YENEPOYA
(DEEMED TO BE UNIVERSITY)
Recognized under Sec 3(A) of the UGC Act 1956
Accredited by NAAC with 'A' Grade

Details of the collaborative Activities under Functional MoUs/linkages

Collaborating Organization: Ministry of Health and Child Care, Zimbabwe

Year of collaboration: 2019

Activities:

The Yenepoya (Deemed to be University) and the Ministry of Health and Child Care, Zimbabwe, signed a MoU on 26th June 2019 for the purpose of educational cooperation, extending health services and strengthening of the relationship between two countries in terms of health education and Research and Development.

Research publication:

1. Harries AD, Thekkur P, Mbithi I, Chakaya JM, Tweya H, Takarinda KC, **Kumar AMV**, Satyanarayana S, Berger Real-Time Operational Research: Case Studies from the Field of Tuberculosis and Lessons Learnt. *Tropical Medicine and Infectious Diseases*. 2021; 6: 97.

2. Harries AD, **Kumar AMV**, Styanarayana S, Takarinda KC, Timire C, Dlodlo RA. Treatment for latent tuberculosis infection in low- and middle-income countries: progress and challenges with implementation and scale-up. *Expert Review of Respiratory Medicine*. 2019; https://doi.org/10.1080/17476348.2020.1694907

3. Timire C, Sandy C, Ngwenya M, Woznitza N, **Kumar AMV**, Takarinda KC, Sengai T, Harries AD. Targeted active screening for tuberculosis in Zimbabwe: are field digital chest X-ray ratings reliable? *Public Health Action*. 2019; 9(3): 96-101.
4. Augustine N, Philip O, **Kumar AMV**, Simukai Z, Owein M, Dumisani MH, Brian K. Gaps in the Care Cascade among Human Immunodeficiency Virus-Exposed Infants Born in 2017 in Mashonaland East Province of Zimbabwe. *Journal of Global Infectious Diseases*. 2021; 13: 72-9.

ATTESTED
Yenepoya (Deemed to be University)

Original Article

Gaps in the Care Cascade among Human Immunodeficiency Virus-Exposed Infants Born in 2017 in Mashonaland East Province of Zimbabwe

Ndaimani Augustine, Owiti Philip[1,2], Ajay MV Kumar[1,3,4], Zizhou Simukai[5], Mugurungi Owen[6], Mugauri Hamufare Dumisani[6], Komtenza Brian[6]

Biomedical Informatics and Biomedical Engineering Department, University of Zimbabwe Faculty of Medicine and Health Sciences, Harare, [6]AIDS and TB Programme Unit, Ministry of Health and Child Welfare, Harare, Zimbabwe, [1]Centre for Operational Research, International Union Against Tuberculosis and Lung Disease, Paris, France, [2]National Tuberculosis, Leprosy and Lung Disease Programme, Nairobi, Kenya, [3]International Union Against Tuberculosis and Lung Disease, South-East Asia Office, New Delhi, India, [4]Department of Community Medicine Yenepoya Medical College, Yenepoya (Deemed to be University), Mangalore, Karnataka, India, [5]Mashonaland East Provincial Medical Directorate, Ministry of Health and Child Care, Marondera, Zimbabwe

