

An integrated Bioethics curriculum for health personnel in India



Christian Medical College
Vellore

PART I

AWARD APPLIED BY:

PRIVATE SECTOR ORGANIZATION

PART II

INTRODUCTORY INFORMATION

PROJECT NAME: An integrated Bioethics curriculum for health personnel in India

INSTITUTE: Christian Medical College, Vellore

AWARD CATEGORY APPLIED FOR: SKOCH SMART GOVERNANCE AWARD – Health

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PROJECT COMMENCEMENT DATE: July 2012

PROJECT COMPLETION DATE: Ongoing

DETAILS OF RESPONDENT:

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AN INTEGRATED BIOETHICS CURRICULUM FOR HEALTH PERSONNEL IN INDIA

Brief overview

Health care involves a complex interaction between patient, physician and the health care system. As medical knowledge advances, health care providers are constantly bombarded with information on new technology and treatment options and have to make decisions that are free from bias, keeping the patient's best interests in mind. The aim is not only to do no harm, but to do good for those in our care.

Society, however, is a culturally diverse melange of values and ethical principles, and the lack of overarching common ideals, coupled with issues related to privacy of patient medical records, allocation of limited medical resources, unethical or fraudulent research practices, and increasing interference by pharmaceutical and insurance companies, have greatly increased the complexity of the clinical decisions that medical practitioners are called upon to make. Nowhere are these issues as pertinent as they are in India, with its huge cultural, religious and economic disparities.

Recognizing the need for health care personnel to be sensitized to these issues, ethics has always been an integral part of clinical practice, teaching and research at Christian Medical College, Vellore (CMC). This stems from CMC's commitment to provide men and women an education of the highest quality in the art and science of medicine, nursing, and allied sciences and to offer affordable yet excellent health care to all patients. The institution has a long history of teaching bioethics to medical students in an informal setting, through group discussions and case rounds, and students imbibed much of the ethics of medical care by following the examples of exemplary physicians who served as role models. There was a felt

need for a more structured curriculum, and this led to the establishment of an Academic unit of Bioethics with trained faculty. The Academic Unit, along with the two Institutional Review Boards (IRBs) and a Clinical Ethics Unit, have formulated a unique bioethics curriculum that ensures that the practice of therapeutic medicine and medical research in the institution adheres to the highest ethical standards.

Challenges faced before deployment of the program

India is home to one-sixth of the world's population. Despite the rapid economic growth of the past decade, vast disparities in health equity exist. The country is a study in contrasts, with world-class medical care available to those who can pay, and high infant and maternal mortality rates in many states. Although the principles and theories of ethics apply to all of humankind, understanding individual and community reasoning and belief systems is necessary for the ethical practice of medicine. These beliefs and decision-making processes are based on society, culture and religion, and in no single country is there as much diversity as in India. Adding to the complexity, India also has multiple systems of medicine, including those of Indian origin, such as Ayurveda, and those from other parts of the world. With over 350 medical schools, producing 40,000 doctors annually and more than 1,000,000 practitioners of alternative and complementary medicine, none of whom receive formal instruction in ethics, there is a huge need for medical ethics training in India.

The main challenge to teaching ethics lies in the fact that the Medical Council of India does not assign time in the medical curriculum for ethics teaching. There is also a lack of clinicians trained in teaching bioethics and of resource materials developed from local cultural and social conditions. The main challenge to constituting the clinical ethics committee, lay in motivating clinicians to devote time from their busy schedules to review

the ethical aspect of research proposals submitted to the IRB, and resolve ethical dilemmas in clinical practice.

Objectives

The objective of the bioethics program are to build capacity among students in CMC in the identification and resolution of ethical dilemmas and to ensure that medical training, therapeutic medicine, and medical research is conducted upholding the highest ethical standards.

Description of the program

Teaching ethics: Academic Unit of Bioethics

With increasing media and public attention to ethical issues in clinical practice and medical research, bioethics is now of public interest. The Medical Council of India (MCI), the Indian medical regulatory and licensing body, recently mandated that bioethics be included in the foundation course taken at entry by all medical students, and is considering making bioethics a larger part of the medical curriculum. Currently, CMC is one of the few medical colleges teaching bioethics.

Formation of the Unit of Bioethics: To improve the quality and scope of ethics teaching, the institution formed a Unit of Bioethics to design a Bioethics curriculum for the students in the institution. The Unit has a hub and spoke model (Figure 1), and comprises four core members and 20 adjunct members. The core members include a chaplain, an ethicist and the vice – principal for Undergraduate students. The adjunct members are clinicians from different departments in CMC where undergraduate medical ethics training takes place. The Unit is

responsible for the development and implementation of an ethics curriculum in the institution.

