

Frontier Pulse

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NEWS OF THE QUARTER
DECEMBER 2008

Redefining The Frontier Of Health Care



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Frontier Lifeline

International Centre for Cardiothoracic and Vascular Diseases
& Dr. K. M. Cherian Heart Foundation



We know it by heart

Hithendran's parents to campaign for encouraging organ donation

Chennai: A chain of events set in motion by a young boy's unfortunate accident and subsequent brain death came to a happy end on Tuesday, as his parents, Hithendran and his mother, campaigned for encouraging organ donation.

The parents of the 13-year-old boy, who was declared brain dead following a road accident, are now planning to retrieve his eyes, heart, kidneys, and skin for transplants. The parents are also planning to launch a campaign to encourage organ donation.

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LAUDING A NOBLE DEED: Dr. Ashokan and Dr. Pushpanjali being honored by Governor Sunil Singh Barnala at a function organized by RI District Chennai on Tuesday. (PHOTO: R.RAGU)

Dr. Cheriau team to visit Pakistan

Chennai: The family of 33-year-old cardiac surgeon Dr. Cheriau is planning to visit Pakistan to promote organ donation. The team, led by Dr. Cheriau, will be visiting Pakistan to promote organ donation and to share their experience in cardiac surgery.

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35th Anniversary Special

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THE BEST THE GREATEST THE REAL

Heart transplant: City hospital does it again

Chennai: A brain-dead woman's organs were successfully harvested in the city hospital. The hospital has performed another successful organ harvest from a brain-dead patient.

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LAUDING A NOBLE DEED: Dr. Ashokan and Dr. Pushpanjali being honored by Governor Sunil Singh Barnala at a function organized by RI District Chennai on Tuesday. (PHOTO: R.RAGU)

Accident victim's organs donated

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Yet another 'green corridor' organ transplant in city

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Salem mishap victim turns savior

Chennai: A 45-year-old man, who was declared brain dead following a private hospital in Salem following a road accident, was shifted on Friday night to the city where doctors plan to retrieve his eyes, heart, kidneys, and skin for transplants. The parents are also planning to launch a campaign to encourage organ donation.

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33rd Anniversary Special

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Celebrating Achiever

From The Chairman's Desk



Greetings.

2008 has drawn to a close and with it ends a year filled with triumphs and tribulations on the global front; as well as for the common individual who was witness to the generosity of the human spirit as well as to the horror of the basic instincts of man. Records were made during the Beijing Olympics and hearts were broken during the bomb blasts which plagued our nation this past year. We have reached heights of achievements in our journey to the moon and we have also plunged to the depths of the dark side of human nature through the horrific Mumbai blasts and senseless loss of lives.

Through all this we have steadily ploughed ahead with our activities and events namely the 2nd Cardiac Pathology Meet followed by Frontier Conclave 2008, which annually culminates the academic programs for the year. We are grateful to His Excellency Shri Surjit Singh Barnala, Governor of Tamil Nadu, for his distinguished participation and the Inaugural Address. We are also deeply appreciative of Prof. K. Balaram of the Indian Institute of Science, Bangalore, who traveled to Chennai for the inauguration and delivered the keynote Address, despite his commitment to an event at his institution later that day, which he fulfilled as well.

This year the Conclave focused on the Helix & Heart devoted to Genetics, with an aim to understand the heart at the molecular level. This was meant to be followed by an intense update in Cardio Thoracic Surgery which was abruptly called off in light of the unstable conditions following "Black Wednesday". It is unfortunate that the esteemed faculty comprising Prof. Lawrence Cohn, Prof. Jean Deslauriers, Prof. Christo Tchervenkov, Dr Sunji Sano and Dr Zhiwei Xu were unable to attend and we look forward to their involvement in future events and appreciate their support. We are very grateful to Dr Nilesh Samani, Dr Shoumo Bhattacharya and Dr Quigyu Wu for their invaluable participation and contributions to the Helix & Heart segment. A panel of eminent national faculty also helped to make the Conclave a grand success with their collective contributions.

The other events which marked this quarter were the PA

Day celebrations. I find deep personal satisfaction for having had the opportunity to introduce this remarkable program to India in 1987 after I had observed the significant role played by this cadre of paramedical professionals in the US. I am proud of its development in India and of its rapid evolution to become an indispensable work force within the medical community. Children's Day was also celebrated in a significant manner with a free cardiac screening camp for children, graciously inaugurated by US Consul General Mr. Andrew Simkin. This program was held in collaboration with Madras Anchorage Round Table 100 under the auspices of the joint 'Heart 2 Heart' program which has sponsored the surgeries of four needy children. I'm sure the coming year will see more children benefit through this project.

We also hosted two visiting nurses from the US who stayed with us for 6 weeks, during which time they also visited St. Gregorios Cardio-Vascular Centre at Parumala. The purpose of their visit was well served as you will read in the feedback kindly shared by them for this magazine. We are happy that our nurses have had the opportunity to benefit from the wealth of their experience and teaching during their stay with us. We also bid goodbye and good luck to Dr Arvin Wesley Karu who had been with us for the past one year, training in Adult and Pediatric, Cardiac Anesthesia and Intensive Care. He hails from Papua New Guinea and was sent from the Royal Australasian College of Surgeons as their candidate under the Rowan Nicks International Travel Fellowship. Dr Lister Lunn who also completed this Fellowship Program along with Dr Karu has opted to stay with us for another 6 months. We are glad and grateful to be recognized as a centre for cardiac specialty training by the Royal Australasian College of Surgeons and we are happy that the trainees have immensely benefited from this program. We are launching a similar International Fellowship in Cardio Thoracic Surgery in the coming year and have received good response from promising candidates from various countries.

And last but not least, we have been officially awarded the Special Economic Zone (SEZ) status for our Frontier Mediville project which is a privilege and recognition we are extremely proud and grateful for. With so many blessings and the Almighty's grace 2009 will witness the genesis of Frontier Mediville, the 'magnum opus' of Frontier Lifeline's ever expanding accomplishments.

*Dr. K.M. Cherian, MS, FRACS, DSc[Hon] DSc [HC]
Chairman & CEO*

Expanding Dimensions



Children's Day 2008

FLL continued its efforts to provide quality cardiac care for underprivileged children through its joint initiative Project 'Heart 2 Heart' with Madras Anchorage Round Table 100 on Children's Day this year. Children's Day was celebrated with a free heart care camp for children at Frontier Lifeline Hospital.