Abstract

Introduction: Prevention of mother-to-child transmission (PMTCT) is a key strategy for ending the human immunodeficiency virus (HIV) pandemic. Most studies have focused on the mothers' side of the PMTCT cascade or the rate of vertical HIV transmission. Information on child-focused cascade is limited. We aimed to evaluate HIV testing, antiretroviral therapy (ART), and cotrimoxazole prophylaxis uptake and associated factors among HIV-exposed infants (HEIs) born in 2017. **Methods:** This was a record-based descriptive study in Mashonaland East Province, Zimbabwe. We analyzed routinely collected program data abstracted from electronic and paper-based HEI registers. Uptakes were calculated as proportions while associations were measured using adjusted risk ratios (log-binomial regression). **Results:** Of 1028 HEIs, 1015 (98.7%) were commenced on nevirapine prophylaxis, while 915 (89.0%) were commenced on cotrimoxazole prophylaxis. A total of 880 (85.0%) HEIs were tested for HIV by 6 weeks and 445 (44.4%) by 9 months. Overall, 40 (3.9%) were found to be HIV positive, and of them, 34 (85.0%) commenced on ART. Secondary and tertiary health facilities, being born through nonvaginal delivery, and certain districts were significantly associated with not commencing cotrimoxazole prophylaxis or getting tested for HIV. One district was associated with less risk of not having an HIV test by 9 months. **Conclusions:** While nevirapine, cotrimoxazole, and ART uptake were high among the HEIs, HIV testing by 9 months was suboptimal. The vertical HIV transmission rate was 3.9%. There is a need to strengthen HIV testing and antiretroviral and cotrimoxazole prophylaxes, especially at high-level facilities and certain districts.

Keywords: Cotrimoxazole prophylaxis, early infant diagnosis, human immunodeficiency virus-exposed infants, operational research, record-based study, structured operational research and training initiative, vertical human immunodeficiency virus transmission cascade

Introduction

In 2018, an estimated 1.7 million children were living with human immunodeficiency virus (HIV) globally, of whom 180,000 were newly infected.[1] At least 90% of children with HIV acquire the infection through vertical transmission. Prevention of mother-to-child transmission (PMTCT) of HIV intends to reduce the incidence of HIV infection among exposed infants and improve the overall health of these children. For instance, between 2010 and 2017, PMTCT contributed to a 35% reduction in new pediatric HIV infections.[2] Consequently, PMTCT is one of the strategies being used to close the tap of new HIV infections in both adults and children.[3] PMTCT includes HIV testing and antiretroviral therapy (ART) for HIV-infected mothers, prophylaxis for all HIV-exposed infants (HEIs), HIV testing using deoxyribonucleic acid polymerase chain reaction (DNA-PCR), and initiation of ART for all HIV-positive infants.

Address for correspondence: Dr. Ndaimani Augustine, University of Zimbabwe Faculty of Medicine and Health Sciences, First Floor, New Health Sciences Building, P.O. Box A178, Avondale, Harare, Zimbabwe.
E-mail: andaimani@medsch.uz.ac.zw

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Tropical Medicine and Infectious Disease

MDPI

Perspective

Real-Time Operational Research: Case Studies from the Field of Tuberculosis and Lessons Learnt

Anthony D. Harries [1,2,*], Pruthu Thekkur [1,3], Irene Mbithi [4], Jeremiah Muhwa Chakaya [4,5,6], Hannock Tweya [7], Kudakwashe C. Takarinda [8], Ajay M. V. Kumar [1,3,9], Srinath Satyanarayana [1,3], Selma Dar Berger [1], I. D. Rusen [10], Mohammed Khogali [11] and Rony Zachariah [11]

1 International Union against Tuberculosis and Lung Disease (The Union), 75006 Paris, France; Pruthu.TK@theunion.org (P.T.); akumar@theunion.org (A.M.V.K.); SSrinath@theunion.org (S.S.); sberger@theunion.org (S.D.B.)
2 Department of Clinical Research, Faculty of Infectious and Tropical Diseases, London School of Hygiene and Tropical Medicine, London WC1E 7HT, UK
3 The Union South-East Asia Office, C-6 Qutub Institutional Area, New Delhi 110016, India
4 Respiratory Society of Kenya, Regent Court, Nairobi P.O. Box 27789-00506, Kenya; imbithi@resok.org (I.M.); Jeremiah.Muhwa@lstmed.uk (J.M.C.)
5 Department of Medicine, Therapeutics and Dermatology, Kenyatta University, Nairobi P.O. Box 43844-00100, Kenya
6 Department of Clinical Sciences, Liverpool School of Tropical Medicine, Liverpool L3 5QA, UK
7 The Lighthouse, Kamuzu Central Hospital, Lilongwe P.O. Box 106, Malawi; htweya@lighthouse.org.mw
8 AIDS and TB Department, Ministry of Health and Child Care, Causeway, Harare P.O. Box CY 1122, Zimbabwe; kctakarinda@gmail.com
9 Yenepoya Medical College, Yenepoya (Deemed to be University), Mangalore 575018, India
10 Vital Strategies, New York, NY 10005, USA; irusen@vitalstrategies.org
11 Special Programme for Research and Training in Tropical Disease (TDR), World Health Organization, 1211 Geneva 27, Switzerland; khogalim@who.int (M.K.); zachariahr@who.int (R.Z.)
* Correspondence: adharries@theunion.org; Tel.: +44-(0)-1962-714-297