Development of the undergraduate ethics curriculum : To inform the development of the ethics curriculum, the core members with permission from the Principal, conducted a survey among the medical students and staff of the institution about the types of ethical dilemmas and issues they face on a regular basis. This formed the basis for development of the curriculum. The core members also studied curricula from different universities in India, and received input from well known ethicists such as Prof. Alastair Campbell from Singapore National University and Dr. Philip Hubert from the University of Toronto.

The curriculum: The curriculum consists of an integrated teaching program where modules are supplemented by discussions during clinical teaching. The modules and sessions are distributed through the 5 years of medical school, and are designed to be relevant to the postings the students go through in the medical curriculum. The teaching methods are varied, with a lot of teaching integrated into the regular medical curriculum taught by the clinicians. The teachers consist of bioethicists, clinicians, chaplains, lawyers and patients themselves. The strengths of CMC in using this approach are the large clinical load, commitment from the administration and the presence of faculty with an interest in ethics.

Figure 1: Organogram of the Academic Unit of Bioethics



Course content: The Course content provides students with a basic understanding of the principles and concepts required to deal successfully with the issues they will eventually face as clinicians. To achieve this, the course contains theoretical aspects of ethical analysis as well as relevant examples of their application. Both faculty and student input was solicited regarding course content, and it includes dilemmas relevant to both students and clinicians.

This is done in two ways, based on speciality areas such as medicine, surgery, obstetrics and so on, or compiled from a database of cases based on types of ethical dilemmas. The course topics include theoretical content such as law, principles, theories and guidelines, as well as topics best taught by case discussions, structured controversies and story telling. The “by dilemma” approach is preferred, and the topics influence the choice of cases and teaching method. Student input into the curriculum is by including topics for each year based on an “ethics needs assessment” survey. Students have the least training, experience and power in the health care system. This leads to significant internal conflicts and some of the topics students want addressed revolve around this fact. Recurring ethical dilemmas unique to students center around students performing procedures, being a team player, challenging medical routine, knowing the patient as a person and witnessing unethical behaviour. Other issues include death and dying, personhood, confidentiality, privacy, roles of the family and society in medical care, and the ethics of research.

Structure of the course:-

The course is a minimum of 40 hours (not including bedside teaching and clinical rounds), distributed through the 4.5 years of medical school, structured as modules.

Teaching methods: Several teaching methods are used in each module. Small group discussions are used for case based teaching, in addition to i) Role play, structured controversy, ii) Bed-side clinic, iii) Patient narratives, iv) Games for teaching ethics v) Ethics based movies: e.g.: Wit and vi) Didactic teaching.

Modules: (Each module is a conceptualized, self-contained "unit" of content)

<p><u>Introduction to ethics</u> Professionalism Principles in medical ethics Ethical reasoning Historical perspectives Legal issues, codes and guidelines Doctor patient relationship Boundaries in medicine</p>	<p><u>Clinical ethics</u> Use of frameworks Conflicts of interest Informed consent in clinical care Clinical ethics committees Dealing with Pharma Confidentiality</p>	<p><u>Death and dying</u> Allowing death, and the right to refuse care Physician assisted suicide Withholding life saving treatment, termination of life sustaining treatment Pain and alleviating pain</p>
<p><u>Diversity in ethics</u> Roles of family and society Culture, religion and ethics</p>	<p><u>Ethics and new life</u> Reproductive medicine ethics Termination of pregnancy The interests of the child-being born and living life Sex selection</p>	<p><u>Student specific issues</u> Team work Honesty Dealing with unethical behaviour Medical malpractice and disclosure</p>
<p><u>Use of limited resources</u> Distributive justice Justice in everyday medicine Transplant ethics Poverty and medical care Duty to rescue</p>	<p><u>Research ethics,</u> Principles of research ethics Ethical issues in research Standard of care, Post trial access, ancillary care IRB, DSMB and compensation Informed consent Research misconduct and authorship ethics</p>	<p><u>Public health ethics</u> Duty to protect the public Human rights</p>
<p><u>Issues with capacity to consent</u> Parental decision making Substitute decision making The mentally ill patient The unconscious patient Rights of children</p>	<p><u>Global health</u> Health patterns in an unequal world Social determinants of health Health systems</p>	<p><u>Unequal relationships</u> Gender and health Poverty and health</p>
<p><u>Justice and infectious disease</u> Ethics of HIV, Tb and other infectious diseases The Right to health The Rationale for mutual caring</p>	<p><u>Resource allocations in health</u> Distributive justice Technology in medicine</p>	<p><u>Research in developing countries</u> Autonomy Privacy and confidentiality Voluntary and informed consent Obligations to the community Standard of care, Post trial access, Community in research</p>

Faculty: The faculty have developed cases and teaching material from their clinical fields, and are responsible for bedside teaching of ethics and evaluation.