There is an increasing awareness of heart disease as the most common cause of death world-wide. In India alone, there are approximately two lakh children born with congenital heart diseases (CHD). Frequently the diagnosis in these children comes to light at a delayed stage and, more commonly, the treatment required is unaffordable to the vast majority.

The objective of the camp was to identify children with heart ailments and help those who need financial assistance for further treatment. This was an open camp where children with their parents/caretaker could walk in at any time between 10am and 5pm on 14th November 2008. This initiative was inaugurated by US Consul General Andrew T. Simkin in the morning, during which children who had already benefited from this joint effort also participated.

The camp facilitated detection of various heart ailments like holes in the heart, complex "blue baby" conditions and valvular heart disease. The tests conducted at the camp included weight, blood pressure, ECG (electrocardiography) and echocardiography, apart from consultation with the cardiologists, dieticians and geneticists. The team of cardiologists from Frontier Lifeline, supported by paramedical and technical staff, screened the children with state-of-the-art facilities for the accurate and timely diagnosis of cardiac anomalies.

Frontier Lifeline and Madras Anchorage Round Table 100 are working hand-in-hand to instill awareness. All children with recurrent chest infections, poor weight gain, unexplainable breathlessness and bluish discoloration of the hands and feet should be evaluated for heart problems. Children with heart

diseases should be treated early so as to prevent irreversible damage to the heart and lungs. The other emphasis is on teaching the children about heart-healthy diet and the need for regular exercise. The current trend of rapid westernization and sedentary lifestyle, where children have a lot of fast food and indulge in video games/internet games, leads to childhood obesity which is growing to epidemic proportions worldwide. Educating the parents and their children on a heart-healthy lifestyle is a collective effort which finds a forum during initiatives such as this campaign.



*Inauguration by Mr. Andrew Simkin,
US Consul General*



Beneficiaries of Project 'Heart 2 Heart'

Expanding
Dimensions

Expanding Dimensions



Physician Assistant Day Celebrations

'Physician Assistant Day', celebrated world-wide on 6th October, acknowledges the important contributions of the noble bio-medical professionals known as 'physician assistants'. A physician assistant (PA) is a health-care professional with a wide range of responsibilities in the clinical setting, working closely with the supervising physician(s). These tasks include physical examination of patients, diagnosis, order and interpretation of clinical tests, assistance during surgery for surgical procedures and perfusing for the same, pre-operative preparations and post-operative care, and counseling on preventive health care (pre-operative patient education). A PA can also contribute to education, research, and administrative services.

At Frontier Lifeline 'PA Week' was celebrated during 6th October 2008 to highlight the important role of physician assistants in providing efficient and quality healthcare to patients. A Power Point presentation on The '*Physician Assistant Program in India*' was given by intern Ms. Sindhuja in the auditorium, followed by an address by Dr.K.M.Cherien on the genesis and evolution of this program in India and how this cadre has gained acceptance among the medical fraternity.

A poster exhibition was formally inaugurated by Dr.Cherien highlighting the evolution of this health care cadre in India. It showcased the training imparted to

students and the course curriculum, as well as the role of physician assistants in various clinical and research fields. It was well attended by the staff, patients and their relatives, who appreciated the awareness brought about by the informative and colorful posters.

Messages sent by eminent healthcare professionals were displayed and the opportunities offered to PA graduates in the form of higher education and employment in India and abroad were showcased. All in all, PA Week celebrated at Frontier Lifeline was an occasion to recognize the importance of this unique biomedical profession.



Physician Assistant Day

The Lighter Side

How To Keep Yourself Informed

A sweet grandmother telephoned St. Joseph's Hospital, and she timidly asked, "Is it possible to speak to someone who can tell me how a patient is doing?"

The operator responded, "I'll be glad to help, dear. What's the patient's name and room number?"

The grandmother in her weak tremulous voice said, "Norma Findlay, Room 302."

The operator replied, "Let me place you on hold while I check with her nurse."

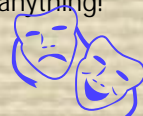
After a few minutes the operator returned to the phone. "Oh, good news. Her nurse has told

me that Norma is doing very well. Her blood pressure is fine; her blood work just came back as normal. And her physician, Dr. Cohen, has scheduled her to be discharged Tuesday."

The grandmother said, "Thank you. That's wonderful. I was so worried! God bless you for the good news."

The operator replied, "You're more than welcome. Is Norma your daughter?"

The grandmother said, "No, I'm Norma Findlay in Room 302. But no one tells me anything!"



The Heart Of the Matter



Dr. R. Prem Sekar MRCP (Ireland)
Interventional Paediatric Cardiologist



Percutaneous Embolisation of a Large Pulmonary Arteriovenous Malformation using the Nitinol Vascular Plug

We report the case of a 10-month-old infant who presented with unexplained refractory cyanosis and tachypnoea in the presence of normal cardiac anatomy. Contrast echocardiography and pulmonary angiography confirmed a large pulmonary arteriovenous malformation involving the right lower lobe of the lung. This was embolised successfully using two Nitinol vascular plugs. Vascular plugs lend themselves as a safe alternative to occlude large pulmonary arteriovenous malformations which would otherwise have necessitated lobectomy.

Pulmonary arteriovenous malformations (PAVM) are rare vascular malformations in children. Congenital AV malformations occur when the process of vascular differentiation in the embryological stage is interrupted. Depending on the phase of interruption, AV malformations may either be capillary telangiectasia or cavernous haemangioma.¹ Unlike the capillary type of AV malformation, which is commonly associated with hereditary haemorrhagic telangiectasia² (Rendu-Osler-Weber syndrome), the cavernous type is usually fed by one or more tortuous large pulmonary artery branches in which case the right to left shunt may be significant. For a diagnosis of hereditary haemorrhagic telangiectasia to be established, at least three of the following four criteria should be present epistaxis, visceral lesions, telangiectasia and a compatible family history.³ Infrequently, PAVM is acquired after palliation for single ventricle cardiac physiology when the IVC flow to the pulmonary vascular bed is interrupted. These commonly resolve spontaneously with completion of the Fontan procedure when the hepatic venous flow is incorporated to flow to the pulmonary arterial bed.⁴ Acquired AV malformations are also found in juvenile cirrhosis and in pulmonary schistosomiasis.