check for updates

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Abstract: Real-time operational research can be defined as research on strategies or interventions to assess if they are feasible, working as planned, scalable and effective. The research involves primary data collection, periodic analysis during the conduct of the study and dissemination of the findings to policy makers for timely action. This paper aims to illustrate the use of real-time operational research and discuss how to make it happen. Four case studies are presented from the field of tuberculosis. These include (i) mis-registration of recurrent tuberculosis in Malawi; (ii) HIV testing and adjunctive cotrimoxazole to reduce mortality in TB patients in Malawi; (iii) screening TB patients for diabetes mellitus in India; and (iv) mitigating the impact of COVID-19 on TB case detection in capital cities in Kenya, Malawi and Zimbabwe. The important ingredients of real-time operational research are sound ethics; relevant research; adherence to international standards of conducting and reporting on research; consideration of comparison groups; timely data collection; dissemination to key stakeholders; capacity building; and funding. Operational research can improve the delivery of established health interventions and ensure the deployment of new interventions as they become available, irrespective of diseases. This is particularly important when public health emergencies, including pandemics, threaten health services.

Keywords: operational research; real-time operational research; tuberculosis; COVID-19; ethics; research capacity building; Malawi; Kenya; Zimbabwe; India

1. Introduction

Over the years, the terms "operational research", "operations research", "implementation research", "health systems research" and "health services research" have been used interchangeably to describe research conducted in health programmes using routinely collected data to try and effect change in policy and/or practice. Ask 20 operational research

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REVIEW

Treatment for latent tuberculosis infection in low- and middle-income countries: progress and challenges with implementation and scale-up

Anthony D. Harries[a,b], Ajay M. V. Kumar[a,c,d], Srinath Satyanarayana[a,c], Kudakwashe C. Takarinda[a,e], Collins Timire [a,e] and Riitta A. Dlodlo[f]

[a]The Centre for Operational Research, International Union Against Tuberculosis and Lung Disease, Paris, France; [b]Department of Clinical Research, Faculty of Infectious and Tropical Diseases, London School of Hygiene and Tropical Medicine, London, UK; [c]South-East Asia Office, International Union Against Tuberculosis and Lung Disease, New Delhi, India; [d]Yenepoya Medical College, Yenepoya (Deemed to be University), Mangalore, India; [e]AIDS and TB Department, Ministry of Health and Child Care, Harare, Zimbabwe; [f]TB Department, International Union Against Tuberculosis and Lung Disease, Paris, France

ABSTRACT

Introduction: Treatment of latent tuberculosis infection (LTBI) is a crucial but neglected component of global tuberculosis control. The 2018 United Nations High-Level Meeting committed world leaders to provide LTBI treatment to at least 30 million people, including 4 million children<5 years, 20 million other household contacts and 6 million HIV-infected people by 2022.