Modules based on ethical issues: Modules are prepared by the faculty based on their interest, assignment and specialization, to reflect issues likely to be encountered during different phases of medical training. The description of goals, teaching materials, teaching methods and evaluation form the basis of each module.

Flexibility: Teachers are encouraged to develop their own cases as examples, and their own style of teaching. The implementation of the core curriculum is flexible as long as the appropriate connection and coherence among the modules is maintained.

Research Ethics: The Institutional Review Boards: There are two IRBs in CMC, and each meet once a month. The Silver IRB reviews research initiated by faculty and externally sponsored research, while the Blue IRB reviews research by students and internally sponsored research. Each IRB consists of a scientific review committee and an ethics committee that ensure the scientific validity and ethical conduct of research in the institution.

Clinical Ethics: The Clinical Ethics Unit: The clinical ethics unit under the medical superintendent addresses ethical issues arising in the clinical services. The unit meets as and when there is a request made by the hospital staff or by patients, and makes a decision within 24 hours after interviewing the relevant stakeholders and deliberation and decision within the unit with legal advice when necessary.

Details of coverage of the target population

CMC is a national leader in medical education and is ranked as one of the top medical colleges in India. CMC trains 500 undergraduate medical students and 220 residents and fellows. Clinical care and training are carried out mostly in the CMC Hospital, a 2700-bed

facility that caters to referrals from India and neighboring countries, but also serves a local population of approximately 400,000, through primary and secondary care health programs. All graduates spend a minimum of 2 years after their internship in mission hospitals, the majority in remote rural locations. Many also choose to establish their careers in these areas and have a major influence on the practice of medicine across India. Thus, bioethics training impacts health care not just in CMC, but has a ripple effect – impacting how health care is delivered to millions across the country.

Comparison of the pre-deployment scenario and post deployment benefits

CMC was one of the first Indian institutions to teach bioethics to medical students. Initially, bioethics was taught through mentorship and value-based teaching. Slowly, more concrete methods were adopted, and ethics was taught by case discussions. Time was allotted in the curriculum for formal teaching of ethics in three sessions of a minimum of 3 hours. The first session was during the foundation course at entry that bridges school with college, the second as they started clinical training and the third at the beginning of internship. However, the need for a more structured curriculum, relevant to the students' clinical needs was felt.

With CMC being one of the first institutions to formulate a structured bioethics curriculum, it is critically placed to train the health personnel of tomorrow in the principles and practice of ethical medicine. Apart from the bioethics curriculum which has been integrated into CMC's medical undergraduate training programs, the academic unit has also developed a six session module for teaching ethics to DM and MD students in the Department of Neonatology in CMC. They are currently engaged in developing ethics curricula for other post graduate courses. The unit teaches ethics to allied health students, periodically reviews and updates the curriculum and conducts evaluations of the students ethical sensitivity and the curriculum.

The core members are now invited teachers in ethics courses at other institutions, and in the last year have been involved in teaching students in Agartala Medical College, Surat Medical College and Kolencherry Medical College. They are now in the process of developing a PG Diploma course in Bioethics on a distance education model.

Cost effectiveness of the project

The unit of bioethics was set up as part of the Principal's Office, using existing infrastructure and equipment. Dr. Anuradha Rose, is core faculty for the Academic Unit, has a Masters degree in Bioethics from the University of Toronto. Her training was funded through a Fogarty grant.

All members of the Academic, Research and Clinical Ethics Units are full time employees of the institution engaged in various departments, and do not draw additional salary for their work in ethics. Thus setting up the unit did not require much capital, while the main investment has been in time and human resources. The benefits of the project lie in equipping students and staff of the institution with the skills required to navigate the ethical dilemmas that are a part of their daily lives, and developing programs that will pass on the same principles to health personnel practicing all over the country. This will act as a force multiplier, educating and training generations of medical practitioners who will have a lasting impact on the future of health care delivery in India.

