Mary Ngatoluwa	Magnitude, Types and risk factors for Misconceptions around HIV vaccine trials among potential trial participants in Dar es Salaam, Tanzania
31	Elias Masumbuko, E. Mmbaga, A. Abade, R. Kishimba	Vertical transmission of HIV infection and associated determinants in the era of option B+ use in Mbeya Region, Tanzania-2016.
32	Elizabeth Appollo, Belinda Balandya, Francis Fredrick, Paschal Ruggajo Mail	Pregnancy Related Acute Kidney Injury in Dar Es Salaam
33	Eric Bigirimana, Dereck Chitama, Bruno Meessen	Results based financing in Tanzania: Process assessment of the pilot project in Kishapu Health District - Shinyanga Region
34	Feksi JM, Mafwiri MM, Nyaluke P, Sanyiwa AJ	Pattern of nystagmus in children attending the paediatric ophthalmology and neurology clinics at Muhimbili National Hospital.
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36	Florence Urio, Twilumba Makene, Siana Nkya Mtatiro, Julie Makani, Lucio Luzzatto	The effect of growth pattern of malaria parasite, plasmodium falciparum in red cells of different foetal haemoglobin levels - infectious
37	Florida Mbwilo, Godlove Chaula, Miri Mcharo, Abisai Kisinda, Anfridy Mahenge, Jacklina Mhidze, Lwitiho Sudi, Getrudi Mihale, Twasime Mwang'onda, Bariki Mtafya, Nyanda Elias.	Prevalence of Hepatitis B Co- infection among HIV-1 Positive Patients
38	Francis M. Sakita, Brittany L. Murray, Victor Mwafongo, Hendry R. Sawe	Clinical Profiles, diagnoses and outcomes of Paeditric patients presenting with abdominal pain at the Emergency Department of Muhimbili National Hospital
39	Galcan Fredrick Jovin Eden. Maro	Factors associated with immunosuppressive therapy adherence in post-renal transplant patients at Muhimbili National Hospital
40	Godlove Chaula, Emma Peter, Johnisius Msigwa, Nyanda Elias Ntinginya, Bariki Mtafya	Investigation of selected pathogens in raw leafy vegetables: A case study in Morogoro, Tanzania.
41	Godlove Chaula, Emmanuel Sichone, Bariki Mtafya, , Chacha Mangu Lwitiho Sudi, Leonard Maboko, Issa Sabi, Johnisius Msigwa, Jonathan Munkai, Wolfram Mwalongo, Christina Manyama, Simeon Mwanyonga, Nyanda Ntinginya	In vitro activity of Solanum carolinense extract against human fungal isolates: case study in Mbeya
42	Gordon Dandeebo and Ezra Jonathan Mrema	Integrating Climate Variability and Change into Tanzania's District Health System: Prospects and Challenges from Chalinze District.
43	Gordon Dandeebo, and Ezra Jonathan Mrema	Integrating Climate Variability and Change into Tanzania's District Health System: Prospects and Challenges from Chalinze District.
44	Harriet	Identification and antimicrobial resistance patterns of bacterial enteropathogens from children aged 0-59 months at the University Teaching Hospital, Lusaka, Zambia: a prospective cross-sectional study.



45	Hussein Nasib, Emmanuel Balandya	Evaluation of intravenous fluid therapy practices for paediatric and adult patients admitted at district hospitals in Mbeya region-Tanzania-2016.
46	I.M. Ngerageza, E. Meda, J. Makani	The appropriateness and practice of red cell transfusion in medical wards at Muhimbili National Hospital, Dar es Salaam, Tanzania.
47	Issa A. Garimo, Abdul-wahid Al-mafazy, Abdullah S. Ali, Rogath Kishimba, A. Abade, Mohammed Ali, Wahida Hassan, Mahdi M. Ramsan, Lynn Paxton, Gordon Cressman, Michael McKay, Richard Reithinger, Jeremiah M. Ngondi	Enhanced Malaria Surveillance in Zanzibar: Four years' experience of malaria case notification and response in pre-elimination settings
48	Issa Sabi, Hellen Mahiga, Willyhelmina Olomi, Jimson Mgaya, Otto Geisenberger, John France, Leonard Maboko, Michael Hoelscher, Arne Kroidl	Operational Feasibility on Implementation of Infant HIV Point of Care Diagnostics at Birth in Tanzania
49	Jacklina Mhidze, Wilbert Mbuya, Anifrid Mahenge, Antelmo Haule, Mkunde Chachage, Ruby Mcharo, Leonard Maboko, Otto Geisenberger, Elmar Saathoff, Michael Hoelscher, Kathrin Held, Arne Kroidl, Christof Geldmacher	Phenotyping mucosal T-Cells in HIV-and HIV+ women with/without precancerous cervical lesions/invasive cancer
50	Jimson Bernard Mgaya	Virological efficacy of 24-week fozivudine-based regimen in ART-naive patients from Tanzania and Côte d'Ivoire
51	Joel Johanson, Ewaldo Komba	Colorectal Cancer Screening and Awareness among Patients Attending Outpatient Clinic at Muhimbili National Hospital, Dar es Salaam
52	Joel Seme Ambikile, Iseselo Kidula Masunga	Mental Health Care and Delivery System at Temeke Hospital in Dar es Salaam, Tanzania
53	Johannes A. Ngemera	Body fat composition and dyslipidemia among students at the Dar es Salaam University College of Education, Tanzania