Areas covered: This review searched MEDLINE between 1990 and 2019 and discussed: i) high-risk groups to be prioritized for diagnosis and treatment of LTBI; ii) challenges with diagnosing LTBI in programmatic settings; iii) LTBI treatment options including isoniazid monotherapy, shorter regimens (rifampicin-monotherapy, rifampicin-isoniazid and rifapentine-isoniazid) and treatments for contacts of drug-resistant patients; iv) issues with programmatic scale-up of treatment including policy considerations, ruling out active TB, time to start treatment, safety, uninterrupted drug supplies and treatment adherence; and v) recording and reporting.

Expert opinion: In 2017, <1.5 million persons were reported to be treated for LTBI. This must rapidly increase to 6 million persons annually. If HIV programs focus on HIV-infected people already accessing or about to start antiretroviral therapy and TB programs focus on household contacts, these targets could be achieved. Isoniazid remains the current treatment of choice although shorter courses of rifapentine-isoniazid are possible alternatives.

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KEYWORDS
Latent tuberculosis infection; people living with HIV; household contacts

1. Introduction

1.1. Latent tuberculosis infection (LTBI)

Latent tuberculosis infection (LTBI) is defined by the World Health Organization (WHO) as a state of persistent immune response to stimulation by *Mycobacterium tuberculosis* (*MTB*) antigens with no evidence of clinically manifest active tuberculosis (TB) [1]. It is not possible to directly diagnose *MTB* infection, and therefore LTBI is diagnosed by the immunological response to in vivo or in vitro stimulation by *MTB* antigens with the use of the tuberculin skin test (TST) or interferon-gamma release assays (IGRA) [2]. LTBI arises as a result of individuals inhaling *MTB* into their lung alveoli – in some individuals the bacilli are cleared through innate immune responses while in others infection is established. What happens next depends on the dynamic interplay between pathogen and host, which changes throughout the individual's lifespan and is characterized by clinical latency (when host immune responses predominate) or by disease (when bacterial replication exceeds the threshold needed to cause symptoms and signs).

The global burden of LTBI is not known for certainty. For over 30 years, modeling studies put the estimate at one-third of the global population or approximately 2.3 billion individuals [3]. However, with changes in demography, improvements in scientific understanding and progress in TB care and prevention, a re-estimation was carried out in 2014 putting the global burden of LTBI lower at 23% or approximately 1.7 billion people [4]. Persons with LTBI have no symptoms or signs of TB and are not infectious, although they are at risk of developing active TB and becoming infectious as a result. On average, between 5% and 10% of those with LTBI will develop active TB over the course of their lifetime and it was commonly understood that most of these cases develop within the first 5 years after initial infection [5]. This view has recently been challenged through an examination of longitudinal studies, which suggests that active TB usually develops 3–9 months after infection and rarely beyond 2 years [6]. If confirmed, these findings have important policy implications for LTBI treatment with attention needing to be paid to newly infected people who are at the highest risk of progression to disease.

1.2. Targets for control and treatment of LTBI

Despite progress over the last three decades in global TB control, the disease remains an enormous public health challenge, especially in low- and middle-income countries (LMIC).

CONTACT Anthony D. Harries adharries@theunion.org London School of Hygiene and Tropical Medicine, Keppel Street, London WC1E 7HT, UK

Public Health Action

International Union Against Tuberculosis and Lung Disease
Health solutions for the poor

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Targeted active screening for tuberculosis in Zimbabwe: are field digital chest X-ray ratings reliable?

C. Timire,[1,2,3] C. Sandy,[1] M. Ngwenya,[4] N. Woznitza,[5] A. M. V. Kumar,[3,6,7] K. C Takarinda,[1,2,3] T. Sengai,[8] A. D. Harries[3,9]

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Setting: Fifteen purposively selected districts in Zimbabwe in which targeted active screening for tuberculosis (Tas4TB) was conducted among TB high-risk groups (HRGs). There were 230 patients started on TB treatment on the basis of chest X-ray (CXR) results without corresponding bacteriological confirmation.