Future road map of the project

To address the need for trained staff, the Unit wrote a grant in partnership with Tufts University, Boston, to further train the 20 adjunct members in the particular areas of Bioethics they are interested in. The Unit of Bioethics has won this grant- The **Obama Singh**

Initiative for the year 2014. The period of the grant is from July 2014 to 2017 and is for a sum of 481925 USD.

This grant will enable CMC to develop the capacity and resources to implement an intercalated program that complements clinical training at each stage of the medical curriculum. Once developed, CMC, as a center for medical teaching, will be ideally situated to disseminate a culturally appropriate bioethics curriculum tailored to the needs of Indian medical students. This will enable us to start a Masters level Program in Bioethics in the institution, which will serve a great need, as currently there are no such courses available in the country.

The Bioethics Core group

The members of the core group are Dr.Anuradha Rose, Dr.Kuryan George, Rev.Arulldhas and Dr.Anna Pulimood. They are responsible for curriculum development, teaching and all functions of the unit. Dr. Anuradha Rose is a member of the Institutional Review Board (IRB), and the Data Security Monitoring Board (DSMB). Rev.Arulldhas is an IRB member as well.

SHORT CV: Dr. Anuradha Rose

NAME Anuradha Rose	POSITION TITLE Associate Professor of Community Medicine, Department of Community Health, Christian Medical College, Vellore		
EDUCATION/TRAINING			
INSTITUTION AND LOCATION	DEGREE	MM/YY	FIELD OF STUDY
Christian Medical College, Vellore, India	MBBS	1996	Medicine
Christian Medical College, Vellore, India	MD	2003	Community Medicine
University of Toronto, Toronto, Canada	MHSc	2011	Bioethics

Personal Statement: My interest in bioethics during my training in Public Health in India led to my organization of ethics discussions for interns and teaching in the foundation and ethics orientation courses. Following this I obtained a degree in ethics-MHSc –Bioethics, from the University of Toronto. On my return to India, I have become engaged in several activities, including teaching, research ethics and clinical ethics. I teach ethics to undergraduate medical and allied health students. I am a core member of the Undergraduate Ethics Unit which has designed an ethics curriculum for the medical students and am involved in organizing ethics teaching in the institution. I also teach ethics in the research training courses run by the department such as the Research Methodology course, Clinical trials Workshop, and in institution run courses like the GCP workshop, both at my institution and other colleges around the country. I am a member of the IRB and of the internal DSMB. I serve as a resource person for researchers who have clarifications on the ethics of their studies before they submit for review. Some medical and surgical specialties have started ethics discussions for their residents. I serve as a resource person for discussions in neonatology, psychiatry, surgery and community medicine.

B. Positions and Honors**Positions and Employment**

1996-2000 Medical Officer, Herbert Brough Memorial Hospital, Chennimalai
2000-2003 Resident in Community Medicine, Christian Medical College, Vellore
2003-2007 Consultant, Community medicine, Church of South India Hospital, Erode
2007-2010 Assistant Professor of Community Medicine, Christian Medical College, Vellore
2010-2011 Student, Joint Center for Bioethics, University of Toronto, Toronto, Canada
2011-2012 Research Ethics Board, Hospital for Sickkids, Toronto, Canada
2012- 2013 Assistant Professor, Dept. of Community Medicine, Christian Medical College, Vellore
2013- Associate Professor, Dept. of Community Medicine, Christian Medical College, Vellore

C. Academic / Administrative positions:

2009-2010 Deputy Chief Superintendent of Exams, Christian Medical College, Vellore
2011-2012 Member, Research Ethics Board, Hospital for Sickkids, Toronto, Canada
2012- Member, Institutional review Board, Christian Medical College, Vellore
2012- Member, Data Security Monitoring Board, Christian Medical College, Vellore
2013- Core Member, Undergraduate Ethics teaching group, CMC, Vellore

Honors

2004 Dr. Kesavalu Educational Trust Annual Award of Gold Medal,
M.D.(Community Medicine)
2003 Dr. Rangarajan Memorial Prize and Medal for the Best Outgoing PG Student

C. Selected Peer-reviewed Publications

1. Solar disinfection of water for diarrhoeal prevention in southern India. A Rose, S Roy, V Abraham, G Holmgren, K George, V Balraj, S Abraham, J Muliylil, A Joseph, G Kang. Arch Dis Child. 2006 February; 91(2): 139–141. doi: 10.1136/adc.2005.077867.PMCID: PMC2082686
2. Nine Years from the Millennium Declaration on Water and Sanitation. CMC Alumni Journal
3. How 'Informed' is Informed Consent? Findings from a Study in South India. Shuba Kumar, Rani Mohanraj Anuradha Rose, MJ Paul, George Thomas. Indian J Med Ethics.2012 Jul-Sep;9(3):180-6.
4. Survey of Ethical Issues Reported by Indian Medical Students: Basis for Design of a New Curriculum. Anuradha Rose, Kuryan George, Arul Dhas T, Anna Benjamin Pulimood, Gagandeep . Kang. Indian J Med Ethics.2014 Jan-Mar;11(1):25-28..

