May the peace and joy that Christmas brings... Always be with you and your family.

EDITORIAL

2014 is nearly over; and once again, it is time to take stock of what we have been able to achieve this year, and make plans and prioritise for 2015. It has been an eventful year. It seems only the other day that many of us attended the IAL Conference at Chandigarh in February, where two of our colleagues won awards for best paper in their own categories.

TLMTI staff continues to engage with research despite pressures of time and work in our hospitals and field projects. In February, a Social Science Methodology Workshop was held to build the capacity of the staff of our Community Projects, and encourage them to integrate research into their work. In October, we held a Workshop which brought together clinicians and laboratory scientists in order to foster a better understanding of each other’s work, and appreciate the possibilities of research which includes both components. The participants appreciated the sessions, and plans are being made for collaborative projects which will provide new knowledge. We present also a brief report on a meeting on Transmission of Leprosy held earlier this year in Houston, Texas, which was attended by our Director and one of our young scientists from Stanley Browne Laboratory.

Routine work on developing proposals and writing up the new findings continue as we approach the end of the year and look forward to Christmas and the New Year.

Hope you enjoy this issue. Happy Christmas to all our readers!

A MESSAGE

At The Leprosy Mission Trust India, there has been a renewed focus on research during the last couple of years. Recognising the diversity and depth of programs with a leprosy focus, we have taken few steps to inculcate a research culture in the organisation.

Research was encouraged in The Leprosy Mission Trust India since the early 1990s. Yet practitioners have perceived research as distinct from practice, requiring dedicated staff, time and resources. In order to overcome some of these challenges, the Research Domain initiated workshops to simplify the concept of research, how to build on an idea and develop a concept, conduct literature review and analyses, basic principles and social science methods. This was done both through workshops organised at the central level and providing support at the field units.

The Stanley Brown Laboratory at Shahdara has been conducting interesting research in immunology and microbiology, pertaining to transmission, predictors for early diagnosis of type 1 reactions, and drug resistance surveillance. In October, a workshop was conducted with clinicians across TLM hospitals in India and scientists from the laboratory to understand the needs of the clinicians, identifying issues to be researched on, demystifying the laboratory techniques and its importance and progressing towards further collaboration between clinicians and the laboratory staff.

This year we also instituted a seed amount to support our colleagues to generate and develop ideas and pilot the studies on innovative concepts. Interesting results that have a greater potential could be written up for further collaborations with other agencies and universities.
In order to promote the practice of generating evidence for influencing policy and practice, the Research Domain also supports individuals in writing up their results for publication in peer reviewed journals. Over the last two years, ---- papers have been published. We also hope to develop projects engaging and enabling people affected by leprosy to conduct research.

As we move into another year, we hope to emerge as a learning organisation, open to new information and ideas and think creatively to improve services, opportunities and policies.

I hope you will enjoy this edition of the Research Newsletter. A blessed Christmas and New Year to each one of you!

Dr Mary Verghese
Deputy Director (Programmes)
The Leprosy Mission Trust India
**JOURNAL SCAN**

- **Trend in drug resistance pattern in Mycobacterium leprae isolates from the relapsed leprosy patients from The Leprosy Mission (TLM) Hospitals in India**


**Abstract**

Implementation of multidrug therapy (MDT) in leprosy control programme has significantly reduced the global prevalence of the disease in the last two decades. After so many years of use of MDT it is expected to find emergence of drug resistance in Mycobacterium leprae becomes a very likely possibility. This can cause a major concern, especially during the stage of elimination. In the present study, slit skin smears (SSS) samples were collected from 140 relapse leprosy cases from different The Leprosy Mission hospitals across India. DNA extracted from these samples was analyzed for the genes associated with drug resistance in M. leprae. These samples were analyzed for the genes associated with drug resistance in M. leprae. More than 90% of the patients relapsed as multibacillary (MB) cases. We observed 5.4% of the DNA samples showed mutations associated with rifampicin resistance. We also observed 8.1% of the DNA samples showed mutations that can cause resistance to Dapsone and quinolones. Further surveillance and necessary actions are needed to ensure successful control of the disease that has reached a stage of elimination.