Case Report

A 10-month-old infant was referred from a pediatric hospital for management of refractory noncardiac cyanosis after medical management of a persisting right lung opacity with antibiotics had failed. A faint bruit over the right lateral chest wall detected by the primary paediatrician led to a CT chest, which however failed to delineate any pathology. The resting saturation was 74%. At our institution, echocardiography revealed normal cardiac anatomy and contrast echocardiography with agitated normal saline confirmed significant extra cardiac right to left shunt (Fig-1).



Fig-1 Bubble contrast in LA and LV suggestive of pulmonary right to left shunt

Subsequent pulmonary angiography revealed a large cavernous type of arteriovenous malformation involving only the posterobasal segment of the lower lobe of the right lung (Fig-2).

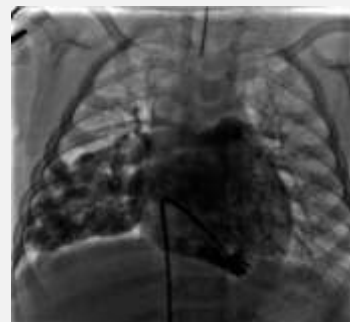


Fig-2 RV angiography revealing extensive PAVM of lower lobe of right lung

The Heart Of the Matter

Elective percutaneous embolisation of the PAVM was advised as the alternative option of lobectomy would result in sacrificing the unaffected lobar segments. After obtaining consent the infant was taken to the catheterization laboratory again. The large, proximally bifurcating pulmonary artery branch feeding the PAVM was identified and occluded with a 5Fr Swan-Ganz catheter. This resulted in the saturation increasing from 84% to 97%. The lower branch of the right pulmonary artery was catheterized with a 6Fr right coronary artery guiding catheter through which a 12 mm Amplatzer vascular plug was used to embolise the proximal feeding artery which measured 8 mm. A lateral view angiogram of the right lower pulmonary artery branch then identified an additional anteriorly bifurcating feeding vessel while also revealing the entire anterobasal right lower lobe segment of the lung to be normal (Fig-3).



Fig-3 Lateral angiogram identifying an additional arteriovenous channel and unaffected anterior segment of the right lower lobe

This vessel was selectively catheterized with the same coronary guiding catheter and embolised with a 10 mm Amplatzer vascular plug effecting complete occlusion of the PAVM (Fig-4).



Fig-4 Selective RPA injection after complete embolisation of the PAVM

There were no complications and after recovery in ICU the child was shifted to the ward the same day and discharged the following day with a resting saturation of 98%. Chest X-ray prior to discharge revealed resolution of the vascular shadow in the right lower lung field and decrease in cardiothoracic ratio to 50% (Fig-5).

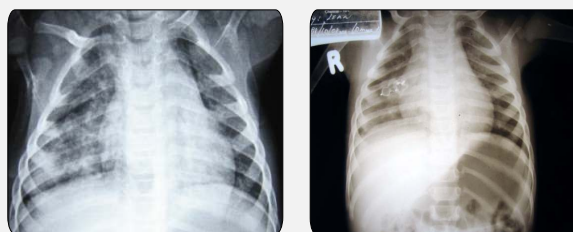


Fig-5 CXr showing PAVM pre-embolisation and resolution of vascular shadow post-embolisation.

Discussion

Pulmonary arteriovenous malformations should be considered in all cases presenting with refractory non-cardiac cyanosis. Bubble contrast echocardiography can be a useful diagnostic tool. Agitating normal saline produces micro bubbles which, when injected in the peripheral venous system, enter the right heart circulation and are usually filtered by the alveolar capillary bed and so do not enter the pulmonary veins. However, the presence of significant PAVM allows these microbubbles to bypass the capillary bed and enter the pulmonary veins and left heart where they can be detected by transthoracic echocardiography. Surgical lobectomy has been the treatment of choice earlier as percutaneous management of large PAVM was considered to be associated with a higher risk of failure and systemic embolisation of the coils.⁵ Subsequently, successful coil embolisation of large PAVM with multiple coils have been reported³ although the risk of systemic embolisation of coils does still exist. Very large pulmonary AV malformations, irrespective of size, such as the one described in this case report are now amenable to transcatheter embolisation with the recent availability of vascular plugs. This is a Nitinol wire mesh, self-expandable cylindrical device without occlusive fabric and platinum marker bands on both ends. The

The Heart Of the Matter

available in sizes ranging from diameter 4-16 mm in 2 mm increments and lengths of 7-8 mm. The recommended device size is one 30-50% larger than the target vessel. This case substantiates earlier reports of Nitinol vascular plugs for successful embolisation of large pulmonary arteriovenous malformations.⁶ Percutaneous embolisation of PAVM is preferred as these malformations may commonly recur in previously unaffected segments of the lung and serial lobectomies would seriously compromise the pulmonary functional status of the patient.

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We acknowledge the contributions by Dr. S. Balasubramaniam, Consultant Paediatrician at KKCTH, Chennai who made a clinical diagnosis of non-cardiac cyanosis and referred the child for further management and Dr. R. Subramanyan, Consultant Cardiologist at Frontier Lifeline Hospital who assisted in literature review and the interventional procedure.

In Memorium

Mr. Kuttappan was a teacher who was operated on by Dr K. M. Cherian in November 1979. He had the distinction of being the first patient to have had an aortic valve replacement in Southern Railway Hospital, Chennai. He was admitted for severe calcified aortic stenosis and had his valve replaced with a Star Edward Valve No. 9.



He lived for 29 years after that successful surgery and demonstrated his gratitude by faithfully calling Dr Cherian every year on the date of his surgery to thank him and the Almighty and to say "you gave me one more year". However, it cannot be forgotten that what man proposes God disposes, as it so happened on that fateful day on 28th December 2008, when Mr. Kuttappan was tragically killed in a motor accident in front of his home.

We convey our deepest condolences to the family and mourn the unexpected loss of Kuttappan "Sir", as he was fondly addressed by Dr. Cherian.

Conferences & Workshops



Frontier Conclave 2008

Since the inception of Frontier Lifeline in 2004, we have upheld our strong academic tradition through conferences and workshops, culminating in the Annual Frontier Conclave dedicated to the progress of knowledge in the field of cardiac sciences.