D. Research Support

Ongoing Research Support

Obama Singh Initiative 2014-2017
Program Director

IA/E/12/1/500750 05/01/2013 – 04/30/2014
Wellcome Trust DBT India Alliance
Comparison of efficacy of single or multiple cycle(s) of preventive chemotherapy with albendazole in reducing the hookworm re-infection rate in an endemic trial population
Role: Co- Investigator

CMC Fluid Research Grant. 11/21/2012-11/20/2014
Descriptive study on risk of unintentional injury among children aged 1 – 5 years residing in an urban slum in South India.
Role: Co-Investigator

CMC Fluid Research Grant. 03/19/2013-03/18/2015

Incidence of unintentional childhood injuries and risk Perception of unintentional childhood injuries among primary caregivers of children between 0-14 yrs of age in a rural block of South India.

Role: Co-Investigator

CMC Fluid Research Grant. 03/19/2013-03/18/2015

Feasibility and acceptability of implementing a program for screening and treatment of gynaecological morbidity among remote tribal population in Jawadhi Hills, South India

Role: Co-Investigator

CMC Fluid Research Grant. 01/07/2014-06/01/2016

A study of risk factors and environmental sources for elevated blood lead levels among pre-school children living in slums of Vellore, southern India

Role: Co-Investigator

CMC Fluid Research Grant. 03/06/2014-03/06/2016

Prevalence of ocular morbidity in children aged 15 years or younger in Tribal area of Jawadhi hills, South India, a cross sectional study.

Role: Guide for post graduate student.

CMC Fluid Research Grant. 04/23/2014-04/22/2016

To study the prevalence of Vitamin B 12 deficiency amongst children in Jawadhi Hills.

Role: Co-Investigator

CMC Fluid Research Grant. 06/19/2014-06/18/2016

An assessment of socio demographic, psychological and behavioral risk factors for obesity among adolescence who are attending schools in the urban area of Vellore district in Tamil Nadu.

Role: Co-Investigator

CMC Fluid Research Grant Sept-2013-Sept 2015

Qualitative study exploring community perspectives on alcohol use and abuse in the tribal hamlets of Jawadhi hills

Role: Principal Investigator

Completed Research Support

CMC Fluid Research Grant. 11/11/2009-11/10/2011

Understanding informed consent in the medical setting.

Role: Principal Investigator

CMC Fluid Research Grant. 06/10/2009-06/09/2011

Combined use of biosand filter and the SODIS method as a low cost method.

Role: Principal Investigator

CMC Fluid Research Grant. 06/10/2009-06/09/2011

Microbial risk assessment tool for water quality control in an urban community

Role: Principal Investigator

SHORT CV: DR. KURYAN GEORGE

Dr. KURYAN GEORGE

PROFESSOR AND HEAD,

COMMUNITY HEALTH DEPARTMENT,

CHRISTIAN MEDICAL COLLEGE , VELLORE 632 002,

TAMIL NADU, INDIA.

PERSONAL INFORMATION

Date of Birth	4th May 1957
Sex	Male
Nationality	Indian
Religion	Christian

EDUCATION:

Bachelor of Medicine & Bachelor of Surgery (MBBS), Christian Medical College, Vellore, Tamil Nadu

Doctor of Medicine (M.D.) (Community Medicine), Christian Medical College, Vellore, Tamil Nadu, March 1987.

Master of Science (M.Sc) (Medical Informatics), Netherlands Institute of Health Sciences , Rotterdam, June 1997

WORK EXPERIENCE

Nov. 1980 - Nov. 1981 - Compulsory rotating internship at Christian Medical College & Hospital, Vellore, Tamil Nadu, S. India.

Dec. 1981 - Mar. 1987 - Registrar in the Department of Community Health, Christian Medical College, Vellore, S.India. During this period was involved in the Community Health and Development Programme (CHAD Programme) especially in the area of Leprosy, and Maternal & Child Health .