Objectives: To determine 1) the percentage of agreements in digital CXR ratings by medical officers against final ratings by radiologist(s), 2) inter-rater agreement in CXR ratings between medical officers and radiologists, and 3) number (and proportion) of patients belonging to HRGs who were over-treated during Tas4TB.

Design: This was a cross-sectional study using programme data.

Results: A total of 168 patients had their CXRs rated by two independent radiologists. Discordances among the radiologists were resolved by a third index radiologist, who provided the final rating. κ scores were 0.01 (field ratings vs. Radiologist A); 0.02 (field ratings vs. Radiologist B); 0.74 (Radiologists A vs. B). The percentage agreement for field and final radiologist rating was 70% (95%CI 64–78). Around 29% (95%CI 23–36) of the patients were potentially over-treated during Tas4TB.

Conclusion: Over a quarter of patients with presumptive TB are potentially over-treated during Tas4TB. Over-treatment is highest among those with previous contact with TB patients. Trainings of radiographers and medical officers may improve CXR ratings.

In 2016, the tuberculosis (TB) treatment coverage in Zimbabwe was 81%, suggesting that around a fifth of TB patients were not diagnosed and could be *foci* for community TB transmission.[1] These could be within high-risk groups (HRGs), who are less likely to utilise healthcare services. The inverse care law states that people who need medical services the most are least likely to utilise them.[2] Zimbabwe is a country in southern African and is among the 14 countries with a triple burden of TB, TB-HIV and multidrug-resistant TB (MDR-TB; defined as resistance to at least isoniazid and rifampicin, the two most potent first-line anti-TB drugs).[3,4] The 2014 Zimbabwe TB prevalence survey showed that around 67 (63%) individuals with no TB symptoms but with CXR suggestive of TB, had bacteriologically confirmed pulmonary TB.[5] The survey also recorded a similar crude prevalence of TB in rural and urban areas. However, under programme conditions, urban areas record higher prevalences of TB than rural areas. Like active case finding (ACF) strategies, the survey ensured equity of access by bringing healthcare services to the communities, especially the marginalised. Targeted active screening for TB (Tas4TB) is one example of an ACF strategy.

Following recommendations from the prevalence survey, and as part of the global effort to end TB, the first pillar of the End TB Strategy, which emphasises the need for early diagnosis of TB, the Zimbabwe National TB Control Programme (NTP) and partner institutions embarked on Tas4TB, targeting HRGs for TB to improve both yield and impact.[6] The groups comprise people living with human immunodeficiency virus (PLHIV), refugees, contacts of TB patients, miners and prison inmates.

Tas4TB is used to screen people in communities and has the potential to detect asymptomatic TB patients, especially in contexts characterised by delayed health-seeking behaviour. People delay seeking healthcare when they are asymptomatic, and do not recognise TB symptoms, or when barriers to accessing healthcare exist.[7,8] Such barriers may include cost of healthcare services and distance to health centres. Unlike patient-initiated passive case finding, Tas4TB systematically identifies people who are presumed to have active TB (usually outside health facilities) using reliable and rapid screening and diagnostic tests. The objective is to detect active TB early and to ensure early treatment. This reduces mortality, comorbidities, transmission of TB and the socio-economic burden due to TB.

The yield from ACF is a function of the reliability (sensitivity and specificity) of screening and diagnostic tests. Since a high yield of true-positives is required, the screening algorithm should have a high sensitivity.[9] According to the Zimbabwean programme, the Tas4TB algorithm comprises symptom inquiry and digital chest X-ray (CXR) as screening tools, and Xpert® MTB/RIF testing (Cepheid, Sunnyvale, CA, USA) as the diagnostic tool for bacteriological confirmation.