Frontier Conclave 2008 was conducted on 5th December at the Triple Helix Auditorium in CLRI. Its focus was "Helix & Heart", devoted to genetics, with an aim to understanding the heart at the molecular level. An eminent faculty from India and abroad working in these cutting-edge fields enhanced our understanding and promoted an exciting climate of knowledge and discovery. The decoding of the genome has opened up new worlds of possibilities in the cure of diseases like diabetes and coronary artery disease. The path lies in going back to basic sciences where medicines will give way to physiological treatment through the better understanding of the human genome. The environment also plays a major role in promoting the mutation of cells leading to various types of cancers. This can also be addressed through genetic experiments factoring in our rapidly changing environment. The Frontier Conclave aimed to address such mutations and their genetic role, especially in the origin of cardiovascular diseases.

The Frontier Conclave got underway with the inauguration presided by His Excellency, Shri Surjit Singh Barnala, the Governor of Tamil Nadu as the Chief Guest. The Key-Note Address was delivered by Prof. P. Balaram, Director of the Indian Institute of

Science, Bangalore. The other dignitaries who graced the function were US Consul General, Mr Andrew Simkin, and the Vice-Chancellor of Madras University, Prof. Ramachandran.

Key faculty members who contributed invaluable to the scientific content of the conference were Dr Shoumo Bhattacharya, University of Oxford, and Dr. Nilesh J. Samani, University of Leicester from the UK. The eminent national speakers were Dr. V. Mohan, Madras Diabetes Research Foundation, Chennai; Dr. Partha P. Majumder, Human Genetics Unit, Indian Statistical Institute, Kolkata; Prof. A. Ramachandarn, India Diabetes Research Foundation, Chennai; Dr. K. Thangaraj, Center for Cellular and Molecular Biology, Hyderabad; Dr Nitish Mahapatra from IIT, Chennai; and Dr. S. Suresh from Mediscan, Chennai, with his dynamic team members.

Student scientists and doctors who participated felt that the programs were well conducted and benefited tremendously from the depth and breadth of the topics covered by experts in the field. Active interaction between speakers and delegates kept the sessions lively and contributed to the rich academic climate.

Overall it was an event which once again established our commitment to the progress of knowledge and research in basic sciences as we aim to bridge the gap between scientists and clinicians.

Conferences
& Workshops

An Overview of 'Helix & Heart'



Conferences & Workshops

Cardiac Pathology 2008



Inauguration with esteemed faculty

Cardiac pathology is a speciality which has been underutilized to a great extent in our country. In all established cardiac centers abroad cardiac pathology is part of the teaching program for the cardiology and pediatric cardiology trainees. Although it has been included in the National Board Fellowship in India, it is not implemented either due to non-availability of an expert or disinterest shown by the concerned departments. In our center, the cardiac pathology department plays an important role in improving our understanding of congenital defects in the heart, thus improving patient care and training programs.

With the intention of sharing our interest in this field, we conducted the first Cardiac Pathology CME in our hospital on 12th November 2007 at the auditorium. Dr Richard Hawker (Senior Pediatric Cardiologist, Sydney, Australia), Dr Jaya Deshpande (Senior Cardiac Pathologist, Mumbai) and Dr Pradeep Vaideeswar (Cardiac Pathologist, Mumbai) were the faculty. They delivered lectures on interesting congenital heart disease topics (DORV, LVOT obstruction and AVSD) with demonstration of relevant autopsy specimens to enrich our knowledge.

Due to the enthusiastic response and request from the fellows, we decided to hold this CME as an annual meet. The second CME was held on 11th October 2008 at Tichel Bio-Park Auditorium, Chennai. Topics on aortic lesions and atherosclerosis were included in addition to congenital diseases. Dr S. Sandyamani from SCT, Trivandrum and Dr Gayathri Amonkar from Mumbai were the faculty along with Dr Jaya and Dr Pradeep. The program was a huge success with much delegate participation, very useful interactive sessions and a wide coverage of topics. We are already looking forward to our next meet in 2009 to learn more in Cardiac Pathology.

PARUMALA NEWS

Christmas Celebrations 2008



Mr. Mammen Cherian cutting the Christmas Cake

St. Gregorios Cardio Vascular Centre celebrated Christmas on 22nd December 2008. The Christmas message was delivered by the chief guest Prof. George M Cherian, Rtd. Principal of Bishop Moor Vidhya Peedom, Mavelikkara.

The Welcome speech was delivered by Dr. Saji Philip and the Presidential Address was delivered by Fr. Alexander Koodarathil. Appachan, Dr. Alex Paul, Mr. Eappen Oommen, Dr. M.G Pillai, and Dr. Saji Jose gave the felicitation, which were followed by cultural programmes..

FREE CARDIAC CAMP

A free paediatric cardiac camp was conducted by St. Gregorios Cardio Vascular Centre YMCA VAPI in association with Janseva Mandal Hospital on 18th December 2008. During this camp a total of 72 children were identified with various types of congenital heart diseases.



Cardiac Camp at YMCA VAPI, Gujarat

Enhancing Knowledge



Nurses without Frontiers

Frontier Lifeline played host to two Visiting Nurses from the USA from 1st November for a period of 6 weeks. Ms. Jennifer Schroer, RN, BSN, from Missouri Western State College and Ms. Andrea Walters, RN, BSN, from Augustana College participated in all aspects of nursing care and offered various invaluable suggestions for further improvement after making a careful assessment of the existing protocols and procedures. The following is part of an account of their visit as related by them...

"As American nurses with a collective 23 years of varied ICU experience, when we were asked to travel to a heart hospital in Chennai, India for volunteer work, we expected mission work in an underdeveloped hospital with limited resources. We quickly found we couldn't have been further from the truth. As we began to read up on the hospital, called Frontier Lifeline (FLL)/Dr. K.M. Cherian's Heart Foundation, it became obvious this hospital would be very different.

FLL is an advanced hospital in a third world country stricken by immense poverty. FLL has two campuses; one located in Chennai, Tamil Nadu and the other located in Parumala, Kerala. Both hospitals provide open heart surgical procedures and advanced cardiac care for India and surrounding countries. Dr. Cherian, CEO and chief surgeon of FLL, not only performed the first open heart surgery in India, but also the first heart transplant in India. After 35 years in cardiac surgery, he has performed over 33,000 surgeries around the world. He has devoted his life to treating the public, especially children, to improve their lives, thus hopefully improving the future of India. As Dr. Cherian says, "you never know, this child could be the next President or Prime

Minister."