Mar. 1987 - May 1987 - Jr. Lecturer in Department of Community Health, Christian Medical College & Hospital, Vellore, Tamil Nadu, S. India

June 1987 - April 1991 - Lecturer in Community Health, RUHSA Department of Christian Medical College & Hospital. Involved in organization and management of a Primary Health Care Program and Research and Teaching.

April 1991 - April 1993 - Research Officer in the Department of Community Health. Involved with a Research Project on Risk factors for Coronary Heart Disease.

April 1993 - April 1994 - Lecturer in the Department of Community Health, Christian Medical college.

April 1994- May 1997 - Reader in the Department of Community Health, Medical college

May 1997 till April 2000- Sr.Reader in Community Health Department, Christian Medical College

April 2000 to date- Professor in Community Health Department, Christian Medical College

June 2010 to date – Head , Community Health Department , Christian Medical College

RESPONSIBILITIES IN THE PREVIOUS POSTS

MANAGEMENT of an inter-sectoral Primary Health Care Program for a population of 1,00,000 providing ante-natal care, under-2 year child care, family planning service, nutrition intervention program, diarrhoea and oral dehydration, eye and rehabilitation services and low cost curative care.

TRAINING various levels of health personnel from Primary Health Care Workers to post Graduate students, Medical Interns and Supervising Electives of Foreign Medical and Public Health students. Special involvement in Training Medical Students in Community Health. Trained Primary Health Centre workers in immunization under the North Arcot District Polio Control Program. Was involved in training medical practitioners in epidemiology especially in the use of microcomputers in epidemiology.

RESEARCH areas have involved participation in Programs using injectable Salk vaccine, Growth Monitoring, Acute Respiratory Infection, Nutrition Education, Infant Mortality, Leprosy, Immunization and vaccine preventable diseases especially measles and poliomyelitis.

CLINICAL Responsibilities have involved running a 60 bedded hospital with 200-250 outpatients per day. Was predominantly involved in the care of women in labor.

RESPONSIBILITIES IN THE PRESENT POST

RESEARCH

- a. Research into vaccine preventable disease with special emphasis on measles and poliomyelitis.

TRAINING

- a. Involved in training Medical undergraduates and postgraduates in Community Health.
- b. Involved in training Medical Practitioners in Epidemiology.

CLINICAL

Was Medical officer in charge of an 100 bedded hospital with 300 outpatients per day.

ADMINISTRATIVE

Registrar of The Christian Medical College

Consultancies and surveys

- Part of the team of consultants who carried out the evaluation of the health care project of DANIDA in Tamilnadu in 1994
- Principal Coordinator for the baseline survey on " Quality of primary health care with specific regard to Gender dimensions" done by the Community Health Department of Christian Medical College for **DANIDA**. This survey looked at various aspects of RCH with special emphasis on STI/RTI and gender issues in health care utilization

PUBLICATIONS

1. Epidemiology and Prevention of Measles in Rural South India Ind J Med Res (72) Aug 80 pp 153-158 Jacob John, Abraham Joseph, T.I. George, Janaki Radhakrishna, Raj Dayal P.D. Singh, **Kuryan George**.
2. Improving Immunisation Coverage - World Health Forum Vol 9 (1988) pp 336 - 340 A. Joseph, S. Abraham, S. Bhattacharji, J. Muliylil, K.R. John, N. Ethirajan, **K. George**, K.S. Joseph.
3. Factors affecting Immunization uptake - Tropical Doctor (1990) 20 85-86 **Kuryan George**, Ingrid Van Sluisveld, Sonja Sweegman, Solomon G. Victor, Rajaratnam Abel.
4. The role of Intra Household contact in the transmission of Leprosy Lep Rev (1990) 61 60-63 **K. George**, K.R. John, J.P. Muliylil and A. Joseph.
5. Reliability of mother as an informant with regard to immunization Ind J Paed (1990) 57 (4) 588-590 **Kuryan George**, Solomon G. Victor and Rajaratnam Abel.
6. Prescription Patterns and Cost analysis of drugs in a base hospital in South India Natl Med J India 1994 ;7:167-168 A. Kuruvilla, **K. George**, A. Rajaratnam, K.R. John
7. Measles vaccinations before nine months Tropical Medicine and International Health Volume 3, No, 9, pp 751-756 September 1998, **Kuryan George**, Abraham Joseph, Jayaprakash Muliylil, Sulochana Abraham, Sara Bhattacharji and K.R. John
8. Drowning in childhood: A population based study. Indian Paediatrics Volume 3 pp 80 -83 Bose A, **George K**, Joseph A.