54	John N. Sagaika, Prof. G. Kwesigabo, Senga Sembuche	Causes, distribution and trend of maternal deaths in Tanzania, from 2014 to 2015- Discriptive study.
55	Jonathan, I, William, I, Chillo, O	Assessment of Cardiorespiratory Fitness among University Students
56	Jonathan Mnkai, Wilbert Mbuya, Wolfram Mwalongo, Rubby Mcharo, Tessa Lennemann, Liset Torres, Asli Bauer, Kathrin Held, Mkunde Chachage, Nice Mwinuka, Michael Hoelscher, Leonard Maboko, John France, Arne Kroidl and Christof Geldmacher	Distribution of Human Papilloma virus genotypes among women enrolled in cervical cancer study in Mbeya-Tanzania
57	Jonathan Mnkai, Wilbert Mbuya, Wolfram Mwalongo, Rubby Mcharo, Tessa Lennemann, Liset Torres, Asli Bauer, Kathrin Held, Mkunde Chachage, Nice Mwinuka, Michael Hoelscher, Leonard Maboko1, John France, Arne Kroidl and Christof Geldmacher	Distribution of Human Papilloma virus genotypes among women enrolled in cervical cancer study in Mbeya-Tanzania
58	Kabano M ¹ , Kisimbi SJ ¹ , Mosenene S ¹ , Mafwiri MM ¹ , Sanyiwa AJ ¹ , Mhina C ¹ , Padhani D ¹ .	Serum levels of Folate and Vitamin B 12 among Patients with Optic Neuropathy Attending Muhimbili National Hospital Eye Clinic.
59	Kanisiusy Ngonyani, Alice Christensen, Mariam Mohamed, Robert Salim, Michael Machaku, Augustino Hellar, Gissenge Lija, Abdallah Maganga, Erick Mlanga, Frank Phiri	Towards Scaling-Up of Early Infant Male Circumcision Services for HIV Prevention in Tanzania: Lesson learned from Iringa Pilot
60	Kanisiusy Ngonyani, Mariam Mohamed, Alice Christensen, Abdallah Maganga, Frank Phiri, Michael Machaku, Gissenge Lija, Erick Mlanga,	Parents Perception of Early Infant Male Circumcision Services in Iringa, Tanzania
61	Kilemile JJ, Mhina C, Nyaluke P, Mafwiri MM, Sanyiwa AJ	Prevalence and types of strabismus among patients attending ophthalmology outpatient clinic at Muhimbili national Hospital