Tas4TB programme data for 2017 shows that a high proportion of patients is initiated into treatment on the basis of field CXR ratings and/or symptom screening. Of the 35 610 people who were screened, 11 213 (31%) had presumptive TB, and 705 (2%) were clinically diagnosed with TB (all forms) and initiated on treatment. Only 89/705 (13%) were bacteriologically confirmed. All the digital CXR images are retained by the Tas4TB programme. In 2017, there were 230 images for presumptive TB patients who were initiated on treatment but had sputum-negative results on

AFFILIATIONS
1 Ministry of Health and Child Care, National AIDS & TB Programme, Harare, Zimbabwe
2 International Union Against Tuberculosis and Lung Disease (The Union), Harare, Zimbabwe
3 The Union, Paris, France
4 World Health Organization, Harare Country Office, Zimbabwe
5 Homerton University Hospital & Canterbury Christ Church University, London, UK
6 The Union, South East-Asia Office, New Delhi, India
7 Yenepoya Medical College, Yenepoya (deemed University), Mangaluru, India
8 Family AIDS Caring Trust (FACT), Mutare, Zimbabwe
9 London School of Hygiene & Tropical Medicine, London, UK

CORRESPONDENCE
Collins Timire, Ministry of Health and Child Care; National TB Control Programme, 5th Floor, Kaguvi Building; Cnr 4th/Central Avenue, Harare, Zimbabwe
e-mail: collinstimire2005@yahoo.com

KEY WORDS
CXR; high-risk group; SORT-IT; inter-observer variability; diagnostic accuracy

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YENEPOYA
(DEEMED TO BE UNIVERSITY)
Recognized under Sec 3(A) of the UGC Act 1956
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MEMORANDUM OF UNDERSTANDING

BETWEEN

THE MINISTRY OF HEALTH AND CHILD CARE, ZIMBABWE

AND

YENEPOYA (DEEMED TO BE UNIVERSITY), MANGALORE

FOR

EDUCATIONAL COOPERATION, EXTENDING HEALTH SERVICES AND STRENGTHENING OF RELATIONSHIP IN TERMS OF HEALTH, EDUCATION AND SKILL DEVELOPMENT

The Yenepoya (Deemed to be University), Mangalore, India and the Ministry of Health and Child Care hereinafter referred to as the first Party and second Party respectively).

RECOGNIZING the parties are desirous to enhance the bilateral cooperation and strengthen the ties of friendship between the two countries, realizing the importance of education and research, health care services, skill development, in terms of generating value human resources that advances the local economy, employability, health care services and mutual interest on equal grounds.

MR

EMPHASIZING the need to strengthen, deepen and broaden cooperation in education, research and health care services.

RECOGNIZING further the importance of medical education and research, health care and cultural values in enhancing the knowledge and understanding between their people.

TAKING INTO ACCOUNT the importance of the parties as partners and major source market for education and health.

HAVE REACHED the following understanding:

ATTESTED
Dr.Gangadhara Somayaji K.S.
Registrar
Yenepoya(Deemed to be University)
University Road, Deralakatte
Mangalore- 575 018, Karnataka

ARTICLE 1:

The parties will seek in accordance with the National Medical Education Laws of each county to enhance the bilateral cooperation in Medical Education & Research, Health care services and Hospitality sectors.

ARTICLE 2:

The second party will encourage student and faculty exchange programs, medical education exchange, extension of health care services at the community level and cultural exchange at the Yenepoya (Deemed to be University) and support each other for enhancing the skill development in the specialized and niche areas of health care services and super specialty disciplines for creating massive employment opportunities. Both parties shall promote cooperation and direct communication between the stakeholders of Medical Education & Research, Health Care Services, and other related activities for enhancing growth in skills, tourism and exchange at higher education sectors.