- **Detection of Mycobacterium gilvum first time from the bathing water of leprosy patient from Purulia, West Bengal**


**Abstract**

In this present study for the first time the authors are reporting the isolation of Mycobacterium gilvum from the accumulated water in the drain connected to the bathing place of leprosy patients residing in an endemic region. The identification and characterization of this isolate was carried out by various conventional and molecular tests, including 16S rDNA sequencing. These findings might shed further light and association with amoeba in the leprosy endemic area of this rare Mycobacterium species.

- **Risk Factors for Leprosy Reactions in Three Endemic Countries**


**Abstract**

The objective of this study was to ascertain risk factors for complications (reactions or neuritis) in leprosy patients at the time of diagnosis in three leprosy-endemic countries. Newly diagnosed patients were enrolled in Brazil, the Philippines, and Nepal, and risk factors for reactions and neuritis were assessed using a case-control approach: “cases” were patients with these complications, and controls were patients without complications. Of 1,972 patients enrolled in this study, 22% had complications before treatment. Type 1 reaction was diagnosed in 13.7% of patients, neuritis alone in 6.9%, and type 2 reaction in 1.4%. The frequency of these complications was higher in Nepal, in lepromatous patients, in males, and in adults versus children. Reactions and neuritis were seen in patients at diagnosis, before treatment was started. Reactions were seen in adults and children, even in patients with only a single lesion. Neuritis was often present without other signs of reaction. Reactions and neuritis were more likely to occur in lepromatous patients, and were more likely to be seen in adults than in children.

---

**Don’t Forget Jesus**

Christmas is a special time to reflect on Jesus Christ, The wonder of His lowly birth brings meaning to our lives. There really is no other reason we celebrate this day, The birth of God’s precious son and the life He willingly gave. But so much seems to distract us in the bustling of our lives, We lose our focus in all the happenings not knowing, we leave out Christ.

We lose sight of the true meaning as we endlessly rush about, Trying to find that perfect gift seems to cloud our Saviour out. We need to stop and reflect awhile remembering our precious Lord, His birth, His life and sacrifice and all that He stands for. For though the world may celebrate it seems for other reasons, Let’s keep in mind that Jesus Christ is the true meaning of the season.

- M S Lowndes
DEVELOPING STRATEGIES TO BLOCK THE TRANSMISSION OF LEPROSY

Dr Tom Gillis and Peter Derrick on behalf of The Leprosy Mission Canada and Dr Peter Hotezon behalf of Baylor College of Medicine, National School of Tropical Medicine centre in Houston, Texas invited experts from different countries - India, Brazil, Ethiopia, Bangladesh, Philippines, USA, Scotland, Switzerland, Netherlands, Canada, and Japan - for a meeting: “Developing strategies to block the transmission of leprosy” from May 28 - 30, 2014.

The challenge for this symposium was to develop strategies that will lead to a deeper understanding of the relationship between the pathogen, the host and the environment.

In spite of advancement in research both at clinical and biological levels, leprosy is still a major disease in developing countries. The experts from different countries shared their problems with leprosy and placed the current epidemiological status from respective countries. Dr Sunil Anand, from The Leprosy Mission Trust, India, represented India and presented the leprosy burden, problems and epidemiological data on leprosy in India.

Dr Ravindra Turankar from Stanley Brown Laboratory TLM India, acted as Group Leader in the discussion on ‘Environmental reservoir of M. leprae’ and presented data from his studies about the environmental reservoir of M. leprae and existence of viable M. leprae in the inhabitant places of MB cases. This study revealed the existence of active transmission around the cases. Soil as well as water samples showed co-presence of M. leprae and Acanthamoeba. This needs to be explored further to establish significance of their co-existence. DNA finger printing of M. leprae was found in all household contacts from leprosy families which clearly indicated that the contacts were either infected by the patients and both leprosy patient as well as contact had the same source of infection.

Dr Ravi Turankar