62	Kokuhabwa Mukurasi, Fadhili Ngogo, Candida Mshiro, Mohamed Ali Mohamed, Ahamed Abade.	Evaluation of HIV /AIDS care and treatment patient monitoring system
63	L. Mtei, S. Nkya, D. Soka, V. Mdai, P. Mwakale, P. Mrosso, I. Mchoropa, J. Soka, M. Azayo, N. Ulenga, M. Ngido, S. E. Cox, B. Sequeira D'Mello, H. Masanja, G. Kabadi, F. Mbuya, A. Streetly, F. Tluway, J. Killewo, M. Lyimo, J. Makani.	Newborn Screening for Sickle Cell Disease: An Innovative pilot program to improve child survival in Dar-es-Salaam, Tanzania.
64	Lauren Brown, Sachiko Ozawa, Dereck Chitama, John FP Bridges, Japhet Killewo, Abdullah Baqui	Determining preferences for program characteristics of a future, national community health worker program: A best-worst scale experiment
65	LilianNjovu, Basaswa Mbozi, Epifania Ndunguru, Jonisius Msigwa, Clement Mwakabenga, Alice Shoo, Florida Mbwilo, Abisai Kisinda, Bariki Mtafya, Nyanda Elias, Lucas Mganga, Cornelia Luuer	Identification of contaminated areas that interfere with Aptima Qualitative HIV-1 RNA Assay in Mbeya, Tanzania.
66	Linda Mlunde, Dunstan Bishanga, Mary Drake, Ruth Lemwayi, John George, Mustafa Njozi	Utilization and quality of maternal health services among women in Mara and Kagera
67	Linda Simon, Angwara Denis Kiwara	University medical education in the twenty first century: challenges of social determinants of health and non-communicable diseases
68	Lwoga, ET and Sukums, F.	Faculty usage behavior of electronic resources and their information literacy practices. 5 th MUHAS Conference from 29-30 June 2017, Dar es Salaam
69	Mathias Eulambius I, Omary Minzi, Appolinary A.R. Kamuhabwa, Eleni Aklillu	Effectiveness of the combination of dihydroartemisinin and piperaquine for prevention of falciparum malaria during pregnancy in Tanzania
70	Mboka Jacob, Dawn Saunders, Jamie Kawadler, Julie Makani, Fenella Kirkham	Silent Cerebral Infarction in Tanzanian Children with Sickle Cell Anaemia



71	Minyahil Woldu	Factors Associated with Poor Glycemic Control among Patients with Type 2 Diabetes Mellitus in Ambo Hospital, Ambo; Ethiopia
72	Mistry KR, Mhina C, Padhani D, Sanyiwa A, Mosonene S	Pattern of Ocular Manifestations in Sickie Cell Disease Patients Attending Sickie Cell Clinic at Muhimbili National Hospital
73	Msiba Selekwa, John Greer, Beatrice Mushi, Charles Cahalane2Ally Mwanga, Larry Akoko, Katherine Van Loon, Eric Collisson, Elia Mmbaga	A pilot study to establish procedures for DNA and RNA isolation from African esophageal tumor specimens
74	Mtinangi BL.	The Pathophysiology of Cardio- Renal Anemia Syndrome; What is it and its possible magnitude in Tanzania?
75	Mushi, BK, Sanyiwa AJ, Mwende J, Mafwiri MM	Ocular Manifestations among Children with Cerebral Palsy Attending Muhimbili National Hospital Cerebral Palsy Clinic
76	Mwampaka WM, Tarimo DS, Kishimba RS	Uptake of three or more doses of Sulfadoxine-Pyrimethamine for Intermittent Preventive Therapy of Malaria in Pregnancy in Nyamagana and Ilemela districts, Mwanza, Tanzania
77	Nangi W. Nangi, Mwakapasa E, Fadhili Ngogo, Mwedi Athumani, Jailos Hiriza, Mwendwa Mwenesi Ahmed Abade, Rogath Kishimba	Cholera Outbreak after Funeral Gathering in Kigamboni Municipality, Tanzania, 01/02/2017
78	Neema Camara, G. H. Leyna, S. Sharapova R. S. Kishimba, S. Salandy and A. Abade	revalence of Tobacco Use and Risk Factors among Adults in Dar Es Salaam, Tanzania, 2016
79	Ngalula J, Sanyiwa AJ, Mafwiri M, Mhina C, Mosenene S, Mwende J	Retinoblastoma: Clinical Picture and Grouping at the Time of First Presentationamong Patients Attending Pediatric Oncology Ward at Muhimbili National Hospital
80	Njelekela M1, Kilama B, Ndayanga P, Gamaliel J, Ndile M, Mbelwa C, Machota N, Swai P, Eshun J,	Micro Strategy Implementation Improved HIV/AIDS Service Delivery in Five Regions Tanzania
81	Nsiande Lema, Mtebe Majigo, Peter Mbelele, Ahmed Abade, Mecky Matee	Modified risk factors and drug susceptibility pattern for MDR-TB patients referred to Kibong'oto Infectious Diseases Hospital, Kilimanjaro Tanzania.