9. Evaluation of suicide rates in rural India using verbal autopsies A. Joseph, S. Abraham, J.P. Muliylil, **K. George**, J. Prasad, S. Minz, V.J. Abraham, K.S. Jacob *British Medical Journal* ; May 2003; 326(7399): 1121-1122
10. Suicides: the magnitude of the problem in young people in rural Southern India. Aaron R, Joseph A, Abraham S, Muliylil J, **George K**, Prasad J, Minz S, Abraham V Joseph, Bose A. *The Lancet*, Vol. 363 April 3, 2004; 1117 to 1118
11. Serological Response to Early Measles Vaccination Sushil John, G. Lalitha, **Kuryan George** and Abraham Joseph *Journal of Tropical Pediatrics*, Vol. 50, No. 3; 175 – 177.
12. Rates and factors associated with suicide in Kaniyambadi Block, Tamil Nadu, South India, 2000-2002. Prasad J, Abraham VJ, Minz S, Abraham S, Joseph A, Muliylil JP, **George K**, Jacob KS. *Int J Soc Psychiatry*. 2006 Jan;52(1):65-71
13. Solar disinfection of water for diarrhoeal prevention in southern India. Rose A, Roy S, Abraham V, Holmgren G, **George K**, Balraj V, Abraham S, Muliylil J, Joseph A, Kang G. *Arch Dis Child*. 2006 Feb;91(2):139-41.
14. A Community Health Program in Rural Tamil Nadu, India : A need for Gender Justice for Women Mini Elizabeth Jacob, Sulochana Abraham, Susila Surya, Shanthidani Minz, Daisy Singh, Vinod Joseph Abraham, Jasmin Prasad, **Kuryan George**, Anju Kuruvilla, KS Jacob *Reproductive Health Matters* 2006;14(27): 101-108
15. Two Doses of Measles Vaccine: Are Some States in India Ready for It? Sushil John, Savita Sanghi, Suranjan Prasad, Anuradha Bose **Kuryan George** *Journal of Tropical Pediatrics Advance Access published on September 17, 2008 J Trop Pediatr* 2009 55: 253-256; doi:10.1093/tropej/fmn079
16. Perinatal outcomes in a South Asian setting with high rates of low birth weight **Kuryan George**,¹ Jasmin Prasad,¹ Daisy Singh,¹ Shanthidani Minz,¹ David S Albert,¹ Jayaprakash Muliylil,¹ K S Joseph,² Jyothi Jayaraman,³ and Michael S Kramer⁴ *BMC Pregnancy Childbirth*. 2009; 9: 5. Published online 2009 February 9. doi: 10.1186/1471-2393-9-5.
17. Misgav-Ladach versus Pfannenstiel incision – A randomized controlled trial of two incisions for LSCS in Secondary health care centre in South India Daisy Singh, Jasmin Prasad, Vinod Joseph Abraham, Shanthidani Minz, **Kuryan George**, Sulochana Abraham, Gunnar Holmgren *The Alumni Journal of the Christian Medical College ,Vellore* Vol 42(3) 17-21
18. Foot care knowledge and practices and the prevalence of peripheral neuropathy among people with diabetes attending a secondary care rural hospital in Southern India. Hanu George, Rakesh PS, Manjunath Krishna, Reginald Alex, Vinod Joseph Abraham, Kuryan George, Jasmin H. Prasad, *Journal of Family Medicine and Primary Care*, January 2013, Volume 2, Issue 1, pg. 27-32.
19. Arup Chakraborty, P.S. Rakesh, V. Kumaran, Jasmin Prasad, Anu M. Alexander, Kuryan George Risk of developing adulthood obesity among females born with low birth weight: Results from a non-concurrent study from rural Southern India; *Indian Journal of Endocrinology and Metabolism*; May-June 2014; Vol. 18, Issue 3.