Dr. Cherian opened FLL in Chennai, India, four years ago. He invited us to FLL to observe, evaluate, and work in collaboration with his staff, to enhance the already impressive hospital he has created. He expects top quality, expert care from his surgeons, nurses and ancillary staff. Indeed, during our visit we found the knowledge base and care provided in the FLL hospitals to be impressive.

Our focus was primarily with the nursing staff, with some overlap into the respiratory staff. We met daily with FLL nurses and nursing coordinators to evaluate their goals, needs, and to prioritize our focus. We quickly became aware, that although we could provide a bit of updated education to the caregivers, our focus would be on starting a policy, procedure, and protocol system. By applying AACN (American Association of Critical Care Nurses) evidence-based practice, to their already quality care, we developed many policies, procedures, and protocols the nurses can use to ensure they are providing the safest care possible for their patient. Dr. Thomas Pezzella donated an AACN policy procedure manual to assist the FLL staff in creating future protocols. The nurse educators and coordinators are excited and eager to complete more protocols and create their own policy manual based on FLL standards of care. Along with each protocol, competencies were created to further ensure the standardization and evaluation of the care provided by all nurses. A program was outlined whereby a file is created for each nurse to maintain documented proof of providing care to FLL's standards.

Enhancing Knowledge

We were also asked by Dr. Cherian, to focus on BLS and ACLS. Many of them are currently waiting to take BLS or recently received their certification, so they were very eager to apply their knowledge in a mock situation. We stressed the importance of early intervention for improved patient outcomes and taught them how to "run a code." As nurse and respiratory personnel in India are not allowed the autonomy to provide ACLS care in the absence of a doctor, they were delighted to receive this education in order to properly care for the patient prior to a physician's arrival. The participants' eagerness to learn was palpable and we worked whole-heartedly to try to exceed expectations. We often broke the participants into smaller groups and encouraged them to discuss the class content and ask us questions in a more one-on-one setting. Everyone involved enjoyed the small group interactions and the occasional spirited discussions were some of the highlights of our trip

As American nurses, we are proud of the care we provide and continue to strive for improvement. Through our time at FLL, we have come to further respect and appreciate our already beloved career and profession. At FLL, Dr. Cherian requested we share our knowledge and ideas, however, we feel we have gained more from our experiences at FLL and in India than we have provided. Our trip has been one of new experiences, hard work, soul-searching and unparalleled hospitality. Having experienced the warmth and acceptance by the people of FLL and of India, we are eternally humbled and grateful.

We thank Dr. Cherian, all the staff at FLL, Dr. Thomas Pezzella and ICHF for this amazing opportunity."

By
Ms. Andrea Walters & Ms. Jennifer Schroer,
Visiting Nurse Educators.



Guest Lecture

The Directors of HCG Anderson PET CT Institute gave a short talk on "Future of Nuclear Cardiology – Cardiac PET" on 20th October 2008 at the FLL Auditorium. This presentation made by Dr. C. Surya Kumar, MD, Consultant Radiologist and Dr. Amol Galge, Consultant Nuclear Physician benefited all who attended the talk and interacted with the speakers thereafter.

Enhancing Knowledge

October

1st - 3rd Dr. Joy Thomas gave a talk on "Evaluation of Syncope" at the Annual Conference of the Indian College of Cardiology, Kochi.

Dr. Joy M. Thomas delivered a talk on "When do I do CRT" at TANCSI, Annual Conference of Tamil Nadu Cardiological Society of India Meeting at Kodaikanal.

3rd Dr. K. M. Cherian delivered a talk on "Paediatric Heart Transplant-Current Status" at the Annual Conference of the Indian College of Cardiology 2008 (ICCCON 08) held at Le Meridian Convention Center, Cochin.

November

8th Dr. Joy M. Thomas gave a talk on "CRT Case Scenarios" at the Heart Rhythm Summit, Chennai.

19th Dr. R. Prem Sekar was invited to give a lecture on "Clinical Approach to Grown-up Congenital Heart Disease" at the Annual 18th All India Postgraduate Training Program, Chennai.

21st Dr. Joy M. Thomas was invited to give a Guest Lecture on "Diastolic dysfunction in Hypertension" at the Annual Conference of the Hypertension Society of India, Chennai.

24th Dr. K. M. Cherian gave a lecture on "Heart Transplant and Stem Cell Research" at Sree Balaji Medical College and Hospital, Chromepet, Chennai.

December

7th to 9th PCSI 2008 organised by Amrita Institute of Medical Sciences & Research Centre, Kerala, saw active participation from

cardiologists and cardiology fellows:

Dr. R. Subramanyan was invited to chair the scientific session for presentation of free papers and for the interactive session on 'Paediatric Echocardiography'.

Dr. C. Shanthi chaired a lecture on 'Kawasaki Disease' at the General Pediatric Surgery session.

Other paper presentations were

"Massive Intracardiac thrombus in infants following cardiac surgery". Anuradha Sridhar Anto Sahayaraj, Shanthi C, Prem Sekar, Raghavan Subramanyan, Ravi Agarwal, K.M. Cherian

"Low Cardiac Output Syndrome and Failed Extubation". Anuradha Sridhar Anto Sahayaraj, Shanthi C, Prem Sekar, Raghavan Subramanyan, Ravi Agarwal, K.M. Cherian

"Duplicate Mitral Valve". Anuradha Sridhar Anto Sahayaraj, Vijaya Nayak, Shanthi C, Prem Sekar, Raghavan Subramanyan, Ravi Agarwal, K.M. Cherian

"Surgical correction of Horse shoe lung with out scimitar syndrome". Anuradha Sridhar Anto Sahayaraj, Vijaya Nayak, Shanthi C, Prem Sekar, Raghavan Subramanyan, Ravi Agarwal, K.M. Cherian.

"Massive pulmonary infarction following interruption of anomalous blood supply to the right lung in scimitar syndrome". Anuradha Sridhar Anto Sahayaraj, Shanthi C, Prem Sekar, Raghavan Subramanyan, Ravi Agarwal, K.M. Cherian

Enhancing Knowledge

11th-13th

Dr. K.M. Cherian was invited to deliver a talk on "Intellectual property vs. the 'Right to be cured': A XXI Century Dilemma" during the special symposium on Global Thinking in Cardiovascular Surgery: "East meets West" in Milan, Italy, for the 3rd International Congress of Aortic Surgery and Anaesthesia "How to do it" conducted by San Raffaele Scientific Institute.