MR

ARTICLE 3:

The parties shall endeavour to enhance cooperation in the following areas under this Memorandum of Understanding:

a. Expansion of Bilateral co-operation in Medical Education & Research, Health Care Services and Skill development.

b. Specialist Doctors for advanced fellowship in Super/Sub specialties **(UROLOGY, NEUROLOGY, NEURO-SURGERY, NEPHROLOGY, CARDIOLOGY, CARDIOTHORACIC AND VASCULAR SURGERY, PAEDIATRIC SURGERY, GASTROENTEROLOGY, PLASTIC SURGERY, ONCOLOGY AND ONCOSURGERY, CRANIO-FACIAL SURGERY, OPTOMETRY TECHNOLOGY, ANAESTHESIA AND OT TECHNOLOGY, MEDICAL IMAGING TECHNOLOGY, MEDICAL LABORATORY TECHNOLOGY AND ALL OTHER RELATED SPECIALITIES)**

c. Professionals for higher educational programs in BSc, MSc Nursing & Allied Sciences - Technicians Health technology programs.

a. **Cardio Vascular Technology**
b. **Perfusion Technology**
c. **Renal Dialysis Technology**
d. **Respiratory Care Technology**
e. **Optometry Technology**
f. **Anaesthesia & OT Technology**
g. **Medical Imaging Technology**
h. **Medical Laboratory Technology**
i. **Any other Medical/Health Technology**

d. Doctors, Nurses and Paramedics and any other related fields for short term skill building & extension programs based on needs and certification requirements. Scholarships for the deserving students identified by Government may be extended under this understanding.

ATTESTED
Dr.Ganesh Kamath Somayaji K.S.
Registrar
Yenepoya(Deemed to be University)
University Road, Deralakatte
Mangalore- 575 018, Karnataka

a. Referral of needy patients and empanelment of insurance agencies, the free treatment of deserving paediatric patients in the first one year may be extended through this MoU.
a. Professional exchange programs in Health & Allied subjects.
a. Development of joint research programs and funding with mutual consent in emerging areas of health and allied fields.
a. Establishment of joint centres and exchange programs for skill training and innovation management in MedTech & incubation facilities for encouraging Innovation and Entrepreneurship.
a. Establishment of Student & Faculty Exchange Programs for enhancing culture and education exchange
a. Participation in travel and education fairs in each country
a. Promoting entrepreneurship and business development in both organizations.

ARTICLE 4:

Within the framework of this Memorandum of Understanding in order to exchange views and ideas and opinions on improving the Medical Education sector, Health Care Services, and other related areas both the parties shall plan a road map for enhancing effective co-operation. Each Party will assign a Nodal Officer who will do the communication and attend to all the queries related to student exchange, patient care and other related areas.

MR

ARTICLE 5:

Both Parties shall bear all expenses related to delegation travel, boarding and or lodging. The expenses for organizing the meetings shall be borne by the hosting party.

ARTICLE 6:

Either Party may request in writing an amendment of all or any part of the Memorandum of Understanding through the Nodal Officer. Any amendments agreed to by the Parties will be reduced into writing and will form part of this Memorandum of Understanding.

ARTICLE 7:

This Memorandum of Understanding shall come into force on the date of its signature by both the Parties after the completion of all legal internal processes.

This Memorandum of Understanding shall remain in force for a period of 5 (five) years and thereafter, it shall be automatically renewed for similar successive periods at a time, unless one Party informs the other Party through Nodal Officer about its desire to terminate the same at least six months prior to its date of expiry.

IN WITNESS WHEREOF, the undersigned being duly authorized thereto by their respective Governments, have signed this Memorandum of Understanding at the .....

ATTESTED

Dr.Gangadhara Somayaji K.S.
Registrar
Yenepoya(Deemed to be University)
University Road, Deralakatte
Mangalore- 575 018, Karnataka

FOR THE MINISTRY OF HEALTH
AND CHILD CARE

FOR YENEPOYA
UNIVERSITY

26/06/19

Registrar
Yenepoya (Deemed to be University)
University Road, Deralakatte
Mangalore 575 018

Witness

Witness

ATTESTED

Dr.Gangadhara Somayaji K.S.
Registrar
Yenepoya(Deemed to be University)
University Road, Deralakatte
Mangalore- 575 018, Karnataka