82	Nsiande Lema, Mtebe Majigo, Peter Mbelele, Ahmed Abade, Mecky Matee	Modified risk factors and drug susceptibility pattern for MDR-TB patients referred to Kibong'oto Infectious Diseases Hospital, Kilimanjaro Tanzania, 2014
83	Odunayo Olawumi ALOWOLODU, Ayotunde Samuel ADEAGBO, Okoliko Victor UKWENYA	ocio-Economic Background and Mental Well-Being of Pre-Medical Students in Nigeria: Any Gender Difference?
84	Ombi J, Milka M, Padhani D, Gibson K	Pattern and Causes of Corneal Opacities among Patients Attending Eye Clinics at Muhimbili National Hospital
85	Opita, M & Tarimo, E.A.M	Knowledge and attitude towards HIV-Post Exposure Prophylaxis among University Undergraduate students: A descriptive cross-sectional study from Dar es Salaam, Tanzania.
86	Oscar F. Mwashuiya ¹ , M. Majigo ² , A. Abade ¹ , D. Mogela ³	Trend of Syphilis among blood donors, Dar es Salaam, Tanzania, 2010- 2015
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88	Peter S. Mabula, Brittany L. Murray, Victor Mwafongo, Hendry R. Sawe	Impact of emergency medicine training in tertiary hospitals on the understanding, perception and career decisions
89	Peter Shadrack Mabula, Brittany Lee Murray, Hendry Robert Sawe	Impact of Emergency Medicine Training in Tertiary Hospitals on the Understanding, Perception and Career Decisions
90	Prosper J. Bashaka, Brittany L. Murray, Victor Mwafongo, Hendry R. Sawe	Profile and outcomes of malnourished children presenting to the Emergency Department of Muhimbili National Hospital.
91	R.C. Ndege, M. Weisser, F. Diggelmann, F. Bani, F. Haraka, K. Reither, G. Sikalengo, L. Fenner, W. Gingo, C. Hatz, M. Tanner, M. Rohacek	Sonographic signs of pulmonary and extrapulmonary tuberculosis in HIV-positive and HIV-negative patients
92	Rajabu Hussein ¹ Omary Minzi ² Appolinary Kamuhabwa ² Safari Kinung'hi ³ Eleni Aklillu	Efficacy and Safety of Praziquantel combined with Dihydroartemisinin-Piperaquine for treatment of Schistosomiasis in Tanzania

93	Ratxe Perez-Urdiales, Irrintzi Fernandez-Aedo, Saloa Unanue-Arza, Ziortza Garcia-Azpiazu, Sendoa Ballesteros-Peña	Experiences of Emergency Medical Technicians and Out-Of-Hospital Emergency Nurses after Performing Cardiopulmonary Resuscitation Resulting in Death
94	Richard. Magodi, W. Mchwampaka, E. Masumbuko, A. Abade1, E. Mmbaga, J. Harrison, A. Simba, S. Sembuche, R. Kishimba, J. Mghamba.	Suspected aflatoxicosis in Dodoma and Manyara regions, Tanzania. 2016.
95	Rukia Rajab Bakar1,2,3, Rachel Manongi1,2, Blandina T. Mmbaga1,4,5, Birgitte Bruun Nielsen	Perinatal mortality and associated risk factors among singleton babies in Unguja Island, Zanzibar
96	S. RiyatiSugiarto, G. Bwire, O. M. S. Minzi, T. Davis, J. Makani.	Effects of sickle cell disease and trait on the pharmacokinetic properties of artemether-lumefantrine in african children.
97	Saada Ali Seif, Thecla W. Kohi, Candida S. Moshiro	Sexual and Reproductive Health-Communication Intervention for Caretakers Of Adolescents in Unguja, Zanzibar -Tanzania.
98	Samson Hilonga, Joseph Nicolao Otieno, Joseph Nicolao Otieno, Abdolbaset Ghorbani Dahaneh, Abdolbaset Ghorbani Dahaneh, Hugo Boer, Hugo Boer	The Assessment of the Quantities and Chain of Commercial Trade on Wild-Harvested Medicinal Plant Species in Tanzania.
99	Samson S, Mpembeni RNM, Kishimba RS, Njau PF	Uptake of Early Infant Diagnosis Confirmatory Test and Associated Factors among HIV Exposed Children after Cessation of Breastfeeding Period in Iringa Region, Tanzania
100	Samwel Jacob Rweyemamu, Lwakatare J.M.	Prevalence of Human Immunodeficiency Virus, Clinical Presentation and Related Factors among Adult Patients with Heart Failure at the Jakaya Kikwete Cardiac Institute.
101	Sangeda, R. and Lwoga	Research performance and citation impact of scholars at MUHAS. 5 th MUHAS Conference from 29-30 June 2017, Dar essalaam