Dr. K.M. Cherian with Mr. Silvio Berlusconi, Hon'ble Prime Minister of Italy during the gala dinner hosted at the 4 Seasons Hotel on 12, December 2008

19th-21st

Dr. Joy M. Thomas spoke on "Postmyocardial infarction current management strategies" at the API Update, Chennai.

28th

Dr. K.M. Cherian spoke on "Intellectual property vs. The 'Right to be cured', A XXI Century Dilemma" at the Hotel Windsor Castle in Kottayam organized by Rotary Club, Kerala.

3rd-6th

The 60th Annual Conference of the Cardiological Society of India (CSI 2008), was held at the Chennai Trade Centre and saw active participation by the following:

3rd

Ms. Alagu N. Meenakshi gave a talk on "A Case of Tricuspid Insufficiency and Pulmonary Stenosis (TIPS) Carcinoid Syndrome with Atrial Septal Defect" during the 'Potpourri of interesting and challenging cases - just echo case studies from around the world' session.

3rd

Dr. Joy M. Thomas delivered a case presentation on "Interventional

Council".

4th Dr. Joy M. Thomas chaired a symposium on "Systemic Hypertension"

6th Dr. Joy M. Thomas chaired a session on "Peripheral Intervention".

6th Dr. R. Subramanyan delivered an invited lecture on "Eisenmenger Syndrome"

Other papers presented were:

☞ Isolated decrease in HDLc in acute coronary syndrome – an independent marker of multi vessel coronary artery disease? -a report on individual risk factor analysis. C. K. Das, Joy M. Thomas, R. Subramanyan, K. M. Cherian.

☞ Long term follow up of Permanent Pacemaker Implantations in Children C. K. Das, Joy M. Thomas, Ravi Agrawal and K.M. Cherian

☞ Technitium-99 single-photon emission computerized tomography evaluation of ischemic heart failure patients treated with enhanced external counter pulsation. C. K. Das, C. Arumugam, Joy M. Thomas, S. Ramaswamy, K. M. Cherian

☞ Vectorcardiography as a tool to localize accessory pathway for radio frequency ablation. C. K. Das, Joy M. Thomas, K. M. Cherian.

DIGNITARIES DIARY

(FROM OCTOBER 2008 TO DECEMBER 2008)

DATE	NAME OF THE VISITORS	PLACE	COMMENTS
14/11/2008	Mr. Andrew T. Simkin, Consul General of USA, US Consulate General	Chennai	This is such an impressive facility. I appreciate the opportunity to view the hospital and meet those who are providing such advanced medical care, so tenderly, to needy children and others. Thank you.
02/12/2008	Dr. Lianyi Wang, University of China	China	Enjoyed the good hospitality The hospital is very well organized and very efficient. Friendly staff and very impressive work with great achievement.
5/12/2008	Dr. S. Ramachandran Vice Chancellor University of Madras	Chennai	Impressed very much with the interests of Dr. K.M.Chерian and his colleagues in research. University of Madras is proudly associating with Frontier Lifeline and with all the best in all joint ventures.
5/12/2008	Dr. Shumo Bhattacharya Professor of Cardio - vascular Medicine University of Oxford	U.K.	Excellentlу organized and very honoured to be here, look forward to developing work in collaboration.
2/10/2008	Dr. Jyothi Mannari HOD, Shri Krishna Medical College Hospital	Gujarat	Good hospitality, nice and clean setup and good work. Keep it up.
12/11/2008	Dr. Umesh Kumar Jain State Medical Commissioner, ESIC	Chennai	It was a pleasure visiting the hospital and making it a part for our ESI beneficiaries. Thanks.
12/11/2008	Mrs. Padmaja Nambiar ESIC, Tamil Nadu & Pondicherry State.	Chennai	Impressive; especially reception cleanliness

DIGNITARIES DIARY

(FROM OCTOBER 2008 TO DECEMBER 2008)

DATE	NAME OF THE VISITORS	PLACE	COMMENTS
5/12/2008	Dr. V. Mohan Madras Diabetes Research Foundation	Chennai	What a wonderful inauguration, organization and conference. Hats off to KMC and his whole team. Sir, I am your humble fan and admirer, you are a true 'pioneer' in every sense of the team. My salutations.
5/12/2008	Prof. P Balram IISc	Bangalore	It was a privilege for me to come and be part of the 'Heart and Helix.'
6/12/2008	Dr. Qingyu Wu	Beijing, China	It is a wonderful meeting. Thank you very much to Dr.Cherian and his team.
9/12/2008	Ms. Jennifer Schroer, Visiting Nurse Educator State College, USA	Missouri Western	I have been very impressed during our stay at this establishment. I have gained much that I will bring back to the US. Thank you for the amazing hospitality inside and outside the hospital. I will never forget such a wonderful experience.
9/12/2008	Ms. Andrea Walters, Visiting Nurse Educator College, USA	Augustan	Such a wonderful staff. We came here to help educate and ended up leaving more knowledgeable. Best to all.



Ms. Andrea Walters, Ms. Jennifer Schroer
Visiting Nurse Educator, USA

Mrs. Padmaja Nambiar, Dr. Umesh Kumar Jain
ESIC, Tamil Nadu & Pondicherry State.

Spoken From the Heart

We had a good stay at the hospital; all staff are very nice and friendly. Congratulations to Dr. Cherian and staff for a job well done.

Manboadram Sukhai, Guyana, South America

I will refer this hospital to new patients. Thanks.

Safiyam Ahmed, Maldives

Thanks to all the second floor nurses.

Mustafa, Iraq

Frankly I have never seen such love, care, smiles and professionalism anywhere in a hospital. I wish Dr. Cherian would set up one such hospital in Uganda. There will be transformation. May the good Lord bless you.

Peter Asiimur, Uganda

Overall impressions about Frontier Lifeline are very good especially Dr. Ravi Agarwal. I am very grateful to him for replying all our queries kindly.

Shobha Lalchandani, Gujarat

Overall services are perfect; keep it up.

Mukamusoni Ammet, Uganda

Very nice hospital, shows very good services for good healthcare, so with my best wishes to go forward - thank you for everything.

Mohammed Sahib, Iraq

In my life I haven't seen such a systematic system anywhere else except in your hospital. ICU staff is next to the God.

A. Jeyaraj, Madurai

Excellent service. I wish Dr. Cherian's Hospital to grow from strength to strength.