SHORT CV: REV. ARUL DHAS

I Personal Details

Name : T. Arul Dhas
Date of birth : 27th July 1963
Address : Chaplaincy, Christian Medical College, Vellore 632 004, India
Telephone : 0416 2284276
Mobile : 09442454209
E mail : aruldhas@cmcvellore.ac.in

II Educational Qualifications

- Certificate in Bioethics, 2013 : Manipal University
- Doctor of Philosophy (New Testament) : University of Edinburgh, Scotland 1996
[*Dissertation: "The prayer of Jesus at Gethsemane with special reference to the other prayers/speeches before death/martyrdom"*]
- PG Dip. in Psychological Counseling, 1992 : Christian Counseling Centre, Vellore
- Bachelor of Divinity, 1989: United Theological College, Bangalore (Class I)
[*Dissertation: "Christological Titles in the Gospel According to St.Mark"*]
- Master of Science (Zoology), 1985 : Scott Christian College, Nagercoil (Class I)
Madurai Kamaraj University [Dissertation: "*Humoral Antibody Responses of Columba Livia to an Erythrocyte Antigen*"]
- Bachelor of Science (Zoology), 1983 : Lakshmipuram College of Arts and Science (Class I) Madurai Kamaraj University

III Professional Experience

2012 – Present Core Faculty, Bioethics Academic Unit, CMC, Vellore
2009 – Present Senior Lecturer in Chaplaincy. CMC, Vellore
2010 – 2012 Residential Faculty, Theological College of Lanka, Pilimatalawa, Sri Lanka
2006 – 2009 Head of Chaplaincy, Christian Medical College, Vellore
1996 - 2005 Chaplain/Lecturer, Christian Medical College (CMC) Vellore
1993 – 1996 Research Student in Language, Literature and Theology of New Testament, University of Edinburgh
1989 - 1993 Chaplain, Christian Medical College, Vellore

IV Publications

1. Arul Dhas T., “Human Rights and Jesus of Nazareth” in *Struggle for Human Rights towards a new Humanity. Biblical Perspectives* (vol.1) ed. I.J.M. Razu & A. Pattel - Gray, NCCI, Nagpur, 2000.
2. Arul Dhas T., “Power to heal – A Gift from God” in *Souvenir, Mission Partnership Workshop 2000. Re- exploring the links & celebrating the partnership*, CMCH, Vellore, 2000.
3. Arul Dhas T., “Wonderful in Counsel” *Christian Medical Journal of India*, Vol 5, No 4, Oct- Dec. 2000, Delhi, pp. 34-35.
4. Arul Dhas T., “One’s Attitude is the Key to Caring” *Christian Medical Journal of India*, Vol 18, No 1, Jan-Mar 2003, pp.5-6.
5. Arul Dhas T., “Disaster! A Chaplain’s reflection”, *Christian Medical Journal of India*, Vol 19 No 4 2004 & Vol 20 No 1 2005, Delhi, 19-21.
6. Arul Dhas T., “Tax Collector” “Grinding Stone”, “Gethsemane”, “ Mount of Olives”, “Only Begotten”, “First Born”, Beloved”, “Casting out Demons”, *Vedapusthaha Bhashyam*, (Dictionary of the Bible in Malayalam) ed by E.C. John, 2006.
7. Arul Dhas T., “Crisis – A Time to Grow”, *Counsel*, Vol 2, No 3 & 4, 2007, p 1
8. Arul Dhas T., “‘Poor will be always with you’ A note on Mark 14:7” *Counsel*, Vol 3, No 5, 2008, pp 6-7
9. Anuradha Rose, Kuryan George, Arul Dhas T, Anna Benjamin Pulimood, Gagandeep Kang, “Survey of Ethical Issues Reported by Indian Medical Students: Basis for Design of a New Curriculum”, *Indian Journal of Medical Ethics*, no 1, Vol 11, 2014, p 25-28.

V Activities in Organizations and Professional committees

- a) Worked as a member of the drafting committee of the **Bible translation project** (Greek to Tamil), 1989-1991.
- b) Served as the chairperson of the Chaplains section of the **Christian Medical Association of India**, 2001-2003.
- c) Served as an executive committee member of the **Society of Biblical Studies in India**, 2002-2004.
- d) Served as a member of local committee for the **Afro Asian Mission Consultation** on Healing, Reconciliation and Power, World Council of Churches, 2004.
- e) Served as a member of the Clinical Ethics Committee, **Christian Medical College**, 2000 - 2004.
- f) Served as a member of the Communication Advisory Committee, **Christian Medical Association of India**, 2003 - 2006.
- g) Served as a member of the committee for Ecumenical Relations and Church Ministries, **Senate of Serampore College**, 2005 - 2006.

- h) Served as a member of the Executive Committee, **Christian Medical College**, 2006 - 2008.
- i) Served as a member of the Grievance Cell, **Christian Medical College**, 2005-2007.
- j) Served as a member of the Council, **Christian Medical College**, 2008-2009.
- k) Serving as the member of Institutional Review Board, 2012 – Present
- l) Serving as the member of Central Education Board & the General Body of Christian Medical Association of India, 2013 – Present.

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