102	Saning'o Sangeti, Paschal Ruggajo, Joel Manyahi	Bacteremia associated with central venous catheterization, etiology and their antibiogram among patients on hemodialysis therapy at Muhimbili national hospital – Dar es salaam, Tanzania.
103	Saumu Nungu, I. Semali, A. Abade, S. Rumisha, R. Kishimba, J. Mghamba	Uptake and determinants of HIV re-testing among newly-delivered mothers previously tested HIV-negative in Njombe Region, Tanzania. 2016
104	Sheila M. Maregesi, Amos R. Mwakigonja, Peter Urio	Toxicity evaluation of Abrus precatorius seeds collected from Bunda District, Tanzania
105	Shelley KD, Frumence G, Idda M, Mpembeni R, Mwinnyaa G, George AS, Baqui AH, Peters DH, and Killewo J	“Because even the person living with HIV/AIDS might need to make babies” – Perspectives on drivers of feasibility, acceptance, and adoption of an integrated community health worker program in Iringa, Tanzania.
106	Shelley KD, Mpembeni R, Frumence G, George AS, Baqui AH, Peters DH, and Killewo	Can volunteer community health workers manage multiple roles? an interrupted time series analysis of combined hiv and maternal and child health care in Iringa, Tanzania – health system
107	Tluway, Balandya E, Lyimo M, Makubi A, Sangeda, Chamba C, Luzzatto L, Makani J	establishment of sickle Pan-African research consortium (SPARCO)
108	Twalib A. Ngoma	State of oncology in Africa 2015: An IPRI report.
109	Twilumba Makene, Florence Urio, Billy Ngasala, Julie Makani, Lucio Luzzatto	In-vitro cultivation of P. falciparum at MUHAS
110	William W, Moshiro C, Gibson J.	First line anti-Tuberculosis failure among smear-positive pulmonary Tuberculosis
111	Willyhelmina Olomi, Issa Sabi, Peter Agrea, Monica Minja, Nhamo Chiwelengo, Petra Clowes, Joshua Mwakyelu, Sosten Buromo, Nyanda Elias Ntinginya	Impact of Mobile Diagnostic services on accessibility of HIV services among individuals in rural communities.



112	Winfride O. Akyoo, Germana H. Leyna, Deodatus C. Kakoko	Family Support and Adherence to Dietary Recommendations among Diabetic Patients Attending Clinics in Dar es Salaam, Tanzania: A cross sectional study
113	Winfride O. Akyoo, Idda H. Moshali, Mangi J. Ezekiel & Amon Sabasaba	Intimate partner violence and characteristics of perpetrators in Iringa municipality Tanzania: a cross sectional study
114	Witness M. Mchwampaka, Donath Tarimo, Ahmed Mohamed, Roghath Kishimba	Factors influencing uptake of three or more doses of Sulfadoxine-Pyrimethamine for Intermittent Preventive Therapy of malaria in pregnancy in Nyamagana and Ilemela Districts, Mwanza Region, Tanzania.
115	Yazid Kachwamba, A. A. Mohammed, H. Lukupulo, L. Urrio, M. Majigo, F. Moshali, M. Matonya, R. Kishimba, J. Mghamba, J. Lusekelo, S. Nyanga, M. Almeida, S. Li, D. Domman, S.Y. Massele, O. C. Stine	Phenotypic and molecular epidemiology of <i>Vibrio cholerae</i> isolated from outbreaks in Tanzania, December 2011 to August 2015 (Pending) patients in Dar es Salaam region, Tanzania

C: Book chapters

1	Chande-Mallya, R, Msonde, SE, Mtega, Lwoga, ET, 2016.	Health Information on the Internet, In International Encyclopedia of Public Health (Second Edition), edited by Stella R. Quah,, Academic Press, Oxford, 2017, Pages 414-417, ISBN 9780128037089, http://dx.doi.org/10.1016/B978-0-12-803678-5.00239-3
2	Lwoga, E. T., Ngulube, P., & Stilwell, C. 2016.	Indigenous Knowledge Management Practices in Indigenous Organizations in South Africa and Tanzania. <i>Handbook of Research on Social, Cultural, and Educational Considerations of Indigenous Knowledge in Developing Countries</i> , 181.