Y.R. Ravindran, Sivakasi

Your overall services are perfect, keep it up.

Okuku Alex, Uganda

Very systematic and professional approach. Hard work, sincerity and services provided by doctors and nurses are praiseworthy. Well done. Keep it up.

Athul Reghunath, Bahrain

"I am truly most grateful to you for saving my adopted son, Baby Kasun, who was operated for VSD in 1992. The photograph is of him as a baby in the cot, post-surgery by your loving hands. The second photo is of him at 18 years of age in Sri Lanka." ... "your golden hands saved many lives of the people on Mother Earth." ... "I pray that you teach your lifesaving methods to young surgeons who can carry on your good work."

Excerpts from letter to Dr. K. M. Cherian from William Meerwald, Victoria, Australia



Academic Opportunities



Dr. K. M. Cherian International Fellowship in Cardio Thoracic Surgery

This program attracted more than 12 international applicants from all over the world. Our limited infrastructure could accommodate only three candidates this year and the rest were placed in the pipeline. The successful candidates are



Dr. Carlos David Najera A., MD
Quito-Ecuador, South America



Dr. You Ma, PhD
SooZhou University, China



Ms. Dairiimaa Daansuren,
Mongolia



Dr. K. M. Cherian
Educational Society

Training Period :One year

For further information please contact:

Dr. Prashant Vaijyanath, MS, MCh, FCS, Sr. Consultant
Co-ordinator for International Postgraduate Fellowship Program
E mail: pvaijyanath@hotmail.com



International Fellowship Program in Paediatric Cardiology, Anesthesia and Intensive Care



Frontier Lifeline, has been included in the panel of institutions to send doctors for advanced training in the above specialities by the prestigious San Donato Hospital, Milan, Italy. This program has been organized by Prof. Alessandro Frigiola, MD. The first Fellowship has been awarded to Dr. Anuradha Sridhar, Fellow in Paediatric Cardiology of FLL.



The International Centre for Biomedical Sciences and Technology (ICBST) is a growing unit of Frontier Lifeline and Dr. K. M. Cherian Heart Foundation. It is managed by a team of young scientists with extensive academic and industrial foresight with the offer of training to research scholars in the field of biotechnology and molecular biology. To provide students pursuing life science and related careers with good laboratory skills and technical knowledge and to narrow the gap between the academic institute and industry, thereby enhancing their skills further. There has been considerable advancement in the divisions of tissue engineering and stemcell technology. After successful animal trials, the products are in pilot clinical trials with good results. The ethical and biosafety aspects of the products have been critically analyzed. Stem cell therapy has been offered to 'no option' patients following careful selection of patients.

Workshop Program

Due to the demand for "hands-on" training in laboratory techniques we are providing short-term workshops throughout the year.

Speciality of the workshops

- ❖ Ethics in research
- ❖ Hands-on training
- ❖ Personal attention for each student throughout the programme
- ❖ Limited number of students in each batch
- ❖ Programs are designed as per the university syllabus
- ❖ Nominal fee
- ❖ Concession for larger groups from the same college

Projects

ICBST has guided more than 50 research projects for B.Sc., M.Sc., B.Tech., M.Tech., M.Phil. and Ph.D degree in all aspects of biotechnology. Selection is based on interview.

Mr. C. Anbarasan M.E. Biotechnology
Scientist, Program Co-ordinator
Email : anbarasanc@yahoo.com
Office Phone No: 26548997
(Timing: 9.00 am - 5.00pm)
Mobile : 9841369741

Academic Opportunities



The International Centre for Biomedical Sciences and Technology for Research Training Applications was inaugurated by Hon. President Dr.A.P.J. Abdul Kalam in 2004.

This centre offers a large number of career oriented programs in the field of paramedical, and biotechnological health sciences. On successful completion, students will receive recognized degrees from premier universities with which we have an affiliation such as the Indian Institute of Technology (Madras), Birla Institute of Technology and Science (Pilani), Meenakshi University (Chennai) and the Madras University (Chennai). The BS in Physician Assistant is a unique four

year program conducted in collaboration with BITS, Pilani.

Eligibility

Pass in 10 + 2 (CBSE, Matriculation, State Board are equivalent) with Physics, Chemistry, Biology/ Maths. Admission is through an entrance exam and interview.

Applications can be downloaded from the BITS website (<http://www.bits-pilani.ac.in/dlp-home>)

For further information contact

Ms. Farida Farzana A.J. PA.
Program Coordinator,
E Mail: icbst@frontierlifeline.com,



Other Courses offered, in affiliation with Meenakshi University are:

PG Diploma Courses

- * Transfusion Medicine,
- * Medical Lab Technology
- * Medical Records Management.

B.Sc. Courses

- * Operation Theatre Technology
- * Perfusion Technology
- * Anaesthesia Technology
- * Renal Dialysis Technology
- * Medical Lab Technology
- * Cardiopulmonary and Respiratory Technology
- * Cardiac Catheterization and Electrophysiology Laboratory Technology

M.Sc. Courses

- * Clinical Microbiology
- * Clinical Dietetic Management and Hospital

Food Service Management

Ph.D. Courses

- * Biochemistry
- * Cardiology
- * Cardiac Surgery
- * Genetics
- * Microbiology
- * Pathology.

Academic Coordinator

International Centre for Biomedical Sciences and Technology

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Fax: 91-44-26565150

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Web: www.frontierlifeline.com

Awards & Achievements

FRONTIER MEDIVILLE (*F lamingo*)



Mr. R. Jayakumar,
Chief Operating Officer
for the Frontier Mediville
Project



Frontier Mediville gets Special Economic Zone Status (Ref.No. F.1/55/2008 SEZ)

The Government of India has granted us formal approval for our proposal to develop, operate and maintain a Special Economic Zone (SEZ) for our Frontier Mediville project. This is the first such SEZ status to awarded to a hospital and is an enormous privilege for which we are grateful and honoured.



Mediville On Right Track at Elavur Railway Station

Frontier Lifeline has been given permission by Indian Railways-Southern Region, to develop amenities and facilities at Elavur railway station. Frontier Mediville is situated at Elavur village, Thiruvallur District, This will be an example of public private partnership.



Beyond 5000 before 5 years and counting...

A remarkable achievement by any standards – Frontier Lifeline completed a record 5000 surgeries on 11th August 2008, a mere four and a half years after the commencement of surgical activities on 23rd February 2004. This is indeed noteworthy and a matter of pride for all its dedicated employees. We are inspired to achieve greater heights in the years to come.

We would like to express our heartfelt gratitude to all our patients and their families for their continued support and encouragement. We pledge to continue our "Service Beyond Self" and offer quality treatment and care with increasing efficiency and patient satisfaction. We plan to scale greater altitudes with our attitude.



International and National Publications of this Quarter

Best Poster Award

Dillip Kumar Bishi, Suneel R., R. Balasundari, Rama S. Verma, K.M. Cherian, Soma Guhathakurta.
Dexamethasone Alone Can Induce Adipocytic Transdifferentiation Of Human Mesenchymal Stem Cells

1. International Centre for Cardiothoracic and Vascular Diseases, Frontier Lifeline Pvt. Ltd., Chennai



2. Stemcell and Molecular Biology Laboratory, Department of Biotechnology, Indian Institute of Technology, Madras

77th Annual Meeting Society of Biological Chemists (India) 18-20th December 2008 held in Chennai.

ARTICLES: Dilip Kumar Bishi, Ilu Vargheese and Rama S. Verma (2008). "Molecular typing of colonizing *Streptococcus agalactiae* strains by Enterobacterial Repetitive Intergenic Consensus PCR (ERIC-PCR) in a Chennai based hospital". *Indian Journal of Microbiology* 48: 291-296

S Rallapalli, S Verghese and Verma R S (2008). Validation of Multiplex PCR strategy for simultaneous detection and identification of methicillin resistance *Staphylococcus aureus*. *Indian Journal on Medical Microbiology* 26 (4):360-363

Patents

Patent application for a multiplex PCR technique for detecting hMSC- Suneel R and Dillip Kumar Bishi (2642/CHE/2008)



Avenues

For Improvement



PG Update 2009



Post
Graduate
Update in
Clinical Cardiology
2009

Date :
20th to 22nd
March 2009



Venue :
Ticel Bio-Park
Taramani, Chennai

Organised by

FRONTIER LIFELINE

&

Dr. K.M.CHERIAN HEART FOUNDATION

Chennai

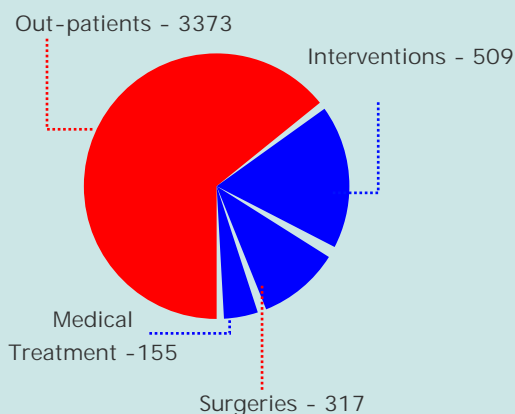
Phone: 42017575 Extn:234, 235, E-Mail: pgupdate2009@gmail.com

INPATIENT DOMICILE DISTRIBUTION

	Feb 04 - Sep 08	Oct	Nov	Dec	Total
Chennai City	7572	160	185	169	8086
Other parts of TN	4070	90	79	96	4335
Andaman & Nicobar	25	1	1		27
Andhra Pradesh	485	12	6	3	506
Assam	23			1	24
Bihar	19	1			20
Chattisgarh	27				27
Delhi	18		2		20
Goa	11				11
Gujarat	435	3	5	5	448
Haryana	2			1	3
Jammu & Kashmir	6				6
Jharkand	21			1	22
Karnataka	77	1	1	1	80
Kerala	223	5	3	7	238
Madhya Pradesh	67	2	2		71
Maharashtra	241	2		2	245
Manipur	2				2
Meghalaya	2				2
Nagaland	1				1
Orissa	31	4		1	36
Pondicherry	289	4	8	8	309
Punjab	5		1		6
Rajasthan	25				25
Tirupura	3				3
Uttar Pradesh	44		1		45
West Bengal	194		2	1	197

TOTAL 13918 285 296 296 17795

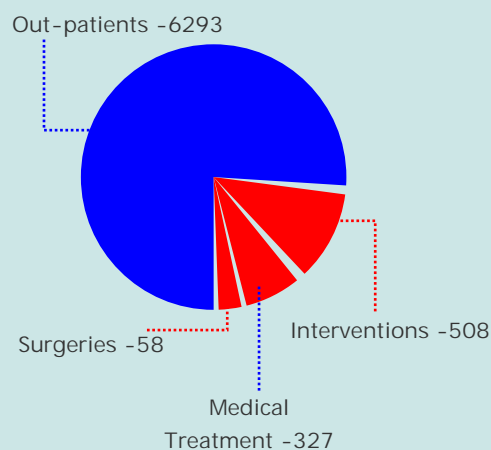
FRONTIER LIFELINE (OCTOBER - DECEMBER 2008)



PATIENTS FROM FOREIGN COUNTRIES

	Feb 04 - Sep 08	Oct	Nov	Dec	Total
Afghanistan	1				1
Australia	2				2
Bahrain	67	1	3		71
Bangladesh	41	2	2	1	46
Bhutan	2				2
Brunei	1				1
Ethiopia	4			1	5
Eritrea	1				1
Myanmar	7				7
Fiji	145	4	1	1	151
Guyana	64		1		65
Indonesia	2				2
Iraq	442	21	21	16	500
Kenya	78	1	2	1	82
Malaysia	16				16
Maldives	30			1	31
Mauritius	3				3
Nepal	3	2			5
Nigeria	10		2		12
Pakistan	13				13
Saudi Arabia	2				2
Singapore	6				6
Sri Lanka	91			1	92
Sudan	6				6
Switzerland	1				1
Tanzania	17	1	1	1	20
UAE	54	1	2		57
USA	8				8
Uganda	103			5	108
United Kingdom	2	1			3
Yemen	1				1
TOTAL	1223	34	35	28	1320

PARUMALA (OCTOBER - DECEMBER 2008)



EDITORIAL

Dr. Usha R. Subramanyan
Mrs. Priya Gopal
Ms. Priya Jebakaran
Mrs. Revathy Vijayakumar

FRONTIER LIFELINE

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Telemedicine web: www.frontierlifeline.com/telemedicine.html

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Some of the overseas children treated at Frontier Lifeline during this quarter